Some examples and graphics depicted herein are provided for illustration only. No real association or connection to ServiceNow products or services is intended or should be inferred.

If you have comments about this documentation, submit your feedback to:
docfeedback@servicenow.com
# Table of Contents

**Analytics, Intelligence, and Reporting** ................................................................. 4

- Performance Analytics................................................................. 4
  - Get started with Performance Analytics................................ 4
  - Performance Analytics admin console.......................... 20
  - Visualize Performance Analytics data........................... 23
  - Performance Analytics data architecture............. 120
  - Integrate Performance Analytics............................. 218
  - Analytics Diagnostics................................................... 267
  - Performance Analytics for mobile devices........ 268
  - Ranking records with Spotlight.......................... 273
  - Interactive Analysis................................................... 280

- Reporting.................................................................................... 283
  - Getting started with reports................................... 283
  - Distribute reports............................................................... 294
  - Creating reports................................................................. 307
  - Advanced reporting......................................................... 681
  - Administering reports................................................... 732
  - Interactive Analysis......................................................... 771
  - Interactive Filters............................................................... 790

- Dashboards................................................................. 808
  - Create and use dashboards........................................ 809
  - Administering dashboards.......................................... 838
  - Performance Analytics Solution Library.................. 855
  - Widgets............................................................................... 858

- Agent Intelligence................................................................. 859
  - Get started with Agent Intelligence.............................. 863
  - Create and train a solution definition.................. 868
  - Exclude a class from solution training.................... 871
  - View training progress............................................. 872
  - Review solution coverage, distribution, and precision statistics......................... 873
  - Review prediction results over time.................... 875
  - Configure class precision and coverage values................................................. 875
  - Exclude a class from prediction.............................. 876
  - Activate solution version.................................... 876
  - Preserve solutions during a system clone.................. 877
  - Domain separation and Agent Intelligence............... 877
  - Test a solution prediction........................................ 878

**Index** ................................................................................................. 881
Analytics, Intelligence, and Reporting

Analytics, Intelligence, and Reporting includes ServiceNow® Performance Analytics and Reporting, Predictive Intelligence.

Use Performance Analytics with reports and dashboards to visualize data from your instance so that you can anticipate trends, prioritize resources, and guide continual service improvement.

Use Predictive Intelligence to automatically categorize tasks, increase agent productivity, and decrease resolution times and errors.

Tip: Bookmark the following links to the Analytics, Intelligence, and Reporting landing pages so you can quickly navigate to all needed resources for these applications.

Performance Analytics

Performance Analytics enables you to track, aggregate, and visualize key performance indicators over time, rather than reporting on a point in time.

Explore
- Get Started with Performance Analytics (Customer Success Center)
- Performance Analytics and Reporting release notes
- Upgrade to Kingston
- Watch Performance Analytics videos
- Performance Analytics with domain separation

Data Architecture
- Indicators
- Breakdowns
- Data collection and cleanup

Visualizing Data
- Performance Analytics scorecards
- Performance Analytics widgets
- Create and use dashboards

Use
- Try out Complimentary Performance Analytics for Incident Management
- Get licensed Performance Analytics
- Out-of-the-box Performance Analytics Solutions

Develop
- Performance Analytics API
- Developer training
  - Performance Analytics Objectives
  - Developer documentation

Troubleshoot and get help
- Ask questions and share your expertise
- Search the HI Knowledge Base
- Contact ServiceNow Technical Support
- Performance Analytics training

Get started with Performance Analytics

Review key concepts, watch videos, and use example functionality.

The single system of record approach within the ServiceNow platform enables you to measure and drive performance faster and easier within and across all service request management processes. Provide time-based perspectives of relevant data and focus on trend anomalies to prompt action.

With Performance Analytics, companies can:

Drive performance
Provide actionable insight on each level and for every role using key indicators, mobile-enabled scorecards, time charts, analytics, drill-downs, and dashboards.

**Establish a single version of truth**

Share clear, up-to-date visualizations of performance across teams and organizations, establishing a single version of truth as the basis for objectively discussing service delivery and driving behavioral change.

**Realize fast time-to-value**

Implement business intelligence within the base ServiceNow system within days, instead of months, and make better use of the time and money that currently go into labor-intensive manual reporting.

Benefits of using Performance Analytics include:

- Aligning the organization with company goals.
- Decreasing time required to create strategic or operational changes by communicating the changes through a new set of goals.
- Increasing overall quality of services.
- Lowering cost of services.
- Improving availability of services.

Watch the videos to familiarize yourself with ServiceNow Performance Analytics concepts, data architecture, and how to create Performance Analytics widgets and dashboards.

- ServiceNow Performance Analytics – Now you see it (approximately 2 ½ minutes)
- ServiceNow Performance Analytics Introduction (approximately 3 minutes)
- Performance Analytics vs. Reporting (approximately 6 minutes)

**Performance Analytics concepts**

Performance Analytics uses terms and concepts that can differ from industry norms due to the unique nature of the ServiceNow platform.

**Note:** Performance Analytics is used by other applications, such as Benchmarks. The information below describes the core Performance Analytics functionality. For information about other applications that use Performance Analytics, refer to the documentation for those applications.

When working with Performance Analytics, you can use:

**Indicators**

Indicators define a performance measurement taken at regular intervals of a business service, an activity, or organizational behavior. These performance measurements result in a series of indicator scores over time. Businesses track these scores to measure current conditions and to forecast trends.

The following are some key characteristics of the Business Process indicator:

- Indicator scores can be generated automatically from a set of records defined in an indicator source, entered manually, or calculated from other indicators.
- Indicator scores can be viewed or analyzed in generated scorecards or presented, via widgets, on dashboards.

Synonyms: Metrics, business metrics, KPIs
Indicator sources define filtered sets of records from a facts table to evaluate when collecting indicator scores. An indicator source configuration specifies a table, such as incident, and it specifies the frequency with which to collect data from that table. Indicator sources can also include filter conditions to limit the included records. Multiple indicators can use the same indicator source.

Typically, an indicator tracks the situation on a certain date. The indicator source conditions usually include a date-related filter, such as \((\text{Open}\text{ed}(on)\text{Today})\). Indicators collected less frequently might specify a larger date range, such as \((\text{Closed}(on)(\text{This month})\).

Breakdowns enable you to group or filter indicator scores for more detailed analysis, such as to show separate scores for each assignment group. You can apply a breakdown on scorecards and dashboards.

For example, you can look at the Number of Open Changes by Assignment Group. Or you can see the Number of New Changes by Priority.

The values for each breakdown are called breakdown elements. Breakdowns are automated, manual, or external, depending on where these elements come from. Automated breakdown elements are based on existing data in breakdown sources. A field in the facts table is mapped to a set of records on the breakdown source, or a script is used for more complex mapping.

Manual breakdowns have their elements entered manually to define an organization. Lastly, an external breakdown specifies the JDBC data source and SQL statement for retrieving breakdown elements.

Synonyms: dimensions, drill-downs

Breakdown sources specify which unique elements a breakdown contains. A breakdown source is defined as a set of records from a table or database view or as a bucket group. Multiple breakdowns can use the same breakdown source.

For example, instead of seeing ALL assignment groups in your instance for Number of Open Changes, you can limit the element list to just those groups that are part of the change process by configuring the Breakdown Source.

Aggregate/Aggregation can refer to either of the following functions:

- The Performance Analytics function of aggregating, or collecting, indicator scores over time. The indicator configuration includes the frequency with which indicator scores are collected.
- Statistical functions applied to collected indicator scores over a time period. For example, you can apply a 3-month SUM to indicator scores. Aggregation functions can be added either in the indicator form or later in the scorecard or widget. Aggregation functions in the scorecard or widget are named time series.

Bucket groups are used to recategorize data so a breakdown can apply, such as grouping a range of values into discrete buckets.

To work with a bucket group, create a breakdown source that uses Bucket (pa_buckets) as the facts table and specifies the bucket group in a condition. If a breakdown built on this source uses a breakdown mapping with a script, the breakdown groups the values that the script returns into buckets. If the breakdown mapping specifies a field instead of using a script, the breakdown groups the values of the mapped field into buckets.

In the data architecture, bucket groups are defined in Bucket Group (pa_bucket_groups) records and buckets in Bucket (pa_buckets) records. Each Bucket (pa_buckets) record contains a Bucket Group field that is a reference to a Bucket Group (pa_bucket_groups) record.
Dashboards
are single-screen displays of multiple Performance Analytics, reporting, and other widgets. Dashboards can be responsive or non-responsive. To create or share a responsive dashboard, you need at least one role, but this can be any role. You can drag to move and resize widgets on responsive dashboards. Non-responsive dashboards use less flexible drop zone layouts, and require Performance Analytics roles to view, create, and edit.

Day
A day in Performance Analytics is always defined as 24 hours. Performance Analytics does not use the concept of ‘business days.’

Data collector
is the engine that collects the process and service performance data that are presented through indicators and breakdowns. You can set up data collector jobs to run automatically according to a schedule. Usually set a job schedule to match the frequency in the indicator source. You can also set up jobs that run manually, such as historical jobs, which you run only when collecting data for a new indicator.

Detailed Scorecard
is the central interface where you assess, compare, and predict the performance of an indicator over time. Set on the indicator record whether that indicator is to be included in the detailed scorecard.

Snapshots
are the lists of records (sys_ids) that are collected at the time that the scores for those records are collected. A snapshot is made only for indicators with Collect records selected. The snapshot/list of records can be retrieved in the detailed scorecard. Snapshots are kept for the main indicator and for first level breakdowns. Second level breakdown snapshots are derived as an intersection of the two first level breakdown snapshot lists.

Scorecards
are a graphical visualization of the scores of an indicator. Indicators generate scorecards automatically. The basic feel and look of a scorecard can not be changed. Scorecards can be enhanced by adding targets, thresholds, trendlines, and useful comments for significant changes. In a scorecard, the scores of an indicator can be analyzed further by viewing the scores by breakdowns (scores per group), aggregates (counts, sums, and maximums), time series (totals and averages applied to different time periods) and drilling down to the records on which the scores are based.

Time series
can refer to either of the following items:
- A type of widget that aggregates and shows multiple scores of an indicator collected over a period.
- A statistical function applied to collected indicator scores over a time period in a scorecard or a widget, also called an aggregator.

Targets
are goals your organization wants to achieve, operationalized as indicator scores. Targets enable you to visualize the difference between the desired score at a certain date and the actual score of an indicator.

A target can be personal or global. A personal target is visible only to the user that created it and appears as a light line. A global target is visible to all users and appears as a dark line.
Personal targets appear only on scorecards, whereas global targets appear on scorecards and time series widgets.

**Thresholds**

define a normal range of scores for an indicator and alert you when certain events occurs, such as when a score reaches an all-time high or low.

When a threshold is triggered, the instance generates an email notification. This message is associated with the indicator and the message is directly available via the detailed scorecard.

A threshold can be personal or global. A personal threshold is visible only to the user that created it and appears as a light gray dotted line. A global threshold is visible to all users and appears as a dark gray dotted line. Personal thresholds appear only on scorecards, while global thresholds appear on both scorecards and time series widgets.

**Widgets**

are reusable graphic visualizations on a dashboard. In Performance Analytics, widgets show the scores of one or more indicators. For example, a widget can display the evolution of an indicator over time, how an indicator can be broken down, or how several indicators look side by side. Many variations are possible. Widgets are visible only when added to a dashboard.

**Try out Complimentary Performance Analytics for Incident Management**

Complimentary Performance Analytics for Incident Management is a limited version of Performance Analytics that is included in the base system, enabling you to become familiar with the functionality. License Performance Analytics for complete functionality.

Complimentary Performance Analytics for Incident Management has the following features and limitations:

- Comes with an Incident Management dashboard and predefined indicators
- Indicators cannot be added or deleted
- A maximum of 180 days of historic scores are visualized
- Is usable only in the global domain

To try out Complimentary Performance Analytics for Incident Management, navigate to **Performance Analytics > Guided Setup** and launch the incident Management guided setup. This setup takes you on a tour of indicators, breakdowns, their sources, data collection, and viewing results.

You can also try out the Spotlight feature with Complimentary Performance Analytics for Incident Management. Spotlight helps prioritize work by evaluating records against multiple weighted criteria. Without a license you can only use Spotlight with incident records and you cannot access the Spotlight interactive analysis. To try out Spotlight, activate the Performance Analytics - Spotlight - Incident Spotlight plugin and follow the guided setup at **Spotlight > Guided Setup**. The admin role is necessary to activate the plugin.

**Check an indicator source**

Verify that the sample indicator sources match your configuration.

Role required: pa_admin, pa_power_user, or admin

1. Navigate to **Performance Analytics > Indicator Sources**.
2. Open one of the sample indicator sources.
3. Go to the Source section.
4. Change the **Conditions**, if needed.
A good indication to see if the conditions are set up correctly is the number of matching records found. Click the matching records link to view the results in a new tab. Check to see if these are the expected records based on the conditions.

5. Click Update.
6. Repeat this procedure for each sample indicator source.

**Note:** If an indicator source has a condition on a field or column that does not exist, the condition does not appear in the UI (although it is there). Therefore, you cannot change the condition through the UI. Instead, you can export the XML and import of the indicator source record.

### Check a breakdown source

Verify that the sample breakdown sources match your instance configuration.

1. Navigate to **Performance Analytics > Breakdown Sources**.
2. Open one of the sample breakdown sources.
3. Go to the **Source** section.
4. Change the **Facts table**, if needed.
5. Change the **Conditions**, if needed.
   
   A good indication to determine whether the conditions are set up correctly is the number of matching records found. Click the matching records link to view the results in a new tab. Check to see whether these are the expected records based on the conditions.
6. Change the **Security type**, if needed.
7. Add breakdown elements to the **Elements Security List**.
8. Click **Update**.
9. Repeat this procedure for each sample breakdown source.

### Collect historical data for the provided indicators

Query scores for the predefined indicators and breakdowns for which historic collection is possible.

Role required: pa_data_collector or admin

1. Navigate to **Performance Analytics > Data Collector > Jobs**.
2. Open the **(PA Incident) Historic Data Collection** job.
3. In the **Collection parameters** section, specify the date range to query data for.
   
   Complimentary Performance Analytics for Incident Management collects a maximum of 180 days worth of historical data.
4. Click **Execute Now**.

### Schedule data collection

After validating the sources for the indicators and the breakdowns, configure and activate the data collection job. Two sample jobs are provided; a daily collection and an on-demand collection for historical scores.

1. Navigate to **Performance Analytics > Data Collector > Jobs**.
2. Open the **(PA Incident) Daily Data Collection** job.
3. Go to the **Job Parameters** section.
4. Change the **Run as**, if needed.
5. Change the **Run as tz** (time zone), if needed.
6. Select the **Active** check box.
7. Click **Update**.

When the job is **Active**, it appears under **System Scheduler > Scheduled Jobs**, where you can change the time to start the job, if needed.

**Note:** Support in Performance Analytics for domain separated ServiceNow instances requires a license.

**Get licensed Performance Analytics**

For unlimited access to all Performance Analytics features, purchase a subscription to the licensed Performance Analytics. After you purchase the subscription, activate the plugin associated with that subscription within the production instance.

All ServiceNow instances are provisioned with a complimentary version of Performance Analytics that has configuration limitations. If you attempt to use functionality that is outside those limits, you get a warning that a license is required.

**Cannot create record**

New Performance Analytics configuration records cannot be created with the complimentary version of Performance Analytics. To create this record, your business must license Performance Analytics. Contact your sales representative for more information.

**Note:** A subscription is necessary only on the production instance. You can activate a licensed Performance Analytics plugin on a development or test instance without purchasing a subscription.

The licensed Performance Analytics enables the following functionality beyond what is available on the complimentary version:

- Creating new Performance Analytics indicators, breakdowns, widgets, or other configuration records
- Ability to use out-of-the-box solutions besides Incident Management and Spotlight - Incident Management
- Preserving scores for longer than 180 days
- Creating in-form analytics
- Creating interactive filters and using interactive analysis
- Creating reports using an Microsoft Excel data source as part of the Report Designer report creation workflow
- Creating text analytics widgets
- Scheduling export of Scorecards to PDF
- Using Performance Analytics with external data

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A complete guide to getting started with the licensed version of Performance Analytics is available at Getting Started with Performance Analytics in the ServiceNow Community pages. This guide includes the procedure for activating the licensed version of Performance Analytics and setting it up afterwards. The Customer Success Center also guides you through beginning to use Performance Analytics. The document you are currently reading contains only basic instructions for activating the relevant plugin.

When you purchase a subscription to a Performance Analytics product line, you receive an email from welcome@servicenow.com with the name of that product line. Activate the corresponding plugin.

Note: As an administrator, you can also view the subscriptions on your production instance by navigating to Subscription Management > Subscriptions.

<table>
<thead>
<tr>
<th>Product lines and corresponding plugin names</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>You have purchased:</strong></td>
</tr>
<tr>
<td>Performance Analytics for Now Platform Custom Application</td>
</tr>
<tr>
<td>Performance Analytics for APM</td>
</tr>
<tr>
<td>Performance Analytics for CSM</td>
</tr>
<tr>
<td>Performance Analytics for HR</td>
</tr>
<tr>
<td>Performance Analytics for ITBM</td>
</tr>
<tr>
<td>Performance Analytics for ITOM</td>
</tr>
<tr>
<td>Performance Analytics for IT Operations Suite</td>
</tr>
<tr>
<td>Performance Analytics for Project Portfolio Management</td>
</tr>
<tr>
<td>Performance Analytics for Security Incident Response</td>
</tr>
<tr>
<td>Performance Analytics for Service Management</td>
</tr>
<tr>
<td>Performance Analytics for Service Strategy</td>
</tr>
<tr>
<td>Performance Analytics for Software Asset Management</td>
</tr>
</tbody>
</table>

Activate the plugin for licensed Performance Analytics

When you have purchased a Performance Analytics license and identified the associated plugin, activate that plugin as follows.

Role required: admin
For evaluation, you can activate the plugin for an application that requires a purchased subscription on a non-production instance. To activate the plugin on production instances, you must purchase the subscription.

1. Navigate to **System Definition > Plugins**.
2. Search for plugins with premium in the name.
3. Find the Performance Analytics premium plugin that matches your entitlement and click its name.
4. On the System Plugin form, review the plugin details and then click the **Activate/Upgrade** related link.
5. Optional: To check whether your production instance has the necessary subscription for the plugin:
   a) Find the line You can view the list of your subscriptions on your production instance and click Click here.
b) Compare the list of subscriptions to the table of plugins associated with subscriptions in *Get licensed Performance Analytics*. The Learn more link loads this page.

6. In the Activate Plugin dialog, click **Activate**.

A progress bar shows you the progress of the plugin activation, after which you have several options of what to view.

When the process is complete, consider installing out-of-the-box solutions, which include preconfigured dashboards and all necessary underlying components. For more information, see *Out-of-the-box Performance Analytics Solutions*.

Also consider activating Spotlight. Spotlight helps prioritize records by evaluating them against multiple weighted criteria. For more information, see *Ranking records with Spotlight*.

### Out-of-the-box Performance Analytics Solutions

Out-of-the-box Performance Analytics Solutions contain preconfigured best practice dashboards. These dashboards contain data visualizations that help you improve your business processes and practices. With in-form analytics, you can access preconfigured dashboards directly from a form.

**Note:** Out-of-the-box solutions and in-form analytics provide all the configuration records required to analyze default applications. You must license Performance Analytics to collect scores for indicators.
Performance Analytics solutions

Out-of-the-box solutions contain pre-configured dashboards that track and analyze key processes and metrics.

Use the Performance Analytics widgets on the dashboard to visualize data over time, analyze your business processes, and identify areas of improvement. With solutions, you can get value from Performance Analytics for your application with minimal setup.

Note: Solutions include some dashboards that are inactive by default. You can activate these dashboards to make them visible to end users according to your business needs.

Solutions provide all the configuration records required to analyze default applications.

In-form analytics

In-form analytics integrate performance insights into forms so that users can access important metrics in context, and make better decisions.

A dashboard with relevant visualizations appears as a pop-up window when a user clicks the Analytics icon ( ) next to a field. For example, in-form analytics on an incident form show the expected time to close that incident based on historical data, enabling support engineers to set appropriate customer expectations.

If an application has a solution plugin that is inactive, that plugin is activated when you activate its corresponding in-form analytics solution.

Available Performance Analytics Solutions

Performance Analytics Solutions with preconfigured dashboards, indicators, and other configuration records are available for multiple applications.

Individual solutions

Solutions are available for the following applications. The ID for each plugin is listed in parentheses. Solutions that are activated when you activate ITSM Dashboards are marked by an asterisk *.

- Application Portfolio Management (com.snc.pa.apm)
- Application Portfolio Management and Change Management (com.snc.pa.apm.change_request)
- Application Portfolio Management and Problem Management (com.snc.pa.apm.problem)
- Change Management (con.snc.pa.change)*
- Cloud Management (com.snc.pa.cmp)
- Communities (com.sn_communities)
- Configuration Management (CMDB) (com.snc.pa.cmdb)
- Customer Service (com.snc.pa.customer_service) - Includes a Spotlight group. Activation also activates the Spotlight plugin. See Available Spotlight solutions
- Discovery (com.snc.pa.discovery)
- Event Management (com.snc.pa.em)
- Field Service Management (com.snc.work_management_pa)
- Financial Management (com.snc.pa.fm)
- Financial Management for Customer Service (com.snc.pa.fm.csm)
- Financial Management for Field Service Management (com.snc.pa.fm.fsm)
- Financial Management for Financial Planning (com.snc.pa.financial_planning)
- Human Resources Scoped App (com.sn_hr_pa)

**Note:** The solution for the unscoped version of Human Resources, com.snc.pa.hr_core, is deprecated. If you are using the unscoped version of Human Resources and want to activate its solution plugin, contact customer support.

- Human Resources Lifecycles Events Scoped App (com.sn_hr.lifecycle_pa)
- Incident Management (com.snc.pa)*

**Note:** Incident management content is available by default with Performance Analytics in a limited version.

- Incident SLA (com.snc.pa.sla)*
- Knowledge Management (com.snc.pa.knowledge)*
- Major Incident Management (com.snc.pa.incident.mim)
- Problem Management (com.snc.pa.problem)*
- Project Portfolio Suite (com.snc.pa.ppm)
- Project Portfolio Suite Dashboards (com.snc.pps_dashboards) (also activates Project Portfolio Suite)
- Request Management (Requested Item) (com.snc.pa.request)*
- Request Management (Requests) (com.snc.pa.request2)
- Service Desk Chat (com.snc.pa.chat)
- Security Incident Analytics (com.snc.security_incident.analytics)
- Software Asset Management (com.snc.pa.samp)

**Note:** For Performance Analytics Spotlight solutions, see Available Spotlight solutions.

**ITSM Dashboard solutions**

The ITSM Dashboards plugin (com.snc.pa.itsm_dashboards) activates the following solutions, along with a set of additional dashboards:

- Change Management (con.snc.pa.change)
- Problem Management (com.snc.pa.problem)
- Request Management (Requested Item) (com.snc.pa.request)
- Knowledge Management (com.snc.pa.knowledge)
- Incident SLA (com.snc.pa.sla)*
- ITSM Dashboards (com.snc.pa.itsm_dashboards)
- Incident Management (com.snc.pa)*

**Note:** Incident management content is available by default with Performance Analytics in a limited version.

**Available in-form analytics**

In-form analytics, which integrate data visualizations into forms, are available for multiple applications.

In-form analytics are available for the following applications. The ID for each plugin is listed in parentheses.
Activate a solution using guided setup

You can activate and set up Performance Analytics solutions quickly and consistently using guided setup.

Role required: admin

Guided setup simplifies the process of activating solutions and configuring the provided records to meet your needs. After you complete guided setup, Performance Analytics will be configured for an application. Collect data, and you can view indicator scores on scorecards and dashboards.

Note: You can activate Performance Analytics solutions on instances that do not have Performance Analytics to evaluate the functionality. However, to collect scores for indicators you must license Performance Analytics.

1. Navigate to Performance Analytics > Guided Setup.
2. Click Get Started.
3. Scroll to the application you want to set up a solution for, such as Incident or Customer Service.
4. If the plugin is not yet active, guided setup is locked until you activate the solution plugin.
   
   Note: A user must have the admin role to complete these steps.
   
   a) Click View plugins.
   
   b) Click the Activate/Upgrade related link.
   
   c) Click Activate.

   Activating a Performance Analytics solution plugin also activates any plugins for the associated application if they are not already active. For example, activating the Performance Analytics - Content Pack - Customer Service plugin also activates the Customer Service plugin, if it is not already active.

   d) After the plugin is activated, close the plugin window to return to guided setup.

5. Click Get Started for the application you are setting up.
6. Follow the guided setup instructions to review the provided records such as indicators, breakdowns, widgets, and dashboards and to begin collecting Performance Analytics scores. As you perform each step, additional information appears in the right-side Help menu.

Performance Analytics roles

Assign roles to ensure that users can perform all necessary actions.
### Roles

<table>
<thead>
<tr>
<th>Role</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>pa_viewer</td>
<td>Users with the pa_viewer role can view scorecards and dashboards.</td>
</tr>
<tr>
<td>pa_diagnostic</td>
<td>Users with this role can read from the Diagnostics tables. They can activate or deactivate a diagnostic. They can delete a message record or diagnostic logs. This role is inherited by pa_admin.</td>
</tr>
<tr>
<td>pa_contributor</td>
<td>Users with the pa_contributor role can view scorecards and dashboards, as well as manually enter scores. The user must be selected in the <strong>Contributor</strong> field of an indicator to view and enter scores for that indicator.</td>
</tr>
<tr>
<td>pa_target_admin</td>
<td>Users with the pa_target_admin role can add targets to an indicator.</td>
</tr>
<tr>
<td>pa_threshold_admin</td>
<td>Users with the pa_threshold_admin role add thresholds to an indicator.</td>
</tr>
<tr>
<td>pa_analyst</td>
<td>Users with the pa_analyst role can read and write text analytics keywords and stop words, and can view indicator sources.</td>
</tr>
<tr>
<td>pa_spotlight</td>
<td>Users with the pa_spotlight role can set up and configure Spotlight jobs, which highlight data records that are high-priority work items, based on multiple criteria. These viewers can also share the results of Spotlight jobs with pa_spotlight_viewer users. The pa_spotlight role contains the pa_viewer role</td>
</tr>
<tr>
<td>pa_spotlight_viewer</td>
<td>Users with the pa_spotlight_viewer role can see the output of Spotlight data evaluation jobs in the form of Spotlight interactive analyses or OOTB Solution dashboards.</td>
</tr>
<tr>
<td>pa_power_user</td>
<td>Users with the pa_power_user role can create Performance Analytics configuration records such as indicators, breakdowns, and dashboards, and all text analytics configuration records. The pa_power_user role contains the pa_viewer, pa_contributor, pa_target_admin, and pa_threshold_admin roles.</td>
</tr>
<tr>
<td>pa_data_collector</td>
<td>Users with the pa_data_collector role can configure and run data collection jobs and can modify Performance Analytics properties.</td>
</tr>
<tr>
<td>Role</td>
<td>Description</td>
</tr>
<tr>
<td>-------------</td>
<td>-------------</td>
</tr>
<tr>
<td>pa_admin</td>
<td>Users with the pa_admin role can create any Performance Analytics records such as indicators and breakdowns, as well as data collection jobs, and can modify Performance Analytics properties. The pa_admin role contains the pa_power_user and pa_data_collector roles.</td>
</tr>
<tr>
<td>admin</td>
<td>The system administrator role. Users with the admin role can perform all pa_admin functions, and can create database views.</td>
</tr>
</tbody>
</table>

Certain roles such as pa_power_user and pa_admin include other roles. For example, pa_power_user includes pa_contributor. This diagram shows the role hierarchy.

**Supported browsers for Performance Analytics**

ServiceNow supports Performance Analytics in UI15 and UI16. Performance Analytics supports all browsers that are supported by the UI15 and UI16 interfaces.
Performance Analytics admin console

From a single console, explore and manage out-of-the-box content and Performance Analytics widgets and dashboards; diagnose and resolve configuration errors; view usage analytics; modify advanced configuration settings and access ServiceNow help.

Users with the admin or pa_admin roles can navigate to Performance Analytics > Admin Console.
Admin Console [Performance Analytics]

Get Started
Install and configure available Out-of-the-box Performance Analytics Solutions using Guided Setup

0% Complete
36 Out-of-the-box Solutions

Explore and Manage
Find, modify and create dashboards and indicator-related records

3 Dashboard Groups
28 Dashboards

Troubleshoot
Diagnose and resolve configuration errors

0 Diagnostic Errors
0 Failed Jobs

Usage
Gain insight into usage, view performance stats, and clean up obsolete items

Data Collection Overview
Report Usage

Advanced Configuration
Modify advanced configuration settings

PA Properties
Reporting Properties
Dashboard Properties

Get Help
Have questions? Find answers in the ServiceNow information resources

ServiceNow Community
Product Documentation
Video Tutorials
Guided Setup for the Out-of-the-box Performance Analytics Solutions.

Click **% Complete** to launch guided setup for Out-of-the-box Performance Analytics Solutions.

Click **Out-of-the-box Solutions** to show a list of available system plugins for inactive Out-of-the-box Performance Analytics Solutions.

1. **Note:** You must have the admin role to see the list of plugins.

2. **Explore and Manage**

   A single place where you can quickly identify and manage the relationships between your Performance Analytics elements and gauge the impact of change. For example, you can identify all the reports, indicators, and interactive filters in a dashboard group that are affected if you change a field name. On the Explore and Manage page, click **Create** to create dashboards, dashboard groups, widgets, reports, interactive filters, indicators and indicator sources, breakdowns and breakdown sources, and data collection jobs.

   For more information, see *Explore and manage dashboards*.

3. **Troubleshoot**

   The **Troubleshoot** panel enables you to utilize diagnostics delivered by the ServiceNow application to investigate tests that result in an Error warning and failed data collection jobs. Out-of-the-box diagnostics run on a schedule, but can also be executed on demand. The Scheduled Data Collection list filters out jobs that are run only once and jobs that are run only on demand.

   **Note:** If either of the numbers on the Troubleshoot card are greater than 0, there may be something wrong with your Performance Analytics implementation.

   - Click **Diagnostic Errors** to view the Diagnostic Executions list, a summary of how many diagnostic tests were run, and how many issues were found. Use the **State** field to track which issues have been resolved. For more information on diagnostic executions, see *Analytics Diagnostics*.
   - Click **Failed Jobs** to view the Scheduled Data Collection list. A failed job is a scheduled job for which the latest complete run is in the state **collected_error**. For more information on data collection, see *Performance Analytics data collection and cleanup*.

4. **Usage**

   Dashboards with statistics about data collection jobs and report usage.

   - Use the **Data Collection Overview** dashboard to track and manage data collection. Note that data collection jobs are not run by default. dashboard widgets do not show data until you run the associated data collection jobs. For more information, see *Performance Analytics data collection and cleanup*.
   - Use the **Reports Usage** dashboard to track and manage report usage. For more information, see *Report statistics*.

5. **Configuration**
Quick links to advanced configuration settings.

- Performance Analytics properties
- Reporting properties
- Responsive dashboard properties
- Color schemes
- Scheduled email summaries

Help

The community, product documentation, and ServiceNow YouTube channel provide additional insights into Performance Analytics functionality.

Visualize Performance Analytics data

Display collected data using scorecards, widgets, and dashboards.

Note: In all visualizations, high scores are abbreviated following the metric system. Thus scores in the millions are abbreviated with an M and scores in the (US) billions with a G.

Performance Analytics scorecards

Scorecards display data for a single indicator and enable you to perform detailed analysis of the indicator data.

Each indicator has an associated scorecard created automatically. To access the list of scorecards, navigate to Performance Analytics > Scorecards.

To watch a video tour of the scorecard, go to DemoNow

Use a scorecard

Use scorecards to thoroughly analyze indicator data, such as by aggregating data, comparing breakdown scores, or viewing changes over time.

To access the detailed scorecard for an indicator, navigate to Performance Analytics > Scorecards, then select an indicator. You can also click the Show scorecard related link on the Indicator form to view the scorecard for that indicator.
Detailed scorecard

**Note:** Large numbers are rendered with the appropriate abbreviation. For example, K represents thousands and M represents millions.

You can interact with a scorecard in the following ways.

- To view aggregate data, such as the monthly sum of scores, apply a time series such as **By week SUM**. The menu shows only the timeframes that are meaningful for the indicator frequency. For more information, see *Time series aggregations in scorecards and widgets*.
- To view the score at a certain date, click that date. After you select a date, you can add a comment, target, or threshold at that date.
- To change the period for which the chart is drawn, select one of the fixed time frames, specify specific **from** and **to** dates, or use the date selector at the bottom of the chart.
- To export the scorecard to a PNG, JPG, PDF, or CSV file, click the show functions icon and select the format you want to export to.
- To access the indicator record, or to modify the scores manually, click the show functions icon and select **Edit indicator** or **Edit scores**.
To control which elements appear on the chart, such as to show a trendline or confidence band, click the chart settings icon.

**Scorecard chart settings**

Use the chart settings to configure which elements appear on a detailed scorecard.

Click the gear icon at the top right to access the chart settings. Use chart settings to enable or disable the following elements.

- **Time Series** dropdown list at the top shows only the time frames that are meaningful for the indicator frequency. For example, the scorecard for an indicator with a frequency of Monthly does not allow you to select a 7-day running time series.
- **Target** set for this indicator. The option can only be selected if a target is set for the indicator. For more information, see [Create a target](#).
- **Thresholds** set for this indicator. A threshold can help to give a warning about abnormal scores. For example, an all time high or an all time low scores. Thresholds are displayed as dashed light gray lines in the detailed scorecard. The option can only be selected if an active threshold is set for the indicator. For more information, see [Create a Performance Analytics threshold](#).
- **Trendline** that the system generates based on the indicator scores for the selected period.
- **Forecast** shows predicted future scores of the indicator, depending on how forecasting is set up on the indicator. For more information, see [Forecasting Performance Analytics data](#).
- **Confidence band** that displays the bandwidth between which the indicator scores are moving. The dark yellow band displays values that are with a 95% certainty within the bandwidth. The light yellow bands display the prediction band. The prediction band is broader than the confidence band, because outlying values are also considered for the calculation.

The confidence bands are calculated using the standard error of the trend. If the standard error is low, the trend line is shown to be accurate. The confidence of the trend is less certain with fewer data points or with volatile scores.

- **Comments** can be switched on or off in the detailed scorecard. If a comment was added for a data point, a balloon is displayed above it. When you point to the balloon, the comment itself is shown.
- **Labels** can be enabled or disabled to show data labels for all data points in the chart.
- **Statistics** can be switched on or off in the detailed scorecard. Chart statistics include average, minimum, maximum and number of scores.

**Note:** If a new date range is selected in the detailed scorecard, targets, thresholds, trendlines, and confidence bands are redrawn for that new date range.
To change the **Type** of chart to display for the scorecard:
1. Click the chart settings menu icon
   at the top right.

2. Select the type of chart from the choice list:
   - Line Chart
   - Column Chart
   - Spline Chart
   - Area Chart

3. Click the chart settings icon
   again to close the menu.

The trend is always shown as a line for all charts.

scorecard breakdown tab
Beside the Chart tab, there is a Breakdowns tab with breakdown information and records for the indicator. If no breakdowns are configured for an indicator, the Breakdowns tab is unavailable.

On the Breakdowns tab, you can choose the breakdown and optionally the element, known as the breakdown instance, for which a chart is drawn. Choose different chart types from the choice list above the chart.
In the default Scorecard view, a table is displayed of the breakdown elements. This table contains the following data for each element:

1. The score for the period that you selected. The most recent period is the default.
2. The change in the score from the previous collection period.
3. The trend in the score. The period for which the trend is calculated depends on the indicator frequency and how far back the data goes. For example, a 3 month average is shown for a daily indicator unless there is not 3 months worth of data, in which case the trend is shown for the longest period for which there is data.
4. The score for the selected period, same as the first column, but represented as a bar. This bar graph is provided to help you see the distribution of scores across the breakdown elements.

### Breakdowns Tab

<table>
<thead>
<tr>
<th>Name</th>
<th>Dec 11</th>
<th>Change</th>
<th>Trend</th>
<th>Distribution</th>
</tr>
</thead>
<tbody>
<tr>
<td>4 - Low</td>
<td>8</td>
<td>-8</td>
<td></td>
<td></td>
</tr>
<tr>
<td>3 - Moderate</td>
<td>6</td>
<td>-1</td>
<td></td>
<td></td>
</tr>
<tr>
<td>1 - Critical</td>
<td>1</td>
<td>1</td>
<td></td>
<td></td>
</tr>
<tr>
<td>2 - High</td>
<td>1</td>
<td>1</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
If the **Collect breakdown matrix** option has been activated for an indicator, you can select which one of these breakdowns you want to see and click to view its details. From the details of one breakdown, for example, **Priority**, navigate to the **Breakdowns** tab to view the second breakdown, for example, **Category**. After selecting a breakdown element from that second breakdown, for example Network, you can dot-walk one level up by clicking the first breakdown from the title bar, for example, **Priority**, to return to the first breakdown level.

If you want to get a hierarchical view of the breakdowns, select **Breakdown matrix**. This enables you to choose a second breakdown level that is shown indented below the first breakdown. For example, you can list all incidents by **Category** (Software), and then by **Priority** (Critical, High, Moderate, Low, or Planning), or vice versa. Any combinations of breakdowns that result in zero scores are suppressed. This option is not available when viewing the real-time score.

To mark favorites in the breakdown list, click the star icon before the breakdown element. If favorites have been marked in the breakdown list, they are shown by default. Click the filter icon beside the **Name** field to switch between showing only favorite breakdown elements and showing all breakdown elements.

**Note:** Favorites are user-specific. The system stores the state of the breakdown list as a user preference. If you are showing only favorites in the breakdowns list when you log out, the breakdowns list shows only favorites when you log back in.

A **Records** tab is available only for **automated indicators**. By default, it shows the records that were used at data collection time to calculate the indicator. For example, the **Records** tab for the **Number of Open Incidents** indicator shows the incidents that matched the criteria at the collection date.

Use the record information in combination with the **Zoom into date** option on the chart, to view records for every collection date. For example, if you click a specific date in the chart, a horizontal bar appears in the chart ‘locking’ the date and the breakdowns and records are displayed for that date. If you want to see the whole date range again, click **Reset selected date**.

**Note:** Access control rules (ACLs) may apply that prevent showing records for the **Records** tab.

A **Comments** tab is available if comments have been added for data points in the chart.

A **More Info** tab is available with information on the chart description, update frequency, last updated, direction, and formula (if applicable).

You can save the chart as a JPG or PNG file by clicking the context menu icon ( ).

**Viewing changes in collected records**
You can compare which records are collected for an indicator at different dates.

You can view a detailed list of records collected for an indicator in the **Records** tab of the detailed scorecard for that indicator. When viewing the records you can compare which records were included in the data set at different dates. You can compare the lists between two different dates, or between a specific date and the real-time data if real time data is enabled for the indicator.
A date picker enables you to specify which date’s data you want to compare the currently-displayed data with, and a Venn diagram enables you to display specific sets of data by clicking the diagram. You cannot select a data set with no records.

### Choices

<table>
<thead>
<tr>
<th>Data set</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Shared with</td>
<td>Click the center of the diagram to display only records that are in both the earlier and the more recent data sets.</td>
</tr>
<tr>
<td>Moved in</td>
<td>Click the left side of the diagram to display only records that are in the more recent data set, but are not in the earlier data set.</td>
</tr>
<tr>
<td>Moved out</td>
<td>Click the right side of the diagram to display only records that are in the earlier data set, but are not in the more recent data set.</td>
</tr>
</tbody>
</table>

#### Important:
The Show delta check box on the Indicator form must be selected for the indicator to show historic data, and for the comparison options to appear on the detailed scorecard.

### Scorecard Scores tab

The Scores tab on a Performance Analytics detailed scorecard displays a list of collected scores by date. For formula indicators, the tab also shows the formula, unless an aggregate is applied to the indicator.

When viewing the Scores tab for a formula indicator, you can click a portion of the formula to view the scorecard for that data. For example, on the scorecard Average age of last update of open incidents, you can click the Number of open incidents link on the Scores tab to view the Number of open incidents scorecard.

#### Note:
- Formulas are not shown for formula indicators that have a time series aggregation applied.
- Dates for the current year are shown in short format but for previous years are shown in long format.

### Find a scorecard

You can search, browse, and filter a list of scorecards to find the scorecard you want to view.

To access the scorecard list, navigate to Performance Analytics > Scorecards. The scorecard list displays indicator scorecards along with their current score, most recent change in score, and a preview of the scorecard.

You can choose to view all indicators, or filter the list based on the indicator performance.

- **Best**: Shows indicators that are outperforming their target (green), ordered by Gap % (best performers on top).
- **Worst**: Shows indicators that are under performing their target (red), ordered by Gap % (worst performers on top).
- **Improved**: Shows indicators that have improved compared to the previous data collection (moving in the right direction).
- **Degraded:** Shows indicators that have degraded compared to the previous data collection (moving in the wrong direction).

- A solid blue star beside an indicator name indicates that it is a favorite. Click the star beside the scorecard to mark it as a favorite.
- A black dot beside an indicator name indicates that it is a key indicator. Mark indicators as key by selecting the **Key** check box when creating the indicator.

To customize the scorecards list, click the list settings icon (⚙️) beside the list header search box. You can apply filters and breakdowns, and control which columns appear in the scorecards list. The condition filter at the top of the list displays any currently-selected filter options. You can remove, but not add filter conditions using this filter.

**Note:** If no scores have been collected and there are no active data collection jobs, the Performance Analytics welcome screen is displayed in scorecards and dashboards. This option can be turned on or off by setting the system property `com.snc.pa.show_welcome_page` to false.

**Navigate scorecards using breakdown relations**

Relations defined for a breakdown appear when you view a scorecard Breakdowns tab. You can select a related breakdown to filter the scorecard data.

Role required: pa_viewer or admin

Before starting this procedure, create a breakdown with one or more breakdown relations.

**Note:** You can use breakdown relations for first-level breakdowns only. For example, when viewing the scorecard Number of resolved incidents > Assignment Group = Database > Priority = 1 - Critical, you can use only those breakdown relations defined for the Assignment Group breakdown. Any breakdown relations defined for the Priority breakdown are not available on this scorecard. Change the scorecard breakdown to Number of resolved incidents > Priority = 1 - Critical > Assignment Group = Database to use Priority breakdown relations.

For example, when viewing the scorecard Number of resolved incidents > Assignment Group = Database, the **Breakdowns** tab displays **Child Groups** related breakdowns. Click a child breakdown to view the scorecard specific to that child group, such as Database Atlanta.

1. Navigate to **Performance Analytics > Scorecards**.
2. Select a scorecard with a breakdown that has one or more breakdown relations.
3. Click the **Breakdowns** tab.
4. In the first choice list, select a breakdown field, such as **Assignment Group**.
5. In the list that appears, select a breakdown element, such as **Database**.
6. Click the **Breakdowns** tab again.

   If any breakdown relations exist for the selected breakdown, the first choice list displays the default relation.

7. In the first choice list, select the related breakdown to apply, such as **Child Groups**.
8. Select a related breakdown element, such as Database Atlanta.

   The scorecard now displays data broken down for the Database Atlanta group.
Export a scorecard

You can export data from a detailed scorecard to PDF or CSV, or save the scorecard as an image.

Role required: pa_admin

Export the scorecard chart to PDF, PNG, or JPG, or export the score values to CSV.
1. Navigate to a scorecard.
2. Click the context menu icon at the top left before the indicator title.
3. Select one of the export options, such as **Save chart as PNG**, **Export scorecard to PDF**, or **Export scores to CSV**.
4. Optional: When exporting to PDF, select the scorecard elements you want to export, then click **Export**.
5. Click **Download**.

View real-time scores

You can view real-time data when using a non-formula and non-scripted indicator.

Real-time data is available in detailed scorecards and on workbench process widgets. Real-time data is available in breakdowns on a detailed scorecard, but not in breakdown widgets.

To view the real-time score, click **Real-time** in the date picker when a different date is selected. You can view real-time data in the **Records** tab of a detailed scorecard or workbench widget by clicking the current date and time within the tab.

**Note:** Record details are not available for the **Unmatched** breakdown element when you view real-time scores.

The indicator must have real-time score enabled for these options to appear on a scorecard. You can enable real-time data for an indicator by selecting the **Show real-time score** check box on the **View real-time scores** **Other** tab of the Indicator form. You may want to disable real-time data when using the indicator in an integration that does not provide real-time data.

Supported scorecard parameters

You can pass certain parameters in the URL when navigating directly to a scorecard.

Parameters passed to a scorecard must follow the format `/scorecard.do?<parameter>=<value>&<parameter2>=<value2>`.

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>indicator_group</td>
<td>Enter the sys_id of an indicator group. The scorecard displays only indicators from the specified group.</td>
</tr>
</tbody>
</table>

Performance Analytics widgets

Widgets enable you to define visualizations for indicator scores. Widgets are shown on dashboards.
A Performance Analytics widget ties an indicator to a visualization, such as a trend line, a set of columns, or a pie chart. Within the widget, you can filter or group indicator scores by breakdowns. You can also apply time series functions, such as 7-day sums, to the scores.

To create or edit a Performance Analytics widget, the user must have the pa_admin or pa_power_user role. These roles are also required to add widgets to a dashboard. However, any user can view a widget that has been added to a dashboard.

**Widget types and creation details**

The first step in creating a widget is to select the type of widget to create. Base this decision on the business goals you are trying to achieve with the widget.

<table>
<thead>
<tr>
<th>Widget type</th>
<th>Purpose</th>
<th>Typical Visualizations</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Time Series widget</strong></td>
<td>Shows changes over time in indicator scores.</td>
<td>Line visualization is the most usual. Other visualizations are: spline, step, column, stacked column, area, and relative compare.</td>
</tr>
<tr>
<td><strong>Breakdown widget</strong></td>
<td>Groups indicator scores by the elements of a breakdown.</td>
<td>Scorecard, pie and similar charts, funnel and pyramid, column and similar charts, relative compare, line, Pareto, pivot scorecard, and treemap.</td>
</tr>
<tr>
<td><strong>Score widget</strong></td>
<td>Shows aggregate indicator scores. Can show an indicator score against a target.</td>
<td>Latest score, speedometer, real-time score.</td>
</tr>
<tr>
<td><strong>List widget</strong></td>
<td>Lists the metrics for several indicators.</td>
<td>Scorecard, spider web.</td>
</tr>
<tr>
<td><strong>Pivot widget</strong></td>
<td>Groups the scores of one indicator by the elements of two breakdowns.</td>
<td>Heatmap</td>
</tr>
<tr>
<td><strong>Text analytics</strong></td>
<td>Visualizes word frequencies and groupings in the text that users enter in forms</td>
<td>Word cloud</td>
</tr>
<tr>
<td><strong>Workbench widget</strong></td>
<td>Shows multiple indicators and their relations, to monitor a workflow or other process.</td>
<td>Workbench</td>
</tr>
</tbody>
</table>

**Time series widgets**

Time series widgets show changes in an indicator score over time. Different visualizations emphasize the trend in the scores or the scores themselves, and can display one indicator or compare several indicators.

A time series is an ordered sequence of metrics taken continuously over time. Indicator scores are measured over time at uniform intervals, which makes them an appropriate subject for time series widgets. The following business cases are some of the uses of a time series widget:

- Identifying trends, patterns, and outliers in indicator scores.
- Identifying turning points, such as whether a change in policy led to a change in indicator scores.

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- Evaluating the relationships between indicators.

When you are selecting a visualization for a time series, consider whether you want to emphasize the trend in the scores or specific changes in the scores. Also consider whether you want to show one indicator or compare several related indicators.

**Note:** Some visualizations of other widget types include a time series. For example, the breakdown widget visualizations Stacked Column and Columns and Total include a time series of the indicator scores.

### Time series widget visualizations

<table>
<thead>
<tr>
<th>Visualization</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Visualizing trends in the scores of an indicator</strong></td>
<td></td>
</tr>
<tr>
<td>Line</td>
<td>Shows how one or more values change over time by connecting a series of data points with straight lines. Use a line visualization to emphasize the trend in the scores. Consider line visualizations to be the default choice for displaying a time series. If you are unsure of which visualization to use, use a line.</td>
</tr>
<tr>
<td>Spline</td>
<td>Shows how one or more values change over time by connecting a series of data points with a fitted curve through the data points. Spline charts let you take a limited set of known data points and approximate intervening values.</td>
</tr>
<tr>
<td><strong>Comparing scores in an indicator</strong></td>
<td></td>
</tr>
<tr>
<td>Column</td>
<td>Shows changes between scores over time by displaying them as proportional vertical columns. Use either to visualize score changes in one indicator or to compare indicators. To compare indicators with a column visualization, either add indicators to the widget, or place several column visualization widgets next to each other in a dashboard.</td>
</tr>
<tr>
<td>Step</td>
<td>Emphasizes changes in indicator scores between discreet points in time. Use to show small incremental changes in scores, especially when a line visualization smudges the data.</td>
</tr>
<tr>
<td><strong>Comparing scores or trends between indicators</strong></td>
<td></td>
</tr>
<tr>
<td>Visualization</td>
<td>Description</td>
</tr>
<tr>
<td>-----------------------</td>
<td>---------------------------------------------------------------------------------------------------------------------------------------------</td>
</tr>
<tr>
<td>Stacked Column</td>
<td>Each column is divided into a stack of slices representing different indicators. Use when you want to see the cumulative result of multiple indicators.</td>
</tr>
<tr>
<td>Area</td>
<td>Resembles a line visualization, but the area between the axis and line is emphasized with colors. Use with multiple indicators to highlight the relative contribution that each indicator makes to the whole.</td>
</tr>
<tr>
<td>Relative Compare</td>
<td>Shows how multiple indicators diverge over time.</td>
</tr>
</tbody>
</table>

**Considerations when creating a time series widget**

To create a time series widget that fulfills your business goal, keep several points in mind.

When you are creating a time series widget, consider the following points:

- To show a filtered set of scores in a time series widget, apply a breakdown to the widget. Only the scores that match the specified element of the breakdown will appear.
- To show aggregated scores, such as a seven-day average or a sum, apply a time series to the widget.
- To show the scores of secondary indicators over the same time line, add widget indicators to an existing widget.
- When you are selecting a visualization for a time series, consider whether you want to emphasize the trend in the scores or specific changes in the scores. Also consider whether you want to show one indicator or compare several related indicators.

**Create a line visualization for a time series widget**

To show the trend over time in indicator scores, create a time series widget with a line visualization.

Role required: pa_power_user or admin

Line visualization is the simplest way to show the trend over time in the scores of a single indicator. Consider it the default visualization for a time series. If you are unsure which visualization to use for a time series, use a line.

The following example is a line visualization of the number of open incidents over the month of July. The **Show trend** optional display setting has been enabled.
Line visualization - time series

1. Navigate to Performance Analytics > Widgets and click New.
2. In the Name field, give the widget a name that reflects the information being displayed.
3. In the Type field, select Time series.
   If you change the value of Type after you fill in other fields, those fields are cleared.
4. In the Visualization field, select Line.
5. In the Indicator field, select the main indicator for which you want to show scores.
6. Optional: Fill in any of the following fields:

<table>
<thead>
<tr>
<th>Field</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Breakdown and Element</td>
<td>Only the scores that match the specified element of this breakdown are shown. Select values for both Breakdown and Element. Otherwise, only scores that are not associated with any element of the breakdown are shown.</td>
</tr>
<tr>
<td>2nd Breakdown and Element</td>
<td>Drill down to a second level of breakdown and element, if a first-level breakdown and element have been specified.</td>
</tr>
<tr>
<td>Time series</td>
<td>Runs a function on the indicator scores for a specific time period, such as a 7-day sum or average. For more information, see Time series aggregations in scorecards and widgets.</td>
</tr>
</tbody>
</table>
### Field | Description
--- | ---
Previous period chart | Compares the scores of the main indicator in similar periods.

The **Column** visualization works well for previous period charts. Also consider setting a **Color scheme**.

Label | Specifies a custom label for the main indicator.

Color | A single color that applies only to the scores for the main indicator. This field overrides any color selected in **Color scheme**.

Color scheme | A spectrum of colors for the scores for all indicators. If a spectrum cannot be applied, only the first color is used. You can create your own color scheme instead of using a provided color scheme.

Follow element | Applies only when this widget is placed in a "breakdown dashboard." Select this option for the widget to follow the element that the user selects interactively on the dashboard. See using breakdowns on dashboards.

Selecting this option removes the ability to set a second breakdown and element on the widget.

Follow breakdown | Breakdown dashboard configurations specify breakdown sources, not specific breakdowns. The same breakdown source can be used for multiple breakdowns. Therefore, select this option to set which of the possible breakdowns to follow.

For example, consider the indicator Number of open incidents. This indicator uses two breakdowns: Assigned to, and Created by. Both breakdowns are based on the Users.Active breakdown source. You create a widget for this indicator and you select **Follow element** on this widget. You also need to select a **Follow breakdown** and specify either the Assigned to or the Created by breakdown.

This option is available only if **Follow element** is selected.

7. Optional: Review the **Settings** tabs and change settings as desired.

8. Click **Submit**.

To view the widget, add it to a dashboard.

**Create a column visualization for a time series widget**

To emphasize the indicator scores over time instead of the trend in scores, create a time series widget with a column visualization. You can also use column visualizations to compare indicators.

**Role required**: pa_power_user or admin

If you want to emphasize indicator scores instead of the trend in scores over time, use a column visualization. Column visualizations are also useful for comparing the scores of several indicators. To compare indicators, add indicators to the widget, or place several widgets with column visualization next to each other in a dashboard.
To help see whether there is a correlation between two indicators, add a second indicator to the widget. For best results, select an indicator that has discreet values as the main indicator and a continuous set of data as the secondary indicator.
1. Navigate to Performance Analytics > Widgets and click New.
2. In the Name field, give the widget a name that reflects the information being displayed.
3. In the Type field, select Time series.
   If you change the value of Type after you fill in other fields, those fields are cleared.
4. In the Visualization field, select Column.
5. In the Indicator field, select the main indicator for which you want to show scores.
6. Optional: Fill in any of the following fields:

<table>
<thead>
<tr>
<th>Field</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Breakdown and Element</td>
<td>Only the scores that match the specified element of this breakdown are shown. Select values for both Breakdown and Element. Otherwise, only scores that are not associated with any element of the breakdown are shown.</td>
</tr>
<tr>
<td>2nd Breakdown and Element</td>
<td>Drill down to a second level of breakdown and element, if a first-level breakdown and element have been specified.</td>
</tr>
<tr>
<td>Time series</td>
<td>Runs a function on the indicator scores for a specific time period, such as a 7-day sum or average. For more information, see Time series aggregations in scorecards and widgets.</td>
</tr>
<tr>
<td>Previous period chart</td>
<td>Compares the scores of the main indicator in similar periods. The Column visualization works well for previous period charts. Also consider setting a Color scheme.</td>
</tr>
<tr>
<td>Field</td>
<td>Description</td>
</tr>
<tr>
<td>--------------------</td>
<td>---------------------------------------------------------------------------------------------------------------------------------------------</td>
</tr>
<tr>
<td>Label</td>
<td>Specifies a custom label for the main indicator.</td>
</tr>
<tr>
<td>Color</td>
<td>A single color that applies only to the scores for the main indicator. This field overrides any color selected in <strong>Color scheme</strong>.</td>
</tr>
<tr>
<td>Color scheme</td>
<td>A spectrum of colors for the scores for all indicators. If a spectrum cannot be applied, only the first color is used. You can create your own color scheme instead of using a provided color scheme.</td>
</tr>
<tr>
<td>Follow element</td>
<td>Applies only when this widget is placed in a “breakdown dashboard.” Select this option for the widget to follow the element that the user selects interactively on the dashboard. See Using breakdowns on dashboards. Selecting this option removes the ability to set a second breakdown and element on the widget.</td>
</tr>
<tr>
<td>Follow breakdown</td>
<td>Breakdown dashboard configurations specify breakdown sources, not specific breakdowns. The same breakdown source can be used for multiple breakdowns. Therefore, select this option to set which of the possible breakdowns to follow. For example, consider the indicator Number of open incidents. This indicator uses two breakdowns: Assigned to, and Created by. Both breakdowns are based on the Users.Active breakdown source. You create a widget for this indicator and you select Follow element on this widget. You also need to select Follow breakdown and specify either the Assigned to or the Created by breakdown. This option is available only if Follow element is selected.</td>
</tr>
</tbody>
</table>

7. Optional: Review the **Settings** tabs and change settings as desired.

8. Click **Submit**.

To compare your indicator to other indicators, perform one of the following actions:
- Add indicators to the Widget Indicators related list. Use the **Column** visualization for those indicators.
- Create widgets with **Column** visualizations for each of the other indicators. Place these widgets next to each other in a dashboard.

To view the widget, add it to a dashboard.

*Create an area visualization for a time series widget*

To examine the contribution of one or more indicators to a summing indicator, create a time series widget with an area visualization.

Role required: pa_power_user or admin

If you want to examine the contribution of one or more indicators to a more inclusive indicator, use an area visualization. An area visualization can emphasize the relative contribution of one or more component indicators to the total trend. At the same time, you can still see the individual...
trends. Compare to the Stacked Column visualization, which sums the indicator scores and emphasizes the contribution of each score to the sum.

Area visualization - time series

1. Navigate to Performance Analytics > Widgets and click New.
2. In the Name field, give the widget a name that reflects the information being displayed.
3. In the Type field, select Time series.
   If you change the value of Type after you fill in other fields, those fields are cleared.
4. In the Visualization field, select Area.
5. In the Indicator field, select the main indicator for which you want to show scores.
6. Optional: Fill in any of the following fields:

<table>
<thead>
<tr>
<th>Field</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Breakdown and Element</td>
<td>Only the scores that match the specified element of this breakdown are shown. Select values for both Breakdown and Element. Otherwise, only scores that are not associated with any element of the breakdown are shown.</td>
</tr>
<tr>
<td>2nd Breakdown and Element</td>
<td>Drill down to a second level of breakdown and element, if a first-level breakdown and element have been specified.</td>
</tr>
<tr>
<td>Time series</td>
<td>Runs a function on the indicator scores for a specific time period, such as a 7-day sum or average. For more information, see Time series aggregations in scorecards and widgets.</td>
</tr>
<tr>
<td>Previous period chart</td>
<td>Compares the scores of the main indicator in similar periods. The Column visualization works well for previous period charts. Also consider setting a Color scheme.</td>
</tr>
<tr>
<td>Field</td>
<td>Description</td>
</tr>
<tr>
<td>--------------------</td>
<td>-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------</td>
</tr>
<tr>
<td>Label</td>
<td>Specifies a custom label for the main indicator.</td>
</tr>
<tr>
<td>Color</td>
<td>A single color that applies only to the scores for the main indicator. This field overrides any color selected in <strong>Color scheme</strong>.</td>
</tr>
<tr>
<td>Color scheme</td>
<td>A spectrum of colors for the scores for all indicators. If a spectrum cannot be applied, only the first color is used. You can create your own color scheme instead of using a provided color scheme.</td>
</tr>
<tr>
<td>Follow element</td>
<td>Applies only when this widget is placed in a “breakdown dashboard.” Select this option for the widget to follow the element that the user selects interactively on the dashboard. See <em>Using breakdowns on dashboards</em>. Selecting this option removes the ability to set a second breakdown and element on the widget.</td>
</tr>
<tr>
<td>Follow breakdown</td>
<td>Breakdown dashboard configurations specify breakdown sources, not specific breakdowns. The same breakdown source can be used for multiple breakdowns. Therefore, select this option to set which of the possible breakdowns to follow. For example, consider the indicator Number of open incidents. This indicator uses two breakdowns: Assigned to, and Created by. Both breakdowns are based on the Users.Active breakdown source. You create a widget for this indicator and you select <strong>Follow element</strong> on this widget. You also need to select <strong>Follow breakdown</strong> and specify either the Assigned to or the Created by breakdown. This option is available only if <strong>Follow element</strong> is selected.</td>
</tr>
</tbody>
</table>

7. **Optional:** Review the **Settings** tabs and change settings as desired.

8. Click **Submit**.

- To compare your selected indicator with other indicators, add indicators to the Widget Indicators related list. Select the **Area** visualization for those indicators.
- To view the widget, add it to a dashboard.

**Create a spline visualization for a time series widget**

To show the trend over time in indicator scores when you need to apply curve fitting, create a time series widget with a spline visualization.

Role required: pa_power_user or admin

A spline visualization replaces the straight line of a line visualization with a curve. As with a line visualization, use a spline visualization to show the trend over time in the indicator scores. Use a spline instead of a line when you need to fit a curve to your indicator scores.

In the following example, the trend line and 95% confidence interval is shown with a spline visualization of the number of open incidents.
1. Navigate to Performance Analytics > Widgets and click New.
2. In the Name field, give the widget a name that reflects the information being displayed.
3. In the Type field, select Time series.
   If you change the value of Type after you fill in other fields, those fields are cleared.
4. In the Visualization field, select Spline.
5. In the Indicator field, select the main indicator for which you want to show scores.
6. Optional: Fill in any of the following fields:

<table>
<thead>
<tr>
<th>Field</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Breakdown and Element</td>
<td>Only the scores that match the specified element of this breakdown are shown. Select values for both Breakdown and Element. Otherwise, only scores that are not associated with any element of the breakdown are shown.</td>
</tr>
<tr>
<td>2nd Breakdown and Element</td>
<td>Drill down to a second level of breakdown and element, if a first-level breakdown and element have been specified.</td>
</tr>
<tr>
<td>Time series</td>
<td>Runs a function on the indicator scores for a specific time period, such as a 7-day sum or average. For more information, see Time series aggregations in scorecards and widgets.</td>
</tr>
<tr>
<td>Previous period chart</td>
<td>Compares the scores of the main indicator in similar periods. The Column visualization works well for previous period charts. Also consider setting a Color scheme.</td>
</tr>
<tr>
<td>Label</td>
<td>Specifies a custom label for the main indicator.</td>
</tr>
<tr>
<td>Field</td>
<td>Description</td>
</tr>
<tr>
<td>---------------------</td>
<td>---------------------------------------------------------------------------------------------------------------------------------------------</td>
</tr>
<tr>
<td>Color</td>
<td>A single color that applies only to the scores for the main indicator. This field overrides any color selected in <strong>Color scheme</strong>.</td>
</tr>
<tr>
<td>Color scheme</td>
<td>A spectrum of colors for the scores for all indicators. If a spectrum cannot be applied, only the first color is used. You can create your own color scheme instead of using a provided color scheme.</td>
</tr>
<tr>
<td>Follow element</td>
<td>Applies only when this widget is placed in a &quot;breakdown dashboard.&quot; Select this option for the widget to follow the element that the user selects interactively on the dashboard. See <em>Using breakdowns on dashboards</em>. Selecting this option removes the ability to set a second breakdown and element on the widget.</td>
</tr>
<tr>
<td>Follow breakdown</td>
<td>Breakdown dashboard configurations specify breakdown sources, not specific breakdowns. The same breakdown source can be used for multiple breakdowns. Therefore, select this option to set which of the possible breakdowns to follow. For example, consider the indicator Number of open incidents. This indicator uses two breakdowns: Assigned to, and Created by. Both breakdowns are based on the Users.Active breakdown source. You create a widget for this indicator and you select <strong>Follow element</strong> on this widget. You also need to select <strong>Follow breakdown</strong> and specify either the Assigned to or the Created by breakdown. This option is available only if <strong>Follow element</strong> is selected.</td>
</tr>
</tbody>
</table>

7. Optional: Review the **Settings** tabs and change settings as desired.  
8. Click **Submit**.

To view the widget, add it to a dashboard.  
*Create a step visualization for a time series widget*  
To emphasize changes in indicator scores between discreet points in time, create a time series widget with a step visualization.  
Role required: pa_power_user or admin  
Consider using a step visualization in the following circumstances:  
- You want to emphasize the change in an indicator score between specific points in time, instead of the trend over time.  
- The changes in indicator scores are too small to be easily seen in a line visualization.  
The use case for a step visualization is the opposite of the use case for the spline visualization. Use a spline to emphasize a trend or the fuzziness of your data over time.
Step visualization - time series

1. Navigate to Performance Analytics > Widgets and click New.
2. In the Name field, give the widget a name that reflects the information being displayed.
3. In the Type field, select Time series.
   If you change the value of Type after you fill in other fields, those fields are cleared.
4. In the Visualization field, select Step.
5. In the Indicator field, select the main indicator for which you want to show scores.
6. Optional: Fill in any of the following fields:

<table>
<thead>
<tr>
<th>Field</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Breakdown and Element</td>
<td>Only the scores that match the specified element of this breakdown are shown. Select values for both Breakdown and Element. Otherwise, only scores that are not associated with any element of the breakdown are shown.</td>
</tr>
<tr>
<td>2nd Breakdown and Element</td>
<td>Drill down to a second level of breakdown and element, if a first-level breakdown and element have been specified.</td>
</tr>
<tr>
<td>Time series</td>
<td>Runs a function on the indicator scores for a specific time period, such as a 7-day sum or average. For more information, see Time series aggregations in scorecards and widgets.</td>
</tr>
<tr>
<td>Previous period chart</td>
<td>Compares the scores of the main indicator in similar periods. The Column visualization works well for previous period charts. Also consider setting a Color scheme.</td>
</tr>
<tr>
<td>Label</td>
<td>Specifies a custom label for the main indicator.</td>
</tr>
</tbody>
</table>

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### Field Description

<table>
<thead>
<tr>
<th>Color</th>
<th>A single color that applies only to the scores for the main indicator. This field overrides any color selected in <strong>Color scheme</strong>.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Color scheme</td>
<td>A spectrum of colors for the scores for all indicators. If a spectrum cannot be applied, only the first color is used. You can create your own color scheme instead of using a provided color scheme.</td>
</tr>
<tr>
<td>Follow element</td>
<td>Applies only when this widget is placed in a &quot;breakdown dashboard.&quot; Select this option for the widget to follow the element that the user selects interactively on the dashboard. See <a href="#">Using breakdowns on dashboards</a>. Selecting this option removes the ability to set a second breakdown and element on the widget.</td>
</tr>
<tr>
<td>Follow breakdown</td>
<td>Breakdown dashboard configurations specify breakdown sources, not specific breakdowns. The same breakdown source can be used for multiple breakdowns. Therefore, select this option to set which of the possible breakdowns to follow. For example, consider the indicator Number of open incidents. This indicator uses two breakdowns: Assigned to, and Created by. Both breakdowns are based on the Users.Active breakdown source. You create a widget for this indicator and you select <strong>Follow element</strong> on this widget. You also need to select <strong>Follow breakdown</strong> and specify either the Assigned to or the Created by breakdown. This option is available only if <strong>Follow element</strong> is selected.</td>
</tr>
</tbody>
</table>

7. **Optional**: Review the **Settings** tabs and change settings as desired.

8. **Click** **Submit**.

To view the widget, add it to a dashboard.

*Create a stacked column visualization for a time series widget*

To compare and sum the scores of several indicators, create a widget as a time series with a stacked column visualization.

**Role required**: pa_power_user or admin

To show the sum of scores of several indicators over time, and to show the relative contribution of each indicator to the sum, use a stacked column visualization.

In the following example, indicators for each regional sales center are stacked in columns to show both the total sales and the relative contribution of each region.
1. Navigate to Performance Analytics > Widgets and click New.
2. In the Name field, give the widget a name that reflects the information being displayed.
3. In the Type field, select Time series.
   If you change the value of Type after you fill in other fields, those fields are cleared.
4. In the Visualization field, select Stacked Column.
5. In the Indicator field, select the main indicator for which you want to show scores.
6. Optional: Fill in any of the following fields:

<table>
<thead>
<tr>
<th>Field</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Breakdown and Element</td>
<td>Only the scores that match the specified element of this breakdown are shown. Select values for both Breakdown and Element. Otherwise, only scores that are not associated with any element of the breakdown are shown.</td>
</tr>
<tr>
<td>2nd Breakdown and Element</td>
<td>Drill down to a second level of breakdown and element, if a first-level breakdown and element have been specified.</td>
</tr>
<tr>
<td>Time series</td>
<td>Runs a function on the indicator scores for a specific time period, such as a 7-day sum or average. For more information, see Time series aggregations in scorecards and widgets.</td>
</tr>
<tr>
<td>Previous period chart</td>
<td>Compares the scores of the main indicator in similar periods. The Column visualization works well for previous period charts. Also consider setting a Color scheme.</td>
</tr>
<tr>
<td>Label</td>
<td>Specifies a custom label for the main indicator.</td>
</tr>
</tbody>
</table>

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<table>
<thead>
<tr>
<th>Field</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Color</td>
<td>A single color that applies only to the scores for the main indicator. This field overrides any color selected in Color scheme.</td>
</tr>
<tr>
<td>Color scheme</td>
<td>A spectrum of colors for the scores for all indicators. If a spectrum cannot be applied, only the first color is used. You can create your own color scheme instead of using a provided color scheme.</td>
</tr>
<tr>
<td>Follow element</td>
<td>Applies only when this widget is placed in a &quot;breakdown dashboard.&quot; Select this option for the widget to follow the element that the user selects interactively on the dashboard. See Using breakdowns on dashboards. Selecting this option removes the ability to set a second breakdown and element on the widget.</td>
</tr>
<tr>
<td>Follow breakdown</td>
<td>Breakdown dashboard configurations specify breakdown sources, not specific breakdowns. The same breakdown source can be used for multiple breakdowns. Therefore, select this option to set which of the possible breakdowns to follow. For example, consider the indicator Number of open incidents. This indicator uses two breakdowns: Assigned to, and Created by. Both breakdowns are based on the Users.Active breakdown source. You create a widget for this indicator and you select Follow element on this widget. You also need to select Follow breakdown and specify either the Assigned to or the Created by breakdown. This option is available only if Follow element is selected.</td>
</tr>
</tbody>
</table>

7. Optional: Review the Settings tabs and change settings as desired.

8. Right-click the form header and select Save.

9. Add additional indicators in the Widget Indicators related list, giving each indicator the Stacked Column visualization.

To view the widget, add it to a dashboard.

Create a relative compare visualization for a time series widget
To show how the relative proportions of several indicators change over time, use a relative compare visualization for a time series.

Role required: pa_power_user or admin

Like a pie chart, a relative compare visualization shows relative proportions between data points, but it can also show how those proportions change over time. Traditional uses of relative compare visualizations are stock charts or population growth trends. When you create a relative compare visualization, it uses a baseline of zero and then shows how the data changes over time.

For example, this visualization shows the change of the total number of open incidents compared to the change in the number of open incidents that were not updated for 5 or more days. When you point to a line, the number of incidents and the percentage change for that day appear. The percentage change shown for a data point is calculated from a baseline of zero, not the previous data point as on most other time series visualizations.
1. Navigate to **Performance Analytics > Widgets**.
2. Click **New**.
3. From the **Type** list, select **Times Series**.
4. From the **Visualization** list, select **Relative Compare**.
5. Specify which indicators to include in the visualization with one of the following options.

<table>
<thead>
<tr>
<th>Option</th>
<th>Note</th>
</tr>
</thead>
<tbody>
<tr>
<td>Indicator group</td>
<td>If you select an indicator group, you cannot select a single indicator.</td>
</tr>
<tr>
<td>Indicator</td>
<td>If you select a single indicator, you must manually add additional indicators in the Widget Indicators related list.</td>
</tr>
</tbody>
</table>

6. Fill in any of the following optional fields:

<table>
<thead>
<tr>
<th>Field</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Breakdown and Element</td>
<td>Only the scores that match the specified element of this breakdown are shown. Select values for both <strong>Breakdown</strong> and <strong>Element</strong>. Otherwise, only scores that are not associated with any element of the breakdown are shown.</td>
</tr>
<tr>
<td>2nd Breakdown and Element</td>
<td>Drill down to a second level of breakdown and element, if a first-level breakdown and element have been specified.</td>
</tr>
</tbody>
</table>
### Field Descriptions

<table>
<thead>
<tr>
<th>Field</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Time series</td>
<td>Runs a function on the indicator scores for a specific time period, such as a 7-day sum or average. For more information, see Time series aggregations in scorecards and widgets.</td>
</tr>
</tbody>
</table>

7. **Right-click the form header and select Save.**

8. **If you selected a single indicator, add additional indicators in the Widget Indicators related list.**
   
   If you selected an indicator group, additional indicators are optional.

9. **Select the Show date range selector check box on the Date Settings tab.**
   
   This setting lets users dynamically change the amount of time displayed in the visualization.

10. **Fill in the other fields, as appropriate.**

11. **Click Update.**

To view the widget, add it to a dashboard.

**Optional settings for time series widgets**

Time series widgets have the following optional settings for display, for the date range, and for the axis labels.

<table>
<thead>
<tr>
<th>Setting</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Date Settings</td>
<td>The date settings are available only if Previous period chart is not selected.</td>
</tr>
<tr>
<td>Period</td>
<td>Select the date range to display in the widget. Several options are available.</td>
</tr>
<tr>
<td></td>
<td>- Select a specific time range. The default is 3m (3 months).</td>
</tr>
<tr>
<td></td>
<td>- Select max to use scores up to the current date.</td>
</tr>
<tr>
<td></td>
<td>- Select between and then fill in the From and To fields to define a time period.</td>
</tr>
<tr>
<td></td>
<td>The Period field is available only if you select Line, Spline, Column, Area, Step, Stacked Column, or Relative Compare as the Visualization.</td>
</tr>
<tr>
<td>Show date range selector</td>
<td>Display a date range selector on the widget that enables users to change the selected period from a dashboard.</td>
</tr>
<tr>
<td></td>
<td>Note: Selecting a date range on a widget does not update the trend line.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Axis Settings</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Y-axis title</td>
<td>Specify a title to display on the vertical axis of the chart.</td>
</tr>
<tr>
<td>Y-axis from</td>
<td>Specify the starting point for the range of values for the vertical axis of the chart.</td>
</tr>
<tr>
<td>Y-axis to</td>
<td>Specify the ending point for the range of values for the vertical axis of the chart.</td>
</tr>
<tr>
<td>2nd Y-axis title</td>
<td>Specify a secondary title to display on the vertical axis of the chart.</td>
</tr>
</tbody>
</table>

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<table>
<thead>
<tr>
<th>Setting</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>2nd Y-axis from</td>
<td>Specify the starting point for a 2nd range of values for the vertical axis of the chart. The 2nd Y-axis can be used if scores normally move between a limited range, but you have some exceptions that would otherwise distort the chart, such as a range of 40 to 60, with an exception of 1000.</td>
</tr>
<tr>
<td>2nd Y-axis to</td>
<td>Specify the ending point for a 2nd range of values for the vertical axis of the chart.</td>
</tr>
<tr>
<td>Display Settings</td>
<td></td>
</tr>
<tr>
<td>Show target</td>
<td>Compare the scores of this chart with the target scores, if defined. This field appears only if Previous period chart is not selected.</td>
</tr>
<tr>
<td>Show thresholds</td>
<td>Display thresholds such as an all time high or an all time low. Thresholds appear only if they have been defined for this indicator.</td>
</tr>
<tr>
<td>Show data labels</td>
<td>Display the score for each portion of the chart, such as for each slice of a pie chart.</td>
</tr>
<tr>
<td>Show trend</td>
<td>Display the trend line. This field appears only if Previous period chart is not selected.</td>
</tr>
<tr>
<td>Show confidence bands</td>
<td>Display confidence bands in this chart. For information about how the confidence band is calculated, see Widget confidence bands.</td>
</tr>
<tr>
<td>Show forecast</td>
<td>Display forecast data in the chart based on current trend data.</td>
</tr>
<tr>
<td>Show comments</td>
<td>Display comments added to data points in the chart.</td>
</tr>
<tr>
<td>Previous Period Settings</td>
<td>Previous period settings are available only if Previous period chart is selected.</td>
</tr>
<tr>
<td>Range of periods</td>
<td>Select the range of periods to compare with the current period,</td>
</tr>
<tr>
<td>Number of periods</td>
<td>Specify the number of previous periods to display.</td>
</tr>
</tbody>
</table>

**Widget confidence bands**

The visible points of the trend line are used to calculate the confidence band. If you increase the date range, the bands are recalculated using the trend for the new date range.

First, the confidence bands are calculated using the standard error of the trend. The width of the band depends on the number of points that are included in the calculation and the mean of the scores. If the standard error is low, the trend line is shown to be accurate. As the number of points decreases, or outliers are recorded, the confidence band widens. The confidence of the trend is less certain with fewer data points or with volatile scores.

**Score widgets**

Score widgets show aggregate indicator scores.
## Score widget visualizations

<table>
<thead>
<tr>
<th>Visualization</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Latest score</td>
<td>Shows a single indicator score and the change in that score compared to a previous period. A line representing the time series of scores appears in the background.</td>
</tr>
<tr>
<td>Speedometer</td>
<td>Shows the most recently collected score of an indicator in the form of a round meter. The indicator target and its color scheme are shown on the dial.</td>
</tr>
<tr>
<td>Dial</td>
<td>Shows an overview of the most recently collected score of an indicator in a half circle.</td>
</tr>
<tr>
<td>Real-time score</td>
<td>Shows the current indicator score and the change in that score compared to the score at the last scheduled collection. A line representing the time series of scores appears in the background.</td>
</tr>
</tbody>
</table>

Create a latest score visualization for a score widget

To see the change between the latest score and a previous score, use a latest score visualization in a score widget. You can also show a trend line of scores.

Role required: pa_power_user or admin

A latest score visualization shows the latest score and both the absolute and percentage change between this score and a previous score. This visualization is similar to a Chart view in a scorecard. You can choose how many scores back to compare to the latest score. You can also display a trend line of absolute or percentage changes in scores.
Latest score visualization

1. Navigate to Performance Analytics > Widgets and click New.
2. In the Name field, give the widget a name that reflects the information being displayed.
3. In the Type field, select Score.
   If you change the value of Type after you fill in other fields, those fields are cleared.
4. In the Visualization field, select Latest score.
5. In the Indicator field, select the indicator for which you want to show scores.
6. Optional: Fill in any of the following optional fields:

<table>
<thead>
<tr>
<th>Field</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Breakdown and Element</td>
<td>Only the scores that match the specified element of this breakdown are shown. Select values for both Breakdown and Element. Otherwise, only scores that are not associated with any element of the breakdown are shown.</td>
</tr>
<tr>
<td>2nd Breakdown and Element</td>
<td>Drill down to a second level of breakdown and element, if a first-level breakdown and element have been specified.</td>
</tr>
<tr>
<td>Time series</td>
<td>Runs a function on the indicator scores for a specific time period, such as a 7-day sum or average. For more information, see Time series aggregations in scorecards and widgets.</td>
</tr>
<tr>
<td>Field</td>
<td>Description</td>
</tr>
<tr>
<td>---------------------</td>
<td>-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------</td>
</tr>
<tr>
<td>Follow element</td>
<td>Applies only when this widget is placed in a ‘breakdown dashboard.’ Select this option for the widget to follow the element that the user selects interactively on the dashboard. See Using breakdowns on dashboards. Selecting this option removes the ability to set a second breakdown and element on the widget.</td>
</tr>
<tr>
<td>Follow breakdown</td>
<td>Breakdown dashboard configurations specify breakdown sources, not specific breakdowns. The same breakdown source can be used for multiple breakdowns. Therefore, select this option to set which of the possible breakdowns to follow.</td>
</tr>
<tr>
<td></td>
<td>For example, consider the indicator Number of open incidents. This indicator uses two breakdowns: Assigned to, and Created by. Both breakdowns are based on the Users.Active breakdown source. You create a widget for this indicator and you select Follow element on this widget. You also need to select Follow breakdown and specify either the Assigned to or the Created by breakdown. This option is available only if Follow element is selected.</td>
</tr>
</tbody>
</table>

7. Optional: Select a template.

<table>
<thead>
<tr>
<th>Template name</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Template 1</td>
<td>Line shows absolute change in score.</td>
</tr>
<tr>
<td>Template 2</td>
<td>Line shows percentage change in score.</td>
</tr>
<tr>
<td>Template 3</td>
<td>Line is not displayed.</td>
</tr>
</tbody>
</table>

**Formula indicators** that return a percentage value use Template 2 by default. Other indicators use Template 1 by default.

8. Optional: Select which previous score to compare against the latest score in the Compare score with field in the Latest Score Settings tab.

<table>
<thead>
<tr>
<th>Setting</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Previous score</td>
<td>The score from the previous data collection. This setting is the default.</td>
</tr>
<tr>
<td>Periods back</td>
<td>Specify the number of data collection periods back from which you want the score to compare against the latest score.</td>
</tr>
</tbody>
</table>

9. Click Submit.

To view the widget, add it to a dashboard.

Create a speedometer or a dial visualization for a score widget

To show the latest score of an indicator compared to the range of scores, use a speedometer or dial visualization in a score widget. A speedometer also shows the indicator target.

Role required: pa_power_user or admin

A speedometer visualization shows the latest score with a needle on a speedometer. A dial visualization shows the latest score with a colored in section of a half-circle. By default, the speedometer or dial shows the range of possible scores, but you can create your own range.
The speedometer is particularly useful when a target is set on the indicator. If a direction is set on the indicator (minimize or maximize), the visualization reproduces the target and the 3- or 5-color traffic light set on the indicator. For example, the following speedometer shows the Average age open incidents indicator with a Minimize direction, a target of 10, and a 3-color traffic light.

![Average age open incidents speedometer visualization](image)

**Average age open incidents**

The dial visualization does not show the indicator target.
1. Navigate to Performance Analytics > Widgets and click New.
2. In the Name field, give the widget a name that reflects the information being displayed.
3. In the Type field, select Score.
   If you change the value of Type after you fill in other fields, those fields are cleared.
4. In the Visualization field, select Speedometer or Dial.
5. In the Indicator field, select the indicator for which you want to show scores.
6. Optional: Fill in any of the following optional fields:

<table>
<thead>
<tr>
<th>Field</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Breakdown and Element</td>
<td>Only the scores that match the specified element of this breakdown are shown. Select values for both Breakdown and Element. Otherwise, only scores that are not associated with any element of the breakdown are shown.</td>
</tr>
<tr>
<td>2nd Breakdown and Element</td>
<td>Drill down to a second level of breakdown and element, if a first-level breakdown and element have been specified.</td>
</tr>
<tr>
<td>Time series</td>
<td>Runs a function on the indicator scores for a specific time period, such as a 7-day sum or average. For more information, see Time series aggregations in scorecards and widgets.</td>
</tr>
</tbody>
</table>
### Field | Description
--- | ---
Follow element | Applies only when this widget is placed in a "breakdown dashboard." Select this option for the widget to follow the element that the user selects interactively on the dashboard. See Using breakdowns on dashboards.

Selecting this option removes the ability to set a second breakdown and element on the widget.

Follow breakdown | Breakdown dashboard configurations specify breakdown sources, not specific breakdowns. The same breakdown source can be used for multiple breakdowns. Therefore, select this option to set which of the possible breakdowns to follow.

For example, consider the indicator Number of open incidents. This indicator uses two breakdowns: Assigned to, and Created by. Both breakdowns are based on the Users.Active breakdown source. You create a widget for this indicator and you select Follow element on this widget. You also need to select Follow breakdown and specify either the Assigned to or the Created by breakdown.

This option is available only if Follow element is selected.

7. Optional: In the Speedometer/Dial Settings tab, either select Auto scale, which shows the range of actual scores on the speedometer, or specify another scale.

8. Click Submit.

To view the widget, add it to a dashboard.

Create a real-time score visualization for a score widget

To see the current score, use a real-time score visualization in a score widget. You can also show a trend line of scores.

- The indicator for which you want the real-time scores must have the Show real-time score property enabled.
- Role required: pa_power_user or admin

A real-time score visualization shows the current score and both the absolute and percentage change between this score and the score at the last previous scheduled data collection. This visualization is similar to a Chart view in a scorecard. You can also show a trend line of absolute or percentage changes in scores.

**Note:** At least one condition must be set on the indicator or its associated indicator source for real-time data to be collected.
Real-time score visualization

1. Navigate to Performance Analytics > Widgets.
2. Click New.
3. In the Name field, give the widget a name that reflects the information being displayed.
4. In the Type field, select Score.
   If you change the value of Type after you fill in other fields, those fields are cleared.
5. In the Visualization field, select Real-time score.
6. In the Indicator field, select the indicator for which you want to show scores.
7. Optional: To filter the scores by a breakdown, select values in the Breakdown and first Element fields.
   If you select a breakdown but not an element, the widget shows only the scores for which no value is assigned for the breakdown.
8. Optional: If you have selected a breakdown and you want to filter the scores by a second breakdown, select values in the 2nd Breakdown and second Element fields.
   If you have selected Follow element, a second breakdown is not available.
9. Optional: The following options apply only when the widget is included in a ‘breakdown dashboard’:
   a) Select Follow element for the widget to follow the element that the user selects interactively on the dashboard.
   b) Note: Breakdown dashboard configurations specify breakdown sources, not specific breakdowns. The same breakdown source can be used for multiple breakdowns.
Select **Follow breakdown** to set which of the possible breakdowns to follow.

For more information, see *Using breakdowns on dashboards*.

### 10. Optional: Select a template.

<table>
<thead>
<tr>
<th>Template name</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Template 1</td>
<td>Line shows absolute change in score.</td>
</tr>
<tr>
<td>Template 2</td>
<td>Line shows percentage change in score.</td>
</tr>
<tr>
<td>Template 3</td>
<td>Line is not displayed.</td>
</tr>
</tbody>
</table>

Real-time score visualizations use Template 2 by default.

### 11. Click **Submit**.

To view the widget, add it to a dashboard.

**List widgets**

List widgets show the scores of multiple indicators.

#### List widget visualizations

<table>
<thead>
<tr>
<th>Visualization</th>
<th>Description</th>
</tr>
</thead>
</table>
| Scorecard     | For several indicators, shows any of the following attributes:  
|               | · Scores at several points in time  
|               | · Changes between the last two scores  
|               | · % Change  
|               | · Trends  
|               | · Bullet charts |
| Spider        | Shows a plot of the latest score of each indicator on its own axis, starting with 0 at the center. |

**Permission to view indicators**

The pa_viewer role is required to view List widgets. Furthermore, List widgets do not show indicators that you do not have permission to read. This behavior is unlike other Performance Analytics widgets, which inherit view ACLs from the dashboards to which they have been added. While the dashboard permission applies to the Performance Analytics list widget as a whole, individual indicators in that list follow the permissions for that indicator.

Create a scorecard visualization in a list widget

To list the metrics of several indicators, use a scorecard visualization in a list widget.

Role required: pa_power_user or admin

Use this visualization to help compare several similar indicators regarding their scores, the trend in their scores, and their compliance with targets.
Scorecard visualization - list widget

1. Navigate to Performance Analytics > Widgets.
2. Click New.
3. In the Name field, give the widget a name that reflects the information being displayed.
4. In the Type field, select List.
   If you change the value of Type after you fill in other fields, those fields are cleared.
5. In the Visualization field, select Scorecard.
6. Select indicators in one of the following ways:
   - Select a group in the Indicator Group field.
   - Click Save, then add widget indicators as described in Add widget indicators.
7. Optional: To aggregate the widget data for a specific time period, such as applying a 7-day sum or average, select a function in the Time series field.
8. Optional: The following options apply only when the widget is included in a “breakdown dashboard”:
   a) Select Follow element for the widget to follow the element that the user selects interactively on the dashboard.
   b) Breakdown dashboard configurations specify breakdown sources, not specific breakdowns. The same breakdown source can be used for multiple breakdowns. Select Follow breakdown to set which of the possible breakdowns to follow.
   For example, consider the indicator Number of open incidents. This indicator uses two breakdowns: Assigned to, and Created by. Both breakdowns are based on the Users.Active breakdown source. You create a widget for this indicator and you select
Follow element on this widget. You also select Follow breakdown and specify either the Assigned to or the Created by breakdown.

For more information, see Using breakdowns on dashboards.

9. Optional: Select the attribute on which to sort the data in the Sort on field.
10. Select the scores and metrics to show in the Column Settings tab.

<table>
<thead>
<tr>
<th>Column setting</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Current score</td>
<td>Show the score from the latest data collection. Selected by default.</td>
</tr>
<tr>
<td>Trend</td>
<td>Shows the direction that the indicator is moving. The trend is shown in a mini-chart on the dashboard. Selected by default.</td>
</tr>
<tr>
<td>Bullet chart</td>
<td>Show a graphic that shows how close the latest score is to the latest target score. The graphic only appears if the indicator has a defined target.</td>
</tr>
<tr>
<td>Multiple scores</td>
<td>Shows the number of scores that are defined in the Number of periods field, which appears when Multiple scores is selected. If Current Score is also selected, the most recent period is labeled Score. Otherwise, the most recent period is labeled with the date.</td>
</tr>
<tr>
<td>Number of periods</td>
<td>Select the number of additional periods to include in the widget.</td>
</tr>
<tr>
<td>Period step</td>
<td>If the Number of periods &gt; 1, select the length of each period. The unit is based on the frequency of the first indicator.</td>
</tr>
</tbody>
</table>

**Note:** Including indicators with different frequencies, such as daily or weekly, may result in different numbers of periods per indicator. For example, if the first indicator has a daily frequency, and another indicator has a weekly frequency, the daily indicator shows 7 scores for every 1 score of the weekly indicator.

<table>
<thead>
<tr>
<th>Column setting</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Change</td>
<td>Shows the change in value from the previous score.</td>
</tr>
<tr>
<td>Change %</td>
<td>Shows the percentage change from the previous score.</td>
</tr>
<tr>
<td>Target</td>
<td>Shows the target for the indicator. A value appears only if the indicator has a defined target. The target and current score are shown graphically in the Bullet chart.</td>
</tr>
<tr>
<td>Column setting</td>
<td>Description</td>
</tr>
<tr>
<td>----------------</td>
<td>-------------</td>
</tr>
<tr>
<td>Gap</td>
<td>Shows the difference between the current score and the target. For indicators with a Maximize direction, the gap calculation is Score–Target. For indicators with a Minimize direction, the calculation is Target–Score. Thus a positive value is always good, and a negative value is always bad. A value appears only if the indicator has a defined target.</td>
</tr>
<tr>
<td>Gap %</td>
<td>Shows the percentage difference between the current and target scores. As with Gap, a positive Gap % is always good, and a negative Gap % is always bad, regardless of the direction of the indicator. A value appears only if the indicator has a defined target.</td>
</tr>
</tbody>
</table>

11. Optional: Filter which indicators to show in the List Settings tab.

<table>
<thead>
<tr>
<th>List setting</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Scorecard options</td>
<td>Select All indicators, indicators marked Key, or Favorite indicators to show only those indicators on the dashboard.</td>
</tr>
<tr>
<td>Page size</td>
<td>Select the number of rows to show on the list scorecard.</td>
</tr>
<tr>
<td>Filter</td>
<td>Filter the scorecard list for Best Performing, Worst Performing, Improved, Declined, or Deteriorated. Only indicator scores that match the filter are shown.</td>
</tr>
</tbody>
</table>

12. Click Submit or Update.

To view the widget, add it to a dashboard.

Create a spider visualization in a list widget

To plot the scores of several indicators, use a spider visualization in a list widget.

Role required: pa_power_user or admin

Use this visualization to help compare the scores of several similar indicators.
1. Navigate to **Performance Analytics > Widgets**.
2. Click **New**.
3. In the **Name** field, give the widget a name that reflects the information being displayed.
4. In the **Type** field, select **List**.
   If you change the value of **Type** after you fill in other fields, those fields are cleared.
5. In the **Visualization** field, select **Spider**.
6. Select indicators in one of the following ways:
   - Select a group in the **Indicator Group** field.
   - Click **Save**, then add widget indicators as described in **Add widget indicators**.
7. Optional: To aggregate the widget data for a specific time period, such as applying a 7-day sum or average, select a function in the **Time series** field.

8. Optional: The following options apply only when the widget is included in a ‘breakdown dashboard’:
   a) Select **Follow element** for the widget to follow the element that the user selects interactively on the dashboard.
   
   b) Breakdown dashboard configurations specify breakdown sources, not specific breakdowns. The same breakdown source can be used for multiple breakdowns. Select **Follow breakdown** to set which of the possible breakdowns to follow.

   For example, consider the indicator Number of open incidents. This indicator uses two breakdowns: Assigned to, and Created by. Both breakdowns are based on the Users.Active breakdown source. You create a widget for this indicator and you select **Follow element** on this widget. You also need to select **Follow breakdown** and specify either the Assigned to or the Created by breakdown.

   For more information, see *Using breakdowns on dashboards*.

9. Optional: Select the attribute on which to sort the data in the **Sort on** field.

10. Optional: Filter which indicators to display in the **List Settings** tab.

<table>
<thead>
<tr>
<th>List setting</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Scorecard options</td>
<td>Select All scorecards, scorecards marked Key, or Favorite scorecards to show only those scorecards on the dashboard.</td>
</tr>
<tr>
<td>Page size</td>
<td>Select the number of rows to show on the list scorecard.</td>
</tr>
</tbody>
</table>

11. Click **Submit** or **Update**.

   To view the widget, add it to a dashboard.

**Breakdown widgets**

Breakdown widgets show indicator scores grouped by breakdown elements. Different visualizations can be used to compare the relative proportion of breakdown elements or the trends in these proportions.

When you are selecting a visualization for a breakdown widget, consider whether you want to compare the trends or the relative proportions of the breakdown elements. Also consider whether you want to show one indicator or compare several related indicators, and whether you want to show one or two breakdowns.

**Breakdown widget visualizations**

<table>
<thead>
<tr>
<th>Visualization</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Scorecard</td>
<td>Shows the trends for one breakdown for a single indicator. Equivalent to <strong>Breakdown</strong> tab on a Scorecard. For more information, see <em>Performance Analytics scorecards</em>.</td>
</tr>
<tr>
<td>Visualizing the relative proportions of the elements of a breakdown</td>
<td></td>
</tr>
<tr>
<td>Visualization</td>
<td>Description</td>
</tr>
<tr>
<td>-------------------</td>
<td>---------------------------------------------------------------------------------------------------------------------------------------------</td>
</tr>
<tr>
<td>Column</td>
<td>Enables a comparison between the relative proportion of breakdown elements by displaying them as proportional vertical columns. Use when a pie, funnel, or other such visualization is not appropriate.</td>
</tr>
<tr>
<td>Pie</td>
<td>Enables a comparison between the relative proportion of breakdown elements by using a circle to represent the whole.</td>
</tr>
<tr>
<td>Donut</td>
<td>Enables a comparison between the relative proportion of breakdown elements by using a donut shape to represent the whole.</td>
</tr>
<tr>
<td>Semi-donut</td>
<td>Enables a comparison between the relative proportion of breakdown elements by using a semi-donut shape to represent the whole. A semi-donut chart uses a donut sliced in half to represent the whole.</td>
</tr>
<tr>
<td>Funnel</td>
<td>Enables a comparison between the relative proportion of breakdown elements by displaying values as progressively decreasing proportions. The size of each section reflects a percentage of the total of all values.</td>
</tr>
<tr>
<td>Pyramid</td>
<td>Enables a comparison between the relative proportion of breakdown elements by displaying values as progressively increasing proportions. The size of each section reflects a percentage of the total of all values.</td>
</tr>
</tbody>
</table>

Visualizing both the trend in scores and the relative proportions of elements of a breakdown

<p>| Stacked Column    | Combines time series and breakdown widget functions. The X-axis is a time line and the visualization shows the development of indicator scores over time. Also, each column is divided into a stack of slices according to the elements of a breakdown. Thus the visualization shows the relative proportion of breakdown elements over time. |</p>
<table>
<thead>
<tr>
<th>Visualization</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Column and total</td>
<td>Shows both the relative proportion of breakdown elements and the trend in the indicator score. Shows a separate column for each breakdown value and a line representing the total for all values, over time.</td>
</tr>
<tr>
<td>Line</td>
<td>Shows changes over time in the relative proportion of breakdown elements for an indicator by connecting a series of data points with straight lines.</td>
</tr>
<tr>
<td>Relative Compare</td>
<td>Shows how multiple breakdowns diverge over time.</td>
</tr>
<tr>
<td>Pareto</td>
<td>Combines column and line visualizations to identify the most important factors in a large set of factors.</td>
</tr>
<tr>
<td>Pivot scorecard</td>
<td>Enables you to compare the breakdown elements for one breakdown applied to several indicators. The Y-axis can be the indicators or the breakdown elements.</td>
</tr>
<tr>
<td>Treemap</td>
<td>Shows a treelike display of nested rectangles with a color gradient to signify positive to negative scores or trends in scores.</td>
</tr>
</tbody>
</table>

Grouping by breakdown and filtering by breakdown

In breakdown widgets, breakdowns either group or filter indicator scores. When you create a widget, this dual purpose of breakdowns affects the function of the breakdown fields.

The **Breakdown** and **2nd Breakdown** fields in the widget form have a different function for breakdown widgets than for other widget types. In most other widget types, these fields specify data filters. Only the indicator scores that correspond to the specified breakdown elements are shown. However, when you create a breakdown widget, you group the data by a breakdown instead of filtering it. The elements of the breakdown are shown as the different wedges of a pie visualization, or separate columns in a column visualization, for example.

You can still filter the data by specifying a breakdown and an element in the **Breakdown** and **Element** fields. However, in this case you must specify the breakdown that is used to group the
data in the 2nd Breakdown field. If you do not specify a 2nd Breakdown, the Element field is ignored and the first Breakdown is used to group indicator scores instead of filtering them.

Interacting with breakdown widgets on dashboards
Performance Analytics users can interact with individual breakdown widgets on dashboards to change the visualization or breakdown.

Widgets with the Type of Breakdown enable users with the pa_viewer role to select the visualization when viewing the widget on a dashboard. Users can select any visualization for the widget type from the Visualization choice list when viewing the widget on a dashboard.

- **Note:** You cannot select the Pivot Scorecard visualization from a dashboard. You must configure the widget record to use this visualization.

Breakdown widgets also enable users to select the breakdown if multiple breakdowns are available. All available breakdowns for the widget Indicator appear in the Breakdown choice list when viewing the widget on a dashboard. If the indicator has only 1 associated breakdown, the Breakdown choice list does not appear on the widget.

Usually, the interactive breakdown applies as the 1st-level breakdown. However, if Follow element is selected on the Widget form, the interactive breakdown applies as the 2nd-level breakdown. Any breakdown that is set on a dashboard that contains the widget applies as the 1st level breakdown.

- **Note:** If the user selects the same breakdown on the widget and on the dashboard, the dashboard breakdown is ignored. However, when the user selects any other combination of widget and dashboard breakdowns, both breakdowns apply.

You can disable this functionality for a specific widget by clearing the Show visualization selector or Show breakdown selector check boxes on the Widgets form.

The visualization or breakdown selected in the widget record is used as the default.

Create a scorecard visualization for a breakdown widget
To show the trend for the elements of one breakdown applied to one indicator, use a scorecard visualization.

- **Role required:** pa_power_user or admin

Scorecard visualizations show the trends by element for one breakdown applied to one indicator. This visualization is the equivalent of the Breakdowns tab of a Scorecard.
1. Navigate to Performance Analytics > Widgets and click New.
2. In the Name field, give the widget a name that reflects the information being displayed.
3. In the Type field, select Breakdown.
   If you change the value of Type after you fill in other fields, those fields are cleared.
4. In the Visualization field, select Scorecard.
   You can let the user switch between visualizations. Select Show visualization selector in the Display settings tab.
5. In the Indicator field, select the main indicator which you want to break down.
6. Optional: To show only the scores that match one element of a breakdown, select a filtering breakdown in the Breakdown and Element fields.
   To use a breakdown to filter the data, you must specify an element.
7. Select the breakdown to group the scores by.
   - If you did not select a breakdown as a filter, select the grouping breakdown in the Breakdown field.
   - If you selected a filtering breakdown in the Breakdown and Element fields, select the grouping breakdown in the 2nd Breakdown field.

   You can let the user switch between breakdowns to apply. Select Show breakdown selector in the Display settings tab.
8. Fill in any of the following fields:
<table>
<thead>
<tr>
<th>Field</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Time series</td>
<td>Run a function on the scores for a specific time period, such as applying a 7-day sum or average. For more information, see Time series aggregations in scorecards and widgets.</td>
</tr>
<tr>
<td>Sort on</td>
<td>Sort the data on this attribute.</td>
</tr>
<tr>
<td>Follow element</td>
<td>Applies only when this widget is placed in a &quot;breakdown dashboard.&quot; Select this option for the widget to follow the element that the user selects interactively on the dashboard. See Using breakdowns on dashboards. Selecting this option removes the ability to set a filtering option on the widget. Only one Breakdown field remains in the form, for selecting the grouping breakdown.</td>
</tr>
<tr>
<td>Follow breakdown</td>
<td>Breakdown dashboard configurations specify breakdown sources, not specific breakdowns. The same breakdown source can be used for multiple breakdowns. Therefore, select this option to set which of the possible breakdowns to follow. For example, consider the indicator Number of open incidents. This indicator uses two breakdowns: Assigned to, and Created by. Both breakdowns are based on the Users.Active breakdown source. You create a widget for this indicator and you select Follow element on this widget. You also need to select Follow breakdown and specify either the Assigned to or the Created by breakdown. This option is available only if Follow element is selected.</td>
</tr>
<tr>
<td>Follow breakdown relation</td>
<td>If more than one breakdown relation is defined for the grouping breakdown, this field specifies which breakdown relation to follow on the breakdown dashboard. For a detailed example, see Showing breakdown relations in Using breakdowns on dashboards. You can specify only Follow breakdown relation or Follow breakdown.</td>
</tr>
</tbody>
</table>

9. Optional: Review the Settings tabs and change settings as desired.
10. Click Submit.

To view the widget, add it to a dashboard.

Create a pie, donut, or semi-donut visualization for a breakdown widget

To show the relative proportions of the elements of a breakdown, use a pie, donut, or semi-donut visualization.

Role required: pa_power_user or admin

When you need to compare the percentages or relative proportions of breakdown elements, you can use a pie, a donut, or a semi-donut visualization. Consider trying all three to see which works best for a particular widget.

These visualizations can be unclear in the following cases:

- The breakdown has many elements.
Several elements in the breakdown are much smaller than the others. In these cases, or to compare scores instead of proportions, consider using a column visualization.

Pie, donut, and semi-donut visualizations

1. Navigate to Performance Analytics > Widgets and click New.
2. In the Name field, give the widget a name that reflects the information being displayed.
3. In the Type field, select Breakdown.
   If you change the value of Type after you fill in other fields, those fields are cleared.
4. In the Visualization field, select Pie, Donut, or Semi donut.
   You can let the user switch between visualizations. Select Show visualization selector in the Display settings tab.
5. In the Indicator field, select the main indicator which you want to break down.
6. Optional: To show only the scores that match one element of a breakdown, select a filtering breakdown in the Breakdown and Element fields.
   To use a breakdown to filter the data, you must specify an element.
7. Select the breakdown to group the scores by.
   • If you did not select a breakdown as a filter, select the grouping breakdown in the Breakdown field.
   • If you selected a filtering breakdown in the Breakdown and Element fields, select the grouping breakdown in the 2nd Breakdown field.
You can let the user switch between breakdowns to apply. Select **Show breakdown selector** in the **Display settings** tab.

### 8. Optional: Fill in any of the following fields:

<table>
<thead>
<tr>
<th>Field</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Time series</strong></td>
<td>Run a function on the scores for a specific time period, such as applying a 7-day sum or average. For more information, see <strong>Time series aggregations in scorecards and widgets</strong>.</td>
</tr>
<tr>
<td><strong>Sort on</strong></td>
<td>Sort the data on this attribute.</td>
</tr>
<tr>
<td><strong>Follow element</strong></td>
<td>Applies only when this widget is placed in a ‘breakdown dashboard.’ Select this option for the widget to follow the element that the user selects interactively on the dashboard. See <strong>Using breakdowns on dashboards</strong>.</td>
</tr>
<tr>
<td></td>
<td>Selecting this option removes the ability to set a filtering option on the widget. Only one <strong>Breakdown</strong> field remains in the form, for selecting the grouping breakdown.</td>
</tr>
<tr>
<td><strong>Follow breakdown</strong></td>
<td>Breakdown dashboard configurations specify breakdown sources, not specific breakdowns. The same breakdown source can be used for multiple breakdowns. Therefore, select this option to set which of the possible breakdowns to follow.</td>
</tr>
<tr>
<td></td>
<td>For example, consider the indicator Number of open incidents. This indicator uses two breakdowns: Assigned to, and Created by. Both breakdowns are based on the Users.Active breakdown source. You create a widget for this indicator and you select <strong>Follow element</strong> on this widget. You also need to select <strong>Follow breakdown</strong> and specify either the Assigned to or the Created by breakdown.</td>
</tr>
<tr>
<td></td>
<td>This option is available only if <strong>Follow element</strong> is selected.</td>
</tr>
</tbody>
</table>

### 9. Optional: Review the **Settings** tabs and change settings as desired.

### 10. Click **Submit**.

To view the widget, add it to a dashboard.

**Create a pyramid or a funnel visualization for a breakdown widget**

To show the relative proportions of the elements of a breakdown, particularly when the elements represent stages in a process, use a pyramid or funnel visualization.

**Role required:** `pa_power_user` or `admin`

When you need to compare the percentages or relative proportions of breakdown elements, consider using a funnel or pyramid visualization instead of a pie visualization. Funnel and pyramid visualizations are particularly appropriate when the elements of a breakdown represent stages in a process, such as going from lead to closed deal in a sales process.

Funnel charts stack slices from top to bottom by decreasing percentage and pyramid charts stack slices by increasing percentage. Pyramid charts are often used to represent hierarchical levels in an organization.
In the following examples, open incidents are displayed according to the stages that the incidents are in.

1. Navigate to Performance Analytics > Widgets and click New.
2. In the Name field, give the widget a name that reflects the information being displayed.
3. In the Type field, select Breakdown.
   
   If you change the value of Type after you fill in other fields, those fields are cleared.
4. In the Visualization field, select Pyramid or Funnel.
You can let the user switch between visualizations. Select **Show visualization selector** in the **Display settings** tab.

5. In the **Indicator** field, select the main indicator which you want to break down.

6. Optional: To show only the scores that match one element of a breakdown, select a filtering breakdown in the **Breakdown** and **Element** fields.

To use a breakdown to filter the data, you must specify an element.

7. Select the breakdown to group the scores by.
   - If you did not select a breakdown as a filter, select the grouping breakdown in the **Breakdown** field.
   - If you selected a filtering breakdown in the **Breakdown** and **Element** fields, select the grouping breakdown in the **2nd Breakdown** field.

You can let the user switch between breakdowns to apply. Select **Show breakdown selector** in the **Display settings** tab.

8. Optional: Fill in any of the following fields:

<table>
<thead>
<tr>
<th>Field</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Time series</td>
<td>Run a function on the scores for a specific time period, such as applying a 7-day sum or average. For more information, see <em>Time series aggregations in scorecards and widgets</em>.</td>
</tr>
<tr>
<td>Sort on</td>
<td>Sort the data on this attribute.</td>
</tr>
<tr>
<td>Follow element</td>
<td>Applies only when this widget is placed in a “breakdown dashboard.” Select this option for the widget to follow the element that the user selects interactively on the dashboard. See <em>Using breakdowns on dashboards</em>. Selecting this option removes the ability to set a filtering option on the widget. Only one <strong>Breakdown</strong> field remains in the form, for selecting the grouping breakdown.</td>
</tr>
<tr>
<td>Follow breakdown</td>
<td>Breakdown dashboard configurations specify breakdown sources, not specific breakdowns. The same breakdown source can be used for multiple breakdowns. Therefore, select this option to set which of the possible breakdowns to follow. For example, consider the indicator Number of open incidents. This indicator uses two breakdowns: Assigned to, and Created by. Both breakdowns are based on the Users.Active breakdown source. You create a widget for this indicator and you select <strong>Follow element</strong> on this widget. You also need to select <strong>Follow breakdown</strong> and specify either the Assigned to or the Created by breakdown. This option is available only if <strong>Follow element</strong> is selected.</td>
</tr>
</tbody>
</table>

9. Optional: Review the **Settings** tabs and change settings as desired.

10. Click **Submit**.

To view the widget, add it to a dashboard.

**Create a column visualization for a breakdown widget**

To compare the elements of one breakdown applied to one indicator, use a column visualization.
Role required: pa_power_user or admin

If you want to compare the relative proportion of indicator scores associated with each element of a breakdown, and a pie visualization is not appropriate, use a column visualization. Column visualizations are clearer when there are many elements, when several elements are much smaller than others, or when several elements are close to each other in value.

Column visualization - breakdown

1. Navigate to Performance Analytics > Widgets and click New.
2. In the Name field, give the widget a name that reflects the information being displayed.
3. In the Type field, select Breakdown.
   If you change the value of Type after you fill in other fields, those fields are cleared.
4. In the Visualization field, select Column.
   You can let the user switch between visualizations. Select Show visualization selector in the Display settings tab.
5. In the Indicator field, select the main indicator which you want to break down.
6. Optional: To show only the scores that match one element of a breakdown, select a filtering breakdown in the Breakdown and Element fields.
   To use a breakdown to filter the data, you must specify an element.
7. Select the breakdown to group the scores by.
   - If you did not select a breakdown as a filter, select the grouping breakdown in the Breakdown field.
   - If you selected a filtering breakdown in the Breakdown and Element fields, select the grouping breakdown in the 2nd Breakdown field.

You can let the user switch between breakdowns to apply. Select Show breakdown selector in the Display settings tab.
8. Optional: Fill in any of the following fields:
<table>
<thead>
<tr>
<th>Field</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Time series</td>
<td>Run a function on the scores for a specific time period, such as applying a 7-day sum or average. For more information, see Time series aggregations in scorecards and widgets.</td>
</tr>
<tr>
<td>Sort on</td>
<td>Sort the data on this attribute.</td>
</tr>
<tr>
<td>Follow element</td>
<td>Applies only when this widget is placed in a “breakdown dashboard.” Select this option for the widget to follow the element that the user selects interactively on the dashboard. See Using breakdowns on dashboards. Selecting this option removes the ability to set a filtering option on the widget. Only one Breakdown field remains in the form, for selecting the grouping breakdown.</td>
</tr>
<tr>
<td>Follow breakdown</td>
<td>Breakdown dashboard configurations specify breakdown sources, not specific breakdowns. The same breakdown source can be used for multiple breakdowns. Therefore, select this option to set which of the possible breakdowns to follow. For example, consider the indicator Number of open incidents. This indicator uses two breakdowns: Assigned to, and Created by. Both breakdowns are based on the Users.Active breakdown source. You create a widget for this indicator and you select Follow element on this widget. You also need to select Follow breakdown and specify either the Assigned to or the Created by breakdown. This option is available only if Follow element is selected.</td>
</tr>
</tbody>
</table>

9. Optional: Review the Settings tabs and change settings as desired.

10. Click Submit.

To view the widget, add it to a dashboard.

Create a Pareto visualization for a breakdown widget
To identify the most important breakdown elements when the breakdown has a large set of elements, use a Pareto visualization.

Role required: pa_power_user or admin

Pareto visualizations contain both bar and line graphs. The bars display the data in descending order from left to right, and the line graph shows the cumulative totals from each category in the same order. The left Y axis is the record count, and the right Y axis is the cumulative percentage of the total number of records evaluated. The data to the left of the intersection of the line graph and the 80% mark have the greatest effect on the overall outcome.
1. Navigate to Performance Analytics > Widgets and click New.
2. In the Name field, give the widget a name that reflects the information being displayed.
3. In the Type field, select Breakdown.
   If you change the value of Type after you fill in other fields, those fields are cleared.
4. In the Visualization field, select Pareto.
   You can let the user switch between visualizations. Select Show visualization selector in the Display settings tab.
5. In the Indicator field, select the main indicator which you want to break down.
6. Optional: To show only the scores that match one element of a breakdown, select a filtering breakdown in the Breakdown and Element fields.
   To use a breakdown to filter the data, you must specify an element.
7. Select the breakdown to group the scores by.
   - If you did not select a breakdown as a filter, select the grouping breakdown in the Breakdown field.
   - If you selected a filtering breakdown in the Breakdown and Element fields, select the grouping breakdown in the 2nd Breakdown field.

You can let the user switch between breakdowns to apply. Select Show breakdown selector in the Display settings tab.
8. Optional: Fill in any of the following fields:

<table>
<thead>
<tr>
<th>Field</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Time series</td>
<td>Run a function on the scores for a specific time period, such as applying a 7-day sum or average. For more information, see Time series aggregations in scorecards and widgets.</td>
</tr>
<tr>
<td>Sort on</td>
<td>Sort the data on this attribute.</td>
</tr>
<tr>
<td>Field</td>
<td>Description</td>
</tr>
<tr>
<td>---------------------</td>
<td>-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------</td>
</tr>
<tr>
<td>Follow element</td>
<td>Applies only when this widget is placed in a ‘breakdown dashboard.’ Select this option for the widget to follow the element that the user selects interactively on the dashboard. See Using breakdowns on dashboards. Selecting this option removes the ability to set a filtering option on the widget. Only one Breakdown field remains in the form, for selecting the grouping breakdown.</td>
</tr>
<tr>
<td>Follow breakdown</td>
<td>Breakdown dashboard configurations specify breakdown sources, not specific breakdowns. The same breakdown source can be used for multiple breakdowns. Therefore, select this option to set which of the possible breakdowns to follow. For example, consider the indicator Number of open incidents. This indicator uses two breakdowns: Assigned to, and Created by. Both breakdowns are based on the Users.Active breakdown source. You create a widget for this indicator and you select Follow element on this widget. You also need to select Follow breakdown and specify either the Assigned to or the Created by breakdown. This option is available only if Follow element is selected.</td>
</tr>
</tbody>
</table>

9. **Optional**: Review the **Settings** tabs and change settings as desired.
10. **Click** Submit.

To view the widget, add it to a dashboard.

**Create a line visualization for a breakdown widget**

To follow changes over time in the relative proportion of breakdown elements for an indicator, use a line visualization in a breakdown widget.

**Role required**: pa_power_user or admin

A line visualization in a breakdown widget shows how the proportion of indicator scores belonging to different breakdown elements changes over time. To select the time period over which changes are tracked, go to the **Date Settings** tab.
Line visualization - breakdown

1. Navigate to Performance Analytics > Widgets and click New.
2. In the Name field, give the widget a name that reflects the information being displayed.
3. In the Type field, select Breakdown.
   If you change the value of Type after you fill in other fields, those fields are cleared.
4. In the Visualization field, select Line.
   You can let the user switch between visualizations. Select Show visualization selector in the Display settings tab.
5. In the Indicator field, select the main indicator which you want to break down.
6. Optional: To show only the scores that match one element of a breakdown, select a filtering breakdown in the Breakdown and Element fields.
   To use a breakdown to filter the data, you must specify an element.
7. Select the breakdown to group the scores by.
   - If you did not select a breakdown as a filter, select the grouping breakdown in the Breakdown field.
   - If you selected a filtering breakdown in the Breakdown and Element fields, select the grouping breakdown in the 2nd Breakdown field.

You can let the user switch between breakdowns to apply. Select Show breakdown selector in the Display settings tab.
8. Optional: Fill in any of the following fields:

<table>
<thead>
<tr>
<th>Field</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Time series</td>
<td>Run a function on the scores for a specific time period, such as applying a 7-day sum or average. For more information, see Time series aggregations in scorecards and widgets.</td>
</tr>
<tr>
<td>Sort on</td>
<td>Sort the data on this attribute.</td>
</tr>
</tbody>
</table>
### Field | Description
--- | ---
Follow element | Applies only when this widget is placed in a ‘breakdown dashboard.’ Select this option for the widget to follow the element that the user selects interactively on the dashboard. See Using breakdowns on dashboards.

Selecting this option removes the ability to set a filtering option on the widget. Only one Breakdown field remains in the form, for selecting the grouping breakdown.

Follow breakdown | Breakdown dashboard configurations specify breakdown sources, not specific breakdowns. The same breakdown source can be used for multiple breakdowns. Therefore, select this option to set which of the possible breakdowns to follow.

For example, consider the indicator Number of open incidents. This indicator uses two breakdowns: Assigned to, and Created by. Both breakdowns are based on the Users.Active breakdown source. You create a widget for this indicator and you select Follow element on this widget. You also need to select Follow breakdown and specify either the Assigned to or the Created by breakdown.

This option is available only if Follow element is selected.

9. Optional: Review the Settings tabs and change settings as desired.
10. Click Submit.

To view the widget, add it to a dashboard.

**Create a columns and total visualization for a breakdown widget**

To follow changes over time in both the scores of an indicator and the relative proportion of breakdown elements for that indicator, use a Columns and Total visualization in a breakdown widget.

Role required: pa_power_user or admin

This visualization combines a time series and a breakdown widget. A classic time series with a line visualization is shown for the indicator scores. This line is combined with a column visualization of the breakdown for each point in time at which indicator scores were collected. Use this widget to explore relationships between the indicator score and the relative proportion of breakdown elements for that indicator.
Columns and total visualization

1. Navigate to Performance Analytics > Widgets and click New.
2. In the Name field, give the widget a name that reflects the information being displayed.
3. In the Type field, select Breakdown.
   If you change the value of Type after you fill in other fields, those fields are cleared.
4. In the Visualization field, select Columns and Total.
   You can let the user switch between visualizations. Select Show visualization selector in the Display settings tab.
5. In the Indicator field, select the main indicator which you want to break down.
6. Optional: To show only the scores that match one element of a breakdown, select a filtering breakdown in the Breakdown and Element fields.
   To use a breakdown to filter the data, you must specify an element.
7. Select the breakdown to group the scores by.
   - If you did not select a breakdown as a filter, select the grouping breakdown in the Breakdown field.
   - If you selected a filtering breakdown in the Breakdown and Element fields, select the grouping breakdown in the 2nd Breakdown field.

You can let the user switch between breakdowns to apply. Select Show breakdown selector in the Display settings tab.
8. Optional: Fill in any of the following fields:

<table>
<thead>
<tr>
<th>Field</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Time series</td>
<td>Run a function on the scores for a specific time period, such as applying a 7-day sum or average. For more information, see Time series aggregations in scorecards and widgets.</td>
</tr>
<tr>
<td>Sort on</td>
<td>Sort the data on this attribute.</td>
</tr>
<tr>
<td>Field</td>
<td>Description</td>
</tr>
<tr>
<td>------------------</td>
<td>------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------</td>
</tr>
<tr>
<td><strong>Follow element</strong></td>
<td>Applies only when this widget is placed in a ‘breakdown dashboard.’ Select this option for the widget to follow the element that the user selects interactively on the dashboard. See Using breakdowns on dashboards. Selecting this option removes the ability to set a filtering option on the widget. Only one Breakdown field remains in the form, for selecting the grouping breakdown.</td>
</tr>
<tr>
<td><strong>Follow breakdown</strong></td>
<td>Breakdown dashboard configurations specify breakdown sources, not specific breakdowns. The same breakdown source can be used for multiple breakdowns. Therefore, select this option to set which of the possible breakdowns to follow. For example, consider the indicator Number of open incidents. This indicator uses two breakdowns: Assigned to, and Created by. Both breakdowns are based on the Users.Active breakdown source. You create a widget for this indicator and you select Follow element on this widget. You also need to select Follow breakdown and specify either the Assigned to or the Created by breakdown. This option is available only if Follow element is selected.</td>
</tr>
</tbody>
</table>

9. Optional: Review the Settings tabs and change settings as desired.

10. Click Submit.

To view the widget, add it to a dashboard.

**Create a stacked column visualization for a breakdown widget**

To follow changes over time in the relative proportion of breakdown elements for an indicator, use a stacked column visualization in a breakdown widget.

Role required: pa_power_user or admin

This visualization shows the relative proportion of breakdown elements in a single column, and shows a column for every point in time that indicator scores are collected. To select the time period over which changes are tracked, go to the Date Settings tab.
1. Navigate to **Performance Analytics > Widgets** and click **New**.
2. In the **Name** field, give the widget a name that reflects the information being displayed.
3. In the **Type** field, select **Breakdown**.
   - If you change the value of **Type** after you fill in other fields, those fields are cleared.
4. In the **Visualization** field, select **Stacked Column**.
   - You can let the user switch between visualizations. Select **Show visualization selector** in the **Display settings** tab.
5. In the **Indicator** field, select the main indicator which you want to break down.
6. Optional: To show only the scores that match one element of a breakdown, select a filtering breakdown in the **Breakdown** and **Element** fields.
   - To use a breakdown to filter the data, you must specify an element.
7. Select the breakdown to group the scores by:
   - If you did not select a breakdown as a filter, select the grouping breakdown in the **Breakdown** field.
   - If you selected a filtering breakdown in the **Breakdown** and **Element** fields, select the grouping breakdown in the **2nd Breakdown** field.
8. Optional: Fill in any of the following fields:

<table>
<thead>
<tr>
<th>Field</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Time series</td>
<td>Run a function on the scores for a specific time period, such as applying a 7-day sum or average. For more information, see <em>Time series aggregations in scorecards and widgets</em>.</td>
</tr>
<tr>
<td>Sort on</td>
<td>Sort the data on this attribute.</td>
</tr>
</tbody>
</table>
Follow element

Applies only when this widget is placed in a ‘breakdown dashboard.’ Select this option for the widget to follow the element that the user selects interactively on the dashboard. See Using breakdowns on dashboards.

Selecting this option removes the ability to set a filtering option on the widget. Only one Breakdown field remains in the form, for selecting the grouping breakdown.

Follow breakdown

Breakdown dashboard configurations specify breakdown sources, not specific breakdowns. The same breakdown source can be used for multiple breakdowns. Therefore, select this option to set which of the possible breakdowns to follow.

For example, consider the indicator Number of open incidents. This indicator uses two breakdowns: Assigned to, and Created by. Both breakdowns are based on the Users.Active breakdown source. You create a widget for this indicator and you select Follow element on this widget. You also need to select Follow breakdown and specify either the Assigned to or the Created by breakdown.

This option is available only if Follow element is selected.

9. Optional: Review the Settings tabs and change settings as desired.
10. Click Submit.

To view the widget, add it to a dashboard.
Create a relative compare visualization for a breakdown widget
To show how the relative proportions of several indicators change over time, use a relative compare visualization for a time series.

Role required: pa_power_user or admin

Like a pie chart, a relative compare visualization shows relative proportions between data points, but it can also show how those proportions change over time. Traditional uses of relative compare visualizations are stock charts or population growth trends. When you create a relative compare visualization, it uses a baseline of zero and then shows how the data changes over time.

For example, this visualization shows the number of open incidents from December to March for three different incident types. When you point to a line, the number of incidents and the percentage change for that day appear. The percentage change shown for a data point is calculated from a baseline of zero, not the previous data point as on most other time series visualizations.
Example of a relative compare visualization

1. Navigate to Performance Analytics > Widgets and click New.
2. In the Name field, give the widget a name that reflects the information being displayed.
3. In the Type field, select Breakdown. If you change the value of Type after you fill in other fields, those fields are cleared.
4. In the Visualization field, select Relative Compare. You can let the user switch between visualizations. Select Show visualization selector in the Display settings tab.
5. In the Indicator field, select the main indicator which you want to break down.
6. Optional: To show only the scores that match one element of a breakdown, select a filtering breakdown in the Breakdown and Element fields. To use a breakdown to filter the data, you must specify an element.
7. Select the breakdown to group the scores by.
   - If you did not select a breakdown as a filter, select the grouping breakdown in the Breakdown field.
   - If you selected a filtering breakdown in the Breakdown and Element fields, select the grouping breakdown in the 2nd Breakdown field.

You can let the user switch between breakdowns to apply. Select Show breakdown selector in the Display settings tab.
8. Optional: Fill in any of the following fields:

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<thead>
<tr>
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</tr>
</thead>
<tbody>
<tr>
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</tr>
<tr>
<td>Sort on</td>
<td>Sort the data on this attribute.</td>
</tr>
<tr>
<td>Follow element</td>
<td>Applies only when this widget is placed in a &quot;breakdown dashboard.&quot; Select this option for the widget to follow the element that the user selects interactively on the dashboard. See Using breakdowns on dashboards. Selecting this option removes the ability to set a filtering option on the widget. Only one Breakdown field remains in the form, for selecting the grouping breakdown.</td>
</tr>
<tr>
<td>Follow breakdown</td>
<td>Breakdown dashboard configurations specify breakdown sources, not specific breakdowns. The same breakdown source can be used for multiple breakdowns. Therefore, select this option to set which of the possible breakdowns to follow. For example, consider the indicator Number of open incidents. This indicator uses two breakdowns: Assigned to, and Created by. Both breakdowns are based on the Users.Active breakdown source. You create a widget for this indicator and you select Follow element on this widget. You also need to select Follow breakdown and specify either the Assigned to or the Created by breakdown. This option is available only if Follow element is selected.</td>
</tr>
</tbody>
</table>

9. In the Date Settings tab, select Show date range indicator.

10. Review the Settings tabs and adjust other settings as desired.

11. Click Submit.

To view the widget, add it to a dashboard.

Create a pivot scorecard visualization for a breakdown widget

To compare the relative proportions of breakdown elements between a number of indicators, use a pivot scorecard visualization in a breakdown widget.

Role required: pa_power_user or admin

If you want to see the same breakdown applied to more than one indicator in the same widget, use a pivot scorecard. You can pivot the scorecard so that the axes for breakdown elements and for indicators are reversed.
Pivot scorecard - breakdown

<table>
<thead>
<tr>
<th>Priority of all open incidents</th>
<th>1 - Critical</th>
<th>2 - High</th>
<th>3 - Moderate</th>
<th>4 - Low</th>
<th>5 - Planning</th>
</tr>
</thead>
<tbody>
<tr>
<td>Number of open incidents</td>
<td>4</td>
<td>4</td>
<td>23</td>
<td>43</td>
<td>71</td>
</tr>
<tr>
<td>Number of open incidents not updated in last 5 days</td>
<td>2</td>
<td>0</td>
<td>5</td>
<td>0</td>
<td>10</td>
</tr>
<tr>
<td>Number of open incidents not updated in last 30 days</td>
<td>0</td>
<td>0</td>
<td>1</td>
<td>0</td>
<td>2</td>
</tr>
</tbody>
</table>

Pivot scorecard with the breakdown on the Y-axis

1. Navigate to **Performance Analytics > Widgets** and click **New**.
2. In the **Name** field, give the widget a name that reflects the information being displayed.
3. In the **Type** field, select **Breakdown**.
If you change the value of **Type** after you fill in other fields, those fields are cleared.

4. In the **Visualization** field, select **Pivot Scorecard**.

5. In the **Pivot breakdown** field, select the breakdown whose elements you want to see across several indicators.

6. Click **Save**.
   - The **Indicators** related list appears at the bottom of the form.

7. In the **Indicators** related list, click **New**.

8. In the slushbucket that appears, select the indicators that you want to compare breakdown elements between.

9. Click **Update**.

- To view the widget, add it to a dashboard.
- Once the widget is in a dashboard, edit the widget and try the **Breakdown on Y-axis** display setting.

---

Create a treemap visualization for a breakdown widget

To display a hierarchy of breakdown elements, use a treemap visualization.

**Role required:** pa_power-user or admin

If the elements of a breakdown differ in favorability, or if you want to compare each breakdown element against an indicator target, you can use a treemap. Treemaps use nested rectangles with the size representing the relative proportion of the element and the color representing the favorability.
1. Navigate to **Performance Analytics > Widgets** and click **New**.
2. In the **Name** field, give the widget a name that reflects the information being displayed.
3. In the **Type** field, select **Breakdown**.
   If you change the value of **Type** after you fill in other fields, those fields are cleared.
4. In the **Visualization** field, select **Treemap**.
   You can let the user switch between visualizations. Select **Show visualization selector** in the **Display settings** tab.
5. In the **Indicator** field, select the main indicator which you want to break down.
6. Optional: To show only the scores that match one element of a breakdown, select a filtering breakdown in the **Breakdown** and **Element** fields. To use a breakdown to filter the data, you must specify an element.

7. Select the breakdown to group the scores by.
   - If you did not select a breakdown as a filter, select the grouping breakdown in the **Breakdown** field.
   - If you selected a filtering breakdown in the **Breakdown** and **Element** fields, select the grouping breakdown in the **2nd Breakdown** field.

You can let the user switch between breakdowns to apply. Select **Show breakdown selector** in the **Display settings** tab.

8. In the **Coloring method** field, select whether to rank the favorability based on score, change to score, percent of change, or an indicator target.

9. Select the color that indicates a positive in the **Positive color** field.

10. Depending on the **Coloring method**, you may need to select a **Negative color**.

11. Optional: Fill in any of the following fields:

<table>
<thead>
<tr>
<th>Field</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Time series</td>
<td>Run a function on the scores for a specific time period, such as applying a 7-day sum or average. For more information, see <a href="#">Time series aggregations in scorecards and widgets</a>.</td>
</tr>
<tr>
<td>Sort on</td>
<td>Sort the data on this attribute.</td>
</tr>
<tr>
<td>Follow element</td>
<td>Applies only when this widget is placed in a &quot;breakdown dashboard.&quot; Select this option for the widget to follow the element that the user selects interactively on the dashboard. See <a href="#">Using breakdowns on dashboards</a>. Selecting this option removes the ability to set a filtering option on the widget. Only one <strong>Breakdown</strong> field remains in the form, for selecting the grouping breakdown.</td>
</tr>
<tr>
<td>Follow breakdown</td>
<td>Breakdown dashboard configurations specify breakdown sources, not specific breakdowns. The same breakdown source can be used for multiple breakdowns. Therefore, select this option to set which of the possible breakdowns to follow. For example, consider the indicator Number of open incidents. This indicator uses two breakdowns: Assigned to, and Created by. Both breakdowns are based on the Users.Active breakdown source. You create a widget for this indicator and you select <strong>Follow element</strong> on this widget. You also need to select <strong>Follow breakdown</strong> and specify either the Assigned to or the Created by breakdown. This option is available only if <strong>Follow element</strong> is selected.</td>
</tr>
</tbody>
</table>

12. Optional: Review the **Settings** tabs and change settings as desired.

13. Click **Submit**.

To view the widget, add it to a dashboard.
Optional settings for breakdown widgets

Breakdown widgets have the following optional settings for the date range, the display, the grouping breakdown, and for the column contents. Not all options are available for all visualizations.

| Date Settings |  
|---------------|---|
| Period        | Select the date range to display in the widget. Several options are available. |
|               |   - Select a specific time range. The default is 3m (3 months). |
|               |   - Select max to use scores up to the current date. |
|               |   - Select between and then fill in the From and To fields to define a time period. |
|               | The Period field is available only if you select Line, Columns and Total, or Stacked Column as the Visualization. |
| Show date range selector | Display a date range selector on the widget that enables users to change the selected period from a dashboard. |
|               | **Note:** Selecting a date range on a widget does not update the trend line. |

<p>| Display Settings |<br />
|-----------------|---|
| Show data labels | Display the score for each portion of the chart, such as for each slice of a pie chart. |
| Show visualization selector | Display a choice list on the widget that enables users to change the selected visualization from a dashboard. |
|               | <strong>Note:</strong> You cannot select the Pivot Scorecard visualization from a dashboard. You must configure the widget record to use this visualization. |
| Show breakdown selector | Display a choice list on the widget that enables users to change the selected breakdown from a dashboard. There must be more than 1 breakdown available for the widget for the breakdown choice list to appear. |
| Positive color | When the Visualization is Treemap, select the color used to indicate a score moving in the desired direction, based on the indicator Direction value. If Color based on is set to Target, the positive color indicates values closer to the target. |
| Negative color | When the Visualization is Treemap, select the color used to indicate a score moving in the wrong direction, based on the indicator Direction value. If Color based on is set to Target, the negative color indicates values further away from the target. This field is not available when Color based on is Score. |</p>
<table>
<thead>
<tr>
<th>Show legend</th>
<th>When the <strong>Visualization</strong> is <strong>Treemap</strong>, select this option to display a legend for the positive and negative colors.</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Breakdown Settings</strong></td>
<td></td>
</tr>
<tr>
<td>Elements filter</td>
<td>Specify if only a certain subset of breakdown elements are available for this widget. By default all elements are available. For example, elements of the breakdown <strong>Priority</strong> can be: <strong>Critical</strong>, <strong>High</strong>, <strong>Moderate</strong>, <strong>Low</strong> or <strong>Planning</strong>.</td>
</tr>
<tr>
<td>Breakdown on Y axis</td>
<td>Pivot scorecard breakdown widgets display breakdown elements as the X axis and indicators as the Y axis by default. Select this check box to display breakdown elements as the Y axis and indicators as the X axis.</td>
</tr>
<tr>
<td>Manual elements</td>
<td>Breakdown elements can be selected automatically or manually. Select the <strong>Manual elements</strong> check box to display the <strong>Widget Elements</strong> related list for adding elements. Clear the <strong>Manual elements</strong> check box to automatically use the elements that belong to the breakdown.</td>
</tr>
<tr>
<td>Show top x</td>
<td>If there are many breakdown instances, the breakdown chart may become too large. Enter a number to show only the top x of the instances. The maximum <strong>Number of elements in the breakdown charts</strong> can also be specified at <strong>System &gt; Properties</strong>. The top x for a widget cannot be higher than the property maximum.</td>
</tr>
<tr>
<td>Percentages</td>
<td>If you select <strong>No percentages</strong>, no score percentages are shown for the instances. If you select <strong>Percentage of elements</strong>, a score percentage is shown for each instance. For example, 6.4% of the total incidents are Critical, 11.8% are High, and so on.</td>
</tr>
<tr>
<td>Show total</td>
<td>If you selected <strong>Scorecard</strong> in the <strong>Visualization</strong> field, an extra row can be included in the breakdown chart showing the totals of all selected breakdowns.</td>
</tr>
<tr>
<td>Show bar</td>
<td>The score for each instance is represented by a bar.</td>
</tr>
<tr>
<td><strong>Column Settings</strong></td>
<td></td>
</tr>
<tr>
<td>Current score</td>
<td>Display the score from the latest data collection.</td>
</tr>
<tr>
<td>Trend</td>
<td>Shows the direction the indicator is moving. The trend is shown in a mini-chart on the dashboard.</td>
</tr>
<tr>
<td>Multiple scores</td>
<td>Adds scores to the scorecard. Select the number of additional scores to display in <strong>Number of periods</strong>. Select the length of each period in <strong>Period step</strong>. If <strong>Current Score</strong> is also selected, the Score column is counted as the most recent period and N-1 periods are added.</td>
</tr>
<tr>
<td>Change</td>
<td>Displays the change from the previous score.</td>
</tr>
<tr>
<td>Metric</td>
<td>Description</td>
</tr>
<tr>
<td>------------</td>
<td>-------------------------------------------------------------------------------------------------------------------------------------------</td>
</tr>
<tr>
<td>Change %</td>
<td>Displays the percentage change from the previous score.</td>
</tr>
<tr>
<td>Target</td>
<td>Displays the target for the indicator if a target has been defined.</td>
</tr>
<tr>
<td>Gap</td>
<td>Displays the difference between the current and the target scores. Gap can be either positive (moving towards the target) or negative (moving away from the target).</td>
</tr>
<tr>
<td>Gap %</td>
<td>Displays the percentage difference between the current and target scores. Gap % can be either positive (moving towards the target) or negative (moving away from the target).</td>
</tr>
</tbody>
</table>

Create a heatmap visualization in a pivot widget

To group the scores of an indicator by two breakdowns, use a heatmap visualization in a pivot widget.

Role required: pa_power_user or admin

If you want to apply two breakdowns to an indicator, create a pivot widget with the breakdowns as the two axes of the pivot table. Heatmaps, which use a color gradient to highlight when both scores are high, are the only visualization available for pivot widgets.

**Note:** Pivot widgets do not support the Follow Element function. Dashboard breakdowns cannot apply to these widgets.
1. Navigate to Performance Analytics > Widgets.
2. Click New.
3. In the Name field, give the widget a name that reflects the information being displayed.
4. In the Type field, select Pivot.
   If you change the value of Type after you fill in other fields, those fields are cleared.
5. In the Visualization field, select Heatmap.
6. In the Indicator field, select the indicator which you want to break down.
7. In the Breakdown field, select the breakdown to be the X-axis.
8. In the 2nd Breakdown field, select the breakdown to be the Y-axis.
9. Optional: In the Display Settings, set the color scheme and whether to display data labels.
10. Click Submit.

To view the widget, add it to a dashboard.

Text analytics and text widgets

Text analytics reveal any patterns that exist in user-entered text fields.

Text analytics provides visual tools for analyzing the text that users enter in forms. The possible benefits of such analyses include early warning of customer pain points, disclosure of fraudulent
activity, and the extraction of certain entities or concepts that are clustering in sales, incident reports, etc. The useful information in this unstructured, qualitative data may be hidden from other tools.

Note: Text analytics is available only with licensed Performance Analytics.

Text analysis begins with indexing the text. Text indexing is defined on indicator sources, to allow for the reuse of a single index configuration by many indicators.

When you set up text analytics, you decide on:

- Which fields in an indicator source to index.
- Which indicators to apply a text index configuration to.
- Which stop words to exclude from analysis.
- Keywords for default drilldowns.

When you have set up text analytics, create a widget to visualize the text and include the widget in a dashboard.

The following video walks you through the process of setting up and viewing text analytics:

**Set up text analytics**

Select the text fields to analyze and which indicators to analyze.

Text analytics relies on specific steps in the data collection jobs. The **Collect** parameter in the relevant jobs must be set to collect text analytics. A job is relevant if it collects data for the same indicators that are subject to text analysis. See [Create or schedule a data collection job](#).

Role required: pa_power_user or pa_admin

1. Navigate to **Text Analytics > Setup Fields**.
   - To create a new text analytics configuration, click **New**.
   - To edit an existing text analytics configuration, click the information icon in that row and select **Open record**. Clicking the indicator source name opens the record for that indicator source, not the text analytics configuration.

2. Select the **Indicator source** whose input text you want to analyze.

3. Unlock **Fields to analyze** and select the fields whose input text you want to analyze.
   You must select at least one field. Usually you want to include the **Short description** field.

4. Optional: Select **Use system stop words** to include the Zing stop words.
   Selected by default. The Zing global stop words apply to the indicator source. If you do not use the Zing stop words, you must select all stop words yourself.

5. Save the text index configuration.

   The Indicators related list appears at the bottom of the form.

6. In the **Indicators** list, click **Edit** and select the indicators to analyze from the slushbucket.

7. Run a relevant historical data collection job to collect initial data.
   - You may be able to run a job from this form, or you may have to run a historical data collection job. See the next topic for details.

**Collect initial text analytics data**

When you configure text analytics for an indicator source, no data is available until a relevant data collector job is run. If you have newly created a text analytics configuration, run a special collection job. If you have added indicators to an existing text analytics configuration, run a historical data collection job to collect only text analytics.

Role required: pa_power_user or admin
On the **Setup Fields** form, if the button is available next to **Save**, **Update**, and **Delete**, click **Run collection**.

This button launches a single-use historical job that collects only text indexes. It is available only when you create a text analytics configuration.

This job collects data for a period equal to the shortest period for which there is data for any of the indicators in the analysis. For example, if you are running text analysis on five indicators and you have one year of data for four of them but only four months of data for the fifth indicator, four months of text analytics are collected for all five indicators.

If you have added an indicator to an existing text analytics configuration, configure and run a historical data collection job.

a) Navigate to **Data collection > Jobs**.

b) Create or edit a historical data collection job as described in Create or schedule a data collection job, with the following characteristics:

- Set the **Collect** job parameter to **Text indexes only**.
- Set the **Run** job parameter to **On demand**.
- Set **Relative start**, **Relative start interval**, **Relative end**, and **Relative end interval** values that are appropriate for the indicators for which you are performing text analytics.
- Ensure that the indicators for which you are performing text analytics match the indicators for the collection job.

c) Execute the job.

Now that text analytics are configured and initial data is collected, you can create text analysis widgets for the selected indicators. Consider setting text analytics stop words first. Both these stop words and the Zing stop words can apply.

**Select text analytics stop words**

Select words to exclude from text analysis. You can exclude words at either the indicator source or the indicator level.

Role required: pa_analyst or pa_admin

Select stop words to apply either at the indicator source or at the indicator level. If you select stop words for an indicator, you can filter the scores to which the stop words apply by breakdown and breakdown element. If you select stop words for an indicator source, you exclude them from data collection, which results in a leaner index.

By default, the Zing global stop words apply in addition to the stop words you select in this form. You can disable this behavior in the text index configuration.

1. Navigate to **Text Analytics > Stop Words** and click **New**.
2. In the **Type** field, select either **Indicator** or **Indicator source**.

   If you specify an indicator, you can filter the text by one or two levels of breakdown.

   When specified on the indicator source, stop words are removed from data collection to keep the index lean. However, you cannot immediately bring these stop words back into the widget by removing them from the **Stopwords** field. They do not appear until the next data collection.

   Stop words that are specified on the indicator remain in the index. These stop words can be brought back into the widget immediately by removing them from the **Stopwords** list, but index size may affect performance.

3. Select either the **Indicator** or the **Indicator source** to which to apply the stop words.
4. Optional: To filter the text by a breakdown, select values in the **Breakdown** and first **Element** fields.
If you select a breakdown but not an element, the widget analyses only the text that is not associated with any element of that breakdown.

5. Optional: If you have selected a breakdown and you want to filter the text by a second breakdown, select values in the **2nd Breakdown** and **second Element** fields.

6. In the **Stopwords** field, enter a comma-separated list of words to exclude from the text analysis.

7. Click **Submit**.

**Create a text widget**

To visualize any patterns in user-entered text in an indicator, use a word cloud visualization in a text widget.

Text indexing must be configured for the relevant indicator source, and this configuration must include the relevant indicator.

Text analytics is available only with the licensed version of Performance Analytics.

**Note:** To view the dashboard, users must have the pa_viewer role or a role that contains pa_viewer.

Role required: pa_power_user or admin

The Text widget provides a word cloud for visualizing the frequency of words and phrases.
1. Navigate to Performance Analytics > Widgets and click New.
2. In the **Name** field, give the widget a name that reflects the information being displayed.

3. In the **Type** field, select **Text**.
   
   If you change the value of **Type** after you fill in other fields, those fields are cleared.
   
   **Word Cloud** is automatically selected as the **Visualization**.

4. In the **Indicator** field, select the main indicator for which you want to analyze text.

5. Optional: Fill in any of the following fields:

<table>
<thead>
<tr>
<th>Field</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Breakdown and Element</td>
<td>Only text that is associated with the specified element of the specified breakdown is analyzed. Select values for both <strong>Breakdown</strong> and <strong>Element</strong>. Otherwise, only text that is not associated with any element of the breakdown is shown.</td>
</tr>
<tr>
<td>2nd Breakdown and Element</td>
<td>Drill down to a second level of breakdown and element, if a first-level breakdown and element have been specified.</td>
</tr>
<tr>
<td>Follow element</td>
<td>Applies only when this widget is placed in a “breakdown dashboard.” Select this option for the widget to follow the element that the user selects interactively on the dashboard. See <strong>Using breakdowns on dashboards</strong>. Selecting this option removes the ability to set a second breakdown and element on the widget.</td>
</tr>
</tbody>
</table>

6. Optional: Set any of the display settings.

<table>
<thead>
<tr>
<th>Field</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Default field</td>
<td>If multiple fields are selected in the text index configuration, this field appears by default.</td>
</tr>
<tr>
<td>Cut-off</td>
<td>Minimum number of occurrences of a word for it to be included in the cloud.</td>
</tr>
<tr>
<td>Limit</td>
<td>Maximum number of words to show.</td>
</tr>
</tbody>
</table>

7. **Click** **Submit**.

   - Add the widget to a dashboard.
   - If you are an admin, give the pa_viewer role to users who need to view the widget.
   - Text analysis uses special steps in the data collection job. If no data is available for the widget, verify that the relevant data collection job has run and that the job collects text indexes. See **Collect initial text analytics data**.
   - Save keywords for filtering the word cloud.

**Save keywords for text analytics**

You can save keywords that will always filter a text analytics widget. You can save them directly on the widget in a dashboard, choosing from the words in the word cloud. Alternatively, you can create or edit a record of saved keywords.

Role required: pa_analyst or admin

To filter a word cloud by keywords, click the words in the cloud. You can save a list of the keywords, which will be used whenever someone views the widget. Each list of keywords applies to one breakdown and element combination for the indicator in one widget. In the following example, the word ‘battery’ has been specified as a keyword. If you click **Save**, all viewers will see this widget filtered by ‘battery.’ Anyone with the required roles can delete the saved keywords later.
Alternatively, you can create or edit the record where the keywords are saved. This approach does not restrict your selection to keywords that have already appeared in the word cloud.

1. Navigate to **Text Analytics > Keywords** and click **New**.
2. In the **Widget** field, specify the widget to which the keywords apply.
3. In the **Indicator** field, specify the indicator to which the keywords apply.
4. In the **Field** field, select the indicator field that the keywords apply to.
5. Optional: In the **Breakdown** and **Element** fields, you can filter the records to which the keywords apply by a breakdown element.
   - Specify both a breakdown and an element. You can filter to a second level by filling in the level 2 **Breakdown** and **Element** fields.
   - If you specify a breakdown and element combination, the keywords only apply when that combination is selected in the widget. If you do not specify a breakdown and element combination, the keywords apply for all breakdown and element combinations that do not have keywords selected specifically for them.
6. In the **Keywords** field, enter a comma-separated list of keywords.
7. Click **Submit**.

**Monitor a workflow with a workbench process widget**

A workbench process widget is a collection of indicators that tell a story, and that enables you to analyze multiple facets of multiple indicators on one screen without drilling down. This widget is useful when you want to monitor a process or service that has a workflow.

You choose the main indicators on the top of the widget. Optionally, each main indicator can have a unique set of supporting indicators.

The widget has four interconnected sections that dynamically update. For example, when you click a main indicator its score, trend, supporting indicators, and breakdown information appear. Click or select a date on any visualization and the entire widget displays data for that day.
The bottom section of the workbench process widget displays available breakdowns or collected records for the selected main or supporting indicator. Click the Breakdowns or Records tabs to display one or the other. If you select a supporting indicator that specifies an aggregate, such as the average age of open incidents, the Records tab is hidden.

Note: The pa_viewer role is required to view breakdown information in a workbench widget.

When you create a workbench widget, you choose only main and supporting indicators. The score, trend, and breakdown sections of widget are automatically configured and cannot be changed. However, you can change the order and appearance of indicators on the widget.
Create a workbench process widget
Create a workbench widget to monitor a process using multiple indicators.

- Familiarize yourself with the structure of the workbench widget
- Decide which main and supporting indicators to include
- Role required: pa_admin, pa_power_user, or admin

1. Navigate to Performance Analytics > Widgets and click New.
   A new widget record appears.
2. Name the widget.
3. In the Type field, select Workbench.
4. Right-click the form header and select Save.
   The Main Widget Indicators related list appears.
5. Add a main indicator to the workbench widget.
   Main indicators appear on the top of the widget. The maximum number of indicators you can add is specified in com.snc.pa.widget.max_widget_indicators. The default maximum number of widget indicators is seven.
   a) Click New in the Main Widget Indicators related list.
   b) Select an Indicator.
   c) Set the Order to define where the indicator appears (from let to right).
   d) Fill in other fields, as appropriate.

Additional indicator configuration options

<table>
<thead>
<tr>
<th>Field</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Breakdown and Element</td>
<td>A breakdown element filters the data that appears in the indicator. If you select a breakdown you must select an element.</td>
</tr>
<tr>
<td></td>
<td>For example, if your indicator is Number of open Incidents and you select Breakdown for State and Active for Element, only scores for incidents in the active state are included in the widget.</td>
</tr>
<tr>
<td>2nd Breakdown and Element</td>
<td>Adds a second breakdown element that filters the data that appears in indicator. If you select a 2nd breakdown you must select an element.</td>
</tr>
<tr>
<td></td>
<td>For example, imagine your indicator is Number of open incidents and the first breakdown filters for active state. You then select Category for 2nd Breakdown and Software for Element. The indicator will now display only scores for open incidents that are active and in the software category.</td>
</tr>
<tr>
<td>Time series</td>
<td>Adds the specified time period and aggregation to the widget's trend visualization.</td>
</tr>
<tr>
<td>Field</td>
<td>Description</td>
</tr>
<tr>
<td>------------------------</td>
<td>---------------------------------------------------------------------------------------------------------------------------------------------</td>
</tr>
<tr>
<td>Follow element</td>
<td>Specifies that a breakdown element applied to the dashboard where the widget is added also applies to the indicator.</td>
</tr>
<tr>
<td></td>
<td>If you specify a 2nd Breakdown, Follow element is ignored.</td>
</tr>
<tr>
<td>Followed breakdown</td>
<td>Specifies that only this breakdown applies to the indicator as a Follow element. All other breakdowns applied to a dashboard where the widget has been added will be ignored.</td>
</tr>
<tr>
<td></td>
<td>If you do not specify a Followed breakdown all breakdowns applied to the dashboard will apply to the indicator.</td>
</tr>
<tr>
<td>Label</td>
<td>Specifies the name of the indicator on the widget. If you do not specify a Label, the name of the indicator is used.</td>
</tr>
</tbody>
</table>

e) Right-click the form header and select **Save**. The Supporting Widget indicators list appears.

   When you click a main indicator, its supporting indicators appear in the middle of the widget.
   You can add an unlimited number of supporting indicators.
   a) Click **New** in the **Supporting Widget Indicators** related list.
   b) Select an **Indicator**.
   c) Set the **Order** to define where indicator appears (from left to right).
   d) Fill in other fields, as appropriate. You can configure supporting indicators the same way as main indicators. See step 5 for configuration options.
   e) Click **Submit** to return to the Main Indicator record.
   f) Repeat step 6 until you have added all supporting indicators.

7. Click **Update** to return to the widget record.
8. Repeat steps 5 - 7 until you have added all indicators.
9. Optional: Select one of the main indicators as the **Default indicator**.
   This default indicator appears automatically when a user views the widget. If you do not specify a default indicator, the widget displays the main indicator with the lowest **Order** value first.
10. Click **Update** to save the widget.

Review the widget to ensure that the new indicators are correct. If you have not already, add the widget to a dashboard to view it.

**Add widget indicators**
Add any number of secondary indicators to an existing time series or list widget.
The widget must exist. If you want to add indicators to a widget that you are creating, save the widget instead of submitting it. The form remains open and the Widget Indicators related list appears at the bottom.

Role required: pa_power_user or admin

When you create a time series widget, you associate it with a single, main indicator. If you want to compare this indicator to another indicator in the same widget, add the additional indicator to the existing widget. This procedure is necessary when you create a Stacked Column visualization for a time series.

When you create a list widget, you must either specify an indicator group or add widget indicators.

1. Either save a widget that you are creating, or open an existing widget for editing.
   You can open a widget either from Performance Analytics > Widgets or from the dashboard. For more information, see Edit a responsive dashboard.

2. Scroll to the bottom of the form and locate a related list with the label Widget Indicators.

3. Click New.

4. In the Indicator field, select a secondary indicator for the widget.
   Selecting too many indicators might make your widget difficult to read.

5. In the Chart type field, select a visualization for the indicator.
   Select a visualization that works well with the visualization of the primary indicator. For instance, show the primary indicator as columns and the secondary indicators as lines. If you are using a Stacked Column visualization for the primary indicator of a time series widget, set all secondary indicators to also use Stacked Column.

6. Optional: Fill in any of the following fields:

<table>
<thead>
<tr>
<th>Field</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Breakdown and Element</td>
<td>Only the scores that match the specified element of this breakdown are shown. Select values for both Breakdown and Element. Otherwise, only scores that are not associated with any element of the breakdown are shown.</td>
</tr>
<tr>
<td>2nd Breakdown and Element</td>
<td>Drill down to a second level of breakdown and element, if a first-level breakdown and element have been specified.</td>
</tr>
<tr>
<td>Time series</td>
<td>Runs a function on the indicator scores for a specific time period, such as a 7-day sum or average. For more information, see Time series aggregations in scorecards and widgets.</td>
</tr>
<tr>
<td>Follow element</td>
<td>Applies only when this widget is placed in a &quot;breakdown dashboard.&quot; Select this option for the widget to follow the element that the user selects interactively on the dashboard. See Using breakdowns on dashboards. Selecting this option removes the ability to set a second breakdown and element on the widget.</td>
</tr>
<tr>
<td>Followed breakdown</td>
<td>If you have breakdowns set in both the widget and the dashboard, select which breakdown the indicator will follow.</td>
</tr>
</tbody>
</table>
**Field** | **Description**  
---|---  
**Order** | Set which order this indicator appears, if the widget has several secondary indicators. Consider adding extra digits, such as 200 and 300 instead of 2 and 3. This way, if you later add more indicators, you only have to specify the order of the new indicators. You do not have to respecify the order of all secondary indicators.  

**2nd Y axis** | Add a Y-axis for this indicator. Only one secondary indicator Y-axis is displayed. If a second Y-axis is selected for several secondary indicators, only the axis for the indicator that originally came first in the order is shown.  

**Label** | Specifies a custom label for this indicator.

7. **Click Submit.**

To edit any of these settings later, go to the **Widget Indicators** list and click the information icon for the indicator, not the name.

**Set the on-click behavior of a widget**

You can configure what happens when a user clicks on a widget.

Role required: pa_power_user, pa_admin, or admin

By default, when a user clicks on a widget, the detailed scorecard for the widget indicator appears. You can configure a widget to direct users to a different URL instead.

1. **Navigate to Performance Analytics > Widgets.**
2. **Select the widget you want to configure.**
3. **In the On-click behaviors related list, click New** and create a new record.
   a) In the **Label** field, enter the text that appears for this option when a user clicks on the widget.
   b) In the **Type** field, select **URL**.
   c) In the **Value** field, enter the URL that you want to direct users to when they click on the widget.
    Only URLs relative to the instance URL are allowed. The value must begin with a / character, such as /incident.do.
   d) **Click Submit.**

**Create a color scheme for widget visualizations**

Create a color scheme to predefine and reuse a set of colors in Performance Analytics widgets.

Role required: pa_power_user or admin

1. **Navigate to Performance Analytics > Chart Color Schemes.**
2. **Click New.**
3. **Enter a descriptive Name.**
4. **Select colors in the Color 1 and Color 2 fields.**
A color scheme must have at least two colors. All other colors are optional.

5. Optional: Select up to 32 total colors to include in the color scheme.

6. Click Submit.

Select the color scheme in a new or edited Time Series or Breakdown widget. For an example, see the description of the Color Scheme field in Create a line visualization for a time series widget.

View widget statistics

You can view statistics about Performance Analytics widgets to help identify and resolve problems, such as if a widget is loading slowly on dashboards.

Role required: pa_power_user, pa_admin, or admin

1. Navigate to Performance Analytics > Widget Statistics.
2. Select the widget you want to view statistics for.
3. Review the following fields.

### Report Stats fields

<table>
<thead>
<tr>
<th>Field</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Widget</td>
<td>The widget that the statistics describe.</td>
</tr>
<tr>
<td>Number executions total</td>
<td>The total number of times the widget was loaded from the server.</td>
</tr>
<tr>
<td>Average execution duration</td>
<td>The average time it took to load the widget, in milliseconds, for all executions of this widget.</td>
</tr>
<tr>
<td>Recent number executions</td>
<td>The number of time the widget was recently loaded from the server.</td>
</tr>
<tr>
<td>Recent avg execution duration</td>
<td>The average time it took to load the widget, in milliseconds, for recent executions. The maximum number of recent executions is determined by the property glide.report.recent_executions_number.</td>
</tr>
<tr>
<td>Total executions duration</td>
<td>The total sum duration for all executions of the widget.</td>
</tr>
</tbody>
</table>

### Widget statistics properties

These properties control how widget statistics are tracked and maintained.

<table>
<thead>
<tr>
<th>Property</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>glide.report.recent_executions_number</td>
<td>The number of widget executions that are considered recent for the purpose of recent average duration calculations.</td>
</tr>
<tr>
<td></td>
<td>- Type: integer</td>
</tr>
<tr>
<td></td>
<td>- Default value: 25</td>
</tr>
<tr>
<td></td>
<td>- Location: Add a system property</td>
</tr>
</tbody>
</table>
Time series aggregations in scorecards and widgets

A time series aggregation consists of an aggregation, such as AVG or SUM, combined with a time series, such as By quarter. The frequency with which scores are collected for the indicator determines which time series are applicable. Some time series include data from partial collection periods.

Time series and associated indicator frequencies

When you select a time series aggregation, the frequency with which indicator scores are collected limits which time series you can choose. You cannot select a time series aggregation that is applied to scores more frequently than those scores are collected. For example, the By week SUM time series aggregation can apply to an indicator with a daily or weekly frequency. However, By week SUM cannot apply to an indicator with a monthly, quarterly, or yearly frequency.

The following table shows what period between score collection (the indicator frequency) is the longest allowed for a time series. The longest allowed frequency applies to a time series with any aggregation (AVG, SUM, or custom), and therefore only the time series are shown.

<table>
<thead>
<tr>
<th>Time series</th>
<th>Includes partial periods?</th>
<th>Longest indicator frequency</th>
</tr>
</thead>
<tbody>
<tr>
<td>Daily</td>
<td>No</td>
<td>Daily</td>
</tr>
<tr>
<td>28d running</td>
<td>No</td>
<td>Daily</td>
</tr>
<tr>
<td>30d running</td>
<td>No</td>
<td>Daily</td>
</tr>
<tr>
<td>7d running</td>
<td>No</td>
<td>Daily</td>
</tr>
<tr>
<td>Fiscal quarter to date</td>
<td>No</td>
<td>Monthly</td>
</tr>
<tr>
<td>Fiscal year to date</td>
<td>No</td>
<td>Quarterly</td>
</tr>
<tr>
<td>Month to date</td>
<td>No</td>
<td>Weekly</td>
</tr>
<tr>
<td>Quarter to date</td>
<td>No</td>
<td>Monthly</td>
</tr>
<tr>
<td>Week to date</td>
<td>No</td>
<td>Daily</td>
</tr>
<tr>
<td>Year to date</td>
<td>No</td>
<td>Quarterly</td>
</tr>
<tr>
<td>12m running</td>
<td>No</td>
<td>Monthly</td>
</tr>
<tr>
<td>3m running</td>
<td>No</td>
<td>Monthly</td>
</tr>
<tr>
<td>6m running</td>
<td>No</td>
<td>Monthly</td>
</tr>
<tr>
<td>By month</td>
<td>No</td>
<td>Monthly</td>
</tr>
<tr>
<td>By month +</td>
<td>Yes</td>
<td>Monthly</td>
</tr>
<tr>
<td>4q running</td>
<td>No</td>
<td>Quarterly</td>
</tr>
<tr>
<td>By fiscal quarter</td>
<td>No</td>
<td>Quarterly</td>
</tr>
<tr>
<td>By fiscal quarter +</td>
<td>Yes</td>
<td>Quarterly</td>
</tr>
<tr>
<td>By quarter</td>
<td>No</td>
<td>Quarterly</td>
</tr>
<tr>
<td>By quarter +</td>
<td>Yes</td>
<td>Quarterly</td>
</tr>
<tr>
<td>13w running</td>
<td>No</td>
<td>Weekly</td>
</tr>
</tbody>
</table>
### Time series

<table>
<thead>
<tr>
<th>Time series</th>
<th>Includes partial periods?</th>
<th>Longest indicator frequency</th>
</tr>
</thead>
<tbody>
<tr>
<td>4w running</td>
<td>No</td>
<td>Weekly</td>
</tr>
<tr>
<td>By week</td>
<td>No</td>
<td>Weekly</td>
</tr>
<tr>
<td>By week +</td>
<td>Yes</td>
<td>Weekly</td>
</tr>
<tr>
<td>By fiscal year</td>
<td>No</td>
<td>Yearly</td>
</tr>
<tr>
<td>By fiscal year +</td>
<td>Yes</td>
<td>Yearly</td>
</tr>
<tr>
<td>By year</td>
<td>No</td>
<td>Yearly</td>
</tr>
<tr>
<td>By year +</td>
<td>Yes</td>
<td>Yearly</td>
</tr>
</tbody>
</table>

### Yearly aggregations

**By Year** and **Year to Date** aggregations are not available for indicators with daily score collection.

### Partial periods

Some time series include indicator scores from incomplete collection periods. These periods can include the current period and the period from the beginning of data collection. A plus sign in the name, +, identifies these time series.

A time series that does not include data from partial periods must have data from the beginning and the end of the period. For example, a **By month SUM** time series aggregation requires scores from the start and the end of the month to be present. Otherwise that month is not included. A time series aggregation that includes data from partial periods, such as **By month SUM +**, needs only data from one day in the period.

**Warning:** Partial periods can skew the results of certain aggregations, such as averages.

### Default time series definitions

Performance Analytics comes with default SUM, AVG, and other time series definitions. Do not alter these definitions.

**Warning:** Any changes to time series definitions can have unexpected results.

### Using breakdowns on dashboards

You can add breakdown sources to a dashboard. Users then can select a breakdown element to filter data in the Performance Analytics widgets that have been added to the dashboard.

For example, a dashboard that uses the breakdown source **Incident.Category** enables users to select a category from the list. After this selection, all the Performance Analytics widgets on the dashboard that are configured to follow dashboard elements are filtered by that category value.

**Note:**

For the element to apply to a Performance Analytics widget on the dashboard, the **Follow element** option must be selected in that widget configuration.
Pivot widgets (Heatmaps) do not support the **Follow Element** function. Dashboard breakdowns cannot apply to these widgets.
Open incidents by age

Breakdown dashboard by Category

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Add a breakdown to a dashboard

To enable users to filter Performance Analytics widgets on a dashboard by breakdown element, add breakdown sources to the dashboard.

Role required: pa_admin, pa_power_user, or admin

After you add breakdown sources to a dashboard, all enabled Performance Analytics widgets can be filtered by the elements of those breakdown sources. To enable a widget, select **Follow element** in that widget configuration. To change this setting while editing the dashboard, click the pencil at the top right of the widget. The Widget Configuration form appears and you can change the setting.

If you did not select **Follow element** for a widget, that widget does not follow a breakdown applied to the dashboard.

If the dashboard uses a breakdown source which is used by more than one breakdown, set **Follow breakdown** in the widget configurations and specify which breakdown the widget will use. For example, the breakdowns Opened by, Requested by, Requested for, and Assigned to use the Users.Active breakdown source. If you add the Users.Active source to a dashboard, set **Follow breakdown** and select the relevant breakdown for each of the widgets that you have on that dashboard. This option does not affect the ability to filter by elements of any of the other breakdown sources you have configured the dashboard to use.

1. Navigate to the relevant list of dashboards.
2. Open the dashboard that you want to add a breakdown source to.
3. Click **Edit** in the Breakdown Source related list.
4. Move the breakdown sources you want to apply to the **Breakdown Source List**.
5. Click **Save**.

The breakdown sources are applied to the dashboard. Users can select elements from these sources on the dashboard.

Showing breakdown relations

A breakdown widget with the Scorecard visualization can display related breakdown information. The widget must be on a breakdown dashboard, and that dashboard must include the breakdown sources of the related breakdowns.

Consider an indicator such as Number of open incidents. This indicator uses the Assignment Group breakdown. The Assignment Group breakdown has three breakdown relations between its own elements. For an element of Assignment Group, these relations are:

- A Parent Group, whose Sys ID value is in the Parent field of the selected element.
- Child Groups, consisting of other Assignment Group elements whose Parent field value is the Sys ID value of the selected element.
- Sibling Groups, consisting of other Assignment Group elements who share the same value in the Parent field.
Now consider a widget that displays the Number of open incidents indicator scores grouped by Assignment Group. You set the widget to follow an element selected in a breakdown dashboard. Now you must select which of the breakdown relations to follow.
Setting up widget to show elements by breakdown relation

You select Child Groups. Now you put the widget in a breakdown dashboard that uses the Groups breakdown source. Groups is the breakdown source of the Assignment Group breakdown, so on the dashboard you can select any of the elements of Assignment Group. You select ACME Support, and the widget shows the groups that have ACME Support as a parent.
A widget on a breakdown dashboard showing a breakdown relation

If you edit the widget to display the Sibling Groups instead of the Child Group and select ACME Support on the dashboard again, you see the Assignment Groups with the same parent as ACME Support.
Forecasting Performance Analytics data

Performance Analytics enables you to forecast future data based on existing trends. You can forecast data on Performance Analytics time series widgets and detailed scorecards. Forecast data appears as a dotted line.

The number of data points included in the forecast depends on the indicator frequency, and the number of Periods to forecast configured on the indicator. A period is a set number of data points based on the indicator frequency.

Note: If you select a time series aggregation, the forecast is based on the frequency of the aggregation instead of the frequency of the indicator. For example, the 7d running SUM aggregation is a daily frequency, whereas the By week SUM aggregation is a weekly frequency.
### Forecast periods

<table>
<thead>
<tr>
<th>Score frequency</th>
<th>Number of data points per period</th>
<th>Total period length</th>
</tr>
</thead>
<tbody>
<tr>
<td>Daily</td>
<td>7</td>
<td>1 Week</td>
</tr>
<tr>
<td>Weekly</td>
<td>13</td>
<td>1 Quarter</td>
</tr>
<tr>
<td>Bi Weekly</td>
<td>6</td>
<td>1 Quarter</td>
</tr>
<tr>
<td>Four Weekly</td>
<td>13</td>
<td>1 Year</td>
</tr>
<tr>
<td>Monthly</td>
<td>12</td>
<td>1 Year</td>
</tr>
<tr>
<td>Bi Monthly</td>
<td>6</td>
<td>1 Year</td>
</tr>
<tr>
<td>Quarterly</td>
<td>4</td>
<td>1 Year</td>
</tr>
<tr>
<td>Fiscal Quarterly</td>
<td>4</td>
<td>1 Year</td>
</tr>
<tr>
<td>Half Yearly</td>
<td>2</td>
<td>1 Year</td>
</tr>
<tr>
<td>Yearly</td>
<td>4</td>
<td>4 Years</td>
</tr>
<tr>
<td>Fiscal Yearly</td>
<td>4</td>
<td>4 Years</td>
</tr>
</tbody>
</table>

### Displaying the forecast

To display the forecast on a time series widget, select the **Show forecast** check box in the **Display Settings** section of the Widgets form.

To display the forecast on a detailed scorecard, click the chart settings icon and enable the **Forecast** option.

### Forecast methods

Several different methods are available for forecasting Performance Analytics data.

<table>
<thead>
<tr>
<th>Method</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Seasonal Trend Loess (STL)</td>
<td>Generates a seasonal forecast based on a best-fit function, trend data, and a filter to exclude noise from random variation in the data. A ‘season’ for this analysis is one period.</td>
</tr>
<tr>
<td>Naive Seasonal</td>
<td>Generates a seasonal forecast that is a copy of the previous season of data. This method does not take into account trend data beyond the previous season, such as increasing scores season over season. A ‘season’ for this analysis is one period.</td>
</tr>
</tbody>
</table>
**Automatic method selection**

If the indicator **Forecast method used** is **Auto**, the instance evaluates each of the available forecast methods against your historical data to determine the method that generates the best fit trend. This evaluation is performed each time the forecast is displayed, so collecting additional scores can alter which forecast method is used.

To determine the best fit forecast method, the instance generates forecasts using each forecast method with your historical data, then compares those forecasts with the latest data based on how far ahead you want to forecast.

For example, if you configure an indicator with a daily frequency to forecast ahead two periods, the instance generates forecasts using each method for your historical data that is older than two weeks, then compares those forecasts against the latest two weeks of data. The forecast that most closely fits the latest two weeks of data is then recalculated using the entire data set and displayed.

**Forecasting and targets**

When both forecasting is enabled for an indicator and there is a global target defined, the forecast shows when the target will be reached.

Additionally, the instance sends a notification 14 days before a target is reached. You can control how many days ahead the notification is sent by setting the `pa.job.forecast.target.days_to_check` property.

This functionality is available only for global targets. Thresholds and personal targets do not interact with forecasts.

**Add in-form analytics to a form**

Create a UI action that enables users to access contextual in-form analytics.

Role required: `pa_power_user`, `pa_admin`, or `admin`. In addition to the Performance Analytics roles, you must be able to create records on the UI Actions (sys_ui_action) table.

Before adding in-form analytics for a specific table and field, a breakdown dashboard that uses that table and field as a breakdown source must exist.

Performance Analytics must be active to create in-form analytics.

In-form analytics integrate performance insights into forms so that users can access important metrics in context, and make better decisions. A dashboard with relevant visualizations appears as a pop-up when a user clicks the Analytics icon next to a field. For example, in-form analytics on an incident form show the expected to time close that incident based on historical data, enabling support engineers to set appropriate customer expectations.

Navigate to **Performance Analytics > In-Form Analytics** and create a new record (see table for field descriptions).
In-form analytics fields

<table>
<thead>
<tr>
<th>Field</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Name</td>
<td>A descriptive name for the UI action.</td>
</tr>
<tr>
<td>Table</td>
<td>The table to display analytics for. The in-page icon appears on forms for this table.</td>
</tr>
<tr>
<td>Field</td>
<td>The field that the in-page icon appears next to. The analytics are broken down based on the value of this field.</td>
</tr>
<tr>
<td>Dashboard</td>
<td>The breakdown dashboard to display. The dashboard must use the selected Table and Field as a breakdown source.</td>
</tr>
<tr>
<td>Icon</td>
<td>The icon to display next to the selected field on the form.</td>
</tr>
<tr>
<td>Icon color</td>
<td>The color of the form icon.</td>
</tr>
<tr>
<td>Create in-form link</td>
<td>Display a related link on the form in addition to the icon when this check box is selected. The related link directs to the same dashboard as the icon.</td>
</tr>
</tbody>
</table>

Performance Analytics widgets on Service Portal

You can show Performance Analytics indicators and breakdowns using Service Portal.

When you edit a portal, add the Performance Analytics widget. Use the widget options to select an existing Performance Analytics widget to show on the portal and whether to show its title.
Performance Analytics widget

Note: The visibility of some widgets on the Service Portal depends on the roles that are assigned to the viewer. For more details, see the documentation for the specific widget type.

Activate the Performance Analytics and Reporting — Service Portal Widgets plugin

You can activate the Performance Analytics and Reporting - Service Portal Widgets plugin (com.snc.pa.sp.widget) if you have the admin role. This plugin includes demo data and activates related plugins if they are not already active.

Role required: admin

The Service Portal Widget plugin activates these related plugins if they are not already active.

Plugins for Performance Analytics and Reporting — Service Portal Widgets

<table>
<thead>
<tr>
<th>Plugin</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Service Portal (com.glide.service-portal)</td>
<td>Core Service Portal functionality.</td>
</tr>
</tbody>
</table>

1. Navigate to System Definition > Plugins.
2. Find and click the plugin name.
3. On the System Plugin form, review the plugin details and then click the **Activate/Upgrade** related link.
   
   If the plugin depends on other plugins, these plugins are listed along with their activation status.
   
   If the plugin has optional features that depend on other plugins, those plugins are listed under **Some files will not be loaded because these plugins are inactive**. The optional features are not installed until the listed plugins are installed (before or after the installation of the current plugin).

4. Optional: If available, select the **Load demo data** check box.
   
   Some plugins include demo data—Sample records that are designed to illustrate plugin features for common use cases. Loading demo data is a good practice when you first activate the plugin on a development or test instance.
   
   You can also load demo data after the plugin is activated by clicking the **Load Demo Data Only** related link on the System Plugin form.

5. Click **Activate**.

**Performance Analytics data architecture**

Define key metrics and data structure to generate scores.

**Performance Analytics indicators**

Indicators define a performance measurement taken at regular intervals of a business service, an activity, or organizational behavior. These performance measurements result in a series of **indicator scores** over time.

The following are some key characteristics of the Business Process indicator:

- Indicator scores can be generated automatically from a set of records defined in an **indicator source**, entered manually, or calculated from other indicators.
- Indicator scores can be viewed or analyzed in generated scorecards or presented, via **widgets**, on dashboards.

**Set up indicators**

Create an indicator that is based on an indicator source or that uses manually entered scores.

You can also create an indicator based on a formula that uses existing indicators.

**Indicator sources**

Indicator sources define filtered sets of records from a facts table to evaluate when collecting indicator scores.

An indicator source configuration specifies a table, such as incident, and it specifies the frequency with which to collect data from that table. Indicator sources can also include filter conditions to limit the included records. Multiple indicators can use the same indicator source.

Typically, an indicator tracks the situation on a certain date. The indicator source conditions should include a date-related filter, such as **(Opened)(on)(Today)**. Indicators collected less frequently might specify a larger date range, such as **(Closed)(on)(This month)**.

Create indicator sources carefully. Since multiple indicators may be linked to an indicator source, it is not easy to change the indicator source after you created it.
Create an indicator source
Create an indicator source to define the set of records to evaluate when collecting indicator scores.

Look at the list of indicator sources, for these reasons:

- An indicator source that meets your requirements may already exist. To help maintain your instance, you should not create duplicate indicator sources.
- If you do need to create an indicator source, ensure that you are giving it a unique name. Giving the same name to different indicator sources can be confusing.

Role required: pa_data_collector or admin

1. Navigate to Performance Analytics > Indicator Sources and click New.
2. Enter a unique Name by which you can easily see what the indicator source is used for, such as Incidents.Open.
3. Add a detailed Description to help others understand the use and purpose of this indicator source and to help them avoid creating duplicates.
4. In the Valid for Frequency field, select how often to collect the scores for the indicator source, such as Daily, Weekly, or Bi-weekly.
   Indicators based on this indicator source use the Valid for frequency value as the indicator Frequency. The frequency of the data collection job for the indicator should match this value.
   If you are uncertain about the frequency to set, base the frequency on your business cycle.
5. Select a facts table, either directly or by reusing a report source:

<table>
<thead>
<tr>
<th>Field</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Facts table</td>
<td>Specify the facts table and any conditions for filtering the records of that table. You can specify a database view as the facts table.</td>
</tr>
<tr>
<td>Report source</td>
<td>Specify an existing report source to reuse. A report source specifies a facts table and filtering conditions.</td>
</tr>
<tr>
<td></td>
<td>If the report source changes, a warning appears when you view the indicator source to inform you about the change. To update the indicator source, click the refresh button next to the Report source field.</td>
</tr>
</tbody>
</table>

6. If you select a facts table directly, add Conditions that must be fulfilled before data is included in the subset.
   For example, set the conditions (Active) (is) (true) or (Created) (at or before) (date). Date fields are often used in conditions for time stamping. Any records that match the conditions are shown immediately.
   Due to the reusability of indicator sources, use only high-level criteria to define indicator source conditions. Use the advanced filters on individual indicators to go deeper into the data. Indicator source conditions on text fields are not case-sensitive.
7. Click Submit.

Note: Indicator sources must be created before you can create an indicator.

Warning: Performance Analytics does not support rotated tables. If you select a rotated table as your facts table, data collection will not be accurate. For more information about rotated tables in general, see Table rotation.
The following settings create an indicator source that collects new incidents daily:

- **Name**: Incidents.New
- **Frequency**: Daily
- **Facts table**: Incident [incident]
- **Condition**: [Opened] [on] [Today]
After you save or submit an indicator source, a related list is available in which you can define Performance Analytics text index configurations. These configurations are used for creating text widgets with word clouds. For more information, see *Set up text analytics*.

If you are reusing a report source and the report source changes, a warning appears when you view the indicator source to inform you about the change. You can update the indicator source to match by clicking the Update report source related link or the refresh button next to the Report source field on the Indicator Source form.

The read-only Report source updated at field displays the last time the report source was updated. This date and time always appear in the UTC timezone.

Use a database view in an indicator source
You can select a database view as the facts table in an indicator source. Database views enable you to combine data from tables in your ServiceNow instance that are not connected by default.

By joining tables in a database view, you can easily access them by calling up the view, and then select fields from any of the tables included in the view. For example, if you want to report on the number of SLAs breached, you need fields from both the SLA and the Incident tables.

If you select a database view as the facts table for an indicator source, provide additional configuration in the Records view section of the Indicator Source form.

<table>
<thead>
<tr>
<th>Option</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>View Table</td>
<td>Select the table to collect records from, for example, incident.</td>
</tr>
<tr>
<td>List View</td>
<td>Select the list view used to display collected record sets. Default view is suggested, but you can select any defined view, such as Self Service or Mobile.</td>
</tr>
</tbody>
</table>

Create an indicator and related records
You can quickly create a Performance Analytics indicator and breakdowns, widgets, and data collection jobs for that indicator.

Role required: pa_contributor, pa_data_collector, pa_power_user, or pa_admin

Ensure that there is at least one indicator source and a data collection job for the indicator source facts table.

These instructions are for using a wizard to create a simple automated indicator quickly. If you need access to the full range of indicator parameters, see *Create an automated indicator*.

1. Navigate to Performance Analytics > Indicators > Create New.
2. Enter an Indicator name.
3. Optional: Specify any other descriptive values for the indicator, such as the Direction of the chart, the Unit of measurement for numerical values, or the indicator Group.
4. Click Next.
5. Select an Indicator source.
6. Select an Aggregate, such as Count or Average.
   - If you select an aggregate other than Count, you must specify a Field or Script to use when performing aggregate calculations. You can perform aggregate operations using fields from the indicator source facts table.
7. Optional: Select any additional filtering conditions to filter the indicator data. This filter is applied in addition to any filter defined on the indicator source record.
8. Click Next.
9. Select the breakdowns you want to apply to this indicator. Clear the check box for any breakdowns you do not want to apply.
10. Click Next.
11. Optional: Select the data collection Job you want to use to populate the indicator data.
   Indicator data is populated only by data collection jobs. If an indicator has no associated
   collection job, the indicator will not contain any data.

12. Optional: Select Collect data from the past and a date range to collect historical data.
    If you choose to collect historical data, a new collection job is created and run once to
    populate the historical data.

13. Click Next.

14. Optional: Select any widgets you want to create to display the indicator data.
    You can specify widget values such as the Time Series or add the widget to a dashboard tab.

15. Click Next.

16. Review the changes, then click Apply.
    The indicator is created and linked to the selected indicator source, breakdowns, and data
    collection job. Any widgets associated with the indicator are created and added to the
    specified dashboard tab.

17. Optional: Click Create another indicator to restart the process with a new indicator.

If the data collection job is configured to collect historical data, a temporary data collection job
with a Run value of Once is created. You can delete this job record after the job runs.

Indicator creation widget options
There are several options for creating widgets to display the indicator data when creating an
indicator and related records.

<table>
<thead>
<tr>
<th>Field</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Time series widget</td>
<td>Select this check box to create a time series widget to display the indicator data.</td>
</tr>
<tr>
<td>Time series</td>
<td>Select the time series to use when determining what data to display.</td>
</tr>
<tr>
<td>Visualization</td>
<td>Select the chart type to use to display the data, such as Line or Column.</td>
</tr>
<tr>
<td>Put the widgets on a new tab on dashboard</td>
<td>Select a dashboard you want to add this widget to. If you do not select a dashboard, a widget record is created but is not added to any dashboard.</td>
</tr>
<tr>
<td>New tab name</td>
<td>Enter a name for the new tab created to display this widget. This field is required if you select a dashboard.</td>
</tr>
<tr>
<td>Latest score widget</td>
<td>Select the check box to create a score widget with a Visualization value of Latest Score to display the indicator data.</td>
</tr>
<tr>
<td>Time series</td>
<td>Select the time series to use when determining the score.</td>
</tr>
<tr>
<td>Periods back</td>
<td>Select the number of periods to compare the score with. For example, if the Time series is By week SUM, enter a Periods back value of 4 to compare the current score with scores from the past 4 weeks.</td>
</tr>
</tbody>
</table>
Create an automated indicator

To save scores from a table according to a regular frequency, create an automated indicator.

Role required: pa_admin, pa_power_user, and pa_data_collector

An automated indicator is based on an indicator source. The indicator source specifies a table and a frequency at which scores from this table are saved. After you select the indicator source and specify other properties, choose scheduled jobs to collect data for the indicator.

This form provides all the many options for creating an automated indicator. To create a simple automated indicator quickly, see Create an indicator and related records.

**Note:** You must have a license for Performance Analytics to create indicators.

1. Navigate to **Performance Analytics > Indicators > Automated Indicators** and click **New**.
2. In the **Name** field, give the indicator a descriptive name, such as Number of Critical Incidents.
3. Select the indicator source.
   a) Optional: In the **Frequency** field, filter the selection of indicator sources by their frequency of data collection.
      The frequency of the indicator is set automatically based on the frequency of the selected indicator source, such as **Daily**, **Weekly**, or **Monthly**. Filling in this field limits the list of indicator sources to the ones whose frequency matches the field value. This field is hidden after you select the indicator source.
   b) Scroll to the **Source** tab and select an **Indicator Source**.
      Typing a partial name in the field filters the list of available indicator sources accordingly.
4. In the **Aggregate** field, select the aggregate function to apply when calculating the indicator on the indicator source.
   **Count** counts the number of records. **Count distinct** counts the number of unique values rather than the total number of records. For example, if the name of a user appears more than once in a list, the user is only counted once. Other choices perform the specified aggregate operation, such as summing or averaging the values in a field across records.
5. Optional: If you prefer that the score of this indicator increases or decreases over time, select **Maximize** or **Minimize** in the **Direction** field.

Many analytical tools and graphic displays use this **Direction** with this indicator.

<table>
<thead>
<tr>
<th>Value</th>
<th>Use case</th>
</tr>
</thead>
<tbody>
<tr>
<td>Maximize</td>
<td>Select if an increase in this indicator score is desired. For example, consider selecting <strong>Maximize</strong> for an indicator that shows revenue. Analytic tools and graphic elements, such as those in scorecards, reflect that an increase in this indicator score is good and a decrease is bad.</td>
</tr>
<tr>
<td>Value</td>
<td>Use case</td>
</tr>
<tr>
<td>---------</td>
<td>--------------------------------------------------------------------------</td>
</tr>
<tr>
<td>Minimize</td>
<td>Select if a decrease in this indicator score is desired. For example, consider selecting Minimize for an indicator that shows costs. Analytic tools and graphic elements, such as those in scorecards, reflect that a decrease in this indicator score is good and an increase is bad.</td>
</tr>
<tr>
<td>None</td>
<td>Select if the direction of change in this score does not matter to your business.</td>
</tr>
</tbody>
</table>

6. Optional: Specify any of the remaining indicator properties:

Other property fields

<table>
<thead>
<tr>
<th>Field</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Unit</td>
<td>The unit of measurement for the indicator score, such as number, days, or percentages.</td>
</tr>
<tr>
<td>Precision</td>
<td>The number of digits behind the decimal separator. For indicator scores in the thousands and millions, the score is displayed as the number of thousands or millions with a k or an M, respectively. For example, a score of 612,875 with a precision of 0 is rendered as 613K. A score of 8,546,937 with a precision of 1 is rendered as 8.5M. For more information, see Rounding and precision in indicators.</td>
</tr>
<tr>
<td>Key</td>
<td>Check box to indicate if the indicator is a key metric for the process being monitored. Used only to filter the list of scorecards in Performance Analytics &gt; Scorecards.</td>
</tr>
</tbody>
</table>

7. In the Source tab, complete any remaining fields. Other than the Collect Records checkbox, these fields are available only if Aggregate is not set to Count.

Optional Source tab fields

<table>
<thead>
<tr>
<th>Field</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Collect records</td>
<td>Check box to indicate if the individual records sys_ids are stored when the indicator is collected. Selecting this check box enables you to drill down to those details in the scorecard and widgets. When available, collected records appear on the Records tab. This option must be selected for the main indicator of a Spotlight group. Otherwise, the Spotlight group is not able to evaluate snapshots of records. For more information, see Collect Spotlight scores.</td>
</tr>
<tr>
<td>Field</td>
<td>Description</td>
</tr>
<tr>
<td>--------------</td>
<td>---------------------------------------------------------------------------------------------------------------------------------------------</td>
</tr>
<tr>
<td>Scripted</td>
<td>A check box to indicate if the value should be aggregated based on a script. Clear the <strong>Scripted</strong> check box to aggregate the values in a field.</td>
</tr>
<tr>
<td>Field</td>
<td>The field to perform the aggregate operation on if a script is not used. You can select only numerical fields, including duration, time, and currency fields, when the <strong>Aggregate</strong> is any value other than <strong>Count</strong> or <strong>Count distinct</strong>.</td>
</tr>
<tr>
<td>Script</td>
<td>Select a script or create a new script for the aggregation. This option is available only if the <strong>Scripted</strong> check box is selected.</td>
</tr>
<tr>
<td></td>
<td>A script is used to add information to a record set that is not stored in the table. This additional, virtual attribute can be used in an indicator to base an aggregation on, or as an attribute to classify scores per bucket. The elements of the breakdown source are not stored in a column in the facts table. The script adds a virtual column and adds an element value to each record. For more information, see <em>Scripting in Performance Analytics</em>.</td>
</tr>
<tr>
<td>Value when nil</td>
<td>The value that is inserted as the score when no value is collected. This value applies only to the indicator score, it does not impact scores for breakdown elements.</td>
</tr>
</tbody>
</table>

8. Optional: In the **Additional Conditions** tab, add conditions to limit the set of records that the indicator evaluates.

   The conditions in the indicator apply in addition to the conditions in the indicator source.

   However, the following operators are not supported on indicators, and so use them only on indicator sources:
   - keywords
   - is same
   - is different
   - greater than field
   - less than field
   - greater than or is field
   - less than or is field
   - is one of
   - is not one of

   are not supported for indicators. You can use these operators on the indicator source conditions instead.

9. In the **Access control** tab, set whether to publish this indicator to a scorecard, and whether to limit the visibility of the indicator by user, group, or role.

   The scorecard enables analysis of the indicator through graphics.

10. Optional: In the **Other** tab, set various miscellaneous properties.
### 'Other' tab fields

<table>
<thead>
<tr>
<th>Field</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Default time series</td>
<td>A predefined analytical function, like a 7-days running average, to display the indicator instead of showing the actual values of the indicator.</td>
</tr>
<tr>
<td>Live group profile</td>
<td>Live group profile that indicates the live group where the indicator scores are published.</td>
</tr>
<tr>
<td>Order</td>
<td>Number indicating the order in which scorecards are displayed. Indicators with the lowest value are displayed at the top of the scorecard list. If no values are provided in the Order field, scorecards are displayed from a to z using the Name field. To use the order field, you must enter order numbers for all indicators. If you put in numbers for only a few indicators, the order in which scorecards are displayed reverts to a to z.</td>
</tr>
<tr>
<td>Default chart type</td>
<td>Set a default chart type (line, column, spline, or area) for this indicator. When opening the detailed scorecard for the first time, the default chart type is used. If the chart type is changed in the detailed scorecard, that preference is remembered.</td>
</tr>
<tr>
<td>Render continuous lines</td>
<td>When selected, scorecards displaying this indicator show unbroken data lines, even when there is no data for a specific date. This behavior may be useful when displaying data sets with varied starting dates or data that is not regularly updated, such as stock information.</td>
</tr>
<tr>
<td>Show real-time score</td>
<td>When selected, scorecards displaying this indicator show the score in real time, as well as the current state of associated records. Clear this check box when indicator data is not available in real time, such as in an integration that uses data from a third-party source.</td>
</tr>
<tr>
<td>Show delta</td>
<td>When selected, enables reporting of historic records when viewing this indicator on a detailed scorecard. You can filter the data to display only the currently data, only the historical data, or the data shared between both sets.</td>
</tr>
</tbody>
</table>

11. Optional: In the **Collect breakdown matrix fields** tab, you can enable second-level breakdowns for the indicator, such as Open Incidents by Category by Priority. Enabling second-level breakdowns can significantly impact performance.

12. Optional: In the **Collection periods** tab, override the properties that set the maximum number of periods prior to today for which scores and snapshots are collected and kept. To see the properties that you would override, go to **Performance Analytics > System > Properties**.
13. Optional: In the Forecasting tab, set the forecast method, the number of data collection periods to forecast, and the amount of historical data to base the forecast on. For more information, see Forecasting Performance Analytics data.

Add or remove breakdowns in an automated indicator
Add an existing breakdown to an automated indicator to group and filter indicator scores based on the breakdown.
Role required: pa_admin, pa_power_user, or admin
1. Open an existing automated indicator.
2. In the Breakdowns related list, click Edit.
3. Optional: Use Add Filter and Run Filter to limit the selection of breakdowns.
4. Select one or more breakdowns in the Collections or Breakdowns List.
5. Use the arrow buttons to move the breakdowns to the other list.
6. Click Save.

Exclude a breakdown from the breakdown matrix
Exclude certain combinations of breakdowns by defining a breakdown exclusion matrix.
Role required: pa_admin, pa_power_user, or admin
Sometimes, not all breakdown combinations give useful information. For example, the combination (Country, Region) will give the same scores as the breakdown Country. You can prevent the instance from collecting data for these invalid combinations with breakdown matrix exclusions. These exclusions are not shown in the detailed scorecard or in the scoresheet and cannot be selected when creating widgets.

Exclude breakdown

1. Open an existing automated indicator.
2. In the Breakdown matrix exclusion related list, click New.
3. In the Breakdown and 2nd Breakdown fields, select the two breakdowns whose combination you want to exclude.
The order in which you specify the breakdowns does not matter. All combinations of the two breakdowns are excluded.
4. Click Submit.

Edit a job for the indicator
Add a data collection job to an indicator to collect scores for that indicator.
Role required: pa_admin, pa_power_user, or admin
1. Open an existing automated indicator.
2. In the Jobs related list, click Edit.
3. Optional: Use Add Filter and Run Filter to limit the selection of jobs.
4. Select one or more jobs in the Collections or Jobs List.
5. Use the arrow buttons to move the jobs to the other list.
6. Click Save.

Create a manual indicator
Create a manual indicator to enter indicator scores manually. Manual indicators are typically used for data that cannot be retrieved from the ServiceNow instance because it comes from an outside system, such as customer data from a third-party sales system.

Role required: pa_admin, pa_power_user, or admin

Manual indicators are not associated with an indicator source. Scores for manual indicators are not generated automatically by a data collection job. Instead, populate these indicators by adding scores manually or by importing data.

```
Note: You must have a license for Performance Analytics to create indicators.
```

- To create a manual indicator, navigate to Performance Analytics > Indicators > Manual Indicators.

You can assign users as contributors for each manual indicator. Users with the pa_admin, pa_power_user or pa_contributor role can view the scoresheet and select which users are allowed to contribute to each indicator.

```
Note: The frequency for a manual indicator specifies how to visualize its data. For example, if you set the data points per day or per month in the charts, the setting also affects the scoresheet, so it determines whether you can enter daily or monthly values.
```

Create a formula indicator
Create a formula indicator to use the historic data of other indicators and analytical functions to produce a computed score.

Role required: pa_admin, pa_power_user, or admin

Formulas are often used to:

- Calculate ratios and percentages.
- Combine data from different applications.
- Build predictive indicators based on historic performance.

```
Important: Formula indicator scores are calculated when a user views the indicator on a dashboard or the Detailed Scorecard.
```

```
Note: You must have a license for Performance Analytics to create indicators.
```

1. Navigate to Performance Analytics > Formula Indicators.
2. In the Formula section of the Indicators form, click the Browse for an indicator link.
3. Select an Indicator to display.
Note: You cannot delete any indicators, such as automated indicators, that are used in a formula. You must change or delete the formula indicator before you can delete any indicators used in the formula.

4. Optional: Select a Breakdown and breakdown Element to filter the indicator data. You can select an additional breakdown and breakdown element to further filter the data.

5. Optional: Select a Default time series to use when aggregating the data.

6. Optional: Select the Apply time series to result check box.

   When selected, the indicator calculates the formula first, then applies the time series calculation to the result. For example, when calculating the weekly average incident resolution time using the formula \( \frac{\text{Total time to resolve incidents}}{\text{total incidents resolved}} \), the formula first calculates the average incident resolution time for each day, then the average of those times. Each day is given equal weight, leading to an unweighted average.

   When cleared, the indicator applies the time series to each component individually before calculating the score. Using the average incident resolution time example, clearing the check box results in a weighted average. The formula first calculates the weekly sum of the total time to resolve incidents and the weekly total number of incidents, then uses those values to calculate the weekly average time to resolution.

7. Optional: Clear the Allow breakdowns check box to prevent breakdowns from applying to this formula component.

8. Click Select.

   The Formula field is automatically populated based on your selections.

9. Modify the Formula as needed. Enter any operators or numbers to include in the formula. Use valid operator symbols, such as +, -, /, %, >, <.

   For example, if you want to calculate the average age of open incidents based on summed age of open incidents and number of open incidents, you could use the following formula:
   \[
   \frac{[\text{Summed age of open incidents}]}{[\text{Open incidents}]} / 24
   \]

   Use the variables \( \text{score\_start} \) and \( \text{score\_end} \) to refer to the start and end of the data collection period, respectively.

   Formulas support multi-level breakdowns. For indicators that have Collect breakdown matrix enabled, it is possible to drill down to the second level in the detailed scorecard on the Breakdowns tab. For example, Closed incidents by Category, and then by Priority, or vice versa.

Prevent a formula component from following breakdowns

You can prevent certain formula components from being broken down when a user applies a breakdown to the formula indicator.

When you apply a breakdown to a formula indicator, such as on a breakdown dashboard, the selected breakdown applies to all formula components. You prevent certain components from being broken down using the syntax \{Indicator\}. You can also prevent a formula component from following breakdowns by clearing the Allow breakdowns check box in the Browse for an indicator popup.

For example, consider the formula \([\text{Incidents}] / [\text{Customers}]\). If you apply a region breakdown to this indicator, and specify EU as the breakdown element, the formula indicator returns scores using the formula \([\text{Incidents > region = eu}] / [\text{Customers > region = eu}]\). However, to view the EU incidents divided by the total number of incidents across all regions, you can write the formula as \([\text{Incidents}] / [\text{Customers}]\). Using the \{Indicator\} format causes the Customers component to ignore breakdowns. This way, when you apply the
region breakdown with the EU breakdown element, this formula indicator is equivalent to the formula \([\text{Incidents} > \text{region} = \text{eu}] / [\text{Customers}].\)

You can specify a breakdown within a component itself, such as \([\text{Incidents}] / \{\text{Customers} > \text{importance} = \text{high}\}\). In this example, the formula denominator is always broken down to include only the high-importance customers. Any breakdown applied to the formula indicator, such as the region breakdown, does not apply to the Customers component.

Breakdown matrixes in formula indicators

Formula indicators inherit breakdown matrixes from indicators in the formula. If all the indicators in the formula collect breakdown matrixes, 2nd level breakdowns are available for the formula indicator. If none of the indicators in the formula collect breakdown matrixes, 2nd level breakdowns are not available for the formula indicator. If only some of the indicators in the formula collect breakdown matrixes, only those indicators can be broken down at a 2nd level.

For example, consider a formula indicator with the following formula:

\[
[\text{Summed age of open incidents}] / [\text{Number of open incidents}] / 24
\]

Both the Summed age of open incidents and the Number of open incidents indicators have breakdown matrixes collected. In the detailed scorecard for the formula indicator, you break down the scores first by Category=Software and second by Priority=High(2). The result is a score of 170.
Scores when both indicators in formula collect breakdown matrices

Now consider the same formula indicator, but the breakdown matrix is not collected for the Number of open incidents indicator. The result is a score of 11.
Scores when only one indicator in formula collects breakdown matrix

Indicator Groups

Use indicator groups to filter or group indicators in Performance Analytics.

You can use indicator groups to filter or group indicators in Performance Analytics, enabling you to quickly search for indicators. For example, group all indicators related to new incidents in the incidents new indicator group.

You can use indicator groups when you create widgets, enabling authorized users to browse the indicators by indicator group then viewing all indicators in that indicator group.

Create an indicator group
Create an indicator group to organize indicators.

Role required: pa_admin, pa_power_user, or admin

1. Navigate to Performance Analytics > Indicator Groups.
2. Click New.
3. Enter a **Label** for the indicator group.
4. Click **Submit**.

**Add an existing indicator to an indicator group**

Add indicators to an indicator group.

Role required: pa_admin, pa_power_user, or admin

1. Navigate to **Performance Analytics > Indicator Groups**.
2. Open an indicator group record.
3. In the **Indicators** related list, click **Edit**.
4. Select one or more indicators using the slushbucket.

**Tip:** If you have many indicators, use a filter to limit the number of indicators.

5. Click **Save**.

**Rounding and precision in indicators**

Indicators round fractional results using “Banker’s rounding” or mathematical rounding depending on the indicator **Precision**.

When an indicator has a **Precision** of 0, the indicator rounds the result to the nearest even, whole number. For example, if an indicator with Precision 0 calculates the values $7 + (5 / 2)$, the indicator rounds the result up to 10. However, if the formula calculates $2 + (5 / 2)$, the indicator rounds the result down to 4.

When an indicator has a **Precision** greater than 0, the indicator rounds to the nearest decimal point for the given precision. For example, an indicator with **Precision** 1 rounds a result of 4.45 to 4.5.

For indicator scores in the thousands and millions, the score is displayed as the number of thousands or millions with a k or an M, respectively. For example, a score of 612,875 with a precision of 0 is rendered as 613K. A score of 8,546,937 with a precision of 1 is rendered as 8.5M.

Y-axis values plotted on a line or column chart are not rounded. The score and tooltip displayed when you point to a value on the chart are rounded based on the indicator **Precision**.

**Note:** In formula indicators, rounding applies only to the formula result. Values within the formula are not rounded.

**Create a unit**

You can define units in which Performance Analytics indicator scores are shown. Units can be numbers, percentages, currencies, quantities of time, or any other entity you define. The most commonly used units are provided by default.

Roles required: pa_admin or pa_data_collector

1. Navigate to **Performance Analytics > System > Units**.
2. Click **New**.
3. Enter the **Name** of the unit.
   For example, **Gallon**.
4. Specify the way the unit must be formatted.
   For example, `{0}Gal` gives you the number of gallons with the abbreviation Gal. For currencies, you can place the symbol for the unit in front of the number, such as `$0`.
5. Click **Submit**.
Units can be used for automated, manual, and formula indicators.

**Exclude time series from an indicator**

You can exclude time series on automated, formula, and manual indicators. Excluded time series are not selectable, such as from scorecards. Other time series remain selectable.

To exclude a time series from an indicator, select the time series in the **Time series exclusions** related list on the Indicator form.

**Control access to an indicator**

You can control which user roles grant access to specific indicators. Access to an indicator is regulated in the indicator record.

**pa_admin or admin**

1. Navigate to **Performance Analytics > Automated Indicators** or to **Manual Indicators** or **Formula Indicators** if applicable.
2. Select an indicator record.
3. In the **Access control** section, clear the **Visible by all roles** check box.
4. Select the **Roles** that grant access to the indicator.
5. Click **Update**.

**Schedule the export of an indicator to PDF**

Schedule an indicator to automate its distribution.

**Role required: pa_power_user, pa_admin, or admin**

Navigate to **Performance Analytics > Scheduled Indicators** and create a new record.

**Scheduled Indicator fields**

<table>
<thead>
<tr>
<th>Field</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Indicator</td>
<td>Select the indicator that you want to export.</td>
</tr>
<tr>
<td>Breakdown</td>
<td>Select a breakdown to filter the indicator scores.</td>
</tr>
<tr>
<td>Element</td>
<td>If you selected a breakdown, select a breakdown element to show only scores associated with that element.</td>
</tr>
<tr>
<td>Chart</td>
<td>Select this checkbox to include the scores visualization in the PDF. The visualization is the same as displayed on the indicator scorecard.</td>
</tr>
<tr>
<td>Breakdowns</td>
<td>Select this checkbox to include the scores for each breakdown and breakdown element in a table at the bottom of the PDF. If you have selected a <strong>Breakdown</strong> and <strong>Element</strong>, the breakdowns displayed at the bottom of the PDF are 2nd-level breakdowns.</td>
</tr>
<tr>
<td>Users</td>
<td>Users who should receive the indicator. To receive indicators, users must have an Email address defined and have <strong>Notifications</strong> set to <strong>Enable</strong> in their user records.</td>
</tr>
<tr>
<td>Groups</td>
<td>Groups that should receive the indicator.</td>
</tr>
<tr>
<td>Field</td>
<td>Description</td>
</tr>
<tr>
<td>--------------------</td>
<td>-----------------------------------------------------------------------------</td>
</tr>
<tr>
<td>Email addresses</td>
<td>Email addresses of users who should receive the indicator but who are not in the system.</td>
</tr>
<tr>
<td>Active</td>
<td>Check box that enables (selected) or disables (cleared) scheduling for the indicator.</td>
</tr>
<tr>
<td>Run</td>
<td>Frequency for exporting the indicator.</td>
</tr>
<tr>
<td>Time</td>
<td>Time of day to export the indicator.</td>
</tr>
<tr>
<td>Conditional</td>
<td>Check box that displays (selected) or hides (cleared) the Condition field, which allows you to specify conditions under which the indicator is exported.</td>
</tr>
<tr>
<td>Condition</td>
<td>User-created script that checks for certain conditions to be true before exporting the indicator. This field is visible only when Conditional is selected.</td>
</tr>
<tr>
<td>Subject</td>
<td>Text that appears in the subject line of the distribution email.</td>
</tr>
<tr>
<td>Introductory message</td>
<td>Additional message that is delivered with the indicator.</td>
</tr>
<tr>
<td>Include with</td>
<td>Additional scheduled indicators to send.</td>
</tr>
<tr>
<td>Orientation</td>
<td>Select the page orientation, Landscape or Portrait.</td>
</tr>
<tr>
<td>Zip output</td>
<td>Select this check box to send the indicator as a zip file.</td>
</tr>
</tbody>
</table>

**Performance Analytics breakdowns**

Breakdowns enable you to group or filter indicator scores for more detailed analysis, such as to show separate scores for each assignment group. You can apply a breakdown on scorecards and dashboards.

The values for each breakdown are called breakdown *elements*. Breakdowns are automated, manual, or external, depending on where these elements come from. Automated breakdown elements are based on existing data in *breakdown sources*. A field in the facts table is mapped to a set of records on the breakdown source, or a script is used for more complex mapping. Manual breakdowns have their elements entered manually to define an organization. Lastly, an external breakdown specifies the JDBC data source and SQL statement for retrieving breakdown elements.

For example, you can look at the Number of Open Changes by Assignment Group. Or you can see the Number of New Changes by Priority.

**Create and apply a simple breakdown**

Create a breakdown, breakdown source, and breakdown mappings, and associate the breakdown with indicators.

Role required: pa_power_user, pa_data_collector, or admin
Create a simple breakdown based on an existing indicator. To create more advanced breakdowns or breakdown sources, such as to limit data sets with complex filters, create or update breakdown and breakdown source records directly.

1. Navigate to Performance Analytics > Breakdowns > Create New.
2. Select the Indicator that you want to create the breakdown for.
   The Table field is automatically populated based on the indicator source table. You can apply the new breakdown to other indicators with the same source table on the Link to indicators tab.
3. Select the Field to base the breakdown on.
   The breakdown uses values from this field as breakdown elements and breaks down collected data based on the value of this field in each record.
4. Click Next.
   The Define the breakdown tab displays different data depending on if a breakdown, breakdown source, or breakdown mapping exist for the specified indicator, table, and field.
5. Perform one of the following actions.

<table>
<thead>
<tr>
<th>Option</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Create a breakdown, breakdown source, and</td>
<td>If no breakdown or breakdown source exists for the specified table, enter a name for the new breakdown. A breakdown source and mapping for the selected table and field are created automatically. Click Show filter to make adjustments to filter the data included in the breakdown source.</td>
</tr>
<tr>
<td>mapping</td>
<td></td>
</tr>
<tr>
<td>Create a mapping using an existing breakdown source</td>
<td>If at least one breakdown source exists for the specified table and there are one or more breakdowns using the source, select the breakdown to create a mapping for. If a mapping exists between a breakdown with the selected source and a field on a parent of the indicator table, you can only select an existing breakdown to create the mapping for. If no such mapping exists for a parent table, you can select an existing breakdown or create a new breakdown.</td>
</tr>
<tr>
<td>Review existing records</td>
<td>If a breakdown and breakdown source exist for the specified table, and a breakdown mapping exists for the specified breakdown and field, review the settings. You do not need to make any changes.</td>
</tr>
</tbody>
</table>

6. Click Next.
7. On the Link to indicators tab, select any additional indicators that you want to apply the breakdown to.
   You can apply the breakdown to other indicators with the same source table as the indicator you selected first. If the breakdown already applies to an indicator, that indicator is not displayed.
8. Click Next.
9. On the Data Collection tab, select how many days of historical, broken-down scores and snapshots to collect, or clear the Collect data from the past to skip historical data collection.
10. Click Next.
11. Review the settings and confirm that the correct records will be created, then click Apply.
A check mark appears next to each record after it is created. When all records are created the Create another breakdown button appears.

Automated breakdowns

An automated breakdown uses a breakdown source to determine selectable elements. Automated breakdowns are based on a breakdown source, which is a set of records from a table. The breakdown maps these records, known as breakdown elements, with fields on tables that indicators collect scores from. Scores collected from mapped tables can then be grouped and filtered based on the values in the mapped fields and the breakdown elements.

For example, the Groups breakdown source that includes records from the Groups (sys_user_groups) table is available by default. This breakdown source specifies the filter (Active) (is) (true) to include only active groups as elements. You can map this breakdown source to fields on other tables that reference the Groups table, such as the Incident Assignment group field. Scores collected from the mapped table are grouped based on the value of that field. You can then filter the scores on scorecards and dashboards by selecting the breakdown and an element, such as to show scores only for incidents assigned to the Hardware group.

To create an automated breakdown, select a breakdown source for it to use and apply access restrictions. Then map which field on the indicator source references the breakdown source. To map a more complicated relationship than a single field to a breakdown source, use a script instead. Finally, assign indicators to the breakdown.

Define a breakdown source

Breakdown sources specify which unique elements a breakdown contains. A breakdown source is defined as a set of records from a table or database view or as a bucket group. Multiple breakdowns can use the same breakdown source.

Roles required: pa_data_collector, pa_admin, or admin. The breakdown source creator needs access to the table and reference column that the indicator source uses.

Always use a facts table with a field that has a unique value for every record, usually Sys ID. For example, the Incident.Category breakdown source takes its elements from the Choice table. The elements are identified by the Sys ID field. The breakdown source filters the choices to those that are on the Incident table, in English, and not inactive.
### Breakdown Source

**Name:** Incident,Category

**Description:**

#### Source: Security

Select the facts table for the breakdown source elements and apply conditions to optimize the element list.

- **Facts table:** Choice [sys_chains]
- **Field:** Sys ID

#### Conditions

- **Table:** incident
- **Element:** category
- **Language:** en

- **Inactive:** false
- **Inactive:** is-empty

**RELATED LIST CONDITIONS**

**Label for unmatched**
The breakdown source uses the following records from the Choice table:

<table>
<thead>
<tr>
<th>Table</th>
<th>Element</th>
<th>Language</th>
<th>Value</th>
<th>Label</th>
<th>Inactive</th>
</tr>
</thead>
<tbody>
<tr>
<td>Incident</td>
<td>category</td>
<td>en</td>
<td>inquiry</td>
<td>inquiry/Help</td>
<td>false</td>
</tr>
<tr>
<td>Incident</td>
<td>category</td>
<td>en</td>
<td>software</td>
<td>Software</td>
<td>false</td>
</tr>
<tr>
<td>Incident</td>
<td>category</td>
<td>en</td>
<td>hardware</td>
<td>Hardware</td>
<td>false</td>
</tr>
<tr>
<td>Incident</td>
<td>category</td>
<td>en</td>
<td>network</td>
<td>Network</td>
<td>false</td>
</tr>
<tr>
<td>Incident</td>
<td>category</td>
<td>en</td>
<td>database</td>
<td>Database</td>
<td>false</td>
</tr>
</tbody>
</table>

**Note:** The Choice table includes every possible choice from every table, which is why it has Table and Element columns. Most other facts tables you would use for a breakdown source are simpler.

1. Navigate to **Performance Analytics > Breakdown Sources** and click **New**.
2. Give the breakdown source a meaningful **Name**.
3. Add a detailed **Description** to help others understand the use and purpose of this breakdown source and to help them avoid creating duplicates.
4. For the **Facts Table**, select the table that the breakdown source gets elements from.
   For example, for the breakdown source to specify user groups as elements, select **Group (sys_user_group)**.
5. In the **Field** table, select a field that contains a unique value for every record.
   This field is usually **Sys ID**.
6. Set the **Conditions** for filtering the element list.
   For example:  
   (Table) (is) (Incident) and  
   (Element) (is) (Category) and
To see how many records match the selected conditions, click Preview.

Optional: In Label for unmatched, write a custom label to use if a record from an indicator source does not contain a valid element value in a mapped field.

The default label is Unmatched.

In the Security tab, set whether to exclude or include breakdown source elements by role based on element security lists.

For more information, see Define an elements security list.

Click Submit.

Create an automated breakdown

To create an automated breakdown, first select a breakdown source for it to use and apply access restrictions.

Familiarize yourself with the definitions and uses of breakdowns in general and automated breakdowns in particular.

Role required: pa_data_collector, pa_power_user, pa_admin, or admin

An automated breakdown uses a breakdown source to determine selectable elements. You can use an existing breakdown source or you can define a new one.

Note: This process allows you to create a fully customized breakdown. To create a simple automated breakdown, see Create and apply a simple breakdown.

1. Navigate to Performance Analytics > Automated Breakdowns and click New.
2. Specify a meaningful Name.
   The name of a breakdown is frequently based on the label of the field that is used in the breakdown mappings.
3. In the Automated tab, select the Breakdown source.
4. Optional: Select a Default elements filter.
   Use element filters to restrict the elements that are visible to a user. For more information, see Breakdown element filters.
5. Optional: In the Access control tab, set who can see the breakdown.
   These restrictions apply in all cases: seeing the breakdown in the list of breakdowns, seeing the breakdown in a scorecard or dashboard, or using the breakdown when creating a widget.

<table>
<thead>
<tr>
<th>Value of Visible to</th>
<th>Further settings</th>
</tr>
</thead>
<tbody>
<tr>
<td>Everyone (default)</td>
<td>You can restrict visibility by roles. Unselect Visible by all roles and select the Roles that are required to access the breakdown.</td>
</tr>
<tr>
<td>Groups and Users</td>
<td>Select the Groups and individual Users who can access this breakdown. You can select groups or users from a list, and you can select users by email address.</td>
</tr>
</tbody>
</table>

Create breakdown mappings and associate indicators with the breakdown.

Create a breakdown mapping

Breakdown mappings specify which field on the indicator source references the breakdown source.
Assign a breakdown source to the breakdown before creating the mapping. The required roles are the same as for creating a breakdown. You can create multiple mappings for the same breakdown, enabling you to use that breakdown for multiple indicators.

**Note:** A breakdown mapping can specify a script instead of a field.

1. If you are adding a mapping to an existing breakdown, find that breakdown in the relevant list of breakdowns and open it.
2. In the Breakdown Mapping related list, click New.
3. Select the Facts table. This table is the indicator source that you want to break down.
4. Do one of these actions:

<table>
<thead>
<tr>
<th>Option</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Use a field to map values to elements.</td>
<td>Select the Field in the indicator source that maps to records in the breakdown. See the use of the Category field in Example: Field mapping.</td>
</tr>
<tr>
<td>Use a script to map values to elements.</td>
<td>Select Scripted, then select the Script that defines the association between indicator records and breakdown elements. Use a script when you do not have the simple use case of a field in the indicator source that maps to a breakdown source table. A script can define a wide range of mapping relationships. The most common use case is when the breakdown source is a bucket group and the script returns an integer to assign an indicator score to a bucket. See Example: Script mapping.</td>
</tr>
</tbody>
</table>

5. Click Submit.
6. Repeat steps 3–6 as needed, to define additional mappings.

Example: Field mapping

The Category breakdown maps the Category field on the incident table to the Incident.Category breakdown source, which references the Choices(sys_choice_list) table.

In the first image, you see the Category breakdown with the Incident.Category breakdown source. This breakdown has a breakdown mapping to the Category field on the incident table.
An automated breakdown is a breakdown based on breakdown source and points to a field in a facts table, or is scripted.

- **Breakdown source**: Incident.Category

**Breakdown Mappings**

- **incident_spotlight**
  - inc_category
- **incident**
  - category
- **incident_sla**
  - inc_category
The Incident.Category breakdown source uses records in the Choices(sys_choice_list) table.
The next image shows the Choices(sys_choice_list) table records that meet the conditions that are specified in the Incident.Category breakdown source. Note the Label field values.

Finally, you see the Category field of some records on the Incidents table. This field is mapped to the Category breakdown. The field values match the Label fields of the records of the Choices(sys_choice_list) table that the Incident.Category breakdown source filters for.
Example: Script mapping

The Age breakdown uses the Incident.Age.Days script to calculate the age of incidents in days and map the values to the Incident Age Ranges bucket group.

In the first two images, you see the Age breakdown, which uses the Incident.Age.Days breakdown source and the Incident.Age.Days script for breakdown mapping. You also see that the breakdown source refers to the Incident Age Range (Days) bucket group.
Automated

An automated breakdown is a breakdown based on breakdown source and points to a field in a facts table, or is scripted.

- **Breakdown source**: incident.Age.Days

Access control

Specify access control for this breakdown.

- **Visible to**: Everyone
- **Visible by all roles**: Checkmark

Update | Delete

**Breakdown Mappings**

- **Breakdown = Age**
- **Facts table**: incident
- **Field**: Age
- **Script**: incident.Age.Days
- **Scripted**: true
The Incident.Age.Days script takes the time stamp when the incident was opened from the incident table and subtracts this from the time stamp at the end of the collection period. The script converts this value from milliseconds to days.

```javascript
var diff = function(x, y) {
    return y.dateNumericValue() - x.dateNumericValue();
};

var days = function(x, y) {
    return diff(x, y) / (24 * 60 * 60 * 1000);
};

days(current.opened_at, score_end);
```

The resulting numbers of days are sorted into the buckets of the bucket group.
Bucket group
Incident Age Ranges (Days)

Define the buckets for this bucket group by providing start and end ranges for each of the buckets.

<table>
<thead>
<tr>
<th>Name</th>
<th>Start</th>
<th>End</th>
</tr>
</thead>
<tbody>
<tr>
<td>00 - 01 Day</td>
<td>0</td>
<td>1</td>
</tr>
<tr>
<td>01 - 05 Days</td>
<td>1</td>
<td>6</td>
</tr>
<tr>
<td>06 - 30 Days</td>
<td>6</td>
<td>31</td>
</tr>
<tr>
<td>31 - 90 Days</td>
<td>31</td>
<td>91</td>
</tr>
<tr>
<td>90+ Days</td>
<td></td>
<td>91</td>
</tr>
</tbody>
</table>
Here is the result of running this script on the Number of open incidents indicator.

Assign an indicator to an automated breakdown
Associate automated or formula indicators with a breakdown to enable the collection of broken down scores for those indicators.

The breakdown must have a breakdown mapping for the indicator source table.

Role required: pa_data_collector, pa_power_user, pa_admin, or admin

1. Navigate to **Performance Analytics > Automated Breakdowns**.
2. Select a breakdown record.
3. In the **Indicators** related list, click **Edit**.
4. Use the slushbucket to select the indicators you want to assign to this breakdown.
5. Click **Save**.
6. Optional: In the **Indicator Breakdowns** related list, set the **Display** value to false to hide the breakdown on the scorecard and dashboard widgets.
   If the **Display** field is false, broken-down scores are still populated during data collection, but the breakdown is not selectable on the scorecard or on dashboard widgets.

### Manual Breakdowns

In a manual breakdown, you define the breakdown elements and the indicator scores for each element manually instead of using records from a breakdown source.

Unlike an automated breakdown, a manual breakdown does not map to any fields on the indicator source table. Instead, users must populate the broken-down scores manually.

**Create a manual breakdown**

Create a breakdown for an indicator where you add scores manually.

Roles required: pa_data_collector, pa_power_user, pa_admin, or admin

1. Navigate to **Performance Analytics > Manual Breakdowns**.
2. Click **New**.
   - The **Type** is set to **Manual** automatically.
3. Enter a descriptive **Name**.
4. Right-click the form header and select **Save**.
5. In the **Manual** section, double-click **Insert a new row** to add a new breakdown element.
6. Press Enter or click the green check mark to save the entry.
7. Optional: Change the **Order** value.
   - Elements with a lower **Order** value appear higher in the list of elements, such as on scorecards and dashboards.
8. Repeat steps 5-7 to add additional breakdown elements.
9. Click **Submit**.

Associate indicators with this breakdown and populate scores using the scoresheet.

**Assign a manual indicator to a manual breakdown**

Associate a manual indicator with a manual breakdown to enable users to enter broken-down scores for the indicator.

Role required: pa_data_collector, pa_power_user, pa_admin, or admin

**Note:** You can break down manual indicator scores by only one breakdown at a time. You cannot apply a 2nd-level breakdown to a manual indicator.

1. Navigate to **Performance Analytics > Manual Breakdowns**.
2. Select a breakdown record.
3. In the **Indicators** related list, click **Edit**.
4. Use the slushbucket to select the indicators you want to assign to this breakdown.
5. Click **Save**.
6. Optional: In the **Indicator Breakdowns** related list, set the **Display** value to false to hide the breakdown on the scorecard and dashboard widgets.
   If the **Display** field is false, broken-down scores are still populated during data collection, but the breakdown is not selectable on the scorecard or on dashboard widgets.
Populate broken-down scores for the indicators using the scoresheet.

**Bucket groups**

A bucket group is used to create a special breakdown source that you can use with a scripted breakdown. A bucket group divides the range of values that the script returns into discrete buckets. The breakdown sorts records into these buckets.

In the data architecture, bucket groups are defined in Bucket Group (pa_bucket_groups) records and buckets in Bucket (pa_buckets) records. Each Bucket (pa_buckets) record contains a Bucket Group field that is a reference to a Bucket Group (pa_bucket_groups) record.

To work with a bucket group, create a breakdown source that uses Bucket (pa_buckets) as the facts table and specifies the bucket group in a condition. If a breakdown built on this source uses a breakdown mapping with a script, the breakdown groups the values that the script returns into buckets. If the breakdown mapping specifies a field instead of using a script, the breakdown groups the values of the mapped field into buckets.

*Grouping field values into buckets*

You can use a bucket group with a breakdown mapping that does not use a script, to group the values of any mapped field to buckets.

The use case can be as simple as translating the `true` and `false` values of a Boolean into two buckets with meaningful labels.

**Sorting Boolean values into buckets**

A base Performance Analytics installation includes the Active breakdown as part of the Analytics Usage Overview. This breakdown uses a mapping to the job.active Boolean field from the Job Log (pa_jobs_logs) table. The breakdown source uses a bucket group where `true` values for job.active are sorted into the Active bucket, while `false` values are sorted into the Inactive bucket. Note that `false` values are numerically considered to be a value less than one, while `true` values are numerically one and above.
Grouping script results into buckets

When you have a breakdown mapping script that collects a range of values, you can define a bucket group to divide those values into discrete buckets.

After you create the bucket group, you create a breakdown source based on the bucket group. Then you create a breakdown that uses that breakdown source. When you create the breakdown mapping for the breakdown, define or select a script for the mapping. The
breakdown groups the results that the script returns into the buckets of the bucket group. For an example, see Example: Script mapping.

You can write a bucket group for an existing script, or you can first write the bucket group and then write the script. Both must exist before you can create the breakdown.

**Note:** The same script can be used with any number of bucket groups. Also, in principle any scripts that returned the same kind of data could be used with the same bucket group.

Create a bucket group

Use bucket groups to recategorize data so it can be used as a breakdown, for example by grouping a range of values into discrete buckets.

Role required: pa_data_collector or admin

1. Navigate to Breakdowns > Bucket Groups.
2. Click New.
3. Enter a Name that clearly identifies the bucket group, like Age Ranges in Days.
4. Double-click Insert a new row to add a new bucket.
5. Enter a Name for the first bucket, then press Enter or click the green check icon.
6. Double-click in the Start and End columns to enter the starting and ending values for the range.
   - Records that match the end value are excluded from the bucket. Therefore, set the end value of one bucket and the start value of the next bucket to be the same. Records that exactly match that value are sorted into the bucket that has that value as the start value.
7. Click Submit after all the bucket ranges have been defined.

Consider the case where you want to group incidents by age, as follows:
- Less than a day
- 1-5 days
- 6-30 days
- 30-90 days
- More than 90 days

In Performance Analytics > Scripts, you already have a script named Incident.Age.Days that derives the age in days of an incident from its opening date and the latest date on which a score was collected:

```javascript
var diff=function(x,y){return y.dateNumericValue() - x.dateNumericValue();};
var days=function(x,y){return diff(x,y)/(24*60*60*1000);};
days(current.opened_at, score_end);
```

You create a new bucket group named Incident Age Ranges (Days). In this bucket group, you define a set of buckets that start at the desired date and end at the beginning of the next
bucket. For example, the 06-30 Days bucket starts at 6 and ends at 31:

This bucket will contain incidents from the age of precisely 6 days to the age of 30 days, 23 hours, 59 minutes, and 59 seconds.

At the end, you have a bucket group with five buckets corresponding to the age ranges in which you want to divide incidents.
### Incident Age Ranges bucket group

Define the buckets for this bucket group by providing start and end ranges for each of the buckets.

<table>
<thead>
<tr>
<th>Buckets</th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Name</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Description</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Buckets</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Name</td>
<td>Start</td>
<td>End</td>
</tr>
<tr>
<td>----------</td>
<td>-------</td>
<td>-----</td>
</tr>
<tr>
<td>00 - 01 Day</td>
<td>1</td>
<td></td>
</tr>
<tr>
<td>01 - 03 Days</td>
<td>1</td>
<td>6</td>
</tr>
<tr>
<td>04 - 09 Days</td>
<td>6</td>
<td>31</td>
</tr>
<tr>
<td>10 - 30 Days</td>
<td>31</td>
<td>91</td>
</tr>
<tr>
<td>31+ Days</td>
<td>91</td>
<td></td>
</tr>
</tbody>
</table>

[Insert a new row...]

**Update**
The Script Mapping example shows a breakdown that uses this bucket group and script.

Create a breakdown source that uses the Bucket (pa_buckets) facts table, the Sys ID field, and the condition (Bucket group) (is) (<the name of the bucket group you created>). Then create a breakdown that uses this breakdown source and uses the relevant script for the breakdown mapping.

**Breakdown element filters**

Element filters enable you to limit the displayed breakdown elements on a scorecard or widget using filter conditions. You can select an element filter when viewing breakdowns on a scorecard, or when configuring a breakdown widget.

**Create an element filter**

Select the breakdown source and filter conditions to filter breakdown elements from that breakdown source.

Role required: pa_data_collector or admin

Navigate to Performance Analytics > Element Filters and create a new record (see table for field descriptions).

<table>
<thead>
<tr>
<th>Field</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Breakdown source</td>
<td>Select the breakdown source you want to create an element filter for. The element filter is available for any breakdowns based on this breakdown source.</td>
</tr>
<tr>
<td>Facts table</td>
<td>Read-only. Displays the breakdown source facts table.</td>
</tr>
<tr>
<td>Filter</td>
<td>Specify the filter conditions to limit the available elements. Only elements that meet these conditions are displayed when you apply this element filter. For example, if the breakdown source facts table is User (sys_user), you can add a filter condition to include only users in a particular department such as (Department) (is) (HR).</td>
</tr>
<tr>
<td>Roles</td>
<td>Select any roles that a user must have to select this element filter. A user must have at least one of the specified roles. If no roles are specified, all users can access this element filter.</td>
</tr>
</tbody>
</table>

You can select the element filter on a scorecard **Breakdown** tab when viewing a breakdown based on the same breakdown source as the element filter.

You can specify a **Default element filter** for a breakdown to select that element filter automatically when viewing the breakdown. Users that view the breakdown on a scorecard can change or clear the selected element filter.

You can also specify a **Element filter** from the **Breakdown settings** tab when creating a breakdown widget. Users cannot change or clear the element filter on a widget when viewing the widget.
Breakdown relations

Breakdown relations open a new navigation path for viewing breakdown scores, by moving from one breakdown element to another breakdown element. Breakdown relations can be between the elements of different breakdowns, or they can be within a hierarchical structure of elements in the same breakdown. Breakdown relations affect navigation on scorecards and in breakdown widgets.

You can use breakdown relations to navigate between the elements of a single breakdown that are in a hierarchical relationship. For example, the Location breakdown has a hierarchy of ‘parent’ and ‘child’ elements, where a country can be the parent of cities. Breakdown relations let a scorecard viewer navigate from a country down into a city, from a city to the country, or between cities in the same country.

Navigating from a parent to a child element of a breakdown

Similarly, a breakdown widget can show the parent, child, or sibling elements of the element that was chosen for the breakdown dashboard. For more information about using breakdown relations on breakdown dashboards, see Showing breakdown relations.
Breakdown dashboard displaying children of the EMEA element

Breakdown relations also enable navigation between the elements of different breakdowns. For example, first choose an element of the Assignment Group breakdown, then look at the Members breakdown relation. In this relation, navigate to an element of the Assigned To breakdown. The selected member of Assigned To is not necessarily a member of the Assignment Group. You are changing which first-level breakdown you are looking at, not drilling down to a second level of breakdown and element. Again, this breakdown relation can be used both on a scorecard and in a breakdown widget on a dashboard.
Navigating on a scorecard between elements of different breakdowns
More details about these cases for using breakdown relations are in the topics about creating breakdown relations.

*Create relations between elements of one breakdown*

Use a breakdown relation to set up navigation on a scorecard between a hierarchy of elements within the same breakdown. A field in the breakdown records must identify the hierarchical relationship of one record to another.

Review the use cases for breakdown relations in *Breakdown relations.*

Role required: pa_data_collector, pa_power_user, admin

**Note:** While a business analyst, typically with the pa_power_user role, is most likely to know what breakdown relations to create, creating them requires the knowledge and access to tables of a technical expert with pa_data_collector. A pa_admin is likely to understand both. Consider having either a pa_admin create the relation or have a collaboration between a pa_power_user and a pa_data_collector.

You can create breakdown relations to navigate the following hierarchical relationships between elements of a breakdown:

- Child relations, to navigate from a parent element to its children
- Parent relations, to navigate from a child element to its parents
- Sibling, or peer relations, to navigate between elements that share the same parent element

In a breakdown with a hierarchical relationship between elements, one field in the element record identifies the position of the element in the hierarchy. Typically this field is Parent, and identifies the parent element. Elements that are the parent of one element can themselves have a parent element, and you can navigate this multi-level hierarchy in the scorecard.

The example used in this topic is the Location breakdown for the Number of open incidents indicator. A child relation and a parent relation are needed to navigate the several levels of hierarchy, such as from region to country to city and back.
1. Navigate to Breakdowns > Breakdown Relations and click New.
2. In the Breakdown and Related breakdown fields, select the breakdown whose elements you want to navigate between.
   These fields have the same value when you are creating a relation between elements of the same breakdown. For our example, select the Location breakdown in both fields.
3. In the Table field, select the same table as the breakdown source facts table.
   In our example, select Location (cmn_location).
4. Fill in the rest of the form, depending on whether you are creating a child, a parent, or a sibling/peer relation.

Note: Breakdown relations are one-way relationships. Define multiple breakdown relations to create a bi-directional relationship.
### Breakdown Relation form

<table>
<thead>
<tr>
<th>Field</th>
<th>Child relation</th>
<th>Parent relation</th>
<th>Sibling/peer relation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Breakdown field</td>
<td>Select the field that identifies the parent element.</td>
<td>Select the unique identifier field for elements of this breakdown.</td>
<td>Select the unique identifier field for elements of this breakdown.</td>
</tr>
<tr>
<td></td>
<td>For the Location breakdown, select Parent.</td>
<td>For the Location breakdown, as for most breakdowns, select Sys ID.</td>
<td>For the Location breakdown, as for most breakdowns, select Sys ID.</td>
</tr>
<tr>
<td>Related breakdown field</td>
<td>Select the unique identifier field for elements of this breakdown.</td>
<td>Select the field that identifies the parent element.</td>
<td>Select the unique identifier field for elements of this breakdown.</td>
</tr>
<tr>
<td></td>
<td>For the Location breakdown, as for most breakdowns, select Sys ID</td>
<td>For the Location breakdown, select Parent.</td>
<td>For the Location breakdown, as for most breakdowns, select Sys ID</td>
</tr>
<tr>
<td>Common field</td>
<td>Leave empty.</td>
<td>Leave empty.</td>
<td>Select the field that identifies the parent element.</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>For the Location breakdown, select Parent.</td>
</tr>
</tbody>
</table>

5. **Under Conditions**, define any further conditions that a record must fulfill to appear as a related breakdown for this relationship.

After you submit the Breakdown Relation form, the navigation options are available in the scorecard for the relevant indicator. You do not need to run a data collection job first.

View examples of breakdown relations that are shipped by default in every instance. For the Location breakdown, the Child Location and Parent Location breakdown relations are included. The Sibling Group breakdown relation is an example of a sibling or peer relation.

Create a breakdown relation between breakdowns

To set up navigation in a visualization between the elements of two breakdowns, create a breakdown relation between the breakdowns. A table must exist with fields that reference the records for both breakdowns.

Review the use cases for breakdown relations in *Breakdown relations*.

Role required: pa_data_collector, pa_power_user, admin

**Note:** While a business analyst, typically with the pa_power_user role, is most likely to know what breakdown relations to create, creating them requires the knowledge and access to tables of a technical expert with pa_data_collector. A pa_admin is likely to understand both. Consider having either a pa_admin create the relation or have a collaboration between a pa_power_user and a pa_data_collector.

You want to be able to navigate quickly between two breakdowns at the same level that are logically related. The example used in this topic involves the breakdowns Assignment Group and Assigned To for the indicator Number of open incidents. In the following animation, you switch from seeing the number of incidents assigned to the Service Desk group to the number of incidents assigned to Abel Tuter. Both breakdowns are first level, which means that you see...
the total number of incidents assigned to the Service Desk and the total assigned to Abel Tuter. If you had selected Assigned To: Abel Tuter as a second-level breakdown instead of through a breakdown relation, you would have seen only the Service Desk incidents assigned to Abel Tuter.
Note: Breakdown relations are one-way relationships. To create a bi-directional relationship, define multiple breakdown relations.

1. Navigate to Breakdowns > Breakdown Relations and click New.
2. Fill in the fields on the form, as follows.

Breakdown Relation form

<table>
<thead>
<tr>
<th>Field</th>
<th>Description</th>
<th>Example</th>
</tr>
</thead>
<tbody>
<tr>
<td>Breakdown</td>
<td>Select the breakdown that this relationship belongs to. You can access related breakdowns from this breakdown only.</td>
<td>For our example, where you want a selection of group members to appear when you select an Assignment Group, the Breakdown is Assignment Group.</td>
</tr>
<tr>
<td>Related breakdown</td>
<td>Select the breakdown you want to associate with the first breakdown.</td>
<td>For our example, the related breakdown with the Assignment Group members is Assigned To.</td>
</tr>
<tr>
<td>Table</td>
<td>Select a table with fields that reference the facts table records of the sources of both breakdowns. For many-to-many relationships, select a many-to-many table. For one-to-many relationships, select a facts table.</td>
<td>The Assignment Group breakdown uses Group data. The Assigned To breakdown uses User data. Assignment Groups can have many members, and a user can be a member of more than one Assignment Group, so they have a many-to-many relationship. Therefore, you select the Group Member (sys_user_grmember) table, which is a many-to-many table that joins groups and users.</td>
</tr>
<tr>
<td>Breakdown field</td>
<td>Select the field from the specified table that identifies the breakdown element you can navigate from.</td>
<td>In our example, you select the Group field. This field in the Group Member (sys_user_grmember) table identifies the element of the Assignment Group breakdown.</td>
</tr>
<tr>
<td>Related breakdown field</td>
<td>Select the field from the specified table that identifies the breakdown elements you can navigate to when viewing this relation.</td>
<td>In our example, you select the User field. This field in the Group Member (sys_user_grmember) table identifies the element of the Assigned To breakdown.</td>
</tr>
<tr>
<td>Common field</td>
<td>Leave this field empty when defining a relation between breakdowns.</td>
<td></td>
</tr>
</tbody>
</table>
After you submit the Breakdown Relation form, the navigation options are available in the scorecard for the relevant indicator. You do not need to run a data collection job first.

View examples of breakdown relations that are shipped by default in every instance. The example shown here is the Members breakdown relation. The Member of breakdown relation provides navigation in the reverse direction, starting with an element in Assigned To and navigating to an Assignment Group. Lastly, the Manager breakdown relation is similar to Members, but because each assignment group has only one manager, it shows a many-to-one relationship. It thus uses a facts table instead of a many-to-many table.

**Control access to a breakdown**

You can control access to specific breakdowns.

Roles required: pa_admin or admin

There are no visibility options for breakdowns. Instead, access to breakdowns is regulated by ACLs in the breakdown sources.

1. Navigate to Performance Analytics > Breakdown Sources.
2. Open the breakdown sources record for the breakdown you want to set access to.
3. In the Security type choice list, select if you want to blacklist (exclude) or whitelist (include) source elements by role based on element security lists.
4. Define an Elements Security List record and either select the elements to be included or excluded, or use conditions to define which elements should be included.
5. Specify the roles that have access to the elements security list.

**Define an elements security list**

An elements security list prevents unauthorized access to breakdown elements.

1. Navigate to Performance Analytics > Breakdown Sources.
2. Open an existing breakdown source record.
3. In the Elements Security List related list, click New.
4. Fill in the fields, as appropriate.

<table>
<thead>
<tr>
<th>Field</th>
<th>Description</th>
<th>Example</th>
</tr>
</thead>
<tbody>
<tr>
<td>Conditions</td>
<td>Define any further conditions that a record must fulfill to appear as a related breakdown for this relationship.</td>
<td>In our example, you add the condition (User.Active) (is) (true) to filter our inactive group members.</td>
</tr>
</tbody>
</table>

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<table>
<thead>
<tr>
<th>Name</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Dimension</td>
<td>(Read-Only) Dimension selected for the associated breakdown source.</td>
</tr>
<tr>
<td>Facts table</td>
<td>(Read-Only) Facts table selected for the associated breakdown source.</td>
</tr>
<tr>
<td>Select elements</td>
<td>Select to specify explicitly the elements that this security list applies to. If this option is cleared, use Conditions to determine which elements to include.</td>
</tr>
<tr>
<td>All elements</td>
<td>Select for the security list to include all elements. Clear to specify individual elements in this security list. Default: selected</td>
</tr>
<tr>
<td>Show blank option</td>
<td>Select to allow a user on a breakdown dashboard to see scores without any breakdown elements specified. Clear to allow a user on a breakdown dashboard to see only scores for the breakdown elements that are visible to their role. This setting affects only widgets that follow breakdown dashboard elements. Users with the admin role can always see unfiltered scores on breakdown dashboards.</td>
</tr>
</tbody>
</table>

**Warning:** If you configure a breakdown dashboard with some breakdown sources that allow and some that do not allow users to see unfiltered scores, a user can see unfiltered scores by selecting one of the more permissive breakdown sources.

**Conditions**

The conditions for determining which breakdown elements the security list applies to. For example, *(User.Manager) is (dynamic) (Me).* Conditions are applied on top of the breakdown source conditions. This field is available only if Select elements is not selected.

5. Click Submit.

**Role restrictions with blacklist**

If blacklist security is specified for a breakdown source, and any of the roles of a user are on an element security list for that breakdown source, that user cannot see the elements which that security list applies to.

**Visibility of breakdown element by user role with blacklist security**

<table>
<thead>
<tr>
<th>User role on element security list?</th>
<th>Visibility of elements</th>
</tr>
</thead>
<tbody>
<tr>
<td>None of the roles of the user are in an element security list.</td>
<td>All elements that the security list applies to are visible.</td>
</tr>
<tr>
<td>Any of the roles of the user are in an element security list.</td>
<td>None of the elements that the security list applies to are visible.</td>
</tr>
<tr>
<td>User role on element security list?</td>
<td>Visibility of elements</td>
</tr>
<tr>
<td>-------------------------------------</td>
<td>------------------------</td>
</tr>
<tr>
<td>User has the admin role.</td>
<td>All elements are visible.</td>
</tr>
</tbody>
</table>

**Role restrictions with whitelist**

If whitelist security is specified for a breakdown source, and any of the roles of a user are on an element security list for that breakdown source, that user can see the elements which that security list applies to.

<table>
<thead>
<tr>
<th>Visibility of breakdown element by user role with blacklist security</th>
</tr>
</thead>
<tbody>
<tr>
<td>User role on element security list?</td>
</tr>
<tr>
<td>-------------------------------------</td>
</tr>
<tr>
<td>None of the roles of the user are in a security list.</td>
</tr>
<tr>
<td>Any of the roles of the user are in a security list.</td>
</tr>
<tr>
<td>User has the admin role.</td>
</tr>
</tbody>
</table>

**Performance Analytics targets and thresholds**

Targets and thresholds enable you to define important points in your data and provide notifications when a score reaches a specific point.

**Performance Analytics targets**

Targets are goals your organization wants to achieve. Targets enable you to visualize the difference between the desired score at a certain date and the actual score of an indicator.

A target can be personal or global. A personal target is visible only to the user that created it and appears as a light line, a global target is visible to all users and appears as a dark line. Personal targets appear only on scorecards, global targets appear on scorecards and time series widgets.

*Create a target*

You can set targets for indicators, breakdowns, and time series.

Role required:

- pa_viewer to create personal targets that are visible only to the user that created them
- pa_target_admin or admin to create global targets that are visible to all users

1. Navigate to **Performance Analytics** > **Scorecards**.
2. Select a scorecard.
3. Optional: Select a breakdown and breakdown element if you want to add a target to a subset of the data.
   You can also select a 2nd-level breakdown and element.
4. Optional: Select a time series if the target should apply only to a specific aggregation of the data.
5. Select the date on the scorecard that you want to add a target to.

A target is used from the specified start date until the start date for another target. For example, to set a target per quarter in a year, add four targets, each starting on the first day of the quarter.
6. Click the target icon (●).

7. Enter the numeric target value for the score at the selected date.

8. Optional: Clear the Global target check box to create a personal target. Leave the check box selected to create a global target.

   Only users with the pa_target_admin role can create global targets. Users without this role can create only personal targets.

9. Click Save.

Create a target color scheme
A target color scheme can be used to visualize the position of the indicator score relative to its target.

Role required: pa_admin, pa_power_user, or admin

For example, if you want to filter the number of open incidents, the scores for an increase of 25% can be shown in red, an increase of 10% in orange, and no change in yellow. Whereas, for example, a decrease by 25% can be shown in dark green. Two target color schemes are available in Performance Analytics by default: the 3-color traffic light and the 5-color traffic light.

1. Navigate to Performance Analytics > System > Target Color Schemes.
2. Click New.
3. Enter a Name and a Description.
4. Define each of the five ranges and their associated colors. If you do not want to use all the ranges, you can use the same range color for multiple range limits.
5. Click Submit.

   A Default indicator target color scheme can be set in Performance Analytics > System > Properties. This is used when no color scheme has been selected for an indicator target.

Add a target for all elements of a breakdown
You can specify a target that applies separately to each subset of data for an indicator with a breakdown.

Role required: pa_target_admin or admin

For example, you can set a target on an Incident indicator that applies separately to the scores for each assignment group.

Note: This functionality is available only for global targets. The Any element check box does not appear for personal targets.

1. Navigate to Performance Analytics > Targets.
2. Select the Indicator you want to set the target for.
3. Select a Breakdown.
   The Any element check box is selected by default. Do not clear this check box.
4. Optional: Select a Time series.
   For example, you can measure closed incidents daily and set monthly targets for closed incidents.
5. Optional: Select a Color scheme for the target.
6. Click Submit.

Define target values for the new target.

Configure which users receive a target notification
You can control which users receive a notification when a target is reached.
Role required: pa_target_admin

This functionality applies to global targets only. For personal targets, the target owner automatically receives notifications.

1. Navigate to Performance Analytics > Targets.
2. Select a target.
3. In the Users related list, click Edit.
4. Move the users that you want to notify from the Collection column to the Users List column.
5. Click Save.

The notification is sent automatically when a target is reached. Users that receive a notification can unsubscribe from that notification.

Add, modify, or delete a target or threshold

Performance Analytics administrators can add, modify, or delete global targets and thresholds as well as personal targets and thresholds for all users.

Role required: pa_admin

Personal targets and thresholds are visible on scorecards only to the user that created them. Using the indicator form, you can create personal targets and thresholds for other users, or modify and delete existing targets and thresholds that other users have created.

1. Navigate to Performance Analytics > Automated Indicators, Manual Indicators, or Formula Indicators.
2. Select the indicator for which you want to add, modify, or delete a target or threshold.
3. Use the Targets or Thresholds related lists to add, modify, or delete targets or thresholds.
   The related lists display both personal and global targets and thresholds. When you create a new personal target or threshold, ensure that the Owner field is populated.

Performance Analytics thresholds

Thresholds define a normal range of scores for an indicator and alert you when certain events occurs, such as when a score reaches an all-time high or low.

When a threshold is triggered the instance generates an email notification. This message is associated with the indicator and the message is directly available via the detailed scorecard.

A threshold can be personal or global. A personal threshold is visible only to the user that created it and appears as a light grey dotted line, a global threshold is visible to all users and appears as a dark grey dotted line. Personal thresholds appear only on scorecards, global thresholds appear on scorecards and time series widgets.

Create a Performance Analytics threshold

Create a threshold to define the range of scores considered normal.

Role required: pa_power_user or admin

Thresholds can be set for any indicator in combination with a time series and elements of a breakdown.

1. Navigate to Performance Analytics > Scorecards.
2. Select a scorecard.
3. Optional: Select a breakdown and breakdown element if you want to add a threshold to a subset of the data.
   You can also select a 2nd-level breakdown and element.
4. Optional: Select a time series if the threshold should apply only to a specific aggregation of the data.
5. Click the threshold icon ( ).

6. Select the condition that triggers the threshold notification, such as when the score reaches an all-time high, or when the score falls lower than a specific value.

7. Optional: Clear the Global threshold check box to create a personal threshold. Leave the check box selected to create a global threshold.

   Only users with the pa_threshold_admin role can create global thresholds. Users without this role can create only personal thresholds.

8. Click Save.

Configure which users receive a threshold notification
Configure which users should receive an email when a threshold is reached.

Role required: pa_admin, pa_power_user, or admin

This procedure applies to global thresholds. Notifications for personal thresholds are sent only to the owner of the threshold. To configure the message content, modify the PA Threshold Reached notification. See the Notifications documentation for more information.

1. Navigate to Performance Analytics > Indicators > Thresholds.
2. Open a threshold.
3. In the Users related list, click Edit.
4. In the Edit Members screen, use the slushbucket to add members.
5. Click Save.

   Besides the notifications for each indicator, you can also send notifications with an overview of all indicators for which the threshold is reached.

Configure the threshold comment
The Check PA Thresholds job triggers the PA threshold reached comment script action, which adds a comment for the indicator that has reached the threshold.

Role required: admin

The comment is displayed when you open the detailed scorecard for the indicator. Configure the threshold comment to display different text.

1. Navigate to System Policy > Events > Script Actions.
2. Open PA threshold reached comment.
3. Modify the buildMessage function within the script.
4. Click Update.

Configure threshold overview notifications
Besides the notifications for each indicator, you can also send notifications with an overview of all indicators for which the threshold is reached.

Role required: pa_admin, pa_power_user, or admin

This procedures describes how to access the summary notification and change the users who receive the notification as well as the content of the notification.

1. Navigate to System Policy > Email > Notifications.
2. Select PA Thresholds Notification.
3. Optional: Add users or groups to the Who will receive section by clicking the lock icon for either Users or Groups and then selecting the appropriate users or groups.
4. Optional: Change the content of the message by modifying the Message field.
5. Click Update.
Add, modify, or delete a target or threshold
Performance Analytics administrators can add, modify, or delete global targets and thresholds as well as personal targets and thresholds for all users.

Role required: pa_admin

Personal targets and thresholds are visible on scorecards only to the user that created them. Using the indicator form, you can create personal targets and thresholds for other users, or modify and delete existing targets and thresholds that other users have created.

1. Navigate to Performance Analytics > Automated Indicators, Manual Indicators, or Formula Indicators.
2. Select the indicator for which you want to add, modify, or delete a target or threshold.
3. Use the Targets or Thresholds related lists to add, modify, or delete targets or thresholds.
   The related lists display both personal and global targets and thresholds. When you create a new personal target or threshold, ensure that the Owner field is populated.

Create a notification for an indicator or group of indicators
Performance Analytics can automatically generate an email when an indicator or a group of indicators meets predefined conditions.

You must enable and configure email notifications before you can use email summaries.

1. Navigate to Performance Analytics > Automation > Email Summaries.
2. Click New.
3. Enter a Name and a Description for the email summary.
4. Select the Active check box to run a scheduled job that creates the email summary.
5. Select when the job should run.
   - Daily
   - Weekly
   - Monthly
   - Periodically
   - Once
   - On Demand
6. Set the time to run the job by changing the hours, minutes, and seconds (using 24 hour notation).
   By default, the job runs at midnight.
7. Select indicators dynamically or manually.
   - Dynamically
     Select the By Condition check box. Use the condition builder to define the conditions for which indicators the email summary should include. For example, you might select all key indicators by setting the condition to (Key) (is) (true).
   - Manually
     Clear the By Condition check box. Specify the conditions you want to apply on the indicator records.
8. Right-click the form header and select Save.
   The indicator list and the user list become available.
9. Select any number of users and indicators and click Update.
   The email summary job runs based on the schedule you configured.
Add indicators

After you submit an email summary record with the By Condition check box cleared, the Indicators related list becomes available.

1. Click Edit in the Indicators related list.
2. Optional: Add a filter to limit the selection of the indicators.
   For example, *(Name) (contains) (incident)*. When you click Run filter, only indicators whose name contains incident are displayed.
3. Add the desired indicators to the Indicators List.
4. Click Save.

If your instance has the full version of Performance Analytics, you can add new indicators from the Scheduled Email Summary form.

1. In the Indicators related list, click New.
2. Define the indicator.
3. Click Submit to save the indicator and add it to the email summary.

Specify users

Before an email summary job can be scheduled for Performance Analytics, you must specify users who will receive the email.

1. In the Users related list, click Edit.
2. Perform one or both of the following actions.
   a) Add a filter to limit the selection of the users.
      For example, *(Department) (is) (Customer Support)*. When you click Run filter, only users who are in the Customer Support department are displayed.
   b) Add users to the Users List.
3. Click Save.

Performance Analytics data collection and cleanup

Performance Analytics uses scheduled jobs to collect and clean scores and snapshots, and enables you to manually set or import scores.

To collect data immediately for existing records, run a historical data collection job.

For ongoing data collection, choose one of the following methods to collect indicator scores based on the frequency and integrity of your data.

- If you need to measure an indicator once a month, quarter, or year, enter scores manually or import scores.
- If you need to measure indicators more frequently, or you want to eliminate any human involvement, use a scheduled data collection job.

Performance Analytics data collection jobs do not collect scores older than specified in the property `com.snc.pa.dc.keep_snapshots_for`. Scores or snapshots older than this value are not collected during data collection.
Collect historical data

Run a historical data collection job to collect scores and snapshots for existing records. When collecting data for the first time, such as for a new indicator, run historical data collection once to generate scores and snapshots for existing records.

Role required: pa_data_collector or admin

Performance Analytics regularly collects scores from your data on an ongoing basis. When you first set up Performance Analytics for an application, or when you create new indicators or indicator sources, run historical data collection to collect scores on your existing data. Historical data collection enables you to analyze data that existed prior to setting up Performance Analytics.

Warning: Data collection from a non-separated table with a domain configuration is not supported.

Note: A historical data collection job deletes any previously collected data for the periods and the indicators that the job covers. It does not delete data from outside that date range or for other indicators.

1. Navigate to Performance Analytics > Data Collector > Jobs.
2. Select a historical data collection job, such as [PA Change] Historic Data Collection, or create a new historic data collection job.
3. If you are creating or editing the historic data collection job, follow the procedure in Create or schedule a data collection job.

Important: For a historical data collection job, set Run to On demand. Do not run historical data collection jobs on a fixed schedule.

4. In the job indicators, exclude any breakdowns that are based on fields whose value is likely to change during the historical collection period, as described in Configure a job indicator. For example, in the provided (PA Incident SLA) Historic Data Collection job, the job indicator ‘Number of open and overdue incidents’ excludes the Assignment Group and the State breakdowns. The value of both of these breakdowns could change over the data collection period, making the results meaningless.
5. Click Execute Now.

After collecting historical data, use a scheduled data collection job to collect new scores regularly.

Create or schedule a data collection job

Schedule a data collection job to regularly collect scores.

Before defining data collection jobs, make sure that indicator sources, breakdown sources, and indicators have been defined. Otherwise, jobs cannot return any results.

Roles required: pa_data_collector or admin

The important items to know when you configure a data collection job are:

- Collection period
- Collection timezone
- Collected scores domain, if domains are used.
- The collection job runs without any restrictions. It does not use the permissions of the user who runs it.
Data collection jobs run different steps to collect scores and to collect text analytics data. By default, jobs collect both types of data. To improve performance, you can instead schedule separate jobs for scores and for text analytics data.

1. Navigate to Performance Analytics > Data Collector > Jobs and click New.

You can instead edit an existing data collection job, for example to change the schedule of when the job runs. In this case, navigate to Performance Analytics > Data Collector > Jobs and click the job name.

2. In the Name field, give the job a meaningful name.

Follow a standard format for naming data collector jobs, such as (PA Indicator) Daily Data Collection, (PA Indicator) Historic Data Collection...

3. In the Operator field, select whether to collect data for an absolute or a relative time period.

<table>
<thead>
<tr>
<th>Operator value</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Fixed</td>
<td>Collects data for an absolute time period.</td>
</tr>
<tr>
<td>Relative</td>
<td>Collect data for a period of time that is relative to the time when the job is run.</td>
</tr>
</tbody>
</table>

4. If you selected Fixed as the operator, select the Fixed start date and the Fixed end date.

5. If you selected Relative as the operator, specify the intervals prior to the run time to collect data from.

If you set relative start 1 and relative end 1 and intervals of “days ago,” you collect data only for yesterday.

a) In the fields Relative start and Relative start interval, set the number and the length, respectively, of time periods in the past to begin to collect data from.

b) In the fields Relative end and Relative end interval, set the number and the length, respectively, of the last period in the past to collect data from.

For example, you want to collect scores for a set of several indicators with a daily frequency, all using the same indicator source. First you create a historical data collection job that collects data from two months ago up to the day before yesterday. For this job, enter 60 in Relative start and days ago in Relative start interval. Enter 2 in Relative end and days ago in Relative end interval. Set the Run field to On Demand. Click Execute now and run this job once, to collect the initial scores.

Create a second job with relative start and end of 1 day ago and set the Run field to Daily. Activate this job to collect the scores for yesterday and all future scores for the day before the job is run.

6. Fill in the Job parameters, as appropriate.

<table>
<thead>
<tr>
<th>Job parameter</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Run as</td>
<td>Select the user that runs this scheduled job. The data collection job does not use the permissions of this user. Any user can run the job. However, if you have enabled domain support but do not configure domains for this job, the records retrieved from the indicator source respect the domain of this user.</td>
</tr>
<tr>
<td>Run as tz</td>
<td>Select the time zone that the queries use when they are executed from the job. By default the System time zone is used.</td>
</tr>
<tr>
<td>Active</td>
<td>If selected, as it is by default, the data collection occurs at the scheduled date and time.</td>
</tr>
<tr>
<td>Job parameter</td>
<td>Description</td>
</tr>
<tr>
<td>-----------------</td>
<td>---------------------------------------------------------------------------------------------------------------------------------------------</td>
</tr>
</tbody>
</table>
| Run             | Select the schedule for collecting the data. Choices are:  
    • Daily  
    • Weekly  
    • Monthly  
    • Periodically  
    • Once  
    • On demand  
    If you are creating a historical data collection job, schedule the job to run On demand. |
| Day             | • If **Run** is **Weekly**, specify the day of the week.  
    • If **Run** is **Monthly**, specify the day of the month. |
| Repeat Interval | If **Run** is **Periodically**, specify the amount of time between scheduled data collections, in days and hours.                           |
| Starting        | If **Run** is **Periodically** or **Once**, specify the date and time of the first scheduled data collection.                                 |
| Time            | If **Run** is **Weekly** or **Monthly**, the time of day, on a 24-hour clock.                                                               |
| Collect         | Data collection jobs have separate steps for collecting scores and for collecting text analytics. Select one of:  
    • Scores only  
    • Text index only  
    • Both scores and text index (default)  
    For more information, see *Set up text analytics*.                                      |
| Conditional     | If checked, the data collection occurs only if certain conditions are met.                                                                    |
| Conditions      | If **Conditional** is selected, write a script that specifies under what conditions the job is run.                                             |

7. Right-click the form header and select **Save**.

8. In the **Indicators** related list, click **Edit** and select the indicators that this job collects data for.

   **Important:** At least one indicator must be included for the job. Otherwise, the job cannot return any results.

9. Click **Submit**.

   • By default, for each job indicator, data is collected for all breakdowns and the indicator itself. To change this configuration for an indicator, see *Configure a job indicator*.
• If you have enabled domain support, you have a related list named **Domain configuration**. In this tab, click **Edit** to relate an existing domain configuration with this job or click **New** to create a new domain configuration. For more information, see **Create a domain configuration**.

⚠ **Warning:** Data collection from a non-separated table with a domain configuration is not supported.

### Configure a job indicator

Increase the efficiency of data collection by configuring job indicators to collect only necessary and sensible data.

**Role required:** admin, pa_admin

By default, a job indicator collects data for the indicator itself and for all breakdowns that are associated with that indicator. However, not all breakdown data might make sense for a particular data collection job. For example, breakdowns that are based on fields that are likely to change over a collection period, such as Assignment Group and State, are usually excluded from historical jobs. Alternatively, you might need to collect only breakdown data and not to calculate the indicator scores. You can configure a job indicator not to collect unnecessary or meaningless data, thus reducing the resource consumption of the job.

1. Navigate to **Performance Analytics > Jobs**.
2. Open the job for which you want to configure a job indicator.
   
   Job indicators are specific to the job that uses them.
3. In the **Indicators** tab, click the name of the job indicator that you want to configure.
4. Fill in the fields, as appropriate.

<table>
<thead>
<tr>
<th>Field</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Job</td>
<td>Is automatically copied from the job name.</td>
</tr>
<tr>
<td>Indicator</td>
<td>Select the indicator that must be collected for this job.</td>
</tr>
<tr>
<td>Collect</td>
<td>Choose to collect <strong>All breakdowns</strong> or <strong>No breakdowns</strong>, or to exclude specific breakdowns.</td>
</tr>
<tr>
<td>Collect indicator</td>
<td>Select the check box to collect data for the indicator itself (the default). Clear this check box if you want to collect data for breakdowns alone. Depending on the setting in <strong>Collect</strong>, data is collected for all breakdowns, one breakdown, or none at all.</td>
</tr>
</tbody>
</table>

5. If in the **Collect** field you chose to **Exclude these breakdowns**, select breakdowns to exclude.
   a) Open the context menu and click **Save**.
      A related list of excluded breakdowns appears.
   b) Click **Edit** in the **Excluded breakdowns** list and add or remove breakdowns to exclude.

### Cancel a data collection job

Cancel an active data collection job to stop the job from collecting scores.

**Role required:** pa_data_collector and schedule_admin, or admin

1. Navigate to **Performance Analytics > Data Collector > Jobs**.
2. Select the job you want to cancel.
3. Click Cancel Job.

Add or edit indicator scores manually

You can manually enter score data for indicators, including automated indicators.

Role required: pa_contributor, pa_admin, pa_power_user, or admin

You typically add scores manually for indicators that require an update only once a month or less often. In addition, if data cannot be collected automatically for some entities, like customers, you can manually enter or import data.

You can manually overwrite data that a job collected. However, the next time that a job is run that collects this data, the manually entered data is overwritten in turn.

1. Navigate to Performance > Indicators > Scoresheet.
2. Select the indicator for which you want to enter manual scores.
3. Optional: Change the selected date by clicking the left or right arrows around the date range, or click the date range to select a new range.
4. Fill in the main scores for the indicator in the Indicator Scores row.
   Alternatively, if an indicator contains breakdowns, fill in the indicator scores per breakdown instance.
   a) Click Aggregate scores.
   b) Choose whether you want to use the Sum or the Average of a specific breakdown to calculate the main scores for the indicator.
   c) Select the breakdown to aggregate, such as Priority, and click Apply.
      All scores for that breakdown are totaled or the average is calculated for them.
      For automated indicators that collect a second-level breakdown and are based on two or more breakdown sources, multi-level breakdown scores can be entered in the scoresheet. For example, for Open incidents by workgroup by priority, you can enter both scores for the elements of workgroup (first level) and the elements of priority (second level). Aggregations for these indicators are calculated in the same way as other breakdowns.

Import indicator score data

You can import indicator score data from Microsoft Excel or CSV files

Role required: pa_admin or admin

To import score data for an indicator from a Microsoft Excel or CSV file that exactly matches the columns of the table, including sys_ids for each row, follow the steps described in Easy import.

If the file does not include sys_ids for each row, look at the descriptions presented in the documentation on Import sets.

Keep the following information in mind as you use import sets for Performance Analytics.

- Transform Map: Select the Run Business Rules check box to ensure that all the defined rules are applied when inserting scores.
- Field Map:
  - Set Choice action to Reject for the target fields Indicator and Breakdown to ensure that no unknown values are inserted into the table.
  - Set the Referenced value field name to Name for the target fields Indicator and Breakdown if you do not have the sys_ids.
For the target field **Start**, make sure that the corresponding date format is specified in **Date Format**.

**Note:** If you are using a Microsoft Excel spreadsheet, make sure that the column is formatted as **Date**.

If you do not have the sys_id for a breakdown score, specify a script for the **Element** field to get the sys_id into the target field.

View a data collection job event

Job events show which jobs have been executed for Performance Analytics and which actions have been triggered in your ServiceNow instance, such as notifications or business rules.

Role required: pa_data_collector or admin

1. Navigate to **Performance Analytics > Data Collector > Job Events**.
2. Click **Created** to view the details of a specific job event.
   Additional information on the job event is displayed.

View the data collection job logs

Job logs display information about the data collection jobs that have run for Performance Analytics. You can view job logs, create events, and view and edit the event registry. The list view displays all log entries, unless filtered.

Role required: pa_data_collector or admin

1. Navigate to **Performance Analytics > Data Collector > Job Logs**.
   The log provides the following information for all occurrences.

<table>
<thead>
<tr>
<th>Data Collection Job Log</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Field</strong></td>
</tr>
<tr>
<td>Created</td>
</tr>
<tr>
<td>State</td>
</tr>
<tr>
<td>Name</td>
</tr>
<tr>
<td>Completed</td>
</tr>
<tr>
<td>Inserts</td>
</tr>
<tr>
<td>Updates</td>
</tr>
<tr>
<td>Warnings</td>
</tr>
<tr>
<td>Errors</td>
</tr>
<tr>
<td>Run time</td>
</tr>
</tbody>
</table>

2. Click **Created** to view the details of a specific job.
Additional information on the job settings and sequence steps is displayed. If notifications are enabled, you can send emails about the data collection results to users.

Click on a job in the list to see a detailed log of the job. For information about the contents of individual job logs, see Data collection process and logging.

Data collection process and logging

To debug data collection, you need to know the data collection process and how it is reflected in the job logs.

As an administrator, sometimes you have to debug a data collection job. Each job generates a log, but to understand the entries in this log, you need to know which step in the data collection process produced the entries.

The data collection job involves executing an SQL query for each indicator source that uses the data collector. The query is repeated for every collection time from the start date to the stop date, and then queries are run for the next indicator source. Each step of executing the query is documented in the data collection job log. The following example is excerpted from the (PA Incident) Historic Data Collector job.

<table>
<thead>
<tr>
<th>Step num</th>
<th>Step of SQL query execution</th>
<th>Example of resulting log entry</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Retrieve indicator source.</td>
<td>Processing indicator source Incidents.Open</td>
</tr>
<tr>
<td>2</td>
<td>Start date of collection job.</td>
<td>Collecting for 20171028</td>
</tr>
<tr>
<td>3</td>
<td>Fetch fields.</td>
<td>Fetching 'short_description, sys_id, opened_at, assignment_group, description, priority, category' from 'incident'</td>
</tr>
<tr>
<td>4</td>
<td>Generate SQL based on the conditions that are specified in the indicator source.</td>
<td>SELECT task0.&quot;sys_id&quot; FROM task task0 WHERE task0.&quot;sys_class_name&quot; = 'incident' AND (task0.&quot;opened_at&quot; &gt;= '2017-10-28 07:00:00' AND task0.&quot;opened_at&quot; &lt;= '2017-10-29 06:59:59')</td>
</tr>
<tr>
<td>5</td>
<td>Validate indicator conditions</td>
<td>(Not logged)</td>
</tr>
<tr>
<td>6</td>
<td>Execute SQL query, which fetches rows from the facts table.</td>
<td>Fetched 150 rows from incident</td>
</tr>
<tr>
<td>7</td>
<td>The map/reduce function runs.</td>
<td>Applying map/reduce function for indicator source Incidents.Open</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Applied map/reduce function</td>
</tr>
<tr>
<td>8</td>
<td>If text indexing is active and has been configured for the indicator source, the data collector stores the resulting text index.</td>
<td>Storing Text Index for indicator source Incidents.Open</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Bytes used by text index: 41,984 for: Incidents.Open</td>
</tr>
</tbody>
</table>
### View data collection usage

To view statistics about data collection jobs, click **Data Collection Overview** in the Usage tile on the Performance Analytics Admin Console.

**Role required:** pa_admin, admin

1. Navigate to **Performance Analytics > Admin Console**.
2. In the Usage tile, click **Data Collection Overview**.

The following widgets are displayed:
- The net new scores, average run time, and number of errors for the day
- The weekly net new scores and average run time

---

<table>
<thead>
<tr>
<th>Step num</th>
<th>Step of SQL query execution</th>
<th>Example of resulting log entry</th>
</tr>
</thead>
<tbody>
<tr>
<td>9</td>
<td>Loop through the records of the indicator source and execute or evaluate any scripts.</td>
<td></td>
</tr>
<tr>
<td>10</td>
<td>Validate indicator conditions</td>
<td>(Not logged)</td>
</tr>
<tr>
<td>11</td>
<td>Calculate the indicator score</td>
<td>(Not logged)</td>
</tr>
<tr>
<td>12</td>
<td>For each breakdown: 1. Calculate the breakdown score or execute the breakdown script. 2. Retrieve all breakdown unique values. 3. Create or update the array for scores or snapshots. The array is Indicator, Breakdown 1, Element 1, Breakdown 2, Element 2, Domain, Value, Array of [sys_id]</td>
<td>Not logged, but retrieving breakdown unique values can cause delays, especially if the query does not use indexes or retrieves many records.</td>
</tr>
<tr>
<td>13</td>
<td>Delete previous scores for the indicators and breakdowns that use the indicator source.</td>
<td>Deleting previous results for indicator source Incidents.Open</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Deleted previous results 38</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Deleted previous results 21</td>
</tr>
<tr>
<td>14</td>
<td>Store newly collected results for the indicator source.</td>
<td>Storing collected results for indicator source Incidents.Open</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Stored collected results</td>
</tr>
<tr>
<td>15</td>
<td>Specify which indicators the data collector does not collect scores for.</td>
<td>Not collecting for Indicator: Summed age of open incidents with excluded Breakdown: Assignment Group</td>
</tr>
<tr>
<td>16</td>
<td>Finish collecting data for that indicator source for that period.</td>
<td>Collecting for 20171028 finished</td>
</tr>
<tr>
<td>17</td>
<td>For each other period, if any, for the same indicator source, loop back to step 2.</td>
<td></td>
</tr>
<tr>
<td>18</td>
<td>For each other indicator source, if any, loop back to step 1.</td>
<td></td>
</tr>
</tbody>
</table>
The number of data collection job inserts and deletes over time

By default, weekly statistics are shown in a scorecard, broken down by data collector. You can select different visualizations and breakdowns in the widget.

Cleaning collected Performance Analytics data

Performance Analytics scores and snapshots may grow over time and should be routinely cleaned to ensure optimal performance and accurate data.

Performance Analytics uses a scheduled job to remove old scores and snapshots.

The Clean PA collections scheduled job is active by default and has no impact on performance. By default, the job runs daily so it only has to delete a small amount of data.

**Note:** The table attributes nibble_size and nibble_sleep affect the behavior of the collection cleaner job if the attributes are defined for the Scores or Snapshots tables.

This scheduled job also deletes any Score (pa_scores), Score Level 1 (pa_scores_l1), Score Level 2 (pa_scores_l2), or Snapshots (pa_snapshots) records that do not have an associated indicator or breakdown. For example, if a user deletes an indicator, the scheduled job cleans up any scores or snapshots that were associated with the deleted indicator.

**Modify the Clean PA collections job**

Modify the scheduled job to configure when Performance Analytics scores and snapshots are cleaned. The scheduled cleanup job should not run while a data collection job is running.

Role required: pa_admin or admin

By default, the Clean PA collections job runs at 05:00 which is appropriate when using the default data collection jobs. If you create additional data collection jobs, you may need to change the start time of the Clean PA collections job.

1. Navigate to **Performance Analytics > Automation > Schedules**.
2. Select the **Clean PA collections** job.
3. Make any necessary changes. For example, change the **Run time** field value to change when the job runs.
4. Click **Update**.

Using Performance Analytics with external data

Performance Analytics on external data sources enables you to perform detailed analysis on data that is not in your ServiceNow instance.

When you collect scores on external data, Performance Analytics stores scores and breakdown elements from the external data on your instance. The raw data being analyzed remains on the external data source and is not copied to your instance. This functionality enables you to analyze and share metrics without duplicating the underlying data.

Performance Analytics external data collection uses three types of configuration records:

- An external indicator which specifies the JDBC data source and SQL statement used to collect scores.
- An external breakdown which specifies the JDBC data source and SQL statement used to specify breakdown elements.
- An external indicator breakdown which defines the relationship between an external indicator, and breakdown, and the SQL statement used to collect scores for each breakdown element for that indicator.

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Create an indicator for external data

Create an external indicator to define what data to evaluate and the SQL statement used to determine the indicator score.

Role required: pa_admin, pa_power_user, or admin

1. Navigate to Performance Analytics > External Indicators and click New.
2. Give the indicator a descriptive Name.
3. In the Frequency field, specify the frequency of data points for the indicator, such as Daily, Weekly, or Monthly.
4. In the Source tab, select a Data Source to collect scores from.
   - Only JDBC type data sources are supported by Performance Analytics. Refer to the data sources documentation for information on setting up data sources.
   - Note: The SQL Statement and import set table defined in the data source are not used by Performance Analytics.
5. Specify the SQL Statement to use to calculate the score value.
   - The SQL statement must return an aggregate value with the alias value, and should filter data based on a date field, such as `SELECT count(*) AS value FROM... WHERE DATE(date_field) >= DATE(${start_at})`.
   - Important: The aggregate alias must be value.
6. Optional: If you prefer that the score of this indicator increases or decreases over time, select Maximize or Minimize in the Direction field.
   - Many analytical tools and graphic displays use this Direction with this indicator.

<table>
<thead>
<tr>
<th>Value</th>
<th>Use case</th>
</tr>
</thead>
<tbody>
<tr>
<td>Maximize</td>
<td>Select if an increase in this indicator score is desired. For example, consider selecting Maximize for an indicator that shows revenue. Analytic tools and graphic elements, such as those in scorecards, reflect that an increase in this indicator score is good and a decrease is bad.</td>
</tr>
<tr>
<td>Minimize</td>
<td>Select if a decrease in this indicator score is desired. For example, consider selecting Minimize for an indicator that shows costs. Analytic tools and graphic elements, such as those in scorecards, reflect that a decrease in this indicator score is good and an increase is bad.</td>
</tr>
<tr>
<td>None</td>
<td>Select if the direction of change in this score does not matter to your business.</td>
</tr>
</tbody>
</table>

7. Optional: Specify any of the remaining indicator properties:

<table>
<thead>
<tr>
<th>Other property fields</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Field</strong></td>
</tr>
<tr>
<td>Unit</td>
</tr>
<tr>
<td>Field</td>
</tr>
<tr>
<td>------------</td>
</tr>
<tr>
<td>Precision</td>
</tr>
<tr>
<td>Key</td>
</tr>
</tbody>
</table>

8. **In the Access control tab**, set whether to publish this indicator to a scorecard, and whether to limit the visibility of the indicator by user, group, or role.

   The scorecard enables analysis of the indicator through graphics.

9. **Optional**: In the **Other** tab, set various miscellaneous properties.

   **"Other" tab fields**

<table>
<thead>
<tr>
<th>Field</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Default time series</td>
<td>A predefined analytical function, like a 7-days running average, to display the indicator instead of showing the actual values of the indicator.</td>
</tr>
<tr>
<td>Live group profile</td>
<td>Live group profile that indicates the live group where the indicator scores are published.</td>
</tr>
<tr>
<td>Order</td>
<td>Number indicating the order in which scorecards are displayed. Indicators with the lowest value are displayed at the top of the scorecard list. If no values are provided in the <strong>Order</strong> field, scorecards are displayed from a to z using the <strong>Name</strong> field. To use the order field, you must enter order numbers for all indicators. If you put in numbers for only a few indicators, the order in which scorecards are displayed reverts to a to z.</td>
</tr>
<tr>
<td>Default chart type</td>
<td>Set a default chart type (line, column, spline, or area) for this indicator. When opening the detailed scorecard for the first time, the default chart type is used. If the chart type is changed in the detailed scorecard, that preference is remembered.</td>
</tr>
<tr>
<td>Render continuous lines</td>
<td>When selected, scorecards displaying this indicator show unbroken data lines, even when there is no data for a specific date. This behavior may be useful when displaying data sets with varied starting dates or data that is not regularly updated, such as stock information.</td>
</tr>
</tbody>
</table>
### Field | Description
--- | ---
Show real-time score | When selected, scorecards displaying this indicator show the score in real time, as well as the current state of associated records. Clear this check box when indicator data is not available in real time, such as in an integration that uses data from a third-party source.

Show delta | When selected, enables reporting of historic records when viewing this indicator on a detailed scorecard. You can filter the data to display only the currently data, only the historical data, or the data shared between both sets.

10. Optional: In the **Forecasting** tab, set the forecast method, the number of data collection periods to forecast, and the amount of historical data to base the forecast on. For more information, see *Forecasting Performance Analytics data*.

11. Save the indicator.

12. Press **Test Collection**. This action tests the main query of the indicator.

If you want to collect breakdown scores for the indicator, define an external breakdown and associate it with the indicator.

### Create a breakdown using external data

Create an external breakdown to define what elements are available to break down external indicator scores.

**Role required:** pa_admin, pa_power_user, or admin

By default an external breakdown can contain a maximum of 5000 elements. This limit is controlled by the property `com.snc.pa.dc.max_external_elements`.

External breakdown elements are stored on the `pa_ext_elements` tables.

1. Navigate to **Performance Analytics > External Breakdowns**.
2. Click **New**.
3. Select a **Data Source** that contains the records you want to use as breakdown elements.

   Only JDBC type data sources are supported by Performance Analytics. Refer to the data sources documentation for information on setting up data sources.

   **Note:** The SQL Statement and Import set table defined in the data source are not used by Performance Analytics.

4. Specify a **SQL Statement** to select the breakdown elements.

   The SQL Statement must return the unique key for each breakdown element with the alias `id` and the element display name with the alias `name`, such as `SELECT guid AS id, user_name AS name FROM...`.

   **Important:** The unique key alias must be `id` and the display name alias must be `name`.

5. Save the breakdown.
6. Press **Test Collection**.
This action tests the query that selects the breakdown elements.

After defining how to collect breakdown elements, associate the external breakdown with one or more external indicators.

**Configure an external indicator to use an external breakdown**

Associate an external indicator and external breakdown to define how to collect breakdown scores for the indicator.

Role required: pa_admin, pa_power_user, or admin

1. Navigate to Performance Analytics > External Indicators.
2. Select an indicator.
3. In the Breakdowns related list, click New.
4. Select the Breakdown to apply to this indicator.
   You do not need to select a data source. The indicator data source is used.
5. In the SQL statement field, enter a SQL statement that calculates the score value for each breakdown element.
   The SQL statement should use the same aggregate function as the indicator SQL statement, such as COUNT. The SQL statement must return the aggregate value with the alias **value** and the breakdown element unique key with the alias **id**. The SQL statement must also group the data by the column that contains the breakdown element values.
   
   For example, `SELECT count(*) AS value, guid as id FROM... WHERE DATE(date_field) >= DATE($start_at) GROUP BY guid`
   
   **Important:** The aggregate alias must be **value** and the breakdown unique key alias must be **id**.

6. Save your changes.
7. Press Test Collection.
   This action tests the SQL statement that calculates the score value for the breakdown element.

Repeat the previous steps to add additional breakdowns to the indicator. Test the SQL statement after adding each one.

**Test external indicators and breakdowns**

Test your external indicators and breakdowns to ensure you can connect to the external data source and collect the data you expect.

Role required: pa_admin, pa_power_user, or admin

Test an indicator to test the query for that indicator and the queries for all breakdown elements. Test a breakdown to test the query used to determine available breakdown elements.

No scores or breakdown elements are saved when you test an indicator or breakdown.

1. Navigate to Performance Analytics > External Indicators or Performance Analytics > External Breakdowns.
2. Select the indicator or breakdown that you want to test.
3. Click the Test button.
   If the query runs successfully, the number of scores or breakdown elements that would be collected appears. If an error occurs during testing, the error message appears.
After confirming that all queries run successfully and return the data you expect, add the external indicator to a data collection job to begin collecting scores.

Filtering external data by date

When using Performance Analytics with external data you must filter SQL statements that collect scores by date.

In indicator and indicator breakdown SQL statements, filter the query by date, such as WHERE DATE(my_date_field) >= DATE(${start_at}). It is not necessary to filter breakdown SQL statements by date as breakdown SQL statements collect only elements and not scores.

The variable ${start_at} contains the date of the period being collected in the format YYYYMMDD. For daily indicators this value is always the date being collected. For indicators with longer collection frequencies, such as weekly or monthly, the date is the first day of the collection period. The date that the data collection job runs on does not affect this variable.

When you test an indicator or breakdown, the ${start_at} variable is always set to the current date.

Limitations when using Performance Analytics with external data

Certain Performance Analytics functionality is not available when you measure external data.

- You cannot collect snapshots
- You cannot view real-time scores
- You cannot apply 2nd-level breakdowns
- You cannot use widget visualizations that depend on 2nd-level breakdowns with external data. This includes pivot and heatmap visualizations.
- Because snapshots are not available, you cannot view changes in collected records

Quickly configure Performance Analytics for a task table

The configuration generator enables you to quickly configure Performance Analytics to display data from any task table.

You can specify a Task-based table to report on, and the configuration generator automatically creates indicators, breakdowns, formulas, data collection jobs, and dashboards. This configuration provides the same elements as the Performance Analytics incident solution, but for any Task table. When using domain separation, all records are created in the domain of the current user.

Note: You can use the configuration generator only with tables that extend Task.

You can access the configuration generator by navigating to Performance Analytics > Configuration Generator.

After generating a configuration for the selected table, you can view the created records using the Go to the configuration record, Generated Indicators, and Generated Jobs related links. You can modify the generated records as needed using standard Performance Analytics configuration options.

Note: You may need to tweak the configuration before you start using the files that are created by the generator.

Activate the Performance Analytics configuration generator

As an administrator, you can enable the Performance Analytics configuration generator plugin (com.snc.pa.configurationgenerator).
Role required: admin
Before starting this procedure, you must have Performance Analytics.

1. Navigate to System Definition > Plugins.
2. Find and click the plugin name.
3. On the System Plugin form, review the plugin details and then click the Activate/Upgrade related link.
   
   If the plugin depends on other plugins, these plugins are listed along with their activation status.

   If the plugin has optional features that depend on other plugins, those plugins are listed under Some files will not be loaded because these plugins are inactive. The optional features are not installed until the listed plugins are installed (before or after the installation of the current plugin).

4. Optional: If available, select the Load demo data check box.

   Some plugins include demo data—Sample records that are designed to illustrate plugin features for common use cases. Loading demo data is a good practice when you first activate the plugin on a development or test instance.

   You can also load demo data after the plugin is activated by clicking the Load Demo Data Only related link on the System Plugin form.

5. Click Activate.

Performance Analytics schema maps
You can view a schema map of Performance Analytics configuration records.

To view the schema map for a Performance Analytics configuration record, click the Show Schema Map related link on the appropriate form.

You can view the schema map for these types of records:

- Automated indicators
- Breakdowns
- Indicator sources
- Breakdown sources
- Scripts
- Element filters

Performance Analytics with domain separation
Performance Analytics supports collecting scores from multiple domains and can be configured to enable domain-specific administration. Additional domain functionality is available for managed service providers. Domain separation allows you to separate data, processes, and administrative tasks into logical groupings called domains. You can then control several aspects of this separation, including which users can see and access data.

Overview

Support: Level 3

Domain separation is supported in this application. Not all ServiceNow applications support domain separation; some include limitations on the data and administrative settings that can be domain separated. To learn more, see Application support for domain separation.
Note: You must license Performance Analytics to use it in any domain other than global.

Performance Analytics domain configurations
When using Performance Analytics with domain separation you can collect domain-specific scores, and use global or domain-specific configuration records such as indicators, breakdowns, and dashboards.

Collecting domain-specific scores
Data collector jobs can access records based on the roles, entitlements, and domain of the user selected in the job Run as field. To collect scores from a particular domain, ensure the Run as user is a member of that domain. The collected data honors the Run as user domain.

The domain of each data collector job determines the domain of scores generated by that data collector. The domain of the source records does not affect the domain of the scores.

Only users with the pa_admin role who are members of the domain that contains the scheduled job, or who are members of the domain of the Run as user, can modify domain-separated data collection jobs.

Global configuration
By using configuration records in the global domain, you can present domain-appropriate data automatically.

Note: Additional functionality is available for MSP customers using domain separation. For more information, see Performance Analytics domain separation for managed service providers. This functionality requires a global configuration.

To populate the data, create a separate data collector job for each domain. Ensure each user selected in the Run as field is a member of the correct domain. The collected score is recorded under the domain of the Run as user. When a user in a domain views a widget or scorecard, only scores from that user’s domain appear.

By default, configuration records from Performance Analytics solutions use the global domain.

Domain-specific configuration
By using domain-specific configuration records, you can grant the pa_admin role to domain users to create their own domain-specific components. Users, including system administrators, can create and edit configuration records only within their domain. Users in child domains can read but not edit configuration records in a parent domain.

You must create a domain-specific copy of a configuration record to use it in that domain. For example, to add a domain-specific condition to a indicator source, you must create a copy of the indicator and indicator source in that domain.

You can quickly copy an indicator or breakdown and related data from a different domain using the Insert and Stay with Relations UI action on the Indicator or Breakdown forms. Any breakdowns, breakdown exclusions, or time series exclusion relationships are also copied. Any associated scheduled jobs are copied only if the Run as user for that job is the current user.

To collect scores, create a new data collector job associated with the domain-specific indicators.
Hybrid configuration

By using a hybrid configuration you can maintain reusable foundation configuration records such as indicator sources within the global domain or a parent domain while allowing administrators in other domains to create domain-specific configuration records such as indicators and widgets.

When using a hybrid configuration, foundation records should be managed only within the global domain or a parent domain. All other configuration records, such as widgets and indicators should be managed separately within each child domain. The following record types are considered foundation records.

- Bucket groups
- Buckets
- Scripts
- Breakdown sources
- Indicator sources
- Filters
- Breakdowns
- Managed sources
- Manual breakdowns
- Breakdown mappings
- Breakdown relations

Copying configuration data

You can reuse Performance Analytics configurations in multiple domains. The PADomainUtils API provides functionality that enables system administrators to move or copy Performance Analytics configuration records between domains.

Transferring domain configurations between instances

Use update sets to transfer domain configurations between instances. If the domain configuration has Collect aggregate enabled, also transfer the aggregation domain separately. For more information, see Transfer domain configuration with score aggregation.

Performance Analytics domain separation for managed service providers

Managed service providers can configure Performance Analytics with domain separation to provide domain-specific analytics and to control how scores are collected through the domain hierarchy.

You can create domain configurations to define which domains to collect data from and which domains to display on dashboards. Associate these domain configurations with specific
data collection jobs and dashboards to provide relevant scores to users while maintaining your Performance Analytics configuration in a single domain.

To use this functionality you must have Performance Analytics, the Domain Support - Domain Extension installer plugin, and responsive dashboards.

**Activate the Performance Analytics - Domain Support plugin**
You can activate the Performance Analytics - Domain Support plugin (com.snc.pa.domain_support) if you have the admin role.

Role required: admin

Performance Analytics - Domain Support activates these related plugins if they are not already active.

**Plugins for Performance Analytics - Domain Support**

<table>
<thead>
<tr>
<th>Plugin</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Performance Analytics - Domain Support (com.snc.pa.domain_support)</td>
<td>Provides features to support scores collection on domain-separated instances. This plugin depends on the Performance Analytics premium and Domain Separation plugins.</td>
</tr>
</tbody>
</table>

1. Navigate to **System Definition > Plugins**.
2. Find and click the plugin name.
3. On the System Plugin form, review the plugin details and then click the **Activate/Upgrade** related link.

   If the plugin depends on other plugins, these plugins are listed along with their activation status.
   
   If the plugin has optional features that depend on other plugins, those plugins are listed under **Some files will not be loaded because these plugins are inactive**. The optional features are not installed until the listed plugins are installed (before or after the installation of the current plugin).

4. Optional: If available, select the **Load demo data** check box.

   Some plugins include demo data—Sample records that are designed to illustrate plugin features for common use cases. Loading demo data is a good practice when you first activate the plugin on a development or test instance.

   You can also load demo data after the plugin is activated by clicking the **Load Demo Data Only** related link on the System Plugin form.

5. Click **Activate**.

**Create a domain configuration**

Create a domain configuration to define which domains to collect scores from and how to store scores within the domain hierarchy.

Role required: pa_admin or admin

Navigate to **Performance Analytics > Domain Configuration** and create a new record.
<table>
<thead>
<tr>
<th>Field</th>
<th>Description</th>
</tr>
</thead>
</table>
| Configuration type  | Specify how you want to determine which domains to include in this configuration.  
|                     | Select **Visibility group** to include all domains visible to a specific group, based on existing visibility domains associated with that group.  
|                     | Select **Conditions** to specify the domains directly, using conditions.     |
| Visibility group    | When **Configuration type** is **Visibility group**, select the user group. All domains available to this group, based on associated visibility domains, are included in this domain configuration. |
| Conditions          | When **Configuration type** is **Conditions**, specify conditions to determine which domains are included in this configuration. |
| Collect aggregate   | Aggregate scores from the specified domain hierarchy. Aggregate scores are stored in a separate domain that exists outside of the domain hierarchy and contains only scores.  
|                     | One aggregate domain is created for each domain configuration where **Collect aggregate** is selected. The name of this domain is displayed in the read-only **Aggregate domain** field.  
|                     | Aggregate domains are stored as children of the Performance Analytics Aggregation Container domain. |
| Collect children    | Select this option to collect scores from children of the specified domains. Scores are collected from all child domains, not only those domains that are direct children of the specified domains.  
|                     | Scores collected from a child domain are stored in that domain. |
| Roll up             | Select this option to roll collected scores up to the top-level domain in the selected hierarchy. Scores collected from child domains are stored in the top-level domain of the specified domain hierarchy. |
| Roll up type        | Select **All child domains** to roll up scores from the specified domains and all of their child domains. Select **Only selected domains** to roll up scores only from the domains you specified. |

**Associate a domain configuration with a data collection job**  
Associated a domain configuration with a collection job to collect scores from specific domains.  
Role required: pa_data_collector or admin
When you use a domain configuration to control the domain of a data collection job, the domain of the **Run as** user is not used.

1. Navigate to **Performance Analytics > Jobs**.
2. Select a data collection job.
3. In the **Domain Configurations** related list click **Edit**.
4. Select the domain configurations you want to associate with this job.
   A separate data collection job runs for each domain included in the configuration.
5. Click **Save**.
6. Optional: Modify the **Order** of the domain configuration.

   If multiple domain configurations are associated with a collection job, any overlap in the included domains may cause scores to be collected incorrectly. Only the scores collected for the domain configuration with the highest **Order** value are preserved for the overlapping domains.

   **Tip:** When using multiple domain configurations with a single job, ensure each domain configuration specifies a unique set of domains.

Associate a domain configuration with a dashboard

Associate a domain configuration with a dashboard to display the domain picker on that dashboard and enable users to view scores from specific domains.

Role required: **pa_power_user** or **admin**

A user must have visibility into all domains in the domain configuration to view domain-specific scores on a dashboard.

1. Navigate to **Performance Analytics > Dashboard Administration**.
2. Select a dashboard.
3. In the **Domain Configurations** related list click **Edit**.
4. Select the domain configurations you want to associate with this dashboard.
5. Click **Save**.

**Domain separation on dashboards and scorecards**

You can view domain-specific scores on dashboards and scorecards.

When you view a dashboard associated with one or more domain configurations you can select which domain's scores to view.

**Note:** You must have access to all domains in the domain configuration to view the domain choice list.

Select a specific domain, or select **My domain** to view scores associated with your domain.

When viewing domain scores on a dashboard, click a widget to view the domain-specific scorecard. The name of the domain appears following the indicator name on the scorecard. All details on the scorecard are specific to the domain. Any target, threshold, or comment you add is automatically associated with the current domain. The **Edit scores** option is not available from a domain scorecard.

**Transfer domain configuration with score aggregation**

To transfer between instances a Performance Analytics domain configuration that is set to aggregate scores, transfer both the configuration and the aggregation domain.

Transfer the domain configuration with an update set. For more information about using update sets to transfer configurations between instances, see **System update sets**.
Role required: admin

1. Log in as admin to the source instance from which you transferred the domain configuration.
2. Navigate to **Data Collector > Domain Configurations**.
3. Open the domain configuration record that you transferred in the update set.
4. Right-click on the header of the form and select **Show XML**.
5. Copy the sys_id, which is the value of the **aggregate_domain element**.

This XML file does not appear to have any style information associated with it. The document tree is shown below.

```xml
<xml>
<aggregate_domain display_value="OpCon">676e94940e8060094a9716ce1050e14</aggregate_domain>
<aggregate_domain_parent display_value="PA aggregation container">a42de8e7d70022006ceca3b20ec61037f</aggregate_domain_parent>
<collect_aggregate>true</collect_aggregate>
<collect_children>true</collect_children>
<conditions_table>domain</conditions_table>
<domain_table>domain</domain_table>
<name>SILVA PA OPCOS</name>
<roll_up>true</roll_up>
<roll_up_type>pa_domain_configurations</roll_up_type>
/sys_class_name>pa_domain_configurations</sys_class_name>
<sys_created_by>laetitia.dano@servicenow.com</sys_created_by>
<sys_created_on>2018-02-15 12:11:40</sys_created_on>
<sys_customer_update>true</sys_customer_update>
<sys_id>1b30e2e94f589300a02a4c318110c7f7</sys_id>
<sys_mod_count>4</sys_mod_count>
<sys_name>SILVA PA OPCOS</sys_name>
<sys_package display_value="Global" source="global">global</sys_package>
<sys_policy/>
<sys_replace_on_upgrade>false</sys_replace_on_upgrade>
<sys_scope display_value="Global">global</sys_scope>
<sys_update_name>pa_domain_configurations_1b30e2e94f589300a02a4c318110c7f7</sys_update_name>
<sys_updated_by>laetitia.dano@servicenow.com</sys_updated_by>
<sys_updated_on>2018-06-05 15:11:06</sys_updated_on>
<type>visibility_group</type>
<visibility_group display_value="SILVA PA OPCOS" name="SILVA PA OPCOS">e3b9a5a4f589300a02a4c318110c75de</visibility_group>
</xml>
```
6. Navigate to Domain Admin > Domains.
7. Filter the list of domains by the sys_id that you copied from the transferred domain configuration.
8. Open the filtered domain and from the context menu, export the domain record to XML.
9. Log in as admin to the target instance.
10. Navigate to Domain Admin > Domains.
11. From the context menu, import the XML file of the domain record from the source instance.

You can execute data collection jobs for the transferred domain.

**PADomainUtils**

The PADomainUtils API enables you to copy Performance Analytics configurations between different domains.

Use this API in server scripts to copy Performance Analytics configuration records, such as indicators, breakdowns, and dashboards, to different domains. This API enables you to create a Performance Analytics configuration in one domain and copy that configuration to any number of additional domains.

**Note:** This API cannot copy records into the Global domain.

To use PADomainUtils, you must satisfy these requirements:

- Performance Analytics must be licensed.
- The user running the script must have the admin role.
- The instance must use domain separation.
- The script must be run from the global domain.
- When moving or copying records, the source and target domains must be different.

**PADomainUtils - PADomainUtils()**

Instantiates a new PADomainUtils object to move or copy Performance Analytics configuration records from the global domain.

Use the PADomainUtils(String domainFrom) constructor instead when moving or copying records from a domain other than the global domain.

**Parameters**

<table>
<thead>
<tr>
<th>Name</th>
<th>Type</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>None</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

```java
// PADomainUtils initialized with the global domain
var globalUtils = new SNC.PADomainUtils();
```

**PADomainUtils - PADomainUtils(String domainFrom)**

Instantiates a new PADomainUtils object to move or copy Performance Analytics configuration records from the specified domain.

Use the PADomainUtils() constructor instead when moving or copying from the global domain.
Parameters

<table>
<thead>
<tr>
<th>Name</th>
<th>Type</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>domainFrom</td>
<td>String</td>
<td>The domain to copy records from.</td>
</tr>
</tbody>
</table>

// c90d4b084a362312013398f051272c0d is the sys id of the ACME domain
var acmeUtils = new SNC.PADomainUtils('c90d4b084a362312013398f051272c0d');

PADomainUtils - setFoundation(Boolean foundation)
Uses this method to move or copy only foundation records in a hybrid domain configuration.

You can implement a hybrid configuration by maintaining some types of record in a parent domain and some types in child domains. Records maintained in the parent domain are known as foundation records. The following types of record are considered foundation records.

- Bucket groups
- Buckets
- Scripts
- Breakdown sources
- Indicator sources
- Filters
- Breakdowns
- Managed sources
- Manual breakdowns
- Breakdown mappings
- Breakdown relations

Other Performance Analytics configuration records such as widgets and indicators are not foundation records. Set this method to false to move or copy these additional records as well.

Parameters

<table>
<thead>
<tr>
<th>Name</th>
<th>Type</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>foundation</td>
<td>Boolean</td>
<td>Indicates if only foundation records should be copied or moved by this PADomainUtils object.</td>
</tr>
</tbody>
</table>

Returns

<table>
<thead>
<tr>
<th>Type</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>PADomainUtils</td>
<td>The object calling this function.</td>
</tr>
</tbody>
</table>
PADomainUtils - setOverrides(Boolean overrides)
Use this method before copying records to set the sys_override value of the new record to the original parent record.

Using this method enables you to automatically override records in a parent domain. By overriding the parent records, the parent records do not impact the child domain. If the source domain is not the parent of the target domain when copying records, setting the sys_override value will not have any impact on behavior. You can specify an override only when copying records, not when moving records.

Parameters

<table>
<thead>
<tr>
<th>Name</th>
<th>Type</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>overrides</td>
<td>Boolean</td>
<td>Indicates that copied records in a child domain should override the source record in the parent domain. This value is true by default.</td>
</tr>
</tbody>
</table>

Returns

<table>
<thead>
<tr>
<th>Type</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>PADomainUtils</td>
<td>The object calling this function.</td>
</tr>
</tbody>
</table>

PADomainUtils - copy(String runAs)
Copies Performance Analytics configuration records to a different domain.

To copy dashboards or scheduled jobs, see copyDashboard and copyJob.

Parameters

<table>
<thead>
<tr>
<th>Name</th>
<th>Type</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>runAs</td>
<td>String</td>
<td>The user whose domain you want to copy records to.</td>
</tr>
</tbody>
</table>
PADomainUtils - copyJob(String paJob, String runAs)
Copies a Performance Analytics scheduled data collection job record to another domain.

Parameters

<table>
<thead>
<tr>
<th>Name</th>
<th>Type</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>paJob</td>
<td>String</td>
<td>The sys_id of a Performance Analytics scheduled data collection job (sysauto_pa) record.</td>
</tr>
<tr>
<td>runAs</td>
<td>String</td>
<td>The user whose domain you want to copy the job to.</td>
</tr>
</tbody>
</table>

Returns

<table>
<thead>
<tr>
<th>Type</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>String</td>
<td>An error message if an error occurs, or an empty string if there is no error.</td>
</tr>
</tbody>
</table>

PADomainUtils - copyDashboard(String dashboardId, String runAs)
Copy a dashboard to another domain.

Parameters

<table>
<thead>
<tr>
<th>Name</th>
<th>Type</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>dashboardId</td>
<td>String</td>
<td>The sys_id of the dashboard to copy.</td>
</tr>
</tbody>
</table>
### PADomainUtils - move(String runAs)
Moves Performance Analytics configuration records to a different domain.

**Parameters**

<table>
<thead>
<tr>
<th>Name</th>
<th>Type</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>runAs</td>
<td>String</td>
<td>The user whose domain you want to copy records to.</td>
</tr>
</tbody>
</table>

**Returns**

<table>
<thead>
<tr>
<th>Type</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>void</td>
<td></td>
</tr>
</tbody>
</table>

// move all the Performance Analytics records from the global to the customers domain  
var pa = new SNC.PADomainUtils();  
pa.move('774190f01f1310005a3637b8ec8b70ef')

### PADomainUtils - isWriteable(String table, String id)
Evaluate if you can write to a specific record identified by table and sys_id.

**Parameters**

<table>
<thead>
<tr>
<th>Name</th>
<th>Type</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>table</td>
<td>String</td>
<td>The name of the table containing the record to query, such as pa_indicators.</td>
</tr>
</tbody>
</table>

// Copy Incident Management dashboard from global to user's domain  
var pa = new SNC.PADomainUtils();  
pa.copyDashboard('a64b7031d7201100b96d45a3ce610335','09ff3d105f231000b12e3572f2b4775d')

Optional example explanation

<table>
<thead>
<tr>
<th>Type</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>void</td>
<td></td>
</tr>
</tbody>
</table>
### ServiceNow Analytics, Intelligence, and Reporting

<table>
<thead>
<tr>
<th>Name</th>
<th>Type</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>id</td>
<td>String</td>
<td>The sys_id of the record to query.</td>
</tr>
</tbody>
</table>

#### Returns

<table>
<thead>
<tr>
<th>Type</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Boolean</td>
<td>Indicates that you can write to the specified record. Returns true if the record exists within the domain of the current user. Returns false if the record does not exist, or is in a different domain.</td>
</tr>
</tbody>
</table>

```javascript
var pa = new SNC.PADomainUtils();
pa.isWriteable('pa_incidents','cd8125b5140012007665a83e633b028d');
```

### Scripting in Performance Analytics

Performance Analytics provides several script objects for use in scripts and APIs for querying Performance Analytics data. The scripts serve as breakdown mappings or to calculate a value from an indicator.

A breakdown mapping script typically returns either a sys_id of a breakdown element or an integer to put the score in a bucket. Indicator scripts return a score calculated from one or more fields. The same script can serve both as a breakdown mapping script and as an indicator script. For example, consider the provided Incident.Age.Days script, which uses the `opened_at` field from the incident table. This script serves as a breakdown mapping for the Age breakdown, which uses the Incident Age Ranges (Days) bucket group as the breakdown source.

```javascript
var diff=function(x,y){return y.dateNumericValue() - x.dateNumericValue();};
var days=function(x,y){return diff(x,y)/(24*60*60*1000);};
days(current.opened_at, score_end);
```

In this example, `current.opened_at` gets the timestamp of when the currently evaluated record was opened. The `score_end` script variable comes from the data collector and is bound to the period being collected. For example, if a monthly indicator is being collected, the `score_end` is the end of the month. Here the timestamp of when the incident was opened is subtracted from the timestamp of the end of the collection period and the result is converted to days.

**Note:**

This example includes the `Incident.opened_at` field, which is specified in the *Fields* field for this script. You can use `score_start` and `score_end` without defining them in the *Fields* field.

### Create a script in Performance Analytics

To create a script, first select the facts table to which the script applies and explicitly select any fields.

**Role required:** admin, pa_admin

1. Navigate to **Performance Analytics > Scripts** and click **New**.
2. Give the script a descriptive **Name**.
3. Select the **Facts table** that the script applies to.
   
   Only indicators that use the same facts table can use this script.
4. Select the fact table **Fields**, if any, that will be used in the script.
   
   You select fields by their labels.
5. Write the script.
   
   The script must conform to the following relationships and restrictions:
   
   - You can include only the fields that are selected in this form and the **universal script variables**.
   - When you use a field in the script, you use the column name. If necessary, look up the column name in the facts table.
   - When you use a field from a database view, you must include the prefix. For example, the incident_sla database view includes the task_sla table, with the prefix taskslatable. Task_sla includes the business_duration column. To use the business_duration field from the incident_sla database view, write it as taskslatable_business_duration. If you do not have access to the database view, ask your system administrator to find the prefix for you.

**Performance Analytics script variables**

Several variables are available for use in Performance Analytics scripts and formula scripts.

You can use the following variables in Performance Analytics scripts and formula indicator scripts. You can obtain a GlideDateTime object from these variables by calling `getGlideObject()`, such as in this example: `gs.log("Score main = " + score_end.getGlideObject().getDayOfWeek());`

- **score_start**: start of the data collection period
- **score_end**: end of the data collection period

The values of these variables are bound to the data collection period. For example, if a monthly indicator is being collected, the **score_end** is the end of the month.

**PAScorecard**

The PAScorecard API enables you to query information about Performance Analytics scorecards and indicators.

**PAScorecard - addParam(String parameter, String value)**

Add a query parameter to filter the returned scores.

Call this method multiple times on the same PAScorecard object to pass multiple parameters, such as the indicator sys_id and a breakdown sys_id. After specifying all parameters, call `query()` to run the query and get the resulting scorecard object.

**Parameters**

<table>
<thead>
<tr>
<th>Name</th>
<th>Type</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>parameter</td>
<td>String</td>
<td>The parameter to set. For a detailed list of available parameters, see PAScorecard parameters.</td>
</tr>
<tr>
<td>value</td>
<td>String</td>
<td>The value to assign to the specified parameter.</td>
</tr>
</tbody>
</table>
var sc = new SNC.PAScorecard(); //in a scoped app, do not use the SNC namespace
sc.addParam('uuid', 'fb007202d7130100b96d45a3ce6103b4');
   // Number of open incidents
sc.addParam('breakdown', '0df47e02d7130100b96d45a3ce610399');
   // by Priority
var result = sc.query();
var json = sc.asJSON();
for (var i = 0; i < result.length; i++)
gs.info(result[i].name + ': ' + result[i].value + ' ' +
       result[i].unit.display_value);

### PAScorecards parameters

You can set these parameters using the PAScorecards API `addParam` method.

<table>
<thead>
<tr>
<th>Type</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>void</td>
<td></td>
</tr>
</tbody>
</table>

### uuid

Enter a colon-separated list of `sys_id` values to specify which indicators, breakdowns, and aggregates to query. The parameter follows this format:

<indicator sys_id>:<breakdown sys_id>:<element sys_id>:<aggregate sys_id>

The parameter must begin with the `sys_id` of an indicator record. Optionally, you can append the `sys_id` values of a breakdown and breakdown element to group the response based on the breakdown, and the `sys_id` of an aggregate to apply that aggregate. You can use a breakdown with an aggregate, or use only one.

**Note:** If an indicator is configured to use a Default time series, all scorecards for that indicator use the selected aggregate.

### breakdown

Enter the `sys_id` of a breakdown to return chart information organized as defined by the breakdown. For example, enter the `sys_id` of a priority breakdown to return separate task chart information for each priority value, such as Number of open incidents / Priority / 2 - High.

### breakdown_relation

Specify the `sys_id` of a breakdown relation to break down the returned data using that relation. You can view available breakdown relations by setting the `sysparm_include_available_breakdowns` parameter to true.

### elements_filter

Specify the `sys_id` of an elements filter to apply that filter to the returned data.
<table>
<thead>
<tr>
<th>Parameter</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>display</td>
<td>Set to <code>true</code> to return only scorecards where the indicator <strong>Display</strong> field is selected. Set this parameter to <code>all</code> to return scorecards with any <strong>Display</strong> field value. This parameter is true by default.</td>
</tr>
<tr>
<td>favorites</td>
<td>Set to <code>true</code> to return only scorecards that are favorites of the querying user.</td>
</tr>
<tr>
<td>key</td>
<td>Set to <code>true</code> to return only scorecards for key indicators.</td>
</tr>
<tr>
<td>target</td>
<td>Set to <code>true</code> to return only scorecards that have a target.</td>
</tr>
<tr>
<td>contains</td>
<td>Enter a comma-separated list of names or descriptions to return only scorecards with a matching value.</td>
</tr>
<tr>
<td>tags</td>
<td>Enter a comma-separated list of sys_id values to return only scorecards with a matching sys_id.</td>
</tr>
<tr>
<td>per_page</td>
<td>Enter the maximum number of scorecards each query can return. By default this value is 10, and the maximum is 100.</td>
</tr>
<tr>
<td>page</td>
<td>Specify the page number. For example, when querying 20 scorecards with the default per_page value (10), specify a page value of 2 to retrieve scorecards 11-20.</td>
</tr>
<tr>
<td>sortby</td>
<td>Specify the value to use when sorting results. Valid values for this parameter are value, change, changeperc, gap, gapperc, due date, name, order, default, group, indicator_group, frequency, target, date, trend, bullet, and direction. By default, queries sort records by value.</td>
</tr>
<tr>
<td>sortdir</td>
<td>Specify the sort direction, ascending or descending. By default, queries sort records in descending order. Set this parameter to <code>asc</code> to sort in ascending order.</td>
</tr>
<tr>
<td>display_value</td>
<td>Data retrieval operation for reference and choice fields. Based on this value, the display value and/or the actual value in the database are retrieved.</td>
</tr>
<tr>
<td></td>
<td>• <code>true</code> returns display values for all of the fields.</td>
</tr>
<tr>
<td></td>
<td>• <code>false</code> returns actual values from the database. If a value is not specified, this parameter defaults to <code>false</code>.</td>
</tr>
<tr>
<td></td>
<td>• <code>all</code> returns both actual and display values.</td>
</tr>
<tr>
<td>exclude_reference_link</td>
<td>Set to <code>true</code> to hide additional information provided for reference fields, such as the URI to the reference resource.</td>
</tr>
<tr>
<td>include_scores</td>
<td>Set to <code>true</code> to return all scores for a scorecard. If a value is not specified, this parameter defaults to false and returns only the most recent score value.</td>
</tr>
</tbody>
</table>
from | Specify the earliest date to return scores from. Only scores from this date or later are returned. The date format must match the ISO-8601 standard.

to | Specify the latest date to return scores from. Only scores from this date or earlier are returned. The date format must match the ISO-8601 standard.

step | Specify a numeric value to skip scores, based on the indicator frequency. For example, specify a value of 3 to return only scores from every third day for a daily indicator, or from every third week for a weekly indicator.

limit | Specify the maximum number of scores to return.

include_available_breakdowns | Set to true to return all available breakdowns for an indicator. If a value is not specified, this parameter defaults to false and returns no breakdowns.

include_available_aggregates | Set to true to always return all available aggregates for an indicator, including when an aggregate has already been applied. If a value is not specified, this parameter defaults to false and returns no aggregates.

include_realtime | Set this parameter to true to return the realtime_enabled element which indicates if real-time scores are enabled for the indicator, and the realtime_value element which contains the real-time score value. This parameter is not supported for formula indicators.

include_target_color_scheme | Set this parameter to true to return the target_color_scheme element that contains the minimum and maximum values, and the color of each section of the target color scheme for the scorecard.

include_forecast_Scores | Set this parameter to true to return the forecast_scores element that contains an array of date-value pairs that define the forecast data for the scorecard.

include_trendline_scores | Set this parameter to true to return the trendline_scores element that contains an array of date-value pairs that define the scorecard trendline.

PAScorecard - query()
Performs a query based on the specified parameters and return the scorecard as an object.

Before calling this method, configure parameters for the PAScorecard object by calling addParam(String parameter, String value).

Parameters

<table>
<thead>
<tr>
<th>Name</th>
<th>Type</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>None</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Returns

<table>
<thead>
<tr>
<th>Type</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Object</td>
<td>The scorecard object.</td>
</tr>
</tbody>
</table>

**PAScorecard - result()**

Returns the latest query result as an object.

This method does not perform a query. To perform a query before returning the result, use `query()`.

**Parameters**

<table>
<thead>
<tr>
<th>Name</th>
<th>Type</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>None</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Returns**

<table>
<thead>
<tr>
<th>Type</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Object</td>
<td>The scorecard object from the last query.</td>
</tr>
</tbody>
</table>

**PAScorecard - asJSON()**

Returns the latest query result as a JSON string.

This method does not perform a query. To perform a query before returning the result, use `query()`.

**Parameters**

<table>
<thead>
<tr>
<th>Name</th>
<th>Type</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>None</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Returns**

<table>
<thead>
<tr>
<th>Type</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>String</td>
<td>A JSON representation of the query result.</td>
</tr>
</tbody>
</table>

**PASnapshot**

The PASnapshot API enables you to query information about Performance Analytics snapshots.

You can query information about a snapshot at a certain date using the indicator `sys_id` and `date`, and perform comparisons between snapshots for an indicator at different dates.

**PASnapshot - getIDs(String sys_id, Number date)**

Get the `sys_id` values for all records contained in the snapshot for a specified indicator at the specified date.
Parameters

<table>
<thead>
<tr>
<th>Name</th>
<th>Type</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>sys_id</td>
<td>String</td>
<td>The indicator sys_id.</td>
</tr>
<tr>
<td>date</td>
<td>Number</td>
<td>The date when the snapshot was taken, in the format yyyymmdd.</td>
</tr>
</tbody>
</table>

Returns

<table>
<thead>
<tr>
<th>Type</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>String</td>
<td>A comma-separated list of sys_id values.</td>
</tr>
</tbody>
</table>

```javascript
var snapshot1 = PASnapshot.getIDs('fb007202d7130100b96d45a3ce6103b4', 20160530);
gs.info(snapshot1);
```

Output: *** Script:
09c01200d7002100b81145a3ce6103ab,19c01200d7002100b81145a3ce6103e9,fcc01200d7002100b81145a3
....

`PASnapshot - getCompareIDs(String sys_id, Number date1, Number date2, String type)`
Compare records in snapshots for a specified indicator at multiple dates, such as to identify records included in one snapshot but not the other.

Parameters

<table>
<thead>
<tr>
<th>Name</th>
<th>Type</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>sys_id</td>
<td>String</td>
<td>The indicator sys_id.</td>
</tr>
<tr>
<td>date1</td>
<td>Number</td>
<td>The date of the first snapshot, in the format yyyymmdd.</td>
</tr>
<tr>
<td>date2</td>
<td>Number</td>
<td>The date of the second snapshot, in the format yyyymmdd.</td>
</tr>
<tr>
<td>Name</td>
<td>Type</td>
<td>Description</td>
</tr>
<tr>
<td>------</td>
<td>--------</td>
<td>-------------</td>
</tr>
</tbody>
</table>
| type | String | Specifies what data to retrieve. Valid values are:  
- all1: all records in the first snapshot  
- all2: all records in the second snapshot  
- shared: records that are in both snapshots  
- movedin: records that are in the second snapshot, but not the first  
- movedout: records that are in the first snapshot, but not the second |

**Returns**

<table>
<thead>
<tr>
<th>Type</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>String</td>
<td>A comma-separated list of sys_id values.</td>
</tr>
</tbody>
</table>

```javascript
var snapshot2 =
    PASnapshot.getCompareIDs('fb007202d7130100b96d45a3ce6103b4', 20160430, 20160531, 'shared');
gs.info(snapshot2);
```

Output: *** Script:  
09c01200d7002100b81145a3ce6103ab,19c01200d7002100b81145a3ce6103e9,fcc01200d7002100b81145a3ce6103b4,....

**PASnapshot - getQuery(String sys_id, Number date)**

Get the query used to generate the snapshot for a specified indicator at the specified date.

**Parameters**

<table>
<thead>
<tr>
<th>Name</th>
<th>Type</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>sys_id</td>
<td>String</td>
<td>The indicator sys_id.</td>
</tr>
<tr>
<td>date</td>
<td>Number</td>
<td>The date when the snapshot was taken, in the format yyyymmdd.</td>
</tr>
</tbody>
</table>
Returns

<table>
<thead>
<tr>
<th>Type</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>String</td>
<td>The table, view, and encoded query as a JSON string.</td>
</tr>
</tbody>
</table>

```javascript
var snapshot3 = PASnapshot.getQuery('fb007202d7130100b96d45a3ce6103b4', 20160530);
gs.info(snapshot3);
```

Output: **Script:**
```
"view":"","sys_idInjavaScript:new PAUtils().getSnapshotIDs("fb007202d7130100b96d45a3ce6103b4",\"20160530\"),"table":"incident"
```

**PASnapshot - getCompareQuery(String sys_id, Number date1, Number date2, String type)**

Get the query used to compare records in snapshots for a specified indicator at multiple dates.

**Parameters**

<table>
<thead>
<tr>
<th>Name</th>
<th>Type</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>sys_id</td>
<td>String</td>
<td>The indicator sys_id.</td>
</tr>
<tr>
<td>date1</td>
<td>Number</td>
<td>The date of the first snapshot, in the format yyyyymmdd.</td>
</tr>
<tr>
<td>date2</td>
<td>Number</td>
<td>The date of the second snapshot, in the format yyyyymmdd.</td>
</tr>
<tr>
<td>type</td>
<td>String</td>
<td>Specifies what data to retrieve. Valid values are:</td>
</tr>
<tr>
<td></td>
<td></td>
<td>· all1: all records in the first snapshot</td>
</tr>
<tr>
<td></td>
<td></td>
<td>· all2: all records in the second snapshot</td>
</tr>
<tr>
<td></td>
<td></td>
<td>· shared: records that are in both snapshots</td>
</tr>
<tr>
<td></td>
<td></td>
<td>· movedin: records that are in the second snapshot, but not the first</td>
</tr>
<tr>
<td></td>
<td></td>
<td>· movedout: records that are in the first snapshot, but not the second</td>
</tr>
</tbody>
</table>
### Returns

<table>
<thead>
<tr>
<th>Type</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>String</td>
<td>The table, view, and encoded query as a JSON string.</td>
</tr>
</tbody>
</table>

```javascript
var snapshot4 = PASnapshot.getCompareQuery('fb007202d7130100b96d45a3ce6103b4', 20160530, 20160531, 'all1');
gs.info(snapshot4); `Output: *** Script: {"view":"","query":"sys_idINjavascript:new PAUtils().getCompareSnapshotIDs\("fb007202d7130100b96d45a3ce6103b4\",\"20160530\",\"20160531\",\"all\"\"),\"table":"incident"\"} ```

### Performance Analytics properties

These system properties control the behavior of Performance Analytics. To configure properties, navigate to Performance Analytics > Properties or to sys_properties.list.

### Collection cleanup properties

Several properties determine how long Performance Analytics scores and snapshots are maintained before being deleted by the scheduled cleanup job.

<table>
<thead>
<tr>
<th>Property</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>com.snc.pa.dc.keep_scores_for.frequency</td>
<td>Maximum number of periods prior to today for which scores are collected and kept. The number of periods varies according to the score collection frequency, as follows: daily; weekly; bi-weekly; four weeks; monthly; bi-monthly; quarterly; fiscal quarterly; half-yearly; yearly; fiscal yearly</td>
</tr>
<tr>
<td></td>
<td>Scores older than this limit are not collected during data collection.</td>
</tr>
<tr>
<td></td>
<td>- Type: String</td>
</tr>
<tr>
<td></td>
<td>- Default value: 732;105;53;40;30;20;10</td>
</tr>
<tr>
<td></td>
<td>- Location: Performance Analytics &gt; System &gt; Properties</td>
</tr>
<tr>
<td>Property</td>
<td>Description</td>
</tr>
<tr>
<td>----------</td>
<td>-------------</td>
</tr>
<tr>
<td>com.snc.pa.dc.keep_snapshots_for.frequency</td>
<td>Maximum number of periods prior to today for which lists of records (snapshots) related to a score are collected and kept. The number of periods varies according to the score collection frequency, as follows: daily; weekly; bi-weekly; four weeks; monthly; bi-monthly; quarterly; fiscal quarterly; half-yearly; yearly; fiscal yearly. Snapshots older than this limit are not collected during data collection.</td>
</tr>
<tr>
<td>· Type: String</td>
<td></td>
</tr>
<tr>
<td>· Default value: 183;26;13;10;15;8;5;5;5;3;3</td>
<td></td>
</tr>
<tr>
<td>· Location: Performance Analytics &gt; System &gt; Properties</td>
<td></td>
</tr>
</tbody>
</table>

**Fiscal year properties**

These properties set the year in Performance Analytics to match your company fiscal year.

<table>
<thead>
<tr>
<th>Property</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>com.snc.pa.fy_start</td>
<td>Start of the fiscal year of your company</td>
</tr>
</tbody>
</table>

**Default color schemes**

These properties set the default colors for the chart overall and for indicator targets.

<table>
<thead>
<tr>
<th>Property</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>com.snc.pa.indicator_target_default_color_schema</td>
<td>Default indicator target color scheme</td>
</tr>
<tr>
<td>com.snc.pa.chart_default_color_schema</td>
<td>Default visualization color scheme</td>
</tr>
</tbody>
</table>

**Breakdown and visualization properties**

Most of these properties relate to breakdowns and how breakdowns are displayed in visualizations.

<table>
<thead>
<tr>
<th>Property</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>com.snc.pa.scoresheet.max_elements</td>
<td>Maximum number of elements of a breakdown that can be shown in a Scoresheet</td>
</tr>
<tr>
<td>Property</td>
<td>Description</td>
</tr>
<tr>
<td>---------------------------------------------------------------</td>
<td>-----------------------------------------------------------------------------</td>
</tr>
</tbody>
</table>
| com.snc.pa.breakdown_element_cutoff                           | Maximum number of elements that a breakdown can have for the elements without scores to be shown in a scorecard. If the value of this parameter is exceeded, no scoreless elements are shown in the scorecard. Example: The value of the parameter is 10. Breakdown A has 8 elements. All 8 are shown in the scorecard. Breakdown B has 12 elements, of which 5 have scores. Only those 5 elements are shown. Notes:  
  - This parameter does not affect whether unmatched elements are shown.  
  - If the element involves a formula with multiple scores, the element is considered to have a score if all parts of the formula have scores at any point in time. The formula is considered to have a score even if the result is invalid, such as a division by 0. |
| com.snc.pa.scorecards.max_breakdown_elements                  | Maximum number of breakdown elements in scorecard lists                     |
| com.snc.pa.scorecard.breakdown.chart.max_rows                 | Number of breakdown elements in visualizations                               |
| com.snc.pa.thresholds.frequency_intervals_in_the_pa          | Maximum number of frequency intervals in the past that a threshold check job will analyze |
| com.snc.pa.scorecard.max_record_number                       | Number of records to be loaded automatically on the records tab of a detailed scorecard. If the number of records exceeds the value of this property, records are not automatically loaded. In this case, the user is presented with a message and a button to load all records. |
| com.snc.pa.breakdown_element_ui_max_records                  | Limit for the number of elements to be fetched for a breakdown. Default 100. Used for the lookup fields(breakdown dashboard, scorecard etc.) |
| com.snc.pa.widget.max_widget_indicators                      | Maximum number of widget indicators, in addition to the main indicator, that can be added to a widget |

**Chart properties**

A *chart* refers here to a graphical component of a widget visualization or a detailed scorecard.
<table>
<thead>
<tr>
<th>Property</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>com.snc.pa.default_chart_line_color</td>
<td>Color of the scores in detailed scorecards and widgets, including the trend line and bullet chart.</td>
</tr>
<tr>
<td></td>
<td>• <strong>Format</strong>: RGBA</td>
</tr>
<tr>
<td></td>
<td>• <strong>Default</strong>: 106,183,239,1</td>
</tr>
<tr>
<td>com.snc.pa.text.trendline_points_for.frequency</td>
<td>Maximum number of points visible in the text analytics trend-line</td>
</tr>
<tr>
<td>com.snc.pa.default_chart_target_color</td>
<td>Color of the target in a chart.</td>
</tr>
<tr>
<td></td>
<td>• <strong>Format</strong>: Hexadecimal</td>
</tr>
<tr>
<td></td>
<td>• <strong>Default</strong>: #666666</td>
</tr>
<tr>
<td>com.snc.pa.default_chart_personal_target_color</td>
<td>The line color for personal targets displayed on scorecards.</td>
</tr>
<tr>
<td></td>
<td>• <strong>Type</strong>: string</td>
</tr>
<tr>
<td></td>
<td>• <strong>Default value</strong>: #BDC0C4</td>
</tr>
<tr>
<td>com.snc.pa.default_chart_threshold_color</td>
<td>Color of the threshold in a chart.</td>
</tr>
<tr>
<td></td>
<td>• <strong>Format</strong>: Hexadecimal</td>
</tr>
<tr>
<td></td>
<td>• <strong>Default</strong>: #666666</td>
</tr>
<tr>
<td>com.snc.pa.default_chart_personal_threshold_color</td>
<td>The line color for personal thresholds displayed on scorecards.</td>
</tr>
<tr>
<td></td>
<td>• <strong>Type</strong>: string</td>
</tr>
<tr>
<td></td>
<td>• <strong>Default value</strong>: #BDC0C4</td>
</tr>
<tr>
<td>com.snc.pa.default_chart_area_color0</td>
<td>Color of first gradient area in a chart.</td>
</tr>
<tr>
<td></td>
<td>• <strong>Format</strong>: RGBA</td>
</tr>
<tr>
<td></td>
<td>• <strong>Default</strong>: 106,183,239,1</td>
</tr>
<tr>
<td>com.snc.pa.default_chart_area_color1</td>
<td>Color of second gradient area in a chart.</td>
</tr>
<tr>
<td></td>
<td>• <strong>Format</strong>: RGBA</td>
</tr>
<tr>
<td></td>
<td>• <strong>Default</strong>: 106,183,239,0</td>
</tr>
<tr>
<td>com.snc.pa.navigator_line_color</td>
<td>Color of the Line in the chart navigator.</td>
</tr>
<tr>
<td></td>
<td>• <strong>Format</strong>: RGBA</td>
</tr>
<tr>
<td></td>
<td>• <strong>Default</strong>: 106,183,239,1</td>
</tr>
<tr>
<td>com.snc.pa.navigator_area_color0</td>
<td>Color of first gradient area in the chart navigator.</td>
</tr>
<tr>
<td></td>
<td>• <strong>Format</strong>: RGBA</td>
</tr>
<tr>
<td></td>
<td>• <strong>Default</strong>: 204,204,204,0.25</td>
</tr>
</tbody>
</table>
### Data collector properties

Data collector properties enable you to configure various limits for Performance Analytics data collection. The properties are configured to safeguard the data collection process. The default values are appropriate for most environments.

<table>
<thead>
<tr>
<th>Property</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>com.snc.pa.dc.script_timeout</td>
<td>The maximum time in seconds that a script is allowed to run during a data collection cycle, such as an indicator source script or a breakdown script. This limit applies individually for each record processed by the data collection job. If a script exceeds this limit, the current record is skipped by the data collection job. If your scripts frequently reach the default limit, simplify the scripts as much as possible before modifying this property.</td>
</tr>
<tr>
<td></td>
<td>Type: integer</td>
</tr>
<tr>
<td></td>
<td>Default value: 30</td>
</tr>
<tr>
<td>com.snc.pa.dc.query_time_limit</td>
<td>The maximum duration in minutes that a single query for a data collection job can run before a warning is logged.</td>
</tr>
<tr>
<td></td>
<td>Type: integer</td>
</tr>
<tr>
<td></td>
<td>Default value: 60</td>
</tr>
</tbody>
</table>

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<table>
<thead>
<tr>
<th>Property</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>com.snc.pa.dc.max_row_count_indicator_source</td>
<td>The maximum number of records that a job can collect from a single indicator source. <strong>Warning:</strong> If the number of records that an indicator source contains is higher than the value of this property, no indicators are collected for this indicator source. Increasing this value may cause data collection jobs to take longer to complete. This limit applies separately to each indicator source included in a data collection job. The number of indicators associated with each indicator source does not affect this limit. For example, if a data collection job collects scores for 12 indicators from three indicator sources, the job can collect a maximum of 150,000 records by default: 50,000 from each indicator source. <strong>Type:</strong> integer <strong>Default value:</strong> 50,000</td>
</tr>
<tr>
<td>com.snc.pa.dc.max_breakdown_elements_limit</td>
<td>Maximum number of breakdown elements retrieved by data collection for each breakdown source. If a breakdown source has more elements than this property defines, it is disabled. Increasing this limit increases the potential number of table insertions that are made for a data collection job. This increase may impact performance, depending on your database. Also, it may be difficult for users to access data for a specific breakdown element when there are many elements. This limit applies separately to each breakdown source included in a data collection job. The number of breakdowns associated with each breakdown source does not affect this limit. For example, if a data collection job collects scores for 12 breakdowns from three breakdown sources, the job can collect a maximum of 30,000 records by default: 10,000 from each breakdown source. <strong>Type:</strong> integer <strong>Default value:</strong> 10,000</td>
</tr>
<tr>
<td>Property</td>
<td>Description</td>
</tr>
<tr>
<td>----------</td>
<td>-------------</td>
</tr>
<tr>
<td>com.snc.pa.dc.max_breakdown_elements_level2_limit</td>
<td>Maximum number of breakdown elements resulting from the combination of two breakdowns for a data collection. For example, if the first-level breakdown has 10 elements, and the second-level breakdown has 5, 50 breakdown elements are collected. Increasing this limit can cause data collection to use a large amount of memory which may impact performance. Consider a first-level breakdown with the maximum of 10,000 elements. In this scenario, the second-level breakdown can specify at most 100 breakdown elements before reaching the default second-level limit of 1,000,000 total elements. <strong>Note:</strong> This limit is also affected by the <code>com.snc.pa.dc.max_breakdown_elements_limit</code> property. For example, if the first-level breakdown has greater than 10,000 elements, the breakdown is disabled.</td>
</tr>
<tr>
<td>Type: integer</td>
<td>Default value: 1,000,000</td>
</tr>
<tr>
<td>com.snc.pa.dc.max_error_count</td>
<td>The maximum number errors that may occur for a single data collection job run before data collection is stopped. Errors during data collection usually occur due to an invalid script, or when encountering the script timeout limit. Do not increase this value. If you encounter this limit, review any scripts that run during data collection to ensure they are valid and perform as expected.</td>
</tr>
<tr>
<td>Type: integer</td>
<td>Default value: 500</td>
</tr>
<tr>
<td>Property</td>
<td>Description</td>
</tr>
<tr>
<td>---------------------</td>
<td>---------------------------------------------------------------------------------------------------------------------------------------------</td>
</tr>
<tr>
<td>com.snc.pa.dc.max_records</td>
<td>Maximum number of sys IDs that are stored on a single Snapshot (pa_snapshots) record. A Snapshot record is created for each collected score, and a field in this record contains all the sys IDs from the indicator that contribute to the score. If this limit is exceeded, a Snapshot record is not created for this score. This limit applies only when Collect records is selected for an indicator. For example, say you are using the default limit of 5,000 and you run a job that collects a score referring to 4,500 sys IDs. The system creates a Snapshot record with a comma-separated list of the 4,500 sys IDs in the sys ID field. If the same job also collects a score of 5,001, the system does not create a Snapshot record corresponding to that score. Generally, the default limit provides enough detail into collected records. Increasing this limit may impact performance during data collection or when performing operations on the Snapshots table.</td>
</tr>
</tbody>
</table>

Integrate Performance Analytics

Integrate Performance Analytics with an external system to collect scores based on remote data or to expose scorecard information.

Performance Analytics API

The Performance Analytics REST API enables you to query data about Performance Analytics scorecards.

The Performance Analytics API supports only the GET action. Performance Analytics queries never update records.

Performance Analytics API - GET /now/pa/scorecards

This method retrieves Performance Analytics scorecard details.

URL format

Versioned URL: /api/now/v1/pa/scorecards

Default URL: /api/now/pa/scorecards
### Supported parameters

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>sysparm_uuid</td>
<td>Enter a colon-separated list of sys_id values to specify which indicators, breakdowns, and aggregates to query. The parameter follows this format: &lt;indicator sys_id&gt;:&lt;breakdown sys_id&gt;:&lt;element sys_id&gt;:&lt;aggregate sys_id&gt;</td>
</tr>
<tr>
<td></td>
<td>The parameter must begin with the sys_id of an indicator record. Optionally, you can append the sys_id values of a breakdown and breakdown element to group the response based on the breakdown, and the sys_id of an aggregate to apply that aggregate. You can use a breakdown with an aggregate, or use only one.</td>
</tr>
<tr>
<td></td>
<td><strong>Note:</strong> If an indicator is configured to use a <strong>Default time series</strong>, all scorecards for that indicator use the selected aggregate.</td>
</tr>
<tr>
<td></td>
<td>See Performance Analytics API Examples for examples of fully-constructed sysparm_uuid values.</td>
</tr>
<tr>
<td>sysparm_breakdown</td>
<td>Enter the sys_id of a breakdown to return chart information organized as defined by the breakdown. For example, enter the sys_id of a priority breakdown to return separate task chart information for each priority value, such as Number of open incidents / Priority / 2 - High.</td>
</tr>
<tr>
<td>sysparm_include_scores</td>
<td>Set to true to return all scores for a scorecard. If a value is not specified, this parameter defaults to false and returns only the most recent score value.</td>
</tr>
<tr>
<td>sysparm_include_aggregates</td>
<td>Set to true to always return all available aggregates for an indicator, including when an aggregate has already been applied. If a value is not specified, this parameter defaults to false and returns no aggregates.</td>
</tr>
<tr>
<td>sysparm_include_available_breakdowns</td>
<td>Set to true to return all available breakdowns for an indicator. If a value is not specified, this parameter defaults to false and returns no breakdowns.</td>
</tr>
<tr>
<td>sysparm_include_available_aggregates</td>
<td>Set to true to return all available aggregates for an indicator when no aggregate has been applied. If a value is not specified, this parameter defaults to false and returns no aggregates.</td>
</tr>
<tr>
<td>Parameter</td>
<td>Description</td>
</tr>
<tr>
<td>-------------------------------</td>
<td>-----------------------------------------------------------------------------</td>
</tr>
</tbody>
</table>
| sysparm_display_value         | Data retrieval operation for reference and choice fields. Based on this value, retrieves the display value and/or the actual value from the database. Valid values:  
  - true: returns display values for all fields.  
  - false: returns actual values from the database.  
  - all: returns both actual and display values.  
  Default: false  |
<p>| sysparm_exclude_reference_link| Set to true to hide additional information provided for reference fields, such as the URI to the reference resource. |
| sysparm_favorites             | Set to true to return only scorecards that are favorites of the querying user. |
| sysparm_key                   | Set to true to return only scorecards for key indicators.                   |
| sysparm_target                | Set to true to return only scorecards that have a target.                   |
| sysparm_display               | Set to true to return only scorecards where the indicator Display field is selected. Set this parameter to all to return scorecards with any Display field value. This parameter is true by default. |
| sysparm_contains              | Enter a comma-separated list of names or descriptions to return only scorecards with a matching value. |
| sysparm_tags                  | Enter a comma-separated list of sys_id values to return only scorecards with a matching sys_id. |
| sysparm_per_page              | Enter the maximum number of scorecards each query can return. By default this value is 10, and the maximum is 100. |
| sysparm_page                  | Specify the page number. For example, when querying 20 scorecards with the default sysparm_per_page value (10), specify a sysparm_page value of 2 to retrieve scorecards 11-20. |</p>
<table>
<thead>
<tr>
<th>Parameter</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>sysparm_sortby</td>
<td>Specify the value to use when sorting results. Valid values for this parameter are value, change, changeperc, gap, gapperc, duedate, name, order, default, group, indicator_group, frequency, target, date, trend, bullet, and direction. By default, queries sort records by value.</td>
</tr>
<tr>
<td>sysparm_sortdir</td>
<td>Specify the sort direction, ascending or descending. By default, queries sort records in descending order. Set this parameter to asc to sort in ascending order.</td>
</tr>
<tr>
<td>sysparm_from</td>
<td>Specify the earliest date to return scores from. Only scores from this date or later are returned. The date format must match the ISO-8601 standard.</td>
</tr>
<tr>
<td>sysparm_to</td>
<td>Specify the latest date to return scores from. Only scores from this date or earlier are returned. The date format must match the ISO-8601 standard.</td>
</tr>
<tr>
<td>sysparm_step</td>
<td>Specify a numeric value to skip scores, based on the indicator frequency. For example, specify a value of 3 to return only scores from every third day for a daily indicator, or from every third week for a weekly indicator.</td>
</tr>
<tr>
<td>sysparm_limit</td>
<td>Specify the maximum number of scores to return.</td>
</tr>
<tr>
<td>sysparm_elements_filter</td>
<td>Specify the sys_id of an elements filter to apply that filter to the returned data.</td>
</tr>
<tr>
<td>sysparm_breakdown_relation</td>
<td>Specify the sys_id of a breakdown relation to break down the returned data using that relation. You can view available breakdown relations by setting the sysparm_include_available_breakdowns parameter to true.</td>
</tr>
<tr>
<td>sysparm_include_score_notes</td>
<td>Set this parameter to true to return all notes associated with the score. The note element contains the note text as well as the author and timestamp when the note was added.</td>
</tr>
<tr>
<td>sysparm_include_realtime</td>
<td>Set this parameter to true to return the realtime_enabled element which indicates if real-time scores are enabled for the indicator, and the realtime_value element which contains the real-time score value. This parameter is not supported for formula indicators.</td>
</tr>
<tr>
<td>sysparm_include_target_color_scheme</td>
<td>Set this parameter to true to return the target_color_scheme element that contains the minimum and maximum values, and the color of each section of the target color scheme for the scorecard.</td>
</tr>
<tr>
<td>sysparm_include_forecast_scores</td>
<td>Set this parameter to true to return the forecast_scores element that contains an array of date-value pairs that define the forecast data for the scorecard.</td>
</tr>
<tr>
<td>Parameter</td>
<td>Description</td>
</tr>
<tr>
<td>---------------------------------</td>
<td>---------------------------------------------------------------------------------------------------</td>
</tr>
<tr>
<td>sysparm_include_trendline_scores</td>
<td>Set this parameter to <code>true</code> to return the <code>trendline_scores</code> element that contains an array of date-value pairs that define the scorecard trendline.</td>
</tr>
</tbody>
</table>

Headers

Request headers

<table>
<thead>
<tr>
<th>Header</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>None</td>
<td></td>
</tr>
</tbody>
</table>

Status codes

<table>
<thead>
<tr>
<th>Status code</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>200</td>
<td>Indicates that the query ran successfully.</td>
</tr>
</tbody>
</table>

Performance Analytics API security

You must meet certain requirements to access the Performance Analytics REST API.

Access to tables via the REST API is restricted by BasicAuth. ACLs defined for tables are enforced to restrict access to data.

To make queries using the Performance Analytics API, you must also have the `pa_viewer` role.

Performance Analytics API examples

These examples demonstrate how to perform a REST query using cURL commands, and show the data returned for each command. Each example builds upon the last, with later examples using the data returned by earlier examples.

Return all main scorecards

You can request a list of all scorecards for indicators that have a `Display` value set to `true`.

Command:

```
curl -v -u "admin:admin" -H "Accept:application/json" "https://instance.service-now.com/api/now/v1/pa/scorecards"
```

Response:

```
{
  "result" : [
    {
      "change_formatted" : "",
      "key" : true,
```

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"value_unit": "",  
"value_formatted": "",  
"period_title": null,  
"gapperc": null,  
"gap": null,  
"target": null,  
"period": null,  
"target_formatted": "",  
"favorite": false,  
"direction_label": "Maximize",  
"uuid": "002d65c3d7131100b96d45a3ce6103e2",  
"name": "% of incidents resolved by first assigned group",  
"value_color": "#000000",  
"frequency_label": "Daily",  
"change": null,  
"gap_formatted": "",  
"gapperc_formatted": "",  
"formula": "( [[Number of resolved incidents by first assigned group]] / [[Number of resolved incidents]] ) * 100",  
"value": null,  
"unit": {  
"display_value": "%",  
"link": "https://instance.service-now.com/api/now/v1/table/pa_units/f9c365e2d7320100ba986f14ce6103b8",  
"value": "f9c365e2d7320100ba986f14ce6103b8"  
},  
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"value": "002d65c3d7131100b96d45a3ce6103e2"  
},  
"description": "Percentage of incidents resolved by first assigned group."  
},  
{  
"change_formatted": "",  
"key": true,  
"value_unit": "",  
"value_formatted": "",  
"period_title": null,  
"gapperc": null,  
"gap": null,  
"target": null,  
"period": null,  
"target_formatted": "",  
"favorite": false,  
"direction_label": "Minimize",  
"uuid": "4660f602d7320100ba986f14ce6103b8",  
"name": "% of new critical incidents",  
"value_color": "#000000",  
"frequency_label": "Daily",  
"change": null,  
"gap_formatted": "",  
"gapperc_formatted": "",  
"formula": "( [[Number of new incidents / Priority / 1 - Critical]] / [[Number of new incidents]] ) * 100",  
"value": null,  
"unit": {
"display_value": "%",
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pa_indicators/4660f602d7130100b96d45a3ce610383",
"value": "4660f602d7130100b96d45a3ce610383"
},
"description": "Number of new critical incidents as a percentage of
number of new incidents."
},
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"uuid": "f0f07202d7130100b96d45a3ce610383",
"name": "% of open incidents not updated in last 30 days",
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"frequency_label": "Daily",
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"formula": "\{(\[[\text{Number of open incidents not updated in last 30}
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"display_value": ",
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"value": "f0f07202d7130100b96d45a3ce610383"
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as a percentage of number of open incidents."
"key": true,
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"period_title": null,
"gapperc": null,
"gap": null,
"target": null,
"period": null,
"target_formatted": "$",
"favorite": false,
"direction_label": "Minimize",
"uuid": "fd51f602d7130100b96d45a3ce610385",
"name": "% of open incidents not updated in last 5 days",
"value_color": "#000000",
"frequency_label": "Daily",
"change": null,
"gap_formatted": "$",
"gapperc_formatted": "$",
"formula": "(([[Number of open incidents not updated in last 5 days]] / [[Number of open incidents]]) * 100",
"value": null,
"unit": {
  "display_value": "/%",
  "link": "https://instance.service-now.com/api/now/v1/table/pa_units/f9c365e2d7320100ba986f14ce6103b8",
  "value": "f9c365e2d7320100ba986f14ce6103b8"
},
"changeperc_formatted": "%
",
"direction": 2,
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"precision": 2,
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  "value": "fd51f602d7130100b96d45a3ce610385"
},
"description": "Number of open incidents not updated in last 5 days as a percentage of number of open incidents."}
<table>
<thead>
<tr>
<th>Key</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Change format</strong></td>
<td>&quot;&quot;</td>
</tr>
<tr>
<td><strong>Direction</strong></td>
<td>2</td>
</tr>
<tr>
<td><strong>Frequency</strong></td>
<td>10</td>
</tr>
<tr>
<td><strong>Precision</strong></td>
<td>2</td>
</tr>
<tr>
<td><strong>Change percent</strong></td>
<td>null</td>
</tr>
<tr>
<td><strong>Indicator</strong></td>
<td>{</td>
</tr>
<tr>
<td></td>
<td><strong>Display value</strong></td>
</tr>
<tr>
<td></td>
<td><strong>Link</strong></td>
</tr>
<tr>
<td></td>
<td><strong>Value</strong></td>
</tr>
<tr>
<td></td>
<td><strong>Description</strong></td>
</tr>
<tr>
<td><strong>Change format</strong></td>
<td>&quot;&quot;</td>
</tr>
<tr>
<td><strong>Key</strong></td>
<td>true</td>
</tr>
<tr>
<td><strong>Value unit</strong></td>
<td>&quot;&quot;</td>
</tr>
<tr>
<td><strong>Value format</strong></td>
<td>&quot;&quot;</td>
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<tr>
<td><strong>Period title</strong></td>
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<tr>
<td><strong>Gap percent</strong></td>
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</tr>
<tr>
<td><strong>Gap</strong></td>
<td>null</td>
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<tr>
<td><strong>Target</strong></td>
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<tr>
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<td><strong>Target format</strong></td>
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<tr>
<td><strong>Favorite</strong></td>
<td>false</td>
</tr>
<tr>
<td><strong>Direction label</strong></td>
<td>&quot;Minimize&quot;</td>
</tr>
<tr>
<td><strong>UUID</strong></td>
<td>6fbb7202d7130100b96d45a3ce610360</td>
</tr>
<tr>
<td><strong>Name</strong></td>
<td>&quot;Average resolution time of resolved incidents&quot;</td>
</tr>
<tr>
<td><strong>Value color</strong></td>
<td>&quot;#000000&quot;</td>
</tr>
<tr>
<td><strong>Frequency label</strong></td>
<td>&quot;Daily&quot;</td>
</tr>
<tr>
<td><strong>Change</strong></td>
<td>null</td>
</tr>
<tr>
<td><strong>Gap format</strong></td>
<td>&quot;&quot;</td>
</tr>
<tr>
<td><strong>Gap percent format</strong></td>
<td>&quot;&quot;</td>
</tr>
<tr>
<td><strong>Formula</strong></td>
<td>&quot;[[Summed duration of resolved incidents]] / [[Number of resolved incidents]] / 24&quot;</td>
</tr>
<tr>
<td><strong>Value</strong></td>
<td>null</td>
</tr>
<tr>
<td><strong>Unit</strong></td>
<td>{</td>
</tr>
<tr>
<td></td>
<td><strong>Display value</strong></td>
</tr>
<tr>
<td></td>
<td><strong>Link</strong></td>
</tr>
<tr>
<td></td>
<td><strong>Value</strong></td>
</tr>
<tr>
<td><strong>Change percent format</strong></td>
<td>&quot;&quot;</td>
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<tr>
<td><strong>Direction</strong></td>
<td>2</td>
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<tr>
<td><strong>Frequency</strong></td>
<td>10</td>
</tr>
<tr>
<td><strong>Precision</strong></td>
<td>2</td>
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<tr>
<td><strong>Change percent</strong></td>
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<tr>
<td><strong>Indicator</strong></td>
<td>{</td>
</tr>
<tr>
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<td><strong>Display value</strong></td>
</tr>
<tr>
<td></td>
<td><strong>Link</strong></td>
</tr>
<tr>
<td></td>
<td><strong>Value</strong></td>
</tr>
<tr>
<td></td>
<td><strong>Description</strong></td>
</tr>
<tr>
<td><strong>Change format</strong></td>
<td>&quot;&quot;</td>
</tr>
</tbody>
</table>
"key" : true,
"value_unit" : "",
"value_formatted" : "",
"period_title" : null,
"gapperc" : null,
"gap" : null,
"target" : null,
"period" : null,
"target_formatted" : "",
"favorite" : false,
"direction_label" : "Minimize",
"uuid" : "d0b0f602d7130100b96d45a3ce6103b0",
"name" : "Incident backlog growth",
"value_color" : "#000000",
"frequency_label" : "Daily",
"change" : null,
"gap_formatted" : "",
"gapperc_formatted" : "",
"formula" : "([Number of new incidents]) - ([Number of resolved incidents])",
"value" : null,
"unit" : {
    "display_value" : "#",
    "link" : "https://instance.service-now.com/api/now/v1/table/pa_units/17b365e2d7320100ba986f14ce6103ad",
    "value" : "17b365e2d7320100ba986f14ce6103ad"
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    "link" : "https://instance.service-now.com/api/now/v1/table/pa_indicators/d0b0f602d7130100b96d45a3ce6103b0",
    "value" : "d0b0f602d7130100b96d45a3ce6103b0"
},
"description" : "Number of new incidents - Number of resolved incidents."
},
{
    "change_formatted" : "",
    "key" : false,
    "value_unit" : "",
    "value_formatted" : "",
    "period_title" : null,
    "gapperc" : null,
    "gap" : null,
    "target" : null,
    "period" : null,
    "target_formatted" : "",
    "favorite" : false,
    "direction_label" : "Minimize",
    "uuid" : "31efe602d7130100b96d45a3ce610300",
    "name" : "Number of new incidents",
    "value_color" : "#000000",
    "frequency_label" : "Daily",
    "change" : null,
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    "value" : null,
    "unit" : {
        "display_value" : "#",
        "link" : "https://instance.service-now.com/api/now/v1/table/pa_units/31efe602d7130100b96d45a3ce610300",
        "value" : "31efe602d7130100b96d45a3ce610300"
    },
"link": "https://instance.service-now.com/api/now/v1/table/pa_units/17b365e2d7320100ba986f14ce6103ad",
  "value": "17b365e2d7320100ba986f14ce6103ad"
},
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    "value": "31efe602d7130100b96d45a3ce610300"
  },
  "description": "Number of incidents based on registration date."
},
  {
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    "key": false,
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    "period_title": null,
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    "direction_label": "Minimize",
    "uuid": "fb007202d7130100b96d45a3ce6103b4",
    "name": "Number of open incidents",
    "value_color": "#000000",
    "frequency_label": "Daily",
    "change": null,
    "gap_formatted": "",
    "gapperc_formatted": "",
    "value": null,
    "unit": {
      "display_value": "#",
      "link": "https://instance.service-now.com/api/now/v1/table/pa_units/17b365e2d7320100ba986f14ce6103ad",
      "value": "17b365e2d7320100ba986f14ce6103ad"
    },
    "changeperf__formatted": "",
    "direction": 2,
    "frequency": 10,
    "precision": 0,
    "changeperc": null,
    "indicator": {
      "display_value": "Number of open incidents",
      "link": "https://instance.service-now.com/api/now/v1/table/pa_indicators/fb007202d7130100b96d45a3ce6103b4",
      "value": "fb007202d7130100b96d45a3ce6103b4"
    },
    "description": "Number of incidents open based on resolved date is empty."
}
}
Return the number of open incidents scorecard

You can query scorecards for a particular indicator by providing the `sysparm_uuid` parameter with an indicator `sys_id` value.

Command:

```bash
curl -v -u "admin:admin" -H "Accept:application/json" 
"https://instance.service-now.com/api/nov/v1/pa/scorecards?
sysparm_uuid=fb007202d7130100b96d45a3ce6103b4"
```

Response:

```json
{
  "result" : [
    {
      "change_formatted" : "",
      "key" : false,
      "value_unit" : "",
      "value_formatted" : "",
      "period_title" : null,
      "gapperc" : null,
      "gapperc_formatted" : "",
      "gap" : null,
      "target" : null,
      "period" : null,
      "target_formatted" : "",
      "frequency_label" : "Daily",
      "change" : null,
      "gap_formatted" : "",
      "gapperc_formatted" : "",
      "value_color" : "#000000",
      "value" : null,
      "unit" : {
        "display_value" : "#",
        "link" : "https://instance.service-now.com/api/now/v1/table/pa_units/17b365e2d7320100ba986f14ce6103ad",
        "value" : "17b365e2d7320100ba986f14ce6103ad"
      },
      "changeperc_formatted" : "",
      "direction" : 2,
      "frequency" : 10,
      "precision" : 0,
      "changeperc" : null,
      "indicator" : {
        "display_value" : "Number of open incidents not updated in last 30 days",
        "link" : "https://instance.service-now.com/api/now/v1/table/pa_indicators/44944f12bf130100b96dac808c0739a7",
        "value" : "44944f12bf130100b96dac808c0739a7"
      },
      "description" : "Number of open incidents not updated in last 30 days based on updated date."
    }
  ]
}
```
"gap" : null,
"target" : null,
"period" : null,
"target_formatted" : "",
"favorite" : false,
"direction_label" : "Minimize",
"uuid" : "fb007202d7130100b96d45a3ce6103b4",
"name" : "Number of open incidents",
"value_color" : "#000000",
"frequency_label" : "Daily",
"change" : null,
"gap_formatted" : "",
"gapperc_formatted" : "",
"value" : null,
"unit" : {
  "display_value" : "#",
  "link" : "https://instance.service-now.com/api/now/v1/table/pa_units/17b365e2d7320100ba986f14ce6103ad",
  "value" : "17b365e2d7320100ba986f14ce6103ad"
},
"changeperc_formatted" : "",
"direction" : 2,
"frequency" : 10,
"precision" : 0,
"changeperc" : null,
"indicator" : {
  "display_value" : "Number of open incidents",
  "link" : "https://instance.service-now.com/api/now/v1/table/pa_indicators/fb007202d7130100b96d45a3ce6103b4",
  "value" : "fb007202d7130100b96d45a3ce6103b4"
},
"description" : "Number of incidents open based on resolved date is empty."
}
]
"changeperc" : null,
"value_formatted" : "",
"period_title" : null,
"gapperc" : null,
"value_unit" : "",
"target" : null,
"period" : null,
"target_formatted" : "",
"favorite" : false,
"gap" : null,
"direction_label" : "Minimize",
"uuid" : "fb007202d7130100b96d45a3ce6103b4",
"name" : "Number of open incidents",
"value_color" : "#000000",
"frequency_label" : "Daily",
"change" : null,
"gap_formatted" : "",
"gappercFormatted" : "",
"value" : null,
"unit" : {
"display_value" : "#",
"link" : "https://instance.service-now.com/api/now/v1/table/pa_units/17b365e2d7320100ba986f14ce6103ad",
"value" : "17b365e2d7320100ba986f14ce6103ad"
},
"breakdowns" : [
{
"display_value" : "Priority",
"link" : "https://instance.service-now.com/api/now/v1/table/pa_breakdowns/0df47e02d7130100b96d45a3ce610399",
"value" : "0df47e02d7130100b96d45a3ce610399"
},
{
"display_value" : "Category",
"link" : "https://instance.service-now.com/api/now/v1/table/pa_breakdowns/1f918835d7231100b96d45a3ce6103fe",
"value" : "1f918835d7231100b96d45a3ce6103fe"
},
{
"display_value" : "Assignment Group",
"link" : "https://instance.service-now.com/api/now/v1/table/pa_breakdowns/baec0752bf130100b96d45a3ce61030b",
"value" : "baec0752bf130100b96d45a3ce61030b"
},
{
"display_value" : "State",
"link" : "https://instance.service-now.com/api/now/v1/table/pa_breakdowns/f0647e02d7130100b96d45a3ce61030b",
"value" : "f0647e02d7130100b96d45a3ce61030b"
},
{
"display_value" : "Age",
"link" : "https://instance.service-now.com/api/now/v1/table/pa_breakdowns/65947e02d7130100b96d45a3ce61033a",
"value" : "65947e02d7130100b96d45a3ce61033a"
}]
}
Return the scorecard with breakdown relations

You can obtain the sys_id values for all breakdown relations associated with the scorecard using the `sysparm_include_available_breakdowns` parameter.

Command:

```bash
curl -v -u "admin:admin" -H "Accept:application/json" 
"https://<instance>.service-now.com/api/now/v1/pa/scorecards?
sysparm_uuid=fb007202d7130100b96d45a3ce6103b4:baec0752bf130100b96dac808c0739ed:287ee6fea9fe198100ada7950d0b1b73&sysparm_include_available_breakdowns=true"
```

Response:

```json
{
    "result": [
        {
            "value_formatted": "37",
            "indicator": {
                "display_value": "Number of open incidents",
                "link": "https://<instance>.service-now.com/api/now/v1/table/pa_indicators/fb007202d7130100b96d45a3ce6103b4",
                "value": "fb007202d7130100b96d45a3ce6103b4"
            },
            "gapperc": null,
            "change": 9.0,
            "value_color": "#455464",
            "direction": 2,
            "target_formatted": ",",
            "frequency": 10,
            "changeperc_formatted": "32.1%",
            "direction_label": "Minimize",
            "period_title": "Jul 22",
            "description": "Number of incidents open based on resolved date is empty."
        },
        {
            "display_value": "Database",
            "link": "https://<instance>.service-now.com/api/now/v1/table/sys_user_group/287ee6fea9fe198100ada7950d0b1b73",
            "value": "287ee6fea9fe198100ada7950d0b1b73"
        },
        {
            "display_value": "Priority",
            "link": "https://<instance>.service-now.com/api/now/v1/table/pa_breakdowns/0df47e02d7130100b96d45a3ce610399",
            "value": "0df47e02d7130100b96d45a3ce610399"
        }
    ]
}
```
},
{
"display_value": "Category",
"link": "https://<instance>.service-now.com/api/now/v1/table/pa_breakdowns/1f918835d7231100b96d45a3ce6103fe",
"value": "1f918835d7231100b96d45a3ce6103fe"
},
{
"display_value": "State",
"link": "https://<instance>.service-now.com/api/now/v1/table/pa_breakdowns/f0647e02d7130100b96d45a3ce61030b",
"value": "f0647e02d7130100b96d45a3ce61030b"
},
{
"display_value": "Age",
"link": "https://<instance>.service-now.com/api/now/v1/table/pa_breakdowns/65947e02d7130100b96d45a3ce61033a",
"value": "65947e02d7130100b96d45a3ce61033a"
},
{
"display_value": "Business Service",
"link": "https://<instance>.service-now.com/api/now/v1/table/pa_breakdowns/9a6f62f36780020005d1ff5557415a85",
"value": "9a6f62f36780020005d1ff5557415a85"
}
],
"breakdown_relations": [
{
"display_value": "Child Groups",
"link": "https://<instance>.service-now.com/api/now/v1/table/pa_breakdown_relations/301fd511eb23310065deac6aa206fe31",
"value": "301fd511eb23310065deac6aa206fe31"
},
{
"display_value": "Parent Group",
"link": "https://<instance>.service-now.com/api/now/v1/table/pa_breakdown_relations/790b6e11eb23310065deac6aa206fe1c",
"value": "790b6e11eb23310065deac6aa206fe1c"
},
{
"display_value": "Sibling Groups",
"link": "https://<instance>.service-now.com/api/now/v1/table/pa_breakdown_relations/15e15a12eb233100871aac6aa206fe59",
"value": "15e15a12eb233100871aac6aa206fe59"
}
],
"breakdown": {
"display_value": "Assignment Group",
"link": "https://<instance>.service-now.com/api/now/v1/table/pa_breakdowns/baec0752bf130100b96dac808c0739ed",
"value": "baec0752bf130100b96dac808c0739ed"
},
"period": "Jul 22",
"favorite": false,
"change_formatted": "9",
"unit": {
"display_value": "#",
"link": "https://<instance>.service-now.com/api/now/v1/table/"pa_units/17b365e2d7320100ba986f14ce6103ad",
"value": "17b365e2d7320100ba986f14ce6103ad"
},
"frequency_label": "Daily",
"target": null,
"changeperc": 0.32142857142857145,
Return the scorecard broken down using a breakdown relation

You can break down the returned data by passing a breakdown relation sys_id in the sysparm_breakdown_relation parameter.

Command:

curl -v -u "admin:admin" -H "Accept:application/json" 
"https://<instance>.service-now.com/api/now/v1/pa/scorecards?
 sysparm_uuid=fb007202d7130100b96d45a3ce6103b4:baec0752bf130100b96d45a3ce6103b4&sysparm_breakdown_relation=790b6e11eb23310065deac6aa206fe1c"

Response:

```json
{
  "result": [
    {
      "value_formatted": "37",
      "indicator": {
        "display_value": "Number of open incidents",
        "link": "https://<instance>.service-now.com/api/now/v1/table/pa_indicators/fb007202d7130100b96d45a3ce6103b4",
        "value": "fb007202d7130100b96d45a3ce6103b4"
      },
      "gapperc": null,
      "change": 9.0,
      "value_color": "#455464",
      "direction": 2,
      "target_formatted": "",
      "frequency": 10,
      "changeperc_formatted": "32.1%",
      "direction_label": "Minimize",
      "period_title": "Jul 22",
      "description": "Number of incidents open based on resolved date is empty.",
      "name": "Number of open incidents / Assignment Group / Database",
      "value": 37.0,
      "key": false,
      "gap_formatted": "",
      "element": {
        "display_value": "Database",
        "link": "https://<instance>.service-now.com/api/now/v1/table/sys_user_group/287ee6feca9fe198100ada7950d0b1b73",
        "value": "287ee6feca9fe198100ada7950d0b1b73"
      },
      "precision": 0,
      "breakdown": {
        "display_value": "Assignment Group",
        "link": "https://<instance>.service-now.com/api/now/v1/table/pa_breakdowns/baec0752bf130100b96dac808c0739ed",
        "value": "baec0752bf130100b96dac808c0739ed"
      },
      "period": "Jul 22",
```
Return the scorecard broken down by location

The Performance Analytics API returns geolocation data when available.

Command:

```
curl -v -u "admin:admin" -H "Accept:application/json"
  "https://<instance>.service-now.com/api/now/v1/pa/scorecards?
sysparm_uuid=fb007202d7130100b96d45a3ce6103b4&sysparm_breakdown=656d5662eb23310065deac6a"
```

Response:

```
{
  "result": [
    {
      "element": {
        "display_value": "San Diego",
        "link": "https://<instance>.service-now.com/api/now/v1/table/cmnn_location/108752c8c611227501d4ab0e392ba97f",
        "value": "108752c8c611227501d4ab0e392ba97f",
        "longitude": -117.15726,
        "latitude": 32.71533
      },
      "..."
    },
    {
      "element": {
        "display_value": "Florida",
        "link": "https://<instance>.service-now.com/api/now/v1/table/cmnn_location/8e3e85f037d0200044e0bfc8bcbe5d14",
        "value": "8e3e85f037d0200044e0bfc8bcbe5d14",
        "longitude": -95.71289,
        "latitude": 37.09024
      },
      "..."
    }
  ]
}
```
Return the scorecard with a filter

You can apply a filter to the scorecard data using the `sysparm_elements_filter` parameter with the `sys_id` of a Performance Analytics element filter record.

**Command:**

```bash
curl -v -u "admin:admin" -H "Accept:application/json"
"https://<instance>.service-now.com/api/now/v1/pa/scorecards?sysparm_uuid=fb007202d7130100b96d45a3ce6103b4&sysparm_breakdown=baec0752bf130100b96dac808c0739ed&sysparm_elements_filter=7b9eb563eb11020065deac6aa206fe11"
```

**Response:**

```json
{
  "result": [
    {
      "value_formatted": "37",
      "indicator": {
        "display_value": "Number of open incidents",
        "link": "https://<instance>.service-now.com/api/now/v1/table/pa_indicators/fb007202d7130100b96d45a3ce6103b4",
        "value": "fb007202d7130100b96d45a3ce6103b4"
      },
      "gapperc": null,
      "change": 9.0,
      "value_color": "#455464",
      "direction": 2,
      "target_formatted": ",",
      "frequency": 10,
      "changeperc_formatted": "32.1%",
      "direction_label": "Minimize",
      "period_title": "Jul 22",
      "description": "Number of incidents open based on resolved date is empty."
    },
    {
      "name": "Number of open incidents / Assignment Group / Database",
      "value": 37.0,
      "key": false,
      "gap_formatted": "",
      "element": {
        "display_value": "Database",
        "link": "https://<instance>.service-now.com/api/now/v1/table/sys_user_group/287ee6fe9fe198100ada7950d0b1b73",
        "value": "287ee6fe9fe198100ada7950d0b1b73"
      },
      "precision": 0,
      "breakdown": {
        "display_value": "Assignment Group",
        "link": "https://<instance>.service-now.com/api/now/v1/table/pa_breakdowns/7baec0752bf130100b96dac808c0739ed",
        "value": "7baec0752bf130100b96dac808c0739ed"
      },
      "period": "Jul 22",
      "favorite": false,
      "change_formatted": "9",
      "unit": {
        "display_value": "#",
        "link": "https://<instance>.service-now.com/api/now/v1/table/pa_units/17b365e2d7320100ba986f14ce6103ad",
        "value": "17b365e2d7320100ba986f14ce6103ad"
      },
      "frequency_label": "Daily",
      "target": null,
```
"changeperc": 0.32142857142857145,
"uuid": "fb007202d7130100b96d45a3ce6103b4:baec0752bf130100b96dac808c0739ed:287ee6f6a9fe198100ada7950d0b1b73",
"gapperc_formatted": "",
"value_unit": "37",
"gap": null
},
{ "value_formatted": "20",
"indicator": {
"display_value": "Number of open incidents",
"link": "https://<instance>.service-now.com/api/now/v1/table/pa_indicators/fb007202d7130100b96d45a3ce6103b4",
"value": "fb007202d7130100b96d45a3ce6103b4"
},
"gapperc": null,
"change": 4.0,
"value_color": "#455464",
"direction": 2,
"target_formatted": "",
"frequency": 10,
"changeperc_formatted": "25.0%",
"direction_label": "Minimize",
"period_title": "Jul 22",
"description": "Number of incidents open based on resolved date is empty.",
"name": "Number of open incidents / Assignment Group / Database Atlanta",
"value": 20.0,
"key": false,
"gap_formatted": "",
"element": {
"display_value": "Database Atlanta",
"link": "https://<instance>.service-now.com/api/now/v1/table/sys_user_group/db53580b0a0a6501aa37c294a2ba6b",
"value": "db53580b0a0a6501aa37c294a2ba6b"
},
"precision": 0,
"breakdown": {
"display_value": "Assignment Group",
"link": "https://<instance>.service-now.com/api/now/v1/table/pa_breakdowns/baec0752bf130100b96dac808c0739ed",
"value": "baec0752bf130100b96dac808c0739ed"
},
"period": "Jul 22",
"favorite": false,
"change_formatted": "4",
"unit": {
"display_value": "#",
"link": "https://<instance>.service-now.com/api/now/v1/table/pa_units/17b365e2d7320100ba986f14ce6103ad",
"value": "17b365e2d7320100ba986f14ce6103ad"
},
"frequency_label": "Daily",
"target": null,
"changeperc": 0.25,
"uuid": "fb007202d7130100b96d45a3ce6103b4:baec0752bf130100b96dac808c0739ed:db53580b0a0a6501aa37c294a2ba6b:baec0752bf130100b96dac808c0739ed:17b365e2d7320100ba986f14ce6103ad",
"gapperc_formatted": "",
"value_unit": "20",
"gap": null
},
{ "value_formatted": "19",}
"indicator": {
  "display_value": "Number of open incidents",
  "link": "https://<instance>.service-now.com/api/now/v1/table/
pa_indicators/fb007202d7130100b96d45a3ce6103b4",
  "value": "fb007202d7130100b96d45a3ce6103b4"
},
"gapperc": null,
"change": 5.0,
"value_color": "#455464",
"direction": 2,
"target_formatted": "",
"frequency": 10,
"changeperc_formatted": "35.7%",
"direction_label": "Minimize",
"period_title": "Jul 22",
"description": "Number of incidents open based on resolved date is empty.",
"name": "Number of open incidents / Assignment Group / NY DB",
"value": 19.0,
"key": false,
"gap_formatted": "",
"element": {
  "display_value": "NY DB",
  "link": "https://<instance>.service-now.com/api/now/v1/table/
sys_user_group/5f74727dc0a8010e01efe33a251993f9",
  "value": "5f74727dc0a8010e01efe33a251993f9"
},
"precision": 0,
"breakdown": {
  "display_value": "Assignment Group",
  "link": "https://<instance>.service-now.com/api/now/v1/table/
pa_breakdowns/baec0752bf130100b96dac808c0739ed",
  "value": "baec0752bf130100b96dac808c0739ed"
},
"period": "Jul 22",
"favorite": false,
"change_formatted": "5",
"unit": {
  "display_value": "#",
  "link": "https://<instance>.service-now.com/api/now/v1/table/
pa_units/17b365e2d7320100ba986f14ce6103ad",
  "value": "17b365e2d7320100ba986f14ce6103ad"
},
"frequency_label": "Daily",
"target": null,
"changeperc": 0.35714285714285715,
"uuid": "fb007202d7130100b96d45a3ce6103b4:baec0752bf130100b96dac808c0739ed:5f74727dc0a8010e01efe33a251993f9",
"gapperc_formatted": "",
"value_unit": "19",
"gap": null
},

{ "value_formatted": "10",
  "indicator": {
    "display_value": "Number of open incidents",
    "link": "https://<instance>.service-now.com/api/now/v1/table/
pa_indicators/fb007202d7130100b96d45a3ce6103b4",
    "value": "fb007202d7130100b96d45a3ce6103b4"
  },
  "gapperc": null,
  "change": 0.0,
  "value_color": "#455464",
  "direction": 2,
"target_formatted": "",
"frequency": 10,
"changeperc_formatted": "0.0%",
"direction_label": "Minimize",
"period_title": "Jul 22",
"description": "Number of incidents open based on resolved date is empty."

"name": "Number of open incidents / Assignment Group / Database San Diego",
"value": 10.0,
"key": false,
"gapFormatted": "",
"element": {
  "display_value": "Database San Diego",
  "link": "https://<instance>.service-now.com/api/now/v1/table/sys_user_group/db53a9290a0a650091aebccf833c6",
  "value": "db53a9290a0a650091aebccf833c6"
},
"precision": 0,
"breakdown": {
  "display_value": "Assignment Group",
  "link": "http://localhost:8080/api/now/v1/table/pa_breakdowns/baec0752bf130100b96dac808c0739ed",
  "value": "baec0752bf130100b96dac808c0739ed"
},
"period": "Jul 22",
"favorite": false,
"changeFormatted": "0",
"unit": {
  "display_value": "#",
  "link": "http://<instance>.service-now.com/api/now/v1/table/pa_units/17b365e2d7320100ba986f14ce6103ad",
  "value": "17b365e2d7320100ba986f14ce6103ad"
},
"frequency_label": "Daily",
"target": null,
"changeperc": 0.0,
"uuid": "fb007202d7130100b96d45a3ce6103b4:baec0752bf130100b96dac808c0739ed:db53a9290a0a650091aebccf833c6",
"gappercFormatted": "",
"value_unit": "10",
"gap": null
}]

Return the scorecard with an aggregate

You can apply the 7d running SUM aggregate to the scorecard using the sysparm_uuid value with the sys_id of the aggregate.

Command:

```
curl -v -u "admin:admin" -H "Accept:application/json"
  "https://instance.service-now.com/api/now/v1/pa/scorecards?
  sysparm_uuid=fb007202d7130100b96d45a3ce6103b4:89ea4c11d7001100ba986f14ce6103dc"
```

Response:

```
{
"result": [
```
Return the scorecard with priority breakdown

You can request broken down scorecard data by passing the sysparm_breakdown parameter. This example shows the Number of open incidents scorecard broken down by priority.

In this example, the (PA Incident) Daily Data Collection job must run at least once to populate the data.
Command:

curl -v -u "admin:admin" -H "Accept:application/json" 
"https://instance.service-now.com/api/now/v1/pa/scorecards?
sysparm_uuid=fb007202d7130100b96d45a3ce6103b4&sysparm_breakdown=0df47e02d7130100b96d45a3ce6103b4"

Response:

```json
{
"result": [
{
"key": false,
"change_formatted": "0",
"changeperc": 0,
"value_unit": "15",
"value_formatted": "15",
"period_title": "Mar 23",
"gapperc": null,
"gap": null,
"target": null,
"period": "Mar 23",
"target_formatted": ",",
"favorite": false,
"direction_label": "Minimize",
"uuid": "fb007202d7130100b96d45a3ce6103b4:0df47e02d7130100b96d45a3ce610399:dce1db9cc803310026c1c49f3d06511",
"name": "Number of open incidents / Priority / 1 - Critical",
"value_color": "#000000",
"frequency_label": "Daily",
"element": {
"display_value": "1 - Critical",
"link": "https://instance.service-now.com/api/now/v1/table/sys_choice/dce1db9cc803310026c1c49f3d065511",
"value": "dce1db9cc803310026c1c49f3d065511"
},
"change": 0,
"gap_formatted": ",",
"gapperc_formatted": ",",
"value": 15,
"unit": {
"display_value": "#",
"link": "https://instance.service-now.com/api/now/v1/table/pa_units/17b365e2d7320100ba986f14ce6103ad",
"value": "17b365e2d7320100ba986f14ce6103ad"
},
"breakdown": {
"display_value": "Priority",
"link": "https://instance.service-now.com/api/now/v1/table/pa_breakdowns/0df47e02d7130100b96d45a3ce610399",
"value": "0df47e02d7130100b96d45a3ce610399"
},
"changeperc_formatted": "0.0%",
"frequency": 10,
"precision": 0,
"direction": 2,
"indicator": {
"display_value": "Number of open incidents",
"link": "https://instance.service-now.com/api/now/v1/table/pa_indicators/fb007202d7130100b96d45a3ce6103b4",
"value": "fb007202d7130100b96d45a3ce6103b4"
},
"description": "Number of incidents open based on resolved date is empty."
}
```
},
{
  "key" : false,
  "change_formatted" : "0",
  "changeperc" : 0,
  "value_unit" : "5",
  "value_formatted" : "5",
  "period_title" : "Mar 23",
  "gapperc" : null,
  "gap" : null,
  "target" : null,
  "period" : "Mar 23",
  "target_formatted" : ",",
  "favorite" : false,
  "direction_label" : "Minimize",
  "uuid" : "fb007202d7130100b96d45a3ce6103b4:0df47e02d7130100b96d45a3ce610399:50e1db9cc803310026c1c49f3d065512",
  "name" : "Number of open incidents / Priority / 3 - Moderate",
  "value_color" : "#000000",
  "frequency_label" : "Daily",
  "element" : {
    "display_value" : "3 - Moderate",
    "link" : "https://instance.service-now.com/api/now/v1/table/sys_choice/50e1db9cc803310026c1c49f3d065512",
    "value" : "50e1db9cc803310026c1c49f3d065512"
  },
  "change" : 0,
  "gap_formatted" : ",",
  "gapperc_formatted" : ",",
  "value" : 5,
  "unit" : {
    "display_value" : ",",
    "link" : "https://instance.service-now.com/api/now/v1/table/pa_units/17b36e2d7320100ba986f14ce6103ad",
    "value" : "17b36e2d7320100ba986f14ce6103ad"
  },
  "breakdown" : {
    "display_value" : "Priority",
    "link" : "https://instance.service-now.com/api/now/v1/table/pa_breakdowns/0df47e02d7130100b96d45a3ce610399",
    "value" : "0df47e02d7130100b96d45a3ce610399"
  },
  "changeperc_formatted" : "0.0%",
  "frequency" : 10,
  "precision" : 0,
  "direction" : 2,
  "indicator" : {
    "display_value" : "Number of open incidents",
    "link" : "https://instance.service-now.com/api/now/v1/table/pa_indicators/fb007202d7130100b96d45a3ce6103b4",
    "value" : "fb007202d7130100b96d45a3ce6103b4"
  },
  "description" : "Number of incidents open based on resolved date is empty."
},
{
  "key" : false,
  "change_formatted" : "0",
  "changeperc" : 0,
  "value_unit" : "4",
  "value_formatted" : "4",
  "period_title" : "Mar 23",
  "gapperc" : null,
  "gap" : null,
"target": null,
"period": "Mar 23",
"target_formatted": "",
"favorite": false,
"direction_label": "Minimize",
"uuid": "fb007202d7130100b96d45a3ce6103b4:0df47e02d7130100b96d45a3ce610399:10e1db9cc803310026c1c49f3d065512",
"name": "Number of open incidents / Priority / 2 - High",
"value_color": "#000000",
"frequency_label": "Daily",
"element": {
"display_value": "2 - High",
"link": "https://instance.service-now.com/api/now/v1/table/sys_choice/10e1db9cc803310026c1c49f3d065512",
"value": "10e1db9cc803310026c1c49f3d065512",
"change": 0,
"gap_formatted": "",
"gapperc_formatted": "",
"value": 4,
"unit": {
"display_value": "#",
"link": "https://instance.service-now.com/api/now/v1/table/pa_units/17b365e2d7320100ba986f14ce6103ad",
"value": "17b365e2d7320100ba986f14ce6103ad",
"breakdown": {
"display_value": "Priority",
"link": "https://instance.service-now.com/api/now/v1/table/pa_breakdowns/0df47e02d7130100b96d45a3ce610399",
"value": "0df47e02d7130100b96d45a3ce610399",
"changeperc_formatted": "0.0%",
"frequency": 10,
"precision": 0,
"direction": 2,
"indicator": {
"display_value": "Number of open incidents",
"link": "https://instance.service-now.com/api/now/v1/table/pa_indicators/fb007202d7130100b96d45a3ce6103b4",
"value": "fb007202d7130100b96d45a3ce6103b4",
"description": "Number of incidents open based on resolved date is empty."
},
"key": false,
"change_formatted": "0",
"changeperc": 0,
"value_unit": "#",
"value_formatted": "3",
"period_title": "Mar 23",
"gapperc": null,
"gap": null,
"target": null,
"period": "Mar 23",
"target_formatted": "",
"favorite": false,
"direction_label": "Minimize",
"uuid": "fb007202d7130100b96d45a3ce6103b4:0df47e02d7130100b96d45a3ce610399:10e1db9cc803310026c1c49f3d065512",
"name": "Number of open incidents / Priority / 5 - Planning",
"value_color": "#000000",
"frequency_label": "Daily",}
Number of incidents open based on resolved date is empty.
Return the scorecard with priority breakdown and available breakdowns

You can request broken down scorecard data by passing the `sysparm_breakdown` parameter, and a list of available breakdowns by passing the `sysparm_include_available_breakdowns` parameter. Passing both parameters in the same request enables you to query both sets of data using a single request.

In this example, the (PA Incident) Daily Data Collection job must run at least once to populate the data.

Command:
```
curl -v -u "admin:admin" -H "Accept:application/json" 
"https://instance.service-now.com/api/now/v1/pa/scorecards?
sysparm_uuid=fb007202d7130100b96d45a3ce6103b4&sysparm_breakdown=0df47e02d7130100b96d45a3ce610399&sysparm_include_available_breakdowns=true"
```

Response:
```
{  
  "result" : [  
    {  
      "key" : false,  
      "direction" : 2,  
      "change_formatted" : "0",  
      "changeperc" : 0,  
      "value_formatted" : "15",  
      "period_title" : "Mar 23",  
      "gapperc" : null,  
      "value_unit" : "15",  
      "target" : null,  
      "period" : "Mar 23",  
      "target_formatted" : "",  
      "favorite" : false,
```
"description": "Number of incidents open based on resolved date is empty.",

{
  "key": false,
  "direction": 2,
  "change_formatted": "0",
  "changeperc": 0,
  "value_formatted": "5",
  "period_title": "Mar 23",
  "gapperc": null,
  "value_unit": "5",
  "target": null,
  "period": "Mar 23",
  "target_formatted": "",
  "favorite": false,
  "gap": null,
  "direction_label": "Minimize",
  "uuid": "fb007202d7130100b96d45a3ce6103b4:0df47e02d7130100b96d45a3ce610399:50e1db9cc803310026c1c49f3d065512",
  "name": "Number of open incidents / Priority / 3 - Moderate",
  "value_color": "#000000",
  "frequency_label": "Daily",
  "element": {
    "display_value": "3 - Moderate",
    "link": "https://instance.service-now.com/api/now/v1/table/sys_choice/50e1db9cc803310026c1c49f3d065512",
    "value": "50e1db9cc803310026c1c49f3d065512"
  },
  "change": 0,
  "gap_formatted": "",
  "gapperc_formatted": "",
  "value": 5,
  "unit": {
    "display_value": "#",
    "link": "https://instance.service-now.com/api/now/v1/table/pa_units/17b365e2d7320100ba986f14ce6103ad",
    "value": "17b365e2d7320100ba986f14ce6103ad"
  },
  "breakdown": {
    "display_value": "Priority",
    "link": "https://instance.service-now.com/api/now/v1/table/pa_breakdowns/0df47e02d7130100b96d45a3ce610399",
    "value": "0df47e02d7130100b96d45a3ce610399"
  },
  "breakdowns": [
    {
      "display_value": "Category",
      "link": "https://instance.service-now.com/api/now/v1/table/pa_breakdowns/1f918835d7231100b96d45a3ce6103fe",
      "value": "1f918835d7231100b96d45a3ce6103fe"
    },
    {
      "display_value": "Assignment Group",
      "link": "https://instance.service-now.com/api/now/v1/table/pa_breakdowns/baec0752bf130100b96d45a3ce808c0739ed",
      "value": "baec0752bf130100b96d45a3ce808c0739ed"
    },
    {
      "display_value": "State",
      "link": "https://instance.service-now.com/api/now/v1/table/pa_breakdowns/f0647e02d7130100b96d45a3ce61030b",
      "value": "f0647e02d7130100b96d45a3ce61030b"
    }
  ]
}


```json
{
  "display_value": "Age",
  "link": "https://instance.service-now.com/api/now/v1/table/pa_breakdowns/65947e02d7130100b96d45a3ce61033a",
  "value": "65947e02d7130100b96d45a3ce61033a"
},
"changeperc_formatted": "0.0%",
"precision": 0,
"frequency": 10,
"indicator": {
  "display_value": "Number of open incidents",
  "link": "https://instance.service-now.com/api/now/v1/table/pa_indicators/fb007202d7130100b96d45a3ce6103b4",
  "value": "fb007202d7130100b96d45a3ce6103b4"
},
"description": "Number of incidents open based on resolved date is empty."
},
{
  "key": false,
  "direction": 2,
  "change_formatted": "0",
  "changeperc": 0,
  "value_formatted": "4",
  "period_title": "Mar 23",
  "gapperc": null,
  "value_unit": "4",
  "target": null,
  "period": "Mar 23",
  "target_formatted": "",
  "favorite": false,
  "gap": null,
  "direction_label": "Minimize",
  "uuid": "fb007202d7130100b96d45a3ce6103b4:0df47e02d7130100b96d45a3ce610399:10e1db9cc803310026c1c49f3d065512",
  "name": "Number of open incidents / Priority / 2 - High",
  "value_color": "#000000",
  "frequency_label": "Daily",
  "element": {
    "display_value": "2 - High",
    "link": "https://instance.service-now.com/api/now/v1/table/sys_choice/10e1db9cc803310026c1c49f3d065512",
    "value": "10e1db9cc803310026c1c49f3d065512"
  },
  "change": 0,
  "gap_formatted": "",
  "gapperc_formatted": "",
  "value": 4,
  "unit": {
    "display_value": "#",
    "link": "https://instance.service-now.com/api/now/v1/table/pa_units/17b365e2d7320100ba986f14ce6103ad",
    "value": "17b365e2d7320100ba986f14ce6103ad"
  },
  "breakdown": {
    "display_value": "Priority",
    "link": "https://instance.service-now.com/api/now/v1/table/pa_breakdowns/0df47e02d7130100b96d45a3ce610399",
    "value": "0df47e02d7130100b96d45a3ce610399"
  },
  "breakdowns": [
    {
      "display_value": "Category",
```

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"value": 3,
"unit": {
  "display_value": "#",
  "link": "https://instance.service-now.com/api/now/v1/table/pa_units/17b365e2d7320100ba986f14ce6103ad",
  "value": "17b365e2d7320100ba986f14ce6103ad"
},
"breakdown": {
  "display_value": "Priority",
  "link": "https://instance.service-now.com/api/now/v1/table/pa_breakdowns/0df47e02d7130100b96d45a3ce610399",
  "value": "0df47e02d7130100b96d45a3ce610399"
},
"breakdowns": [
  {
    "display_value": "Category",
    "link": "https://instance.service-now.com/api/now/v1/table/pa_breakdowns/1f918835d7231100b96d45a3ce6103fe",
    "value": "1f918835d7231100b96d45a3ce6103fe"
  },
  {
    "display_value": "Assignment Group",
    "link": "https://instance.service-now.com/api/now/v1/table/pa_breakdowns/baec0752bf130100b96dac808c0739ed",
    "value": "baec0752bf130100b96dac808c0739ed"
  },
  {
    "display_value": "State",
    "link": "https://instance.service-now.com/api/now/v1/table/pa_breakdowns/f0647e02d7130100b96d45a3ce61030b",
    "value": "f0647e02d7130100b96d45a3ce61030b"
  },
  {
    "display_value": "Age",
    "link": "https://instance.service-now.com/api/now/v1/table/pa_breakdowns/65947e02d7130100b96d45a3ce61033a",
    "value": "65947e02d7130100b96d45a3ce61033a"
  }
],
"changeperc_formatted": "0.0%",
"precision": 0,
"frequency": 10,
"indicator": {
  "display_value": "Number of open incidents",
  "link": "https://instance.service-now.com/api/now/v1/table/pa_indicators/fb007202d7130100b96d45a3ce6103b4",
  "value": "fb007202d7130100b96d45a3ce6103b4"
},
"description": "Number of incidents open based on resolved date is empty."}
"gap" : null,
"direction_label" : "Minimize",
"uuid" :
"fb007202d7130100b96d45a3ce6103b4:0df47e02d7130100b96d45a3ce610399:90e1db9cc803310026c1c49f3d065512",
"name" : "Number of open incidents / Priority / 4 - Low",
"value_color" : "#000000",
"frequency_label" : "Daily",
"element" : {
  "display_value" : "4 - Low",
  "link" : "https://instance.service-now.com/api/now/v1/table/sys_choice/90e1db9cc803310026c1c49f3d065512",
  "value" : "90e1db9cc803310026c1c49f3d065512"
},
"change" : 0,
"gap_formatted" : ",",
"gapperc_formatted" : ",",
"value" : 1,
"unit" : {
  "display_value" : ",",
  "link" : "https://instance.service-now.com/api/now/v1/table/pa_units/17b365e2d7320100ba986f14ce6103ad",
  "value" : "17b365e2d7320100ba986f14ce6103ad"
},
"breakdown" : {
  "display_value" : "Priority",
  "link" : "https://instance.service-now.com/api/now/v1/table/pa_breakdowns/0df47e02d7130100b96d45a3ce610399",
  "value" : "0df47e02d7130100b96d45a3ce610399"
},
"breakdowns" : [
  {
    "display_value" : "Category",
    "link" : "https://instance.service-now.com/api/now/v1/table/pa_breakdowns/1f918835d7231100b96d45a3ce6103fe",
    "value" : "1f918835d7231100b96d45a3ce6103fe"
  },
  {
    "display_value" : "Assignment Group",
    "link" : "https://instance.service-now.com/api/now/v1/table/pa_breakdowns/baec0752bf130100b96dac808c0739ed",
    "value" : "baec0752bf130100b96dac808c0739ed"
  },
  {
    "display_value" : "State",
    "link" : "https://instance.service-now.com/api/now/v1/table/pa_breakdowns/f0647e02d7130100b96d45a3ce6103b",
    "value" : "f0647e02d7130100b96d45a3ce6103b"
  },
  {
    "display_value" : "Age",
    "link" : "https://instance.service-now.com/api/now/v1/table/pa_breakdowns/65947e02d7130100b96d45a3ce61033a",
    "value" : "65947e02d7130100b96d45a3ce61033a"
  }
],
"changeperc_formatted" : "0.0%",
"precision" : 0,
"frequency" : 10,
"indicator" : {
  "display_value" : "Number of open incidents",
  "link" : "https://instance.service-now.com/api/now/v1/table/pa_indicators/fb007202d7130100b96d45a3ce6103b4",
  "value" : "fb007202d7130100b96d45a3ce6103b4"
}
Return the scorecard for priority 1 incidents

You can apply a breakdown by appending the breakdown and breakdown element sys_id values to the sysparm_uuid parameter. In this example, the data is broken down to show priority 1 incidents.

Command:

curl -v -u "admin:admin" -H "Accept:application/json" "https://instance.service-now.com/api/now/v1/pa/scorecards?sysparm_uuid=fb007202d7130100b96d45a3ce6103b4:0df47e02d7130100b96d45a3ce610399:e5900140200331007665978299a805f3"

Response:

```json
{
  "result": [
    {
      "value_formatted": "",
      "indicator": {
        "display_value": "Number of open incidents",
        "link": "http://instance.service-now.com/api/now/v1/table/pa_indicators/fb007202d7130100b96d45a3ce6103b4",
        "value": "fb007202d7130100b96d45a3ce6103b4"
      },
      "gapperc": null,
      "change": null,
      "value_color": "#000000",
      "direction": 2,
      "target_formatted": "",
      "frequency": 10,
      "changeperc_formatted": "",
      "direction_label": "Minimize",
      "period_title": null,
      "description": "Number of incidents open based on resolved date is empty."
    },
    {
      "name": "Number of open incidents / Priority / 1 - Critical",
      "value": null,
      "key": false,
      "gap_formatted": "",
      "element": {
        "display_value": "1 - Critical",
        "link": "http://instance.service-now.com/api/now/v1/table/sys_choice/e5900140200331007665978299a805f3",
        "value": "e5900140200331007665978299a805f3"
      },
      "precision": 0,
      "breakdown": {
        "display_value": "Priority",
        "link": "http://instance.service-now.com/api/now/v1/table/pa_breakdowns/0df47e02d7130100b96d45a3ce610399",
        "value": "0df47e02d7130100b96d45a3ce610399"
      },
      "period": null,
      "favorite": false,
      "change_formatted": ""
    }
  ]
}
```
Return the scorecard for priority 1 database incidents

You can apply multiple breakdowns by appending multiple breakdown sys_ids to the **sysparm_uuid** parameter. In this example, the data is broken down by priority to show priority 1 incidents, and by category to show database incidents.

Command:
```
curl -v -u "admin:admin" -H "Accept:application/json" 
"https://instance.service-now.com/api/now/v1/pa/scorecards?sysparm_uuid=fb007202d7130100b96d45a3ce6103b4:0df47e02d7130100b96d45a3ce610399:e5900140200331007665978299a805f3:1f918835d7231100b96d45a3ce6103fe:9e418d40200331007665978299a805c1"
```

Response:
```
{
   "result": [
      {
         "value_formatted": "",
         "indicator": {
            "display_value": "Number of open incidents",
            "link": "http://instance.service-now.com/api/now/v1/table/pa_indicators/fb007202d7130100b96d45a3ce6103b4",
            "value": "fb007202d7130100b96d45a3ce6103b4"
         },
         "gapperc": null,
         "change": null,
         "value_color": "#000000",
         "direction": 2,
         "target_formatted": "",
         "frequency": 10,
         "changeperc_formatted": "",
         "direction_label": "Minimize",
         "period_title": null,
         "description": "Number of incidents open based on resolved date is empty.",
         "name": "Number of open incidents / Priority / 1 - Critical / Category / Database",
         "value": null,
         "key": false,
         "gap_formatted": "",
         "element": {
            "display_value": "1 - Critical",
```
Return the scorecard for priority 1 database incidents with all scores

You can request a list of individual scores by setting the `sysparm_include_scores` parameter to `true`.

Command:

```
curl -v -u "admin:admin" -H "Accept:application/json" "https://instance.service-now.com/api/now/v1/pa/scorecards?sysparm_uuid=fb007202d7130100b96d45a3ce6103b4:0df47e02d7130100b96d45a3ce610399:e590014020031007665978299a805f3&sysparm_include_scores=true"
```

Response:

```
{
  "result": [
    {
      "key": false,
      "value": "e590014020031007665978299a805f3",
      "display_value": "Database",
      "link": "http://instance.service-now.com/api/now/v1/table/sys_choice/9e418d4020031007665978299a805c1",
      "value": "9e418d4020031007665978299a805c1",
      "display_value": "Priority",
      "link": "http://instance.service-now.com/api/now/v1/table/pa_breakdowns/0df47e02d7130100b96d45a3ce610399",
      "value": "0df47e02d7130100b96d45a3ce610399",
      "period": null,
      "frequency_label": "Daily",
      "display_value": "Category",
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Example integration - LinkedIn

Performance Analytics includes an optional example integration that demonstrates how to fetch data from the LinkedIn service and display it on a Performance Analytics dashboard.

To use the LinkedIn integration, you must activate the Performance Analytics - Example - LinkedIn plugin.

The integration enables you to track, break down, and report on the number of followers and updates for a particular company.

LinkedIn enforces several limits and requirements:
The LinkedIn Updates API supports only 600 calls per day. The integration tracks at most the latest 600 updates.

The application authentication must be refreshed every 90 days. See the access_token_expire field to determine when authentication expires.

**Configure LinkedIn integration**

Configure the LinkedIn integration to display LinkedIn data in Performance Analytics.

Role required: linkedin_admin

Before starting this procedure, ensure that you have complete the following prerequisites with the LinkedIn service:

- A LinkedIn Client Application is associated with your company LinkedIn profile.
- Configure the Client Application with the redirect URL for your instance. You can view this URL by creating a LinkedInApps record (LinkedIn > Apps).
- You have recorded the LinkedIn Client Application API Key and API Secret values.

1. Navigate to LinkedIn > Apps.
2. Click New.
3. Enter a descriptive App name.
4. Enter the Api key and Api secret for your LinkedIn Client Application.
5. Right-click the form header and select Save.
6. Click the Authenticate related link.
   You are redirected to LinkedIn. Complete any steps required by LinkedIn.
7. On the LinkedInApp form, right-click the form header and select Reload form to confirm that the application was authenticated.
   Note the access token expiry date.
8. Navigate to LinkedIn > Companies.
9. Click New.
10. Enter the company Name and the company ID Code.
11. Click Submit.
13. Click New.
14. Select the App and Company records you created.
15. Click Submit.
16. Navigate to LinkedIn > LinkedIn Collector Job.
17. Schedule this job to run at least once.
   The job state changes to Running, then to Ready. Wait for this process to complete before moving on--this may take several minutes.
18. Navigate to LinkedIn > Aggregate Update Table and LinkedIn > Individual Update Table to verify that the tables were populated.
19. Navigate to LinkedIn > PA Data Collector Job.
20. Change the Relative end value to 0.
21. Schedule this job to run at least once.
   An entry is added to the Job Logs related list. Wait for this record to reach the Collected state before moving on--this may take several minutes.

After configuring the integration and collecting the data, you can view the LinkedIn dashboard by navigating to LinkedIn > Dashboard.

You can view all LinkedIn scorecards by navigating to Performance Analytics > Scorecards and filtering the list to include only scorecards that contain the text LinkedIn.
Example integration - Twitter

Performance Analytics includes an optional example integration that demonstrates how to fetch data from the Twitter service and display it on a Performance Analytics dashboard.

To use the Twitter integration you must activate the Performance Analytics - Example - Twitter plugin.

The integration enables you to track, break down, and report on the number of tweets and retweets containing certain tags and mentions.

You can define which tags and users to track by creating Twitter context records.

The Twitter service enforces several limits:

- The Twitter Search API limits results to tweets at most three weeks old. Historic collection of hashtags and mentions is not available.
- The integration is intended for use with a single user account and timeline. Support for multiple Twitter accounts is not available.

Configure Twitter integration

Configure the Twitter service integration to display Twitter data in Performance Analytics.

Role required: pa_admin, u_pa_twitter_context_user, and web_service_admin

Before starting this procedure, ensure that you have completed the following prerequisites with the Twitter service:

- A Twitter application is associated with your Twitter account.
- You have recorded the Twitter application Consumer Key and Consumer Secret values.

1. Navigate to System Web Services > REST Message.
2. Select the Get Twitter OAuth Token REST message record.
3. In the HTTP Methods related list, select the POST method.
4. In the Basic authentication user ID field, enter your Twitter application Consumer Key.
5. In the Basic authentication password field, enter your Twitter application Consumer Secret.
6. Click Update.
7. Navigate to Twitter > Twitter Collector Job.
8. Schedule this job to run at least once.
   - The job state changes to Running, then to Ready. Wait for this process to complete before moving on--this may take several minutes.
9. Navigate to Twitter > PA Data Collector Job.
10. Schedule this job to run at least once.
    - When the job runs, an entry is added to the Job Logs related list. Wait for this record to reach the Collected state before moving on--this may take several minutes.

After configuring the integration and collecting the data, you can view the Twitter dashboard by navigating to Twitter > Dashboard.

You can view all Twitter scorecards by navigating to Performance Analytics > Scorecards and filtering the list to include only scorecards where the Indicator group is Twitter.

Analytics Diagnostics

Identify and diagnose configuration issues using predefined scripts that examine the database for invalid records and provide suggestions to resolve issues.
Each diagnostic consists of a script or database query with a severity code, message text, and suggested solution. Diagnostics are read-only. You cannot create or edit diagnostics.

**Run a diagnostic**

Run a diagnostic to determine if a configuration issue could impact your Performance Analytics implementation.

Role required: sn_pa_diagnostics.pa_diagnostic

1. Navigate to Performance Analytics > Diagnostics.
2. Select the diagnostic you want to run.
   - To run all active diagnostics, click Execute All from the list.
3. Click Execute Diagnostic.
   - The diagnostics script is cancelled automatically if it takes longer than 2 minutes to run.
4. After the diagnostic completes, click View Result.

If a diagnostic returns a warning or error, review the provided solution and take steps to resolve the issue.

**Performance Analytics for mobile devices**

You can view Performance Analytics scorecards using the ServiceNow mobile application.

You can use the mobile application to view and share scorecards, mark favorite scorecards, and perform detailed analysis of scorecard data such as by applying an aggregate or breakdown.
For information about device support and how to obtain the mobile application, refer to the general mobile application documentation.
Scorecard mobile interface

The scorecard mobile interface enables you to interact with scorecards.

You can perform many of the same actions on a scorecard in the mobile interface as in the standard web interface. For example, you can apply aggregates and breakdowns, view the score at specific dates, and view target and gap information.

The mobile scorecard interface is divided into three main sections.

- The top section shows the indicator details such as the indicator name, score, the selected aggregate, and target information if targets are defined for the indicator. You can change the aggregation by tapping on the current aggregate in the top-right corner, such as Daily. Tap on the information icon (i) to view metadata about the indicator, such as the formula for formula indicators.

- The center section shows all collected scores as a graph. You can pinch to zoom in and out, or select a specific date by tapping on the graph. Selecting a specific date causes the top section to display details for the selected date instead of the most recent score.

- The bottom section displays breakdown information. You can select a breakdown by tapping on the breakdown name, such as Priority. Available breakdown elements and the score for each element appears below the breakdown. Tap on a breakdown element to filter the scorecard by that breakdown and element. The breakdown section does not appear if you have already selected both first and second level breakdowns.
Access a scorecard in the mobile application

You can browse your favorite Performance Analytics scorecards.

You must have a System Mobile UI Navigator application with a module that accesses $pa_scorecards.do. The Now Platform provides a default System Mobile UI Navigator application named Analytics, with a module named Favorite KPIs that accesses $pa_scorecards.do. You can replace this module or create additional modules and applications that display scorecards. For more information, see Configure the mobile application navigator.

Role required: pa_viewer, pa_admin, or admin

The mobile application displays indicators marked as favorites in alphabetical order. Each entry includes the indicator name, current score, change, and an indication if the score is improving based on the indicator direction and a defined target. You can select an indicator to view the detailed scorecard.
1. In the mobile application, tap the general navigator icon ( ).
2. Select Analytics > Favorite KPIs.
   Any indicators you have marked as favorites appear. If no indicators appear, you must first select at least one favorite.
3. Optional: Tap the favorites icon ( ) to add an icon for the Favorite KPIs page to the mobile application homepage so you can quickly access the Favorite KPIs page later.
4. Tap on an indicator to view the scorecard.
Select favorite indicators in the mobile application

Mark an indicator as a favorite to access it quickly.

Role required: pa_viewer, pa_admin, or admin

Select multiple indicators as favorites to quickly access the scorecards. You can also select individual indicators as favorites by tapping the favorites icon (⭐) when viewing the scorecard.

1. Navigate to the list of your favorite indicators.
2. Tap the plus (+) icon in the top-right corner.
   The list of all indicators appears.
3. Tap the check mark (✔️) next to the indicators you want to favorite.
   To filter the list by name, enter text in the top search box. Filtering may hide but does not clear indicators you have already selected.
4. Tap Add to mark all selected indicators as favorites.

To remove a favorite, swipe the favorite to the side when viewing the list of your favorite indicators, then tap Delete.

Share a scorecard in the mobile application

You can share an image of a scorecard, such as by MMS or email.

Role required: pa_viewer, pa_admin, or admin

You can share an image of a scorecard that includes the latest score and change, the graph, the instance URL, and the target and gap values if defined.

1. Navigate to a scorecard using the mobile application.
2. Tap the share icon (分享).
3. Select how you want to share or save the image using your device’s default options.

Ranking records with Spotlight

Spotlight enables you to rank records based on multiple weighted criteria.

Spotlight enables you to define weighted criteria for important work and quickly identify the most important tasks based on these criteria, such as when triaging incidents or performing lead scoring. You can rank tasks based on multiple dimensions, instead by a single field value like priority.

For example, you might want to rank one incident over another if that incident has been open for a long time, breached an SLA, or has been reassigned multiple times.

The score of a record being evaluated is the sum of the weight of all criteria that apply to that record. If the score exceeds the threshold defined in the Spotlight group that the record belongs to, a spotlight is created automatically, bringing your attention to that record.

The following diagram demonstrates scoring in Spotlight. The large circle represents the set of all open incidents. Each of the smaller circles represents a weighted Spotlight criteria that applies to a subset of the open incidents.
Set up Spotlight

To set up Spotlight, specify the set of records to evaluate and the criteria to use. Then collect scores for the data.

Specify the records that you want to evaluate by selecting an indicator that is associated with the records. Create multiple Spotlight criteria and associate them with the group to define how to weight the records.

After creating the Spotlight group and multiple Spotlight criteria, collect scores for the records in the data set. A spotlight is automatically created for any records with scores that exceed the Spotlight group threshold, allowing you to quickly identify the highest priority work.
Note: Before you start to work with Spotlight, an administrator must activate a Spotlight plugin. When activating Spotlight, consider activating one of the out-of-the-box Spotlight solutions. First, see whether one of these solutions already covers your business use case. Second, if you still need to create a new Spotlight group or Spotlight criteria, an out-of-the-box solution can be a useful template. For more information, see Activate Spotlight and Spotlight solutions.

Spotlight groups

Spotlight groups define the records to evaluate and the weight threshold needed to create a spotlight.

Spotlight groups specify a set of data to evaluate, and a threshold. If the score of a record in the data set exceeds the threshold, a spotlight is created for that record. The score of a record is the total weight from all applicable spotlight criteria in the spotlight group.

The data set to evaluate is defined in an Performance Analytics indicator.

Create a Spotlight group

Create a Spotlight group to define the indicator records to evaluate. The Spotlight group also defines the threshold that an indicator record must exceed to create a spotlight.

Role required: pa_spotlight and pa_viewer

1. Navigate to Spotlight > Spotlight Groups and create a new record (see table for field descriptions).

Spotlight Group fields

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<tr>
<th>Field</th>
<th>Description</th>
</tr>
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<tbody>
<tr>
<td>Threshold</td>
<td>Specify the Spotlight score that an indicator record must exceed to create a spotlight. This score is equal to the sum of weights of all Spotlight criteria that the indicator record meets.</td>
</tr>
<tr>
<td>Main Indicator</td>
<td>Select an indicator to specify the data set of records to evaluate. All criteria associated with this group must use the same table as the selected main indicator.</td>
</tr>
<tr>
<td>Breakdown</td>
<td>Optionally select a breakdown to limit the data to evaluate.</td>
</tr>
<tr>
<td>Element</td>
<td>If you select a breakdown, select the breakdown element to limit the included records to only those with the specified breakdown element value.</td>
</tr>
<tr>
<td>Active</td>
<td>Select this check box to automatically collect scores for the specified main indicator. The Spotlight job must also be activated. For more information, see Collect Spotlight scores.</td>
</tr>
</tbody>
</table>
### Field Description

<table>
<thead>
<tr>
<th>Field</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Use Snapshot</td>
<td>Select this check box for indicator-type criteria to use the most recently collected snapshot of records for the selected main indicator. Clear this check box to use real-time data.</td>
</tr>
</tbody>
</table>

**Note:** Using real-time data requires additional system resources to query the indicator data.

When using real-time data, certain conditions are not available, such as those based on an indicator that uses a bucket group. Use conditions based on a query instead when using real-time data. For example, to check for incidents that are 30-90 days old, instead of using an indicator for incident age, use the query conditions `(Opened)(relative)(on or before)(30)(days)(ago) and (Opened)(relative)(on or after)(90)(days)(ago).` Only indicator-type Spotlight criteria can evaluate snapshot data. Query-type criteria always evaluate real-time data, even if **Use Snapshot** is selected.

---

2. Save the Spotlight group and add Spotlight criteria to the related list that appears.

**Spotlight criteria**

Spotlight criteria define how to weight records based on specific attributes, such as assigning a higher weight to incidents with a higher priority.

Some criteria may be more important than others and have a higher weight. Weight from multiple criteria is cumulative within a spotlight group. The score of a record is the total weight from all applicable spotlight criteria in the spotlight group.

For example, the priority P1 - Critical has a weight of 1000, the priority P2 - High has a weight of 100, and open incidents not updated in 30 days have a weight of 1000. In this example an open P2 incident that has not been updated in 30 days has a total score of 1100 and is prioritized above a recently-opened P1 incident that has a total score of 1000.

**Create spotlight criteria**

Create spotlight criteria to define when to weight a record, and the weight to assign.

Role required: pa_spotlight and pa_viewer

You can define spotlight criteria based on values in a table, or based on a Performance Analytics indicator.

1. Navigate to **Spotlight > Spotlight Criteria**.
2. Click **New**.
3. Select the **Spotlight Group** to associate this criterion with.
   - Each criterion can be associated with one spotlight group. A spotlight group can have any number of criteria associated with it.
4. Enter the **Weight** you want to assign to records that meet this criterion.
5. Select the **Criteria Type** to determine which records are assigned the specified weight.
Select an **Indicator** to assign the weight to all records included in that indicator. Optionally select one or two breakdowns and elements to limit the included records to only those with the specified breakdown element values.

The **Facts table** that is the source for the **Spotlight Group** is selected automatically. Set **Filter conditions**, too. The specified weight is applied to all records from the facts table that match the filter conditions.

6. Click **Submit**.

**Collect Spotlight scores**

A single Spotlight job collects scores for all active Spotlight groups. You can execute this job manually. An administrator can have it execute automatically according to a schedule.

As an administrator, you can schedule the collection of Spotlight scores. For each Spotlight group whose scores you want to collect:

- Ensure that the group is activated. On the Spotlight Group form of each group, **Active** must be selected.
- Ensure that you have correctly set whether to collect scores from a snapshot, or to collect real-time scores.
- If you are evaluating a snapshot of records for a Spotlight group, ensure that the following conditions are true:
  - **Collect Records** is enabled for the **Main indicator** of the group.
  - The Performance Analytics data collection job has run for the **Main indicator** of the group.

For more information, see **Create a Spotlight group**.

Role required: admin (to set up schedule), pa_spotlight (to run manually)

Any user with the pa_spotlight role can manually run a job to collect scores. Navigate to **Spotlight > Spotlight Job** and click **Execute now**.

**Important:**
- If you are evaluating a snapshot of records, collected these scores as soon as possible after the data collection jobs run for the indicators of the Spotlight groups. Otherwise the data can be stale or meaningless.
- When you collect scores, all previously created Snapshot records are deleted for all Snapshot groups.

1. Navigate to **Spotlight > Spotlight Job**.
2. Select **Active**.
   - Fields appear for scheduling the Spotlight job.
3. In the **Run** field, select the frequency with which the Spotlight job runs.
   - Different scheduling fields appear depending on the run frequency that you select.
4. Fill in the scheduling fields, such as **Time**.
   - If you have any Spotlight groups that use a snapshot of records, schedule the Spotlight group job to run after the data collection jobs for the main indicators of those groups. Scheduling
the Spotlight jobs after the data collection jobs ensures that Spotlight evaluations are up-to-date and meaningful.

5. Optional: Select **Conditional** to allow the scores to be collected only under conditions that you specify in a script.

   See the example of such a script after these steps.

6. Optional: In the **Run this script** field, specify a custom Spotlight evaluation script to run.

   By default, the provided Spotlight evaluation script is specified in this field. Do not alter this field unless you have a custom run script.

### Conditional script for scheduling a job

This example script runs the scheduled job only if there are active Incidents older than 30 days.

```javascript
// Only run this Scheduled Job if there are active Incidents over 30 days old
var ga = new GlideAggregate('incident');
ga.addAggregate('COUNT');
ga.addQuery('active', 'true');
ga.addQuery('sys_created_on', '<', gs.daysAgo(30));
ga.query();
ga.next();
ga.getAggregate('COUNT') !== '0'
```

### See Spotlight score details

To see the criteria whose weights contributed to a Spotlight score, view the details of the Spotlight.

Role required: pa_spotlight or admin

1. Navigate to **Spotlight > Spotlights** or view the **Spotlights** related list in a Spotlight Group form.

2. Locate the Spotlight that interests you and click the Information icon

   ![Information icon](image)

3. Click **Open Record**

   The Spotlight record opens. In the Spotlight Audits related list, you can see which Spotlight Criteria the record met and the contribution of each criteria to the total score.

<table>
<thead>
<tr>
<th>Criteria</th>
<th>Weight</th>
</tr>
</thead>
<tbody>
<tr>
<td>Incidents older than 28 days</td>
<td>25</td>
</tr>
<tr>
<td>Incidents older than 14 days</td>
<td>25</td>
</tr>
<tr>
<td>P1 Critical</td>
<td>1,000</td>
</tr>
<tr>
<td>Incidents older than 7 days</td>
<td>25</td>
</tr>
<tr>
<td>Incidents older than 90 days</td>
<td>25</td>
</tr>
</tbody>
</table>

**TOTAL SCORE:** 1,100
**Spotlight database views**

Join Spotlight record data with data from the Spotlight group main indicator source table. Use this database view to examine and share Spotlight results.

To perform detailed analysis and to easily view record details along with the Spotlight weight, create a database view between the Spotlight table and the record source table, such as incident. Join the tables so that the Spotlight ID value matches the source record sys_id value. For example, the Incident Spotlight solution includes the incident_spotlight database view, which includes the following tables:

<table>
<thead>
<tr>
<th>Table</th>
<th>Variable prefix</th>
<th>Where clause</th>
</tr>
</thead>
<tbody>
<tr>
<td>spotlight</td>
<td>spotlight</td>
<td>spotlight_table=incident’</td>
</tr>
<tr>
<td>incident</td>
<td>inc</td>
<td>spotlight_id=inc_sys_id</td>
</tr>
</tbody>
</table>

From this example, you see the following rules for creating the database view:

- Always include two tables: the spotlight table and the facts table that is the data source for the Spotlight group main indicator.
- The Where clause for the spotlight table specifies records for which the value of the spotlight table field is the same as the name of the facts table.
- The Where clause for the facts table specifies records where the sys_id field of the facts table matches the id field of the spotlight table.

When you have created the database view, use it as the data source for creating reports to visualize Spotlight results. To get an idea about what kind of reports to design, install the Incident Spotlight solution and view the included dashboard.

**Activate Spotlight and Spotlight solutions**

To use Spotlight, activate the Spotlight plugin. Also activate any of the Spotlight solution plugins that apply to how you use the product.

- Spotlight solutions other than Incident Spotlight require the fully enabled, licensed version of Performance Analytics. See [Get licensed Performance Analytics](https://service-now.com).
- Performance Analytics Responsive Dashboards must be active. For more information, see [Working with responsive dashboards](https://service-now.com). Responsive Dashboards are active by default.

Role required: admin

Spotlight functionality is not available until you activate the Performance Analytics - Spotlight plugin (com.snc.pa.spotlight). You can activate the plugin directly or through activating your first Spotlight solution plugin.

Each Spotlight Solution provides the following:

- A Spotlight Dashboard for the relevant application, along with reports that can be put in other dashboards.
- A preconfigured Spotlight Group that defines which records to evaluate.
- Several spotlight criteria based on common business use cases.

After Spotlight is activated, a Guided Setup is available to walk you through the Spotlight solutions. Navigate to Spotlight > Guided Setup and follow the instructions there.

1. Navigate to System Definition > Plugins.
2. Find and click the plugin name.
3. On the System Plugin form, review the plugin details and then click the **Activate/Upgrade** related link.

   If the plugin depends on other plugins, these plugins are listed along with their activation status.

   If the plugin has optional features that depend on other plugins, those plugins are listed under **Some files will not be loaded because these plugins are inactive**. The optional features are not installed until the listed plugins are installed (before or after the installation of the current plugin).

4. Optional: If available, select the **Load demo data** check box.

   Some plugins include demo data—Sample records that are designed to illustrate plugin features for common use cases. Loading demo data is a good practice when you first activate the plugin on a development or test instance.

   You can also load demo data after the plugin is activated by clicking the **Load Demo Data Only** related link on the System Plugin form.

5. Click **Activate**.

   If you have activated a Spotlight solution, examine the Spotlight group and Spotlight criteria for that solution. A Guided Setup is available to walk you through the solution. Navigate to **Spotlight > Guided Setup** and follow the instructions there.

**Available Spotlight solutions**

The following Spotlight solutions are available:

- Spotlight — Change Spotlight Performance Analytics Solution (com.snc.pa.spotlight.change)
- Spotlight — Incident Spotlight Performance Analytics Solution (com.snc.pa.spotlight.incident)
- Spotlight — Problem Spotlight Performance Analytics Solution (com.snc.pa.spotlight.problem)
- Spotlight — Request Spotlight Performance Analytics Solution (com.snc.pa.spotlight.request)
- Customer Service (com.snc.pa.customer_service) — Includes the Case Spotlight group.
  Activation also activates the Spotlight plugin. No dashboard, but includes the Case Spotlight report that can be included on dashboards.

**Interactive Analysis**

Interactive Analysis enables you to quickly explore data using visualizations.

From any list of records, you can access an interactive set of reports on the list data. You can also manipulate the data by grouping, stacking, aggregating, and applying interactive filters. Click the visualization to drill down into the data. Click the information icon ( ) to edit the source filter, view the list of applied filters, and copy the URL of the analysis.
Launch Interactive Analysis

Launch Interactive Analysis from any list.
Role required: none
You must have access to the list of records that you want to analyze.

1. Navigate to any list.
2. Optional: Configure the columns that are displayed on the list.
   The columns that appear on the list when you launch Interactive Analysis determine which fields are included in the analysis. The included fields determine which **Group by** and **Stack by** options are available, and which interactive filters appear by default.
3. Right-click the column header for a reference, choice, date/time, integer, or boolean field and select *Launch Interactive Analysis*.
   The column that you launch Interactive Analysis from is used as the default **Group by** value.
4. Optional: Change how data is aggregated by selecting different values in the **Group by** and **Stack by** choice lists, or filter the data by applying one or more interactive filters.
5. Optional: Drill down into a subset of the data by clicking a visualization, such as a bar in the bar chart or a cell in the heatmap.

Request Interactive Analysis

The Interactive Analysis plugin (com.glideapp.interactive_analysis) requires a Performance Analytics license.
Role required: none

1. In the HI Service Portal, click **Service Requests > Activate Plugin**.
2. Fill out the form.

<table>
<thead>
<tr>
<th>Target Instance</th>
<th>Instance on which to activate the plugin.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Plugin Name</td>
<td>Name of the plugin to activate.</td>
</tr>
<tr>
<td>Specify the date and time you would like this plugin to be enabled</td>
<td>Date and time must be at least 2 business days from the current time.</td>
</tr>
</tbody>
</table>

**Note:** Plugins are activated in two batches each business day in the Pacific timezone, once in the morning and once in the evening. If the plugin must be activated at a specific time, enter the request in the **Reason/Comments**.

| Reason/Comments | Any information that would be helpful for the ServiceNow personnel activating the plugin such as if you need the plugin activated at a specific time instead of during one of the default activation windows. |

3. Click **Submit**.
Reporting

ServiceNow® Reporting enables you to create and distribute reports that show the current state of instance data, such as how many open incidents of each priority there are. Reporting functionality is available by default for all tables, except for system tables.

Explore
- Reporting release notes
- Upgrade to Kingston
- Domain separation in Reporting

Administer
- Administering reports includes role information
- Report Administration module

Use
- Getting started with reports
- Creating reports
- Distribute reports
- Add a report to a homepage or dashboard
- Using multiple data series in a report

Develop
- Data Visualization
- Developer documentation

Videos
- Watch Reporting videos

Troubleshoot and get help
- Ask or answer questions in the Performance Analytics and Reporting forum
- Search the HI knowledge base
- Contact ServiceNow Technical Support

Getting started with reports

ServiceNow reports are visualizations of your data that you can share with users on dashboards and service portals, export to PDF, and send via email. Learn how to create, run, edit, view, and share reports.

Note: To administer reports, reporting roles, and report sources, navigate to Reports > Administration and select the area to administer. See Administering reports.

The ServiceNow system includes a range of predefined reports that provide data on applications and features like incident management and service catalog requests. You can also create your own reports. Add reports on homepages and dashboards to share information across your organization.

The following podcast offers additional information on Reporting.

Run a report

Run a report to view current data with an existing report configuration.

To administer reports, reporting roles, and report sources, navigate to Reports > Administration and select the area to administer. See Administering reports.

1. Navigate to Reports > View/Run.
2. Click the title of the report you want to run.
Run a report from a list

You can create a pie or bar chart report directly from a list. If you have a reporting role you can also save, distribute, and export these reports.

1. Navigate to the list.
2. Right-click the header of the column that contains the values you want to be displayed as the bars or slices in the chart.
3. Select Pie Chart or Bar Chart.  
   See Pie charts and Bar and horizontal bar reports.  
   The report is generated.

Create a report visualization

Create a report to visualize and analyze current instance data or temporary data that you have imported.

1. Follow one of these paths:

<table>
<thead>
<tr>
<th>Option</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Create a report</td>
<td>Navigate to Reports &gt; Create New.</td>
</tr>
<tr>
<td>Edit an existing report</td>
<td>Navigate to Reports &gt; View / Run and click the edit icon ( ) beside the report name.</td>
</tr>
<tr>
<td>Create a report on a dashboard</td>
<td>Navigate to the dashboard where you want to add the report, click the Add Widgets icon ( ), and select Reports.</td>
</tr>
<tr>
<td>Edit a report on a dashboard</td>
<td>Navigate to the dashboard where the report resides and click Edit. To edit a report, click its edit icon ( ).</td>
</tr>
</tbody>
</table>

2. On the Configure and Style tabs, fill in the fields, as appropriate.
3. Click Save.
   The report is generated.

Note: For details on creating a specific report type, see Creating reports.

Report options

When you edit a form, you can also choose to save, share, run, delete, or view more information about the report.

All actions are available from the upper right side of the form, from the Save and Share choice lists and the Info, Delete, and Run buttons. Available report options vary depending on the role of the user working with the report. For more information, see Administering reports.

Note: In the Report Builder ("Classic UI"), these options are found in the Save menu.
Report options

<table>
<thead>
<tr>
<th>Name</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Link</td>
<td>Displays the URL of a saved report that you can copy into other documents.</td>
</tr>
<tr>
<td>Info</td>
<td>Displays general and statistical information for the report. General information includes the base table, type, creator, users, groups, and last modification date of the report. Statistical information includes when the report was last run, the number of runs, and run time.</td>
</tr>
<tr>
<td>Sharing</td>
<td>Displays several options for sharing the output of the report.</td>
</tr>
<tr>
<td>Name</td>
<td>Description</td>
</tr>
<tr>
<td>--------------</td>
<td>---------------------------------------------------------------------------------------------------------------------------------------------</td>
</tr>
<tr>
<td>Share</td>
<td>Enables you to set the visibility of the report. Options are <strong>Me</strong>, <strong>Everyone</strong>, and <strong>Groups and Users</strong>. See <em>Share a report – Report Designer</em> for more information on sharing. This option is available from the Sharing icon.</td>
</tr>
<tr>
<td>Schedule</td>
<td>Creates a schedule for running the report. <strong>Note:</strong> You cannot schedule calendar reports.</td>
</tr>
<tr>
<td>Add to Dashboard</td>
<td>Adds the current report to a dashboard or homepage. For details on how to edit reports and other dashboard content, see <em>Edit a responsive dashboard</em>. <strong>Note:</strong> Users can add reports to any homepage they can view. Users who do not have edit rights to a homepage create new homepages with the added information when they modify a homepage that they don’t own.</td>
</tr>
<tr>
<td>Export to PDF</td>
<td>Generates a PDF that you can download or email. This option is not available for calendar reports. <strong>Note:</strong> Drilldown reports do not export to PDF. If you select Export to PDF on a drilldown report, a PDF of the top-level report is generated.</td>
</tr>
<tr>
<td>Publish</td>
<td>Creates a URL for the report and displays the URL above the report form. You can email this URL to share the report.</td>
</tr>
<tr>
<td>Delete</td>
<td>Deletes the report.</td>
</tr>
<tr>
<td>Save</td>
<td>Saves your changes to the report and leaves the form open.</td>
</tr>
<tr>
<td>Update</td>
<td>Saves your changes to the report and returns to the Reports list.</td>
</tr>
<tr>
<td>Name</td>
<td>Description</td>
</tr>
<tr>
<td>-------------------</td>
<td>-----------------------------------------------------------------------------</td>
</tr>
<tr>
<td>Insert</td>
<td>Duplicates the report record, inserts it into the Reports list, and opens the Reports list. Use this option to create a report quickly by changing values in an existing report. Be sure to give the new report a unique name.</td>
</tr>
<tr>
<td>Insert and Stay</td>
<td>Duplicates the report record, inserts it into the Reports list, and opens the new record. Use this option to create a report quickly by changing values in an existing report. Be sure to give the new report a unique name.</td>
</tr>
<tr>
<td>Save as data source</td>
<td>Opens the <code>Create new report source</code> window in which you can save the report conditions as a report source that can be reused for other reports.</td>
</tr>
<tr>
<td>Run</td>
<td>Creates the report based on the conditions and layout you select.</td>
</tr>
</tbody>
</table>

**Differences between Report Builder and Report Designer**

The Report Designer provides a guided flow for report creation. Selection of the data source, selection of the report type, configuration, and styling of the report are presented on successive tabs. The Report Builder provides most report creation functionality in a single panel.

Using the Report Designer, users can configure a report, preview it, iterate and adjust, then share it using the integrated Share panel.

The older Report Builder provides functionality for naming, selection of the data source, and configuration on one page. Style option selection is provided in a pop-up.

The Report Designer supports imported data sources and MetricBase Time Series reports, but the Report Builder does not. See **Using imported report data**.

**Determine the report creation tool**

You can create and edit reports in both report creation UIs. The new Report Designer has separate panels for specifying the report source, the type, the configuration, and the style options. The Report Builder ("Classic UI") provides most of this functionality on a single panel.

The layout of the report creation tool indicates the type:

1. Report Designer:
2. **Report Builder:**

![Report Builder Image]
View the Reports list

View a list of reports and create reports from the Reports list.

On the View / Run report module, standard platform ACLs control access to reports in the reports list. For information about the ACLs used to control access to reports, see Access control list rules.

You can sort and filter the search results using the standard report list controls, such as by clicking tabs, column headings, or the favorites icon (⭐).

Select the gear icon (⚙️) next to the Create a report button to configure the columns displayed in the Reports list.

Reports list configuration window

You can filter the Reports list with the following tabs:
Reports list

<table>
<thead>
<tr>
<th>Tab</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>My reports</td>
<td>Reports that you created.</td>
</tr>
<tr>
<td>Group</td>
<td>Reports that have been shared with you and with the groups that you are a member of.</td>
</tr>
<tr>
<td>Global</td>
<td>Reports that are available to everyone.</td>
</tr>
<tr>
<td>All</td>
<td>All reports that you have access to (Global, Group, and My reports).</td>
</tr>
</tbody>
</table>

Additional columns

<table>
<thead>
<tr>
<th>Column</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Scheduled</td>
<td>Indicates if the report is scheduled to run in the future. Reports can be run periodically to be emailed.</td>
</tr>
<tr>
<td>Column</td>
<td>Description</td>
</tr>
<tr>
<td>--------</td>
<td>-------------</td>
</tr>
<tr>
<td>Published</td>
<td>Shows a check mark (✓) if the report is published.</td>
</tr>
</tbody>
</table>

### View favorite reports

You can show either all reports or only those reports marked as favorites. Reports can be marked favorite both automatically and manually.

To toggle between showing only favorite reports and showing all reports, click the star icon in the list header.

#### Report favorites

A report is automatically marked as a favorite when you open it. You can manually mark a report as a favorite by clicking the star icon beside the report title.

**Note:** To turn off the automatic marking of reports as favorites, disable the user preference `glide.ui.nav.auto_favorite`. For more information, see [User preferences](#).

### Copy a report

Copying a report enables users who cannot create their own global reports to modify a global report, and then save a personal version of the report.

**Role required:** itil, report_group, report_global, report_admin, or admin.

If you save a global report as a group or personal report, the platform copies the report rather than changing its security state.

**Note:** If you open a personal report and try to save it as a group or global report, security state is changed rather than copying the report.

1. Navigate to Reports > View / Run.
2. Click the arrow next to Save.
3. Select Insert and Stay. Creates a copy of the report that you can modify.


Delete a report

Delete reports that are no longer used.

You must be the creator, an administrator, or have a managing role of a report to delete it. If a report has been shared with you, and you do not have a report managing role, you do not have the ability to delete it. For more information about roles that can delete reports, see Administering reports.

1. Navigate to Reports > View / Run.
2. Select the report to delete.
3. When the report opens, click the Delete icon ( ).
   If you are using the Report Builder, click the arrow next to the Save button and select Delete.
4. Confirm that you want to delete the report.

The selected report is removed, and is no longer available to share, publish, or view.

Report Designer keyboard shortcuts

Keyboard shortcuts enable you to perform certain functions in the Report Designer without using your mouse.

You can use the following keyboard shortcuts.

<table>
<thead>
<tr>
<th>Function</th>
<th>Shortcut</th>
</tr>
</thead>
<tbody>
<tr>
<td>Run the current report</td>
<td>Control + Alt (Option) + R</td>
</tr>
<tr>
<td>Save the current report</td>
<td>Control + Alt (Option) + S</td>
</tr>
<tr>
<td>Delete the current report</td>
<td>Control + Alt (Option) + D</td>
</tr>
</tbody>
</table>
Distribute reports

Distribute reports to provide business information to other users.

Watch the following video for an overview of distributing reports.

Report access control

You can control who sees reports by applying a security state. You can make reports that are:

- Globally visible to all users
- Visible only to you if you are the report creator.
- Visible to one or more specific roles
- Visible to one or more specific users or groups

Sharing by user, group, or role, is the primary method of sharing reports. You can use access control lists (ACLs) to control access to the underlying table or database view data. Users are able to view reports when the user does not have access rights to a data record in a data source or source table of a report. However, they are not able to see that record in a list view or in a drill-down view. Database-view-list reports require the reporting user to satisfy ACLs on the target data to view records in the list. Users without sufficient permissions see filtered list reports.

**Note:** ACLs for a table do not propagate to database views based on that table. Database views require separate ACLs. For more information, see Database views.

Reports that present aggregate data, such as pie or bar reports, do not require the user to satisfy target table ACLs to view the report. ACLs are required to view the list of records when you select a portion of a report visualization. When you have access to a report but not to some of its records, you do not see those records in a drill-down list or in a list view of the data in the report. However, they are included in visualizations of data.

If a user saves a global report as a group or personal report, the platform copies the report rather than changing its security state. Copying the report enables users who cannot create their own global reports to modify a global report, and then save a personal version of the report.

If a user opens a personal report and tries to save it as a group or global report, the security state is changed rather than copying the report.

Share a report – Report Designer

Control which users and groups can see a report in their Reports list.

Role required:

The following roles can share reports:

<table>
<thead>
<tr>
<th>Role</th>
<th>Report sharing permissions</th>
</tr>
</thead>
</table>

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<table>
<thead>
<tr>
<th>Report Role</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>report_admin</td>
<td>Can share a report that is shared with the user, any group, or everyone. This role can share with:</td>
</tr>
<tr>
<td></td>
<td>- any user</td>
</tr>
<tr>
<td></td>
<td>- any group</td>
</tr>
<tr>
<td></td>
<td>- everyone</td>
</tr>
<tr>
<td>report_global</td>
<td>- Can share a report that is shared with everyone. This role can share with everyone.</td>
</tr>
<tr>
<td></td>
<td>- Cannot share a report that is shared with the user or a group</td>
</tr>
<tr>
<td>report_group</td>
<td>- Can share a report that is shared with the user, or a report shared with a group the user belongs to. This role can share the report with:</td>
</tr>
<tr>
<td></td>
<td>- any user</td>
</tr>
<tr>
<td></td>
<td>- any group</td>
</tr>
<tr>
<td></td>
<td>- Cannot share a report that is shared with everyone, or with a group the user does not belong to.</td>
</tr>
<tr>
<td>report_publisher</td>
<td>No sharing permissions.</td>
</tr>
<tr>
<td>report_scheduler</td>
<td>No sharing permissions.</td>
</tr>
</tbody>
</table>

For more information about roles that can share reports, see *Administering reports*.

You can control who sees reports by making them:
- Globally visible to all users
- Visible only to you if you are the report creator.
- Visible to one or more specific users
- Visible to one or more specific groups

*i Note:* The permissions of a report can constrain the number of users or groups you can share a report with. For more information, see *Restrict report creation with an ACL rule*.

1. Navigate to **Reports > View / Run** and select the report you want to control.
2. In the upper right side of the report form, click the **Sharing** icon and select **Share**.
3. In the Sharing settings dialog box, fill in the fields and click **OK**.
## Sharing settings

<table>
<thead>
<tr>
<th>Field</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Visible to</td>
<td>Users to whom the report is available. You can select the following options:</td>
</tr>
<tr>
<td></td>
<td>• <strong>Me</strong> Only you can view the report. This option is only available to you on reports that you created.</td>
</tr>
<tr>
<td></td>
<td>• <strong>Everyone</strong> All users can view the report. If roles are selected from the <strong>Roles</strong> field and added to the <strong>Role required</strong> list, only users with those roles can view the report.</td>
</tr>
<tr>
<td></td>
<td>• <strong>Groups and Users</strong> Only specific groups and users can see the report. The <strong>Groups and Users</strong> option is visible to users with the report_group role.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Groups</th>
<th>Groups whose members are authorized to see the report.</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>This field is available when the <strong>Groups and Users</strong> option is selected.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Users</th>
<th>Users who are authorized to see the report.</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>This field is available when the <strong>Groups and Users</strong> option is selected.</td>
</tr>
</tbody>
</table>

4. Click the **Sharing** icon (and select **Add to Dashboard** or **Publish**).

5. Share the dashboard or share the URL of the published report with the user, role, or group with whom you have shared the report. See **Share a responsive dashboard** or **Control access to a non-responsive dashboard**.

The people with whom you share the report must have rights to view the report data.

### Share a report – Report Builder

Control which users and groups can see a report in their reports list.

**Role required:**

The following roles can share reports:

<table>
<thead>
<tr>
<th>Role</th>
<th>Report sharing permissions</th>
</tr>
</thead>
<tbody>
<tr>
<td>report_admin</td>
<td>Can share a report that is shared with the user, any group, or everyone. This role can share with:</td>
</tr>
<tr>
<td></td>
<td>• any user</td>
</tr>
<tr>
<td></td>
<td>• any group</td>
</tr>
<tr>
<td></td>
<td>• everyone</td>
</tr>
</tbody>
</table>
For more information about roles that can share reports, see *Administering reports*.

You can control who sees reports by making them:

- Globally visible to all users.
- Visible only to the report creator.
- Visible to one or more specific users.
- Visible to one or more specific groups.

**Note:** The permissions of a report can constrain the number of users or groups you can share a report with. For more information, see *Restrict report creation with an ACL rule.*

ACLs control access to the underlying table data. List reports require the reporting user to satisfy ACLs on the target table to view records in the list. Users without sufficient permissions may see filtered list reports.

Reports that present aggregate data, such as pie or bar charts, do not require the user to satisfy target table ACLs to view the chart. These reports are not filtered due to security, though may be filtered by an on-query business rule defined for the target table. ACLs are required to view the list of records when you click a portion of a chart.

If a user saves global report as a group or personal report, the platform copies the report rather than moving it from one security state to another. This means users who cannot create their own global reports can modify a global report, and then save a personal version of the report.

If a user opens a personal report and tries to save it as a group or global report, the platform moves the report rather than copying it.

1. Click the arrow next to the **Save** button to open the Report Options menu and select **Sharing**.
2. In the Sharing settings dialog box, fill in the fields and click **Close**.
Sharing settings

<table>
<thead>
<tr>
<th>Field</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Visible to</td>
<td>Users to whom the report is available:</td>
</tr>
<tr>
<td></td>
<td>· <strong>Me</strong> Only the report creator can view the report. Users who did not</td>
</tr>
<tr>
<td></td>
<td>create the report cannot set it to <strong>Me</strong>.</td>
</tr>
<tr>
<td></td>
<td>· <strong>Everyone</strong> All users can view the report. Specific roles can be</td>
</tr>
<tr>
<td></td>
<td>assigned for viewing reports under Everyone, so access can be restricted.</td>
</tr>
<tr>
<td></td>
<td>· <strong>Groups and Users</strong> Only specific groups and users can see the report.</td>
</tr>
<tr>
<td></td>
<td><strong>Groups and Users</strong> is visible to users with the report_group role.</td>
</tr>
<tr>
<td>Groups</td>
<td>Groups whose members are authorized to see the report. This field is available when <strong>Groups and Users</strong> is selected.</td>
</tr>
<tr>
<td>Users</td>
<td>Users who are authorized to see the report. This field is available when <strong>Groups and Users</strong> is selected.</td>
</tr>
</tbody>
</table>

3. Click the arrow next to the **Save** button to open the Report Options menu and select **Add to Dashboard** or **Publish**.

4. Share the dashboard or share the URL of the published report with the user, role, or group with whom you have shared the report. See **Control access to a non-responsive dashboard** and **Restrict responsive dashboard access to specific roles**. The people with whom you share the report must have rights to view the report data.

Automate report distribution

Schedule a report to automate its distribution. Scheduled reports can be distributed in PDF, CSV, or XLS format. Graphical reports can be distributed in PNG or PDF format.

Role required: To create scheduled reports, you must have both the itil role and either the report_admin or report_scheduler role.

- **Note:** It is not possible to schedule Calendar, Map, Pivot Table, and Single Score reports.

1. Navigate to **Reports > View / Run**.
2. Click a report to be scheduled for distribution.
3. In the **Report Designer**, click the **Sharing** icon and select **Schedule**.
4. Fill in the fields, as appropriate.

<table>
<thead>
<tr>
<th>Field</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Name</td>
<td>Name of the scheduled report. The default name is based on the name of the underlying report.</td>
</tr>
<tr>
<td>Field</td>
<td>Description</td>
</tr>
<tr>
<td>-----------------------------------</td>
<td>-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------</td>
</tr>
<tr>
<td>Report</td>
<td>The report to schedule. This field is filled in by default. To send a report as a URL instead of as an image, clear this field and include the report URL in the Introductory Message field.</td>
</tr>
<tr>
<td>Users</td>
<td>Individual recipients of the report. To receive reports, users must have an email address defined and have Notifications set to Enable in their user records.</td>
</tr>
<tr>
<td>Groups</td>
<td>Group recipients of the report.</td>
</tr>
<tr>
<td>Email addresses</td>
<td>Email addresses of report recipients who are not in the system.</td>
</tr>
<tr>
<td>Active</td>
<td>Check box that enables (selected) or disables (cleared) scheduling for the report.</td>
</tr>
<tr>
<td>Run</td>
<td>Frequency for generating the report.</td>
</tr>
<tr>
<td>Time</td>
<td>Time of day to generate the report.</td>
</tr>
<tr>
<td>Conditional</td>
<td>Check box that shows (selected) or hides (cleared) the Condition field, which lets you specify the conditions under which the report is generated.</td>
</tr>
<tr>
<td>Omit if no records</td>
<td>Check box that prevents (selected) or allows (cleared) the distribution of empty reports.</td>
</tr>
<tr>
<td>Condition</td>
<td>User-created script that checks for certain conditions to be true before generating reports. This field is visible only when Conditional is selected.</td>
</tr>
<tr>
<td>Subject</td>
<td>Text that appears in the subject line of the distribution email.</td>
</tr>
<tr>
<td>Introductory message</td>
<td>Additional message that is delivered with the report.</td>
</tr>
<tr>
<td>Type</td>
<td>Report output type. Graphical reports are sent as PNG or PDF files, and list reports are sent as PDF files. When scheduling a graphical report to be emailed, select output type PDF or PDF-landscape to include the chart grid data. When scheduling a data report, select output type Excel or CSV. All reports are generated with the Highcharts charting engine, giving them a consistent look.</td>
</tr>
<tr>
<td>Zip output</td>
<td>Check box to send the report as a zip file.</td>
</tr>
<tr>
<td>Include with</td>
<td>Additional scheduled report to send.</td>
</tr>
<tr>
<td>Page size (Multilevel pivot report only)</td>
<td>Select from A3, A4, Letter, or Legal size. To specify the dimensions for a different paper size, select Custom and enter the Page height and Page width in pixels.</td>
</tr>
</tbody>
</table>
5. Click Submit.

6. Optional: Use the Included in Email related list to create additional scheduled reports.

   Each report you add to the Included in Email related list must have its own schedule. By specifying a schedule for each report, you can send different reports to recipients of the previously identified reports, each with its own schedule.

   To unschedule a report:
   1. Navigate to Reports > Scheduled reports.
   2. Select the entry.
   3. Choose Delete from Actions on selected rows.

   This action only deletes the report schedule, not the report itself.

### Schedule a report in the Report Builder

Schedule a report to automate its distribution. Scheduled reports can be sent as PDF, CSV, or XLS format.

To create scheduled reports, users must have both the itil role and either the report_admin or report_scheduler role.

**Note:** It is not possible to schedule Calendar, Map, Pivot Table, and Single Score reports.

1. Navigate to Reports > View / Run.
2. Select a report to be scheduled for distribution.
3. Click the arrow next to the Save button to open the Report Options menu and select Schedule.
4. Fill in the fields, as appropriate.

<table>
<thead>
<tr>
<th>Field</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Name</td>
<td>Name of the scheduled report. The default name is based on the name of the underlying report.</td>
</tr>
<tr>
<td>Report</td>
<td>The report to schedule. This field is filled in by default. To send a report as a URL instead of as an image, such as if the report image is too large for an email attachment, clear this field and include the report URL in the Introductory Message field.</td>
</tr>
<tr>
<td>Users</td>
<td>Users who should receive the report. To receive reports, users must have an Email address defined and have Notifications set to Enable in their user records.</td>
</tr>
<tr>
<td>Groups</td>
<td>Groups that should receive the report.</td>
</tr>
</tbody>
</table>
### Field | Description
---|---
Email addresses | Email addresses of users who should receive the report but who are not in the system.
Active | Check box that enables (selected) or disables (cleared) scheduling for the report.
Run | Frequency for generating the report.
Time | Time of day to generate the report.
Conditional | Check box that displays (selected) or hides (cleared) the **Condition** field, which allows you to specify conditions under which the report is generated.
Omit if no records | Check box that prevents (selected) or allows (cleared) the distribution of empty reports.
Condition | User-created script that checks for certain conditions to be true before generating reports. This field is visible only when **Conditional** is selected.
Subject | Text that appears in the subject line of the distribution email.
Introductory message | Additional message that is delivered with the report.
Type | Report output type. Graphical reports are sent as PNG or PDF files, and list reports are sent as PDF files. When scheduling a graphical report to be emailed, select output type **PDF** or **PDF-landscape** to include the chart grid data. When scheduling a data report, select output type **Excel** or **CSV**. All reports are generated with the Highcharts charting engine, giving them a consistent look.
Zip output | Check box for indicating that the report is to be sent as a zip file.
Include with | Additional scheduled report to send.

5. **Click Submit.**
6. **Optional:** Use the **Included in Email** related list to create additional scheduled reports.

Each report you add to the **Included in Email** related list must have its own schedule. This allows you to send different reports to one or more of the recipients of the previously identified reports, each with its own schedule.

To unschedule a report:
1. **Navigate to Reports > Scheduled reports.**
2. **Select the entry.**
3. **Choose Delete from Actions on selected rows.**

This action only deletes the schedule of the report, not the report itself.

### Report output formats
You can export reports in certain output formats. You can schedule these reports for regular export.
Report output formats

<table>
<thead>
<tr>
<th>Report format</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>PDF</td>
<td>Generate a PDF in portrait or landscape orientation. PDF reports include the chart grid data. Map reports cannot be exported to PDF format.</td>
</tr>
<tr>
<td></td>
<td><strong>Note:</strong> To export <em>Multilevel pivot tables</em> to PDF, you must enable the Webkit HTML to PDF (com.snc.whtp) plugin.</td>
</tr>
<tr>
<td>Excel</td>
<td>Report visualization shows as a Microsoft Excel (XLS) spreadsheet.</td>
</tr>
<tr>
<td>PNG</td>
<td>Report visualization shows as a Portable Network Graphic (PNG) file.</td>
</tr>
<tr>
<td>CSV</td>
<td>Report visualization shows as a comma-separated value (CSV) plain-text file.</td>
</tr>
</tbody>
</table>

Publish a report

Publish a report to create a URL that anyone can use to access the report, including people who are not users. When anyone navigates to the URL, the report is generated with current data from the instance. Reports are available until they are unpublished.

Role required: both the report_publisher and itil role, report_admin, or admin

There are limitations to what users see when they follow the publish URL for a report:

- Data that is visualized as a graphic report and not limited by business rules is always visible in published reports. Graphic reports are all reports except for list reports.
- Read ACLs govern the content of list reports. Users cannot see records for which they do not have access.

Users with the admin or report_admin role can see if a report has been published. Navigate to Reports > View / Run, open the report, and click the Sharing icon.

If the Sharing menu has the Publish option, the report is not yet published. If the Sharing menu has the Unpublish option, the report has been published.

**Note:** To make a report available only to logged in users, set its Sharing setting to Everyone, but do not publish it.

1. Navigate to Reports > View / Run.
2. Click the report you want to publish.
3. In the upper right side of the report form, click the Sharing icon and select Publish.
A link icon

shows with the Report option icons message. Click this icon to show a link to the published report. This link is available as long as the report is published. See Report options.

**Note:** Business rules may affect how records are collected for public reports. For more information, see Business rules.

### Unpublish a report

Published reports are available at the published URL until you unpublish them.

Role required: both the report_publisher and itil role, report_admin, or admin

1. Navigate to **Reports > View / Run**.
2. Select the report you want to unpublish.
3. From the upper right side of the report form, click the **Sharing** icon

   and select **Unpublish**.

The report is no longer published and the link icon

is removed from the report designer for the unpublished report.

### Add a report to a homepage or dashboard

When viewing a report, you can add that report to a homepage or a dashboard.

Before starting this procedure, make sure that there is a report you want to include on a homepage or dashboard.

Role required: Any user who can create a report can add it to a homepage or responsive dashboard. To add a report to a non-responsive dashboard, one of the following roles is required: itil, report_global, report_group, report_admin, pa_power_user. For more information, see Differences between homepages and responsive and non-responsive dashboards.

1. Navigate to **Reports > View/Run**.
2. Select a report.
3. Click the **Sharing** icon

   and select **Add to Dashboard**.
4. Select if you want to add the report to a **Homepage** or **Dashboard**.
5. Based on your selection, perform one of the following actions.

<table>
<thead>
<tr>
<th>Option</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Homepage</td>
<td>Select the <strong>Homepage</strong> to add the report to.</td>
</tr>
<tr>
<td>Dashboard</td>
<td>Select the <strong>Dashboard</strong> and <strong>Tab</strong> to add the report to.</td>
</tr>
</tbody>
</table>

6. Perform one of the following actions:
<table>
<thead>
<tr>
<th>Option</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>for responsive dashboards</td>
<td>Click <strong>Add</strong>. The widget is added to the dashboard in the top position and the dashboard opens. Click <strong>Edit</strong> to move or resize the widget.</td>
</tr>
<tr>
<td>for non-responsive dashboards and homepages</td>
<td>Click <strong>Add here</strong> to add the report in a specific position, or click <strong>Add</strong> to add the report to the first available position on the homepage or dashboard.</td>
</tr>
</tbody>
</table>

### Reports on Service Portal

Show reports using Service Portal.

When you edit a portal, add the **Report** widget. Use the widget options to specify a report to show on the service portal and whether to show the title of the report.

- **Report**
  - **30/60/90 Day Desired State Task Aging**
  - **30/60/90 Day Task Aging**
  - **Achieved SLAs by Type**
  - **Active Change Requests**
  - **Active Contracts by Cost Per Unit**
  - **Active Contracts by Lifetime Cost**
  - **Active Contracts by Monthly Cost**
  - **Active Contracts by Vendor**

### Report widget

With the report widget, you can show all report types on your portal except for list reports. Use the **simple list widget** instead.

### Activate the Performance Analytics and Reporting — Service Portal Widgets plugin

You can activate the Performance Analytics and Reporting — Service Portal Widgets plugin (com.snc.pa.sp.widget) if you have the admin role. This plugin includes demo data and activates related plugins if they are not already active.
Role required: admin

The Service Portal Widget plugin activates these related plugins if they are not already active.

### Plugins for Performance Analytics and Reporting — Service Portal Widgets

<table>
<thead>
<tr>
<th>Plugin</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Service Portal</td>
<td>Core Service Portal functionality.</td>
</tr>
<tr>
<td>(com.glide.service-portal)</td>
<td></td>
</tr>
</tbody>
</table>

1. **Navigate to System Definition > Plugins.**
2. Find and click the plugin name.
3. On the System Plugin form, review the plugin details and then click the **Activate/Upgrade** related link.
   
   If the plugin depends on other plugins, these plugins are listed along with their activation status.

   If the plugin has optional features that depend on other plugins, those plugins are listed under **Some files will not be loaded because these plugins are inactive.** The optional features are not installed until the listed plugins are installed (before or after the installation of the current plugin).

4. Optional: If available, select the **Load demo data** check box.
   
   Some plugins include demo data—Sample records that are designed to illustrate plugin features for common use cases. Loading demo data is a good practice when you first activate the plugin on a development or test instance.

   You can also load demo data after the plugin is activated by clicking the **Load Demo Data Only** related link on the System Plugin form.

5. Click **Activate**.

### PDF page header footer templates

Administrators and report owners can create header and footer templates for reports exported as PDFs. Reporting users can apply the available templates to specific reports.

A default PDF page header footer template appears on all PDF exports that do not specify a custom header footer template. PDF page header footer templates are saved independently from reports. All header and footer text uses 8-point Helvetica bold font. A PDF page header footer template is made of multiple cells containing report attributes or user-specified content.

The default PDF page header footer template appears on all reports, as well as **exports from lists,** unless you define a specific template for that report. You can modify the default template but you cannot delete it. In the default template, the header shows the report **Title** and the page number in the format **Page X.** The footer shows the report **Run by** field and the report run time and date.

### Configure PDF export settings for a report

You can customize the header and footer of reports exported to PDF.

Role required: report_admin or admin

1. **Click Switch to classic UI.**
2. From the upper right side of the report form, click the arrow next to **Save** and select **Export settings.**
3. In the Export settings dialog box, fill in the fields as appropriate.

**PDF export settings**

<table>
<thead>
<tr>
<th>Field</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Export report details</td>
<td>Check box to show the report attributes in the top right of exported PDF pages.</td>
</tr>
<tr>
<td>Header Footer Template</td>
<td>The template for the PDF header and footer.</td>
</tr>
</tbody>
</table>

4. Click **Close**.

**Create a header footer template for reports exported to PDF**

A PDF page header footer template defines the page header and footer layout for PDF files exported from your instance.

Role required: report_admin or admin

The header and footer each have three cells: Left, Middle, and Right. To leave a cell blank, select **Empty**.

1. Navigate to **Reports > Header Footer Templates**.
2. Click **New**.
3. Enter a **Name** for the template.
4. Select the content option for each header and footer cell, and enter or upload content as appropriate.

**Template form view**

<table>
<thead>
<tr>
<th>Type</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Page number of the PDF</td>
<td>Page number in either the Page X format or Page X of Y format.</td>
</tr>
<tr>
<td>Report Title</td>
<td>Title of the report.</td>
</tr>
<tr>
<td>Run by</td>
<td>Name of the user who ran the report.</td>
</tr>
<tr>
<td>Run Date and Time</td>
<td>Date and time the report ran.</td>
</tr>
<tr>
<td>User Specified Text</td>
<td>User-defined message. Messages are truncated at 150 characters.</td>
</tr>
<tr>
<td>Image</td>
<td>User-specified. Upload a new image when selecting Image content. Images are scaled to fit the space available in the template cell.</td>
</tr>
</tbody>
</table>

5. Click **Submit**.

**Apply a PDF page header footer template to a report**

Reporting users can apply the available templates to specific reports, so the custom header footer template replaces the default PDF page header footer template.

Any user who can edit reports can apply a PDF page header footer template to a report.

1. Navigate to **Reports > View/Run**.
2. Open a report.
3. Click the **Switch to classic UI** link.
4. Click the arrow next to Save and select Export settings.
5. In the Header Footer Template field, select the template to apply.
6. Click Close.
   This procedure saves the report with the selected template.
7. Optional: Export the report as a PDF to view the newly applied page header and footer.

Creating reports
Learn about different types of reports you can create, and when and how to create them.

Differences between Report Builder and Report Designer
The Report Designer provides a guided flow for report creation. Selection of the data source, selection of the report type, configuration, and styling of the report are presented on successive tabs. The Report Builder provides most report creation functionality in a single panel.

Using the Report Designer, users can configure a report, preview it, iterate and adjust, then share it using the integrated Share panel.

The older Report Builder provides functionality for naming, selection of the data source, and configuration on one page. Style option selection is provided in a pop-up.

The Report Designer supports imported data sources and MetricBase Time Series reports, but the Report Builder does not. See Using imported report data.

Report types
You can generate the following types of reports, organized by category:

- **Bar reports** enable you to compare scores across data dimensions.
- **Proportional reports** visualize the relationship between the parts and the whole of a data set using other shapes such as pies and pyramids.
- **Time Series reports** visualize data over time. In addition to data from within your instances and imported data sources, you can also use MetricBase data in time series reports. For more information, see MetricBase application.
- **Multidimensional reports** visualize data across dimensions in a single table or graph.
- **Scores** visualize single data points either across ranges or as a single value.
- **Statistical reports** visualize data with statistical values such as medians and means.
- **Other reports** include calendars, maps, and lists.

### Bar reports

<table>
<thead>
<tr>
<th></th>
<th>Report Designer</th>
<th>Report Builder</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Bar</strong></td>
<td>Bar</td>
<td>Bar</td>
<td>Shows vertical bars with lengths proportional to the values that they represent.</td>
</tr>
</tbody>
</table>
## ServiceNow Kingston Analytics, Intelligence, and Reporting

<table>
<thead>
<tr>
<th>Report Designer</th>
<th>Report Builder</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Horizontal bar</td>
<td>Horizontal bar</td>
<td>Shows horizontal bars with lengths proportional to the values that they represent.</td>
</tr>
<tr>
<td>Pareto</td>
<td>Pareto</td>
<td>Combines bar and line reports to identify the most important factors in a large set of factors.</td>
</tr>
<tr>
<td>Histogram</td>
<td>Histogram</td>
<td>Provides visual interpretation of numerical data by indicating the number of data points that lie within a range of values.</td>
</tr>
</tbody>
</table>

### Other proportional reports

<table>
<thead>
<tr>
<th>Report Designer</th>
<th>Report Builder</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pie</td>
<td>Pie</td>
<td>Shows how individual pieces of data relate to the whole using a circle to represent the whole.</td>
</tr>
<tr>
<td>Donut</td>
<td>Donut</td>
<td>Shows how individual pieces of data relate to the whole using a donut shape to represent the whole.</td>
</tr>
<tr>
<td>Semi-donut</td>
<td>Semi-donut</td>
<td>Shows how individual pieces of data relate to the whole using a semi-donut shape to represent the whole. A semi-donut report uses a donut sliced in half to represent the whole.</td>
</tr>
<tr>
<td>Funnel</td>
<td>Funnel</td>
<td>Displays values as progressively decreasing proportions. The size of each section reflects a percentage of the total of all values. (Found in the Other reports section.)</td>
</tr>
<tr>
<td>Pyramid</td>
<td>Pyramid</td>
<td>Visualizes a variation on a bar report using pyramid sections instead of rectangles. (Found in the Other reports section.)</td>
</tr>
</tbody>
</table>
## Time series reports

<table>
<thead>
<tr>
<th>Report Designer</th>
<th>Report Builder</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Column</td>
<td>Column</td>
<td>Shows how one or more values change over time by displaying them as proportional vertical columns.</td>
</tr>
<tr>
<td>Line</td>
<td>Line</td>
<td>Shows how one or more values change over time by connecting a series of data points with straight lines.</td>
</tr>
<tr>
<td>Step line</td>
<td>Step line</td>
<td>Shows how one or more values change over time by connecting a series of data points with horizontal and vertical lines.</td>
</tr>
<tr>
<td>Area</td>
<td>Area</td>
<td>Resembles a line report, but the area between the axis and line is commonly emphasized with colors.</td>
</tr>
<tr>
<td>Spline</td>
<td>Spline</td>
<td>Shows how one or more values change over time by connecting a series of data points with a fitted curve through the data points. Spline reports let you take a limited set of known data points and approximate intervening values.</td>
</tr>
</tbody>
</table>

## Multidimensional reports

<table>
<thead>
<tr>
<th>Report Designer</th>
<th>Report Builder</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Multilevel pivot table</td>
<td>Multilevel pivot table</td>
<td>Displays aggregate data broken down by multiple metrics in a single chart.</td>
</tr>
<tr>
<td>Heatmap</td>
<td>Heatmap</td>
<td>Displays aggregate data in a matrix using colors to represent different values.</td>
</tr>
<tr>
<td>Bubble</td>
<td>Bubble</td>
<td>Displays multiple metrics on a single chart.</td>
</tr>
</tbody>
</table>
## Scores

<table>
<thead>
<tr>
<th>Report Designer</th>
<th>Report Builder</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Speedometer</td>
<td>Speedometer</td>
<td>Shows an overview of the count of an indicator at the current moment in the form of a round meter.</td>
</tr>
<tr>
<td>Dial</td>
<td>Dial</td>
<td>Shows an overview of the count of an indicator you want to measure at this moment in a half circle, where the part in which scores are shown is filled out with a color.</td>
</tr>
<tr>
<td>Single score</td>
<td>Single score</td>
<td>Displays a single aggregate value that is important to your business.</td>
</tr>
</tbody>
</table>

## Statistical analysis visualizations

<table>
<thead>
<tr>
<th>Report Designer</th>
<th>Report Builder</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Control</td>
<td>Control</td>
<td>Displays data as a series of connected points to determine whether a business process is in a state of statistical control and to identify outliers. (Found in the Other reports section.)</td>
</tr>
<tr>
<td>Trend</td>
<td>Trend</td>
<td>Shows how the value of one or more items changes over time. Values along the horizontal axis of the trend report represent the time measurement. Values on the vertical axis represent the changes to the items being monitored. The trend line or curve reveals a general pattern of change. (Found in the Other reports section.)</td>
</tr>
<tr>
<td>Box</td>
<td>Box</td>
<td>Shows the distribution of values in a data set highlighting statistical averages. (Found in the Other reports section.)</td>
</tr>
</tbody>
</table>
### Trendbox
- **Description:** Shows the distribution of values in a data set, highlighting statistical averages for a specified period of time. (Found in the Other reports section.)

### Other reports

<table>
<thead>
<tr>
<th>Report Designer</th>
<th>Report Builder</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>List</td>
<td>List</td>
<td>Displays data in the form of an expandable list, similar to a standard ServiceNow list.</td>
</tr>
<tr>
<td>Calendar</td>
<td>Calendar</td>
<td>Displays data-driven events in a calendar format.</td>
</tr>
<tr>
<td>Map</td>
<td>Map</td>
<td>Displays data on a geographical map image.</td>
</tr>
<tr>
<td>Pivot table</td>
<td>Pivot table</td>
<td>Aggregates data from a table to display the source of summarized data. This functionality is expanded in multilevel pivot reports.</td>
</tr>
</tbody>
</table>

### Area and spline reports

Area reports show trends over time for related attributes. Spline reports show how one or more values change over time by connecting a series of known data points with a curve that emphasizes the trend over individual data points.

For example, you can create an area or spline reports for incident counts, to show how the number of incidents changes over time. The incident count often increases during the first few months after a product upgrade is deployed. Over time, the number of reported incidents decreases as users become more accustomed to the changes in the product.
Area reports

Note:
When the sections of an area report with multiple datasets overlap, it is not possible to drill down into the various sections. To drill down, click items in the legend to clear them from the report.
Create an area or spline report in the Report Designer

Area and spline reports show trends over time for related attributes. Create an area or spline report with the Report Designer.

Create an area or spline report to show trends over time for related attributes.

Role required: itil, report_group, report_global, report_admin, or admin. To create a meaningful report, you must have the right to access the data you want to report on.
This task refers to Report Designer in the Kingston release. If you are using the Report Builder (Classic UI) in Kingston for creating reports, select the applicable report from Creating reports to see instructions. If you are using an earlier UI or the Classic UI for creating reports in an earlier release, follow the instructions in the Helsinki documentation: Report types and creation details.

<table>
<thead>
<tr>
<th>Report Designer UI</th>
<th>Report Builder UI</th>
</tr>
</thead>
<tbody>
<tr>
<td><img src="image1.png" alt="Report Designer UI" /></td>
<td><img src="image2.png" alt="Report Builder UI" /></td>
</tr>
</tbody>
</table>

1. Navigate to **Reports > Create New**.
2. On the **Data** tab, give the report a name that reflects the information being grouped.
3. Select the applicable source for the report:

<table>
<thead>
<tr>
<th>Option</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Data source</strong></td>
<td>A table with filters applied to provide a single source of information for all users.</td>
</tr>
<tr>
<td>Note:</td>
<td>If you select a data source used by existing reports, a notification displays prompting you to view them.</td>
</tr>
<tr>
<td><strong>Table</strong></td>
<td>The raw data from a table with no filters applied.</td>
</tr>
<tr>
<td>Option</td>
<td>Description</td>
</tr>
<tr>
<td>--------------</td>
<td>-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------</td>
</tr>
<tr>
<td>External Import</td>
<td>Choose an existing imported report source, or click the Upload icon to import a new file. See Create a report from an imported Microsoft Excel document.</td>
</tr>
<tr>
<td>MetricBase</td>
<td>MetricBase enables you to collect, retain, analyze, and visualize custom time series data on the Now Platform. For more information, see MetricBase application.</td>
</tr>
</tbody>
</table>

4. Click **Next**.

5. On the **Type** tab, select **Area** or **Spline** from the **Time Series** section and click **Next**.

   A preliminary version of the report is displayed. To view the updated report at any time, click **Run**.

6. On the **Configure** tab, fill in the following fields and click **Next**.

   **Configure tab**

<table>
<thead>
<tr>
<th>Field</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Group by</td>
<td>Group report data using the values of this field. For example, in an incident report grouped by <strong>Assignment group</strong>, all incidents that belong to Software, Service Desk, and Network are placed in separate groups.</td>
</tr>
<tr>
<td></td>
<td><strong>Note</strong>: It is not possible to group or stack reports by the <strong>Tags</strong> field.</td>
</tr>
<tr>
<td>Additional group by</td>
<td>Extra fields to group the report by. When you select <strong>Additional group by</strong> fields, a control is added to the bottom of the report that groups the report by any one of the additional fields.</td>
</tr>
<tr>
<td></td>
<td><strong>Note</strong>: It is not possible to group or stack reports by the <strong>Tags</strong> field.</td>
</tr>
<tr>
<td>Display data table</td>
<td>Check this box to show report data in a grid beneath the report. The table appears on dashboards where the report is added.</td>
</tr>
<tr>
<td></td>
<td>All reports that use charts, including reports that are used on dashboards, show the table of report data when the glide.ui.section508 system property is set to <strong>true</strong>. The glide.ui.section508 property overrides the Display data table field.</td>
</tr>
<tr>
<td>Trend by</td>
<td>Table field whose values you want to show in a time sequence.</td>
</tr>
<tr>
<td>Field</td>
<td>Description</td>
</tr>
<tr>
<td>-------</td>
<td>-------------</td>
</tr>
</tbody>
</table>
| per   | Time period to group data by. Time periods range from an hour to a year. You can also specify a date.  

**Note:** Reporting per Week is not supported when the report range includes more than one year. Inconsistent results are produced when a week is split between two years. |

| Aggregation | Mathematical calculation to perform on the data. The default is Count, which shows the number of records selected.  

To show only unique records, select Count Distinct. For example, if you want a report on the distinct number of users who have one or more of the roles in a given list of roles. Users with more than one role would be counted twice unless you use Count Distinct.  

Select Average, Sum, or Count Distinct, to show a list of fields from the selected Table. Select a field to Aggregate by from this list. For example, if you select a duration field, such as Business duration on the Incident table, the aggregated data is expressed in days, hours, and minutes. If you select an integer field, such as Priority, the data is expressed as a decimal value number.  

If you choose Sum or Average, select Show related fields to aggregate on dot-walked fields. See Selecting fields on related tables using dot-walking.  

**Note:** For duration values, the unit of measurement displayed in the aggregation axis cannot be customized. |
### Field Descriptions

<table>
<thead>
<tr>
<th>Field</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Percentage calculation</td>
<td>Method of calculating percentages. The percentage appears when you point to a report segment, such as a bar on a bar report. This field appears when Aggregation is set to <strong>Average</strong>, <strong>Sum</strong>, or <strong>Count Distinct</strong>.</td>
</tr>
<tr>
<td></td>
<td><strong>Use Aggregation</strong> calculates the percentage using the selection in the Aggregation field. Only data that is displayed in the report is used to calculate the percentage.</td>
</tr>
<tr>
<td></td>
<td>For example, a report shows assets by department with the Aggregation set to <strong>Sum</strong> and the percentage calculated using aggregation. If the total cost of assets is $100,000 and the cost of assets for Customer Support is $10,000, the percentage for Customer Support is 10%.</td>
</tr>
<tr>
<td></td>
<td><strong>Use Record Count</strong> calculates the percentage using the total number of records in the data set.</td>
</tr>
<tr>
<td></td>
<td>For example, a report shows incidents by priority. Out of 500 incident records, 200 have low priority. The percentage for the Low priority section is 40%.</td>
</tr>
</tbody>
</table>

### Sorting Order

7. Optional: Configure the sort order of the applicable fields in the report (column, row, Group by, Stack by or Trend by depending on the report type). Click the filter icon and select **Add Sort**.

   1. In the Sorting Order list, choose the field you want to sort on and then choose a-z or z-a for alphabetical order or reverse alphabetical order.

   The list contains all possible fields from the report's source. The only effective values, however, are the fields chosen for the current report (column, row, Group by, Stack by, or Trend by depending on the report type). Add sort cannot be applied to dot-walked fields.

   2. Click to configure additional sorting order conditions. (Click to delete configured sorting order conditions.)

   3. Click **Save**.

For fields of the type Choice list, the sort order is determined by the sequence of the choices in the choice list, not alphabetically or numerically. For example, a priority
choice list is often indexed from Critical to Planning as shown in the following figure.

8. Optional: To limit the information displayed in the report, click the filter icon
   and select conditions to filter the report data.
   For more details on how conditions are constructed, see Condition builder.

   **Note:** Keywords is a special field used for text searches across all fields. Its use in a filter
   or condition, in combination with other conditions, may return inconsistent results.

9. On the **Style** tab, fill in the fields as appropriate to configure the appearance of the report.
10. Click **Save**.
    The report is generated.
• Click the Report info icon

and add a description of the report.

• Click the sharing icon

 to open the Sharing menu. On this menu, you can add the report to a dashboard, export the report to PDF, publish the report to the web, and set visibility and schedules. For more information, see Share a report – Report Designer.

Area and spline report style options – Report Designer
Change the look of your area or spline report.

When you create or edit a report, click the Style tab for options to configure the look of your report. The options are organized under two or more of the following tabs: General, Title, Legend, and Axis. To see how the report looks with the changed settings, click Save.

Area and spline report style options

<table>
<thead>
<tr>
<th>Field</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>General</td>
<td>Colors used in the report.</td>
</tr>
<tr>
<td>Chart color</td>
<td>If you do not group or stack the report, Use one color is automatically selected. Select a single predefined system color. If you group or stack the report, select one of the following options: Use color palette: Select a color palette from the predefined system color palettes. Use several colors: Define a custom set of Colors using hex codes. You can add any number of colors. Use chart colors: Use the colors defined in Reports &gt; Chart Colors.</td>
</tr>
<tr>
<td>Note: It is not possible to use transparency hex values.</td>
<td></td>
</tr>
<tr>
<td>Set color</td>
<td>Color used in the report. This field displays when you select Use one color from the Chart color list. Click the search icon to choose from the Chart color schemes or Color Definitions list.</td>
</tr>
<tr>
<td>Field</td>
<td>Description</td>
</tr>
<tr>
<td>---------------------</td>
<td>---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------</td>
</tr>
<tr>
<td>Set palette</td>
<td>Color palette used in the report. This field appears when you select <strong>Use color palette</strong> from the <strong>Chart color</strong> list. Click the search icon (🔍) to choose from the <strong>Color color schemes</strong> list.</td>
</tr>
<tr>
<td>Display data labels</td>
<td>Check box to show the value for each data point.</td>
</tr>
<tr>
<td>Show marker</td>
<td>Check box to show a symbol at each data point.</td>
</tr>
<tr>
<td>Custom chart size</td>
<td>Check box to specify the width and height of the report in pixels. <strong>Note:</strong> The chart size is ignored when you export the report to PDF. In PDFs, the full page width is used to show the chart.</td>
</tr>
<tr>
<td>Chart size</td>
<td>Chart size. This field is available when <strong>Custom chart size</strong> is cleared. Options are <strong>Small</strong>, <strong>Medium</strong>, and <strong>Large</strong>. <strong>Note:</strong> The chart size is ignored when you export the report to PDF. In PDFs, the full page width is used to show the chart.</td>
</tr>
<tr>
<td>Drilldown view</td>
<td>List view to show when a user selects a segment of a report for which no drilldown report type is specified. This view is also used when the user reaches the lowest drilldown level of a report. See <strong>Configure the list layout</strong>. If you specify a <strong>Report drilldown</strong>, <strong>Drilldown view</strong> is ignored. <strong>Note:</strong> All users are able to view report visualizations, such as pie charts and column reports. However, the last level of a report drilldown is always a list. Platform access control lists determine user access to list information. Users who do not have rights to any part of the list data see the message “Number of rows removed from this list by Security constraints:” followed by the number. See <strong>Access control rules</strong>. For more information, see <strong>Define a report drilldown in the Report Designer</strong>.</td>
</tr>
<tr>
<td>Field</td>
<td>Description</td>
</tr>
<tr>
<td>-------------------</td>
<td>---------------------------------------------------------------------------------------------------------------------------------------------</td>
</tr>
<tr>
<td>Decimal precision</td>
<td>Number of decimal places to show. You can show from zero to four decimal places. Default value: 2. To change the default value, create the system property glide.chart.decimal.precision and specify the value.</td>
</tr>
</tbody>
</table>

**Note:** Percentage labels do not change accordingly with the decimal precision specified.
<table>
<thead>
<tr>
<th>Field</th>
<th>Description</th>
</tr>
</thead>
</table>
| Show chart title           | When the chart title is shown for the report.  
  - **Never**: Never show the chart title.  
  - **Report only**: Shows the chart title on reports.  
  - **Always**: Shows the chart title on reports, dashboards, and homepages. |
<p>| Chart title                | The chart title has a maximum length of 40 characters. If no title is entered, the report name is used for the title. This field appears when <strong>Report only</strong> or <strong>Always</strong> is selected from the <strong>Show chart title</strong> list. |
| Size of the chart title    | Size of the chart title in pixels. This field appears when <strong>Report only</strong> or <strong>Always</strong> is selected from the <strong>Show chart title</strong> list. |
| Chart title color          | Color of the chart title. This field appears when <strong>Report only</strong> or <strong>Always</strong> is selected from the <strong>Show chart title</strong> list. |
| Custom chart title position| Check box to specify X and Y coordinates for the position of the chart title. This field appears when <strong>Report only</strong> or <strong>Always</strong> is selected from the <strong>Show chart title</strong> list. |
| Title horizontal alignment | How the chart title is aligned horizontally. This field is available when <strong>Custom chart title position</strong> is cleared. |
| Title vertical alignment   | How the chart title is aligned vertically. This field appears when <strong>Custom chart title position</strong> is cleared. |
| Chart title X position     | Number of pixels to adjust the chart title position right or left. By default the title appears at the center top of the chart. To move the chart title to the right, enter a positive value. To move the title to the left, enter a negative value. This field appears only when <strong>Custom chart title position</strong> is selected. |
| Chart title Y position     | Number of pixels to adjust the chart title position up or down. By default the title appears at the center top of the chart. To move up the chart title, enter a positive value. To move the chart title down, enter a negative value. This field appears only when <strong>Custom chart title position</strong> is selected. |
| Legend                     | Check box to show a chart legend. This check box appears when a <strong>Group by</strong> field is selected on the report form. |</p>
<table>
<thead>
<tr>
<th>Field</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Legend horizontal alignment</td>
<td>How the legend is aligned horizontally. This field appears when Show legend is selected.</td>
</tr>
<tr>
<td>Legend vertical alignment</td>
<td>How the legend is aligned vertically. This field appears when Show legend is selected.</td>
</tr>
<tr>
<td>Show legend border</td>
<td>Check box to show a border around the legend. This check box appears when Show legend is selected.</td>
</tr>
<tr>
<td>Left align legend text</td>
<td>Check box to left-align the legend text when the report is viewed in a browser. By default, the legend text is centered. When the report is exported to PDF, PNG, or JPG, the legend remains centered. This check box appears when Show legend is selected.</td>
</tr>
<tr>
<td>Axis</td>
<td></td>
</tr>
<tr>
<td>Y axis and X axis</td>
<td>Axis for which you want to configure the titles, appearance, and labels.</td>
</tr>
<tr>
<td>Title</td>
<td>Title for the axis.</td>
</tr>
<tr>
<td>Title size</td>
<td>Size of the axis title in pixels. Default value is 12.</td>
</tr>
<tr>
<td>Title bold</td>
<td>Check this box to show the axis title in a bold typeface.</td>
</tr>
<tr>
<td>Opposite</td>
<td>On the X axis tab, select this check box to show the X-axis title on the right side of the report instead. On the Y axis tab, select this check box to show the Y-axis title on top of the report instead of across the bottom.</td>
</tr>
<tr>
<td>Display grid</td>
<td>On the X axis tab, select this check box to show horizontal grid lines on the report.</td>
</tr>
<tr>
<td></td>
<td>On the Y axis tab, select this check box to show vertical grid lines on top the report.</td>
</tr>
<tr>
<td>Grid dotted</td>
<td>Check this box to show dotted grid lines instead of solid lines.</td>
</tr>
<tr>
<td>From</td>
<td>Specify a minimum Y-axis value to limit the amount of information in the report. If you select an aggregation field that is not of the type Number, the From and To fields are not available.</td>
</tr>
</tbody>
</table>

**Note:** Depending on configured Highcharts settings, the minimum value may be rounded up or down. If you require the settings that affect this changed, contact the administrator.
<table>
<thead>
<tr>
<th>Field</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>To</td>
<td>Specify a maximum Y-axis value to limit the amount of information in the report. If you select an aggregation field that is not of the type <strong>Number</strong>, the <strong>From</strong> and <strong>To</strong> fields are not available.</td>
</tr>
<tr>
<td>Note:</td>
<td>Depending on configured <strong>Highcharts</strong> settings, the maximum value may be rounded up or down. If you require the settings that affect this changed, contact the administrator.</td>
</tr>
<tr>
<td>X axis / Y axis label size</td>
<td>On the <strong>X axis</strong> tab, specify the size of the labels for the rows of the report. On the <strong>Y axis</strong> tab, specify the size of the labels for the columns in the report.</td>
</tr>
<tr>
<td>Label bold</td>
<td>Check this box to show the labels of the report in a bold typeface.</td>
</tr>
</tbody>
</table>

**Create an area or spline report in the Report Builder**

Area and spline reports show trends over time for related attributes.

Create an area or spline report in the Report Builder

Create an area or spline report to show trends over time for related attributes.

Role required: itil, report_group, report_global, report_admin, or admin. To create a meaningful report, you must have the right to access the data you want to report on. This task refers to using the Report Builder (Classic UI) in the Kingston release under UI15 and UI16. If you are using the Report Designer, see [Create an area or spline report in the Report Designer](#).

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1. Navigate to **Reports > Create New**.
2. Fill in the fields, as appropriate.

### Area report

<table>
<thead>
<tr>
<th>Field</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Name</td>
<td>Name the report.</td>
</tr>
<tr>
<td>Description</td>
<td>Click the information icon (ℹ️) to enter a more detailed description of what the report does and its purpose.</td>
</tr>
<tr>
<td>Data</td>
<td>Specify the table or report source containing the data set that you want to include in the report. From the first choice list, select <strong>Table</strong> or <strong>Report source</strong>. Then select the specific table or <strong>predefined data set</strong> from the second choice list.</td>
</tr>
</tbody>
</table>

**Note:** If you select a data source used by existing reports, a notification will display prompting you to view them.

<p>| Type         | Select <strong>Area</strong> or <strong>Spline</strong>.                                               |</p>
<table>
<thead>
<tr>
<th>Field</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Style your chart</td>
<td>Click the gear icon (⚙️) after the <strong>Type</strong> field to configure the chart style options.</td>
</tr>
<tr>
<td>Group by</td>
<td>Select a field to organize data into groups from the selected table. For example, in an incident report that is grouped by <strong>Assignment group</strong>, all incidents belonging to Software, Service Desk, Network, and so on, are placed in separate groups. Make sure you give the report a name that reflects the field you select. Click + to select additional group by fields. When you select <strong>Additional group by</strong> fields, a control is added to the bottom of the report that groups the report by any one of the additional fields.</td>
</tr>
<tr>
<td>Note:</td>
<td>It is not possible to group or stack reports by the <strong>Tags</strong> field.</td>
</tr>
<tr>
<td>Display Grid</td>
<td>Select this check box to display details of the report data in a table below the chart.</td>
</tr>
<tr>
<td>Note:</td>
<td>All reports that use charts, including reports that are used on homepages, display the table of report data when the glide.ui.section508 system property is set to <strong>true</strong>, even if <strong>Display Grid</strong> is cleared.</td>
</tr>
<tr>
<td>Trend by</td>
<td>Select the table field whose values you want to display in a time sequence.</td>
</tr>
<tr>
<td>Note:</td>
<td>Reporting per <strong>Week</strong> is not supported when the report range includes more than one year. Inconsistent results are produced when a week is split between two years.</td>
</tr>
<tr>
<td>Aggregation</td>
<td>Select a computational method for aggregating report data. The default is <strong>Count</strong>, which displays the number of records selected. If you select <strong>Count Distinct</strong>, only unique records are counted. For example, if you want to generate a report with a distinct number of users who have one or more of the roles in a given list of roles, these users would be counted twice unless you use count distinct. If you select <strong>Average</strong>, <strong>Sum</strong>, or <strong>Count Distinct</strong>, a list of fields from the selected <strong>Table</strong> appears. From this list, select a field to aggregate by. For example, if you select a duration field, such as the <strong>Business duration</strong> field on the Incident table, the aggregated data is expressed in days, hours, and minutes. If you select an integer field, such as the <strong>Priority</strong> field, the data is expressed as a number.</td>
</tr>
<tr>
<td>Note:</td>
<td>For duration values, the unit of measurement displayed in the aggregation axis cannot be customized.</td>
</tr>
</tbody>
</table>
Field | Description
--- | ---
Percentages | Select the computational method used for calculating percentages for each element (selected record) in a data set.
  - **Use Aggregation**: default method. Computes percentages for each element using the sum of all elements in the data set.
  - **Use Record Count**: computes percentages for each element using the total number (count) of elements in the data set.
This field is only available when **Aggregation** is set to **Average**, **Sum**, or **Count Distinct**.

Add Filter Condition | Click the filter icon to create conditions for filtering and ordering data. For example, you might create a condition that states **Priority + less than + 3 – Moderate** to have the report include only records with priorities of **2 – High** and **1 – Critical**.

  - **Note**: Keywords is a special field used for text searches across all fields. It’s use in a filter or condition, in combination with other conditions, may return inconsistent results.

Add “OR” Clause | Select a second condition that must be met if the first condition is invalid. For example, select **(Assignment Group) (is) (Database)**, to include records that are assigned to the Database group if the first condition is false.

Add Sort | Select fields to sort data by. For example, to sort results from lowest to highest priority, select **(Priority) (z to a)**. For reports with **Group by**, **Stack by**, **Row/Column** or **Trend by** fields to configure, you can sort by fields that are not listed in the **Group by**, **Stack by**, **Row/Column** or **Trend by** options.

3. **Click** **Save**.
   The report is generated.

Add reports to homepages or dashboards, publish to the internet, schedule email distribution of PDFs or URLs of published reports, and share reports with others. See **Distribute reports**.

**Area and spline report style options – Report Builder**
Change the look of your area or spline report.

When you create or edit a report, click the gear icon (⚙️) after the **Type** field to open the **Style your chart** dialog box with options to configure the look of your chart. The options are organized under the **General**, **Title**, **Legend**, and **Axis** tabs. Chart options are automatically saved when you click **Close**. To see how the chart looks with the saved settings, click **Save**.

**Area and spline chart style options**

<table>
<thead>
<tr>
<th>Field</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>General</td>
<td></td>
</tr>
<tr>
<td>Field</td>
<td>Description</td>
</tr>
<tr>
<td>--------------------</td>
<td>-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------</td>
</tr>
</tbody>
</table>
| Chart color        | If no group by or stack by is used, **Use one color** is automatically selected. Select a single predefined system color.  
|                    | If a group by or stack by is used, select one of the following options:  
|                    | • **Use color palette**: Select a color palette from the predefined system color palettes.  
|                    | • **Use several colors**: Define a custom set of **Colors** using hex codes. You can add any number of colors.  
|                    | • **Use chart colors**: Use the colors defined in **Reports > Chart Colors**.                                                                                                                                  |
| Display data labels | Select this check box to display the value for each data point.                                                                                                                                               |
| Marker             | Select this check box to display a symbol at each data point.                                                                                                                                               |
| Custom chart size  | Select this check box to specify the chart's width and height in pixels.                                                                                                                                     |
| Chart size         | Select a chart size. This field is available when **Custom chart size** is cleared.                                                                                                                          |
| Drilldown View     | Select a **view** that determines how detailed records are shown when a specific part of the report visualization is clicked. This option is available for charts with drill-down capabilities.  
<p>|                    | If you select a view that has no fields in common to link to the table that the report is based on, the default view is used. See <strong>Define a report drilldown in the Report Designer</strong>. |</p>
<table>
<thead>
<tr>
<th>Field</th>
<th>Description</th>
<th>Note: Percentage labels do not change accordingly with the decimal precision specified.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Decimal precision</td>
<td>Number of decimal places to show. You can show from zero to four decimal places. Default value: 2. To change the default value, create the system property glide.chart.decimal.precision and specify the value.</td>
<td></td>
</tr>
</tbody>
</table>

| Average Reassignment count | (empty), Open = 0.773 (27.78%) |

Title
<table>
<thead>
<tr>
<th>Field</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Show chart title</td>
<td>Select when the chart title is displayed.</td>
</tr>
<tr>
<td></td>
<td>* Never: never shows the chart title.</td>
</tr>
<tr>
<td></td>
<td>* Report only: shows the chart title on reports.</td>
</tr>
<tr>
<td></td>
<td>* Always: shows the chart title on reports, dashboards, and homepages.</td>
</tr>
<tr>
<td>Chart title</td>
<td>Enter a title for this chart. The title has a maximum length of 40 characters. If no title is entered, the report name is used for the title. This field is available when Report only or Always is selected from the Show chart title list.</td>
</tr>
<tr>
<td>Chart title size</td>
<td>Enter the size of the chart title in pixels. This field is available when Report only or Always is selected from the Show chart title list.</td>
</tr>
<tr>
<td>Chart title color</td>
<td>Select the color for the chart title. This field is available when Report only or Always is selected from the Show chart title list.</td>
</tr>
<tr>
<td>Custom chart title position</td>
<td>Select this check box to specify X and Y coordinates for the position of the chart title. This field is available when Report only or Always is selected from the Show chart title list.</td>
</tr>
<tr>
<td>Title horizontal alignment</td>
<td>Select how the chart title is aligned horizontally. This field is available when Custom chart title position is cleared.</td>
</tr>
<tr>
<td>Title vertical alignment</td>
<td>Select how the chart title is aligned vertically. This field is available when Custom chart title position is cleared.</td>
</tr>
<tr>
<td>Legend</td>
<td></td>
</tr>
<tr>
<td>Show legend</td>
<td>Select this check box to show a chart legend. This check box is available when a Group by field is selected on the report form.</td>
</tr>
<tr>
<td>Legend horizontal alignment</td>
<td>Select how the legend is aligned horizontally. This field is available when Show legend is selected.</td>
</tr>
<tr>
<td>Legend vertical alignment</td>
<td>Select how the legend is aligned vertically. This field is available when Show legend is selected.</td>
</tr>
<tr>
<td>Left align legend text</td>
<td>Select to left-align the legend text. By default, legend text is centered.</td>
</tr>
<tr>
<td>Show legend border</td>
<td>Select this check box to display a border around the legend. This check box is available when Show legend is selected.</td>
</tr>
<tr>
<td>Axis</td>
<td></td>
</tr>
<tr>
<td>Axis tab</td>
<td>Configure the titles, appearance, and labels of the X and Y axis. For the Y axis, you can also specify a From and To range.</td>
</tr>
</tbody>
</table>

**Bar and horizontal bar reports**

Use bar reports to compare individual or aggregate scores across data dimensions. You can create bar and horizontal bar reports. Bar report columns originate on the x-axis and horizontal bar report columns originate on the y-axis.

Bar reports display data in either a horizontal or vertical bar format with each bar representing a specific category of data. A bar report can use a single color to represent all categories of data, or a different color for each category. Bar reports can be placed on homepages where users can quickly interpret the information displayed.
The following figure shows an example of a bar report that displays discrete categories of data. The report includes data from the Incident (incident) table for all incidents recorded up until the time that the report is generated.

Bar report

You can configure the bar report to stack data or change the measurement units of the bars. Stacked bar reports show the parts that contribute to the total. The following figure shows a bar report with the number of incidents that are assigned to each user. It is also stacked to display how many of the incidents are from each incident category.
Create a bar report in the Report Designer

Create a bar report that compares two or more values.

Role required: itil, report_group, report_global, report_admin, or admin. To create a meaningful report, you must have the right to access the data you want to report on.
This task refers to Report Designer in the Kingston release. If you are using the Report Builder (Classic UI) in Kingston for creating reports, select the applicable report from Creating reports to see instructions. If you are using an earlier UI or the Classic UI for creating reports in an earlier release, follow the instructions in the Helsinki documentation: Report types and creation details.

1. Navigate to Reports > Create New.
2. On the Data tab, give the report a name that reflects the information being grouped.
3. Select the applicable source for the report:

<table>
<thead>
<tr>
<th>Option</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Data source</td>
<td>A table with filters applied to provide a single source of information for all users.</td>
</tr>
<tr>
<td>Note:</td>
<td>If you select a data source used by existing reports, a notification displays prompting you to view them.</td>
</tr>
<tr>
<td>Table</td>
<td>The raw data from a table with no filters applied.</td>
</tr>
<tr>
<td>Option</td>
<td>Description</td>
</tr>
<tr>
<td>------------------</td>
<td>-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------</td>
</tr>
<tr>
<td>External Import</td>
<td>Choose an existing imported report source, or click the Upload icon to import a new file. See Create a report from an imported Microsoft Excel document.</td>
</tr>
<tr>
<td>MetricBase</td>
<td>MetricBase enables you to collect, retain, analyze, and visualize custom time series data on the Now Platform. For more information, see MetricBase application.</td>
</tr>
</tbody>
</table>

4. Click Next.

5. On the Type tab, select Bar or Horizontal bar in the Bars section and click Next.

   A preliminary version of the report is displayed. To view the updated report at any time, click Run.

6. On the Configure tab, fill in the following fields and click Next.

   **Configure tab**

<table>
<thead>
<tr>
<th>Field</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Group by</td>
<td>Group report data using the values of this field. For example, in an incident report grouped by Assignment group, all incidents that belong to Software, Service Desk, and Network are placed in separate groups. Note: It is not possible to group or stack reports by the Tags field.</td>
</tr>
<tr>
<td>Additional group by</td>
<td>Extra fields to group the report by. When you select Additional group by fields, a control is added to the bottom of the report that groups the report by any one of the additional fields. Note: It is not possible to group or stack reports by the Tags field.</td>
</tr>
<tr>
<td>Field</td>
<td>Description</td>
</tr>
<tr>
<td>------------</td>
<td>-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------</td>
</tr>
<tr>
<td>Stack by</td>
<td>Divide each bar using values of this field.</td>
</tr>
<tr>
<td></td>
<td>On a bar chart of incidents sorted by Category and stacked by Priority, a user sees the proportion of high, medium, and low priority issues for each category.</td>
</tr>
<tr>
<td></td>
<td>Select stacked fields carefully to avoid cluttering the report. Sometimes it is a better practice to create another report that shows these relationships rather than stack too much data. Bar charts display a legend only when a stacked field is selected. Boolean, reference, and choice lists can be used as stacked fields. Date, date/time, integer, long, string, and text fields cannot be used as stacked fields.</td>
</tr>
<tr>
<td></td>
<td>You can choose to display the stacked field either in a single bar or as a group of bars.</td>
</tr>
<tr>
<td></td>
<td>If you select a Group by field on the report form, you can choose to visualize the bars as Grouped bars. In this case, bars are displayed next to one another per the Group by field (for example, the state of the incident), instead of stacked.</td>
</tr>
<tr>
<td></td>
<td>If you choose fields with Additional group by, these fields are also available in a Stacked by control at the bottom of the report.</td>
</tr>
<tr>
<td>Display data table</td>
<td>Check this box to show report data in a grid beneath the report. The table appears on dashboards where the report is added. All reports that use charts, including reports that are used on dashboards, show the table of report data when the glide.ui.section508 system property is set to true. The glide.ui.section508 property overrides the Display data table field.</td>
</tr>
</tbody>
</table>
### ServiceNow Kingston Analytics, Intelligence, and Reporting

<table>
<thead>
<tr>
<th>Field</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Aggregation</td>
<td>Mathematical calculation to perform on the data. The default is <strong>Count</strong>, which shows the number of records selected. To show only unique records, select <strong>Count Distinct</strong>. For example, if you want a report on the distinct number of users who have one or more of the roles in a given list of roles. Users with more than one role would be counted twice unless you use <strong>Count Distinct</strong>. Select <strong>Average</strong>, <strong>Sum</strong>, or <strong>Count Distinct</strong>, to show a list of fields from the selected <strong>Table</strong>. Select a field to <strong>Aggregate by</strong> from this list. For example, if you select a duration field, such as <strong>Business duration</strong> on the Incident table, the aggregated data is expressed in days, hours, and minutes. If you select an integer field, such as <strong>Priority</strong>, the data is expressed as a decimal value number. If you choose <strong>Sum</strong> or <strong>Average</strong>, select <strong>Show related fields</strong> to aggregate on dot-walked fields. See <a href="#">Selecting fields on related tables using dot-walking</a>. Note: For duration values, the unit of measurement displayed in the aggregation axis cannot be customized.</td>
</tr>
</tbody>
</table>
| Percentage calculation | Method of calculating percentages. The percentage appears when you point to a report segment, such as a bar on a bar report. This field appears when **Aggregation** is set to **Average**, **Sum**, or **Count Distinct**.  
- **Use Aggregation** calculates the percentage using the selection in the **Aggregation** field. Only data that is displayed in the report is used to calculate the percentage. For example, a report shows assets by department with the **Aggregation** set to **Sum** and the percentage calculated using aggregation. If the total cost of assets is $100,000 and the cost of assets for Customer Support is $10,000, the percentage for Customer Support is 10%.  
- **Use Record Count** calculates the percentage using the total number of records in the data set. For example, a report shows incidents by priority. Out of 500 incident records, 200 have low priority. The percentage for the Low priority section is 40%. |
### Field Description

<table>
<thead>
<tr>
<th>Field</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Max number of groups</td>
<td>Maximum number of groups to display in the report. Groups with highest values are included first. Any excluded groups are combined into the single group <strong>Other</strong>. If you select <strong>Show all</strong>, all groups up to a limit of 50 are displayed. The rest of the results are grouped as <strong>Other</strong>.</td>
</tr>
<tr>
<td>Show Other</td>
<td>Check box to include the Other group in the report. The Other group contains data for all groups that exceed the number specified in <strong>Max number of groups</strong>.</td>
</tr>
</tbody>
</table>

7. Optional: Configure the sort order of the applicable fields in the report (column, row, Group by, Stack by or Trend by depending on the report type). Click the filter icon ( ) and select **Add Sort**.

1. In the Sorting Order list, choose the field you want to sort on and then choose **a-z** or **z-a** for alphabetical order or reverse alphabetical order.

   The list contains all possible fields from the report's source. The only effective values, however, are the fields chosen for the current report (column, row, Group by, Stack by, or Trend by depending on the report type). Add sort cannot be applied to dot-walked fields.

2. Click 

   to configure additional sorting order conditions. (Click 

   to delete configured sorting order conditions.)

3. Click **Save**.

For fields of the type Choice list, the sort order is determined by the sequence of the choices in the choice list, not alphabetically or numerically. For example, a priority
choice list is often indexed from Critical to Planning as shown in the following figure.

8. Optional: To limit the information displayed in the report, click the filter icon and select conditions to filter the report data.
   For more details on how conditions are constructed, see Condition builder.

   Note: Keywords is a special field used for text searches across all fields. Its use in a filter or condition, in combination with other conditions, may return inconsistent results.

9. On the Style tab, fill in the fields as appropriate to configure the appearance of the report.
10. Click Save.
    The report is generated.
• Click the Report info icon

and add a description of the report.

• Click the sharing icon

 to open the Sharing menu. On this menu, you can add the report to a dashboard, export the report to PDF, publish the report to the web, and set visibility and schedules. For more information, see Share a report – Report Designer.

Bar report style options – Report Designer
Change the look of your bar chart.

When you create or edit a report, click the Style tab for options to configure the look of your report. The options are organized under two or more of the following tabs: General, Title, Legend, and Axis. To see how the report looks with the changed settings, click Save.

<table>
<thead>
<tr>
<th>Field</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>General</td>
<td>Colors used in the report. If you do not group or stack the report, Use one color is automatically selected. Select a single predefined system color. If you group or stack the report, select one of the following options: • Use color palette: Select a color palette from the predefined system color palettes. • Use several colors: Define a custom set of Colors using hex codes. You can add any number of colors. • Use chart colors: Use the colors defined in Reports &gt; Chart Colors. Note: It is not possible to use transparency hex values.</td>
</tr>
<tr>
<td>Chart color</td>
<td>Color used in the report. This field displays when you select Use one color from the Chart color list. Click the search icon to choose from the Chart color schemes or Color Definitions list.</td>
</tr>
<tr>
<td>Field</td>
<td>Description</td>
</tr>
<tr>
<td>-----------------------</td>
<td>--------------------------------------------------------------------------------------------------------------------------------------------</td>
</tr>
<tr>
<td>Set palette</td>
<td>Color palette used in the report. This field appears when you select <strong>Use color palette</strong> from the <strong>Chart color</strong> list. Click the search icon</td>
</tr>
<tr>
<td></td>
<td>to choose from the <strong>Color color schemes</strong> list.</td>
</tr>
<tr>
<td>Display data labels</td>
<td>Select to display the current value for each bar. This field is available when you select None from the <strong>Stacked by</strong> list or if there is no</td>
</tr>
<tr>
<td></td>
<td><strong>Stacked by</strong> list. • Select <strong>Data labels in the middle</strong> to show the labels in the middle of each bar.</td>
</tr>
<tr>
<td></td>
<td>• Select <strong>Allow data labels to overlap</strong> to override default separation of labels in the visualization.</td>
</tr>
<tr>
<td>Custom chart size</td>
<td>Check box to specify the width and height of the report in pixels. <strong>Note:</strong> The chart size is ignored when you export the report to PDF. In</td>
</tr>
<tr>
<td></td>
<td>PDFs, the full page width is used to show the chart.</td>
</tr>
<tr>
<td>Chart width</td>
<td>Width of the report in pixels. The default value is 600. <strong>This field is available when Custom chart size is selected.</strong></td>
</tr>
<tr>
<td>Chart height</td>
<td>Height of the report in pixels. The default value is 450. <strong>This field appears when Custom chart size is selected.</strong></td>
</tr>
<tr>
<td>Chart size</td>
<td>Chart size. This field is available when <strong>Custom chart size</strong> is cleared. Options are Small, Medium, and Large. <strong>Note:</strong> The chart size</td>
</tr>
<tr>
<td></td>
<td>is ignored when you export the report to PDF. In PDFs, the full page width is used to show the chart.</td>
</tr>
<tr>
<td>Field</td>
<td>Description</td>
</tr>
<tr>
<td>---------------</td>
<td>-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------</td>
</tr>
<tr>
<td>Drilldown view</td>
<td>List view to show when a user selects a segment of a report for which no drilldown report type is specified. This view is also used when the user reaches the lowest drilldown level of a report. See Configure the list layout. If you specify a Report drilldown, Drilldown view is ignored.</td>
</tr>
</tbody>
</table>

**Note:** All users are able to view report visualizations, such as pie charts and column reports. However, the last level of a report drilldown is always a list. Platform access control lists determine user access to list information. Users who do not have rights to any part of the list data see the message “Number of rows removed from this list by Security constraints:” followed by the number. See Access control rules.

For more information, see Define a report drilldown in the Report Designer.
<table>
<thead>
<tr>
<th>Field</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Decimal precision</td>
<td>Number of decimal places to show. You can show from zero to four decimal places. Default value: 2. To change the default value, create the system property glide.chart.decimal.precision and specify the value.</td>
</tr>
</tbody>
</table>

Note: Percentage labels do not change accordingly with the decimal precision specified.
<table>
<thead>
<tr>
<th>Field</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Show chart title</td>
<td>When the chart title is shown for the report.</td>
</tr>
<tr>
<td></td>
<td>- <strong>Never</strong>: Never show the chart title.</td>
</tr>
<tr>
<td></td>
<td>- <strong>Report only</strong>: Shows the chart title on reports.</td>
</tr>
<tr>
<td></td>
<td>- <strong>Always</strong>: Shows the chart title on reports, dashboards, and homepages.</td>
</tr>
<tr>
<td>Chart title</td>
<td>The chart title has a maximum length of 40 characters.</td>
</tr>
<tr>
<td></td>
<td>If no title is entered, the report name is used for the title.</td>
</tr>
<tr>
<td></td>
<td>This field appears when <strong>Report only</strong> or <strong>Always</strong> is selected from the</td>
</tr>
<tr>
<td></td>
<td><strong>Show chart title</strong> list.</td>
</tr>
<tr>
<td>Size of the chart title</td>
<td>Size of the chart title in pixels.</td>
</tr>
<tr>
<td></td>
<td>This field appears when <strong>Report only</strong> or <strong>Always</strong> is selected from the</td>
</tr>
<tr>
<td></td>
<td><strong>Show chart title</strong> list.</td>
</tr>
<tr>
<td>Chart title color</td>
<td>Color of the chart title.</td>
</tr>
<tr>
<td></td>
<td>This field appears when <strong>Report only</strong> or <strong>Always</strong> is selected from the</td>
</tr>
<tr>
<td></td>
<td><strong>Show chart title</strong> list.</td>
</tr>
<tr>
<td>Custom chart title position</td>
<td>Check box to specify X and Y coordinates for the position of the chart title.</td>
</tr>
<tr>
<td></td>
<td>This field appears when <strong>Report only</strong> or <strong>Always</strong> is selected from the</td>
</tr>
<tr>
<td></td>
<td><strong>Show chart title</strong> list.</td>
</tr>
<tr>
<td>Title horizontal alignment</td>
<td>How the chart title is aligned horizontally.</td>
</tr>
<tr>
<td></td>
<td>This field is available when <strong>Custom chart title position</strong> is cleared.</td>
</tr>
<tr>
<td>Title vertical alignment</td>
<td>How the chart title is aligned vertically.</td>
</tr>
<tr>
<td></td>
<td>This field appears when <strong>Custom chart title position</strong> is cleared.</td>
</tr>
<tr>
<td>Chart title X position</td>
<td>Number of pixels to adjust the chart title position right or left.</td>
</tr>
<tr>
<td></td>
<td>By default the title appears at the center top of the chart. To move the</td>
</tr>
<tr>
<td></td>
<td>chart title to the right, enter a positive value. To move the title to</td>
</tr>
<tr>
<td></td>
<td>the left, enter a negative value.</td>
</tr>
<tr>
<td></td>
<td>This field appears only when <strong>Custom chart title position</strong> is selected.</td>
</tr>
<tr>
<td>Chart title Y position</td>
<td>Number of pixels to adjust the chart title position up or down.</td>
</tr>
<tr>
<td></td>
<td>By default the title appears at the center top of the chart. To move up</td>
</tr>
<tr>
<td></td>
<td>the chart title, enter a positive value. To move the chart title down,</td>
</tr>
<tr>
<td></td>
<td>enter a negative value.</td>
</tr>
<tr>
<td></td>
<td>This field appears only when <strong>Custom chart title position</strong> is selected.</td>
</tr>
<tr>
<td>Axis</td>
<td>Y axis and X axis</td>
</tr>
<tr>
<td></td>
<td>Axis for which you want to configure the titles, appearance, and labels.</td>
</tr>
<tr>
<td>Title</td>
<td>Title for the axis.</td>
</tr>
<tr>
<td>Field</td>
<td>Description</td>
</tr>
<tr>
<td>---------------------</td>
<td>-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------</td>
</tr>
<tr>
<td>Title size</td>
<td>Size of the axis title in pixels. Default value is 12.</td>
</tr>
<tr>
<td>Title bold</td>
<td>Check this box to show the axis title in a bold typeface.</td>
</tr>
<tr>
<td>Opposite</td>
<td>On the <strong>X axis</strong> tab, select this check box to show the X-axis title on the right side of the report instead. On the <strong>Y axis</strong> tab, select this check box to show the Y-axis title on top of the report instead of across the bottom.</td>
</tr>
<tr>
<td>Display grid</td>
<td>On the <strong>X axis</strong> tab, select this check box to show horizontal grid lines on the report. On the <strong>Y axis</strong> tab, select this check box to show vertical grid lines on top the report.</td>
</tr>
<tr>
<td>Grid dotted</td>
<td>Check this box to show dotted grid lines instead of solid lines.</td>
</tr>
<tr>
<td>From</td>
<td>Specify a minimum Y-axis value to limit the amount of information in the report. If you select an aggregation field that is not of the type <strong>Number</strong>, the <strong>From</strong> and <strong>To</strong> fields are not available.</td>
</tr>
<tr>
<td></td>
<td><strong>Note:</strong> Depending on configured <strong>Highcharts</strong> settings, the minimum value may be rounded up or down. If you require the settings that affect this changed, contact the administrator.</td>
</tr>
<tr>
<td>To</td>
<td>Specify a maximum Y-axis value to limit the amount of information in the report. If you select an aggregation field that is not of the type <strong>Number</strong>, the <strong>From</strong> and <strong>To</strong> fields are not available.</td>
</tr>
<tr>
<td></td>
<td><strong>Note:</strong> Depending on configured <strong>Highcharts</strong> settings, the maximum value may be rounded up or down. If you require the settings that affect this changed, contact the administrator.</td>
</tr>
<tr>
<td>X axis / Y axis label size</td>
<td>On the <strong>X axis</strong> tab, specify the size of the labels for the rows of the report. On the <strong>Y axis</strong> tab, specify the size of the labels for the columns in the report.</td>
</tr>
<tr>
<td>Label bold</td>
<td>Check this box to show the labels of the report in a bold typeface.</td>
</tr>
</tbody>
</table>

**Create a bar report in the Report Builder**

Create a bar report that compares two or more values.

Create a bar report in the Report Builder
Create a bar report that compares two or more values.
Role required: itil, report_group, report_global, report_admin, or admin. To create a meaningful report, you must have the right to access the data you want to report on.

This task refers to using the Report Builder (Classic UI) in the Kingston release under UI15 and UI16. If you are using the Report Designer, see Create a bar report in the Report Designer.

1. Navigate to Reports > Create New.
2. Fill in the fields, as appropriate.

<table>
<thead>
<tr>
<th>Field</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Name</td>
<td>Enter a unique and descriptive name for your report.</td>
</tr>
<tr>
<td>Description</td>
<td>Click the information icon ( ) to enter a more detailed description of what the report does and its purpose.</td>
</tr>
<tr>
<td>Field</td>
<td>Description</td>
</tr>
<tr>
<td>-------------</td>
<td>-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------</td>
</tr>
<tr>
<td>Data</td>
<td>Specify the table or report source containing the data set that you want to include in the report. From the first choice list, select the <strong>Table or Report source</strong>. Then select the specific table or predefined data set from the second choice list.</td>
</tr>
<tr>
<td><strong>Note:</strong></td>
<td>If you select a data source used by existing reports, a notification will display prompting you to view them.</td>
</tr>
<tr>
<td>Type</td>
<td>Select <strong>Bar</strong> or <strong>Horizontal bar</strong>.</td>
</tr>
<tr>
<td>Style your chart</td>
<td>Click the gear icon (⚙️) after the <strong>Type</strong> field to configure the <strong>style options</strong> for the look of your report.</td>
</tr>
<tr>
<td>Group by</td>
<td>Select a field to organize data into groups from the selected table. In an incident report grouped by <strong>Assignment group</strong>, all incidents belonging to Software, Service Desk, Network, and so on, are placed in separate groups. Make sure that you give the report a name that reflects the field you select.</td>
</tr>
<tr>
<td><strong>Note:</strong></td>
<td>It is not possible to group or stack reports by the <strong>Tags</strong> field.</td>
</tr>
<tr>
<td>Stacked by</td>
<td>Select the field used to show the relationship of individual items from the selected field to the whole.</td>
</tr>
<tr>
<td><strong>Note:</strong></td>
<td>It is not possible to group or stack reports by the <strong>Tags</strong> field.</td>
</tr>
</tbody>
</table>

For example, you might create a bar report of incidents by Category and stack by Priority, enabling a manager to determine at a glance the proportion of high, medium, and low priority issues for each category. Select stacked fields carefully to avoid cluttering the report. In some cases, it is a better practice to create another report to show these relationships rather than stack too much data. Bar reports display a legend only when a stacked field is selected. Boolean, reference, and choice lists can be used as stacked fields. Date, date/time, integer, long, string, and text fields cannot be used as stacked fields. Date types are not allowed starting with the introduction of the Report Charting v2 plugin.

You can choose to display the stacked field either in a single column or as a group of columns.

If you select a **Grouped by** field on the report form, you can choose to visualize the bars as Grouped columns. This means that bars are displayed next to one another per the Group by field (for example, the state of the incident), instead of stacked.
<table>
<thead>
<tr>
<th>Field</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Display Grid</td>
<td>Select this check box to display details of the report data in a table below the chart. All reports that use charts, including reports that are used on homepages, display a table of report data when the glide.ui.section508 system property is set to true, even if Display Grid is cleared.</td>
</tr>
<tr>
<td>Aggregation</td>
<td>Select a computational method for aggregating report data. The default is <strong>Count</strong>, which displays the number of records selected. If you select <strong>Count Distinct</strong>, only unique records are counted. For example, if you want to generate a report with a distinct number of users who have one or more of the roles in a given list of roles, these users would be counted twice unless you use count distinct. If you select <strong>Average</strong>, <strong>Sum</strong>, or <strong>Count Distinct</strong>, a list of fields from the selected Table appears. From this list, select a field to aggregate by. For example, if you select a duration field, such as the Business duration field on the Incident table, the aggregated data is expressed in days, hours, and minutes. If you select an integer field, such as the Priority field, the data is expressed as a number. <strong>Note:</strong> For duration values, the unit of measurement displayed in the aggregation axis cannot be customized.</td>
</tr>
</tbody>
</table>
| Percentages  | Select a computational method used for calculating percentages for each element (selected record) in a data set.  
- **Use Aggregation:** default method. Computes percentages for each element using the sum of all elements in the data set.  
- **Use Record Count:** computes percentages for each element using the total number (count) of elements in the data set.  
This field is available when Aggregation is set to Average, Sum, or Count Distinct. |
| No. groups   | Select the maximum number of bars that can be displayed in the chart. If the number of values from the selected data exceeds this limit, only the largest values are represented by the bars. By default, up to the 12 of the largest values from the selected data can be represented. Remaining values are grouped into an Other bar. If you select **Show all**, all bars up to a limit of 50 bars are displayed. The rest of the results are stacked on the Other bar. |
| Show Other   | Select this check box to display the Other bar for values that exceed the No. groups limit. |
Add Filter Condition

Click the filter icon to create conditions for filtering and ordering data. For example, you might create a condition that states Priority + less than + 3 – Moderate to have the report include only records with priorities of 2 – High and 1 – Critical.

Note: Applying a string filter with other filters to donut and bar charts is not supported.

Note: Keywords is a special field used for text searches across all fields. Its use in a filter or condition, in combination with other conditions, may return inconsistent results.

Add "OR" Clause

Select a second condition that must be met if the first condition is invalid. For example, select [Assignment Group] [is] [Database], to include records that are assigned to the Database group if the first condition is false. This field is only available after at least one filter condition has been created.

Add Sort

Select fields to sort data by. For example, to sort results from lowest to highest priority, select [Priority] [z to a]. For reports with Group by, Stack by, Row/Column or Trend by fields to configure, you can sort by fields that are not listed in the Group by, Stack by, Row/Column or Trend by options.

3. Click Save. The report is generated.

Add reports to homepages or dashboards, publish to the internet, schedule email distribution of PDFs or URLs of published reports, and share reports with others. See Distribute reports.

Bar report style options – Report Builder

Change the look of your bar report.

When you create or edit a report, click the gear icon (⚙️) after the Type field to open the Style your chart dialog box with options to configure the look of your chart. The options are organized under the General, Title, Legend, and Axis tabs. Chart options are automatically saved when you click Close. To see how the chart looks with the saved settings, click Save.

Chart style options

<table>
<thead>
<tr>
<th>Field</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>General</td>
<td></td>
</tr>
<tr>
<td>Chart color</td>
<td>If no group by or stack by is used, Use one color is automatically selected.</td>
</tr>
<tr>
<td></td>
<td>Select a single predefined system color.</td>
</tr>
<tr>
<td></td>
<td>If a group by or stack by is used, select one of the following options:</td>
</tr>
<tr>
<td></td>
<td>• Use color palette: Select a color palette from the predefined system color palettes.</td>
</tr>
<tr>
<td></td>
<td>• Use several colors: Define a custom set of Colors using hex codes. You can add any number of colors.</td>
</tr>
<tr>
<td></td>
<td>• Use chart colors: Use the colors defined in Reports &gt; Chart Colors.</td>
</tr>
<tr>
<td>Field</td>
<td>Description</td>
</tr>
<tr>
<td>---------------------</td>
<td>------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------</td>
</tr>
<tr>
<td>Display data labels</td>
<td>Select this check box to display the current value for each bar. This field is available when you select None from the Stacked by list.</td>
</tr>
<tr>
<td>Custom chart size</td>
<td>Select this check box to specify the chart's width and height in pixels.</td>
</tr>
<tr>
<td>Chart size</td>
<td>Select a chart size. This field is available when Custom chart size is cleared.</td>
</tr>
<tr>
<td>Drilldown View</td>
<td>Select a view that determines how detailed records are shown when a specific part of the chart is clicked. This option is available for all charts that have drill-down capabilities. If you select a view that has no fields in common to link to the table that the report is based on, the default view is used.</td>
</tr>
<tr>
<td>Field</td>
<td>Description</td>
</tr>
<tr>
<td>------------------</td>
<td>-------------</td>
</tr>
<tr>
<td>Decimal precision</td>
<td>Number of decimal places to show. You can show from zero to four decimal places. Default value: 2. To change the default value, create the system property glide.chart.decimal.precision and specify the value.</td>
</tr>
</tbody>
</table>

**Note:** Percentage labels do not change accordingly with the decimal precision specified.

![Chart Diagram]
<table>
<thead>
<tr>
<th>Field</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Show chart title</td>
<td>Select when the chart title is displayed.</td>
</tr>
<tr>
<td></td>
<td>• <strong>Never</strong>: never displays the chart title.</td>
</tr>
<tr>
<td></td>
<td>• <strong>Report only</strong>: displays the chart title on reports.</td>
</tr>
<tr>
<td></td>
<td>• <strong>Always</strong>: displays the chart title on reports, dashboards, and homepages.</td>
</tr>
<tr>
<td>Chart title</td>
<td>Enter a title for this chart. The title has a maximum length of 40 characters. If no title is entered, the report name is used for the title. This field is available when Report only or Always is selected from the Show chart title list.</td>
</tr>
<tr>
<td>Chart title size</td>
<td>Enter the size of the chart title in pixels. This field is available when Report only or Always is selected from the Show chart title list.</td>
</tr>
<tr>
<td>Chart title color</td>
<td>Select the color for the chart title. This field is available when Report only or Always is selected from the Show chart title list.</td>
</tr>
<tr>
<td>Custom chart title position</td>
<td>Select this check box to specify the X and Y coordinates for the position of the chart title.</td>
</tr>
<tr>
<td>Title horizontal alignment</td>
<td>Select how the chart title is aligned horizontally. This field is available when Custom chart title position is cleared.</td>
</tr>
<tr>
<td>Title vertical alignment</td>
<td>Select how the chart title is aligned vertically. This field is available when Custom chart title position is cleared.</td>
</tr>
<tr>
<td>Legend</td>
<td></td>
</tr>
<tr>
<td>Show legend</td>
<td>Select this check box to display the legend. This field is available when a Stacked by option is selected on the report form.</td>
</tr>
<tr>
<td>Legend horizontal alignment</td>
<td>Select how the legend is aligned horizontally. This field is available when Show legend is selected.</td>
</tr>
<tr>
<td>Legend vertical alignment</td>
<td>Select how the legend is aligned vertically. This field is available when Show legend is selected.</td>
</tr>
<tr>
<td>Left align legend text</td>
<td>Select to left-align the legend text. By default, legend text is centered.</td>
</tr>
<tr>
<td>Show legend border</td>
<td>Select this check box to display a border around the legend. This field is available when Show legend is selected.</td>
</tr>
<tr>
<td>Axis</td>
<td></td>
</tr>
<tr>
<td>Axis button</td>
<td>Configure the titles, appearance, and labels of the X and Y axis. For the Y axis, you can also specify a From and To range. If you select an aggregation field that is not of the type number, such as an average or a sum with a business duration, the From and To fields are not available.</td>
</tr>
</tbody>
</table>

**Box reports**

Box reports visualize the distribution of data including the maximum, minimum, quartiles, median, and mean.

Use box reports to report on multiple data sets from different sources that are related to each other.

For example, use a box chart to view the age range of all customers who attended a convention. The box chart helps you determine where most ages are grouped. With this information, you can
attempt to increase attendance levels at future events by targeting advertisements at the age groups that had lower attendance levels.

Box chart

A box chart displays the following information for each group of data:
Box chart scale

1. Sample maximum
2. Upper quartile
3. Median
4. Mean
5. Lower quartile
6. Sample minimum

**Note:** When accessibility is enabled, this visualization includes a report that screen readers can interpret. For more information, see *Enabling accessibility features*.

**Create a box report in the Report Designer**

Box reports enable you to show data organised by statistical averages.

*Create a box report in the Report Designer*

Create a box report to show the distribution of values in a data set.

Role required: itil, report_group, report_global, report_admin, or admin. To create a meaningful report, you must have the right to access the data you want to report on.

This task refers to Report Designer in the Kingston release. If you are using the Report Builder (Classic UI) in Kingston for creating reports, select the applicable report from *Creating reports* to see instructions. If you are using an earlier UI or the Classic UI for creating reports in an earlier release, follow the instructions in the Helsinki documentation: *Report types and creation details.*
1. Navigate to **Reports > Create New**.
2. On the **Data** tab, give the report a name that reflects the information being grouped.
3. Select the applicable source for the report:

<table>
<thead>
<tr>
<th>Option</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Data source</strong></td>
<td>A table with filters applied to provide a single source of information for all users.</td>
</tr>
<tr>
<td><strong>Note:</strong></td>
<td>If you select a data source used by existing reports, a notification displays prompting you to view them.</td>
</tr>
<tr>
<td><strong>Table</strong></td>
<td>The raw data from a table with no filters applied.</td>
</tr>
<tr>
<td><strong>External import</strong></td>
<td>Choose an existing imported report source, or click the Upload icon to import a new file. See <a href="#">Create a report from an imported Microsoft Excel document</a>.</td>
</tr>
</tbody>
</table>
MetricBase enables you to collect, retain, analyze, and visualize custom time series data on the Now Platform. For more information, see [MetricBase application](#).

4. Click **Next**.

5. On the **Type** tab, select **Box** in the Other section and click **Next**.

A preliminary version of the report is displayed. To view the updated report at any time, click **Run**.

6. On the **Configure** tab, fill in the following fields and click **Next**.

### Configure tab

<table>
<thead>
<tr>
<th>Field</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Group by</td>
<td>Group report data using the values of this field. For example, in an incident report grouped by <strong>Assignment group</strong>, all incidents that belong to Software, Service Desk, and Network are placed in separate groups.</td>
</tr>
<tr>
<td></td>
<td><img src="#" alt="Note:" /> It is not possible to group or stack reports by the Tags field.</td>
</tr>
<tr>
<td></td>
<td><img src="#" alt="Note:" /> Label names longer than 20 characters may show or print a truncated view.</td>
</tr>
<tr>
<td>Additional group by</td>
<td>Extra fields to group the report by. When you select Additional group by fields, a control is added to the bottom of the report that groups the report by any one of the additional fields.</td>
</tr>
<tr>
<td>Measured by</td>
<td>Field to use as a measurement for the data. Date and time fields are not supported for box charts.</td>
</tr>
<tr>
<td></td>
<td><img src="#" alt="Note:" /> It is not possible to group or stack reports by the Tags field.</td>
</tr>
</tbody>
</table>

7. Optional: Configure the sort order of the applicable fields in the report (column, row, Group by, Stack by or Trend by depending on the report type). Click the filter icon (🔗) and select **Add Sort**.

1. In the Sorting Order list, choose the field you want to sort on and then choose **a-z** or **z-a** for alphabetical order or reverse alphabetical order.

   The list contains all possible fields from the report's source. The only effective values, however, are the fields chosen for the current report (column, row, Group by, Stack by, or Trend by depending on the report type). Add sort cannot be applied to dot-walked fields.
2. Click 

   to configure additional sorting order conditions. (Click 

   to delete configured sorting order conditions.)

3. Click Save.

For fields of the type Choice list, the sort order is determined by the sequence of the choices in the choice list, not alphabetically or numerically. For example, a priority choice list is often indexed from Critical to Planning as shown in the following figure.
8. Optional: To limit the information displayed in the report, click the filter icon and select conditions to filter the report data. For more details on how conditions are constructed, see Condition builder.

**Note:** Keywords is a special field used for text searches across all fields. Its use in a filter or condition, in combination with other conditions, may return inconsistent results.

9. On the **Style** tab, fill in the fields as appropriate to configure the appearance of the report.

10. Click **Save**. The report is generated.

   - Click the Report info icon and add a description of the report.
   - Click the sharing icon to open the **Sharing** menu. On this menu, you can add the report to a dashboard, export the report to PDF, publish the report to the web, and set visibility and schedules. For more information, see Share a report ± Report Designer.

**Box report style options – Report Designer**

Configure the look of your box report.

When you create or edit a report, click the **Style** tab for options to configure the look of your report. The options are organized under two or more of the following tabs: **General**, **Title**, **Legend**, and **Axis**. To see how the report looks with the changed settings, click **Save**.

**Report style options**

<table>
<thead>
<tr>
<th>Field</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>General</strong></td>
<td>Check box to specify the width and height of the report in pixels.</td>
</tr>
<tr>
<td>Custom chart size</td>
<td>Width of the report in pixels. The default value is 600.</td>
</tr>
<tr>
<td></td>
<td>This field is available when <strong>Custom chart size</strong> is selected.</td>
</tr>
<tr>
<td></td>
<td><strong>Note:</strong> The chart size is ignored when you export the report to PDF. In PDFs, the full page width is used to show the chart.</td>
</tr>
<tr>
<td>Chart width</td>
<td>Height of the report in pixels. The default value is 450.</td>
</tr>
<tr>
<td></td>
<td>This field appears when <strong>Custom chart size</strong> is selected.</td>
</tr>
<tr>
<td>Field</td>
<td>Description</td>
</tr>
<tr>
<td>--------------</td>
<td>------------------------------------------------------------------------------</td>
</tr>
<tr>
<td>Chart size</td>
<td>Chart size. This field is available when <strong>Custom chart size</strong> is cleared. Options are <strong>Small</strong>, <strong>Medium</strong>, and <strong>Large</strong>. Note: The chart size is ignored when you export the report to PDF. In PDFs, the full page width is used to show the chart.</td>
</tr>
<tr>
<td>Field</td>
<td>Description</td>
</tr>
<tr>
<td>--------------------</td>
<td>-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------</td>
</tr>
<tr>
<td>Decimal precision</td>
<td>Number of decimal places to show. You can show from zero to four decimal places. Default value: 2. To change the default value, create the system property glide.chart.decimal.precision and specify the value.</td>
</tr>
</tbody>
</table>

**Note:** Percentage labels do not change accordingly with the decimal precision specified.
<table>
<thead>
<tr>
<th>Field</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Show chart title</td>
<td>When the chart title is shown for the report.</td>
</tr>
<tr>
<td></td>
<td>- Never: Never show the chart title.</td>
</tr>
<tr>
<td></td>
<td>- Report only: Shows the chart title on reports.</td>
</tr>
<tr>
<td></td>
<td>- Always: Shows the chart title on reports, dashboards, and homepages.</td>
</tr>
<tr>
<td>Chart title</td>
<td>The chart title has a maximum length of 40 characters. If no title is entered, the report name is used for the title. This field appears when Report only or Always is selected from the Show chart title list.</td>
</tr>
<tr>
<td>Size of the chart title</td>
<td>Size of the chart title in pixels. This field appears when Report only or Always is selected from the Show chart title list.</td>
</tr>
<tr>
<td>Chart title color</td>
<td>Color of the chart title. This field appears when Report only or Always is selected from the Show chart title list.</td>
</tr>
<tr>
<td>Custom chart title position</td>
<td>Check box to specify X and Y coordinates for the position of the chart title. This field appears when Report only or Always is selected from the Show chart title list.</td>
</tr>
<tr>
<td>Title horizontal alignment</td>
<td>How the chart title is aligned horizontally. This field is available when Custom chart title position is cleared.</td>
</tr>
<tr>
<td>Title vertical alignment</td>
<td>How the chart title is aligned vertically. This field appears when Custom chart title position is cleared.</td>
</tr>
<tr>
<td>Chart title X position</td>
<td>Number of pixels to adjust the chart title position right or left. By default the title appears at the center top of the chart. To move the chart title to the right, enter a positive value. To move the title to the left, enter a negative value. This field appears only when Custom chart title position is selected.</td>
</tr>
<tr>
<td>Chart title Y position</td>
<td>Number of pixels to adjust the chart title position up or down. By default the title appears at the center top of the chart. To move up the chart title, enter a positive value. To move the chart title down, enter a negative value. This field appears only when Custom chart title position is selected.</td>
</tr>
<tr>
<td>Axis</td>
<td>Y axis and X axis Axis for which you want to configure the titles, appearance, and labels.</td>
</tr>
<tr>
<td>Title</td>
<td>Title for the axis.</td>
</tr>
</tbody>
</table>

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<table>
<thead>
<tr>
<th>Field</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Title size</td>
<td>Size of the axis title in pixels. Default value is 12.</td>
</tr>
<tr>
<td>Title bold</td>
<td>Check this box to show the axis title in a bold typeface.</td>
</tr>
<tr>
<td>Opposite</td>
<td>On the X axis tab, select this check box to show the X-axis title on the right side of the report instead. On the Y axis tab, select this check box to show the Y-axis title on top of the report instead of across the bottom.</td>
</tr>
<tr>
<td>Display grid</td>
<td>On the X axis tab, select this check box to show horizontal grid lines on the report. On the Y axis tab, select this check box to show vertical grid lines on top of the report.</td>
</tr>
<tr>
<td>Grid dotted</td>
<td>Check this box to show dotted grid lines instead of solid lines.</td>
</tr>
<tr>
<td>From</td>
<td>Specify a minimum Y-axis value to limit the amount of information in the report. If you select an aggregation field that is not of the type Number, the From and To fields are not available.</td>
</tr>
<tr>
<td>Note:</td>
<td>Depending on configured Highcharts settings, the minimum value may be rounded up or down. If you require the settings that affect this changed, contact the administrator.</td>
</tr>
<tr>
<td>To</td>
<td>Specify a maximum Y-axis value to limit the amount of information in the report. If you select an aggregation field that is not of the type Number, the From and To fields are not available.</td>
</tr>
<tr>
<td>Note:</td>
<td>Depending on configured Highcharts settings, the maximum value may be rounded up or down. If you require the settings that affect this changed, contact the administrator.</td>
</tr>
<tr>
<td>X axis / Y axis label size</td>
<td>On the X axis tab, specify the size of the labels for the rows of the report. On the Y axis tab, specify the size of the labels for the columns in the report.</td>
</tr>
<tr>
<td>Label bold</td>
<td>Check this box to show the labels of the report in a bold typeface.</td>
</tr>
</tbody>
</table>

Create a box report in the Report Builder

Box reports enable you to show data organised by statistical averages. Create a box report in the Report Builder. Create a box report to show the distribution of values in a data set.
Role required: itil, report_group, report_global, report_admin, or admin. To create a meaningful report, you must have the right to access the data you want to report on.

This task refers to using the Report Builder (Classic UI) in the Kingston release under UI15 and UI16. If you are using the Report Designer, see Create a box report in the Report Designer.

1. Navigate to Reports > Create New.
2. Fill in the fields, as appropriate.

Box Charts Creating Reports

<table>
<thead>
<tr>
<th>Field</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Name</td>
<td>Enter a unique and descriptive name for your report.</td>
</tr>
<tr>
<td>Description</td>
<td>Click the information icon to enter a more detailed description of what the report does and its purpose.</td>
</tr>
<tr>
<td>Field</td>
<td>Description</td>
</tr>
<tr>
<td>-------------------</td>
<td>---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------</td>
</tr>
<tr>
<td>Data</td>
<td>Specify the table or report source containing the data set that you want to include in the report. From the first choice list, select <strong>Table</strong> or <strong>Report source</strong>. Then select the specific table or predefined data set from the second choice list.</td>
</tr>
<tr>
<td><strong>Note:</strong></td>
<td>If you select a data source used by existing reports, a notification will display prompting you to view them.</td>
</tr>
<tr>
<td>Type</td>
<td>Select <strong>Box</strong>. Alternatively, click the question mark icon to use the report type selector.</td>
</tr>
<tr>
<td>Style your chart</td>
<td>Click the gear icon after the <strong>Type</strong> field and configure the chart style options to edit the layout and look of your chart.</td>
</tr>
<tr>
<td>Group by</td>
<td>Select a field to organize data into groups from the selected table. In an incident report grouped by <strong>Assignment group</strong>, all incidents belonging to Software, Service Desk, Network, and so on, are placed in separate groups. Make sure that you give the report a name that reflects the field you select.</td>
</tr>
<tr>
<td><strong>Note:</strong></td>
<td>It is not possible to group or stack reports by the <strong>Tags</strong> field.</td>
</tr>
<tr>
<td><strong>Note:</strong></td>
<td>Label names longer than 20 characters may show or print a truncated view.</td>
</tr>
<tr>
<td>Measured by</td>
<td>Select a field to use as a measurement for the data. Date and time fields are not supported for box charts.</td>
</tr>
<tr>
<td>Add Filter Condition</td>
<td>Click the filter icon to create conditions for filtering and ordering data. For example, you might create a condition that states <strong>Priority + less than + 3 – Moderate</strong> to have the report include only records with priorities of <strong>2 – High</strong> and <strong>1 – Critical</strong>.</td>
</tr>
<tr>
<td><strong>Note:</strong></td>
<td>Keywords is a special field used for text searches across all fields. It’s use in a filter or condition, in combination with other conditions, may return inconsistent results.</td>
</tr>
<tr>
<td>Add &quot;OR&quot; Clause</td>
<td>Select a second condition that must be met if the first condition is invalid. For example, select <strong>(Assignment Group) is (Database)</strong>, to include records that are assigned to the Database group if the first condition is false.</td>
</tr>
</tbody>
</table>
### Field Description

Add Sort
Select fields to sort data by. For example, to sort results from lowest to highest priority, select **(Priority) (z to a)**. For reports with Group by, Stack by, Row/Column or Trend by fields to configure, you can sort by fields that are not listed in the Group by, Stack by, Row/Column or Trend by options.

3. **Click** **Save** or **Insert**.

Add reports to homepages or dashboards, publish to the internet, schedule email distribution of PDFs or URLs of published reports, and share reports with others. See **Distribute reports**.

**Box report style options – Report Builder**

Change the look of your box report.

When you create or edit a report, click the gear icon (⚙️) after the **Type** field to open the **Style your chart** dialog box with options to configure the look of your chart. Chart options are automatically saved when you click **Close**. To see how the chart looks with the saved settings, click **Save**.

### Chart style options

<table>
<thead>
<tr>
<th>Field</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>General</td>
<td></td>
</tr>
<tr>
<td>Custom chart size</td>
<td>Select this check box to specify the chart’s width and height in pixels.</td>
</tr>
<tr>
<td>Chart size</td>
<td>Select a chart size. This field is available when <strong>Custom chart size</strong> is cleared.</td>
</tr>
<tr>
<td>Field</td>
<td>Description</td>
</tr>
<tr>
<td>--------------------</td>
<td>------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------</td>
</tr>
<tr>
<td>Decimal precision</td>
<td>Number of decimal places to show. You can show from zero to four decimal places. Default value: 2. To change the default value, create the system property glide.chart.decimal.precision and specify the value.</td>
</tr>
</tbody>
</table>

**Note:** Percentage labels do not change accordingly with the decimal precision specified.

![Chart showing reassignment count](chart.png)
### Field Description

<table>
<thead>
<tr>
<th>Field</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Show chart title</td>
<td>Select when the chart title is displayed.</td>
</tr>
<tr>
<td></td>
<td>- <strong>Never</strong>: never displays the chart title.</td>
</tr>
<tr>
<td></td>
<td>- <strong>Report only</strong>: displays the chart title on reports.</td>
</tr>
<tr>
<td></td>
<td>- <strong>Always</strong>: displays the chart title on reports, and dashboards and homepage.</td>
</tr>
<tr>
<td>Chart title</td>
<td>Enter a title for this chart. The title has a maximum length of 40 characters. If no title is entered, the report name is used for the title.</td>
</tr>
<tr>
<td>Chart title size</td>
<td>Enter the size of the chart title in pixels. This field is available when <strong>Report only</strong> or <strong>Always</strong> is selected from the <strong>Show chart title</strong> list.</td>
</tr>
<tr>
<td>Chart title color</td>
<td>Select the color for the chart title. This field is available when <strong>Report only</strong> or <strong>Always</strong> is selected from the <strong>Show chart title</strong> list.</td>
</tr>
<tr>
<td>Custom chart title position</td>
<td>Select this check box to specify the X and Y coordinates for the position of the chart title. This field is available when <strong>Report only</strong> or <strong>Always</strong> is selected from the <strong>Show chart title</strong> list.</td>
</tr>
<tr>
<td>Title horizontal alignment</td>
<td>Select how the chart title is aligned horizontally. This field is available when <strong>Custom chart title position</strong> is cleared.</td>
</tr>
<tr>
<td>Title vertical alignment</td>
<td>Select how the chart title is aligned vertically. This field is available when <strong>Custom chart title position</strong> is cleared.</td>
</tr>
<tr>
<td>Axis button</td>
<td>Configure the titles, appearance, and labels of the X and Y axis. For the Y axis, you can also specify a <strong>From</strong> and <strong>To</strong> range.</td>
</tr>
</tbody>
</table>

### Bubble reports

Bubble reports plot data points on X and Y axes and use a third aggregate dimension to define bubble size.

Bubble reports can use numeric values to define the X and Y axes, and an aggregate value to determine the size of each bubble.

**Note:** When accessibility is enabled, this visualization includes a report that screen readers can interpret. For more information, see [Enabling accessibility features](#).

For example, when using Demand Management you can create a bubble report on the Demand table to compare risk and reward for various demands. Each bubble represents one demand. The risk and financial return determine the position of each bubble, while the total financial benefit for the demand determines the bubble size. You can quickly identify demands with low risk and high reward using the large bubbles in the top left of the report.
Create a bubble report in the Report Designer

Create a bubble report to aggregate information over three different metrics, using the X axis, Y axis, and bubble size.

Create a bubble report in the Report Designer
Create a bubble chart to display multiple separate metrics on a chart.
Role required: itil, report_group, report_global, report_admin, or admin. To create a meaningful report, you must have the right to access the data you want to report on.

This task refers to Report Designer in the Kingston release. If you are using the Report Builder (Classic UI) in Kingston for creating reports, select the applicable report from Creating reports to see instructions. If you are using an earlier UI or the Classic UI for creating reports in an earlier release, follow the instructions in the Helsinki documentation: Report types and creation details.

1. Navigate to Reports > Create New.
2. On the Data tab, give the report a name that reflects the information being grouped.
3. Select the applicable source for the report:

<table>
<thead>
<tr>
<th>Option</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Data source</td>
<td>A table with filters applied to provide a single source of information for all users.</td>
</tr>
<tr>
<td>Note:</td>
<td>If you select a data source used by existing reports, a notification displays prompting you to view them.</td>
</tr>
<tr>
<td>Table</td>
<td>The raw data from a table with no filters applied.</td>
</tr>
<tr>
<td>Option</td>
<td>Description</td>
</tr>
<tr>
<td>-----------------</td>
<td>-----------------------------------------------------------------------------</td>
</tr>
<tr>
<td>External Import</td>
<td>Choose an existing imported report source, or click the Upload icon to import a new file. See Create a report from an imported Microsoft Excel document.</td>
</tr>
<tr>
<td>MetricBase</td>
<td>MetricBase enables you to collect, retain, analyze, and visualize custom time series data on the Now Platform. For more information, see MetricBase application.</td>
</tr>
</tbody>
</table>

4. Click Next.
5. On the Type tab, select Bubble in the Multidimensional reports section and click Next.

A preliminary version of the report is displayed. To view the updated report at any time, click Run.
6. On the Configure tab, fill in the following fields and click Next.

**Configure tab**

<table>
<thead>
<tr>
<th>Field</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Group by</td>
<td>Field to group data by. Each value is represented by a unique bubble color on the chart. Note: It is not possible to group or stack reports by the Tags field.</td>
</tr>
<tr>
<td>Additional group by</td>
<td>Extra fields to group the report by. When you select Additional group by fields, a control is added to the bottom of the report that groups the report by any one of the additional fields. Note: It is not possible to group or stack reports by the Tags field.</td>
</tr>
<tr>
<td>Row</td>
<td>Numeric field to use as the Y axis.</td>
</tr>
<tr>
<td>Column</td>
<td>Numeric field to use as the X axis.</td>
</tr>
<tr>
<td>Field</td>
<td>Description</td>
</tr>
<tr>
<td>--------------</td>
<td>---------------------------------------------------------------------------------------------------------------------------------------------</td>
</tr>
<tr>
<td>Aggregation</td>
<td>Mathematical calculation to perform on the data. The default is <strong>Count</strong>, which shows the number of records selected.</td>
</tr>
<tr>
<td></td>
<td>To show only unique records, select <strong>Count Distinct</strong>. For example, if you want a report on the distinct number of users who have one or more of the roles in a given list of roles. Users with more than one role would be counted twice unless you use <strong>Count Distinct</strong>.</td>
</tr>
<tr>
<td></td>
<td>Select <strong>Average</strong>, <strong>Sum</strong>, or <strong>Count Distinct</strong>, to show a list of fields from the selected <strong>Table</strong>. Select a field to <strong>Aggregate by</strong> from this list. For example, if you select a duration field, such as <strong>Business duration</strong> on the Incident table, the aggregated data is expressed in days, hours, and minutes. If you select an integer field, such as <strong>Priority</strong>, the data is expressed as a decimal value number.</td>
</tr>
</tbody>
</table>

If you choose **Sum** or **Average**, select **Show related fields** to aggregate on dot-walked fields. See **Selecting fields on related tables using dot-walking**.

**Note:** For duration values, the unit of measurement displayed in the aggregation axis cannot be customized.

7. Optional: Configure the sort order of the applicable fields in the report (column, row, Group by, Stack by or Trend by depending on the report type). Click the filter icon and select **Add Sort**.

   1. In the Sorting Order list, choose the field you want to sort on and then choose **a-z** or **z-a** for alphabetical order or reverse alphabetical order.

      The list contains all possible fields from the report's source. The only effective values, however, are the fields chosen for the current report (column, row, Group by, Stack by, or Trend by depending on the report type). Add sort cannot be applied to dot-walked fields.

   2. Click to configure additional sorting order conditions. (Click to delete configured sorting order conditions.)

   3. Click **Save**.

For fields of the type Choice list, the sort order is determined by the sequence of the choices in the choice list, not alphabetically or numerically. For example, a priority
8. Optional: To limit the information displayed in the report, click the filter icon and select conditions to filter the report data. For more details on how conditions are constructed, see Condition builder.

**Note:** Keywords is a special field used for text searches across all fields. Its use in a filter or condition, in combination with other conditions, may return inconsistent results.

9. On the **Style** tab, fill in the fields as appropriate to configure the appearance of the report.
10. Click **Save**. The report is generated.
• Click the Report info icon

and add a description of the report.

• Click the sharing icon

 to open the Sharing menu. On this menu, you can add the report to a dashboard, export the report to PDF, publish the report to the web, and set visibility and schedules. For more information, see Share a report – Report Designer.

---

_Bubble report style options - Report Designer_

Change the look of your bubble report.

When you create or edit a report, click the **Style** tab for options to configure the look of your report. The options are organized under two or more of the following tabs: **General**, **Title**, **Legend**, and **Axis**. To see how the report looks with the changed settings, click **Save**.

---

### Bubble report style options

<table>
<thead>
<tr>
<th>Field</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>General</td>
<td></td>
</tr>
<tr>
<td>Custom chart size</td>
<td>Check box to specify the width and height of the report in pixels.</td>
</tr>
<tr>
<td>Note:</td>
<td>The chart size is ignored when you export the report to PDF. In PDFs, the full page width is used to show the chart.</td>
</tr>
<tr>
<td>Chart width</td>
<td>Width of the report in pixels. The default value is 600.</td>
</tr>
<tr>
<td></td>
<td>This field is available when <strong>Custom chart size</strong> is selected.</td>
</tr>
<tr>
<td>Chart height</td>
<td>Height of the report in pixels. The default value is 450.</td>
</tr>
<tr>
<td></td>
<td>This field appears when <strong>Custom chart size</strong> is selected.</td>
</tr>
<tr>
<td>Chart size</td>
<td>Chart size. This field is available when <strong>Custom chart size</strong> is cleared. Options are Small, Medium, and Large.</td>
</tr>
<tr>
<td>Note:</td>
<td>The chart size is ignored when you export the report to PDF. In PDFs, the full page width is used to show the chart.</td>
</tr>
<tr>
<td>Field</td>
<td>Description</td>
</tr>
<tr>
<td>---------------------</td>
<td>-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------</td>
</tr>
<tr>
<td>Drilldown view</td>
<td>List view to show when a user selects a segment of a report for which no drilldown report type is specified. This view is also used when the user reaches the lowest drilldown level of a report. See Configure the list layout. If you specify a Report drilldown, Drilldown view is ignored.</td>
</tr>
</tbody>
</table>

**Note:** All users are able to view report visualizations, such as pie charts and column reports. However, the last level of a report drilldown is always a list. Platform access control lists determine user access to list information. Users who do not have rights to any part of the list data see the message “Number of rows removed from this list by Security constraints:” followed by the number. See Access control rules.

For more information, see Define a report drilldown in the Report Designer.
<table>
<thead>
<tr>
<th>Field</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Decimal precision</td>
<td>Number of decimal places to show. You can show from zero to four decimal places. Default value: 2. To change the default value, create the system property glide.chart.decimal.precision and specify the value.</td>
</tr>
</tbody>
</table>

**Note:** Percentage labels do not change accordingly with the decimal precision specified.
<table>
<thead>
<tr>
<th>Field</th>
<th>Description</th>
</tr>
</thead>
</table>
| Show chart title              | When the chart title is shown for the report.  
  - **Never**: Never show the chart title.  
  - **Report only**: Shows the chart title on reports.  
  - **Always**: Shows the chart title on reports, dashboards, and homepages. |
| Chart title                   | The chart title has a maximum length of 40 characters. If no title is entered, the report name is used for the title. This field appears when **Report only** or **Always** is selected from the **Show chart title** list. |
| Size of the chart title       | Size of the chart title in pixels. This field appears when **Report only** or **Always** is selected from the **Show chart title** list. |
| Chart title color             | Color of the chart title. This field appears when **Report only** or **Always** is selected from the **Show chart title** list. |
| Custom chart title position   | Check box to specify X and Y coordinates for the position of the chart title. This field appears when **Report only** or **Always** is selected from the **Show chart title** list. |
| Title horizontal alignment    | How the chart title is aligned horizontally. This field is available when **Custom chart title position** is cleared. |
| Title vertical alignment      | How the chart title is aligned vertically. This field appears when **Custom chart title position** is cleared. |
| Chart title X position        | Number of pixels to adjust the chart title position right or left. By default the title appears at the center top of the chart. To move the chart title to the right, enter a positive value. To move the title to the left, enter a negative value.  
  This field appears only when **Custom chart title position** is selected. |
| Chart title Y position        | Number of pixels to adjust the chart title position up or down. By default the title appears at the center top of the chart. To move up the chart title, enter a positive value. To move the chart title down, enter a negative value.  
  This field appears only when **Custom chart title position** is selected. |
<p>| Legend                        | Check box to show a chart legend. This check box appears when a <strong>Group by</strong> field is selected on the report form. |</p>
<table>
<thead>
<tr>
<th>Field</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Legend horizontal alignment</td>
<td>How the legend is aligned horizontally. This field appears when Show legend is selected.</td>
</tr>
<tr>
<td>Legend vertical alignment</td>
<td>How the legend is aligned vertically. This field appears when Show legend is selected.</td>
</tr>
<tr>
<td>Show legend border</td>
<td>Check box to show a border around the legend. This check box appears when Show legend is selected.</td>
</tr>
<tr>
<td>Left align legend text</td>
<td>Check box to left-align the legend text when the report is viewed in a browser. By default, the legend text is centered. When the report is exported to PDF, PNG, or JPG, the legend remains centered. This check box appears when Show legend is selected.</td>
</tr>
</tbody>
</table>

Create a bubble report in the Report Builder

Create a bubble report to aggregate information over three different metrics, using the X axis, Y axis, and bubble size.

Create a bubble report in the Report Builder
Create a bubble report to display multiple separate metrics on a chart.

Role required: itil, report_group, report_global, report_admin, or admin. To create a meaningful report, you must have the right to access the data you want to report on. This task refers to using the Report Builder (Classic UI) in the Kingston release under UI15 and UI16. If you are using the Report Designer, see Create a bubble report in the Report Designer.
1. Navigate to Reports > Create New.
2. Fill in the fields, as appropriate (see table).

### Fields

<table>
<thead>
<tr>
<th>Field</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Data</td>
<td>Specify the table or report source containing the data set that you want to include in the report. From the first choice list, select Table or Report source. Then select the specific table or predefined data set from the second choice list.</td>
</tr>
<tr>
<td>Note:</td>
<td>If you select a data source used by existing reports, a notification will display prompting you to view them.</td>
</tr>
<tr>
<td>Type</td>
<td>Select Bubble.</td>
</tr>
<tr>
<td>Style your chart</td>
<td>Click the gear icon (⚙️) after the Type field to configure the bubble report style options for the look and layout of the chart.</td>
</tr>
<tr>
<td>Field</td>
<td>Description</td>
</tr>
<tr>
<td>-------------</td>
<td>---------------------------------------------------------------------------------------------------------------------------------------------</td>
</tr>
<tr>
<td>Group by</td>
<td>Select a field to group data by. Each value is represented by a unique bubble color on the chart.</td>
</tr>
<tr>
<td></td>
<td><strong>Note:</strong> It is not possible to group or stack reports by the Tags field.</td>
</tr>
<tr>
<td>Row</td>
<td>Select a numeric field to use as the chart Y axis.</td>
</tr>
<tr>
<td>Columns</td>
<td>Select a numeric field to use as the chart X axis.</td>
</tr>
<tr>
<td>Aggregation</td>
<td>Select a computational method for aggregating report data. The size of each bubble depends on the aggregate value. The default is <strong>Count</strong>, which displays the number of records selected.</td>
</tr>
<tr>
<td></td>
<td>If you select <strong>Count Distinct</strong>, only unique records are counted. For example, if you want to generate a report with a distinct number of users who have one or more of the roles in a given list of roles, these users would be counted twice unless you use count distinct.</td>
</tr>
<tr>
<td></td>
<td>If you select <strong>Average</strong>, <strong>Sum</strong>, or <strong>Count Distinct</strong>, this displays an additional list of fields from the selected <strong>Table</strong>. From this list, select a field to aggregate by. For example, if you select a duration field, such as the <strong>Business duration</strong> field on the Incident table, the aggregated data is expressed in days, hours, and minutes. If you select an integer field, such as the <strong>Priority</strong> field, the data is expressed as a number. If a value in a column being aggregated has a comma, the value will be separated by the comma, and the aggregation will not be performed accurately.</td>
</tr>
<tr>
<td></td>
<td><strong>Note:</strong> For duration values, the unit of measurement displayed in the aggregation axis cannot be customized.</td>
</tr>
<tr>
<td>Add Filter Condition</td>
<td>Click the filter icon to create conditions for filtering and ordering data. For example, you might create a condition that states <strong>Priority + less than + 3 ± Moderate</strong> to have the report include only records with priorities of <strong>2 – High</strong> and <strong>1 – Critical</strong>.</td>
</tr>
<tr>
<td></td>
<td><strong>Note:</strong> Keywords is a special field used for text searches across all fields. It’s use in a filter or condition, in combination with other conditions, may return inconsistent results.</td>
</tr>
<tr>
<td>Add ‘OR’ Clause</td>
<td>Select a second condition that must be met if the first condition is invalid. For example, select <strong>(Assignment Group) (is) (Database)</strong>, to include records that are assigned to the Database group, if the first condition is false.</td>
</tr>
<tr>
<td>Add Sort</td>
<td>Select fields to sort data by. For example, to sort results from lowest to highest priority, select <strong>(Priority) (z to a)</strong>. For reports with Group by, Stack by, Row/Column or Trend by fields to configure, you can sort by fields that are not listed in the Group by, Stack by, Row/Column or Trend by options.</td>
</tr>
</tbody>
</table>

3. Click **Save**. The report is generated.
Add reports to homepages or dashboards, publish to the internet, schedule email distribution of PDFs or URLs of published reports, and share reports with others. See Distribute reports.

Bubble report style options – Report Builder

Change the look of your bubble report.

When you create or edit a report, click the gear icon (⚙️) after the Type field. Use the options in the Style your chart dialog box to configure the look of your chart. Chart options are automatically saved when you click Close. To see how the chart looks with the saved settings, click Save.

### Chart style options

<table>
<thead>
<tr>
<th>Field</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>General</strong></td>
<td></td>
</tr>
<tr>
<td>Custom chart size</td>
<td>Check box to specify the width and height of the report in pixels.</td>
</tr>
<tr>
<td>Note:</td>
<td>The chart size is ignored when you export the report to PDF. In PDFs, the full page width is used to show the chart.</td>
</tr>
<tr>
<td>Chart size</td>
<td>Chart size. This field is available when Custom chart size is cleared. Options are Small, Medium, and Large.</td>
</tr>
<tr>
<td>Note:</td>
<td>The chart size is ignored when you export the report to PDF. In PDFs, the full page width is used to show the chart.</td>
</tr>
<tr>
<td>Chart width</td>
<td>Width of the report in pixels. The default value is 600. This field is available when Custom chart size is selected.</td>
</tr>
<tr>
<td>Chart height</td>
<td>Height of the report in pixels. The default value is 450. This field appears when Custom chart size is selected.</td>
</tr>
<tr>
<td>Drilldown view</td>
<td>List view to show when a user selects a segment of a report for which no drilldown report type is specified. This view is also used when the user reaches the lowest drilldown level of a report. See Configure the list layout. If you specify a Report drilldown, Drilldown view is ignored.</td>
</tr>
<tr>
<td>Note:</td>
<td>All users are able to view report visualizations, such as pie charts and column reports. However, the last level of a report drilldown is always a list. Platform access control lists determine user access to list information. Users who do not have rights to any part of the list data see the message &quot;Number of rows removed from this list by Security constraints:&quot; followed by the number. See Access control rules.</td>
</tr>
<tr>
<td>Title</td>
<td></td>
</tr>
<tr>
<td>Field</td>
<td>Description</td>
</tr>
<tr>
<td>--------------------------------</td>
<td>--------------------------------------------------------------------------------------------------------------------------------------------</td>
</tr>
<tr>
<td>Show chart title</td>
<td>When the chart title is shown for the report.</td>
</tr>
<tr>
<td></td>
<td>• <strong>Never</strong>: Never show the chart title.</td>
</tr>
<tr>
<td></td>
<td>• <strong>Report only</strong>: Shows the chart title on reports.</td>
</tr>
<tr>
<td></td>
<td>• <strong>Always</strong>: Shows the chart title on reports, dashboards, and homepages.</td>
</tr>
<tr>
<td>Chart title</td>
<td>The chart title has a maximum length of 40 characters. If no title is entered, the report name is used for the title. This field appears when <strong>Report only</strong> or <strong>Always</strong> is selected from the <strong>Show chart title</strong> list.</td>
</tr>
<tr>
<td>Size of the chart title</td>
<td>Size of the chart title in pixels. This field appears when <strong>Report only</strong> or <strong>Always</strong> is selected from the <strong>Show chart title</strong> list.</td>
</tr>
<tr>
<td>Chart title color</td>
<td>Color of the chart title. This field appears when <strong>Report only</strong> or <strong>Always</strong> is selected from the <strong>Show chart title</strong> list.</td>
</tr>
<tr>
<td>Custom chart title position</td>
<td>Check box to specify X and Y coordinates for the position of the chart title. This field appears when <strong>Report only</strong> or <strong>Always</strong> is selected from the <strong>Show chart title</strong> list.</td>
</tr>
<tr>
<td>Title horizontal alignment</td>
<td>How the chart title is aligned horizontally. This field is available when <strong>Custom chart title position</strong> is cleared.</td>
</tr>
<tr>
<td>Title vertical alignment</td>
<td>How the chart title is aligned vertically. This field appears when <strong>Custom chart title position</strong> is cleared.</td>
</tr>
<tr>
<td>Chart title X position</td>
<td>Number of pixels to adjust the chart title position right or left. By default the title appears at the center top of the chart. To move the chart title to the right, enter a positive value. To move the title to the left, enter a negative value. This field appears only when <strong>Custom chart title position</strong> is selected.</td>
</tr>
<tr>
<td>Chart title Y position</td>
<td>Number of pixels to adjust the chart title position up or down. By default the title appears at the center top of the chart. To move up the chart title, enter a positive value. To move the chart title down, enter a negative value. This field appears only when <strong>Custom chart title position</strong> is selected.</td>
</tr>
</tbody>
</table>

**Calendar reports**

Calendar reports display date-driven events on a calendar.
Calendar report

You can highlight calendar events by relevant criteria such as priority, status, or escalation. Events that have no end date have a duration of one hour.

Limitations

- Calendar reports with an updated look-and-feel are not supported in Internet Explorer 8, which displays an older version of calendars.
- Events that started more than 30 days before the first day visible on a calendar are not displayed on the calendar. For example, if you select Year, then the calendar includes events that start between December 1 of the previous year and December 31 of the current year.
- To view more or fewer days, edit the `glide.report.calendar.max_days_back` property. See Reporting properties.
Note: Performance may degrade if this value is too large.

- This report type cannot be run as a scheduled report.

Create a calendar report in the Report Designer

Create a calendar report to show and highlight date-driven events.
Create a calendar report in the Report Designer
Create a calendar report to display date-driven events on a calendar.

Role required: itil, report_group, report_global, report_admin, or admin. To create a meaningful report, you must have the right to access the data you want to report on.

This task refers to Report Designer in the Kingston release. If you are using the Report Builder (Classic UI) in Kingston for creating reports, select the applicable report from Creating reports to see instructions. If you are using an earlier UI or the Classic UI for creating reports in an earlier release, follow the instructions in the Helsinki documentation: Report types and creation details.

1. Navigate to Reports > Create New.
2. On the Data tab, give the report a name that reflects the information being grouped.
3. Select the applicable source for the report:
### Option | Description
--- | ---
Data source | A table with filters applied to provide a single source of information for all users.

**Note:** If you select a data source used by existing reports, a notification displays prompting you to view them.

Table | The raw data from a table with no filters applied.

External import | Choose an existing imported report source, or click the Upload icon to import a new file. See [*Create a report from an imported Microsoft Excel document*](#).

MetricBase | MetricBase enables you to collect, retain, analyze, and visualize custom time series data on the Now Platform. For more information, see [*MetricBase application*](#).

4. Click **Next**.

5. On the **Type** tab, select **Calendar** in the **Other** section and click **Next**.

A preliminary version of the report is displayed. To view the updated report at any time, click **Run**.

6. On the **Configure** tab, fill in the following fields and click **Next**.

<table>
<thead>
<tr>
<th>Field</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Event to display</td>
<td>The date-driven event to display on the calendar. This list contains fields that are in the date/time format in the data source or source table.</td>
</tr>
</tbody>
</table>

7. Optional: To limit the information displayed in the report, click the filter icon and select conditions to filter the report data. For more details on how conditions are constructed, see [*Condition builder*](#).

**Note:** Keywords is a special field used for text searches across all fields. Its use in a filter or condition, in combination with other conditions, may return inconsistent results.

8. Click **Save**.

The report is generated.

**Note:** When there are more events on a date than fit in the calendar cell, a link is shown to view the additional events.
If there are more than thirty events, the cell shows + many. Click this link to show all the events in a list view for that date.

- To enter a description of the report, click the Report info icon.
- Click the sharing icon to open the Sharing menu. On this menu, you can share the report with users and groups, add the report to a dashboard, and publish the report to the web. See Share a report – Report Designer for more information.
- To export a calendar report to PDF:
  1. Click the sharing icon and select Publish.
  2. Click the link icon to copy the report link and open the link in a browser.
  3. Select Click to Print and choose PDF output from your printer options.
- Change highlighting of calendar report events.
- Configure how calendar entries look

Disable new calendar reports
To use the version of calendars from releases prior to Helsinki, disable the new calendar version. Reasons to use the old calendar include having scripts that are incompatible with the new calendar and preference for the style of the older calendar. The updated calendar is also not supported in Internet Explorer versions 7 and 8.

Role required: report_admin or admin

1. Navigate to Reports > Administration > Properties.
2. Add the glide.report.new_calendar system property, and set it to false.

See Reporting properties.
If this system property is set to true, it is supported only in the classic UI. Click **Switch to classic UI** in the report designer.

Create a calendar report in the Report Builder

Create a calendar report to show and highlight date-driven events.

Create a calendar report to display date-driven events on a calendar.

Role required: itil, report_group, report_global, report_admin, or admin. To create a meaningful report, you must have the right to access the data you want to report on.

This task refers to using the Report Builder (Classic UI) in the Kingston release under UI15 and UI16. If you are using the Report Designer, see *Create a calendar report in the Report Designer*.

1. Navigate to **Reports > Create New**.
2. Fill in the fields, as appropriate.

<table>
<thead>
<tr>
<th>Field</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Name</td>
<td>Enter a name for the report.</td>
</tr>
</tbody>
</table>
### ServiceNow Field Description

<table>
<thead>
<tr>
<th>Field</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td><img src="image1.png" alt="Icon" /></td>
<td>Click this icon to enter a report description. This description appears when users point to the question mark icon for the report when the report is on a dashboard in the edit mode.</td>
</tr>
</tbody>
</table>

| Data | Select the table or report source containing the data that you want to report on. |
| Type | Select Calendar. |
| Calendar by | Select the type of date-driven event to display on the calendar. For example, select **Planned end date** to view events on the date that they are scheduled to end. |

3. Click **Run** to view the calendar report, or click **Save** to save the report.

The report is generated.

**Note:** When there are more events on a date than fit in the calendar cell, a link is shown to view the additional events.

If there are more than thirty events, the cell shows + many. Click this link to show all the events in a list view for that date.

- To export a calendar report to PDF:
  1. Click the arrow next to the Save button and select **Publish**.
  2. Copy the link that displays above the report and open the link in a browser.
  3. Select **Click to Print** and choose PDF output from your printer options.

- **Change highlighting of calendar report events.**
- **Configure how calendar entries look**

**Disable new calendar reports**
To use the version of calendars from releases prior to Helsinki, disable the new calendar version. Reasons to use the old calendar include having scripts that are incompatible with the new calendar and preference for the style of the older calendar. The updated calendar is also not supported in Internet Explorer versions 7 and 8.
Role required: report_admin or admin

1. Navigate to Reports > Administration > Properties.
2. Add the glide.report.new_calendar system property, and set it to false.
   See Reporting properties.

Note:
If this system property is set to true, it is supported only in the classic UI. Click Switch to classic UI in the report designer.

Column reports

Column reports show how the value of one or more items changes over time by with columns.

Values along the horizontal axis of the column chart represent the time measurement (years, hours, minutes, milliseconds, and so on). Values on the vertical axis represent the changes to the items being monitored. Users with the report_admin role can define the ranges that are used in a column chart report. See Report ranges for information on creating report ranges.

For example, you can create a column chart for incident counts, to show how the number of incidents changes over time. The incident count often increases during the first few months after a product upgrade is deployed. Over time, the number of reported incidents decreases as users become more accustomed to the changes in the product.

The figure shows resolved incidents stacked by category with a legend that indicates which category the colors represent.
Stacked column chart

A grouped column chart shows the categories as individual bars, rather than stacked colors in a single bar.
Create a column report in the Report Designer

Create a column report to show how the values of data elements change over time.

Role required: itil, report_group, report_global, report_admin, or admin. To create a meaningful report, you must have the right to access the data you want to report on.
This task refers to Report Designer in the Kingston release. If you are using the Report Builder (Classic UI) in Kingston for creating reports, select the applicable report from Creating reports to see instructions. If you are using an earlier UI or the Classic UI for creating reports in an earlier release, follow the instructions in the Helsinki documentation: Report types and creation details.

1. Navigate to Reports > Create New.
2. On the Data tab, give the report a name that reflects the information being grouped.
3. Select the applicable source for the report:

<table>
<thead>
<tr>
<th>Option</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Data source</td>
<td>A table with filters applied to provide a single source of information for all users.</td>
</tr>
</tbody>
</table>

Note: If you select a data source used by existing reports, a notification displays prompting you to view them.

<p>| Table       | The raw data from a table with no filters applied.                           |</p>
<table>
<thead>
<tr>
<th>Option</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>External Import</td>
<td>Choose an existing imported report source, or click the Upload icon to import a new file. See <a href="#">Create a report from an imported Microsoft Excel document</a>.</td>
</tr>
<tr>
<td>MetricBase</td>
<td>MetricBase enables you to collect, retain, analyze, and visualize custom time series data on the Now Platform. For more information, see <a href="#">MetricBase application</a>.</td>
</tr>
</tbody>
</table>

4. Click **Next**.

5. On the **Type** tab, select **Column** in the **Time Series** section and click **Next**.

   A preliminary version of the report is displayed. To view the updated report at any time, click **Run**.

6. On the **Configure** tab, fill in the following fields and click **Next**.

<table>
<thead>
<tr>
<th><strong>Configure tab</strong></th>
<th><strong>Field</strong></th>
<th><strong>Description</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Group by</td>
<td>Group report data using the values of this field. For example, in an incident report grouped by <strong>Assignment group</strong>, all incidents that belong to Software, Service Desk, and Network are placed in separate groups.</td>
</tr>
<tr>
<td></td>
<td>Additional group by</td>
<td>Extra fields to group the report by. When you select Additional group by fields, a control is added to the bottom of the report that groups the report by any one of the additional fields.</td>
</tr>
<tr>
<td></td>
<td>Stacked bars / Grouped bars</td>
<td>How to show the relationship of individual items from the selected field to the whole. You can choose to display the stacked field either in a single bar or as a group of bars. Select Stacked bars to display the parts that contribute to the whole for each column in the chart. Select Grouped bars to display the parts that contribute to the whole as individual columns. Bars are displayed next to one another according to the Group by field (for example, the state of the incident), instead of stacked.</td>
</tr>
<tr>
<td>Field</td>
<td>Description</td>
<td></td>
</tr>
<tr>
<td>-----------------------</td>
<td>-----------------------------------------------------------------------------</td>
<td></td>
</tr>
<tr>
<td>Display data table</td>
<td>Check this box to show report data in a grid beneath the report. The table appears on dashboards where the report is added. All reports that use charts, including reports that are used on dashboards, show the table of report data when the glide.ui.section508 system property is set to true. The glide.ui.section508 property overrides the Display data table field.</td>
<td></td>
</tr>
<tr>
<td>Trend by</td>
<td>Table field whose values you want to show in a time sequence.</td>
<td></td>
</tr>
<tr>
<td>per</td>
<td>Time period to group data by. Time periods range from an hour to a year. You can also specify a date. Note: Reporting per Week is not supported when the report range includes more than one year. Inconsistent results are produced when a week is split between two years.</td>
<td></td>
</tr>
<tr>
<td>Aggregation</td>
<td>Mathematical calculation to perform on the data. The default is Count, which shows the number of records selected. To show only unique records, select Count Distinct. For example, if you want a report on the distinct number of users who have one or more of the roles in a given list of roles. Users with more than one role would be counted twice unless you use Count Distinct. Select Average, Sum, or Count Distinct, to show a list of fields from the selected Table. Select a field to Aggregate by from this list. For example, if you select a duration field, such as Business duration on the Incident table, the aggregated data is expressed in days, hours, and minutes. If you select an integer field, such as Priority, the data is expressed as a decimal value number. If you choose Sum or Average, select Show related fields to aggregate on dot-walked fields. See Selecting fields on related tables using dot-walking. Note: For duration values, the unit of measurement displayed in the aggregation axis cannot be customized.</td>
<td></td>
</tr>
<tr>
<td>Field</td>
<td>Description</td>
<td></td>
</tr>
<tr>
<td>------------------------------</td>
<td>------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------</td>
<td></td>
</tr>
</tbody>
</table>
| Percentage calculation      | Method of calculating percentages. The percentage appears when you point to a report segment, such as a bar on a bar report. This field appears when Aggregation is set to Average, Sum, or Count Distinct.  
  - Use Aggregation calculates the percentage using the selection in the Aggregation field. Only data that is displayed in the report is used to calculate the percentage.  
    For example, a report shows assets by department with the Aggregation set to Sum and the percentage calculated using aggregation. If the total cost of assets is $100,000 and the cost of assets for Customer Support is $10,000, the percentage for Customer Support is 10%.  
  - Use Record Count calculates the percentage using the total number of records in the data set.  
    For example, a report shows incidents by priority. Out of 500 incident records, 200 have low priority. The percentage for the Low priority section is 40%. |

7. Optional: Configure the sort order of the applicable fields in the report (column, row, Group by, Stack by or Trend by depending on the report type). Click the filter icon and select **Add Sort**.

1. In the Sorting Order list, choose the field you want to sort on and then choose a-z or z-a for alphabetical order or reverse alphabetical order.
   
   The list contains all possible fields from the report's source. The only effective values, however, are the fields chosen for the current report (column, row, Group by, Stack by, or Trend by depending on the report type). Add sort cannot be applied to dot-walked fields.

2. Click to configure additional sorting order conditions. (Click to delete configured sorting order conditions.)

3. Click **Save**.

For fields of the type Choice list, the sort order is determined by the sequence of the choices in the choice list, not alphabetically or numerically. For example, a priority
choice list is often indexed from Critical to Planning as shown in the following figure.

8. Optional: To limit the information displayed in the report, click the filter icon ( ) and select conditions to filter the report data.
   For more details on how conditions are constructed, see Condition builder.

   Note: Keywords is a special field used for text searches across all fields. Its use in a filter or condition, in combination with other conditions, may return inconsistent results.

9. On the Style tab, fill in the fields as appropriate to configure the appearance of the report.
10. Click Save.
   The report is generated.
- Click the Report info icon and add a description of the report.

- Click the sharing icon to open the Sharing menu. On this menu, you can add the report to a dashboard, export the report to PDF, publish the report to the web, and set visibility and schedules. For more information, see Share a report – Report Designer.

Column report style options – Report Designer
Change the look of your column report.

When you create or edit a report, click the Style tab for options to configure the look of your report. The options are organized under two or more of the following tabs: General, Title, Legend, and Axis. To see how the report looks with the changed settings, click Save.

### Column report style options

<table>
<thead>
<tr>
<th>Field</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>General</td>
<td></td>
</tr>
</tbody>
</table>
| Chart color    | Colors used in the report. If you do not group or stack the report, **Use one color** is automatically selected. Select a single predefined system color. If you group or stack the report, select one of the following options:  
  - **Use color palette**: Select a color palette from the predefined system color palettes.  
  - **Use several colors**: Define a custom set of Colors using hex codes. You can add any number of colors.  
  - **Use chart colors**: Use the colors defined in Reports > Chart Colors.  
  **Note**: It is not possible to use transparency hex values. |
<p>| Set palette    | Color palette used in the report. This field appears when you select <strong>Use color palette</strong> from the Chart color list. Click the search icon to choose from the Color color schemes list. |</p>
<table>
<thead>
<tr>
<th>Field</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Display data labels</td>
<td>Select to display the current value for each bar.</td>
</tr>
<tr>
<td></td>
<td>This field is available when you select None from the Stacked by list or if</td>
</tr>
<tr>
<td></td>
<td>there is no Stacked by list.</td>
</tr>
<tr>
<td></td>
<td>• Select <strong>Data labels in the middle</strong> to show the labels in the middle of</td>
</tr>
<tr>
<td></td>
<td>each bar.</td>
</tr>
<tr>
<td></td>
<td>• Select <strong>Allow data labels to overlap</strong> to override default separation of</td>
</tr>
<tr>
<td></td>
<td>labels in the visualization.</td>
</tr>
<tr>
<td>Custom chart size</td>
<td>Check box to specify the width and height of the report in pixels.</td>
</tr>
<tr>
<td></td>
<td><strong>Note:</strong> The chart size is ignored when you export the report to PDF. In</td>
</tr>
<tr>
<td></td>
<td>PDFs, the full page width is used to show the chart.</td>
</tr>
<tr>
<td>Chart width</td>
<td>Width of the report in pixels. The default value is 600.</td>
</tr>
<tr>
<td></td>
<td>This field is available when <strong>Custom chart size</strong> is selected.</td>
</tr>
<tr>
<td>Chart height</td>
<td>Height of the report in pixels. The default value is 450.</td>
</tr>
<tr>
<td></td>
<td>This field appears when <strong>Custom chart size</strong> is selected.</td>
</tr>
<tr>
<td>Chart size</td>
<td>Chart size. This field is available when <strong>Custom chart size</strong> is cleared.</td>
</tr>
<tr>
<td></td>
<td>Options are <strong>Small</strong>, <strong>Medium</strong>, and <strong>Large</strong>.</td>
</tr>
<tr>
<td></td>
<td><strong>Note:</strong> The chart size is ignored when you export the report to PDF. In</td>
</tr>
<tr>
<td></td>
<td>PDFs, the full page width is used to show the chart.</td>
</tr>
<tr>
<td>Field</td>
<td>Description</td>
</tr>
<tr>
<td>---------------------</td>
<td>-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------</td>
</tr>
<tr>
<td>Drilldown view</td>
<td>List view to show when a user selects a segment of a report for which no drilldown report type is specified. This view is also used when the user reaches the lowest drilldown level of a report. See <em>Configure the list layout</em>. If you specify a Report drilldown, <strong>Drilldown view</strong> is ignored.</td>
</tr>
<tr>
<td></td>
<td><strong>Note:</strong> All users are able to view report visualizations, such as pie charts and column reports. However, the last level of a report drilldown is always a list. Platform access control lists determine user access to list information. Users who do not have rights to any part of the list data see the message “Number of rows removed from this list by Security constraints:” followed by the number. See <em>Access control rules</em>. For more information, see <em>Define a report drilldown in the Report Designer</em>.</td>
</tr>
<tr>
<td>Field</td>
<td>Description</td>
</tr>
<tr>
<td>---------------------</td>
<td>-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------</td>
</tr>
<tr>
<td>Decimal precision</td>
<td>Number of decimal places to show. You can show from zero to four decimal places. Default value: 2. To change the default value, create the system property glide.chart.decimal.precision and specify the value.</td>
</tr>
<tr>
<td>Field</td>
<td>Description</td>
</tr>
<tr>
<td>------------------------------</td>
<td>-----------------------------------------------------------------------------</td>
</tr>
<tr>
<td>Show chart title</td>
<td>When the chart title is shown for the report.</td>
</tr>
<tr>
<td></td>
<td>- <strong>Never</strong>: Never show the chart title.</td>
</tr>
<tr>
<td></td>
<td>- <strong>Report only</strong>: Shows the chart title on reports.</td>
</tr>
<tr>
<td></td>
<td>- <strong>Always</strong>: Shows the chart title on reports, dashboards, and homepages.</td>
</tr>
<tr>
<td>Chart title</td>
<td>The chart title has a maximum length of 40 characters.</td>
</tr>
<tr>
<td></td>
<td>If no title is entered, the report name is used for the title. This field</td>
</tr>
<tr>
<td></td>
<td>appears when <strong>Report only</strong> or <strong>Always</strong> is selected from the Show chart</td>
</tr>
<tr>
<td></td>
<td>title list.</td>
</tr>
<tr>
<td>Size of the chart title</td>
<td>Size of the chart title in pixels.</td>
</tr>
<tr>
<td></td>
<td>This field appears when <strong>Report only</strong> or <strong>Always</strong> is selected from the</td>
</tr>
<tr>
<td></td>
<td>Show chart title list.</td>
</tr>
<tr>
<td>Chart title color</td>
<td>Color of the chart title.</td>
</tr>
<tr>
<td></td>
<td>This field appears when <strong>Report only</strong> or <strong>Always</strong> is selected from the</td>
</tr>
<tr>
<td></td>
<td>Show chart title list.</td>
</tr>
<tr>
<td>Custom chart title position</td>
<td>Check box to specify X and Y coordinates for the position of the chart title.</td>
</tr>
<tr>
<td></td>
<td>This field appears when <strong>Report only</strong> or <strong>Always</strong> is selected from the</td>
</tr>
<tr>
<td></td>
<td>Show chart title list.</td>
</tr>
<tr>
<td>Title horizontal alignment</td>
<td>How the chart title is aligned horizontally.</td>
</tr>
<tr>
<td></td>
<td>This field is available when <strong>Custom chart title position</strong> is cleared.</td>
</tr>
<tr>
<td>Title vertical alignment</td>
<td>How the chart title is aligned vertically.</td>
</tr>
<tr>
<td></td>
<td>This field appears when <strong>Custom chart title position</strong> is cleared.</td>
</tr>
<tr>
<td>Chart title X position</td>
<td>Number of pixels to adjust the chart title position right or left. By</td>
</tr>
<tr>
<td></td>
<td>default the title appears at the center top of the chart. To move the</td>
</tr>
<tr>
<td></td>
<td>chart title to the right, enter a positive value. To move the title to the</td>
</tr>
<tr>
<td></td>
<td>left, enter a negative value.</td>
</tr>
<tr>
<td></td>
<td>This field appears only when <strong>Custom chart title position</strong> is selected.</td>
</tr>
<tr>
<td>Chart title Y position</td>
<td>Number of pixels to adjust the chart title position up or down. By default</td>
</tr>
<tr>
<td></td>
<td>the title appears at the center top of the chart. To move up the chart</td>
</tr>
<tr>
<td></td>
<td>title, enter a positive value. To move the chart title down, enter a</td>
</tr>
<tr>
<td></td>
<td>negative value.</td>
</tr>
<tr>
<td></td>
<td>This field appears only when <strong>Custom chart title position</strong> is selected.</td>
</tr>
<tr>
<td>Legend</td>
<td>Check box to show a chart legend.</td>
</tr>
<tr>
<td></td>
<td>This check box appears when a <strong>Group by</strong> field is selected on the report</td>
</tr>
<tr>
<td></td>
<td>form.</td>
</tr>
<tr>
<td>Field</td>
<td>Description</td>
</tr>
<tr>
<td>-------------------------------</td>
<td>-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------</td>
</tr>
<tr>
<td>Legend horizontal alignment</td>
<td>How the legend is aligned horizontally. This field appears when Show legend is selected.</td>
</tr>
<tr>
<td>Legend vertical alignment</td>
<td>How the legend is aligned vertically. This field appears when Show legend is selected.</td>
</tr>
<tr>
<td>Show legend border</td>
<td>Check box to show a border around the legend. This check box appears when Show legend is selected.</td>
</tr>
<tr>
<td>Left align legend text</td>
<td>Check box to left-align the legend text when the report is viewed in a browser. By default, the legend text is centered. When the report is exported to PDF, PNG, or JPG, the legend remains centered. This check box appears when Show legend is selected.</td>
</tr>
<tr>
<td>Axis</td>
<td></td>
</tr>
<tr>
<td>Y axis and X axis</td>
<td>Axis for which you want to configure the titles, appearance, and labels.</td>
</tr>
<tr>
<td>Title</td>
<td>Title for the axis.</td>
</tr>
<tr>
<td>Title size</td>
<td>Size of the axis title in pixels. Default value is 12.</td>
</tr>
<tr>
<td>Title bold</td>
<td>Check this box to show the axis title in a bold typeface.</td>
</tr>
<tr>
<td>Opposite</td>
<td>On the X axis tab, select this check box to show the X-axis title on the right side of the report instead. On the Y axis tab, select this check box to show the Y-axis title on top of the report instead of across the bottom.</td>
</tr>
<tr>
<td>Display grid</td>
<td>On the X axis tab, select this check box to show horizontal grid lines on the report.</td>
</tr>
<tr>
<td></td>
<td>On the Y axis tab, select this check box to show vertical grid lines on top the report.</td>
</tr>
<tr>
<td>Grid dotted</td>
<td>Check this box to show dotted grid lines instead of solid lines.</td>
</tr>
<tr>
<td>From</td>
<td>Specify a minimum Y-axis value to limit the amount of information in the report. If you select an aggregation field that is not of the type Number, the From and To fields are not available.</td>
</tr>
</tbody>
</table>

Note: Depending on configured Highcharts settings, the minimum value may be rounded up or down. If you require the settings that affect this changed, contact the administrator.
<table>
<thead>
<tr>
<th>Field</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>To</td>
<td>Specify a maximum Y-axis value to limit the amount of information in the report. If you select an aggregation field that is not of the type <strong>Number</strong>, the <strong>From</strong> and <strong>To</strong> fields are not available.</td>
</tr>
<tr>
<td>Note:</td>
<td>Depending on configured <strong>Highcharts</strong> settings, the maximum value may be rounded up or down. If you require the settings that affect this, contact the administrator.</td>
</tr>
<tr>
<td>X axis / Y axis label size</td>
<td>On the <strong>X axis</strong> tab, specify the size of the labels for the rows of the report.</td>
</tr>
<tr>
<td></td>
<td>On the <strong>Y axis</strong> tab, specify the size of the labels for the columns in the report.</td>
</tr>
<tr>
<td>Label bold</td>
<td>Check this box to show the labels of the report in a bold typeface.</td>
</tr>
</tbody>
</table>

**Create a column report in the Report Builder**

Create a column report to show how the values of data elements change over time.

*Create a column report in the Report Builder*

Create a column report to show how the value of one or more data element changes over time using vertical columns.

Role required: itil, report_group, report_global, report_admin, or admin. To create a meaningful report, you must have the right to access the data you want to report on.

This task refers to using the Report Builder (Classic UI) in the Kingston release under UI15 and UI16. If you are using the Report Designer, see *Create a column report in the Report Designer*. 
1. Navigate to Reports > Create New.
2. Fill in the fields, as appropriate.

Column chart

<table>
<thead>
<tr>
<th>Field</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Name</td>
<td>Enter a unique and descriptive name for your report.</td>
</tr>
<tr>
<td>Description</td>
<td>Click the information icon (i) to enter a more detailed description of what the report does and its purpose.</td>
</tr>
<tr>
<td>Data</td>
<td>Specify the table or report source containing the data set that you want to include in the report. From the first choice list, select Table or Report source. Then select the specific table or predefined data set from the second choice list.</td>
</tr>
<tr>
<td>Type</td>
<td>Select Column.</td>
</tr>
</tbody>
</table>

Note: If you select a data source used by existing reports, a notification will display prompting you to view them.
<table>
<thead>
<tr>
<th>Field</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Style your chart</td>
<td>Click the gear icon (🔧) after the <strong>Type</strong> field and configure the chart style options to edit the layout and look of your chart.</td>
</tr>
<tr>
<td>Group by</td>
<td>Select a field to organize data into groups from the selected table. In an incident report grouped by <strong>Assignment group</strong>, all incidents belonging to Software, Service Desk, Network, and so on, are placed in separate groups. Make sure that you give the report a name that reflects the field you select.</td>
</tr>
<tr>
<td></td>
<td>Click + to select additional group by fields. When you select <strong>Additional group by</strong> fields, a control is added to the bottom of the report that groups the report by any one of the additional fields.</td>
</tr>
<tr>
<td></td>
<td><strong>Note:</strong> It is not possible to group or stack reports by the <strong>Tags</strong> field.</td>
</tr>
<tr>
<td>Stacked / Grouped columns</td>
<td>Choose to display the <strong>Group by</strong> field as stacked columns or grouped columns. For example, if a report groups incidents by state and the <strong>Group by</strong> field is <strong>Category</strong>, selecting Stacked shows the incidents in one column by state with different colors for each category. Selecting <strong>Grouped columns</strong> shows the incidents in separate columns for each state with different colors for each category column.</td>
</tr>
<tr>
<td></td>
<td>The <strong>Stacked</strong> and <strong>Grouped columns</strong> options are not available when <strong>None</strong> is selected from the <strong>Group by</strong> list.</td>
</tr>
<tr>
<td>Display Grid</td>
<td>Select this check box to display details of the report data in a table below the chart.</td>
</tr>
<tr>
<td></td>
<td>All reports that use charts, including reports that are used <strong>on homepages</strong>, display the table of report data details if the <strong>glide.ui.section508</strong> system property is set to true, even if the <strong>Display Grid</strong> check box is cleared.</td>
</tr>
<tr>
<td>Trend by</td>
<td>Select the table field whose values you want to display in a time sequence.</td>
</tr>
<tr>
<td>per</td>
<td>Time period to group data by. Time periods range from an hour to a year. You can also specify a date.</td>
</tr>
<tr>
<td></td>
<td><strong>Note:</strong> Reporting per Week is not supported when the report range includes more than one year. Inconsistent results are produced when a week is split between two years.</td>
</tr>
</tbody>
</table>

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### Field | Description
--- | ---
**Aggregation** | Select a computational method for aggregating report data. The default is **Count**, which displays the number of records selected.

If you select **Count Distinct**, only unique records are counted. For example, if you want to generate a report with a distinct number of users who have one or more of the roles in a given list of roles, these users would be counted twice unless you use count distinct.

If you select **Average**, **Sum**, or **Count Distinct**, a list of fields from the selected **Table** appears. From this list, select a field to aggregate by. For example, if you select a duration field, such as the **Business duration** field on the Incident table, the aggregated data is expressed in days, hours, and minutes. If you select an integer field, such as the **Priority** field, the data is expressed as a number.

**Note:** For duration values, the unit of measurement displayed in the aggregation axis cannot be customized.

**Percentages** | Select a computational method used for calculating percentages for each element in a data set.

- **Use Aggregation**: default method. Computes percentages for each element using the sum of all elements in the data set.
- **Use Record Count**: computes percentages for each element using the total number (count) of elements in the data set.

This field is only available when **Aggregation** is set to **Average**, **Sum**, or **Count Distinct**.

**Add Filter Condition** | Click the filter icon to create conditions for filtering and ordering data. For example, you might create a condition that states **Priority + less than + 3 ± Moderate** to have the report include only records with priorities of **2 ± High** and **1 ± Critical**.

**Note:** Keywords is a special field used for text searches across all fields. It's use in a filter or condition, in combination with other conditions, may return inconsistent results.

**Add "OR" Clause** | Select a second condition that must be met if the first condition is invalid. For example, select **(Assignment Group) is (Database)** to include records that are assigned to the Database group if the first condition is false.

**Add Sort** | Select fields to sort data by. For example, to sort results from lowest to highest priority, select **(Priority) (z to a)**. For reports with Group by, Stack by, Row/Column or Trend by fields to configure, you can sort by fields that are not listed in the Group by, Stack by, Row/Column or Trend by options.

3. Click **Save**. The report is generated.

Add reports to homepages or dashboards, publish to the internet, schedule email distribution of PDFs or URLs of published reports, and share reports with others. See **Distribute reports**.

Column report style options – Report Builder
Change the look of your column report.
When you create or edit a report, click the gear icon (IconButton) after the **Type** field to open the **Style your chart** window with options to configure the look of your chart. Chart options are automatically saved when you click **Close**. To see how the chart looks with the saved settings, click **Save**.

### Column chart style options

<table>
<thead>
<tr>
<th>Field</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>General</td>
<td></td>
</tr>
</tbody>
</table>
| Chart color       | If no group by is used, **Use one color** is automatically selected. Select a single predefined system color.  
If a group by or stack by is used, select one of the following options:  
  - **Use color palette**: Select a color palette from the predefined system color palettes.  
  - **Use several colors**: Define a custom set of **Colors** using hex codes. You can add any number of colors.  
  - **Use chart colors**: Use the colors defined in Reports > Chart Colors. |
<p>| Display data labels | Select this check box to display the current score for the start and end points of the column. |
| Custom chart size  | Select this check box to specify the chart's width and height in pixels.   |
| Chart size        | Select a chart size. This field is available when <strong>Custom chart size</strong> is cleared. |
| Drilldown View    | Select a <strong>view</strong> that determines how detailed records are shown when a specific part of the report visualization is clicked. This option is available for charts with drill-down capabilities. If you select a view that has no fields in common to link to the table that the report is based on, the default view is used. See Define a report drilldown in the Report Designer. |</p>
<table>
<thead>
<tr>
<th>Field</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Decimal precision</td>
<td>Number of decimal places to show. You can show from zero to four decimal places. Default value: 2. To change the default value, create the system property glide.chart.decimal.precision and specify the value.</td>
</tr>
</tbody>
</table>

**Note:** Percentage labels do not change accordingly with the decimal precision specified.
<table>
<thead>
<tr>
<th>Field</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Show chart title</td>
<td>Select when the chart title is displayed.</td>
</tr>
<tr>
<td></td>
<td>• <strong>Never</strong>: never displays the chart title.</td>
</tr>
<tr>
<td></td>
<td>• <strong>Report only</strong>: displays the chart title on reports.</td>
</tr>
<tr>
<td></td>
<td>• <strong>Always</strong>: displays the chart title on reports, dashboards, and homepages.</td>
</tr>
<tr>
<td>Chart title</td>
<td>Enter a title for this chart. The title has a maximum length of 40 characters. If no title is entered, the report name is used for the title. This field is available when <strong>Report only</strong> or <strong>Always</strong> is selected from the <strong>Show chart title</strong> list.</td>
</tr>
<tr>
<td>Chart title size</td>
<td>Enter the size of the chart title in pixels. This field is available when <strong>Report only</strong> or <strong>Always</strong> is selected from the <strong>Show chart title</strong> list.</td>
</tr>
<tr>
<td>Chart title color</td>
<td>Select the color for the chart title. This field is available when <strong>Report only</strong> or <strong>Always</strong> is selected from the <strong>Show chart title</strong> list.</td>
</tr>
<tr>
<td>Custom chart title position</td>
<td>Select this check box to specify X and Y coordinates for the position of the chart title. This field is available when <strong>Report only</strong> or <strong>Always</strong> is selected from the <strong>Show chart title</strong> list.</td>
</tr>
<tr>
<td>Title horizontal alignment</td>
<td>Select how the chart title is aligned horizontally. This field is available when <strong>Custom chart title position</strong> is cleared.</td>
</tr>
<tr>
<td>Title vertical alignment</td>
<td>Select how the chart title is aligned vertically. This field is available when <strong>Custom chart title position</strong> is cleared.</td>
</tr>
<tr>
<td>Legend</td>
<td>Select this check box to display a chart legend. This check box is available when a <strong>Group by</strong> field is selected in the visualization fields.</td>
</tr>
<tr>
<td>Legend horizontal alignment</td>
<td>Select how the legend is aligned horizontally. This field is available when <strong>Show legend</strong> is selected.</td>
</tr>
<tr>
<td>Legend vertical alignment</td>
<td>Select how the legend is aligned vertically. This field is available when <strong>Show legend</strong> is selected.</td>
</tr>
<tr>
<td>Left align legend text</td>
<td>Select to left-align the legend text. By default, legend text is centered.</td>
</tr>
<tr>
<td>Show legend border</td>
<td>Select this check box to display a border around the legend. This check box is available when <strong>Show legend</strong> is selected.</td>
</tr>
<tr>
<td>Axis</td>
<td>Configure the titles, appearance, and labels of the X and Y axis. For the Y axis, you can also specify a <strong>From</strong> and <strong>To</strong> range.</td>
</tr>
</tbody>
</table>

**Control reports**

Control reports visualize data over time using standard deviations to show statistical likelihood and identify outliers.

Control reports display data as a series of connected points. The blue line at the center of the report is drawn at the mean. Upper and lower control limits, represented by red lines, indicate the thresholds at which activity is considered statistically unlikely. If the process is in control, all points are plotted within the control limits. You may want to investigate any activity outside these limits.
Note: When accessibility is enabled, this visualization includes a report that screen readers can interpret. For more information, see Enabling accessibility features.

Control report

Note: The mean is calculated by taking a sum of the data points on the Data Points line and dividing by the number of points. These values depend on the aggregation (Count, Average, Sum, or Count Distinct). This mean can differ from averages in other reports based on the same data if the other reports use different aggregations. For example, the mean number of incidents (Count) per month over a period is different from the mean Average duration of those same incidents.

Create a control report in the Report Designer

Create a control chart to determine whether a business process is in a state of statistical control. Create a control report in the Report Designer

Create a control chart to determine whether a business process is in a state of statistical control.
Role required: itil, report_group, report_global, report_admin, or admin. To create a meaningful report, you must have the right to access the data you want to report on.

This task refers to Report Designer in the Kingston release. If you are using the Report Builder (Classic UI) in Kingston for creating reports, select the applicable report from *Creating reports* to see instructions. If you are using an earlier UI or the Classic UI for creating reports in an earlier release, follow the instructions in the Helsinki documentation: *Report types and creation details*.

1. **Navigate to Reports > Create New.**
2. On the **Data** tab, give the report a name that reflects the information being grouped.
3. Select the applicable source for the report:

<table>
<thead>
<tr>
<th>Option</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Data source</strong></td>
<td>A table with filters applied to provide a single source of information for all users.</td>
</tr>
<tr>
<td><strong>Table</strong></td>
<td>The raw data from a table with no filters applied.</td>
</tr>
</tbody>
</table>

**Note:** If you select a data source used by existing reports, a notification displays prompting you to view them.
<table>
<thead>
<tr>
<th>Option</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>External Import</strong></td>
<td>Choose an existing imported report source, or click the Upload icon to import a new file. See Create a report from an imported Microsoft Excel document.</td>
</tr>
</tbody>
</table>

**MetricBase**

MetricBase enables you to collect, retain, analyze, and visualize custom time series data on the Now Platform. For more information, see MetricBase application.

4. Click **Next**.
5. On the **Type** tab, select **Control** in the **Other** section and click **Next**.

A preliminary version of the report is displayed. To view the updated report at any time, click **Run**.

6. On the **Configure** tab, fill in the following fields and click **Next**.

**Configure tab**

<table>
<thead>
<tr>
<th>Field</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Trend by</td>
<td>Table field whose values you want to show in a time sequence.</td>
</tr>
<tr>
<td>per</td>
<td>Time period to group data by. Time periods range from an hour to a year. You can also specify a date.</td>
</tr>
</tbody>
</table>

**Note:** Reporting per Week is not supported when the report range includes more than one year. Inconsistent results are produced when a week is split between two years.
<table>
<thead>
<tr>
<th>Field</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Aggregation</td>
<td>Mathematical calculation to perform on the data. The default is Count, which shows the number of records selected.</td>
</tr>
<tr>
<td></td>
<td>To show only unique records, select Count Distinct. For example, if you want a report on the distinct number of users who have one or more of the roles in a given list of roles. Users with more than one role would be counted twice unless you use Count Distinct.</td>
</tr>
<tr>
<td></td>
<td>Select Average, Sum, or Count Distinct, to show a list of fields from the selected Table. Select a field to Aggregate by from this list.</td>
</tr>
<tr>
<td></td>
<td>For example, if you select a duration field, such as Business duration on the Incident table, the aggregated data is expressed in days, hours, and minutes. If you select an integer field, such as Priority, the data is expressed as a decimal value number.</td>
</tr>
<tr>
<td></td>
<td>If you choose Sum or Average, select Show related fields to aggregate on dot-walked fields. See Selecting fields on related tables using dot-walking.</td>
</tr>
</tbody>
</table>

Note: For duration values, the unit of measurement displayed in the aggregation axis cannot be customized.

7. Optional: Configure the sort order of the applicable fields in the report (column, row, Group by, Stack by or Trend by depending on the report type). Click the filter icon ( ) and select Add Sort.

1. In the Sorting Order list, choose the field you want to sort on and then choose a-z or z-a for alphabetical order or reverse alphabetical order.

   The list contains all possible fields from the report's source. The only effective values, however, are the fields chosen for the current report (column, row, Group by, Stack by, or Trend by depending on the report type). Add sort cannot be applied to dot-walked fields.

2. Click to configure additional sorting order conditions. (Click to delete configured sorting order conditions.)

3. Click Save.

For fields of the type Choice list, the sort order is determined by the sequence of the choices in the choice list, not alphabetically or numerically. For example, a priority
choice list is often indexed from Critical to Planning as shown in the following figure.

8. Optional: To limit the information displayed in the report, click the filter icon and select conditions to filter the report data.
   For more details on how conditions are constructed, see Condition builder.

   ![Condition builder](image)

   **Note**: Keywords is a special field used for text searches across all fields. Its use in a filter or condition, in combination with other conditions, may return inconsistent results.

9. On the Style tab, fill in the fields as appropriate to configure the appearance of the report.
10. Click Save to generate the report.
• Click the Report info icon

and add a description of the report.
• Click the sharing icon

 to open the Sharing menu. On this menu, you can add the report to a dashboard, export the report to PDF, publish the report to the web, and set visibility and schedules. For more information, see Share a report – Report Designer.

Control chart style options – Report Designer
Change the look of your control chart.

When you create or edit a report, click the Style tab for options to configure the look of your report. The options are organized under two or more of the following tabs: General, Title, Legend, and Axis. To see how the report looks with the changed settings, click Save.

Control chart style options

<table>
<thead>
<tr>
<th>Field</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Display data labels</td>
<td>Check box to show the value for each data point.</td>
</tr>
<tr>
<td>Custom chart size</td>
<td>Check box to specify the width and height of the report in pixels.</td>
</tr>
<tr>
<td>Note: The chart size is ignored when you export the report to PDF. In PDFs, the full page width is used to show the chart.</td>
<td></td>
</tr>
<tr>
<td>Chart width</td>
<td>Width of the report in pixels. The default value is 600.</td>
</tr>
<tr>
<td>Note: This field is available when Custom chart size is selected.</td>
<td></td>
</tr>
<tr>
<td>Chart height</td>
<td>Height of the report in pixels. The default value is 450.</td>
</tr>
<tr>
<td>Note: This field appears when Custom chart size is selected.</td>
<td></td>
</tr>
<tr>
<td>Chart size</td>
<td>Chart size. This field is available when Custom chart size is cleared. Options are Small, Medium, and Large.</td>
</tr>
<tr>
<td>Note: The chart size is ignored when you export the report to PDF. In PDFs, the full page width is used to show the chart.</td>
<td></td>
</tr>
<tr>
<td>Field</td>
<td>Description</td>
</tr>
<tr>
<td>-------------------</td>
<td>-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------</td>
</tr>
<tr>
<td>Drilldown view</td>
<td>List view to show when a user selects a segment of a report for which no drilldown report type is specified. This view is also used when the user reaches the lowest drilldown level of a report. See Configure the list layout. If you specify a Report drilldown, Drilldown view is ignored.</td>
</tr>
</tbody>
</table>

**Note:** All users are able to view report visualizations, such as pie charts and column reports. However, the last level of a report drilldown is always a list. Platform access control lists determine user access to list information. Users who do not have rights to any part of the list data see the message "Number of rows removed from this list by Security constraints:" followed by the number. See Access control rules.

For more information, see Define a report drilldown in the Report Designer.
<table>
<thead>
<tr>
<th>Field</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Decimal precision</td>
<td>Number of decimal places to show. You can show from zero to four decimal places. Default value: 2. To change the default value, create the system property glide.chart.decimal.precision and specify the value.</td>
</tr>
</tbody>
</table>

**Note:** Percentage labels do not change accordingly with the decimal precision specified.

![Chart](chart.png)
<table>
<thead>
<tr>
<th>Field</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Show chart title</td>
<td>When the chart title is shown for the report.</td>
</tr>
<tr>
<td></td>
<td>- <strong>Never</strong>: Never show the chart title.</td>
</tr>
<tr>
<td></td>
<td>- <strong>Report only</strong>: Shows the chart title on reports.</td>
</tr>
<tr>
<td></td>
<td>- <strong>Always</strong>: Shows the chart title on reports, dashboards, and homepages.</td>
</tr>
<tr>
<td>Chart title</td>
<td>The chart title has a maximum length of 40 characters. If no title is entered, the report name is used for the title. This field appears when <strong>Report only</strong> or <strong>Always</strong> is selected from the <strong>Show chart title</strong> list.</td>
</tr>
<tr>
<td>Size of the chart title</td>
<td>Size of the chart title in pixels. This field appears when <strong>Report only</strong> or <strong>Always</strong> is selected from the <strong>Show chart title</strong> list.</td>
</tr>
<tr>
<td>Chart title color</td>
<td>Color of the chart title. This field appears when <strong>Report only</strong> or <strong>Always</strong> is selected from the <strong>Show chart title</strong> list.</td>
</tr>
<tr>
<td>Custom chart title position</td>
<td>Check box to specify X and Y coordinates for the position of the chart title. This field appears when <strong>Report only</strong> or <strong>Always</strong> is selected from the <strong>Show chart title</strong> list.</td>
</tr>
<tr>
<td>Title horizontal alignment</td>
<td>How the chart title is aligned horizontally. This field is available when <strong>Custom chart title position</strong> is cleared.</td>
</tr>
<tr>
<td>Title vertical alignment</td>
<td>How the chart title is aligned vertically. This field appears when <strong>Custom chart title position</strong> is cleared.</td>
</tr>
<tr>
<td>Chart title X position</td>
<td>Number of pixels to adjust the chart title position right or left. By default the title appears at the center top of the chart. To move the chart title to the right, enter a positive value. To move the title to the left, enter a negative value. This field appears only when <strong>Custom chart title position</strong> is selected.</td>
</tr>
<tr>
<td>Chart title Y position</td>
<td>Number of pixels to adjust the chart title position up or down. By default the title appears at the center top of the chart. To move up the chart title, enter a positive value. To move the chart title down, enter a negative value. This field appears only when <strong>Custom chart title position</strong> is selected.</td>
</tr>
</tbody>
</table>

**Legend**

Show legend: Check box to show a chart legend. This check box appears when a **Group by** field is selected on the report form.
<table>
<thead>
<tr>
<th>Field</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Legend horizontal alignment</td>
<td>How the legend is aligned horizontally. This field appears when <strong>Show legend</strong> is selected.</td>
</tr>
<tr>
<td>Legend vertical alignment</td>
<td>How the legend is aligned vertically. This field appears when <strong>Show legend</strong> is selected.</td>
</tr>
<tr>
<td>Show legend border</td>
<td>Check box to show a border around the legend. This check box appears when <strong>Show legend</strong> is selected.</td>
</tr>
<tr>
<td>Left align legend text</td>
<td>Check box to left-align the legend text when the report is viewed in a browser. By default, the legend text is centered. When the report is exported to PDF, PNG, or JPG, the legend remains centered. This check box appears when <strong>Show legend</strong> is selected.</td>
</tr>
</tbody>
</table>

**Axis**

<table>
<thead>
<tr>
<th>Y axis and X axis</th>
<th>Axis for which you want to configure the titles, appearance, and labels.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Title</td>
<td>Title for the axis.</td>
</tr>
<tr>
<td>Title size</td>
<td>Size of the axis title in pixels. Default value is 12.</td>
</tr>
<tr>
<td>Title bold</td>
<td>Check this box to show the axis title in a bold typeface.</td>
</tr>
<tr>
<td>Opposite</td>
<td>On the <strong>X axis</strong> tab, select this check box to show the X-axis title on the right side of the report instead. On the <strong>Y axis</strong> tab, select this check box to show the Y-axis title on top of the report instead of across the bottom.</td>
</tr>
<tr>
<td>Display grid</td>
<td>On the <strong>X axis</strong> tab, select this check box to show horizontal grid lines on the report.</td>
</tr>
<tr>
<td>Grid dotted</td>
<td>Check this box to show dotted grid lines instead of solid lines.</td>
</tr>
<tr>
<td>From</td>
<td>Specify a minimum Y-axis value to limit the amount of information in the report. If you select an aggregation field that is not of the type <strong>Number</strong>, the <strong>From</strong> and <strong>To</strong> fields are not available.</td>
</tr>
</tbody>
</table>

**Note:** Depending on configured **Highcharts** settings, the minimum value may be rounded up or down. If you require the settings that affect this changed, contact the administrator.
## Field Description

<table>
<thead>
<tr>
<th>Field</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>To</td>
<td>Specify a maximum Y-axis value to limit the amount of information in the report. If you select an aggregation field that is not of the type <strong>Number</strong>, the <strong>From</strong> and <strong>To</strong> fields are not available. <strong>Note:</strong> Depending on configured <strong>Highcharts</strong> settings, the maximum value may be rounded up or down. If you require the settings that affect this changed, contact the administrator.</td>
</tr>
</tbody>
</table>
| X axis / Y axis label size    | On the **X axis** tab, specify the size of the labels for the rows of the report.  
On the **Y axis** tab, specify the size of the labels for the columns in the report. |
| Label bold                    | Check this box to show the labels of the report in a bold typeface.          |

### Create a control report in the Report Builder

Create a control chart to determine whether a business process is in a state of statistical control.  
*Create a control report in the Report Builder*

Create a control report to determine whether a business process is in a state of statistical control.

Role required: itil, report_group, report_global, report_admin, or admin. To create a meaningful report, you must have the right to access the data you want to report on.

This task refers to using the Report Builder (Classic UI) in the Kingston release under UI15 and UI16. If you are using the Report Designer, see *Create a control report in the Report Designer.*
1. Navigate to Reports > Create New.
2. Fill in the fields, as appropriate.

### Creating Reports

<table>
<thead>
<tr>
<th>Field</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Name</td>
<td>Unique and descriptive name for your report.</td>
</tr>
<tr>
<td>Description</td>
<td>Click the information icon (ℹ️) to enter a more detailed description of what the report does and its purpose.</td>
</tr>
<tr>
<td>Data</td>
<td>Specify the table or report source containing the data set that you want to include in the report. From the first choice list, select Table or Report source. Then select the specific table or predefined data set from the second choice list. Note: If you select a data source used by existing reports, a notification will display prompting you to view them.</td>
</tr>
<tr>
<td>Type</td>
<td>Select Control.</td>
</tr>
</tbody>
</table>
### Field | Description
---|---
**Style your chart** | Click the gear icon (⚙️) after the **Type** field to configure chart style options for the look and layout of the chart.

**Trend by** | Select the table field whose values you want to display in a time sequence.

**per** | Time period to group data by. Time periods range from an hour to a year. You can also specify a date.

**Aggregation** | Select a computational method for aggregating report data. The default is **Count**, which displays the number of records selected.

| If you select **Count Distinct**, only unique records are counted. For example, if you want to generate a report with a distinct number of users who have one or more of the roles in a given list of roles, these users would be counted twice unless you use count distinct.

| If you select **Average**, **Sum**, or **Count Distinct**, a list of fields from the selected **Table** appears. From this list, select a field to aggregate by. For example, if you select a duration field, such as the **Business duration** field on the Incident table, the aggregated data is expressed in days, hours, and minutes. If you select an integer field, such as the **Priority** field, the data is expressed as a number.

| **Note:** For duration values, it is not possible to customize the unit of measurement displayed in the aggregation axis.

**Add Filter Condition** | Click the filter icon (🔍) to create conditions for filtering and ordering data. For example, you might create a condition that states **Priority + less than + 3 ± Moderate** to have the report include only records with priorities of **2 ± High** and **1 ± Critical**.

| **Note:** Keywords is a special field used for text searches across all fields. It’s use in a filter or condition, in combination with other conditions, may return inconsistent results.

**Add "OR" Clause** | Select a second condition that must be met if the first condition is invalid. For example, select (Assignment Group) (is) (Database), to include records that are assigned to the Database group if the first condition is false.

**Add Sort** | Select fields to sort data by. For example, to sort results from lowest to highest priority, select (Priority) (z to a). For reports with Group by, Stack by, Row/Column or Trend by fields to configure, you can sort by fields that are not listed in the Group by, Stack by, Row/Column or Trend by options.

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3. Click **Save** to generate the report.
Add reports to homepages or dashboards, publish to the internet, schedule email distribution of PDFs or URLs of published reports, and share reports with others. See Distribute reports.

Control chart style options – Report Builder

Change the look of your pie chart.

When you create or edit a report, click the Style tab for options to configure the look of your report. The options are organized under two or more of the following tabs: General, Title, Legend, and Axis. To see how the report looks with the changed settings, click Save.

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<tbody>
<tr>
<td>General</td>
<td></td>
</tr>
<tr>
<td>Display data labels</td>
<td>Check box to show the value for each data point.</td>
</tr>
<tr>
<td>Custom chart size</td>
<td>Check box to specify the width and height of the report in pixels.</td>
</tr>
<tr>
<td>Note: The chart size is ignored when you export the report to PDF. In PDFs, the full page width is used to show the chart.</td>
<td></td>
</tr>
<tr>
<td>Chart width</td>
<td>Width of the report in pixels. The default value is 600.</td>
</tr>
<tr>
<td>Chart height</td>
<td>Height of the report in pixels. The default value is 450.</td>
</tr>
<tr>
<td>Chart size</td>
<td>Chart size. This field is available when Custom chart size is cleared. Options are Small, Medium, and Large.</td>
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<tr>
<td>Note: The chart size is ignored when you export the report to PDF. In PDFs, the full page width is used to show the chart.</td>
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<td>Field</td>
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</tr>
<tr>
<td>------------------</td>
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</tr>
<tr>
<td>Drilldown view</td>
<td>List view to show when a user selects a segment of a report for which no drilldown report type is specified. This view is also used when the user reaches the lowest drilldown level of a report. See Configure the list layout. If you specify a Report drilldown, Drilldown view is ignored.</td>
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For more information, see Define a report drilldown in the Report Designer.
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</tr>
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<tbody>
<tr>
<td>Decimal precision</td>
<td>Number of decimal places to show. You can show from zero to four decimal places. Default value: 2. To change the default value, create the system property glide.chart.decimal.precision and specify the value.</td>
</tr>
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<tbody>
<tr>
<td>Show chart title</td>
<td>When the chart title is shown for the report.</td>
</tr>
<tr>
<td></td>
<td>- <strong>Never</strong>: Never show the chart title.</td>
</tr>
<tr>
<td></td>
<td>- <strong>Report only</strong>: Shows the chart title on reports.</td>
</tr>
<tr>
<td></td>
<td>- <strong>Always</strong>: Shows the chart title on reports, dashboards, and homepages.</td>
</tr>
<tr>
<td>Chart title</td>
<td>The chart title has a maximum length of 40 characters. If no title is entered, the report name is used for the title. This field appears when <strong>Report only</strong> or <strong>Always</strong> is selected from the Show chart title list.</td>
</tr>
<tr>
<td>Size of the chart title</td>
<td>Size of the chart title in pixels. This field appears when <strong>Report only</strong> or <strong>Always</strong> is selected from the Show chart title list.</td>
</tr>
<tr>
<td>Chart title color</td>
<td>Color of the chart title. This field appears when <strong>Report only</strong> or <strong>Always</strong> is selected from the Show chart title list.</td>
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<tr>
<td>Custom chart title position</td>
<td>Check box to specify X and Y coordinates for the position of the chart title. This field appears when <strong>Report only</strong> or <strong>Always</strong> is selected from the Show chart title list.</td>
</tr>
<tr>
<td>Title horizontal alignment</td>
<td>How the chart title is aligned horizontally. This field is available when Custom chart title position is cleared.</td>
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<tr>
<td>Legend</td>
<td>Check box to show a chart legend. This check box appears when a <strong>Group by</strong> field is selected on the report form.</td>
</tr>
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<td>Field</td>
<td>Description</td>
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<td>How the legend is aligned vertically. This field appears when <strong>Show legend</strong> is selected.</td>
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<tr>
<td>Show legend border</td>
<td>Check box to show a border around the legend. This check box appears when <strong>Show legend</strong> is selected.</td>
</tr>
<tr>
<td>Left align legend text</td>
<td>Check box to left-align the legend text when the report is viewed in a browser. By default, the legend text is centered. When the report is exported to PDF, PNG, or JPG, the legend remains centered. This check box appears when <strong>Show legend</strong> is selected.</td>
</tr>
<tr>
<td>Axis</td>
<td></td>
</tr>
<tr>
<td>Y axis and X axis</td>
<td>Axis for which you want to configure the titles, appearance, and labels.</td>
</tr>
<tr>
<td>Title</td>
<td>Title for the axis.</td>
</tr>
<tr>
<td>Title size</td>
<td>Size of the axis title in pixels. Default value is 12.</td>
</tr>
<tr>
<td>Title bold</td>
<td>Check this box to show the axis title in a bold typeface.</td>
</tr>
<tr>
<td>Opposite</td>
<td>On the <strong>X axis</strong> tab, select this check box to show the X-axis title on the right side of the report instead. On the <strong>Y axis</strong> tab, select this check box to show the Y-axis title on top of the report instead of across the bottom.</td>
</tr>
<tr>
<td>Display grid</td>
<td>On the <strong>X axis</strong> tab, select this check box to show horizontal grid lines on the report.</td>
</tr>
<tr>
<td>Grid dotted</td>
<td>Check this box to show dotted grid lines instead of solid lines.</td>
</tr>
<tr>
<td>From</td>
<td>Specify a minimum Y-axis value to limit the amount of information in the report. If you select an aggregation field that is not of the type <strong>Number</strong>, the <strong>From</strong> and <strong>To</strong> fields are not available.</td>
</tr>
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</table>

**Note:** Depending on configured Highcharts settings, the minimum value may be rounded up or down. If you require the settings that affect this changed, contact the administrator.
<table>
<thead>
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<th>Field</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>To</td>
<td>Specify a maximum Y-axis value to limit the amount of information in the report. If you select an aggregation field that is not of the type <strong>Number</strong>, the <strong>From</strong> and <strong>To</strong> fields are not available.</td>
</tr>
<tr>
<td>Note: <strong>Note:</strong></td>
<td>Depending on configured <strong>Highcharts</strong> settings, the maximum value may be rounded up or down. If you require the settings that affect this changed, contact the administrator.</td>
</tr>
</tbody>
</table>

| X axis / Y axis label size | On the **X axis** tab, specify the size of the labels for the rows of the report.  
                            | On the **Y axis** tab, specify the size of the labels for the columns in the report. |

| Label bold            | Check this box to show the labels of the report in a bold typeface.                                                                      |

**Dial and speedometer reports**

Dials and speedometers provide a real-time count for an indicator. These charts cannot contain comparison or historical data. You can configure colors in these reports to display at a glance values that are within acceptable ranges.

For example, red indicates unacceptable value ranges. A low value for monthly sales is worse than a high value, but a low value for incident resolution times is better than a high value. So you would configure red for low values in the report for monthly sales and red for high values in the report for incident resolution times.

Dials and speedometers also have different appearances:

- A speedometer shows numbers in the form of a round meter with a defined range.
- A dial shows where a score falls across ranges on a half-circle dial.
Angular speedometer report
Solid dial report

Create a dial or speedometer report in the Report Designer

Create a report that shows counts for an indicator with colors to indicate value ranges.

Create a dial or speedometer report in the Report Designer

Create a dial or speedometer to provide a real-time count for an indicator.

Role required: itil, report_group, report_global, report_admin, or admin. To create a meaningful report, you must have the right to access the data you want to report on.

This task refers to Report Designer in the Kingston release. If you are using the Report Builder (Classic UI) in Kingston for creating reports, select the applicable report from Creating reports to see instructions. If you are using an earlier UI or the Classic UI for creating reports in an earlier release, follow the instructions in the Helsinki documentation: Report types and creation details.
1. Navigate to Reports > Create New.
2. On the Data tab, give the report a name that reflects the information being grouped.
3. Select the applicable source for the report:

<table>
<thead>
<tr>
<th>Option</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Data source</td>
<td>A table with filters applied to provide a single source of information for all users.</td>
</tr>
<tr>
<td>Note: If you select a data source used by existing reports, a notification displays prompting you to view them.</td>
<td></td>
</tr>
<tr>
<td>Table</td>
<td>The raw data from a table with no filters applied.</td>
</tr>
<tr>
<td>External import</td>
<td>Choose an existing imported report source, or click the Upload icon to import a new file. See Create a report from an imported Microsoft Excel document.</td>
</tr>
</tbody>
</table>
MetricBase enables you to collect, retain, analyze, and visualize custom time series data on the Now Platform. For more information, see MetricBase application.

4. Click Next.
5. On the Type tab, select Speedometer or Dial in the Scores section and click Next.

A preliminary version of the report is displayed. To view the updated report at any time, click Run.

6. On the Configure tab, fill in the following fields and click Next.

<p>| Configure tab |</p>
<table>
<thead>
<tr>
<th>Field</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Aggregation</td>
<td>Select a computational method for aggregating report data. The default is Count, which displays the number of records selected. If you select Count Distinct, only unique records are counted. For example, if you want to generate a report with a distinct number of users who have one or more of the roles in a given list of roles, these users would be counted twice unless you use count distinct. If you select Average, Sum, or Count Distinct, a list of fields from the selected Table appears. From this list, select a field to aggregate by. For example, if you select an integer field, such as the Priority field, the data is expressed as a number.</td>
</tr>
</tbody>
</table>

Note: Dial and speedometer charts do not support aggregating duration field values. Duration fields do not appear in the list of available aggregation fields.

7. Optional: To limit the information displayed in the report, click the filter icon and select conditions to filter the report data. For more details on how conditions are constructed, see Condition builder.

Note: Keywords is a special field used for text searches across all fields. Its use in a filter or condition, in combination with other conditions, may return inconsistent results.

8. On the Style tab, fill in the fields as appropriate to configure the appearance of the report.
9. Click Save.

The report is generated.
• Click the Report info icon

and add a description of the report.

• Click the sharing icon

to open the Sharing menu. On this menu, you can add the report to a dashboard, export the report to PDF, publish the report to the web, and set visibility and schedules. For more information, see Share a report – Report Designer.

Dial and speedometer report style options – Report Designer
Change the look of your dial or speedometer report.

When you create or edit a report, click the Style tab for options to configure the look of your report. The options are organized under two or more of the following tabs: General, Title, Legend, and Axis. To see how the report looks with the changed settings, click Save.

Dial chart style options

<table>
<thead>
<tr>
<th>Field</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>General</td>
<td></td>
</tr>
<tr>
<td>Chart color (dial chart only)</td>
<td>A predefined system color for the dial.</td>
</tr>
<tr>
<td>Set color</td>
<td>Color used in the report. This field displays when you select Use one color from the Chart color list. Click the search icon to choose from the Chart color schemes or Color Definitions list.</td>
</tr>
<tr>
<td>Custom chart size</td>
<td>Check box to specify the width and height of the report in pixels.</td>
</tr>
<tr>
<td>Chart width</td>
<td>Width of the report in pixels. The default value is 600.</td>
</tr>
<tr>
<td></td>
<td>This field is available when Custom chart size is selected.</td>
</tr>
<tr>
<td>Chart height</td>
<td>Height of the report in pixels. The default value is 450.</td>
</tr>
<tr>
<td></td>
<td>This field appears when Custom chart size is selected.</td>
</tr>
<tr>
<td>Field</td>
<td>Description</td>
</tr>
<tr>
<td>---------------</td>
<td>---------------------------------------------------------------------------------------------------------------------------------------------</td>
</tr>
<tr>
<td><strong>Chart size</strong></td>
<td>Chart size. This field is available when <strong>Custom chart size</strong> is cleared. Options are Small, Medium, and Large.</td>
</tr>
<tr>
<td></td>
<td><strong>Note:</strong> The chart size is ignored when you export the report to PDF. In PDFs, the full page width is used to show the chart.</td>
</tr>
<tr>
<td><strong>Direction</strong></td>
<td>Choose whether lower or larger numbers are better. Select <strong>Minimize</strong> if lower numbers are better. Select <strong>Maximize</strong> if larger numbers are better. This setting works with <strong>Lower Limit</strong> and <strong>Upper Limit</strong>, which determine the colors for the areas in the dial or speedometer.</td>
</tr>
<tr>
<td></td>
<td>• Green indicates that the figures are acceptable.</td>
</tr>
<tr>
<td></td>
<td>• Orange indicates that the figures have changed, but are still within the acceptable range.</td>
</tr>
<tr>
<td></td>
<td>• Red indicates that the figures are not acceptable.</td>
</tr>
<tr>
<td><strong>Lower limit</strong></td>
<td>The lower threshold for color change on the dial or speedometer. If it uses only two colors, specify the same number for both lower and upper limits.</td>
</tr>
<tr>
<td><strong>Upper limit</strong></td>
<td>The upper threshold for color change on the dial or speedometer. If it uses only two colors, specify the same number for both lower and upper limits.</td>
</tr>
<tr>
<td></td>
<td>For example, a dial contains a current score of 50 and <strong>Dial Autoscale</strong> is selected. The <strong>Lower Limit</strong> is set to 50 and <strong>Upper Limit</strong> is set to 100 and the direction is <strong>Minimize</strong>. The dial displays the area 0–50 in green, the area 50–100 in orange, and the area above 100 in red.</td>
</tr>
<tr>
<td></td>
<td>If <strong>Lower Limit</strong> is set to 50, <strong>Upper Limit</strong> is set to 100 and the direction is <strong>Maximize</strong>, the colors are reversed.</td>
</tr>
<tr>
<td></td>
<td>If no upper and lower limits have been set, no colors are used in the visualization. If you want to have only two section or colors, you can set the upper and lower limits to the same number.</td>
</tr>
<tr>
<td><strong>Dial autoscale</strong></td>
<td>Check box to automatically generate start and end values for the dial or speedometer based on the selected data.</td>
</tr>
<tr>
<td><strong>From</strong></td>
<td>Custom minimum value to display on the left side of the dial or speedometer. This field is available when <strong>Dial Autoscale</strong> is cleared.</td>
</tr>
<tr>
<td>Field</td>
<td>Description</td>
</tr>
<tr>
<td>------------------</td>
<td>-----------------------------------------------------------------------------</td>
</tr>
<tr>
<td>To</td>
<td>Custom maximum value to display on the right side of the dial or speedometer. This field is available when Dial Autoscale is cleared.</td>
</tr>
<tr>
<td>Drilldown view</td>
<td>List view to show when a user selects a segment of a report for which no drilldown report type is specified. This view is also used when the user reaches the lowest drilldown level of a report. See Configure the list layout. If you specify a Report drilldown, Drilldown view is ignored.</td>
</tr>
</tbody>
</table>

Note: All users are able to view report visualizations, such as pie charts and column reports. However, the last level of a report drilldown is always a list. Platform access control lists determine user access to list information. Users who do not have rights to any part of the list data see the message “Number of rows removed from this list by Security constraints:” followed by the number. See Access control rules. For more information, see Define a report drilldown in the Report Designer.
<table>
<thead>
<tr>
<th>Field</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Decimal precision</td>
<td>Number of decimal places to show. You can show from zero to four decimal places. Default value: 2. To change the default value, create the system property glide.chart.decimal.precision and specify the value.</td>
</tr>
</tbody>
</table>

**Note:** Percentage labels do not change accordingly with the decimal precision specified.
<table>
<thead>
<tr>
<th>Field</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Show chart title</td>
<td>When the chart title is shown for the report.</td>
</tr>
<tr>
<td></td>
<td>· <strong>Never</strong>: Never show the chart title.</td>
</tr>
<tr>
<td></td>
<td>· <strong>Report only</strong>: Shows the chart title on reports.</td>
</tr>
<tr>
<td></td>
<td>· <strong>Always</strong>: Shows the chart title on reports, dashboards, and homepages.</td>
</tr>
<tr>
<td>Chart title</td>
<td>The chart title has a maximum length of 40 characters. If no title is entered, the report name is used for the title. This field appears when <strong>Report only</strong> or <strong>Always</strong> is selected from the <strong>Show chart title</strong> list.</td>
</tr>
<tr>
<td>Size of the chart title</td>
<td>Size of the chart title in pixels. This field appears when <strong>Report only</strong> or <strong>Always</strong> is selected from the <strong>Show chart title</strong> list.</td>
</tr>
<tr>
<td>Chart title color</td>
<td>Color of the chart title. This field appears when <strong>Report only</strong> or <strong>Always</strong> is selected from the <strong>Show chart title</strong> list.</td>
</tr>
<tr>
<td>Custom chart title position</td>
<td>Check box to specify X and Y coordinates for the position of the chart title. This field appears when <strong>Report only</strong> or <strong>Always</strong> is selected from the <strong>Show chart title</strong> list.</td>
</tr>
<tr>
<td>Chart title X position</td>
<td>Number of pixels to adjust the chart title position right or left. By default the title appears at the center top of the chart. To move the chart title to the right, enter a positive value. To move the title to the left, enter a negative value. This field appears only when <strong>Custom chart title position</strong> is selected.</td>
</tr>
<tr>
<td>Chart title Y position</td>
<td>Number of pixels to adjust the chart title position up or down. By default the title appears at the center top of the chart. To move up the chart title, enter a positive value. To move the chart title down, enter a negative value. This field appears only when <strong>Custom chart title position</strong> is selected.</td>
</tr>
<tr>
<td>Title horizontal alignment</td>
<td>How the chart title is aligned horizontally. This field is available when <strong>Custom chart title position</strong> is cleared.</td>
</tr>
<tr>
<td>Title vertical alignment</td>
<td>How the chart title is aligned vertically. This field appears when <strong>Custom chart title position</strong> is cleared.</td>
</tr>
</tbody>
</table>

**Create a dial or speedometer report in the Report Builder**

Create a report that shows counts for an indicator with colors to indicate value ranges.

**Create a dial or speedometer report in the Report Builder**
Create a dial or speedometer to provide a real-time count for an indicator.
Role required: itil, report_group, report_global, report_admin, or admin. To create a meaningful report, you must have the right to access the data you want to report on.

This task refers to using the Report Builder (Classic UI) in the Kingston release under UI15 and UI16. If you are using the Report Designer, see Create a dial or speedometer report in the Report Designer.

1. Navigate to Reports > Create New.
2. Fill in the fields, as appropriate.

**Speedometer report fields**

<table>
<thead>
<tr>
<th>Field</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Name</td>
<td>Enter a unique and descriptive name for the report.</td>
</tr>
<tr>
<td>Description</td>
<td>Click the information icon (i) to enter a more detailed description of what the report does and its purpose.</td>
</tr>
</tbody>
</table>
### Field | Description
---|---
**Data** | Specify the table or report source containing the data set that you want to include in the report. From the first choice list, select the **Table** or **Report source**. Then select the specific table or **predefined data set** from the second choice list.

**Note:** If you select a data source used by existing reports, a notification will display prompting you to view them.

**Type** | Select **Speedometer** or **Dial**.

**Style your chart** | Click the gear icon (⚙️) after the **Type** field to configure the chart style options for the look and layout of the chart.

**Aggregation** | Select a computational method for aggregating report data. The default is **Count**, which displays the number of records selected.

If you select **Count Distinct**, only unique records are counted. For example, if you want to generate a report with a distinct number of users who have one or more of the roles in a given list of roles, these users would be counted twice unless you use count distinct.

If you select **Average**, **Sum**, or **Count Distinct**, a list of fields from the selected **Table** appears. From this list, select a field to aggregate by. For example, if you select an integer field, such as the **Priority** field, the data is expressed as a number.

**Note:** Dial and speedometer charts do not support aggregating duration field values. Duration fields do not appear in the list of available aggregation fields.

**Add Filter Condition** | Click the filter icon to create conditions for filtering and ordering data. For example, you might create a condition that states **Priority + less than + 3 ± Moderate** to have the report include only records with priorities of **2 ± High** and **1 ± Critical**.

**Note:** Keywords is a special field used for text searches across all fields. It’s use in a filter or condition, in combination with other conditions, may return inconsistent results.

**Add ‘OR’ Clause** | Select a second condition that must be met if the first condition is invalid. For example, select **(Assignment Group) (is) (Database)**, to include records that are assigned to the Database group if the first condition is false.

---

3. Click **Save**. The report is generated.

Add reports to homepages or dashboards, publish to the internet, schedule email distribution of PDFs or URLs of published reports, and share reports with others. See **Distribute reports**.

**Dial and speedometer report style options – Report Builder**

Change the look of your dial or speedometer report.
### Dial report style options

<table>
<thead>
<tr>
<th>Field</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>General</strong></td>
<td></td>
</tr>
<tr>
<td>Chart color (dial chart only)</td>
<td>Select a single predefined system color.</td>
</tr>
<tr>
<td>Custom chart size</td>
<td>Select this check box to specify the chart’s width and height in pixels.</td>
</tr>
<tr>
<td>Chart size</td>
<td>Select a chart size. This field is available when <strong>Custom chart size</strong> is cleared.</td>
</tr>
<tr>
<td><strong>Direction</strong></td>
<td>Select <strong>Minimize</strong> if lower numbers in the dial are better. Select <strong>Maximize</strong> if larger numbers in the dial are better. This setting works in combination with <strong>Lower Limit</strong> and <strong>Upper Limit</strong>, as the colors for the areas in the dial are determined by it. In general, green means the figures are acceptable, orange means the figures have changed, they may have become better or worse but are still within the acceptable range, red means the figures are not acceptable.</td>
</tr>
<tr>
<td>Lower Limit</td>
<td>Enter the number that is still an acceptable score for this the dial.</td>
</tr>
<tr>
<td>Upper Limit</td>
<td>The upper threshold for color change on the dial or speedometer. If it uses only two colors, specify the same number for both lower and upper limits. For example, a dial contains a current score of 50 and <strong>Dial Autoscale</strong> is selected. The <strong>Lower Limit</strong> is set to 50 and <strong>Upper Limit</strong> is set to 100 and the direction is <strong>Minimize</strong>. The dial displays the area 0–50 in green, the area 50–100 in orange, and the area above 100 in red. If <strong>Lower Limit</strong> is set to 50, <strong>Upper Limit</strong> is set to 100 and the direction is <strong>Maximize</strong>, the colors are reversed. If no upper and lower limits have been set, no colors are used in the visualization. If you want to have only two section or colors, you can set the upper and lower limits to the same number.</td>
</tr>
<tr>
<td><strong>Dial Autoscale</strong></td>
<td>Select this check box to automatically set the start and end values for the dial scale.</td>
</tr>
<tr>
<td>From</td>
<td>Enter the start value for the dial scale. This field is available when <strong>Dial Autoscale</strong> is cleared.</td>
</tr>
<tr>
<td>To</td>
<td>Enter the end value for the dial scale. This field is available when <strong>Dial Autoscale</strong> is cleared.</td>
</tr>
<tr>
<td><strong>Drilldown View</strong></td>
<td>Select a view that determines how detailed records are shown when a specific part of the report visualization is clicked. This option is available for charts with drill-down capabilities. If you select a view that has no fields in common to link to the table that the report is based on, the default view is used. See <strong>Define a report drilldown in the Report Designer.</strong></td>
</tr>
<tr>
<td>Field</td>
<td>Description</td>
</tr>
<tr>
<td>------------------</td>
<td>-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------</td>
</tr>
<tr>
<td>Decimal precision</td>
<td>Number of decimal places to show. You can show from zero to four decimal places. Default value: 2. To change the default value, create the system property glide.chart.decimal.precision and specify the value.</td>
</tr>
</tbody>
</table>

**Note:** Percentage labels do not change accordingly with the decimal precision specified.
### Show chart title
Select when the chart title is displayed.
- **Never**: never displays the chart title.
- **Report only**: displays the chart title on reports.
- **Always**: displays the chart title on reports and homepage gauges.

### Chart title
Enter a title for this chart. The title has a maximum length of 40 characters. If no title is entered, the report name is used for the title. This field is available when Report only or Always is selected from the Show chart title list.

### Chart title size
Enter the size of the chart title in pixels. This field is available when Report only or Always is selected from the Show chart title list.

### Chart title color
Select the color for the chart title. This field is available when Report only or Always is selected from the Show chart title list.

### Custom chart title position
Select this check box to specify the X and Y coordinates for the position of the chart title.

### Title horizontal alignment
Select how the chart title is aligned horizontally. This field is available when Custom chart title position is cleared.

### Title vertical alignment
Select how the chart title is aligned vertically. This field is available when Custom chart title position is cleared.

## Donut charts
Donut and semi-donut charts show the proportions that make up a whole.

Donut charts are similar to pie charts, but the donut chart has empty space in the middle. The difference between a donut and a semi-donut chart is that a semi-donut is a donut sliced in half. The information presented is the same. Donut and semi-donut charts can be placed on homepages where users can quickly interpret the information displayed.

For example, use a donut or semi-donut chart to show open incidents by priority. At any time, there are open incidents of different priority levels. A donut or semi-donut chart enables you to see quickly whether incident counts of different priorities are within acceptable ranges.
Donut chart of incidents by priority
Create a donut report in the Report Designer

Create a donut report to show the how one grouping relates to the total amount. Create a donut chart report to compare the size of parts to the whole.

Role required: itil, report_group, report_global, report_admin, or admin. To create a meaningful report, you must have the right to access the data you want to report on.

This task refers to Report Designer in the Kingston release. If you are using the Report Builder (Classic UI) in Kingston for creating reports, select the applicable report from Creating reports to see instructions. If you are using an earlier UI or the Classic UI for creating reports in an earlier release, follow the instructions in the Helsinki documentation: Report types and creation details.
1. Navigate to **Reports > Create New**.
2. On the **Data** tab, give the report a name that reflects the information being grouped.
3. Select the applicable source for the report:

<table>
<thead>
<tr>
<th>Option</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Data source</td>
<td>A table with filters applied to provide a single source of information for all users.</td>
</tr>
<tr>
<td><strong>Note:</strong> If you select a data source used by existing reports, a notification displays prompting you to view them.</td>
<td></td>
</tr>
<tr>
<td>Table</td>
<td>The raw data from a table with no filters applied.</td>
</tr>
<tr>
<td>External import</td>
<td>Choose an existing imported report source, or click the Upload icon to import a new file. See Create a report from an imported Microsoft Excel document.</td>
</tr>
<tr>
<td>Option</td>
<td>Description</td>
</tr>
<tr>
<td>------------------</td>
<td>-----------------------------------------------------------------------------</td>
</tr>
<tr>
<td>MetricBase</td>
<td>MetricBase enables you to collect, retain, analyze, and visualize custom time series data on the Now Platform. For more information, see MetricBase application.</td>
</tr>
</tbody>
</table>

4. Click **Next**.

5. On the **Type** tab, select **Donut** or **Semi-donut** in the **Pies and Donuts** section and click **Next**.

   A preliminary version of the report is displayed. To view the updated report at any time, click **Run**.

6. On the **Configure** tab, fill in the following fields and click **Next**.

   **Configure tab**

<table>
<thead>
<tr>
<th>Field</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Group by</td>
<td>Group report data using the values of this field. For example, in an incident report grouped by <strong>Assignment group</strong>, all incidents that belong to Software, Service Desk, and Network are placed in separate groups.</td>
</tr>
<tr>
<td>Additional group by</td>
<td>Extra fields to group the report by. When you select <strong>Additional group by</strong> fields, a control is added to the bottom of the report that groups the report by any one of the additional fields.</td>
</tr>
<tr>
<td>Display data table</td>
<td>Check this box to show report data in a grid beneath the report. The table appears on dashboards where the report is added. All reports that use charts, including reports that are used on dashboards, show the table of report data when the glide.ui.section508 system property is set to <strong>true</strong>. The glide.ui.section508 property overrides the <strong>Display data table</strong> field.</td>
</tr>
<tr>
<td>Field</td>
<td>Description</td>
</tr>
<tr>
<td>--------------</td>
<td>--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------</td>
</tr>
<tr>
<td>Aggregation</td>
<td>Mathematical calculation to perform on the data. The default is <strong>Count</strong>, which shows the number of records selected. To show only unique records, select <strong>Count Distinct</strong>. For example, if you want a report on the distinct number of users who have one or more of the roles in a given list of roles. Users with more than one role would be counted twice unless you use <strong>Count Distinct</strong>. Select <strong>Average</strong>, <strong>Sum</strong>, or <strong>Count Distinct</strong>, to show a list of fields from the selected <strong>Table</strong>. Select a field to <strong>Aggregate by</strong> from this list. For example, if you select a duration field, such as <strong>Business duration</strong> on the Incident table, the aggregated data is expressed in days, hours, and minutes. If you select an integer field, such as <strong>Priority</strong>, the data is expressed as a decimal value number. If you choose <strong>Sum</strong> or <strong>Average</strong>, select <strong>Show related fields</strong> to aggregate on dot-walked fields. See <strong>Selecting fields on related tables using dot-walking</strong>. <strong>Note:</strong> For duration values, the unit of measurement displayed in the aggregation axis cannot be customized. <strong>Max number of groups</strong></td>
</tr>
</tbody>
</table>

7. **Optional:** Configure the sort order of the applicable fields in the report (column, row, Group by, Stack by or Trend by depending on the report type). Click the filter icon ( ) and select **Add Sort**.

1. In the Sorting Order list, choose the field you want to sort on and then choose **a-z** or **z-a** for alphabetical order or reverse alphabetical order. The list contains all possible fields from the report's source. The only effective values, however, are the fields chosen for the current report (column, row, Group by, Stack by, or Trend by depending on the report type). Add sort cannot be applied to dot-walked fields.
2. Click to configure additional sorting order conditions. (Click to delete configured sorting order conditions.)

3. Click **Save**.

For fields of the type Choice list, the sort order is determined by the sequence of the choices in the choice list, not alphabetically or numerically. For example, a priority choice list is often indexed from Critical to Planning as shown in the following figure.
8. Optional: To limit the information displayed in the report, click the filter icon
and select conditions to filter the report data.
For more details on how conditions are constructed, see Condition builder.

Note: Keywords is a special field used for text searches across all fields. Its use in a filter or condition, in combination with other conditions, may return inconsistent results.

9. On the Style tab, fill in the fields as appropriate to configure the appearance of the report.

10. Click Save.
The report is generated.

- Click the Report info icon
  ( )
  and add a description of the report.
- Click the sharing icon
  ( )
  to open the Sharing menu. On this menu, you can add the report to a dashboard, export the report to PDF, publish the report to the web, and set visibility and schedules. For more information, see Share a report – Report Designer.

Donut chart style options – Report Designer
Change the look of your donut or semi-donut chart.

When you create or edit a report, click the Style tab for options to configure the look of your report. The options are organized under two or more of the following tabs: General, Title, Legend, and Axis. To see how the report looks with the changed settings, click Save.

Donut chart style options

<table>
<thead>
<tr>
<th>Field</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>General</td>
<td></td>
</tr>
<tr>
<td>Donut width</td>
<td>Percentage for the width of the donut or semi-donut band, ranging from 1 through 100 percent. 100 percent equals a pie chart. The default value is 50.</td>
</tr>
<tr>
<td>Show total and hide legend</td>
<td>Check box to display the total aggregation value in the center of the donut. Also automatically hides the chart legend.</td>
</tr>
<tr>
<td>Field</td>
<td>Description</td>
</tr>
<tr>
<td>---------------------</td>
<td>-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------</td>
</tr>
<tr>
<td>Chart color</td>
<td>Color for the chart. Select one of the following options:</td>
</tr>
<tr>
<td></td>
<td>- Use color palette: Select a color palette from the predefined system color palettes.</td>
</tr>
<tr>
<td></td>
<td>- Use several colors: Define a custom set of Colors using hex codes. You can add any number of colors.</td>
</tr>
<tr>
<td></td>
<td>- Use chart colors: Use the colors defined in Reports &gt; Chart Colors.</td>
</tr>
<tr>
<td>Set palette</td>
<td>Color palette used in the report. This field appears when you select Use color palette from the Chart color list. Click the search icon ( ) to choose from the Color color schemes list.</td>
</tr>
<tr>
<td>Colors</td>
<td>Colors used in the report. This field displays when you select Use several colors from the Chart color list. Click the search icon ( ) to choose from the Chart color schemes or Color Definitions list.</td>
</tr>
<tr>
<td>Display data labels</td>
<td>Check box to show the value for each data point.</td>
</tr>
<tr>
<td>Custom chart size</td>
<td>Check box to specify the width and height of the report in pixels.</td>
</tr>
<tr>
<td></td>
<td><strong>Note:</strong> The chart size is ignored when you export the report to PDF. In PDFs, the full page width is used to show the chart.</td>
</tr>
<tr>
<td>Chart width</td>
<td>Width of the report in pixels. The default value is 600.</td>
</tr>
<tr>
<td></td>
<td>This field is available when Custom chart size is selected.</td>
</tr>
<tr>
<td>Chart height</td>
<td>Height of the report in pixels. The default value is 450.</td>
</tr>
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<td></td>
<td>This field appears when Custom chart size is selected.</td>
</tr>
<tr>
<td>Chart size</td>
<td>Chart size. This field is available when Custom chart size is cleared. Options are Small, Medium, and Large.</td>
</tr>
<tr>
<td></td>
<td><strong>Note:</strong> The chart size is ignored when you export the report to PDF. In PDFs, the full page width is used to show the chart.</td>
</tr>
<tr>
<td>Field</td>
<td>Description</td>
</tr>
<tr>
<td>---------------------</td>
<td>-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------</td>
</tr>
<tr>
<td>Drilldown view</td>
<td>List view to show when a user selects a segment of a report for which no drilldown report type is specified. This view is also used when the user reaches the lowest drilldown level of a report. See Configure the list layout. If you specify a Report drilldown, Drilldown view is ignored.</td>
</tr>
</tbody>
</table>

**Note:** All users are able to view report visualizations, such as pie charts and column reports. However, the last level of a report drilldown is always a list. Platform access control lists determine user access to list information. Users who do not have rights to any part of the list data see the message “Number of rows removed from this list by Security constraints:” followed by the number. See Access control rules.

For more information, see Define a report drilldown in the Report Designer.
<table>
<thead>
<tr>
<th>Field</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Decimal precision</td>
<td>Number of decimal places to show. You can show from zero to four decimal places. Default value: 2. To change the default value, create the system property glide.chart.decimal.precision and specify the value.</td>
</tr>
</tbody>
</table>

**Note:** Percentage labels do not change accordingly with the decimal precision specified.

![Chart](chart.png)
<table>
<thead>
<tr>
<th>Field</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Show chart title</td>
<td>When the chart title is shown for the report.</td>
</tr>
<tr>
<td></td>
<td>- Never: Never show the chart title.</td>
</tr>
<tr>
<td></td>
<td>- Report only: Shows the chart title on reports.</td>
</tr>
<tr>
<td></td>
<td>- Always: Shows the chart title on reports, dashboards, and homepages.</td>
</tr>
<tr>
<td>Chart title</td>
<td>The chart title has a maximum length of 40 characters. If no title is entered, the report name is used for the title. This field appears when Report only or Always is selected from the Show chart title list.</td>
</tr>
<tr>
<td>Size of the chart title</td>
<td>Size of the chart title in pixels. This field appears when Report only or Always is selected from the Show chart title list.</td>
</tr>
<tr>
<td>Chart title color</td>
<td>Color of the chart title. This field appears when Report only or Always is selected from the Show chart title list.</td>
</tr>
<tr>
<td>Custom chart title position</td>
<td>Check box to specify X and Y coordinates for the position of the chart title. This field appears when Report only or Always is selected from the Show chart title list.</td>
</tr>
<tr>
<td>Chart title X position</td>
<td>Number of pixels to adjust the chart title position right or left. By default the title appears at the center top of the chart. To move the chart title to the right, enter a positive value. To move the title to the left, enter a negative value.</td>
</tr>
<tr>
<td></td>
<td>This field appears only when Custom chart title position is selected.</td>
</tr>
<tr>
<td>Chart title Y position</td>
<td>Number of pixels to adjust the chart title position up or down. By default the title appears at the center top of the chart. To move up the chart title, enter a positive value. To move the chart title down, enter a negative value.</td>
</tr>
<tr>
<td></td>
<td>This field appears only when Custom chart title position is selected.</td>
</tr>
<tr>
<td>Title horizontal alignment</td>
<td>How the chart title is aligned horizontally. This field is available when Custom chart title position is cleared.</td>
</tr>
<tr>
<td>Title vertical alignment</td>
<td>How the chart title is aligned vertically. This field appears when Custom chart title position is cleared.</td>
</tr>
<tr>
<td>Legend</td>
<td>Check box to show a chart legend. This check box appears when a Group by field is selected on the report form.</td>
</tr>
<tr>
<td>Field</td>
<td>Description</td>
</tr>
<tr>
<td>-------------------------------</td>
<td>-----------------------------------------------------------------------------</td>
</tr>
<tr>
<td>Legend horizontal alignment</td>
<td>How the legend is aligned horizontally. This field appears when <strong>Show legend</strong> is selected.</td>
</tr>
<tr>
<td>Legend vertical alignment</td>
<td>How the legend is aligned vertically. This field appears when <strong>Show legend</strong> is selected.</td>
</tr>
<tr>
<td>Show legend border</td>
<td>Check box to show a border around the legend. This check box appears when <strong>Show legend</strong> is selected.</td>
</tr>
<tr>
<td>Left align legend text</td>
<td>Check box to left-align the legend text when the report is viewed in a browser. By default, the legend text is centered. When the report is exported to PDF, PNG, or JPG, the legend remains centered. This check box appears when <strong>Show legend</strong> is selected.</td>
</tr>
</tbody>
</table>

**Create a donut report in the Report Builder**

Create a donut report to show how one grouping relates to the total amount.

*Create a donut report in the Report Builder*

How to create a donut report.

Role required: itil, report_group, report_global, report_admin, or admin. To create a meaningful report, you must have the right to access the data you want to report on.

This task refers to using the Report Builder (Classic UI) in the Kingston release under UI15 and UI16. If you are using the Report Designer, see *Create a donut report in the Report Designer*. 
1. Navigate to **Reports > Create New**.
2. Fill in the fields, as appropriate.

<table>
<thead>
<tr>
<th>Field</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Name</td>
<td>Enter a unique and descriptive name for the report.</td>
</tr>
<tr>
<td>Description</td>
<td>Click the information icon (i) to enter a more detailed description of what the report does and its purpose.</td>
</tr>
</tbody>
</table>
| Data    | Specify the table or report source containing the data set that you want to include in the report. From the first choice list, select the **Table** or **Report source**. Then select the specific table or **predefined data set** from the second choice list.  
  **Note:** If you select a data source used by existing reports, a notification will display prompting you to view them. |
<p>| Type    | Select <strong>Donut</strong> or <strong>Semi donut</strong>. |</p>
<table>
<thead>
<tr>
<th>Field</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Style your chart</td>
<td>Click the gear icon (🔧) after the <strong>Type</strong> field to configure chart style options for the look and layout of the chart.</td>
</tr>
<tr>
<td>Group by</td>
<td>Select a field to organize data into groups from the selected table. In an incident report grouped by <strong>Assignment group</strong>, all incidents belonging to Software, Service Desk, Network, and so on, are placed in separate groups. Make sure that you give the report a name that reflects the field you select. Click + to select additional group by fields. When you select <strong>Additional group by</strong> fields, a control is added to the bottom of the report that groups the report by any one of the additional fields.</td>
</tr>
<tr>
<td>Note:</td>
<td>It is not possible to group or stack reports by the <strong>Tags</strong> field.</td>
</tr>
<tr>
<td>Display Grid</td>
<td>Select this check box to display details of the report data in a table below the chart.</td>
</tr>
<tr>
<td>Aggregation</td>
<td>Select a computational method for aggregating report data. The default is Count, which displays the number of records selected. If you select Count Distinct, only unique records are counted. For example, if you want to generate a report with a distinct number of users who have one or more of the roles in a given list of roles, these users would be counted twice unless you use count distinct. If you select Average, Sum, or Count Distinct, a list of fields from the selected Table appears. From this list, select a field to aggregate by. For example, if you select a duration field, such as the Business duration field on the Incident table, the aggregated data is expressed in days, hours, and minutes. If you select an integer field, such as the Priority field, the data is expressed as a number. Note: For duration values, the unit of measurement displayed in the aggregation axis cannot be customized.</td>
</tr>
<tr>
<td>No. groups</td>
<td>Select the maximum number of individual values that can be represented as slices in the chart. If the number of values from the selected data exceeds this limit, only the largest values are represented by the slices. By default, up to the 12 of the largest values from the selected data can be represented. Remaining values are grouped into an <strong>Other</strong> slice. If you select <strong>Show all</strong>, all slices up to limit of 50 slices can be displayed. The rest of the results are stacked in the <strong>Other</strong> slice.</td>
</tr>
<tr>
<td>Show Other</td>
<td>Select this check box if you want to display the <strong>Other</strong> slice.</td>
</tr>
</tbody>
</table>
Add Filter Condition

Click the filter icon to create conditions for filtering and ordering data. For example, you might create a condition that states `Priority + less than + 3 – Moderate` to have the report include only records with priorities of `2 – High` and `1 – Critical`.

**Note:** Applying a string filter with other filters to donut and bar charts is not supported.

**Note:** Keywords is a special field used for text searches across all fields. Its use in a filter or condition, in combination with other conditions, may return inconsistent results.

Add “OR” Clause

Select a second condition that must be met if the first condition is invalid. For example, select `(Assignment Group) (is) (Database)`, to include records that are assigned to the Database group if the first condition is false.

Add Sort

Select fields to sort data by. For example, to sort results from lowest to highest priority, select `(Priority) (z to a)`. For reports with Group by, Stack by, Row/Column or Trend by fields to configure, you can sort by fields that are not listed in the Group by, Stack by, Row/Column or Trend by options.

3. **Click Save.** The report is generated.

Add reports to homepages or dashboards, publish to the internet, schedule email distribution of PDFs or URLs of published reports, and share reports with others. See *Distribute reports*.

**Donut chart style options – Report Builder**

Change the look of your donut chart.

When you create or edit a report, click the gear icon ( ) after the **Type** field to open the **Style your chart** window with options to configure the look of your chart. Chart options are automatically saved when you click **Close**.

**Donut chart style options**

<table>
<thead>
<tr>
<th>Field</th>
<th>Description</th>
</tr>
</thead>
</table>
| Chart color    | If no group by is used, **Use one color** is automatically selected. Select a single predefined system color.  
If a group by is used, select one of the following options:  
- **Use color palette**: Select a color palette from the predefined system color palettes.  
- **Use several colors**: Define a custom set of Colors using hex codes. You can add any number of colors.  
- **Use chart colors**: Use the colors defined in Reports > Chart Colors. |
<table>
<thead>
<tr>
<th>Field</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Donut Width Percent</td>
<td>Enter a percentage for the width of the donut or semi-donut band, ranging between 1 and 100 percent. One hundred percent equals a pie chart. The default value is 50.</td>
</tr>
<tr>
<td>Show total</td>
<td>Select this check box to display the total aggregation value in the center of the donut. Selecting this option automatically hides the chart legend.</td>
</tr>
<tr>
<td>Display data labels</td>
<td>Select this check box to display the current value for each bar. This field is available when you select None from the Stacked by list.</td>
</tr>
<tr>
<td>Custom chart size</td>
<td>Select this check box to specify the chart's width and height in pixels.</td>
</tr>
<tr>
<td>Chart size</td>
<td>Select a chart size. This field is available when Custom chart size is cleared.</td>
</tr>
<tr>
<td>Drilldown View</td>
<td>Select a view that determines how detailed records are shown when a specific part of the report visualization is clicked. This option is available for charts with drill-down capabilities. If you select a view that has no fields in common to link to the table that the report is based on, the default view is used. See Define a report drilldown in the Report Designer.</td>
</tr>
<tr>
<td>Field</td>
<td>Description</td>
</tr>
<tr>
<td>---------------------</td>
<td>---------------------------------------------------------------------------------------------------------------------------------------------</td>
</tr>
<tr>
<td>Decimal precision</td>
<td>Number of decimal places to show. You can show from zero to four decimal places. Default value: 2. To change the default value, create the system property glide.chart.decimal.precision and specify the value.</td>
</tr>
</tbody>
</table>

**Note:** Percentage labels do not change accordingly with the decimal precision specified.

---

Title
<table>
<thead>
<tr>
<th>Field</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Show chart title</td>
<td>Select when the chart title is displayed.</td>
</tr>
<tr>
<td></td>
<td>• Never: never displays the chart title.</td>
</tr>
<tr>
<td></td>
<td>• Report only: displays the chart title on reports.</td>
</tr>
<tr>
<td></td>
<td>• Always: displays the chart title on reports, dashboards, and homepages.</td>
</tr>
<tr>
<td>Chart title</td>
<td>Enter a title for this chart. The title has a maximum length of 40 characters. If no title is entered, the report name is used for the title. This field is available when Report only or Always is selected from the Show chart title list.</td>
</tr>
<tr>
<td>Chart title size</td>
<td>Enter the size of the chart title in pixels. This field is available when Report only or Always is selected from the Show chart title list.</td>
</tr>
<tr>
<td>Chart title color</td>
<td>Select the color for the chart title. This field is available when Report only or Always is selected from the Show chart title list.</td>
</tr>
<tr>
<td>Custom chart title position</td>
<td>Select this check box to specify the X and Y coordinates for the position of the chart title.</td>
</tr>
<tr>
<td>Title horizontal alignment</td>
<td>Select how the chart title is aligned horizontally. This field is available when Custom chart title position is cleared.</td>
</tr>
<tr>
<td>Title vertical alignment</td>
<td>Select how the chart title is aligned vertically. This field is available when Custom chart title position is cleared.</td>
</tr>
<tr>
<td>Legend</td>
<td></td>
</tr>
<tr>
<td>Show legend</td>
<td>Select this check box to display the legend. This field is available when a Stacked by option is selected on the report form.</td>
</tr>
<tr>
<td>Legend horizontal alignment</td>
<td>Select how the legend is aligned horizontally. This field is available when Show legend is selected.</td>
</tr>
<tr>
<td>Legend vertical alignment</td>
<td>Select how the legend is aligned vertically. This field is available when Show legend is selected.</td>
</tr>
<tr>
<td>Left align legend text</td>
<td>Select to left-align the legend text. By default, legend text is centered.</td>
</tr>
<tr>
<td>Show legend border</td>
<td>Select this check box to display a border around the legend. This field is available when Show legend is selected.</td>
</tr>
</tbody>
</table>

**Funnel and pyramid reports**

Funnel and pyramid reports visualize the distribution of data. The size of the slices or sections represents a percentage of the total of all values.

Funnel reports are often used to represent stages in a sales process (from lead to closed deal), or to identify potential problem areas in a process. If you apply a neck in a funnel chart, all values below a certain percentage of the total value are represented as a bar. The bar indicates that their differences are of equal importance.

Funnel reports stack slices from top to bottom by decreasing percentage and pyramid charts stack slices by increasing percentage. Pyramid reports are often used to represent hierarchical levels in an organization. Funnel and pyramid reports can be placed on homepages where users can quickly interpret the information displayed.

For example, use a funnel or pyramid report to show open incidents by priority. At any time, there are open incidents of different priority levels. For example, an organization has a policy that P1
incidents can never exceed 40% of all open incidents. Funnel and pyramid charts show whether incident counts are within acceptable ranges.
Create a funnel or pyramid report in the Report Designer

Create a report that shows the distribution of data in a process.

Create a funnel report where the size of each slice represents a percentage of the total.

Role required: itil, report_group, report_global, report_admin, or admin. To create a meaningful report, you must have the right to access the data you want to report on.

This task refers to Report Designer in the Kingston release. If you are using the Report Builder (Classic UI) in Kingston for creating reports, select the applicable report from Creating reports to see instructions. If you are using an earlier UI or the Classic UI for creating reports in an earlier release, follow the instructions in the Helsinki documentation: Report types and creation details.
1. Navigate to **Reports > Create New**.
2. On the **Data** tab, give the report a name that reflects the information being grouped.
3. Select the applicable source for the report:

<table>
<thead>
<tr>
<th>Option</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Data source</strong></td>
<td>A table with filters applied to provide a single source of information for all users.</td>
</tr>
<tr>
<td><strong>Table</strong></td>
<td>The raw data from a table with no filters applied.</td>
</tr>
<tr>
<td><strong>External import</strong></td>
<td>Choose an existing imported report source, or click the Upload icon to import a new file. See Create a report from an imported Microsoft Excel document.</td>
</tr>
<tr>
<td>Option</td>
<td>Description</td>
</tr>
<tr>
<td>--------------</td>
<td>-----------------------------------------------------------------------------</td>
</tr>
<tr>
<td>MetricBase</td>
<td>MetricBase enables you to collect, retain, analyze, and visualize custom</td>
</tr>
<tr>
<td></td>
<td>time series data on the Now Platform. For more information, see MetricBase</td>
</tr>
<tr>
<td></td>
<td>application.</td>
</tr>
</tbody>
</table>

4. Click **Next**.

5. On the **Type** tab, select **Pyramid** or **Funnel** in the **Other** section and click **Next**.

A preliminary version of the report is displayed. To view the updated report at any time, click **Run**.

6. On the **Configure** tab, fill in the following fields and click **Next**.

**Funnel chart**

<table>
<thead>
<tr>
<th>Field</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Group by</td>
<td>Group report data using the values of this field. For example, in an incident report grouped by <strong>Assignment group</strong>, all incidents that belong to Software, Service Desk, and Network are placed in separate groups.</td>
</tr>
<tr>
<td></td>
<td><strong>Note:</strong> It is not possible to group or stack reports by the <strong>Tags</strong> field.</td>
</tr>
<tr>
<td></td>
<td><strong>Note:</strong> Label names longer than 20 characters may show or print a truncated view.</td>
</tr>
<tr>
<td>Additional group by</td>
<td>Extra fields to group the report by. When you select <strong>Additional group by</strong> fields, a control is added to the bottom of the report that groups the report by any one of the additional fields.</td>
</tr>
<tr>
<td></td>
<td><strong>Note:</strong> It is not possible to group or stack reports by the <strong>Tags</strong> field.</td>
</tr>
<tr>
<td>Display data table</td>
<td>Check this box to show report data in a grid beneath the report. The table appears on dashboards where the report is added.</td>
</tr>
<tr>
<td></td>
<td>All reports that use charts, including reports that are used on dashboards, show the table of report data when the glide.ui.section508 system property is set to <strong>true</strong>. The glide.ui.section508 property overrides the <strong>Display data table</strong> field.</td>
</tr>
<tr>
<td>Field</td>
<td>Description</td>
</tr>
<tr>
<td>-----------------------</td>
<td>-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------</td>
</tr>
<tr>
<td>Aggregation</td>
<td>Mathematical calculation to perform on the data. The default is Count, which shows the number of records selected. To show only unique records, select Count Distinct. For example, if you want a report on the distinct number of users who have one or more of the roles in a given list of roles. Users with more than one role would be counted twice unless you use Count Distinct. Select Average, Sum, or Count Distinct, to show a list of fields from the selected Table. Select a field to Aggregate by from this list. For example, if you select a duration field, such as Business duration on the Incident table, the aggregated data is expressed in days, hours, and minutes. If you select an integer field, such as Priority, the data is expressed as a decimal value number. If you choose Sum or Average, select Show related fields to aggregate on dot-walked fields. <strong>Note:</strong> For duration values, the unit of measurement displayed in the aggregation axis cannot be customized.</td>
</tr>
<tr>
<td>Max number of groups</td>
<td>Maximum number of groups to display in the report. Groups with highest values are included first. Any excluded groups are combined into the single group Other. If you select Show all, all groups up to a limit of 50 are displayed. The rest of the results are grouped as Other.</td>
</tr>
<tr>
<td>Show Other</td>
<td>Check box to include the Other group in the report. The Other group contains data for all groups that exceed the number specified in Max number of groups.</td>
</tr>
</tbody>
</table>

7. Optional: Configure the sort order of the applicable fields in the report (column, row, Group by, Stack by or Trend by depending on the report type). Click the filter icon and select Add Sort.

1. In the Sorting Order list, choose the field you want to sort on and then choose a-z or z-a for alphabetical order or reverse alphabetical order. The list contains all possible fields from the report's source. The only effective values, however, are the fields chosen for the current report (column, row, Group by, Stack by, or Trend by depending on the report type). Add sort cannot be applied to dot-walked fields.
2. Click  
   ![Icon]  
to configure additional sorting order conditions. (Click  
   ![Icon]  
to delete configured sorting order conditions.)

3. Click **Save**.

For fields of the type Choice list, the sort order is determined by the sequence of the choices in the choice list, not alphabetically or numerically. For example, a priority choice list is often indexed from Critical to Planning as shown in the following figure.
8. Optional: To limit the information displayed in the report, click the filter icon
   \[\text{filter icon}\]
   and select conditions to filter the report data.
   For more details on how conditions are constructed, see \textit{Condition builder}.

   \textbf{Note:} Keywords is a special field used for text searches across all fields. Its use in a filter
   or condition, in combination with other conditions, may return inconsistent results.

9. On the \textbf{Style} tab, fill in the fields as appropriate to configure the appearance of the report.
10. Click \textbf{Save}.
    The report is generated.

   - Click the \textbf{Report info} icon
     \[\text{Report info icon}\]
     and add a description of the report.
   - Click the \textbf{sharing} icon
     \[\text{sharing icon}\]
     to open the \textbf{Sharing} menu. On this menu, you can add the report to a dashboard, export
   the report to PDF, publish the report to the web, and set visibility and schedules. For more
   information, see \textit{Share a report ± Report Designer}.

\textbf{Funnel and pyramid report style options} – \textit{Report Designer}
Change the look of your funnel or pyramid report.

When you create or edit a report, click the \textbf{Style} tab for options to configure the look of your
report. The options are organized under two or more of the following tabs: \textit{General}, \textit{Title}, \textit{Legend},
and \textbf{Axis}. To see how the report looks with the changed settings, click \textbf{Save}.

\textbf{Funnel and pyramid chart style options}

<table>
<thead>
<tr>
<th>Field</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>General</strong></td>
<td></td>
</tr>
<tr>
<td>Funnel neck size</td>
<td>(\text{(Funnel charts only) Enter a percentage for the width of the funnel, from } 1-100 \text{ percent. 1 percent is the lowest value that can be represented above the funnel neck. Values lower than 1 percent are stacked below the neck in a bar of a set width. 100 percent equals a bar chart. The default value is 30.})</td>
</tr>
</tbody>
</table>
| Chart color       | \(\text{Select one of the following options:}\) 
   - Use color palette: Select a color palette from the predefined system color palettes.
   - Use several colors: Define a custom set of Colors using hex codes. You can add any number of colors.
   - Use chart colors: Use the colors defined in Reports > Chart Colors. |
<table>
<thead>
<tr>
<th>Field</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Set color</td>
<td>Color used in the report. This field displays when you select <strong>Use one color</strong> from the <strong>Chart color</strong> list. Click the search icon (🔍) to choose from the <strong>Chart color schemes</strong> or <strong>Color Definitions</strong> list.</td>
</tr>
<tr>
<td>Set palette</td>
<td>Color palette used in the report. This field appears when you select <strong>Use color palette</strong> from the <strong>Chart color</strong> list. Click the search icon (🔍) to choose from the <strong>Color color schemes</strong> list.</td>
</tr>
<tr>
<td>Custom chart size</td>
<td>Check box to specify the width and height of the report in pixels. <strong>Note:</strong> The chart size is ignored when you export the report to PDF. In PDFs, the full page width is used to show the chart.</td>
</tr>
<tr>
<td>Chart width</td>
<td>Width of the report in pixels. The default value is 600. This field is available when <strong>Custom chart size</strong> is selected.</td>
</tr>
<tr>
<td>Chart height</td>
<td>Height of the report in pixels. The default value is 450. This field appears when <strong>Custom chart size</strong> is selected.</td>
</tr>
<tr>
<td>Chart size</td>
<td>Chart size. This field is available when <strong>Custom chart size</strong> is cleared. Options are <strong>Small</strong>, <strong>Medium</strong>, and <strong>Large</strong>. <strong>Note:</strong> The chart size is ignored when you export the report to PDF. In PDFs, the full page width is used to show the chart.</td>
</tr>
<tr>
<td>Field</td>
<td>Description</td>
</tr>
<tr>
<td>--------------------</td>
<td>-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------</td>
</tr>
<tr>
<td>Drilldown view</td>
<td>List view to show when a user selects a segment of a report for which no drilldown report type is specified. This view is also used when the user reaches the lowest drilldown level of a report. See <em>Configure the list layout</em>. If you specify a Report drilldown, <em>Drilldown view</em> is ignored.</td>
</tr>
</tbody>
</table>

**Note:** All users are able to view report visualizations, such as pie charts and column reports. However, the last level of a report drilldown is always a list. Platform access control lists determine user access to list information. Users who do not have rights to any part of the list data see the message “Number of rows removed from this list by Security constraints:” followed by the number. See *Access control rules*. For more information, see *Define a report drilldown in the Report Designer*. |
<table>
<thead>
<tr>
<th>Field</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Decimal precision</td>
<td>Number of decimal places to show. You can show from zero to four decimal places. Default value: 2. To change the default value, create the system property glide.chart.decimal.precision and specify the value.</td>
</tr>
</tbody>
</table>

**Note:** Percentage labels do not change accordingly with the decimal precision specified.
<table>
<thead>
<tr>
<th>Field</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Show chart title</td>
<td>When the chart title is shown for the report.</td>
</tr>
<tr>
<td></td>
<td>- <strong>Never</strong>: Never show the chart title.</td>
</tr>
<tr>
<td></td>
<td>- <strong>Report only</strong>: Shows the chart title on reports.</td>
</tr>
<tr>
<td></td>
<td>- <strong>Always</strong>: Shows the chart title on reports, dashboards, and homepages.</td>
</tr>
<tr>
<td>Chart title</td>
<td>The chart title has a maximum length of 40 characters.</td>
</tr>
<tr>
<td></td>
<td>- If no title is entered, the report name is used for the title.</td>
</tr>
<tr>
<td></td>
<td>This field appears when <strong>Report only</strong> or <strong>Always</strong> is selected from the</td>
</tr>
<tr>
<td></td>
<td><strong>Show chart title</strong> list.</td>
</tr>
<tr>
<td>Size of the chart title</td>
<td>Size of the chart title in pixels.</td>
</tr>
<tr>
<td></td>
<td>- This field appears when <strong>Report only</strong> or <strong>Always</strong> is selected from</td>
</tr>
<tr>
<td></td>
<td>the <strong>Show chart title</strong> list.</td>
</tr>
<tr>
<td>Chart title color</td>
<td>Color of the chart title.</td>
</tr>
<tr>
<td></td>
<td>- This field appears when <strong>Report only</strong> or <strong>Always</strong> is selected from</td>
</tr>
<tr>
<td></td>
<td>the <strong>Show chart title</strong> list.</td>
</tr>
<tr>
<td>Custom chart title position</td>
<td>Check box to specify X and Y coordinates for the position of the chart</td>
</tr>
<tr>
<td></td>
<td>title. This field appears when <strong>Report only</strong> or <strong>Always</strong> is selected</td>
</tr>
<tr>
<td></td>
<td>from the <strong>Show chart title</strong> list.</td>
</tr>
<tr>
<td>Chart title X position</td>
<td>Number of pixels to adjust the chart title position right or left.</td>
</tr>
<tr>
<td></td>
<td>- By default the title appears at the center top of the chart.</td>
</tr>
<tr>
<td></td>
<td>- To move the chart title to the right, enter a positive value.</td>
</tr>
<tr>
<td></td>
<td>- To move the title to the left, enter a negative value.</td>
</tr>
<tr>
<td></td>
<td>- This field appears only when <strong>Custom chart title position</strong> is selected.</td>
</tr>
<tr>
<td>Chart title Y position</td>
<td>Number of pixels to adjust the chart title position up or down.</td>
</tr>
<tr>
<td></td>
<td>- By default the title appears at the center top of the chart.</td>
</tr>
<tr>
<td></td>
<td>- To move up the chart title, enter a positive value.</td>
</tr>
<tr>
<td></td>
<td>- To move the chart title down, enter a negative value.</td>
</tr>
<tr>
<td></td>
<td>- This field appears only when <strong>Custom chart title position</strong> is selected.</td>
</tr>
<tr>
<td>Title horizontal alignment</td>
<td>How the chart title is aligned horizontally. This field is available when</td>
</tr>
<tr>
<td></td>
<td><strong>Custom chart title position</strong> is cleared.</td>
</tr>
<tr>
<td>Title vertical alignment</td>
<td>How the chart title is aligned vertically. This field appears when **Custom</td>
</tr>
<tr>
<td></td>
<td>chart title position** is cleared.</td>
</tr>
<tr>
<td>Legend</td>
<td>Check box to show a chart legend.</td>
</tr>
<tr>
<td></td>
<td>- This check box appears when a <strong>Group by</strong> field is selected on the</td>
</tr>
<tr>
<td></td>
<td>report form.</td>
</tr>
<tr>
<td>Field</td>
<td>Description</td>
</tr>
<tr>
<td>-----------------------------------</td>
<td>-----------------------------------------------------------------------------</td>
</tr>
<tr>
<td>Legend horizontal alignment</td>
<td>How the legend is aligned horizontally. This field appears when <strong>Show legend</strong> is selected.</td>
</tr>
<tr>
<td>Legend vertical alignment</td>
<td>How the legend is aligned vertically. This field appears when <strong>Show legend</strong> is selected.</td>
</tr>
<tr>
<td>Show legend border</td>
<td>Check box to show a border around the legend. This check box appears when <strong>Show legend</strong> is selected.</td>
</tr>
<tr>
<td>Left align legend text</td>
<td>Check box to left-align the legend text when the report is viewed in a browser. By default, the legend text is centered. When the report is exported to PDF, PNG, or JPG, the legend remains centered. This check box appears when <strong>Show legend</strong> is selected.</td>
</tr>
</tbody>
</table>

**Create a funnel or pyramid report in the Report Builder**

Create a report that shows the distribution of data in a process.

Create a funnel report, where the size of each slice represents its percentage of the total.

Role required: itil, report_group, report_global, report_admin, or admin. To create a meaningful report, you must have the right to access the data you want to report on.

This task refers to using the Report Builder (Classic UI) in the Kingston release under UI15 and UI16. If you are using the Report Designer, see "Create a funnel or pyramid report in the Report Designer."
1. Navigate to **Reports > Create New**.
2. Fill in the fields, as appropriate.

**Funnel chart**

<table>
<thead>
<tr>
<th>Field</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Name</td>
<td>Enter a unique and descriptive name for the report.</td>
</tr>
<tr>
<td>Description</td>
<td>Click the information icon ( ) to enter a more detailed description of what the report does and its purpose.</td>
</tr>
<tr>
<td>Data</td>
<td>Specify the table or report source containing the data set that you want to include in the report. From the first choice list, select <strong>Table</strong> or <strong>Report source</strong>. Then select the specific table or <strong>predefined data set</strong> from the second choice list.</td>
</tr>
<tr>
<td>Note: If you select a data source used by existing reports, a notification will display prompting you to view them.</td>
<td></td>
</tr>
<tr>
<td>Type</td>
<td>Select <strong>Funnel</strong> or <strong>Pyramid</strong>.</td>
</tr>
<tr>
<td>Field</td>
<td>Description</td>
</tr>
<tr>
<td>-------------</td>
<td>-----------------------------------------------------------------------------</td>
</tr>
<tr>
<td>Style your chart</td>
<td>Click the gear icon ( ) to configure the chart style options for the look of your chart.</td>
</tr>
<tr>
<td>Group by</td>
<td>Select a field to organize data into groups from the selected table. In an incident report grouped by <strong>Assignment group</strong>, all incidents belonging to Software, Service Desk, Network, and so on, are placed in separate groups. Make sure that you give the report a name that reflects the field you select. Click § to select additional group by fields. When you select <strong>Additional group by</strong> fields, a control is added to the bottom of the report that groups the report by any one of the additional fields.</td>
</tr>
<tr>
<td>Display Grid</td>
<td>Select this check box to display details of the report data in a table below the chart. All reports that use charts, including reports that are used on homepages, display the table of report data when the glide.ui.section508 system property is set to <strong>true</strong>, even if <strong>Display Grid</strong> is cleared.</td>
</tr>
<tr>
<td>Aggregation</td>
<td>Select a computational method for aggregating report data. The default is <strong>Count</strong>, which displays the number of records selected. If you select <strong>Count Distinct</strong>, only unique records are counted. For example, if you want to generate a report with a distinct number of users who have one or more of the roles in a given list of roles, these users would be counted twice unless you use count distinct. If you select <strong>Average</strong>, <strong>Sum</strong>, or <strong>Count Distinct</strong>, a list of fields from the selected <strong>Table</strong> appears. From this list, select a field to aggregate by. For example, if you select a duration field, such as the <strong>Business duration</strong> field on the Incident table, the aggregated data is expressed in days, hours, and minutes. If you select an integer field, such as the <strong>Priority</strong> field, the data is expressed as a number. <strong>Note:</strong> For duration values, the unit of measurement displayed in the aggregation axis cannot be customized.</td>
</tr>
<tr>
<td>No. groups</td>
<td>Select the maximum number of individual values that can be represented as slices. If the number of values from the selected data exceeds this limit, only the largest values are represented by the slices. By default, funnel charts display up to 12 slices. Remaining values are grouped into an <strong>Other</strong> category. If you select <strong>Show all</strong>, all slices up to limit of 50 slices can be displayed. The rest of the results are stacked in the <strong>Other</strong> slice.</td>
</tr>
<tr>
<td>Show Other</td>
<td>Select this check box to display the <strong>Other</strong> slice.</td>
</tr>
</tbody>
</table>
Add Filter Condition

Click the filter icon to create conditions for filtering and ordering data. For example, you might create a condition that states **Priority + less than + 3 – Moderate** to have the report include only records with priorities of **2 – High** and **1 – Critical**.

**Note:** Keywords is a special field used for text searches across all fields. Its use in a filter or condition, in combination with other conditions, may return inconsistent results.

Add "OR" Clause

Select a second condition that must be met if the first condition is invalid. For example, select **(Assignment Group) (is) (Database)**, to include records that are assigned to the Database group if the first condition is false.

Add Sort

Select fields to sort data by. For example, to sort results from lowest to highest priority, select **(Priority) (z to a)**. For reports with Group by, Stack by, Row/Column or Trend by fields to configure, you can sort by fields that are not listed in the Group by, Stack by, Row/Column or Trend by options.

3. Click **Save**. The report is generated.

Add reports to homepages or dashboards, publish to the internet, schedule email distribution of PDFs or URLs of published reports, and share reports with others. See **Distribute reports**.

**Funnel and pyramid report style options – Report Builder**

Change the look of your funnel or pyramid chart.

When you create or edit a report, click the gear icon (⚙️) after the **Type** field to open the **Style your chart** dialog box with options to configure the look of your chart. Chart options are automatically saved when you click **Close**. To see how the chart looks with the saved settings, click **Save**.

**Chart style options**

<table>
<thead>
<tr>
<th>Field</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>General</td>
<td><strong>Funnel Neck Percent</strong> (Funnel charts only) Enter a percentage for the width of the funnel, ranging between 1 and <strong>100</strong> percent. This is the lowest percentage that can be represented above the funnel neck, and all percentages lower than this are stacked in a bar with a set width below the neck. One hundred percent equals a bar chart. The default value is <strong>30</strong>.</td>
</tr>
<tr>
<td>Field</td>
<td>Description</td>
</tr>
<tr>
<td>------------------------</td>
<td>-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------</td>
</tr>
</tbody>
</table>
| Chart color            | If no group by is used, **Use one color** is automatically selected. Select a single predefined system color. If a group by is used, select one of the following options:  
  - **Use color palette**: Select a color palette from the predefined system color palettes.  
  - **Use several colors**: Define a custom set of Colors using hex codes. You can add any number of colors.  
  - **Use chart colors**: Use the colors defined in Reports > Chart Colors.                                                                 |
<p>| Custom chart size      | Select this check box to specify the chart’s width and height in pixels.                                                                                                                                 |
| Chart size             | Select a chart size. This field is available when <strong>Custom chart size</strong> is cleared.                                                                                                                          |
| Drilldown View         | Select a view that determines how detailed records are shown when a specific part of the report visualization is clicked. This option is available for charts with drill-down capabilities. If you select a view that has no fields in common to link to the table that the report is based on, the default view is used. See <em>Define a report drilldown in the Report Designer</em>. |</p>
<table>
<thead>
<tr>
<th>Field</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Decimal precision</td>
<td>Number of decimal places to show. You can show from zero to four decimal places. Default value: 2. To change the default value, create the system property glide.chart.decimal.precision and specify the value.</td>
</tr>
</tbody>
</table>

**Note:** Percentage labels do not change accordingly with the decimal precision specified.

![Chart showing data distribution](image)
<table>
<thead>
<tr>
<th>Field</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Show chart title</td>
<td>Select when the chart title is displayed.</td>
</tr>
<tr>
<td></td>
<td>• <strong>Never</strong>: never displays the chart title.</td>
</tr>
<tr>
<td></td>
<td>• <strong>Report only</strong>: displays the chart title on reports.</td>
</tr>
<tr>
<td></td>
<td>• <strong>Always</strong>: displays the chart title on reports, homepages, and dashboards.</td>
</tr>
<tr>
<td>Chart title</td>
<td>Enter a title for this chart. The title has a maximum length of 40 characters. If no title is entered, the report name is used for the title. This field is available when <strong>Report only</strong> or <strong>Always</strong> is selected from the Show chart title list.</td>
</tr>
<tr>
<td>Chart title size</td>
<td>Enter the size of the chart title in pixels. This field is available when <strong>Report only</strong> or <strong>Always</strong> is selected from the Show chart title list.</td>
</tr>
<tr>
<td>Chart title color</td>
<td>Select the color for the chart title. This field is available when <strong>Report only</strong> or <strong>Always</strong> is selected from the Show chart title list.</td>
</tr>
<tr>
<td>Custom chart title position</td>
<td>Select this check box to specify X and Y coordinates for the position of the chart title. This field is available when <strong>Report only</strong> or <strong>Always</strong> is selected from the Show chart title list.</td>
</tr>
<tr>
<td>Title horizontal alignment</td>
<td>Select how the chart title is aligned horizontally. This field is available when <strong>Custom chart title position</strong> is cleared.</td>
</tr>
<tr>
<td>Title vertical alignment</td>
<td>Select how the chart title is aligned vertically. This field is available when <strong>Custom chart title position</strong> is cleared.</td>
</tr>
<tr>
<td>Legend</td>
<td></td>
</tr>
<tr>
<td>Show legend</td>
<td>Select this check box to display a chart legend.</td>
</tr>
<tr>
<td>Legend horizontal alignment</td>
<td>Select how the legend is aligned horizontally. This field is available when <strong>Show legend</strong> is selected.</td>
</tr>
<tr>
<td>Legend vertical alignment</td>
<td>Select how the legend is aligned vertically. This field is available when <strong>Show legend</strong> is selected.</td>
</tr>
<tr>
<td>Left align legend text</td>
<td>Select to left-align the legend text. By default, legend text is centered.</td>
</tr>
<tr>
<td>Show legend border</td>
<td>Select this check box to display a border around the legend. This check box is available when <strong>Show legend</strong> is selected.</td>
</tr>
</tbody>
</table>

**Heatmap reports**

Heatmap reports display aggregate data visually using colors to represent different values on a matrix. Heatmap reports can have no more than 1000 cells.

**Note:** When accessibility is enabled, this visualization includes a report that screen readers can interpret. For more information, see *Enabling accessibility features*.

In the figure, the cell for confirmed low priority problems is filled to highlight the large value.
Create a heatmap report in the Report Designer

Create a heatmap report to show aggregate data with ranges of values highlighted in different colors.

Create a heatmap report in the Report Designer
Create a heatmap report to display aggregate data visually using colors to represent different values on a matrix.
Role required: itil, report_group, report_global, report_admin, or admin. To create a meaningful report, you must have the right to access the data you want to report on.

This task refers to Report Designer in the Kingston release. If you are using the Report Builder (Classic UI) in Kingston for creating reports, select the applicable report from [Creating reports](#) to see instructions. If you are using an earlier UI or the Classic UI for creating reports in an earlier release, follow the instructions in the Helsinki documentation: [Report types and creation details](#).

<table>
<thead>
<tr>
<th>Report Designer UI</th>
<th>Report Builder UI</th>
</tr>
</thead>
<tbody>
<tr>
<td><img src="image" alt="Report Designer UI" /></td>
<td><img src="image" alt="Report Builder UI" /></td>
</tr>
</tbody>
</table>

1. Navigate to **Reports > Create New**.
2. On the **Data** tab, give the report a name that reflects the information being grouped.
3. Select the applicable source for the report:

<table>
<thead>
<tr>
<th>Option</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Data source</td>
<td>A table with filters applied to provide a single source of information for all users.</td>
</tr>
<tr>
<td>Note:</td>
<td>If you select a data source used by existing reports, a notification displays prompting you to view them.</td>
</tr>
<tr>
<td>Table</td>
<td>The raw data from a table with no filters applied.</td>
</tr>
</tbody>
</table>

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<table>
<thead>
<tr>
<th>Option</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>External Import</td>
<td>Choose an existing imported report source, or click the Upload icon to import a new file. See <a href="#">Create a report from an imported Microsoft Excel document</a>.</td>
</tr>
<tr>
<td>MetricBase</td>
<td>MetricBase enables you to collect, retain, analyze, and visualize custom time series data on the Now Platform. For more information, see <a href="#">MetricBase application</a>.</td>
</tr>
</tbody>
</table>

4. **Click Next.**

5. **On the Type tab, select** Heatmap **in the Multidimensional reports section and click Next.**

   A preliminary version of the report is displayed. To view the updated report at any time, click **Run.**

6. **Fill in the fields, as appropriate (see table).**

   **Fields**

<table>
<thead>
<tr>
<th>Field</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Row</strong></td>
<td>Field used as the source of the data for the rows in the heatmap.</td>
</tr>
<tr>
<td></td>
<td><img src="#" alt="Note: Label names longer than 20 characters may show or print a truncated view." /></td>
</tr>
<tr>
<td><strong>Column</strong></td>
<td>Field used as the source of the data for the columns in the heatmap.</td>
</tr>
<tr>
<td></td>
<td><img src="#" alt="Note: Label names longer than 20 characters may show or print a truncated view." /></td>
</tr>
<tr>
<td>Field</td>
<td>Description</td>
</tr>
<tr>
<td>--------------------</td>
<td>-------------</td>
</tr>
<tr>
<td>Aggregation</td>
<td>Mathematical calculation to perform on the data. The default is <strong>Count</strong>, which shows the number of records selected. To show only unique records, select <strong>Count Distinct</strong>. For example, if you want a report on the distinct number of users who have one or more of the roles in a given list of roles. Users with more than one role would be counted twice unless you use <strong>Count Distinct</strong>. Select <strong>Average</strong>, <strong>Sum</strong>, or <strong>Count Distinct</strong>, to show a list of fields from the selected Table. Select a field to <strong>Aggregate by</strong> from this list. For example, if you select a duration field, such as <strong>Business duration</strong> on the Incident table, the aggregated data is expressed in days, hours, and minutes. If you select an integer field, such as <strong>Priority</strong>, the data is expressed as a decimal value number. If you choose <strong>Sum</strong> or <strong>Average</strong>, select <strong>Show related fields</strong> to aggregate on dot-walked fields. See <strong>Selecting fields on related tables using dot-walking</strong>. <strong>Note:</strong> For duration values, the unit of measurement displayed in the aggregation axis cannot be customized.</td>
</tr>
<tr>
<td>Max number of groups</td>
<td>Maximum number of groups to display in the report. Groups with highest values are included first. Any excluded groups are combined into the single group <strong>Other</strong>. If you select <strong>Show all</strong>, all groups up to a limit of 50 are displayed. The rest of the results are grouped as <strong>Other</strong>.</td>
</tr>
<tr>
<td>Show Other</td>
<td>Check box to include the Other group in the report. The Other group contains data for all groups that exceed the number specified in <strong>Max number of groups</strong>.</td>
</tr>
</tbody>
</table>

7. Optional: Configure the sort order of the applicable fields in the report (column, row, Group by, Stack by or Trend by depending on the report type). Click the filter icon ( ) and select **Add Sort**.

1. In the Sorting Order list, choose the field you want to sort on and then choose **a-z** or **z-a** for alphabetical order or reverse alphabetical order.

The list contains all possible fields from the report’s source. The only effective values, however, are the fields chosen for the current report (column, row, Group by, Stack by, or Trend by depending on the report type). Add sort cannot be applied to dot-walked fields.
2. Click to configure additional sorting order conditions. (Click to delete configured sorting order conditions.)
3. Click **Save**.

For fields of the type Choice list, the sort order is determined by the sequence of the choices in the choice list, not alphabetically or numerically. For example, a priority choice list is often indexed from Critical to Planning as shown in the following figure.
8. Optional: To limit the information displayed in the report, click the filter icon
and select conditions to filter the report data.
For more details on how conditions are constructed, see Condition builder.

Note: Keywords is a special field used for text searches across all fields. Its use in a filter or condition, in combination with other conditions, may return inconsistent results.

9. On the Style tab, fill in the fields as appropriate to configure the appearance of the report.
10. Click Save.
    The report is generated.

- Click the Report info icon

    and add a description of the report.

- Click the sharing icon

    to open the Sharing menu. On this menu, you can add the report to a dashboard, export the report to PDF, publish the report to the web, and set visibility and schedules. For more information, see Share a report ± Report Designer.

Heatmap report style options - Report Designer
Change the look of your heatmap chart.

When you create or edit a report, click the Style tab for options to configure the look of your report. The options are organized under two or more of the following tabs: General, Title, Legend, and Axis. To see how the report looks with the changed settings, click Save.

Heatmap chart style options

<table>
<thead>
<tr>
<th>General</th>
<th>Use heatmap colors</th>
<th>Check box to use different colors to indicate different values.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Color for high scores</td>
<td>Color used to indicate a high value on the chart.</td>
<td></td>
</tr>
<tr>
<td>Color for low scores</td>
<td>Color used to indicate a low value on the chart.</td>
<td></td>
</tr>
<tr>
<td>Display data labels</td>
<td>Check box to show the value for each data point.</td>
<td></td>
</tr>
<tr>
<td>Display Zero</td>
<td>Select this check box to display the number 0 when the value of a cell is 0. Clear this check box to display an empty cell when the value of the cell is 0.</td>
<td></td>
</tr>
</tbody>
</table>
## General

<table>
<thead>
<tr>
<th>Field</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Custom chart size</td>
<td>Check box to specify the width and height of the report in pixels. Note: The chart size is ignored when you export the report to PDF. In PDFs, the full page width is used to show the chart.</td>
</tr>
<tr>
<td>Chart width</td>
<td>Width of the report in pixels. The default value is 600. This field is available when Custom chart size is selected.</td>
</tr>
<tr>
<td>Chart height</td>
<td>Height of the report in pixels. The default value is 450. This field appears when Custom chart size is selected.</td>
</tr>
<tr>
<td>Chart size</td>
<td>Chart size. This field is available when Custom chart size is cleared. Options are Small, Medium, and Large. Note: The chart size is ignored when you export the report to PDF. In PDFs, the full page width is used to show the chart.</td>
</tr>
<tr>
<td>Drilldown view</td>
<td>List view to show when a user selects a segment of a report for which no drilldown report type is specified. This view is also used when the user reaches the lowest drilldown level of a report. See Configure the list layout. If you specify a Report drilldown, Drilldown view is ignored. Note: All users are able to view report visualizations, such as pie charts and column reports. However, the last level of a report drilldown is always a list. Platform access control lists determine user access to list information. Users who do not have rights to any part of the list data see the message “Number of rows removed from this list by Security constraints:” followed by the number. See Access control rules. For more information, see Define a report drilldown in the Report Designer.</td>
</tr>
</tbody>
</table>

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### General

<table>
<thead>
<tr>
<th>Decimal precision</th>
<th>Number of decimal places to show. You can show from zero to four decimal places. Default value: 2. To change the default value, create the system property glide.chart.decimal.precision and specify the value.</th>
</tr>
</thead>
</table>

**Note:** Percentage labels do not change accordingly with the decimal precision specified.
<table>
<thead>
<tr>
<th>General</th>
</tr>
</thead>
<tbody>
<tr>
<td>Show chart title</td>
</tr>
<tr>
<td></td>
</tr>
<tr>
<td>• Never: Never show the chart title.</td>
</tr>
<tr>
<td>• Report only: Shows the chart title on</td>
</tr>
<tr>
<td>reports.</td>
</tr>
<tr>
<td>• Always: Shows the chart title on reports,</td>
</tr>
<tr>
<td>dashboards, and homepages.</td>
</tr>
<tr>
<td></td>
</tr>
<tr>
<td>Chart title</td>
</tr>
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<td></td>
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<td></td>
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<tr>
<td>Size of the chart title</td>
</tr>
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<td></td>
</tr>
<tr>
<td>Chart title color</td>
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<tr>
<td></td>
</tr>
<tr>
<td>Custom chart title position</td>
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<td>Chart title X position</td>
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<tr>
<td>Title horizontal alignment</td>
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<tr>
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<td></td>
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<tr>
<td></td>
</tr>
<tr>
<td>Title vertical alignment</td>
</tr>
<tr>
<td></td>
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<tr>
<td></td>
</tr>
<tr>
<td></td>
</tr>
<tr>
<td>Legend</td>
</tr>
<tr>
<td></td>
</tr>
<tr>
<td></td>
</tr>
</tbody>
</table>

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<table>
<thead>
<tr>
<th>General</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Legend horizontal alignment</td>
<td>How the legend is aligned horizontally. This field appears when</td>
</tr>
<tr>
<td></td>
<td>Show legend is selected.</td>
</tr>
<tr>
<td>Legend vertical alignment</td>
<td>How the legend is aligned vertically. This field appears when</td>
</tr>
<tr>
<td></td>
<td>Show legend is selected.</td>
</tr>
<tr>
<td>Show legend border</td>
<td>Check box to show a border around the legend. This check box</td>
</tr>
<tr>
<td></td>
<td>appears when Show legend is selected.</td>
</tr>
<tr>
<td>Left align legend text</td>
<td>Check box to left-align the legend text when the report is</td>
</tr>
<tr>
<td></td>
<td>viewed in a browser. By default, the legend text is centered.</td>
</tr>
<tr>
<td></td>
<td>When the report is exported to PDF, PNG, or JPG, the legend</td>
</tr>
<tr>
<td></td>
<td>remains centered. This check box appears when Show legend is</td>
</tr>
<tr>
<td></td>
<td>selected.</td>
</tr>
</tbody>
</table>

Create a heatmap report in the Report Builder

Create a heatmap report to show aggregate data with ranges of values highlighted in different colors.

Role required: itil, report_group, report_global, report_admin, or admin. To create a meaningful report, you must have the right to access the data you want to report on.

This task refers to using the Report Builder (Classic UI) in the Kingston release under UI15 and UI16. If you are using the Report Designer, see Create a heatmap report in the Report Designer.
1. Navigate to **Reports > Create New**
2. Fill in the fields, as appropriate (see table).

### Fields

<table>
<thead>
<tr>
<th>Field</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Data</strong></td>
<td>Specify the table or report source containing the data set that you want to include in the report. From the first choice list, select <strong>Table</strong> or <strong>Report source</strong>. Then select the specific table or <strong>predefined data set</strong> from the second choice list. Note: If you select a data source used by existing reports, a notification will display prompting you to view them.</td>
</tr>
<tr>
<td><strong>Type</strong></td>
<td><strong>Heatmap</strong></td>
</tr>
<tr>
<td><strong>Style your chart</strong></td>
<td>Click the gear icon after the <strong>Type</strong> field to configure chart style options for the look and layout of the chart.</td>
</tr>
<tr>
<td>Field</td>
<td>Description</td>
</tr>
<tr>
<td>--------------</td>
<td>-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------</td>
</tr>
<tr>
<td><strong>Row</strong></td>
<td>Select the field used as the source of the data for the rows in the heatmap.</td>
</tr>
<tr>
<td></td>
<td><strong>Note:</strong> Label names longer than 20 characters may show or print a truncated view.</td>
</tr>
<tr>
<td><strong>Column</strong></td>
<td>Select the field used as the source of the data for the columns in the heatmap.</td>
</tr>
<tr>
<td></td>
<td><strong>Note:</strong> Label names longer than 20 characters may show or print a truncated view.</td>
</tr>
<tr>
<td><strong>Aggregation</strong></td>
<td>Select a computational method for aggregating report data. The default is <strong>Count</strong>, which displays the number of records selected.</td>
</tr>
<tr>
<td></td>
<td><strong>Note:</strong> For duration values, the unit of measurement displayed in the aggregation axis cannot be customized.</td>
</tr>
<tr>
<td><strong>No. groups</strong></td>
<td>Select the maximum number of individual values that can be represented as columns. By default, Pivot charts display up to 12 of the largest values from the selected data. Remaining values are grouped into an <strong>Other</strong> category.</td>
</tr>
<tr>
<td></td>
<td>If you select <strong>Count Distinct</strong>, only unique records are counted. For example, if you want to generate a report with a distinct number of users who have one or more of the roles in a given list of roles, these users would be counted twice unless you use count distinct.</td>
</tr>
<tr>
<td></td>
<td>If you select <strong>Average</strong>, <strong>Sum</strong>, or <strong>Count Distinct</strong>, this displays an additional list of fields from the selected <strong>Table</strong>. From this list, select a field to aggregate by. For example, if you select a duration field, such as the <strong>Business duration</strong> field on the Incident table, the aggregated data is expressed in days, hours, and minutes. If you select an integer field, such as the <strong>Priority</strong> field, the data is expressed as a number.</td>
</tr>
<tr>
<td></td>
<td>If a value in a column being aggregated has a comma, the value will be separated by the comma, and the aggregation will not be performed accurately.</td>
</tr>
<tr>
<td><strong>Show Other</strong></td>
<td>Select this check box to display the <strong>Other</strong> column.</td>
</tr>
<tr>
<td><strong>Add Filter Condition</strong></td>
<td>Click the filter icon to create conditions for filtering and ordering data. For example, you might create a condition that states <strong>Priority + less than + 3 ± Moderate</strong> to have the report include only records with priorities of 2 ± High and 1 ± Critical.</td>
</tr>
<tr>
<td></td>
<td><strong>Note:</strong> Keywords is a special field used for text searches across all fields. It’s use in a filter or condition, in combination with other conditions, may return inconsistent results.</td>
</tr>
<tr>
<td><strong>Add “OR” Clause</strong></td>
<td>Select a second condition that must be met if the first condition is invalid. For example, select (Assignment Group) (is) (Database), to include records that are assigned to the Database group, if the first condition is false.</td>
</tr>
</tbody>
</table>
3. Click **Save**. The report is generated.

Add reports to homepages or dashboards, publish to the internet, schedule email distribution of PDFs or URLs of published reports, and share reports with others. See [Distribute reports](#).

**Heatmap report style options - Report Builder**

Change the look of your heatmap report.

When you create or edit a report, click the gear icon (⚙️) after the **Type** field. Use the options in the **Style your chart** dialog box to configure the look of your chart. Chart options are automatically saved when you click **Close**. To see how the chart looks with the saved settings, click **Save**.

<table>
<thead>
<tr>
<th>Field</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Drilldown view</td>
<td>List view to show when a user selects a segment of a report for which no drilldown report type is specified. This view is also used when the user reaches the lowest drilldown level of a report. See <a href="#">Configure the list layout</a>. If you specify a <strong>Report drilldown</strong>, <strong>Drilldown view</strong> is ignored.</td>
</tr>
<tr>
<td><strong>Note:</strong> All users are able to view report visualizations, such as pie charts and column reports. However, the last level of a report drilldown is always a list. Platform access control lists determine user access to list information. Users who do not have rights to any part of the list data see the message “Number of rows removed from this list by Security constraints:” followed by the number. See <a href="#">Access control rules</a>.</td>
<td></td>
</tr>
</tbody>
</table>

For more information, see [Define a report drilldown in the Report Designer](#).

**Histogram reports**

Histograms group numbers in a data set into ranges. The data used in a histogram is continuous data. Continuous data is measured whereas discrete data, which is used in bar charts, is counted.

For example, a histogram can show the pattern of P1 incidents logged over a four-week period after a product release. For the first week after the product was released, P1 incidents are low because users do not really understand the product enough to use it. In the second week, more users start working with the product and P1 issues increased. In the third week, P1 issues increase even more as more users began working with the product. In the fourth week, P1 issues stay the same as the third week. The information suggests that it is not necessary to increase support staff until the third week after a product is released.
Create a histogram report in the Report Designer

Histograrms group numbers in a continuous data set into ranges.

Role required: itil, report_group, report_global, report_admin, or admin. To create a meaningful report, you must have the right to access the data you want to report on.

This task refers to Report Designer in the Kingston release. If you are using the Report Builder (Classic UI) in Kingston for creating reports, select the applicable report from Creating reports to see instructions. If you are using an earlier UI or the Classic UI for creating reports in an earlier release, follow the instructions in the Helsinki documentation: Report types and creation details.

1. Navigate to Reports > Create New.
2. On the Data tab, give the report a name that reflects the information being grouped.
3. Select the applicable source for the report:
<table>
<thead>
<tr>
<th>Option</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Data source</td>
<td>A table with filters applied to provide a single source of information for all users.</td>
</tr>
<tr>
<td></td>
<td><strong>Note:</strong> If you select a data source used by existing reports, a notification displays prompting you to view them.</td>
</tr>
<tr>
<td>Table</td>
<td>The raw data from a table with no filters applied.</td>
</tr>
<tr>
<td>External import</td>
<td>Choose an existing imported report source, or click the Upload icon to import a new file. See Create a report from an imported Microsoft Excel document.</td>
</tr>
<tr>
<td>MetricBase</td>
<td>MetricBase enables you to collect, retain, analyze, and visualize custom time series data on the Now Platform. For more information, see MetricBase application.</td>
</tr>
</tbody>
</table>

4. Click **Next**.

5. On the **Type** tab, select **Histogram** in the **Bars** section and click **Next**.

   A preliminary version of the report is displayed. To view the updated report at any time, click **Run**.

6. On the **Configure** tab, fill in the following fields and click **Next**.

   **Configure tab**

<table>
<thead>
<tr>
<th>Field</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Measured by</td>
<td>Select a field to report against. The values from this field appear on the X axis of the histogram and determine the width of the bars.</td>
</tr>
</tbody>
</table>

7. Optional: To limit the information displayed in the report, click the filter icon and select conditions to filter the report data.

   For more details on how conditions are constructed, see **Condition builder**.

   **Note:** Keywords is a special field used for text searches across all fields. Its use in a filter or condition, in combination with other conditions, may return inconsistent results.

8. Click **Save**.

   The report is generated.

   - Click the Report info icon and add a description of the report.
• Click the sharing icon to open the Sharing menu. On this menu, you can add the report to a dashboard, export the report to PDF, publish the report to the web, and set visibility and schedules. For more information, see Share a report – Report Designer.

Create a histogram report in the Report Builder

Histograms group numbers in a continuous data set into ranges.

Role required: itil, report_group, report_global, report_admin, or admin. To create a meaningful report, you must have the right to access the data you want to report on.

This task refers to using the Report Builder (Classic UI) in the Kingston release under UI15 and UI16. If you are using the Report Designer, see Create a histogram report in the Report Designer.

1. Navigate to Reports > Create New.
2. Fill in the fields, as appropriate.
### Histogram

<table>
<thead>
<tr>
<th>Field</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Name</td>
<td>Enter a unique and descriptive name for your report.</td>
</tr>
<tr>
<td>Description</td>
<td>Click the information icon (i) to enter a more detailed description of what the report does and its purpose.</td>
</tr>
<tr>
<td>Data</td>
<td>Specify the table or report source containing the data set that you want to include in the report. From the first choice list, select the Table or Report source. Then select the specific table or predefined data set from the second choice list.</td>
</tr>
<tr>
<td>Note:</td>
<td>If you select a data source used by existing reports, a notification will display prompting you to view them.</td>
</tr>
<tr>
<td>Type</td>
<td>Select Histogram.</td>
</tr>
<tr>
<td>Measured by</td>
<td>Select a field to report against. Make sure that you give the report a name that reflects this field. The values from this field appear on the X axis of the histogram and determine the width of the bars.</td>
</tr>
<tr>
<td>Add &quot;OR&quot; Clause</td>
<td>Select a second condition that must be met if the first condition is invalid. For example, select (Assignment Group) (is) (Database), to include records that are assigned to the Database group if the first condition is false.</td>
</tr>
<tr>
<td>Add Sort</td>
<td>Select fields to sort data by. For example, to sort results from lowest to highest priority, select (Priority) (z to a). For reports with Group by, Stack by, Row/Column or Trend by fields to configure, you can sort by fields that are not listed in the Group by, Stack by, Row/Column or Trend by options.</td>
</tr>
</tbody>
</table>

3. Click Save. The report is generated.

Add reports to homepages or dashboards, publish to the internet, schedule email distribution of PDFs or URLs of published reports, and share reports with others. See Distribute reports.

### Line reports

Line reports plot individual data points to show how the value of one or more items changes over time.

The value of an item at specific dates or times is displayed as data points connected by horizontal lines. Values along the horizontal axis of the line chart represent the time measurement (years, hours, minutes, milliseconds, and so on). Values on the vertical axis represent the changes to the items being monitored. Users with the report_admin role can define the ranges that are used in a line chart report.

For example, you can create a line report for incident counts, to show how the number of incidents changes over time. The incident count often increases during the first few months after a product upgrade is deployed. Over time, the number of reported incidents decreases as users...
become more accustomed to the changes in the product. This figure shows the number of incidents per caller over time.

Create a line report in the Report Designer

Create a line report to visualize the trend in the value changes of one or more items over time. Create a line report to show how the value of one or more items changes over time.

Role required: itil, report_group, report_global, report_admin, or admin. To create a meaningful report, you must have the right to access the data you want to report on.

This task refers to Report Designer in the Kingston release. If you are using the Report Builder (Classic UI) in Kingston for creating reports, select the applicable report from Creating reports to see instructions. If you are using an earlier UI or the Classic UI for creating reports in an earlier release, follow the instructions in the Helsinki documentation: Report types and creation details.
1. Navigate to Reports > Create New.
2. On the Data tab, give the report a name that reflects the information being grouped.
3. Select the applicable source for the report:

<table>
<thead>
<tr>
<th>Option</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Data source</td>
<td>A table with filters applied to provide a single source of information for all users.</td>
</tr>
<tr>
<td></td>
<td><strong>Note:</strong> If you select a data source used by existing reports, a notification displays</td>
</tr>
<tr>
<td></td>
<td>prompting you to view them.</td>
</tr>
<tr>
<td>Table</td>
<td>The raw data from a table with no filters applied.</td>
</tr>
<tr>
<td>External import</td>
<td>Choose an existing imported report source, or click the Upload icon to import a new file.</td>
</tr>
<tr>
<td>Option</td>
<td>Description</td>
</tr>
<tr>
<td>--------------</td>
<td>-----------------------------------------------------------------------------</td>
</tr>
<tr>
<td>MetricBase</td>
<td>MetricBase enables you to collect, retain, analyze, and visualize custom time series data on the Now Platform. For more information, see MetricBase application.</td>
</tr>
</tbody>
</table>

4. Click **Next**.

5. On the **Type** tab, select **Line**.
   
   This report type is in the **Time Series** section.
   
   A preliminary version of the report is displayed. To view the updated report at any time, click **Run**.

6. On the **Configure** tab, fill in the following fields and click **Next**.

   **Configure tab**

<table>
<thead>
<tr>
<th>Field</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Group by</td>
<td>Group report data using the values of this field. For example, in an incident report grouped by <strong>Assignment group</strong>, all incidents that belong to Software, Service Desk, and Network are placed in separate groups.</td>
</tr>
<tr>
<td></td>
<td><strong>Note:</strong> It is not possible to group or stack reports by the <strong>Tags</strong> field.</td>
</tr>
<tr>
<td>Additional group by</td>
<td>Extra fields to group the report by. When you select <strong>Additional group by</strong> fields, a control is added to the bottom of the report that groups the report by any one of the additional fields.</td>
</tr>
<tr>
<td></td>
<td><strong>Note:</strong> It is not possible to group or stack reports by the <strong>Tags</strong> field.</td>
</tr>
<tr>
<td>Display data table</td>
<td>Check this box to show report data in a grid beneath the report. The table appears on dashboards where the report is added. All reports that use charts, including reports that are used on dashboards, show the table of report data when the glide.ui.section508 system property is set to <strong>true</strong>. The glide.ui.section508 property overrides the <strong>Display data table</strong> field.</td>
</tr>
<tr>
<td>Trend by</td>
<td>Table field whose values you want to show in a time sequence.</td>
</tr>
<tr>
<td>Field</td>
<td>Description</td>
</tr>
<tr>
<td>-------</td>
<td>-------------</td>
</tr>
</tbody>
</table>
| per | Time period to group data by. Time periods range from an hour to a year. You can also specify a date.  
**Note:** Reporting per Week is not supported when the report range includes more than one year. Inconsistent results are produced when a week is split between two years. |

**Aggregation**

Mathematical calculation to perform on the data. The default is **Count**, which shows the number of records selected.  
To show only unique records, select **Count Distinct**. For example, if you want a report on the distinct number of users who have one or more of the roles in a given list of roles. Users with more than one role would be counted twice unless you use **Count Distinct**.  
Select **Average**, **Sum**, or **Count Distinct**, to show a list of fields from the selected Table. Select a field to **Aggregate by** from this list. For example, if you select a duration field, such as **Business duration** on the Incident table, the aggregated data is expressed in days, hours, and minutes. If you select an integer field, such as **Priority**, the data is expressed as a decimal value number.  
If you choose **Sum** or **Average**, select **Show related fields** to aggregate on dot-walked fields. See *Selecting fields on related tables using dot-walking*.  
**Note:** For duration values, the unit of measurement displayed in the aggregation axis cannot be customized.
### Field Description

**Percentage calculation**

| Method of calculating percentages. The percentage appears when you point to a report segment, such as a bar on a bar report. This field appears when **Aggregation** is set to **Average**, **Sum**, or **Count Distinct**.

- **Use Aggregation** calculates the percentage using the selection in the **Aggregation** field. Only data that is displayed in the report is used to calculate the percentage.

  For example, a report shows assets by department with the **Aggregation** set to **Sum** and the percentage calculated using aggregation. If the total cost of assets is $100,000 and the cost of assets for Customer Support is $10,000, the percentage for Customer Support is 10%.

- **Use Record Count** calculates the percentage using the total number of records in the data set.

  For example, a report shows incidents by priority. Out of 500 incident records, 200 have low priority. The percentage for the Low priority section is 40%.

---

7. Optional: Configure the sort order of the applicable fields in the report (column, row, Group by, Stack by or Trend by depending on the report type). Click the filter icon

    ( )

    and select **Add Sort**.

1. In the Sorting Order list, choose the field you want to sort on and then choose **a-z** or **z-a** for alphabetical order or reverse alphabetical order.

   The list contains all possible fields from the report's source. The only effective values, however, are the fields chosen for the current report (column, row, Group by, Stack by, or Trend by depending on the report type). Add sort cannot be applied to dot-walked fields.

2. Click

    (+)

    to configure additional sorting order conditions. (Click

    (−)

    to delete configured sorting order conditions.)

3. Click **Save**.

   For fields of the type Choice list, the sort order is determined by the sequence of the choices in the choice list, not alphabetically or numerically. For example, a priority
choice list is often indexed from Critical to Planning as shown in the following figure.

8. Optional: To limit the information displayed in the report, click the filter icon and select conditions to filter the report data. For more details on how conditions are constructed, see Condition builder.

Note: Keywords is a special field used for text searches across all fields. Its use in a filter or condition, in combination with other conditions, may return inconsistent results.

9. On the Style tab, fill in the fields as appropriate to configure the appearance of the report.

10. Click Save.
    The report is generated.
• Click the Report info icon

![info_icon]

and add a description of the report.

• Click the sharing icon

![share_icon]

to open the Sharing menu. On this menu, you can add the report to a dashboard, export the report to PDF, publish the report to the web, and set visibility and schedules. For more information, see Share a report – Report Designer.

**Line report style options – Report Designer**

Configure the look of your line report.

When you create or edit a report, click the **Style** tab for options to configure the look of your report. The options are organized under two or more of the following tabs: **General**, **Title**, **Legend**, and **Axis**. To see how the report looks with the changed settings, click **Save**.

**Line chart style options**

<table>
<thead>
<tr>
<th>Field</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>General</td>
<td></td>
</tr>
</tbody>
</table>
| Chart color   | Colors used in the report. If you do not group or stack the report, **Use one color** is automatically selected. Select a single predefined system color. If you group or stack the report, select one of the following options:  
  • **Use color palette**: Select a color palette from the predefined system color palettes.  
  • **Use several colors**: Define a custom set of **Colors** using hex codes. You can add any number of colors.  
  • **Use chart colors**: Use the colors defined in **Reports > Chart Colors**.  

  ![Note_icon]

  **Note**: It is not possible to use transparency hex values. |
<p>| Set color     | Color used in the report. This field displays when you select <strong>Use one color</strong> from the Chart color list. Click the search icon ![search_icon] to choose from the Chart color schemes or Color Definitions list. |
| Set palette   | Color palette used in the report. This field appears when you select <strong>Use color palette</strong> from the Chart color list. |</p>
<table>
<thead>
<tr>
<th>Field</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Colors</td>
<td>Colors used in the report. This field displays when you select <strong>Use several colors</strong> from the <strong>Chart color</strong> list. Click the search icon to choose from the <strong>Chart color schemes</strong> or <strong>Color Definitions</strong> list.</td>
</tr>
<tr>
<td>Display data labels</td>
<td>Check box to show the value for each data point.</td>
</tr>
<tr>
<td>Show marker</td>
<td>Check box to display a symbol at each data point.</td>
</tr>
<tr>
<td>Custom chart size</td>
<td>Check box to specify the width and height of the report in pixels. <strong>Note:</strong> The chart size is ignored when you export the report to PDF. In PDFs, the full page width is used to show the chart.</td>
</tr>
<tr>
<td>Chart width</td>
<td>Width of the report in pixels. The default value is 600. This field is available when <strong>Custom chart size</strong> is selected.</td>
</tr>
<tr>
<td>Chart height</td>
<td>Height of the report in pixels. The default value is 450. This field appears when <strong>Custom chart size</strong> is selected.</td>
</tr>
<tr>
<td>Chart size</td>
<td>Chart size. This field is available when <strong>Custom chart size</strong> is cleared. Options are <strong>Small</strong>, <strong>Medium</strong>, and <strong>Large</strong>. <strong>Note:</strong> The chart size is ignored when you export the report to PDF. In PDFs, the full page width is used to show the chart.</td>
</tr>
<tr>
<td>Field</td>
<td>Description</td>
</tr>
<tr>
<td>------------------</td>
<td>-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------</td>
</tr>
<tr>
<td>Drilldown view</td>
<td>List view to show when a user selects a segment of a report for which no drilldown report type is specified. This view is also used when the user reaches the lowest drilldown level of a report. See Configure the list layout. If you specify a Report drilldown, Drilldown view is ignored.</td>
</tr>
</tbody>
</table>

**Note:** All users are able to view report visualizations, such as pie charts and column reports. However, the last level of a report drilldown is always a list. Platform access control lists determine user access to list information. Users who do not have rights to any part of the list data see the message “Number of rows removed from this list by Security constraints:” followed by the number. See Access control rules.

For more information, see Define a report drilldown in the Report Designer.
<table>
<thead>
<tr>
<th>Field</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Decimal precision</td>
<td>Number of decimal places to show. You can show from zero to four decimal places. Default value: 2. To change the default value, create the system property glide.chart.decimal.precision and specify the value.</td>
</tr>
</tbody>
</table>

**Note:** Percentage labels do not change accordingly with the decimal precision specified.

![Chart showing average development chart with Open: 0.773 (27.78%) and Closed/Resolved: 1.01]
<table>
<thead>
<tr>
<th>Field</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Show chart title</td>
<td>When the chart title is shown for the report.</td>
</tr>
<tr>
<td></td>
<td>- <strong>Never</strong>: Never show the chart title.</td>
</tr>
<tr>
<td></td>
<td>- <strong>Report only</strong>: Shows the chart title on reports.</td>
</tr>
<tr>
<td></td>
<td>- <strong>Always</strong>: Shows the chart title on reports, dashboards, and homepages.</td>
</tr>
<tr>
<td>Chart title</td>
<td>The chart title has a maximum length of 40 characters. If no title is entered, the report name is used for the title. This field appears when <strong>Report only</strong> or <strong>Always</strong> is selected from the <strong>Show chart title</strong> list.</td>
</tr>
<tr>
<td>Size of the chart title</td>
<td>Size of the chart title in pixels. This field appears when <strong>Report only</strong> or <strong>Always</strong> is selected from the <strong>Show chart title</strong> list.</td>
</tr>
<tr>
<td>Chart title color</td>
<td>Color of the chart title. This field appears when <strong>Report only</strong> or <strong>Always</strong> is selected from the <strong>Show chart title</strong> list.</td>
</tr>
<tr>
<td>Custom chart title position</td>
<td>Check box to specify X and Y coordinates for the position of the chart title. This field appears when <strong>Report only</strong> or <strong>Always</strong> is selected from the <strong>Show chart title</strong> list.</td>
</tr>
<tr>
<td>Chart title X position</td>
<td>Number of pixels to adjust the chart title position right or left. By default the title appears at the center top of the chart. To move the chart title to the right, enter a positive value. To move the title to the left, enter a negative value. This field appears only when <strong>Custom chart title position</strong> is selected.</td>
</tr>
<tr>
<td>Chart title Y position</td>
<td>Number of pixels to adjust the chart title position up or down. By default the title appears at the center top of the chart. To move up the chart title, enter a positive value. To move the chart title down, enter a negative value. This field appears only when <strong>Custom chart title position</strong> is selected.</td>
</tr>
<tr>
<td>Title horizontal alignment</td>
<td>How the chart title is aligned horizontally. This field is available when <strong>Custom chart title position</strong> is cleared.</td>
</tr>
<tr>
<td>Title vertical alignment</td>
<td>How the chart title is aligned vertically. This field appears when <strong>Custom chart title position</strong> is cleared.</td>
</tr>
<tr>
<td>Legend</td>
<td>Check box to show a chart legend. This check box appears when a <strong>Group by</strong> field is selected on the report form.</td>
</tr>
<tr>
<td>Field</td>
<td>Description</td>
</tr>
<tr>
<td>------------------------------</td>
<td>-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------</td>
</tr>
<tr>
<td>Legend horizontal alignment</td>
<td>How the legend is aligned horizontally. This field appears when <strong>Show legend</strong> is selected.</td>
</tr>
<tr>
<td>Legend vertical alignment</td>
<td>How the legend is aligned vertically. This field appears when <strong>Show legend</strong> is selected.</td>
</tr>
<tr>
<td>Show legend border</td>
<td>Check box to show a border around the legend. This check box appears when <strong>Show legend</strong> is selected.</td>
</tr>
<tr>
<td>Left align legend text</td>
<td>Check box to left-align the legend text when the report is viewed in a browser. By default, the legend text is centered. When the report is exported to PDF, PNG, or JPG, the legend remains centered. This check box appears when <strong>Show legend</strong> is selected.</td>
</tr>
</tbody>
</table>

**Axis**

| Y axis and X axis           | Axis for which you want to configure the titles, appearance, and labels.                                                                                                                                       |
| Title                       | Title for the axis.                                                                                                                                                                                             |
| Title size                  | Size of the axis title in pixels. Default value is 12.                                                                                                                                                        |
| Title bold                  | Check this box to show the axis title in a bold typeface.                                                                                                                                                      |
| Opposite                    | On the **X axis** tab, select this check box to show the X-axis title on the right side of the report instead. On the **Y axis** tab, select this check box to show the Y-axis title on top of the report instead of across the bottom. |
| Display grid                | On the **X axis** tab, select this check box to show horizontal grid lines on the report.                                                                                                                     |
| Grid dotted                 | Check this box to show dotted grid lines instead of solid lines.                                                                                                                                                |
| From                        | Specify a minimum Y-axis value to limit the amount of information in the report. If you select an aggregation field that is not of the type **Number**, the **From** and **To** fields are not available.                |
| To                          | Specify a maximum Y-axis value to limit the amount of information in the report. If you select an aggregation field that is not of the type **Number**, the **From** and **To** fields are not available.                |
| X axis / Y axis label size  | On the **X axis** tab, specify the size of the labels for the rows of the report.                                                                                                                               |
|                            | On the **Y axis** tab, specify the size of the labels for the columns in the report.                                                                                                                           |
Create a line report in the Report Builder

Create a line report to visualize the trend in the value changes of one or more items over time.

**Create a line report in the Report Builder**
Create a line report to show how the value of one or more items changes over time.

Role required: itil, report_group, report_global, report_admin, or admin. To create a meaningful report, you must have the right to access the data you want to report on.

This task refers to using the Report Builder (Classic UI) in the Kingston release under UI15 and UI16. If you are using the Report Designer, see *Create a line report in the Report Designer*.

<table>
<thead>
<tr>
<th>Field</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Label bold</td>
<td>Check this box to show the labels of the report in a bold typeface.</td>
</tr>
</tbody>
</table>

1. Navigate to **Reports > Create New**.
2. Fill in the fields, as appropriate (see table).
3. Click **Save** or **Insert**.

The report is generated.
### Line report options

<table>
<thead>
<tr>
<th>Field</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Name</td>
<td>Enter a unique and descriptive name for your report.</td>
</tr>
<tr>
<td>Description</td>
<td>Click the information icon to enter a more detailed description of what the report does and its purpose.</td>
</tr>
<tr>
<td>Data</td>
<td>Specify the table or report source containing the data set that you want to include in the report. From the first choice list, select <strong>Table</strong> or <strong>Report source</strong>. Then select the specific table or predefined data set from the second choice list. <strong>Note:</strong> If you select a data source used by existing reports, a notification will display prompting you to view them.</td>
</tr>
<tr>
<td>Type</td>
<td>Select Line. Alternatively, click the question mark icon (?) to use the report type selector.</td>
</tr>
<tr>
<td>Style your chart</td>
<td>Click the gear icon after the <strong>Type</strong> field and configure the chart style options to edit the layout and look of your chart.</td>
</tr>
<tr>
<td>Group by</td>
<td>Select a field to organize data into groups from the selected table. In an incident report grouped by <strong>Assignment group</strong>, all incidents belonging to Software, Service Desk, Network, and so on, are placed in separate groups. Make sure that you give the report a name that reflects the field you select. <strong>Click</strong> to select additional group by fields. When you select <strong>Additional group by</strong> fields, a control is added to the bottom of the report that groups the report by any one of the additional fields. <strong>Note:</strong> It is not possible to group or stack reports by the <strong>Tags</strong> field.</td>
</tr>
<tr>
<td>Display Grid</td>
<td>Select this check box to display details of the report data in a table below the chart. All reports that use charts, including reports that are used on homepages, display the table of report data details if the <code>glide.ui.section508</code> system property is set to <code>true</code>, even if <strong>Display Grid</strong> is cleared.</td>
</tr>
<tr>
<td>Trend by</td>
<td>Select the table field whose values you want to display in a time sequence.</td>
</tr>
<tr>
<td>per</td>
<td>Time period to group data by. Time periods range from an hour to a year. You can also specify a date. <strong>Note:</strong> Reporting per Week is not supported when the report range includes more than one year. Inconsistent results are produced when a week is split between two years.</td>
</tr>
</tbody>
</table>
### Field Description

<table>
<thead>
<tr>
<th>Field</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Aggregation</td>
<td>Select a computational method for aggregating report data. The default is <strong>Count</strong>, which displays the number of records selected. If you select <strong>Count Distinct</strong>, only unique records are counted. For example, if you want to generate a report with a distinct number of users who have one or more of the roles in a given list of roles, these users would be counted twice unless you use count distinct. If you select <strong>Average</strong>, <strong>Sum</strong>, or <strong>Count Distinct</strong>, a list of fields from the selected Table appears. From this list, select a field to aggregate by. For example, if you select a duration field, such as the <strong>Business duration</strong> field on the Incident table, the aggregated data is expressed in days, hours, and minutes. If you select an integer field, such as the <strong>Priority</strong> field, the data is expressed as a number. <strong>Note:</strong> For duration values, you cannot customize the unit of measurement displayed in the aggregation axis.</td>
</tr>
<tr>
<td>Percentages</td>
<td>Select a computational method used for calculating percentages for each element (selected record) in a data set.</td>
</tr>
<tr>
<td></td>
<td>- <strong>Use Aggregation</strong>: default method that computes percentages for each element using the sum of all elements in the data set.</td>
</tr>
<tr>
<td></td>
<td>- <strong>Use Record Count</strong>: computes percentages for each element using the total number (count) of elements in the data set.</td>
</tr>
<tr>
<td></td>
<td>This field is only available when <strong>Aggregation</strong> is set to <strong>Average</strong>, <strong>Sum</strong>, or <strong>Count Distinct</strong>.</td>
</tr>
<tr>
<td>Add Filter Condition</td>
<td>Click the filter icon to create conditions for filtering and ordering data. For example, you might create a condition that states <strong>Priority + less than + 3 = Moderate</strong> to have the report include only records with priorities of <strong>2 = High</strong> and <strong>1 = Critical</strong>. <strong>Note:</strong> Keywords is a special field used for text searches across all fields. Its use in a filter or condition, in combination with other conditions, may return inconsistent results.</td>
</tr>
<tr>
<td>Add “OR” Clause</td>
<td>Select a second condition that must be met if the first condition is invalid. For example, select <strong>(Assignment Group) = (Database)</strong> to include records that are assigned to the Database group if the first condition is false. In Eureka, this field is only available after at least one filter condition has been created.</td>
</tr>
<tr>
<td>Add Sort</td>
<td>Select fields to sort data by. For example, to sort results from lowest to highest priority, select <strong>(Priority) (z to a)</strong>. For reports with Group by, Stack by, Row/Column or Trend by fields to configure, you can sort by fields that are not listed in the Group by, Stack by, Row/Column or Trend by options.</td>
</tr>
</tbody>
</table>

Add reports to homepages or dashboards, publish to the internet, schedule email distribution of PDFs or URLs of published reports, and share reports with others. See Distribute reports.

**Line report style options – Report Builder**

Configure the look of your line report.
When you create or edit a report, click the gear icon after the **Type** field to open the **Style your chart** dialog box with options to configure the look of your chart. Chart options are automatically saved when you click **Close**. To see how the chart looks with the saved settings, click **Save**.

<table>
<thead>
<tr>
<th>Field</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>General</strong></td>
<td></td>
</tr>
</tbody>
</table>
| Chart color         | If no group by is used, **Use one color** is automatically selected. Select a single predefined system color.  
                        | If a group by is used, select one of the following options:                                             
                        | · **Use color palette**: Select a color palette from the predefined system color palettes.               
                        | · **Use several colors**: Define a custom set of **Colors** using hex codes. You can add any number of colors.  
<pre><code>                    | · **Use chart colors**: Use the colors defined in **Reports &gt; Chart Colors**.                           |
</code></pre>
<p>| Display data labels | Select this check box to display the current value for each data point.                                |
| Marker              | Select this check box to display a symbol at each data point.                                          |
| Custom chart size   | Select this check box to specify the chart's width and height in pixels.                              |
| Chart size          | Select a chart size. This field is available when Custom chart size is cleared.                        |
| Drilldown View      | Select a <strong>view</strong> that determines how detailed records are shown when a specific part of the report visualization is clicked. This option is available for charts with drill-down capabilities. If you select a view that has no fields in common to link to the table that the report is based on, the default view is used. See <strong>Define a report drilldown in the Report Designer</strong>. |</p>
<table>
<thead>
<tr>
<th>Field</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Decimal precision</td>
<td>Number of decimal places to show. You can show from zero to four decimal places. Default value: 2. To change the default value, create the system property glide.chart.decimal.precision and specify the value. Note: Percentage labels do not change accordingly with the decimal precision specified.</td>
</tr>
</tbody>
</table>

---

### Chart Description

- **Average Assignment count**
  - Open = 0.773 (27.78%)
  - Pending Change
  - Closed/Resolved

---

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<table>
<thead>
<tr>
<th>Field</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Show chart title</td>
<td>Select when the chart title is displayed.</td>
</tr>
<tr>
<td></td>
<td>- Never: never displays the chart title.</td>
</tr>
<tr>
<td></td>
<td>- Report only: displays the chart title on reports.</td>
</tr>
<tr>
<td></td>
<td>- Always: displays the chart title on reports, dashboards, and homepages.</td>
</tr>
<tr>
<td>Chart title</td>
<td>Enter a title for this chart. The title has a maximum length of 40 characters. If no title is entered, the report name is used for the title. This field is available when Report only or Always is selected from the Show chart title list.</td>
</tr>
<tr>
<td>Chart title size</td>
<td>Enter the size of the chart title in pixels. This field is available when Report only or Always is selected from the Show chart title list.</td>
</tr>
<tr>
<td>Chart title color</td>
<td>Select the color for the chart title. This field is available when Report only or Always is selected from the Show chart title list.</td>
</tr>
<tr>
<td>Custom chart title position</td>
<td>Select this check box to specify X and Y coordinates for the position of the chart title. This field is available when Report only or Always is selected from the Show chart title list.</td>
</tr>
<tr>
<td>Title horizontal alignment</td>
<td>Select how the chart title is aligned horizontally. This field is available when Custom chart title position is cleared.</td>
</tr>
<tr>
<td>Title vertical alignment</td>
<td>Select how the chart title is aligned vertically. This field is available when Custom chart title position is cleared.</td>
</tr>
<tr>
<td>Legend</td>
<td></td>
</tr>
<tr>
<td>Show legend</td>
<td>Select this check box to display a chart legend. This field is available when a Group by field is selected on the report form.</td>
</tr>
<tr>
<td>Legend horizontal alignment</td>
<td>Select how the legend is aligned horizontally. This field is available when Show legend is selected.</td>
</tr>
<tr>
<td>Legend vertical alignment</td>
<td>Select how the legend is aligned vertically. This field is available when Show legend is selected.</td>
</tr>
<tr>
<td>Left align legend text</td>
<td>Select to left-align the legend text. By default, legend text is centered.</td>
</tr>
<tr>
<td>Show legend border</td>
<td>Select this check box to display a border around the legend. This check box is available when Show legend is selected.</td>
</tr>
<tr>
<td>Axis</td>
<td></td>
</tr>
<tr>
<td>Axis tab</td>
<td>Configure the titles, appearance, and labels of the X and Y axis. For the Y axis, you can also specify a From and To range.</td>
</tr>
</tbody>
</table>

**List reports**

List reports display data in the form of an expandable list. You can configure whether lists appear expanded or collapsed. Lists are often used for enumerations such as the number of incidents or changes. They contain columns that show more detailed information, such as a short description, category, or state.

**Notes:**
- List reports display in List v2, even if List v3 is enabled.
- As of the Kingston release, the record count and pagination buttons appear only at the bottom of the list.

This example list report displays incidents sorted by caller.
## Change Requests in progress

**Table: change_request**

<table>
<thead>
<tr>
<th>Number</th>
<th>Assigned to</th>
<th>Short description</th>
<th>Planned start date</th>
<th>Planned end date</th>
</tr>
</thead>
<tbody>
<tr>
<td>CHG0000015</td>
<td>Bud Richman</td>
<td>Unix update</td>
<td>2016-12-30 16:00:00</td>
<td>2016-12-30 22:00:00</td>
</tr>
<tr>
<td>CHG0000008</td>
<td>ITIL User</td>
<td>Install new Cisco</td>
<td>2016-05-28 12:30:00</td>
<td>2016-05-28 17:30:00</td>
</tr>
<tr>
<td>CHG0000006</td>
<td>ITIL User</td>
<td>Put another 100 Gb drive on the 2nd Floor Server</td>
<td>2016-05-30 23:00:00</td>
<td>2016-05-30 23:45:00</td>
</tr>
</tbody>
</table>

- **Category: Hardware (3)**
  - CHG0000015, Bud Richman: Unix update
  - CHG0000008, ITIL User: Install new Cisco
  - CHG0000006, ITIL User: Put another 100 Gb drive on the 2nd Floor Server

- **Category: Network (60)**
- **Category: Other (26)**
- **Category: Server, Reboot (3)**
- **Category: Software (4)**
- **Category: Telecom (2)**
  - CHG0000005, David Loo: Install new PBX
  - CHG0000002, ITIL User: Switch Sales over to the new 555 prefix

Total change requests: 96
Create a list report in the Report Designer

Create a list report to display data in the form of an expandable list.

List reports display data in the form of an expandable list. For example, an incident report grouped by priority displays only the priority names and a number of records that display if the user clicks the priority. You can configure whether lists display expanded or collapsed.

Role required: itil, report_group, report_global, report_admin, or admin. To create a meaningful report, you must have the right to access the data you want to report on.

This task refers to Report Designer in the Kingston release. If you are using the Report Builder (Classic UI) in Kingston for creating reports, select the applicable report from Creating reports to see instructions. If you are using an earlier UI or the Classic UI for creating reports in an earlier release, follow the instructions in the Helsinki documentation: Report types and creation details.

1. Navigate to Reports > Create New.
2. On the Data tab, give the report a name that reflects the information being grouped.
3. Select the applicable source for the report:
<table>
<thead>
<tr>
<th>Option</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Data source</td>
<td>A table with filters applied to provide a single source of information for all users.</td>
</tr>
<tr>
<td></td>
<td><strong>Note:</strong> If you select a data source used by existing reports, a notification displays prompting you to view them.</td>
</tr>
<tr>
<td>Table</td>
<td>The raw data from a table with no filters applied.</td>
</tr>
<tr>
<td>External import</td>
<td>Choose an existing imported report source, or click the Upload icon to import a new file. See Create a report from an imported Microsoft Excel document.</td>
</tr>
<tr>
<td>MetricBase</td>
<td>MetricBase enables you to collect, retain, analyze, and visualize custom time series data on the Now Platform. For more information, see MetricBase application.</td>
</tr>
</tbody>
</table>

4. Click **Next**.

5. On the **Type** tab, select **List** in the **Other** section and click **Next**.

   A preliminary version of the report is displayed. To view the updated report at any time, click **Run**.

6. On the **Configure** tab, fill in the following fields and click **Next**.

**Configure tab**

<table>
<thead>
<tr>
<th>Field</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Choose columns</td>
<td>Fields to display as columns in the list report. In the Columns window that opens after you click <strong>Choose columns</strong>, select fields in the Available list that you want to appear in your report and move them to the Selected list. Depending on system configuration, you can add fields from tables that extend the selected table. For more information, see How to report fields on extended tables in a report.</td>
</tr>
<tr>
<td>Group by</td>
<td>Group report data using the values of this field. For example, in an incident report grouped by <strong>Assignment group</strong>, all incidents that belong to Software, Service Desk, and Network are placed in separate groups. <strong>Note:</strong> It is not possible to group or stack reports by the <strong>Tags</strong> field.</td>
</tr>
</tbody>
</table>
### Table: Field and Description

<table>
<thead>
<tr>
<th>Field</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Additional group by</td>
<td>Extra fields to group the report by. When you select <strong>Additional group by</strong> fields, a control is added to the bottom of the report that groups the report by any one of the additional fields.</td>
</tr>
</tbody>
</table>

#### Note:

It is not possible to group or stack reports by the **Tags** field.

---

7. Optional: Configure the sort order of the applicable fields in the report (column, row, Group by, Stack by or Trend by depending on the report type). Click the filter icon and select **Add Sort**.

1. In the Sorting Order list, choose the field you want to sort on and then choose **a-z** or **z-a** for alphabetical order or reverse alphabetical order.

   The list contains all possible fields from the report’s source. The only effective values, however, are the fields chosen for the current report (column, row, Group by, Stack by, or Trend by depending on the report type). Add sort cannot be applied to dot-walked fields.

2. Click to configure additional sorting order conditions. (Click to delete configured sorting order conditions.)

3. Click **Save**.

For fields of the type Choice list, the sort order is determined by the sequence of the choices in the choice list, not alphabetically or numerically. For example, a priority
choice list is often indexed from Critical to Planning as shown in the following figure.

8. Optional: To limit the information displayed in the report, click the filter icon (and select conditions to filter the report data.

For more details on how conditions are constructed, see Condition builder.

Note: Keywords is a special field used for text searches across all fields. Its use in a filter or condition, in combination with other conditions, may return inconsistent results.

9. Click Save.

The report is generated.
ServiceNow Kingston Analytics, Intelligence, and Reporting

- Click the Report info icon
  
  and add a description of the report.

- Click the sharing icon
  
  to open the Sharing menu. On this menu, you can add the report to a dashboard, export the report to PDF, publish the report to the web, and set visibility and schedules. For more information, see Share a report – Report Designer.

**Note:**

- The default number of rows in a list report exported to PDF is 1000. To configure this value, enter sys_properties.list in the Filter Navigator, and edit the property glide.pdf.max_rows. For more information, see: Add a system property.
- Despite list filtering, pdf-format exported rows will count all record rows sequentially up to the export limit and show as blank for roles prevented by ACLs from viewing restricted data.

- **Configure and use list functions**

  *Create a list report in the Report Designer with variable columns*

  You can create a list report with variables columns based on a data source or table that has variables associated with it. For example, if an item has a variable called Storage, you can create a list report that has a column for the values in this variable.

  Role required: itil, report_group, report_global, report_admin, or admin. To create a meaningful report, you must have the right to access the data you want to report on.

  This task refers to the Kingston release under UI15 and UI16. If you are using an earlier UI or the Classic UI for creating reports, follow the instructions in the Helsinki documentation instead: Report types and creation details.

  1. Navigate to Reports > Create New.
  2. On the Data tab, give the report a name that reflects the information being grouped.
  3. Select a report source that has variables associated with it. There are two kinds of report sources:

      | Option | Description |
      |--------|-------------|
      | Data source | A table with filters applied to provide a single source of information for all users. |
      | Table | The raw data from a table with no filters applied. |

      **Note:** If you select a data source used by existing reports, a notification will display prompting you to view them.

      For list reports with variables, the report source is usually the service catalog table.

  4. Click Next.
  5. On the Type tab, select List in the Other section and click Next.

      A preliminary version of the report is displayed. To view the updated report at any time, click Run.
6. On the **Configure** tab, click **Choose columns** and select **Variables (+)** in the Columns window that opens.

**Variables (+)** is at the bottom of the list of available columns.

Depending on system configuration, you can add fields from tables that extend the selected table. For more information, see *How to report fields on extended tables in a report*.

7. Click the structure icon to choose an item.

8. Select an item from the Catalog item list that appears.

   The variables associated with the selected item then appear in the **Columns** window.
9. Select and move variables to the Selected column and click OK.
10. On the Configure tab, fill in the following fields and click Next.

**Configure tab**

<table>
<thead>
<tr>
<th>Field</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Group by</td>
<td>Group report data using the values of this field. For example, in an incident report grouped by Assignment group, all incidents that belong to Software, Service Desk, and Network are placed in separate groups.</td>
</tr>
</tbody>
</table>

*Note: It is not possible to group or stack reports by the Tags field.*
11. Optional: Configure the sort order of the applicable fields in the report (column, row, Group by, Stack by or Trend by depending on the report type). Click the filter icon and select **Add Sort**.

1. In the Sorting Order list, choose the field you want to sort on and then choose **a-z** or **z-a** for alphabetical order or reverse alphabetical order.

   The list contains all possible fields from the report’s source. The only effective values, however, are the fields chosen for the current report (column, row, Group by, Stack by, or Trend by depending on the report type). Add sort cannot be applied to dot-walked fields.

2. Click to configure additional sorting order conditions. (Click to delete configured sorting order conditions.)

3. Click **Save**.

For fields of the type Choice list, the sort order is determined by the sequence of the choices in the choice list, not alphabetically or numerically. For example, a priority
12. Optional: To limit the information displayed in the report, click the filter icon and select conditions to filter the report data. For more details on how conditions are constructed, see Condition builder.

**Note:** Keywords is a special field used for text searches across all fields. Its use in a filter or condition, in combination with other conditions, may return inconsistent results.

13. Click **Save**.
   The report is generated.

- Click the sharing icon
to open the **Sharing** menu. On this menu, you can add the report to a dashboard, export the report to PDF, publish the report to the web, and set visibility and schedules. For more information, see *Share a report – Report Designer*.

**Note:**
- The default number of rows in a list report exported to PDF is 1000. To configure this value, enter `sys_properties.list` in the Filter Navigator, and edit the property `glide.pdf.max_rows`. For more information, see: *Add a system property*.
- Despite list filtering, pdf-format exported rows will count all record rows sequentially up to the export limit and show as blank for roles prevented by ACLs from viewing restricted data.

**Grouping records in list reports**

Grouped list reports can display only the records in each group that are configured to appear in a normal list. You can group rows of information in list reports by specific fields. You cannot group list reports by service catalog variables.

For example, a list configured to display 100 records at a time can show only the first 100 records, regardless of the number of records in that group. Paging is not available within groups, and you cannot access the remaining records without leaving the grouped list. To access all the records in a group:

- Increase the display size of the list.
- Click the group header to return to a normal list for that group with paging enabled.

List reports do not support the user preference to automatically expand grouped records.

This figure shows a list of products grouped by manufacturer. By default, the sections of the report are collapsed. In this example, the items associated with Gateway are expanded.
<table>
<thead>
<tr>
<th>Name</th>
<th>Manufacturer</th>
<th>Asset tag</th>
<th>Operating System</th>
<th>CPU speed (MHz)</th>
</tr>
</thead>
<tbody>
<tr>
<td>*CAROL3-GATEWAY</td>
<td>Gateway</td>
<td>P1000038</td>
<td>Windows XP Professional</td>
<td>2,992</td>
</tr>
<tr>
<td>6490-28330S</td>
<td>Gateway</td>
<td>P1000224</td>
<td>Windows XP Professional</td>
<td>3,391</td>
</tr>
<tr>
<td>DIANEK</td>
<td>Gateway</td>
<td>P100051</td>
<td>Windows XP Professional</td>
<td>3,192</td>
</tr>
<tr>
<td>DK Series</td>
<td>Gateway</td>
<td>P1000241</td>
<td>Windows XP Professional</td>
<td></td>
</tr>
<tr>
<td>JENIFAITY</td>
<td>Gateway</td>
<td>P1000221</td>
<td>Windows XP Professional</td>
<td>3,192</td>
</tr>
<tr>
<td>KISIK</td>
<td>Gateway</td>
<td>P1000111</td>
<td>Windows XP Professional</td>
<td>2,394</td>
</tr>
<tr>
<td>MEGANS</td>
<td>Gateway</td>
<td>P1000222</td>
<td>Windows XP Professional</td>
<td>2,793</td>
</tr>
<tr>
<td>OLIGAS</td>
<td>Gateway</td>
<td>P1000163</td>
<td>Windows XP Professional</td>
<td>3,049</td>
</tr>
<tr>
<td>Product KIOSK</td>
<td>Gateway</td>
<td>P100096</td>
<td>Windows XP</td>
<td></td>
</tr>
</tbody>
</table>

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Export a list report to Excel
You can export a list report to Excel from the list columns, or by scheduling it to be exported.

- You can export a list report as an Excel spreadsheet by right-clicking any column heading and selecting **Export > Excel**.
- You can **schedule** a saved list report to be exported as an Excel spreadsheet, by clicking **Schedule** and specifying **Type** as Excel Spreadsheet. Excel displays report duration values in milliseconds, rather than the "<x> days <y> hours" format.

**Applying list report column configurations with an update set**
Configured columns in list reports can be moved to another instance by committing an update set.

Configured list report columns do not automatically get applied to an instance when you commit an update set. List reports render using UI views created each time you save a report. To ensure configured columns reflect in a list report or on a dashboard widget in another instance, from the UI View table, search for the sys_id of the report (RPT) view record for your changes, and add it to the update set. For information on adding customized configurations to an update set and applying them, see .

**Create a list report in the Report Builder**
Create a list report to display data in the form of an expandable list.

**Create a list report in the Report Builder**
Create a list report to display data in the form of an expandable list.

Role required: itil, report_group, report_global, report_admin, or admin. To create a meaningful report, you must have the right to access the data you want to report on.

This task refers to using the Report Builder (Classic UI) in the Kingston release under UI15 and UI16. If you are using the Report Designer, see **Create a list report in the Report Designer.**
Lists are often used for enumerations like the number of new incidents, problems, or changes. They contain columns that show more detailed information, such as a short description, category, state, assigned to, or created.

**Note:** List reports display in List v2, even if List v3 is enabled.
1. Navigate to Reports > Create New.

<table>
<thead>
<tr>
<th>Number</th>
<th>Assigned to</th>
<th>Short description</th>
<th>Planned start date</th>
<th>Planned end date</th>
</tr>
</thead>
<tbody>
<tr>
<td>CHG000015</td>
<td>Bud Richman</td>
<td>Unix update</td>
<td>2018-12-30 16:00:00</td>
<td>2018-12-30 22:00:00</td>
</tr>
<tr>
<td>CHG000008</td>
<td>ITIL User</td>
<td>Install new Cisco</td>
<td>2018-05-28 12:30:00</td>
<td>2018-05-28 17:30:00</td>
</tr>
<tr>
<td>CHG000006</td>
<td>ITIL User</td>
<td>Put another 100 Gb drive on the 2nd Floor Server</td>
<td>2018-05-30 23:00:00</td>
<td>2018-05-30 23:45:00</td>
</tr>
</tbody>
</table>

Category: Network (60)
Category: Other (26)
Category: Server Reboot (3)
Category: Software (4)
Category: Telecom (2)

1. CHG000005 | David Lee | Install new PBX | 2018-05-26 00:00:00 | 2018-05-29 16:46:31 |
2. CHG000002 | ITIL User | Switch Sales over to the new 555 prefix | 2018-05-23 12:00:00 | 2018-05-23 12:30:00 |
2. Fill in the fields, as appropriate.

<table>
<thead>
<tr>
<th>Field</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Name</td>
<td>Unique and descriptive name for your report.</td>
</tr>
<tr>
<td>Description</td>
<td>Click the information icon (i) to enter more details on what the report does and its purpose.</td>
</tr>
<tr>
<td>Data</td>
<td>Specify the table or report source containing the data set that you want to include in the report. From the first choice list, select <strong>Table</strong> or <strong>Report source</strong>. Then select the specific table or predined from the second choice list. <strong>Note:</strong> If you select a data source used by existing reports, a notification will display prompting you to view them.</td>
</tr>
<tr>
<td>Type</td>
<td>Select <strong>List</strong>.</td>
</tr>
<tr>
<td>Group by</td>
<td>Select a field whose values will group data into expandable sections.</td>
</tr>
<tr>
<td></td>
<td>Click the plus sign (+) to add additional Group bys.</td>
</tr>
<tr>
<td></td>
<td><strong>Note:</strong> Make sure the name of the report reflects groupings.</td>
</tr>
<tr>
<td></td>
<td><strong>Note:</strong> It is not possible to group or stack reports by the Tags field.</td>
</tr>
<tr>
<td>Columns</td>
<td>Add or remove columns from the information that appears when you expand an item in the list. Select one or more fields and use the left and right arrows to move them in or out of the table. Depending on system configuration, you can add fields from tables that extend the selected table. For more information, see How to report fields on extended tables in a report.</td>
</tr>
<tr>
<td>Add Filter Condition</td>
<td>Create <strong>conditions</strong> for filtering data to include in the report. For example, to include only records with priorities of 2—High and 1—Critical, select (Priority) (less than) (3—Moderate).</td>
</tr>
<tr>
<td>Add “OR” Clause</td>
<td>Select a second condition that must be met if the first condition is invalid. For example, select (Assignment Group) (is) (Database), to include records that are assigned to the Database group if the first condition is false.</td>
</tr>
<tr>
<td>Add Sort</td>
<td>Select fields to sort data by. For example, to sort results from lowest to highest priority, select (Priority) (a to z). For reports with Group by, Stack by, Row/Column or Trend by fields to configure, you can sort by fields that are not listed in the Group by, Stack by, Row/Column or Trend by options.</td>
</tr>
</tbody>
</table>

3. Optional: **Customize the number of list rows per page.**

The default number of list rows per page is 20.

4. **Click Save.**

Add reports to homepages or dashboards, publish to the internet, schedule email distribution of PDFs or URLs of published reports, and share reports with others. See **Distribute reports.**
Note:

- The default number of rows in a list report exported to PDF is 1000. To configure this value, enter `sys_properties.list` in the Filter Navigator, and edit the property `glide.pdf.max_rows`. For more information, see: Add a system property.
- Despite list filtering, pdf-format exported rows will count all record rows sequentially up to the export limit and show as blank for roles prevented by ACLs from viewing restricted data.

Create a list report in the Report Builder with variable columns and rows

You can create a list report with variables columns based on a data source or table that has variables associated with it. For example, if an item has a variable called Storage, you can create a list report that has a column for the values in this variable.

Role required: itil, report_group, report_global, report_admin, or admin. To create a meaningful report, you must have the right to access the data you want to report on.

1. Navigate to Reports > Create New.
2. Give the report a name that reflects the information being grouped.
3. Select a report source that has variables associated with it or any table that dot walks to such a report source. By default the Requested Item table (`sc_req_item`) is the only report source that has variables associated with it. There are two kinds of report sources:

<table>
<thead>
<tr>
<th>Option</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Data source</td>
<td>A table with filters applied to provide a single source of information for all users.</td>
</tr>
</tbody>
</table>

Note: If you select a data source used by existing reports, a notification will display prompting you to view them.

| Table           | The raw data from a table with no filters applied.      |

For list reports with variables, the report source is usually the service catalog table.

4. From the Type drop-down list, select List.
5. In the Group by field, specify the value by which to group the report. For example, in a request report grouped by State, requests are Open, Fulfilled, and Canceled are placed in separate groups.

Click the plus icon to specify one or more Additional group by fields. When you select Additional group by fields, a control is added to the bottom of the report that groups the report by any one of the additional fields.

6. From the list of available columns, select the columns you want to show in the report.

Variables (+) is at the bottom of the list of available columns.

Note: It is not possible to group or stack reports by the Tags field.
Depending on system configuration, you can add fields from tables that extend the selected table. For more information, see *How to report fields on extended tables in a report*.

7. Select **Variables (++)** and click the expand icon (+) to choose an item.

   ![Available and Selected columns](image)

   a) Select a **Catalog item** from the pop-up window.

      The variables associated with the item appear in the **Available** columns list.

   b) Move the selected variables to the **Selected** column.

8. Optional: Configure the sort order of the applicable fields in the report (column, row, Group by, Stack by or Trend by depending on the report type). Click the filter icon ( ) and select **Add Sort**.

   ![Available and Selected columns](image)

   1. In the Sorting Order list, choose the field you want to sort on and then choose **a-z** or **z-a** for alphabetical order or reverse alphabetical order.

      The list contains all possible fields from the report's source. The only effective values, however, are the fields chosen for the current report (column, row, Group by, Stack by, or Trend by depending on the report type).
2. Click
   to configure additional sorting order conditions. (Click
   to delete configured sorting order conditions.)

3. Click Save.

For fields of the type Choice list, the sort order is determined by the sequence of the choices in the choice list, not alphabetically or numerically. For example, a priority choice list is often indexed from Critical to Planning as shown in the following figure.

9. Optional: To limit the information displayed in the report, click Add Filter Condition, or Add "OR" Clause, and select conditions to filter the report data.
   For more details on how conditions are constructed, see Condition builder.
10. Click **Save**.

   The report is generated.

Add reports to homepages or dashboards, publish to the internet, schedule email distribution of PDFs or URLs of published reports, and share reports with others. See *Distribute reports*.

**Note:**
- The default number of rows in a list report exported to PDF is 1000. To configure this value, enter `sys_properties.list` in the Filter Navigator, and edit the property `glide.pdf.max_rows`. For more information, see: *Add a system property*.
- Despite list filtering, pdf-format exported rows will count all record rows sequentially up to the export limit and show as blank for roles prevented by ACLs from viewing restricted data.

**Grouping records in list reports**

Grouped list reports can display only the records in each group that are configured to appear in a normal list. You can group rows of information in list reports by specific fields. You cannot group list reports by service catalog variables.

For example, a list configured to display 100 records at a time can show only the first 100 records, regardless of the number of records in that group. Paging is not available within groups, and you cannot access the remaining records without leaving the grouped list. To access all the records in a group:

- Increase the display size of the list.
- Click the group header to return to a normal list for that group with paging enabled.

List reports do not support the user preference to automatically expand grouped records. This figure shows a list of products grouped by manufacturer. By default, the sections of the report are collapsed. In this example, the items associated with Gateway are expanded.
<table>
<thead>
<tr>
<th>Name</th>
<th>Manufacturer</th>
<th>Asset tag</th>
<th>Operating System</th>
<th>CPU speed (MHz)</th>
</tr>
</thead>
<tbody>
<tr>
<td><em>CAROL</em></td>
<td>Gateway</td>
<td>P1000038</td>
<td>Windows XP Professional</td>
<td>2,992</td>
</tr>
<tr>
<td>8402-053108</td>
<td>Gateway</td>
<td>P1000224</td>
<td>Windows XP Professional</td>
<td>3,391</td>
</tr>
<tr>
<td>DIANZK</td>
<td>Gateway</td>
<td>P1000051</td>
<td>Windows XP Professional</td>
<td>3,192</td>
</tr>
<tr>
<td>DK Series</td>
<td>Gateway</td>
<td>P1000241</td>
<td>Windows XP Professional</td>
<td></td>
</tr>
<tr>
<td>JENFEATY</td>
<td>Gateway</td>
<td>P1000221</td>
<td>Windows XP Professional</td>
<td>3,192</td>
</tr>
<tr>
<td>KIKIK</td>
<td>Gateway</td>
<td>P1000111</td>
<td>Windows XP Professional</td>
<td>2,394</td>
</tr>
<tr>
<td>MEGANS</td>
<td>Gateway</td>
<td>P1000222</td>
<td>Windows XP Professional</td>
<td>2,793</td>
</tr>
<tr>
<td>OLGAS</td>
<td>Gateway</td>
<td>P1000163</td>
<td>Windows XP Professional</td>
<td>3,049</td>
</tr>
<tr>
<td>Product KIOSK</td>
<td>Gateway</td>
<td>P1000096</td>
<td>Windows XP</td>
<td></td>
</tr>
</tbody>
</table>

- Manufacturer: IBM (30)
- Manufacturer: IBUYPOWER (4)
Export a list report to Excel
You can export a list report to Excel from the list columns, or by scheduling it to be exported.

- You can export a list report as an Excel spreadsheet by right-clicking any column heading and selecting **Export > Excel**.

- You can **schedule** a saved list report to be exported as an Excel spreadsheet, by clicking **Schedule** and specifying **Type** as Excel Spreadsheet. Excel displays report duration values in milliseconds, rather than the “<x> days <y> hours” format.

Applying list report column configurations with an update set
Configured columns in list reports can be moved to another instance by committing an update set.

Configured list report columns do not automatically get applied to an instance when you commit an update set. List reports render using UI views created each time you save a report. To ensure configured columns reflect in a list report or on a dashboard widget in another instance, from the UI View table, search for the sys_id of the report (RPT) view record for your changes, and add it to the update set. For information on adding customized configurations to an update set and applying them, see .

Map reports
Map reports display data on a map. You can display data as

- a geographical heatmap ( ) or view specific data points ( ).

Zoom in on a map to get a more detailed view. In heatmap mode, click any region on the map that contains data to drill down into its map.

**Note:** Save the map report to drill down into it. You cannot drill down into unsaved reports.
The lowest level of a map hierarchy can display only data points. Click data on this lowest level to see the data in list view, or in drill-down view if one has been configured.

**Limitations**

- Maps are not supported on Internet Explorer versions 7 and 8.
- Map reports cannot be saved as images on Internet Explorer versions 7 to 9, Firefox versions 31 to 37, Safari 5, or all versions of the Edge browser. For best results, use Chrome to work with map reports.
- Map reports cannot be exported as PDFs, but can be saved as images.
- This report type cannot be run as a scheduled report.
Create a map report in the Report Designer

Create a map report to plot your data on a map.

Role required: itil

This task refers to Report Designer in the Kingston release. If you are using the Report Builder (Classic UI) in Kingston for creating reports, select the applicable report from Creating reports to see instructions. If you are using an earlier UI or the Classic UI for creating reports in an earlier release, follow the instructions in the Helsinki documentation: Report types and creation details.

![Report Designer UI and Report Builder UI comparison chart](image)

1. Navigate to Reports > Create New.
2. On the Data tab, give the report a name that reflects the information being grouped.
3. Select the applicable source for the report:

<table>
<thead>
<tr>
<th>Option</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Data source</td>
<td>A table with filters applied to provide a single source of information for all users.</td>
</tr>
</tbody>
</table>

Note: If you select a data source used by existing reports, a notification displays prompting you to view them.
<table>
<thead>
<tr>
<th>Option</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Table</td>
<td>The raw data from a table with no filters applied.</td>
</tr>
<tr>
<td>External import</td>
<td>Choose an existing imported report source, or click the Upload icon to import a new file. See Create a report from an imported Microsoft Excel document.</td>
</tr>
<tr>
<td>MetricBase</td>
<td>MetricBase enables you to collect, retain, analyze, and visualize custom time series data on the Now Platform. For more information, see MetricBase application.</td>
</tr>
</tbody>
</table>

4. Click **Next**.
5. On the **Type** tab, select **Map** in the **Other** section and click **Next**.
   A preliminary version of the report is displayed. To view the updated report at any time, click **Run**.
6. On the **Configure** tab, fill in the following fields and click **Next**.

<table>
<thead>
<tr>
<th>Field</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Display data table</td>
<td>Check this box to show report data in a grid beneath the report. The table appears on dashboards where the report is added. All reports that use charts, including reports that are used on dashboards, show the table of report data when the glide.ui.section508 system property is set to true. The glide.ui.section508 property overrides the Display data table field.</td>
</tr>
</tbody>
</table>
### Field Description

<table>
<thead>
<tr>
<th>Field</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Aggregation</td>
<td>Mathematical calculation to perform on the data. The default is Count, which shows the number of records selected. To show only unique records, select Count Distinct. For example, if you want a report on the distinct number of users who have one or more of the roles in a given list of roles. Users with more than one role would be counted twice unless you use Count Distinct. Select Average, Sum, or Count Distinct, to show a list of fields from the selected Table. Select a field to Aggregate by from this list. For example, if you select a duration field, such as Business duration on the Incident table, the aggregated data is expressed in days, hours, and minutes. If you select an integer field, such as Priority, the data is expressed as a decimal value number. If you choose Sum or Average, select Show related fields to aggregate on dot-walked fields. See Selecting fields on related tables using dot-walking.</td>
</tr>
<tr>
<td>Map this data</td>
<td>The data that you want to plot on the map. Only data that a report administrator has prepared as a map source is available.</td>
</tr>
<tr>
<td>Set map</td>
<td>The starting map for the report. You can zoom in but cannot zoom out from this map.</td>
</tr>
</tbody>
</table>

7. Optional: To limit the information displayed in the report, click the filter icon and select conditions to filter the report data. For more details on how conditions are constructed, see Condition builder.

8. On the Style tab, configure the appearance of the report. Fill in the fields as appropriate.

### Map report style options

<table>
<thead>
<tr>
<th>Field</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>General</td>
<td></td>
</tr>
<tr>
<td>Use heatmap colors</td>
<td>Check box to use different colors to indicate different values on the map. If you clear this check box, all geographical locations with data are displayed in the same color.</td>
</tr>
<tr>
<td>Field</td>
<td>Description</td>
</tr>
<tr>
<td>-------------------------------</td>
<td>-----------------------------------------------------------------------------</td>
</tr>
<tr>
<td>Color for high scores</td>
<td>Color to indicate high values.</td>
</tr>
<tr>
<td>Color for low scores</td>
<td>Color to indicate low values.</td>
</tr>
<tr>
<td>Display data labels</td>
<td>Check box to show the value for each data point.</td>
</tr>
<tr>
<td>Display geographical labels</td>
<td>Check box to display the names of geographical objects on the map, such as countries, regions, and states.</td>
</tr>
<tr>
<td>Custom chart size</td>
<td>Check box to specify the width and height of the report in pixels.</td>
</tr>
</tbody>
</table>

**Note:** The chart size is ignored when you export the report to PDF. In PDFs, the full page width is used to show the chart.

<table>
<thead>
<tr>
<th>Field</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Chart width</td>
<td>Width of the report in pixels. The default value is 600.</td>
</tr>
<tr>
<td></td>
<td>This field is available when <strong>Custom chart size</strong> is selected.</td>
</tr>
<tr>
<td>Chart height</td>
<td>Height of the report in pixels. The default value is 450.</td>
</tr>
<tr>
<td></td>
<td>This field appears when <strong>Custom chart size</strong> is selected.</td>
</tr>
<tr>
<td>Chart size</td>
<td>Chart size. This field is available when <strong>Custom chart size</strong> is cleared. Options are <strong>Small</strong>, <strong>Medium</strong>, and <strong>Large</strong>.</td>
</tr>
</tbody>
</table>

**Note:** The chart size is ignored when you export the report to PDF. In PDFs, the full page width is used to show the chart.
<table>
<thead>
<tr>
<th>Field</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Drilldown view</td>
<td>List view to show when a user selects a segment of a report for which no drilldown report type is specified. This view is also used when the user reaches the lowest drilldown level of a report. See Configure the list layout. If you specify a Report drilldown, Drilldown view is ignored.</td>
</tr>
</tbody>
</table>

**Note:** All users are able to view report visualizations, such as pie charts and column reports. However, the last level of a report drilldown is always a list. Platform access control lists determine user access to list information. Users who do not have rights to any part of the list data see the message "Number of rows removed from this list by Security constraints:" followed by the number. See Access control rules.

For more information, see Define a report drilldown in the Report Designer.
<table>
<thead>
<tr>
<th>Field</th>
<th>Description</th>
</tr>
</thead>
</table>
| Decimal precision  | Number of decimal places to show. You can show from zero to four decimal places. Default value: 2. To change the default value, create the system property glide.chart.decimal.precision and specify the value.  

**Note:** Percentage labels do not change accordingly with the decimal precision specified. |

![Diagram showing data distribution with labels: Open = 9.77%, Pending Change = 27.18%, Closed/Resolved = 54.04%](image)
<table>
<thead>
<tr>
<th>Field</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Show chart title</td>
<td>When the chart title is shown for the report.</td>
</tr>
<tr>
<td></td>
<td>• <strong>Never</strong>: Never show the chart title.</td>
</tr>
<tr>
<td></td>
<td>• <strong>Report only</strong>: Shows the chart title on reports.</td>
</tr>
<tr>
<td></td>
<td>• <strong>Always</strong>: Shows the chart title on reports, dashboards, and homepages.</td>
</tr>
<tr>
<td>Chart title</td>
<td>The chart title has a maximum length of 40 characters. If no title is entered, the report name is used for the title. This field appears when <strong>Report only</strong> or <strong>Always</strong> is selected from the <strong>Show chart title</strong> list.</td>
</tr>
<tr>
<td>Size of the chart title</td>
<td>Size of the chart title in pixels. This field appears when <strong>Report only</strong> or <strong>Always</strong> is selected from the <strong>Show chart title</strong> list.</td>
</tr>
<tr>
<td>Chart title color</td>
<td>Color of the chart title. This field appears when <strong>Report only</strong> or <strong>Always</strong> is selected from the <strong>Show chart title</strong> list.</td>
</tr>
<tr>
<td>Custom chart title position</td>
<td>Check box to specify X and Y coordinates for the position of the chart title. This field appears when <strong>Report only</strong> or <strong>Always</strong> is selected from the <strong>Show chart title</strong> list.</td>
</tr>
<tr>
<td>Chart title X position</td>
<td>Number of pixels to adjust the chart title position right or left. By default the title appears at the center top of the chart. To move the chart title to the right, enter a positive value. To move the title to the left, enter a negative value. This field appears only when <strong>Custom chart title position</strong> is selected.</td>
</tr>
<tr>
<td>Chart title Y position</td>
<td>Number of pixels to adjust the chart title position up or down. By default the title appears at the center top of the chart. To move up the chart title, enter a positive value. To move the chart title down, enter a negative value. This field appears only when <strong>Custom chart title position</strong> is selected.</td>
</tr>
<tr>
<td>Title horizontal alignment</td>
<td>How the chart title is aligned horizontally. This field is available when <strong>Custom chart title position</strong> is cleared.</td>
</tr>
<tr>
<td>Title vertical alignment</td>
<td>How the chart title is aligned vertically. This field appears when <strong>Custom chart title position</strong> is cleared.</td>
</tr>
<tr>
<td>Legend tab fields</td>
<td>Check box to show a chart legend. This check box appears when a <strong>Group by</strong> field is selected on the report form.</td>
</tr>
<tr>
<td>Legend horizontal alignment</td>
<td>How the legend is aligned horizontally. This field appears when <strong>Show legend</strong> is selected.</td>
</tr>
</tbody>
</table>
### Field | Description
--- | ---
Legend vertical alignment | How the legend is aligned vertically. This field appears when **Show legend** is selected.
Show legend border | Check box to show a border around the legend. This check box appears when **Show legend** is selected.
Left align legend text | Check box to left-align the legend text when the report is viewed in a browser. By default, the legend text is centered. When the report is exported to PDF, PNG, or JPG, the legend remains centered. This check box appears when **Show legend** is selected.

9. Optional: To limit the information displayed in the report, click the filter icon and select conditions to filter the report data. For more details on how conditions are constructed, see **Condition builder**.

**Note:** Keywords is a special field used for text searches across all fields. Its use in a filter or condition, in combination with other conditions, may return inconsistent results.

10. Click **Save**. The report is generated.

- Click the Report info icon and add a description of the report.
- Click the sharing icon to open the **Sharing** menu. On this menu, you can share the report with users and groups, add the report to a dashboard, and publish the report to the web. See **Share a report – Report Designer** for more information.

---

**Create a map report in the Report Builder**

Create a map report that plots your data on a map.

Role required: itil, report_group, report_global, report_admin, or admin. To create a meaningful report, you must have the right to access the data you want to report on.

This task refers to using the Report Builder (Classic UI) in the Kingston release under UI15 and UI16. If you are using the Report Designer, see **Create a map report in the Report Designer**.
1. Navigate to **Reports > Create New**.
2. Fill in the following fields.

<table>
<thead>
<tr>
<th>Field</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Data</td>
<td>Select the report source or table containing the data that you want to map.</td>
</tr>
<tr>
<td>Type</td>
<td>Select <strong>Map</strong>.</td>
</tr>
<tr>
<td>Map data</td>
<td>Select the data that you want to plot on the map. Only data that has been prepared by a report administrator as a map source is available.</td>
</tr>
<tr>
<td>Aggregation</td>
<td>Select a mathematical calculation to perform on the data.</td>
</tr>
<tr>
<td>Set map</td>
<td>Select a starting map for the report. You can zoom in but cannot zoom out from this map.</td>
</tr>
</tbody>
</table>

3. To configure the look of your chart, click the gear icon (⚙️) after the **Type** field.
   After you finish configuring these settings, click **Close**.
### Style your chart fields

<table>
<thead>
<tr>
<th>Field</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>General tab fields</strong></td>
<td></td>
</tr>
<tr>
<td>Use color</td>
<td>Select this check box to use different colors to indicate different values on the map. If you clear this check box, all geographical locations with data are displayed in the same color.</td>
</tr>
<tr>
<td>Max color</td>
<td>Select a color to indicate high values.</td>
</tr>
<tr>
<td>Min color</td>
<td>Select a color to indicate low values.</td>
</tr>
<tr>
<td>Display data labels</td>
<td>Select this check box to display the numbers for data values on the map.</td>
</tr>
<tr>
<td>Display geographical labels</td>
<td>Select this check box to display the names of geographical objects on the map, such as countries, regions, and states.</td>
</tr>
<tr>
<td>Drilldown view</td>
<td>Specify a view for the list that appears when you navigate to the lowest map level and view its records.</td>
</tr>
<tr>
<td>Field</td>
<td>Description</td>
</tr>
<tr>
<td>---------------------</td>
<td>-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------</td>
</tr>
<tr>
<td>Decimal precision</td>
<td>Number of decimal places to show. You can show from zero to four decimal places. Default value: 2. To change the default value, create the system property glide.chart.decimal.precision and specify the value.</td>
</tr>
<tr>
<td></td>
<td><strong>Note</strong>: Percentage labels do not change accordingly with the decimal precision specified.</td>
</tr>
</tbody>
</table>

Title tab fields

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<table>
<thead>
<tr>
<th>Field</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Show chart title</td>
<td>Specify whether the chart title is displayed.</td>
</tr>
<tr>
<td></td>
<td>- <strong>Never</strong>: Hides the title.</td>
</tr>
<tr>
<td></td>
<td>- <strong>Report only</strong>: Displays the title only on standalone reports, but not on dashboards.</td>
</tr>
<tr>
<td></td>
<td>- <strong>Always</strong>: Displays the report title on standalone reports and dashboards.</td>
</tr>
<tr>
<td>Chart title</td>
<td>Enter a title for the report.</td>
</tr>
<tr>
<td>Chart title size</td>
<td>Enter the font size for the report title.</td>
</tr>
<tr>
<td>Chart title color</td>
<td>Select a text color for the report title.</td>
</tr>
<tr>
<td>Custom chart title position</td>
<td>Select this check box to specify a location for the report title using pixels. You can move the title only down and left from the top center. If you clear this check box, you can select from more general title positions using the Title horizontal alignment and Title vertical alignment fields.</td>
</tr>
<tr>
<td>Chart title X position</td>
<td>Enter the number of pixels to move the report title right from the center. You cannot move the title left. This field appears only if Custom chart title position is selected.</td>
</tr>
<tr>
<td>Chart title Y position</td>
<td>Enter the number of pixels to move the report title down from the center. You cannot move up the title. This field appears only if Custom chart title position is selected.</td>
</tr>
<tr>
<td>Legend tab fields (available only when colors are used on the report)</td>
<td></td>
</tr>
<tr>
<td>Show legend</td>
<td>Select this check box to display the report legend.</td>
</tr>
<tr>
<td>Legend horizontal alignment</td>
<td>Select where to horizontally position the report legend.</td>
</tr>
<tr>
<td>Legend vertical alignment</td>
<td>Select where to vertically position the report legend.</td>
</tr>
<tr>
<td>Show legend border</td>
<td>Select this check box to show a border around the report legend.</td>
</tr>
</tbody>
</table>

4. Click Save.
   Style options are applied, and the report is regenerated and saved.

Click the sharing icon 
( ) to open the Sharing menu. On this menu, you can add the report to a dashboard and publish the report to the web. See Share a report – Report Builder for more information.

**Multilevel pivot tables**

Multilevel pivot tables display aggregate data broken down by multiple dimensions in a single table. They display separate cells for each row and column value combination, as well as a column subtotal for each first-level row. Aggregate information is presented in the top left of the chart.

You can also create multilevel pivot tables with columns and rows containing variables. See Use service catalog variables in a report – Report Designer.
You can expand and collapse rows in the table to show the chart details, or only the subtotals. The top row of a multilevel pivot report is always visible.

**Note:** Some row configurations prevent the chart from displaying subtotal information, such as when a string column has the same text value but with different character cases.

**Note:** This report type cannot be run as a scheduled report.
### Multilevel Pivot Report Example

<table>
<thead>
<tr>
<th>Last name</th>
<th>Name</th>
<th>Active</th>
<th>State</th>
<th>Count</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Total</td>
<td>false</td>
<td>Closed</td>
<td>5</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>New</td>
<td>1</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>In Progress</td>
<td>5</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>On Hold</td>
<td>1</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Resolved</td>
<td></td>
</tr>
<tr>
<td></td>
<td>(empty)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>(empty)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Anglin</td>
<td>Total</td>
<td>true</td>
<td>Closed</td>
<td>1</td>
</tr>
<tr>
<td>Sales</td>
<td></td>
<td></td>
<td>New</td>
<td>5</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>In Progress</td>
<td>4</td>
</tr>
<tr>
<td>Goodliffe</td>
<td>Total</td>
<td>true</td>
<td>Closed</td>
<td>4</td>
</tr>
<tr>
<td>Development</td>
<td></td>
<td></td>
<td>New</td>
<td>4</td>
</tr>
<tr>
<td>Johnson</td>
<td>Total</td>
<td>true</td>
<td>Closed</td>
<td>1</td>
</tr>
<tr>
<td>Sales</td>
<td></td>
<td></td>
<td>New</td>
<td>1</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>In Progress</td>
<td>1</td>
</tr>
<tr>
<td>Loo</td>
<td>Total</td>
<td>true</td>
<td>Closed</td>
<td>6</td>
</tr>
<tr>
<td>Development</td>
<td></td>
<td></td>
<td>New</td>
<td>1</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>In Progress</td>
<td>1</td>
</tr>
<tr>
<td>Luddy</td>
<td>Total</td>
<td>true</td>
<td>Closed</td>
<td>2</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>New</td>
<td>1</td>
</tr>
<tr>
<td>Richman</td>
<td>Total</td>
<td>true</td>
<td>Closed</td>
<td>1</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>New</td>
<td>1</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>In Progress</td>
<td>2</td>
</tr>
<tr>
<td>User</td>
<td>Total</td>
<td>true</td>
<td>Closed</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>New</td>
<td>6</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>In Progress</td>
<td>2</td>
</tr>
<tr>
<td>Whitherspoon</td>
<td>Total</td>
<td>true</td>
<td>Closed</td>
<td>1</td>
</tr>
<tr>
<td>Wilson</td>
<td>Total</td>
<td>true</td>
<td>Closed</td>
<td>3</td>
</tr>
</tbody>
</table>

Multilevel pivot with subtotals and expanded rows
Create a multilevel pivot report in the Report Designer

Create a multilevel pivot report to display aggregate data broken down by multiple dimensions in a single table.

Create a multilevel pivot report to display aggregate data broken down by multiple metrics in a single table.

Role required: itil, report_group, report_global, report_admin, or admin. To create a meaningful report, you must have the right to access the data you want to report on.

This task refers to Report Designer in the Kingston release. If you are using the Report Builder (Classic UI) in Kingston for creating reports, select the applicable report from Creating reports to see instructions. If you are using an earlier UI or the Classic UI for creating reports in an earlier release, follow the instructions in the Helsinki documentation: Report types and creation details.

**Report Designer UI**

**Report Builder UI**

**Note:** To export multilevel pivot tables to PDF, you must activate the Webkit HTML to PDF plugin.

1. Navigate to Reports > Create New.
2. On the Data tab, give the report a name that reflects the information being grouped.
3. Select the applicable source for the report:
<table>
<thead>
<tr>
<th>Option</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Data source</td>
<td>A table with filters applied to provide a single source of information for all users.</td>
</tr>
<tr>
<td></td>
<td><strong>Note:</strong> If you select a data source used by existing reports, a notification displays prompting you to view them.</td>
</tr>
<tr>
<td>Table</td>
<td>The raw data from a table with no filters applied.</td>
</tr>
<tr>
<td>External import</td>
<td>Choose an existing imported report source, or click the Upload icon to import a new file. See Create a report from an imported Microsoft Excel document.</td>
</tr>
<tr>
<td>MetricBase</td>
<td>MetricBase enables you to collect, retain, analyze, and visualize custom time series data on the Now Platform. For more information, see MetricBase application.</td>
</tr>
</tbody>
</table>

4. Click Next.
5. On the Type tab, select Multi-level pivot table in the Multidimensional reports section and click Next.
   A preliminary version of the report is displayed. To view the updated report at any time, click Run.
6. On the Configure tab, fill in the following fields and click Next.

**Configure tab**

<table>
<thead>
<tr>
<th>Field</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Select columns</td>
<td>One or more fields to use as chart columns. The chart displays data broken down by a combination of row and column values. You can select up to three columns.</td>
</tr>
<tr>
<td></td>
<td><strong>Note:</strong> It is not possible to group by the Tags field.</td>
</tr>
<tr>
<td>Select rows</td>
<td>One or more fields to use as chart rows. The chart displays data broken down by a combination of row and column values. You can select up to five rows.</td>
</tr>
<tr>
<td></td>
<td><strong>Note:</strong> The Tags field is not supported for multilevel pivot reports.</td>
</tr>
</tbody>
</table>
**Field** | **Description**
---|---
Aggregation | Mathematical calculation to perform on the data. The default is **Count**, which shows the number of records selected. To show only unique records, select **Count Distinct**. For example, if you want a report on the distinct number of users who have one or more of the roles in a given list of roles. Users with more than one role would be counted twice unless you use **Count Distinct**. Select **Average**, **Sum**, or **Count Distinct**, to show a list of fields from the selected **Table**. Select a field to **Aggregate by** from this list. For example, if you select a duration field, such as **Business duration** on the Incident table, the aggregated data is expressed in days, hours, and minutes. If you select an integer field, such as **Priority**, the data is expressed as a decimal value number. If you choose **Sum** or **Average**, select **Show related fields** to aggregate on dot-walked fields. See **Selecting fields on related tables using dot-walking**.<br><br>Note: For duration values, the unit of measurement displayed in the aggregation axis cannot be customized.

Max number of groups | Maximum number of groups to display in the report. Groups with highest values are included first. Any excluded groups are combined into the single group **Other**. If you select **Show all**, all groups up to a limit of 50 are displayed. The rest of the results are grouped as **Other**.

Show Other | Check box to include the Other group in the report. The Other group contains data for all groups that exceed the number specified in **Max number of groups**.

7. Optional: Select **Default expanded** to display the report with the rows expanded. Otherwise, the report will display with all rows collapsed.
Multilevel pivot report with collapsed and expanded rows

8. Optional: Check **Display row lines** and **Display column lines** to show the lines that separate the cells in the report.

9. Optional: Configure the sort order of the applicable fields in the report (column, row, Group by, Stack by or Trend by depending on the report type). Click the filter icon
and select **Add Sort**.

1. In the Sorting Order list, choose the field you want to sort on and then choose **a-z** or **z-a** for alphabetical order or reverse alphabetical order.

   The list contains all possible fields from the report’s source. The only effective values, however, are the fields chosen for the current report (column, row, Group by, Stack by, or Trend by depending on the report type). Add sort cannot be applied to dot-walked fields.

2. Click

   ![Plus icon](image)

   to configure additional sorting order conditions. (Click

   ![Minus icon](image)

   to delete configured sorting order conditions.)

3. Click **Save**.

   For fields of the type Choice list, the sort order is determined by the sequence of the choices in the choice list, not alphabetically or numerically. For example, a priority
choice list is often indexed from Critical to Planning as shown in the following figure.

10. Optional: To limit the information displayed in the report, click the filter icon and select conditions to filter the report data. For more details on how conditions are constructed, see Condition builder.

   Note: Keywords is a special field used for text searches across all fields. Its use in a filter or condition, in combination with other conditions, may return inconsistent results.

11. On the Style tab, fill in the fields as appropriate to configure the appearance of the report.
12. Click Save.
   The report is generated.
• Click the Report info icon

and add a description of the report.

• Click the sharing icon

 to open the Sharing menu. On this menu, you can add the report to a dashboard, export the report to PDF, publish the report to the web, and set visibility and schedules. For more information, see Share a report – Report Designer.

Create a multilevel pivot report in the Report Designer with variable columns and rows

You can create a multilevel pivot report with variables columns and rows based on a data source or table that has variables associated with it. Variables are descriptions of catalog items. For example, if a service catalog item has a variable called Storage, you can create a report that has a column or row for the values in this variable, such as 128 GB, 500 GB, and 1 TB.

Role required: itil, report_group, report_global, report_admin, or admin. To create a meaningful report, you must have the right to access the data you want to report on.

This task refers to the Kingston release under UI15 and UI16. If you are using an earlier UI or the Classic UI for creating reports, follow the instructions in the Helsinki documentation instead: Report types and creation details.

Note: To export multilevel pivot tables to PDF, you must activate the Webkit HTML to PDF plugin.

1. Navigate to Reports > Create New.
2. On the Data tab, give the report a name that reflects the information being grouped.
3. Select the applicable source for the report:

<table>
<thead>
<tr>
<th>Option</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Data source</td>
<td>A table with filters applied to provide a single source of information for all users.</td>
</tr>
<tr>
<td>External import</td>
<td>Choose an existing imported report source, or click the Upload icon to import a new file. See Create a report from an imported Microsoft Excel document.</td>
</tr>
<tr>
<td>MetricBase</td>
<td>MetricBase enables you to collect, retain, analyze, and visualize custom time series data on the Now Platform. For more information, see MetricBase application.</td>
</tr>
</tbody>
</table>

4. Click Next.
5. On the Type tab, select Multi-level pivot table in the Multidimensional reports section and click Next.
A preliminary version of the report is displayed. To view the updated report at any time, click Run.

6. On the Configure tab, click Select columns.

From the Available list in the Multilevel Pivot Columns window, select columns that you want to use in the report and move them to the Selected list.

**Note:** It is not possible to group or stack reports by the Tags field.

Depending on system configuration, you can add fields from tables that extend the table selected as the report data source. For more information, see [How to report fields on extended tables in a report](#).

7. Select variables to use as columns:
   a) Select one or more fields to use as report columns.
      
      The report visualization displays data broken down by a combination of row and column values. You can select up to three columns including the variables.
   
   b) Select **Variables (+)** and click the structure icon to choose an item.
c) Select a **Catalog item** from the pop-up window. The variables associated with the item appear in the **Columns** window.
### Columns

<table>
<thead>
<tr>
<th>Available</th>
<th>Selected</th>
</tr>
</thead>
<tbody>
<tr>
<td>Requested Item fields</td>
<td>Number</td>
</tr>
<tr>
<td>.Variables-&gt;iPhone 6</td>
<td>Item</td>
</tr>
<tr>
<td>iPhone 6:What color would you like?</td>
<td>Stage</td>
</tr>
<tr>
<td>iPhone 6:How many gigs of storage?</td>
<td>Request</td>
</tr>
</tbody>
</table>

- **d)** Move the selected variables to the **Selected** column and click **OK**.

- **8.** Click **Select rows** to select one or more fields to use as report rows. You select rows similarly to how you select columns.

  The report visualization displays data broken down by a combination of row and column values. You can select up to five rows including the variables.

  **Note:** It is not possible to group or stack reports by the **Tags** field.

- **9.** On the **Configure** tab, fill in the following fields and click **Next**.
Configure tab

<table>
<thead>
<tr>
<th>Field</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Aggregation</td>
<td>Mathematical calculation to perform on the data. The default is <strong>Count</strong>, which shows the number of records selected.</td>
</tr>
<tr>
<td></td>
<td>To show only unique records, select <strong>Count Distinct</strong>. For example, if you want a report on the distinct number of users who have one or more of the roles in a given list of roles. Users with more than one role would be counted twice unless you use <strong>Count Distinct</strong>.</td>
</tr>
<tr>
<td></td>
<td>Select <strong>Average</strong>, <strong>Sum</strong>, or <strong>Count Distinct</strong>, to show a list of fields from the selected <strong>Table</strong>. Select a field to <strong>Aggregate by</strong> from this list. For example, if you select a duration field, such as <strong>Business duration</strong> on the Incident table, the aggregated data is expressed in days, hours, and minutes. If you select an integer field, such as <strong>Priority</strong>, the data is expressed as a decimal value number.</td>
</tr>
<tr>
<td></td>
<td>If you choose <strong>Sum</strong> or <strong>Average</strong>, select <strong>Show related fields</strong> to aggregate on dot-walked fields. See <strong>Selecting fields on related tables using dot-walking</strong>.</td>
</tr>
</tbody>
</table>

**Note:** For duration values, the unit of measurement displayed in the aggregation axis cannot be customized.

<table>
<thead>
<tr>
<th>Max number of groups</th>
<th>Maximum number of groups to display in the report. Groups with highest values are included first. Any excluded groups are combined into the single group <strong>Other</strong>. If you select <strong>Show all</strong>, all groups up to a limit of 50 are displayed. The rest of the results are grouped as <strong>Other</strong>.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Show Other</td>
<td>Check box to include the Other group in the report. The Other group contains data for all groups that exceed the number specified in <strong>Max number of groups</strong>.</td>
</tr>
</tbody>
</table>

10. Optional: Check **Display row lines** and **Display column lines** to show the lines that separate the cells in the report.
Open incidents by Priority/State/Category

<table>
<thead>
<tr>
<th></th>
<th>Priority</th>
<th>1 - Critical</th>
<th>2 - High</th>
<th>3 - Moderate</th>
<th>4 - Low</th>
<th>5 - Planning</th>
<th>Count</th>
</tr>
</thead>
<tbody>
<tr>
<td>State</td>
<td>Category</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>New</td>
<td>Total</td>
<td>0</td>
<td>0</td>
<td>2</td>
<td>0</td>
<td>3</td>
<td>5</td>
</tr>
<tr>
<td>In Progress</td>
<td>Total</td>
<td>11</td>
<td>4</td>
<td>3</td>
<td>0</td>
<td>2</td>
<td>20</td>
</tr>
<tr>
<td>On Hold</td>
<td>Total</td>
<td>4</td>
<td>0</td>
<td>1</td>
<td>1</td>
<td>0</td>
<td>6</td>
</tr>
<tr>
<td>Count</td>
<td></td>
<td>15</td>
<td>4</td>
<td>6</td>
<td>1</td>
<td>5</td>
<td>31</td>
</tr>
</tbody>
</table>

11. Optional: Configure the sort order of the applicable fields in the report (column, row, Group by, Stack by or Trend by depending on the report type). Click the filter icon and select Add Sort.

1. In the Sorting Order list, choose the field you want to sort on and then choose a-z or z-a for alphabetical order or reverse alphabetical order.
   The list contains all possible fields from the report’s source. The only effective values, however, are the fields chosen for the current report (column, row, Group by, Stack by, or Trend by depending on the report type). Add sort cannot be applied to dot-walked fields.

2. Click to configure additional sorting order conditions. (Click to delete configured sorting order conditions.)

3. Click Save.

For fields of the type Choice list, the sort order is determined by the sequence of the choices in the choice list, not alphabetically or numerically. For example, a priority
choice list is often indexed from Critical to Planning as shown in the following figure.

12. Optional: To limit the information displayed in the report, click the filter icon ( ) and select conditions to filter the report data. For more details on how conditions are constructed, see Condition builder.

**Note:** Keywords is a special field used for text searches across all fields. Its use in a filter or condition, in combination with other conditions, may return inconsistent results.

13. On the **Style** tab, fill in the fields as appropriate to configure the appearance of the report.

14. Click **Save**.

The report is generated.
- Click the Report info icon and add a description of the report.
- Click the sharing icon to open the Sharing menu. On this menu, you can add the report to a dashboard, export the report to PDF, publish the report to the web, and set visibility and schedules. For more information, see Share a report — Report Designer.

**Multilevel pivot report style options - Report Designer**

Change the look of your multi-level pivot chart.

When you create or edit a report, click the **Style** tab for options to configure the look of your report. The options are organized under two or more of the following tabs: **General**, **Title**, **Legend**, and **Axis**. To see how the report looks with the changed settings, click **Save**.

**Multilevel pivot report style options**

<table>
<thead>
<tr>
<th>Field</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>General</td>
<td></td>
</tr>
<tr>
<td>Display Zero</td>
<td>Check this box to display the number 0 when the value of a cell is 0. Clear this check box to display an empty cell when the value of the cell is 0. Applicable when <strong>Aggregation</strong> is <strong>Count</strong> or <strong>Count Distinct</strong>.</td>
</tr>
<tr>
<td>Default expanded</td>
<td>Check this box to expand all rows when the report is displayed. Clear this check box to collapse all rows when the report is displayed. See <strong>Multilevel pivot report with collapsed and expanded rows</strong></td>
</tr>
<tr>
<td>Display row lines</td>
<td>Check this box to display lines between rows in the report.</td>
</tr>
<tr>
<td>Display column lines</td>
<td>Check this box to display lines between columns in the report.</td>
</tr>
<tr>
<td>Field</td>
<td>Description</td>
</tr>
<tr>
<td>------------------</td>
<td>-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------</td>
</tr>
<tr>
<td>Drilldown view</td>
<td>List view to show when a user selects a segment of a report for which no drilldown report type is specified. This view is also used when the user reaches the lowest drilldown level of a report. See Configure the list layout. If you specify a Report drilldown, Drilldown view is ignored.</td>
</tr>
<tr>
<td></td>
<td><strong>Note:</strong> All users are able to view report visualizations, such as pie charts and column reports. However, the last level of a report drilldown is always a list. Platform access control lists determine user access to list information. Users who do not have rights to any part of the list data see the message “Number of rows removed from this list by Security constraints:” followed by the number. See Access control rules. For more information, see Define a report drilldown in the Report Designer.</td>
</tr>
<tr>
<td>Edit coloring rules</td>
<td>Click this hyperlink to configure how cells and cell text with numerical values are colored in the report. You can create rules to define which colors are used based on operators and values. For example, you can specify that any value greater than 5 displays in red. See Create a coloring rule for a multilevel pivot table.</td>
</tr>
<tr>
<td>Field</td>
<td>Description</td>
</tr>
<tr>
<td>------------------</td>
<td>-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------</td>
</tr>
<tr>
<td>Decimal precision</td>
<td>Number of decimal places to show. You can show from zero to four decimal places. Default value: 2. To change the default value, create the system property glide.chart.decimal.precision and specify the value.</td>
</tr>
</tbody>
</table>

**Note:** Percentage labels do not change accordingly with the decimal precision specified.
<table>
<thead>
<tr>
<th>Field</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Show chart title</td>
<td>When the chart title is shown for the report.</td>
</tr>
<tr>
<td></td>
<td>- <strong>Never</strong>: Never show the chart title.</td>
</tr>
<tr>
<td></td>
<td>- <strong>Report only</strong>: Shows the chart title on reports.</td>
</tr>
<tr>
<td></td>
<td>- <strong>Always</strong>: Shows the chart title on reports, dashboards, and homepages.</td>
</tr>
<tr>
<td>Chart title</td>
<td>The chart title has a maximum length of 40 characters. If no title is entered, the report name is used for the title. This field appears</td>
</tr>
<tr>
<td></td>
<td>when <strong>Report only</strong> or <strong>Always</strong> is selected from the <strong>Show chart title</strong> list.</td>
</tr>
<tr>
<td>Size of the chart title</td>
<td>Size of the chart title in pixels. This field appears when <strong>Report only</strong> or <strong>Always</strong> is selected from the <strong>Show chart title</strong> list.</td>
</tr>
<tr>
<td>Chart title color</td>
<td>Color of the chart title. This field appears when <strong>Report only</strong> or <strong>Always</strong> is selected from the <strong>Show chart title</strong> list.</td>
</tr>
<tr>
<td>Custom chart title position</td>
<td>Check box to specify X and Y coordinates for the position of the chart title. This field appears when <strong>Report only</strong> or <strong>Always</strong> is</td>
</tr>
<tr>
<td></td>
<td>selected from the <strong>Show chart title</strong> list.</td>
</tr>
<tr>
<td>Chart title X position</td>
<td>Number of pixels to adjust the chart title position right or left. By default the title appears at the center top of the chart. To move</td>
</tr>
<tr>
<td></td>
<td>the chart title to the right, enter a positive value. To move the title to the left, enter a negative value.</td>
</tr>
<tr>
<td></td>
<td>This field appears only when <strong>Custom chart title position</strong> is selected.</td>
</tr>
<tr>
<td>Chart title Y position</td>
<td>Number of pixels to adjust the chart title position up or down. By default the title appears at the center top of the chart. To move up</td>
</tr>
<tr>
<td></td>
<td>the chart title, enter a positive value. To move the chart title down, enter a negative value.</td>
</tr>
<tr>
<td></td>
<td>This field appears only when <strong>Custom chart title position</strong> is selected.</td>
</tr>
<tr>
<td>Title horizontal alignment</td>
<td>How the chart title is aligned horizontally. This field is available when <strong>Custom chart title position</strong> is cleared.</td>
</tr>
<tr>
<td>Title vertical alignment</td>
<td>How the chart title is aligned vertically. This field appears when <strong>Custom chart title position</strong> is cleared.</td>
</tr>
</tbody>
</table>
Create coloring rules for multilevel pivot reports

Configure rules for how numerical values are displayed in a multilevel pivot table report, to easily highlight the more important values. The color rule is applied to the content of cells in pivot reports.

This task is part of configuring the style options of a multilevel pivot report.

1. On the Style tab of the report designer, click Edit coloring rules.
2. In the Multilevel Pivot Rules dialog box, click New rule.
3. In the New record dialog box, select an Operator.
   Options are: greater than, greater than or is, lower than, lower than or is, is, and between.
4. Specify a value. If you selected the operator between, specify two values. The color rule is applied to the aggregated values.
5. Select a font color and a background color.
6. Optional: Specify a Rule order. Rules are evaluated from lowest value to highest. For example, you have one rule applies the color blue to the value 7, and a second rule that applies the color red to values between 1 and 10. If you want the 7 to appear blue, the Rule order value for the first rule should be higher so that the second rule does not override it.
   If you do not specify a rule order, coloring rules are applied in the order in which they were created.
7. Click Submit to save the rule and create a new rule, or click OK to save the rule and return to the report designer.
Create a multilevel pivot report in the Report Builder

Create a multilevel pivot report to display aggregate data broken down by multiple dimensions in a single table.

*Create a multilevel pivot table report in the Report Builder*

Create a multilevel pivot table to display aggregate data broken down by multiple metrics in a single chart.

Role required: itil, report_group, report_global, report_admin, or admin. To create a meaningful report, you must have the right to access the data you want to report on.

This task refers to using the Report Builder (Classic UI) in the Kingston release under UI15 and UI16. If you are using the Report Designer, see *Create a multilevel pivot report in the Report Designer.*

### Report Designer UI

<table>
<thead>
<tr>
<th>Report Designer UI</th>
<th>Report Builder UI</th>
</tr>
</thead>
<tbody>
<tr>
<td><img src="image1.png" alt="Report Designer UI" /></td>
<td><img src="image2.png" alt="Report Builder UI" /></td>
</tr>
</tbody>
</table>

**Note:** To export multilevel pivot tables to PDF, you must activate the Webkit HTML to PDF plugin.

1. Navigate to Reports > Create New
2. Fill in the fields, as appropriate.
### Multilevel pivot table fields

<table>
<thead>
<tr>
<th>Field</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Data</strong></td>
<td>Specify the table or report source containing the data set that you want to include in the report. From the first choice list, select <strong>Table</strong> or <strong>Report source</strong>. Then select the specific table or predefined data set from the second choice list.</td>
</tr>
<tr>
<td></td>
<td>Note: If you select a data source used by existing reports, a notification will display prompting you to view them.</td>
</tr>
<tr>
<td><strong>Type</strong></td>
<td>Multilevel Pivot</td>
</tr>
<tr>
<td><strong>Style your chart</strong></td>
<td>Click the gear icon (⚙️) after the <strong>Type</strong> field to see the following style options:</td>
</tr>
<tr>
<td></td>
<td>• <strong>Display Zero</strong>: Select this check box to display the number 0 when the value of a cell is 0. Clear this check box to display an empty cell when the value of the cell is 0. Applicable when Aggregation is <strong>Count</strong> or <strong>Count Distinct</strong>.</td>
</tr>
<tr>
<td></td>
<td>• <strong>Drilldown view</strong>: Select a view that determines how detailed records are shown when a specific part of the chart is clicked. This option is available for charts with drill-down capabilities. If you select a view that bears no relation to the table that the report is based on, the default view is used.</td>
</tr>
<tr>
<td><strong>Columns</strong></td>
<td>Select one or more fields to use as chart columns. The chart displays data broken down by a combination of row and column values. You can select 3 columns maximum.</td>
</tr>
<tr>
<td></td>
<td>Note: It is not possible to group or stack reports by the <strong>Tags</strong> field.</td>
</tr>
<tr>
<td><strong>Rows</strong></td>
<td>Select one or more fields to use as chart rows. The chart displays data broken down by a combination of row and column values. You can select 5 rows maximum.</td>
</tr>
<tr>
<td></td>
<td>Note: It is not possible to group or stack reports by the <strong>Tags</strong> field.</td>
</tr>
</tbody>
</table>
### Field Description

**Aggregation**  
Select a computational method for aggregating report data. The default is **Count**, which displays the number of records selected.  
- **Count Distinct**: only unique records are counted. For example, if you want to generate a report with a distinct number of users who have one or more of the roles in a given list of roles, these users would be counted twice unless you use count distinct.  
- **Average**, **Sum**, or **Count Distinct**: this displays an additional list of fields from the selected **Table**. From this list, select a field to aggregate by. For example, if you select a duration field, such as the **Business duration** field on the Incident table, the aggregated data is expressed in days, hours, and minutes. If you select an integer field, such as the **Priority** field, the data is expressed as a number.  
- A value in a column being aggregated has a comma, the value will be separated by the comma, and the aggregation will not be performed accurately.  

**Note:** For duration values, the unit of measurement displayed in the aggregation axis cannot be customized.

**No. groups**  
Select the maximum number of individual values that can be represented as columns. By default, Pivot charts display up to 12 of the largest values from the selected data. Remaining values are grouped into an **Other** category. If you select **Show all**, all values up to a limit of 50 bars are displayed. The rest of the results are stacked on the **Other** column.

**Show Other**  
Select this check box to display the **Other** column.

**Add Filter Condition**  
Click the filter icon to create conditions for filtering and ordering data. For example, you might create a condition that states **Priority + less than + 3 ± Moderate** to have the report include only records with priorities of **2 – High** and **1 – Critical**.

**Note:** Keywords is a special field used for text searches across all fields. It’s use in a filter or condition, in combination with other conditions, may return inconsistent results.

**Add ‘OR’ Clause**  
Select a second condition that must be met if the first condition is invalid. For example, select **(Assignment Group) (is) (Database)**, to include records that are assigned to the Database group, if the first condition is false.

---

3. Click **Save**. The report is generated.

Add reports to homepages or dashboards, publish to the internet, schedule email distribution of PDFs or URLs of published reports, and share reports with others. See **Distribute reports**.

**Create a multilevel pivot report in the Report Builder with variable columns and rows**  
You can create a multilevel pivot report with variables columns and rows based on a data source or table that has variables associated with it. Variables are descriptions of catalog items. For example, if a service catalog item has a variable called **Storage**, you can create a report that has a column or row for the values in this variable, such as 128 GB, 500 GB, and 1 TB.

Role required: itil, report_group, report_global, report_admin, or admin. To create a meaningful report, you must have the right to access the data you want to report on.
This task refers to using the Report Builder (Classic UI) in the Kingston release under UI15 and UI16. If you are using the Report Designer, see Create a multilevel pivot report in the Report Designer.

1. Navigate to **Reports > Create New**.
2. Give the report a name that reflects the information being grouped.
3. Select a report source that has variables associated with it. By default this is the Requested Item table (sc_req_item) or any table that dot walks to it. There are two kinds of report sources:

<table>
<thead>
<tr>
<th>Option</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Data source</td>
<td>A table with filters applied to provide a single source of information for all users.</td>
</tr>
<tr>
<td>Table</td>
<td>The raw data from a table with no filters applied.</td>
</tr>
</tbody>
</table>

For list reports with variables, the report source is usually the service catalog table.

4. From the **Type** dropdown list, select **Multilevel Pivot** in the Pivot section.
5. Click the cog wheel icon next to the **Type** field to configure the appearance of the report. See Multilevel pivot report style options – Report Builder.

6. Click **Select Groups** next to the word Columns to open the Multilevel Pivot Columns slush bucket.

From the **Available** list in the Multilevel Pivot Columns window, select columns that you want to use in the report and move them to the **Selected** list.

**Note:** It is not possible to group or stack reports by the **Tags** field.

Depending on system configuration, you can add fields from tables that extend the table selected as the report data source. For more information, see How to report fields on extended tables in a report.

7. Select variables to use as columns:
   a) Select one or more fields to use as report columns.
      The report visualization displays data broken down by a combination of row and column values. You can select up to three columns including the variables.
   b) Select **Variables (+)** and click the expand icon to choose an item.
c) Select a **Catalog item** from the pop-up window.
The variables associated with the item appear in the **Columns** window.

Multilevel Pivot Rows
d) Move the selected variables to the **Selected** column and click **Close**.

8. Click **Select Groups** next to the word Rows to open the **Multilevel Pivot Rows** slush bucket. Select rows the same way you select columns.
   The report visualization displays data broken down by a combination of row and column values. You can select up to five rows including the variables.

   **Note:** It is not possible to group or stack reports by the **Tags** field.

9. Fill in the following fields and click **Next**.

   **Configure tab**

<table>
<thead>
<tr>
<th>Field</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Aggregation</td>
<td>Mathematical calculation to perform on the data. The default is <strong>Count</strong>, which shows the number of records selected. To show only unique records, select <strong>Count Distinct</strong>. For example, if you want a report on the distinct number of users who have one or more of the roles in a given list of roles. Users with more than one role would be counted twice unless you use <strong>Count Distinct</strong>. Select <strong>Average</strong>, <strong>Sum</strong>, or <strong>Count Distinct</strong>, to show a list of fields from the selected <strong>Table</strong>. Select a field to <strong>Aggregate by</strong> from this list. For example, if you select a duration field, such as <strong>Business duration</strong> on the Incident table, the aggregated data is expressed in days, hours, and minutes. If you select an integer field, such as <strong>Priority</strong>, the data is expressed as a decimal value number. If you choose <strong>Sum</strong> or <strong>Average</strong>, select <strong>Show related fields</strong> to aggregate on dot-walked fields. See <strong>Selecting fields on related tables using dot-walking</strong>.</td>
</tr>
<tr>
<td>Max number of groups</td>
<td>Maximum number of groups to display in the report. Groups with highest values are included first. Any excluded groups are combined into the single group <strong>Other</strong>. If you select <strong>Show all</strong>, all groups up to a limit of 50 are displayed. The rest of the results are grouped as <strong>Other</strong>.</td>
</tr>
<tr>
<td>Show Other</td>
<td>Check box to include the Other group in the report. The Other group contains data for all groups that exceed the number specified in <strong>Max number of groups</strong>.</td>
</tr>
</tbody>
</table>

10. Optional: To limit the information displayed in the report, click **Add Filter Condition** or **Add “OR” Clause** and select conditions to filter the report data.
   For more details on how conditions are constructed, see **Condition builder**.
   
   **Note:** Keywords is a special field used for text searches across all fields. It’s use in a filter or condition, in combination with other conditions, may return inconsistent results.

11. Click **Save**.
   The report is generated.
Add reports to homepages or dashboards, publish to the internet, schedule email distribution of PDFs or URLs of published reports, and share reports with others. See Distribute reports.

**Multilevel pivot report style options – Report Builder**

Change the look of your multi-level pivot report.

When you create or edit a report, click the gear icon (⚙️) after the Type field. Use the options in the Style your chart dialog box to configure the look of your chart. Chart options are automatically saved when you click Close. To see how the chart looks with the saved settings, click Save.

### Chart style options

<table>
<thead>
<tr>
<th>Field</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>General</strong></td>
<td></td>
</tr>
<tr>
<td>Display Zero</td>
<td>Select this check box to display the number 0 when the value of a cell is 0. Clear this check box to display an empty cell when the value of the cell is 0. Applicable when Aggregation is Count or Count Distinct.</td>
</tr>
<tr>
<td>Drilldown view</td>
<td>List view to show when a user selects a segment of a report for which no drilldown report type is specified. This view is also used when the user reaches the lowest drilldown level of a report. See Configure the list layout. If you specify a Report drilldown, Drilldown view is ignored.</td>
</tr>
<tr>
<td><strong>Note:</strong></td>
<td>All users are able to view report visualizations, such as pie charts and column reports. However, the last level of a report drilldown is always a list. Platform access control lists determine user access to list information. Users who do not have rights to any part of the list data see the message “Number of rows removed from this list by Security constraints:” followed by the number. See Access control rules.</td>
</tr>
<tr>
<td><strong>Edit coloring rules</strong></td>
<td>Click this hyperlink to configure how cells and cell text with numerical values are colored in the report. You can create rules to define which colors are used based on operators and values. For example, you can specify that any value greater than 5 displays in red. See Create a coloring rule for a multilevel pivot table.</td>
</tr>
<tr>
<td>Field</td>
<td>Description</td>
</tr>
<tr>
<td>----------------</td>
<td>---------------------------------------------------------------------------------------------------------------------------------------------</td>
</tr>
<tr>
<td>Decimal precision</td>
<td>Number of decimal places to show. You can show from zero to four decimal places. Default value: 2. To change the default value, create the system property glide.chart.decimal.precision and specify the value.</td>
</tr>
</tbody>
</table>

**Note:** Percentage labels do not change accordingly with the decimal precision specified.
<table>
<thead>
<tr>
<th>Field</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Show chart title</td>
<td>When the chart title is shown for the report.</td>
</tr>
<tr>
<td></td>
<td>• Never: Never show the chart title.</td>
</tr>
<tr>
<td></td>
<td>• Report only: Shows the chart title on reports.</td>
</tr>
<tr>
<td></td>
<td>• Always: Shows the chart title on reports, dashboards, and homepages.</td>
</tr>
<tr>
<td>Chart title</td>
<td>The chart title has a maximum length of 40 characters. If no title is entered,</td>
</tr>
<tr>
<td></td>
<td>the report name is used for the title. This field appears when Report only or</td>
</tr>
<tr>
<td></td>
<td>Always is selected from the Show chart title list.</td>
</tr>
<tr>
<td>Size of the chart title</td>
<td>Size of the chart title in pixels. This field appears when Report only or</td>
</tr>
<tr>
<td></td>
<td>Always is selected from the Show chart title list.</td>
</tr>
<tr>
<td>Chart title color</td>
<td>Color of the chart title. This field appears when Report only or Always is</td>
</tr>
<tr>
<td></td>
<td>selected from the Show chart title list.</td>
</tr>
<tr>
<td>Custom chart title position</td>
<td>Check box to specify X and Y coordinates for the position of the chart title.</td>
</tr>
<tr>
<td></td>
<td>This field appears when Report only or Always is selected from the Show</td>
</tr>
<tr>
<td></td>
<td>chart title list.</td>
</tr>
<tr>
<td>Title horizontal alignment</td>
<td>How the chart title is aligned horizontally. This field is available when</td>
</tr>
<tr>
<td></td>
<td>Custom chart title position is cleared.</td>
</tr>
<tr>
<td>Title vertical alignment</td>
<td>How the chart title is aligned vertically. This field appears when Custom</td>
</tr>
<tr>
<td></td>
<td>chart title position is cleared.</td>
</tr>
<tr>
<td>Chart title X position</td>
<td>Number of pixels to adjust the chart title position right or left. By default</td>
</tr>
<tr>
<td></td>
<td>the title appears at the center top of the chart. To move the chart title to</td>
</tr>
<tr>
<td></td>
<td>the right, enter a positive value. To move the title to the left, enter a</td>
</tr>
<tr>
<td></td>
<td>negative value.</td>
</tr>
<tr>
<td></td>
<td>This field appears only when Custom chart title position is selected.</td>
</tr>
<tr>
<td>Chart title Y position</td>
<td>Number of pixels to adjust the chart title position up or down. By default</td>
</tr>
<tr>
<td></td>
<td>the title appears at the center top of the chart. To move up the chart title</td>
</tr>
<tr>
<td></td>
<td>enter a positive value. To move the chart title down, enter a negative value.</td>
</tr>
<tr>
<td></td>
<td>This field appears only when Custom chart title position is selected.</td>
</tr>
</tbody>
</table>

Create coloring rules for multilevel pivot reports
Configure rules for how numerical values are displayed in a multilevel pivot table report, to easily highlight the more important values. The color rule is applied to the content of cells in pivot reports.

This task is part of configuring the style options of a multilevel pivot report.

1. On the Style tab of the report designer, click Edit coloring rules.
2. In the Multilevel Pivot Rules dialog box, click New rule.
3. In the New record dialog box, select an Operator.
   Options are: greater than, greater than or is, lower than, lower than or is, is, and between.
4. Specify a value. If you selected the operator between, specify two values. The color rule is applied to the aggregated values.
5. Select a font color and a background color.
6. Optional: Specify a Rule order. Rules are evaluated from lowest value to highest. For example, you have one rule applies the color blue to the value 7, and a second rule that applies the color red to values between 1 and 10. If you want the 7 to appear blue, the Rule order value for the first rule should be higher so that the second rule does not override it.

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If you do not specify a rule order, coloring rules are applied in the order in which they were created.

7. Click **Submit** to save the rule and create a new rule, or click **OK** to save the rule and return to the report designer.

**Pareto reports**

Pareto charts help you identify the most important dimension in a large set of dimensions. Columns show data in descending order. A line shows cumulative percentage.

Pareto charts contain both bar and line graphs. The bars display the data in descending order from left to right, and the line graph shows the cumulative totals from each category in the same order. The left Y axis is the record count, and the right Y axis is the cumulative percentage of the total number of records evaluated. The blue line at the 80% mark helps determine which data is the most influential in the process. The data to the left of the intersection of the line graph and the 80% mark have the greatest effect on the overall outcome.

The figure below shows that five callers account for 80% of the incident calls, while seven account for the other 20%.
Pareto chart

80% of incidents come from these callers

Intersection of cumulative total line and the 80% mark

20% of incidents come from these callers
Create a pareto report in the Report Designer

Create a Pareto report to identify the most important factors in a large set of factors. Columns show data in descending order while a curve shows cumulative percentage.

Create a pareto report in the Report Designer
Create a pareto report to identify the most important factors in a large set of factors.

This task refers to Report Designer in the Kingston release. If you are using the Report Builder (Classic UI) in Kingston for creating reports, select the applicable report from Creating reports to see instructions. If you are using an earlier UI or the Classic UI for creating reports in an earlier release, follow the instructions in the Helsinki documentation: Report types and creation details.

1. Navigate to Reports > Create New.
2. On the Data tab, give the report a name that reflects the information being grouped.
3. Select the applicable source for the report:
### Option | Description
--- | ---
**Data source** | A table with filters applied to provide a single source of information for all users.

**Note:** If you select a data source used by existing reports, a notification displays prompting you to view them.

**Table** | The raw data from a table with no filters applied.

**External import** | Choose an existing imported report source, or click the Upload icon to import a new file. See Create a report from an imported Microsoft Excel document.

**MetricBase** | MetricBase enables you to collect, retain, analyze, and visualize custom time series data on the Now Platform. For more information, see MetricBase application.

### 4. Click **Next**.

### 5. On the **Type** tab, select **Pareto** in the **Bars** section and click **Next**.

A preliminary version of the report is displayed. To view the updated report at any time, click **Run**.

### 6. On the **Configure** tab, fill in the following fields and click **Next**.

**Configure tab**

<table>
<thead>
<tr>
<th>Field</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Group by</strong></td>
<td>Group report data using the values of this field. For example, in an incident report grouped by <strong>Assignment group</strong>, all incidents that belong to Software, Service Desk, and Network are placed in separate groups.</td>
</tr>
<tr>
<td><strong>Note:</strong> It is not possible to group or stack reports by the <strong>Tags</strong> field.</td>
<td></td>
</tr>
<tr>
<td><strong>Additional group by</strong></td>
<td>Extra fields to group the report by. When you select <strong>Additional group by</strong> fields, a control is added to the bottom of the report that groups the report by any one of the additional fields.</td>
</tr>
<tr>
<td><strong>Note:</strong> It is not possible to group or stack reports by the <strong>Tags</strong> field.</td>
<td></td>
</tr>
<tr>
<td>Field</td>
<td>Description</td>
</tr>
<tr>
<td>-----------------------</td>
<td>-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------</td>
</tr>
<tr>
<td>Display data table</td>
<td>Check this box to show report data in a grid beneath the report. The table appears on dashboards where the report is added. All reports that use charts, including reports that are used on dashboards, show the table of report data when the glide.ui.section508 system property is set to true. The glide.ui.section508 property overrides the Display data table field.</td>
</tr>
<tr>
<td>Max number of groups</td>
<td>Maximum number of groups to display in the report. Groups with highest values are included first. Any excluded groups are combined into the single group Other. If you select Show all, all groups up to a limit of 50 are displayed. The rest of the results are grouped as Other.</td>
</tr>
<tr>
<td>Show Other</td>
<td>Check box to include the Other group in the report. The Other group contains data for all groups that exceed the number specified in Max number of groups.</td>
</tr>
</tbody>
</table>

7. Optional: Configure the sort order of the applicable fields in the report (column, row, Group by, Stack by or Trend by depending on the report type). Click the filter icon ( ), and select Add Sort.

1. In the Sorting Order list, choose the field you want to sort on and then choose a-z or z-a for alphabetical order or reverse alphabetical order. The list contains all possible fields from the report’s source. The only effective values, however, are the fields chosen for the current report (column, row, Group by, Stack by, or Trend by depending on the report type). Add sort cannot be applied to dot-walked fields.

2. Click to configure additional sorting order conditions. (Click to delete configured sorting order conditions.)

3. Click Save.

For fields of the type Choice list, the sort order is determined by the sequence of the choices in the choice list, not alphabetically or numerically. For example, a priority
choice list is often indexed from Critical to Planning as shown in the following figure.

8. Optional: To limit the information displayed in the report, click the filter icon and select conditions to filter the report data.
   For more details on how conditions are constructed, see Condition builder.

   **Note:** Keywords is a special field used for text searches across all fields. Its use in a filter or condition, in combination with other conditions, may return inconsistent results.

9. On the **Style** tab, fill in the fields as appropriate to configure the appearance of the report.

10. Click **Save**.
    The report is generated.
- Click the Report info icon

and add a description of the report.

- Click the sharing icon

 to open the **Sharing** menu. On this menu, you can add the report to a dashboard, export the report to PDF, publish the report to the web, and set visibility and schedules. For more information, see *Share a report – Report Designer*.

**Pareto report style options - Report Designer**

Change the look of your pareto report.

When you create or edit a report, click the **Style** tab for options to configure the look of your report. The options are organized under two or more of the following tabs: **General**, **Title**, **Legend**, and **Axis**. To see how the report looks with the changed settings, click **Save**.

**Note:** The cumulative totals percentage line is not configurable. It cannot be disabled and the color cannot be changed.

### Pareto chart style options

<table>
<thead>
<tr>
<th>Field</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>General</td>
<td></td>
</tr>
<tr>
<td>Chart color</td>
<td>Colors used in the report. If you do not group or stack the report, <strong>Use one color</strong> is automatically selected. Select a single predefined system color. If you group or stack the report, select one of the following options:</td>
</tr>
<tr>
<td>Set color</td>
<td>Color used in the report. This field displays when you select <strong>Use one color</strong> from the <strong>Chart color</strong> list. Click the search icon to choose from the <strong>Chart color schemes</strong> or <strong>Color Definitions</strong> list.</td>
</tr>
</tbody>
</table>

**Note:** It is not possible to use transparency hex values.
<table>
<thead>
<tr>
<th>Field</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Set palette</td>
<td>Color palette used in the report. This field appears when you select <strong>Use color palette</strong> from the <strong>Chart color</strong> list. Click the search icon ( ) to choose from the <strong>Color color schemes</strong> list.</td>
</tr>
</tbody>
</table>
| Display data labels   | Select to display the current value for each bar. This field is available when you select None from the **Stacked by** list or if there is no **Stacked by** list.  
  - Select **Data labels in the middle** to show the labels in the middle of each bar.  
  - Select **Allow data labels to overlap** to override default separation of labels in the visualization. |
<p>| Custom chart size     | Check box to specify the width and height of the report in pixels.                                                                                                                                              |
| Note: The chart size is ignored when you export the report to PDF. In PDFs, the full page width is used to show the chart.                                      |
| Chart width           | Width of the report in pixels. The default value is 600. This field is available when <strong>Custom chart size</strong> is selected.                                                                                                                                                        |
| Chart height          | Height of the report in pixels. The default value is 450. This field appears when <strong>Custom chart size</strong> is selected.                                                                                                                                                             |
| Chart size            | Chart size. This field is available when <strong>Custom chart size</strong> is cleared. Options are <strong>Small</strong>, <strong>Medium</strong>, and <strong>Large</strong>. Note: The chart size is ignored when you export the report to PDF. In PDFs, the full page width is used to show the chart. |</p>
<table>
<thead>
<tr>
<th>Field</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Drilldown view</td>
<td>List view to show when a user selects a segment of a report for which no drilldown report type is specified. This view is also used when the user reaches the lowest drilldown level of a report. See Configure the list layout. If you specify a Report drilldown, Drilldown view is ignored.</td>
</tr>
<tr>
<td></td>
<td></td>
</tr>
</tbody>
</table>
| Note:            | All users are able to view report visualizations, such as pie charts and column reports. However, the last level of a report drilldown is always a list. Platform access control lists determine user access to list information. Users who do not have rights to any part of the list data see the message “Number of rows removed from this list by Security constraints:” followed by the number. See Access control rules.
<p>|                  | For more information, see Define a report drilldown in the Report Designer.                                                                                                                                                                                                                                                                                        |
| Title            |                                                                                                                                                                                                                                                                                                                                                               |
| Show chart title | When the chart title is shown for the report.                                                                                                                                                                                                                                                                                                                   |
|                  | · Never: Never show the chart title.                                                                                                                                                                                                                                                                                                                        |
|                  | · Report only: Shows the chart title on reports.                                                                                                                                                                                                                                                                                                             |
|                  | · Always: Shows the chart title on reports, dashboards, and homepages.                                                                                                                                                                                                                                                                                       |
| Chart title      | The chart title has a maximum length of 40 characters. If no title is entered, the report name is used for the title. This field appears when Report only or Always is selected from the Show chart title list.                                                                                                                                                                         |
| Size of the chart title | Size of the chart title in pixels. This field appears when Report only or Always is selected from the Show chart title list.                                                                                                                                                                                                                     |
| Chart title color | Color of the chart title. This field appears when Report only or Always is selected from the Show chart title list.                                                                                                                                                                                                                                              |
| Custom chart title position | Check box to specify X and Y coordinates for the position of the chart title. This field appears when Report only or Always is selected from the Show chart title list.                                                                                                                                  |</p>
<table>
<thead>
<tr>
<th>Field</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Chart title X position</td>
<td>Number of pixels to adjust the chart title position right or left. By default the title appears at the center top of the chart. To move the chart title to the right, enter a positive value. To move the title to the left, enter a negative value. This field appears only when <strong>Custom chart title position</strong> is selected.</td>
</tr>
<tr>
<td>Chart title Y position</td>
<td>Number of pixels to adjust the chart title position up or down. By default the title appears at the center top of the chart. To move up the chart title, enter a positive value. To move the chart title down, enter a negative value. This field appears only when <strong>Custom chart title position</strong> is selected.</td>
</tr>
<tr>
<td>Title horizontal alignment</td>
<td>How the chart title is aligned horizontally. This field is available when <strong>Custom chart title position</strong> is cleared.</td>
</tr>
<tr>
<td>Title vertical alignment</td>
<td>How the chart title is aligned vertically. This field appears when <strong>Custom chart title position</strong> is cleared.</td>
</tr>
<tr>
<td>Axis</td>
<td></td>
</tr>
<tr>
<td>Y axis and X axis</td>
<td>Axis for which you want to configure the titles, appearance, and labels.</td>
</tr>
<tr>
<td>Title</td>
<td>Title for the axis.</td>
</tr>
<tr>
<td>Title size</td>
<td>Size of the axis title in pixels. Default value is 12.</td>
</tr>
<tr>
<td>Title bold</td>
<td>Check this box to show the axis title in a bold typeface.</td>
</tr>
<tr>
<td>Opposite</td>
<td>On the <strong>X axis</strong> tab, select this check box to show the X-axis title on the right side of the report instead. On the <strong>Y axis</strong> tab, select this check box to show the Y-axis title on top of the report instead of across the bottom.</td>
</tr>
<tr>
<td>Display grid</td>
<td>On the <strong>X axis</strong> tab, select this check box to show horizontal grid lines on the report. On the <strong>Y axis</strong> tab, select this check box to show vertical grid lines on top the report.</td>
</tr>
<tr>
<td>Grid dotted</td>
<td>Check this box to show dotted grid lines instead of solid lines.</td>
</tr>
<tr>
<td>X axis / Y axis label size</td>
<td>On the <strong>X axis</strong> tab, specify the size of the labels for the rows of the report. On the <strong>Y axis</strong> tab, specify the size of the labels for the columns in the report.</td>
</tr>
</tbody>
</table>
Create a Pareto report in the Report Builder

Create a Pareto report to identify the most important factors in a large set of factors. Columns show data in descending order while a curve shows cumulative percentage.

Role required: itil, report_group, report_global, report_admin, or admin. To create a meaningful report, you must have the right to access the data you want to report on.

This task refers to using the Report Builder (Classic UI) in the Kingston release under UI15 and UI16. If you are using the Report Designer, see Create a Pareto report in the Report Designer.

1. Navigate to Reports > Create New.
2. Fill in the fields, as appropriate.
### New Pareto chart report

<table>
<thead>
<tr>
<th>Field</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Name</td>
<td>Unique and descriptive name for your report.</td>
</tr>
<tr>
<td>Type</td>
<td>Pareto chart.</td>
</tr>
<tr>
<td>Table</td>
<td>ServiceNow table against which this report will be run.</td>
</tr>
<tr>
<td>Group by</td>
<td>Select a field to organize data into groups from the selected table. In an incident report grouped by Assignment group, all incidents belonging to Software, Service Desk, Network, and so on, are placed in separate groups. Make sure that you give the report a name that reflects the field you select.</td>
</tr>
<tr>
<td></td>
<td>Click to select additional group by fields. When you select Additional group by fields, a control is added to the bottom of the report that groups the report by any one of the additional fields.</td>
</tr>
<tr>
<td></td>
<td>Note: It is not possible to group or stack reports by the Tags field.</td>
</tr>
<tr>
<td>Export details</td>
<td>Check this box to indicate whether to display (selected) or hide (cleared) the report attributes at the top of the page when exporting to PDF.</td>
</tr>
<tr>
<td>Header Footer Template</td>
<td>Page header and footer template to use when exporting the report to PDF.</td>
</tr>
<tr>
<td>Visible to</td>
<td>Users to whom the report is available:</td>
</tr>
<tr>
<td></td>
<td>- Me allows only the report creator to view the report.</td>
</tr>
<tr>
<td></td>
<td>- Everyone allows all users to view the report.</td>
</tr>
<tr>
<td></td>
<td>- Groups and Users allows the report creator to specify groups and users who are authorized to see the report.</td>
</tr>
<tr>
<td></td>
<td>Groups and Users is visible to users with the report_group role.</td>
</tr>
<tr>
<td>Groups</td>
<td>Groups whose members are authorized to see the report. This field is visible only when Groups and Users is selected.</td>
</tr>
<tr>
<td>Users</td>
<td>Users who are authorized to see the report. This field is visible only when Groups and Users is selected.</td>
</tr>
<tr>
<td>Filter and Order</td>
<td>Conditions for filtering and ordering data. For example, you might create a condition that states Priority + less than + 3 - Moderate to have the report include only records with priorities of 2 - High and 1 - Critical. To order the results from lowest to highest, specify sorting based on Priority and set the sort order to z to a.</td>
</tr>
<tr>
<td></td>
<td>Note: Keywords is a special field used for text searches across all fields. It’s use in a filter or condition, in combination with other conditions, may return inconsistent results.</td>
</tr>
<tr>
<td>Chart size</td>
<td>Size of chart: large or small.</td>
</tr>
</tbody>
</table>
### Pareto report style options – Report Builder

Change the look of your pareto report.

When you create or edit a report, click the gear icon (⚙️) after the **Type** field to open the **Style your chart** dialog box with options to configure the look of your chart. Chart options are automatically saved when you click **Close**. To see how the chart looks with the saved settings, click **Save**.

#### Pareto chart style options

<table>
<thead>
<tr>
<th>Field</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>General</td>
<td></td>
</tr>
</tbody>
</table>
| Chart color | If no group by is used, **Use one color** is automatically selected. Select a single predefined system color. If a group by is used, select one of the following options:  
  * **Use color palette**: Select a color palette from the predefined system color palettes.  
  * **Use several colors**: Define a custom set of **Colors** using hex codes. You can add any number of colors.  
  * **Use chart colors**: Use the colors defined in **Reports > Chart Colors**. |
<table>
<thead>
<tr>
<th>Field</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Display data labels</td>
<td>Select this check box to display the current value for each bar. This field is available when you select None from the Stacked by list.</td>
</tr>
<tr>
<td>Custom chart size</td>
<td>Select this check box to specify the chart’s width and height in pixels.</td>
</tr>
<tr>
<td>Chart size</td>
<td>Select a chart size. This field is available when Custom chart size is cleared.</td>
</tr>
<tr>
<td>Drilldown View</td>
<td>Select a view that determines how detailed records are shown when a specific part of the report visualization is clicked. This option is available for charts with drill-down capabilities. If you select a view that has no fields in common to link to the table that the report is based on, the default view is used. See Define a report drilldown in the Report Designer.</td>
</tr>
<tr>
<td>Title</td>
<td></td>
</tr>
<tr>
<td>Show chart title</td>
<td>Select when the chart title is displayed.</td>
</tr>
<tr>
<td></td>
<td>- <strong>Never</strong>: never displays the chart title.</td>
</tr>
<tr>
<td></td>
<td>- <strong>Report only</strong>: displays the chart title on reports.</td>
</tr>
<tr>
<td></td>
<td>- <strong>Always</strong>: displays the chart title on reports, dashboards, and homepages.</td>
</tr>
<tr>
<td>Chart title</td>
<td>Enter a title for this chart. The title has a maximum length of 40 characters. If no title is entered, the report name is used for the title. This field is available when Report only or Always is selected from the Show chart title list.</td>
</tr>
<tr>
<td>Chart title size</td>
<td>Enter the size of the chart title in pixels. This field is available when Report only or Always is selected from the Show chart title list.</td>
</tr>
<tr>
<td>Chart title color</td>
<td>Select the color for the chart title. This field is available when Report only or Always is selected from the Show chart title list.</td>
</tr>
<tr>
<td>Custom chart title position</td>
<td>Select this check box to specify the X and Y coordinates for the position of the chart title.</td>
</tr>
<tr>
<td>Title horizontal alignment</td>
<td>Select how the chart title is aligned horizontally. This field is available when Custom chart title position is cleared.</td>
</tr>
<tr>
<td>Title vertical alignment</td>
<td>Select how the chart title is aligned vertically. This field is available when Custom chart title position is cleared.</td>
</tr>
<tr>
<td>Axis</td>
<td></td>
</tr>
<tr>
<td>Axis button</td>
<td>Configure the titles, appearance, and labels of the X and Y axis. For the Y axis, you can also specify a From and To range. If you select an aggregation field that is not of the type number, such as an average or a sum with a business duration, the From and To fields are not available.</td>
</tr>
</tbody>
</table>

### Pie charts

Pie charts show the proportions that make up a whole.

You can use a pie chart to show things like open incidents by priority. For example, suppose that an organization has a policy that critical incidents can never exceed 40% of all open incidents. Given that there are always open incidents of various priority levels, you can quickly see with a pie chart when incident counts exceed acceptable ranges. This figure shows that 14.61% of the open incidents are critical.
Create a pie report in the Report Designer

Create a pie chart to show the relationship of individual values to the whole.

Create a pie chart to compare the size of individual categories to the whole.
This task refers to Report Designer in the Kingston release. If you are using the Report Builder (Classic UI) in Kingston for creating reports, select the applicable report from Creating reports to see instructions. If you are using an earlier UI or the Classic UI for creating reports in an earlier release, follow the instructions in the Helsinki documentation: Report types and creation details.

<table>
<thead>
<tr>
<th>Report Designer UI</th>
<th>Report Builder UI</th>
</tr>
</thead>
<tbody>
<tr>
<td><img src="image1.png" alt="Report Designer UI" /></td>
<td><img src="image2.png" alt="Report Builder UI" /></td>
</tr>
</tbody>
</table>

1. Navigate to Reports > Create New.
2. On the Data tab, give the report a name that reflects the information being grouped.
3. Select the applicable source for the report:

<table>
<thead>
<tr>
<th>Option</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Data source</td>
<td>A table with filters applied to provide a single source of information for all users.</td>
</tr>
<tr>
<td><strong>Note:</strong></td>
<td>If you select a data source used by existing reports, a notification displays prompting you to view them.</td>
</tr>
<tr>
<td>Table</td>
<td>The raw data from a table with no filters applied.</td>
</tr>
<tr>
<td>Option</td>
<td>Description</td>
</tr>
<tr>
<td>-----------------</td>
<td>-----------------------------------------------------------------------------------------------------------------------------------------------</td>
</tr>
<tr>
<td><strong>External Import</strong></td>
<td>Choose an existing imported report source, or click the Upload icon to import a new file. See Create a report from an imported Microsoft Excel document.</td>
</tr>
<tr>
<td><strong>MetricBase</strong></td>
<td>MetricBase enables you to collect, retain, analyze, and visualize custom time series data on the Now Platform. For more information, see MetricBase application.</td>
</tr>
</tbody>
</table>

4. Click **Next**.

5. On the **Type** tab, select **Pie** in the **Pies and Donuts** section and click **Next**.

A preliminary version of the report is displayed. To view the updated report at any time, click **Run**.

6. On the **Configure** tab, fill in the following fields and click **Next**.

**Configure tab**

<table>
<thead>
<tr>
<th>Field</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Group by</td>
<td>Group report data using the values of this field. For example, in an incident report grouped by <strong>Assignment group</strong>, all incidents that belong to Software, Service Desk, and Network are placed in separate groups.</td>
</tr>
<tr>
<td></td>
<td><strong>Note:</strong> It is not possible to group or stack reports by the <strong>Tags</strong> field.</td>
</tr>
<tr>
<td>Additional group by</td>
<td>Extra fields to group the report by. When you select <strong>Additional group by</strong> fields, a control is added to the bottom of the report that groups the report by any one of the additional fields.</td>
</tr>
<tr>
<td></td>
<td><strong>Note:</strong> It is not possible to group or stack reports by the <strong>Tags</strong> field.</td>
</tr>
<tr>
<td>Display data table</td>
<td>Check this box to show report data in a grid beneath the report. The table appears on dashboards where the report is added.</td>
</tr>
<tr>
<td></td>
<td>All reports that use charts, including reports that are used on dashboards, show the table of report data when the glide.ui.section508 system property is set to <strong>true</strong>. The glide.ui.section508 property overrides the <strong>Display data table</strong> field.</td>
</tr>
<tr>
<td>Field</td>
<td>Description</td>
</tr>
<tr>
<td>-------------------</td>
<td>-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------</td>
</tr>
<tr>
<td>Aggregation</td>
<td>Mathematical calculation to perform on the data. The default is <strong>Count</strong>, which shows the number of records selected. To show only unique records, select <strong>Count Distinct</strong>. For example, if you want a report on the distinct number of users who have one or more of the roles in a given list of roles. Users with more than one role would be counted twice unless you use <strong>Count Distinct</strong>. Select <strong>Average</strong>, <strong>Sum</strong>, or <strong>Count Distinct</strong>, to show a list of fields from the selected <strong>Table</strong>. Select a field to <strong>Aggregate by</strong> from this list. For example, if you select a duration field, such as <strong>Business duration</strong> on the Incident table, the aggregated data is expressed in days, hours, and minutes. If you select an integer field, such as <strong>Priority</strong>, the data is expressed as a decimal value number. If you choose <strong>Sum</strong> or <strong>Average</strong>, select <strong>Show related fields</strong> to aggregate on dot-walked fields. See <strong>Selecting fields on related tables using dot-walking</strong>. <strong>Note:</strong> For duration values, the unit of measurement displayed in the aggregation axis cannot be customized.</td>
</tr>
<tr>
<td>Max number of groups</td>
<td>Maximum number of groups to display in the report. Groups with highest values are included first. Any excluded groups are combined into the single group <strong>Other</strong>. If you select <strong>Show all</strong>, all groups up to a limit of 50 are displayed. The rest of the results are grouped as <strong>Other</strong>.</td>
</tr>
<tr>
<td>Show Other</td>
<td>Check box to include the Other group in the report. The Other group contains data for all groups that exceed the number specified in <strong>Max number of groups</strong>.</td>
</tr>
</tbody>
</table>

7. Optional: Configure the sort order of the applicable fields in the report (column, row, Group by, Stack by or Trend by depending on the report type). Click the filter icon ( ) and select **Add Sort**.

1. In the Sorting Order list, choose the field you want to sort on and then choose **a-z** or **z-a** for alphabetical order or reverse alphabetical order. The list contains all possible fields from the report's source. The only effective values, however, are the fields chosen for the current report (column, row, Group by, Stack by, or Trend by depending on the report type). Add sort cannot be applied to dot-walked fields.
2. Click 
   ![Add Sort icon] to configure additional sorting order conditions. (Click 
   ![Remove Sort icon] to delete configured sorting order conditions.)

3. Click **Save**.

For fields of the type Choice list, the sort order is determined by the sequence of the choices in the choice list, not alphabetically or numerically. For example, a priority choice list is often indexed from Critical to Planning as shown in the following figure.
8. Optional: To limit the information displayed in the report, click the filter icon and select conditions to filter the report data. For more details on how conditions are constructed, see Condition builder.

Note: Keywords is a special field used for text searches across all fields. Its use in a filter or condition, in combination with other conditions, may return inconsistent results.

9. On the Style tab, fill in the fields as appropriate to configure the appearance of the report.

10. Click Save. The report is generated.

- Click the Report info icon and add a description of the report.
- Click the sharing icon to open the Sharing menu. On this menu, you can add the report to a dashboard, export the report to PDF, publish the report to the web, and set visibility and schedules. For more information, see Share a report – Report Designer.

Pie chart style options – Report Designer
Change the look of your pie chart.

When you create or edit a report, click the Style tab for options to configure the look of your report. The options are organized under two or more of the following tabs: General, Title, Legend, and Axis. To see how the report looks with the changed settings, click Save.

Chart style options

<table>
<thead>
<tr>
<th>Field</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>General</td>
<td></td>
</tr>
<tr>
<td>Field</td>
<td>Description</td>
</tr>
<tr>
<td>-----------------------</td>
<td>-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------</td>
</tr>
<tr>
<td>Chart color</td>
<td>Colors used in the report.</td>
</tr>
<tr>
<td></td>
<td>If you do not group or stack the report, <strong>Use one color</strong> is automatically selected. Select a single predefined system color.</td>
</tr>
<tr>
<td></td>
<td>If you group or stack the report, select one of the following options:</td>
</tr>
<tr>
<td></td>
<td>- <strong>Use color palette</strong>: Select a color palette from the predefined system color palettes.</td>
</tr>
<tr>
<td></td>
<td>- <strong>Use several colors</strong>: Define a custom set of Colors using hex codes. You can add any number of colors.</td>
</tr>
<tr>
<td></td>
<td>- <strong>Use chart colors</strong>: Use the colors defined in <strong>Reports &gt; Chart Colors</strong>.</td>
</tr>
<tr>
<td></td>
<td><strong>Note</strong>: It is not possible to use transparency hex values.</td>
</tr>
<tr>
<td>Set palette</td>
<td>Color palette used in the report. This field appears when you select <strong>Use color palette</strong> from the <strong>Chart color</strong> list. Click the search icon to choose from the <strong>Color color schemes</strong> list.</td>
</tr>
<tr>
<td>Display data labels</td>
<td>Check box to display the value for each slice. By default, data labels can be displayed for pie charts with up to 8 slices. To change this limit, add the <strong>glide.ui.chart.pie.labels.max_items</strong> property to the System Property (sys_properties) table.</td>
</tr>
<tr>
<td>Custom chart size</td>
<td>Check box to specify the width and height of the report in pixels.</td>
</tr>
<tr>
<td></td>
<td><strong>Note</strong>: The chart size is ignored when you export the report to PDF. In PDFs, the full page width is used to show the chart.</td>
</tr>
<tr>
<td>Chart width</td>
<td>Width of the report in pixels. The default value is 600. This field is available when <strong>Custom chart size</strong> is selected.</td>
</tr>
<tr>
<td>Chart height</td>
<td>Height of the report in pixels. The default value is 450. This field appears when <strong>Custom chart size</strong> is selected.</td>
</tr>
<tr>
<td>Field</td>
<td>Description</td>
</tr>
<tr>
<td>-------------------</td>
<td>-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------</td>
</tr>
<tr>
<td>Chart size</td>
<td>Chart size. This field is available when <strong>Custom chart size</strong> is cleared. Options are <strong>Small</strong>, <strong>Medium</strong>, and <strong>Large</strong>.</td>
</tr>
<tr>
<td></td>
<td><strong>Note:</strong> The chart size is ignored when you export the report to PDF. In PDFs, the full page width is used to show the chart.</td>
</tr>
<tr>
<td>Drilldown view</td>
<td>List view to show when a user selects a segment of a report for which no drilldown report type is specified. This view is also used when the user reaches the lowest drilldown level of a report. See <strong>Configure the list layout</strong>. If you specify a <strong>Report drilldown</strong>, <strong>Drilldown view</strong> is ignored.</td>
</tr>
<tr>
<td></td>
<td><strong>Note:</strong> All users are able to view report visualizations, such as pie charts and column reports. However, the last level of a report drilldown is always a list. Platform access control lists determine user access to list information. Users who do not have rights to any part of the list data see the message “Number of rows removed from this list by Security constraints:” followed by the number. See <strong>Access control rules</strong>.</td>
</tr>
<tr>
<td></td>
<td>For more information, see <strong>Define a report drilldown in the Report Designer</strong>.</td>
</tr>
<tr>
<td>Field</td>
<td>Description</td>
</tr>
<tr>
<td>--------------------</td>
<td>-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------</td>
</tr>
<tr>
<td>Decimal precision</td>
<td>Number of decimal places to show. You can show from zero to four decimal places. Default value: 2. To change the default value, create the system property glide.chart.decimal.precision and specify the value.</td>
</tr>
</tbody>
</table>

**Note:** Percentage labels do not change accordingly with the decimal precision specified.
<table>
<thead>
<tr>
<th>Field</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Show chart title</td>
<td>When the chart title is shown for the report.</td>
</tr>
<tr>
<td></td>
<td>- <strong>Never</strong>: Never show the chart title.</td>
</tr>
<tr>
<td></td>
<td>- <strong>Report only</strong>: Shows the chart title on reports.</td>
</tr>
<tr>
<td></td>
<td>- <strong>Always</strong>: Shows the chart title on reports, dashboards, and homepages.</td>
</tr>
<tr>
<td>Chart title</td>
<td>The chart title has a maximum length of 40 characters. If no title is entered, the report name is used for the title. This field appears when <strong>Report only</strong> or <strong>Always</strong> is selected from the <strong>Show chart title</strong> list.</td>
</tr>
<tr>
<td>Size of the chart title</td>
<td>Size of the chart title in pixels. This field appears when <strong>Report only</strong> or <strong>Always</strong> is selected from the <strong>Show chart title</strong> list.</td>
</tr>
<tr>
<td>Chart title color</td>
<td>Color of the chart title. This field appears when <strong>Report only</strong> or <strong>Always</strong> is selected from the <strong>Show chart title</strong> list.</td>
</tr>
<tr>
<td>Custom chart title position</td>
<td>Check box to specify X and Y coordinates for the position of the chart title. This field appears when <strong>Report only</strong> or <strong>Always</strong> is selected from the <strong>Show chart title</strong> list.</td>
</tr>
<tr>
<td>Title horizontal alignment</td>
<td>How the chart title is aligned horizontally. This field is available when <strong>Custom chart title position</strong> is cleared.</td>
</tr>
<tr>
<td>Title vertical alignment</td>
<td>How the chart title is aligned vertically. This field appears when <strong>Custom chart title position</strong> is cleared.</td>
</tr>
<tr>
<td>Chart title X position</td>
<td>Number of pixels to adjust the chart title position right or left. By default the title appears at the center top of the chart. To move the chart title to the right, enter a positive value. To move the title to the left, enter a negative value. This field appears only when <strong>Custom chart title position</strong> is selected.</td>
</tr>
<tr>
<td>Chart title Y position</td>
<td>Number of pixels to adjust the chart title position up or down. By default the title appears at the center top of the chart. To move up the chart title, enter a positive value. To move the chart title down, enter a negative value. This field appears only when <strong>Custom chart title position</strong> is selected.</td>
</tr>
<tr>
<td>Legend</td>
<td>Check box to show a chart legend. This check box appears when a <strong>Group by</strong> field is selected on the report form.</td>
</tr>
<tr>
<td>Field</td>
<td>Description</td>
</tr>
<tr>
<td>-------------------------------</td>
<td>-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------</td>
</tr>
<tr>
<td>Legend horizontal alignment</td>
<td>How the legend is aligned horizontally. This field appears when Show legend is selected.</td>
</tr>
<tr>
<td>Legend vertical alignment</td>
<td>How the legend is aligned vertically. This field appears when Show legend is selected.</td>
</tr>
<tr>
<td>Show legend border</td>
<td>Check box to show a border around the legend. This check box appears when Show legend is selected.</td>
</tr>
<tr>
<td>Left align legend text</td>
<td>Check box to left-align the legend text when the report is viewed in a browser. By default, the legend text is centered. When the report is exported to PDF, PNG, or JPG, the legend remains centered. This check box appears when Show legend is selected.</td>
</tr>
</tbody>
</table>

**Create a pie report in the Report Builder**

Create a pie chart to show the relationship of individual values to the whole.

*Create a pie chart in the Report Builder*

Create a pie chart to compare the size of a individual categories to the whole.

Role required: itil, report_group, report_global, report_admin, or admin. To create a meaningful report, you must have the right to access the data you want to report on.

This task refers to using the Report Builder (Classic UI) in the Kingston release under UI15 and UI16. If you are using the Report Designer, see *Create a pie report in the Report Designer.*
1. Navigate to Reports > Create New.
2. Fill in the fields, as appropriate (see table).
3. Click Save or Insert.

Creating Reports

<table>
<thead>
<tr>
<th>Field</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Name</td>
<td>Unique and descriptive name for your report.</td>
</tr>
<tr>
<td>Description</td>
<td>Click the information icon to enter a more detailed description of what the report does and its purpose.</td>
</tr>
<tr>
<td>Data</td>
<td>Specify the table or report source containing the data set that you want to include in the report. From the first choice list, select Table or Report source. Then select the specific table or predefined data set from the second choice list. Note: If you select a data source used by existing reports, a notification will display prompting you to view them.</td>
</tr>
<tr>
<td>Type</td>
<td>Select Pie. Alternatively, click the question mark icon to use the report type selector.</td>
</tr>
<tr>
<td>Field</td>
<td>Description</td>
</tr>
<tr>
<td>--------------------</td>
<td>-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------</td>
</tr>
<tr>
<td>Style your chart</td>
<td>Click the gear icon after the Type field to configure chart style options for the look and layout of the chart.</td>
</tr>
</tbody>
</table>
| Group by           | Select a field to organize data into groups from the selected table. In an incident report grouped by Assignment group, all incidents belonging to Software, Service Desk, Network, and so on, are placed in separate groups. Make sure that you give the report a name that reflects the field you select.  
  Click + to select additional group by fields. When you select Additional group by fields, a control is added to the bottom of the report that groups the report by any one of the additional fields.  
  Note: It is not possible to group or stack reports by the Tags field.                                                                                           |
| Display Grid       | Select this check box to display details of the report data in a table below the chart. All reports that use charts, including reports that are used on homepages, display a table of report data if the glide.ui.section508 system property is set to true, even if Display Grid is cleared. |
| Aggregation        | Select a computational method for aggregating report data. The default is Count, which displays the number of records selected.  
  If you select Count Distinct, only unique records are counted. For example, if you want to generate a report with a distinct number of users who have one or more of the roles in a given list of roles, these users would be counted twice unless you use count distinct.  
  If you select Average, Sum, or Count Distinct, a list of fields from the selected Table appears. From this list, select a field to aggregate by. For example, if you select a duration field, such as the Business duration field on the Incident table, the aggregated data is expressed in days, hours, and minutes. If you select an integer field, such as the Priority field, the data is expressed as a number.  
  Note: For duration values, the unit of measurement displayed in the aggregation axis cannot be customized.                                                                 |
| No. groups         | Select the maximum number of individual values that can be represented as slices. If the number of values from the selected data exceeds this limit, only the largest values are represented by the slices. By default, pie charts can display up to 12 slices. Remaining values are grouped into an Other slice. If you select Show all, all slices up to a limit of 50 slices can be displayed. The rest of the results are stacked in the Other slice. If you select Remove Other, the Other slice is hidden.  
  Show Other | Select this check box to display the Other slice. This check box is not available when Show all or Remove Other is selected from the No. groups list.                                                                 |
Add Filter Condition

Click the filter icon to create conditions for filtering and ordering data. For example, you might create a condition that states `Priority + less than + 3 – Moderate` to have the report include only records with priorities of `2 – High` and `1 – Critical`.

**Note:** Applying a string filter with other filters to pie and bar charts is not supported.

**Note:** Keywords is a special field used for text searches across all fields. It’s use in a filter or condition, in combination with other conditions, may return inconsistent results.

Add “OR” Clause

Select a second condition that must be met if the first condition is invalid. For example, select `(Assignment Group) (is) (Database)`, to include records that are assigned to the Database group if the first condition is false.

Add Sort

Select fields to sort data by. For example, to sort results from lowest to highest priority, select `(Priority) (z to a)`. For reports with Group by, Stack by, Row/Column or Trend by fields to configure, you can sort by fields that are not listed in the Group by, Stack by, Row/Column or Trend by options.

Add reports to homepages or dashboards, publish to the internet, schedule email distribution of PDFs or URLs of published reports, and share reports with others. See Distribute reports.

**Pie chart style options – Report Builder**

Change the look of your pie chart.

When you create or edit a report, click the gear icon (⚙️) after the **Type** field to open the **Style your chart** dialog box with options to configure the look of your chart. Chart options are automatically saved when you click **Save**. To see how the chart looks with the saved settings, click **Save**.

### Chart style options

<table>
<thead>
<tr>
<th>Field</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>General</strong></td>
<td></td>
</tr>
</tbody>
</table>
| **Chart color** | If no group by is used, **Use one color** is automatically selected. Select a single predefined system color.  
If a group by is used, select one of the following options:  
- **Use color palette**: Select a color palette from the predefined system color palettes.  
- **Use several colors**: Define a custom set of **Colors** using hex codes. You can add any number of colors.  
- **Use chart colors**: Use the colors defined in **Reports > Chart Colors**. |
<table>
<thead>
<tr>
<th>Field</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Display data labels</td>
<td>Select this check box to display the value for each slice. By default, data labels can be displayed for pie charts with up to 8 slices. To change this limit, add the <code>glide.ui.chart.pie.labels.max_items</code> property to the System Property (sys_properties) table.</td>
</tr>
<tr>
<td>Custom chart size</td>
<td>Select this check box to specify the chart's width and height in pixels.</td>
</tr>
<tr>
<td>Chart size</td>
<td>Select a chart size. This field is available when Custom chart size is cleared.</td>
</tr>
<tr>
<td>Drilldown View</td>
<td>Select a view that determines how detailed records are shown when a specific part of the chart is clicked. This option is available for all charts that have drill-down capabilities. If you select a view that has no fields in common to link to the table that the report is based on, the default view is used.</td>
</tr>
<tr>
<td>Field</td>
<td>Description</td>
</tr>
<tr>
<td>--------------------</td>
<td>------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------</td>
</tr>
<tr>
<td>Decimal precision</td>
<td>Number of decimal places to show. You can show from zero to four decimal places. Default value: 2. To change the default value, create the system property glide.chart.decimal.precision and specify the value. Note: Percentage labels do not change accordingly with the decimal precision specified.</td>
</tr>
</tbody>
</table>

Note: Percentage labels do not change accordingly with the decimal precision specified.

Diagram:
- Closed/Resolved
- Open
- Pending Change

Title
### Field Description

<table>
<thead>
<tr>
<th>Field</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Show chart title</td>
<td>Select when the chart title is displayed.</td>
</tr>
<tr>
<td></td>
<td>- <strong>Never</strong>: never displays the chart title.</td>
</tr>
<tr>
<td></td>
<td>- <strong>Report only</strong>: displays the chart title on reports.</td>
</tr>
<tr>
<td></td>
<td>- <strong>Always</strong>: displays the chart title on reports, dashboards, and homepages.</td>
</tr>
<tr>
<td>Chart title</td>
<td>Enter a title for this chart. The title has a maximum length of 40 characters. If no title is entered, the report name is used for the title. This field is available when <strong>Report only</strong> or <strong>Always</strong> is selected from the <strong>Show chart title</strong> list.</td>
</tr>
<tr>
<td>Chart title size</td>
<td>Enter the size of the chart title in pixels. This field is available when <strong>Report only</strong> or <strong>Always</strong> is selected from the <strong>Show chart title</strong> list.</td>
</tr>
<tr>
<td>Chart title color</td>
<td>Select the color for the chart title. This field is available when <strong>Report only</strong> or <strong>Always</strong> is selected from the <strong>Show chart title</strong> list.</td>
</tr>
<tr>
<td>Custom chart title position</td>
<td>Select this check box to specify the X and Y coordinates for the position of the chart title. This field is available when <strong>Report only</strong> or <strong>Always</strong> is selected from the <strong>Show chart title</strong> list.</td>
</tr>
<tr>
<td>Title horizontal alignment</td>
<td>Select how the chart title is aligned horizontally. This field is available when <strong>Custom chart title position</strong> is cleared.</td>
</tr>
<tr>
<td>Title vertical alignment</td>
<td>Select how the chart title is aligned vertically. This field is available when <strong>Custom chart title position</strong> is cleared.</td>
</tr>
<tr>
<td>Legend</td>
<td>Select this check box to display the chart legend. This check box is available when the <strong>Group by</strong> field is selected in the visualization fields.</td>
</tr>
<tr>
<td>Legend horizontal alignment</td>
<td>Select how the legend is aligned horizontally. This field is available when <strong>Show legend</strong> is selected.</td>
</tr>
<tr>
<td>Legend vertical alignment</td>
<td>Select how the legend is aligned vertically. This field is available when <strong>Show legend</strong> is selected.</td>
</tr>
<tr>
<td>Left align legend text</td>
<td>Select to left-align the legend text. By default, legend text is centered.</td>
</tr>
<tr>
<td>Show legend border</td>
<td>Select this check box to display a border around the legend. This field is available when <strong>Show legend</strong> is selected.</td>
</tr>
<tr>
<td>Axis</td>
<td>Configure the titles, appearance, and labels of the X and Y axes. For the Y axis, you can also specify a <strong>From</strong> and <strong>To</strong> range. If you select an aggregation field that is not of the type Number, the <strong>From</strong> and <strong>To</strong> fields are not available.</td>
</tr>
</tbody>
</table>

### Pivot tables

Pivot tables aggregate data from a table into columns and rows, which you define. They help you quickly investigate the source of the summarized data. Non-empty cells display tooltips to indicate how many records the cell represents. Click a non-empty cell to display a breakdown of those records.

You can configure a filter to further refine the data and select the aggregation values.
Note: Pivot tables are no longer supported. If you have a problem with a pivot table report, open the report and change the type to Multilevel pivot table. The multilevel pivot table report is more stable and has more features than the pivot table.

### Incident Breakdown

<table>
<thead>
<tr>
<th>Assigned to</th>
<th>Request</th>
<th>Inquiry / Help</th>
<th>Software</th>
<th>Hardware</th>
<th>Network</th>
<th>Database</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>(empty)</td>
<td>0</td>
<td>0</td>
<td>1</td>
<td>0</td>
<td>1</td>
<td>0</td>
<td>2</td>
</tr>
<tr>
<td>Beth Anglin</td>
<td>0</td>
<td>2</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>0</td>
<td>5</td>
</tr>
<tr>
<td>Bow Ruggeri</td>
<td>0</td>
<td>1</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>1</td>
</tr>
<tr>
<td>Bud Richman</td>
<td>1</td>
<td>0</td>
<td>1</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>2</td>
</tr>
<tr>
<td>Charlie Whitherspoon</td>
<td>0</td>
<td>0</td>
<td>1</td>
<td>0</td>
<td>1</td>
<td>0</td>
<td>2</td>
</tr>
<tr>
<td>David Loc</td>
<td>0</td>
<td>4</td>
<td>1</td>
<td>3</td>
<td>0</td>
<td>1</td>
<td>9</td>
</tr>
<tr>
<td>Don Goodliffe</td>
<td>0</td>
<td>3</td>
<td>2</td>
<td>1</td>
<td>0</td>
<td>1</td>
<td>7</td>
</tr>
<tr>
<td>Fred Luddy</td>
<td>0</td>
<td>0</td>
<td>1</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>1</td>
</tr>
<tr>
<td>Howard Johnson</td>
<td>0</td>
<td>0</td>
<td>2</td>
<td>1</td>
<td>0</td>
<td>0</td>
<td>3</td>
</tr>
<tr>
<td>ITIL User</td>
<td>0</td>
<td>8</td>
<td>5</td>
<td>2</td>
<td>0</td>
<td>0</td>
<td>15</td>
</tr>
<tr>
<td>Luke Wilson</td>
<td>0</td>
<td>2</td>
<td>1</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>3</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>1</strong></td>
<td><strong>20</strong></td>
<td><strong>16</strong></td>
<td><strong>8</strong></td>
<td><strong>3</strong></td>
<td><strong>2</strong></td>
<td><strong>50</strong></td>
</tr>
</tbody>
</table>

---

**Pivot table**

Create a pivot table report to aggregate data from a table into user-defined columns and rows with tooltips to indicate what the values represent.

**Note:** Multilevel pivot table reports provide more configuration features, more style options, and are more stable.

Create a pivot table in the Report Designer

Create a pivot table to aggregate data from a table into columns and rows.

This task refers to Report Designer in the Kingston release. If you are using the Report Builder (Classic UI) in Kingston for creating reports, select the applicable report from Creating reports.
to see instructions. If you are using an earlier UI or the Classic UI for creating reports in an earlier release, follow the instructions in the Helsinki documentation: *Report types and creation details.*

<table>
<thead>
<tr>
<th>Report Designer UI</th>
<th>Report Builder UI</th>
</tr>
</thead>
<tbody>
<tr>
<td><img src="image1.png" alt="Report Designer UI" /></td>
<td><img src="image2.png" alt="Report Builder UI" /></td>
</tr>
</tbody>
</table>

1. Navigate to **Reports > Create New**.
2. On the **Data** tab, give the report a name that reflects the information being grouped.
3. Select the applicable source for the report:

<table>
<thead>
<tr>
<th>Option</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Data source</strong></td>
<td>A table with filters applied to provide a single source of information for all users.</td>
</tr>
<tr>
<td><strong>Note:</strong> If you select a data source used by existing reports, a notification displays prompting you to view them.</td>
<td></td>
</tr>
</tbody>
</table>

<p>| Table       | The raw data from a table with no filters applied.                         |</p>
<table>
<thead>
<tr>
<th>Option</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>External Import</td>
<td>Choose an existing imported report source, or click the Upload icon to import a new file. See Create a report from an imported Microsoft Excel document.</td>
</tr>
<tr>
<td>MetricBase</td>
<td>MetricBase enables you to collect, retain, analyze, and visualize custom time series data on the Now Platform. For more information, see MetricBase application.</td>
</tr>
</tbody>
</table>

4. Click **Next**.

5. On the **Type** tab, select **Pivot table** in the **Other** section and click **Next**.
   
   A preliminary version of the report is displayed. To view the updated report at any time, click **Run**.

6. On the **Configure** tab, fill in the following fields and click **Next**.

### Configure tab

<table>
<thead>
<tr>
<th>Field</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Row</td>
<td>Select one field for the chart rows. The chart displays data broken down by a combination of row and column values.</td>
</tr>
<tr>
<td>Column</td>
<td>Select one field for the chart columns. The chart displays data broken down by a combination of row and column values.</td>
</tr>
</tbody>
</table>
| Aggregation | Mathematical calculation to perform on the data. The default is **Count**, which shows the number of records selected.  
To show only unique records, select **Count Distinct**. For example, if you want a report on the distinct number of users who have one or more of the roles in a given list of roles. Users with more than one role would be counted twice unless you use **Count Distinct**.  
Select **Average**, **Sum**, or **Count Distinct**, to show a list of fields from the selected **Table**. Select a field to **Aggregate by** from this list. For example, if you select a duration field, such as **Business duration** on the Incident table, the aggregated data is expressed in days, hours, and minutes. If you select an integer field, such as **Priority**, the data is expressed as a decimal value number.  
If you choose **Sum** or **Average**, select **Show related fields** to aggregate on dot-walked fields. See **Selecting fields on related tables using dot-walking**.  

**Note:** For duration values, the unit of measurement displayed in the aggregation axis cannot be customized.
### ServiceNow Kingston Analytics, Intelligence, and Reporting

<table>
<thead>
<tr>
<th>Field</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Max number of groups</td>
<td>Maximum number of groups to display in the report. Groups with highest values are included first. Any excluded groups are combined into the single group <strong>Other</strong>. If you select <strong>Show all</strong>, all groups up to a limit of 50 are displayed. The rest of the results are grouped as <strong>Other</strong>.</td>
</tr>
<tr>
<td>Show Other</td>
<td>Check box to include the Other group in the report. The Other group contains data for all groups that exceed the number specified in <strong>Max number of groups</strong>.</td>
</tr>
</tbody>
</table>

**7.** Optional: Configure the sort order of the applicable fields in the report (column, row, Group by, Stack by or Trend by depending on the report type). Click the filter icon and select **Add Sort**.

1. In the **Sorting Order** list, choose the field you want to sort on and then choose a-z or z-a for alphabetical order or reverse alphabetical order.

   The list contains all possible fields from the report’s source. The only effective values, however, are the fields chosen for the current report (column, row, Group by, Stack by, or Trend by depending on the report type).

2. Click +

   to configure additional sorting order conditions. (Click -

   to delete configured sorting order conditions.)

3. Click **Save**.

For fields of the type Choice list, the sort order is determined by the sequence of the choices in the choice list, not alphabetically or numerically. For example, a priority...
8. Optional: To limit the information displayed in the report, click the filter icon and select conditions to filter the report data.
   For more details on how conditions are constructed, see Condition builder.

   **Note:** Keywords is a special field used for text searches across all fields. Its use in a filter or condition, in combination with other conditions, may return inconsistent results.

9. On the **Style** tab, fill in the fields as appropriate to configure the appearance of the report.
10. Click **Save**.
    The report is generated.
Click the Report info icon and add a description of the report. Click the sharing icon to open the Sharing menu. On this menu, you can add the report to a dashboard, export the report to PDF, publish the report to the web, and set visibility and schedules. For more information, see Share a report – Report Designer.

Note: While the Import Export property glide.pdf.max_rows applies to row limits for pdf data exports in the platform product, for pivot reports exported to pdf from the Reporting product, it sets the maximum number of total cells (both rows and columns).

Pivot report style options - Report Designer
Change the look of your pivot report.

When you create or edit a report, click the Style tab for options to configure the look of your report. The options are organized under two or more of the following tabs: General, Title, Legend, and Axis. To see how the report looks with the changed settings, click Save.

Pivot report style options

<table>
<thead>
<tr>
<th>Field</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>General</td>
<td>List view to show when a user selects a segment of a report for which no drilldown report type is specified. This view is also used when the user reaches the lowest drilldown level of a report. See Configure the list layout. If you specify a Report drilldown, Drilldown view is ignored.</td>
</tr>
<tr>
<td>Drilldown view</td>
<td></td>
</tr>
</tbody>
</table>

Note: All users are able to view report visualizations, such as pie charts and column reports. However, the last level of a report drilldown is always a list. Platform access control lists determine user access to list information. Users who do not have rights to any part of the list data see the message “Number of rows removed from this list by Security constraints:” followed by the number. See Access control rules.

For more information, see Define a report drilldown in the Report Designer.

Create a pivot table report in the Report Builder
Create a pivot table report to aggregate data from a table into user-defined columns and rows with tooltips to indicate what the values represent.
Note: Multilevel pivot table reports provide more configuration features, more style options, and are more stable.

Create a pivot table in the Report Builder
Create a pivot table to aggregate data from a table into columns and rows.

Role required: itil, report_group, report_global, report_admin, or admin. To create a meaningful report, you must have the right to access the data you want to report on.

This task refers to using the Report Builder (Classic UI) in the Kingston release under UI15 and UI16. If you are using the Report Designer, see Create a pivot table report in the Report Designer.

1. Navigate to Reports > Create New
2. Fill in the fields, as appropriate.

<table>
<thead>
<tr>
<th>Field</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Name</td>
<td>Unique and descriptive name for your report</td>
</tr>
<tr>
<td>Description</td>
<td>Click the information icon (i) to enter a more detailed description of what the report does and its purpose.</td>
</tr>
<tr>
<td>Field</td>
<td>Description</td>
</tr>
<tr>
<td>-----------</td>
<td>-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------</td>
</tr>
<tr>
<td>Data</td>
<td>Specify the table or report source containing the data set that you want to include in the report. From the first choice list, select Table or Report source. Then select the specific table or predefined data set from the second choice list.</td>
</tr>
<tr>
<td>Type</td>
<td>Pivot Table</td>
</tr>
<tr>
<td>Row</td>
<td>Select the field used as the source of the data for the rows in the pivot table.</td>
</tr>
<tr>
<td>Column</td>
<td>Select the field used as the source of the data for the columns in the pivot table.</td>
</tr>
<tr>
<td>Aggregation</td>
<td>Select a computational method for aggregating report data. The default is Count, which displays the number of records selected. If you select Count Distinct, only unique records are counted. For example, if you want to generate a report with a distinct number of users who have one or more of the roles in a given list of roles, these users would be counted twice unless you use count distinct. If you select Average, Sum, or Count Distinct, this displays an additional list of fields from the selected Table. From this list, select a field to aggregate by. For example, if you select a duration field, such as the Business duration field on the Incident table, the aggregated data is expressed in days, hours, and minutes. If you select an integer field, such as the Priority field, the data is expressed as a number. If a value in a column being aggregated has a comma, the value will be separated by the comma, and the aggregation will not be performed accurately.</td>
</tr>
</tbody>
</table>
### Field | Description
--- | ---
Note: For duration values, the unit of measurement displayed in the aggregation axis cannot be customized.

| No. groups | Select the maximum number of individual values that can be represented as columns. By default, Pivot charts display up to 12 of the largest values from the selected data. Remaining values are grouped into an **Other** category. If you select **Show all**, all values up to a limit of 50 bars are displayed. The rest of the results are stacked on the **Other** column. |
| Show Other | Select this check box to display the **Other** column. |
| Add Filter Condition | Create **conditions** for filtering data to include in the report. For example, to include only records with priorities of 2 — **High** and 1 — **Critical**, select **(Priority) less than (3 — Moderate)**. |
| Add "OR" Clause | Select a second condition that must be met if the first condition is invalid. For example, select **(Assignment Group) is (Database)**, to include records that are assigned to the Database group, if the first condition is false. |

3. Click **Save**. The report is generated.

Add reports to homepages or dashboards, publish to the internet, schedule email distribution of PDFs or URLs of published reports, and share reports with others. See **Distribute reports**.

**Pivot table style options - Report Builder**

Change the look of your pivot table report.

When you create or edit a report, click the gear icon (⚙️) after the **Type** field. Use the options in the **Style your chart** dialog box to configure the look of your chart. Chart options are automatically saved when you click **Close**. To see how the chart looks with the saved settings, click **Save**.

**Chart style options**

<table>
<thead>
<tr>
<th>Field</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>General</td>
<td></td>
</tr>
</tbody>
</table>
### Drilldown view

List view to show when a user selects a segment of a report for which no drilldown report type is specified. This view is also used when the user reaches the lowest drilldown level of a report. See [Configure the list layout](#). If you specify a Report drilldown, Drilldown view is ignored.

**Note:** All users are able to view report visualizations, such as pie charts and column reports. However, the last level of a report drilldown is always a list. Platform access control lists determine user access to list information. Users who do not have rights to any part of the list data see the message “Number of rows removed from this list by Security constraints:” followed by the number. See [Access control rules](#).

For more information, see [Define a report drilldown in the Report Designer](#).

### Single score report

Single score reports display a single value that is key to your business. You can add single score reports to dashboards and configure them to update in real time.

**Note:** This report type cannot be run as a scheduled report.

#### Critical Open Incidents

![Critical Open Incidents](image)

Single score report that has been added to a dashboard

#### Create a single score report in the Report Designer

Create a single score chart to display a value that is key to your business and that updates in real time on a dashboard.

Create a single score report in the Report Designer

Create a single score chart to display a metric or score that is key to your business.

Role required: itil

This task refers to Report Designer in the Kingston release. If you are using the Report Builder (Classic UI) in Kingston for creating reports, select the applicable report from [Creating reports](#) to see instructions. If you are using an earlier UI or the Classic UI for creating reports in an earlier release, follow the instructions in the Helsinki documentation: [Report types and creation details](#).
1. Navigate to Reports > Create New.
2. On the Data tab, give the report a name that reflects the information being grouped.
3. Select the applicable source for the report:

<table>
<thead>
<tr>
<th>Option</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Data source</td>
<td>A table with filters applied to provide a single source of information for all users.</td>
</tr>
<tr>
<td></td>
<td><strong>Note:</strong> If you select a data source used by existing reports, a notification displays prompting you to view them.</td>
</tr>
<tr>
<td>Table</td>
<td>The raw data from a table with no filters applied.</td>
</tr>
<tr>
<td>External import</td>
<td>Choose an existing imported report source, or click the Upload icon to import a new file. See Create a report from an imported Microsoft Excel document.</td>
</tr>
</tbody>
</table>
4. Click **Next**.
5. On the **Type** tab, select **Single score** in the **Scores** section and click **Next**.
   A preliminary version of the report is displayed. To view the updated report at any time, click **Run**.
6. On the **Configure** tab, fill in the following fields and click **Next**.

**Configuration tab**

<table>
<thead>
<tr>
<th>Field</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Aggregation</td>
<td>Computational method for aggregating report data. The default is <strong>Count</strong>, which displays the number of records selected.</td>
</tr>
</tbody>
</table>

- **Note:** A single score chart displays only the aggregate value.

- If you select **Count Distinct**, only unique records are counted. For example, you want to generate a report with a distinct number of users who have one or more of the roles in a given list of roles. Users with more than one role would be counted twice unless you use **Count Distinct**.

- If you select **Average**, **Sum**, or **Count Distinct**, a list of fields from the selected **Table** appears. Select a field to aggregate by from this list. For example, if you select a duration field, such as **Business duration** on the Incident table, the aggregated data is expressed in days, hours, and minutes. If you select an integer field, such as the **Priority** field, the data is expressed as a number.

  - **Note:** For duration values, the unit of measurement displayed in the aggregation axis cannot be customized.

7. Optional: To limit the information displayed in the report, click the filter icon and select conditions to filter the report data.
   For more details on how conditions are constructed, see **Condition builder**.

- **Note:** Keywords is a special field used for text searches across all fields. Its use in a filter or condition, in combination with other conditions, may return inconsistent results.

8. On the **Style** tab, fill in the fields as appropriate to configure the appearance of the report.
9. Click **Save**.
The report is generated.

- Click the Report info icon

   (i)

   and add a description of the report.
- Click the sharing icon

   (▲)

to open the Sharing menu. On this menu, you can share the report with users and groups, add the report to a dashboard, and publish the report to the web. See Share a report – Report Designer for more information.

**Single score report style options - Report Designer**

Change the look of your single score report.

When you create or edit a report, click the **Style** tab for options to configure the look of your report. The options are organized under two or more of the following tabs: **General**, **Title**, **Legend**, and **Axis**. To see how the report looks with the changed settings, click **Save**.

**Single score chart style options**

<table>
<thead>
<tr>
<th>Field</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>General</td>
<td></td>
</tr>
<tr>
<td>Display Zero</td>
<td>Check box to display the number 0 when the value of the report is zero. Clear this check box to display an error message when the value of the cell is 0. Applicable when Aggregation is <strong>Count</strong> or <strong>Count Distinct</strong>.</td>
</tr>
<tr>
<td>Score color</td>
<td>Color of the score in the chart.</td>
</tr>
<tr>
<td>Drilldown view</td>
<td>List view to show when a user selects a segment of a report for which no drilldown report type is specified. This view is also used when the user reaches the lowest drilldown level of a report. See Configure the list layout. If you specify a <strong>Report drilldown</strong>, <strong>Drilldown view</strong> is ignored.</td>
</tr>
</tbody>
</table>

**Note:** All users are able to view report visualizations, such as pie charts and column reports. However, the last level of a report drilldown is always a list. Platform access control lists determine user access to list information. Users who do not have rights to any part of the list data see the message “Number of rows removed from this list by Security constraints:” followed by the number. See **Access control rules**.

For more information, see Define a report drilldown in the Report Designer.
<table>
<thead>
<tr>
<th>Field</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Edit coloring rules</td>
<td>Click this hyperlink to configure how values are colored in the report. You can create rules to define which colors are used based on operators and values. For example, you can specify that any value greater than 5 displays in red. See Create coloring rules for single score reports.</td>
</tr>
<tr>
<td>Field</td>
<td>Description</td>
</tr>
<tr>
<td>--------------------</td>
<td>-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------</td>
</tr>
<tr>
<td>Decimal precision</td>
<td>Number of decimal places to show. You can show from zero to four decimal places. Default value: 2. To change the default value, create the system property glide.chart.decimal.precision and specify the value.</td>
</tr>
</tbody>
</table>

**Note:** Percentage labels do not change accordingly with the decimal precision specified.
<table>
<thead>
<tr>
<th>Field</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Show chart title</td>
<td>When the chart title is shown for the report.</td>
</tr>
<tr>
<td></td>
<td>• <strong>Never</strong>: Never show the chart title.</td>
</tr>
<tr>
<td></td>
<td>• <strong>Report only</strong>: Shows the chart title on reports.</td>
</tr>
<tr>
<td></td>
<td>• <strong>Always</strong>: Shows the chart title on reports, dashboards, and homepages.</td>
</tr>
<tr>
<td>Chart title</td>
<td>The chart title has a maximum length of 40 characters. If no title is entered, the report name is used for the title. This field appears when <strong>Report only</strong> or <strong>Always</strong> is selected from the <strong>Show chart title</strong> list.</td>
</tr>
<tr>
<td>Size of the chart title</td>
<td>Size of the chart title in pixels. This field appears when <strong>Report only</strong> or <strong>Always</strong> is selected from the <strong>Show chart title</strong> list.</td>
</tr>
<tr>
<td>Chart title color</td>
<td>Color of the chart title. This field appears when <strong>Report only</strong> or <strong>Always</strong> is selected from the <strong>Show chart title</strong> list.</td>
</tr>
<tr>
<td>Custom chart title position</td>
<td>Check box to specify X and Y coordinates for the position of the chart title. This field appears when <strong>Report only</strong> or <strong>Always</strong> is selected from the <strong>Show chart title</strong> list.</td>
</tr>
<tr>
<td>Chart title X position</td>
<td>Number of pixels to adjust the chart title position right or left. By default the title appears at the center top of the chart. To move the chart title to the right, enter a positive value. To move the title to the left, enter a negative value. This field appears only when <strong>Custom chart title position</strong> is selected.</td>
</tr>
<tr>
<td>Chart title Y position</td>
<td>Number of pixels to adjust the chart title position up or down. By default the title appears at the center top of the chart. To move up the chart title, enter a positive value. To move the chart title down, enter a negative value. This field appears only when <strong>Custom chart title position</strong> is selected.</td>
</tr>
<tr>
<td>Title horizontal alignment</td>
<td>How the chart title is aligned horizontally. This field is available when <strong>Custom chart title position</strong> is cleared.</td>
</tr>
<tr>
<td>Title vertical alignment</td>
<td>How the chart title is aligned vertically. This field appears when <strong>Custom chart title position</strong> is cleared.</td>
</tr>
</tbody>
</table>

*Create coloring rules for single score reports*

Configure rules for how numerical values are displayed in single score reports, to easily highlight why a value is important.
This task is part of configuring the style options of a single score report.

1. On the Style tab of the report designer, click Edit coloring rules.
2. In the Multilevel Pivot Rules (Single Score Color Rule) dialog box, click New rule.
3. In the New record dialog box, select an Operator.
   Options are: greater than, greater than or is, lower than, lower than or is, is, and between.
4. Specify a value. If you selected the operator between, specify two values. The color rule is applied to the aggregated values.
5. Select a font color.
6. Optional: Specify a Rule order. Rules are evaluated from lowest value to highest. For example, you have one rule applies the color blue to the value 7, and a second rule that applies the color red to values between 1 and 10. If you want the 7 to appear blue, the Rule order value for the first rule should be higher so that the second rule does not override it.
   If you do not specify a rule order, coloring rules are applied in the order in which they were created.
7. Click Submit to save the rule and create a new rule, or click OK to save the rule and return to the report designer.

Create a single score report in the Report Builder

Create a single score chart to display a value that is key to your business and that updates in real time on a dashboard.

Role required: itil, report_group, report_global, report_admin, or admin. To create a meaningful report, you must have the right to access the data you want to report on.

This task refers to using the Report Builder (Classic UI) in the Kingston release under UI15 and UI16. If you are using the Report Designer, see Create a single score report in the Report Designer.
1. Navigate to **Reports > Create New**
2. Fill in the fields, as appropriate.

### Single score chart configuration fields

<table>
<thead>
<tr>
<th>Field</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Data</td>
<td>Specify the table or report source containing the data set that you want to include in the report. From the first choice list, select <strong>Table</strong> or <strong>Report source</strong>. Then select the specific table or <strong>predefined data set</strong> from the second choice list. <strong>Note:</strong> If you select a data source used by existing reports, a notification will display prompting you to view them.</td>
</tr>
<tr>
<td>Type</td>
<td><strong>Single Score</strong></td>
</tr>
<tr>
<td>Style your chart</td>
<td>Click the gear icon (🔧) after the <strong>Type</strong> field to configure the look and layout of the chart.</td>
</tr>
</tbody>
</table>
### Field Description

<table>
<thead>
<tr>
<th>Field</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Aggregation</td>
<td>Select a computational method for aggregating report data. The default is <strong>Count</strong>, which displays the number of records selected. A single score chart displays only the aggregate value.</td>
</tr>
<tr>
<td></td>
<td>If you select <strong>Count Distinct</strong>, only unique records are counted. For example, if you want to generate a report with a distinct number of users who have one or more of the roles in a given list of roles, these users would be counted twice unless you use count distinct.</td>
</tr>
<tr>
<td></td>
<td>If you select <strong>Average</strong>, <strong>Sum</strong>, or <strong>Count Distinct</strong>, this displays an additional list of fields from the selected <strong>Table</strong>. From this list, select a field to aggregate by. For example, if you select a duration field, such as the <strong>Business duration</strong> field on the Incident table, the aggregated data is expressed in days, hours, and minutes. If you select an integer field, such as the <strong>Priority</strong> field, the data is expressed as a number. If a value in a column being aggregated has a comma, the value will be separated by the comma, and the aggregation will not be performed accurately.</td>
</tr>
<tr>
<td></td>
<td>For duration values, the unit of measurement displayed in the aggregation axis cannot be customized.</td>
</tr>
<tr>
<td>Add Filter Condition</td>
<td>Click the filter icon to create conditions for filtering and ordering data. For example, you might create a condition that states <strong>Priority + less than + 3 ± Moderate</strong> to have the report include only records with priorities of <strong>2 – High</strong> and <strong>1 – Critical</strong>.</td>
</tr>
<tr>
<td></td>
<td>Keywords is a special field used for text searches across all fields. It's use in a filter or condition, in combination with other conditions, may return inconsistent results.</td>
</tr>
<tr>
<td>Add 'OR' Clause</td>
<td>Select a second condition that must be met if the first condition is invalid. For example, select <strong>(Assignment Group) (is) (Database)</strong>, to include records that are assigned to the Database group, if the first condition is false.</td>
</tr>
</tbody>
</table>

3. **Click Save.** The report is generated.

**Click the sharing icon** ( ) to open the **Sharing** menu. On this menu, you can add the report to a dashboard and publish the report to the web. See **Share a report – Report Builder** for more information.

**Single score report style options – Report Builder**

Change the look of your single score report.

When you create or edit a report, click the gear icon ( ) after the **Type** field. Use the options in the **Style your chart** dialog box to configure the look of your chart. Chart options are automatically saved when you click **Close**. To see how the chart looks with the saved settings, click **Save**.
## Chart style options

<table>
<thead>
<tr>
<th>Field</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>General</strong></td>
<td></td>
</tr>
<tr>
<td>Display Zero</td>
<td>Select this check box to display the number 0 when the value of a cell is 0. Clear this check box to display an empty cell when the value of the cell is 0. Applicable when Aggregation is Count or Count Distinct.</td>
</tr>
<tr>
<td>Score color</td>
<td>Select the color for the score</td>
</tr>
<tr>
<td>Drilldown view</td>
<td>List view to show when a user selects a segment of a report for which no drilldown report type is specified. This view is also used when the user reaches the lowest drilldown level of a report. See Configure the list layout. If you specify a Report drilldown, Drilldown view is ignored.</td>
</tr>
</tbody>
</table>

**Note:** All users are able to view report visualizations, such as pie charts and column reports. However, the last level of a report drilldown is always a list. Platform access control lists determine user access to list information. Users who do not have rights to any part of the list data see the message “Number of rows removed from this list by Security constraints:” followed by the number. See Access control rules.

For more information, see Define a report drilldown in the Report Designer.

<table>
<thead>
<tr>
<th>Title</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Show chart title</td>
<td>When the chart title is shown for the report.</td>
</tr>
<tr>
<td></td>
<td>- Never: Never show the chart title.</td>
</tr>
<tr>
<td></td>
<td>- Report only: Shows the chart title on reports.</td>
</tr>
<tr>
<td></td>
<td>- Always: Shows the chart title on reports, dashboards, and homepages.</td>
</tr>
<tr>
<td>Chart title</td>
<td>The chart title has a maximum length of 40 characters. If no title is entered, the report name is used for the title. This field appears when Report only or Always is selected from the Show chart title list.</td>
</tr>
<tr>
<td>Size of the chart title</td>
<td>Size of the chart title in pixels. This field appears when Report only or Always is selected from the Show chart title list.</td>
</tr>
<tr>
<td>Chart title color</td>
<td>Color of the chart title. This field appears when Report only or Always is selected from the Show chart title list.</td>
</tr>
<tr>
<td>Custom chart title position</td>
<td>Check box to specify X and Y coordinates for the position of the chart title. This field appears when Report only or Always is selected from the Show chart title list.</td>
</tr>
<tr>
<td>Title horizontal alignment</td>
<td>How the chart title is aligned horizontally. This field is available when Custom chart title position is cleared.</td>
</tr>
<tr>
<td>Title vertical alignment</td>
<td>How the chart title is aligned vertically. This field appears when Custom chart title position is cleared.</td>
</tr>
<tr>
<td>Field</td>
<td>Description</td>
</tr>
<tr>
<td>------------------------------</td>
<td>-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------</td>
</tr>
<tr>
<td>Chart title X position</td>
<td>Number of pixels to adjust the chart title position right or left. By default the title appears at the center top of the chart. To move the chart title to the right, enter a positive value. To move the title to the left, enter a negative value. This field appears only when Custom chart title position is selected.</td>
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</tr>
</tbody>
</table>

**Step line reports**

Step line reports plot individual data points to show how the value of one or more items changes over time. Horizontal lines in the step report show the duration of a change and vertical lines show its magnitude.

The values of an item at specific dates or times are displayed as data points connected by horizontal lines. Values along the horizontal axis of the step line report represent the time measurement (years, hours, minutes, milliseconds, and so on). Values on the vertical axis represent the magnitude of changes to the items being monitored. Users with the report_admin role can define the ranges that are used in a step line report.

For example, you can create a step line report for incident counts, to show how the number of incidents changes over time.
Step line report

Create a step line report in the Report Designer

Create a step line report to show how the value of one or more items changes over time.

Create a step line report in the Report Designer

Create a step report to show how the value of one or more items changes over time with emphasis on the duration and magnitude of the change.
Role required: itil, report_group, report_global, report_admin, or admin. To create a meaningful report, you must have the right to access the data you want to report on.

This task refers to Report Designer in the Kingston release under UI15 and UI16. If you are using the Report Builder (Classic UI) in Kingston for creating reports, follow the Report types and creation details instructions for the Report Builder. If you are using an earlier UI or the Classic UI for creating reports in an earlier release, follow the instructions in the Helsinki documentation: Report types and creation details.

1. Navigate to Reports > Create New.
2. On the Data tab, give the report a name that reflects the information being grouped.
3. Select the applicable source for the report:

<table>
<thead>
<tr>
<th>Option</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Data source</td>
<td>A table with filters applied to provide a single source of information for all users.</td>
</tr>
<tr>
<td>Note:</td>
<td>If you select a data source used by existing reports, a notification displays prompting you to view them.</td>
</tr>
<tr>
<td>Table</td>
<td>The raw data from a table with no filters applied.</td>
</tr>
<tr>
<td>Option</td>
<td>Description</td>
</tr>
<tr>
<td>-----------------</td>
<td>--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------</td>
</tr>
<tr>
<td>External Import</td>
<td>Choose an existing imported report source, or click the Upload icon to import a new file. See Create a report from an imported Microsoft Excel document.</td>
</tr>
<tr>
<td>MetricBase</td>
<td>MetricBase enables you to collect, retain, analyze, and visualize custom time series data on the Now Platform. For more information, see MetricBase application.</td>
</tr>
</tbody>
</table>

4. Click **Next**.

5. On the **Type** tab, select **Step** from the **Time Series** section and click **Next**.
   
   A preliminary version of the report is displayed. To view the updated report at any time, click **Run**.

6. On the **Configure** tab, fill in the following fields and click **Next**.

   **Configure tab**

<table>
<thead>
<tr>
<th>Field</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Group by</td>
<td>Group report data using the values of this field. For example, in an incident report grouped by Assignment group, all incidents that belong to Software, Service Desk, and Network are placed in separate groups.</td>
</tr>
<tr>
<td>Additional group by</td>
<td>Extra fields to group the report by. When you select Additional group by fields, a control is added to the bottom of the report that groups the report by any one of the additional fields.</td>
</tr>
<tr>
<td>Display data table</td>
<td>Check this box to show report data in a grid beneath the report. The table appears on dashboards where the report is added. All reports that use charts, including reports that are used on dashboards, show the table of report data when the glide.ui.section508 system property is set to true. The glide.ui.section508 property overrides the Display data table field.</td>
</tr>
<tr>
<td>Trend by</td>
<td>Table field whose values you want to show in a time sequence.</td>
</tr>
<tr>
<td>Field</td>
<td>Description</td>
</tr>
<tr>
<td>-------</td>
<td>-------------</td>
</tr>
<tr>
<td>per</td>
<td>Time period to group data by. Time periods range from an hour to a year. You can also specify a date.</td>
</tr>
</tbody>
</table>

**Note:** Reporting per Week is not supported when the report range includes more than one year. Inconsistent results are produced when a week is split between two years.

| Aggregation | Mathematical calculation to perform on the data. The default is **Count**, which shows the number of records selected. To show only unique records, select **Count Distinct**. For example, if you want a report on the distinct number of users who have one or more of the roles in a given list of roles. Users with more than one role would be counted twice unless you use **Count Distinct**. Select **Average**, **Sum**, or **Count Distinct**, to show a list of fields from the selected **Table**. Select a field to **Aggregate by** from this list. For example, if you select a duration field, such as **Business duration** on the Incident table, the aggregated data is expressed in days, hours, and minutes. If you select an integer field, such as **Priority**, the data is expressed as a decimal value number. If you choose **Sum** or **Average**, select **Show related fields** to aggregate on dot-walked fields. See [Selecting fields on related tables using dot-walking](#). |

**Note:** For duration values, the unit of measurement displayed in the aggregation axis cannot be customized.
### Field Description

<table>
<thead>
<tr>
<th>Field</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Percentage calculation</td>
<td>Method of calculating percentages. The percentage appears when you point to a report segment, such as a bar on a bar report. This field appears when Aggregation is set to Average, Sum, or Count Distinct.</td>
</tr>
<tr>
<td></td>
<td><strong>Use Aggregation</strong> calculates the percentage using the selection in the Aggregation field. Only data that is displayed in the report is used to calculate the percentage. For example, a report shows assets by department with the Aggregation set to <strong>Sum</strong> and the percentage calculated using aggregation. If the total cost of assets is $100,000 and the cost of assets for Customer Support is $10,000, the percentage for Customer Support is 10%.</td>
</tr>
<tr>
<td></td>
<td><strong>Use Record Count</strong> calculates the percentage using the total number of records in the data set. For example, a report shows incidents by priority. Out of 500 incident records, 200 have low priority. The percentage for the Low priority section is 40%.</td>
</tr>
</tbody>
</table>

7. Optional: Configure the sort order of the applicable fields in the report (column, row, Group by, Stack by or Trend by depending on the report type). Click the filter icon and select **Add Sort**.

1. In the Sorting Order list, choose the field you want to sort on and then choose **a-z** or **z-a** for alphabetical order or reverse alphabetical order.
   
   The list contains all possible fields from the report's source. The only effective values, however, are the fields chosen for the current report (column, row, Group by, Stack by, or Trend by depending on the report type). Add sort cannot be applied to dot-walked fields.

2. Click **+** to configure additional sorting order conditions. (Click **−** to delete configured sorting order conditions.)

3. Click **Save**.

For fields of the type Choice list, the sort order is determined by the sequence of the choices in the choice list, not alphabetically or numerically. For example, a priority.
choice list is often indexed from Critical to Planning as shown in the following figure.

8. Optional: To limit the information displayed in the report, click the filter icon and select conditions to filter the report data. For more details on how conditions are constructed, see Condition builder.

   Note: Keywords is a special field used for text searches across all fields. Its use in a filter or condition, in combination with other conditions, may return inconsistent results.

9. On the Style tab, fill in the fields as appropriate to configure the appearance of the report.
10. Click Save. The report is generated.
• Click the Report info icon

and add a description of the report.

• Click the sharing icon

`to open the Sharing menu. On this menu, you can add the report to a dashboard, export the report to PDF, publish the report to the web, and set visibility and schedules. For more information, see Share a report – Report Designer.

Step line report style options — Report Designer
Configure the look of your step line report.

When you create or edit a report, click the Style tab for options to configure the look of your report. The options are organized under two or more of the following tabs: General, Title, Legend, and Axis. To see how the report looks with the changed settings, click Save.

**Step line report style options**

<table>
<thead>
<tr>
<th>Field</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>General</td>
<td>Colors used in the report.</td>
</tr>
<tr>
<td>Chart color</td>
<td>If you do not group or stack the report, <strong>Use one color</strong> is automatically selected. Select a single predefined system color.</td>
</tr>
<tr>
<td></td>
<td>If you group or stack the report, select one of the following options:</td>
</tr>
<tr>
<td></td>
<td>• <strong>Use color palette</strong>: Select a color palette from the predefined system color palettes.</td>
</tr>
<tr>
<td></td>
<td>• <strong>Use several colors</strong>: Define a custom set of Colors using hex codes. You can add any number of colors.</td>
</tr>
<tr>
<td></td>
<td>• <strong>Use chart colors</strong>: Use the colors defined in Reports &gt; Chart Colors.</td>
</tr>
<tr>
<td></td>
<td><strong>Note</strong>: It is not possible to use transparency hex values.</td>
</tr>
<tr>
<td>Set palette</td>
<td>Color palette used in the report. This field appears when you select <strong>Use color palette</strong> from the <strong>Chart color</strong> list. Click the search icon</td>
</tr>
<tr>
<td></td>
<td>`to choose from the <strong>Color color schemes</strong> list.</td>
</tr>
<tr>
<td>Display data labels</td>
<td>Check box to show the value for each data point.</td>
</tr>
<tr>
<td>Field</td>
<td>Description</td>
</tr>
<tr>
<td>--------------------</td>
<td>---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------</td>
</tr>
<tr>
<td>Show marker</td>
<td>Check box to show a symbol at each data point. When selected, the marker shows in the center of the step and the endpoints of the report visualization.</td>
</tr>
<tr>
<td>Custom chart size</td>
<td>Check box to specify the width and height of the report in pixels.</td>
</tr>
<tr>
<td></td>
<td><strong>Note:</strong> The chart size is ignored when you export the report to PDF. In PDFs, the full page width is used to show the chart.</td>
</tr>
<tr>
<td>Chart width</td>
<td>Width of the report in pixels. The default value is 600.</td>
</tr>
<tr>
<td></td>
<td>This field is available when Custom chart size is selected.</td>
</tr>
<tr>
<td>Chart height</td>
<td>Height of the report in pixels. The default value is 450.</td>
</tr>
<tr>
<td></td>
<td>This field appears when Custom chart size is selected.</td>
</tr>
<tr>
<td>Chart size</td>
<td>Chart size. This field is available when Custom chart size is cleared. Options are Small, Medium, and Large.</td>
</tr>
<tr>
<td></td>
<td><strong>Note:</strong> The chart size is ignored when you export the report to PDF. In PDFs, the full page width is used to show the chart.</td>
</tr>
<tr>
<td>Drilldown view</td>
<td>List view to show when a user selects a segment of a report for which no drilldown report type is specified. This view is also used when the user reaches the lowest drilldown level of a report. See Configure the list layout. If you specify a Report drilldown, Drilldown view is ignored.</td>
</tr>
<tr>
<td></td>
<td><strong>Note:</strong> All users are able to view report visualizations, such as pie charts and column reports. However, the last level of a report drilldown is always a list. Platform access control lists determine user access to list information. Users who do not have rights to any part of the list data see the message “Number of rows removed from this list by Security constraints:” followed by the number. See Access control rules. For more information, see Define a report drilldown in the Report Designer.</td>
</tr>
<tr>
<td>Field</td>
<td>Description</td>
</tr>
<tr>
<td>---------------------</td>
<td>---------------------------------------------------------------------------------------------------------------------------------------------</td>
</tr>
<tr>
<td>Decimal precision</td>
<td>Number of decimal places to show. You can show from zero to four decimal places. Default value: 2. To change the default value, create the system property glide.chart.decimal.precision and specify the value.</td>
</tr>
</tbody>
</table>

**Note:** Percentage labels do not change accordingly with the decimal precision specified.
<table>
<thead>
<tr>
<th>Field</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Show chart title</td>
<td>When the chart title is shown for the report.</td>
</tr>
<tr>
<td></td>
<td>- <strong>Never</strong>: Never show the chart title.</td>
</tr>
<tr>
<td></td>
<td>- <strong>Report only</strong>: Shows the chart title on reports.</td>
</tr>
<tr>
<td></td>
<td>- <strong>Always</strong>: Shows the chart title on reports, dashboards, and homepages.</td>
</tr>
<tr>
<td>Chart title</td>
<td>The chart title has a maximum length of 40 characters. If no title is entered, the report name is used for the title. This field appears when Report only or Always is selected from the Show chart title list.</td>
</tr>
<tr>
<td>Size of the chart title</td>
<td>Size of the chart title in pixels. This field appears when Report only or Always is selected from the Show chart title list.</td>
</tr>
<tr>
<td>Chart title color</td>
<td>Color of the chart title. This field appears when Report only or Always is selected from the Show chart title list.</td>
</tr>
<tr>
<td>Custom chart title position</td>
<td>Check box to specify X and Y coordinates for the position of the chart title. This field appears when Report only or Always is selected from the Show chart title list.</td>
</tr>
<tr>
<td>Chart title X position</td>
<td>Number of pixels to adjust the chart title position right or left. By default the title appears at the center top of the chart. To move the chart title to the right, enter a positive value. To move the title to the left, enter a negative value. This field appears only when Custom chart title position is selected.</td>
</tr>
<tr>
<td>Chart title Y position</td>
<td>Number of pixels to adjust the chart title position up or down. By default the title appears at the center top of the chart. To move up the chart title, enter a positive value. To move the chart title down, enter a negative value. This field appears only when Custom chart title position is selected.</td>
</tr>
<tr>
<td>Title horizontal alignment</td>
<td>How the chart title is aligned horizontally. This field is available when Custom chart title position is cleared.</td>
</tr>
<tr>
<td>Title vertical alignment</td>
<td>How the chart title is aligned vertically. This field appears when Custom chart title position is cleared.</td>
</tr>
<tr>
<td>Legend</td>
<td>Check box to show a chart legend. This check box appears when a Group by field is selected on the report form.</td>
</tr>
</tbody>
</table>

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<table>
<thead>
<tr>
<th>Field</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Legend horizontal alignment</td>
<td>How the legend is aligned horizontally. This field appears when Show legend is selected.</td>
</tr>
<tr>
<td>Legend vertical alignment</td>
<td>How the legend is aligned vertically. This field appears when Show legend is selected.</td>
</tr>
<tr>
<td>Show legend border</td>
<td>Check box to show a border around the legend. This check box appears when Show legend is selected.</td>
</tr>
<tr>
<td>Left align legend text</td>
<td>Check box to left-align the legend text when the report is viewed in a browser. By default, the legend text is centered. When the report is exported to PDF, PNG, or JPG, the legend remains centered. This check box appears when Show legend is selected.</td>
</tr>
</tbody>
</table>

**Axis**

<table>
<thead>
<tr>
<th>Field</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Y axis and X axis</td>
<td>Axis for which you want to configure the titles, appearance, and labels.</td>
</tr>
<tr>
<td>Title</td>
<td>Title for the axis.</td>
</tr>
<tr>
<td>Title size</td>
<td>Size of the axis title in pixels. Default value is 12.</td>
</tr>
<tr>
<td>Title bold</td>
<td>Check this box to show the axis title in a bold typeface.</td>
</tr>
<tr>
<td>Opposite</td>
<td>On the X axis tab, select this check box to show the X-axis title on the right side of the report instead. On the Y axis tab, select this check box to show the Y-axis title on top of the report instead of across the bottom.</td>
</tr>
<tr>
<td>Display grid</td>
<td>On the X axis tab, select this check box to show horizontal grid lines on the report.</td>
</tr>
<tr>
<td>Grid dotted</td>
<td>Check this box to show dotted grid lines instead of solid lines.</td>
</tr>
<tr>
<td>X axis / Y axis label size</td>
<td>On the X axis tab, specify the size of the labels for the rows of the report.</td>
</tr>
<tr>
<td>Label bold</td>
<td>Check this box to show the labels of the report in a bold typeface.</td>
</tr>
</tbody>
</table>

Create a step line report in the Report Builder

Create a step report to show how the value of one or more items changes over time. Create a step line report in the Report Builder

Create a step line report to show how the value of one or more items changes over time with emphasis on the duration and magnitude of the change.
Role required: itil, report_group, report_global, report_admin, or admin. To create a meaningful report, you must have the right to access the data you want to report on.

This task refers to using the Report Builder (Classic UI) in the Kingston release under UI15 and UI16. If you are using the Report Designer, see Create a step line report in the Report Designer.

1. Navigate to Reports > Create New.
2. Fill in the fields, as appropriate (see table).
3. Click Save or Insert.

The report is generated.

Step report options

<table>
<thead>
<tr>
<th>Field</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Report title</td>
<td>In the box labeled Enter the report title here, enter a unique and descriptive name for your report.</td>
</tr>
<tr>
<td>Description</td>
<td>Click the information icon to enter a more detailed description of what the report does and its purpose.</td>
</tr>
</tbody>
</table>
### Field | Description
--- | ---
**Data** | Specify the table or report source containing the data set that you want to include in the report. From the first choice list, select **Table** or **Report source**. Then select the specific table or predefined data set from the second choice list.

**Note:** If you select a data source used by existing reports, a notification will display prompting you to view them.

**Type** | Select Step Line.
Alternatively, click the question mark icon (?[ ) to use the **report type selector**.

**Style your chart** | Click the gear icon ( ) after the **Type** field and configure the chart style options to edit the layout and look of your chart.

**Group by** | Select a field to organize data into groups from the selected table. In an incident report grouped by **Assignment group**, all incidents belonging to Software, Service Desk, Network, and so on, are placed in separate groups. Make sure that you give the report a name that reflects the field you select.

Click ( ) to select additional group by fields. When you select **Additional group by** fields, a control is added to the bottom of the report that groups the report by any one of the additional fields.

**Display Grid** | Select this check box to show details of the report data in a table below the chart. All reports, including reports that are used on homepages, show the table of report data details if the **glide.ui.section508** system property is set to **true**, even if **Display Grid** is cleared.

**Trend by** | Select the table field whose values you want to show in a time sequence.

**per** | Select the time period to show in the chart. Time periods range from a year down to an hour. You can also select a specific date.
<table>
<thead>
<tr>
<th>Field</th>
<th>Description</th>
</tr>
</thead>
</table>
| Aggregation  | Select a computational method for aggregating report data. The default is Count, which shows the number of records selected. If you select Count Distinct, only unique records are counted. For example, in a report on the users who have one or more of the roles in a given list, some users would be counted twice unless you use count distinct. If you select Average, Sum, or Count Distinct, the Aggregated field list appears. The items in this list come from the selected table. Select a field to aggregate by. For example, if you select a duration field, such as the Business duration field on the Incident table, the aggregated data is expressed in days, hours, and minutes. If you select an integer field, such as the Priority field, the data is expressed as a number.  

**Note:** For duration values, you cannot customize the unit of measurement displayed in the aggregation axis. |
| Percentages  | Select a computational method used for calculating percentages for each element (selected record) in a data set.  

- Use Aggregation: Default method that computes percentages for each element using the sum of all elements in the data set.  
- Use Record Count: Computes percentages for each element using the total number (count) of elements in the data set.  

This field is only available when Aggregation is set to Average, Sum, or Count Distinct. |
| Add Filter Condition | Click the filter icon to create conditions for filtering and ordering data. For example, you might create a condition that states **Priority + less than + 3 ± Moderate** to have the report include only records with priorities of **2 ± High** and **1 ± Critical**.  

**Note:** Keywords is a special field used for text searches across all fields. It’s use in a filter or condition, in combination with other conditions, may return inconsistent results. |
| Add "OR" Clause | Select a second condition that must be met if the first condition is invalid. For example, select (Assignment Group) (is) (Database), to include records that are assigned to the Database group if the first condition is false. |
| Add Sort      | Select fields to sort data by. For example, to sort results from lowest to highest priority, select (Priority) (z to a). For reports with Group by, Stack by, Row/Column or Trend by fields to configure, you can sort by fields that are not listed in the Group by, Stack by, Row/Column or Trend by options. |

- Click the Report info icon and add a description of the report.
• Click the sharing icon
to open the **Sharing** menu. On this menu, you can add the report to a dashboard, export the report to PDF, publish the report to the web, and set visibility and schedules. For more information, see *Share a report – Report Designer*.

• Click the sharing icon
to open the **Sharing** menu. On this menu, you can share the report with users and groups, add the report to a dashboard, and publish the report to the web. See *Share a report – Report Designer* for more information.

• Click the sharing icon
to open the **Sharing** menu. On this menu, you can add the report to a dashboard, export the report to PDF, publish the report to the web, and set visibility and schedules. For more information, see *Share a report – Report Builder*.

• Click the sharing icon
to open the **Sharing** menu. On this menu, you can share the report with users and groups, add the report to a dashboard, and publish the report to the web. See *Share a report – Report Builder* for more information.

### Step report style options – Report Builder
Configure the look of your step report.

When you create or edit a report, click the gear icon after the **Type** field to open the **Style your chart** dialog box with options to configure the look of your report. Report style options are automatically saved when you click **Close**. To see how the report looks with the saved settings, click **Save**.

#### Step report style options

<table>
<thead>
<tr>
<th>Field</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>General</strong></td>
<td></td>
</tr>
<tr>
<td><strong>Chart color</strong></td>
<td>If no group by is used, <strong>Use one color</strong> is automatically selected. Select a single predefined system color. If a group by is used, select one of the following options:</td>
</tr>
<tr>
<td></td>
<td>• <strong>Use color palette:</strong> Select a color palette from the predefined system color palettes.</td>
</tr>
<tr>
<td></td>
<td>• <strong>Use several colors:</strong> Define a custom set of <strong>Colors</strong> using hex codes. You can add any number of colors.</td>
</tr>
<tr>
<td></td>
<td>• <strong>Use chart colors:</strong> Use the colors defined in <strong>Reports &gt; Chart Colors</strong>.</td>
</tr>
<tr>
<td><strong>Display data labels</strong></td>
<td>Select this check box to show the current value for each data point.</td>
</tr>
<tr>
<td><strong>Marker</strong></td>
<td>Check box to show a symbol at each data point. When selected, the marker shows in the center of the step and at the endpoints of the report visualization.</td>
</tr>
<tr>
<td>Field</td>
<td>Description</td>
</tr>
<tr>
<td>---------------------</td>
<td>--------------------------------------------------------------------------------------------------------------------------------------------</td>
</tr>
<tr>
<td>Custom chart size</td>
<td>Select this check box to specify the chart’s width and height in pixels.</td>
</tr>
<tr>
<td>Chart size</td>
<td>Select a chart size. This field is available when <strong>Custom chart size</strong> is cleared.</td>
</tr>
<tr>
<td>Drilldown View</td>
<td>Select a <strong>view</strong> that determines how detailed records are shown when a specific part of the report visualization is clicked. This option is available for charts with drill-down capabilities. If you select a view that has no fields in common to link to the table that the report is based on, the default view is used. See <a href="#">Define a report drilldown in the Report Designer</a>.</td>
</tr>
</tbody>
</table>
### Decimal precision

Number of decimal places to show. You can show from zero to four decimal places. Default value: 2. To change the default value, create the system property `glide.chart.decimal.precision` and specify the value.

**Note:** Percentage labels do not change accordingly with the decimal precision specified.
<table>
<thead>
<tr>
<th>Field</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Show chart title</td>
<td>Select when the chart title is displayed.</td>
</tr>
<tr>
<td></td>
<td>- <em>Never</em>: never displays the chart title.</td>
</tr>
<tr>
<td></td>
<td>- <em>Report only</em>: displays the chart title on reports.</td>
</tr>
<tr>
<td></td>
<td>- <em>Always</em>: displays the chart title on reports, dashboards, and homepages.</td>
</tr>
<tr>
<td>Chart title</td>
<td>Enter a title for this chart. The title has a maximum length of 40 characters. If no title is entered, the report name is used for the title. This field is available when <em>Report only</em> or <em>Always</em> is selected from the <em>Show chart title</em> list.</td>
</tr>
<tr>
<td>Chart title size</td>
<td>Enter the size of the chart title in pixels. This field is available when <em>Report only</em> or <em>Always</em> is selected from the <em>Show chart title</em> list.</td>
</tr>
<tr>
<td>Chart title color</td>
<td>Select the color for the chart title. This field is available when <em>Report only</em> or <em>Always</em> is selected from the <em>Show chart title</em> list.</td>
</tr>
<tr>
<td>Custom chart title position</td>
<td>Select this check box to specify X and Y coordinates for the position of the chart title. This field is available when <em>Report only</em> or <em>Always</em> is selected from the <em>Show chart title</em> list.</td>
</tr>
<tr>
<td>Title horizontal alignment</td>
<td>Select how the chart title is aligned horizontally. This field is available when <em>Custom chart title position</em> is cleared.</td>
</tr>
<tr>
<td>Title vertical alignment</td>
<td>Select how the chart title is aligned vertically. This field is available when <em>Custom chart title position</em> is cleared.</td>
</tr>
<tr>
<td>Legend</td>
<td></td>
</tr>
<tr>
<td>Show legend</td>
<td>Select this check box to display a chart legend. This field is available when a <em>Group by</em> field is selected from the report form.</td>
</tr>
<tr>
<td>Legend horizontal alignment</td>
<td>Select how the legend is aligned horizontally. This field is available when <em>Show legend</em> is selected.</td>
</tr>
<tr>
<td>Legend vertical alignment</td>
<td>Select how the legend is aligned vertically. This field is available when <em>Show legend</em> is selected.</td>
</tr>
<tr>
<td>Left align legend text</td>
<td>Select to left-align the legend text. By default, legend text is centered.</td>
</tr>
<tr>
<td>Show legend border</td>
<td>Select this check box to display a border around the legend. This check box is available when <em>Show legend</em> is selected.</td>
</tr>
<tr>
<td>Axis</td>
<td></td>
</tr>
<tr>
<td>Axis tab</td>
<td>Configure the titles, appearance, and labels of the X and Y axis. For the Y axis, you can also specify a From and To range.</td>
</tr>
</tbody>
</table>

**Trend reports**

Trend reports show how the value of one or more items changes over time. Values along the horizontal axis of the trend report represent the time measurement. Values on the vertical axis represent the changes to the items being monitored.

Users with the report_admin role can define the ranges that are used in a trend chart report. See *Report ranges* for information on creating report ranges.

An example of an item that changes over time is incident count. The incident count will likely increase during the first few months after a product upgrade is released. Over time, the number of incidents reported drops as users become more accustomed to the changes in the product.
Create a trend report in the Report Designer

Create a trend report to show how the values of data elements change over time.

Create a trend report in the Report Designer
Create a trend report to show how the value of one or more data element changes over time.

This task refers to Report Designer in the Kingston release. If you are using the Report Builder (Classic UI) in Kingston for creating reports, select the applicable report from Creating reports to see instructions. If you are using an earlier UI or the Classic UI for creating reports in an earlier release, follow the instructions in the Helsinki documentation: Report types and creation details.
1. Navigate to **Reports > Create New**.
2. On the **Data** tab, give the report a name that reflects the information being grouped.
3. Select the applicable source for the report:

<table>
<thead>
<tr>
<th>Option</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Data source</td>
<td>A table with filters applied to provide a single source of information for all users.</td>
</tr>
<tr>
<td><strong>Note:</strong> If you select a data source used by existing reports, a notification displays prompting you to view them.</td>
<td></td>
</tr>
<tr>
<td>Table</td>
<td>The raw data from a table with no filters applied.</td>
</tr>
<tr>
<td>External import</td>
<td>Choose an existing imported report source, or click the Upload icon to import a new file. See <strong>Create a report from an imported Microsoft Excel document.</strong></td>
</tr>
</tbody>
</table>

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<table>
<thead>
<tr>
<th>Option</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>MetricBase</td>
<td>MetricBase enables you to collect, retain, analyze, and visualize custom time series data on the Now Platform. For more information, see MetricBase application.</td>
</tr>
</tbody>
</table>

4. Click **Next**.
5. On the **Type** tab, select **Trend** in the **Other** section and click **Next**.
   A preliminary version of the report is displayed. To view the updated report at any time, click **Run**.
6. On the **Configure** tab, fill in the following fields and click **Next**.

**Configure tab**

<table>
<thead>
<tr>
<th>Field</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Group by</td>
<td>Group report data using the values of this field. For example, in an incident report grouped by <strong>Assignment group</strong>, all incidents that belong to Software, Service Desk, and Network are placed in separate groups.</td>
</tr>
<tr>
<td>Note: It is not possible to group or stack reports by the <strong>Tags</strong> field.</td>
<td></td>
</tr>
<tr>
<td>Additional group by</td>
<td>Extra fields to group the report by. When you select <strong>Additional group by</strong> fields, a control is added to the bottom of the report that groups the report by any one of the additional fields.</td>
</tr>
<tr>
<td>Note: It is not possible to group or stack reports by the <strong>Tags</strong> field.</td>
<td></td>
</tr>
<tr>
<td>Display data table</td>
<td>Check this box to show report data in a grid beneath the report. The table appears on dashboards where the report is added.</td>
</tr>
<tr>
<td>All reports that use charts, including reports that are used on dashboards, show the table of report data when the glide.ui.section508 system property is set to <strong>true</strong>. The glide.ui.section508 property overrides the <strong>Display data table</strong> field.</td>
<td></td>
</tr>
<tr>
<td>Trend by</td>
<td>Table field whose values you want to show in a time sequence.</td>
</tr>
<tr>
<td>per</td>
<td>Time period to group data by. Time periods range from an hour to a year. You can also specify a date.</td>
</tr>
<tr>
<td>Note: Reporting per <strong>Week</strong> is not supported when the report range includes more than one year. Inconsistent results are produced when a week is split between two years.</td>
<td></td>
</tr>
<tr>
<td>Field</td>
<td>Description</td>
</tr>
<tr>
<td>--------------------</td>
<td>------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------</td>
</tr>
<tr>
<td>Aggregation</td>
<td>Mathematical calculation to perform on the data. The default is <strong>Count</strong>, which shows the number of records selected.&lt;br&gt;&lt;br&gt;To show only unique records, select <strong>Count Distinct</strong>. For example, if you want a report on the distinct number of users who have one or more of the roles in a given list of roles. Users with more than one role would be counted twice unless you use <strong>Count Distinct</strong>.&lt;br&gt;&lt;br&gt;Select <strong>Average</strong>, <strong>Sum</strong>, or <strong>Count Distinct</strong>, to show a list of fields from the selected <strong>Table</strong>. Select a field to <strong>Aggregate by</strong> from this list. For example, if you select a duration field, such as <strong>Business duration</strong> on the Incident table, the aggregated data is expressed in days, hours, and minutes. If you select an integer field, such as <strong>Priority</strong>, the data is expressed as a decimal value number.&lt;br&gt;&lt;br&gt;If you choose <strong>Sum</strong> or <strong>Average</strong>, select <strong>Show related fields</strong> to aggregate on dot-walked fields. See <a href="#">Selecting fields on related tables using dot-walking</a>.&lt;br&gt;&lt;br&gt;<strong>Note:</strong> For duration values, the unit of measurement displayed in the aggregation axis cannot be customized.</td>
</tr>
<tr>
<td>Percentage calculation</td>
<td>Method of calculating percentages. The percentage appears when you point to a report segment, such as a bar on a bar report. This field appears when <strong>Aggregation</strong> is set to <strong>Average</strong>, <strong>Sum</strong>, or <strong>Count Distinct</strong>.&lt;br&gt;&lt;br&gt;- <strong>Use Aggregation</strong> calculates the percentage using the selection in the <strong>Aggregation</strong> field. Only data that is displayed in the report is used to calculate the percentage.&lt;br&gt;&lt;br&gt;For example, a report shows assets by department with the <strong>Aggregation</strong> set to <strong>Sum</strong> and the percentage calculated using aggregation. If the total cost of assets is $100,000 and the cost of assets for Customer Support is $10,000, the percentage for Customer Support is 10%.&lt;br&gt;&lt;br&gt;- <strong>Use Record Count</strong> calculates the percentage using the total number of records in the data set.&lt;br&gt;&lt;br&gt;For example, a report shows incidents by priority. Out of 500 incident records, 200 have low priority. The percentage for the Low priority section is 40%.</td>
</tr>
<tr>
<td>Field</td>
<td>Description</td>
</tr>
<tr>
<td>--------------------------</td>
<td>---------------------------------------------------------------------------------------------------------------------------------------------</td>
</tr>
<tr>
<td>Max number of groups</td>
<td>Maximum number of groups to display in the report. Groups with highest values are included first. Any excluded groups are combined into the single group Other. If you select Show all, all groups up to a limit of 50 are displayed. The rest of the results are grouped as Other.</td>
</tr>
<tr>
<td>Show Other</td>
<td>Check box to include the Other group in the report. The Other group contains data for all groups that exceed the number specified in Max number of groups.</td>
</tr>
</tbody>
</table>

7. Optional: Configure the sort order of the applicable fields in the report (column, row, Group by, Stack by or Trend by depending on the report type). Click the filter icon and select Add Sort.

1. In the Sorting Order list, choose the field you want to sort on and then choose a-z or z-a for alphabetical order or reverse alphabetical order.

   The list contains all possible fields from the report's source. The only effective values, however, are the fields chosen for the current report (column, row, Group by, Stack by, or Trend by depending on the report type). Add sort cannot be applied to dot-walked fields.

2. Click to configure additional sorting order conditions. (Click to delete configured sorting order conditions.)

3. Click Save.

For fields of the type Choice list, the sort order is determined by the sequence of the choices in the choice list, not alphabetically or numerically. For example, a priority
choice list is often indexed from Critical to Planning as shown in the following figure.

8. Optional: To limit the information displayed in the report, click the filter icon 
   and select conditions to filter the report data.
   For more details on how conditions are constructed, see Condition builder.

   **Note:** Keywords is a special field used for text searches across all fields. Its use in a filter 
or condition, in combination with other conditions, may return inconsistent results.

9. On the Style tab, fill in the fields as appropriate to configure the appearance of the report.
10. Click Save.
    The report is generated.
- Click the Report info icon and add a description of the report.

- Click the sharing icon to open the Sharing menu. On this menu, you can add the report to a dashboard, export the report to PDF, publish the report to the web, and set visibility and schedules. For more information, see Share a report ± Report Designer.

**Trend report style options – Report Designer**
Change the look of your trend report.

When you create or edit a report, click the Style tab for options to configure the look of your report. The options are organized under two or more of the following tabs: General, Title, Legend, and Axis. To see how the report looks with the changed settings, click Save.

**Trend chart style options**

<table>
<thead>
<tr>
<th>Field</th>
<th>Description</th>
</tr>
</thead>
</table>
| Chart color       | Colors used in the report. If you do not group or stack the report, **Use one color** is automatically selected. Select a single predefined system color. If you group or stack the report, select one of the following options:  
  - **Use color palette**: Select a color palette from the predefined system color palettes.  
  - **Use several colors**: Define a custom set of Colors using hex codes. You can add any number of colors.  
  - **Use chart colors**: Use the colors defined in Reports > Chart Colors.  

**Note**: It is not possible to use transparency hex values.  

<p>| Set palette       | Color palette used in the report. This field appears when you select <strong>Use color palette</strong> from the <strong>Chart color</strong> list. Click the search icon to choose from the <strong>Color color schemes</strong> list. |</p>
<table>
<thead>
<tr>
<th>Field</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Display data labels</td>
<td>Select to display the current value for each bar. This field is available when you select None from the Stacked by list or if there is no Stacked by list.</td>
</tr>
<tr>
<td></td>
<td>- Select Data labels in the middle to show the labels in the middle of each bar.</td>
</tr>
<tr>
<td></td>
<td>- Select Allow data labels to overlap to override default separation of labels in the visualization.</td>
</tr>
<tr>
<td>Custom chart size</td>
<td>Check box to specify the width and height of the report in pixels.</td>
</tr>
<tr>
<td>Chart width</td>
<td>Width of the report in pixels. The default value is 600. This field is available when Custom chart size is selected.</td>
</tr>
<tr>
<td>Chart height</td>
<td>Height of the report in pixels. The default value is 450. This field appears when Custom chart size is selected.</td>
</tr>
<tr>
<td>Chart size</td>
<td>Chart size. This field is available when Custom chart size is cleared. Options are Small, Medium, and Large.</td>
</tr>
</tbody>
</table>

**Note:** The chart size is ignored when you export the report to PDF. In PDFs, the full page width is used to show the chart.
<table>
<thead>
<tr>
<th>Field</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Drilldown view</td>
<td>List view to show when a user selects a segment of a report for which no drilldown report type is specified. This view is also used when the user reaches the lowest drilldown level of a report. See Configure the list layout. If you specify a Report drilldown, Drilldown view is ignored.</td>
</tr>
</tbody>
</table>

**Note:** All users are able to view report visualizations, such as pie charts and column reports. However, the last level of a report drilldown is always a list. Platform access control lists determine user access to list information. Users who do not have rights to any part of the list data see the message “Number of rows removed from this list by Security constraints:” followed by the number. See Access control rules.

For more information, see Define a report drilldown in the Report Designer.
<table>
<thead>
<tr>
<th>Field</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Decimal precision</td>
<td>Number of decimal places to show. You can show from zero to four decimal places. Default value: 2. To change the default value, create the system property glide.chart.decimal.precision and specify the value.</td>
</tr>
</tbody>
</table>

**Note:** Percentage labels do not change accordingly with the decimal precision specified.
<table>
<thead>
<tr>
<th>Field</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Show chart title</td>
<td>When the chart title is shown for the report.</td>
</tr>
<tr>
<td></td>
<td>- <strong>Never</strong>: Never show the chart title.</td>
</tr>
<tr>
<td></td>
<td>- <strong>Report only</strong>: Shows the chart title on reports.</td>
</tr>
<tr>
<td></td>
<td>- <strong>Always</strong>: Shows the chart title on reports, dashboards, and homepages.</td>
</tr>
<tr>
<td>Chart title</td>
<td>The chart title has a maximum length of 40 characters. If no title is entered, the report name is used for the title. This field appears when <strong>Report only</strong> or <strong>Always</strong> is selected from the <strong>Show chart title</strong> list.</td>
</tr>
<tr>
<td>Size of the chart title</td>
<td>Size of the chart title in pixels. This field appears when <strong>Report only</strong> or <strong>Always</strong> is selected from the <strong>Show chart title</strong> list.</td>
</tr>
<tr>
<td>Chart title color</td>
<td>Color of the chart title. This field appears when <strong>Report only</strong> or <strong>Always</strong> is selected from the <strong>Show chart title</strong> list.</td>
</tr>
<tr>
<td>Custom chart title position</td>
<td>Check box to specify X and Y coordinates for the position of the chart title. This field appears when <strong>Report only</strong> or <strong>Always</strong> is selected from the <strong>Show chart title</strong> list.</td>
</tr>
<tr>
<td>Chart title X position</td>
<td>Number of pixels to adjust the chart title position right or left. By default the title appears at the center top of the chart. To move the chart title to the right, enter a positive value. To move the title to the left, enter a negative value. This field appears only when <strong>Custom chart title position</strong> is selected.</td>
</tr>
<tr>
<td>Chart title Y position</td>
<td>Number of pixels to adjust the chart title position up or down. By default the title appears at the center top of the chart. To move up the chart title, enter a positive value. To move the chart title down, enter a negative value. This field appears only when <strong>Custom chart title position</strong> is selected.</td>
</tr>
<tr>
<td>Title horizontal alignment</td>
<td>How the chart title is aligned horizontally. This field is available when <strong>Custom chart title position</strong> is cleared.</td>
</tr>
<tr>
<td>Title vertical alignment</td>
<td>How the chart title is aligned vertically. This field appears when <strong>Custom chart title position</strong> is cleared.</td>
</tr>
<tr>
<td>Legend</td>
<td>Check box to show a chart legend. This check box appears when a <strong>Group by</strong> field is selected on the report form.</td>
</tr>
<tr>
<td>Field</td>
<td>Description</td>
</tr>
<tr>
<td>-----------------------------</td>
<td>---------------------------------------------------------------------------------------------------------------------------------------------</td>
</tr>
<tr>
<td>Legend horizontal alignment</td>
<td>How the legend is aligned horizontally. This field appears when Show legend is selected.</td>
</tr>
<tr>
<td>Legend vertical alignment</td>
<td>How the legend is aligned vertically. This field appears when Show legend is selected.</td>
</tr>
<tr>
<td>Show legend border</td>
<td>Check box to show a border around the legend. This check box appears when Show legend is selected.</td>
</tr>
<tr>
<td>Left align legend text</td>
<td>Check box to left-align the legend text when the report is viewed in a browser. By default, the legend text is centered. When the report is exported to PDF, PNG, or JPG, the legend remains centered. This check box appears when Show legend is selected.</td>
</tr>
</tbody>
</table>

**Axis**

<table>
<thead>
<tr>
<th>Field</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Y axis and X axis</td>
<td>Axis for which you want to configure the titles, appearance, and labels.</td>
</tr>
<tr>
<td>Title</td>
<td>Title for the axis.</td>
</tr>
<tr>
<td>Title size</td>
<td>Size of the axis title in pixels. Default value is 12.</td>
</tr>
<tr>
<td>Title bold</td>
<td>Check this box to show the axis title in a bold typeface.</td>
</tr>
<tr>
<td>Opposite</td>
<td>On the X axis tab, select this check box to show the X-axis title on the right side of the report instead. On the Y axis tab, select this check box to show the Y-axis title on top of the report instead of across the bottom.</td>
</tr>
<tr>
<td>Display grid</td>
<td>On the X axis tab, select this check box to show horizontal grid lines on the report. On the Y axis tab, select this check box to show vertical grid lines on top the report.</td>
</tr>
<tr>
<td>Grid dotted</td>
<td>Check this box to show dotted grid lines instead of solid lines.</td>
</tr>
<tr>
<td>From</td>
<td>Specify a minimum Y-axis value to limit the amount of information in the report. If you select an aggregation field that is not of the type Number, the From and To fields are not available.</td>
</tr>
</tbody>
</table>

*Note: Depending on configured Highcharts settings, the minimum value may be rounded up or down. If you require the settings that affect this changed, contact the administrator.*
<table>
<thead>
<tr>
<th>Field</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>To</td>
<td>Specify a maximum Y-axis value to limit the amount of information in the report. If you select an aggregation field that is not of the type <strong>Number</strong>, the <strong>From</strong> and <strong>To</strong> fields are not available.</td>
</tr>
<tr>
<td>Note:</td>
<td>Depending on configured <strong>Highcharts</strong> settings, the maximum value may be rounded up or down. If you require the settings that affect this changed, contact the administrator.</td>
</tr>
<tr>
<td>X axis / Y axis label size</td>
<td>On the <strong>X axis</strong> tab, specify the size of the labels for the rows of the report.</td>
</tr>
<tr>
<td></td>
<td>On the <strong>Y axis</strong> tab, specify the size of the labels for the columns in the report.</td>
</tr>
<tr>
<td>Label bold</td>
<td>Check this box to show the labels of the report in a bold typeface.</td>
</tr>
</tbody>
</table>

**Create a trend report in the Report Builder**

Create a trend report to show how the value of one or more data element changes over time.

Role required: **itil**, **report_group**, **report_global**, **report_admin**, or **admin**. To create a meaningful report, you must have the right to access the data you want to report on.

This task refers to using the Report Builder (Classic UI) in the Kingston release under UI15 and UI16. If you are using the Report Designer, see **Create a trend report in the Report Designer**.
1. Navigate to **Reports > Create New**.
2. Fill in the fields, as appropriate.
3. Click Save. The report is generated.

<table>
<thead>
<tr>
<th>Field</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Name</td>
<td>Enter a unique and descriptive name for the report.</td>
</tr>
<tr>
<td>Description</td>
<td>Click the information icon to enter a more detailed description of what the report does and its purpose.</td>
</tr>
<tr>
<td>Data</td>
<td>Specify the table or report source containing the data set that you want to include in the report. From the first choice list, select <strong>Table</strong> or <strong>Report source</strong>. Then select the specific table or predefined data set from the second choice list. <strong>Note:</strong> If you select a data source used by existing reports, a notification will display prompting you to view them.</td>
</tr>
<tr>
<td>Type</td>
<td>Select <strong>Line</strong>. Alternatively, click the question mark icon to use the report type selector.</td>
</tr>
<tr>
<td>Field</td>
<td>Description</td>
</tr>
<tr>
<td>-------------------</td>
<td>---------------------------------------------------------------------------------------------------------------------------------------------</td>
</tr>
<tr>
<td>Style your chart</td>
<td>Click the gear icon after the <strong>Type</strong> field and configure the chart style options to edit the layout and look of your chart.</td>
</tr>
<tr>
<td>Group by</td>
<td>Select a field to organize data into groups from the selected table. In an incident report grouped by <strong>Assignment group</strong>, all incidents belonging to Software, Service Desk, Network, and so on, are placed in separate groups. Make sure that you give the report a name that reflects the field you select. Click + to select additional group by fields. When you select <strong>Additional group by</strong> fields, a control is added to the bottom of the report that groups the report by any one of the additional fields. <strong>Note:</strong> It is not possible to group or stack reports by the <strong>Tags</strong> field.</td>
</tr>
<tr>
<td>Display Grid</td>
<td>Select this check box to display details of the report data in a table below the chart. All reports that use charts, including reports that are used on homepages, display the table of report data details if the glide.ui.section508 system property is set to <strong>true</strong>, even if <strong>Display Grid</strong> is cleared.</td>
</tr>
<tr>
<td>Trend by</td>
<td>Select the table field whose values you want to display in a time sequence. <strong>Note:</strong> Reporting per Week is not supported when the report range includes more than one year. Inconsistent results are produced when a week is split between two years.</td>
</tr>
<tr>
<td>Aggregation</td>
<td>Select a computational method for aggregating report data. The default is <strong>Count</strong>, which displays the number of records selected. If you select <strong>Count Distinct</strong>, only unique records are counted. For example, if you want to generate a report with a distinct number of users who have one or more of the roles in a given list of roles, these users would be counted twice unless you use count distinct. If you select <strong>Average</strong>, <strong>Sum</strong>, or <strong>Count Distinct</strong>, a list of fields from the selected <strong>Table</strong> appears. From this list, select a field to aggregate by. For example, if you select a duration field, such as the <strong>Business duration</strong> field on the Incident table, the aggregated data is expressed in days, hours, and minutes. If you select an integer field, such as the <strong>Priority</strong> field, the data is expressed as a number. <strong>Note:</strong> For duration values, you cannot customize the unit of measurement displayed in the aggregation axis.</td>
</tr>
</tbody>
</table>
### Field | Description
--- | ---
Percentages | Select a computational method used for calculating percentages for each element (selected record) in a data set.
- **Use Aggregation**: default method that computes percentages for each element using the sum of all elements in the data set.
- **Use Record Count**: computes percentages for each element using the total number (count) of elements in the data set.

This field is only available when Aggregation is set to Average, Sum, or Count Distinct.

### Add Filter Condition
Click the filter icon to create conditions for filtering and ordering data. For example, you might create a condition that states **Priority + less than + 3 ± Moderate** to have the report include only records with priorities of **2 ± High** and **1 ± Critical**.

*Note*: Keywords is a special field used for text searches across all fields. Its use in a filter or condition, in combination with other conditions, may return inconsistent results.

### Add "OR" Clause
Select a second condition that must be met if the first condition is invalid. For example, select **(Assignment Group) (is) (Database)** to include records that are assigned to the Database group if the first condition is false.

### Add Sort
Select fields to sort data by. For example, to sort results from lowest to highest priority, select **(Priority) (z to a)**. For reports with Group by, Stack by, Row/Column or Trend by fields to configure, you can sort by fields that are not listed in the Group by, Stack by, Row/Column or Trend by options.

---

Add reports to homepages or dashboards, publish to the internet, schedule email distribution of PDFs or URLs of published reports, and share reports with others. See *Distribute reports*.  
**Trend report style options – Report Builder**  
Change the look of your trend report.

When you create or edit a report, click the gear icon (⚙️) after the **Type** field to open the **Style your chart** dialog box with options to configure the look of your chart. Chart options are automatically saved when you click **Close**. To see how the chart looks with the saved settings, click **Save**.

### Trend chart style options

<table>
<thead>
<tr>
<th>Field</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>General</td>
<td></td>
</tr>
<tr>
<td>Field</td>
<td>Description</td>
</tr>
<tr>
<td>--------------------</td>
<td>---------------------------------------------------------------------------------------------------------------------------------------------</td>
</tr>
</tbody>
</table>
| Chart color        | If no group by is used, **Use one color** is automatically selected. Select a single predefined system color.  
If a group by is used, select one of the following options:  
  - **Use color palette**: Select a color palette from the predefined system color palettes.  
  - **Use several colors**: Define a custom set of **Colors** using hex codes. You can add any number of colors.  
  - **Use chart colors**: Use the colors defined in Reports > Chart Colors. |
<p>| Display data labels| Select this check box to display the current value for each data point.                                                                      |
| Marker             | Select this check box to display a symbol at each data point.                                                                               |
| Custom chart size  | Select this check box to specify the chart's width and height in pixels.                                                                    |
| Chart size         | Select a chart size. This field is available when <strong>Custom chart size</strong> is cleared.                                                       |</p>
<table>
<thead>
<tr>
<th>Field</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Decimal precision</td>
<td>Number of decimal places to show. You can show from zero to four decimal places. Default value: 2. To change the default value, create the system property glide.chart.decimal.precision and specify the value.</td>
</tr>
</tbody>
</table>

**Note:** Percentage labels do not change accordingly with the decimal precision specified.
<table>
<thead>
<tr>
<th>Field</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Show chart title</td>
<td>Select when the chart title is displayed.</td>
</tr>
<tr>
<td></td>
<td>• Never: never displays the chart title.</td>
</tr>
<tr>
<td></td>
<td>• Report only: displays the chart title on reports.</td>
</tr>
<tr>
<td></td>
<td>• Always: displays the chart title on reports, dashboards, and homepages.</td>
</tr>
<tr>
<td>Chart title</td>
<td>Enter a title for this chart. The title has a maximum length of 40 characters. If no title is entered, the report name is used for the title. This field is available when Report only or Always is selected from the Show chart title list.</td>
</tr>
<tr>
<td>Chart title size</td>
<td>Enter the size of the chart title in pixels. This field is available when Report only or Always is selected from the Show chart title list.</td>
</tr>
<tr>
<td>Chart title color</td>
<td>Select the color for the chart title. This field is available when Report only or Always is selected from the Show chart title list.</td>
</tr>
<tr>
<td>Custom chart title position</td>
<td>Select this check box to specify the X and Y coordinates for the position of the chart title. This field is available when Report only or Always is selected from the Show chart title list.</td>
</tr>
<tr>
<td>Title horizontal alignment</td>
<td>Select how the chart title is aligned horizontally. This field is available when Custom chart title position is cleared.</td>
</tr>
<tr>
<td>Title vertical alignment</td>
<td>Select how the chart title is aligned vertically. This field is available when Custom chart title position is cleared.</td>
</tr>
<tr>
<td>Legend</td>
<td>Select this check box to display the chart legend. This field is available when a Group by field is selected on the report form.</td>
</tr>
<tr>
<td>Legend horizontal alignment</td>
<td>Select how the legend is aligned horizontally. This field is available when Show legend is selected.</td>
</tr>
<tr>
<td>Legend vertical alignment</td>
<td>Select how the legend is aligned vertically. This field is available when Show legend is selected.</td>
</tr>
<tr>
<td>Left align legend text</td>
<td>Select to left-align the legend text. By default, legend text is centered.</td>
</tr>
<tr>
<td>Show legend border</td>
<td>Select this check box to display a border around the legend. This field is available when Show legend is selected.</td>
</tr>
<tr>
<td>Axis</td>
<td>Configure the titles, appearance, and labels of the X and Y axis. For the Y axis, you can also specify a From and To range.</td>
</tr>
</tbody>
</table>

**Trendbox reports**

Trendbox reports visualize the distribution of data for a specific time period.

A trendbox report is similar to a box report, but it also allows you to specify a time period for the report. When defining the report, use a descriptive title that indicates the use of the time period. Use trendbox reports when you have multiple small data sets from different sources that are related to each other. Examples include incident resolution times for different product features, or incident resolution times for different priorities.

For example, a trendbox report can show incident resolution duration for high priority incidents by support employee. Suppose every support employee handles P1 incidents, but you know that the
time it takes to resolve each P1 incident varies. A trendbox report would show, by employee, the longest and shortest resolution times, and a grouping with the most common or closely clustered resolution times. With this information, you can compare resolution times by employee, or you can use the information to estimate future support staffing levels.

**Trendbox report**

**About trendbox report**

Each box in a trendbox report displays the following information for each group of data:
Box chart scale

1. Sample maximum
2. Upper quartile
3. Median
4. Mean
5. Lower quartile
6. Sample minimum

**Note:** When accessibility is enabled, this visualization includes a report that screen readers can interpret. For more information, see Enabling accessibility features.

**Create a trendbox report in the Report Designer**

Create a trendbox report to show the distribution of values in a data set as with a box report, but within a specified time period.

Create a trendbox report in the Report Designer

Create a trendbox report to show the distribution of values in a data set, with a specified time period.

This task refers to Report Designer in the Kingston release. If you are using the Report Builder (Classic UI) in Kingston for creating reports, select the applicable report from Creating reports to see instructions. If you are using an earlier UI or the Classic UI for creating reports in an earlier release, follow the instructions in the Helsinki documentation: Report types and creation details.
1. Navigate to **Reports > Create New**.
2. On the **Data** tab, give the report a name that reflects the information being grouped.
3. Select the applicable source for the report:

<table>
<thead>
<tr>
<th>Option</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Data source</strong></td>
<td>A table with filters applied to provide a single source of information for all users.</td>
</tr>
<tr>
<td><strong>Table</strong></td>
<td>The raw data from a table with no filters applied.</td>
</tr>
<tr>
<td><strong>External import</strong></td>
<td>Choose an existing imported report source, or click the Upload icon to import a new file. See Create a report from an imported Microsoft Excel document.</td>
</tr>
<tr>
<td>Option</td>
<td>Description</td>
</tr>
<tr>
<td>--------------</td>
<td>-----------------------------------------------------------------------------------------------</td>
</tr>
<tr>
<td>MetricBase</td>
<td>MetricBase enables you to collect, retain, analyze, and visualize custom time series data on the Now Platform. For more information, see MetricBase application.</td>
</tr>
</tbody>
</table>

4. Click **Next**.
5. On the **Type** tab, select **Trendbox** in the **Other** section and click **Next**.
   A preliminary version of the report is displayed. To view the updated report at any time, click **Run**.
6. On the **Configure** tab, fill in the following fields and click **Next**.

### Trendbox report configuration options

<table>
<thead>
<tr>
<th>Field</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Group by</td>
<td>Group report data using the values of this field. For example, in an incident report grouped by Assignment group, all incidents that belong to Software, Service Desk, and Network are placed in separate groups.</td>
</tr>
<tr>
<td></td>
<td><strong>Note:</strong> It is not possible to group or stack reports by the Tags field.</td>
</tr>
<tr>
<td></td>
<td><strong>Note:</strong> Label names longer than 20 characters may show or print a truncated view.</td>
</tr>
<tr>
<td>Trend by</td>
<td>Table field whose values you want to show in a time sequence.</td>
</tr>
<tr>
<td>per</td>
<td>Time period to group data by. Time periods range from an hour to a year. You can also specify a date.</td>
</tr>
<tr>
<td></td>
<td><strong>Note:</strong> Reporting per Week is not supported when the report range includes more than one year. Inconsistent results are produced when a week is split between two years.</td>
</tr>
<tr>
<td>Field</td>
<td>Description</td>
</tr>
<tr>
<td>-------------</td>
<td>-------------</td>
</tr>
<tr>
<td>Aggregation</td>
<td>Mathematical calculation to perform on the data. The default is Count, which shows the number of records selected. To show only unique records, select Count Distinct. For example, if you want a report on the distinct number of users who have one or more of the roles in a given list of roles. Users with more than one role would be counted twice unless you use Count Distinct. Select Average, Sum, or Count Distinct, to show a list of fields from the selected Table. Select a field to Aggregate by from this list. For example, if you select a duration field, such as Business duration on the Incident table, the aggregated data is expressed in days, hours, and minutes. If you select an integer field, such as Priority, the data is expressed as a decimal value number. If you choose Sum or Average, select Show related fields to aggregate on dot-walked fields. See Selecting fields on related tables using dot-walking.</td>
</tr>
</tbody>
</table>
choice list is often indexed from Critical to Planning as shown in the following figure.

8. Optional: To limit the information displayed in the report, click the filter icon and select conditions to filter the report data. For more details on how conditions are constructed, see *Condition builder*.

   **Note:** Keywords is a special field used for text searches across all fields. Its use in a filter or condition, in combination with other conditions, may return inconsistent results.

9. On the **Style** tab, fill in the fields as appropriate to configure the appearance of the report.
10. Click **Save**. The report is generated.
- Click the Report info icon

![Report info icon]

and add a description of the report.

- Click the sharing icon

![Sharing icon]

to open the **Sharing** menu. On this menu, you can add the report to a dashboard, export the report to PDF, publish the report to the web, and set visibility and schedules. For more information, see *Share a report – Report Designer*.

**Trendbox report style options – Report Designer**

Change the look of your trendbox report.

When you create or edit a report, click the **Style** tab for options to configure the look of your report. The options are organized under two or more of the following tabs: **General**, **Title**, **Legend**, and **Axis**. To see how the report looks with the changed settings, click **Save**.

**Trendbox chart style options**

<table>
<thead>
<tr>
<th>Field</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Custom chart size</td>
<td>Check box to specify the width and height of the report in pixels.</td>
</tr>
<tr>
<td></td>
<td><img src="https://example.com/notes.png" alt="Note: The chart size is ignored when you export the report to PDF. In PDFs, the full page width is used to show the chart." /></td>
</tr>
<tr>
<td>Chart width</td>
<td>Width of the report in pixels. The default value is 600.</td>
</tr>
<tr>
<td></td>
<td>This field is available when <strong>Custom chart size</strong> is selected.</td>
</tr>
<tr>
<td>Chart height</td>
<td>Height of the report in pixels. The default value is 450.</td>
</tr>
<tr>
<td></td>
<td>This field appears when <strong>Custom chart size</strong> is selected.</td>
</tr>
<tr>
<td>Chart size</td>
<td>Chart size. This field is available when <strong>Custom chart size</strong> is cleared. Options are <strong>Small</strong>, <strong>Medium</strong>, and <strong>Large</strong>.</td>
</tr>
<tr>
<td></td>
<td><img src="https://example.com/notes.png" alt="Note: The chart size is ignored when you export the report to PDF. In PDFs, the full page width is used to show the chart." /></td>
</tr>
<tr>
<td>Field</td>
<td>Description</td>
</tr>
<tr>
<td>------------------</td>
<td>---------------------------------------------------------------------------------------------------------------------------------------------</td>
</tr>
<tr>
<td>Decimal precision</td>
<td>Number of decimal places to show. You can show from zero to four decimal places. Default value: 2. To change the default value, create the system property glide.chart.decimal.precision and specify the value.</td>
</tr>
</tbody>
</table>

**Note:** Percentage labels do not change accordingly with the decimal precision specified.

![Chart](chart.png)
<table>
<thead>
<tr>
<th>Field</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Show chart title</td>
<td>When the chart title is shown for the report.</td>
</tr>
<tr>
<td></td>
<td>• <strong>Never</strong>: Never show the chart title.</td>
</tr>
<tr>
<td></td>
<td>• <strong>Report only</strong>: Shows the chart title on reports.</td>
</tr>
<tr>
<td></td>
<td>• <strong>Always</strong>: Shows the chart title on reports, dashboards, and homepages.</td>
</tr>
<tr>
<td>Chart title</td>
<td>The chart title has a maximum length of 40 characters. If no title is entered, the report name is</td>
</tr>
<tr>
<td></td>
<td>used for the title. This field appears when <strong>Report only</strong> or <strong>Always</strong> is selected from the</td>
</tr>
<tr>
<td></td>
<td><strong>Show chart title</strong> list.</td>
</tr>
<tr>
<td>Size of the chart title</td>
<td>Size of the chart title in pixels. This field appears when <strong>Report only</strong> or <strong>Always</strong> is</td>
</tr>
<tr>
<td></td>
<td>selected from the <strong>Show chart title</strong> list.</td>
</tr>
<tr>
<td>Chart title color</td>
<td>Color of the chart title. This field appears when <strong>Report only</strong> or <strong>Always</strong> is selected from</td>
</tr>
<tr>
<td></td>
<td>the <strong>Show chart title</strong> list.</td>
</tr>
<tr>
<td>Custom chart title position</td>
<td>Check box to specify X and Y coordinates for the position of the chart title. This field</td>
</tr>
<tr>
<td></td>
<td>appears when <strong>Report only</strong> or <strong>Always</strong> is selected from the <strong>Show chart title</strong> list.</td>
</tr>
<tr>
<td>Chart title X position</td>
<td>Number of pixels to adjust the chart title position right or left. By default the title appears</td>
</tr>
<tr>
<td></td>
<td>at the center top of the chart. To move the chart title to the right, enter a positive value.</td>
</tr>
<tr>
<td></td>
<td>To move the title to the left, enter a negative value.</td>
</tr>
<tr>
<td></td>
<td>This field appears only when <strong>Custom chart title position</strong> is selected.</td>
</tr>
<tr>
<td>Chart title Y position</td>
<td>Number of pixels to adjust the chart title position up or down. By default the title appears at</td>
</tr>
<tr>
<td></td>
<td>the center top of the chart. To move up the chart title, enter a positive value. To move the</td>
</tr>
<tr>
<td></td>
<td>chart title down, enter a negative value.</td>
</tr>
<tr>
<td></td>
<td>This field appears only when <strong>Custom chart title position</strong> is selected.</td>
</tr>
<tr>
<td>Title horizontal alignment</td>
<td>How the chart title is aligned horizontally. This field is available when **Custom chart title</td>
</tr>
<tr>
<td></td>
<td>position** is cleared.</td>
</tr>
<tr>
<td>Title vertical alignment</td>
<td>How the chart title is aligned vertically. This field appears when <strong>Custom chart title position</strong></td>
</tr>
<tr>
<td></td>
<td>is cleared.</td>
</tr>
<tr>
<td>Title</td>
<td>Title for the axis.</td>
</tr>
<tr>
<td>Axis</td>
<td>Axis for which you want to configure the titles, appearance, and labels.</td>
</tr>
<tr>
<td>Y axis and X axis</td>
<td>Axis for which you want to configure the titles, appearance, and labels.</td>
</tr>
<tr>
<td>Title</td>
<td>Title for the axis.</td>
</tr>
</tbody>
</table>
## Create a trendbox report in the Report Builder

Create a trendbox report to show the distribution of values in a data set as with a box report, but within a specified time period.

<table>
<thead>
<tr>
<th>Field</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Title size</td>
<td>Size of the axis title in pixels. Default value is 12.</td>
</tr>
<tr>
<td>Title bold</td>
<td>Check this box to show the axis title in a bold typeface.</td>
</tr>
<tr>
<td>Opposite</td>
<td>On the <strong>X axis</strong> tab, select this check box to show the X-axis title on the right side of the report instead. On the <strong>Y axis</strong> tab, select this check box to show the Y-axis title on top of the report instead of across the bottom.</td>
</tr>
<tr>
<td>Display grid</td>
<td>On the <strong>X axis</strong> tab, select this check box to show horizontal grid lines on the report.</td>
</tr>
<tr>
<td></td>
<td>On the <strong>Y axis</strong> tab, select this check box to show vertical grid lines on top the report.</td>
</tr>
<tr>
<td>Grid dotted</td>
<td>Check this box to show dotted grid lines instead of solid lines.</td>
</tr>
<tr>
<td>From</td>
<td>Specify a minimum Y-axis value to limit the amount of information in the report. If you select an aggregation field that is not of the type <strong>Number</strong>, the <strong>From</strong> and <strong>To</strong> fields are not available.</td>
</tr>
<tr>
<td><strong>Note</strong>: Depending on configured <strong>Highcharts</strong> settings, the minimum value may be rounded up or down. If you require the settings that affect this changed, contact the administrator.</td>
<td></td>
</tr>
<tr>
<td>To</td>
<td>Specify a maximum Y-axis value to limit the amount of information in the report. If you select an aggregation field that is not of the type <strong>Number</strong>, the <strong>From</strong> and <strong>To</strong> fields are not available.</td>
</tr>
<tr>
<td><strong>Note</strong>: Depending on configured <strong>Highcharts</strong> settings, the maximum value may be rounded up or down. If you require the settings that affect this changed, contact the administrator.</td>
<td></td>
</tr>
<tr>
<td>X axis / Y axis label size</td>
<td>On the <strong>X axis</strong> tab, specify the size of the labels for the rows of the report.</td>
</tr>
<tr>
<td></td>
<td>On the <strong>Y axis</strong> tab, specify the size of the labels for the columns in the report.</td>
</tr>
<tr>
<td>Label bold</td>
<td>Check this box to show the labels of the report in a bold typeface.</td>
</tr>
</tbody>
</table>
Create a trendbox report in the Report Builder

Create a trendbox chart to show the distribution of values in a data set, with an additional time period.

Role required: itil, report_group, report_global, report_admin, or admin. To create a meaningful report, you must have the right to access the data you want to report on.

This task refers to using the Report Builder (Classic UI) in the Kingston release under UI15 and UI16. If you are using the Report Designer, see Create a trendbox report in the Report Designer.

1. Navigate to Reports > Create New:
2. Fill in the fields, as appropriate (see table).
3. Click Save or Insert.

<table>
<thead>
<tr>
<th>Trendbox report configuration options</th>
</tr>
</thead>
<tbody>
<tr>
<td>Field</td>
</tr>
<tr>
<td>Name</td>
</tr>
<tr>
<td>Description</td>
</tr>
<tr>
<td>Field</td>
</tr>
<tr>
<td>-----------</td>
</tr>
<tr>
<td>Data</td>
</tr>
<tr>
<td></td>
</tr>
<tr>
<td>Type</td>
</tr>
<tr>
<td>Style your chart</td>
</tr>
<tr>
<td>Group by</td>
</tr>
<tr>
<td></td>
</tr>
<tr>
<td></td>
</tr>
<tr>
<td></td>
</tr>
<tr>
<td>Trend by</td>
</tr>
<tr>
<td>per</td>
</tr>
<tr>
<td></td>
</tr>
<tr>
<td>Field</td>
</tr>
<tr>
<td>---------------</td>
</tr>
<tr>
<td>Aggregation</td>
</tr>
<tr>
<td>Add Filter Condition</td>
</tr>
<tr>
<td>Add 'OR' Clause</td>
</tr>
<tr>
<td>Add Sort</td>
</tr>
</tbody>
</table>

Add reports to homepages or dashboards, publish to the internet, schedule email distribution of PDFs or URLs of published reports, and share reports with others. See Distribute reports. **Trendbox report style options – Report Builder** Change the look of your trendbox report.

When you create or edit a report, click the gear icon (🔧) after the **Type** field to open the **Style your chart** dialog box with options to configure the look of your chart. Chart options are automatically saved when you click **Save**. To see how the chart looks with the saved settings, click **Close**.

### Trendbox chart style options

<table>
<thead>
<tr>
<th>Field</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>General</td>
<td></td>
</tr>
<tr>
<td>Field</td>
<td>Description</td>
</tr>
<tr>
<td>------------------</td>
<td>-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------</td>
</tr>
<tr>
<td>Custom chart size</td>
<td>Select this check box to specify the chart’s width and height in pixels.</td>
</tr>
<tr>
<td>Chart size</td>
<td>Select a chart size. This field is available when <strong>Custom chart size</strong> is cleared.</td>
</tr>
<tr>
<td>Decimal precision</td>
<td>Number of decimal places to show. You can show from zero to four decimal places. Default value: 2. To change the default value, create the system property <code>glide.chart.decimal.precision</code> and specify the value.</td>
</tr>
</tbody>
</table>

**Note:** Percentage labels do not change accordingly with the decimal precision specified.

![Chart Diagram]
<table>
<thead>
<tr>
<th>Field</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Show chart title</td>
<td>Select when the chart title is displayed.</td>
</tr>
<tr>
<td></td>
<td>• <strong>Never</strong>: never displays the chart title.</td>
</tr>
<tr>
<td></td>
<td>• <strong>Report only</strong>: displays the chart title on reports.</td>
</tr>
<tr>
<td></td>
<td>• <strong>Always</strong>: displays the chart title on reports, dashboards, and homepages.</td>
</tr>
<tr>
<td>Chart title</td>
<td>Enter a title for this chart. The title has a maximum length of 40 characters. If no title is entered, the report name is used for the title. This field is available when <strong>Report only</strong> or <strong>Always</strong> is selected from the <strong>Show chart title</strong> list.</td>
</tr>
<tr>
<td>Chart title size</td>
<td>Enter the size of the chart title in pixels. This field is available when <strong>Report only</strong> or <strong>Always</strong> is selected from the <strong>Show chart title</strong> list.</td>
</tr>
<tr>
<td>Chart title color</td>
<td>Select the color for the chart title. This field is available when <strong>Report only</strong> or <strong>Always</strong> is selected from the <strong>Show chart title</strong> list.</td>
</tr>
<tr>
<td>Custom chart title position</td>
<td>Select this check box to specify the X and Y coordinates for the position of the chart title. This field is available when <strong>Report only</strong> or <strong>Always</strong> is selected from the <strong>Show chart title</strong> list.</td>
</tr>
<tr>
<td>Title horizontal alignment</td>
<td>Select how the chart title is aligned horizontally. This field is available when <strong>Custom chart title position</strong> is cleared.</td>
</tr>
<tr>
<td>Title vertical alignment</td>
<td>Select how the chart title is aligned vertically. This field is available when <strong>Custom chart title position</strong> is cleared.</td>
</tr>
<tr>
<td>Axis</td>
<td>Configure the titles, appearance, and labels of the X and Y axis. For the Y axis, you can also specify a <strong>From</strong> and <strong>To</strong> range.</td>
</tr>
</tbody>
</table>

**Advanced reporting**

Learn how to further customize report visualizations and the data you report on. Topics in this section are appropriate for users who are already familiar with the basics of report creation.

**Drilling down within reports**

You can drill down within a report to visualize a subset of its data. For example, you can click on the critical section of a report sorted by priority to view the categories of those critical incidents.

For reports with a defined drilldown, click on a portion of the chart to display a subset of data. The subset may use a different chart type. In the example, the user clicks on the critical incidents in a bar chart to reveal the categories of critical incidents in a semi-donut chart.
All chart types except for list, histogram, calendar, control, box, and trendbox charts support drilling down. Drilling down is not available on charts added to forms, and charts embedded as iframes. You can define any number of drilldown levels for a report.

**Note:** Drilldown reports do not export to PDF. If you select Export to PDF on a drilldown, a PDF of the top level report is generated.

### Define a report drilldown in the Report Designer

You can define a report drilldown to allow reporting users to view subsets of the report data. When you define a report drilldown, it applies only to the report for which you define it. The report that you want to define a drilldown for must exist.

**Note:** You can only drill down to data in the same table as the report. The following report types do not support the drilldown feature: list, histogram, calendar, control, box, and trendbox.

1. Navigate to Reports > View / Run.
2. Select the report you want to add a drilldown to.
3. Click the **Show report structure** icon.

   ![Show report structure icon](image)

   A badge on the Report structure icon displays the number of defined drilldowns.

4. Click the **Add drilldown** icon.

   ![Add drilldown icon](image)

**Drilldown example**

5. Enter a **Title** for the drilldown and click **Next**.
6. Select the chart **Type** to display the data and click **Next**. See *Creating reports*.
   The drilldown chart type can be different than the parent report.
7. Configure the report. Configuration options depend on the selected **Type**.
8. Click **Save drilldown**.

The user can now drill down from the top-level report to the specified drilldown report visualizations.

*Note:* All users can view report visualizations, such as pie charts and column reports. However, the last level of a drilldown is always a list. Platform access control lists determine user access to list information. Users who do not have rights to any part of the list data see the message "Number of rows removed from this list by Security constraints:" followed by the number. For more information, see *Access control rules*.
Define a report drilldown in the Report Builder

You can define a report drilldown to allow reporting users to view subsets of the report data. When you define a report drilldown it applies only to the report for which you define it.

The report that you want to define a drilldown for must exist.

Note: You can only drill down to data in the same table as the report. The following report types do not support the drilldown feature: list, histogram, calendar, control, box, and trendbox.

1. Navigate to Reports > View / Run.
2. Select the report you want to add a drilldown to.
3. Click the report options arrow next to the Save button.
Save menu > Report drilldown

5. Enter a **Title** for the drilldown.
6. Select the chart **Type** to display the data.
   The drilldown chart type may be different than the parent report.
7. Click the cog icon to configure the report. Configuration options depend on the selected Type. See Creating reports.

8. Click Save.

The user can now drill down from the top level report to the specified drilldown report visualizations.

**Note:** All users can view report visualizations, such as pie charts and column reports. However, the last level of a drilldown is always a list. Platform access control lists determine user access to list information. Users who do not have rights to any part of the list data see
Set the on-click behavior of a report

You can configure a URL to open when a user clicks a report.

Role required:

- When creating reports: Any
- When editing reports created by others: report_admin, report_global, or report_group

Redirect the user to a URL rather than to the configured drilldown or the list that underlies the clicked section of a report.

1. Navigate to Reports > View / Run.
2. Select the report you want to configure.
3. Click the Show report structure icon.
4. Click the link icon.
5. In the Set redirect URL dialog box, enter relative link in the instance, for example, /$knowledge.do. When the user points to the report, the tooltip includes the text Click to open.
6. Optional: Enter a label for the URL. When the user points to the report, the tooltip includes the text Click to open and the text of the label, for example, Click to open Knowledge Base.
7. Click Save.

When the user clicks the report, the redirect URL replaces any drilldown functionality.

Using multiple datasets in a report

You can create reports that use datasets from multiple tables in a single report.

The following report types support multiple datasets: bar, horizontal bar, line, column, area, spline.

Multiple Group bys are not supported on multiple datasets. When using multiple datasets, the report legend is always displayed.
Add an additional dataset to a report — Report Designer

Add an extra dataset to a report to visualize data from multiple sources in a single report.

Role required: itil. The property glide.ui.doctype must be enabled.

The following limitations apply to specific report types.

- All datasets must be the same type. For example, if the base report uses a time series chart, other datasets added to the report must also use a time series chart.
- If using time series charts, all datasets must have the same Per field value to ensure that the frequency interval is the same for all data.
- If using bar or horizontal bar charts, all data must have the same Group by value. For example, the data must have the same reference table or the same column name.
- Legends are always visible on reports with multiple datasets, even if the Show legend option is disabled in the Style Options of the primary report.

1. Navigate to Reports > View / Run.
2. Select a report with a type that supports multiple datasets.
   You can add additional sets to bar, horizontal bar, line, column, area, and spline reports.
3. Click the Show report structure icon
4. Click Add dataset.
5. On the Data tab, provide a custom name for the additional data set to appear in the legend of the report, select a data source, and click Next.
6. On the **Configure** tab, specify the following fields the same way that you would configure a standalone report.

**Note:** The **Display data table** option is not available from the **Add dataset** module, but is only available from the **Configure** tab of the main Report Designer. If the **Display data table** option is selected, only the first dataset will display on the data table.

<table>
<thead>
<tr>
<th>Field</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Group by</td>
<td>For bar and horizontal bar reports, the <strong>Group by</strong> value must have the same reference table or the same column name as specified in the base report.</td>
</tr>
<tr>
<td>Show as a right Y axis</td>
<td>Add an extra Y axis on the right side of the report for this data.</td>
</tr>
<tr>
<td>Title</td>
<td>Specify the Y-axis label in the <strong>Title</strong> field.</td>
</tr>
<tr>
<td>From and To fields</td>
<td>Specify custom start and end values for the additional Y axis.</td>
</tr>
</tbody>
</table>

**Warning:** When using multiple datasets with separate Y axes, the Y axes may show a greater range than specified in the **From** and **To** fields. This greater range depends on the actual Y values for all datasets. The **From** and **To** field values from the parent report may also be overridden. This behavior ensures that all data can be accurately displayed on the chart.

7. Click **Save dataset**.

The report is generated with the information from the additional dataset.

**Add an additional dataset to a report — Report Builder**

Add an extra dataset to a report to visualize data from multiple sources in a single report.

Role required: itil. The property **glide.ui.doctype** must be enabled.

The following limitations apply to specific report types.

- All datasets must be the same type. For example, if the base report uses a time series chart, other datasets added to the report must also use a time series chart.
- If using time series charts, all datasets must have the same **Per** field value to ensure that the frequency interval is the same for all data.
- If using bar or horizontal bar charts, all data must have the same **Group by** value. For example, the data must have the same reference table or the same column name.
- Legends are always visible on reports with multiple datasets, even if the **Show legend** option is disabled in the Style Options of the primary report.

1. Navigate to **Reports > View / Run**.
2. Select a report with a type that supports multiple datasets.
   You can add additional sets to bar, horizontal bar, line, column, area, and spline reports.
3. Click the arrow next to the **Save** button and select **Multiple dataset**.
4. In the **Add extra data series to the chart** dialog box, specify the following fields the same way that you would configure a standalone report.

<table>
<thead>
<tr>
<th>Field</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Series name</td>
<td>A custom name for the additional dataset.</td>
</tr>
<tr>
<td><strong>Data</strong></td>
<td>Specify <strong>Table</strong> or <strong>Report source</strong> and the name of the data source.</td>
</tr>
<tr>
<td><strong>Note:</strong></td>
<td>If you select a data source used by existing reports, a notification will display prompting you to view them.</td>
</tr>
<tr>
<td>Type</td>
<td>Select the report type.</td>
</tr>
<tr>
<td>Field</td>
<td>Value</td>
</tr>
<tr>
<td>----------------</td>
<td>----------------------------------------------------------------------------------------------------------------------------------------</td>
</tr>
<tr>
<td>Group by</td>
<td>For bar and horizontal bar reports, the <strong>Group by</strong> value must have the same reference table or the same column name as specified in the base report.</td>
</tr>
<tr>
<td>Stacked by</td>
<td>For bar and horizontal bar reports, the <strong>Stacked by</strong> value must have the same reference table or the same column name as specified in the base report.</td>
</tr>
<tr>
<td>List view</td>
<td>Click the magnifier icon to select a list view. For more information, see View Management.</td>
</tr>
</tbody>
</table>
| Chart color    | Colors used in the report. If you do not group or stack the report, **Use one color** is automatically selected. Select a single predefined system color. If you group or stack the report, select one of the following options:  
  - **Use color palette**: Select a color palette from the predefined system color palettes.  
  - **Use several colors**: Define a custom set of Colors using hex codes. You can add any number of colors.  
  - **Use chart colors**: Use the colors defined in Reports > Chart Colors. |
| Set color      | Color used in the report. This field shows when you select **Use one color** from the Chart color list. Click the search icon ( ) to choose from the Chart color schemes or Color Definitions list. |
### Field | Value
--- | ---
Aggregation | Mathematical calculation to perform on the data. The default is **Count**, which shows the number of records selected. To show only unique records, select **Count Distinct**. For example, if you want a report on the distinct number of users who have one or more of the roles in a given list of roles. Users with more than one role would be counted twice unless you use **Count Distinct**.

Select **Average**, **Sum**, or **Count Distinct**, to show a list of fields from the selected **Table**. Select a field to aggregate by from this list. For example, if you select a duration field, such as **Business duration** on the Incident table, the aggregated data is expressed in days, hours, and minutes. If you select an integer field, such as **Priority**, the data is expressed as a number.

**Note:** For duration values, the unit of measurement displayed in the aggregation axis cannot be customized.

Display data labels | Check this box to show the value for each data point.
Show in Y axis | (Optional) Add an extra Y axis on the right side of the report for this data.

5. Click **Save**.

The report is generated with the information from the additional dataset.

**Add an additional group by or stack by – Report Designer**

You can configure a report to let users adjust its grouping and stacking.

Role required: itil

Configure alternative **Group by** and **Stack by** choices that users can select when viewing the chart. Additional group bys can be added to any report that supports group bys (such as bar or pie) and to list reports as columns. When you configure an additional group by to a bar or horizontal bar, it is also added as an additional stack by. You can add variables and variable groups as additional group bys.

**Note:** Available **Stack by** fields are limited to catalog variables, reference fields, choice lists, and boolean values. Date/time, integer, long, string, list, and text fields cannot be used as stacked fields.

1. Navigate to **Reports > View / Run**.
2. Select a report.
3. On the Configure tab, click **Additional group by**.
4. Move one or more fields to the **Selected** list.
5. Optional: Select a **Stack by** field used to show the relationship of individual items from the selected field to the whole. For example, group a bar chart of incidents by **Category** and...
stack by **Priority**. The viewer can then determine at a glance the proportion of high, medium, and low priority issues for each category.

Users viewing the report can select one of these fields to group or stack the report data. The report **Group by** and **Stack by** field values are the default choices.

**Note:** Only bar and horizontal bar reports use stacked data. Other report types allow only grouping.

6. Arrange the fields in the **Selected** column in the order you want them to appear to users.
7. Click **Close**.
8. In the report builder, click **Save**.

### Add an additional group by or stack by – Report Builder

You can configure a report to let users adjust its grouping and stacking.

Role required: itil

Configure alternative **Group by** and **Stacked by** choices that users can select when viewing the chart. Additional group bys can be added to any report that supports group bys (such as bar or pie) and to list reports as columns. When you configure an additional group by to a bar or horizontal bar, it is also added as an additional stack by. You can add variables and variable groups as additional group bys.

**Note:** Available **Stacked by** fields are limited to catalog variables, reference fields, choice lists, and boolean values. Date/time, integer, long, string, and text fields cannot be used as stacked fields.

1. Navigate to **Reports** > **View / Run**.
2. Select a report.
3. Click the plus icon next to the **Group by** field.
4. Move one or more fields to the **Selected** list.
5. Optional: Select a **Stack by** field used to show the relationship of individual items from the selected field to the whole. For example, group a bar chart of incidents by **Category** and stack by **Priority**. The viewer can then determine at a glance the proportion of high, medium, and low priority issues for each category.

Users viewing the report can select one of these fields to group or stack the report data. The report **Group by** and **Stack by** field values are the default choices.

**Note:** Only bar and horizontal bar reports use stacked data. Other report types allow only grouping.

6. Arrange the fields in the **Selected** column in the order you want them to appear to users.
7. Click **Close**.
8. In the report builder, click **Save**.

### Create a report from an imported Microsoft Excel document

In addition to creating reports from tables and data sources maintained on your instance, you can import Excel spreadsheets (.xlsx files) of data maintained outside of your instance and create reports from those files.

Role required: admin, sys_admin, report_admin, pa_admin, or pa_power_user
You must have Performance Analytics to create reports with imported data. See Activate Performance Analytics.

**Note:** The following restrictions apply to imported data:
- The maximum file size is 2 MB.
- The maximum number of rows is 10,000. The maximum number of columns is 25.

**Note:** You can import .xlsx files of up to 50,000 rows, but only the first 10,000 rows appear in your data set.
- Only the first sheet of an .xlsx file with multiple sheets is imported.
- The first row and first column of the imported file must not be empty. The first row is used to identify the column names.
- It is not possible to join columns, calculate fields, or make other changes to the table after import. These changes must be made before import.
- The imported .xlsx file must have a specified expiration date.
- If the owner deletes the table after import, reports based on the imported table are also deleted.

**Note:** Importing report data in this way is useful when you have information that is maintained outside of your instance, for example, recurring third-party data. To import an external data set into your instance permanently, see Importing data using import sets.

1. Navigate to Reports > Create New.
2. On the Data tab, give the report a name that reflects the information being grouped.
3. In the Source type list, select External import.

4. Choose an existing imported report source, or click the Upload icon to import a new file.
   1. Click and drag the file onto the drop zone or click Browse files to choose it from your file system.
   2. Enter a name for the uploaded file.
3. Set the expiration of the file. After this date, the imported file is deleted and reports based on it are no longer available.

4. Select the visibility for the uploaded file: Only you, all users, or a specified group of users, groups, or roles.

5. Click **Upload**.

6. Click **Done**.

5. Click **Next**.

6. On the **Type** tab, select the type of report you want to create and click **Next**. For information on specific reports, see *Creating reports*.

   A preliminary version of the report is displayed. To view the updated report at any time, click **Run**.

7. On the **Configure** tab, fill in the fields as appropriate for the report type.

8. Optional: To limit the information displayed in the report, click the filter icon and select conditions to filter the report data.

   For more details on how conditions are constructed, see *Condition builder*.

   **Note:** Keywords is a special field used for text searches across all fields. Its use in a filter or condition, in combination with other conditions, may return inconsistent results.

9. On the **Style** tab, fill in the fields as appropriate to configure the appearance of the report.

10. Click **Save**.

    The report is generated.

The report is created from the external source. Reports on a dashboard or a homepage show an icon to show that the report is temporary and expires when the external data source expires.

- Click the Report info icon

  and add a description of the report.

- Click the sharing icon

  to open the **Sharing** menu. On this menu, you can add the report to a dashboard, export the report to PDF, publish the report to the web, and set visibility and schedules. For more information, see *Share a report – Report Designer*.

- Click the sharing icon

  to open the **Sharing** menu. On this menu, you can share the report with users and groups, add the report to a dashboard, and publish the report to the web. See *Share a report – Report Designer* for more information.

- Click the sharing icon

  to open the **Sharing** menu. On this menu, you can add the report to a dashboard, export
the report to PDF, publish the report to the web, and set visibility and schedules. For more information, see *Share a report – Report Builder*.

- Click the sharing icon

( ) to open the *Sharing* menu. On this menu, you can share the report with users and groups, add the report to a dashboard, and publish the report to the web. See *Share a report – Report Builder* for more information.

**Edit an imported data source**

You can edit imported Excel spreadsheets (.xlsx files) of data maintained outside of your instance.

Only the person who imported the data source can edit it.

1. Navigate to Reports > View / Run.
2. Click the name of a report that uses to imported data source to open the report in the Report Designer.
3. On the Data tab, click the pencil icon ( ) next to the name of the external import.
4. In the *Edit external import* dialog box you can make these changes:
   - **Change file**
     Select this option to upload a new .xlsx file with the same name and structure.
   - **Name**
     Provide a new name for the external import. This name appears on the Data tab of the Report Designer in the External Import choice list.
   - **Expire**
     Set a new expiry date for the external import. After this date, the imported file is deleted and reports based on it are no longer available.
   - **Visible to**
     Change the visibility for the uploaded file: Only you, Everyone, or Custom. Select Custom to specify users, groups, or roles.
     If you select Custom, click Next to choose who can use the data in the imported file and click Submit.
5. Click Submit.

If you changed the file, the data from the new file replaces that of the old in any reports that are based on the imported file. Changed name, expiry date, and visibility apply to the imported file.

**Create time series reports from MetricBase data**

In addition to creating time series reports from tables and data sources maintained on your instance, and imported data, you can also create time series reports from MetricBase data in your instance.

You must have the MetricBase product. For more information, see *Request the MetricBase product*.

1. Navigate to Reports > Create New.
2. On the Data tab, give the report a name that reflects the information being grouped.
3. In the **Source type** list, select **MetricBase**.

   **Note:** The **MetricBase** menu option is only available if you have MetricBase in your instance.

4. Choose an existing MetricBase table.

5. Click **Next**.

6. On the **Type** tab, select the type of report you want to create and click **Next**.
   Only Time Series reports are available. Choose from Area, Spline, Line, and Step Line reports. For information on specific reports types, see *Creating reports*.

   A preliminary version of the report is displayed. To view the updated report at any time, click **Run**.

7. On the **Configure** tab, fill in the following fields and click **Next**.

   **Configure tab**

<table>
<thead>
<tr>
<th>Field</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Group by</td>
<td>Group report data by any of the applicable fields in the Metrics table.</td>
</tr>
</tbody>
</table>
### Field | Description
--- | ---
Metric | Metrics are determined in your MetricBase database. Click the plus icon (+) to add multiple metrics. For each metric you can set one or more transforms. Click the minus icon (-) to remove a metric.

Transform | • Select no transforms to show the raw data in your report.  
• Select one transform.  
• Select multiple transforms to create a transform chain. A transform chain applies a new transform to the results of the previous transform.  

For more information, see MetricBase transforms.

Time range | Set a period of time for the report to cover. Relative values are a number of minutes, hours, days, months, or years from the current time. Absolute ranges enable you to specify the start time and end time of the report.

Display data table | Check this box to show report data in a grid beneath the report. The table appears on dashboards where the report is added. All reports that use charts, including reports that are used on dashboards, show the table of report data when the glide.ui.section508 system property is set to true. The glide.ui.section508 property overrides the Display data table field.

---

8. Optional: To limit the information displayed in the report, click the filter icon and select conditions to filter the report data. For more details on how conditions are constructed, see Condition builder.

**Note:** Keywords is a special field used for text searches across all fields. Its use in a filter or condition, in combination with other conditions, may return inconsistent results.

9. On the Style tab, fill in the fields as appropriate to configure the appearance of the report. See the Style options section of the report you are creating for more information.

- Area and spline report style options – Report Designer
- Line report style options – Report Designer
- Step line report style options — Report Designer

10. Click Save.

The report is generated.

The report is created from the MetricBase source. If the report visualization is truncated, a message displays
• Click the Report info icon
![Info Icon]
and add a description of the report.

• Click the sharing icon
![Share Icon]
to open the Sharing menu. On this menu, you can add the report to a dashboard, export the report to PDF, publish the report to the web, and set visibility and schedules. For more information, see Share a report – Report Designer.

• Click the sharing icon
![Share Icon]
to open the Sharing menu. On this menu, you can share the report with users and groups, add the report to a dashboard, and publish the report to the web. See Share a report – Report Designer for more information.

• Click the sharing icon
![Share Icon]
to open the Sharing menu. On this menu, you can share the report with users and groups, add the report to a dashboard, and publish the report to the web. See Share a report – Report Builder for more information.

• Click the sharing icon
![Share Icon]
to open the Sharing menu. On this menu, you can share the report with users and groups, add the report to a dashboard, and publish the report to the web. See Share a report – Report Builder for more information.

MetricBase transforms
Transforms enable you to visualize MetricBase data in different ways.

Available Transforms
All transforms except for the Label transform are mathematical functions you can apply to the metrics data. Apply multiple transforms to create a transform chain.

<table>
<thead>
<tr>
<th>Transform</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Label</td>
<td>Enables you to set a label for your transform.</td>
</tr>
<tr>
<td>Average</td>
<td>Calculates the arithmetic means of all currently selected metrics.</td>
</tr>
<tr>
<td>Min</td>
<td>Shows the smallest value at each point in time for the metric dataset.</td>
</tr>
<tr>
<td>Max</td>
<td>Shows the largest value at each point in time for the metric dataset.</td>
</tr>
<tr>
<td>Count</td>
<td>Shows the count of data points within the metric dataset.</td>
</tr>
<tr>
<td>Transform</td>
<td>Description</td>
</tr>
<tr>
<td>-------------------</td>
<td>-----------------------------------------------------------------------------</td>
</tr>
<tr>
<td>Sum</td>
<td>Calculates the sum of the data points within the metric dataset.</td>
</tr>
<tr>
<td>Log</td>
<td>Calculates the natural logarithm of all values in the dataset.</td>
</tr>
<tr>
<td>Median</td>
<td>Shows the median of the metric dataset. The median separates the higher values of the metric dataset from the lower values.</td>
</tr>
<tr>
<td>Standard Deviation</td>
<td>Calculates the standard deviation across the underlying data. Used to quantify the variation or dispersion of a set of data values in the metric dataset.</td>
</tr>
<tr>
<td>Envelope</td>
<td>Shows the minimum and maximum values of the metric dataset.</td>
</tr>
<tr>
<td>Top</td>
<td>Shows only the highest specified number of values of the metric dataset.</td>
</tr>
<tr>
<td>Bottom</td>
<td>Shows only the lowest specified number of values of the metric dataset.</td>
</tr>
<tr>
<td>Add</td>
<td>Calculates an outcome by adding the specified value to the data points in the dataset.</td>
</tr>
<tr>
<td>Subtract</td>
<td>Calculates an outcome by subtracting the specified value from the data points in the dataset.</td>
</tr>
<tr>
<td>Multiply</td>
<td>Calculates an outcome by multiplying the data points in the dataset by a specified value.</td>
</tr>
<tr>
<td>Divide</td>
<td>Calculates an outcome by dividing the data points in the dataset by a specified value.</td>
</tr>
<tr>
<td>Interpolate</td>
<td>Constructs new data points a specified duration to calculate an outcome.</td>
</tr>
<tr>
<td>Fractiles</td>
<td>Returns a new series with values representing the given percentiles of the underlying data. For example, to query for the 90th and 99th percentile response times, supply an array of (0.9,0.99).</td>
</tr>
<tr>
<td>Transform</td>
<td>Description</td>
</tr>
<tr>
<td>-----------</td>
<td>-------------</td>
</tr>
</tbody>
</table>
| Resample  | Expands or contracts the data to fit the given period. When you extend the period, the aggregation function is used to combine the data to fit the new period. When you shorten the period, the existing data is propagated to the underlying periods. Supported aggregation functions:  
  * Average  
  * Minimum  
  * Maximum  
  * Last (The last defined value in the period window) |
| Filter    | Produces a new series with values calculated using the given aggregation function over a sliding time window of the given duration. A sliding 15-minute average would use the Filter transform with the **Average** aggregation function and a duration of 15 minutes. Supported aggregation functions:  
  * Average  
  * Minimum  
  * Maximum  
  * Last (The last defined value in the period window) |
| Partition | Produces a new series with values calculated using the given aggregation function over a fixed time frame of a given duration. Specify the **Base** (a time stamp) to align the partition window. Supported aggregation functions:  
  * Average  
  * Minimum  
  * Maximum  
  * Last (The last defined value in the period window) |

**Configure charts on forms**

You can add reports to forms such as change requests, and configure the report visualizations to display information relevant to the user of the form. The configuration is specific to the current view.

Role required: admin
The following report types are not supported on forms: List, Pivot, Multilevel Pivot, Calendar, and Single Score.

1. Select the table on which you want to configure a form with a report in the Filter navigator and select a record. For example, select a record from task.list.

2. From the context menu, select Configure > Form Layout.

3. From the Available list, add *Chart to the Selected column. Use the up and down arrows to position the report on the form.

4. Optional: Specify a label for the chart. The label appears next to the report in the form. If you do not specify a label, the label New Chart is used.

5. Click Save.

A grey box with the text Configure chart appears on the form in the specified position.

6. Click Configure chart.

7. Click the search icon to select a report.

8. Optional: Specify the height of the chart. The default value is 300 pixels.

9. Optional: You can filter the data in the report based on selected fields or based on a scripted filter or an encoded query. The first field must be visible on the form. To add fields to the form, select Configure > Form Layout and use the Available Fields slush bucket.

On the Report condition extension tab, select the form field on which the report is updated and the field on the report source table to which the form field is compared.

To specify a scripted filter or an encoded query, select Advanced Condition Extensions and paste the script in the Report Qual text box. Advanced condition extensions, if present, override report condition extensions.

10. Click Update.

11. To change the configuration, right click on the label and select Configure chart.
The selected report appears on all forms which are of the same type as the one selected. These reports are filtered based on the report condition extensions.

**Embedding reports in Jelly**

You can embed reports in any Jelly-based element, such as a UI page.

**Enabling Embedding**

To enable embedding reports in Jelly, add the following element to your Jelly code.

```xml
<g:inline template="reporting_includes.xml" />
```

After adding this code, you can embed an existing report, or generate a report within the Jelly code.

**Embedding an existing report**

You can embed an existing report by calling the `embedReportById(targetSpan, reportId)` function.

For example:

```xml
<j:jelly trim="false" xmlns:j="jelly:core" xmlns:g="glide"
xmlns:j2="null" xmlns:g2="null">
  <g:inline template="reporting_includes.xml" />
  <div id="report_stuff" />
</j:jelly>
```

```javascript
var div = $j("#report_stuff");
embedReportById(div, <report sys_id>);
```
Alternatively, you can embed the JavaScript in the jelly code:

```xml
<xml version="1.0" encoding="utf-8">
  <j:jelly trim="false" xmlns:j="jelly:core" xmlns:g="glide"
  xmlns:j2="null" xmlns:g2="null">
    <g:inline template="reporting_includes.xml" />
    <div id="report_stuff" />
    <script>
      var div = $j("#report_stuff");
      embedReportById(div, <report sys_id>);
    </script>
  </j:jelly>
</xml>
```

### Parameters

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>targetSpan</td>
<td>The jQuery element to embed the chart in. The chart uses the size of this element.</td>
</tr>
<tr>
<td>reportId</td>
<td>The sys_id of the report you want to embed.</td>
</tr>
</tbody>
</table>

### Generate and embed a report

You can embed a report within the UI by calling the `embedReportByParams(targetSpan, params)` function. When embedding a report in this way, you can generate a new report using parameters, or specify a report `sys_id` to display that report.

For example:

```xml
<xml version="1.0" encoding="utf-8">
  <j:jelly trim="false" xmlns:j="jelly:core" xmlns:g="glide"
  xmlns:j2="null" xmlns:g2="null">
    <g:inline template="reporting_includes.xml" />
    <div id="report_stuff" />
  </j:jelly>
</xml>
```

```javascript
var div = $j("#report_stuff");
embedReportByParams(div, params);
```

Alternatively, you can embed the JavaScript inside the jelly code:

```xml
<xml version="1.0" encoding="utf-8">
  <j:jelly trim="false" xmlns:j="jelly:core" xmlns:g="glide"
  xmlns:j2="null" xmlns:g2="null">
    <g:inline template="reporting_includes.xml" />
    <div id="report_stuff" />
    <script>
      var div = $j("#report_stuff");
      embedReportByParams(div, params);
    </script>
  </j:jelly>
</xml>
```
Parameters

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>targetSpan</td>
<td>The jQuery element to embed the chart in.</td>
</tr>
<tr>
<td>parms</td>
<td>A JSON object defining the report. Available parameters depend on the report type.</td>
</tr>
</tbody>
</table>

Embedded report parameters

When embedding a report in a Jelly element, you can define a report at any time by passing parameters.

Common parameters

Certain parameters are used by multiple report types.

Common parameters

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Description</th>
<th>Default value</th>
</tr>
</thead>
<tbody>
<tr>
<td>jvar_report_id</td>
<td>The sys_id of a report record. If you pass this parameter, do not specify any other parameters. All values are taken from the report record.</td>
<td></td>
</tr>
<tr>
<td>sysparm_title</td>
<td>The title of the report.</td>
<td></td>
</tr>
<tr>
<td>sysparm_table</td>
<td>The table to report on. Specify this value or sysparm_report_source_id, but not both.</td>
<td></td>
</tr>
<tr>
<td>sysparm_report_source_id</td>
<td>The sys_id of a report source. Specify this value or sysparm_table, but not both. This value is used instead of sysparm_table if you pass both.</td>
<td></td>
</tr>
<tr>
<td>sysparm_type</td>
<td>The type of report to create. Possible values are: list, line, line_bar, area, spline, bar, horizontal_bar, pareto, hist, pie, donut, semi_donut, speedometer, dial, pivot, pivot_v2, funnel, calendar, pyramid, box, trend, control, trendbox, and heat map.</td>
<td>line</td>
</tr>
<tr>
<td>sysparm_field</td>
<td>The field from the specified table to group data by. This value is required for time series, column, bar, pie, donut, funnel, pyramid, box, trend, and trend box reports. This value is optional for list reports.</td>
<td></td>
</tr>
<tr>
<td>sysparm_query</td>
<td>The filter to apply to the data before generating the report. Specify a query string for this value. To sort your query results by a specific field, add ^ORDERBY&lt;field_name&gt; or ^ORDERBYDES&lt;field_name&gt; to the end of the query string. ORDERBY sorts the query by ascending order; ORDERBYDES sorts the query by descending order.</td>
<td></td>
</tr>
<tr>
<td>Parameter</td>
<td>Description</td>
<td>Default value</td>
</tr>
<tr>
<td>--------------------</td>
<td>-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------</td>
<td>---------------</td>
</tr>
<tr>
<td>sysparm_aggregate</td>
<td>The aggregation type. Possible values are: AVG, COUNT, SUM, and COUNT_DISTINCT</td>
<td>COUNT</td>
</tr>
<tr>
<td>sysparm_sumfield</td>
<td>The field to aggregate data on. This parameter does not apply when using a COUNT aggregation type.</td>
<td></td>
</tr>
<tr>
<td>sysparm_display_grid</td>
<td>A boolean value that controls whether the report displays a data grid.</td>
<td>false</td>
</tr>
<tr>
<td>sysparm_show_other</td>
<td>A boolean value that controls whether the Other group appears on the report. This group appears only if the number of groups exceeds the number specified in the sysparm_others parameter. This parameter applies to bar, pie, funnel, pyramid, pivot, and heat map reports.</td>
<td>true</td>
</tr>
<tr>
<td>sysparm_others</td>
<td>The maximum number of individual groups of data to display. Any additional data groups are combined into the Other group. This parameter applies to bar, pie, funnel, pyramid, pivot, and heat map reports.</td>
<td></td>
</tr>
<tr>
<td>sysparm_source_type</td>
<td>The source of the embedded report. Optional. Possible values are: table, metricbase, source, import</td>
<td>table</td>
</tr>
<tr>
<td>sysparm_set_color</td>
<td>The color use setting for the report. Possible values are: one_color, color_palette, several_colors</td>
<td>color_palette</td>
</tr>
<tr>
<td>sysparm_color_palette</td>
<td>The color palette that the report uses. This parameter is used when sysparm_set_color=&quot;color_palette&quot;. Possible value: The sys_id of a color palette</td>
<td>Default UI14</td>
</tr>
<tr>
<td>sysparm_color</td>
<td>The color that the report uses. This parameter is used when sysparm_set_color=&quot;one_color&quot;. Possible value: The sys_id of a color</td>
<td></td>
</tr>
<tr>
<td>sysparm_chart_colors</td>
<td>The set of chart colors that the report uses. This parameter is used when sysparm_set_color=&quot;several_colors&quot;. Possible value: A comma-separated list of color hex codes</td>
<td></td>
</tr>
<tr>
<td>sysparm_show_marker</td>
<td>A marker is the value, such as a number, that is represented by a dot in a line or another graphic element in a chart. This parameter is a boolean value that controls whether the marker appears. Possible values: true or false</td>
<td>true</td>
</tr>
<tr>
<td>sysparm_show_empty</td>
<td>A boolean value that controls if records with empty grouping or trend values appear on the report.</td>
<td>false</td>
</tr>
<tr>
<td>Parameter</td>
<td>Description</td>
<td>Default value</td>
</tr>
<tr>
<td>-----------------------------</td>
<td>-----------------------------------------------------------------------------</td>
<td>---------------</td>
</tr>
<tr>
<td>sysparm_stack_field</td>
<td>The field used to control stacking on bar and column reports.</td>
<td></td>
</tr>
<tr>
<td>sysparm_bar_unstack</td>
<td>A boolean value that controls if stacked data is presented as a single bar or column, or as multiple bars.</td>
<td>false</td>
</tr>
<tr>
<td>sysparm_box_field</td>
<td>The numeric field used to measure the data. This parameter is required for box and histogram reports.</td>
<td></td>
</tr>
<tr>
<td>sysparm_trend_field</td>
<td>The date-time field used to organize trend data. This parameter is required for time series, trend, and box reports.</td>
<td></td>
</tr>
<tr>
<td>sysparm_trend_interval</td>
<td>The interval to measure trend values by. Possible values are: year, quarter, month, week, dayofweek, hour, and date.</td>
<td>year</td>
</tr>
<tr>
<td>sysparm_compute_percent</td>
<td>The value to use when displaying report percentages. You can display percentages based on the total record count, or by the specified aggregate. Possible values are: aggregate and count</td>
<td>count</td>
</tr>
<tr>
<td>sysparm_funnel_neck_percent</td>
<td>A number 1–100 that defines the percentage of a funnel report that is the neck of the funnel.</td>
<td>30</td>
</tr>
<tr>
<td>sysparm_show_chart_data_label</td>
<td>A boolean value that controls if data labels appear on the report.</td>
<td>false</td>
</tr>
<tr>
<td>sysparm_show_zero</td>
<td>A boolean value that controls if zeroes appear on multipivot and heat map reports.</td>
<td></td>
</tr>
<tr>
<td>sysparm_ct_row</td>
<td>The field used to define the rows in heat map and bubble reports.</td>
<td></td>
</tr>
<tr>
<td>sysparm_ct_column</td>
<td>The field used to define the columns in heat map and bubble reports.</td>
<td></td>
</tr>
<tr>
<td>sysparm_y_axis_category_fields</td>
<td>The field used to define the rows in multipivot reports. Specify up to five comma-separated field names.</td>
<td></td>
</tr>
<tr>
<td>sysparm_x_axis_category_fields</td>
<td>The field used to define the columns in multipivot reports. Specify up to three comma-separated field names.</td>
<td></td>
</tr>
<tr>
<td>sysparm_list_ui_view</td>
<td>The sys_id of a list view to use when a user drills into the report.</td>
<td></td>
</tr>
<tr>
<td>sysparm_show_marker</td>
<td>A boolean value that controls if markers appear at every plotted point on a report.</td>
<td>true</td>
</tr>
</tbody>
</table>

**Service catalog parameters**

Certain parameters apply only to reports created on service catalog tables, such as the Requested Item (sc_req_item) table. These parameters are not available on list or calendar type reports.
Service catalog report parameters

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>sysparm_sc_groupby_item_id</td>
<td>The sys_id of a catalog item. Use this parameter with the <code>sysparm_sc_groupby_variable_id</code> parameter to group a service catalog report based on a catalog variable value. These parameters replace the <code>sysparm_field</code> parameter when grouping on service catalog variables.</td>
</tr>
<tr>
<td>sysparm_sc_groupby_variable_id</td>
<td>The sys_id of the catalog item variable used to determine how data is grouped on the report. This variable must belong to the catalog item specified in the <code>sysparm_sc_groupby_item_id</code> parameter.</td>
</tr>
<tr>
<td>sysparm_sc_stackby_item_id</td>
<td>The sys_id of a catalog item. Use this parameter with the <code>sysparm_sc_stackby_variable_id</code> parameter to stack a service catalog report based on a catalog variable value. These parameters replace the <code>sysparm_stack_field</code> parameter when grouping on service catalog variables. Only reports that support stacking, such as bar reports, support these parameters.</td>
</tr>
<tr>
<td>sysparm_sc_stackby_variable_id</td>
<td>The sys_id of the catalog item variable used to determine how data is grouped on the report. This variable must belong to the catalog item specified in the <code>sysparm_sc_stackby_item_id</code> parameter.</td>
</tr>
</tbody>
</table>

MetricBase parameters

To use MetricBase in an embedded report, the `sysparm_source_type` parameter must be set to "metricbase".

MetricBase also requires the `sysparm_custom_configuration` parameter, which has the following syntax:

```
sysparm_custom_config: "{query_condition:\"\",transforms:[{transform: {transform:\"Reference\",name:\"chart-subjects\"},metric:\"mb_metricname \"}], group_by:\"\", table:\"mb_tablename\"}";
```

In this syntax:

- A **transform** is a chain of nested transform functions. The last transform of every chain must always be the `Reference` transform:

  ```json
  {transform:\"Reference\",name:\"chart-subjects\")
  ```

- A **metric** is a metric field of a metric table.
- The **group-by** field is the field on the selected metric table by which the time series is grouped.
- **table** refers to the metric table
- **mb_...** are placeholder names

All attributes are mandatory except for group-by.
## Chart-specific parameters

Certain parameters are available only for specific report types.

### Donut report parameters

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Description</th>
<th>Default value</th>
</tr>
</thead>
<tbody>
<tr>
<td>sysparm_show_report_total</td>
<td>A boolean value that controls if the total score of the grouped donut appears in the center of the report.</td>
<td>false</td>
</tr>
<tr>
<td>sysparm_donut_width_percent</td>
<td>A number 1–100 that controls the thickness of the donut report.</td>
<td>50</td>
</tr>
</tbody>
</table>

### Heatmap parameters

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Description</th>
<th>Default value</th>
</tr>
</thead>
<tbody>
<tr>
<td>sysparm_use_color_heatmap</td>
<td>A boolean value that controls if the heatmap uses a gradient to color the report. When true, the sysparm_axis_max_color and sysparm_axis_min_color values are used.</td>
<td>true</td>
</tr>
<tr>
<td>sysparm_axis_max_color</td>
<td>The color used in the heatmap gradient to indicate a high value. This value must be the sys_id of a Color Definition (sys_report_color) record.</td>
<td>UI14 blue</td>
</tr>
<tr>
<td>sysparm_axis_min_color</td>
<td>The color used in the heatmap gradient to indicate a low value. This value must be the sys_id of a Color Definition (sys_report_color) record.</td>
<td>white</td>
</tr>
</tbody>
</table>

### Dial parameters

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Description</th>
<th>Default value</th>
</tr>
</thead>
<tbody>
<tr>
<td>sysparm_gauge_autoscale</td>
<td>A boolean value that controls if the dial automatically calculates the minimum and maximum scale on the report. If you set this value to false, you must specify a sysparm_from and sysparm_to value.</td>
<td>true</td>
</tr>
<tr>
<td>sysparm_from</td>
<td>A number that defines the minimum value for the axis scale.</td>
<td></td>
</tr>
<tr>
<td>sysparm_to</td>
<td>A number that defines the maximum value for the axis scale.</td>
<td></td>
</tr>
<tr>
<td>sysparm_upper_limit</td>
<td>A number that defines the upper threshold for the dial. If you do not specify a value, the dial has no upper threshold.</td>
<td></td>
</tr>
<tr>
<td>sysparm_lower_limit</td>
<td>A number that defines the lower threshold for the dial. If you do not specify a value, the dial has no lower threshold.</td>
<td></td>
</tr>
</tbody>
</table>
### Chart size parameters

Certain parameters control the width and height of the report.

#### Size parameters

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Description</th>
<th>Default value</th>
</tr>
</thead>
<tbody>
<tr>
<td>sysparm_chart_size</td>
<td>The size of the chart in the report. Valid values are small, medium, and large.</td>
<td>large</td>
</tr>
<tr>
<td>sysparm_custom_chart_size</td>
<td>Set this parameter to true to specify custom chart height and width values instead of using one of the size options from the sysparm_chart_size parameter.</td>
<td>false</td>
</tr>
<tr>
<td>sysparm_custom_chart_height</td>
<td>The height of the chart in the report, in pixels.</td>
<td></td>
</tr>
<tr>
<td>sysparm_custom_chart_width</td>
<td>The width of the chart in the report, in pixels.</td>
<td></td>
</tr>
</tbody>
</table>

### Chart title parameters

Certain parameters are available only for reports that display a title. These report types include time series, bar, column, pie, donut, dials, trend, box, trend box, histogram, pyramid, heat map, funnel, and control reports.

#### Title parameters

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Description</th>
<th>Default value</th>
</tr>
</thead>
<tbody>
<tr>
<td>sysparm_report_title_size</td>
<td>A number that defines the font size of the title.</td>
<td>16</td>
</tr>
<tr>
<td>sysparm_report_title_color</td>
<td>The title text color. This value must be the sys_id of a Color Definition (sys_report_color) record.</td>
<td>black</td>
</tr>
<tr>
<td>sysparm_title_horizontal_alignment</td>
<td>Where the title is placed horizontally relative to the report. This value is used only if sysparm_custom_report_title_position is false. Possible values are: left, center, and right.</td>
<td>center</td>
</tr>
<tr>
<td>sysparm_title_vertical_alignment</td>
<td>Where the title is placed vertically relative to the report. This value is used only if sysparm_custom_report_title_position is false. Possible values are: top, middle, and bottom.</td>
<td>top</td>
</tr>
</tbody>
</table>
Parameter | Description | Default value
--- | --- | ---
sysparm_custom_report_title_position | A boolean value that controls if the report title position is defined by x and y coordinates instead of relative alignment. | false
sysparm_report_title_x_position | A number that defines the x position of the title on the report. This value is used only if sysparm_custom_report_title_position is true. | 0
sysparm_report_title_y_position | A number that defines the y position of the title on the report. This value is used only if sysparm_custom_report_title_position is true. | 0

Chart border parameters

Certain parameters are available only for reports that display a border. These report types include time series, bar, column, pies, donuts, dials, trend, box, trend box, histogram, pyramid, heat map, funnel, and control reports.

Border parameters

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Description</th>
<th>Default value</th>
</tr>
</thead>
</table>
sysparm_show_report_border | A boolean value that controls whether the report displays a border. | false |
sysparm_report_border_width | A number that defines the width of the border, in pixels. | 1 |
sysparm_report_border_radius | A number that defines the radius size of the corners of the border, in pixels. | 0 |

Legend parameters

Certain parameters are available only for reports that display a legend. These report types include pie, donut, stacked bar, stacked column, time series, trend, box, histogram, pyramid, control, and heat map reports.

Legend parameters

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Description</th>
<th>Default value</th>
</tr>
</thead>
</table>
sysparm_show_legend | A boolean value that controls whether the report displays a legend. | true |
sysparm_legend_horizontal_alignment | Where the legend is placed horizontally relative to the report. Possible values are: left, center, and right. | center |
### Parameter Description

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Description</th>
<th>Default value</th>
</tr>
</thead>
<tbody>
<tr>
<td>sysparm_legend_vertical_alignment</td>
<td>Where the legend is placed vertically relative to the report.</td>
<td>bottom</td>
</tr>
<tr>
<td></td>
<td>Possible values are: top, middle, and bottom.</td>
<td></td>
</tr>
<tr>
<td>sysparm_show_legend_border</td>
<td>A boolean value that controls whether the legend displays a border.</td>
<td>true</td>
</tr>
<tr>
<td>sysparm_legend_border_width</td>
<td>A number that defines the width of the legend border, in pixels.</td>
<td>1</td>
</tr>
<tr>
<td>sysparm_legend_border_radius</td>
<td>A number that defines the radius size of the corners of the legend border,</td>
<td>0</td>
</tr>
<tr>
<td></td>
<td>in pixels.</td>
<td></td>
</tr>
</tbody>
</table>

### X-axis parameters

Certain parameters are available only for reports that use an X axis. These report types include bar, horizontal bar, pareto, column, line area, spline, box, trendbox, control, and trend reports.

#### X-axis parameters

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Description</th>
<th>Default value</th>
</tr>
</thead>
<tbody>
<tr>
<td>sysparm_x_axis_title</td>
<td>The name to display on the x axis.</td>
<td></td>
</tr>
<tr>
<td>sysparm_x_axis_title_size</td>
<td>A number that defines the font size of the x-axis title.</td>
<td></td>
</tr>
<tr>
<td>sysparm_x_axis_title_bold</td>
<td>A boolean value that controls whether the x-axis title text is</td>
<td>true</td>
</tr>
<tr>
<td></td>
<td>bold.</td>
<td></td>
</tr>
<tr>
<td>sysparm_x_axis_opposite</td>
<td>A boolean value that controls if the x axis appears at the top of</td>
<td>false</td>
</tr>
<tr>
<td></td>
<td>the report.</td>
<td></td>
</tr>
<tr>
<td>sysparm_x_axis_display_grid</td>
<td>A boolean value that controls if vertical grid lines appear</td>
<td>false</td>
</tr>
<tr>
<td></td>
<td>from the x axis.</td>
<td></td>
</tr>
<tr>
<td>sysparm_x_axis_grid_dotted</td>
<td>A boolean value that controls whether the vertical grid lines</td>
<td>false</td>
</tr>
<tr>
<td></td>
<td>are dotted.</td>
<td></td>
</tr>
<tr>
<td>sysparm_x_axis_label_size</td>
<td>A number that defines the font size for increment labels on the</td>
<td>11</td>
</tr>
<tr>
<td></td>
<td>x axis.</td>
<td></td>
</tr>
<tr>
<td>sysparm_x_axis_label_bold</td>
<td>A boolean value that controls whether the x-axis increment</td>
<td>false</td>
</tr>
<tr>
<td></td>
<td>labels are bold.</td>
<td></td>
</tr>
</tbody>
</table>

### Y-axis parameters

Certain parameters are available only for reports that use a Y axis. These report types include bar, horizontal bar, pareto, column, line area, spline, box, trendbox, control, and trend reports.
### Y-axis parameters

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Description</th>
<th>Default value</th>
</tr>
</thead>
<tbody>
<tr>
<td>sysparm_y_axis_title</td>
<td>The name to display on the y axis.</td>
<td>An automatically generated description of the report aggregation</td>
</tr>
<tr>
<td>sysparm_y_axis_title_size</td>
<td>A number that defines the font size of the y-axis title.</td>
<td></td>
</tr>
<tr>
<td>sysparm_y_axis_title_bold</td>
<td>A boolean value that controls whether the y-axis title text is bold.</td>
<td>true</td>
</tr>
<tr>
<td>sysparm_y_axis_opposite</td>
<td>A boolean value that controls if the y axis appears on the left of the report.</td>
<td>false</td>
</tr>
<tr>
<td>sysparm_y_axis_display_grid</td>
<td>A boolean value that controls if horizontal grid lines appear from the y axis.</td>
<td>true</td>
</tr>
<tr>
<td>sysparm_y_axis_grid_dotted</td>
<td>A boolean value that controls whether the horizontal grid lines are dotted.</td>
<td>false</td>
</tr>
<tr>
<td>sysparm_y_axis_label_size</td>
<td>A number that defines the font size for increment labels on the y axis.</td>
<td>12</td>
</tr>
<tr>
<td>sysparm_y_axis_label_bold</td>
<td>A boolean value that controls whether the y-axis increment labels are bold.</td>
<td>false</td>
</tr>
<tr>
<td>sysparm_y_axis_from</td>
<td>A number defining the lowest value displayed on the y axis.</td>
<td></td>
</tr>
<tr>
<td>sysparm_y_axis_to</td>
<td>A number defining the highest value displayed on the y axis.</td>
<td></td>
</tr>
</tbody>
</table>

### How to report fields on extended tables in a report

Learn how to include fields from tables that extend the Task table in a single report. For example, you could include both incidents and problems in a single report.

**Note:** Dot-walking functionality is not available in the Kingston release. To report on extended tables, see How to report fields on extended tables in a report.

To include the columns in the report that are unique to the extended tables, a user with the admin role must enable a system property:

1. Navigate to **System Properties > UI Properties**.
2. Enable the property **Allow base table lists (task, cmdb_ci, etc.) to include extended table fields (incident_state, os_version, etc.), and allow filtering on extended table fields**.
3. Click **Save** at the bottom of the page.

Role required: report_admin
Watch this six-minute video to learn how to include fields on extended tables in reports by starting with the parent table.

The video shows how to create a report with data from multiple tables using the Report Builder. The report contains both incidents and problems, which are child tables of the Task table. Here's how to create the same report, Active Incidents and Problems of Priority 1 or 2, in the Report Designer.

1. Navigate to Reports > Create New.
2. On the Data tab, name the report Active Incidents and Problems of Priority 1 or 2, select the Source type Table, and select the table Task

   ![Edit report](image)

   Data > Type > Configure > Style

   - **Report name**
     - Active Incidents and Problems of Priority 1 or 2

   - **Source type**
     - Table

   - **Table**
     - Task [task]

3. On the Type tab, enter List in the filter, select the report type, and click Next.
   
   A preliminary version of the report is displayed. To view the updated report at any time, click Run.

4. On the Configure tab, Group by Task type and click Save.
The list report is refreshed with all tasks collapsed into their types.

5. Use the Condition Builder to limit what the report displays to only the information you want. Click the filter icon (open the Condition Builder.)

6. To show only active incidents and problems of priority 1 or 2, set these conditions, and click Save.
   - Active is true.
   - Task type is Incident OR Task type is Problem.
   - Priority is one of 1 - Critical or 2 - High.
The new report only has the two task types. Because you selected only Active tasks, there are fewer tasks in each category as well.

<table>
<thead>
<tr>
<th>Task type: Incident (29)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Task type: Problem (2)</td>
</tr>
</tbody>
</table>
7. Select the columns to display in the report, including the extended table fields Category (Incident) and Related Incidents (Problem) and click **Save**.

### Columns

#### Available
- Reason [Change Request]
- Reason [Escalation]
- Reclassification class [Reclassification]
- Recurring Price [Requested Item]
- Recurring price frequency [Request]
- Release [Release Phase]
- Reopen count [Incident]
- Reopen count [Problem Task]
- Reopen count [Problem]
- Request [Catalog Task]
- Request [Requested Item]
- Request By [Escalation]
- Request item [Catalog Task]
- Request reason [Request new Know]
- Request Source [Escalation]
- Request state [Request]
- Requested by [Change Request]

#### Selected
- **Number**
- Priority
- State
- Assigned to
- Short description
- Category [Incident]
- Related Incidents [Problem]

The Category (Incident) and Related Incidents (Problem) fields are unique to the extended tables (Incident and Problem). They appear at the bottom of the list of columns that are available from the Task table. These two fields are available because you enabled the property **Allow base table lists to include extended table fields, and allow filtering on extended table fields**.

The report shows the open incidents and their categories and the open problems with the number of their related incidents.

### Related tables in reporting

Watch the video to learn how to use dot-walking, dynamic filters, and database views to access data on extended, or related, tables.
Watch this five-minute video to learn how to use dot walking to include data from extended or related tables in reports. The video also discusses using dynamic filters in reports and reporting on database views.

**Note:** Dot-walking functionality is not available in the Kingston release. To report on extended tables, see *How to report fields on extended tables in a report.*

### Report on service catalog variables

Create reports grouped by a variable on a selected service catalog item. In addition you can create filters on the same variable. For example, if a specific mobile phone item has a storage variable, you can create a report that only shows those phones with 32 GB of storage.

- To group by variables, see *Group a report by service catalog variables – Report Designer.*
- To group a report on a field and additionally group by a variable, see *Add additional group by variables to a service catalog report.*
- To add a variable field to a list report, see *Create a list report in the Report Designer with variable columns.*

### Use service catalog variables in a report – Report Designer

For reports on service catalog data, you can stack and group data by variables, use variables as columns in list reports, and use variables as columns and rows in multilevel pivot tables.

Role required: itil, report_admin, report_global for global reports, or report_group for group reports

**Note:** The report for which you want to use the variable must report on the Requested Items table (sc_req_item) or Catalog Task table (sc_task). Using other types of variables causes an error when generating the report.

For primary **Group by** and **Stack by** these steps are intuitive.
Variable use in Group by and Stack by fields.

**Note:** List, Box, Trendbox, and Pivot reports cannot use service catalog variables as a primary or secondary Group by. Single Score, Calendar, Control, and Map reports do not support Group by on any fields. List reports can use service catalog variables as columns.

Follow these steps below to use a variable as an additional Group by, as a column in a list report, or as a column or row in a multilevel pivot table.

1. **Navigate to Reports > View / Create** and open the report to add the variable to.
2. **Do one of the following:**

<table>
<thead>
<tr>
<th>Option</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Add as a column in a list report</td>
<td>On the Configure tab, select Variables+ at the bottom of the Available slushbucket.</td>
</tr>
<tr>
<td>Add as an additional Group by</td>
<td>On the Configure tab, click Additional group by, then select Variables+ at the bottom of the Available column in the Additional group by slushbucket.</td>
</tr>
<tr>
<td>As as a column or row in a multilevel pivot table</td>
<td>Click Select columns or Select rows, then select Variables+ at the bottom of the slushbucket that appears.</td>
</tr>
</tbody>
</table>

3. **Click the structure icon**

( )

the plus sign that appears.

A list of service catalog items appears.

4. **Select a catalog item where the variable has been added.**

The variables for that item appear in the Available slushbucket.

5. **Move the variable that you want to use to the Selected column.**
6. Save the report.

Use service catalog variables in a report – Report Builder

For reports on service catalog data, you can stack and group data by variables, use variables as columns in list reports, and use variables as columns and rows in multilevel pivot tables.

Role required: itil, report_admin, report_global for global reports, or report_group for group reports

Note: The report for which you want to use the variable must report on the Requested Items table (sc_req_item) or Catalog Task table (sc_task). Using other types of variables causes an error when generating the report.

For primary Group by and Stack by these steps are intuitive.

Variable use in Group by and Stack by fields.

Note: List, Box, Trendbox, and Pivot reports cannot use service catalog variables as a primary or secondary Group by. Single Score, Calendar, Control, and Map reports do not support Group by on any fields. List reports can use service catalog variables as columns.

Follow these steps below to use a variable as an additional Group by, as a column in a list report, or as a column or row in a multilevel pivot table.

1. Navigate to Reports > View / Create and open the report to add the variable to.
2. Do one of the following:

<table>
<thead>
<tr>
<th>Option</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Add as a column in a list report</td>
<td>Select Variables+ at the bottom of the Available slushbucket.</td>
</tr>
</tbody>
</table>
Option | Description
--- | ---
**Add as an additional Group by** | Click the plus sign (➕) next to **Group by**, then select **Variables+** at the bottom of the **Available** slushbucket that appears.

**As as a column or row in a multilevel pivot table** | Click **Select Groups**, then select **Variables+** at the bottom of the **Available** slushbucket that appears.

3. Click the plus sign that appears. A list of service catalog items appears.
4. Select a catalog item where the variable has been added. The variables for that item appear in the **Available** slushbucket.
5. Move the variable that you want to use to the **Selected** column.
6. Save the report.

**Group a report by service catalog variables – Report Designer**

You can create reports grouped by variable on a selected service catalog item. In addition you can create filters on the same variable. For example, if a specific mobile phone item has a storage variable, you can create a report that only shows those phones with 32 GB of storage.

Role required: itil, report_group, report_global, report_admin, or admin. To create a meaningful report, you must have the right to access the data you want to report on.

You can apply these steps to any report type as long as the report source has variables associated with it. If the report source does not have variables, the **Variables** option does not display in the **Group by** and **Stack by** fields.

---

**Note:** List, Box, Trendbox, and Pivot reports cannot use service catalog variables as a primary or secondary **Group by**. Single Score, Calendar, Control, and Map reports do not support **Group by** on any fields. List reports can use service catalog variables as columns.

1. Navigate to **Reports > Create New**.
2. On the **Data** tab, give the report a name that reflects the information being grouped.
3. Select a report source that has variables associated with it. There are two kinds of report sources:

<table>
<thead>
<tr>
<th>Option</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Data source</strong></td>
<td>A table with filters applied to provide a single source of information for all users.</td>
</tr>
</tbody>
</table>

**Note:** If you select a data source used by existing reports, a notification will display prompting you to view them.

| Table | The raw data from a table with no filters applied. |

4. Click **Next**.
5. On the **Type** tab, select the report type and click **Next**.
6. On the **Configure** tab, select **Variables** from the **Group by** or **Stack by** filters.
7. Click **Select item** to choose the item the variable is associated with.
8. Click **Select variable** to choose the variable to group or stack by.
9. In the **Variables** window, click the filter icon 
   \[\text{filter icon}\]
   to choose the variable.
10. Continue to configure and style the report according to its report type. See *Creating reports*.

**Group a report by service catalog variables – Report Builder**

You can create reports grouped by variable on a selected service catalog item. In addition you can create filters on the same variable. For example, if a specific mobile phone item has a storage variable, you can create a report that only shows those phones with 32 GB of storage.
Role required: itil, report_group, report_global, report_admin, or admin. To create a meaningful report, you must have the right to access the data you want to report on.

You can apply these steps to any report type as long as the report source has variables associated with it. If the report source does not have variables, the Variables option does not display in the Group by and Stack by fields.

Note: List, Box, Trendbox, and Pivot reports cannot use service catalog variables as a primary or secondary Group by. Single Score, Calendar, Control, and Map reports do not support Group by on any fields. List reports can use service catalog variables as columns.

1. Navigate to Reports > Create New.
2. Give the report a title that reflects the information being grouped.
3. Select a report source that has variables associated with it. There are two kinds of report sources:

<table>
<thead>
<tr>
<th>Option</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Data source</td>
<td>A table with filters applied to provide a single source of information for all users.</td>
</tr>
</tbody>
</table>

Note: If you select a data source used by existing reports, a notification will display prompting you to view them.

<table>
<thead>
<tr>
<th>Table</th>
<th>The raw data from a table with no filters applied.</th>
</tr>
</thead>
</table>

4. From the Type list, select the report type.
5. Select Variables from the Group by or Stack by filters.
6. Click Select item to choose the item the variable is associated with.
7. Click Select variable to choose the variable to group or stack by.
8. In the Variables window, click the filter icon to choose the variable.
9. Continue to configure and style the report according to its report type. See Creating reports.

Add additional group by variables to a service catalog report

You can create reports grouped by any field with an additional group by variable on a selected service catalog item. In addition you can create filters on the same variable. For example, if a specific mobile phone item has a storage variable, you can create a report that only shows those phones with 32 GB of storage.

Role required: itil, report_group, report_global, report_admin, or admin. To create a meaningful report, you must have the right to access the data you want to report on.

You can apply these steps to any report type as long as the report source has variables associated with it. If the report source does not have variables, the Variables option does not display in the Additional group by filter.

1. Navigate to Reports > Create New.
2. On the Data tab, give the report a name that reflects the information being grouped.
3. Select a report source that has variables associated with it. There are two kinds of report sources:
<table>
<thead>
<tr>
<th>Option</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Data source</td>
<td>A table with filters applied to provide a single source of information for all users.</td>
</tr>
<tr>
<td></td>
<td><strong>Note:</strong> If you select a data source used by existing reports, a notification will display prompting you to view them.</td>
</tr>
</tbody>
</table>

Table: The raw data from a table with no filters applied.

4. Click **Next**.
5. On the **Type** tab, select the report type and click **Next**.
6. On the **Configure** tab, select a **Group by** filter.
7. Click **Additional group by**.
8. Select **Variables (+)** and click the structure icon to choose an item.
9. Select a Catalog item.
The variables associated with the item appear in the **Additional group by** window.

10. Add the variables desired variables to the **Selected** column and click **OK**.
11. Continue to configure and style the report according to its report type. See *Creating reports*.

**Chart colors**

Report administrators can change the look of charts by specifying colors used to represent specific report data categories.

You can configure the system to use the same color for all bars on a bar or column chart. You can also define new system colors that can be used in charts. The following reports use the color palette specified on the **Style** tab of the Report designer:

- Pie charts
- Bar and column charts that have a **Stack by** or **Group by** value
- Line and trend reports that have a **Stack by** or **Group by** value
Bar and column charts and line and trend reports that do not have a **Stack by** or **Group by** value use one color.

**Using chart colors**

Newly generated bar or pie chart reports update the Chart Colors list to show each data category for the report and the color associated with the category. The colors used in bar and pie charts for a particular data category are consistently used across all bar and pie charts created. For example, priority 1 incidents in a chart always have the same color and do not change color based on their relative position within the chart.

Colors from the following list are automatically assigned to each category the first time the category is used in a chart. If there are more than 15 possible categories, the colors repeat.

![Chart colors](chart_colors.png)

**Define colors for report data categories**

You can define colors for a specific value for a data category.

Role required: report_admin

1. Navigate to **Reports > Administration > Chart Colors**.
2. Click **New**.
3. Fill in the fields, as appropriate.

**New Chart Colors form**

<table>
<thead>
<tr>
<th>Name</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Name</td>
<td>Table used for the report.</td>
</tr>
<tr>
<td>Element</td>
<td>Column name specific to the selected table.</td>
</tr>
</tbody>
</table>

*Note: The list shows only tables and database views that are in the same scope as the chart colors record.*
<table>
<thead>
<tr>
<th>Name</th>
<th>Description</th>
</tr>
</thead>
</table>
| Value | The sys_id of the value for which the specified color should be displayed.  

**Note:** A sys_id value applies when the element being used is a reference type. For choice type fields, this value must be the value defined in choice entries. When entering the value, letter must casing match.  

To understand the various ways to get a record’s sys_id, see [The unique record identifier (sys_id)](https:// servicenow.com). |
### Define system colors for reports

You can define colors that the system uses in reports.

1. Navigate to **Reports > Administration > Color Definition**.
2. Click **New**.
3. Fill in these fields.

<table>
<thead>
<tr>
<th>Name</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Name</td>
<td>Enter a unique name for the new color.</td>
</tr>
<tr>
<td>Color</td>
<td>Enter a hexadecimal value, for example #003366.</td>
</tr>
</tbody>
</table>

4. Click **Submit**.

The default color scheme `glide.ui.chart.default.colors` contains the following 20 colors:
Scoped reports

When editing a report from a different application scope than the current scope, actions modifying the original report are unavailable.

To modify the original report, change the current application scope to the report's scope and make any changes.

The following actions are available from the **Save** menu after opening a report from a different application scope in the Report Designer or Report Builder. Other actions, such as **Update** are not available.

- Insert
- Insert and Stay
- Schedule
- Add to Dashboard
- Export to PDF
- Report History

You can create a new report based on an existing report, but within the current application scope using the **Insert** or **Insert and Stay** options.
Administering reports

Learn about the tasks report administrators typically perform, the objects that they work with, and the roles and rules that apply.

To administer reports, reporting roles, and report sources, navigate to Reports > Administration and select the area to administer.

Reporting roles

Note:

- Users must have the itil role to see the Reports module on the application navigator (left navigation pane).
- Users with any reporting role or the itil role can access the following report options for all reports that are visible to them: Insert, Insert and Stay, Add to Dashboard and Export to PDF.
- In the table below, the term manage indicates access to the following report options: Update, Delete, and Export settings.

Navigate to User Administration > Roles to manage roles.

<table>
<thead>
<tr>
<th>Role title (name)</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>No role</td>
<td>Can view reports that are shared with them.</td>
</tr>
<tr>
<td>itil (itil)</td>
<td>Can create and view reports that have been shared with them. Cannot share, edit, or delete reports that have been shared with them.</td>
</tr>
<tr>
<td>report publisher (report_publisher)</td>
<td>Can Publish reports that they can manage. Publishing a report creates public a link to that report. Users with this role must also have another role that grants permission to create, edit, and share reports.</td>
</tr>
<tr>
<td>report scheduler (report_scheduler)</td>
<td>Can Schedule emailing of all reports that they can see, including reports they cannot manage. Users with this role must also have another role that grants permission to create, edit, and share reports.</td>
</tr>
<tr>
<td>group report user (report_group)</td>
<td>Can manage reports that are shared with them (listed in Group).</td>
</tr>
<tr>
<td>global report user (report_global)</td>
<td>Can manage reports that are shared with everyone (listed in Global).</td>
</tr>
<tr>
<td>report administrator (report_admin)</td>
<td>Can manage, share, publish, and schedule all reports. Can access Reports &gt; Administration and manage all report-related objects. The report_admin role inherits all other report roles.</td>
</tr>
</tbody>
</table>
Restrict report creation with an ACL rule

Create an access control list rule to restrict who can create a report on a table, data source, or database view.

Requires role: security_admin

In addition to *report_on ACLs* for specific tables, a write ACL on the (sys_report) table controls write access for all reports. If this ACL prevents you from saving the current report, the Save button in the Report Designer or Report Builder is disabled. For example, when you view a report that another user shared with you. If you have the correct security settings, click Save > Insert to save an editable copy of the report.

For more information on ACLs, see *Access control rules*.

1. Navigate to System Security > Access Control (ACL).
2. Add an access control record with the following information:

<table>
<thead>
<tr>
<th>Option</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Type</td>
<td>record</td>
</tr>
<tr>
<td>Operation</td>
<td>report_on</td>
</tr>
<tr>
<td>Name (table)</td>
<td>&lt;select the table name&gt;</td>
</tr>
</tbody>
</table>

3. Define the rules that determine whether a user can create a report against the table.

   If a user does not have *report_on* access for a table, the table does not appear in the Table field when the user creates a report. Data sources based on tables for which a user does not pass the *report_on* ACL do not appear in the Data Source choice list in the Report Builder and Report Designer. To restrict one or more users from seeing a data source in the Report Source choice list, create a new read ACL on the (sys_report_source) table that excludes those users.

   **Note:**

   - Users can view and run reports on tables even if they cannot create reports due to *report_on* ACL restrictions.
   - System tables are not reportable by default. To allow reporting against system tables, administrators can configure the *glide.ui.permitted_tables* property. To learn more, see Reporting on system tables.
   - The ACL *report_on* operation grants the right to report on the target table.
   - Database views have their own ACLs. If a user has *report_on* rights to all the tables in a database view, they still require *report_on* rights on the view to create reports on it. See Database views.

Enforce the classic report builder UI

The new report designer for creating and editing reports is the default. Report administrators can restrict users to the classic UI. If the classic UI is not restricted, users can switch between the UIs by clicking the Switch to classic UI / Switch to new UI hyperlinks in the upper right corner.

Role required: report_admin

The new report designer has a clearer work flow, is easier to navigate, and is generally easier to use. There are no functional differences between the new UI and the classic UI.

1. Navigate to Reports > Administration > Properties.
2. Clear the Use new report designer check box.
This check box is enabled by default.

3. Click **Save**.

**Report statistics**

The **Report Stats** list enables you to view how often each of your reports is run and how long it takes for the reports to run.

Role required: admin or report_admin

To view report statistics, navigate to **Reports > Administration > Report Statistics**. By default, the Report Statistics list displays all reports that have been run. To view all reports, click the context menu icon and select **Add Unused Reports**.

**Note:** Adding unused reports to this list takes some time, especially if your instance contains many reports.

The **Report Stats** list has the following columns:

<table>
<thead>
<tr>
<th>Column</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Report</td>
<td>The name of the report. Click the hyperlink to view the report properties.</td>
</tr>
<tr>
<td>Last run</td>
<td>The date and time the report was last run.</td>
</tr>
<tr>
<td>Runs</td>
<td>The number of times the report has been run.</td>
</tr>
<tr>
<td>Runs on page</td>
<td>The number of times the report has been run on dashboard or homepage.</td>
</tr>
<tr>
<td>Recent run time</td>
<td>The average execution time of the report in milliseconds based on the 25 most recent runs. Edit the glide.report.recent_executions_number property to change the number of runs used to calculate this value.</td>
</tr>
<tr>
<td>Run time</td>
<td>The average execution time in milliseconds of all runs of the report.</td>
</tr>
</tbody>
</table>

- To view the reports that take the most time to run, sort **Recent run time** from z-a.
- To view used reports, filter out the value 0 from the **Runs** column.
- To view the most used reports, sort the **Runs** column from z-a.

**Reports Usage dashboard**

The Reports Usage dashboard provides an overview of how reports are used in a ServiceNow instance or domain.

To view report statistics, navigate to **Performance Analytics > Admin Console** and select **Report Usage** on the Usage tile.
Note: The report_admin role cannot view this console. The admin or qa_admin role is required.

The Reports Usage dashboard shows the following widgets:

<table>
<thead>
<tr>
<th>Widget</th>
<th>Type</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Number of Reports</td>
<td>Single Score with percentage change month on month.</td>
<td>The number of reports in the instance. Click the score to view a dashboard with chart and lists of breakdowns, records, and scores.</td>
</tr>
<tr>
<td>% Reports not viewed in the last 6 months</td>
<td>Single Score with percentage change month on month.</td>
<td>The percentage of reports in the domain or instance that have not been viewed in the last six months. Click the score to view a detailed dashboard with a chart on which you can adjust the period, the calculation used, and additional information on the report.</td>
</tr>
<tr>
<td>Top 10 Report Tables</td>
<td>List</td>
<td>A list of the top 10 tables used in reports. Point to the name of a table to read its description. Click the name of the table or the number of reports to show a dashboard with an enlarged chart, a list of the records in the table, the scores, and additional information on the report.</td>
</tr>
<tr>
<td>Reports by Visualization type</td>
<td>Bar chart (with option to change the visualization to one of several other report types)</td>
<td>The number of times the report has been run on dashboard or homepage. Click a report segment to show a dashboard with an enlarged chart, a list of the records in the table, the scores, and additional information on the report.</td>
</tr>
</tbody>
</table>

Report sources

Report sources are predefined data sets for creating reports.

Use report sources for reports containing the same conditions, so you do not have to define the conditions more than once. You can also use report sources to implement the same definitions across your organization.

A report source always consists of a table and a number of conditions. When you create a new report, you can either use a report source or select a table. Some examples of report sources are open incidents, closed problems, and so on.

Create a report source

Create a custom set of data that you can use to create reports. In the Report Designer and Report Builder, report sources are called Data Sources.
Role required: report_admin

If you update the conditions in a report source, these conditions are automatically propagated to all reports based on that report source.

1. Navigate to Reports > Administration > Report Sources.
2. Click New.
3. Fill in the fields on the form, as appropriate.

**Report Source New record**

<table>
<thead>
<tr>
<th>Field</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Name</td>
<td>The name of the report source. For example, Open incidents</td>
</tr>
<tr>
<td>Table</td>
<td>The table on which the report source is based. For example, Incident (incident).</td>
</tr>
<tr>
<td>Description</td>
<td>A more detailed description of what the report source does and its purpose.</td>
</tr>
<tr>
<td>Filter</td>
<td>Conditions for the specific table records to include in the report source.</td>
</tr>
<tr>
<td></td>
<td>For example, to include open incidents, select (State) (is) (Active) for the Incident table.</td>
</tr>
</tbody>
</table>

**Note:**
- If the report source is used for a report that includes OR conditions, only records that match both the report and the report source conditions are included.
- Sorting on data fields is accessible from within reports for specific report types. For further information, search for the Add Sort field description in a Creating reports or Creating reports topic for the report type to sort data on.
- If a report source specifies a Add related list conditions, a report created that is based on the report source will ignore any additional related list conditions specified from within the report.

4. To view reports based on a report source, click the Reports using this report source related link in the report source record.
5. Click Submit.

Use the report source to create a report.

**Note:** While a report source is used by active reports, you cannot delete it.
Report ranges

Use a report range to define data intervals that are used in bar and pie charts.

Sometimes it can be helpful to group results into ranges or buckets rather than viewing every result as an individual score. Think of a bar or pie chart which shows a percentage result. By default each individual value from 0% – 100% would be a separate data point, creating an unnecessarily crowded-looking visual. However, segmenting the results into logical groups of scores can add context and help the audience understand which ranges are good, bad, or concerning. A report range is used to define data intervals for bar, pie, and donut charts. For example, if you’re interested in understanding how many tasks were completed well within the SLA versus how many elapsed during the SLA.

Example use case: There is a significant cost involved to a business each time a SLA is breached at a company. A Service Manager can understand which SLAs are being easily met versus which ones are being breached, or are coming close to being breached. This information helps her identify which SLAs may need to be adjusted.

Note: Reports only show historical data. It is not possible to set report ranges for dates in the future.
Incidents created date with ranges

**Note:** The module for report ranges is hidden by default. You may need to enable the module before use. For more information, see Enable or disable an application menu or module.

**How report ranges work**

Report ranges work with elements that hold only dates, lists, or integers.

**Report range elements list**

<table>
<thead>
<tr>
<th>Type</th>
<th>Examples</th>
</tr>
</thead>
<tbody>
<tr>
<td>Dates</td>
<td>Using the <strong>Created</strong> field in the Incidents table: Same Day, 2 Days, 2–5 Days, 5–7 Days, 1–2 Weeks, 2–4 Weeks, 1–2 Months, &gt; 2 Months</td>
</tr>
</tbody>
</table>
### Type | Examples
--- | ---
Lists | Using the **Priority** field in the Incidents table: Low, Moderate, High, Critical, Planning
Integers | Using the **Count** field in the Incidents table: Overloaded, Optimized, Under Utilized

Report ranges can be globally applied to all date type fields (date, due date, duration, date/time, date time), or you can limit report ranges to a specific table.

**View all report ranges**

To view all currently configured report ranges, navigate to **Reports > Administration > Report Ranges**.
### Report ranges list

The following are important columns and their associated data types:

#### Report range list field

<table>
<thead>
<tr>
<th>Field</th>
<th>Corresponding data type</th>
</tr>
</thead>
<tbody>
<tr>
<td>Upper value duration</td>
<td>Date - works with elements that store dates.</td>
</tr>
<tr>
<td>Upper value int</td>
<td>Integer - works with elements that store numbers.</td>
</tr>
</tbody>
</table>

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Create a report range

Create a report range to define data intervals that are used in bar and pie charts.

1. Navigate to Reports > Administration > Report Ranges.
2. Select New.
3. Fill in the form (see table):

<table>
<thead>
<tr>
<th>Field</th>
<th>Corresponding data type</th>
</tr>
</thead>
<tbody>
<tr>
<td>Value list</td>
<td>List - works with elements that store a list item.</td>
</tr>
</tbody>
</table>

Use the following fields to refine the data displayed in the report and to design the appearance of your line chart:
Report range form fields

<table>
<thead>
<tr>
<th>Field</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Name</td>
<td>The name of the table to draw the values from.</td>
</tr>
<tr>
<td></td>
<td><strong>Note:</strong> This field is required before you can select from the Element choice list.</td>
</tr>
<tr>
<td>Element</td>
<td>The table field to draw the values from.</td>
</tr>
<tr>
<td>Label</td>
<td>The name for the report range that is displayed in reports.</td>
</tr>
<tr>
<td>Value list</td>
<td>For choice list elements, this field defines which values are within the range. After the range is saved, the value list is populated with the choices of the element.</td>
</tr>
<tr>
<td>Color name</td>
<td>The color to display this report range in. The color appears in the Display field. If you enter a color name, you do not need to enter a color value.</td>
</tr>
<tr>
<td></td>
<td><strong>Note:</strong> When creating reports, colors may not display as specified for ranges on Group by report fields selected via dot-walking. For this feature to work appropriately, select applicable Group by fields from the base table only.</td>
</tr>
<tr>
<td>Color</td>
<td>The hexadecimal value for the color to report this report range in. The color appears in the Display field. If you enter a value for color, you do not need to enter a color name.</td>
</tr>
<tr>
<td></td>
<td><strong>Note:</strong> When creating reports, colors may not display as specified for ranges on Group by report fields selected via dot-walking. For this feature to work appropriately, select applicable Group by fields from the base table only.</td>
</tr>
<tr>
<td>Upper value int</td>
<td>For integer-type elements, this field defines the upper limit of the range. The upper value of the report range with nearest lower Order defines the lower limit of this range. If no range with a lower Order exists, the lower limit is zero. Example: One report range has an upper limit of 10 and an Order of 20. A second report range has an upper limit of 5 and the Order of 19. Values from 5 to 10 display the formatting specified by this range.</td>
</tr>
<tr>
<td>Field</td>
<td>Description</td>
</tr>
<tr>
<td>---------------------</td>
<td>-------------</td>
</tr>
<tr>
<td>Upper value duration</td>
<td>For duration-type elements, this field defines the upper limit of the range. The upper value of the report range with nearest lower Order defines the lower limit of this range. If no range with a lower Order exists, the lower limit is zero. Example: One report range has an upper limit of 10 and an Order of 20. A second report range has an upper limit of 5 and the Order of 19. Values from 5 to 10 display the formatting specified by this range.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Display</th>
<th>Read-only. Shows the color that is used for the specific report range.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Order</td>
<td>The order in which the report ranges are used. If a value is defined within more than one label, it is reported under the report range with the lowest order.</td>
</tr>
</tbody>
</table>

**Note:** Once configured, a report range will show as empty if there's no data available in your report. Context fields such as data labels or legend related to the configured report range will still show and be highlighted.

**Using imported report data**

Imported Excel spreadsheets enable you to generate reports based on data maintained outside of your instance and to distribute those reports.

Users with admin, sys_admin, report_admin, pa_admin, and pa_power_user roles are able to upload .xlsx files. Uploaded data is temporary and has a specified expiration date, after which reports based on those files are no longer available.

You must have Performance Analytics to create reports with imported data. See *Activate Performance Analytics Premium*.

**Note:** Importing report data in this way is useful when you have information that is maintained outside of your instance. To import an external data set into your instance permanently, see *Easy import*.

**Reporting on system tables**

System tables are, by default, restricted from the Reporting module.

These tables include, but are not limited to:

- Sys audit (sys_audit)
- Log (syslog)
- Transaction Log (syslog_transaction)
- Attachment (sys_attachment)
- Email (sys_email)
The reason for this is because `sys_audit` is typically the largest table in any instance. It is not unusual for the audit table, in even a mid-sized instance, to be several gigabytes. In a large installation, this table can be 50GB or more.

When we access the `sys_audit` table programmatically, we know what our query pattern is going to look like, so we have added appropriate data indexes to match our queries. This means that when you bring up, for example, the history of an incident, the database can use an index to efficiently pull back the few dozen rows it needs for that query.

With freeform reporting, however, we cannot predict what your query pattern is going to look like. Maybe you want to group by `fieldname`, or sort by `oldvalue`. So it is possible your queries are not going to be indexed queries. The net result is you will be asking the database to table scan a multiple gigabyte file, which is bad for these reasons:

- It is slow, so your report will take an unacceptably long time to run.
- While the database is scanning your table, your instance will slow down or even become unavailable because other queries cannot get the resources they need.

If you must report on a system table, you can add it to the `glide.ui.permitted_tables` property. Navigate to System Properties > UI Properties and locate the property labeled List of system tables (beginning with "sys_", comma separated), that are reportable. By default, system tables are not reportable. Proceed with caution.

**Map report administration**

Learn how about the different objects that are used in map reports, and how to create and modify them.

**Map report objects**

Map objects define the different levels that users can drill down into on a map report and the data displayed on these levels. Admins can create and manage these objects.

Each map report contains a map source hierarchy, which configures the data for a map level. The report also contains a map hierarchy, which defines the map drill levels. The Level field connects levels for these hierarchies. For example, the data in the Level 1 map is displayed on the Level 1 map object.

**Note:** A set of predefined map sources and maps are available by default. Use these predefined objects whenever possible. If you need a map source that does not exist, generate it automatically using Generate map source levels link on the map source form, then customize it. You can automatically generate map source levels only for map sources that reference the location table. These map sources have a field that ends in `.location`. 

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Map objects

<table>
<thead>
<tr>
<th>Object</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Map source</td>
<td>Defines a set of data to display on a map report.</td>
</tr>
<tr>
<td></td>
<td>The map source that a user selects in the <strong>Map data</strong> field when creating a map report is actually a map source hierarchy. There is one map source level for each drill level on the map. The top map source in the hierarchy is not a level, but rather a wrapper for other hierarchy levels. Each map source contains the data for a single map hierarchy drill level, with both having the same <strong>Level</strong>. Because they both specify the data that is used for a report, a map source is similar to a report source. However, in a map source you select a field to report on instead of a table.</td>
</tr>
<tr>
<td>Object</td>
<td>Description</td>
</tr>
<tr>
<td>-------------</td>
<td>-----------------------------------------------------------------------------</td>
</tr>
<tr>
<td>Map</td>
<td>The map that data is displayed on. Maps are set up in a hierarchy defined by parent-child relationships. Each hierarchy level is a drill level on the map report. A JSON definition (geoJSON definition for geographical maps) defines the actual map layout. Select an existing map or create a new one. You can optionally define conditions for a map, which further filters the data it displays.</td>
</tr>
<tr>
<td>Mappings</td>
<td>Transform the data in a map source to a value that can be displayed on a map. Mappings are organized into the Countries and State / Province mapping groups. During map source configuration, you select the mapping group to transform the data in that source. The mapping group that you select must match the Field that you have selected. For example, a map source that has a Field value of Locations Country would use the Country mappings group. A map source that has a Field value of Locations State / Province would use the Region and state mappings mapping group.</td>
</tr>
</tbody>
</table>

### Automatically generate a map source hierarchy

A map source hierarchy is a data source that is used to create a map report. Except for the top-level wrapper, each map source level in the hierarchy defines the data for one map drill level.

Role required: report_admin or admin

**Note:** A set of predefined map sources and maps are available by default. Use these predefined objects whenever possible. If you need a map source that does not exist, generate it automatically using Generate map source levels link on the map source form, then customize it. You can automatically generate map source levels only for map sources that reference the location table. These map sources have a field that ends in .location.

1. Navigate to Reports > Administration > Map Sources.
2. Click New.
3. Fill in these fields.

#### Map Source fields

<table>
<thead>
<tr>
<th>Field</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Name</td>
<td>Enter a descriptive name. For example, Incident by location. Users select the map source by this name in the Map data field when they create a map report.</td>
</tr>
<tr>
<td>Table</td>
<td>Select the table that contains the field that you want to map. All map source levels in the hierarchy use this table.</td>
</tr>
<tr>
<td>Field</td>
<td>Select the field with the data that you want to display on the map report. This field must reference the location table. For example, incident.caller.location or incident.location. You can dot walk to this field.</td>
</tr>
<tr>
<td>Active</td>
<td>Select this check box to make the map source available when creating map reports.</td>
</tr>
</tbody>
</table>

4. Right-click the form header and select Save.
5. Click Generate map source levels.
Three map source levels are created. Only the level 1 map source is visible in the Map Sources related list.

**Note:** A map source can have up to four levels, but only three are automatically generated. If the map hierarchy you are using requires an extra drill level, you can create a fourth level map source.

The map source is ready to use in a map report.

**Customize a map source level**

A map source configures data to be displayed in a map report. Customize existing map sources according to your needs.

Role required: report_admin or admin

**Note:** A set of predefined map sources and maps are available by default. Use these predefined objects whenever possible. If you need a map source that does not exist, generate it automatically using Generate map source levels link on the map source form, then customize it. You can automatically generate map source levels only for map sources that reference the location table. These map sources have a field that ends in .location.

1. Navigate to Reports > Administration > Map Sources.
2. Open the map source whose level you want to customize, then navigate down to the appropriate level using the Map Sources related lists.
   For example, click the level 1 map source name to reopen the Map Source form with the level 2 map source in the related list, and so on.
3. Modify these fields as appropriate.

**Map source fields**

<table>
<thead>
<tr>
<th>Field</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Name</td>
<td>Enter a name for the map source. Include the level in the names of map source levels. For example, Incident by location - level 2.</td>
</tr>
<tr>
<td>Table</td>
<td>The same table is used throughout a map source hierarchy, and is specified in the top-level map source.</td>
</tr>
</tbody>
</table>
ServiceNow Kingston Analytics, Intelligence, and Reporting

Field Description

Field  Select the field whose data you want display on the map. You can
dot walk to other fields. Select a field that is one level more granular
than the map you want to display the data on.

For example, imagine you are configuring data for a level 1 map
source that is displayed on the world map. Because the data for
countries are displayed on the world map, select Location Country.
Similarly, if you are configuring data to display on a map of Germany
or the United States, select Location State / Province.

Note: The city label is the most granular level able to
be displayed when drilling down into a map report. For
example: If you want to report on various site locations
within a city, and define the bottom-level map source field
to include location.name, the map report displays the
multiple locations as the corresponding city labels. As a
result, reporting on multiple locations which have the same
location.city value results in displaying multiple map dots with
the same label, but with different aggregated values, and
which drill down to different locations.

Most map sources use a field on the Location table.

Level  Select a hierarchy level for this map source. You can have a
maximum of four levels. Each map source level corresponds to a drill
level on the map hierarchy, and these levels much match. Each level
must exist in a hierarchy only once.

Active  Clear this check box to make this map source unavailable when
creating map reports.

4. In the Data transformation section, modify these fields as appropriate.

Field Description

Data  Select how to use data in this map source.

- **Use data on table**: Use the data in the ServiceNow platform
  without transforming it. Select this option when the data already
  matches the JSON key values that you are mapping to.
- **Use mapping**: Transform that data so it matches the JSON key
  values that you are mapping to. For geographical map sources
  that use the hc-key geoJSON key, always select this option.
- **Use longitude and latitude**: Use latitude and longitude coordinates
to plot your data. Always select this option for the bottom map
level, such as level 3. Ensure that your data has latitude and
longitude values.

Warning: Because the Use longitude and latitude option
disables heatmap and drilling for maps using this map
source, select this option only on map source levels that
are the bottom level in a hierarchy.
5. In the **JSON key** section, select a JSON key to connect the map source data to maps. Geographical maps typically use hc-key.

Every report map has a JSON definition. Select one JSON key-value pair to map the data to. The data to appear on the map must match the JSON key values. So the key that you select determines whether you must transform your data with the settings in the **How to use data** section. All default platform maps and mappings use the geoJSON hc-key and ISO 3166 standard values. For custom maps, you can enter a different JSON key.

6. Click **Update**.

Create a key-value pair mapping

Key-value pair mappings transform data in the ServiceNow platform to a value that can be plotted on a map. Mappings are used during map source configuration when data requires transformation. Each mapping exists in a mapping group.

Role required: report_admin or admin

Default system key-value pairs map data to geoJSON hc-key values. All hc-key values follow ISO 3166 standards. Default mappings exist for the most commonly used data values. If your data uses a different value, you must create a key-value pair mapping.

For example, the default mapping for United States of America maps key USA to ISO value us. If your data has value of United States instead of USA, you must make a new key-value pair to map United States to ISO value us.

1. Navigate to the Locations Mappings (sys_report_map_source_mapping) table.
2. Open the mapping group to add the mapping to.
3. Select the mapping group that corresponds to type of object that you want to create a mapping for. For example, if you are creating a mapping for field value United States, select the **Country mappings** group.
4. Click **New**.
5. Fill in these fields.

<table>
<thead>
<tr>
<th>Field</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Key</td>
<td>The field value to transform. For example, USA.</td>
</tr>
<tr>
<td>Value</td>
<td>The value to transform the key to. For example, us. This value is typically an ISO 3166 standard value. Each value can be used only once per map.</td>
</tr>
<tr>
<td>Map</td>
<td>The map to associate with this mapping. If you do not fill in this field, this mapping can be used with any map.</td>
</tr>
</tbody>
</table>

5. Click **Submit** to save your changes.
Add the mapping to a report source, so it can be used to map data from that source to a map.

**Create a map**

Create a map that can be used in a map hierarchy.

Role required: report_admin or admin

1. Navigate to Reports > Administration > Maps, and click New.
2. Fill in the following fields as appropriate.

<table>
<thead>
<tr>
<th>Report Maps form</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Field</strong></td>
</tr>
<tr>
<td>Key</td>
</tr>
<tr>
<td>Name</td>
</tr>
<tr>
<td>Level</td>
</tr>
<tr>
<td>JSON definition</td>
</tr>
<tr>
<td>Parent</td>
</tr>
<tr>
<td>Active</td>
</tr>
<tr>
<td>Geographical map</td>
</tr>
</tbody>
</table>

3. Right-click the form header and select Save.
4. To add conditions that filter the data in the map:
   a) Click New in the Map conditions related list.
   b) Fill in these fields.

<table>
<thead>
<tr>
<th>Map condition form</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Field</strong></td>
</tr>
<tr>
<td>Active</td>
</tr>
<tr>
<td>Table</td>
</tr>
<tr>
<td>Map source</td>
</tr>
<tr>
<td>Conditions</td>
</tr>
</tbody>
</table>

   c) Click Submit.

5. Optional: In the Report Maps related list, create a child map to extend the map hierarchy.
6. Click Update to save the map.

**Set the default map for map reports**

You can change the map that appears by default in the Set map field when you create a map report.
Role required: admin or report_admin

1. Navigate to Reports > Administration > Properties.
2. In the Set the default map for reports of type 'Map' field, type the key of the map that you want to set as default.
   You can find a list of maps under Reports > Administration > Maps.
3. Click Save.

Create a coloring rule for a multilevel pivot table

Create coloring rules to change the color of a table cell of a multilevel pivot table based on its value.

Role required: report_admin or admin

1. Navigate to Reports > View / Run.
2. Click a report with a Type value of Multilevel Pivot to open it.
3. Click the Style your chart icon ( ).
4. Click Edit coloring rules.
   If you see the error message 'Security constraints prevent access to requested page,' an ACL is preventing access. If necessary, a user with the security_admin role should create new read and write ACLs on the Multilevel Pivot Rule (sys_report_mpivot_rule) table.
5. Click New rule.
6. Fill in the fields on the form.

### Multilevel pivot rule fields

<table>
<thead>
<tr>
<th>Field</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Operator</td>
<td>The operator used when evaluating values in cells, such as greater than or between. For example, to style cells with a value less than 5, select lower than and specify a Value 1 value of 5.</td>
</tr>
<tr>
<td>Value 1</td>
<td>The number to evaluate cell values against. When the Operator value is between, enter the lower value in the Value 1 field.</td>
</tr>
<tr>
<td>Value 2</td>
<td>The maximum value a cell can contain to match this rule. This field only appears when the Operator value is between.</td>
</tr>
<tr>
<td>Font color</td>
<td>The font color to apply to cells that match this rule.</td>
</tr>
<tr>
<td>Background color</td>
<td>The background color to apply to cells that match this rule.</td>
</tr>
</tbody>
</table>

Note: When creating rules based on a duration value, specify the duration in seconds.
<table>
<thead>
<tr>
<th>Field</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Rule order</td>
<td>A numerical value that determines the order in which rules apply. Rules with a higher rule order apply later and override lower-order rules. For example, one rule matches cells with a value greater than 140, and another rule matches cells with a value less than 150. The rule with the higher order applies to cells with values from 141 through 149.</td>
</tr>
</tbody>
</table>

7. Click **Submit**.
8. Click **Close**.
9. Click **Run** to generate the report using the rules.

**Domain separation in Reporting**

This is an overview of domain separation as it pertains to reporting and how it relates to report creation and administration. Domain separation allows you to separate data, processes, and administrative tasks into logical groupings called domains. You can then control several aspects of this separation, including which users can see and access data.

**Overview**

Domain separation is supported in this application. Not all ServiceNow applications support domain separation; some include limitations on the data and administrative settings that can be domain separated. To learn more, see Application support for domain separation. To activate the domain separation plugin, see Request domain separation.

**How domain separation works in Reporting**

In the case of Reporting, the data that is separated includes report designs and report content. A report defined at the global level is visible to users in all child domains. In the figure below, the TOP domain represents the global domain.

- Reports created in the TOP domain are visible to users in the Joe's company domain and HR, CS, and IT child domains of Joe's company.
- Reports created in either the IT, CS, or HR child domains are not visible to users in the other child domains, but they are visible to users in the parent Joe's company domain.
- Reports created in the parent Joe's company domain are available only to users in that domain, but not to users in the child domains.
However, if you create a report in one domain and copy it to another, the report structure remains the same, but the data the report accesses is adjusted for the domain. For example, a report on the [incident] table that shows active incidents will show all active incidents to a user in the parent domain, but only IT incidents to a user in the IT domain.

### Enable domain separation on reports

Activate the domain separation plugin to enable reports to display content based on data, rules, and settings from the logged-on user domain. See [Request domain separation](#).

Requires role: `[security_admin]`

By default, the Domain Support plugin separates data on certain tables by domain. It does not, however, separate reports by domain unless the MSP Extensions plugin is installed. The report displays data only from the user’s domain, but the user is able to see all the reports.

Follow these steps to ensure domain separation on reports if the MSP Extensions plugin is not installed.

1. Navigate to [Reports > Administration](#) and select a report to separate by domain. If necessary, enable this module.
2. Right-click the header and select [Configure > Dictionary](#).
3. Configure the dictionary on the [sys_domain](#) field and fill in the [Reference](#) field with the domain for this report. If left blank, the report is global.

   **Domain** fields appear on reports, and the field references a table. After a domain field exists on a form, all records within the table will have the domain field enabled. By default, all these records are global.
Customize calendar reports

You can specify the fields that are displayed in calendar tasks.

By default, the number and short_description fields are displayed, but this behavior is configurable. Radio buttons on reports can be configured for various fields to highlight calendar entries by properties such as priority level and approval status. You can select a unique highlight color for each task property.

Configure how calendar entries look

To configure how calendar entries appear for a table, add calendar_elements attributes to the System Dictionary entry for that table.

1. Open a form for any record in that table.
2. Right-click the form header and select Configure > Dictionary.
3. In the record list that appears, select the first record that does not have a value in the Column name field.
4. Switch the Dictionary Entry form to the Advanced view. For more information, see View management.
5. In the Attributes field, add calendar_elements=<field name>;<field name>, listing the fields you want to appear in each entry of your calendar report separated by semi-colons.

Note: When you define attributes for calendar elements, you replace the default display elements of number and short_description with the attributes that you list in this field. To add any additional attributes to the calendar entry and retain the number and short description of the change, include the number and short_description fields.
in your attributes. For example, to add state information to your task calendar, add the following attribute to the Task table:

\[ \text{calendar_elements=number;short_description;state} \]

6. If the table already has an attribute, separate it from the attribute you are adding with a comma, for example:

\[ \text{reference_index_include=active,calendar_elements=number;short_description;state} \]

7. Click Update.
The calendar entries display the attributes you have added for the selected table.

**Table: Task [task]**

- **All**

### Modify or add calendar report system properties

Specify system property values to override Task table highlighting in calendar events, limit the number of events in a calendar cell, or change the day the calendar week starts.

**Override Task table field styles for highlighting calendar events**

Highlighting for calendar report events is configured with field styles, which are defined for a particular table. You can configure whether calendar reports use field styles from the tables or report sources that they are based on.
Role required: admin

By default, field styles in the Task (task) table are applied to calendar reports. If calendar reports are configured to use field styles from their tables or report sources, these field styles override the Task table styles.

1. In the filter navigator, enter: `sys_properties.list`
2. Select the `glide.ui.report.extend_calendar_choices` property to specify which field styles are used during calendar highlighting.
   - To use field styles in only the Task table, set the property to `false`.
   - To use field styles from the table that the calendar report is based on, set the property to `true`.
3. Click Update.

Limit the number of events displayed on calendar days
For calendar reports, the maximum number of events that appear in some calendar views is configurable. When this maximum is exceeded a `+ <number>` link appears, which opens a pop-up window with additional events. You can also configure the maximum number of events that appear in this pop-up window. When this maximum is exceeded, a `+ many` link appears, which opens a list of events instead of a pop-up window.

Role required: report_admin, admin

You can configure these settings for the following calendar views:

- A calendar day when calendar is in month or year view
- The top `full day` section of a calendar day when a calendar is in day or week view

1. In the navigation filter, enter `sys_properties.list`.
2. Configure the `glide.report.calendar.max_events_displayed_per_cell` and `glide.report.calendar.max_more_events_per_day` properties.
   For more information, see Available system properties for information about these properties.
3. Click Update.

Change the day that calendar weeks start on
By default, weeks for calendar reports start on Monday. You can add a system property to start weeks on Sunday or another day instead. Weeks use ISO numbering regardless of what day they start on.

Role required: admin

The `glide.ui.date_format.first_day_of_week` system property modifies the generated date/time value used in the query and sets the start day of the week in the rendered calendar.

Note:
- `glide.ui.filter.first_day_of_week` must also be set to the same value as `glide.ui.date_format.first_day_of_week` for the set day to display properly.
- If you change the `glide.ui.filter.first_day_of_week` property after collecting Performance Analytics score data, the scores will be removed.

1. Add the `glide.ui.date_format.first_day_of_week` system property.
   For more information, see Add a system property
2. Set one of the following integer values:
### Option | Description
--- | ---
Start weeks on Monday | Set Value to 2
Start weeks on Sunday | Set Value to 1

3. Click **Submit**.

**Set calendar record limit**

By default, calendar reports save up to 10,000 records. Change this limit by setting the `glide.ui.max_calendar_records` system property. If the number of records fetched exceeds this limit, you are prompted to filter the data and run the report again.

Role required: admin

1. Add the `glide.ui.max_calendar_records` system property.
   For more information, see [Add a system property](#).
2. Complete the form with the following values.

<table>
<thead>
<tr>
<th>Option</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Name</td>
<td><code>glide.ui.max_calendar_records</code></td>
</tr>
<tr>
<td>Description</td>
<td>Enter a phrase that describes the function of the property, such as Maximum number of calendar records saved.</td>
</tr>
<tr>
<td>Type</td>
<td>Integer</td>
</tr>
<tr>
<td>Value</td>
<td>Enter the desired value for the number of records retained by the platform. The default value if this property is not configured is 10,000.</td>
</tr>
</tbody>
</table>

3. Click **Submit**.

**Change highlighting of calendar report events**

Field styles control the highlighting of events in calendar reports. Manage field styles to change how highlighting works.

Role required: admin

You can apply field styles for the table that a calendar is based on or field styles for the Task (task) table to a calendar. The field styles that are applied for calendar highlighting depends on the `glide.ui.report.extend_calendar_choices` system property. See [Modify or add calendar report system properties](#) for more information.

You can change only the background color of calendar events. All other CSS is ignored. Events without a defined field style display a white background when highlighting is applied to a calendar report.

Define field styles for the appropriate table.
- To define field styles for all calendar reports, define the style on the Task (task) table.
- To define field styles that apply only to calendars that are a based on a specific table or report source, define the field styles on that table.

If calendar reports are configured to use field styles from their tables or report sources, these field styles override the Task (task) table styles.

**Set persistent highlighting for a calendar criterion**

Calendar report and widget criteria highlighting is removed once you close the report or widget. Set highlighting for a selected criterion to remain persistently.
Role required: admin

1. Navigate to **Homepage Admin > Pages**.
2. Click the homepage or dashboard title where the calendar report is located.
3. Click the Dropzone the calendar report type is listed under.
4. Click **New** to define a new portal preference.
5. Complete these fields:

<table>
<thead>
<tr>
<th>Field</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Name</td>
<td>Enter <code>sysparm_calstyle</code></td>
</tr>
<tr>
<td>Value</td>
<td>Enter the value you want to highlight, for example, <code>priority</code></td>
</tr>
</tbody>
</table>

6. Click **Update** to save the preference and return to the homepage or dashboard portal page form.
Each time you open the report, the selected criterion will be highlighted.

**Customize a start and end date**

You can configure calendar reports to support the spanning of multi-day events across calendar cells.

Role required: dictionary admin or admin

A change request with a **Work Start** date on Monday and a **Work End** date on Tuesday is displayed on both days when viewed in a **Calendar** field. However, when two custom fields named **First Date** and **Last Date** are used, the same behavior does not occur.

The code looks for an ending field with the same name as the start date field, except using the word end instead of start. If the custom fields are **My Start Date** and **My End Date**, the system
correctly interprets the meaning of these fields because their names are the same except for the words start and end.

1. Follow the steps in Add and customize a field in a table.

2. Enter the following values in the form to create the start date span field.

<table>
<thead>
<tr>
<th>Field</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Name</td>
<td>Calendar start date span</td>
</tr>
<tr>
<td>Database column name</td>
<td>u_first_date # u_my_start_date</td>
</tr>
<tr>
<td>Type</td>
<td>Date</td>
</tr>
</tbody>
</table>

3. Add another field using the following values for the end date span field.

<table>
<thead>
<tr>
<th>Field</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Name</td>
<td>Calendar end date span</td>
</tr>
<tr>
<td>Database column name</td>
<td>u_last_date # u_my_end_date</td>
</tr>
<tr>
<td>Type</td>
<td>Date</td>
</tr>
</tbody>
</table>

**Translate a report’s grouping labels**

When executing reports that group results by a Translated Text field, to ensure that individual field labels and values display as translated, use the Translated_field type.

When executing reports, for example multi-level pivot or bar reports, that group results by a Translated Text field, the labels may not all display as translated when the instance language is changed from English to another language. These field labels are entries from the Translated Name / Field table.

Translation errors can occur when translating more than the first row or column of a report, or when creating a custom field for grouping. Use the Translated_field type to Translate individual field labels and values. See Creating reports for grouping options available from the Configure tab for the specific report type.

If you create a custom field for a report, the label is not added automatically. You need to add the label in the Field Label table and manually Translate a field label.

**Report Administration module**

Learn how to administer reports on the ServiceNow platform using the Reports > Administration module.

This module is not enabled by default, and must be activated. For a list of the reporting roles delivered with the ServiceNow platform, see Base system roles.

**Note:** Restricting a report by role restricts who can view a report. Users without the admin role cannot edit global reports. If a non-admin user edits a global report, saving that report creates a personalized version belonging to that user.

Use the record list view to filter, view, or modify reports using any of the standard record list controls. Click New to create reports or select any of the records to display the report as a form. All the standard ServiceNow form controls apply.

You can select the table and field on which to report and the characteristics of the report format. Create a condition in the Filter field to further restrict the data that is presented in the report and select a role that can use the report.
Report Security

The Report Security enforce access control checks plugin allows administrators to use access control list (ACL) rules to restrict report access. This functionality prevents unauthorized users from editing, updating, or deleting reports either through the UI or through a URL construct. See Access control list rules for more information.

Available Report Fields

The following fields can be manipulated:

<table>
<thead>
<tr>
<th>Field</th>
<th>Input Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Title</td>
<td>A unique and descriptive name for the report.</td>
</tr>
<tr>
<td>Table</td>
<td>The ServiceNow table against which this report is run.</td>
</tr>
<tr>
<td>Field Name</td>
<td>The name of the group-by field.</td>
</tr>
<tr>
<td>Type</td>
<td>The report type for this report.</td>
</tr>
<tr>
<td>Chart Size</td>
<td>Large, medium, or small.</td>
</tr>
<tr>
<td>Visible to</td>
<td>Select a group whose members are authorized to see the report. Select Everyone to give all your users access.</td>
</tr>
<tr>
<td>User</td>
<td>The user who can view the chart. Enter GLOBAL to make the report accessible to all.</td>
</tr>
<tr>
<td>Filter</td>
<td>The filter applied to the report data.</td>
</tr>
<tr>
<td>Roles</td>
<td>The roles required to view the report.</td>
</tr>
</tbody>
</table>

If added to the form, the following fields are available

<table>
<thead>
<tr>
<th>Field</th>
<th>Input Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Aggregate</td>
<td>Determine how you want the data in the report aggregated. The default is Count, which displays the number of records selected. When you select Average, Sum or Count Distinct, you can select from a list of additional fields whose values you want to use to aggregate the data. Typical values to use as an average or a sum are the time measurements, such as Business duration (expressed in days, hours, and minutes) and Resolve time (expressed in seconds). Other fields, such as Priority, have numerical values associated with their levels and can be used as aggregators.</td>
</tr>
</tbody>
</table>

Note: Averages are calculated by dividing the sum of all fields by the number of those fields that contain a value. Fields that are empty or that contain a light gray zero are not included in the field count that is used when dividing the sum.
### Field | Input Value
--- | ---
Content | An HTML field for describing the content of the report. Not processed in the generation of the report.
Display grid | Select to display a table under the chart that contains a breakdown of the requested data. The aggregation units are **Count**, **Average**, **Sum**, or **Count Distinct**. The percentage of the total data represented by each discrete piece is displayed.
Group | Select a group whose members are authorized to see the report. Select **Everyone** to give all your users access.
Interval | For **Trend** or **Trendbox** charts, the interval of time to measure along.
No Groups | Use the values in this list to limit the number of bars that appear in the chart. The platform displays 12 bars by default, from high values to low values and puts the remaining data into an **Other** category. You can select to display 10, 12, 15, 20, or all bars.
Others | Check box to include the **Other** group in the report.
Select fields for list | The fields that display in a list report.
Select fields for orderBy | The order of fields that display in the report.
Show Empty | Whether to display empty categories.
Sumfield | The field to perform a sum on for **Trend** or **Trendbox** Charts.
Trend Field | The field to track over time for **Trend** or **Trendbox** Charts.

### Reporting properties

Use properties to fine-tune report behavior and appearance.

### Introduction

Navigate to **Reports > Administration > Properties** to configure the main reporting properties. In the Filter navigator, enter `sys_properties.list` to configure other reporting properties.

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## Reporting properties

<table>
<thead>
<tr>
<th>Property</th>
<th>Description</th>
</tr>
</thead>
</table>
| Use new report designer. glide.ui.report.new_report_designer | Enable the use of the report designer.  
- Type: true | false  
- Default value: true  
- Location: **Reports > Administration > Properties**
| Truncates x-axis labels to 20 characters, if selected (Applicable only to charts generated with the charting v2 plugin). glide.chart.truncate.x_axis_labels | Sets the maximum number of columns in a horizontal bar chart before slanting (angling) the labels.  
- Type: true | false  
- Default value: true  
- Location: **Reports > Administration > Properties**
| glide.ui.chart.bar.horiz.max_col_slant_labels | Sets the maximum number of columns in a horizontal bar chart before slanting (angling) the labels.  
- Type: integer  
- Default value: 5  
- Location: add to the System Property (sys_properties) table |
| Toggle animations on and off for charts generated with the charting v2 plugin glide.chart.animation | Enables animations for reports and Performance Analytics visualizations that support animations.  
**Note:** Map reports do not support animations and therefore do not follow this property.  
- Type: true | false  
- Default value: true  
- Location: **Reports > Administration > Properties**
| Truncates data labels from the front of the label. glide.chart.data_labels.remove_leading | This property is applicable only if glide.chart.truncate.data_labels is set.  
- Type: string  
- Default value: false  
- Location: **Reports > Administration > Properties**
| Number of bins in a histogram chart (minimum 1, maximum 20). glide.chart.histogram.bins | Determines the number of sections that appear on the Y axis of the histogram.  
- Type: integer  
- Default value: 10 (Allowed range of values 1–20)  
- Location: **Reports > Administration > Properties**  
This property applies to histogram reports.

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<table>
<thead>
<tr>
<th>Property</th>
<th>Description</th>
</tr>
</thead>
</table>
| Color of the mean value dot in box and trendbox charts. glide.chart.box.mean.color | Sets the color of the 'mean' value dot in a box or trendbox report.  
- Type: string  
- Default value: #2f7ed8  
- Location: Reports > Administration > Properties  
This property applies to box and trendbox reports. |
| glide.chart.drill.open_new_win | If enabled, opens the default list drilldown in a new tab if no drilldown is defined. Applies only for non-list type reports.  
- Type: true | false  
- Default value: false  
- Location: Reports > Administration > Properties |
| Color of the box and whisker in box charts glide.chart.box.color | Sets the color of the box report.  
- Type: string  
- Default value: #FF0000  
- Location: Reports > Administration > Properties  
This property applies to box reports. |
| Default Color list name for each dataset glide.ui.report.datasets.default_colors | Sets the default colors to use when adding multiple data sets to a single chart. These values are used when the Chart color value is Use one color.  
Enter a comma-separated list of chart color Color name values. You can view available colors and define new colors on the Chart Colors (sys_report_chart_color) table.  
Each color is used in order as the default chart color when adding a data set to a chart. If there are more data sets than default colors, the colors repeat.  
- Type: string  
- Default value: Default Color  
- Location: Reports > Administration > Properties |
<table>
<thead>
<tr>
<th>Property</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>List of color palette names that are used as a</td>
<td>Sets the default palette to use when adding multiple data sets to a single chart. These values are used when the Chart color value is Use color palette.</td>
</tr>
<tr>
<td>default color palette for each dataset</td>
<td>Enter a comma-separated list of chart color scheme Name values. You can view available palettes and define new palettes on the Chart Color Schemes (pa_chart_color_schemes) table.</td>
</tr>
<tr>
<td>glide.ui.report.datasets.default_palettes</td>
<td>Each palette is used in order as the default chart palette when adding a data set to a chart. If there are more data sets than default palettes, the palettes repeat.</td>
</tr>
<tr>
<td></td>
<td>• Type: string</td>
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<tr>
<td></td>
<td>• Default value: Default UI14</td>
</tr>
<tr>
<td></td>
<td>• Location: Reports &gt; Administration &gt; Properties</td>
</tr>
<tr>
<td></td>
<td>This property applies to pie, bar, horizontal bar, donut, and semi-donut reports.</td>
</tr>
<tr>
<td></td>
<td></td>
</tr>
<tr>
<td>Set the default map for reports of type ‘Map’</td>
<td>Specifies the default map to use when creating Map-type reports.</td>
</tr>
<tr>
<td>glide.ui.report.map.default_map</td>
<td>• Type: string</td>
</tr>
<tr>
<td></td>
<td>• Default value: world</td>
</tr>
<tr>
<td></td>
<td>• Location: Reports &gt; Administration &gt; Properties</td>
</tr>
<tr>
<td></td>
<td>This property applies to Map reports.</td>
</tr>
<tr>
<td>glide.ui.chart.color</td>
<td>Specify the chart color.</td>
</tr>
<tr>
<td></td>
<td>• Type: string</td>
</tr>
<tr>
<td></td>
<td>• Default value: #006DDA</td>
</tr>
<tr>
<td></td>
<td>• Location: Add a system property to the System Property [sys_properties] table</td>
</tr>
<tr>
<td>glide.ui.chart.use_full_color_palette</td>
<td>Enable to generate bars in bar and Pareto charts with different colors for each bar.</td>
</tr>
<tr>
<td></td>
<td>• Type: true</td>
</tr>
<tr>
<td></td>
<td>• Default value: #false</td>
</tr>
<tr>
<td></td>
<td>• Location: Reports &gt; Administration &gt; Properties</td>
</tr>
<tr>
<td></td>
<td>This property applies to bar, horizontal bar, and Pareto reports.</td>
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</tbody>
</table>

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<th>Property</th>
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</tr>
</thead>
</table>
| glide.chart.label.legend.truncate_to | Truncates legend labels for left or right legend alignment for all chart sizes except large charts. Prevents shrinking of charts when labels are too long.  
  - Type: integer  
  - Default value: 14  
  - Location: System Property [sys_properties] table |
| glide.chart.label.legend.truncate_to.large | Truncates legend labels for left or right legend alignment for large charts. Prevents shrinking of charts when labels are too long.  
  - Type: integer  
  - Default value: 20  
  - Location: System Property [sys_properties] table |
| glide.report.new_calendar | Enables (true) or disables (false) new calendar reports. Internet Explorer 7 and 8 do not support new calendars. If you open a calendar report in one of these browsers the old version of calendar reports is always used.  
  - Type: true | false  
  - Default value: true  
  - Location: Add to the system Property [sys_properties] table |
| glide.report.calendar.max_days_back | Enables you to specify the number of days with events that are returned when you browse backward and forward in a calendar report. Evaluated on the Calendar by field in the report creator.  
  - Type: integer  
  - Default value: 30  
  - Location: Add a system property to the System Property [sys_properties] table  
This property applies to calendar reports. |
| glide.report.calendar.default_event_duration | The default duration for an event without a specified end date.  
  - Type: string  
  - Default value: 01:00:00 (One hour, zero minutes, zero seconds)  
  - Location: System Property [sys_properties] table  
This property applies to calendar reports. |
<table>
<thead>
<tr>
<th>Property</th>
<th>Description</th>
</tr>
</thead>
</table>
| glide.report.calendar.max_events_displayed_per_cell | Defines the maximum number of events that can appear in calendar report for:  
- A calendar day when calendar is in month or year view  
- The top ‘full day’ section of a calendar day when a calendar is in day or week view  
Events that exceed this value are visible via a link in the calendar cell. See glide.report.calendar.max_more_events_per_day for more information.  
- Type: integer  
- Default value: 3  
- Location: add to the System Property (sys_properties) table |
| glide.report.calendar.max_more_events_per_day | Defines that maximum number of calendar events that can appear in the + <number> popup for:  
- A calendar day when calendar is in month or year view  
- The top ‘full day’ section of a calendar day when a calendar is in day or week view  
When this number is exceeded, a + many link appears, which opens a list of events instead of a popup. For more information about the maximum number of events that can be displayed in a calendar day, see system property glide.report.calendar.max_events_displayed_per_cell.  
- Type: integer  
- Default value: 30  
- Location: add to the System Property (sys_properties) table |
| glide.ui.report.extend_calendar_choices | Controls which field styles are applied during calendar highlighting. If this property is set to false, field styles in only the Task table are used. If this property is set to true, the calendar first uses field styles from the table the report is based on. If no applicable styles exist in that table, the calendar uses field styles from the Task table.  
- Type: true | false  
- Default value: true  
- Location: System Property (sys_properties) table |
<table>
<thead>
<tr>
<th>Property</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td><code>glide.ui.filter.first_day_of_week</code></td>
<td>Identifies the first day of the calendar week for the company. By default, the start of the week is Monday, meaning that the calendar week begins with Monday and ends with Sunday. To change this behavior, add the property <code>glide.ui.filter.first_day_of_week</code> to the instance as an integer property. Set the value to the integer corresponding with the day of the week that the calendar begins on, where 1 is Sunday, 2 is Monday, and so on. The function impacts all charts and calculations where the day of the week is used as a parameter.</td>
</tr>
<tr>
<td></td>
<td>- Type: integer</td>
</tr>
<tr>
<td></td>
<td>- Default value: 2</td>
</tr>
<tr>
<td></td>
<td>- Location: Add a system property to the System Property [sys_properties] table</td>
</tr>
<tr>
<td><code>glide.ui.chart.bar.horiz.max_col_slant_labels</code></td>
<td>Sets the maximum number of columns in a horizontal bar chart before slanting (angling) the labels.</td>
</tr>
<tr>
<td></td>
<td>- Type: integer</td>
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<tr>
<td></td>
<td>- Default value: 5</td>
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<tr>
<td></td>
<td>- Location: Add a system property to the System Property [sys_properties] table</td>
</tr>
<tr>
<td></td>
<td>This property applies to horizontal bar reports.</td>
</tr>
<tr>
<td><code>glide.ui.chart.pie.labels</code></td>
<td>Enables (true) or disables (false) labels on pie chart slices.</td>
</tr>
<tr>
<td></td>
<td>- Type: true</td>
</tr>
<tr>
<td></td>
<td>- Default value: true</td>
</tr>
<tr>
<td></td>
<td>- Location: add to the System Property (sys_properties) table</td>
</tr>
<tr>
<td><code>glide.ui.chart.pie.labels.max_items</code></td>
<td>Sets the maximum number of pie chart slice values that can be returned in order to display their labels.</td>
</tr>
<tr>
<td></td>
<td>- Type: integer</td>
</tr>
<tr>
<td></td>
<td>- Default value: 8</td>
</tr>
<tr>
<td></td>
<td>- Location: add to the System Property (sys_properties) table</td>
</tr>
</tbody>
</table>
### Property Description

<table>
<thead>
<tr>
<th>Property</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>glide.chart.data.label.truncate_to</td>
<td>Sets the maximum length of a data label for a chart. If longer, the label is truncated and an ellipsis (…) appended.</td>
</tr>
<tr>
<td></td>
<td>• Type: integer</td>
</tr>
<tr>
<td></td>
<td>• Default value: 13</td>
</tr>
<tr>
<td></td>
<td>• Location: System Property [sys_properties] table</td>
</tr>
<tr>
<td>glide.report.pivot.fixed_headers</td>
<td>When disabled, the header row of a multiple level pivot table is unfrozen and scrolls out of frame when the user scrolls through the table.</td>
</tr>
<tr>
<td></td>
<td>• Type: true</td>
</tr>
<tr>
<td></td>
<td>• Default value: true</td>
</tr>
<tr>
<td></td>
<td>• Location: Add a system property to the System Property [sys_properties] table</td>
</tr>
<tr>
<td></td>
<td>This property applies to multilevel pivot tables.</td>
</tr>
<tr>
<td>glide.report.metric_max_data_points</td>
<td>Configure the maximum number of data points per MetricBase report. Typically only MetricBase time series reports display enough data to require this limitation.</td>
</tr>
<tr>
<td></td>
<td>• Type: integer</td>
</tr>
<tr>
<td></td>
<td>• Default value: 2000</td>
</tr>
<tr>
<td></td>
<td>• Location: Add a system property to the System Property [sys_properties] table</td>
</tr>
</tbody>
</table>

**Interactive Filters properties**

<table>
<thead>
<tr>
<th>Property</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>glide.homepage_interactivity.ui_ctrls_max_display_options</td>
<td>Maximum number of choices for radio button and checkbox interactive filters.</td>
</tr>
<tr>
<td></td>
<td>• Type: integer</td>
</tr>
<tr>
<td></td>
<td>• Default value: 25</td>
</tr>
<tr>
<td></td>
<td>• Location: Reports &gt; Administration &gt; Properties</td>
</tr>
<tr>
<td></td>
<td>Category: Choice list, Reference field, Date, Group</td>
</tr>
</tbody>
</table>

**Interactive Analysis**

Interactive Analysis enables you to quickly explore data using visualizations.

From any list of records, you can access an interactive set of reports on the list data. You can also manipulate the data by grouping, stacking, aggregating, and applying
interactive filters. Click the visualization to drill down into the data. Click the information icon

( )
to edit the source filter, view the list of applied filters, and copy the URL of the analysis.
**Launch Interactive Analysis**

Launch Interactive Analysis from any list.

Role required: none

You must have access to the list of records that you want to analyze.

1. Navigate to any list.
2. Optional: Configure the columns that are displayed on the list.
   The columns that appear on the list when you launch Interactive Analysis determine which fields are included in the analysis. The included fields determine which **Group by** and **Stack by** options are available, and which interactive filters appear by default.
3. Right-click the column header for a reference, choice, date/time, integer, or boolean field and select **Launch Interactive Analysis**.
   The column that you launch Interactive Analysis from is used as the default **Group by** value.
4. Optional: Change how data is aggregated by selecting different values in the **Group by** and **Stack by** choice lists, or filter the data by applying one or more interactive filters.
5. Optional: Drill down into a subset of the data by clicking a visualization, such as a bar in the bar chart or a cell in the heatmap.

**Interactive Filters deduplication**

When you launch Interactive Analysis, the **Filters** panel displays all of the configured filters that are available on your personalized view. So that you do not have to clean up the filter panel, duplicate filters are removed automatically.

Duplicate filters are removed according to the following criteria:

- If the configuration is the same, the UI control determines which filter is shown on initial launch. Multiple input filters have first priority, then single input, check box, and radio buttons. For more information, see *Available interactive filter UI control types*.
- If the configuration is the same, except that some filters have only one target and others have multiple targets, then only the last updated filter is retained.
- If both the configuration and the UI control are the same, then the last updated filter is retained.
- If the configuration is the same, but some filters have multiple target columns in the same target table, then all the filters are considered as separate filters and retained. An example of multiple target columns in the same target table is the **Date opened** and **Date escalated** columns in the incident table.
- If the configuration and the UI control are the same, but the base condition is different for any two filters, then they are considered separate filters and retained.

**Interactive Analysis information panel**

The **Filter Info** panel summarizes what the current filter shows and enables you to edit the source filter condition, bookmark an interactive analysis, and share an interactive analysis with colleagues.

Click the information icon

![info_icon](image)

( )

to open the **Filter Info** panel.
The information panel has the following features:

**Source Filter**

Shows the conditions that apply to the filter. Click the star to add this interactive analysis to your favorites.

**Edit Source Filter**

Click the **Edit Source Filter** button to open the condition builder. You can edit the source filter here instead of reopening the definition page of the interactive filter. For more information, see *Edit source filters*.

**Applied Filter**

Shows a summary of the filters that are applied to the current interactive analysis.

**Share**

Shows the full URL of the analysis. Click the URL to highlight it. For more information, see *Share an interactive analysis*.
Bookmark an interactive analysis

To save an interactive analysis for later use, you can add it to your favorites.

1. Navigate to the table that you want to analyze.
2. Right-click on the header of the column you want to analyze and select **Launch Interactive Analysis**.
3. Click the information icon

( )

to open the Filter Info panel.

4. Apply filters to the interactive analysis and click Apply Filters.

5. Click the star icon to add the interactive analysis to your favorites.

The favorites list on the navigation panel is updated with a bookmark for the current interactive analysis.
Share an interactive analysis

You can share the URL of an interactive analysis with other users.

1. Navigate to the table that you want to analyze.
2. Right-click on the header of the column you want to analyze and select Launch Interactive Analysis.
3. Click the filter icon to show the interactive filters.
4. Make the desired filter changes and click Apply Filters.
5. Click the information icon to open the Filter Info panel.
6. Right-click the URL in the Share section and select Copy.
You can share the URL for the interactive analysis via email with users who have rights to the information in the analysis.
Add a filter to Interactive Analysis

Add a filter to show more refined information in your Interactive Analysis.

1. Navigate to the table that you want to analyze.
2. Right-click on the header of the column you want to analyze and select **Launch Interactive Analysis**.
3. Click the filter icon

   ![Filter Icon](image)

   and click **Add filters**. Use the **Search Filters** bar to limit the number of filters displayed.

4. Select the filter to add.
5. Click **Apply Filters**.
The new filter is applied to the interactive analysis. Click the information icon

(____) to view the filters in the source filter summary.

**Remove a filter from Interactive Analysis**

You can remove a filter from Interactive Analysis and specify whether to remove the filter element from Group by and Stack by choice lists in the analysis.

1. Navigate to the table that you want to analyze.
2. Right-click on a column header and select **Launch Interactive Analysis** or open a dashboard that you own to show the interactive filters.
3. Click the filter icon

(____) to show the interactive filters.
4. Point to the filter you want to remove and click the **Remove filter** icon.

The filter is removed from the Interactive Analysis.

**Edit source filters**

You can edit a source filter in the Interactive Analysis **Filter Info** panel.

1. Navigate to the table that you want to analyze.
2. Right-click on the header of the column you want to analyze and select **Launch Interactive Analysis**.
3. Click the information icon

(____) to open the **Filter Info** panel.
4. Click **Edit Source Filter**.
5. Click **Load Filter** and select the filter to edit.
6. Edit the existing conditions and add new conditions. For more information, see **Condition builder**.
7. Click **Save changes**.

The interactive analysis updates with the new source filter. The **Filter Info** panel shows the updated conditions.

**Cascading filters**

Cascading filters allow you to filter based on multiple values in a hierarchy, such as by region, country, and city.

Lower level choices are filtered by the values selected at higher levels. For example, you can create a cascading filter that allows users to select from a list of managers, then select from user groups that are managed by the selected manager. Report data is then filtered to show only records assigned to that group.

Alternatively, you can leave lower levels of the filter unselected, such as by selecting only a manager but no user group. Report data is then filtered to show records assigned to any group managed by that manager.

Cascading filters retain the last elements selected on a dashboard.
Create a cascading filter

To create a cascading filter, define each level of the filter, the relationship between levels, and how a selection at each level filters the report data.

Role required: hp_publisher_admin and report_admin. The hp_publisher_admin role exists only for managing interactive filters. By default, it contains no other roles and is not contained in any other roles.

You must have Performance Analytics to create new interactive filters.

Ensure that the structure of the data that you use to create the filter is consistent. For example, in a cascading filter based on location, ensure that the top level choices are all regions, and the second-level choices are all countries. You can define filter conditions to ensure that only appropriate choices for each level are available.

This procedure includes examples based on a cascading interactive filter using managers and groups. In this example, the top-level choice allows users to select a manager and the second-level choice allows users to select a user group managed by that manager.

Example cascading filter
Note: You can filter reports based on the values in reference fields only. Cascading filters support only the Single Select UI control type.

1. Homepage Admin > Interactive filters.
2. Click New.
3. In the Filter based on choice list, select Cascading Filters.
4. Right-click the form header and select Save.
5. Define the first level of the cascading filter.
   a) In the Cascading Filter related list, click New.
   b) Select the Table and the Display field from the table that contains the values you want to use as the top-level filter choices. The Display Field is limited to the types boolean, choice, reference, and string.
      For example, to define the top level of a hierarchy based on managers and the groups they manage, select Group (sys_user_group) as the Table and Manager as the Display field.
   c) Optional: Use the Filters field to limit which choices are available to users.
      Filter conditions are especially useful when you create a cascading filter based on a self-referencing table, such as Location (cmn_location). Filter the data to ensure each level of the cascading filter has only options appropriate for that level.
   d) Right-click the form header and select Save.
6. Define the next level of the hierarchy.
   Cascading filters use a one-to-many relationship between higher-level filters and lower-level filters. One higher-level filter can affect the choices available in any number of lower-level filters.
   a) From the manager filter, in the Cascading Filter related list, click New.
   b) Select the Table and the Display field from the table that contains the values you want to use as the second-level filter choices. The Display Field is limited to the types boolean, choice, reference, and string.
      In the managers and groups example, select Group (sys_user_group) as the Table and Name as the Display field.
   c) In the Parent Reference Field field, select the field that contains the value selected from the higher-level filter.
      For example, when you create the Group filter, the Parent Reference Field value is Manager. In this example, the manager selected in the first filter is used to filter the list of available groups based on the Manager field value of each group.
   d) Right-click the form header and select Save.
   e) Repeat these substeps for each additional filter you want to add. To add another level to the filter hierarchy, add a new record in the Cascading Filter related list of the lowest-level filter such as the Group filter, instead of the top-level filter such as the Manager filter.
7. Define how each filter level applies the filter to reports on a dashboard.
   a) In the Target Tables related list, click New.
   b) Select the Target table that contains the data you want to filter, such as Incident.
   c) Select the Field to filter on.
      The field must reference the table specified in the filter. For example when filtering incident data, the Field for the top-level manager filter is Assignment group.Manager. In this example, the Field for the second-level group filter is Assignment group.
d) Click **Submit**.

e) Repeat these substeps to add targets for each level of the filter.

You can define multiple targets for each filter level, such as to filter incident data by assignment group or to filter CMDB CIs by support group using the same Groups (sys_user_group) filter.

**Note:** A cascading filter hierarchy must specify at least one target. You can define a cascading filter that skips levels in a hierarchy, or a cascading filter that only specifies targets for certain levels in a hierarchy. For example you can define a target only for the Group-level filter and not the Manager-level filter. In this example, reports are filtered only when a user selects a specific group and not just a manager.

The following images demonstrate the completed configuration for the example cascading filter. The **Cascading Filter** related list (not shown) in the top-level filter contains the second-level filter.
After you create all levels of the filter, add it to a homepage or dashboard.

**Cascading filters deduplication**

So that you do not have to clean up the filter panel, duplicate filters are removed automatically. Duplicate filters are removed according to the following criteria:

- If the configuration is the same, the last edited filter is retained.
- If the configuration is the same, except that some filters have only one target and others have multiple targets, then only the last updated filter is retained.
- If the configuration is the same, but some filters have multiple target columns in the same target table, then all the filters are considered as separate filters and retained. An example of multiple target columns in the same target table is the Date opened and Date escalated columns in the incident table.
- If the configuration and the UI control are the same, but the base condition is different for any two filters, then they are considered separate filters and retained.

**Interactive Analysis persistence**

The filters that you select persist between uses of Interactive Analysis per view and per user.

When you launch Interactive Analysis on a view, a specific column in a table, for the first time, all filters are set to their default values. The next time you launch Interactive Analysis on the same view, selections including filters, filter order, group by, stack by, and aggregation parameters persist from the previous visit.

In addition, **Group by** and **Stack by** elements are updated when filters are added to an analysis. For example, add a manager filter to an Interactive Analysis page. You can immediately group and stack your widgets by manager.

**Synchronize Group by and Stack by elements in filters**

Synchronize Group by and Stack by elements in an interactive analysis when filters are added to the filter panel and when they are removed from the filter panel. You can also remove a filter without synchronizing group by and stack by elements.

1. Navigate to the table that you want to analyze.
2. Right-click on the header of the column you want to analyze and select **Launch Interactive Analysis**.
3. In the **Filters** panel, click **Add Filters** and add a new filter.
4. Click **Apply Filters**.
   - The new filter element appears in the **Group by** and **Stack by** choice lists.
5. **Remove the filter from the interactive analysis** to remove the filter from the **Filters** panel.

---

6. Optional: Select **Remove element from Group by and Stack by**.

   The option **Remove element from Group by and Stack by** is not shown if:
   - There is another filter on the **Filters** panel that has the same target field as the filter you are removing.
   - You have personalized the source list before launching interactive analysis. You cannot synchronize **Group by** and **Stack by** elements by adding or removing a filter if the column is part of a personalized list.
Interactive Analysis aggregations

When you work with Interactive Analysis, you can view data from the perspectives of record counts, sums, averages, and distinct counts.

Aggregation types

Count

Count is the default aggregation and shows when you launch Interactive Analysis. The Count aggregation shows the number of records selected. For example, an analysis of incidents grouped by state, stacked by priority, and aggregated by count shows the number of incidents in each category in hints and in the cells of multidimensional reports.

Average, Sum, Count Distinct
Select **Average**, **Sum**, or **Count Distinct**, to show a list of fields from the selected **Table**. Select a field to **Aggregate by** from this list. For example, if you select an integer field, such as **Reassignment count**, the data is expressed as a decimal value number.

---

**Interactive Filters**

Interactive Filters allow you to filter report widgets directly from a homepage or dashboard without modifying the reports.

You can create an interactive filter and add it to a homepage or dashboard as a widget. Selecting a value in the Interactive Filter widget filters the data in report widgets on the homepage or dashboard. On dashboards, selected filters are saved for each user and applied automatically next time that user views the dashboard.

Interactive filters on homepages do not retain default values or retain values across logins or page refreshes. This functionality is available on dashboards. For more information, see *Create a dashboard version of a homepage*.

**Note:** Creating a new Interactive Filter requires Performance Analytics.
Available Interactive Filter types

You can create Interactive Filters for multiple field types.

<table>
<thead>
<tr>
<th>Interactive filter types</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Choice list</td>
<td>Allows you to filter data based on the value of a specific choice list. You must select the table and choice list field. The filter affects reports on the specified table.</td>
</tr>
<tr>
<td>Reference</td>
<td>Allows you to filter data based on the value of one or more reference fields. You must select the referenced table, as well as reference fields from other tables. The filter affects reports on tables that have the specified reference fields.</td>
</tr>
<tr>
<td>Date</td>
<td>Allows you to filter data based on the value of one or more date fields. You must select the tables and date fields. The filter affects reports on the specified tables.</td>
</tr>
<tr>
<td>Boolean</td>
<td>Allows you to filter data based on the value in a specific true/false field. You must select the table and the true/false field. The filter affects reports on the specified table.</td>
</tr>
<tr>
<td>Group</td>
<td>Allows you to display multiple interactive filters in a single widget on a homepage. Users viewing the homepage can select which grouped filters to apply.</td>
</tr>
<tr>
<td>Empty/non-empty</td>
<td>Filter based on whether a field contains a value.</td>
</tr>
<tr>
<td>Cascading filters</td>
<td>Allow you to filter based on multiple values in a hierarchy, such as by region, country, and city.</td>
</tr>
</tbody>
</table>

Create a choice list interactive filter

A choice list interactive filter enables users to filter report widgets based on the value of a choice list.

Role required: hp_publisher_admin and report_admin. The hp_publisher_admin role exists only for managing interactive filters. By default, it contains no other roles and is not contained in any other roles.

You must have Performance Analytics to create new interactive filters.

Note: If the interactive filter has a default value or specifies the last selected value, this value is not applied automatically on non-responsive dashboards. This feature is only available on Responsive dashboards.

1. Navigate to **Homepage Admin > Interactive Filters**.
2. Click **New**.
3. In the **Filter based on** choice list, select **Choice list**.
4. Set the following fields:
<table>
<thead>
<tr>
<th>Name</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Name</td>
<td>Enter a name for the filter. This name appears on the dashboard widget for the filter.</td>
</tr>
<tr>
<td>Look up name</td>
<td>Enter a lookup name for the filter. This name appears in the Add content menu for users adding a filter to a dashboard. Use this name to help organize your filters. If you do not specify a lookup name, the Name value is used instead.</td>
</tr>
<tr>
<td>Description</td>
<td>Enter a description of the filter.</td>
</tr>
<tr>
<td>UI control type</td>
<td>Select how the available filtering options for this filter appear on the dashboard widget. See Available interactive filter UI control types.</td>
</tr>
</tbody>
</table>

5. Optional: Select **Apply to all tables in hierarchy** to apply the filter to parent, child, and sibling tables of an extended table. For more information, see Apply interactive filters to all tables in a hierarchy.

6. Optional: Exclude specific elements from appearing on the filter using the **Exclusion list**. Data for excluded choices is included when you select **All** on the interactive filter.

7. In the **Table** choice list, select the table that contains the choice list to filter on.

8. In the **Field** choice list, select the choice list field to filter on.

9. Optional: Add any choice list elements you want to exclude from the filter to the **Exclusion list** field.

10. Optional: Select a **Default value** for the filter.

    This default is applied automatically for all users. If a user selects a different value, that value is saved as the user’s default and overrides the global default. You can specify more than one default value when using a UI control type that enables multiple selections, such as Select Multiple Input.

    **Note:** To pass more than 50 default values, or if you see the error **This is exceeding the GET call limitation**, create multiple interactive filters.

11. Click **Submit**.

After you create the filter, add it to a homepage or dashboard.

**Create a reference field interactive filter**

A reference field interactive filter allows users to filter report widgets based on the value of a reference field.

Role required: hp_publisher_admin and report_admin. The hp_publisher_admin role exists only for managing interactive filters. By default, it contains no other roles and is not contained in any other roles.

You must have Performance Analytics to create new interactive filters.

**Note:** If the interactive filter has a default value or specifies the last selected value, this value is not applied automatically on non-responsive dashboards. This feature is only available on Responsive dashboards.

1. Navigate to **Homepage Admin > Interactive filters**.
2. Click **New**.
3. In the **Filter based on** choice list, select **Reference**.
4. In the **Reference table** choice list, select the table that stores the referenced records you want to filter on.
5. Optional: Select a **Default value** for the filter.
   This default is applied automatically for all users. If a user selects a different value, that value is saved as the user's default and overrides the global default. You can specify more than one default value when using a UI control type that enables multiple selections, such as **Select Multiple Input**.

   **Note:** To pass more than 50 default values, or if you see the error *This is exceeding the GET call limitation*, create multiple interactive filters.

6. Set the following fields:

<table>
<thead>
<tr>
<th>Name</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Name</td>
<td>Enter a name for the filter. This name appears on the dashboard widget for the filter.</td>
</tr>
<tr>
<td>Look up name</td>
<td>Enter a lookup name for the filter. This name appears in the <strong>Add content</strong> menu for users adding a filter to a dashboard. Use this name to help organize your filters. If you do not specify a lookup name, the <strong>Name</strong> value is used instead.</td>
</tr>
<tr>
<td>Description</td>
<td>Enter a description of the filter.</td>
</tr>
<tr>
<td>UI control type</td>
<td>Select how the available filtering options for this filter appear on the dashboard widget. See <strong>Available interactive filter UI control types</strong>.</td>
</tr>
</tbody>
</table>

7. Optional: Select **Apply to all tables in hierarchy** to apply the filter to parent, child, and sibling tables of an extended table. For more information, see **Apply interactive filters to all tables in a hierarchy**.

8. Right-click on the form header and select **Save**.
9. In the **Interactive filter references** related list, click **New**.
10. In the **Reference table** field, select a table that has reports you want to filter.
11. Select the **Reference field** to filter on.

   The field must reference the table specified in the parent filter **Reference table** field.

   You can dot-walk from fields that reference other tables. For example, if the parent filter **Reference table** is Department (cmn_department), you can select Incident as the reference **Reference table**, then select **Caller Department** as the **Reference field**.

12. Click **Submit**.

Repeat steps 8-11 as needed for each reference field you want to filter on. After you create the filter, add it to a homepage or dashboard.

**Note:** A filter may be converted from the **Check boxes** to the **Select Multiple Input** control type for performance reasons.

### Create a date interactive filter

A date interactive filter allows users to filter report widgets based on the value in a date field.
Role required: hp_publisher_admin and report_admin. The hp_publisher_admin role exists only for managing interactive filters. By default, it contains no other roles and is not contained in any other roles.

You must have Performance Analytics to create new interactive filters.

Note: If the interactive filter has a default value or specifies the last selected value, this value is not applied automatically on non-responsive dashboards. This feature is only available on Responsive dashboards.

1. Navigate to Homepage Admin > Interactive filters.
2. Click New.
3. In the Filter based on choice list, select Date.
4. Set the following fields:

<table>
<thead>
<tr>
<th>Name</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Name</td>
<td>Enter a name for the filter. This name appears on the dashboard widget for the filter.</td>
</tr>
<tr>
<td>Look up name</td>
<td>Enter a lookup name for the filter. This name appears in the Add content menu for users adding a filter to a dashboard. Use this name to help organize your filters. If you do not specify a lookup name, the Name value is used instead.</td>
</tr>
<tr>
<td>Description</td>
<td>Enter a description of the filter.</td>
</tr>
<tr>
<td>UI control type</td>
<td>Select how the available filtering options for this filter appear on the dashboard widget. See Available interactive filter UI control types.</td>
</tr>
</tbody>
</table>

5. Optional: Select Apply to all tables in hierarchy to apply the filter to parent, child, and sibling tables of an extended table. For more information, see Apply interactive filters to all tables in a hierarchy.

6. In the Date section, use the slushbucket to select one or more date ranges that users can filter on.

Available date filters are defined in the Get Date Filter options for Date Filters business rule. Customize this business rule to add or remove filter options.

7. Optional: Select a Default value for the filter.

This default is applied automatically for all users. If a user selects a different value, that value is saved as the user’s default and overrides the global default. You can specify more than one default value when using a UI control type that enables multiple selections, such as Select Multiple Input.

Note: To pass more than 50 default values, or if you see the error This is exceeding the GET call limitation, create multiple interactive filters.

8. Right-click on the form header and select Save.
9. In the Interactive filter Dates related list, click New.
10. In the Table field, select a table that has reports you want to filter.
11. In the Field field, select a date field to filter on.
12. Click Submit.
Repeat steps 7-10 as needed for each date field you want to filter on. After you create the filter, add it to a dashboard or homepage.

Create a boolean interactive filter

A boolean interactive filter allows users to filter report widgets based on the value of a true/false field.

Role required: hp_publisher_admin and report_admin. The hp_publisher_admin role exists only for managing interactive filters. By default, it contains no other roles and is not contained in any other roles.

You must have Performance Analytics to create new interactive filters.

![Note](image)

**Note:** If the interactive filter has a default value or specifies the last selected value, this value is not applied automatically on non-responsive dashboards. This feature is only available on Responsive dashboards.

1. Navigate to **Homepage Admin > Interactive filters.**
2. Click **New.**
3. In the **Filter based on** choice list, select **Boolean.**
4. Set the following fields:

<table>
<thead>
<tr>
<th>Name</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Name</td>
<td>Enter a name for the filter. This name appears on the dashboard widget for the filter.</td>
</tr>
<tr>
<td>Look up name</td>
<td>Enter a lookup name for the filter. This name appears in the Add content menu for users adding a filter to a dashboard. Use this name to help organize your filters. If you do not specify a lookup name, the Name value is used instead.</td>
</tr>
<tr>
<td>Description</td>
<td>Enter a description of the filter.</td>
</tr>
<tr>
<td>UI control type</td>
<td>Select how the available filtering options for this filter appear on the dashboard widget. See Available interactive filter UI control types.</td>
</tr>
</tbody>
</table>

5. Optional: Select **Apply to all tables in hierarchy** to apply the filter to parent, child, and sibling tables of an extended table. For more information, see Apply interactive filters to all tables in a hierarchy.
6. In the **Table** choice list, select the table that contains the true/false field to filter on.
7. In the **Field** choice list, select the true/false field to filter on.
8. Optional: Select a **Default value** for the filter.
   This default is applied automatically for all users. If a user selects a different value, that value is saved as the user’s default and overrides the global default.
9. Click **Submit.**

After you create the filter, add it to a homepage or dashboard.

Create a group interactive filter

A group interactive filter allows users to select multiple interactive filters to apply to reports on a homepage.
Role required: hp_publisher_admin and report_admin. The hp_publisher_admin role exists only for managing interactive filters. By default, it contains no other roles and is not contained in any other roles.

You must have Performance Analytics to create new interactive filters.

Note: If the interactive filter has a default value or specifies the last selected value, this value is not applied automatically on non-responsive dashboards. This feature is only available on Responsive dashboards.

Before starting this procedure, create several choice list, reference field, boolean, or date filters to group.

Note: Default values selected for child filters are not applied when using a group filter. Selected values in a group filter are not saved when you reload the dashboard.

1. Navigate to Homepage Admin > Interactive filters.
2. Click New.
3. In the Filter based on choice list, select Group.
4. Set the following fields.

<table>
<thead>
<tr>
<th>Name</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Name</td>
<td>Enter a name for the filter. This name appears on the homepage widget for the filter.</td>
</tr>
<tr>
<td>Look up name</td>
<td>Enter a lookup name for the filter. This name appears in the Add content menu when adding a filter to a homepage or dashboard. Use this name to help organize your filters. If you do not specify a lookup name, the Name value is used instead.</td>
</tr>
<tr>
<td>Description</td>
<td>Enter a description of the filter.</td>
</tr>
</tbody>
</table>

5. Optional: Select Apply to all tables in hierarchy to apply the filter to parent, child, and sibling tables of an extended table. For more information, see Apply interactive filters to all tables in a hierarchy.

6. In the Group section, click Insert a new row.
7. Select an interactive filter to add to this group.
   You cannot add a group filter to another group filter.
8. Repeat steps 5 and 6 as needed for each filter you want to group.
9. Click Submit.

After you create the filter, add it to a dashboard or homepage.

Create an interactive filter for whether a field is empty or populated

You can create a Boolean interactive filter that lets users filter report widgets based on whether a specific field is empty or populated.

Role required: hp_publisher_admin and report_admin. The hp_publisher_admin role exists only for managing interactive filters. By default, it contains no other roles and is not contained in any other roles.

You must have Performance Analytics to create interactive filters.
Create this filter for a field where **Yes** filters for records where the specified field is populated and **No** filters for records where the field is empty. Name the filter to represent this logical relationship.

For example, you can use the name "Incident generated problem" for a filter based on the Incident table and the Problem field.

1. Navigate to **Reports > Interactive filters**.
2. Click **New**.
3. In the **Filter based on** list, select **Boolean**.
4. Set the following fields:

<table>
<thead>
<tr>
<th>Name</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Name</td>
<td>Enter a name for the filter. This name appears on the dashboard widget for the filter.</td>
</tr>
<tr>
<td>Look up name</td>
<td>Enter a lookup name for the filter. This name appears in the <strong>Add content</strong> menu for users adding a filter to a dashboard. Use this name to help organize your filters. If you do not specify a lookup name, the <strong>Name</strong> value is used instead.</td>
</tr>
<tr>
<td>Description</td>
<td>Enter a description of the filter.</td>
</tr>
<tr>
<td>UI control type</td>
<td>Select how the available filtering options for this filter appear on the dashboard widget. See <strong>Available interactive filter UI control types</strong>.</td>
</tr>
</tbody>
</table>

5. Optional: Select **Apply to all tables in hierarchy** to apply the filter to parent, child, and sibling tables of an extended table. For more information, see **Apply interactive filters to all tables in a hierarchy**.

6. In the **Table** choice list, select the table that contains the field to filter on.
7. In the **Field** choice list, select the field to filter on.
8. Click **Submit**.

After you create the filter, add it to a homepage or dashboard.

### Apply interactive filters to all tables in a hierarchy

When you create an interactive filter on an extended table, there is an extra step necessary to apply the filter to the other tables in the hierarchy.

Role required: hp_publisher_admin and report_admin. The hp_publisher_admin role exists only for managing interactive filters. By default, it contains no other roles and is not contained in any other roles.

When you create an interactive filter on a parent table, by default the filter applies to the extended tables. For example, an interactive filter that applies to the table (incident) automatically applies to the extended (incident_task) table. If you create an interactive filter on the extended (incident_task) table, an extra field applies the filter to the parent (incident) table and to the other tables in the hierarchy.

1. Navigate to **Homepage Admin > Interactive Filters**.
2. Click **New**.
3. In the Filter based on choice list, select the type of interactive filter to create. For more information, see Available Interactive Filter types.

4. Set the following fields:

<table>
<thead>
<tr>
<th>Name</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Name</td>
<td>Enter a name for the filter. This name appears on the dashboard widget for the filter.</td>
</tr>
<tr>
<td>Look up name</td>
<td>Enter a lookup name for the filter. This name appears in the Add content menu for users adding a filter to a dashboard. Use this name to help organize your filters. If you do not specify a lookup name, the Name value is used instead.</td>
</tr>
<tr>
<td>Description</td>
<td>Enter a description of the filter.</td>
</tr>
<tr>
<td>UI control type</td>
<td>Select how the available filtering options for this filter appear on the dashboard widget. See Available interactive filter UI control types.</td>
</tr>
</tbody>
</table>

Note: The UI control type field is not used by Group interactive filters.

5. Select Apply to all tables in hierarchy to apply the filter to parent, child, and sibling tables of an extended table.

6. Follow the rest of the steps for the interactive filter you are creating.
   - Create a choice list interactive filter
   - Create a reference field interactive filter
   - Create a date interactive filter
   - Create a boolean interactive filter
   - Create a group interactive filter

Interactive filters created on extended tables also apply to the other tables in the hierarchy.

Available interactive filter UI control types

The interactive filter UI control type field provides several options for displaying the filter.

<table>
<thead>
<tr>
<th>UI control type</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Radio Buttons</td>
<td>Displays each filtering option as a radio button. Users can select only one radio button at a time.</td>
</tr>
<tr>
<td>Check boxes</td>
<td>Displays each filtering option as a check box. Users can select any number of check boxes at a time.</td>
</tr>
<tr>
<td>Select Single Input</td>
<td>Displays the filtering options as a choice list. Users can select only one choice at a time.</td>
</tr>
<tr>
<td>UI control type</td>
<td>Description</td>
</tr>
<tr>
<td>-------------------------</td>
<td>---------------------------------------------------------------------------------------------------------------------------------------------</td>
</tr>
<tr>
<td>Select Multiple Input</td>
<td>Displays the filtering options as a choice list. Users can select any number of choices at a time. Click the X next to a selected choice to deselect that choice.</td>
</tr>
</tbody>
</table>

**Note:** Filtering behavior depends on the filter type when selecting multiple values using the Check boxes or Select Multiple Input control types. Choice and reference filters use an AND query, meaning records must match all conditions. Date filters use an OR query, meaning records must match at least one of the specified conditions.

**Note:** A filter may be converted from the Check boxes to the Select Multiple Input control type for performance reasons.

**Interactive Filters on homepages and dashboards**

You can make an Interactive Filter available to users by adding the filter to a homepage or dashboard.

**Note:** Add interactive filters only to homepages and dashboards. Interactive filters are not supported on CMS pages.

**Add an interactive filter widget to a homepage**

You can use an interactive filter by adding the filter widget to a homepage.

Role required: itil. You must have edit access to the homepage you want to add the filter to.

Add an interactive filter to a homepage to filter reports on that homepage. To be effective, interactive filters must be based on the same tables as the reports they filter. Report widgets based on the user table, for example, do not change based on the settings of Interactive Filters based on the incident table. For more information, see Make a report follow interactive filters.

**Note:** Interactive filters on homepages do not retain default values or retain values across logins or page refreshes. This functionality is available on dashboards. For more information, see Create a dashboard version of a homepage.

1. Navigate to a homepage.
2. Click the add content icon (+).
3. In the Add content menu, select Interactive filters from the left column.
4. Select the type of filter to add, such as Choice list or Reference.
5. Select the filter you want to add to the homepage.
6. Click Add here in the section you want the filter to appear.

**Add an interactive filter widget to a responsive dashboard**

Add an interactive filter to a dashboard to filter reports on that dashboard.

Role required: pa_power_user. You must have edit access to the dashboard you want to add the widget to.
To be effective, interactive filters must be based on the same tables as the reports they filter. Report widgets based on the user table, for example, do not change based on the settings of Interactive Filters based on the incident table. For more information, see *Make a report follow interactive filters*.

1. Navigate to a dashboard.
2. Click the add content icon (+).
3. Select **Interactive filters**.
4. Select the type of filter to add, such as **Choice list** or **Reference**.
5. Select the filter you want to add.
6. Click **Add** or drag the filter onto the dashboard.

### Add an interactive filter widget to a non-responsive dashboard

Add an interactive filter to a dashboard to filter reports on that dashboard.

Role required: pa_power_user

**Note:** If the interactive filter has a default value or specifies the last selected value, this value is not applied automatically on non-responsive dashboards. This feature is only available on **Responsive dashboards**.

To be effective, interactive filters must be based on the same tables as the reports they filter. Report widgets based on the user table, for example, do not change based on the settings of Interactive Filters based on the incident table. For more information, see *Make a report follow interactive filters*.

1. Navigate to a dashboard.
2. Click **Edit**.
3. Click the add content icon (+).
4. In the Add content menu, select **Interactive filters** from the left column.
5. Select the type of filter to add, such as **Choice list** or **Reference**.
6. Select the filter you want to add.
7. Click **Add here** in the section you want the filter to appear.

### Make a breakdown act as an interactive filter

You can configure a breakdown on a dashboard to act as an interactive filter for reports on the dashboard.

There must be a dashboard configured with one or more reports and breakdowns, and an interactive filter based on the same table as the breakdown source.

Role required: pa_power_user, pa_admin, or admin

When you select a breakdown and breakdown element on a dashboard, that element can be used to filter reports on the dashboard based on the filtering rules defined in an interactive filter.

1. Navigate to **Performance Analytics > Dashboards**.
2. Select the dashboard with the breakdown you want to make act as an interactive filter.
3. Click the context menu icon (…) and select **Dashboard Properties**.
4. In the **Breakdown sources** related list, click the reference icon ( ) next to the breakdown source you want to make into an interactive filter and select **Open Record**.

   **Note:** You cannot use a breakdown source that is based on a bucket group as an interactive filter.

5. In the **Act as filter** field, select the interactive filter you want this breakdown source to act as. The breakdown source **Facts table** must match the table that the interactive filter is based on. For example, for the breakdown source HR.Groups.Active, use a reference field interactive filter for the Groups (sys_user_group) table. Breakdown elements from the HR.Groups.Active breakdown source are not valid selections for interactive filters on other tables, such as interactive filters based on a choice or date field.

6. Click **Update**.

7. On the dashboard's record, click **View Dashboard**.

8. Click the + icon to put the dashboard in edit mode.

9. Click the cog icon

   to open the Edit Widget window.

10. Select **Follow interactive filter**.

    Select **Show when following filter** to show a filter icon next to the widget title when the widget is following an interactive filter.

11. Click **Done**.

The selected breakdown acts as an interactive filter on the dashboard's reports.

### Make a report follow interactive filters

You can configure a report widget to accept filters from interactive filters.

Role required: itil

**Note:** If interactive filters are applied to responsive dashboards and responsive canvas is later disabled, the interactive filters only work when the dashboard is in edit mode.

1. Navigate to a homepage or dashboard.

2. Put the dashboard or homepage in edit mode.

3. In the report widget, click the Edit widget icon ( ).

4. Select **Follow interactive filter**.

   This option is available for all report widgets. If you do not see the **Follow interactive filter** option, the widget is a list, PA, or other non-report widget.

5. To show a filter icon

   ( )

   on the top left corner of the report when it is following an interactive filter, select **Show when following**.

6. Click **Done**.

7. Refresh the current browser page to apply the change.

Add one or more interactive filters to the homepage or dashboard.
Make a report act as an interactive filter

You can configure an existing report widget to filter other report widgets on the same homepage or dashboard.

Role required: itil

1. Navigate to a homepage or dashboard.
2. If editing a dashboard, click **Edit Widget**.
3. In the report widget, click the Edit widget icon (⚙).
4. Select **Act as interactive filter**.
   This field appears only for reports that can be filters. Only reports with a **Type** value of pie, donut, semi donut, funnel, or pyramid may be filters.

   **Note:** If responsive canvas is disabled, then there is no delay in filtering when a user clicks segments of a report that acts an interactive filter in quick succession.

5. Click **Done**.
6. Refresh the current browser page to apply the change.

Click on a subset of data in the report, such as a slice of pie in a pie chart, to filter all subscriber reports for the same table. All subscriber reports on the homepage or dashboard for the same table show information about that subset of data only.

Reset all interactive filters on a dashboard tab

Reset all applied filters on a dashboard tab to view the unfiltered data.

Role required: none. You must have access to the dashboard.

1. Navigate to **Self-Service > Dashboards**.
2. Select the dashboard and tab that you want to reset.
3. Click the context menu (≡) and select **Reset Filters**.

Custom interactive filters

As an administrator, you can create scripted interactive filter widgets to provide advanced filtering options on dashboard reports.

By creating a custom interactive filter, you can control more aspects of the filter interface and filtering logic. By defining these elements you can create filters that fit your specific needs, such as filters that perform multiple, common filtering operations with a single click.

Custom filters are scripted widgets (**System UI > Widgets**) that use the DashboardMessageHandler JavaScript class to define and publish report filters.

You must define the appearance of the widget, such as available buttons, using Jelly.

You must have Performance Analytics to create new interactive filters.

**Note:** The exposed API for custom interactive filters is limited and does not provide parity with standard interactive filters. Before implementing any custom interactive filters, please review the **Custom interactive filter limitations**.
Custom interactive filter example

As an administrator, you can create custom interactive filter widgets to provide advanced filtering options on dashboards.

Use case

This example details how to create a custom filter that filters reports on the Task table, or child tables, to show only records where the current user is the caller. The filter exposes two buttons to the user, one button to add the filter and one to remove the filter.

Create the widget

To create a custom filter, you must create a new dynamic content record (Content Management > Blocks > Dynamic > New) and define the user interface for the filter.

![Dynamic Content](image)

```xml
1  <xml version="1.0" encoding="utf-8" ?>
2  <![jelly trim="false" xmlns:j="jelly:core" xmlns:gx="glide" xmlns:js="null" xmlns:gs="null">]
3  <script>
4  var my_dashboardMessageHandler = new DashboardMessageHandler("my_unique_id");
5  </script>
6  Example of a filter, that generates a static filter on 'task' table reports, or remove it<br/>
7  <input id="allTasks" type="button" value="All tasks" onclick="my_dashboardMessageHandler.removeFilter();" />
8  <input id="onlyMine" type="button" value="Only mine" onclick="my_dashboardMessageHandler.publishFilter('task','caller_idDYNAMIC90d1921e5f51010b090e2572f2b477fe');" /></br>
9  <![/]jelly>
```
Add any buttons or other interface elements to the dynamic content.

```xml
<?xml version="1.0" encoding="utf-8" ?>
<j:jelly trim="false" xmlns:j="jelly:core" xmlns:g="glide"
    xmlns:j2="null" xmlns:g2="null">
    Example of a filter, that generates a static filter on 'task' table reports, or remove it <br/>
    <input id="allTasks" type="button" value="All tasks" />
    <input id="onlyMine" type="button" value="Only mine" />
</j:jelly>
```

### Define the filtering logic

After defining the buttons or other elements visible to users, define how each option filters reports on the dashboard.

Filters use the `DashboardMessageHandler` class to manage active filters. Instantiate `DashboardMessageHandler` with a unique value.

**Note:** No two custom or interactive filters should have the same unique ID or else the filtering logic will not work properly.

The **Only mine** button publishes a filter on Task table reports using the encoded query `caller_idDYNAMIC90d1921e5f510100a9ad2572f2b477fe`. The **All tasks** button removes the filter.

```xml
<?xml version="1.0" encoding="utf-8" ?>
<j:jelly trim="false" xmlns:j="jelly:core" xmlns:g="glide"
    xmlns:j2="null" xmlns:g2="null">
    <script>
        var my_dashboardMessageHandler = new DashboardMessageHandler("my_unique_id");
    </script>
    Example of a filter, that generates a static filter on 'task' table reports, or remove it <br/>
    <input id="allTasks" type="button" value="All tasks" onclick="my_dashboardMessageHandler.removeFilter();" />
    <input id="onlyMine" type="button" value="Only mine" onclick="my_dashboardMessageHandler.publishFilter('task','caller_idDYNAMIC90d1921e5f510100a9ad2572f2b477fe');" />
</j:jelly>
```

### Add the filter to a dashboard

After creating the filter, add it to a dashboard that contains reports on the Task table or child tables.

Clicking the **Only mine** button on the filter filters reports on the dashboard to only show tasks where the current user is the caller.

**The custom filter**
Debug filter

The debug interactive filter facilitates the creation of custom filters by displaying a JSON array representation of all active filters on a dashboard.

To use the debug filter, add it to a homepage. The debug filter is read-only and intended to aid in the design and implementation of custom interactive filters.
Custom interactive filter limitations

Custom interactive filters are a fallback for use when standard interactive filters don’t provide certain functionality.

**Note:** The exposed DashboardMessageHandler API for custom interactive filters is limited and does not provide parity with standard interactive filters. The API does not support these features. To provide this functionality, you must write your own code.

Unsupported custom interactive filter features

**Setting default filter values**

Creators of custom interactive filters are not able to select default filter values.

**Retaining filter value on refreshing the widget**

When you click a widget’s refresh icon (↻) to refresh its content, or when you select **Refresh** from the context menu (⋯), the custom interactive filter value does not persist.

**Resetting custom filter values / All filter values**

When you select **Reset Filters** from the context menu (⋯), the custom interactive filter does not change and is still applied.

**Setting filter values on page load or tab switch**

Custom interactive filter values do not persist when the user switches tabs, or opens a new dashboard and returns to the first dashboard or dashboard tab.

**Adding multiple instances of the same custom interactive filter on a tab**

If there is more than one instance of the same custom interactive filter on a tab, unexpected behavior can result.

**Note:** Custom interactive filter values do not persist across tabs. To filter values on multiple tabs on the same dashboard, you must add the custom interactive filter to each tab.

Unsubscribing reports on removal of custom interactive filter

Reports following a custom interactive filter on a dashboard continue to follow that filter even when the filter is deleted from the dashboard.

**Applying a custom interactive filter to more than one table at a time**

In the definition of a custom interactive filter, it is possible to specify only one table. If multiple tables are specified, the filter is invalid. The publishFilter method of the API only takes one table as an argument.

**Filtering widgets in Export to PDF**

When you create custom content to be placed as widgets on dashboards and home pages, you must perform extra tests before you export the content to PDF. In the exported PDF, report widgets that are filtered using custom interactive filters may appear as blank squares or the widget content does not respect the filter.
Custom filters do not apply to lazy loaded dashboard widgets

Custom interactive filters only apply to the widgets below the filter and on the screen when the filter is visible. Widgets that are loaded when the user scrolls through a longer dashboard are not filtered. For more information on lazy loading, see Differences between homepages and responsive and non-responsive dashboards.

Custom interactive filters cannot be used in a breakdown dashboard

On breakdown dashboards, the breakdown itself is used to filter all Performance Analytics widget data. For more information, see Using breakdowns on dashboards.

DashboardMessageHandler

The DashboardMessageHandler class allows you to define custom filtering logic for interactive publishers.

DashboardMessageHandler - DashboardMessageHandler(String id)

Instantiates a DashboardMessageHandler object with a given unique ID.

Parameters

<table>
<thead>
<tr>
<th>Name</th>
<th>Type</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Id</td>
<td>String</td>
<td>A unique ID for the filter. This ID allows report widgets to track which filter applied each filter. The ID does not need to be unique across all dashboards, but each dashboard cannot have multiple filters with the same ID.</td>
</tr>
</tbody>
</table>

```
var my_dashboardMessageHandler = new DashboardMessageHandler("my_unique_id");
```

DashboardMessageHandler - publishFilter(String table, String encodedQuery)

Each DashboardMessageHandler object can publish a single filter.

Publishing a new filter from the same object overwrites the original filter. Use multiple DashboardMessageHandler objects to publish multiple filters.

Parameters

<table>
<thead>
<tr>
<th>Name</th>
<th>Type</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>table</td>
<td>String</td>
<td>The table to filter, such as task.</td>
</tr>
<tr>
<td>encodedQuery</td>
<td>String</td>
<td>An encoded query that specifies the filter to publish.</td>
</tr>
</tbody>
</table>
Returns

<table>
<thead>
<tr>
<th>Type</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>void</td>
<td></td>
</tr>
</tbody>
</table>

```javascript
var my_dashboardMessageHandler = new DashboardMessageHandler("my_unique_id");
<input id="onlyMine" type="button" value="Only mine"
onclick="my_dashboardMessageHandler.publishFilter('task','caller_idDYNAMIC90d1921e5f510100a9ad2572f2b477fe');"/>
```

### DashboardMessageHandler - removeFilter()
Removes the current filter published by this DashboardMessageHandler object from all reports on the homepage or dashboard.

#### Parameters

<table>
<thead>
<tr>
<th>Name</th>
<th>Type</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>None</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Returns

<table>
<thead>
<tr>
<th>Type</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>void</td>
<td></td>
</tr>
</tbody>
</table>

```javascript
var my_dashboardMessageHandler = new DashboardMessageHandler("my_unique_id");
<input id="removeFilter" type="button" value="Remove filter"
onclick="my_dashboardMessageHandler.removeFilter();"/>
```

### Dashboards

ServiceNow® Dashboards product enables you to display multiple Performance Analytics, reporting, and other widgets on a single screen. Use dashboards to create a story with data you can share with multiple users.

#### Explore
- Dashboards release notes
- Upgrade to Kingston
- Available Performance Analytics Solutions
- Available in-form analytics

#### Administer
- Enable responsive dashboards
- Group dashboards
- Solving permissions issues on a responsive dashboard
- Move a dashboard with an update set

#### Use
- Working with responsive dashboards
- Working with non-responsive dashboards
- Determine whether a dashboard is responsive
Create and use dashboards

Learn about different types of dashboards and how to use them.

Watch this seven-minute video to learn more about flexible layouts, multiple tabs, sharing, converting homepages to dashboards, and enabling responsive dashboards.

Working with responsive dashboards

Responsive dashboards enable all users to share widgets such as reports and Performance Analytics visualizations. Use an easy-to-use drag and drop canvas to create, edit, and arrange content, then share with colleagues.

Use dashboards to:
- Create and edit Performance Analytics reports and other widgets directly from the dashboard.
- Use the Add Widget pane to quickly find and preview widgets, then add them to the dashboard.
- Easily share dashboards with other users from the integrated Sharing pane.
- Use quick layouts to snap widgets into a predefined layout, then adjust the layout as desired.
- Set dashboards as your Home so you can quickly access information that you use frequently.

For more information see: Dashboards release notes.

Watch this seven-minute video to learn more about flexible layouts, multiple tabs, sharing, converting homepages to dashboards, and enabling responsive dashboards.

Benefits

- Optimize performance with configurable widget loading. For more information, see Optimize widget rendering time on responsive dashboards.
- Use the Restrict to roles field to Restrict responsive dashboard access to specific roles. Users with any of the specified roles can access the dashboard if they have been given access to the dashboard on the dashboard Share pane.

Limitations

- The mobile apps do not give access to dashboards as dashboards are not optimized for mobile screen sizes. You can access dashboards on a tablet using the standard web interface.
Create or configure a responsive dashboard

Create a dashboard where you can add widgets that you frequently use. You can then share the dashboard with other users.

Users with any role can create dashboards.

1. Navigate to Self-Service > Dashboards or Performance Analytics > Dashboards.
2. Click New.
3. Fill in the following fields:

<table>
<thead>
<tr>
<th>Field</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Name</td>
<td>Name the dashboard.</td>
</tr>
<tr>
<td>Order</td>
<td>Enter an Order number to indicate the order the dashboard is to appear on the dashboards picker. Dashboards with lower numbers are listed first.</td>
</tr>
<tr>
<td>Active</td>
<td>Clear this field to mark the dashboard inactive in the dashboard picker. Inactive dashboards are visible to users with the admin, pa_power_user, and pa_admin roles only if those dashboards have been shared with them.</td>
</tr>
<tr>
<td>Owner</td>
<td>The dashboard owner. Only a user with the administrator role can change this value.</td>
</tr>
<tr>
<td>No tabs</td>
<td>This field does not do anything.</td>
</tr>
</tbody>
</table>

4. Users with admin, pa_admin, and pa_power user roles can configure these additional fields.

<table>
<thead>
<tr>
<th>Field</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Group</td>
<td>Add the dashboard to a Group. Groups organize dashboards in the dashboard picker choice list. Groups are listed at the top of the list. Ungrouped dashboards are listed at the bottom of the list, under Other.</td>
</tr>
<tr>
<td>Breakdown Source</td>
<td>Select one or more breakdown sources in the Breakdown Source related list. Breakdowns enable users to filter the data in Performance Analytics on the dashboard. The Breakdown Source related list is available on the Dashboard form after you create the dashboard.</td>
</tr>
</tbody>
</table>

5. Click Submit.

Create a dashboard version of a homepage

To take advantage of responsive dashboard functionality, you can migrate your existing homepage to a dashboard.

Users with any role can copy their own homepage to a dashboard. Users with the admin role can create dashboard versions of any homepage.

Advantages of dashboards include:

- Responsive design – The widgets on a dashboard are optimized for the screen you are using: desktop, tablet, or mobile phone.
- Drag-and-drop widgets – You can add dashboard widgets precisely where you want them and rearrange the dashboard with easy to use tools.
- Shareability – You can share dashboards easily with users, roles, and groups.
When you create a dashboard version of a homepage, the content is added to the new dashboard, but permissions associated with the homepage are not retained. To apply permissions to the dashboard, specify the permissions again. Users with whom you share a dashboard may or may not be able to edit the dashboard or share it with others. The ability to edit or share a dashboard is based on the user's role and the permissions granted to them.

**Note:**

Only pages that are accessible through `home.do` can be converted. Manually coded UI pages that utilize the homepage layout system, but are not accessible through `home.do` cannot be converted.

Homepages with layouts that include scripts or style sheets might not work or might not look as expected after conversion. This discrepancy is because jelly code is not evaluated during conversion.

When you convert a homepage to a dashboard, the dashboard is independent of the homepage. Changes you make to the dashboard do not migrate to the source homepage. In addition, changes that you make to the homepage after conversion do not migrate to the dashboard.

1. Enable responsive dashboards. For more information, see *Responsive dashboard properties*.
2. Navigate to **Self-Service > Homepage**.
3. From the list, select the homepage you want to copy.
4. Click the Homepage settings icon 🛠️ and choose **Create Dashboard Version**.
5. Select **Create new dashboard** or **Add to existing dashboard** and click **Create**. The **Add to existing dashboard** list contains only the dashboards you own.

When successful, the dashboard version opens as a new dashboard or as a tab on the selected dashboard.

**Note:** The layout of the dashboard version is similar to the homepage layout but may not be precisely the same.

**Note:** Homepages with dashboard versions show a button with the text **Open Dashboard Version**. This button takes the user to the most recently created dashboard version of the homepage.

You can share the dashboard version of your homepage with other users. See **Share a responsive dashboard**.

**Solving errors on dashboards created from homepages**

Occasionally it is not possible to create a dashboard from a homepage. Follow the instructions for each error to solve these problems.
Entity name must immediately follow the ‘&’ in the entity reference

When you try to create a dashboard version of a homepage, the following error may occur: ‘The entity name must immediately follow the ‘&’ in the entity reference’. To solve this error, remove ampersands from the names of the dashboards in the instance or temporarily change the value of the glide.ui.escape_text property.

Role required: security_admin to edit glide.ui.escape_text or admin/dashboard_admin to rename dashboards.

There are two sources of this error:

- The system property glide.ui.escape_text is set to false.

  Only users with the security_admin role can enable or disable the glide.ui.escape_text property.

- There are dashboards in the instance that contain an ampersand (&) in the title.

  If any dashboard in the instance has an ampersand in the title, and the glide.ui.escape_text property is set to false, then conversion of homepages to dashboards is not possible.

If both of these conditions are met, then the list of dashboards that you can add the converted homepage to does not populate and you cannot convert the homepage.

With the security_admin role, you can temporarily enable this property and convert the homepages in your instance to dashboards.

1. Elevate your role to security_admin.
2. In the filter navigator, type sys_properties.list.
3. In the System Properties list, find glide.ui.escape_text and enable this property.
4. Create dashboard versions of the homepages.

   The dashboard list is shown and you can create dashboard versions the homepages as new dashboards or add the dashboard versions as tabs to existing dashboards.
5. Disable glide.ui.escape_text.

Edit a responsive dashboard

You can edit the contents of a dashboard, including tabs and widgets. Because dashboards are shared, any modifications you make are applied globally.

Users can edit dashboards that they own, or ones to which they have been given editing rights.

Note: Responsive dashboards do not support the Sticky Notes widget.

1. Navigate to Self-Service > Dashboards.
2. From the dashboard picker on the upper left, select the dashboard that you want to edit.
3. Perform any of the following actions.

<table>
<thead>
<tr>
<th>Action</th>
<th>Steps</th>
</tr>
</thead>
</table>
| Add a widget   | 1. Click the plus sign ( + ) to put the dashboard in edit mode.  
                  2. Search or navigate to the widget that you want to add.  
                  3. Click Add.  
                  4. Drag to move or resize the widget on the dashboard. |
<table>
<thead>
<tr>
<th>Action</th>
<th>Steps</th>
</tr>
</thead>
<tbody>
<tr>
<td>Remove a widget</td>
<td>1. Click the plus sign (+) to put the dashboard in edit mode.</td>
</tr>
<tr>
<td></td>
<td>2. Point to the top of the widget, then click the X icon ((\times)) that appears.</td>
</tr>
<tr>
<td>Edit a widget</td>
<td>1. Click the plus sign (+) to put the dashboard in edit mode.</td>
</tr>
<tr>
<td></td>
<td>2. Point to the widget, then click the pencil icon ((\pen)) that appears.</td>
</tr>
<tr>
<td>Note:</td>
<td>You must have access rights to the widget to edit it. Edit rights to a dashboard do not give you edit rights to the widgets on that dashboard.</td>
</tr>
<tr>
<td>Change the appearance of a widget</td>
<td>1. Point to the widget, then click the gear icon ((\gear)) that appears.</td>
</tr>
<tr>
<td>Resize or change the layout of widgets</td>
<td>1. Click the plus sign (+) to put the dashboard in edit mode.</td>
</tr>
<tr>
<td></td>
<td>2. Drag to move and resize widgets.</td>
</tr>
<tr>
<td></td>
<td>• To make a widget larger, point to it and then click the resize icon ((\resize)) that appears.</td>
</tr>
<tr>
<td></td>
<td>• To make a widget smaller, point to it then press SHIFT as you click the resize icon.</td>
</tr>
<tr>
<td>Apply a quick layout to a dashboard</td>
<td>Click the configuration icon ((\configuration)) to open the configuration pane, then click a layout to snap the widgets against. Modify the layout as desired.</td>
</tr>
<tr>
<td>Add a tab to a dashboard</td>
<td>Click the configuration icon ((\configuration)) to open the configuration pane, then click Create Tab.</td>
</tr>
<tr>
<td>Note:</td>
<td>You cannot link an existing tab into a dashboard.</td>
</tr>
<tr>
<td>Action</td>
<td>Steps</td>
</tr>
<tr>
<td>--------------------------------------------</td>
<td>---------------------------------------------------------------------------------------------------------------------------------------</td>
</tr>
<tr>
<td>Reorder a dashboard tab</td>
<td>1. Click the plus sign (+) to put the dashboard in edit mode. 2. Select the dashboard tab and drag it to the desired position.</td>
</tr>
<tr>
<td>Alternatively</td>
<td>1. Click the context menu and select Dashboard Properties. 2. On the Dashboard Tabs related list, enter numbers in the Order column to specify the tab order. Tabs are listed from left to right with lower numbers appearing first.</td>
</tr>
<tr>
<td>Delete a dashboard tab</td>
<td>Click the tab to make it active. Point to the tab name and click the trash icon that appears.</td>
</tr>
<tr>
<td>Note:</td>
<td>The dashboard tab is deleted from all dashboards where it exists. Dashboards may have tabs that are used in multiple dashboards.</td>
</tr>
<tr>
<td>Rename a tab</td>
<td>1. Click the tab to make it active. 2. Point to the tab name and click the pencil icon that appears. 3. Type the new name then press ENTER.</td>
</tr>
<tr>
<td>Enable filtering of data for report widgets</td>
<td>Interactive filters let users filter data for all report widgets on a dashboard that are configured to follow interactive filters. 1. Click the plus sign (+) to put the dashboard in edit mode. 2. From the list, select Interactive Filters. 3. Navigate to the filter you want to add. 4. Click Add.</td>
</tr>
<tr>
<td>Action</td>
<td>Steps</td>
</tr>
<tr>
<td>------------------------------------------------------------</td>
<td>-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------</td>
</tr>
</tbody>
</table>
| Configure a report widget to follow interactive filters    | 1. Point to the report widget, then click the gear icon (⚙).  
2. In the Edit Widget window, select the **Follow interactive filter** check box.  
3. To show a filter icon (🔍) on the report when it is following an interactive filter, select the **Show when following** check box. |

**Note:** Performance Analytics widgets cannot follow interactive filters.

| Enable filtering of data for Performance Analytics widgets | 1. Click the plus sign (+) to put the dashboard in edit mode.  
2. Add a breakdown to a dashboard so that users can filter data for all Performance Analytics widgets on that dashboard. The pa_admin or pa_power user role is required to work with breakdowns. |

See *Add a breakdown to a dashboard.*

| View the description of a widget                           | Point to the widget, then click the question mark (❓). If the widget does not have a description, the question mark icon does not appear. |

**Dashboards overview**

The Dashboards Overview shows cards that represent the dashboards that you have access to and a dashboard picker which allows you to choose a dashboard from a list. Click a card to open the dashboard.

Navigate to **Self-Service > Dashboards.**

Watch this two-minute video to learn more about using the Dashboards Overview.

The overview is divided into the following tabs:

- **Recent** shows up to nine dashboards that you have visited recently. The most recent are shown first.
- **Owned by me** shows the dashboards that you have created and those dashboards to which you have been assigned ownership.
- **Shared with me** shows the dashboards which have been shared with you as a user, or member of a group or role.
- **All** shows all the dashboards that you have access to.

All tabs except for Recent are sorted alphabetically by dashboard group and then by dashboard name. Dashboards without groups (Other) are shown first.

Cards on the overview show thumbnails of the widgets on the dashboard, the Dashboard Group, your role on the dashboard, the name of the dashboard, and the owner of the dashboard.
Use the Dashboard Group picker to show only those dashboards in a single group.
ServiceNow    Kingston    Analytics, Intelligence, and Reporting

Use the search box to search for dashboards by name or
group.

Click New to create a responsive dashboard.

Share a responsive dashboard

Share a dashboard with other users to create a shared view of data that you can use to collaborate. You can give other users viewing rights or both viewing and editing rights.

- Users can share dashboards that they own with other groups and users.
- Only users with the admin, pa_admin, or pa_power_user role can share dashboards with other roles.
- Users with the pa_admin or pa_power_user role can share dashboards that they can edit.
- Users with the admin role can share any dashboard they can access.

In general, when you share a dashboard, you are not granting permission to the widgets on that dashboard. Most Performance Analytics widgets, however, inherit view ACLs from the dashboards where they have been added. If you can view a dashboard, you can see the Performance Analytics widgets on that dashboard.

Note: Performance Analytics List widgets do not show the indicators that you do not have permission to read. While the dashboard permission applies to the Performance Analytics list widget as a whole, individual indicators in that list follow the permissions for those indicators.

1. Navigate to Self-Service > Dashboards.
2. Select the dashboard that you want to share from the dashboard picker on the top left.
3. Click Sharing ( ) to open the sharing panel.
4. Click **Add groups and users**. Users who have the admin, pa_admin, or pa_power_user roles can also share the dashboard with other roles.

5. Start typing the name in the **To** field.

6. Select a user, group, or role from the list that displays.

7. From the **Recipients** list, select **Can read** or **Can edit** to specify the permissions the user, group, or role has on the dashboard.

   **Note**: To edit a shared dashboard, a user must be in the same domain as the dashboard. Sharing a dashboard with write access (**Can edit**) does not change that. The **Can edit** sharing option works only if the dashboard is shared with a user in the same domain as the dashboard. For more information, see *Domain separation in Dashboards*.

8. Click **Invite**.
Invite

To: Aileen Mottern

BK Bridget Knightly
bridget.knightly@example.com

CK Clarice Knower
clarice.knower@example.com

TK Tiffany Knust
tiffany.knust@example.com

K knowledge

K knowledge_admin

K knowledge_manager

Recipients: Can view

Cancel Invite
The dashboard is shared and an invitation is sent out to the invited users.

Note: It is not possible to disable the email notification.

**Dashboard permissions**
Dashboards have special granular view and edit permissions that are managed from the Sharing pane. ACLs apply to most widgets that are added to dashboards.

- Users with any role can create dashboards, share dashboards that they own with users and groups, and edit dashboards if they have been given edit permissions.
- Users without a role can view dashboards that have been shared with them, but cannot create or edit dashboards.
- Users with pa_admin and pa_power_user roles can manage users, groups, and roles on any dashboard that they can edit. They can also assign an owner to a dashboard that has no owner.
- Users with the admin role can edit and manage users, groups, and roles for any dashboards they can access. Admin users can also change a dashboard owner at any time.
- Only a dashboard owner and users with the admin role can delete that dashboard.

Note: The columns Visible to, Groups, Users, and Requires Roles only apply to non-responsive dashboards. The values in these columns do not apply to responsive dashboards.

Widget ACLs apply when that widget is added to dashboards (except for Performance Analytics widgets). If a user can view a dashboard but does not have ACLs to view one of its widgets, an empty widget placeholder is displayed. ACLs do not apply to data visualizations that aggregate data, such as pie or bar reports. ACLs always apply to list data that is displayed in widgets. Rows in a list that a user does not have access to are not displayed.

Note: ACLs are not applied to Performance Analytics widgets that are added to dashboards. Any user who can view a dashboard can view all its Performance Analytics widgets. Performance Analytics widgets can only be added to dashboards by users with the pa_power_user, pa_admin, and admin roles.

Dashboard permissions may be impacted by the **Restrict to role** field on the dashboard properties form and by dashboard group permissions. Dashboard properties can be changed by the dashboard owner, and users with pa_power_user, pa_admin, or admin roles. Dashboard group permissions can be changed by users with the pa_power_user, pa_admin, and admin roles.

For example, when you add a pie report widget that includes 36 records to a dashboard, any user with access to that dashboard and that report can view the pie visualization of all 36 records. However, if a user drills down into the list view for that widget, only the records for which the user has access are visible.

**Restrict responsive dashboard access to specific roles**
After you share a dashboard with specified users, groups, and roles, you can specify additional roles required to access the dashboard. To access the dashboard, it must be shared with the user and the user must have one of the specified roles. For example, if you share a dashboard with the itil role, and **Restrict to Roles** is populated with pa_viewer, only users with both the itil and pa_viewer roles can see the dashboard.

Role required: pa_admin, pa_power_user, admin, or be the dashboard owner. Other users who edit the dashboard can see this field but cannot modify it.
The **Restrict to roles** field is available only after responsive dashboards have been enabled. If responsive dashboards have been enabled and then disabled, the **Restrict to roles** field remains available but does not affect dashboard access.

When dashboards are migrated between releases, this field is automatically populated with the `pa_viewer` and `pa_contributor` roles. This provides extra security and ensures that only users who could access the dashboard before migration can access it after migration.

1. Navigate to the dashboard to restrict to specific roles.
2. Click the context menu (≡) and select **Dashboard properties**.
3. In the **Restrict to roles** field, specify the additional roles required to access the dashboard.

   Users with any of the specified roles can access the dashboard only if it has been shared with them first from the sharing panel. For more information, see [Share a responsive dashboard](#).

Only users with the restricted role are able to view the dashboard. A message displays on the sharing panel to indicate which roles have access. Click the roles in this message to view the dashboard’s properties.

**Manage responsive dashboards**

Depending upon their role, users can delete or duplicate responsive dashboards, and remove a user from a dashboard. All users can mark a dashboard as a favorite.

**Delete a responsive dashboard**

Delete dashboards that are no longer used. Deleted dashboards cannot be restored.

Role required: admin, or be the owner of the dashboard.

1. Navigate to **Performance Analytics > Dashboards**.
2. Click the context menu (≡) and choose **Delete Dashboard**.
**Duplicate a responsive dashboard**
When you duplicate a dashboard, its widget layout is preserved. However, sharing permissions are not preserved. Changes you make to the duplicated dashboard do not affect the original dashboard.

Any user who can share a dashboard can duplicate it.

1. Navigate to the dashboard that you want to duplicate.
2. Click the context menu
   (  
   and select **Duplicate Dashboard**.  
   A copy of the dashboard is created with you as the owner. The name of the copy is Copy of (Original Dashboard Name).
3. Optional: To rename the dashboard, click the context menu
   (  
   select **Dashboard Properties**, and edit the **Name** field.

A copy of the dashboard is created with you as the owner.

Modify the dashboard and then share it with other users.

**Remove a user from a dashboard**
When you no longer want to share a dashboard with a specific user, group, or role, you can remove their access to the dashboard.

Role required: Any dashboard owner can remove users or groups from dashboards they own.

Users with the admin role can remove users, groups, or roles from any dashboard.

Users with the pa_admin or pa_power_user role can remove users, groups, or roles from any dashboard that they can edit. These dashboards include dashboards that a user owns, and dashboards to which they have been granted edit rights.

See [Dashboard permissions](#).

1. Navigate to **Self-Service > Dashboards**.
2. Select the dashboard you want to modify.
3. Click the sharing icon
   (  
   ).
4. Select the user, group, or role that you want to remove.
5. On the information panel of the user, group, or role, click **Remove From Dashboard**.

The removed users no longer have the right to view the shared dashboard.

**Mark a responsive dashboard as a favorite**
You can mark a dashboard as a favorite to easily access it from the navigation pane.

Anyone who can access a dashboard can make it a favorite.

1. Navigate to **Self-Service > Dashboards**.
2. From the dashboard picker in the upper left, select the dashboard that you want to mark as a favorite.
3. Click the context menu
   (  
   and select **Favorite Dashboard**.  

Export a responsive dashboard to PDF

Export a dashboard as a PDF so you can archive or print it.

Roles required: pa_viewer role is required to export dashboards to PDF.

You must activate the WebKit HTML To PDF plugin before you can export homepages, dashboards, and some reports as PDF documents. If the OAuth 2.0 plugin is not already active, the WebKit HTML To PDF plugin activates it as well. For more information, see Activate a plugin.

Interactive filters that are applied to the dashboard are also applied to the PDF. However, applied breakdowns are not included in the export.

**Note:** To generate the PDF locally, set the interactive filters, click the settings icon, and choose Printer Friendly Version to open the dashboard in a new window or tab. Export the dashboard using the browser's print settings.

Limitations:

- Custom content may not generate as expected when exported to PDF. For more information, see Custom content PDF export limitations.
- Dashboards that are exported to PDF do not include the dashboard layout. Widgets are stacked on top of each other and take up the full page width.
- Widgets are exported to a fixed height. Large widgets, such as workbench or list widgets, are truncated.
- Because exporting calendar reports to PDF is not supported, calendar reports exported from a dashboard may be truncated.
- Breakdowns applied to a dashboard are not included in the PDF.
- Widgets may appear in a different order than on the dashboard.
- Widget legends may not appear.
- Coloring on the delta text for single score report widgets is not preserved.
- The selected time frame at the widget level (for example, three minutes) is not reflected in the PDF file when the Show date range selector is selected at the widget level.

**Note:** PDFs that are sent as emails may not be generated immediately.

1. Navigate to Self-Service > Dashboards.
2. From the dashboard picker in the upper left, select the dashboard that you want to export.
3. Click the context menu ( ) and select Export to PDF.
4. Configure your print and delivery options.

5. Click Export.

The content is exported to PDF according to the print and delivery options. If the PDF does not generate, identify and resolve any JavaScript errors.

**Copy a responsive dashboard URL**

You can create a URL that opens the current view of the dashboard, including tabs and breakdown elements. The ServiceNow platform frame around the dashboards is not included in the link. You cannot copy a dashboard URL from the browser.

You must be able to access the dashboard.

1. Navigate to the dashboard whose URL you want to copy.
2. Optional: Select a specific tab, breakdown, and breakdown element.
3. Click the context menu (≡) and select Copy Dashboard URL.

The dashboard URL is copied to your clipboard. Some browsers prompt you to manually copy the URL to your clipboard.

Share the URL with other users.

**Dashboard URL format**

It is possible to link to a Performance Analytics dashboard from your instance. Several URL parameters enable you to specify aspects of the dashboard when the link is followed.

All dashboard URLs follow this format: https://<instance>.service-now.com/$dashboards.do?

This base URL is followed by several optional query parameters.

**URL parameters**

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>sysparm_dashboard=&lt;sys_id&gt;</td>
<td>The sys_id of the dashboard to show.</td>
</tr>
<tr>
<td>sysparm_tab=&lt;sys_id&gt;</td>
<td>The sys_id of the dashboard tab to show. If you do not specify a tab, the</td>
</tr>
<tr>
<td></td>
<td>leftmost tab is displayed. This parameter applies only if sysparm_dashboard</td>
</tr>
<tr>
<td></td>
<td>exists.</td>
</tr>
<tr>
<td>sysparm_breakdown_source=&lt;sys_id&gt;</td>
<td>The sys_id of the dashboard breakdown to show.</td>
</tr>
<tr>
<td>sysparm_element=&lt;value&gt;</td>
<td>The sys_id or value of breakdown element to show. This parameter applies only if sysparm_breakdown_source also exists. Values are case-sensitive.</td>
</tr>
<tr>
<td>sysparm_element_value=&lt;value&gt;</td>
<td>The selected element value. This value may be the sys_id of a referenced record, or the database value for a choice list choice. Database values are case-sensitive. This parameter applies only if sysparm_element and sysparm_breakdown_source also exist.</td>
</tr>
</tbody>
</table>
### Parameter and Description

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>sysparm_header=&lt;value&gt;</td>
<td>Controls if the dashboard header appears. Possible values are:</td>
</tr>
<tr>
<td></td>
<td>• Visible — The full header is visible.</td>
</tr>
<tr>
<td></td>
<td>• Hidden — The full header is hidden.</td>
</tr>
<tr>
<td></td>
<td>• Embedded — The header is visible but only the options Refresh, Reset filters, and Export to PDF are visible.</td>
</tr>
</tbody>
</table>

| sysparm_breakdown=<value>  | Controls if the dashboard breakdown appears. Possible values are:            |
|                            | • Visible — The full breakdown is visible, including both source and element. |
|                            | • Hidden — The full breakdown is hidden.                                    |
|                            | • Embedded — Only the breakdown element is visible.                         |
|                            | • Readonly — The breakdown is visible but the user cannot change how the filter is configured. |

When linking to your instance from an outside source such as a text document or presentation, use nav_to.do instead. For instructions on constructing this URL, see Navigate to a record or module using a URL.

## Enable real-time updating for single score report widgets

Real-time updates ensure that users viewing a responsive dashboard always see the most up-to-date information.

You must have edit rights to the dashboard where the widget has been added.

Four types of aggregation are available for single-score reports: Count, Average, Sum, and Count Distinct. Real-time updating is available only for single score widgets that use the **Count** aggregation.

**Note:** Real-time updating does not work for single score report widgets on responsive dashboards under the following circumstances:

- When the report source is a database view, the user must click the Refresh icon on the widget to update the score. For more information, see *Database views*.
- When a business rule that uses the `current.update()` method fires on insert/update, the single score report increments by two instead of one. For more information, see *KB article KB0693812*.

You can enable real-time updating for single score widgets on homepages and all dashboards.

1. Navigate to the dashboard where the single score widget has been added.
2. Click the plus sign (+) to put the dashboard in edit mode.
3. Point to the widget, then click the gear icon ( ) that appears.

4. Select **Show real-time updates** then click **Done**.

5. Click the plus sign ( ) to exit edit mode for the dashboard.

The real-time icon ( ) appears on the widget. This icon is permanently visible, even when the score is not changing.

**Change the owner of a responsive dashboard**

The owner of a dashboard can edit it, and share it with other users.

Role required: Only admins can change a dashboard owner.

1. Navigate to **Self service > Dashboards**.
2. Open the dashboard whose owner you want to change.
3. Click the context menu ( ) and select **Dashboard Properties**.
4. Select a new owner in the **Owner** field.
5. Click **Update**.

**Working with non-responsive dashboards**

Non-responsive dashboards have several limitations including who can create, view, and edit them. Only users with the **pa_viewer** role can view non-responsive dashboards. Only users with the **admin**, **pa_admin**, or **pa_power_user** roles can create and edit them. Non-responsive dashboards use layouts with predefined dropzones.

<table>
<thead>
<tr>
<th>Principle</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Dashboards</td>
<td>Users with any pa role can have one or more dashboards assigned for viewing. Users with the <strong>pa_admin</strong> and <strong>pa_power_user</strong> role can set up and edit dashboards.</td>
</tr>
<tr>
<td>Tabs</td>
<td>Each dashboard may contain one or more dashboard tabs.</td>
</tr>
<tr>
<td>Rows</td>
<td>A tab can have multiple rows. For each row, you can specify the number of “placeholders” or columns. Each placeholder can hold a widget.</td>
</tr>
<tr>
<td>Widgets</td>
<td>Widgets contain information about one or multiple indicators.</td>
</tr>
</tbody>
</table>

**Note:** The mobile apps do not give access to dashboards as dashboards are not optimized for mobile screen sizes. You can access dashboards on a tablet using the standard web interface.

**Create or configure a non-responsive dashboard**

Create a dashboard to show the most relevant indicators for specific users or groups.
Roles required: pa_admin or pa_power_user

Watch this four-minute video to learn how to create a dashboard.

You can create separate dashboards according to topic, such as for incident management, problem management, or request management. The Owner field is automatically populated and can only be changed by a user with the admin role.

1. Navigate to Performance Analytics > Dashboards.
2. From a dashboard, click the unlock icon ( ).
3. Click the plus (+) icon in the top left.
4. Enter a Name that indicates what the dashboard shows. For example, Incidents Dashboard.
5. Enter an Order number to indicate the order the dashboard should appear on the Dashboards list.
   Dashboards with lower numbers are listed before dashboards with higher numbers.
6. Select Active to make the dashboard available in the Dashboards list.
7. Select a dashboard Group to add the dashboard to. Dashboard groups determine how dashboards appear on the dashboard picker.
8. Optional: Select No tabs to disable the tab header.
   Dashboards with the tab header disabled can show only one tab. If you select the No tabs option, you cannot add additional tabs to the dashboard.
9. In the Visible to field, select one of the following options.

<table>
<thead>
<tr>
<th>Option</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Everyone</td>
<td>Make the dashboard available to all users with the pa_viewer role.</td>
</tr>
<tr>
<td>Requires Roles</td>
<td>Select any roles that are required to access the dashboard, in addition to the pa_viewer role.</td>
</tr>
<tr>
<td>Users and Groups</td>
<td>Select specific users or groups that can access the dashboard. Users must have the pa_viewer role.</td>
</tr>
</tbody>
</table>

10. Optional: Select one or more breakdown sources in the Breakdown Source related list.

   Breakdown dashboards have extra options in the dashboard header to select a breakdown and an element.

Create a tab on a non-responsive dashboard

By default, a dashboard is created with a Home tab. You can create and manage additional tabs to group information in a logical order. Tabs help you to manage information on your dashboard and keep related widgets in the same place.

Role required: pa_admin, pa_power_user, or admin

For example, the tabs Daily Indicators, Weekly Indicators, and Home could show the key indicators for incident management.

1. On a dashboard, click Edit.
2. Click the plus (+) icon beside the existing tabs.
3. In the pop-up window, enter a name for the new tab.
4. Perform one of these actions:
ServiceNow    Kingston    Analytics, Intelligence, and Reporting

<table>
<thead>
<tr>
<th>Option</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Enter a name for the new tab and click Create tab.</td>
<td>Adds a new empty tab to the dashboard.</td>
</tr>
<tr>
<td>Select an existing tab from a different dashboard and click Link this tab.</td>
<td>Adds the tab to the dashboard. You can share a tab across multiple dashboards.</td>
</tr>
<tr>
<td>Select an existing homepage and click Link this homepage.</td>
<td>Adds the homepage to the dashboard. You can show a homepage within the dashboard.</td>
</tr>
</tbody>
</table>

To add or change content for a tab, click the plus (+) icon at the top left of the tab area.

To change the appearance of a tab, click Change Layout.

**Modify a tab on a non-responsive dashboard**

An existing tab can be renamed, reordered, or deleted. Rename a tab when you want to clarify what it contains in a different way; reorder tabs when you want to move tabs with related information closer together; and delete a tab when what it contains is no longer relevant.

Role required: pa_admin, pa_power_user, or admin

**Note:** The information on this page applies only to non-responsive dashboards. For information on how to use responsive dashboards, see Working with responsive dashboards.

1. Navigate to the dashboard that you want to modify.
2. In edit mode, click the down arrow beside the name of the active tab to access options for modifying tabs.

<table>
<thead>
<tr>
<th>Option</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Rename</td>
<td>Change the name of the tab.</td>
</tr>
<tr>
<td>Delete this tab</td>
<td>Delete the tab completely. When deleting the tab, it is also removed from all other dashboards.</td>
</tr>
<tr>
<td>Set as homepage</td>
<td>Make this tab the homepage for the dashboard. When a user selects the dashboard, this tab appears as the first page. The homepage icon is added before the title of the tab.</td>
</tr>
<tr>
<td>Change tab order</td>
<td>Change the order of the tabs by giving them a number. The tab with the lowest number starts on the left and the tab with the highest number appears on the right.</td>
</tr>
</tbody>
</table>

**Change the layout of a tab on a non-responsive dashboard**

You can change the layout of a tab the same way you change the layout of homepages.

1. In edit mode, click Change Layout.
2. In the pop-up window, select one of the available layouts.
   - three columns with two wide columns and a narrow right column.
   - narrow left column, large right column, with a header.
   - Minimalist approach to the CMS layout.
   - two columns with wide right column, header and footer.
   - three columns of equal size only.
   - a single cell centered on screen.
3. Click Change Layout to apply the new layout to the tab.
   To revert the change, click Change Layout and select the original layout.
Manage non-responsive dashboards

Depending upon their roles, users can modify, delete, or duplicate non-responsive dashboards. Administrators can control access to a dashboard and add a Performance Analytics widget to a dashboard.

Modify, delete, or copy a non-responsive dashboard
You can change dashboard properties while the dashboard is in Edit mode.

Role required: pa_admin, pa_power_user, or admin

1. Navigate to the dashboard that you want to modify, delete, or copy.
2. Click **Edit** to put the dashboard in edit mode.
3. Click the gear icon at the top right and select one of the following options.

<table>
<thead>
<tr>
<th>Option</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Modify</strong></td>
<td>Change the basic dashboard settings, as described in Create or configure a non-responsive dashboard.</td>
</tr>
<tr>
<td><strong>Delete</strong></td>
<td>Permanently delete the dashboard.</td>
</tr>
<tr>
<td><strong>Duplicate</strong></td>
<td>Create a copy of the dashboard, with the name Copy of &lt;name&gt;. The copy contains all tabs and their content. Widgets are not copied, only widget links are copied.</td>
</tr>
</tbody>
</table>

You can add, delete, rename, and change the layout of tabs in a copy without affecting the original dashboard. However, changing the configuration of a widget on the copied dashboard also affects the original dashboard, since they share widgets. Use the **Modify** option to change the name and update the look and contents of the dashboard copy.

Control access to a non-responsive dashboard
You can control which users, groups, or user roles can access a dashboard.

Role required: pa_admin

If users can access a dashboard, they can see all widgets on that dashboard.

1. Navigate to **Performance Analytics > Dashboards**.
2. Select the dashboard you want to give access to.
3. Click **Edit**.
4. Click the properties icon ( ).
5. Select **Modify**.
6. Limit access using one of these options:

   - To limit access to users with certain roles, select the roles in the **Required Roles** field.
   - To limit access to certain users and groups, select **Users and Groups** in the **Visible to** choice list and specify which users and groups get access.

Add a Performance Analytics widget to a non-responsive dashboard
You can add a widget to a non-responsive dashboard.

The dashboard must be in edit mode. To enable edit mode, click **Edit**.

Role required: pa_admin, pa_power_user, or admin
Note: The information on this page applies only to non-responsive dashboards. For information on how to use responsive dashboards, see Working with responsive dashboards.

Click the plus (+) icon at the top of the tab area to add widgets. A pop-up window appears for choosing which content you want to add to the tab. Content is not limited to Performance Analytics content, but may be from any area.

1. Select **Performance Analytics** in the category list.
2. Select the type of content to use.
   - Breakdown
   - List
   - Score
   - Time Series
   - Relative Compare
3. Select an existing widget, or select the option to create a new one.
4. Select the desired tab location by clicking the corresponding **Add here** button.
5. You can either add another widget or close the pop-up window. The widget is saved automatically.

Copy the URL of a non-responsive dashboard

You can create a URL for a dashboard.

Role required: pa_viewer

1. Navigate to **Performance Analytics > Dashboards**
2. Select a dashboard.
3. Optional: Select a specific tab, breakdown, and breakdown element.
4. Click the Copy URL icon (copy).  

Distribute the URL to share the dashboard.

**Dashboard URL format**

It is possible to link to a Performance Analytics dashboard from your instance. Several URL parameters enable you to specify aspects of the dashboard when the link is followed.

All dashboard URLs follow this format: `https://<instance>.service-now.com/$dashboards.do?`.

This base URL is followed by several optional query parameters.

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>sysparm_dashboard=&lt;sys_id&gt;</td>
<td>The sys_id of the dashboard to show.</td>
</tr>
<tr>
<td>sysparm_tab=&lt;sys_id&gt;</td>
<td>The sys_id of the dashboard tab to show. If you do not specify a tab, the leftmost tab is displayed. This parameter applies only if <code>sysparm_dashboard</code> exists.</td>
</tr>
<tr>
<td>sysparm_breakdown_source=&lt;sys_id&gt;</td>
<td>The sys_id of the dashboard breakdown to show.</td>
</tr>
</tbody>
</table>

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<table>
<thead>
<tr>
<th>Parameter</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>sysparm_element=&lt;value&gt;</td>
<td>The sys_id or value of breakdown element to show. This parameter applies only if sysparm_breakdown_source also exists. Values are case-sensitive.</td>
</tr>
<tr>
<td>sysparm_element_value=&lt;value&gt;</td>
<td>The selected element value. This value may be the sys_id of a referenced record, or the database value for a choice list choice. Database values are case-sensitive. This parameter applies only if sysparm_element and sysparm_breakdown_source also exist.</td>
</tr>
<tr>
<td>sysparm_header=&lt;value&gt;</td>
<td>Controls if the dashboard header appears. Possible values are:</td>
</tr>
<tr>
<td></td>
<td>· Visible — The full header is visible.</td>
</tr>
<tr>
<td></td>
<td>· Hidden — The full header is hidden.</td>
</tr>
<tr>
<td></td>
<td>· Embedded — The header is visible but only the options Refresh, Reset filters, and Export to PDF are visible.</td>
</tr>
<tr>
<td>sysparm_breakdown=&lt;value&gt;</td>
<td>Controls if the dashboard breakdown appears. Possible values are:</td>
</tr>
<tr>
<td></td>
<td>· Visible — The full breakdown is visible, including both source and element.</td>
</tr>
<tr>
<td></td>
<td>· Hidden — The full breakdown is hidden.</td>
</tr>
<tr>
<td></td>
<td>· Embedded — Only the breakdown element is visible.</td>
</tr>
<tr>
<td></td>
<td>· Readonly — The breakdown is visible but the user cannot change how the filter is configured.</td>
</tr>
</tbody>
</table>

When linking to your instance from an outside source such as a text document or presentation, use nav_to.do instead. For instructions on constructing this URL, see Navigate to a record or module using a URL.

**Export a homepage or non-responsive dashboard to PDF**

You can generate a PDF file for any homepage or dashboard.

Roles required: pa_viewer role is required to export dashboards to PDF.

You must activate the WebKit HTML To PDF plugin before you can export homepages, dashboards, and some reports as PDF documents. If the OAuth 2.0 plugin is not already active, the WebKit HTML To PDF plugin activates it as well. For more information, see Activate a plugin.

Custom content may not generate as expected when exported to PDF. For more information, see Custom content PDF export limitations.

Some widgets may be truncated on PDF exports.

Interactive filters and breakdowns that are configured as interactive filters that are applied to the dashboard are not applied to the PDF exports of homepages and non-responsive dashboards. Interactive filters are applied when you generate the PDF locally using the browser's print settings.
To generate the PDF locally, set the interactive filters, click the settings icon, and choose **Printer Friendly Version** to open the dashboard in a new window or tab. Export the dashboard using the browser's print settings.

1. Navigate to a homepage or dashboard.
2. Click the export to PDF icon (\[\]) on a homepage or the **Export to PDF** button on a dashboard.
3. In the Export to PDF dialog box, select formatting options.

<table>
<thead>
<tr>
<th>Option</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Orientation</td>
<td>Page orientation of the exported PDF, either portrait or landscape.</td>
</tr>
<tr>
<td>Paper size</td>
<td>Paper size for the PDF. Available sizes match common paper sizes such as Letter and A4.</td>
</tr>
<tr>
<td>Zoom factor</td>
<td>Scaling percentage for the displayed widgets. This value must be a positive number.</td>
</tr>
<tr>
<td>Avoid page break inside widget</td>
<td>Prevents widgets from being printed across multiple pages. Widgets that would span multiple pages are moved to the top of the following page.</td>
</tr>
<tr>
<td>Smart shrink</td>
<td>Automatically selects the necessary zoom factor for all content to fit into the width of the selected paper size.</td>
</tr>
</tbody>
</table>

**Note:** This option may cause incorrect page formatting when used with **Avoid page break inside widget** or a zoom factor greater than 100.

4. Click **Export**.
5. If you selected the **Generate now** option, wait for the rendering to complete and then click **Download**.
Enable real-time updating for single-score-report widgets on a non-responsive dashboard

Enable single score report widgets on a dashboard to update in real time. Real-time updates ensure that users see the most up-to-date information.

You must have edit rights to the dashboard where the widget has been added.

Four types of aggregation are available for single-score reports: Count, Average, Sum, and Count Distinct. Real-time updating is available only for single score widgets that use the Count aggregation.

You can enable real-time updating for single score widgets on homepages and all dashboards.

Note: Real-time updating does not work for single score report widgets on non-responsive dashboards when a business rule that uses the `current.update()` method fires on insert/update. The single score report increments by two instead of one. For more information, see the Knowledge Base article KB article KB0693812.

1. Navigate to the dashboard where the single score widget has been added.
2. Click Edit to put the dashboard in edit mode.
3. Point to the widget, then click the gear icon (⚙️) that appears.
4. In the Edit Widget window, select the Show real-time updates check box and then click Done.
5. Click Done to exit the edit mode for the dashboard.

The real-time icon ( yapılınabilir) appears on the widget. This icon is permanently visible, even when the score is not changing.

Differences between homepages and responsive and non-responsive dashboards

Any user with a role can create and share responsive dashboards. You can drag to move and resize widgets on responsive dashboards. Non-responsive dashboards use less flexible drop zone layouts, and require Performance Analytics roles to view, create, and edit. Homepages have more restrictive layouts and permission structures.

<table>
<thead>
<tr>
<th>Compare dashboard types</th>
<th>Responsive dashboards</th>
<th>Non-responsive dashboards</th>
<th>Homepages</th>
</tr>
</thead>
<tbody>
<tr>
<td>Move and resize widgets</td>
<td>Drag to move and resize widgets.</td>
<td>Layouts with drop zones, no custom resizing of widgets.</td>
<td>Layouts with drop zones, no custom resizing of widgets.</td>
</tr>
<tr>
<td>Lazy loading</td>
<td>Only visible widgets load. More widgets load as you scroll down. For more information, see <a href="#">Optimize widget rendering time on responsive dashboards</a>.</td>
<td>All widgets load when the dashboard is opened which results in slower performance.</td>
<td>All widgets load when the dashboard is opened which results in slower performance.</td>
</tr>
</tbody>
</table>
## Determine whether a dashboard is responsive

Dashboards on an instance are responsive or non-responsive depending on how an administrator has configured your instance. These different dashboard types have different headers.

Look at the dashboard header to determine the type:

1. **Responsive dashboards:**

   ![Responsive dashboard example]

   - Incident Management
   - Incident Overview
   - Incident Open
   - Incident New
   - Incident Resolved

2. **Non-responsive dashboards:**

   ![Non-responsive dashboard example]

   - Incident Management
   - Incident Overview
   - Incident Open
   - Incident New
   - Incident Resolved

---

**Note:** Some of the buttons are shown only if you have edit rights to the dashboard.
Set dashboards as your Home

You can set dashboards instead of homepages as your Home. With this setting, the last dashboard you selected appears when you navigate to Self-Service > Homepage, or click the logo on the upper left corner of the platform.

When dashboards are set as your Home, you can no longer navigate to homepages under Self-Service > Homepage or the company logo. The most recently selected dashboard is always loaded. You cannot specify a specific dashboard as your Home. Mark a dashboard as a favorite to easily navigate to the dashboard.

1. Click the gear icon to access System Settings.
2. On the General tab, select Dashboards in the Home section.

When you navigate to Self-Service > Homepage, Self-Service > Dashboards, or click your company logo, the last dashboard you selected appears.
Request an analytics service

Request services associated with dashboards, such as to request a new dashboard or access to an existing dashboard.

Role required: none

1. Navigate to either Self-Service > Service Catalog or Service Portal > Service Portal Home.
2. If you navigated to the Service Portal, select Order Something.
3. Select the Can We Help You? category.
4. Select Analytics Request.
5. Select the Request type, such as Request dashboard access, Edit a dashboard, or Report an issue.
6. Optional: If you are submitting the request for another user, select the Request on behalf of another user check box and select User you are making the request for.
7. Provide additional details about your request, such as the name of the dashboard and a description of the changes you want made. Available fields depend on the request type. A notification is automatically sent to the requesting user.

After you submit the request, the Analytics team is responsible for reviewing and implementing your requested changes.

Fulfill an analytics request

Analytics service requests are assigned to the Analytics group who can review and fulfill the requests.

At least one user must be a member of the Analytics group.

Role required:

- Fulfiller - itil and pa_admin. The fulfilling user must be a member of the Analytics group which automatically grants these roles.
- Approver - itil and approver_user

1. Navigate to Service Desk > My Groups Work.
2. Select a request.
3. If the request is to grant access to a dashboard, select the Dashboard that this request applies to.
4. Select one or more users as the Request Approver.
   This approver should not be a member of the Analytics group.
   
   Note: No approval is required when the request type is Report an issue.

5. The approver can then approve the request.
   a) Navigate to Self-Service > My Approvals.
   b) Select the request approval.
   c) Click Approve.

If the approver rejects the approval, the request is closed automatically. If the approver selects an option other than approved or rejected, the fulfilling user can close the request by setting the State to Closed Skipped or Closed Incomplete.

After the request is approved, or if no approval was required, a task is created for the Analytics team. Navigate to the Tasks related list on the request record to view the task. An email notification is sent to the Analytics team.
6. After the approver approves the request, perform the requested changes to fulfill the request. Refer to the dashboards documentation for instructions on how to modify dashboards and dashboard permissions.

7. Update the task **State** to **Closed Complete**.
   The request **State** is updated automatically when the task is closed. An email notification is sent to the requesting user to inform the user that the requested changes are complete.

**Activate the Self-Service Portal for Analytics plugin**

You can activate the Self-Service Portal for Analytics plugin (com.snc.pa.bi_service) if you have the admin role. This plugin and activates related plugins if they are not already active.

Role required: admin

Self-Service Portal for Analytics activates these related plugins if they are not already active.

<table>
<thead>
<tr>
<th>Plugin</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Performance Analytics (com.snc.pa)</td>
<td>Core Performance Analytics functionality</td>
</tr>
</tbody>
</table>

1. Navigate to **System Definition > Plugins**.
2. Find and click the plugin name.
3. On the System Plugin form, review the plugin details and then click the **Activate/Upgrade** related link.
   - If the plugin depends on other plugins, these plugins are listed along with their activation status.
   - If the plugin has optional features that depend on other plugins, those plugins are listed under **Some files will not be loaded because these plugins are inactive**. The optional features are not installed until the listed plugins are installed (before or after the installation of the current plugin).
4. Optional: If available, select the **Load demo data** check box.
   - Some plugins include demo data—Sample records that are designed to illustrate plugin features for common use cases. Loading demo data is a good practice when you first activate the plugin on a development or test instance.
   - You can also load demo data after the plugin is activated by clicking the **Load Demo Data Only** related link on the System Plugin form.
5. Click **Activate**.

**Administering dashboards**

Learn about administering dashboards including how to group dashboards, how to move a dashboard with an update set, and troubleshooting permissions.

**Explore and manage dashboards**

Quickly identify the relationships between Performance Analytics elements, such as dashboards, reports, and indicators. Each dashboard tab has customized interactive filters that enable you to refine the information displayed. Navigate to **Performance Analytics > Admin Console** and select **Dashboards** or **Dashboard Groups** in the Explore and Manage tile.
Explore dashboards example

To see all the automated indicators related to the Incident dashboard group based on the Incident table:

1. Select Dashboard Groups and Incident from the first two choice lists.
2. Select the Indicators tab.
3. From the Indicator — Table choice list, select Incident to see only the indicators on the Incident table.
4. From the Type choice list, select Automated to see only the automated indicators on the Incident table.

Dashboard and Dashboard Groups

Click Dashboard or Dashboard Groups to view the dashboard with the following tabs:

- Dashboard groups — a list of all the dashboard groups in your instance. This tab has focus if you select Dashboard Groups on the Admin Console.
  - Filter: Visibility. Show all dashboard groups, dashboard groups that are visible to everyone, or the dashboard groups that are limited to specific groups and users.
- Dashboards — a list of all the dashboards in your instance sorted by group. Expand the group to view the individual dashboards. Click the dashboard name to view and edit its details. This tab has focus if you select Dashboards on the Admin Console.
  - Filters:
    - Active — Choose All, Active=True, or Active=False.
    - Dashboard owner — Choose All or select one or more owners from a choice list.
- Widgets — a list of all Performance Analytics widgets used in your instance’s dashboards.
  - Filters:
    - Type — Choose All or filter on one or more widget types. See Performance Analytics widgets.
    - Visualization — Choose All or filter on one or more report visualization types from a choice list.
- Indicators — a list of all indicators, except for benchmark indicators, that are used in your instance’s dashboards. Filters: You can filter on Indicator Table, Type, Frequency, Indicator Source, Units, Direction, Scripted, and Aggregation Type. Click the name of the Indicator or Indicator Source to view and edit its details. For more information, see Set up indicators.
- Indicator Sources — a list of all indicator sources in your instance. Filter on Indicator Table and Frequency. Click the name of the Indicator Source to view and edit its details. For more information, see Indicator sources.
- Breakdowns — a list of all breakdowns in your instance. Filter on one or more Breakdown Tables. Click the names of the breakdown and the breakdown source to view and edit their details. For more information, see Define a breakdown source.
- Breakdown Sources — a list of all breakdown sources in your instance. Filter on one or more Breakdown Tables. Click the name of the breakdown source to view and edit its details. For more information, see Define a breakdown source.
- Jobs — a list of all jobs created in your instance with columns for how often the job is run and how long the job took the last time it was run. The list also shows whether the job is Active. Click the name of the job to view its details. For more information, see Configure a job indicator.
• Reports — a list of all reports created on your instance. Filter on one or more Report Tables and one or more Report Types. Click the title of a report to view its details. For more information, see Create a report visualization.

• Interactive Filters — a list of all interactive filters configured on your instance. Filter on what the filter is based on and one or more UI control types. Click the Look up name to view and edit the details of the interactive filter. For more information, see Interactive Filters.

Group dashboards

Organize dashboards into groups so users can easily find them. Dashboard groups determine how dashboards appear in the dashboard picker when you navigate to Dashboards. You can add view permissions to dashboard groups.

Role required: admin, pa_admin, or pa_power_user

Permissions on dashboard groups apply to all the dashboards in that group.

**Note:**
- View permissions on an individual dashboard override the permissions set at the dashboard group level.
- Edit permissions on a dashboard do not affect group permissions.
- Dashboard group permissions do not appear in the dashboard Sharing panel.

To show single groups in the dashboard picker, add the parameter `sysparm_group=` followed by the group name to the dashboard URL. For example, to show only a dashboard group named incident, use the URL `https://<instance>/$dashboards.do?sysparm_group=incident`.

1. Navigate to Performance Analytics > System > Dashboard Administration.
2. Review current dashboards groupings using the Group column.
3. Click the dashboard that you want to add to a group to open its form.
4. In the Group field, select a group to add the dashboard to, or click New to add a group.
5. Optional: Open the form of the dashboard group to modify its permissions. Only view permissions can be set on dashboard groups.
   Dashboard groups use standard platform permissions. For more information, see Access control list rules.
6. Click Update.

How dashboard and dashboard group permissions interact on responsive dashboards

Dashboard group and dashboard permissions are not additive. Depending on how permissions are defined on a dashboard, dashboard group permissions may not apply.

If a dashboard belongs to a dashboard group, any view permissions defined on the dashboard override all view permissions on the dashboard group. Permissions on the dashboard group level are not visible from the Share panel of a dashboard. When changing the view permissions for a dashboard that is part of a group, always review the permissions for the dashboard group to ensure that users do not lose access. For more information, see Dashboard permissions scenarios.

For example, the dashboard group Support Dashboards contains the dashboards Open Incidents and Incident Metrics. The dashboard group has view permissions for the group Support. When you give view permissions to user John Dee for the dashboard Incident Metrics, the group Support can no longer see that dashboard.
View permissions on the dashboard override all view permissions on the dashboard group.

**Move a dashboard with an update set**

Portal pages related to dashboard tabs are not automatically transferred in update sets. You can add portal pages to update sets from a dashboard record using the **Unload Dashboard** function, which unloads the entire dashboard with all related tabs, including portal pages.

Role required: admin

This procedure describes moving the dashboard structure to an update set. The dashboard structure includes the dashboard itself, tabs, the related security configuration, and dashboard-specific widget settings such as header color, borders, etc.

This procedure does not move the content of the dashboard (such as reports, PA widgets, content blocks, and other widgets) to the update set. You can add dashboard content to the update set using default platform functionality.

**Note:** Make sure dashboard content is either in the same update set as the dashboard record or is already present in the target instance. Errors result if the moved dashboard points to content that does not exist on the target instance.

1. In the source instance, navigate to the location of the dashboard you want to unload, for example, **Self-Service > Dashboards**.
2. Select the dashboard you want to unload to an update set.
3. Click the context menu icon (Ξ) and select **Dashboard Properties** to open the dashboard record.
4. Click the context menu icon (Ξ) and select **Unload Dashboard**.
   Only perform this step once the dashboard is ready to unload, meaning that all content is added to the tabs.
5. When you are ready to move the update set, mark the update set as complete.
6. On the target instance, move the update using standard update set functionality. For more information, see **Retrieve an update set**.
   On the Remote Instance page, the **Retrieved Update Sets** related list shows all retrieved update sets. Click the update set to see if there are errors. Errors are shown on the **Retrieved Update Set** form in a related list called **Update Set Preview Problems**. See **Solving errors on dashboards moved with update sets**.
7. Required: On the target instance, make sure that all the tabs of the dashboard have associated portal pages. See **Validate that tabs are moved to a target dashboard**.
   If the portal page is missing in the Tab form, click the search icon (🔍) next to the **Page** field to search for the associated portal page.

**Note:** If you cannot find the associated portal page in the target instance, follow these steps to move each missing portal page through the update:

1. Navigate to **Homepage Admin > Pages**.
2. Filter the list to show only the portal page with the sys_id you copied.
3. Right-click the record and select **Unload Portal**.

   The portal page for the current tab is added to the current update set.

4. Move the update set to another instance using standard update set functionality. For more information, see *Retrieve an update set*.

   The dashboard and its tabs are moved to the target instance.

**Validate that tabs are moved to a target dashboard**

When you have moved a dashboard with an update set, validate that the tabs are moved to the target instance and are populated.
Role required: admin

Moving dashboards from one instance to another requires associating the sys_id values of dashboard tabs with the sys_id values of the associated portal pages. This task explains how to find these values and map them to each other if there are problems with moving the dashboard. Perform this task after you *Move a dashboard with an update set*.

1. In the target instance, navigate to the dashboard you have just moved.
2. Click the context menu icon (≡) and select **Dashboard Properties**.
3. For each tab in the tab form, verify that the mandatory field **Page (sys_portal_page reference)** is there. If every tab has an associated portal page then the dashboard was successfully moved.
4. If the portal page is missing in any of the tab forms, perform these steps:
   a) Click the context menu icon (≡) in the Tab form and select **Copy sys_id**.
   b) In the filter navigator of the source instance, enter `pa_tabs.list`.
   c) Filter the list to show only the tab with the sys_id you copied in substep a.
   d) Click the name of the tab to open its form.
   e) Click the information icon (ℹ️) of the Page value for that tab.
f) On the **Portal Page**, click the context menu icon (≡) and select **Copy sys_id**. Paste this value into the text editor.

This value is the sys_id for the portal page. It is different than the sys_id for the associated tab that you have already used. These values are used together to map the tab to the portal page.

g) Click the search icon (🔍) associated with the **Page** field.

h) In the pop-up window, filter on the portal page sys_id and select the returned query result.

i) Click **Update** in the Tab form to save your changes.

5. The associated portal page should be visible in the target instance. If you can't find the portal page in the target, perform the following:
   a) In the source instance, navigate to **Homepage Admin > Pages**.
   b) Filter the list to show only the portal page with the sys_id you copied.
c) Right-click the record and select **Unload Portal**

![Unload Portal](image)

Page.

d) Move the update set to another instance using standard update set functionality. For more information, see *Retrieve an update set*.

Solving errors on dashboards moved with update sets

When you move a dashboard with an update set, if errors are shown on the **Update Set Preview Problems** tab of the Retrieved Update Set page, follow the instructions for each error to solve these problems.

_Could not find a record in sys_grid_canvas for column canvas_page referenced in this update_

When you move a dashboard with an update set, the following error may occur: 'Could not find a record in sys_grid_canvas for column canvas_page referenced in this update'. To solve this error, move the canvas page from the source instance to the target instance.
Role required: admin

1. In the **Update Set Preview Problems** related list, click the information icon next to the error.

2. In the `pa_tabs` record payload, copy the `sys_id` associated with the `canvas_page` field.

3. In the source instance, navigate to `sys_grid_canvas.list`.

4. Filter the list on the `sys_id` copied in step 2.

5. Right-click on the returned record and select **Unload Canvas Page** to add this record to the current update set.

6. Transfer the update set to the target instance using standard update set functionality. For more information, see **Retrieve an update set**.

7. Repeat this task for all update set preview problems that have this error.

The missing dashboard tab content is moved to the target instance.
Solving permissions issues on a responsive dashboard

Dashboard permissions can be set in several different locations.

When you find problems with permissions on responsive dashboards, you can review permissions on the Dashboard Sharing panel, group permissions and dashboard properties.

- Check the permissions on the Dashboard Sharing pane.
  The dashboard owner, users with the admin role, and users with the pa_power_user or pa_admin role who can edit the dashboard can perform this step.
- Review permissions of the group to which the dashboard belongs. Dashboard group permissions do not show up in the dashboard Sharing panel.
  Users with the admin, pa_power_user, or pa_admin role can perform this step.
- Compare the dashboard and dashboard group permissions. If permissions are specified on a dashboard, the permissions on the dashboard group are overridden and no do not apply.
  Users with the admin, pa_power_user, or pa_admin role can perform this step.
- On the dashboard properties form, review the roles specified in the **Restrict to roles** field. Only users with one of the roles specified in this field can view the dashboard.
  The dashboard owner, users with the admin role, and users with pa_power_user or pa_admin roles who can edit the dashboard can perform this step. Other users who can edit the dashboard can view this field but cannot edit it.

Dashboard permissions scenarios

Permissions on dashboards can be complicated. If you set a permission on a dashboard group, for example, permissions set on a dashboard within that group override it. This matrix shows what is visible based on various combinations of permissions.

The Dashboard permissions scenarios table uses these abbreviations:

- **DB** = Dashboard
- **DG** = Dashboard Group
- **RTR** = Restrict to Roles (For more information, see *Restrict responsive dashboard access to specific roles*.
- **X** = Unspecified

### Dashboard permissions scenarios

<table>
<thead>
<tr>
<th>Scenario</th>
<th>DG</th>
<th>DG Permission</th>
<th>DB view permission</th>
<th>DB edit permission</th>
<th>RTR</th>
<th>Who can view the DB?</th>
</tr>
</thead>
<tbody>
<tr>
<td>No DG, no DB permissions</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>Only the owner</td>
</tr>
<tr>
<td>Only RTR</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>asset</td>
<td>Only the owner</td>
</tr>
<tr>
<td>Only DB permissions</td>
<td>X</td>
<td>X</td>
<td>itil</td>
<td>X</td>
<td>X</td>
<td>Users with the itil role</td>
</tr>
<tr>
<td>DB permissions and RTR</td>
<td>X</td>
<td>X</td>
<td>itil</td>
<td>X</td>
<td>asset</td>
<td>Users with both the itil AND asset roles</td>
</tr>
</tbody>
</table>
### Domain separation in Dashboards

This document is an overview of domain separation as it pertains to dashboards and how it relates to dashboard creation and administration. Domain separation allows you to separate data, 

The default permissions for a dashboard group are `pa_admin` and `pa_power_user`. If a permission, such as `itil`, is specified on the dashboard group, this permission is added to the default permission. Permissions on individual dashboards override the dashboard group permission.

<table>
<thead>
<tr>
<th>Scenario</th>
<th>DG Permission</th>
<th>DB view permission</th>
<th>DB edit permission</th>
<th>RTR</th>
<th>Who can view the DB?</th>
</tr>
</thead>
<tbody>
<tr>
<td>Only DG without permissions</td>
<td>Exists</td>
<td>X</td>
<td>X</td>
<td></td>
<td>Users with either the <code>pa_admin</code> role OR the <code>pa_power_user</code> role</td>
</tr>
<tr>
<td>DG without permissions and RTR</td>
<td>Exists</td>
<td>X</td>
<td>X</td>
<td>asset</td>
<td>Users with both the asset role AND either the <code>pa_admin</code> role OR the <code>pa_power_user</code> role</td>
</tr>
<tr>
<td>Only DG and DG permissions</td>
<td>Exists</td>
<td>itil</td>
<td>X</td>
<td>X</td>
<td>Users with either the <code>itil</code> role OR the <code>pa_admin</code> role OR the <code>pa_power_user</code> role</td>
</tr>
<tr>
<td>DG, DG permissions, and RTR</td>
<td>Exists</td>
<td>itil</td>
<td>X</td>
<td>X</td>
<td>Users with both the asset role AND either the <code>itil</code> role OR the <code>pa_admin</code> role OR the <code>pa_power_user</code> role</td>
</tr>
<tr>
<td>DG, DG permissions, and DB permissions</td>
<td>Exists</td>
<td>itil</td>
<td>itil_admin</td>
<td>X</td>
<td>Users with both the <code>itil_admin</code> role AND the asset role</td>
</tr>
<tr>
<td>DG, DG permissions, DB permissions, and RTR</td>
<td>Exists</td>
<td>itil</td>
<td>itil_admin</td>
<td>X</td>
<td>Users with the <code>itil_admin</code> role</td>
</tr>
</tbody>
</table>

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processes, and administrative tasks into logical groupings called domains. You can then control several aspects of this separation, including which users can see and access data.

Overview

Support: Data only

Domain separation is supported in this application. Not all ServiceNow applications support domain separation; some include limitations on the data and administrative settings that can be domain separated. To learn more, see Application support for domain separation. To activate the domain separation plugin, see Request domain separation.

**Note:** In order for users in child domains to view dashboards in parent domains, both domain separation and delegated administration must be enabled. For more information, see Configure Domain Separation.

How domain separation works in Dashboards

Assumptions:

- Only dashboards that have been shared are visible to other users. See Share a responsive dashboard.
- Users granted edit permissions on a dashboard can only edit that dashboard if they are in the same domain as the dashboard. For example, a user who is in the HR domain cannot edit a dashboard created in the parent of the HR domain.

Dashboard data that is domain separated includes dashboard records, dashboard tabs, and widget containers. Widget content is governed by the domain separation that applies to the content itself. For example, an admin adds a report created in the HR domain to a dashboard in the IT domain. This dashboard is not visible to users in the IT domain, although they can see the widget container.

A dashboard defined at the global level is visible to all users with whom it has been shared. A shared dashboard created in a parent domain is visible to users in the parent and all of its child domains. For example, a dashboard created in the TOP company is visible to users in Joe's company, other companies in the TOP company, and all HR, CS, and IT child domains in those companies if it is shared with those users. In the following figure, dashboards created in the IT, CS, and HR domain are not visible to users in the other child domains or to users in the parent domain.
Note: Administrators should not edit a domain-separated dashboard from the global domain, because additions made to the dashboard are not visible to users within the separated domain. When editing dashboards, make sure that you are logged in to the correct domain.

Dashboard URL parameters

Dashboard URL parameters allow you to control the visibility of headers and the breakdown sources of dashboards used in application pages.

Dashboard header

This sysparm_header URL system parameter controls the visibility of the header of the dashboard. It has the following values:

- hidden — The header is hidden on the application page.
- embedded — The dashboard header appears but only has limited options. Options to refresh, reset filters, and export to PDF are available on the context menu.
- visible (default) — The full header is visible on the application page.

<your-servicenow-instance.com>/$dashboards.do?
sysparm_dashboard=ABC123&sysparm_tab=123ABC&sysparm_cancelable=true&sysparm_editable=true
Dashboard breakdown

The sysparm_breakdown URL system parameter controls the visibility of the dashboard breakdown. It has the following values:
- visible (default) — The full breakdown is visible including source and element.
- hidden — The full breakdown is hidden.
- embedded — Only the breakdown element is visible.
- readonly — The breakdown element is visible but is read only.

Optimize widget rendering time on responsive dashboards

Large dashboards can take a long time to render, especially when widgets require complex queries or queries on large tables. You can use system properties to optimize how widgets load.

Note: You can optimize widget rendering only for responsive dashboards.

Role required: admin

Use these two system properties to optimize dashboard widget rendering:

<table>
<thead>
<tr>
<th>Name</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>glide.canvas.grid.widget_performance_threshold</td>
<td>Defines the maximum number of seconds for a widget to render on a dashboard. Widgets that exceed this time are not rendered and a warning message is shown. Users can click to restart rendering. Stopping widgets that render slowly enables faster widgets to load, and increases the speed of dashboard loading.</td>
</tr>
<tr>
<td></td>
<td>Type: integer</td>
</tr>
<tr>
<td></td>
<td>Default value: none</td>
</tr>
<tr>
<td></td>
<td>Location: System Properties &gt; Dashboard Properties</td>
</tr>
<tr>
<td>Name</td>
<td>Description</td>
</tr>
<tr>
<td>------</td>
<td>-------------</td>
</tr>
</tbody>
</table>
| glide.canvas.grid.widget_render_concurrent_max | Defines the maximum number of widgets that render simultaneously on a dashboard. With smaller values, more requests are made to the server. With larger values, fewer requests are made to the server.  

**Note:** This property reduces load on the server. It does not necessarily improve performance of individual dashboards.  

Widgets that are outside of the screen do not load at all until you scroll past them.  
- **Type:** integer  
- **Default value:** 3 if the property is not manually set. The minimum value is 2 if you set the property manually. If you set this property manually to 1 or lower, all widgets on the dashboard load simultaneously.  
- **Location:** System Properties > Dashboard Properties |

The values to use for these properties depend on the performance of your instance and the contents of its dashboards.

**Enable responsive dashboards**

A system administrator can enable responsive dashboards for an entire instance.  

Role required: admin  

During conversion to responsive dashboards, the layout of dashboards may slightly change. Highly customized dashboards may have significant changes, such as different widget layouts or missing widgets. Review each dashboard for changes and adjust its layout as necessary on the drag-and-drop canvas.  

1. Navigate to System Properties > Dashboard Properties.  
2. Under **Enable responsive dashboard**, select Yes.  

All new dashboards are responsive, and existing dashboards become responsive. Review the layout of all existing dashboards. See Dashboards upgrade information.  

**Disable responsive dashboards**

If you disable responsive canvas for an instance, all dashboards become non-responsive dashboards and revert to non-responsive functionality. Disabling responsive canvas after it has been enabled is strongly discouraged.  

Role required: admin  

When you disable responsive dashboards:  

- Sharing permissions that were made while responsive canvas was enabled are lost and must be manually re-added to dashboards. Only dashboard owners will be able to see dashboards that were created after responsive dashboards was enabled. For dashboards that existed before responsive dashboards was enabled, dashboard permissions revert to their pre-conversion state.  

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- The layouts of dashboards that were made after responsive dashboards was enabled will be lost, and use the default drop zone layout. Dashboards that were created before responsive canvas was enabled will revert to their pre-conversion layout. Any widgets that were added or removed while the dashboard was responsive will be preserved.

- the **Restrict to roles** and **Owner** fields remains available in the dashboard properties form. However, the **Restrict to role** field does not do anything.

  Set the **glide.cms.enable.responsive_grid_layout** system property to **false**. If this system property does not exist, you can create it.

### Admin Console for dashboards

The Performance Analytics Admin Console contains several features for dashboard management.

### Explore and Manage

Navigate to **Performance Analytics > Admin Console**.

The Explore and Manage dashboard contains tools to find, modify, and create dashboards and indicator-related records. Click the links to manage Dashboard Groups and Dashboards.

### Advanced Configuration

Navigate to **Performance Analytics > Admin Console**.

The **Advanced Configuration** tile on the Admin Console shows a link to **Dashboard Properties**.

### Responsive dashboard properties

Use properties to fine-tune dashboard behavior and appearance.

### Introduction

Navigate to **System Properties > Dashboard Properties** to configure the main responsive dashboard properties.

### Responsive Dashboard properties

<table>
<thead>
<tr>
<th>Property</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Enable responsive dashboards.</td>
<td><strong>Type</strong>: true</td>
</tr>
<tr>
<td><strong>glide.cms.enableresponsive_grid_layout</strong></td>
<td><strong>Default value</strong>: true</td>
</tr>
<tr>
<td></td>
<td><strong>Location</strong>: <strong>System Properties &gt; Dashboard Properties</strong></td>
</tr>
<tr>
<td></td>
<td>For more information, see <strong>Enable responsive dashboards</strong>.</td>
</tr>
</tbody>
</table>
### ServiceNow® Kingston Analytics, Intelligence, and Reporting

<table>
<thead>
<tr>
<th>Property</th>
<th>Description</th>
</tr>
</thead>
</table>
| Maximum number of seconds for a widget to render on a responsive dashboard. glide.canvas.grid.widget_performance_threshold | **Type:** integer  
**Default value:** none  
**Location:** System Properties > Dashboard Properties  
For more information, see Optimize widget rendering time on responsive dashboards. |
| Maximum number of widgets that can render simultaneously on a responsive dashboard. glide.canvas.grid.widget_render_concurrent_max | **Type:** integer  
**Default value:** 3  
**Location:** System Properties > Dashboard Properties  
For more information, see Optimize widget rendering time on responsive dashboards. |
| Number of minutes that responsive dashboard widgets are cached in the browser. glide.canvas.grid.widget_cache_ttl | **Type:** integer  
**Default value:** 2  
**Location:** System Properties > Dashboard Properties |

### Custom content PDF export limitations

When you create custom content to be placed as widgets on dashboards and home pages, you must perform extra tests before you export the content to PDF.

### Outside of ServiceNow support

As with any custom implementations, several things have limited or no support when they are beyond ServiceNow’s control:

- Custom content blocks: Content blocks that are not out-of-the-box or part of a plugin.
- Custom interactive filters (dynamic content blocks).
- Custom Iframes, including Iframes that link back to existing UI pages and scripts.
- Custom widgets: widgets not created by ServiceNow.
- Custom Global UI scripts: UI scripts that are not out-of-the-box.
- Custom UI pages: UI pages that are not out-of-the-box.
- Custom script includes: Script includes that are not out-of-the-box.

PDF export engines do not render pages the same way a browser does. PDF export functionality supports the following web technologies: HTML 4, CSS2, and JavaScript 1.5. Content block developers are responsible for testing their code against PDF export and for adjusting their implementation to these limitations.

### Gauge support

Gauges are containers for holding graphical content on dashboards and homepages in ServiceNow®, but gauges are no longer supported. Widgets are the supported containers for graphical content.

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It is not possible to create gauges through the Dashboard and Homepage user interfaces. When you navigate to System UI > Gauges and click New, a widget is created for your content. You may have gauges in your instance if they have been moved from an earlier instance in an update set or are present in an older installed plugin. If gauges do not contain content or do not behave correctly, create a new widget with the content you want to show.

**Note:** Admins can create gauges at the table level using platform functionality. An ACL on the sys_gauge table restricts other users from creating gauges.

To create a new widget, navigate to System UI > Widgets and click New. For an example, see Create a widget that displays a ServiceNow UI page.

**Performance Analytics Solution Library**

The Solution Library enables you to easily install and update dashboards and visualizations for Performance Analytics solutions.

Using the Solution Library, you can install and update dashboards, widgets, reports, interactive filters, and other configuration records without impacting your indicators or indicator sources. The Solutions Library ensures that your data remains consistent. The Solution Library also enables you to update existing visualizations when you want, either individually or for an entire dashboard, instead of automatically updating the visualizations when you upgrade the instance.

The Solution Library provides a description and preview of each dashboard that you can use to identify which dashboards you want to install.

Solution Library dashboards are available for the following applications:

- Incident
- Problem
- Change
- SLA
- Knowledge
- Service Catalog Request

You must enable responsive dashboards to use the Solution Library.

**Install a dashboard**

Use the Solution Library to install a dashboard and all associated visualizations such as widgets and reports.

Role required: pa_admin

You can install a dashboard for the first time, or reinstall a dashboard to restore it to the default state.

**Note:** Reinstalling a dashboard overrides all customizations made to the dashboard or its associated records such as widgets.

To reinstall a single record from a dashboard, such as a widget, without impacting other records used by the same dashboard, see Reinstall a single dashboard record.

1. Navigate to PA Solution Library > Solutions.
2. Select the dashboard you want to install or upgrade.

The dashboards provided in the Solution Library may depend on indicators, indicator sources, or other configuration records associated with data collection that are not installed by the
Solution Library. To install these records, activate the plugin for the associated Performance Analytics solution that appears in the **Plugin** field.

3. **Click Install.**
4. **In the confirmation window, click Install.**

   The installation may take up to 30 seconds to complete after you confirm. Clicking **Cancel** during this time closes the confirmation window but does not stop the in-progress installation. After the installation completes, the confirmation window disappears and the **Installed Metadata** related list is populated with the records that were installed.

Navigate to the newly-installed dashboard to begin analyzing your data.

### Upgrade a dashboard

Upgrading a dashboard installs new versions of any record used by that dashboard that have been updated. Records without new versions are not affected.

**Role required:** pa_admin

#### Note:
Any customizations you have made to records with available updates are overwritten when you upgrade.

1. Navigate to **PA Solution Library > Solutions.**
2. Select the dashboard you want to upgrade.
3. Review the **Solution Metadata** related list.
   - Records where the **Update Available** field is **true** will be upgraded.
4. **Click Upgrade.**
   - The **Upgrade** button appears only if updates are available for the current dashboard.
5. **In the confirmation window, click Upgrade.**
   - The upgrade may take up to 30 seconds to complete after you confirm. Clicking **Cancel** during this time closes the confirmation window but does not stop the in-progress upgrade.

### Reinstall a single dashboard record

Reinstall a single record used by a dashboard, such as a widget, to restore that record to the default state without impacting other records used by the same dashboard.

**Role required:** pa_admin

To reinstall the entire dashboard and all associated records, see **Install a dashboard.**

#### Note:
Reinstalling a record overwrites any customizations you have made to that record.

1. Navigate to **PA Solution Library > Solutions.**
2. Select the dashboard that uses the record you want to reinstall.
3. **In the Solution Metadata related list, select the record you want to reinstall.**
4. **Click Install.**
5. **In the confirmation window, click Install.**

### Duplicate a dashboard

Duplicate a dashboard and preserve the layout, including tabs and displayed widgets.
Role required: pa_admin

By duplicating a dashboard you can modify or upgrade one copy without affecting the duplicate.

Note: Duplicating a dashboard does not duplicate the widgets displayed on the dashboard. You can rearrange or remove widgets from one copy of the dashboard without affecting the other. However, modifying a widget record will affect both the original dashboard and the duplicate.

1. Navigate to PA Solution Library > Solutions.
2. Select the dashboard you want to duplicate.
3. Click the Duplicate Dashboard icon.

A copy of the dashboard with the name Copy of (original dashboard name) is created.

Activate the Solution Library plugin

You can activate the Performance Analytics - PA Solution Library plugin (com.snc.pa.solution.library) if you have the admin role. This plugin includes demo data and activates related plugins if they are not already active.

Role required: admin

If the related plugins are not already active, the Performance Analytics - PA Solution Library plugin activates them.

<table>
<thead>
<tr>
<th>Plugin</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Performance Analytics</td>
<td>Contains the core Performance Analytics functionality.</td>
</tr>
<tr>
<td>(com.snc.pa)</td>
<td></td>
</tr>
</tbody>
</table>

1. Navigate to System Definition > Plugins.
2. Find and click the plugin name.
3. On the System Plugin form, review the plugin details and then click the Activate/Upgrade related link.

If the plugin depends on other plugins, these plugins are listed along with their activation status.

If the plugin has optional features that depend on other plugins, those plugins are listed under Some files will not be loaded because these plugins are inactive. The optional features are not installed until the listed plugins are installed (before or after the installation of the current plugin).

4. Optional: If available, select the Load demo data check box.

Some plugins include demo data—Sample records that are designed to illustrate plugin features for common use cases. Loading demo data is a good practice when you first activate the plugin on a development or test instance.

You can also load demo data after the plugin is activated by clicking the Load Demo Data Only related link on the System Plugin form.
5. Click Activate.

Widgets

Objects that have been added to dashboards are called widgets. You can create and manage widgets. Many applications have their own widgets. See an application’s documentation for information about the widgets included with the application.

Create a widget that displays a ServiceNow UI page

You can create ServiceNow UI page that displays a web page, then make the UI page into a widget that can be added to dashboards and homepages.

Role required: admin

A UI page is a ServiceNow page that is not a list or a form. Certain UI pages, such as external site widgets or gadgets, do not display properly when placed in a dashboard.

Note: This functionality requires a knowledge of JavaScript.

1. Create or find a ServiceNow UI page that you want to display as a widget. Note the name of this UI page, to use in Step 4.

For example, this HTML displays the ServiceNow landing page in an iframe.

```html
<iframe id="myframe" src="http://www.service-now.com" scrolling="yes" style="height:100%; width:100%"></iframe>
```

2. Navigate to System UI > Widgets and click New.

Widgets records are widget category records, not records for individual widgets. When adding a widget to the dashboard, first select the category and then the widget. The javascript you specify in step 4 contains the list of widgets to include in that category.

3. Fill in the following fields.

<table>
<thead>
<tr>
<th>Field</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Name</td>
<td>The name of this widget category. The user selects this category when adding its widgets to a dashboard.</td>
</tr>
<tr>
<td>Renderer Type</td>
<td>Select Javascript.</td>
</tr>
<tr>
<td>Active</td>
<td>Clear to make the widget unavailable to add to dashboards.</td>
</tr>
<tr>
<td>Roles</td>
<td>Select roles that can see this category when adding widgets to dashboards. If no roles are selected, all roles can see the category.</td>
</tr>
</tbody>
</table>

4. Add the following javascript in the Script field, making replacements as specified. The return statement contains the widgets that are listed in this widget category.

```javascript
widget_name
```

The name of the widget, which the user selects in the widget picker when adding the widget to a dashboard. This string also appears on the widget header.
function sections() {
  return {
    'widget_name': { 'uiPageName' : 'UI_page_name' },
    'widget_name2': { 'uiPageName' : 'UI_page_name' }
  };
}

function render() {
  var uiPageName = renderer.getPreferences().get("uiPageName");
  return renderer.getRenderedPage(uiPageName);
}

function getEditLink() {
  return "sys_ui_page.do?sysparm_query=name=" +
         renderer.getPreferences().get("uiPageName");
}

5. Click Submit.

To learn how to make a UI page without using a framework page template, see the Making a UI page without using the framework page template blog posting by a developer in the ServiceNow Community.

**Linking to a scorecard from a custom widget**

You can create a custom widget to link to a Performance Analytics scorecard.

Use the function `paDetailedHelper.open('<scorecard sys_id>')` in a widget link to open a scorecard when clicking that link.

The following example demonstrates how to create a dynamic content block including links to Performance Analytics scorecards.

```xml
<?xml version='1.0' encoding='utf-8' ?>
<j:jelly trim='false'
  xmlns:j='jelly:core'
  xmlns:glide='glide'
  xmlns:j2='null'
  xmlns:g2='null'>
  <script src='scripts/pa/pa_detailed_helper.js' />
  <a href='##' onclick="paDetailedHelper.open('31efe602d7130100b96d45a3ce610300')">New Incidents</a><br />
  <a href='##' onclick="paDetailedHelper.open('7dafa602d7130100b96d45a3ce6103c8')">Resolved Incidents</a><br />
</j:jelly>
```

**Agent Intelligence**

Use ServiceNow® Agent Intelligencemachine-learning algorithms to set field values during record creation such as setting the incident category based on the short description. Train predictive models to act as an agent to categorize and route work based on your past record-handling experience.

**Note:** Agent Intelligence is not supported on on-premise instances, as its solution training functionality requires processing in ServiceNow datacenters.
Note: In artificial intelligence communities, the term “train” is used for machine-learning discourse in the same way we use it for humans and animals. For example, you can train horses, and you can train data sets.

Benefits of Agent Intelligence

Enable Agent Intelligence to handle higher volumes of incoming requests at lower costs. Automate the categorization and assignment of requests to gain these benefits.

- Reduce task resolution times.
- Reduce the number of interactions required to resolve tasks.
- Reduce the error rates of categorizing and assigning work.

Training your machine-learning solutions

Agent intelligence enables you to train predictive models and machine-learning solutions that you can apply to your business processes, such as:

- **Incident categorization**: Predicts the incident category based on the short description. See Agent Intelligence for Incident Management.
- **CSM case assignment**: Predicts the case record assignment group based on the short description. See Agent Intelligence for Customer Service Management.

You can also extend Agent Intelligence to other processes by creating your own predictive models and training them on your past record data.
A predictive model consists of these components, some of which you must provide.

- **A solution definition** is a configuration record that specifies how to train a predictive model. All solution definitions specify these values.

  - The records used to train the model. For example, only train on incidents that have been resolved or closed within the last 6 months.
  - The input fields the model uses to make predictions. For example, use the incident short description to make a prediction.
  - The output field whose value the model predicts. For example, set the incident category based on the short description.
  - The frequency to retrain the model. For example, retrain the model every 30 days.

- **A solution** is a Java object produced by training a solution definition. Agent Intelligence uses this object to predict a target field value given one or more input field values. All solutions specify these values.

  - The solution **precision** is the aggregate percentage of correct predictions. For example, a precision of 50 means that out of 100 predictions, half of them should have the correct value.
  - The solution **coverage** is the aggregate percentage of records that receive a prediction. For example, a coverage of 50 means half of all eligible records actually receive a prediction.
  - The solution **classes** are the output field values for which the model can make predictions. Each class is an output field value with a list of possible precision, coverage, and distribution metrics to choose from. For example, the Incident Categorization solution has a class for each category such as software, inquiry, and database.
  - The class **distribution** is the percentage of records from the entire table that have this particular output field value. For example, a distribution of 50 for the inquiry class means that half of incidents have the inquiry category.

- A business rule that calls the solution data set to generate a prediction when a new record is created.

**Selecting data records for training your solution**

A solution is only as good as the record data you use to train it. In general, a good training dataset has these characteristics.

- The solution definition input fields are available to users when creating records. To make predictions at record creation, the solution must have the input field values at record creation.
- The solution definition output field is a choice field. To make more accurate predictions, limit the output field to a finite set of possible values.
- The training records only contain correct values for the output field. To make more accurate predictions, filter out any records that have unreliable output field values. For example, if recently closed incidents are subject to review and change for a month, filter out any recently-closed incidents.
- The training records contain multiple examples of each output field value you want the solution to predict. To provide more record coverage, include multiple examples of each output field value.
- The training records include common variations of the input fields. To provide more record coverage, include multiple examples of input field values.
Exporting your solution for training

Training flow

Training a solution involves exporting the solution definition and its associated records to the nearest training service at a ServiceNow datacenter. Training services are not available to customers who have data sovereignty requirements. When training is complete, the training service exports the solution back to the instance and deletes all customer training data from the training service servers.

Note: All communications between the instance and the training service are over HTTPS.

Prediction business rules

By default, the system uses these business rules for Agent Intelligence.
Default Task Based Prediction
A business rule that runs before inserting new task records to make a field value prediction based on the solution definition output field and the solution dataset. Use this business rule as a template to create your own prediction logic. This business rule calls the Agent Intelligence API.

Update Prediction Results
A business rule that runs before closing task records to update the solution statistics with the actual precision and coverage results.

Monitoring your predictive model coverage and precision

Administrators can track the coverage and precision of each predictive model using dashboards or scorecards. By default, Agent Intelligence offers these dashboards.

Available dashboards

<table>
<thead>
<tr>
<th>Report</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Average Prediction Coverage (last 30 days)</td>
<td>Shows the average prediction coverage of a solution for the last 30 days. The value represents the percentage of predictions that yielded an outcome out of the total number of predictions attempted. Click the coverage score to see a breakdown by class.</td>
</tr>
<tr>
<td>Daily Prediction Coverage</td>
<td>Shows the daily prediction coverage of a solution. The value represents the percentage of records created on a given day where the solution was able to predict an outcome.</td>
</tr>
<tr>
<td>Average Prediction Precision (last 30 days)</td>
<td>Shows the average prediction precision of a solution for the last 30 days. The value represents the percentage of predictions where the predicted value was the same as the final value of the field when the record closed. Click the precision score to see a breakdown by class.</td>
</tr>
<tr>
<td>Daily Prediction Precision</td>
<td>Shows the daily prediction precision of a solution. The value represents the percentage of records closed on a given day where the predicted field value was the same as the final value.</td>
</tr>
</tbody>
</table>

Get started with Agent Intelligence

Complete these setup and initial configuration steps to start using Agent Intelligence.

Role required: admin or ml_admin.

Agent Intelligence involves training a machine-learning algorithm to make predictions based on your past record data. The training process requires sending record data to a training service in the nearest data center and is therefore unavailable to customers who have data sovereignty requirements.

1. Activate Agent Intelligence on a non-production instance.
2. Export the production records for which you want Agent Intelligence solutions to provide predictions to a non-production instance. For example, export 12 months of incident records to a non-production instance.

3. Review the default solution definition records to determine if the filter, input fields, and output field are sufficient to predict your incident or task records. If necessary, create a solution definition for each record set you want to predict on the non-production instance.

4. Train the solution definition records you want to test on the non-production instance.

5. Enable the **Default Task Based Prediction** business rule on the non-production instance. If you have created custom solution definition records, update the business rule with the solution definitions you want to enable.

6. Test the solution predictions by either creating test records or importing more records from production.

7. Review the prediction reports to determine the accuracy and coverage of your solution and individual classes.

8. If necessary, update the solution definition filter to include more or different training records.

9. Retrain and retest any updated solution definition records.

10. When you are satisfied with the accuracy and coverage of your solutions, activate Agent Intelligence on your production instance.

11. Recreate any custom solution definition records and business rules to your production instance, and retrain the solutions.

### Activate Agent Intelligence

Agent Intelligence is available as a separate subscription from the rest of the ServiceNow platform. It requires that these two plugins are activated per separate Service Catalog requests: Agent Intelligence plugin (com.glide.platform_ml) and Agent Intelligence Reports plugin (com.glide.platform_ml_pa).

To purchase a subscription, contact your ServiceNow account manager. The account manager can arrange to have the plugin activated on your organization’s production and sub-production instances, generally within a few days.

If you do not have an account manager, decide to delay activation after purchase, or want to evaluate the product on a sub-production instance without charge, follow these steps.

Role required: none

1. In the HI Service Portal, click **Service Requests > Activate Plugin**.

2. Fill out the form:

<table>
<thead>
<tr>
<th>Target Instance</th>
<th>Instance on which to activate the plugin.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Plugin Name</td>
<td>Name of the plugin to activate.</td>
</tr>
<tr>
<td>Specify the date and time you would like this plugin to be enabled</td>
<td>Date and time must be at least 2 business days from the current time.</td>
</tr>
</tbody>
</table>

   **Note:** Plugins are activated in two batches each business day in the Pacific timezone, once in the morning and once in the evening. If the plugin must be activated at a specific time, enter the request in the Reason/Comments.
3. Click **Submit**.

If you are running on an earlier version than Kingston Patch 2, such as Kingston Patch 0 or Kingston Patch 1, once your plugins are activated, you must update the scheduler URL property as follows before you can **Create and train a solution definition**.

1. Type `sys_properties.list` in the **Filter navigator**.
2. Type `*scheduler` in the Search box of your System Properties list.
3. Click the `glide.shared_service_scheduler.url` system property and update its property value to `https://sncmlscheduler.service-now.com/`

Role required: **admin**

**Agent Intelligence for Incident Management**

Use the default Agent Intelligence records as templates to create Incident Management-specific solutions.

**Solution definitions**

These solution definitions are available as templates on instances where both Agent Intelligence and Incident Management are active. Create your own solution definition records to customize the behavior.

**Solution Definitions for Incident Management**

<table>
<thead>
<tr>
<th>Solution Definition</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Incident Assignment</td>
<td>Predicts the <strong>Assignment group</strong> field from the <strong>Short description</strong>.</td>
</tr>
<tr>
<td>Incident Categorization</td>
<td>Predicts the <strong>Category</strong> field from the <strong>Short description</strong>.</td>
</tr>
</tbody>
</table>

**Business rules**

These business rules are available on instances where both Agent Intelligence and Incident Management are active. Create your own business rules on the Incident table to customize prediction and reporting behaviors.
### Business rules for Incident Management

<table>
<thead>
<tr>
<th>Business rule</th>
<th>Table</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Default Incident Based Prediction</td>
<td>Incident</td>
<td>Generates prediction results for active Incident Management solutions. Shows prediction results in an information message to users with the ITIL role. Runs when an incident record is inserted. Only updates the output field with a predicted value if it has not been previously set to a value different from the default value.</td>
</tr>
<tr>
<td>Update Prediction Results</td>
<td>Incident</td>
<td>Updates the solution precision and coverage statistics. Runs when an incident record is closed.</td>
</tr>
</tbody>
</table>

If your instance is running on Kingston Patch 7 or earlier:

- Use the Default Incident Based Prediction business rule template to create a new business rule. This rule includes a Solution variable that gets all active solutions retrieved by the `findActiveSolution(solutionName)` method. Deactivate any solution definitions that you do not want the method to retrieve.
- In a domain-separated environment, such as an MSP environment, change this business rule to call the solution definitions specific to the domain of the incident. Detailed instructions are provided in commented code that is delivered in Kingston Patch 8.
- This business rule uses the `applyPredictionForSolution()` method to predict unless the default value is explicitly overwritten by a user or a script.

**Note:** If you plan to upgrade to Kingston Patch 8, deactivate your copies of the Default Incident Based Prediction business rule before following the instructions below for Patch 8.

If your instance is running on Kingston Patch 8 and beyond:

- The Default Incident Based Prediction business rule is replaced with the read-only Incident Based Prediction (Template). Make a copy of this business rule and customize it to reflect the specifics of your implementation and activate it.
- In a global domain environment, use the new `solutionNames` array variable which requires that you explicitly provide the solutions that are called by the business rule.
- In a domain-separated environment, such as an MSP environment, refer to the commented code in the business rule template for easy customization.
- The business rule template calls the `applyPredictionForSolution()` method to predict regardless of any changes to the default value.

You can manage prediction drift by retraining, modifying, or creating new solutions to reflect changes in your business conditions. Test and modify your business rule over time to ensure it works as desired across multiple consumption points and user Personas.
Agent Intelligence for Customer Service Management

Use the default Agent Intelligence records as templates to create Customer Service Management-specific solutions.

Solution definitions

These solution definitions are available as templates on instances where both Agent Intelligence and Customer Service Management are active. Create your own solution definition records to customize the behavior.

<table>
<thead>
<tr>
<th>Solution Definition</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>CSM Case Assignment</td>
<td>Predicts the Assignment group field from the Short description.</td>
</tr>
<tr>
<td>CSM Case Categorization</td>
<td>Predicts the Category field from the Short description.</td>
</tr>
<tr>
<td>CSM Case Prioritization</td>
<td>Predicts the Priority field from the Short description.</td>
</tr>
</tbody>
</table>

Business rules

These business rules are available on instances where both Agent Intelligence and Customer Service Management are active. Create your own business rules on the Case (sn_customerservice_case) table to customize prediction and reporting behaviors.

<table>
<thead>
<tr>
<th>Business rule</th>
<th>Table</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Default Case Based Prediction</td>
<td>Case (sn_customerservice_case)</td>
<td>Generates prediction results from the active Customer Service Management solutions. Shows prediction results when a Case record is inserted. Only updates the output field with a predicted value if it has not been previously set to a value that is different from the default value.</td>
</tr>
<tr>
<td>Update Prediction Results</td>
<td>Case (sn_customerservice_case)</td>
<td>Updates the solution precision and coverage statistics. Runs when a case record is closed.</td>
</tr>
</tbody>
</table>

If your instance is running on Kingston Patch 7 or earlier:

- Use the Default Case Based Prediction business rule template to create a new business rule. This rule includes a Solution variable that gets all active solutions retrieved by the findActiveSolution(solutionName) method.
In a domain-separated environment, such as an MSP environment, change this business rule to call the solution definitions specific to the domain of the case. Detailed instructions are provided in commented code that is delivered in Kingston Patch 8.

This business rule uses the applyPredictionForSolution() method to predict unless the default value is explicitly overwritten by a user or a script.

**Note:** If you plan to upgrade to Kingston Patch 8, deactivate your copies of the Default Case Based Prediction business rule before following the instructions below for Patch 8.

If your instance is running on Kingston Patch 8 and beyond:

- Use the Default Case Based Prediction business rule template to create a new business rule. This rule includes a Solution variable that gets all active solutions retrieved by the findActiveSolution(solutionName) method.
- In a global domain environment, use the new solutionNames array variable which requires that you explicitly provide the solutions that are called by the business rule.
- In a domain-separated environment, such as an MSP environment, refer to the commented code in the business rule template for easy customization.
- The business rule template calls the applyPredictionForSolution() method to predict regardless of any changes to the default value.

You can manage prediction drift by retraining, modifying, or creating new solutions to reflect changes in your business conditions. Test and modify your business rule over time to ensure it works as desired across multiple consumption points and user Personas.

### Create and train a solution definition

Specify the records used to train a predictive model, what fields trigger a prediction, and how often to retrain a solution.

Role required: admin or ml_admin.

A predictive model is only as good as the data you use to train it. To select appropriate training records, you should be familiar with the table database dictionary as well as the current quality of the record values to be used.

You must create a separate solution definition for each predictive model you want to support.

1. Navigate to **Agent Intelligence > Solution Definitions**.
   The system displays the current list of solution definitions.
2. Click **New**.
   The system displays a blank solution definition form.
3. Enter these field values.
<table>
<thead>
<tr>
<th>Field</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Solution template</td>
<td>Select a template to fill in the form with preset values. For example, the <strong>Incident Assignment Template</strong> selects the incident table and creates a filter that selects resolved or closed incidents within the last 12 months.</td>
</tr>
<tr>
<td><strong>Note:</strong> This field cannot have a value of None.</td>
<td></td>
</tr>
<tr>
<td>By default, Agent Intelligence offers these solution templates.</td>
<td></td>
</tr>
<tr>
<td>· Assignment Template</td>
<td></td>
</tr>
<tr>
<td>· Category Template</td>
<td></td>
</tr>
<tr>
<td>· Incident Assignment Template</td>
<td></td>
</tr>
<tr>
<td>· Incident Category Template</td>
<td></td>
</tr>
<tr>
<td>· Incident Priority Template</td>
<td></td>
</tr>
<tr>
<td>· Priority Template</td>
<td></td>
</tr>
<tr>
<td>Table</td>
<td>Select the table containing the target records to be predicted.</td>
</tr>
<tr>
<td>Domain</td>
<td>On instances where domain separation is active, select the domain whose target records you want to predict. Create a separate solution definition record for each domain whose field values you want to predict.</td>
</tr>
<tr>
<td>Label</td>
<td>Enter a name for the solution record.</td>
</tr>
<tr>
<td>Name</td>
<td>The system generates the value of this read-only field based on the Label.</td>
</tr>
<tr>
<td>Active</td>
<td>Select whether the system uses the solution definition record to train solutions. You can only train active solution definition records.</td>
</tr>
<tr>
<td>Field</td>
<td>Description</td>
</tr>
<tr>
<td>--------------</td>
<td>-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------</td>
</tr>
</tbody>
</table>
| Filter       | Select the conditions you want to apply to the training records. In order to train a solution, the filter must return at least one record. If your filter returns no records, update it until it returns records for training. The system provides a default filter when you select a Solution Template. A solution is only as good as the data you use to train it. In general, a good filter has these characteristics.  
- The training records are inactive and have task states that represent completing work within your standard process such as resolved or closed.  
- The training records only contain correct values for the target field. Filter out records with unreliable target field values.  
- The training records contain multiple examples of each target field value you want the solution to predict.  
- The training records include common variations of the input fields. For example, the Incident Category Template creates a filter with these conditions.  
(Created)[on](Last 12 months) AND (Active) (is)(false) AND (State)(is one of)(Resolved | Closed) |

| Input fields | Select the input fields you want the solution to use to generate a prediction. The system provides default input fields when you select a Solution Template.  
In general, good input fields have these characteristics.  
- The fields are available to users when creating records. Configure the form to display all input fields.  
- The field data type can be string, reference, or choice, such as Short description and Description. Journal type is not a supported data type.  
- The more information a field provides, the more often a solution can make a prediction, and the more often predictions are accurate.  
- The field has a default value. The field should not have a blank value. For example, all default solution definitions use the Short description field as the input field. |
Field | Description
--- | ---
Output field | Select the field whose value you want the predictive model to set. The system provides a default output field when you select a Solution Template. In general, a good output field has these characteristics.
- The field is a choice field or a string field with a finite set of possible values.
- The field has some causal connection to the input fields.
For example, the Incident Category Template selects the Category field.

Training frequency | Select how often the system regenerates the solution based on records matching the Filter. Options include:
- Run Once
- Every 30 days
- Every 60 days
- Every 90 days
- Every 120 days
- Every 180 days
By default, the system runs training once. This allows you to review and update the solution definition as needed until it provides acceptable coverage and precision values.

4. Click the appropriate button for the solution definition.

<table>
<thead>
<tr>
<th>Option</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Activate &amp; Train</strong></td>
<td>Activate and train a default solution definition.</td>
</tr>
<tr>
<td><strong>Submit &amp; Train</strong></td>
<td>Create a new solution definition record and train it.</td>
</tr>
</tbody>
</table>

The system displays the Training Activation confirmation window.

5. Click OK to confirm.
The system schedules the solution for training with the nearest training service. When training is complete, the system uploads the solution as an Attachment record.

Review the trained solution precision and coverage statistics.

**Exclude a class from solution training**

Exclude a class from solution training to prevent the model from ever making predictions for a particular output field class. For example, you can exclude a particular incident category from training if you plan to retire or change the category.

Role required: admin or ml_admin.

Excluding a class from training does not prevent the solution from making predictions for records that use the excluded class. Solution training still uses the input and output field values as data.
and attempts to match input field values to a new output field class. This may cause undesirable prediction results unless you have another suitable class to replace the excluded class value.

Typically, you only exclude a class from training if you change the list of valid output field values. For example, if you replaced one Incident category with another Incident category, you may exclude the old category from training so that the solution only uses the new category for predictions.

1. Navigate to Agent Intelligence > Solution Definitions.
   The system displays the current list of solution definitions.
2. Select the solution definition you want to edit.
   For example, select Incident Categorization to exclude an incident category from training.
3. Edit the filter to exclude the class.
   You can use the (is one of) or (is not one of) operators to exclude a particular class.
4. Click Update & Train.
   The system schedules the solution for training with the nearest training service. When training is complete, the system uploads the solution as an Attachment record.

The solution excludes the class from all predictions.

Review the trained solution precision and coverage statistics.

View training progress

You can view solution training progress or statistics to determine if a solution is available or how long the next training cycle might take to complete.

Role required: admin or ml_admin.

Solution training involves these steps.

1. Fetching files for training. The system downloads the training records and sends them to the nearest training service.
2. Preparing the data. The system removes duplicate records from the training set.
3. Training the solution. The training service trains the solution.
4. Uploading the trained solution. The training service uploads the solution as attachment records.

1. Navigate to Agent Intelligence > Solutions.
   The system displays the current list of solutions.
2. Select the solution whose progress or statistics you want to view.
   For example, select Incident Categorization to see the training history.
3. From Related Links, click Show training progress.
   Training times vary based on the number of records and classes within the training set. The more records and classes there are, the longer the training can take. For example, a data set containing 100,000 records and several hundred classes can take around five hours to complete.
   The system displays a training Progress pop-up window.
Review the trained solution precision and coverage statistics.

**Review solution coverage, distribution, and precision statistics**

Use the Solution Statistics dashboard to determine if a solution has sufficient precision and coverage for each class. Identify classes that require configuration or retraining with a new solution definition filter.

- Role required: admin, ml_admin, or ml_report_user.
- To ensure optimal dashboard display, enable responsive dashboards or change the default dashboard layout.

The Solution Statistics dashboard lists the precision, coverage, and distribution for each class of active solutions. The maximum number of classes you can predict is 25. The system uses the top 25 classes with the highest number of records when it builds a solution. Note that the number of classes predicted may be less than 25, and can skip a class if there is not enough historical data to build a solution that can predict the class confidently.

1. Navigate to **Agent Intelligence > Reports > Solution Statistics**. The system displays the Solution Statistics dashboard.
2. From **Filter by solution**, select the solution whose statistics you want to review.
3. From **Filter by version**, select the solution version whose statistics you want to review.
4. Click **Apply**.
   The system updates the dashboard based on the filters selected.

5. Identify classes with unwanted combinations of precision, coverage, and distribution values.
   For example, identify classes that have low precision or coverage but a high distribution.

6. Identify any missing classes you want the model to include.
   For example, identify any missing incident categories from the Incident classification solution.

If you are satisfied with the solution you have reviewed, it will already be active and ready to use if it is the latest version. If you are not satisfied, you can choose a different version of the solution and make it active. You could also tune the solution by configuring the class precision and coverage to use acceptable values.
Review prediction results over time

Use the Prediction Results dashboard to determine if solution predictions are improving over time. Identify solutions that require filter changes or retraining.

- Role required: admin, ml_admin, or ml_report_user.
- To ensure optimal dashboard display, enable responsive dashboards or change the default dashboard layout.

The Prediction Results dashboard lists solution precision and coverage over time.

1. Navigate to Agent Intelligence > Reports > Prediction Results.
   The system displays the Prediction Results dashboard.
2. From Filter by solution, select the solution whose statistics you want to review.
   The system updates the dashboard based on the solution selected.
3. Identify classes with anomalous precision or coverage values.
   For example, identify solutions where the precision or coverage is decreasing over time.

Update the solution definition filter to include or exclude classes as needed.

Configure class precision and coverage values

Configure how often a solution predicts specific output field values by selecting the class precision and coverage.

- Role required: admin or ml_admin.
- Train the solution definition whose output field values you want to configure.

The system creates a class record for each output field value that it can predict. Each class record includes a list of possible precision and coverage combinations to choose from. By default, solutions use the highest combination of precision and coverage available. You can select another combination to refine predictions based on acceptable precision and coverage values.

1. Navigate to Agent Intelligence > Solutions.
   The system displays the list of available solutions.
2. Select the solution whose classes you want to configure.
   This solution must have a State of Solution Complete.
   The system displays the Solution record.
3. From the Class Confidence related list, select the class you want to configure.
   The solution only lists output field values for which it can make predictions. If the output field value is missing from this list, update the solution definition filter to provide more data for this output field value, and retrain the solution.
   The system displays the Class Confidence record.
4. Review the precision and coverage combinations available from the Precision Coverage Lookups embedded list.
5. Select the check box for the precision and coverage combination you want to use to make predictions of this class.
   You can only select one check box. Some combinations produce special prediction results.

Special prediction combinations

<table>
<thead>
<tr>
<th>Prediction result</th>
<th>Precision</th>
<th>Coverage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Never include class in predictions</td>
<td>100</td>
<td>0</td>
</tr>
</tbody>
</table>
6. From the Actions on selected rows control, select **Apply Values**. The system displays a **Precision / Coverage Setting** confirmation window.
7. Click **OK** to confirm the change or **Cancel** to discard it.

Test predictions of this class to verify the system produces acceptable results.

### Exclude a class from prediction

Exclude a class from prediction if its precision or coverage statistics do not meet your threshold of usefulness or if you do not want the model to predict a particular output field value. For example, you can exclude a particular incident category from prediction if the solution does not provide sufficient precision or coverage.

- Role required: admin or ml_admin.
- Train the solution definition whose output field values you want to exclude.

Excluding a class from prediction only lasts until the solution is next trained. If a class still does not provide sufficient precision or coverage values, you may want to consider deactivating the solution until provides better results.

Typically, you exclude a class from prediction if you only want a person to manually set the excluded class value. This could be because the solution does not offer sufficient precision or coverage or because the class triggers other business logic that requires review or approval.

1. Navigate to **Agent Intelligence > Solutions**. The system displays the list of available solutions.
2. Select the solution whose classes you want to exclude.
   This solution must have a **State** of **Solution Complete**.
   The system displays the Solution record.
3. From the **Class Confidence** related list, select the class you want to exclude.
   The system displays the Class Confidence record.
4. Review the precision and coverage combinations available from the **Precision Coverage Lookups** embedded list.
5. Select the check box for the 100 precision and 0 coverage combination.
   You can only select one check box.
6. From the Actions on selected rows control, select **Apply Values**. The system displays a **Precision / Coverage Setting** confirmation window.
7. Click **OK** to confirm the change or **Cancel** to discard it.

The solution excludes the class from all predictions until the next training cycle.

If this class will never produce meaningful predictions, consider deactivating the solution or changing the solution definition.

### Activate solution version

Activate the solution version you want Agent Intelligence to use to make predictions. The system only allows one solution version to be active at a time.

- Role required: admin or ml_admin

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• Manually train a solution multiple times or set a training schedule.

The system creates a solution version each time you train a solution definition. Typically, you only manually create a new solution version when you change the solution definition filter and want to test it. Otherwise, most solution versions are created during scheduled solution training.

1. Navigate to Agent Intelligence > Solutions.
   The system displays a list of trained solutions.
2. Select the solution version you want to activate.
   The system displays the solution record.
3. Click Active.
   The system activates this solution version and deactivates any other solution version.

Review the trained solution precision and coverage statistics.

Preserve solutions during a system clone

Create a data preserver to save trained solution data during a system clone.

Role required: clone_admin or admin.

The system stores trained solutions as Attachment records, which you will want to preserve during a system clone.

1. Navigate to System Clone > Preserve Data.
2. Click New.
3. Enter a Name.
   For example, Agent Intelligence solutions
4. For Table, select Attachment (sys_attachment).
5. For Conditions, add the condition (Table name) (is) (ml_model_artifact).
6. Click Submit.

The system preserves solution records during a system clone.

Domain separation and Agent Intelligence

This is an overview of domain separation and the Agent Intelligence application. Domain separation allows you to separate data, processes, and administrative tasks into logical groupings called domains. You can then control several aspects of this separation, including which users can see and access data.

Overview

Support: Level 2

Agent Intelligence enables the creation of supervised machine learning solutions using historic datasets. A machine learning solution definition can be configured in Agent Intelligence per domain, which ensures that the data used by the solution is domain-specific data. After a solution is trained for a domain, the solution calls for a prediction to be made for resolution, depending on what that domain belongs to. For example, the solution might be an incident or case.
How domain separation works in Agent Intelligence

An instance owner can train a machine learning (ML) solution for each domain by creating a solution definition for each domain and training those solutions. In this way each solution uses data specific to the corresponding domain.

- Data can be domain separated
- Domain column is present for base system application tables
- Domain-specific configuration is managed by instance owner
- Tenant domains can manage their own application data
- Application properties are domain-aware when needed

Test a solution prediction

Once your Machine Learning ML solutions are trained, you can call on the Agent Intelligence API to make a solution prediction. In this example procedure, we use the REST API Explorer to test a solution prediction for incident categorization.

Role required: web_service_admin, rest_api_explorer, or admin

1. Write down and save the name of your ML solution definition.
   In this case, you would use the Name field value in your ML Solution Definition Incident Categorization record, as illustrated in the following example.

![ML Solution Definition Incident Categorization](image)

2. Write down and save the Input Fields type in your ML Solution Definition Incident Categorization record that you want the REST API Explorer to use in its call to the Agent Intelligence API.
   In this case, you would use the short_description field, as the prediction model has been trained to use this field to learn its category definition.
3. In your Filter navigator, navigate to System Web Services > REST > REST API Explorer. The system displays the REST API Explorer.

4. Set these choice fields as follows.

<table>
<thead>
<tr>
<th>Field</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Namespace</td>
<td>now (leave as default)</td>
</tr>
<tr>
<td>API Name</td>
<td>Agent Intelligence</td>
</tr>
<tr>
<td>API Version</td>
<td>latest (leave as default)</td>
</tr>
</tbody>
</table>

The Agent Intelligence form displays. You use this form to prepare your call request to the Agent Intelligence API.

5. In the solution-name Value field, type ml_incident_categorization.

Note: This is the Name value you captured in Step 1 of this procedure.
6. Click **Add query parameter**.
   The Agent Intelligence form refreshes to display the **Query parameters** section.

7. Type `short_description` in the first field.

   **Note:** This is the input field you captured in Step 2 of this procedure.

8. Type a short description of an incident in the second field. For instance, type **Unable to connect**.

9. Click the **Send** button.
   The REST API Explorer sends your request to the Agent Intelligence API.
   The system predicts the output value in the Response Body section of the API output. You can use other short descriptions to test what the solution is predicting.

10. (Optional) Send a different request to the Agent Intelligence API so you can test the prediction model again.
    a) Return to the **Query parameters** section of the Agent Intelligence form.
    b) Type a short description that references a different kind of incident in the second field. For example, type **Unable to connect to MSSQL**.
    c) Click the **Send** button.

   The Response Body section may refresh to display a different outcome than what you saw in Step 9, depending on which incident categories you configured in your solution definition setup. In other words, changing the short description text can recategorize the incident as a different kind of issue.

You can also test the Agent Intelligence prediction model when you create a new incident record using the incident form.

1. Navigate to **Incident > Create New**.
2. In the new Incident form that loads, set the fields as follows.
   - **User:** Type the Caller name.
   - **Category:** Leave as default.
   - **Short description:** Type a short description that you want to test.
3. Submit the incident form.

Result: When the form refreshes, an information message displays with the incident category automatically set to a specific value.

   **Note:** For some short descriptions, the prediction might not process because the solution does not have enough confidence in predicting the value for this input.
Index

A

access controls
  breakdown 168
ACL rules
  report, creating 733
adding scores
  manually 180
Advanced Reporting
  remove a published report 303
  schedule reports 298, 300
  automated indicators 125

B

basic reporting
  create area charts 311, 324, 327
  create area reports 313, 319
  create bubble reports 372
  create column charts 387, 389, 395, 401, 404
  create dials and speedometers 426, 428, 431, 435, 437
  create donut charts 440, 442, 447, 452, 455
  create funnel charts 460, 465, 470, 473
  create funnel reports 458
  create pyramid charts 460, 465, 470, 473
  create pyramid reports 458
  create spline charts 311, 324, 327
  create spline reports 313, 319
  Pareto charts 578
Basic Reporting
  create bar charts 305, 332, 339, 344, 348
  create bar reports 330
  create box charts 364, 379, 489, 575, 617, 627
  create box reports 357
  create pareto charts 584, 590
  Pareto charts 580, 588
  pie charts 591
  box charts 351, 353, 361
  breakdown
    assigning to indicator 152
    creating 137, 142, 153
  Breakdown
    Interactive filter 800
  breakdown access controls 168
  breakdown dashboards 108
  breakdown source
    defining 139
  Bubble charts
    create 367, 376
  bucket group
    create 156
  bucket groups 154

C

Calendars
  creating 380
  Cascading filters
    create a cascading filter 784
  chart colors
    report data categories, defining 727
  collecting data
    indicators 175
    performance analytics 175
    scores 175
  column visualization
    in time series widget 37
  control charts
    creating 408, 418
  Control Reports
    creating 407
  create 102
  create area and spline charts
    area 327
    area report 324
    chart style options 327
    spline 327
  create area and spline reports
    area 319
    area report 313
    report style options 319
    spline 319
  Create Bar Charts
    chart style options 339, 348
    create a bar chart report 332, 344
    export a setting 305
  Create Box Charts
    chart style options 364, 379, 489, 575, 617, 627
  Create Box reports
    report style options 357
  create bubble charts
    chart style options 372
  create column charts
    report 389, 395, 401, 404
  create donut charts
    chart style options 447, 455
    report 442, 452
  Create funnel and pyramid charts
    report 460, 470
    style options 465, 473
  Create Pareto Charts
    chart style options 584, 590
    create a report 580, 588
  Creating Histograms 489, 490, 492
  creating thresholds 173, 173, 173
  customizing calendar reports
    configure calendar attribute 754
    highlight a calendar entry 758
    set calendar record limit 758

D

dashboard 5
Dashboard
  Add a filter 799, 800
Interactive Filter 790
DashboardMessageHandler
API 807
DashboardMessageHandler(String id) 807
publishFilter(String table, String encodedQuery) 807
removeFilter() 808
dashboards
add a widget 830
breakdown dashboards 111
change tab layout 829
copying 830
create 810, 827
create tabs 828
deleting 830
edit tabs 829
modifying 830
data collection
job log 181
data collection job creating 176
Data Collector 5
dials and speedometers
chart style options 431, 437
report 428, 435

E
Element filter
create 159
elements security list 168
e-mail summaries 174, 175
Email summaries 175
Embed reports 703
export to PDF
dashboard 824, 832
homepage 824, 832

F
Formula indicator
Rounding 135

G
get started with performance analytics
breakdown source 9
check 8, 9
data collection 9
historical collection 9
indicator source 8
indicators 9
schedule 9, 9

H
heatmap
style options 482
heatmap charts 476
heatmap report
create 477, 486
Homepage
Add an interactive filter 799
Interactive Filter 790
Homepage publishers
API 807
I
indicator
assigning to breakdown 152
indicator groups
adding 135
creating 134
existing indicator 135
Indicator scorecard
compare settings 25
drill down details 27
indicators
widget indicators 103
Interactive filter
Add to dashboard 799, 800
available UI control types 798
boolean 795, 796
breakdown 800
Choice list 791
Date field 793
Group 795
Reference field 792
Interactive Filter
Available types 791
Interactive filters
custom filter 802
Custom filter example 803
debug filter 805
Interactive Filters
Dashboards 799
Homepages 799
Interactive publisher
Add to homepage 799
J
job event
viewing 181
K
KPI 5
L
line charts
creating reports 494, 506, 630, 640
Line Charts
creating 493
line visualization 35
list reports
create 514, 523, 525, 532
export to excel 525, 534
M
multilevel pivot  create 551, 569
Multilevel pivot coloring rule 751

P
PADomainUtils
copy(String runAs) 199
  copyDashboard(String dashboardId, String runAs) 200
  copyJob(String paJob, String runAs) 200
  isWriteable(String table, String id) 201
  move(String runAs) 201
PADomainUtils(String domainFrom) 197
setFoundation(boolean foundation) 198
setOverrides(Boolean overrides) 199

PAScorecard
addParam(String parameter, String value) 203
  asJSON() 207
query() 206
result() 207

PASnapshot
getCompareIDs(String sys_id, Number date1, Number date2, String type) 208
getCompareQuery(String sys_id, number date1, number date2, String type) 210
getID(S(String sys_id, Number date) 207
getQuery(String sys_id, number date) 209

PDF page header footer templates
apply template 306
create template 306

Performance analytics
breakdown dashboards 108
breakdown wizard 137
Clean PA collections 184
clean up properties 211
Cleanup 184
collect historical data 176
Collection cleanup properties 211
Configuration generator 189
creating a target 170
detailed scorecard 23
e-mail summaries 174
Excluding time series 136
for incident management
setting up 8
Forecasting data 115
indicator overview 30
indicators
  widget options 124
  Interacting with widgets 67
  Interactive widgets 67
  Limiting breakdowns in formulas 131
  Linking to a scorecard 859
  manual indicators 130
  premium 10, 11
REST API examples 222
Schema maps 190
scorecards 23
script variables 203
set up indicators 120, 120, 120, 121, 123, 129, 129, 130
supported browsers 19
targets
  add target for each element 171
Widget
Statistics 106
Widget statistics 106
Widget statistics properties 106
Widget properties 106
Widgets
  Statistics properties 106
Performance Analytics and Reporting 4
Performance Analytics API 222
performance analytics collection 184

export scores 32
Indicator access controls 136
indicators 123
LinkedIn example integration 265
Map a breakdown 142
Move a dashboard with an update set 841
navigate using breakdown relations 31
Real-time data 32
Scorecard parameters 32
Scorecard scores tab 30
Twitter example integration 267
units 135
Viewing changes in collected records 29

Performance Analytics
Activate the configuration generator 189
Add in-form analytics 117
API 218, 218
automated indicators 125
Available solutions 15
breakdown dashboard 108
breakdown wizard 137
Clean PA collections 184
clean up properties 211
Cleanup 184
collect historical data 176
Collection cleanup properties 211
Configuration generator 189
creating a target 170
detailed scorecard 23
e-mail summaries 174
Excluding time series 136
for incident management
setting up 8
Forecasting data 115
indicator overview 30
indicators
  widget options 124
  Interacting with widgets 67
  Interactive widgets 67
  Limiting breakdowns in formulas 131
  Linking to a scorecard 859
  manual indicators 130
  premium 10, 11
REST API examples 222
Schema maps 190
scorecards 23
script variables 203
set up indicators 120, 120, 120, 121, 123, 129, 129, 130
supported browsers 19
targets
  add target for each element 171
Widget
Statistics 106
Widget statistics 106
Widget statistics properties 106
Widget properties 106
Widgets
  Statistics properties 106
Performance Analytics and Reporting 4
Performance Analytics API 222
performance analytics collection 184

export scores 32
Indicator access controls 136
indicators 123
LinkedIn example integration 265
Map a breakdown 142
Move a dashboard with an update set 841
navigate using breakdown relations 31
Real-time data 32
Scorecard parameters 32
Scorecard scores tab 30
Twitter example integration 267
units 135
Viewing changes in collected records 29

Performance Analytics
Activate the configuration generator 189
Add in-form analytics 117
API 218, 218
automated indicators 125
Available solutions 15
breakdown dashboard 108
breakdown wizard 137
Clean PA collections 184
clean up properties 211
Cleanup 184
collect historical data 176
Collection cleanup properties 211
Configuration generator 189
creating a target 170
detailed scorecard 23
e-mail summaries 174
Excluding time series 136
for incident management
setting up 8
Forecasting data 115
indicator overview 30
indicators
  widget options 124
  Interacting with widgets 67
  Interactive widgets 67
  Limiting breakdowns in formulas 131
  Linking to a scorecard 859
  manual indicators 130
  premium 10, 11
REST API examples 222
Schema maps 190
scorecards 23
script variables 203
set up indicators 120, 120, 120, 121, 123, 129, 129, 130
supported browsers 19
targets
  add target for each element 171
Widget
Statistics 106
Widget statistics 106
Widget statistics properties 106
Widget properties 106
Widgets
  Statistics properties 106
Performance Analytics and Reporting 4
Performance Analytics API 222
performance analytics collection 184
Performance Analytics content packs
activate 17
Performance analytics data collector
properties 211
Performance Analytics mobile app 268
Performance analytics scorecards
Scores tab 30
Performance Analytics solutions 14
Performance Analytics target
creating 170
Pie Charts
creating 592, 602
pivot tables
create 609, 615
style options 482
process widget 100, 102
properties
data collector 211

R
report
administering 762
fields 762
security 762
Report
Interactive Filter 790
report output formats 301
report types 307
report administration
ACL 733
creation 733
customize calendar reports 754
customizing calendar reports 754, 758, 758
restricting 733
rules 733
Report Administration
report ranges 737, 738, 739, 741
Report drilldown
define 682, 684
report options 284
report security 762
report sources 735, 735
report statistics 734
Reporting
add a dataset 688, 689
Add to dashboard or homepage 303
embedded report parameters 705
multiple datasets 687
publish a report 302
report 301, 307
Scoped reports 731
reports
creating 284
domain separation 753
generate 290
generating 283
run 283, 284
view 292
REST API
Performance Analytics 218, 218
Performance analytics examples 222

S
score
imported data 180
scorecard 5
scores
adding manually 180
Service Portal Performance Analytics widget 118
Service Portal Report widget 304
set up indicators
add breakdown 129
automated indicator 129, 129, 129, 130
breakdown matrix 129
define an indicator source 120, 121
define an indicator source 120, 121
define an indicator source 120, 121
define an indicator source 120, 121
define an indicator source 120, 121
define an indicator source 120, 121
define an indicator source 120, 121
define an indicator source 120, 121
edit job 129
exclude breakdown 129
formula indicator 130
manual indicator 130
remove breakdown 129
Set Up Indicators
database view 123
sharing reports 294, 296
single score chart
create 618, 625
Single score chart 618
spline visualization 42
stacked column
in time series widget 46
Step Reports
creating 629
step visualization 44
system colors
defining 730
system tables
report on 743

T
targets
creating 171
thresholds
creating 172
Trendbox Charts
creating 668, 677
Style options 673, 679
Trendbox Reports
creating 666

W
widget
workbench process 100
Widget
Interactive Filter 790
widgets
time series
column 37
line 35
spline 42
stacked column 46

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step 44
widget indicators 103
workbench process widget
create 102