Helsinki ServiceNow Performance Analytics and Reporting

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Performance Analytics and Reporting

Use Performance Analytics and Reporting to visualize data from your instance to better understand your processes and drive continual improvement.

- Performance Analytics enables you to track and aggregate data over time, such as to measure how many tickets are resolved each week per assignment group. Performance Analytics is enabled for the Incident table by default. To track data for other tables and applications you must license Performance Analytics Premium.
- 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.
- Dashboards enable you to display multiple Performance Analytics, reporting, and other widgets on a single screen. Use dashboards to create a story with data that can be shared with multiple users. To create and edit dashboards you must license Performance Analytics Premium.

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

Performance Analytics

Performance Analytics enables you to track and aggregate data over time, such as to measure how many tickets are resolved each week per assignment group. Performance Analytics is enabled for the Incident table by default. To track data for other tables and applications you must license Performance Analytics Premium.

Explore

- Performance Analytics Release Notes
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- Watch Performance Analytics videos

Data Architecture

- Indicators
- Breakdowns
- Data collection and cleanup

Use

- Performance Analytics for Incident Management
- Performance Analytics Premium
- Performance Analytics content packs

Develop

- Performance Analytics API
- Developer training
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Visualizing Data

- Performance Analytics scorecards
- Performance Analytics widgets
- Create a dashboard

Troubleshoot and get help

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

Get started with Performance Analytics

Get started with Performance Analytics by reviewing key concepts and using example functionality.

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

Use Performance Analytics to visualize data that is collected over time. This data reveals trends, which you can use to make real-time adjustments and improve how your business functions. You can use performance analytics to align resources, systems, and employees to strategic objectives and priorities.

The single system of record approach within the ServiceNow platform allows 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 may include:

• Align the organization with company goals.
• Decrease time required to create strategic or operational changes by communicating the changes through a new set of goals.
• Increase overall quality of services.
• Lower cost of services.
• Improve availability of services.

When working with Performance Analytics, you can use:

• Indicators: also known as metrics, business metrics, or KPIs, are a type of performance measurement, used by businesses to measure current conditions and to forecast business trends. Indicators are commonly used to evaluate success or the success of a particular activity. Success may be defined as making progress toward strategic goals, or as the repeated achievement of some level of operational goal (for example, zero defects, or 10/10 customer satisfaction).
  Choosing the right indicator requires a good understanding of what is important to a department in the organization - for example, the KPIs important to finance are quite different from the KPIs important to sales. To help develop this understanding of importance, indicator selection is often closely associated with techniques to assess the present state of the business, and its key activities. These assessments help identify potential improvement areas; so KPIs are usually associated with performance improvement initiatives. Indicators are usually presented in graphs to make them easier to read and understand.
• Breakdowns: also known as dimensions or drill-downs, these divide data in different ways. For example, incidents can be divided by priority or by assignment group. In Performance Analytics, data can be subdivided two levels deep for further analysis. A first-level breakdown could be by priority, for example grouping all Critical incidents. In this example, a second-level breakdown could be by assignment group, subdividing Critical incidents into, for example, Service Desk, Database, CAB, and so on. The breakdowns can also be turned around; for example, first by assignment group and then by priority, creating a so-called breakdown matrix.
• Scorecards: a graphical visualization of the scores of an indicator. 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.
• Dashboards: a dashboard can have multiple tabs and each tab can hold one or more widgets. A dashboard tab is actually a homepage that can hold all kinds of content blocks, not only Performance Analytics widgets. And any homepage can hold Performance Analytics widgets. A user can have one or more dashboards assigned for viewing.

• Widgets: determine how data is presented on dashboards. Widget configurations are used to view, set up, edit, and manage properties for dashboards and visualization types: time series, scores, lists, and breakdowns. For example, as a chart, latest score, speedometer, dial, scorecard, or column. Many variations are possible. Widgets are only visible when added to a dashboard.

• Data collector: the engine that collects scores from your database on a regular basis by running jobs.

Performance Analytics for Incident Management

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. You can upgrade to the premium version of Performance Analytics for complete Performance Analytics functionality.

Performance Analytics for Incident Management comes with several predefined elements that you can use to assess organizational performance.

• automated indicators
• formula indicators
• dashboards
• data collection jobs

Note: Performance Analytics for Incident Management is available only in the global domain. To use Performance Analytics in a different domain you must upgrade to the premium version of Performance Analytics.

Use the following procedures to configure the predefined elements for incident management.

Table 1: Configure predefined elements for incident management

<table>
<thead>
<tr>
<th>Procedure</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Check Indicator Sources</strong></td>
<td>Verify that the sample indicator sources match your ServiceNow configuration.</td>
</tr>
<tr>
<td><strong>Check Breakdown Sources</strong></td>
<td>Verify that the sample breakdown sources match your ServiceNow configuration.</td>
</tr>
<tr>
<td><strong>Schedule Data Collection</strong></td>
<td>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.</td>
</tr>
<tr>
<td><strong>Schedule Historical Collection for Indicators</strong></td>
<td>Optional. This job loads the last 60 days of scores for the indicators and breakdowns for which historic collection is possible.</td>
</tr>
</tbody>
</table>

Note: The number of days can be changed, but it is best to limit the historical collection.
Get started with Performance Analytics for Incident Management

Performance Analytics for Incident Management is included in the base system. Use it to familiarize yourself with Performance Analytics before upgrading Performance Analytics Premium.

Performance Analytics for Incident Management:
- Consists of an Incident Management dashboard with 15 indicators
- Indicators cannot be added or deleted
- A maximum of 180 days of historic scores are visualized
- Is usable only in the global domain

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: For Eureka Patch 6 and later versions, including Fuji, 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.

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.
   Performance Analytics for Incident Management collects a maximum of 180 days worth of historical data.
4. Click Execute Now.

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 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.
6. Change the Security type, if needed.
8. Click Update.
9. Repeat this procedure for each sample breakdown source.

**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.

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**Note:** Setting up Performance Analytics to support domain separated ServiceNow instances requires special configuration.

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**Predefined automated indicators**

Performance Analytics for Incident Management includes the following automated indicators, which automatically collect business performance scores on a regular basis.

**Table 2: Automated indicators**

<table>
<thead>
<tr>
<th>Indicator</th>
<th>Breakdown</th>
</tr>
</thead>
<tbody>
<tr>
<td>Number of new incidents</td>
<td>by priority</td>
</tr>
<tr>
<td></td>
<td>by category</td>
</tr>
<tr>
<td>Number of open incidents</td>
<td>by priority</td>
</tr>
<tr>
<td></td>
<td>by category</td>
</tr>
<tr>
<td></td>
<td>by assignment group</td>
</tr>
<tr>
<td></td>
<td>by state</td>
</tr>
<tr>
<td></td>
<td>by age</td>
</tr>
<tr>
<td>Summed age of open incidents</td>
<td>by priority</td>
</tr>
<tr>
<td></td>
<td>by category</td>
</tr>
<tr>
<td></td>
<td>by assignment group</td>
</tr>
<tr>
<td></td>
<td>by state</td>
</tr>
<tr>
<td></td>
<td>by age</td>
</tr>
</tbody>
</table>
### Predefined formula indicators

Performance Analytics for Incident Management includes the following formula indicators. Formula indicators are calculated based on automated indicators.

#### Table 3: Formula indicators

<table>
<thead>
<tr>
<th>Indicator</th>
<th>Breakdown</th>
</tr>
</thead>
<tbody>
<tr>
<td>% of incidents resolved by first assignment group</td>
<td>by priority, by category</td>
</tr>
<tr>
<td>% of new critical incidents</td>
<td>No breakdowns</td>
</tr>
<tr>
<td>% of open incidents not updated in the last 5 days</td>
<td>by age, by assignment group, by category, by priority, by state</td>
</tr>
<tr>
<td>% of open incidents not updated in the last 30 days</td>
<td>by priority, by category, by assignment group, by state, by age</td>
</tr>
<tr>
<td>Incident backlog growth</td>
<td>by priority, by category</td>
</tr>
</tbody>
</table>
Predefined dashboards

Performance Analytics dashboards show the most relevant indicators for specific users or groups.

Performance Analytics for Incident Management includes the following dashboards.

- An Incident Management dashboard containing the following tabs:
  - Incident Overview, contains an area compare chart.
  - Incident Open
  - Incident New
  - Incident Resolved

- An Incident by Group dashboard. This is a dynamic dashboard that allows you to choose an assignment group. The dashboard contains the following tabs that reflect information for the selected assignment group:
  - By Group daily
  - By Group 7d running
  - By Group 28d running

From the detailed scorecard, all daily measurements can be rolled up and analyzed with the following time series filters:

- 7 - 28 - 30 days running SUM & AVG
- Weekly - monthly - quarterly SUM/AVG

Predefined data collection jobs

Data collection jobs collect and send data to Performance Analytics as indicator and indicator breakdown scores.

Performance Analytics for Incident Management includes the following data collection jobs.

- The (PA Incident) Daily Data Collection job collects daily snapshot data for all indicators and breakdowns.
- The (PA Incident) Historic Data Collection job collects 60 days of data for all indicators except for these, for which historical collection is not possible:
  - Number of open incidents not updated in last 30 days
  - Number of open incidents not updated in last 5 days

<table>
<thead>
<tr>
<th>Indicator</th>
<th>Breakdown</th>
</tr>
</thead>
<tbody>
<tr>
<td>Average age open incidents</td>
<td>by priority</td>
</tr>
<tr>
<td></td>
<td>by category</td>
</tr>
<tr>
<td></td>
<td>by assignment group</td>
</tr>
<tr>
<td></td>
<td>by state</td>
</tr>
<tr>
<td>Average resolution time of resolved incidents</td>
<td>by priority</td>
</tr>
<tr>
<td></td>
<td>by category</td>
</tr>
<tr>
<td></td>
<td>by assignment group</td>
</tr>
</tbody>
</table>
Performance Analytics Premium

For unlimited access to all Performance Analytics features, you can upgrade to a premium version. When you subscribe to a premium version of Performance Analytics, the limits in the application are removed. With Performance Analytics Premium you can create new indicators and other configuration records such as breakdowns and widgets, and collect data for tables other than Incident. The premium version of Performance Analytics is available for specific applications, or for the entire platform.

Activate Performance Analytics Premium

Use this procedure when your organization is ready to upgrade to a premium edition of Performance Analytics.

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.

| 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.

Disabling Performance Analytics Premium

You can disable the premium functionality of Performance Analytics.

To disable Performance Analytics Premium features, set the property com.snc.pa.premium to false.

If Performance Analytics Premium is disabled, users are not able to create new configuration records such as indicators, widgets, or dashboards. Additionally, only the last 180 days of scores are shown for each indicator.
Get Started with Performance Analytics Premium

With Performance Analytics Premium you can define your own key metrics, breakdowns, and visualizations to present exactly the data you want for any process.

After Performance Analytics Premium has been activated, complete the following steps to configure Performance Analytics and begin collecting scores.

1. Clearly define the data you want to present. Before creating any records, identify what you want to measure and how you want to present that data.
   Ensure the data is actionable. Changes in scores should provide usable feedback into the performance of individuals, groups, or processes.
   
   Tip: It can be helpful to create a sketch of your planned scorecards and dashboards to help identify your key metrics and visualizations.

2. Review the configuration records such as indicators, breakdowns, data collection jobs, widgets, and dashboards that are provided by default. Review the optional content packs as well. Use the provided configuration records whenever possible, or use them as a template to create your own configuration.
   Configuration records that allow you to analyze many common processes, such as Incident Management or HR Management, are provided by default.

   If the provided configuration records do not meet your needs, create your own configuration by completing the following steps.

3. Define indicator sources for the tables you want to analyze.
   Indicator sources form the basis of the data that is collected and can be reused for multiple indicators.
   
   An indicator source can specify a filter to include a subset of table data, such as to include only open incidents.

4. Create automated indicators to define the key metrics you want to analyze.
   Automated indicators track scores collected regularly and automatically from the instance.

5. Create breakdown sources to define which breakdown elements are available to group and filter collected scores.
   A breakdown element is a single possible value for a field, such as the Hardware assignment group or the Critical priority. A breakdown source defines the set of available breakdown elements from a table, such as the assignment groups that you can group and filter scores by.
   
   A breakdown source can define a filtered set of elements. For example, you can add the filter condition `[Active] [is] [true]` to a breakdown source on the Groups table to include only active assignment groups as breakdown elements.

6. Create breakdowns to define how you want to group and filter collected scores.
   Breakdowns organize data and allow you to analyze or compare subsets of the indicator data.
   Breakdowns associate indicator scores with elements from a breakdown source, such as to organize incident scores based on the value of the Assignment group field using elements from a breakdown source on the Groups table.
   
   For example, you can break down incident data by priority or by assignment group, such as to show scores only for incidents with a certain priority, or to compare scores across assignment groups.

   After you have defined the data you want to collect and any breakdowns you want to apply, set up and run data collection jobs to populate the scores.

7. Create and schedule data collection jobs to collect data and populate indicator scores.
   You can manually run historical data collection to collect scores for existing records. Run a historical data collection job once after defining new indicators, then use a scheduled data collection job to keep the scores updated.
8. Check the job logs to see if the data collection jobs have run successfully. After you have confirmed that the data collection jobs ran successfully, view the collected scores and create widgets to visualize the data.

9. View the scorecards for your indicators to ensure the scores were populated as expected. Scorecards display a detailed view of data for a single indicator.

10. Create widgets to define how to visualize the collected scores and add the widgets to a dashboard. Widgets allow for additional visualization and formatting options that are not available from scorecards. You can create any number of widgets for your indicators. Widgets only display scores and do not modify the underlying indicator data.

After successfully implementing a simple Performance Analytics configuration, consider taking advantage of these advanced options to refine your data:

- Define bucket groups to break down data in user-defined ranges.
- Create scripts to do more advanced data collection, or to organize scores into bucket groups.
- Apply time series to view aggregate data over different time ranges.
- Apply multi-level breakdowns to group and filter data by multiple dimensions.
- Create indicator groups to organize indicators, and to use with widgets that display multiple indicators such as a scorecard list widget.
- Define improvement goals by creating targets and thresholds.
- Create formula indicators to generate scores based on a formula, or manual indicators to manually enter scores.

Performance Analytics content packs

Content packs are available that provide dashboards, indicators, breakdowns, widgets, and other configuration records to help you start tracking and analyzing processes for common applications.

Use content packs to quickly set up Performance Analytics and start collecting data for common applications such as Change Management, CMDB, or Human Resources.

Content packs provide all the configuration records required to analyze default applications. You can use the content packs to begin collecting analytics with minimal configuration, then expand and customize the analytics as you refine your processes.

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Note: Content packs 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.

You must have Performance Analytics Premium to collect scores for content pack indicators.

For additional, unofficial, content packs on these and other processes or apps, see the ServiceNow Share Portal.

Available Performance Analytics content packs

Content packs with preconfigured dashboards, indicators, and other configuration records are available for multiple applications.

Content packs are available for the following applications. The ID for each content pack plugin is listed in parenthesis.

- Change Management (com.snc.pa.change)
- Cloud Management (com.snc.pa.cmp)
- Configuration Management (CMDB) (com.snc.pa.cmdb)
- Customer Service (com.sn_customerservice_pa)
- Customer Service (New) (com.snc.pa.customer_service)
Activate a Performance Analytics content pack

You can activate the plugin for a Performance Analytics content pack if you have the admin role. The plugins include demo data and activate related plugins if they are not already active.

Role required: admin

Performance Analytics content pack plugins follow the naming format Performance Analytics - Content Pack - \( \text{<Application name>} \).

Activating a Performance Analytics content pack 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.

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

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 are not functional because other plugins are inactive, those plugins are listed. A warning states that some files will not be installed. If you want the optional features to be installed, cancel this activation, activate the necessary plugins, and then return to activating the plugin.
4. 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 policy 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.

In-form analytics for Performance Analytics content packs

You can use in-form analytics with Performance Analytics content packs to quickly view metrics for an application based on the current record.
In-form analytics for Performance Analytics content packs provides optional extensions to the content pack functionality. By using in-form analytics with a content pack you can quickly collect scores for an application, and then view those scores directly from forms used in that application.

To enable in-form analytics for a content pack, activate the Performance Analytics - Context Sensitive Analytics plugin associated with the content pack, such as Context Sensitive Analytics for Customer Service. In-form analytics buttons are added to the appropriate forms and associated with the content pack data automatically.

Performance Analytics roles

Ensure users can perform all necessary actions by assigning roles.

Table 4: 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_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 Contributor 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_power_user</td>
<td>Users with the pa_power_user role can create Performance Analytics configuration records such as indicators, breakdowns, and dashboards. 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>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 such as pa_viewer. This diagram shows the role hierarchy.
Supported browsers for Performance Analytics

ServiceNow supports Performance Analytics in UI15 and UI16. All browsers supported by these interfaces are supported by Performance Analytics.

Performance Analytics data architecture

Define key metrics and data structure to generate scores.
Performance Analytics indicators

Indicators are statistics that businesses track to measure current conditions and to forecast trends. They provide you with key information on how your business is doing.

You can present them in scorecards and in user-friendly dashboards. Before creating indicators, you need to define the sources from which the data is retrieved.

Setting up indicators

To create an indicator, create an indicator source to define the data set to evaluate, and the indicator to define an aggregation.

Indicator sources

Indicator sources define the set of records to evaluate when collecting indicator scores.

Indicator sources are based on a facts table, such as Incident, and may specify filter conditions limit the included records. One indicator source can be used by multiple indicators (1:n relationship).

If you want to use the indicator source to create a snapshot of the situation on a certain date, the conditions should include a date related filter, so you can schedule a historic data collection for it.

Choose your indicator sources carefully. Since an indicator is linked to an indicator source, it is not easy to change the indicator source after you created it.

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

Define an indicator source

Create an indicator source to define the set of records to evaluate when collecting indicator scores.

Role required: pa_data_collector or admin

1. Navigate to Performance Analytics Data Collector Indicator Sources.
2. Click New.
3. Enter a name by which you can easily see what the indicator source is used for. For example, Incidents.Open.
4. Enter a more detailed description. For example, Daily collection open incidents.
5. In the Valid for Frequency field, select the interval at which the data for the indicator source must be collected, such as Daily, Weekly, or Bi-weekly. Indicators based on this indicator source use the Valid for frequency value as the indicator Frequency.
6. Select the Facts table that the indicator source is based on.
   
   Note: Do not select a rotated table as the facts table.
   
7. Add Conditions that must be fulfilled before data is included in the subset. For example, {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.
   
   Conditions should contain high level criteria here because this is meant to extract a large record set. Use the indicator advanced filters to go deeper into the data.
8. Click Submit.
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)
Create an indicator source using a report source
Use an existing report source to quickly define an indicator source.
Role required: pa_data_collector or admin

Reuse the table and filter settings from a report source to create an indicator source.

1. Navigate to Performance Analytics Indicator Sources.
2. Click New.
3. Enter a descriptive Name for the indicator source.
4. Select a Report source.
   When you select a report source the Facts table and Conditions are updated automatically to match the report source values.
5. Click Submit.

If 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 appears in the UTC timezone.

Use a database view
Database views allow you to combine data from tables in your ServiceNow instance that are not connected by default.

By combining these 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.

To create database views, navigate to System Definition Database Views.

If you select a database view as the facts table for an indicator source, you must provide additional configuration in the Additional conditions section of the Indicator Source form. The choice lists present the available views for the joined tables.

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

1. Navigate to Performance Analytics Indicators Create New.
2. Enter an Indicator name.
3. 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. 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. 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. 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. 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. 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 5: Widget options

<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 this checkbox 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>
</tbody>
</table>
### Periods back
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.

### Breakdown widgets
Select this check box to create a breakdown scorecard widget for each breakdown applied to this indicator.

---

**Create an automated indicator**

Create an automated indicator to automatically collect scores on a regular basis.

Role required: pa_admin, pa_power_user, and pa_data_collector

An automated indicator is based on an indicator source. You can set indicator values such as, frequency, direction, and a default time series to influence the way the data is processed.

Note: You must have Performance Analytics Premium to create new indicators.

Navigate to Performance Analytics Indicators Automated Indicators and create a new record (see table for field descriptions).

<table>
<thead>
<tr>
<th>Field</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Name</td>
<td>Descriptive name of the indicator.</td>
</tr>
<tr>
<td>Description</td>
<td>A more detailed description of what the indicator does and its purpose.</td>
</tr>
<tr>
<td>Frequency</td>
<td>The frequency of data points for the indicator, such as Daily, Weekly, or Monthly. This value is set automatically based on the Valid for frequency value from the selected Indicator source. You can select an indicator Frequency before selecting an indicator source to filter the list of indicator sources to display only those indicator sources with the specified frequency. After selecting an indicator source, the Frequency field is hidden on the Indicator form.</td>
</tr>
<tr>
<td>Direction</td>
<td>When an improvement of the indicator value is taking place. Possible values are Minimize (the lower the value the better) or Maximize (the higher the value, the better).</td>
</tr>
<tr>
<td>Unit</td>
<td>The unit of measurement for the indicator.</td>
</tr>
<tr>
<td>Precision</td>
<td>Number of digits behind the decimal separator (0 = none).</td>
</tr>
<tr>
<td>Key</td>
<td>Check box to indicate if the indicator is a key metric for the process being monitored. Can be used to filter key indicators when selecting scorecards to be displayed at Performance Analytics Scorecards.</td>
</tr>
</tbody>
</table>

---

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<table>
<thead>
<tr>
<th>Field</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Indicator source</td>
<td>The basic source for calculating the indicator. You can select only indicator sources for which the Valid for Frequency value for the indicator source is the same as the Frequency for the indicator.</td>
</tr>
<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.</td>
</tr>
<tr>
<td>Aggregate</td>
<td>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. So, 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.</td>
</tr>
<tr>
<td>Scripted</td>
<td>A check box to indicate if the value should be aggregated based on a script. This option is available only if Aggregate is not set to Count. Clear the Scripted check box to aggregate the values in a field.</td>
</tr>
<tr>
<td>Field</td>
<td>The field to perform the aggregate operation on. This field appears only if Aggregate is not Count, and Scripted is not selected.</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 Scripted check box is selected. 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 will add a virtual column and adds an element value to each record. Several sample scripts are available, for example <code>Incident.Age.Days</code>. This is a script that determines the age of open incidents by comparing the creation date with the current date. You can adjust the sample script to your needs or define your own script.</td>
</tr>
<tr>
<td>Value when nil</td>
<td>The value that is inserted as the score when no value is collected. Note: This value applies only to the indicator score. It does not impact scores for breakdown elements.</td>
</tr>
<tr>
<td>Field</td>
<td>Description</td>
</tr>
<tr>
<td>-------------------------------</td>
<td>-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------</td>
</tr>
<tr>
<td>View table</td>
<td>The view to use to filter fields included in the data. If you do not select a view, the default view is used. This field appears only if Collect records is selected.</td>
</tr>
<tr>
<td>Additional conditions fields</td>
<td></td>
</tr>
<tr>
<td>Facts table</td>
<td>Table for the indicator. This field automatically displays the table associated with the selected Indicator source.</td>
</tr>
</tbody>
</table>
| Conditions                    | (Optional) Additional conditions can be added to the conditions in the selected Indicator source. Having conditions available at both the indicator source level and the automated indicator level enables you to create extra selections for the indicator data collected. Query conditions on text fields are case-sensitive.  
For example, to view the number of open incidents not reassigned, based on the reassignment count, you could use the indicator source Incident.Open. However, to get the number of open incidents not reassigned, you must add these conditions in the Indicator form:  
• (Reassignment count) is 0 or  
• (Reassignment count) is empty  
Note: The operators keywords, is same, is different, greater than field, less than field, greater than or is field, less than or is field, is one of, and is not one of are not supported for indicators. You can use these operators on the indicator source conditions instead. |
| Access control tab fields     |                                                                                                                                                                                                             |
| Publish on Scorecards         | Check box to indicate if the indicator can be used for display. Clear this check box to use the indicator only for formula indicators, for example. When this check box is cleared, the indicator is not shown on the scorecard, but is shown in the widget configurations and on the dashboards. |
| Visible by all roles          | Check box to indicate if the indicator is visible to all roles. If this check box is cleared, you can select the roles for which the indicator is visible.  
Note: You must also have at least the pa_viewer role to view any indicators.                                                                 |
<p>| Roles                         | The roles that are required to view this indicator. This field appears only when Visible by all roles is not selected.                                                                                       |
| Other fields                  |                                                                                                                                                                                                             |</p>
<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 to which indicator’s 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 3rd-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>
<tr>
<td>Collect breakdown matrix fields</td>
<td></td>
</tr>
<tr>
<td>Field</td>
<td>Description</td>
</tr>
<tr>
<td>-----------------------------</td>
<td>---------------------------------------------------------------------------------------------------------------------------------------------</td>
</tr>
<tr>
<td>Collect breakdown matrix</td>
<td>Enable second-level breakdowns for this indicator, such as Open Incidents by Assignment group by Priority.</td>
</tr>
<tr>
<td></td>
<td><strong>Warning:</strong> Selecting this option exponentially increases the amount of data that Performance Analytics collects. Having a very large number of scores or snapshots may impact the performance of widgets and dashboards.</td>
</tr>
<tr>
<td></td>
<td>Consider other options, such as a grouped report if you only need to break down a single score, before enabling second-level breakdowns.</td>
</tr>
<tr>
<td></td>
<td>This field is selected by default for new indicators. If you select this field for existing indicators, the scores for the second-level breakdowns are collected when you run the first new collection job.</td>
</tr>
</tbody>
</table>

**Collection periods fields**

<table>
<thead>
<tr>
<th>Field</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Override collection periods</td>
<td>Select this check box to override the number of periods to collect and preserve scores and snapshots for this indicator.</td>
</tr>
<tr>
<td>Periods to keep scores</td>
<td>When Override collection periods is selected, specify how many periods to collect and preserve scores for. The unit of time for each period depends on the indicator source Frequency value, such as Daily, Weekly, or Monthly. This value overrides the property com.snc.pa.dc.keep_scores_for.frequency for this indicator.</td>
</tr>
<tr>
<td>Periods to keep snapshots</td>
<td>When Override collection periods is selected, specify how many periods to collect and preserve snapshots for. The unit of time for each period depends on the indicator source Frequency value, such as Daily, Weekly, or Monthly. This value overrides the property com.snc.pa.dc.keep_snapshots_for.frequency for this indicator.</td>
</tr>
</tbody>
</table>

Add or remove breakdowns in an automated indicator

Add an existing breakdown to an automated indicator to group and filter indicator scores based on that 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. 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 first and second-level 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.

Figure 2: Exclude breakdown

1. Open an existing automated indicator.
2. In the Breakdown matrix exclusion related list, click New.
3. In the Breakdown field, select the breakdown you want to exclude.
4. In the 2nd Breakdown field, select the second-level breakdown you want to exclude. Both fields are mandatory.

Note: Scores are not collected for any combination of the two breakdowns. The order you select the breakdowns does not impact the final behavior.

For example, if you select Customer as the Breakdown and Vendor as the 2nd Breakdown, then the combination of Vendor as the first-level breakdown and Customer as the 2nd-level breakdown is also excluded.

5. 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. 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.

Role required: pa_admin, pa_power_user, or admin

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

Note: You must have Performance Analytics Premium to create new 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, this 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

Note: You must have Performance Analytics Premium to create new indicators.

1. Navigate to Performance Analytics Indicators Formula Indicators.

The fields of a formula indicator are similar to an automated indicator except for the condition. Formulas can consist of other indicators, constants, and time series, or any combination of these.

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

6. 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 Total time to resolve incidents / 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. 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 this formula: 

\[
\frac{\text{Summed age of open incidents}}{\text{Open incidents}} \div 24
\]

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 \{\{Incidents\}\} / \{\{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 \{\{Incidents \ region = eu\}\} / \{\{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 \{\{Incidents\}\} / \{\{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 \{\{Incidents \ region = eu\}\} / \{\{Customers\}\}.

You can specify a breakdown within a component itself, such as \{\{Incidents\}\} / \{\{Customers \ importance = 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.

Rounding in formula indicators

Formula indicators round fractional results using Banker’s rounding or mathematical rounding depending on the indicator Precision.

When a formula indicator has a Precision of 0, the indicator rounds the result to the nearest even whole number. For example, if a formula 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 a formula indicator has a Precision greater than 0, the indicator rounds to the nearest decimal point for the given precision. For example, a formula indicator with Precision 1 rounds a result of 4.45 to 4.5.

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.
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 new 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 Indicators 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. Click Edit in the Indicators related list.
   - If you have many indicators, use a filter to limit the number of indicators.
4. Select one or more indicators using the slushbucket.
5. Click the right arrow to add the indicators to the indicators list.
6. Click Save.

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.
6. Units can be used for automated, manual, and formula indicators.

Excluding time series from indicators

You can exclude specific 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.

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.

Importing scores from Excel or CSV

Use import sets to import scores data using Excel or CSV files.

To import score data for an indicator from an Excel or CSV file that exactly matches the columns of the table, including sys_ids for each row, use Easy Import.

If the file does not include sys_ids for each row, use import sets.

To use import sets for Performance Analytics, take these points into account.

• Transform Map: select the Run Business Rules check box to ensure that all the defined rules are applied when inserting scores.
• Field Maps:
  • 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 the corresponding date format is specified in Date Format. 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 target field Element to get the sys_id into the target field.

Export scores to CSV

You can export data from a detailed scorecard.

Role required: pa_admin

1. Navigate to a scorecard.
2. Click the context menu icon at the top left before the indicator title.
3. Select Export scores to CSV.
4. Click Download.
Performance Analytics data collection and cleanup

Performance Analytics uses scheduled jobs to collect and clean scores and snapshots, and allows 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 Performance Analytics historical data collection job to collect scores and snapshots for existing records.

Role required: pa_data_collector or admin

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.

1. Navigate to Performance Analytics Data Collector Jobs.
2. Select a historical data collection job, such as [PA Change] Historic Data Collection.
3. In the Collection parameters section, configure the date range to collect data from using one of the following methods.

<table>
<thead>
<tr>
<th>Option</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Fixed date range</td>
<td>In the Operator field, select Fixed. Specify the date range to collect data from using the Fixed start and Fixed end fields.</td>
</tr>
<tr>
<td>Relative to the current date</td>
<td>In the Operator field, select Relative. Specify the relative date range to collect data from using the Relative start, Relative end, Relative start interval, and Relative end interval fields.</td>
</tr>
</tbody>
</table>

4. Click Execute Now.

After collecting historical data, use a scheduled data collection job to collect new scores regularly.

Schedule a data collection job

Schedule a data collection job to regularly collect scores without manual intervention.

Roles required: pa_data_collector or admin

Before defining data collection jobs, make sure that indicator sources, breakdown sources, and indicators have been defined. Otherwise, jobs cannot return any results.

1. Navigate to Performance Analytics Data Collector Jobs.
2. Click New.
3. Fill in the fields, as appropriate.
Table 7: Scheduled Data Collection form

<table>
<thead>
<tr>
<th>Field</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Name</td>
<td>Enter a name to identify this scheduled job.</td>
</tr>
<tr>
<td>Description</td>
<td>Enter a description to identify this scheduled job.</td>
</tr>
<tr>
<td>Operator</td>
<td>Select Fixed start to collect data for an absolute time period.</td>
</tr>
<tr>
<td></td>
<td>Select Relative to collect historical data, for instance from 60 days backwards, to populate indicator scores.</td>
</tr>
<tr>
<td>Fixed start</td>
<td>Enter a fixed start date. Available only when the Operator field is set to Fixed.</td>
</tr>
<tr>
<td>Fixed end</td>
<td>Enter a fixed end date. Available only when the Operator field is set to Fixed.</td>
</tr>
<tr>
<td>Relative start</td>
<td>Enter the number of days, weeks, or months (set in the Relative start interval) for the relative start. This determines for how far back, scores will be retrieved. Available only when the Operator field is set to Relative.</td>
</tr>
<tr>
<td>Relative start interval</td>
<td>Select the unit used when the interval should start in days ago, weeks ago, or months ago. Available only when the Operator field is set to Relative.</td>
</tr>
<tr>
<td>Relative end</td>
<td>Enter the number of days, weeks, or months (set in the Relative start interval) for the relative end. This determines for how far back, scores will be retrieved. Available only when the Operator field is set to Relative.</td>
</tr>
<tr>
<td>Relative end interval</td>
<td>Select the unit used when the interval should end in days ago, weeks ago, or months ago. Available only when the Operator field is set to Relative. For example, if you want to collect data from one year back up to the current day, enter 12 in Relative start and months ago in Relative start interval. In the other fields, accept the default values. As this type of data collection can take a long time and is usually done when setting up the system, set the Run field to Once or On Demand.</td>
</tr>
<tr>
<td>Run as</td>
<td>Select the user that runs this scheduled job. For optimal performance choose a user who is authorized to collect scores for the indicators specified in the job. The user who is logged in is used by default.</td>
</tr>
<tr>
<td>Run as tz</td>
<td>Select the time zone the queries that will be executed from the scheduled job will use. By default the System time zone is used, but can be changed when needed.</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>
</tbody>
</table>
### Field Description

<table>
<thead>
<tr>
<th>Field</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Run</td>
<td>Select the type of schedule to collect the data. Choices are:</td>
</tr>
<tr>
<td></td>
<td>• Daily</td>
</tr>
<tr>
<td></td>
<td>• Weekly</td>
</tr>
<tr>
<td></td>
<td>• Monthly</td>
</tr>
<tr>
<td></td>
<td>• Periodically</td>
</tr>
<tr>
<td></td>
<td>• Once</td>
</tr>
<tr>
<td></td>
<td>• On demand</td>
</tr>
<tr>
<td>Day</td>
<td>• If Run is Weekly, the day of the week.</td>
</tr>
<tr>
<td></td>
<td>• If Run is Monthly, the day of the month.</td>
</tr>
<tr>
<td>Repeat Interval</td>
<td>If Run is Periodically, the amount of time</td>
</tr>
<tr>
<td></td>
<td>between scheduled data collections, in days and hour.</td>
</tr>
<tr>
<td>Starting</td>
<td>If Run is Periodically or Once, the date and time</td>
</tr>
<tr>
<td>Time</td>
<td>of the first scheduled data collection.</td>
</tr>
<tr>
<td>Conditions</td>
<td>If checked, the data collection occurs only if certain conditions are met.</td>
</tr>
<tr>
<td>Conditions</td>
<td>If Conditional is selected, a script determines</td>
</tr>
<tr>
<td></td>
<td>under what conditions the entity is generated.</td>
</tr>
</tbody>
</table>

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

5. In the Job Indicators related list, click New to select an indicator for the job to collect.

   **Important:** At least one indicator must be included for the job. Otherwise, the job cannot return any results.

6. Fill in the fields, as appropriate.

   **Table 8: Job Indicator form**

<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>Active</td>
<td>Select the check box to make the job indicator active (the default). Clear</td>
</tr>
<tr>
<td></td>
<td>the check box to deactivate the job temporarily without deleting it from the</td>
</tr>
<tr>
<td></td>
<td>job definition.</td>
</tr>
<tr>
<td>Collect</td>
<td>Choose to collect All breakdowns, One breakdown, or No breakdowns.</td>
</tr>
<tr>
<td>Breakdown</td>
<td>Specify the breakdown you want to collect. Only available if Collect is set</td>
</tr>
<tr>
<td></td>
<td>to One breakdown.</td>
</tr>
</tbody>
</table>
## Collect indicator

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 Collect, data is collected for all breakdowns, one breakdown, or none at all.

### Add indicator scores manually

You can manually enter score data for indicators.

**Role required:** pa_admin, pa_power_user, and pa_contributor

Manually adding scores is usually done for indicators that only require an update once a month or less. Also, if data cannot be collected automatically for some entities, like customers, you can manually enter or import data.

1. Navigate to **Performance Indicators Scoresheet**.
2. Select the indicator for which you want to enter manual scores.
3. 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) Right-click outside the score table and select **Aggregate scores**.
   
   b) Choose whether you want to use the **Total** 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.

   It is possible to calculate a new aggregation based on a different breakdown later on. For automated indicators that have Collect breakdown matrix enabled and that 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.

4. To enter data for a different period, click the down arrow above the score table after the date selection and select a new date from the calendar that appears. Alternatively, click the right or left arrow to move one period forward or back. All changes are saved automatically.

### 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 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 log**

Job logs display information about the data collection jobs that have run for Performance Analytics.

Role required: pa_data_collector or admin

You can view job logs, create new events, and view and edit the event registry. The list view displays all log entries, unless filtered.

1. Navigate to Performance Analytics Data Collector Job Logs.

The log provides the following information for all occurrences.

<table>
<thead>
<tr>
<th>Field</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Created</td>
<td>Date and time the data collection job started.</td>
</tr>
<tr>
<td>State</td>
<td>Can be one of the following: Collecting, Collected, or Collected with errors.</td>
</tr>
<tr>
<td>Name</td>
<td>Name of the job.</td>
</tr>
<tr>
<td>Completed</td>
<td>Date and time the data collection job ended.</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.

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. The job deletes records according to best practices, so there is 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 these attributes are defined for the Scores or Snapshots tables.

This scheduled job also deletes any Scores (pa_scores) 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.

Role required: pa_admin or admin

The scheduled cleanup job should not run while a data collection job is running. 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.

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>
</table>
| `com.snc.pa.dc.keep_scores_for.frequency` | Maximum number of periods that scores will be kept before being deleted, for each indicator frequency, such as Daily or Weekly. The length of each period depends on the indicator frequency. For example, daily scores are kept for 732 days by default, or weekly scores for 105 weeks. Additionally, scores older than this limit are not collected during data collection.  
• Type: String  
• Default value: 732;105;53;40;60;30;20;20;20;10;10  
• Location: Performance Analytics System Properties |
| `com.snc.pa.dc.keep_snapshots_for.frequency` | Maximum number of days the snapshots related to a score will be kept before being deleted for each indicator frequency, such as Daily or Weekly. The unit of each period depends on the indicator frequency. For example, daily snapshots are kept for 183 days by default, or weekly snapshots for 26 weeks. Additionally, snapshots older than this limit are not collected during data collection.  
• Type: String  
• Default value: 183;26;13;10;15;8;5;5;5;3;3  
• Location: Performance Analytics System Properties |

Data collector properties

Data collector properties allow you to configure various limits for Performance Analytics data collection. The data collector properties are configured to safeguard the data collection process. The default values are appropriate for most environments.

Navigate to Performance Analytics Properties to configure properties.
<table>
<thead>
<tr>
<th>Property</th>
<th>Description</th>
</tr>
</thead>
</table>
| com.snc.pa.dc.script_timeout | **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.  
- **Type**: integer  
- **Default value**: 30 |
| com.snc.pa.dc.max_row_count_indicator_source | **The maximum number of records that a job can collect from a single 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 twelve indicators from three indicator sources, the job can collect a maximum of 150,000 records by default, 50,000 from each indicator source.  
- **Type**: integer  
- **Default value**: 50,000 |
| com.snc.pa.dc.max_breakdown_elements_limit | **Maximum number of breakdown elements for a breakdown to be included in data collection.** You may encounter this limit when defining a breakdown based on a reference field, such as the Assigned to or Configuration item fields.  
Increasing this limit may impact performance when viewing breakdown information on a detailed scorecard. Additionally, it may be difficult for users to access data for a specific breakdown element when there are a very large number of elements.  
If you have more breakdown elements than this limit, consider defining a breakdown based on a bucket group instead. Bucket group allow you to maintain a manageable number of breakdown elements, and simplify navigation for users viewing the broken-down data.  
- **Type**: integer  
- **Default value**: 10,000 |
<table>
<thead>
<tr>
<th>Property</th>
<th>Description</th>
</tr>
</thead>
</table>
| com.snc.pa.dc.max_error_count | 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.
  - Type: integer
  - Default value: 500 |
| com.snc.pa.dc.max_breakdown_elements_level2_limit | 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 the Scores (pa_scores) table to store a very large number of records. Having many records on this table may impact performance when performing operations on the Scores table, such as when calculating formula values for formulas with breakdowns.

Note: This limit is also affected by the com.snc.pa.dc.max_breakdown_elements_limit property. For example, if the first-level breakdown has greater than 10,000 elements, only 10,000 are collected by default. 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.
  - Type: integer
  - Default value: 1,000,000 |
| com.snc.pa.dc.max_records | Maximum number of records that are stored on the Snapshots (pa_snapshots) table during each data collection. This limit applies only when Collect records is selected for an indicator. This limit does not apply to scores.
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.
  - Type: integer
  - Default value: 5000 |
Performance Analytics breakdowns

Breakdowns allow you to organize and filter indicator scores based on instance data, such as to show separate scores for each assignment group.

You can apply a breakdown on scorecards and dashboards. Breakdowns can be based on available instance data, or on bucket groups, which are custom groups for categorizing data. For example, a breakdown could divide incident data by priority or by assignment group, or divide a geographical area by country or region.

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

Note: Users with only the pa_power_user role cannot create new breakdown sources.

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 mapping</td>
<td>If no breakdown or breakdown source exist for the specified table, enter a name for the new breakdown. A breakdown source and mapping for the selected table and field will be created automatically. Click Show filter to make adjustments to filter the data included in the breakdown source.</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.

Define a breakdown source

A breakdown source defines what elements the breakdown should contain.

Roles required: pa_data_collector or admin

Breakdown sources are based on a facts table that provides breakdown elements, which are the individual components of the breakdown. For example, a breakdown source might specify the choices from the Priority choice list as the breakdown elements. Scores broken down based on this breakdown source are then organized based on the Priority value of each record. A breakdown source can be shared by multiple breakdowns and indicators.

1. Navigate to Performance Analytics Data Collector Breakdown Sources.
2. Click New.
3. Fill in the fields, as appropriate.

Table 11: Breakdown source fields

<table>
<thead>
<tr>
<th>Security type</th>
<th>Whether to exclude (Blacklist) or include (WhiteList) breakdown source elements by role based on element security lists.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Facts table</td>
<td>The facts table the breakdown source is based on. For example, if it is based on a choice list, select Choice (sys_choice).</td>
</tr>
<tr>
<td>Field</td>
<td>Select a field for the facts table. Usually the Sys ID.</td>
</tr>
<tr>
<td>Conditions</td>
<td>Conditions for filtering the element list. For example: (Table) [is] (Incident) and (Element) [is] (Category) and (Language) [is] (en) and (Inactive) [is] (false) or (Inactive) [is] (empty)</td>
</tr>
<tr>
<td>Label for unmatched</td>
<td>The label to use if an empty value is collected during data collection. The default label is Unmatched.</td>
</tr>
<tr>
<td>DC active</td>
<td>Whether to collect breakdown elements for this breakdown source during data collection. This field is selected and hidden by default. This field is cleared and displayed automatically if data collection for this breakdown source fails, such as if there are more breakdown elements than allowed by the property com.snc.pa.dc.max_breakdown_elements_limit. To reenable the breakdown source, add Conditions to limit the number of breakdown elements and select the DC active check box before running another data collection job.</td>
</tr>
</tbody>
</table>

4. Click Submit.

Any records that match the conditions are shown immediately after you submit the form. If you click a matching record, the result should look like this:

Example of a breakdown source:
Create a breakdown for indicators

After creating breakdown sources, create breakdowns to connect them to indicators.
Role required: pa_data_collector, pa_power_user, or admin

1. Navigate to Performance Analytics Indicators Breakdowns.
2. Click New.
3. Select a type.
   - Manual lets you add manual values for a breakdown.
   - Automated populates the values for the breakdown from a breakdown source.

4. Enter a Name for the breakdown.
5. Enter a Description of the breakdown.
6. In the Access control section, clear the Display check box to disable the display of the breakdown on scorecards and dashboards. Select this check box to enable this display.

   Different configuration fields become available depending on the Type selected.

Assign an indicator to a breakdown.

Breakdown mappings

Breakdown mappings allow you to define relationships between the indicator source table and the breakdown source table. This behavior allows you to use one breakdown for multiple indicator source tables.

For example, you can map the sys_id from Group (sys_user_group) records in the Group.Active breakdown source with Incident record Assignment group values. You can use the same breakdown to create additional relationships between the Group records in the Group.Active breakdown and other tables that reference the Group table, such as Change or Problem Assignment group values.

Create a breakdown with breakdown mappings for an automated indicator

Role required: pa_admin, pa_power_user, or pa_data_collector

1. Select the Breakdown source for the breakdown.
2. Select or create a Default elements filter for selecting the correct breakdown values. For example, if you created a default filter with assignment group Service Desk based on the sys_user_group table, this filter is automatically applied when you select assignment group on the scorecard breakdown tab. The filter needs to be based on the same table the breakdown is based on. You can also create an elements filter by navigating to Performance Analytics Indicators Elements Filters
3. Right-click the form header and select Save.
4. In the Breakdown Mapping related list, click New.
5. Select the Facts table used to collect relevant values for the breakdown. Usually this is the indicator source table.
6. Select the Scripted check box to use a script for the breakdown values. Clear this check box to use a fixed field for the breakdown values.
7. Select the Script or Field to use to determine how the breakdown groups data.
8. Click Submit.
9. Repeat steps 4-8 as needed to define additional mappings.

Create a breakdown for a manual indicator

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

1. Double-click Insert a new row to add a new breakdown value.
2. Press Enter or click the green check mark to save the entry.
3. Select the Order for this breakdown. The default is 100.

   The order is used to sort the breakdown values on widgets or scorecards.
4. Repeat these steps until all values have been added.
5. Click Submit.

Assign an indicator to a breakdown

The last step for creating a breakdown is assigning one or more indicators to it.

Role required: pa_data_collector, pa_power_user, or admin

1. Navigate to Performance Analytics Breakdowns.
2. Select an existing breakdown record.
3. In the Indicator Breakdowns related list, click New.
4. Select the indicator you want to assign to this breakdown.
   The indicator must use the same facts table as the breakdown.
5. Select the Display check box to display the breakdown on the scorecard and dashboard widgets.
   If the Display check box is cleared, scores are populated during data collection, but the breakdown
   is not shown on the scorecard and dashboard widgets.
6. Click Submit.

Bucket groups

Bucket groups are custom groups that can be used when you define a breakdown source that uses
Bucket [pa_buckets] as the facts table.

Bucket groups can also be used with a script. When configuring the indicator, you can attach a script
that runs through the collected data and places the records into a bucket group. For example, you can
arrange open incidents according to age, such as < 1 day, 2-5 days, 6-30 days, > 30 days old. In this
case, the indicator Open Incidents is broken down by Incident Age.

Create a bucket group

Define the ranges of values that you want to group into buckets.

To create a bucket group:

1. Navigate to Performance AnalyticsData CollectorBucket 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 on the green check icon.
6. Double-click in the Start and End columns to enter the starting and ending values for the range.
7. Click Submit after all the bucket ranges have been defined.
Figure 3: Bucket groups

<table>
<thead>
<tr>
<th>Name</th>
<th>Start</th>
<th>End</th>
</tr>
</thead>
<tbody>
<tr>
<td>00 - 01 Days</td>
<td></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>91</td>
<td></td>
</tr>
</tbody>
</table>

Bucket groups define the buckets for this bucket group by providing start and end ranges for each of the buckets.
Breakdown element filters

Element filters allow 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_power_user 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 an 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.

Create a breakdown relation

Breakdown relations define how two Performance Analytics breakdowns relate to each other and provide an additional way to navigate dashboards and scorecards. Create a breakdown relation to view related metrics on scorecards and widgets.

Role required: pa_admin
For example, on a scorecard broken down by the Database assignment group, breakdown relations enable you to view the scorecard for a child group of the Database group such as Database Atlanta, or for a specific member of the Database group.

1. Navigate to Performance Analytics Breakdowns.
2. Select a breakdown.
3. In the Breakdown Relations related list, click New.
4. Fill in the fields on the form, as appropriate.

Table 13: Breakdown relation fields

<table>
<thead>
<tr>
<th>Field</th>
<th>Description</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>
</tr>
<tr>
<td></td>
<td>Note: Breakdown relations are one-way relationships. Define multiple breakdown relations to create a bi-directional relationship.</td>
</tr>
<tr>
<td>Related breakdown</td>
<td>Select the breakdown you want to associate with the first breakdown. For hierarchical relationships, such as associating parent and child groups, you can select the same breakdown as in the Breakdown field. For non-hierarchical breakdown relationships, such as users in a group, the Related breakdown may be different.</td>
</tr>
<tr>
<td>Table</td>
<td>Select the table that defines the relationship between the breakdowns. For hierarchical relationships select the same table as the breakdown source facts table. For example, select Group (sys_user_group) when relating a parent group to child groups. For many-to-many relationships, select the many-to-many table. For example, select Group User (sys_user_grmember) when relating groups to group members.</td>
</tr>
<tr>
<td>Breakdown field</td>
<td>Select the field from the specified Table that identifies the breakdown element you can navigate from. For example, when creating a breakdown relation from groups to group members, select the Group field from the Group User (sys_user_grmember) table.</td>
</tr>
<tr>
<td>Related breakdown field</td>
<td>Select the field from the specified Table that identifies the breakdown element values you can navigate to when viewing this relation. For example, when creating a breakdown relation from groups to group members, select the User field from the Group User (sys_user_grmember) table.</td>
</tr>
</tbody>
</table>
Field | Description
--- | ---
Common field | When the Breakdown field and Related breakdown field specify the same field, select which field to use to identify related records. When Breakdown field and Related breakdown field have different values, do not set a Common field value.

For example, in a breakdown relation associating Group {sys_user_group} records that have the same Parent, both the Breakdown field and Related breakdown field values are Sys ID. In this example, set the Common field value to Parent. When viewing a scorecard broken down by a group, you can view the scorecard broken down by other groups with the same parent group.

Conditions | Define any further conditions that a record must fulfill to appear as a related breakdown for this relationship. For example, when when relating a parent group to child groups, use the condition {Active} {is} {true} to include only active child groups.

5. Click Submit.

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. Open an existing breakdown source record.
2. In the Elements Security List related list, click New.
3. Fill in the fields, as appropriate.
<table>
<thead>
<tr>
<th>Name</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>All roles</td>
<td>Check box for indicating whether the list applies to all roles (selected). Clear the check box and click the lock icon to specify the roles belonging to this elements security list. You can use the search button to look for specific roles.</td>
</tr>
<tr>
<td>Security type</td>
<td>(Read-Only) Security type selected for the associated breakdown source.</td>
</tr>
<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>Check box for including individual elements in this security list (selected). If this option is cleared, use Conditions to define which elements should be included.</td>
</tr>
<tr>
<td>All elements</td>
<td>Check box for including all elements in the security list (selected). Clear the check box to include individual elements in this security list.</td>
</tr>
<tr>
<td>Show blank option</td>
<td>Controls if users can select a blank breakdown element from the breakdown dashboard element selector. The following conditions affect if a user can select the blank option:</td>
</tr>
<tr>
<td></td>
<td>• A user with the admin role can always select the blank option.</td>
</tr>
<tr>
<td></td>
<td>• If no blacklist element security lists match the current user’s roles, the blank option is available.</td>
</tr>
<tr>
<td></td>
<td>• If no whitelist element security lists match the current user’s roles, the blank option is not available.</td>
</tr>
<tr>
<td></td>
<td>• If a blacklist element security list matches the current user’s roles, and Show blank option is selected, the blank option is not available.</td>
</tr>
<tr>
<td></td>
<td>• If a whitelist element security list matches the current user’s roles, and Show blank option is selected, the blank option is available.</td>
</tr>
<tr>
<td></td>
<td>• If a blacklist element security list matches the current user’s roles, and Show blank option is not selected, the blank option is available.</td>
</tr>
<tr>
<td></td>
<td>• If a whitelist element security list matches the current user’s roles, and Show blank option is not selected, the blank option is not available.</td>
</tr>
<tr>
<td>Conditions</td>
<td>The conditions that must be met before the security list is applied. For example, (Category) [is] (Software). Conditions are applied on top of the breakdown source conditions. This field is available only if Select elements is not selected.</td>
</tr>
</tbody>
</table>

4. Click Submit.
Create a Performance Analytics target

Targets are goals your organization wants to achieve. You can set targets for indicators, breakdowns, and time series.

Role required: pa_power_user or admin

Targets allow you to visualize the difference between the desired score at a certain date and the actual score of an indicator.

1. Navigate to Performance Analytics Scorecards.
2. Select a scorecard.
3. 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. 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.
6. Click the target icon (○).
7. Enter the numeric target value for the score at the selected date.
8. 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: the 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 each breakdown element

You can specify a target that applies separately to each subset of data for an indicator with a breakdown.

Role required: pa_admin, pa_power_user, or admin

For example, you can set a target on an Incident indicator that applies individually to the scores for each assignment group.

1. Navigate to Performance Analytics Targets.
2. Select the Indicator you want to set the target for.
3. Select a Breakdown.
   The Any element field is selected by default. Do not clear this check box.
4. Select a Time series.
For example, you can measure closed incidents daily and set monthly targets for closed incidents.

5. Select a Color scheme for the target.
6. Click Submit.

Define target values for the new target.

Set target values

Specify target values to define the target score for an indicator at a certain date.

Role required: pa_admin, pa_power_user, or admin

1. Navigate to Performance Analytics Targets.
2. Select the target you want to add values to.
3. In the Target values related list, click New.
4. Specify the target date in the Target at field.
   A target value is used from the specified start date until the start date for another target value. For example, to set a target per quarter in a year, add four target values, each starting on the first day of the quarter.
5. Enter the target Value.
6. Click Submit.
   The new values appears in the Target values related list on the Target form, and on the target indicator.

Create a Performance Analytics threshold

Create a threshold to define normal behavior so you get a warning when something abnormal occurs.

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. 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.

1. Navigate to Performance Analytics Scorecards.
2. Select a scorecard.
3. 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. 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. Click Save.

Add threshold user notifications

Configure which users should receive an email when the threshold is reached.

Role required: pa_admin, pa_power_user, or admin

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 SA 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

1. Navigate to System Policy Email Notifications.
2. Select PA Thresholds Notification.
3. 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. Click Update.

Create an email summary

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 \( (\text{Key}) \ (\text{is}) \ (\text{true}) \).
• 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. Add a filter to limit the selection of the indicators.
   For example, \( (\text{Name}) \ (\text{contains}) \ (\text{incident}) \). 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, \( (\text{Department}) \ (\text{is}) \ (\text{Customer Support}) \). 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 configuration generator

The configuration generator allows 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 content pack, 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.

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 Premium.

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 are not functional because other plugins are inactive, those plugins are listed. A warning states that some files will not be installed. If you want the optional features to be installed, cancel this activation, activate the necessary plugins, and then return to activating the plugin.

4. 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 policy 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

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 domain of each data collector job determines the domain of scores generated by that data collector. The domain of the source records do not affect the domain of the scores.

Only users with the pa_admin role that are a member of the domain that contains the scheduled job, or 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.

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 content packs 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 indicator and related data from an indicator in a different domain using the Insert and Stay with Relations UI action on the Indicator form. 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.

Note: Domain users cannot set Performance Analytics properties that begin with com.snc.pa. These properties can only be set by users with the admin or pa_admin roles in the global domain.

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.
Note: The hybrid configuration is an advanced option. Implement either the global or domain-specific configurations successfully before attempting to use a hybrid configuration.

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 allows system administrators to move or copy Performance Analytics configuration records between domains.

PADomainUtils

The PADomainUtils API allows 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 Premium must be enabled
- 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()

Instantiate 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.
Table 14: 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>

// PADomainUtils initialized with the global domain
var globalUtils = new SNC.PADomainUtils();

PADomainUtils - PADomainUtils(String domainFrom)
Instantiate 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.

Table 15: 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)
Use 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.
Table 16: 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>

Table 17: 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>

```javascript
var pa = new SNC.PADomainUtils().setFoundation(true);
pa.copy('bb6b58b01f1310005a3637b8ec8b70dd');
```

**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 allows 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.

Table 18: 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>

Table 19: 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>

```javascript
var pa = new SNC.PADomainUtils('c90d4b084a362312013398f051272c0d');
pa.setOverrides(false);
pa.copy('bb6b58b01f1310005a3637b8ec8b70dd');
```

**PADomainUtils - copy (String runAs)**

Copy Performance Analytics configuration records to a different domain.
Table 20: 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>

Table 21: Returns

<table>
<thead>
<tr>
<th>Type</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>void</td>
<td></td>
</tr>
</tbody>
</table>

```javascript
// copy all the Performance Analytics records from global to user's domain
var pa = new SNC.PADomainUtils();
pa.copy('09ff3d105f231000b12e3572f2b4775d');
```

**PADomainUtils - copyJob(String paJob, String runAs)**

Copy a Performance Analytics scheduled data collection job record to another domain.

Table 22: 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 record to.</td>
</tr>
</tbody>
</table>

Table 23: 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>

```javascript
// No source domain needs to be set
var pa = new SNC.PADomainUtils();
// copy the OOTB '[PA Incident] Daily Data Collection job'
// set the 'run as' of the new record to be the 'acme.itil' user
// first argument is the sys_id of the sysauto_pa record
// the second is the sys_id of the acme.itil user record
pa.copyJob('82ba2023d7101b096d45a3ce6103cd','797d1434f1310005a3637b8ec8b7010');
```

**PADomainUtils - move(String runAs)**

Move Performance Analytics configuration records to a different domain.
### Table 24: 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>

### Table 25: Returns

<table>
<thead>
<tr>
<th>Type</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>void</td>
<td></td>
</tr>
</tbody>
</table>

```java
// 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.

### Table 26: 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>
<tr>
<td>id</td>
<td>String</td>
<td>The sys_id of the record to query.</td>
</tr>
</tbody>
</table>

### Table 27: 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>

```java
var pa = new SNC.PADomainUtils();
pa.isWriteable('pa_incidents','cd8125b5140012007665a83e633b028d');
```

### Performance Analytics script variables

Several variables are available for use in Performance Analytics scripts and formula scripts.

The following variables can be used in Performance Analytics scripts and formula indicator scripts. You can obtain a GlideDateTime object from these variables by calling getGlideObject(), such as in the example `gs.info("Score main = " + score_end.getGlideObject().getDayOfWeek());`

- **score_start**: start of the collection period
- **score_end**: end of the collection period
Example script for calculating the age of open incidents:

```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)
```

Visualize Performance Analytics data

Display collected data using scorecards, widgets, and dashboards.

Performance Analytics scorecards

Scorecards display data for a single indicator and allow 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.

Browsing and searching scorecards

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.

- 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.

- 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).

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 system property com.snc.pa.show_welcome_page to false.

Using 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 AnalyticsScorecards, 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](image)

**Figure 4: Detailed scorecard**

**Note:** Very large numbers will be rendered with the appropriate abbreviation. For example, K for thousands and M for 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.
- To view the score at a certain date, click on 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, you can 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 ( ).

**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 allows you to specify which date’s data you want to compare the currently-displayed data with, and a choice list appears allowing you to display specific sets of data:

```
Table 28: Choices

<table>
<thead>
<tr>
<th>Choice</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>All</td>
<td>Displays all records from the data set.</td>
</tr>
<tr>
<td>Shared with</td>
<td>Displays only records that are in both the earlier and the more recent data sets.</td>
</tr>
<tr>
<td>Moved in</td>
<td>Displays 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>Displays 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 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 one of the following chart types from the choice list above the chart:

• Scorecard (default)
• Column
• Pareto
• Line
• Columns & total
• Stacked bar
• Relative compare
• Breakdown matrix
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, all incidents can by listed 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, these 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.

---

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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 single 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’s 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 (   ).

Scorecard Scores tab
The Scores tab on a Performance Analytics detailed scorecard displays a list of collected scores by date, and the formula values for formula indicators.

When viewing the Scores tab for a formula indicator, you can click on 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.

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.

- 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 Performance Analytics 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 grey 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 is generated by the system based on the indicator scores for the selected period.
- 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 taken into account for the calculation. Confidence bands are available starting with Eureka Patch 3 Hotfix 1.
- 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.

No matter which chart type you choose, the trend is always shown as a line.

_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 on 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.

_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 29: Available parameters

<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 allow you to define and reuse visualizations for indicators and display these visualizations on dashboards.

A widget determines how data is presented on dashboards such as in a chart, latest score, speedometer, dial, scorecard, or column. Widgets are always linked to an indicator.

Users with the pa_admin and pa_power_user roles can create and manage widget configurations.

Widgets are global, so:

- Anyone can see a widget you created
- Anyone can use the widget when creating their dashboard
- Anyone can edit your widget

Follow these practices when creating and editing widgets:

- Always create a new widget when you need an alternate view.
- Do not change an existing widget when you did not create it.

Create a widget

Create a widget to specify the data to display, and visualization options based on the widget type.

Role required: pa_admin, pa_power_user, or admin

1. Navigate to Performance Analytics Widgets.
2. Click New.
3. Enter a Name to identify what the widget does. For example, Last score number of open incidents.
4. Enter a Lookup name. The lookup name appears instead of the Name when adding the widget to a dashboard.
5. Enter a more detailed description. For example, Widget to represent the last score of open incidents.
6. Select the type of widget to create.
7. Fill in the rest of the form according to the Type selected.
   For more information about filling out the fields for a specific type, see the appropriate topic.

Create a time series widget

Create a time series widget to display changes in scores over time.

Role required: pa_power_user

Define the time series widget by filling in the following fields.

---

Note: Some choices vary according to the selected Visualization.
Table 30: Time series widget fields

<table>
<thead>
<tr>
<th>Field</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Indicator</td>
<td>Select the indicator you want to display in the widget, such as Number of open incidents.</td>
</tr>
<tr>
<td>Breakdown</td>
<td>Select a breakdown to filter the data by, such as Priority. Scores displayed in the widget are filtered based on this value, such as to show only records with a specific priority.</td>
</tr>
<tr>
<td>Element</td>
<td>Select the default breakdown element to apply. If specified, only records with the selected breakdown value are displayed in the widget. For example, with the Priority breakdown, select the element 1 - Critical to display only records with a critical priority. If you select a breakdown but do not select an element, the widget uses the unmatched breakdown element.</td>
</tr>
<tr>
<td>2nd Breakdown</td>
<td>Select a 2nd-level breakdown to further filter the data by, such as Assignment Group.</td>
</tr>
<tr>
<td>Element</td>
<td>Select the default 2nd-level breakdown element to display. If specified, only records with both the selected breakdown element and 2nd-level breakdown element are included in the widget. If you select a 2nd breakdown but do not select a 2nd element, the widget uses the unmatched breakdown element.</td>
</tr>
<tr>
<td>Indicator group</td>
<td>When displaying multiple indicators, such as in a relative compare visualization, specify a group of indicators instead of a single indicator.</td>
</tr>
<tr>
<td>Time Series</td>
<td>Apply a mathematical aggregation to the widget data for a specific time period. For example, you can display the average yearly score or a weekly sum. You can select only time series that are available for the widget’s indicator. A plus sign (+) at the end of the time series indicates that scores for a partially completed period will be included.</td>
</tr>
<tr>
<td>Follow element</td>
<td>Select this check box to make the widget respond to the selected breakdown on a breakdown dashboard.</td>
</tr>
<tr>
<td>Followed breakdown</td>
<td>If Follow element is selected, specify the breakdown to apply. Data in the widget is filtered based on this breakdown and the element selected in the breakdown dashboard.</td>
</tr>
<tr>
<td>Type</td>
<td>Select Time Series.</td>
</tr>
<tr>
<td>Visualization</td>
<td>Select the visualization to use to display the indicator scores. Certain configuration options are available only for specific visualizations.</td>
</tr>
<tr>
<td>Field</td>
<td>Description</td>
</tr>
<tr>
<td>------------------------------</td>
<td>-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------</td>
</tr>
<tr>
<td>Previous period chart</td>
<td>Select this check box to compare data from previous periods side-by-side. For example, you can compare the number of open incidents per week. Each week is represented in a different color in the same chart for the number of weeks you selected.</td>
</tr>
<tr>
<td>Label</td>
<td>Enter a main series label. Use the main series label to search for similar widgets to add to a dashboard.</td>
</tr>
<tr>
<td>Color</td>
<td>Select a color to use to display the main indicator when there are multiple indicators, such as for the Relative Compare visualization. This color overrides the selected Color scheme.</td>
</tr>
<tr>
<td>Color scheme</td>
<td>Select a chart color scheme to use in the widget.</td>
</tr>
<tr>
<td>Date Settings</td>
<td></td>
</tr>
<tr>
<td>Period</td>
<td>Select the date range to display in the widget. Several options are available.</td>
</tr>
<tr>
<td>Show date range selector</td>
<td>Display a date range selector on the widget that allows users to change the selected period from a dashboard.</td>
</tr>
<tr>
<td>Axis Settings</td>
<td></td>
</tr>
<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>
Create a score widget

Create a score widget to display an aggregate score.

Role required: pa_power_user

Define the score widget by filling in the following fields.

Table 31: Score widget fields

<table>
<thead>
<tr>
<th>Field</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Indicator</td>
<td>Select the indicator you want to display in the widget, such as Number of open incidents.</td>
</tr>
<tr>
<td>Breakdown</td>
<td>Select a breakdown to filter the data by, such as Priority. Scores displayed in the widget are filtered based on this value, such as to show only records with a specific priority.</td>
</tr>
<tr>
<td>Field</td>
<td>Description</td>
</tr>
<tr>
<td>-----------------------</td>
<td>-----------------------------------------------------------------------------</td>
</tr>
<tr>
<td>Element</td>
<td>Select the default breakdown element to apply. If specified, only records with the selected breakdown value are displayed in the widget. For example, with the Priority breakdown, select the element 1 - Critical to display only records with a critical priority. If you select a breakdown but do not select an element, the widget uses the unmatched breakdown element.</td>
</tr>
<tr>
<td>2nd Breakdown</td>
<td>Select a 2nd-level breakdown to further filter the data by, such as Assignment Group.</td>
</tr>
<tr>
<td>Element</td>
<td>Select the default 2nd-level breakdown element to display. If specified, only records with both the selected breakdown element and 2nd-level breakdown element are included in the widget. If you select a 2nd breakdown but do not select a 2nd element, the widget uses the unmatched breakdown element.</td>
</tr>
<tr>
<td>Time Series</td>
<td>Apply a mathematical aggregation to the widget data for a specific time period. For example, you can display the average yearly score or a weekly sum. You can select only time series that are available for the widget’s indicator. A plus sign (+) at the end of the time series indicates that scores for a partially completed period will be included.</td>
</tr>
<tr>
<td>Type</td>
<td>Select Score.</td>
</tr>
<tr>
<td>Visualization</td>
<td>Select the visualization to use to display the indicator scores. Certain configuration options are available only for specific visualizations.</td>
</tr>
<tr>
<td>Template</td>
<td>When the Visualization is Latest Score, select the visualization template to use.</td>
</tr>
<tr>
<td>Follow element</td>
<td>Select this check box to make the widget respond to the selected breakdown on a breakdown dashboard.</td>
</tr>
<tr>
<td>Followed breakdown</td>
<td>If Follow element is selected, specify the breakdown to apply. Data in the widget is filtered based on this breakdown and the element selected in the breakdown dashboard.</td>
</tr>
<tr>
<td>Latest Score Settings</td>
<td></td>
</tr>
<tr>
<td>Compare score with</td>
<td>When the Visualization is Latest Score, select if you want to compare the data with the previous score, or with several previous periods.</td>
</tr>
<tr>
<td>Number of periods back</td>
<td>When Compare score with is Periods Back, specify how many previous periods to compare with the current score.</td>
</tr>
<tr>
<td>Speedometer/Dial Settings</td>
<td></td>
</tr>
</tbody>
</table>
### Create a list widget

Create a list widget to display scores as a list.

**Role required:** pa_power_user

Define the list widget by filling in the following fields.

<table>
<thead>
<tr>
<th>Field</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Indicator group</td>
<td>Select the group of indicators to display on the widget.</td>
</tr>
<tr>
<td>Time Series</td>
<td>Apply a mathematical aggregation to the widget data for a specific time period. For example, you can display the average yearly score or a weekly sum. You can select only time series that are available for the widget’s indicator. A plus sign (+) at the end of the time series indicates that scores for a partially completed period will be included.</td>
</tr>
<tr>
<td>Follow element</td>
<td>Select this check box to make the widget respond to the selected breakdown on a breakdown dashboard.</td>
</tr>
<tr>
<td>Followed breakdown</td>
<td>If Follow element is selected, specify the breakdown to apply. Data in the widget is filtered based on this breakdown and the element selected in the breakdown dashboard.</td>
</tr>
<tr>
<td>Type</td>
<td>Select List.</td>
</tr>
<tr>
<td>Visualization</td>
<td>Select the visualization to use to display the indicator scores. Certain configuration options are available only for specific visualizations.</td>
</tr>
<tr>
<td>Sort on</td>
<td>Define the sort order based on values from the breakdown elements, such as Value or Name, or based on computed metrics, such as Change% or Gap</td>
</tr>
<tr>
<td>Sort direction</td>
<td>Select if the sort order should display higher values first (Descending) or lower values first (Ascending).</td>
</tr>
<tr>
<td>List Settings</td>
<td></td>
</tr>
<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>Field</td>
<td>Description</td>
</tr>
<tr>
<td>---------------------</td>
<td>---------------------------------------------------------------------------------------------------------------------------------------------</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>
<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 that the indicator is moving. The trend is shown in a mini-chart on the dashboard.</td>
</tr>
<tr>
<td>Bullet chart</td>
<td>Display an additional column on the widget that shows how close the latest score is to the latest target score. The additional column only appears if the indicator has a defined target.</td>
</tr>
<tr>
<td>Multiple scores</td>
<td>Adds additional scores to the scorecard.</td>
</tr>
<tr>
<td></td>
<td>If Current Score is also selected, the Score column is counted as the most recent period and N-1 periods are added.</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>Select the length of each period. The unit is based on the frequency of the first indicator.</td>
</tr>
<tr>
<td></td>
<td>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 will show 7 scores for every 1 score of the weekly indicator.</td>
</tr>
<tr>
<td>Change</td>
<td>Displays the change in value from the previous score.</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 breakdown widget

Create a breakdown widget to display a filtered subset of indicator data. For example, a breakdown widget might display open incidents filtered by priority.

Role required: pa_power_user

Define the breakdown widget by filling in the following fields.

Note: Some choices vary according to the selected Visualization.

<table>
<thead>
<tr>
<th>Field</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Indicator</td>
<td>Select the indicator you want to display in the widget, such as Number of open incidents.</td>
</tr>
<tr>
<td>Breakdown</td>
<td>Select a breakdown to filter the data by, such as Priority. Scores displayed in the widget are filtered based on this value, such as to show only records with a specific priority.</td>
</tr>
<tr>
<td>Element</td>
<td>Select the default breakdown element to apply. If specified, only records with the selected breakdown value are displayed in the widget. For example, with the Priority breakdown, select the element 1 - Critical to display only records with a critical priority. If you select a breakdown but do not select an element, the widget uses the unmatched breakdown element.</td>
</tr>
<tr>
<td>2nd Breakdown</td>
<td>Select a 2nd-level breakdown to further filter the data by, such as Assignment Group.</td>
</tr>
<tr>
<td>Element</td>
<td>Select the default 2nd-level breakdown element to display. If specified, only records with both the selected breakdown element and 2nd-level breakdown element are included in the widget. If you select a 2nd breakdown but do not select a 2nd element, the widget uses the unmatched breakdown element.</td>
</tr>
<tr>
<td>Time Series</td>
<td>Apply a mathematical aggregation to the widget data for a specific time period. For example, you can display the average yearly score or a weekly sum. You can select only time series that are available for the widget’s indicator. A plus sign (+) at the end of the time series indicates that scores for a partially completed period will be included.</td>
</tr>
<tr>
<td>Type</td>
<td>Select Breakdown.</td>
</tr>
<tr>
<td>Visualization</td>
<td>Select the visualization to use to display the indicator scores. Certain configuration options are available only for specific visualizations.</td>
</tr>
<tr>
<td>Field</td>
<td>Description</td>
</tr>
<tr>
<td>----------------------------</td>
<td>-----------------------------------------------------------------------------</td>
</tr>
<tr>
<td>Color</td>
<td>Select a color to use to display the main indicator when there are multiple indicators, such as for the Relative Compare visualization. This color overrides the selected Color scheme.</td>
</tr>
<tr>
<td>Sort on</td>
<td>Define the sort order based on values from the breakdown elements, such as Value or Name, or based on computed metrics, such as Change % or Gap</td>
</tr>
<tr>
<td>Sort direction</td>
<td>Select if the sort order should display higher values first (Descending) or lower values first (Ascending).</td>
</tr>
<tr>
<td>Color scheme</td>
<td>Select a chart color scheme to use in the widget.</td>
</tr>
<tr>
<td>Follow element</td>
<td>Select this check box to make the widget respond to the selected breakdown on a breakdown dashboard.</td>
</tr>
<tr>
<td>Followed breakdown</td>
<td>If Follow element is selected, specify the breakdown to apply. Data in the widget is filtered based on this breakdown and the element selected in the breakdown dashboard.</td>
</tr>
<tr>
<td>Date Settings</td>
<td></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 Column, Line, Column and Total, or Stacked Column as the Visualization</td>
</tr>
<tr>
<td>Show date range selector</td>
<td>Display a date range selector on the widget that allows 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>
<tr>
<td>Display Settings</td>
<td></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 visualization selector</td>
<td>Display a choice list on the widget that allows users to change the selected visualization from a dashboard.</td>
</tr>
<tr>
<td></td>
<td>Note: You cannot select the Pivot Scorecard visualization from a dashboard. You must configure the widget record to use this visualization.</td>
</tr>
<tr>
<td>Field</td>
<td>Description</td>
</tr>
<tr>
<td>-------------------------------</td>
<td>-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------</td>
</tr>
<tr>
<td>Show breakdown selector</td>
<td>Display a choice list on the widget that allows 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.</td>
</tr>
<tr>
<td>Breakdown Settings</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 Priority can be: Critical, High, Moderate, Low or Planning.</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 Manual elements check box to display the Widget Elements related list for adding elements. Clear the Manual elements 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 Number of elements in the breakdown charts can also be specified at System Properties. The top x for a widget cannot be higher than the property maximum.</td>
</tr>
<tr>
<td>Percentages</td>
<td>If you select No percentages, no score percentages are shown for the instances. If you select Percentage of elements, 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 Scorecard in the Visualization 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>Column Settings</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>Field</td>
<td>Description</td>
</tr>
<tr>
<td>---------------</td>
<td>---------------------------------------------------------------------------------------------------------------------------------------------</td>
</tr>
<tr>
<td>Multiple scores</td>
<td>Adds additional scores to the scorecard. Select the number of additional scores to display in Number of periods. Select the length of each period in Period step. If Current Score 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>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>

After creating a widget, navigate to Performance Analytics Dashboards to add the widget to a dashboard.

Create a heatmap widget
Create a heatmap widget to visually compare scores in a pivot table using two breakdowns as the table axes.

Role required: pa_power_user
You must have an indicator with at least two breakdowns to create a heatmap widget. Each breakdown defines one axis for the heatmap table.

Define the heatmap widget by filling in the following fields.

Table 34: Heatmap widget fields

<table>
<thead>
<tr>
<th>Field</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Indicator</td>
<td>Select the indicator you want to display in the widget, such as Number of open incidents.</td>
</tr>
<tr>
<td>Type</td>
<td>Select Pivot.</td>
</tr>
<tr>
<td>Visualization</td>
<td>Select Heatmap.</td>
</tr>
<tr>
<td>Breakdown</td>
<td>Select the breakdown to use as the horizontal axis of the heatmap. Scores are organized into cells in the heatmap for each combination of breakdown elements from the Breakdown and 2nd Breakdown.</td>
</tr>
<tr>
<td>2nd Breakdown</td>
<td>Select the breakdown to use as the vertical axis of the heatmap.</td>
</tr>
<tr>
<td>Display Settings</td>
<td>Display the score for each portion of the chart, such as for each slice of a pie chart.</td>
</tr>
<tr>
<td>Field</td>
<td>Description</td>
</tr>
<tr>
<td>--------------</td>
<td>---------------------------------------------------------------------------------------------------------------------------------------------</td>
</tr>
<tr>
<td>Max color</td>
<td>Select the color that appears in heatmap cells with the highest value. Cells with lower values appear less saturated. Cells with no score or a 0 score appear white.</td>
</tr>
</tbody>
</table>

Interacting with breakdown widgets on dashboards

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

Widgets with the Type of Breakdown allow 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 allow 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.

If the Follow element check box is selected on the Widget form, the interactive breakdown applies as the 2nd-level breakdown. If Follow element is not selected, the interactive breakdown applies as the 1st-level breakdown.

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.

Monitor a workflow with a workbench process widget

A workbench process widget is a collection of indicators that tell a story, and that allows 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.

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

The video at the following link shows how to use a workbench widget and how to create a new one:

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 eight.
   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.

<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. 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. 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>Follow element</td>
<td>Specifies that a breakdown element applied to the dashboard where the widget is added also applies to the indicator. If you specify a 2nd Breakdown, Follow element is ignored.</td>
</tr>
</tbody>
</table>
e) Right-click the form header and select Save.
   The Supporting Widget indicators list appears.

6. Add supporting indicators.
   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. 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.

Show breakdown relations on widgets

Performance Analytics widgets can display related breakdown information if breakdown relations are defined for the selected breakdown.

When creating a widget, select a breakdown that has one or more breakdown relations and select the Follow element check box. Leave the Followed breakdown field empty. The resulting widget displays data for each related breakdown.
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:g="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('7dafa6602d7130100b96d45a3ce6103c8')">Resolved Incidents</a><br />
</j:jelly>
```

Relative compare visualization to compare multiple data elements over time

Use a relative compare visualization to compare multiple data elements, such as indicators or breakdowns, over time.
Think of a relative compare visualization as a pie chart with an additional time component. 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.

Figure 9: Example of a relative compare visualization

Create a relative compare visualization for a breakdown widget

Create a visualization that compares multiple elements (dimensions) of an indicator over time.

Role required: pa_admin, pa_power_user, or admin

1. Navigate to Performance Analytics Widgets.
2. Click New.
3. Fill in these fields.

<table>
<thead>
<tr>
<th>Field</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Type</td>
<td>Select Breakdown.</td>
</tr>
<tr>
<td>Visualization</td>
<td>Select Relative Compare.</td>
</tr>
</tbody>
</table>
4. Fill in the other fields, as appropriate.
5. Click Submit.

To view the widget, add it to a dashboard.

Create a relative compare visualization for a time series widget
Create a visualization that compares multiple indicators over time.

Role required: pa_admin, pa_power_user, or admin

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. Right-click the form header and select Save.
7. 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.
8. 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.
9. Fill in the other fields, as appropriate.
10. Click Update.

To view the widget, add it to a dashboard.

Create a chart color scheme
Create a chart 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. Select up to 32 total colors to include in the color scheme.
6. Click Submit.

Configure a widget to use the chart color scheme.

View widget statistics

You can view statistics about Performance Analytics widgets, such as how long it takes the widget to load.

Role required: pa_power_user, pa_admin, or admin

View widget statistics to help identify and resolve problems with widgets, such as if a widget is loading slowly on dashboards.

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

Table 36: 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. The maximum number of recent executions is determined by the property glide.report.recent_executions_number.</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 37: Properties

<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 the property</td>
</tr>
</tbody>
</table>
Real time data

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 on 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 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.

Forecasting Performance Analytics data

Performance Analytics allows 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 following the trend line.

To enable forecasting for a time series widget, select the Show forecast check box in the Display Settings section of the Widgets form.

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

The number of data points included in the forecast depends on the indicator score frequency.

Note: The score frequency is based on the selected aggregation. For example, the 7d running SUM aggregation is a daily frequency, whereas the By week SUM aggregation is a weekly frequency. The score frequency may vary from the indicator Frequency field value.

Table 38: Forecast points

<table>
<thead>
<tr>
<th>Score frequency</th>
<th>Number of forecast points</th>
</tr>
</thead>
<tbody>
<tr>
<td>Daily</td>
<td>28</td>
</tr>
<tr>
<td>Weekly</td>
<td>4</td>
</tr>
<tr>
<td>Monthly, Quarterly, and Fiscal Quarterly</td>
<td>3</td>
</tr>
<tr>
<td>Biweekly, Bimonthly, and Half Yearly</td>
<td>2</td>
</tr>
<tr>
<td>Yearly and Fiscal Yearly</td>
<td>1</td>
</tr>
</tbody>
</table>

In-form analytics

With in-form analytics you can access Performance Analytics dashboards directly from a form, using data from the form to filter and organize the dashboard data.
In-form analytics allows you to add contextual analytics buttons to fields on a form. Clicking one of these buttons opens a breakdown dashboard based on the value of the field. You can control which dashboard is displayed for each button, and the appearance of the buttons.

Add in-form analytics to a form

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

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

Performance Analytics Premium must be active to create new 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.

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

Table 39: 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>

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 allows 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 40: Supported parameters

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Description</th>
</tr>
</thead>
</table>
| sysparm_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.  

See Performance Analytics API Examples for examples of fully-constructed sysparm_uuid values. |
<p>| sysparm_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.                                                      |
| sysparm_include_scores    | Set this parameter 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.                                                                                                               |
| sysparm_include_aggregates| Set this parameter 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.                                                                                   |
| sysparm_include_available_breakdowns | Set this parameter 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.                                                                 |</p>
<table>
<thead>
<tr>
<th>Parameter</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>sysparm_include_available_aggregates</td>
<td>Set this parameter 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>sysparm_display_value</td>
<td>Data retrieval operation for reference and choice fields. Based on this value, retrieves the display value and/or the actual value from the database.</td>
</tr>
<tr>
<td></td>
<td>• true returns display values for all fields.</td>
</tr>
<tr>
<td></td>
<td>• false returns actual values from the database. If a value is not specified, this parameter defaults to false.</td>
</tr>
<tr>
<td></td>
<td>• all returns both actual and display values.</td>
</tr>
<tr>
<td></td>
<td>Note: There is no preferred method for setting this parameter. However, specifying the display value may cause performance issues since it is not reading directly from the database and may include referencing other fields and records. For more information on display values and actual values, see Table API FAQs (KB0534905).</td>
</tr>
<tr>
<td>sysparm_exclude_reference_link</td>
<td>Set this parameter to true to hide additional information provided for reference fields, such as the URI to the reference resource.</td>
</tr>
<tr>
<td>sysparm_favorites</td>
<td>Set this parameter to true to return only scorecards that are favorites of the querying user.</td>
</tr>
<tr>
<td>sysparm_key</td>
<td>Set this parameter to true to return only scorecards for key indicators.</td>
</tr>
<tr>
<td>sysparm_target</td>
<td>Set this parameter to true to return only scorecards that have a target.</td>
</tr>
<tr>
<td>sysparm_display</td>
<td>Set this parameter 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.</td>
</tr>
<tr>
<td>sysparm_contains</td>
<td>Enter a comma-separated list of names or descriptions to return only scorecards with a matching value.</td>
</tr>
<tr>
<td>sysparm_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>sysparm_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>sysparm_page</td>
<td>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.</td>
</tr>
</tbody>
</table>

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### Parameter Description

<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. Use sysparm_sortdir=asc to sort in ascending order.</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>
</tbody>
</table>

### Headers

Table 41: 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 42: Status codes

<table>
<thead>
<tr>
<th>Status code</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>200</td>
<td>Indicates 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:

```json
{
  "result": [
    {
      "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": "Maximize",
      "uuid": "002d65c3d7131100b96d45a3ce6103e2",
      "name": "% of incidents resolved by first assigned group",
      "value_color": "#000000",
      "frequency_label": "Daily",
      "change": null,
      "gapperc_formatted": "",
      "gap_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"
      },
      "changeperc_formatted": "",
      "direction": 3,
      "frequency": 10,
      "precision": 2,
      "changeperc": null,
      "indicator": {
        "display_value": "% of incidents resolved by first assigned group",
        "link": "https://instance.service-now.com/api/now/v1/table/pa_indicators/002d65c3d7131100b96d45a3ce6103e2",
        "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": "Maximize",
      "uuid": "002d65c3d7131100b96d45a3ce6103e2",
      "name": "% of incidents resolved by first assigned group",
      "value_color": "#000000",
      "frequency_label": "Daily",
      "change": null,
      "gapperc_formatted": "",
      "gap_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"
      },
      "changeperc_formatted": "",
      "direction": 3,
      "frequency": 10,
      "precision": 2,
      "changeperc": null,
      "indicator": {
        "display_value": "% of incidents resolved by first assigned group",
        "link": "https://instance.service-now.com/api/now/v1/table/pa_indicators/002d65c3d7131100b96d45a3ce6103e2",
        "value": "002d65c3d7131100b96d45a3ce6103e2"
      },
      "description": "Percentage of incidents resolved by first assigned group."
    }
  ]
}
```
"target" : null,
"period" : null,
"target_formatted" : "",
"favorite" : false,
"direction_label" : "Minimize",
"uuid" : "4660f602d7130100b9645a3ce610383",
"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" : "%",
  "link" : "https://instance.service-now.com/api/now/v1/table/pa_units/f9c365e2d7320100ba986f14ce61038b",
  "value" : "f9c365e2d7320100ba986f14ce61038b"
},
"changeperc_formatted" : "",
"direction" : 2,
"frequency" : 10,
"precision" : 2,
"changeperc" : null,
"indicator" : {
  "display_value" : "% of new critical incidents",
  "link" : "https://instance.service-now.com/api/now/v1/table/pa_indicators/4660f602d7130100b9645a3ce610383",
  "value" : "4660f602d7130100b9645a3ce610383"
},
"description" : "Number of new critical incidents as a percentage of number of new incidents.

"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" : "f0f07202d7130100b9645a3ce610383",
"name" : "% of open incidents not updated in last 30 days",
"value_color" : "#000000",
"frequency_label" : "Daily",
"change" : null,
"gap_formatted" : "",
"gapperc_formatted" : "",
"formula" : "((Number of open incidents not updated in last 30 days) / (Number of open incidents)) * 100",
"value" : null,
"unit" : {
  "display_value" : "%",
  "link" : "https://instance.service-now.com/api/now/v1/table/pa_units/f9c365e2d7320100ba986f14ce61038b",
  "value" : "f9c365e2d7320100ba986f14ce61038b"
},
"change_formatted" : "",
"key" : true,
"changeperc_formatted" : "",
"direction" : 2,
"frequency" : 10,
"precision" : 2,
"changeperc" : null,
"indicator" : {
  "display_value" : "% of open incidents not updated in last 30 days",
  "link" : "https://instance.service-now.com/api/now/v1/table/pa_indicators/f0f07202d7130100b9ed45a3ce610383",
  "value" : "f0f07202d7130100b9ed45a3ce610383"
},
"description" : "Number of open incidents not updated in last 30 days as a percentage of number of open incidents."
},
{
  "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" : "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,
  "frequency" : 10,
  "precision" : 2,
  "changeperc" : null,
  "indicator" : {
    "display_value" : "% of open incidents not updated in last 5 days",
    "link" : "https://instance.service-now.com/api/now/v1/table/pa_indicators/fd51f602d7130100b96d45a3ce610385",
    "value" : "fd51f602d7130100b96d45a3ce610385"
  },
  "description" : "Number of open incidents not updated in last 5 days as a percentage of number of open incidents."
},
{
  "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" : "88a0b602d7130100b96d45a3ce61030c",
"name" : "Average age open incidents",
"value_color" : "#000000",
"frequency_label" : "Daily",
"change" : null,
"gap_formatted" : "",
"gapperc_formatted" : "",
"formula" : "[[Summed age of open incidents]] / [[Number of open incidents]] / 24",
"value" : null,
"unit" : {
  "display_value" : "Days",
  "link" : "https://instance.service-now.com/api/now/v1/table/pa_units/94d365e2d7320100ba986f14ce6103be",
  "value" : "94d365e2d7320100ba986f14ce6103be"
},
"changeperc_formatted" : "",
"direction" : 2,
"frequency" : 10,
"precision" : 2,
"changeperc" : null,
"indicator" : {
  "display_value" : "Average age open incidents",
  "link" : "https://instance.service-now.com/api/now/v1/table/pa_indicators/88a0b602d7130100b96d45a3ce61030c",
  "value" : "88a0b602d7130100b96d45a3ce61030c"
},
"description" : "Summed age open incidents / Number of open incidents / 24 hours"},
"changeperc_formatted" : "",
"direction" : 2,
"frequency" : 10,
"precision" : 2,
"changeperc" : null,
"indicator" : {
  "display_value" : "Average resolution time of resolved incidents",
  "link" : "https://instance.service-now.com/api/now/v1/table/pa_indicators/6fbb7202d7130100b96d45a3ce610360",
  "value" : "6fbb7202d7130100b96d45a3ce610360"
},
"description" : "Average resolution time of resolved incidents"
},
{
  "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" : "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"
  },
  "changeperc_formatted" : "",
  "direction" : 2,
  "frequency" : 10,
  "precision" : 0,
  "changeperc" : null,
  "indicator" : {
    "display_value" : "Incident backlog growth",
    "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,
"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 new incidents",
  "link" : "https://instance.service-now.com/api/now/v1/table/pa_indicators/31efe602d7130100b96d45a3ce610300",
  "value" : "31efe602d7130100b96d45a3ce610300"
},
"description" : "Number of incidents based on registration date."
},
{
  "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" : "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,
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:
curl -v -u "admin:admin" -H "Accept:application/json"
"https://instance.service-now.com/api/now/v1/pa/scorecards?
sysparm_uuid=fb007202d7130100b96d45a3ce6103b4"

Response:

{
  "result" : [
    {
      "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" : "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."
    }
  ]
}

Return the scorecard with all breakdowns and aggregates

You can query a list of available breakdowns and aggregates for an indicator by setting the sysparm_include_available_breakdowns and sysparm_include_available_aggregates parameters 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&sysparm_include_available_breakdowns=true&sysparm_include_available_aggregates=true"
Response:
{
  "result": [
    {
      "key": false,
      "change_formatted": "",
      "aggregates": [
        {
          "display_value": "7d running SUM",
          "link": "https://instance.service-now.com/api/now/v1/table/pa_aggregates/89ea4c11d7001100ba986f14ce6103dc",
          "value": "89ea4c11d7001100ba986f14ce6103dc"
        },
        {
          "display_value": "28d running SUM",
          "link": "https://instance.service-now.com/api/now/v1/table/pa_aggregates/4dfa4c11d7001100ba986f14ce6103e2",
          "value": "4dfa4c11d7001100ba986f14ce6103e2"
        },
        {
          "display_value": "30d running SUM",
          "link": "https://instance.service-now.com/api/now/v1/table/pa_aggregates/3e409011d7001100ba986f14ce610319",
          "value": "3e409011d7001100ba986f14ce610319"
        },
        {
          "display_value": "7d running AVG",
          "link": "https://instance.service-now.com/api/now/v1/table/pa_aggregates/9ef05051d7001100ba986f14ce610372",
          "value": "9ef05051d7001100ba986f14ce610372"
        },
        {
          "display_value": "28d running AVG",
          "link": "https://instance.service-now.com/api/now/v1/table/pa_aggregates/ee015051d7001100ba986f14ce610378",
          "value": "ee015051d7001100ba986f14ce610378"
        },
        {
          "display_value": "30d running AVG",
          "link": "https://instance.service-now.com/api/now/v1/table/pa_aggregates/d5115051d7001100ba986f14ce61038b",
          "value": "d5115051d7001100ba986f14ce61038b"
        },
        {
          "display_value": "By week SUM",
          "link": "https://instance.service-now.com/api/now/v1/table/pa_aggregates/75a15011d7001100ba986f14ce6103ee",
          "value": "75a15011d7001100ba986f14ce6103ee"
        },
        {
          "display_value": "By month SUM",
          "link": "https://instance.service-now.com/api/now/v1/table/pa_aggregates/80e19051d7001100ba986f14ce610320",
          "value": "80e19051d7001100ba986f14ce610320"
        },
        {
          "display_value": "By quarter SUM",
          "link": "https://instance.service-now.com/api/now/v1/table/pa_aggregates/03e19051d7001100ba986f14ce610327",
          "value": "03e19051d7001100ba986f14ce610327"
        },
        {
          "display_value": "By fiscal quarter SUM",
          "value": ""
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:

curl -v -u "admin:admin" -H "Accept:application/json" 
"https://<instance>.service-now.com/api/now/v1/pa/scorecards?
sysparm_uid=fb007202d7130100b96d45a3ce6103b4:baec0752bf130100b96dac808c0739ed:287ee6f6e9b93f882a4c077e90e2e9b3&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."
      "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/287ee6fe9fe1981000da7950d0b1b73",
"value": "287ee6fe9fe1981000da7950d0b1b73",
"precision": 0,
"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": "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/301fd511eb23310065deac6ea206fe31",
"value": "301fd511eb23310065deac6ea206fe31"
},
{
"display_value": "Parent Group",
"link": "https://<instance>.service-now.com/api/now/v1/table/pa_breakdown_relations/790b6e11eb23310065deac6ea206f1c",
"value": "790b6e11eb23310065deac6ea206f1c"
},
{
"display_value": "Sibling Groups",
"link": "https://<instance>.service-now.com/api/now/v1/table/pa_breakdown_relations/15e15a12eb233100871aac6ea206fe59",
"value": "15e15a12eb233100871aac6ea206fe59"
}
],
"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 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:baec0752bf130100b96dac808c0739ed:db53580b0a0a0a6501aa37c294a2ba6b&sysparm_breakdown_relation=790b6e11eb23310065deac6aa206fe1c"
```

Response:
```
{
  "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/287ee6fea9fe198100ada7950d0b1b73",
        "value": "287ee6fea9fe198100ada7950d0b1b73"
      }
    }
  ]
}
```
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=656d5662eb23310065deac6aa206fee7"

Response:

```
{
  "result": [

    ...,  

    "element": {
      "display_value": "San Diego",
      "link": "https://<instance>.service-now.com/api/now/v1/table/cmmentocation/108752c8c61227501d4ab0e392ba97f",
      "value": "108752c8c61227501d4ab0e392ba97f",
      "longitude": -117.15726,
      "latitude": 32.71533
    },
    ...

    ...,  

    "element": {
      "display_value": "Florida",
      "link": "https://<instance>.service-now.com/api/now/v1/table/cmmentocation/8e3e85f037d0200044e0bfc8bcbe5d14",
      "value": "8e3e85f037d0200044e0bfc8bcbe5d14",
      "longitude": -95.71289,
    }
  ]
}```
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:

```
```

Response:

```
{
    "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/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/1230000000b96dac808c0739ed"
            }
        }
    ]
}
```
"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:287ee6fea9fe198100ada7950d0b1b73",
"gapFormatted": 
"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:db53580b0a0a6501aa37c294a2ba6b"
"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": 
  "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": 
  "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"}
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:

```json
{
    "result": [
        {
            "key": false,
            "change_formatted": "",
            "value_unit": "",
            "value_formatted": "",
            "period_title": null,
            "aggregate": {
                "display_value": "7d running SUM",
                "link": "https://instance.service-now.com/api/now/v1/table/pa_aggregates/89ea4c11d7001100ba986f14ce6103dc",
                "value": "89ea4c11d7001100ba986f14ce6103dc"
            },
            "gapperc": null,
            "target": null,
            "period": null,
            "target_formatted": "",
            "favorite": false,
            "gap": null,
            "direction_label": "Minimize",
            "uuid": "fb007202d7130100b96d45a3ce6103b4:89ea4c11d7001100ba986f14ce6103dc",
            "name": "Number of open incidents / 7d running SUM",
            "value_color": "#000000",
            "frequency_label": "Daily",
            "change": null,
            "gap_formatted": "",
            "gapperc_formatted": "",
            "value": null,
            "unit": {
                "display_value": 
```
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"

Response:

```json
{
    "result": [
        {
            "key": false,
            "change_formatted": "0",
            "changeperc": 0,
            "value_unit": "15",
            "valueFormatted": "15",
            "period_title": "Mar 23",
            "gapperc": null,
            "gap": null,
            "target": null,
            "period": "Mar 23",
            "targetFormatted": "",
            "favorite": false,
            "direction_label": "Minimize",
            "uuid": "fb007202d7130100b96d45a3ce6103b4:0df47e02d7130100b96d45a3ce610399:dce1db9cc803310026c1c49f3d065511",
            "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/17b365e2d7320100ba986bf14ce6103ad",
                "value": "17b365e2d7320100ba986bf14ce6103ad"
            },
            "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,
```
Number of open incidents / Priority / 3 - Moderate

- **change**: 0
- **changeperc**: 0
- **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"

- **changeperc**: 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.
"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."}
"link" : "https://instance.service-now.com/api/now/v1/table/sys_choice/d0e1db9cc803310026c1c49f3d065512",
   "value" : "d0e1db9cc803310026c1c49f3d065512"
},
"change" : 0,
"gap_formatted" : "",
"gapperc_formatted" : "",
"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"
},
"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" : "1",
   "value_formatted" : "1",
   "period_title" : "Mar 23",
   "gapperc" : null,
   "gap" : null,
   "target" : null,
   "period" : "Mar 23",
   "target_formatted" : "",
   "favorite" : false,
   "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""}
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 allows 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:

```json
{
  "result": [
    {
      "key": false,
      "direction": 2,
      "change_formatted": "0",
      "changeperc": 0,
      "value_formatted": "15",
      "gapperc": null,
      "value_unit": "15",
      "target": null,
      "period": "Mar 23",
      "target_formated": ",",
      "favorite": false,
      "gap": null,
      "direction_label": "Minimize",
      "uuid": "fb007202d7130100b96d45a3ce6103b4:0df47e02d7130100b96d45a3ce610399:dce1db9cc803310026c1c49f3d065511",
      "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"
},
"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."
}
"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",
      "link" : "https://instance.service-now.com/api/now/v1/table/pa_breakdowns/1f918835d7231100b96d45a3ce6103fe",
      "value" : "1f918835d7231100b96d45a3ce6103fe"
    },
    {
      "display_value" : "Assignment Group",
      // More objects...
    }
  ]
}
"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."
},
{
"key": false,
"direction": 2,
"change_formatted": "0",
"changeperc": 0,
"value_formatted": "3",
"period_title": "Mar 23",
"gapperc": null,
"value_unit": "3",
"target": null,
"period": "Mar 23",
"target_formatted": ",",
"favorite": false,
"gap": null,
"direction_label": "Minimize",
"uuid": "fb007202d7130100b96d45a3ce6103b4:0df47e02d7130100b96d45a3ce610399:d0e1db9cc803310026c1c49f3d065512",
"name": "Number of open incidents / Priority / 5 - Planning",
"value_color": "#000000",
"frequency_label": "Daily",
"element": {
"display_value": "5 - Planning",
"link": "https://instance.service-now.com/api/now/v1/table/sys_choice/d0e1db9cc803310026c1c49f3d065512",
"value": "d0e1db9cc803310026c1c49f3d065512"
},
"change": 0,
"gap_formatted": ",",
"gapperc_formatted": ",",
"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."}
<table>
<thead>
<tr>
<th>Element</th>
<th>Display Value</th>
<th>Link</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Value</td>
<td>4 - Low</td>
<td><a href="https://instance.service-now.com/api/now/v1/table/sys_choice/90e1db9cc803310026c1c49f3d065512">https://instance.service-now.com/api/now/v1/table/sys_choice/90e1db9cc803310026c1c49f3d065512</a></td>
<td>90e1db9cc803310026c1c49f3d065512</td>
</tr>
<tr>
<td>Change</td>
<td>0</td>
<td></td>
<td>0</td>
</tr>
<tr>
<td>Gap Formatted</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Gapperc Formatted</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Frequency</td>
<td>10</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Unit</td>
<td>#</td>
<td><a href="https://instance.service-now.com/api/now/v1/table/pa_units/17b365e2d7320100ba986f14ce6103ad">https://instance.service-now.com/api/now/v1/table/pa_units/17b365e2d7320100ba986f14ce6103ad</a></td>
<td>17b365e2d7320100ba986f14ce6103ad</td>
</tr>
<tr>
<td>Breakdown</td>
<td>Priority</td>
<td><a href="https://instance.service-now.com/api/now/v1/table/pa_breakdowns/0df47e02d7130100b96d45a3ce610399">https://instance.service-now.com/api/now/v1/table/pa_breakdowns/0df47e02d7130100b96d45a3ce610399</a></td>
<td>0df47e02d7130100b96d45a3ce610399</td>
</tr>
<tr>
<td>Breakdowns</td>
<td>Category</td>
<td><a href="https://instance.service-now.com/api/now/v1/table/pa_breakdowns/1f918835d7231100b96d45a3ce6103fe">https://instance.service-now.com/api/now/v1/table/pa_breakdowns/1f918835d7231100b96d45a3ce6103fe</a></td>
<td>1f918835d7231100b96d45a3ce6103fe</td>
</tr>
<tr>
<td></td>
<td>Assignment</td>
<td><a href="https://instance.service-now.com/api/now/v1/table/pa_breakdowns/baec0752bf130100b96dac808c0739ed">https://instance.service-now.com/api/now/v1/table/pa_breakdowns/baec0752bf130100b96dac808c0739ed</a></td>
<td>baec0752bf130100b96dac808c0739ed</td>
</tr>
<tr>
<td></td>
<td>State</td>
<td><a href="https://instance.service-now.com/api/now/v1/table/pa_breakdowns/f0647e02d7130100b96d45a3ce61030b">https://instance.service-now.com/api/now/v1/table/pa_breakdowns/f0647e02d7130100b96d45a3ce61030b</a></td>
<td>f0647e02d7130100b96d45a3ce61030b</td>
</tr>
<tr>
<td></td>
<td>Age</td>
<td><a href="https://instance.service-now.com/api/now/v1/table/pa_breakdowns/65947e02d7130100b96d45a3ce61033a">https://instance.service-now.com/api/now/v1/table/pa_breakdowns/65947e02d7130100b96d45a3ce61033a</a></td>
<td>65947e02d7130100b96d45a3ce61033a</td>
</tr>
</tbody>
</table>

**Description:**
Number of incidents open based on resolved date is empty.
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:
{
  "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": "",
      "unit": {
        "display_value": "#",
        "link": "http://instance.service-now.com/api/now/v1/table/pa_units/17b365e2d7320100ba986f14ce6103ad",
        "value": "17b365e2d7320100ba986f14ce6103ad"
      },
      "frequency_label": "Daily",
      "target": null,
      "changeperc": null,
    }
  ]
}
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",
        "link": "http://instance.service-now.com/api/now/v1/table/sys_choice/e5900140200331007665978299a805f3",
        "value": "e5900140200331007665978299a805f3"
      },
      "precision": 0,
      "element_level2": {
        "display_value": "Database",
        "link": "http://instance.service-now.com/api/now/v1/table/sys_choice/9e418d40200331007665978299a805c1",
        "value": "9e418d40200331007665978299a805c1"
      }
    }
  ]
}
```
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:e5900140200331007665978299a805f3:1f918835d7231100b96d45a3ce6103fe:9e418d40200331007665978299a805c1&sysparm_include_scores=true"

Response:
{
  "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,
      "scores": [
        {
          "end_at": "2015-03-23",
          "period": "Mar 23",
          "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,
          "scores": [
            {
              "end_at": "2015-03-23",
              "period": "Mar 23",
              "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,
              "scores": [
                {
                  "end_at": "2015-03-23",
                  "period": "Mar 23",
                  "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,
                  "scores": [
                    {
                      "end_at": "2015-03-23",
                      "period": "Mar 23",
                      "change_formatted": "0",
                      "changeperc": 0,
                      "value_unit": "15",
                      "value_formatted": "15",
                      "period_title": "Mar 23",
                      "gapperc": null,
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Performance Analytics and Reporting

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 allows 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 you have completed the following prerequisites with the LinkedIn service:

- A LinkedIn Client Application is associated with your company’s LinkedIn profile.
• Configure the Client Application with the redirect URL for your instance. You can view this URL by creating a new 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 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 will change 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 these 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 allows 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 3 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 you have complete 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 will change 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.

Example integration - Yahoo stocks

Performance Analytics includes an optional example integration that demonstrates how to fetch data from the Yahoo stocks service and display it on a Performance Analytics dashboard.

The integration allows you to regularly query stock information for various stock symbols from the Yahoo service, and display that stock information over time using Performance Analytics.

The integration uses outbound REST to query the Yahoo API. You can customize this query in the StockQuotesCollector script include. All stock information is stored on the u_pa_stock_symbols table.

To use the Yahoo stocks integration you must activate the Performance Analytics - Example - Stocks Quotes plugin. Activating this plugin also adds the 50d running AVG, 100d running AVG, and 200d running AVG time series.

Configure Yahoo stocks integration

Configure the Yahoo stocks integration to display stock quote information in Performance Analytics.

Role required:
pa_stock_quotes_user, pa_stock_symbols_user, and pa_admin

1. Navigate to Stock Quotes Symbols.
2. Define which stocks you want to track by adding a new record for each stock symbol, such as NOW.
3. Navigate to Stock Quotes Stock Quotes Collector.
4. Schedule this job to run at least once.
   The initial data collection job runs. Wait for this job to complete before moving on.
5. Navigate to Stock Quotes PA Data Collector Job.
6. Schedule this job to run at least once.

After collecting the stock information, navigate to Stock Quotes Dashboard to view the collected information.

Visualizing Yahoo stock data

You can display Yahoo stock information in a widget.

The UI macro pa_stock_quote_widget allows you to visualize stock quote information for a specific stock symbol. This widget displays real time data based on the u_pa_stock_quotes table.

This example shows a dynamic content block displaying stock data for the NOW symbol.

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<?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:macro_invoke macro="pa_stock_quote_widget" symbol="NOW"/>
</j:jelly>
```

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 allows 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 for 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.

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. 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 (➡️).
3. Select how you want to share or save the image using your device’s default options.

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

- [Helsinki Release Notes](#)
- [Upgrade to Helsinki](#)

Use

- Getting started with reports
- Report types and creation details
- Add a report to a homepage or dashboard

Administer

- Reporting roles
- Administering reports
- Distribute reports

Troubleshoot and get help

- Ask or answer questions in the community
- Search the HI knowledge base for known issues

Advanced Reporting

- Drilling down within reports
- Using multiple datasets in a report
- Interactive filters

Videos

Watch Reporting videos
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 an 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 report you want to run.

Run a report from a list

You can create a 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.
   The report is generated.

Create a report

Create a report to visualize and analyze current instance data.

1. Do one of the following:

<table>
<thead>
<tr>
<th>Option</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Create a new report</td>
<td>Navigate to Reports Create New.</td>
</tr>
<tr>
<td>Edit an existing report</td>
<td>Navigate to Reports View / Run  and click the edit icon ( ) beside the report name.</td>
</tr>
</tbody>
</table>
Edit a report on a dashboard

Navigate to the dashboard where the report resides and click Edit. To edit a report, click its edit icon (✏️).

2. Fill in the fields, as appropriate.
3. Click Save.

The report is generated.

Note: For details on creating a specific report type, use the link below to navigate to information about that report type.

Report options

Use the report options menu above any report to manage the report. For example, you can save, share, publish, or export the report. All reporting options are described in following table.

Note: Some options appear in this menu before you save a report. All of the options available to you will appear after you save the report.

Table 43: Report Options

<table>
<thead>
<tr>
<th>Name</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Run</td>
<td>Creates the report according to the information in the form.</td>
</tr>
<tr>
<td>Save</td>
<td>Saves any changes to the form and leaves the form open.</td>
</tr>
<tr>
<td>Update</td>
<td>Saves any changes to the form and returns to the Reports list.</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 new report quickly by changing a few 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 new report quickly by changing a few values in an existing report. Be sure to give the new report a unique name. Starting with the Fuji release.</td>
</tr>
<tr>
<td>Publish</td>
<td>Creates a URL for the report and displays the address above the report form. You can email this URL to people who must view the report.</td>
</tr>
<tr>
<td>Delete</td>
<td>Deletes the report.</td>
</tr>
<tr>
<td>Schedule</td>
<td>Creates a schedule for running the report. You cannot schedule calendar reports.</td>
</tr>
</tbody>
</table>
### Name | Description
--- | ---
Add to Dashboard | Adds the current report to a dashboard or homepage.

**Note:** Users can add reports to any homepage they can view. Users who do not have edit rights to a homepage can create new homepages with the added information when they modify a homepage that they don’t own.

Sharing | Opens a dialog box in which you can change the sharing settings.

Export settings | Opens a dialog box in which you can change the export settings.

Export to PDF | Generate a PDF of the report that you can download or email. This option is not available for calendar reports.

**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.

Save as report source | Opens the Create new Report Source window in which you can save the report conditions as a report source that can be reused for other reports.

Report history | Shows general information for the report, such as the table the report is based on, the report type, who created the report, when the report was last modified, and whether the report is scheduled or published. Other statistical information for the report is also shown, such as when it was last run, the number of runs, runs on home page, recent run time, and overall run time.

### View the reports list

View a list of reports and create reports from the Reports list.

Standard platform ACLs regulate access to reports in the reports list. This regulation impacts user access to certain reports. For further information on ACLs and reporting, see the article [Reports list access regulated by ACLs [KB0546694]](https://www.citadel.com/) in the HI Knowledge Base.

**Note:** You can open the Reports list by adding /report_home.do to your instance URL. To only show reports that are marked as favorites, add the ?sysparm_favorites=true parameter.

You can sort and filter the search results using the standard report list controls, such as by clicking on tabs, column headings, or the favorites icon (⭐).

Select the cog icon (⚙️) next to the Create a report button to configure the columns displayed in the Reports list.
You can filter the Reports list with the following tabs:

<table>
<thead>
<tr>
<th>Tab</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>My reports</td>
<td>Displays reports that you created.</td>
</tr>
<tr>
<td>Group</td>
<td>Displays reports that have been shared with you and with the groups that you are a member of.</td>
</tr>
<tr>
<td>Global</td>
<td>Displays reports that have been shared with everyone.</td>
</tr>
<tr>
<td>All</td>
<td>Displays all reports that you have access to (global reports, group reports, and my reports).</td>
</tr>
</tbody>
</table>

Users with report_admin or admin roles only can view additional columns on their Reports list.
Table 45: 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 and then emailed.</td>
</tr>
<tr>
<td>Published</td>
<td>Displays a check mark (✓) if the report is published.</td>
</tr>
</tbody>
</table>

View favorite reports

You can manually mark a report as a favorite by clicking the star icon beside the report title.

To toggle between showing only favorite reports and showing all reports, click the star icon in the list header.

A report is automatically marked as a favorite when you open it.

Distribute reports

You can distribute reports to provide business information to other users and stakeholders. You can add reports to homepages or dashboards, publish to the internet, schedule email distribution of PDFs or the URLs of published reports, and share reports with individuals or groups.

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:

- 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

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. 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. These reports are not filtered based on security, but some on-query business rules defined for the target table filter the report results. ACLs are required to view the list of records when you select a portion of a report visualization. If you have access to a report but not to some of its records, you do not see those records in drilldown or as a list. They are included in visualizations of data, however.

If a user saves global report as a group or personal report, the ServiceNow 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, ServiceNow changes the security state rather than copying the report.

Share a report

Control which users and groups can see a report in their reports list.

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 on a portion of a chart.

If a user saves global report as a group or personal report, the ServiceNow platform copies the report rather than moving it from one security state to another. This allows users who cannot create their own global reports to modify a global report, and then save their own personal version of the report.
If a user opens a personal report and tries to save it as a group or global report, ServiceNow 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.

### Table 46: 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>• Me allows only the report creator to view the report. Users who did not create the report</td>
</tr>
<tr>
<td></td>
<td>cannot set it to Me.</td>
</tr>
<tr>
<td></td>
<td>• Everyone allows all users to view the report. Specific roles can be assigned for viewing</td>
</tr>
<tr>
<td></td>
<td>reports under Everyone, so access can be restricted.</td>
</tr>
<tr>
<td></td>
<td>• Groups and Users allows only specific groups and users 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.</td>
</tr>
<tr>
<td></td>
<td>This field is available when Groups and Users is selected.</td>
</tr>
<tr>
<td>Users</td>
<td>Users who are authorized to see the report.</td>
</tr>
<tr>
<td></td>
<td>This field is available when Groups and Users 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 dashboard](#).

The people with whom you share the report must have rights to view the report data.

### Schedule a report

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, 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>
<tr>
<td>Email addresses</td>
<td>Email addresses of users who should receive the report 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 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 enables you to specify conditions under which the report is generated.</td>
</tr>
<tr>
<td>Omit if no records</td>
<td>Check box that prevents (selected) or enables (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 (XLS) 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 for indicating that the report is to be sent as a zip file.</td>
</tr>
<tr>
<td>Include with</td>
<td>Additional scheduled report to send.</td>
</tr>
</tbody>
</table>
5. Click Submit.
6. 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. Individual
   schedules enable 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.

Publish a report

Publish a report to create a URL that anyone can use to access the report, including people who are not
ServiceNow users. Navigating to that URL causes the report to be generated using current data from
the ServiceNow platform.

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, click the arrow next to the Save button to open the Report options menu. If the menu has
the Publish option, the report is not yet published. If the 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. Select the drop arrow next to the Save button and select Publish.
   A message with the link to the published report appears at the top of the page. This message is
   available until the report is unpublished. See Unpublish a report.

   Note: Business rules may affect how records are collected for public reports. For more
   information, see Business rules.

Unpublish a report

Published reports stay at the published URL until you remove 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 remove.
3. Click the arrow next to the Save button and select Unpublish.

**Add a report to a homepage or dashboard**

When viewing a report, you can add that report to a homepage or a dashboard. When a report is on your homepage or dashboard, you have the latest information at any time without having to run the report. You can also share dashboards with other users.

Before starting this procedure, ensure there is a report you want to display on a homepage or dashboard.

Role required: Any users who can create a report can add it to a homepage. itil, report_global, report_group, report_admin. Pa_power_user is required to add a report to a Performance Analytics dashboard.

1. Navigate to Reports View/Run.
2. Select a report.
3. Click the arrow next to the Save button to open the Report Options menu 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 Homepage to add the report to.</td>
</tr>
<tr>
<td>PA dashboard</td>
<td>Select the Performance Analytics Dashboard and Tab to add the report to.</td>
</tr>
</tbody>
</table>

6. Do one of the following:

<table>
<thead>
<tr>
<th>Option</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>for responsive dashboards</td>
<td>Click Add. The widget is added to the dashboard in the top position and the dashboard opens. Click Edit to move or resize the widget.</td>
</tr>
<tr>
<td>for non-responsive dashboards and homepages</td>
<td>Click Add here to add the report in a specific position, or click Add to add the report to the first available position on the homepage or dashboard.</td>
</tr>
</tbody>
</table>

**Header and footer templates for report PDFs**

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 displays the report Title and the page number in the format Page X. The footer displays the report Run by field and the report run time and date.

**Configure PDF export settings for a report**

You can customize header and footer of reports exported to PDF.

1. In the upper right of the report form, click the Save choice list and select Export settings.
2. In the Export settings dialog box, fill in the fields as appropriate (see table) and then click Close.
Create a header and footer template for report PDFs

A PDF page header footer template defines the page header and footer layout for PDF files that you export from ServiceNow.

Users with the admin or report_admin role can create PDF page header footer templates.

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 (see table), and enter or upload content as appropriate for the content option.

Table 47: Template form view

<table>
<thead>
<tr>
<th>Type</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Page X</td>
<td>Page number of the report where X is the current page.</td>
</tr>
<tr>
<td>Page X of Y</td>
<td>Page number of the report where X is the current page and Y is the total number of pages in the report.</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 image. The user creating the template must upload a new image when selecting Image content. Images are scaled to fit the space available in the template cell.</td>
</tr>
<tr>
<td>Empty</td>
<td>Choose this option to leave the selected cell of the header or footer empty.</td>
</tr>
</tbody>
</table>

5. Click Submit.

You can apply the new template to exported reports. See Apply a PDF page header footer template to a report.

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 arrow next to Save ( ) and select Export settings.
4. In the Header Footer Template field, select the template to apply.
5. Click Close.
   This procedure saves the report with the selected template.
6. Export the report as a PDF to view the newly applied page header and footer.

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:requires name="scripts/GlideV2ChartingIncludes.js" includes="true"/>
```

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:requires name="scripts/GlideV2ChartingIncludes.js" includes="true"/>
  <div id="report_stuff"/>
</j:jelly>

var div = $j("#report_stuff");
embedReportById(div, <report sys_id>);
```

Alternatively, you can embed the JavaScript in the jelly code:

```xml
<j:jelly trim="false" xmlns:j="jelly:core" xmlns:g="glide"
xmlns:j2="null" xmlns:g2="null">
  <g:requires name="scripts/GlideV2ChartingIncludes.js" includes="true"/>
  <div id="report_stuff"/>
  <script>
    var div = $j("#report_stuff");
    embedReportById(div, <report sys_id>);
  </script>
</j:jelly>
```

<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, parms)` function. When embedding a report 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:requires name="scripts/GlideV2ChartingIncludes.js" includes="true"/>
        <div id="report_stuff" />
    </j:jelly>
    var params = {
            sysparm_title: "Average for all ratings",
            sysparm_field: "category",
            sysparm_table: "asmt_category_result",
            sysparm_aggregate: "AVG",
            sysparm_sumfield: "rating"};
    var div = $("#report_stuff");
    embedReportByParams(div, params);
</xml>
```

As above, you can also 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:requires name="scripts/GlideV2ChartingIncludes.js" includes="true"/>
        <div id="report_stuff" />
        <script>
            var params = {
            sysparm_title: "Average for all ratings",
            sysparm_field: "category",
            sysparm_table: "asmt_category_result",
            sysparm_aggregate: "AVG",
            sysparm_sumfield: "rating"};
            var div = $("#report_stuff");
            embedReportByParams(div, params);
        </script>
    </j:jelly>
```

Table 49: Parameters

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td><code>targetSpan</code></td>
<td>The jQuery element to embed the chart in.</td>
</tr>
<tr>
<td><code>parms</code></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 by passing parameters.

Common parameters

Certain parameters are used by multiple report types.
Table 50: 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>No default</td>
</tr>
<tr>
<td>sysparm_title</td>
<td>The title of the report.</td>
<td>No default</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>No default</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>No default</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, angular_gauge, solid_gauge, pivot, pivot_v2, funnel, calendar, pyramid, box, trend, control, tbox, 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 trendbox reports. This value is optional for list reports.</td>
<td>No default</td>
</tr>
<tr>
<td>sysparm_query</td>
<td>The filter to apply to the data before generating the report. To sort your query results by a specific field, add ^ORDERBY(field_name) or ^ORDERBYDES(field_name) to the end of the query string. ORDERBY sorts the query by ascending order; ORDERBYDES sorts the query by descending order.</td>
<td>No default</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>No default</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_display_grid</td>
<td>A boolean value that controls if the report displays a data grid.</td>
<td>false</td>
</tr>
<tr>
<td>sysparm_show_other</td>
<td>A boolean value that controls if 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>No default</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>sysparm_stack_field</td>
<td>The field used to control stacking on bar and column reports.</td>
<td>No default</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>No default</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>No default</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_use_color_palette</td>
<td>A boolean value that controls if a full color palette is used to render the report.</td>
<td>The value of the property glide.ui.report.use_full_color_palette or false if this property is undefined.</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_funnel_neck_percent</td>
<td>A number from 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_report_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 multilevel pivot and heatmap reports.</td>
<td>No default</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>No default</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.

Table 51: Service catalog report parameters

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Description</th>
<th>Default value</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 sysparm_sc_groupby_variable_id parameter to group a service catalog report based on a catalog variable value. These parameters replace the sysparm_field parameter when grouping on service catalog variables.</td>
<td>No default</td>
</tr>
</tbody>
</table>
### Parameter Descriptions

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<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 sysparm_sc_groupby_item_id parameter.</td>
</tr>
<tr>
<td>sysparm_sc_stackby_item_id</td>
<td>The sys_id of a catalog item. Use this parameter with the sysparm_sc_stackby_variable_id parameter to stack a service catalog report based on a catalog variable value. These parameters replace the sysparm_stack_field 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 sysparm_sc_stackby_item_id parameter.</td>
</tr>
</tbody>
</table>

### Chart-specific parameters

Certain parameters are available only for specific report types.

**Table 52: Donut report parameters**

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Description</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>
</tr>
<tr>
<td>sysparm_donut_width_percent</td>
<td>A number from 1-100 that controls the thickness of the donut report.</td>
</tr>
</tbody>
</table>

**Table 53: Heatmap parameters**

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Description</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>
</tr>
</tbody>
</table>

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<table>
<thead>
<tr>
<th>Parameter</th>
<th>Description</th>
<th>Default value</th>
</tr>
</thead>
<tbody>
<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>

Table 54: 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>No default</td>
</tr>
<tr>
<td>sysparm_to</td>
<td>A number that defines the maximum value for the axis scale.</td>
<td>No default</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>No default</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>No default</td>
</tr>
<tr>
<td>sysparm_direction</td>
<td>A value that controls which values are considered positive on the report, lower values or higher values. Possible values are: minimize and maximize.</td>
<td>minimize</td>
</tr>
</tbody>
</table>

Chart size parameters

Certain parameters control the width and height of the report.

Table 55: Size parameters

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Description</th>
<th>Default value</th>
</tr>
</thead>
<tbody>
<tr>
<td>sysparm_report_size</td>
<td>The size of the report. Valid values are small, medium, and large.</td>
<td>large</td>
</tr>
<tr>
<td>Parameter</td>
<td>Description</td>
<td>Default value</td>
</tr>
<tr>
<td>---------------------------</td>
<td>-----------------------------------------------------------------------------</td>
<td>---------------</td>
</tr>
<tr>
<td><code>sysparm_custom_report_size</code></td>
<td>Set this parameter to true to specify custom report height and width values instead of using one of the size options from the <code>sysparm_report_size</code> parameter.</td>
<td>false</td>
</tr>
<tr>
<td><code>sysparm_custom_report_height</code></td>
<td>The height of the report, in pixels.</td>
<td>No default</td>
</tr>
<tr>
<td><code>sysparm_custom_report_width</code></td>
<td>The width of the report, in pixels.</td>
<td>No default</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, trendbox, histogram, pyramid, heat map, funnel, and control reports.

Table 56: Title parameters

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Description</th>
<th>Default value</th>
</tr>
</thead>
<tbody>
<tr>
<td><code>sysparm_report_title_size</code></td>
<td>A number that defines the font size of the title.</td>
<td>16</td>
</tr>
<tr>
<td><code>sysparm_report_title_color</code></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><code>sysparm_title_horizontal_alignment</code></td>
<td>Where the title is placed horizontally relative to the report. This value is used only if <code>sysparm_custom_report_title_position</code> is false. Possible values are: left, center, and right.</td>
<td>center</td>
</tr>
<tr>
<td><code>sysparm_title_vertical_alignment</code></td>
<td>Where the title is placed vertically relative to the report. This value is used only if <code>sysparm_custom_report_title_position</code> is false. Possible values are: top, middle, and bottom.</td>
<td>top</td>
</tr>
<tr>
<td><code>sysparm_custom_report_title_position</code></td>
<td>A boolean value that controls if the report title position is defined by x and y coordinates instead of relative alignment.</td>
<td>false</td>
</tr>
<tr>
<td><code>sysparm_report_title_x_position</code></td>
<td>A number that defines the x position of the title on the report. This value is used only if <code>sysparm_custom_report_title_position</code> is true.</td>
<td>0</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_report_title_y_position</td>
<td>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.</td>
<td>0</td>
</tr>
</tbody>
</table>

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, trendbox, histogram, pyramid, heat map, funnel, and control reports.

Table 57: Border parameters

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Description</th>
<th>Default value</th>
</tr>
</thead>
<tbody>
<tr>
<td>sysparm_show_report_border</td>
<td>A boolean value that controls if the report displays a border.</td>
<td>false</td>
</tr>
<tr>
<td>sysparm_report_border_width</td>
<td>A number that defines the width of the border, in pixels.</td>
<td>1</td>
</tr>
<tr>
<td>sysparm_report_border_radius</td>
<td>A number that defines the radius size of the border’s corners, in pixels.</td>
<td>0</td>
</tr>
</tbody>
</table>

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.

Table 58: Legend parameters

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Description</th>
<th>Default value</th>
</tr>
</thead>
<tbody>
<tr>
<td>sysparm_show_legend</td>
<td>A boolean value that controls if the report displays a legend.</td>
<td>true</td>
</tr>
<tr>
<td>sysparm_legend_horizontal_alignment</td>
<td>Where the legend is placed horizontally relative to the report. Possible values are: left, center, and right.</td>
<td>center</td>
</tr>
<tr>
<td>sysparm_legend_vertical_alignment</td>
<td>Where the legend is placed vertically relative to the report. Possible values are: top, middle, and bottom.</td>
<td>bottom</td>
</tr>
<tr>
<td>sysparm_show_legend_border</td>
<td>A boolean value that controls if 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>Parameter</td>
<td>Description</td>
<td>Default value</td>
</tr>
<tr>
<td>-----------------------------</td>
<td>-----------------------------------------------------------------------------</td>
<td>------------------------</td>
</tr>
<tr>
<td>sysparm_legend_border_radius</td>
<td>A number that defines the radius size of the legend border’s corners, in pixels.</td>
<td>0</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.

Table 59: 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>No default</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 if the x-axis title text is bold.</td>
<td>true</td>
</tr>
<tr>
<td>sysparm_x_axis_opposite</td>
<td>A boolean value that controls if the x axis appears at the top of the report.</td>
<td>false</td>
</tr>
<tr>
<td>sysparm_x_axis_display_grid</td>
<td>A boolean value that controls if vertical grid lines appear from the x axis.</td>
<td>false</td>
</tr>
<tr>
<td>sysparm_x_axis_grid_dotted</td>
<td>A boolean value that controls if the vertical grid lines are dotted.</td>
<td>false</td>
</tr>
<tr>
<td>sysparm_x_axis_label_size</td>
<td>A number that defines the font size for increment labels on the x axis.</td>
<td>11</td>
</tr>
<tr>
<td>sysparm_x_axis_label_bold</td>
<td>A boolean value that controls if the x-axis increment labels are bold.</td>
<td>false</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.

Table 60: 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 if the y-axis title text is bold.</td>
<td>true</td>
</tr>
</tbody>
</table>
### Delete a report

Delete reports that are no longer used.

You must have the report_group role, or be the creator or administrator of a report to delete it. If a report has been shared with you, and you do not have the report_group role, you do not have the ability to delete it.

1. Navigate to Reports View / Run.
2. Select the report to delete.
3. When the report opens, 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 types and creation details

Learn about different types of reports you can create, and when and how to create them.

You can generate the following types of reports, organized by category:

Table 61: Report types

<table>
<thead>
<tr>
<th>Report</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>List</strong></td>
<td>Displays data in the form of an expandable list, similar to a standard ServiceNow list.</td>
</tr>
<tr>
<td><strong>Line</strong></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>Report</td>
<td>Description</td>
</tr>
<tr>
<td>------------------------</td>
<td>----------------------------------------------------------------------------------------------------------------------------------------------</td>
</tr>
<tr>
<td><strong>Column</strong></td>
<td>Shows how one or more values change over time by displaying them as proportional vertical columns.</td>
</tr>
<tr>
<td><strong>Area</strong></td>
<td>Resembles line charts, but the area between the axis and line is commonly emphasized with colors.</td>
</tr>
<tr>
<td><strong>Spline</strong></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>Column and Bar Charts</strong></td>
<td></td>
</tr>
<tr>
<td><strong>Bar</strong></td>
<td>Shows rectangular bars with lengths proportional to the values that they represent. The bars can be plotted vertically or horizontally.</td>
</tr>
<tr>
<td><strong>Pareto</strong></td>
<td>Combines bar and line charts to identify the most important factors in a large set of factors.</td>
</tr>
<tr>
<td><strong>Histogram</strong></td>
<td>Provides visual interpretation of numerical data by indicating the number of data points that lie within a range of values.</td>
</tr>
<tr>
<td><strong>Pies</strong></td>
<td></td>
</tr>
<tr>
<td><strong>Pie</strong></td>
<td>Shows how individual pieces of data relate to the whole.</td>
</tr>
<tr>
<td><strong>Donuts and semi-donuts</strong></td>
<td></td>
</tr>
<tr>
<td><strong>Dials</strong></td>
<td></td>
</tr>
<tr>
<td><strong>Speedometer</strong></td>
<td>Shows an overview of the count of an indicator you want to measure at this moment. Speedometers and dials are similar but vary slightly in presentation. A speedometer shows numbers in the form of a round meter. A dial shows a half circle, where the part in which scores are shown is filled out with a color.</td>
</tr>
<tr>
<td><strong>Dial</strong></td>
<td>Shows a quick and simple overview of the count of an indicator you want to measure at this moment.</td>
</tr>
<tr>
<td><strong>Pivot</strong></td>
<td></td>
</tr>
<tr>
<td><strong>Multilevel pivot tables</strong></td>
<td></td>
</tr>
<tr>
<td><strong>Heatmap</strong></td>
<td>Display aggregate data visually using different colors to represent different values.</td>
</tr>
<tr>
<td><strong>Map</strong></td>
<td>Display data on a geographical map.</td>
</tr>
<tr>
<td><strong>Bubble</strong></td>
<td>Display multiple separate metrics on a single chart.</td>
</tr>
<tr>
<td><strong>Pivot table</strong></td>
<td>Aggregates data from a table to display the source of summarized data.</td>
</tr>
</tbody>
</table>

More
<table>
<thead>
<tr>
<th>Report</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Funnel</td>
<td>Displays values as progressively decreasing proportions. The size of the area is determined by the series value as a percentage of the total of all values.</td>
</tr>
<tr>
<td>Calendar</td>
<td>Displays data-driven events in a calendar format.</td>
</tr>
<tr>
<td>Pyramid</td>
<td>Displays a variation on a bar chart that uses pyramid shapes instead of horizontal rectangles.</td>
</tr>
<tr>
<td>Box</td>
<td>Shows the distribution of values in a data set.</td>
</tr>
<tr>
<td>Trend</td>
<td>Shows how the value of one or more items changes over time. Values along the horizontal axis of the trend chart 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.</td>
</tr>
<tr>
<td>Control</td>
<td>Displays data as a series of connected points to determine whether or not a business process is in a state of statistical control.</td>
</tr>
<tr>
<td>Trendbox</td>
<td>Shows the difference between groups over time.</td>
</tr>
<tr>
<td>Single score</td>
<td>Display a single aggregate value that is important to your business.</td>
</tr>
</tbody>
</table>

Area and spline charts

Use area charts to show trends over time for related attributes. Area charts are similar to line charts, but the area between the lines is filled with color. Spline charts show how one or more values change over time by connecting a series of known data points with a curved line.

You can create an area or spline chart, for example, 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 incidents reported should decrease as users become more accustomed to the changes in the product.
Figure 12: Area chart

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 chart report

Create an area or spline chart 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.

1. Navigate to Reports Create New.
2. Fill in the fields, as appropriate.
Table 62: Area chart

<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 (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 Area or Spline.</td>
</tr>
<tr>
<td>Style your chart</td>
<td>Click the gear icon (⚙️) after the Type field to configure 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 Assignment group, 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.</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 true, even if Display Grid 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>Select a time period to display in the chart. Time periods range from a year down to an hour. You can also select a specific 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>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>
</tbody>
</table>
| 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 | 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. |
| Add Sort Field       | Select fields to sort data by. For example, to sort results from lowest to highest priority, select (Priority) (z to a). |
Area and spline chart style options

Change the look of your area or spline 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. 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.

Table 63: 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>
</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 chart 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. |

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. See Access control rules.
<table>
<thead>
<tr>
<th>Field</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Decimal Precision</td>
<td>Enter an integer from 0 to 4 to specify the number of decimal places to display. Currency values always have two decimal places.</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>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 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 charts

Use bar charts to compare two or more values. You can create bar and horizontal bar chart reports. Bar chart columns originate on the x axis and horizontal bar chart columns originate on the y axis.

Bar charts display data in either a horizontal or vertical bar format with each bar representing a specific category of data. Depending on the glide.ui.chart.use_full_color_palette property setting, a bar chart may use a single color to represent all categories of data or a different color for each category. Bar charts can be placed on homepages where users can quickly interpret the information displayed.

The report below is an example of a bar chart that displays discrete categories of data. It includes data from the Incident (incident) table for all incidents recorded up until the time that the report is generated.

To see the difference between the total of different priority levels assigned to the incidents in each category, select Priority from the Stacked by list.
You can manipulate the bar chart display by stacking data or by changing the measurement units of the bars. Stacked bar charts show the parts that contribute to the total.
Create a bar chart

Create a bar chart 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.

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>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>Type</td>
<td>Select Bar or Horizontal bar.</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 of your chart.</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 Assignment group, 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.</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. For example, you might create a bar chart 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 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. 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.</td>
</tr>
<tr>
<td>Field</td>
<td>Description</td>
</tr>
<tr>
<td>------------------</td>
<td>-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------</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 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 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. <strong>Note:</strong> For duration values, the unit of measurement displayed in the aggregation axis cannot be customized.</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>• Use Aggregation: default method. Computes percentages for each element using the sum of all elements in the data set.</td>
</tr>
<tr>
<td></td>
<td>• Use Record Count: 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 available when Aggregation is set to Average, Sum, or Count Distinct.</td>
</tr>
<tr>
<td>Field</td>
<td>Description</td>
</tr>
<tr>
<td>----------------------------</td>
<td>-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------</td>
</tr>
<tr>
<td>No. groups</td>
<td>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. If you select Remove Other, the Other bar is hidden.</td>
</tr>
<tr>
<td>Show Other</td>
<td>Select this check box to display the Other bar for values that exceed the No. groups limit. This check box is not available when Show all or Remove Other is selected from the No. groups list. Select Yes from this list to display the Other bar.</td>
</tr>
<tr>
<td>Add Filter Condition</td>
<td>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]. Note: Applying a string filter with other filters to pie and bar charts is not supported.</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. This field is only available after at least one filter condition has been created.</td>
</tr>
<tr>
<td>Add Sort Field</td>
<td>Select fields to sort data by. For example, to sort results from lowest to highest priority, select [Priority] [z to a].</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.

Bar chart style options

Change the look of your bar 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. 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.
Table 64: 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>Chart color</td>
<td>If no group by or stack by is used, Use one color is automatically selected. 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 Chart Colors.</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 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.</td>
</tr>
</tbody>
</table>

**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. See Access control rules.

| Decimal Precision   | Enter an integer from 0 to 4 to specify the number of decimal places to display. Currency values always have two decimal places.                |
| Title               |                                                                                                                                              |
| 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, dashboards, and homepages.                                                                      |
### Field Description

<table>
<thead>
<tr>
<th>Field</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<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 charts show the distribution of values in a data set.

Use box charts to report 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 the majority of 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.
Figure 16: Box Chart

A box chart displays the following for each group of data:
Figure 17: Box Chart Scale

- Sample maximum: the uppermost bold red line.
- Upper quartile: the red line that forms the top of the box and cuts off the highest 25% of the data.
- Median: the bold red line cutting through the center of the box.
- Mean: the blue dot on the chart.
- Lower quartile: the red line that forms the bottom of the box and cuts off the lowest 25% of the data.
- Sample minimum: the lowermost bold red line.

Create a box report

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.

1. Navigate to Reports Create New.
2. Fill in the fields, as appropriate.

Table 65: 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>
</tbody>
</table>
ServiceNow Helsinki Performance Analytics and Reporting

<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>Type</td>
<td>Select Box. 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 Type 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 the field that you want to group the report data by. For example, in an incident report that is grouped by Assignment group, all incidents belonging to Software, Service Desk, Network, and so on, are grouped together. Make sure you give the report a name that reflects the field you select.</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>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).</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 Field</td>
<td>Select fields to sort data by. For example, to sort results from lowest to highest priority, select (Priority) (z to a).</td>
</tr>
</tbody>
</table>

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

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.

Table 66: 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 Custom chart size is cleared.</td>
</tr>
<tr>
<td>Decimal Precision</td>
<td>Enter an integer from 0 to 4 to specify the number of decimal places to display. Currency values always have two decimal places.</td>
</tr>
<tr>
<td>Title</td>
<td>Select when the chart title is displayed.</td>
</tr>
<tr>
<td>Show chart title</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, 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. 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>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>

**Bubble charts**

Bubble charts allow you to display multiple separate metrics on a chart. Bubble charts can use numeric values to define the X and Y axes, and an aggregate value to determine the size of each bubble.

For example, when using Demand Management you can create a bubble chart report on the Demand table to compare risk and reward for various demands. By grouping on the Name field, 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 chart.

Create a bubble report

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.

1. Navigate to Reports Create New.
2. Fill in the fields, as appropriate (see table).

Table 67: 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>Type</td>
<td>Select Bubble.</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>
<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>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>
</tbody>
</table>
### Field | Description
---|---
Aggregation | Select a computational method for aggregating report data. The size of each bubble depends on the aggregate value. 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.  

Note: For duration values, the unit of measurement displayed in the aggregation axis cannot be customized.

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] < [3 - Moderate].

Add "OR" Clause | Select a second condition that must be met if the first condition is invalid. For example, select (Assignment Group) = Database, to include records that are assigned to the Database group, if the first condition is false.

Add Sort Field | Define the order of values on either axis, such as to display higher values on top or on the right side of the chart. You can sort both axes by setting the sort order for both axis fields.

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**

Change the look of your box 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 68: 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>Select this check box to specify the width and height of the chart in pixels.</td>
</tr>
<tr>
<td></td>
<td>Note: Chart size is ignored when you export to PDF. In PDFs, the full page width is used to display the chart.</td>
</tr>
<tr>
<td>Chart size</td>
<td>Select a chart size. This field is available when Custom chart size is cleared. Options are Small, Medium, and Large.</td>
</tr>
<tr>
<td></td>
<td>Note: Chart size is ignored when you export to PDF. In PDFs, the full page width is used to display the chart.</td>
</tr>
<tr>
<td>Chart width</td>
<td>Specify the width of the chart in pixels. The default value is 600.</td>
</tr>
<tr>
<td>Chart height</td>
<td>Specify the height of the chart in pixels. The default value is 450.</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 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</a>.</td>
</tr>
<tr>
<td></td>
<td>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. See <a href="#">Access control rules</a>.</td>
</tr>
<tr>
<td><strong>Title</strong></td>
<td></td>
</tr>
<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, and 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>Field</td>
<td>Description</td>
</tr>
<tr>
<td>-------------------------------</td>
<td>-----------------------------------------------------------------------------</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>Chart title X position</td>
<td>The number of pixels to adjust the chart title position. By default the title appears at the center top of the chart. Set a value greater than 0 to move the chart title down. This field appears only if Custom chart title position is selected.</td>
</tr>
<tr>
<td>Chart title Y position</td>
<td>The number of pixels to adjust the chart title position. By default the title appears at the center top of the chart. Set a value greater than 0 to move the chart title to the right. This field appears only if Custom chart title position is selected.</td>
</tr>
</tbody>
</table>

**Calendar reports**

Calendar reports display date-driven events on a calendar.
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.

For tips on when it is inappropriate to use calendar reports, go to the KPI Library site and see the "Drop the calendar view" blog post.

Limitations

• Calendar reports with an updated look-and-feel are not supported on Internet Explorer 7 or 8, which display 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

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.

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>
<tr>
<td></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>
<tr>
<td>Data</td>
<td>Select the table or report source containing the data that you want to report on.</td>
</tr>
<tr>
<td>Type</td>
<td>Select Calendar.</td>
</tr>
<tr>
<td>Calendar by</td>
<td>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.</td>
</tr>
</tbody>
</table>

3. Click Run to view the calendar report, or click Save to save the report.

• Add reports to homepages or dashboards, publish to the internet, and share reports with others. See Distribute reports.
• Change highlighting of calendar report events
• Configure how calendar entries look

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 administrator 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 incidents reported should decrease as users become more accustomed to the changes in the product.

Figure 19: Stacked column chart
Create a column report

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.

1. Navigate to Reports Create New.
2. Fill in the fields, as appropriate.
Table 69: 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 ( informações ) 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.</td>
</tr>
<tr>
<td>Type</td>
<td>Select Column.</td>
</tr>
<tr>
<td>Style your chart</td>
<td>Click the gear icon ( tools ) after the Type 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 used to organize data in groups from the selected table. For example, in an incident report that is grouped by Assignment group, 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.</td>
</tr>
<tr>
<td>Stacked / Grouped columns</td>
<td>Choose to display the Group by field as stacked columns or grouped columns. For example, if a report groups incidents by state and the Group by field is Category, selecting Stacked shows the incidents in one column by state with different colors for each category. Selecting Grouped columns shows the incidents in separate columns for each state with different colors for each category column. The Stacked and Grouped columns options are not available when None is selected from the Group by 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. 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 true, even if the Display Grid 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>Field</td>
<td>Description</td>
</tr>
<tr>
<td>-----------</td>
<td>-------------</td>
</tr>
<tr>
<td>per</td>
<td>Select a time period to display in the chart. Time periods range from a year down to an hour. You can also select a specific date.</td>
</tr>
<tr>
<td></td>
<td>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>
</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.</td>
</tr>
<tr>
<td></td>
<td>Note: 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 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 | 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.

Column report style options

Change the look of your column report.

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. To see how the chart looks with the saved settings, click Save.

Table 70: Column chart style options

<table>
<thead>
<tr>
<th>Field</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Add Sort Field</td>
<td>Select fields to sort data by. For example, to sort results from lowest to highest priority, select [Priority] [z to a].</td>
</tr>
</tbody>
</table>
| General          | 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.  
<p>|                  | • Use chart colors: Use the colors defined in Reports Chart Colors. |
| 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 Custom chart size is cleared. |</p>
<table>
<thead>
<tr>
<th>Field</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<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 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</a>.</td>
</tr>
</tbody>
</table>

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. See [Access control rules](#). |

<table>
<thead>
<tr>
<th>Decimal Precision</th>
<th>Enter an integer from 0 to 4 to specify the number of decimal places to display. Currency values always have two decimal places.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Title</td>
<td>Select when the chart title is displayed.</td>
</tr>
</tbody>
</table>

- Never: never displays the chart title.
- Report only: displays the chart title on reports.
- Always: displays the chart title on reports, dashboards, and homepages. |

<table>
<thead>
<tr>
<th>Chart title</th>
<th>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.</th>
</tr>
</thead>
<tbody>
<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>
</tbody>
</table>

Legend
<table>
<thead>
<tr>
<th>Field</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Show legend</td>
<td>Select this check box to display a chart legend. This check box is available when a Group by 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 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>

**Control reports**

Use control reports to determine whether a business process is in a state of statistical control.

Control reports display data as a series of connected points. The blue line at the center of the chart 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.
Figure 21: Control chart

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

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.

1. Navigate to Reports Create New.
2. Fill in the fields, as appropriate.
Table 71: 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 (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 Control.</td>
</tr>
<tr>
<td>Style your chart</td>
<td>Click the gear icon (gear) after the Type field to configure chart style options for the look and layout of the chart.</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>Select a time period to display in the chart. Time periods range from a year down to an hour. You can also select a specific 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>Aggregation</th>
<th>Select a computational method for aggregating report data. The default is Count, which displays the number of records selected.</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>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.</td>
</tr>
<tr>
<td></td>
<td>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.</td>
</tr>
</tbody>
</table>

Note: For duration values, it is not possible to customize the unit of measurement displayed in the aggregation axis.
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.

Pie and Control chart style options

Change the look of your pie or control 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.

Table 72: 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. |
<p>| Display data labels | 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, edit the glide.ui.chart.pie.labels.max_items system property. |
| Custom chart size   | Select this check box to specify the chart’s width and height in pixels.    |</p>
<table>
<thead>
<tr>
<th>Field</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<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 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. 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 &quot;Number of rows removed from this list by Security constraints:&quot; followed by the number. See Access control rules.</td>
</tr>
<tr>
<td>Decimal Precision</td>
<td>Enter an integer from 0 to 4 to specify the number of decimal places to display. Currency values always have two decimal places.</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>• 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>
</tbody>
</table>
ServiceNow Helsinki Performance Analytics and Reporting

<table>
<thead>
<tr>
<th>Field</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Legend</td>
<td></td>
</tr>
<tr>
<td>Show legend</td>
<td>Select this check box to display the chart legend. This check box is available when the Group by 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 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 tab</td>
<td>Configure the titles, appearance, and labels of the X and Y axes. 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, the From and To fields are not available.</td>
</tr>
</tbody>
</table>

Dial and speedometer reports

Dials and speedometers provide a real-time count for an indicator. These reports cannot contain comparison or historical data. They also have different appearances:

- A speedometer shows numbers in the form of a round meter.
- A dial shows a half circle, round meter where the part in which scores are shown is filled out with a color.
Figure 22: Angular speedometer report
Create a dial or speedometer report

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.

1. Navigate to Reports Create New.
2. Fill in the fields, as appropriate.

Table 73: 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>
<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>Type</td>
<td>Select Speedometer or Dial.</td>
</tr>
</tbody>
</table>
Field | Description
--- | ---
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 | 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 \[Priority\] \(<\) \[3 - Moderate\].
Note: Applying a string filter with other filters to donut and bar charts is not supported.
Add “OR” Clause | Select a second condition that must be met if the first condition is invalid. For example, select \{Assignment Group\} \(=\) \{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

Change the look of your dial or speedometer report.

Table 74: Dial report 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>Select a single predefined system color.</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 Custom chart size is cleared.</td>
</tr>
<tr>
<td>Direction</td>
<td>Select Minimize if lower numbers in the dial are better. Select Maximize if larger numbers in the dial are better. This setting works in combination with Lower Limit and Upper Limit, 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 a 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 Dial Autoscale is selected. The Lower Limit is set to 50 and Upper Limit is set to 100 and the direction is Minimize. The dial displays the area 0–50 in green, the area 50–100 in orange, and the area above 100 in red. If Lower Limit is set to 50, Upper Limit is set to 100 and the direction is Maximize, 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>Dial Autoscale</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 Dial Autoscale is cleared.</td>
</tr>
<tr>
<td>To</td>
<td>Enter the end value for the dial scale. This field is available when Dial Autoscale is cleared.</td>
</tr>
<tr>
<td>Field</td>
<td>Description</td>
</tr>
<tr>
<td>----------------------------</td>
<td>-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------</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 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.</td>
</tr>
<tr>
<td>Note:</td>
<td>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 &quot;Number of rows removed from this list by Security constraints:&quot; followed by the number. See Access control rules.</td>
</tr>
<tr>
<td>Decimal Precision</td>
<td>Enter an integer from 0 to 4 to specify the number of decimal places to display. Currency values always have two decimal places.</td>
</tr>
<tr>
<td>Title</td>
<td>Select when the chart title is displayed.</td>
</tr>
<tr>
<td>Show chart title</td>
<td>• Never: never displays the chart title.</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>
</tbody>
</table>

**Donut charts**

Donut and semi-donut charts are useful when comparing the size of parts to the whole.
They are very 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. The organization may have a policy stating that P1 incidents can never exceed 40% of all open incidents. With a donut or semi-donut chart, you can quickly see if incident counts are within acceptable ranges.

Figure 24: Donut incidents priority
Figure 25: Semi donut incidents priority

Create a donut chart report

How to create a donut chart 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.

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>Field</td>
<td>Description</td>
</tr>
<tr>
<td>---------------</td>
<td>-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------</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 the 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 Donut or Semi donut.</td>
</tr>
<tr>
<td>Style your chart</td>
<td>Click the gear icon ( ) after the Type field to configure the 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 in groups from the selected table. For example, in an incident report that is grouped by Assignment group, all incidents belonging to Software, Service Desk, Network, and so on, are placed in separate groups. Make sure the name of the report reflects the selected 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 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 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>
</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.

### Donut chart style options

Change the look of your donut chart.

When you create or edit a report, click the gear icon

![Gear Icon](image) 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.

<table>
<thead>
<tr>
<th>Field</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<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 Other slice. If you select Show all, all slices up to 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.</td>
</tr>
<tr>
<td>Show Other</td>
<td>Select this check box if you want to display the Other slice. This check box is not available when Show all or Remove Other are selected from the No. groups list.</td>
</tr>
<tr>
<td>Add Filter Condition</td>
<td>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]. Note: Applying a string filter with other filters to donut and bar charts is not supported.</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 Field</td>
<td>Select fields to sort data by. For example, to sort results from lowest to highest priority, select (Priority) [z to a].</td>
</tr>
</tbody>
</table>

3. Click Save. The report is generated.
<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. |
| Donut Width Percent | 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. |
| Show total          | Select this check box to display the total aggregation value in the center of the donut. Selecting this option automatically hides the chart legend. |
| Display data labels | 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. |
| 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 chart 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. |
| Decimal Precision   | Enter an integer from 0 to 4 to specify the number of decimal places to display. Currency values always have two decimal places. |

**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. See Access control rules.
<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 charts**

In funnel and pyramid charts, the size of the slices represents the percentage of a value that makes up the total of all values.

Funnel charts are often used to represent stages in a sales process (from lead to closed deal), or to identify potential problem areas in an organization’s process (for example, sales, or incident management). If you apply a neck in a funnel chart, all values below a certain percentage of the total value are represented as a bar, meaning that their difference is of equal importance.
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. Funnel and pyramid charts can be placed on homepages where users can quickly interpret the information displayed.

For example, use a funnel or pyramid chart to show open incidents by priority. At any time, there are open incidents of different priority levels. The organization may have a policy stating that P1 incidents can never exceed 40% of all open incidents. With a funnel or pyramid chart, you can quickly see if incident counts are within acceptable ranges.

![Funnel chart Incidents by Priority](image)

Figure 26: Funnel incidents priority
Create a funnel or pyramid report

How to create a funnel report, where the size of each slices 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.

1. Navigate to Reports Create New.
2. Fill in the fields, as appropriate.

Table 76: 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>Field</td>
<td>Description</td>
</tr>
<tr>
<td>---------------</td>
<td>---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------</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.</td>
</tr>
<tr>
<td>Type</td>
<td>Select Funnel or Pyramid.</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 used to collect similar data in groups, from the selected table. For example, in an incident report that is grouped by Assignment group, all incidents belonging to Software, Service Desk, Network, and so on, are placed in separate groups. Make sure the name of the report reflects the selected 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></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 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 Count, which displays the number of records selected.</td>
</tr>
<tr>
<td></td>
<td>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.</td>
</tr>
<tr>
<td></td>
<td>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.</td>
</tr>
<tr>
<td></td>
<td>Note: For duration values, the unit of measurement displayed in the aggregation axis cannot be customized.</td>
</tr>
</tbody>
</table>
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, funnel charts display up to 12 slices. Remaining values are grouped into an Other category.

If you select Show all, all slices up to 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

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.

Add Sort Field

Select fields to sort data by. For example, to sort results from lowest to highest priority, select [Priority] [z to a].

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 chart style options

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.

Table 77: Chart style options

<table>
<thead>
<tr>
<th>Field</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>General</td>
<td></td>
</tr>
<tr>
<td>Funnel Neck Percent</td>
<td>(Funnel charts only) Enter a percentage for the width of the funnel, ranging between 1 and 100 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 30.</td>
</tr>
<tr>
<td>Field</td>
<td>Description</td>
</tr>
<tr>
<td>---------------------</td>
<td>-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------</td>
</tr>
<tr>
<td>Chart color</td>
<td>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:</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 Chart Colors.</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 charts with drilldown 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.</td>
</tr>
<tr>
<td>Decimal Precision</td>
<td>Enter an integer from 0 to 4 to specify the number of decimal places to display. Currency values always have two decimal places.</td>
</tr>
<tr>
<td>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, homepages, and dashboards.</td>
</tr>
<tr>
<td>Show 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>Field</td>
<td>Description</td>
</tr>
<tr>
<td>-------------------------------------</td>
<td>---------------------------------------------------------------------------------------------------------------------------------------------</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.</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>
</tbody>
</table>

**Heatmap charts**

Heatmap charts display aggregate data visually using colors to represent different values.

Note: Heatmap reports can have no more than 1000 cells.
Create a heatmap report

Create a heatmap report to display aggregate data visually using colors to represent different 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.

1. Navigate to Reports Create New
2. Fill in the fields, as appropriate (see table).

<table>
<thead>
<tr>
<th>Priority</th>
<th>Investigation</th>
<th>Fix Deployment</th>
<th>New</th>
<th>Confirmed</th>
<th>Work in Progress</th>
<th>Closed</th>
<th>Testing</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 - High</td>
<td>6</td>
<td>2</td>
<td>29</td>
<td>10</td>
<td>12</td>
<td>8</td>
<td></td>
</tr>
<tr>
<td>2 - Moderate</td>
<td>90</td>
<td>2</td>
<td>194</td>
<td>303</td>
<td>92</td>
<td>1</td>
<td>36</td>
</tr>
<tr>
<td>3 - Low</td>
<td>343</td>
<td>4</td>
<td>858</td>
<td>2,193</td>
<td>275</td>
<td>1</td>
<td>115</td>
</tr>
<tr>
<td>4 - Planning</td>
<td>41</td>
<td>43</td>
<td>328</td>
<td>17</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>5 - Testing</td>
<td>41</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Field</td>
<td>Description</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>------------</td>
<td>-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------</td>
<td></td>
<td></td>
<td></td>
<td></td>
<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>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Type</td>
<td>Heatmap</td>
<td></td>
<td></td>
<td></td>
<td></td>
<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>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Row</td>
<td>Select the field used as the source of the data for the rows in the heatmap.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Column</td>
<td>Select the field used as the source of the data for the columns in the heatmap.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></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. Note: For duration values, the unit of measurement displayed in the aggregation axis cannot be customized.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>No. groups</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 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. If you select Remove Other, the Other column is hidden.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Field | Description
---|---
Show Other | Select this check box to display the Other column. This check box is not available when Show all or Remove Other are selected from the No. groups list.
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.

Heatmap style options
Change the look of your heatmap 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.

Table 79: Heatmap chart style options

<table>
<thead>
<tr>
<th>General</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Use color</td>
<td>Select if the heatmap uses different colors to indicate different values.</td>
</tr>
<tr>
<td>Max color</td>
<td>Select the color used to indicate a high value on the chart.</td>
</tr>
<tr>
<td>Min color</td>
<td>Select the color used to indicate a low value on the chart.</td>
</tr>
<tr>
<td>Display Zero labels</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>
</tr>
</tbody>
</table>
### General

<table>
<thead>
<tr>
<th>Property</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<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 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</a>. 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. See <a href="#">Access control rules</a>.</td>
</tr>
<tr>
<td>Decimal Precision</td>
<td>Enter an integer from 0 to 4 to specify the number of decimal places to display. Currency values always have two decimal places.</td>
</tr>
<tr>
<td>Title</td>
<td></td>
</tr>
<tr>
<td>Show chart title</td>
<td>Select when to display the chart title. You can hide the title, display the title only on the report form, or always display the title.</td>
</tr>
<tr>
<td>Chart title</td>
<td>Enter a title for the chart.</td>
</tr>
<tr>
<td>Chart title size</td>
<td>Enter the font size for the chart title.</td>
</tr>
<tr>
<td>Chart title color</td>
<td>Select a text color for the chart title.</td>
</tr>
<tr>
<td>Custom chart title position</td>
<td>Select if the chart title should appear at a fixed position.</td>
</tr>
<tr>
<td>Chart title X position</td>
<td>The number of pixels to adjust the chart title position. By default the title appears at the center top of the chart. Set a value greater than 0 to move the chart title down. This field appears only if Custom chart title position is selected.</td>
</tr>
<tr>
<td>Chart title Y position</td>
<td>The number of pixels to adjust the chart title position. By default the title appears at the center top of the chart. Set a value greater than 0 to move the chart title to the right. This field appears only if Custom chart title position is selected.</td>
</tr>
<tr>
<td>Title horizontal alignment</td>
<td>Select the horizontal position that the title appears in, relative to the chart. This field appears only if Custom chart title position is not selected.</td>
</tr>
</tbody>
</table>
### General

<table>
<thead>
<tr>
<th>Field</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Title vertical alignment</td>
<td>Select the vertical position that the title appears in, relative to the chart. This field appears only if Custom chart title position is not selected.</td>
</tr>
<tr>
<td>Legend</td>
<td></td>
</tr>
<tr>
<td>Show legend</td>
<td>Select if the chart should display a legend.</td>
</tr>
<tr>
<td>Legend horizontal alignment</td>
<td>Select the horizontal position that the legend appears in, relative to the chart.</td>
</tr>
<tr>
<td>Legend vertical alignment</td>
<td>Select the vertical position that the legend appears in, relative to the chart.</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 if a border should appear around the legend.</td>
</tr>
</tbody>
</table>

### Histograms chart

A histogram groups 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

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.

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 (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.

### Type
Select Histogram. Alternatively, click the question mark icon to use the report type selector.

### Measured by
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.

### 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 Field
Select fields to sort data by. For example, to sort results from lowest to highest priority, select **[Priority]** **z to a**.

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 charts

Line charts 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 administrator role can define the ranges that are used in a line chart report.

For example, you can create a line 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 incidents reported should decrease as users become more accustomed to changes in the product.
Create a line chart

Create a line chart 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.

1. Navigate to Reports Create New.
2. Fill in the fields, as appropriate (see table).
3. Click Save or Insert.

   The report is generated.
Table 81: 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 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 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 Type 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 the field that you want to group the report data by. For example, in an incident report that is grouped by Assignment group, all incidents belonging to Software, Service Desk, Network, and so on, are grouped together. Make sure you give the report a name that reflects the field you select.</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 true, even if Display Grid 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>Select a time period to display in the chart. Time periods range from a year down to an hour. You can also select a specific 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>Select a computational method for aggregating report data. The default is Count, which displays the number of records selected.</td>
</tr>
<tr>
<td></td>
<td>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.</td>
</tr>
<tr>
<td></td>
<td>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.</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>• Use Aggregation: default method that computes percentages for each element using the sum of all elements in the data set.</td>
</tr>
<tr>
<td></td>
<td>• Use Record Count: 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 Aggregation is set to Average, Sum, or Count Distinct.</td>
</tr>
<tr>
<td>Add Filter Condition</td>
<td>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.</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. In Eureka, this field is only available after at least one filter condition has been created.</td>
</tr>
<tr>
<td>Add Sort Field</td>
<td>Select fields to sort data by. For example, to sort results from lowest to highest priority, select (Priority) {z to a}.</td>
</tr>
</tbody>
</table>
Line chart style options

Configure the look of your line 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.

Table 82: Table title

<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</td>
<td>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:</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 Chart Colors.</td>
</tr>
<tr>
<td>Display data labels</td>
<td>Select this check box to display the current value for each data point.</td>
</tr>
<tr>
<td>Marker</td>
<td>Select this check box to display a symbol at each data point.</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 charts with drilldown 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.</td>
</tr>
<tr>
<td>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. See Access control rules.</td>
<td></td>
</tr>
<tr>
<td>Decimal Precision</td>
<td>Enter an integer from 0 to 4 to specify the number of decimal places to display. Currency values always have two decimal places.</td>
</tr>
</tbody>
</table>

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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>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>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

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.

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.

Figure 29: List

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 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 Table or Report source. Then select the specific table or predefined source from the second choice list.</td>
</tr>
<tr>
<td>Type</td>
<td>Select List.</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>Note: Make sure the name of the report reflects groupings.</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 may be able to add fields from tables that extend the selected table. For more information, see How to access fields on extended tables in a report.</td>
</tr>
<tr>
<td>Add Filter Condition</td>
<td>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] &lt; 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] = Database, to include records that are assigned to the Database group if the first condition is false.</td>
</tr>
<tr>
<td>Add Sort Field</td>
<td>Select fields to sort data by. For example, to sort results from lowest to highest priority, select [Priority] z to a.</td>
</tr>
</tbody>
</table>

3. 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.
Using group by in list reports

Grouped list reports can display only the records in each group that are configured to appear in a normal list. List reports cannot be grouped by service catalog variables.

For example, if you have configured lists to display 100 records at a time, then each group in the report 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, either increase the display size of the list or 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.
Create a list report 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. 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 choice 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 Cancelled 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 display in the report.

   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 access fields on extended tables in a report.

7. Select Variables (+) and click the expand icon

   ( [+ ] )

to choose an item.

   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. To limit the information displayed in the report, click Add Filter Condition, Add “OR” Clause, or Add Sort Field and select conditions to filter the report data. For more details on how conditions are constructed, see Condition builder.

9. Click Save.
   The report is generated.

   • To enter a description of the report, click the Report info icon.

   • To share the report, click Share to open the Sharing menu. On this menu, you can set visibility and schedules, add the report to a dashboard, export the report to PDF, and publish the report to the web. See Share a report for more information.

Export a list report to Excel

You can export a list report to Excel in several ways.

• 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.

Map reports

Map reports display data on a map.

You can display data as a geographical heatmap or view specific data points. Zoom in to a map to see 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 7 and 8.
- Map reports cannot be saved as images on Internet Explorer 7 to 9 and Firefox 31 to 37, Safari 5, or 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 on Firefox 40 and higher, Chrome 43 and higher, Safari.
- This report type cannot be run as a scheduled report.
Create a map report

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.

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 Map.</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.

Table 83: Style your chart fields

<table>
<thead>
<tr>
<th>Field</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>General tab fields</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>Decimal Precision</td>
<td>Enter an integer from 0 to 4 to specify the number of decimal places to display. Currency values always have two decimal places.</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>• Never: Hides the title.</td>
</tr>
<tr>
<td></td>
<td>• Report only: Displays the title only on standalone reports, but not on dashboards.</td>
</tr>
<tr>
<td></td>
<td>• Always: 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.</td>
</tr>
<tr>
<td></td>
<td>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.</td>
</tr>
<tr>
<td></td>
<td>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.</td>
</tr>
<tr>
<td></td>
<td>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.

Add reports to homepages or dashboards, publish to the internet, and share reports with others. See [Distribute reports](#).

**Multilevel pivot tables**

Multilevel pivot tables allows you to display aggregate data broken down by multiple metrics in a single chart.
Multilevel pivot tables display separate cells for each row and column value combination, as well as a column subtotal for each first-level row. You can expand and collapse these rows to show the chart details, or only the subtotals. Aggregate information is presented in the top-left of the chart.

Note: Some row configurations may 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.
Create a multilevel pivot table report

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.

1. Navigate to Reports Create New
2. Fill in the fields, as appropriate.

Table 84: Multilevel pivot 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>Type</td>
<td>Multilevel Pivot</td>
</tr>
<tr>
<td>Style your chart</td>
<td>Click the gear icon (          ) after the Type field to see the following style options:</td>
</tr>
<tr>
<td></td>
<td>• Display Zero: 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></td>
<td>• Drilldown view: 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>Columns</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. Note: It is not possible to group or stack reports by the Tags field.</td>
</tr>
<tr>
<td>Rows</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. Note: It is not possible to group or stack reports by the Tags 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.

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.

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. If you select Remove Other, the Other column is hidden.

**Show Other**

Select this check box to display the Other column. This check box is not available when Show all or Remove Other are selected from the No. groups list.

**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 \([Priority] \langle 3 \) - Moderate\).

**Add “OR” Clause**

Select a second condition that must be met if the first condition is invalid. For example, select \([Assignment Group] \langle Database\) 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.
Multi-level pivot chart style options
Change the look of your box chart.

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 85: 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>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 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.</td>
</tr>
<tr>
<td><strong>Title</strong></td>
<td></td>
</tr>
<tr>
<td>Show chart title</td>
<td>Select when the chart title is displayed.</td>
</tr>
<tr>
<td>• Never: never displays the chart title.</td>
<td></td>
</tr>
<tr>
<td>• Report only: displays the chart title on reports.</td>
<td></td>
</tr>
<tr>
<td>• Always: displays the chart title on reports, and dashboards and homepages.</td>
<td></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>Field</td>
<td>Description</td>
</tr>
<tr>
<td>------------------------------</td>
<td>---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------</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>Chart title X position</td>
<td>The number of pixels to adjust the chart title position. By default the title appears at the center top of the chart. Set a value greater than 0 to move the chart title down. This field appears only if Custom chart title position is selected.</td>
</tr>
<tr>
<td>Chart title Y position</td>
<td>The number of pixels to adjust the chart title position. By default the title appears at the center top of the chart. Set a value greater than 0 to move the chart title to the right. This field appears only if Custom chart title position is selected.</td>
</tr>
</tbody>
</table>

### Pareto charts

Use a Pareto chart to identify the most important factors in a large set of factors.

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 to 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.
Create a Pareto report

Create a Pareto report to identify the most important factors in a large set of factors.

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. Fill in the fields, as appropriate.

Table 86: 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>Field</td>
<td>Description</td>
</tr>
<tr>
<td>-----------------------</td>
<td>-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------</td>
</tr>
<tr>
<td>Table</td>
<td>ServiceNow table against which this report will be run.</td>
</tr>
<tr>
<td>Group by</td>
<td>Field to report, from the selected table. Make sure the name of the report reflects the selected field.</td>
</tr>
<tr>
<td>Export details</td>
<td>Check box for indicating 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.</td>
</tr>
<tr>
<td></td>
<td>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.</td>
</tr>
<tr>
<td></td>
<td>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>Chart size</td>
<td>Size of chart: large or small.</td>
</tr>
<tr>
<td>Other threshold</td>
<td>Maximum number of individual values represented as slices. Pie charts display 12 slices by default, showing largest values from the selected data. Remaining values are grouped into an Other category.</td>
</tr>
<tr>
<td>Field</td>
<td>Description</td>
</tr>
<tr>
<td>---------------------</td>
<td>-------------</td>
</tr>
<tr>
<td>Display grid</td>
<td>Check box for indicating whether to display (selected) or hide (cleared) 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 system property <code>glide.ui.section508</code> is set to true, regardless of the Display grid setting. The table containing the data is collapsed by default.</td>
</tr>
<tr>
<td>Use color palette</td>
<td>Check box for indicating whether to assign (selected) or not assign (cleared) a single color to all bars in pareto charts for the specific report. By default, this setting is derived from the value of the system property <code>glide.ui.chart.use_full_color_palette</code>. If chart colors are defined for specific table fields or if colors are specified for report ranges, they will be used if the check box is selected. If the check box is selected and no chart colors or report range colors are specified, the default color palette is used. If the check box is cleared, the default color will be used unless the property <code>glide.ui.chart.color</code> is set.</td>
</tr>
<tr>
<td>Display percentages</td>
<td>Computational method used for calculating percentages for each element in a data set. The default method, Aggregation computes percentages for each element using the sum of all elements in the data set. Record count computes percentages for each element using the total number (count) of elements in the data set.</td>
</tr>
</tbody>
</table>

3. Click Save or Insert and stay 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.

Pareto chart style options

Change the look of your pareto 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.

Table 87: 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>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. |
| Display data labels | 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.  |
| 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 chart 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.  |
| 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, dashboards, and homepages.  |
<p>| 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.  |</p>
<table>
<thead>
<tr>
<th>Field</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<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>
</tbody>
</table>

**Axis**

| Axis button                  | 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. |

**Pie charts**

Pie charts are useful when comparing the size of individual data elements to the whole.

For example, you can use a pie chart to show open incidents by priority. At any time, there are open incidents of different priority levels. The organization may have a policy stating that P1 incidents can never exceed 40% of all open incidents. With a pie chart, you can quickly see if incident counts are within acceptable ranges.
Create a pie chart

Create a pie chart to compare the size of an individual category 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.

1. Navigate to Reports Create New.
2. Fill in the fields, as appropriate (see table).
3. Click Save or Insert.

Table 88: 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.</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>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>
<tr>
<td>Group by</td>
<td>Select a field used to collect similar data in groups, from the selected table. For example, in an incident report that is grouped by Assignment group, all incidents belonging to, for example, Software, Service Desk, Network, and so on, are grouped together. Make sure you give the report a name that reflects the selected 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 a table of report data if the glide.ui.section508system property is set to true, even if Display Grid is cleared.</td>
</tr>
<tr>
<td>Field</td>
<td>Description</td>
</tr>
<tr>
<td>---------------</td>
<td>------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------</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.</td>
</tr>
<tr>
<td></td>
<td>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 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.</td>
</tr>
<tr>
<td></td>
<td>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. 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.</td>
</tr>
<tr>
<td></td>
<td>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.</td>
</tr>
<tr>
<td>Show Other</td>
<td>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.</td>
</tr>
<tr>
<td>Add Filter Condition</td>
<td>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].</td>
</tr>
<tr>
<td></td>
<td>Note: Applying a string filter with other filters to pie and bar charts is not supported.</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>
</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.

Pie and Control chart style options

Change the look of your pie or control 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.

Table 89: 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 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.</td>
</tr>
<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, edit the glide.ui.chart.pie.labels.max_items system property.</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>Field</td>
<td>Description</td>
</tr>
<tr>
<td>-----------------------</td>
<td>-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------</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 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.</td>
</tr>
<tr>
<td></td>
<td>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. See Access control rules.</td>
</tr>
<tr>
<td>Decimal Precision</td>
<td>Enter an integer from 0 to 4 to specify the number of decimal places to display. Currency values always have two decimal places.</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>• 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>Field</td>
<td>Description</td>
</tr>
<tr>
<td>------------------------------</td>
<td>-----------------------------------------------------------------------------</td>
</tr>
<tr>
<td>Show legend</td>
<td>Select this check box to display the chart legend.</td>
</tr>
<tr>
<td></td>
<td>This check box is available when the Group by 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 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>

**Axis**

| Axis tab                     | Configure the titles, appearance, and labels of the X and Y axes. 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, the From and To fields are not available. |

**Pivot tables**

Pivot tables aggregate data from a table into columns and rows, which you define.

You can configure a filter to further refine the data and select the aggregation values. Pivot tables enable you to quickly investigate the source of the summarized data. Non-empty cells display tooltips to indicate how many records the cell represents. Clicking a non-empty cell displays a breakdown of those records.

---

**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.
Create a pivot table

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.

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 <strong>predefined data set</strong> from the second choice list.</td>
</tr>
<tr>
<td>Type</td>
<td>Pivot Table</td>
</tr>
<tr>
<td>Style your chart</td>
<td>Click the gear icon (⚙️) to view available style options:&lt;br&gt;• Drilldown View: 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>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.&lt;br&gt;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.&lt;br&gt;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.&lt;br&gt;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 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. If you select Remove Other, the Other column is hidden.</td>
</tr>
<tr>
<td>Field</td>
<td>Description</td>
</tr>
<tr>
<td>---------------------</td>
<td>---------------------------------------------------------------------------------------------------------------------------------------------</td>
</tr>
<tr>
<td>Show Other</td>
<td>Select this check box to display the Other column. This check box is not available when Show all or Remove Other are selected from the No. groups list.</td>
</tr>
<tr>
<td>Add Filter Condition</td>
<td>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).</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>
</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.

Pivot table style options

Change the look of your box chart.

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 90: Chart style options

<table>
<thead>
<tr>
<th>Field</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>General</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 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.</td>
</tr>
</tbody>
</table>

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. See Access control rules.

Single score report

Single score charts display an single value. Use them to share metrics or scores that are key to your business. Single score reports that have been added to dashboards can be configured to update in real-time.

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Create a single score report

Create a single score chart to display a metric or score that is key to your business.

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. Fill in the fields, as appropriate.

Table 91: 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 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>Single Score</td>
</tr>
<tr>
<td>Style your chart</td>
<td>Click the gear icon ( ) after the Type 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>
</table>
| Aggregation | Select a computational method for aggregating report data. The default is Count, which displays the number of records selected.  

Note: A single score chart displays only the aggregate value.  

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.  

Note: For duration values, the unit of measurement displayed in the aggregation axis cannot be customized. |
| 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, and share reports with others. See [Distribute reports](Distribute%20reports).  

**Single score chart style options**  
Change the look of your box chart.  

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 92: 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>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 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.</td>
</tr>
<tr>
<td><strong>Title</strong></td>
<td></td>
</tr>
<tr>
<td>Show chart title</td>
<td>Select when the chart title is displayed.</td>
</tr>
</tbody>
</table>
| • Never: never displays the chart title.  
• Report only: displays the chart title on reports.  
• Always: displays the chart title on reports, and dashboards and homepages. |
<p>| 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 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. |
| Title horizontal alignment | Select how the chart title is aligned horizontally. This field is available when Custom chart title position is cleared.                                                                 |</p>
<table>
<thead>
<tr>
<th>Field</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<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>Chart title X position</td>
<td>The number of pixels to adjust the chart title position. By default the title appears at the center top of the chart. Set a value greater than 0 to move the chart title down. This field appears only if Custom chart title position is selected.</td>
</tr>
<tr>
<td>Chart title Y position</td>
<td>The number of pixels to adjust the chart title position. By default the title appears at the center top of the chart. Set a value greater than 0 to move the chart title to the right. This field appears only if Custom chart title position is selected.</td>
</tr>
</tbody>
</table>

**Trend charts**

Trend charts show how the value of one or more items changes over time.

Values along the horizontal axis of the trend chart 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.

A good 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 should drop as users become more accustomed to the changes in the product.
Create a trend report

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.

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>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>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 Type 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 the field that you want to group the report data by. For example, in an incident report that is grouped by Assignment group, all incidents belonging to Software, Service Desk, Network, and so on, are grouped together. Make sure you give the report a name that reflects the field you select.</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.全 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 true, even if Display Grid 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>Select a time period to display in the chart. Time periods range from a year down to an hour. You can also select a specific 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.
### 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 Count, which displays the number of records selected. If you select Count Distinct, only unique records are counted.</td>
</tr>
<tr>
<td></td>
<td>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.</td>
</tr>
<tr>
<td></td>
<td>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.</td>
</tr>
<tr>
<td>Note:</td>
<td>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>• Use Aggregation: default method that computes percentages for each element using the sum of all elements in the data set.</td>
</tr>
<tr>
<td></td>
<td>• Use Record Count: 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 Aggregation is set to Average, Sum, or Count Distinct.</td>
</tr>
<tr>
<td>Add Filter Condition</td>
<td>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).</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 Field</td>
<td>Select fields to sort data by. For example, to sort results from lowest to highest priority, select (Priority) (z to a).</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](#).

**Trend chart style options**

Change the look of your trend 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.

Table 93: Trend 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. |
| 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 view that determines how detailed records are shown when a specific part of the chart is clicked. This option is available for charts with drilldown 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. |
| Decimal Precision   | Enter an integer from 0 to 4 to specify the number of decimal places to display. Currency values always have two decimal places. |
| Title               |                                                                             |

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. See Access control rules.
<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></td>
</tr>
<tr>
<td>Show 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></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.</td>
</tr>
</tbody>
</table>

**Trendbox charts**

A trendbox chart shows the distribution of values in a data set, with an additional time period.
A trendbox chart is similar to a box report. However, a trendbox chart allows you to specify an additional time period for the report. When defining the report, use a descriptive title that indicates the use of the time period. Use trendbox charts 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.

Use a trendbox chart to show, for example, incident resolution duration for high priority incidents by support employee. More precisely, each support employee handles a certain number of P1 incidents and the time it takes to resolve each P1 incident varies. A trendbox chart 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 Chart](image)

Figure 36: Trendbox Chart

Understanding Trendbox Charts

A trendbox chart displays the following for each group of data:
Figure 37: Box Chart Scale

- Sample maximum: the uppermost bold red line.
- Upper quartile: the red line that forms the top of the box and cuts off the highest 25% of the data.
- Median: the bold red line cutting through the center of the box.
- Mean: the blue dot on the chart.
- Lower quartile: the red line that forms the bottom of the box and cuts off the lowest 25% of the data.
- Sample minimum: the lowermost bold red line.

Create trendbox reports

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.

1. Navigate to Reports Create New:
2. Fill in the fields, as appropriate (see table).
3. Click Save or Insert.

Table 94: Trendbox report configuration 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>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>Select Trendbox. 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 Type 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 the field that you want to group the report data by. For example, in an incident report that is grouped by Assignment group, all incidents belonging to Software, Service Desk, Network, and so on, are grouped together. Make sure you give the report a name that reflects the field you select.</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>Select a time period to display in the chart. Time periods range from a year to an hour. You can also select a specific date. Note that when you select, for example, Created per Hour in the trend field, the resulting trend chart based on the incidents table shows incidents created from the start of the hour (for example: 8:00:00) until the end of the hour (8:59:59) in the same bar. So an incident created at 8:14 is shown under 8, and an incident created at 9:01 is shown under 9.</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.
### Field Descriptions

<table>
<thead>
<tr>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<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.</td>
</tr>
<tr>
<td>Note: For duration values, the unit of measurement displayed in the aggregation axis cannot be customized.</td>
</tr>
<tr>
<td>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).</td>
</tr>
<tr>
<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>Select fields to sort data by. For example, to sort results from lowest to highest priority, select (Priority) (z to a).</td>
</tr>
<tr>
<td>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.</td>
</tr>
</tbody>
</table>

**Trendbox chart style options**

Change the look of your trendbox 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.
Table 95: Trendbox 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>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>Decimal Precision</td>
<td>Enter an integer from 0 to 4 to specify the number of decimal places to display. Currency values always have two decimal places.</td>
</tr>
<tr>
<td><strong>Title</strong></td>
<td></td>
</tr>
<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><strong>Axis</strong></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.</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.

![Drilldown example](image)

Figure 38: Drilldown example

All report types except for list, histogram, calendar, control, box, and trendbox support drilling down. Drilling down is not available on reports 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

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.
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 Report types and creation details.

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. User access to list information is determined by platform access control lists. Users who do not have rights to any or all of the list data will see the message “Number of rows removed from this list by Security constraints:” followed by the number. See Access control rules.
Metrics

A metric measures and evaluates the effectiveness of IT service management processes.

For example, a metric could measure the effectiveness of the incident resolution process by calculating how long it takes to resolve an incident.

Sometimes a metric can be easily obtained from the data. For example, to find the number of incidents that were created today, a report will simply count the number of incidents in the incident table with a Created date of today. Often, however, metrics need to be gathered as data is updated. For example, determining how long an incident was assigned to a certain group requires collecting information about assignment changes and calculating the duration of each assignment.

The Metric plugin provides an easy, declarative way of defining metrics. Once defined, the data for the metric will be gathered, and instances of the metric will be calculated and stored. By an instance we mean a specific occurrence. For example, the “Assigned to Duration” metric measures the duration of time an incident is assigned to an individual. The metric is defined by creating a metric definition of type “Field value duration” and selecting the “Assigned to” field from the Incident table. A metric instance is then created for each incident assignment showing its duration. Reporting on the duration of incident assignments becomes easy.

Reporting on a metric is done using the database view that links the metric to the table on which it is defined.

Create a metric

Create a metric definition for a task table.

1. Navigate to Metrics Definitions.
2. Click New.
3. Complete the Metric definition form then click Submit.

<table>
<thead>
<tr>
<th>Field</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Number</td>
<td>The system generates a unique record number for the metric definition.</td>
</tr>
<tr>
<td>Name</td>
<td>Enter a unique name to describe what metrics will be collected.</td>
</tr>
<tr>
<td>Table</td>
<td>Select the table that you want to collect metrics for. A metric can only apply to one table. Note: The list shows only tables and database views that are in the same scope as the metric definition.</td>
</tr>
<tr>
<td>Field</td>
<td>Select the table column you want to monitor for changes. Metrics only work on audited fields. Creating a metric for non-audited field produces unreliable metrics.</td>
</tr>
</tbody>
</table>
### Field Value Duration

**Description**

Select what values this metric will generate.

- **Field value duration**: This type of metric measures the duration of time from when the value of the specified field is set until it’s changed. A Field value duration metric can optionally specify a script. The script can either return a duration value or set the answer variable to false to stop processing the metric. For example, the baseline incident metrics stop calculating duration when an incident’s Active field is set to false. The script can also carry out any other action such as closing the duration of other metrics defined on the same record. See the example script for more information.

- **Script calculation**: This type of metric creates a metric instance using a script. The script has access to the current row in the table (for example an incident) and the metric definition. The script can then perform any calculation and insert data into the metric_instance table. The calculation does not have to result in a duration. It can calculate any type of value and store it in the metric instance value.

### Timeline

Select this checkbox to display the metric on a timeline.

### Active

Select this checkbox to monitor changes for this metric.

### Description

(Optional) Specify what data the metric monitors and it’s conditions.

### Script

Enter the script you want the metric to run to either calculate a duration or perform some calculation on the metric_instance table.

---

**Note:** In the base system, metrics are configured to work on the task table only. To apply metrics to cmdb_ci tables, duplicate the metric events business rule that currently runs on the task table for the cmdb_ci table. Without the events created, no metric processing can occur.

---

**Sample field value duration script**

Review the existing Incident Open metric definition to see how you can create your own custom metric.

This script either provides a duration value or stops processing durations (sets the answer variable to false) when an incident is closed.

```java
// script can set answer to false to terminate processing of the metric
// mi - MetricInstance
// answer
if (!current.active) {
    answer = false;
    mi.endDuration();
}
```
gs.log("Closing field durations");
closeDurations(mi.current);
}

function closeDurations(current) {
  var gr = new GlideRecord('metric_instance');
gr.addQuery('id', current.sys_id);
gr.addQuery('calculation_complete', false);
gr.addQuery('definition.type', 'field_value_duration');
gr.query();
while (gr.next()) {
gs.log("closing: " + gr.definition.name + " for: " + current.number);
  var definition = new GlideRecord('metric_definition');
definition.get(gr.definition);
  var mi = new MetricInstance(definition, current);
  mi.endDuration();
}
}

Metric instance

A metric instance is a record in the metric_instance table. A record holds one instance of a metric.

Some of the notable fields in this table are:

- Metric definition: the metric definition for which this metric instance was gathered.
- Value: For a “Field value duration” metric this is the value of the table field for which duration is calculated. For example, for the “Assigned to Duration” metric, the Value is the name of the person assigned to the incident. For other metrics, the value can be any value calculated by the metric.
- ID: Identifies the specific record for which the metric is gathered. For example, the specific incident.
- Duration: Time duration for a Field value duration metric.
Database views

A database view defines table joins for reporting purposes.

For example, a database view can join the Incident table to the Metric Definition and Metric Instance tables. This view can be used to report on incident metrics and may include fields from any of these three tables.

A number of useful database views are installed with the Database View plugin and the Database Views for Service Management plugin. These database views cover most metric reporting needs and greatly reduce the need to define new ones.

Note: In general, as the number of tables that are included in the view and the number of records that those tables contain increases, the accumulated impact on performance grows. In addition, to optimize the performance of the database view ensure that the 'where' clauses that are defined in the database view are based on indexed fields.

Limitations

- Database views cannot be created on tables that participate in table rotation.
- It is not possible to edit data within a database view.

ACLs and database views

You need to create a read ACL for your users on the tables in a view to generate reports on database views. Non-admin users do not have access to database view records unless a read ACL on the database view record allows access. For information about table-level and field-level ACL behavior on database views, see the ACL on Database Views [KB0535471] article in the HI Knowledge Base.

Creating a database view

Create a database view to join tables. You can then create a report based on the database view. Create a database view

Create the database view.

1. Navigate to System Definition Database Views.
2. Click New.
   The Database View form appears.
3. Name the view as you would name a new table.
   The Label and Plural fields define how the database view is labeled in lists and forms.
Add a table to the database view

Specify the table to join to the database view.

The Table field in the View Table form names the table to join to the database view. A Variable prefix can be assigned and used later when specifying a Where clause to define the conditions for the join. These conditions can refer to any field, but typically define the join by matching a field in the table to a field in another table that is part of the database view. When writing the Where clause, add the field name to the Variable prefix of its table with an underscore. For example, in the following screenshot, in the Where clause field, mi_id refers to the id field in the Metric Instance (metric_instance) table (mi) and
the inc_sys_id refers to the sys_id field in the Incident (incident) table (inc). Database views can not be created on tables that participate in Table Rotation.

The Where clause supports these JavaScript conditional operators:

- =, !=, <, <=, >, >=, &&, ||

1. From the Database View form, click New on the View Tables related list.
2. **Configure a form** and add the Left join field (a check box) to the form.
3. Click Save.
4. Complete the form and select the Left join check box.
   - Selecting Left join causes the left-hand table in the database view to display all records, even if the join condition does not find a matching record on the right-hand table. Select this check box for view tables that specify a Where clause. Selecting Left join for view tables without a Where clause does not affect the query.
• Joined tables are ordered left to right from lowest to highest Order values.

5. Click Submit.

6. Personalize the View Tables related list to show the Left join column.
   The Left join field shows a value of true.

7. Click a record to view a table.
   The View Table form appears.

8. To add an OR to your where clause use ||.
   For example, to query all incidents related to RFCs OR all incidents that are the parent of a change request, use the following syntax:
   
   ```
   inc_rfc = chg_sys_id || chg_parent = inc_sys_id
   ```

Figure 44: Database view where clause

**Specify a field to return**
Use the View Field form to restrict or specify a field that you want returned by the joined table.

If no fields are defined in the View Fields list, all fields are returned. If any fields are defined, then only those fields are returned.
When you restrict the fields returned by creating View Field records, you must create a record for the join field from the Where clause in the parent record. If you omit a record for this field, it cannot be returned, and the join fails. In the previous example, the Where clause uses the sys_id field from the Incident table to establish the join. For the join to succeed with a restricted field list, you must include a record for the sys_id field.

**Relabel a column**

In some cases, two different tables may have fields of the same name that are both important (such as two tables with a sys_updated_on field). You must rename one of these fields.

To create clear reports, relabel the fields on the Database View (sys_db_view) table without changing the names of the fields.

1. Navigate to System Definition Language File.
2. Click New.
3. Fill in the form as follows:

<table>
<thead>
<tr>
<th>Name</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Table</td>
<td>Name of the database view</td>
</tr>
<tr>
<td>Label</td>
<td>Display label</td>
</tr>
<tr>
<td>Plural</td>
<td>Plural form of the display label</td>
</tr>
<tr>
<td>Element</td>
<td>Name of the field on the database view</td>
</tr>
</tbody>
</table>

**Specify the number of records to return**

Specify the number of records to return for a database view.

A property called glide.db.max_view.records controls the maximum number of rows returned when running a GlideRecord query in a script. The default value for this property is 10,000. To change this value, **add the property** to the System Property (sys_properties) table and edit the number of rows to return.

This property only applies when querying a database view table in a script. When displaying the database view table in a list or report, this property does not apply.

**Test the database view**

Verify that the database view works correctly.
After the new view is defined, test it by clicking Try It under Related Links on the Database View form.

If you do not see the Try It link, the tables necessary for the view do not exist. If this occurs, it is possible that you did not activate the necessary plugins to create the supporting tables. When tables are not present to support the view, the form looks like this:

![Database View Form](image)

**Figure 46: Database View**

Note: Database views tables are not included in FTP exports.

Use disjunctions in complex queries

ServiceNow performs conjunction statements before disjunction statements in a query.

When you create a complex query, you must use parenthesis around disjunctions where appropriate to ensure proper grouping of query elements. For example, you must use parenthesis in the query `(md_table = 'incident' || md_table = 'task') && mi_definition = md_sys_id && mi_id = inc_sys_id`. Removing the parenthesis from this query returns all records where the md_table value is incident.
Database views in the base system

Certain views are included in the base system with the Database Views and Database Views for Service Management plugins.

Table 98: Database views

<table>
<thead>
<tr>
<th>Name</th>
<th>Description</th>
<th>Label</th>
</tr>
</thead>
<tbody>
<tr>
<td>change_request_metric</td>
<td>Join change to metric definition to metric instance, creating a view that can be reported on for things like: Changes that were closed by category.</td>
<td>Change Metric</td>
</tr>
<tr>
<td>change_request_sla</td>
<td>Join change_request to sla(task_sla), creating a view that can be reported on for things like change request resolved by sla per change category.</td>
<td>Change Request SLA</td>
</tr>
<tr>
<td>change_task_metric</td>
<td>Join change task to metric definition to metric instance, creating a view that can be reported on for things like: Change tasks that were closed by change state</td>
<td>Change Task Metric</td>
</tr>
<tr>
<td>change_task_sla</td>
<td>Join change_task to sla(task_sla), creating a view that can be reported on for things like change tasks resolved by sla.</td>
<td>Change Task SLA</td>
</tr>
<tr>
<td>change_task_time_worked</td>
<td>Join change task to task time worked to pull time worked entries associated with incidents.</td>
<td>Change Task Time Worked</td>
</tr>
<tr>
<td>incident_metric</td>
<td>Join incident to metric definition to metric instance creating a view that can be reported on for things like: Incidents that were resolved on the first call by category</td>
<td>Incident Metric</td>
</tr>
<tr>
<td>incident_sla</td>
<td>Join incident to sla(task_sla) to report on things like incidents resolved by sla per incident category.</td>
<td>Incident SLA</td>
</tr>
<tr>
<td>incident_time_worked</td>
<td></td>
<td>Incident Time Worked</td>
</tr>
<tr>
<td>pm_project_metric</td>
<td>Join pm.project to metric definition to metric instance creating a view that can be reported on for things like: Projects that were closed by name or date</td>
<td>Project Metric</td>
</tr>
<tr>
<td>pm_project_sla</td>
<td>Join pm.project to sla(task_sla) to report on things like project names by sla.</td>
<td>Project SLA</td>
</tr>
<tr>
<td>Name</td>
<td>Description</td>
<td>Label</td>
</tr>
<tr>
<td>-----------------------------</td>
<td>-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------</td>
<td>---------------------</td>
</tr>
<tr>
<td>pm_project_task_metric</td>
<td>Join pm_project_task to metric definition to metric instance creating a view that can be reported on for things like: Project tasks that were closed by name or date</td>
<td>Project Task Metric</td>
</tr>
<tr>
<td>pm_project_task_sla</td>
<td></td>
<td>Project Task SLA</td>
</tr>
<tr>
<td>pm_project_task_time_worked</td>
<td>Join pm_project_task to task time worked to pull time worked entries associated with project tasks.</td>
<td>Project Task Time Worked</td>
</tr>
<tr>
<td>problem_metric</td>
<td>Join problem to metric definition to metric instance creating a view that can be reported on for things like: Problems that were resolved on the first call by category</td>
<td>Problem Metric</td>
</tr>
<tr>
<td>problem_sla</td>
<td>Join problem to sla(task_sla) to report on things like problems resolved by sla per problem state.</td>
<td>Problem SLA</td>
</tr>
<tr>
<td>release_feature_metric</td>
<td>Join release_feature to metric definition to metric instance creating a view that can be reported on for things like: Release Features that were closed by product</td>
<td>Release Feature Metric</td>
</tr>
<tr>
<td>release_project_metric</td>
<td>Join release_project to metric definition to metric instance creating a view that can be reported on for things like: Releases that were closed by category</td>
<td>Release Metric</td>
</tr>
<tr>
<td>release_task_metric</td>
<td>Join release_task to metric definition to metric instance creating a view that can be reported on for things like: Release Features that were closed by feature</td>
<td>Release Task Metric</td>
</tr>
<tr>
<td>release_task_sla</td>
<td>Join release_task to sla(task_sla) to report on things like release tasks by sla.</td>
<td>Release Task SLA</td>
</tr>
<tr>
<td>sc_request_metric</td>
<td>Join sc_request to metric definition to metric instance creating a view that can be reported on for things like: Requests that were closed by category</td>
<td>Catalog Request Metric</td>
</tr>
<tr>
<td>sc_request_sla</td>
<td>Join sc_request to sla(task_sla) to report on things like requests by sla.</td>
<td>Catalog Request SLA</td>
</tr>
<tr>
<td>sc_req_item_metric</td>
<td>Join sc_request_item to metric definition to metric instance creating a view that can be reported on for things like: Request Items that were closed by item</td>
<td>Catalog Request Item Metric</td>
</tr>
</tbody>
</table>
### Database view reserved words

Certain words have special functionality when used as table identifiers. Using the terms may cause unintended or undesirable performance. For more information, see the [MySQL reserved words document](#).

#### Using multiple datasets in a report

You can create reports that display multiple datasets from various tables within a single chart. Multiple datasets requires Performance Analytics Premium.

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

Add an additional dataset to a report to visualize data from multiple sources in a single report.

Role required: itil

Performance Analytics Premium must be enabled to use multiple datasets.

The property glide.ui.doctype must be enabled.

You can add additional datasets to bar, horizontal bar, line, column, area, and spline reports.

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.
- 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.
3. Select Multiple dataset from the report options list on the top right of the report form.
4. Configure the data series the same way that you would configure a standalone report. The following options are specific to multiple datasets:
### 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.
4. Use the up and down arrows to position the report on the form.
5. 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.
6. Click Save.
   - A gray box with the text Configure chart appears on the form in the specified position.
7. Click Configure chart.
8. Specify the height of the chart. The default value is 300 pixels.
9. You can filter the data in the report based on selected fields or based on a scripted filter or an encoded query.

---

<table>
<thead>
<tr>
<th>Field</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Series name</td>
<td>(Optional) Specify a custom name for this dataset in the legend of the report.</td>
</tr>
<tr>
<td>Group by</td>
<td>For bar and horizontal bar reports, Group by must be the same as the specified in base report.</td>
</tr>
<tr>
<td>Show in yAxis</td>
<td>(Optional) Add an extra Y axis on the right side of the report for this data</td>
</tr>
<tr>
<td>Title</td>
<td>(Optional) You can define the Y axis label in the Title field, a</td>
</tr>
<tr>
<td>From and To fields</td>
<td>(Optional) 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 display a greater range than specified in the From and To fields, depending 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.
The first field must be visible on the form. To add fields to the form, select Configure Form Layout and use the Available Fields slushbucket.

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 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.

Add an additional group by or stack by to a report

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: Additional Group by values you select also appear in the Stack by choice list. As a result, date/time fields may appear in the Stack by choice list in generated reports. However, if you stack by a date/time field in a generated report, an error occurs.

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. Select a Stacked 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 Stacked 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.

Use service catalog variables in a report

For reports on service catalog data, you can stack and group data by variables, use variables as columns in line 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.

Figure 48: Variable use in Group by and Stack by fields.
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 list.</td>
</tr>
<tr>
<td>Add as an additional Group by</td>
<td>Click the plus sign ( + ) next to Group by, then select Variables+ at the bottom of the Available list that appears.</td>
</tr>
<tr>
<td>As as a column or row in a multilevel pivot table</td>
<td>Click Select Groups, then select Variables+ at the bottom of the Available list that appears.</td>
</tr>
</tbody>
</table>

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 list.
5. Move the variable that you want to use to the Selected column.
6. Save the report.

How to access 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.

role required: report_admin

Use data from fields in related tables in a report

Watch video to learn how to use dot walking, dynamic filters, and database views to access data on related tables.

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 chart. You can also define new system colors that can be used in charts.

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.

Figure 49: Chart colors

By default, the bars on a bar chart use different colors for different data categories. To use the same color for all bars, set the glide.ui.chart.use_full_color_palette property to false and specify the desired color in the glide.ui.chart.color property.

Define colors for report data categories

You can define colors for a specific value for a data category.

1. Navigate to Reports Administration Chart Colors.
2. Click New.

Figure 50: New Chart Colors form

3. Fill in the fields, as appropriate.
Table 99: 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>
<tr>
<td>Value</td>
<td>The sys_id of the value for which the specified color should be displayed. See Get the sys_id from the header bar.</td>
</tr>
<tr>
<td>Color name</td>
<td>Color name, as defined in the Color Definition module. When a report is generated, this color is used to represent the specified Value.</td>
</tr>
<tr>
<td>Color</td>
<td>Hexadecimal value used to specify a color that is not already defined in the Color Definition module.</td>
</tr>
</tbody>
</table>

Note: The list shows only tables and database views that are in the same scope as the chart colors record

Note: If the Color name field contains a value, the Color field is ignored.

4. Click Submit.

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 100: New color definition form

<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:
Custom charts

In previous releases, you could configure custom reports. Custom chart creation is now deprecated.

Multiple data set functionality is now found in the report designer when Performance Analytics premium is enabled. See [Using multiple datasets in a report](#).

Data collection based on scripts or formulas is now a function of Performance Analytics. See [Performance Analytics data collection and cleanup](#).

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 builder. Other actions, such as Update are not available.

- Insert
- Insert and Stay
- Schedule
- Add to Dashboard
- Export to PDF

Figure 51: Default colors
• Report History

Figure 52: Report options Save menu

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.

Data URLs for report images

You can use data URLs for report and chart images to reduce the number of round trips between client and server.

Modern web pages with images in them actually consistent of two components:

• The HTML page, which includes overall page structure
• Image tags that tells the browser where to put images

The image is not included in the page, so a second round trip is performed to download the image from the server.

Much of the content does not change between page renders, so the browser caches it locally to avoid the round trip. However, dynamically generated content (such as reports and home pages) must be
freshly reloaded with every report or home page cell. Each of these reloads represents an extra round trip to the server. These extra round trips slow down the overall page render, especially to computers at the end of a slow network link. Likewise, most browsers will display a “placeholder” image while downloading content so users will end up seeing a potentially unsightly place-holder image during the download process.

The platform uses data URLs to include dynamic images within the HTML file itself, saving multiple round trips and speeding up rendering.

Note: Data URLs are not supported at all on Microsoft Internet Explorer 6 and 7, and are only partially supported on Internet Explorer 8. As such, the platform will not use data URLs for transactions initiated by those browsers. For IE users, reports will load using the old method.

When data URLs are enabled, the page size for reports or home pages increases, but overall server traffic is essentially flat, because the same amount of information is exchanged.

Data URLs apply only to dynamic images generated as part of reports or graphs. More traditional content such as icons and navigation images is still downloaded either as a sprite or a traditional URL and then cached.

Most modern browsers fully support data URLs. Microsoft Internet Explorer 6 and 7, however, do not. Internet Explorer 8 provides limited support but imposes a size limit on how large the data block can be. The application server will use data URLs for supported browsers and continue to use traditional URLs for all versions of Internet Explorer.

To disable Data URLs, add the property glide.ui.inline.images and set it to false.

Note that some report images do not display correctly in Internet Explorer. To ensure reports display in Internet Explorer:

1. In Internet Explorer, navigate to ToolsInternet Options
2. Select the Security tab
3. Select Custom Level
4. Enable Open files based on content, not file extension
5. Access the instance

Administering reports

Learn about the tasks report administrators typically perform and the objects that they work with.

To administer reports, reporting roles, and report sources, navigate to Reports Administration and select the area to administer.

Reporting roles

Learn about the different reporting roles and the default abilities of each.

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, Sharing, 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 reports and view reports that have been shared with them. Cannot share reports, 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 and edit 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 and edit reports.</td>
</tr>
<tr>
<td>group report user (report_group)</td>
<td>Can manage reports that are shared with groups the user belongs to (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, publish, and schedule all reports. Can access Reports 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 ACL rule to restrict who can create a report.

Requires role: security_admin

Note: 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 builder or report designer 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>
</tbody>
</table>
3. Define the rules that determine whether a user can create a report against the table. To learn more, see **Use Access Control Rules**.

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. 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**.

### 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>Displays the name of the report. Click the hyperlink to view the report properties.</td>
</tr>
<tr>
<td>Last run</td>
<td>Displays the date and time the report was last run.</td>
</tr>
<tr>
<td>Runs</td>
<td>Displays the number of times the report has been run.</td>
</tr>
<tr>
<td>Runs on page</td>
<td>Displays the number of times the report has been run on dashboard or homepage.</td>
</tr>
<tr>
<td>Column</td>
<td>Description</td>
</tr>
<tr>
<td>-------------</td>
<td>--------------------------------------------------------------------------------------------------------------------------------------------</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 timeRecent 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.

**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. Create a report source when the data you need does not exist in a single table.

**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.

<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>Field</td>
<td>Description</td>
</tr>
<tr>
<td>-----------</td>
<td>-----------------------------------------------------------------------------</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</td>
</tr>
<tr>
<td></td>
<td>Incident table.</td>
</tr>
<tr>
<td></td>
<td>Note: If the report source is used for a report that also includes OR</td>
</tr>
<tr>
<td></td>
<td>conditions, records are only included in the report if they match the</td>
</tr>
<tr>
<td></td>
<td>conditions in both the report source and the report.</td>
</tr>
</tbody>
</table>

4. To view any reports based on a report source, click the Reports using this report source related link in the report source record.

Use the report source to create a report.

Note: While a report source is used by active reports, you cannot delete it.

Report ranges

A report range to defines data intervals that are used in bar and pie charts.

Note: Reports only show historical data. It is not possible to set report ranges for dates in the future.
Figure 53: Incidents created date with ranges

Note: The module for report ranges is hidden by default. You may need to be enable the module before use.

How report ranges work

Report ranges work with elements that hold only dates, lists, or integers.

Table 103: Report range elements list

<table>
<thead>
<tr>
<th>Type</th>
<th>Examples</th>
</tr>
</thead>
<tbody>
<tr>
<td>Dates</td>
<td>Using the Created 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>
<tr>
<td>Lists</td>
<td>Using the Priority field in the Incidents table: Low, Moderate, High, Critical, Planning</td>
</tr>
</tbody>
</table>
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.

Figure 54: Report ranges list

The following are important columns and their associated data types:

Table 104: 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>
<tr>
<td>Value list</td>
<td>List - works with elements that store a list item.</td>
</tr>
</tbody>
</table>
Create a report range

Create a report range to define data intervals that are used in bar and pie charts.
1. Navigate to Reports AdministrationReport Ranges.
2. Select New.
3. Fill in the form (see table):

<table>
<thead>
<tr>
<th>Label</th>
<th>Application</th>
<th>Color</th>
<th>Color name</th>
<th>Display</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Global</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Element</th>
<th>Name</th>
<th>Order</th>
<th>Upper value int</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>- None -</td>
<td>100</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Upper value duration</th>
<th>Value list</th>
</tr>
</thead>
<tbody>
<tr>
<td>Days 00</td>
<td></td>
</tr>
<tr>
<td>Hours 00 00 00</td>
<td></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:
<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>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>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>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.</td>
</tr>
<tr>
<td></td>
<td>For example, if this report range has an upper limit of 10 and has an Order of 20, and the report range with the Order of 19 has an upper limit of 5, values from 5 to 10 will display the formatting specified by this range.</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.</td>
</tr>
<tr>
<td></td>
<td>For example, if this report range has an upper limit of 10 and has an Order of 20, and the report range with the Order of 19 has an upper limit of 5, values from 5 to 10 will display the formatting specified by this range.</td>
</tr>
<tr>
<td>Display</td>
<td>Read-only field that displays the color that is used for the specific report range.</td>
</tr>
<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>
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. At 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 on 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 GB file, which is bad for these reasons:

- It is slow, so your report will take an unacceptably long time
- While the database is grinding the disk to scan 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.

Application overview homepages

Overview homepages display preconfigured reports to help you use and understand specific applications.

Overview homepages display reports on key metrics related to an application. Use the overview homepages to quickly analyze an application or process, or use them as a starting point to create your own homepages.

To view the overview homepage for an application, click the Overview module in the appropriate application menu.

Note: These modules differ from the Overview modules available prior to the Helsinki release. For instances that were upgraded from Geneva or earlier, you must enable the new modules. In upgraded instances the new modules are named Overview (New) to differentiate them from the legacy modules.

Overview homepages are available for the following applications:

- Incident Management
- Problem Management
- Change Management
- Knowledge Management
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.
Table 106: 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 Map data field when creating a map report is actually a map source hierarchy. There is one map</td>
</tr>
<tr>
<td></td>
<td>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</td>
</tr>
<tr>
<td></td>
<td>levels. Each map source contains the data for a single map hierarchy drill level, with both having the same Level. Because they both specify</td>
</tr>
<tr>
<td></td>
<td>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</td>
</tr>
<tr>
<td></td>
<td>instead of a table.</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.

Table 107: 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 whose 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. You can 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 to 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.

   Table 108: 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>
| 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.  
   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.
<table>
<thead>
<tr>
<th>Field</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Data</td>
<td>Select how to use data in this map source.</td>
</tr>
<tr>
<td></td>
<td>• 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.</td>
</tr>
<tr>
<td></td>
<td>• 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.</td>
</tr>
<tr>
<td></td>
<td>• 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.</td>
</tr>
<tr>
<td></td>
<td><strong>Warning:</strong> 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.</td>
</tr>
</tbody>
</table>

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.
Select the mapping group that corresponds to the 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.

3. Click New.
4. 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>Field</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Key</td>
<td>Specify a unique key that links this map to other maps. For default maps, this is the hc-key value. This key must be included in the geoJSON of the parent map.</td>
</tr>
<tr>
<td>Name</td>
<td>Enter a name for the map.</td>
</tr>
<tr>
<td>Level</td>
<td>Specify the level for this map in the map hierarchy.</td>
</tr>
<tr>
<td>JSON map</td>
<td>Define the geoJSON for the map. You can download predefined maps from highcharts, or use any map that follows geoJSON standards. For more information, see the GeoJSON site.</td>
</tr>
<tr>
<td>Parent</td>
<td>Select a parent map for this map. The parent-child relationships define drill levels in a map hierarchy.</td>
</tr>
<tr>
<td>Active</td>
<td>Clear this check box if you want to make the map unavailable when creating map reports.</td>
</tr>
<tr>
<td>Geographical map</td>
<td>If your map is not geographical, clear this check mark. For example, clear this check mark for a floor 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 111: Map condition form

<table>
<thead>
<tr>
<th>Field</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Active</td>
<td>Select this check box to apply this condition.</td>
</tr>
<tr>
<td>Table</td>
<td>Specify the table that these conditions apply to. Conditions cannot be shared across tables.</td>
</tr>
<tr>
<td>Map source</td>
<td>Select the map source that the condition applies to.</td>
</tr>
<tr>
<td>Conditions</td>
<td>Add filter conditions to apply to this map.</td>
</tr>
</tbody>
</table>

c) Click Submit.

5. 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.
5. Click New rule.
6. Fill in the fields on the form.

Table 112: 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>
</tbody>
</table>
### Field Description

<table>
<thead>
<tr>
<th>Field</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<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></td>
<td>Notes: When creating rules based on a duration value, specify the duration in seconds.</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>
| Rule order  | An numerical value that determines the order rules apply in. Rules with a higher rule order apply later and override lower-order rules.  
|             | For example, if 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 between 141 and 149. |

7. Click Submit.
8. Click Close.
9. Click Run to generate the report using the rules.

### Export limits

The platform provides a default upper limit for data exports.

The purpose of the upper limit is to avoid creating performance issues when a table is excessively large. If you need to export more records than the threshold permits, **Break up a large export** into separate manageable chunks.

In addition to the format-specific limits, you may need to set `com.glide.processors.XMLProcessor.max_record_count` to match the upper limit set by the format-specific limit.

### Export limit properties

You can set the number of records to return during an export using the `sysparm_record_count` URL parameter.

However, the system analyzes the following settings to determine whether an export limit should be applied.

1. First, the platform checks the property that defines the format-specific export limit (see table below). Each format can have a different limit. Although this property can be set to any value, exceeding the default export limit can impact system performance. You may want to set the property at or below the default limit and have users **Break up a large export** to export large amounts of data.
2. If the format-specific property is not set, the system checks the property for the general export limit (see table below). This property can also be set to any value, but exceeding the default export limit can impact system performance.

3. If neither the format-specific export limit nor the general export limit property is set, the system enforces the default export limit (see table below).

Note: These properties are not defined by default. You must Add system properties to assign a value to it.

Table 113: Default export limit

<table>
<thead>
<tr>
<th>Format</th>
<th>Format-specific export limit</th>
<th>General export limit</th>
<th>Default export limit</th>
</tr>
</thead>
<tbody>
<tr>
<td>XML</td>
<td>glide.xml.export.limit</td>
<td>glide.ui.export.limit</td>
<td>10,000</td>
</tr>
<tr>
<td>CSV</td>
<td>glide.csv.export.limit</td>
<td>glide.ui.export.limit</td>
<td>10,000</td>
</tr>
<tr>
<td>EXCEL (XLSX)</td>
<td>glide.xlsx.export.limit</td>
<td>glide.ui.export.limit</td>
<td>10,000</td>
</tr>
<tr>
<td>EXCEL (XLS)</td>
<td>glide.xlsx.export.limit</td>
<td>glide.ui.export.limit</td>
<td>50,000</td>
</tr>
<tr>
<td>EXCEL (XLSX)</td>
<td>glide.xlsx.max_cells</td>
<td>N/A</td>
<td>500,000</td>
</tr>
<tr>
<td>EXCEL (XLS)</td>
<td>glide.xlsx.max_cells</td>
<td>N/A</td>
<td>500,000</td>
</tr>
<tr>
<td>PDF</td>
<td>glide.pdf.max_rows</td>
<td>N/A</td>
<td>1,000</td>
</tr>
</tbody>
</table>

Note: The number of rows can be set from 0 to 5,000. If no value is specified, the default is 1,000. If a value greater than 5,000 is specified, the default value of 1,000 is used.

A warning threshold property called glide.ui.export.warn.threshold controls how the records are exported. If a user attempts to export a number of records from Export list data that exceeds the warning threshold, a dialog box offers the choice of waiting for the export to complete or having the exported records emailed as an attachment. The warning threshold can be changed in the system property. The email attachment must not exceed the maximum allowed Email size limits.
Table 114: Export limit examples

<table>
<thead>
<tr>
<th>Example</th>
<th>Property</th>
<th>Table</th>
<th>Note</th>
</tr>
</thead>
<tbody>
<tr>
<td>Exporting to CSV</td>
<td>• glide.csv.export.limit = 20,000</td>
<td>Table 115: Exporting to CSV</td>
<td>In the second export, the number of records returned from the database is limited because the number of records specified for export exceeds the value set in the glide.csv.export.limit property.</td>
</tr>
<tr>
<td></td>
<td>• glide.ui.export.limit = 10,000</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>• com.glide.processors.XMLProcessor.max_record_count = 20,000</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>• Default export limit for CSV = 10,000</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Exporting to Excel</td>
<td>• glide.xlsx.export.limit = no entry</td>
<td>Table 116: Exporting to Excel</td>
<td>In the second export, the number of records returned from the database is limited because the number of records specified for export exceeds the default export limit for Excel, 10,000 records.</td>
</tr>
<tr>
<td>(XLSX)</td>
<td>• glide.ui.export.limit = no entry</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>• Default export limit for Excel (XLSX) = 10,000</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Exporting to PDF</td>
<td>• glide.pdf.max_rows = 1,000</td>
<td>Table 117: Exporting to PDF</td>
<td>In the first export, all records are returned because the number of records specified for export does not exceed the glide.pdf.max_rows property. In the second export, the number of records returned is limited because the number of records specified for export exceeds the value in the glide.pdf.max_rows property.</td>
</tr>
<tr>
<td></td>
<td>• Default export limit for PDF = 1,000</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>• Maximum export limit for PDF = 5,000</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Excel export threshold**

Excel exports are intended for relatively small exports, fewer than 500,000 cells, while CSV can handle larger exports.

Whenever you export to Excel and the resultant spreadsheet has more than 500,000 cells (by default), the export process stops and you are given the Excel file at that point. In the bottom row, there will be the following message: Export stopped due to excessive size. Use CSV for a complete export:
The Excel export cell threshold is customizable using the glide.xlsx.max_cells integer property (or glide.excel.max_cells if using XLS).

Note: Increasing this threshold may cause a memory issue in your instance. The threshold is set at an appropriate level to prevent resource issues.

The export will put the information into the Excel document with 32,000 rows per spreadsheet.

Ensure domain separation on a report

To ensure domain separation on reports if the MSP Extensions plugin is not installed, a domain field must be added to the table for reports. This domain field must then be set as a reference field.

By default, the Domain Support plugin separates data on certain tables by domain. It does not, however, separate reports by domain except if the MSP Extensions plugin is installed. The report will display data only from the user’s domain, but the user will be able to see all of the reports.

Follow these steps too ensure domain separation on reports if the MSP Extensions plugin is not installed.

1. Navigate to Reports Administration (this module may need to be enabled) and select a report to separate by domain.
2. **Configure the form layout** and add a new field named sys.domain.
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 of these records are global.

The 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 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 will be 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’s data.</td>
</tr>
<tr>
<td>Roles</td>
<td>The roles required to view the report.</td>
</tr>
</tbody>
</table>

The following fields are also available if added to the form:
<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, may have numerical values associated with their levels and can be used as aggregators. 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-grey colored zero are not included in the field count that is used when dividing the sum.</td>
</tr>
<tr>
<td>Content</td>
<td>An HTML field for describing the content of the report. Not processed in the report’s generation.</td>
</tr>
<tr>
<td>Display grid</td>
<td>Mark this check box to display a table under the chart that contains a breakdown of the requested data in the aggregation units you have selected (Count, Average, Sum, or Count Distinct) and the values for the stacked field, if selected. You can see what percentage of the total data is represented by each discrete piece.</td>
</tr>
<tr>
<td>Group</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>Interval</td>
<td>For Trend or Trendbox charts, the interval of time to measure along.</td>
</tr>
<tr>
<td>No Groups</td>
<td>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.</td>
</tr>
<tr>
<td>Others</td>
<td>Whether the Other category should appear on the report.</td>
</tr>
<tr>
<td>Select fields for list</td>
<td>The fields that will appear in a list report.</td>
</tr>
<tr>
<td>Select fields for orderBy</td>
<td>The order of fields that will appear in the report.</td>
</tr>
<tr>
<td>Show Empty</td>
<td>Whether to display empty categories.</td>
</tr>
<tr>
<td>Sumfield</td>
<td>The field to perform a sum on for Trend or Trendbox Charts.</td>
</tr>
<tr>
<td>Trend Field</td>
<td>The field to track over time for Trend or Trendbox Charts.</td>
</tr>
</tbody>
</table>
Reporting properties

Use properties to fine tune report behavior and appearance.

Table 119: Reporting properties

<table>
<thead>
<tr>
<th>Property</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>com.glideapp.canvas</td>
<td>Enables (true) or disables (false) responsive canvas for dashboards. When enabled, all new dashboards use responsive canvas. Nonresponsive dashboards are not converted to responsive dashboards.</td>
</tr>
<tr>
<td></td>
<td>• Type: true</td>
</tr>
<tr>
<td></td>
<td>• Default value: true</td>
</tr>
<tr>
<td></td>
<td>• Location: System Property (sys_properties) table</td>
</tr>
<tr>
<td>Use new view/run report list layout</td>
<td>Enables the redesigned Reports list layout. If false, group reports are shown. If true, the number of rows removed from lists by security constraints is shown.</td>
</tr>
<tr>
<td>glide.ui.report.new_home</td>
<td>• Type: true</td>
</tr>
<tr>
<td></td>
<td>• Default value: false</td>
</tr>
<tr>
<td></td>
<td>• Location: Reports Properties</td>
</tr>
<tr>
<td>Toggle animations on and off for charts generated with the charting v2 plugin</td>
<td>Enables animations for reports and Performance Analytics visualizations that support animations. This property is applicable to charts generated using the Report Charting v2 plugin.</td>
</tr>
<tr>
<td>glide.chart.animation</td>
<td>• Type: true</td>
</tr>
<tr>
<td></td>
<td>• Default value: true</td>
</tr>
<tr>
<td></td>
<td>• Location: Reports Properties</td>
</tr>
<tr>
<td>glide.report_home.group_report.show_usr_grp</td>
<td>Enables the Reporting preferences link in the user’s profile.</td>
</tr>
<tr>
<td></td>
<td>• Type: true</td>
</tr>
<tr>
<td></td>
<td>• Default value: false</td>
</tr>
<tr>
<td></td>
<td>• Location: Add to the System Property (sys_properties) table</td>
</tr>
<tr>
<td></td>
<td>Note: The glide.report_home.group_report.show_usr_grp system property is deprecated and can no longer be used.</td>
</tr>
</tbody>
</table>

Global Chart Properties

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<table>
<thead>
<tr>
<th>Property</th>
<th>Description</th>
</tr>
</thead>
</table>
| glide.ui.chart.color | Specifies the default color for all bars in non-stacked bar charts when the glide.ui.chart.use_full_color_palette property is set to false. This property is applicable to charts generated using the Report Charting v2 plugin.  
  - **Type:** string  
  - **Location:** Add to the System Property (sys_properties) table  
  - **Default value:** #006DDA |
| glide.ui.chart.height | Specifies the height of a chart in pixels. This property is applicable to charts generated using the Report Charting v1 plugin.  
  - **Type:** integer  
  - **Default value:** 300 |
| glide.ui.chart.width | Specifies the width of a chart in pixels. This property is applicable to charts generated using the Report Charting v1 plugin.  
  - **Type:** integer  
  - **Default value:** 500 |
| glide.chart.drill.open_new_win | When enabled, the list of records opens in a new window or tab when a user clicks a report segment for which no drilldown is specified. When set to false, the list opens in the same window or tab as the report. This property is applicable to charts generated using the Report Charting v2 plugin.  
  - **Type:** true | false  
  - **Default value:** false  
  - **Location:** Reports Properties |
| glide.chart.truncate.x_axis_labels | Truncates x-axis labels to 20 characters, if selected (Applicable only to charts generated with the charting v2 plugin)  
  - **Type:** true | false  
  - **Default value:** true  
  - **Location:** Reports Properties |
| glide.chart.truncate.x_axis_labels | Truncates X axis labels at 20 characters. This property is applicable to charts generated using the Report Charting v2 plugin.  
  - **Type:** true | false  
  - **Default value:** true  
  - **Location:** Reports Properties |
<table>
<thead>
<tr>
<th>Property</th>
<th>Description</th>
</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 in case of long labels.  
  - Type: integer  
  - Default value: 14 |
| glide.chart.label.legend.truncate_to.large | Truncates legend labels for left or right legend alignment for large charts. Prevents shrinking of charts in case of long labels.  
  - Type: integer  
  - Default value: 20 |
| glide.charts.animation | Enables chart animations when true. When set to false, animations do not play when a visualization loads.  
  - Type: true | false  
  - Default value: true |
| Calendar Chart Properties | |
| glide.report.calendar.max_days_back | Enables you to specify the number of days with events that are returned when you view dates backward and forward in a calendar report as evaluated on the Calendar by field in the report creator.  
  - Type: integer  
  - Default value: 30  
  - Location: System Property (sys_properties) table |
| glide.report.calendar.maxEventsDisplayedPerCell | For year and month views, this property sets the maximum number of events displayed in a day cell. When the number of events in a day cell exceeds this number, a link to a pop-up with the remaining is shown.  
  - Type: integer  
  - Default value: 3  
  - Location: System Property (sys_properties) table |
| glide.report.calendar.maxMoreEventsPerDay | When glide.report.calendar.maxEventsDisplayedPerCell is exceeded, then a link is displayed in the day cell which opens a pop-up of the events for that day. If the number of events for the day exceeds glide.report.calendar.maxMoreEventsPerDay, then that link opens a platform list of the day’s events in a new page.  
  - Type: integer  
  - Default value: 30  
  - Location: System Property (sys_properties) table |
<table>
<thead>
<tr>
<th>Property</th>
<th>Description</th>
</tr>
</thead>
</table>
| glide.report.calendar.defaultEventDuration | If there is no end date field or the end date field is empty, then this value defines the duration of the event.  
  • Type: string  
  • Default value: 01:00:00  
  • Location: System Property (sys_properties) table |
| glide.ui.max_calendar_records | For year and month views, this property sets the limit for the number of events that are displayed. If this value is exceeded, no events are displayed and a link opens a platform list of the events in a new page.  
  • Type: integer  
  • Default value: 10,000  
  • Location: System Property (sys_properties) table |
| glide.ui.chart.pie.labels | Enables labels on all pie chart slices. This property is applicable to charts generated using the Report Charting v1 plugin.  
  • Type: true | false  
  • Default value: true |
| glide.ui.chart.pie.labels.max_items | Sets the maximum number of pie chart slices on which to display labels.  
  • Type: integer  
  • Default value: 8 |
| 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 |
| 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. This property is applicable to charts generated using the Report Charting v2 plugin.  
  • Type: integer  
  • Default value: 10 (Allowed range of values 1 – 20) |
<table>
<thead>
<tr>
<th>Property</th>
<th>Description</th>
</tr>
</thead>
</table>
| **Color of the box and whisker in box charts**<br>glide.chart.box.color | Sets the color of the box chart. This property is applicable to charts generated using the Report Charting v2 plugin.  
- **Type:** string  
- **Default value:** #FF0000 |
| **Color of the mean value dot in box and trendbox charts.**<br>glide.chart.box.mean.color | Sets the color of the ‘mean’ value dot in a box or trendbox chart. This property is applicable to charts generated using the Report Charting v2 plugin.  
- **Type:** string  
- **Default value:** #2f7ed8 |

**Multiple Datasets Properties**

<table>
<thead>
<tr>
<th>Property</th>
<th>Description</th>
</tr>
</thead>
</table>
| Default Color list name for each dataset<br>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 new 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 Properties |
| List of color palette names that are used as a default color palette for each dataset<br>glide.ui.report.datasets.default_pallettes | 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.  
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.  
Each palette is used in order as the default chart palette when adding a new data set to a chart. If there are more data sets than default palettes, the palettes repeat.  
- **Type:** string  
- **Default value:** Default UI14  
- **Location:** Reports Properties |
| Set the default map for reports of type ‘Map’<br>glide.ui.report.map.default_map | Specifies the default map to use when creating Map-type reports.  
- **Type:** string  
- **Default value:** world  
- **Location:** Reports Properties |
Customize calendar reports

You can specify the fields that are displayed for calendar task.

By default, the number and short_description fields are displayed, but this is configurable. You can configure radio buttons to appear on reports for various fields in the task table that enable you 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.
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, you must include the number and short_description fields in your attributes. For example, to add risk level information to your change calendar, add the following attribute to the change_request table:

```
calendar_elements=number;short_description;updated_by;activity_due
```
6. If the table already has an attribute, separate it from the new attribute you are adding with a comma, as in this example:
   `email_client=true, all_tables.query_hints=true, query_hints=true, hasWorkflow=true, live_feed=true, calendar_elements=number; short_description; updated_by; activity_due`

7. Click Update.

Note: If a calendar entry has a duration, it includes parenthetical information to indicate how many days since the event started and how many days until the event ends. For example, the parenthetical information included for the “CHG0000005 – Install new PBX ( -2 to +2)” entry indicates that the change started 2 days ago and has 2 days left until the end date. The start or end time might also show up here on the start
Override Task table field styles for highlighting calendar events

Highlighting for calendar report events is configured with field styles, which are each 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. Find and click 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.

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

Field styles for the table that a calendar is based on, including extended tables such as CMDB, can be applied to a calendar. The field styles that are applied for calendar highlighting depend on the setting of the glide.ui.report.extend_calendar_choices system property. See Override Task table field styles for highlighting calendar events for more information.

You can change only the background color of calendar events. All other CSS styles are 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 based off 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.

Limit the number of events displayed on calendar days

For calendar reports, you can configure the maximum number of events that can appear in some calendar views. 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 can 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

Use the glide.report.calendar.max_events_displayed_per_cell and glide.report.calendar.max_more_events_per_day properties. See Available system properties for information about these properties.

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.

To override this default setting, use the glide.ui.max_calendar_records property. This property is not available in the list of properties and must be created.

1. In the navigation filter, enter sys_properties.list.
2. Click New in the list of properties.
3. Complete the form as follows:
   • Name: glide.ui.max_calendar_records
   • Description: Enter a phrase that describes the function of the property, such as Maximum number of calendar records saved.
   • Type: Select integer from the list.
   • Value: 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.
4. Click Submit.

Customize a start and end date

Out-of-the-box calendar reports support multi-day events.

For example, a change request with a Work Start date Monday and a Work End date 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.

To achieve the multi-day span behavior in a calendar report with custom fields, name the fields in the following way:

• u_first_date → u_my_start_date
• u_last_date → u_my_end_date

The code looks for an ending field with exactly 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 exactly the same except for the word start and end.

Change the day that calendar weeks start on

By default, weeks for calendar reports start on Monday. You can add system properties to start weeks on Sunday instead. Weeks use ISO numbering regardless of what day they start on.

Role required: report_admin or admin.

The glide.ui.date_format.first_day_of_week system property specifies the first day of the week in calendar views. The glide.ui.filter.first_day_of_week system property specifies the first day of the week used in the queries.

1. Add the glide.ui.date_format.first_day_of_week and the glide.ui.filter.first_day_of_week system properties.
2. Set one of the following integer values for each property.

<table>
<thead>
<tr>
<th>Option</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Start weeks on Monday</td>
<td>Set Value to 2</td>
</tr>
<tr>
<td>Start weeks on Sunday</td>
<td>Set Value to 1</td>
</tr>
</tbody>
</table>

Disable new calendar reports

In the Helsinki release, an improved version of calendar reports is available. To use the version of calendars from releases prior to Helsinki, disable the new calendar version.

Role required: report_admin or admin

Note: Internet Explorer 7 and 8 do not support new calendars. Even if new calendars are enabled, old calendars are always used on these browsers.

Add the glide.report.new_calendar system property, and set it to false.

Reporting upgrade information

Reporting upgrade information for the Helsinki release. Review this information to ensure users retain access to reports after upgrade.

In Fuji, the logic behind how sys_report ACLs were applied changed. If you upgrade from a release before Fuji to Fuji or later without the Report Security plugin enabled, changes in report access may occur. For example, users without the admin role may lose read access to reports because of security constraints.

Because the Report Security plugin overrides ACL customizations, it is not enabled by default upon upgrade. You must enable it manually.

Follow these steps to enable the plugin. You can enable it before or after upgrade.

1. Activate the Report Security plugin (com.glideapp.report_security) on a sub-production instance and test to ensure activation does not cause changes to existing reporting functionality.

2. After testing is completed, activate the plugin in production.

If changes in reporting functionality persist after you activate the plugin, this may be because ACLs were improperly updated because of customizations. Manually update your sys_report ACLs to comply with the ACLs below.

calendar create ACL

```javascript
var userID = current.user.toString();
var answer = false;
var isMe = gs.getUserID() == userID;
var isGlobal = userID == "GLOBAL";

if (gs.hasRole('report_admin'))
  answer = true;
else if (isGlobal)
  answer = gs.hasRole('report_global');
else if (current.user == 'group')
  answer = gs.hasRole('report_group');
else
  answer = gs.hasRole(current.roles);

function isGroup(){
```
```javascript
var grpList = gs.getUser().getMyGroups();
var myGrps = ''; 
  for (var i = 0; i != grpList.size(); i++) {
    if (i != 0) myGrps += ',
    myGrps += grpList.get(i);
  }

var myUserId = gs.getUserID();
var gr = new GlideRecord('sys_report_users_groups');
gr.addQuery('report_id', current.getUniqueValue());
var qc = gr.addQuery('user_id', myUserId);
if (myGrps != '')
  qc.addOrCondition('group_id', 'IN', myGrps);
gr.query();
if (gr.getRowCount() > 0)
  return true;
return false;
}

sys_report delete ACL

var answer = false;
var userID = current.user.toString();
var isMe = gs.getUserID() == userID;
var isGlobal = userID == "GLOBAL";

if (isMe | gs.hasRole('report_admin'))
  answer = true;
else if (isGlobal)
  answer = gs.hasRole('report_global');
else if (isGroup())
  answer = gs.hasRole('report_group');

function isGroup() {
  var reportUserId = current.user.toString();
  if (reportUserId != "group")
    return false;
}

var grpList = gs.getUser().getMyGroups();
var myGrps = ''; 
  for (var i = 0; i != grpList.size(); i++) {
    if (i != 0) myGrps += ',
    myGrps += grpList.get(i);
  }

var myUserId = gs.getUserID();
var gr = new GlideRecord('sys_report_users_groups');
gr.addQuery('report_id', current.getUniqueValue());
var qc = gr.addQuery('user_id', myUserId);
if (myGrps != '')
  qc.addOrCondition('group_id', 'IN', myGrps);
gr.query();
if (gr.getRowCount() > 0)
  return true;
return false;
}

sys_report read ACL

answer = false;
var userID = current.user.toString();
```
var isUser = gs.getUserID() == userID;
if (isUser) {
    answer = true; // my own report
} else {
    var isGlobal = userID == "GLOBAL";
    if (isGlobal)
        answer = gs.hasRole(current.roles);
    else
        answer = isGroup();
}

function isGroup() {
    var reportUserId = current.user.toString();
    if (reportUserId != "group"){
        return false;
    }
    var myUserId = gs.getUserID();
    var grpList = gs.getUser().getMyGroups();
    var myGrps = '';
    for (var i = 0; i != grpList.size(); i++) {
        if (i != 0) myGrps += ',';
        myGrps += grpList.get(i);
    }
    var gr = new GlideRecord('sys_report_users_groups');
    gr.addQuery('report_id', current.getUniqueValue());
    var qc = gr.addQuery('user_id', myUserId);
    if (myGrps != '')
        qc.addOrCondition('group_id', 'IN', myGrps);
    gr.query();
    if (gr.getRowCount() > 0)
        return true;
    return false;
}

sys_report write ACL

var answer = false;
var userID = current.user.toString();
var isMe = gs.getUserID() == userID;
var isGlobal = userID == "GLOBAL";

if (isMe || gs.hasRole('report_admin'))
    answer = true;
else if (isGlobal)
    answer = gs.hasRole('report_global');
else if (isGroup())
    answer = gs.hasRole('report_group');

function isGroup(){
    var reportUserId = current.user.toString();
    if (reportUserId != "group"){
        return false;
    }
    var grpList = gs.getUser().getMyGroups();
    var myGrps = '';
    for (var i = 0; i != grpList.size(); i++) {
        if (i != 0) myGrps += ',';
        myGrps += grpList.get(i);
    }
    var gr = new GlideRecord('sys_report_users_groups');
    gr.addQuery('report_id', current.getUniqueValue());
    var qc = gr.addQuery('user_id', myUserId);
    if (myGrps != '')
        qc.addOrCondition('group_id', 'IN', myGrps);
    gr.query();
    if (gr.getRowCount() > 0)
        return true;
    return false;
}
Dashboards

Dashboards enable you to display multiple Performance Analytics, reporting, and other widgets on a single screen. Use dashboards to create a story with data that can be shared with multiple users.

Explore

- [Dashboards release notes](#)
- [Upgrade to Helsinki](#)

Administer

- [Enable responsive canvas for dashboards](#)
- [Group dashboards](#)
- [Move a dashboard tab with an update set](#)

Use

- [Responsive dashboards](#)
- [Using non-responsive dashboards](#)
- [Determine whether a dashboard is responsive](#)

Troubleshoot and get help

- [https://community.servicenow.com/community/performance-analytics](#)
- [Search the HI knowledge base](#)
- [Contact ServiceNow Support](#)

Training

- [Performance Analytics training](#)
- [Watch Dashboards videos](#)

Using dashboards

Export a homepage or dashboard to PDF

You can generate a PDF file for any homepage or Performance Analytics dashboard. Export a dashboard as a PDF so you can share, 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](#).

Note: Interactive filters that are applied to the dashboard are reset when the PDF is rendered and are therefore not applied to the PDF. Applied breakdowns are also not included in the export. Click the settings icon and choose Printer Friendly Version to open the dashboard in a new window or tab. Set the interactive filters and export the dashboard using the browser’s printer 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.
- 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 a homepage or a Performance Analytics dashboard.
2. Click export to PDF.
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>Select page orientation of the exported PDF. Options: portrait or landscape.</td>
</tr>
<tr>
<td>Paper size</td>
<td>Select the paper size for the PDF. Available sizes match common paper sizes such as Letter and A4.</td>
</tr>
<tr>
<td>Zoom factor</td>
<td>Set the percentage for scaling the displayed widgets. This value must be a positive number.</td>
</tr>
<tr>
<td>Avoid page break inside widget</td>
<td>Select the check box to prevent 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>Option</td>
<td>Description</td>
</tr>
<tr>
<td>------------</td>
<td>-----------------------------------------------------------------------------</td>
</tr>
</tbody>
</table>
| Smart shrink | Select the check box to automatically use the zoom factor necessary for all content to fit in the width of the selected paper size.  
Note: This option may cause incorrect page formatting when used with Avoid page break inside widget or a zoom factor greater than 100. |

| Delivery | Select a delivery method.  
• Generate now generates the PDF immediately and shows a button for downloading.  
• Send as an email shows an extra field for entering an email address. After you click Export, the PDF file is generated and sent to the email address. |

4. 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 dashboard’s URL

You can generate a URL for a dashboard 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.

Role required: pa_viewer

1. Navigate to the dashboard whose URL you want to copy.  
2. Select a specific tab, breakdown, and breakdown element.  
3. Click the Copy URL icon

Distribute the URL to share the dashboard.

Dashboard URL format

You can link to a Performance Analytics dashboard from within ServiceNow.

All URLs to Performance Analytics dashboards follow this format: https://<instance>.service-now.com/$pa_dashboard.do?.

This base URL is followed by several query parameters.

Table 120: URL parameters

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>dashboard=&lt;sys_id&gt;</td>
<td>The sys_id of the dashboard to display.</td>
</tr>
<tr>
<td>tab=&lt;sys_id&gt;</td>
<td>The sys_id of the dashboard tab to display. If you do not specify a tab, the default tab is displayed.</td>
</tr>
<tr>
<td>breakdown_source=&lt;sys_id&gt;</td>
<td>The sys_id of the dashboard breakdown to display.</td>
</tr>
<tr>
<td>Parameter</td>
<td>Description</td>
</tr>
<tr>
<td>----------------</td>
<td>----------------------------------------------------------------------------------------------------------------------------------------------</td>
</tr>
<tr>
<td>element=&lt;value&gt;</td>
<td>The dashboard breakdown element to select. This value may be the sys_id of a referenced record, or the database value for a choice list choice.</td>
</tr>
<tr>
<td>embedded=&lt;true/false&gt;</td>
<td>Controls if the dashboard header appears. When true, all choice lists and buttons are hidden. On dashboards with a breakdown, only the breakdown element choice list appears.</td>
</tr>
<tr>
<td>header=&lt;true/false&gt;</td>
<td>Controls if the dashboard header appears. This value overrides the embedded parameter.</td>
</tr>
<tr>
<td>tabs=&lt;true/false&gt;</td>
<td>Controls if the dashboard tabs bar appears.</td>
</tr>
</tbody>
</table>

When linking to ServiceNow from an outside source, such as a text document or presentation, use nav_to.do instead. For instructions on constructing this URL, see [URL schema](#).

**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.

Role required: pa_viewer

Without the pa_viewer role, this functionality is unavailable.

1. Click the gear icon
   ![Gear icon](#)
   (to access your 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.

Determine whether a dashboard is responsive

Two types of dashboards exist, responsive and non-responsive. Determine which of these two types a dashboard is.

Role required: pa_admin, pa_power_user

Click Edit on a dashboard to determine its type.

- On responsive dashboards, the Add Widget and Quick Layout buttons appear.
- On nonresponsive dashboards, the Change layout button appears.
Using non-responsive dashboards

Learn how to use non-responsive dashboards

Learn how to create and edit dashboards that are non-responsive. Dashboards that were created before Helsinki are always non-responsive. Dashboards created in Helsinki or later are responsive only if the responsive canvas plugin has been enabled for an instance.

Note: The information in this section page applies only to non-responsive dashboards. For information about how to use responsive dashboards, see Responsive dashboards.

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.

Add a widget to a dashboard

Display a widget to users by adding the widget to a 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 nonresponsive dashboards. For information on how to use the new responsive dashboards see 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. This can be any content, not only content related to Performance Analytics.

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 on the tab location by clicking the Add here button that indicates the desired location.
5. You can either add another widget or close the pop-up window. The widget is saved automatically.

Add a report to a homepage or dashboard

When viewing a report, you can add that report to a homepage or a dashboard. When a report is on your homepage or dashboard, you have the latest information at any time without having to run the report. You can also share dashboards with other users.

Before starting this procedure, ensure there is a report you want to display on a homepage or dashboard.

Role required: Any users who can create a report can add it to a homepage. itil, report_global, report_group, report_admin. Pa_power_user is required to add a report to a Performance Analytics dashboard.

1. Navigate to Reports View/Run.
2. Select a report.
3. Click the arrow next to the Save button to open the Report Options menu 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 Homepage to add the report to.</td>
</tr>
<tr>
<td>PA dashboard</td>
<td>Select the Performance Analytics Dashboard and Tab to add the report to.</td>
</tr>
</tbody>
</table>

6. Do one of the following:

<table>
<thead>
<tr>
<th>Option</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>for responsive dashboards</td>
<td>Click Add. The widget is added to the dashboard in the top position and the dashboard opens. Click Edit to move or resize the widget.</td>
</tr>
<tr>
<td>for non-responsive dashboards and homepages</td>
<td>Click Add here to add the report in a specific position, or click Add to the first available position on the homepage or dashboard.</td>
</tr>
</tbody>
</table>

Change the layout of a dashboard tab

You can apply predefined layouts to tabs on nonresponsive dashboards.

**Note:** The information on this page applies only to nonresponsive dashboards. For information on how to use the new responsive dashboards see [Responsive dashboards](#).

1. Navigate to Performance AnalyticsDashboard Admin
2. Click the lock icon to put the dashboard in edit mode.
3. Click Change Layout.
4. In the pop-up window, select one of the available layouts.
5. Click Change Layout to apply the new layout to the tab.

Create a dashboard tab

By default a dashboard is created with a Home tab. You can create additional tabs for each dashboard to group information in a logical order.

Role required: pa_admin, pa_power_user, or admin

For example, the tabs Daily Indicators, Weekly Indicators, and Home could display the key indicators for incident management.

**Note:** The information on this page applies only to nonresponsive dashboards. For information on how to use the new responsive dashboards see [Responsive dashboards](#).

1. From 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. Do one of the following

<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. This option allows you to share a tab across multiple dashboards.</td>
</tr>
</tbody>
</table>
To add or change content for the tab you just created, click the plus (+) icon at the top left of the tab area.

To change the appearance of the tab you just created, click Edit and then click Change Layout.

### Edit a dashboard tab

Edit a tab to rename, reorder, or delete the tab.

Role required: pa_admin, pa_power_user, or admin

<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>

### Responsive dashboards

Responsive dashboards improve the creation and management of dashboard content. Responsive dashboards are not enabled by default, and must be enabled by an admin.

The following video provides more information on responsive dashboards:

Responsive layouts provide you with the following advantages:

- Drag to move and resize widgets
- Create and edit reports, performance analytics, and other widgets directly from the dashboard
- Use the add widget pane to quickly find and preview widgets to add to the dashboard
- Use quick layouts to snap widgets into a predefined layout, then adjust the layout as desired

### Limitations

- Existing dashboards cannot be converted to responsive dashboards.
- Responsive dashboard tabs cannot be converted to homepages. However, you can set an entire dashboard as your Home.
- If you are using UI11, responsive dashboards are not supported on Internet Explorer 7 and 8.
- 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.

**Edit the contents of a dashboard**

You can edit the contents of a dashboard, including tabs and widgets. Because dashboards are shared, any modifications you make are applied globally.

Role required: admin, pa_admin, or pa_power user

1. Navigate to Performance Analytics Dashboards.
2. From the dashboard picker in the upper left, select the dashboard that you want to edit.
3. Click Edit.
4. Perform any of the following actions, then click Done to save changes.

<table>
<thead>
<tr>
<th>Action</th>
<th>Steps</th>
</tr>
</thead>
<tbody>
<tr>
<td>Add a widget</td>
<td>1. Click the plus sign (+) in the right pane.</td>
</tr>
<tr>
<td></td>
<td>2. Navigate to the widget that you want to add.</td>
</tr>
<tr>
<td></td>
<td>3. Click Add.</td>
</tr>
<tr>
<td>Remove a widget</td>
<td>Point to the widget, then click the X icon (X) that appears.</td>
</tr>
<tr>
<td>Edit a widget</td>
<td>Point to the widget, then click the pencil icon (-pencil) that appears.</td>
</tr>
<tr>
<td>Change the appearance of a widget</td>
<td>Point to the widget, then click the gear icon (gear) that appears.</td>
</tr>
<tr>
<td>Resize or change the layout of widgets on a dashboard tab</td>
<td>Do any of the following actions:</td>
</tr>
<tr>
<td></td>
<td>• Drag to move and resize widgets.</td>
</tr>
<tr>
<td></td>
<td>• Click the quick layout button (QS), then select a layout to snap the widgets to.</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, press Shift as you click the resize icon.</td>
</tr>
<tr>
<td>Add a tab to a dashboard</td>
<td>Click the plus sign (+) next to the existing tabs. You can create a tab, or link an existing tab or homepage to the dashboard. A dashboard can have a maximum of eight tabs.</td>
</tr>
<tr>
<td>Action</td>
<td>Steps</td>
</tr>
<tr>
<td>--------</td>
<td>-------</td>
</tr>
</tbody>
</table>
| Reorder a dashboard tab | 1. Click the drop arrow on a tab you want to move and select Change tab order.  
2. Give the tab a number from 1 to 8, with 1 being the left-most tab.  
3. Click OK. |
| Delete a dashboard tab | To delete the tab from the system and all dashboards it has been added to, click the drop arrow on the tab and select Delete this tab. |
| Remove a dashboard tab | To remove the tab from the dashboard but keep it in the system, click the drop arrow on the tab and select Unlink this tab. |
| Set a tab as the default tab | To select a tab to open by default for all users of this dashboard, click the drop arrow on the tab and select Set as default tab. |
| Rename a tab | To rename a tab in all dashboards where it has been added, click the drop arrow on the tab and select Rename. |
| Enable filtering of data for report widgets | 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 on the right pane ( ) .  
2. From the list, select Interactive Filters.  
3. Click the filter you want to add.  
4. Click Add. |
| Configure a report widget to follow interactive filters | Point to the report widget, then click the gear icon ( ) that appears. In the Edit Widget window, select the Follow interactive filter check box. To display the filter icon ( ) that indicates the report follows 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 | Add a breakdown to a dashboard so that users can filter data for all Performance Analytics widgets on that dashboard.  
See Add a breakdown to a dashboard. |
| View the description of a widget | Point to the widget, then click the question mark ( ) that appears. |
Creating dashboards

Dashboard roles

Learn about the roles required to create, edit, and view dashboards.

• Users must have the pa_viewer role to view dashboards.
• Users with the pa_admin and pa_power_user roles can create and edit dashboards.

Widget ACLs override dashboard ACLs. If a user can view a dashboard but does not have ACLs to view one of its widgets, an empty widget is displayed. ACLs also apply to data that is displayed in report and Performance Analytics widgets.

Create a dashboard

Create a dashboard to show the most relevant indicators for specific users or groups.

Roles required: pa_admin, pa_power_user, or admin

You can create separate dashboards according to topic, for example, for incident management, problem management, or request management.

1. Navigate to Performance Analytics Dashboard Admin.
2. Click New.
3. Enter a descriptive Name. For example, Incidents Dashboard.
4. Add the dashboard to a Group. Groups organize dashboards in the dashboard picker under Performance Analytics Dashboards
5. Enter an Order number to indicate the order the dashboard should appear on the dashboards choice list.

Dashboards with lower numbers are listed before dashboards with higher numbers.
6. Select Active to make the dashboard available in the dashboards choice list.
7. Select No tabs to disable the tab header.

Dashboards with the tab header disabled can display only one tab. You cannot add additional tabs to the dashboard if you select this option.
8. 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>

9. 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.

Control access to a dashboard

You can control which users, groups, or user roles can access a dashboard.

Role required: pa_admin or admin
If users can access a dashboard, they can see all widgets on that dashboard.

1. Navigate to Performance Analytics Dashboard Admin.
2. Click a dashboard to open it.
3. Choose from the following options in the Visible to field:

<table>
<thead>
<tr>
<th>option</th>
<th>description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Everyone</td>
<td>Select roles that can access this dashboard.</td>
</tr>
<tr>
<td>Users and Groups</td>
<td>Select users and groups that can access the dashboard.</td>
</tr>
</tbody>
</table>

Enable real-time updating for single score report widgets

Enable single score report widgets on a dashboard to update in real time. Real-time updates ensure that users viewing the 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: You can select Show real-time updates for single score widgets that use the Average, Sum, and Count Distinct aggregations, but they do not update in real time.

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 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 edit mode for the dashboard.

The real-time icon ( ) appears on the widget. This icon permanently visible, even when the score is not changing.

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 also add 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. However, permissions set on an individual dashboard override dashboard group permission.

1. Navigate to Performance Analytics System Dashboard Administration.
2. Review current dashboards groupings using the Groups column.
3. Open the dashboard that you want to add to a group.
4. In the Group field, select a group to add the dashboard to, or click New to add a group.
5. Click Update.
Delete a dashboard

Delete unused dashboards to keep your system free of unneeded objects. Deleted dashboards cannot be restored.

Role required: admin, pa_admin, or pa_power user

1. Navigate to Performance Analytics Dashboard Administration.
2. Click the dashboard that you want to delete to open it.
3. Click Delete.

Breakdown dashboards

A breakdown dashboard is a dashboard that has had a breakdown added to it. Users can select a breakdown element to filter data in Performance Analytics widgets that have been added to the dashboard.

For example, a breakdown dashboard for the breakdown Category enables users to select a category from the list. After this selection the entire dashboard shows the data of indicators for that specific category, provided Follow element is selected for the widget that is used to render the chart or list in the widget configuration.
Figure 56: Breakdown dashboard
Add a breakdown to a dashboard

Add a breakdown to a dashboard to enable the ability to filter by breakdown element for all Performance Analytics widgets.

Role required: pa_admin, pa_power_user, or admin

If you selected Follow element for a widget, that widget can follow the breakdown by showing values for the indicators based on the selected breakdown instance. 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.

1. Navigate to Performance Analytics Dashboard Admin.
2. Open the dashboard that you want to add a breakdown to.
3. Click Edit in the Breakdown Source related list.
4. Move the breakdown you want to apply to the Breakdown Source List.
5. Click Save.

The breakdown is applied to the dashboard. Users can select breakdown

Interactive Filters

Interactive Filters allow you to filter report widgets directly from a homepage or Performance Analytics dashboard without modifying the reports.

You can create an interactive filter and add it to a homepage or Performance Analytics dashboard as a widget. Selecting a value in the Interactive Filter widget filters the data in report widgets on the homepage or dashboard.

Interactive Filters are available for all instances. Creating a new Interactive Filter requires Performance Analytics Premium.

Available Interactive Filter types

You can create Interactive Filters for multiple field types.

Table 121: Interactive filter types

<table>
<thead>
<tr>
<th>Type</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 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>Type</td>
<td>Description</td>
</tr>
<tr>
<td>---------------</td>
<td>---------------------------------------------------------------------------------------------------------------------------------------------</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 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>
</tbody>
</table>

Create a choice list interactive filter

A choice list interactive filter allows users to filter report widgets based on the value of a choice list.

You must have Performance Analytics Premium to create new interactive filters.

Role required: hp_publisher_admin and report_admin

1. Navigate to Homepage Admin 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 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 for users 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>
<tr>
<td>UI control type</td>
<td>Select how the available filtering options for this filter appear on the homepage widget. See Available interactive filter UI control types.</td>
</tr>
</tbody>
</table>

Note: For choice list interactive filters, you can exclude specific elements from appearing on the filter using the Exclusion list. However, data for excluded choices is included when you select All on the interactive filter.

5. In the Table choice list, select the table that contains the choice list to filter on.
6. In the Field choice list, select the choice list field to filter on.
7. Add any choice list elements you want to exclude from the filter to the Exclusion list field.
8. 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
You must have Performance Analytics premium to create new interactive filters.

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. 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 for users 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>
<tr>
<td>UI control type</td>
<td>Select how the available filtering options for this filter appear on the homepage widget. See Available interactive filter UI control types.</td>
</tr>
</tbody>
</table>

Note: For choice list interactive filters, you can exclude specific elements from appearing on the filter using the Exclusion list. However, data for excluded choices is included when you select All on the interactive filter.

6. Right-click on the form header and select Save.
7. In the Interactive filter references related list, click New.
8. In the Reference table field, select a table that has reports you want to filter.
9. 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.
10. Click Submit.

Repeat steps 7-10 as needed for each reference field you want to filter on. After you create the filter, add it to a homepage or dashboard.

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
You must have Performance Analytics premium to create new interactive filters.

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.
### Name
Enter a name for the filter. This name appears on the homepage widget for the filter.

### Look up name
Enter a lookup name for the filter. This name appears in the Add content menu for users 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.

### Description
Enter a description of the filter.

### UI control type
Select how the available filtering options for this filter appear on the homepage widget. See Available interactive filter UI control types.

Note: For choice list interactive filters, you can exclude specific elements from appearing on the filter using the Exclusion list. However, data for excluded choices is included when you select All on the interactive filter.

5. 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.

6. Right-click on the form header and select Save.

7. In the Interactive filter Dates related list, click New.

8. In the Table field, select a table that has reports you want to filter.

9. In the Field field, select a date field to filter on.

10. 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

You must have Performance Analytics premium to create new interactive filters.

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 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 for users 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>Name</td>
<td>Description</td>
</tr>
<tr>
<td>---------------</td>
<td>-----------------------------------------------------------------------------</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 homepage widget. See Available interactive filter UI control types. Note: For choice list interactive filters, you can exclude specific elements from appearing on the filter using the Exclusion list. However, data for excluded choices is included when you select All on the interactive filter.</td>
</tr>
</tbody>
</table>

5. In the Table choice list, select the table that contains the true/false field to filter on.
6. In the Field choice list, select the true/false field to filter on.
7. 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

You must have Performance Analytics premium to create new interactive filters.

Before starting this procedure, create several choice list, reference field, boolean, or date filters to group.

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 122: Filter 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 look up 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 look up 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. In the Group section, click Insert a new row...
6. Select an interactive filter to add to this group.
   You cannot add a group filter to another group filter.
7. Repeat steps 5-6 as needed for each filter you want to group.
8. 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.

You must have Performance Analytics Premium to create interactive filters.

Role required: hp_publisher_admin, report_admin, or admin

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 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 for users 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>
<tr>
<td>UI control type</td>
<td>Select how the available filtering options for this filter appear on the homepage widget. See Available interactive filter UI control types.</td>
</tr>
</tbody>
</table>

Note: For choice list interactive filters, you can exclude specific elements from appearing on the filter using the Exclusion list. However, data for excluded choices is included when you select All on the interactive filter.

5. In the Table choice list, select the table that contains the field to filter on.
6. In the Field choice list, select the field to filter on.
7. Click Submit.

After you create the filter, add it to a homepage or dashboard.

Available interactive filter UI control types

The interactive filter UI control type field provides several options for displaying the filter.

Table 123: Available UI control types

<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>Checkboxes</td>
<td>Displays each filtering option as a checkbox. Users can select any number of checkboxes at a time.</td>
</tr>
<tr>
<td>UI control type</td>
<td>Description</td>
</tr>
<tr>
<td>-------------------------</td>
<td>------------------------------------------------------------------------------</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>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 Checkboxes 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 only one condition.

Interactive Filters on homepages and dashboards
You can expose an Interactive Filter to users by adding the filter to a homepage or a Performance Analytics dashboard.

Note: Add interactive filters only to homepages and Performance Analytics 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
Add an interactive filter to a homepage to filter reports on that 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
1. Navigate to a dashboard.
2. Click Edit.
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 to the homepage.
6. Click Add or drag the filter onto the dashboard.

Add an interactive filter widget to a dashboard
Add an interactive filter to a dashboard to filter reports on that dashboard.
Role required: pa_power_user
The video at the following link shows how to create an interactive filter for a dashboard:
1. Navigate to a Performance Analytics 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 to the homepage.
7. Click Add here in the section you want the filter to appear.

Make a breakdown act as an interactive filter
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 a dashboard with one or more breakdowns.
3. Click Edit to modify the dashboard.
4. Click the dashboard settings icon ( ) and select Modify.
5. In the Breakdown sources related list, click the reference icon ( ) next to the breakdown source you want to make into an interactive filter.

Note: You cannot use a breakdown source that is based on a bucket group as an interactive filter.

6. 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.
7. Click Update.

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. If editing a dashboard, click Edit.
3. In the report widget, click the Edit widget icon ( ).
4. Select Follow interactive filter.
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 a Performance Analytics 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.

**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 control all 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 Premium to create new interactive filters.

**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 and define the user interface for the filter.

Add any buttons or other interface elements to the dynamic content.

```xml
<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 DashboardMessageHander class to manage active filters. Instantiate DashboardMessageHander with a unique value.

```
<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>
```

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.
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. Click the Only mine button on the filter to filter reports on the dashboard to only show tasks where the current user is the caller.

Figure 57: 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.
DashboardMessageHandler

The DashboardMessageHandler class allows you to define custom filtering logic for interactive publishers.

DashboardMessageHandler - DashboardMessageHandler(String id)

Instantiate a DashboardMessageHandler object with a given unique ID.

Table 124: 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>
```javascript
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.

<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>

```
Table 126: Returns

<table>
<thead>
<tr>
<th>Type</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>void</td>
<td></td>
</tr>
</tbody>
</table>
```

DashboardMessageHandler - removeFilter()
Removes the current filter published by this DashboardMessageHandler object from all reports on the homepage or dashboard.

<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>

```
Table 128: Returns

<table>
<thead>
<tr>
<th>Type</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>void</td>
<td></td>
</tr>
</tbody>
</table>
```
Administering dashboards

Learn about administering dashboards.

Move a dashboard tab with an update set

Dashboard tabs are not automatically transferred in update sets. To transfer dashboard tabs, manually add the tab content to the update set and associate that content with a new tab on the target instance.

Role required: admin

Note: If the sys_id of the tab you are moving exists on the target instance, you will see empty tabs after you move the dashboard. The dashboard shows empty tabs, for example, when there is a previous commit of an update set. Delete the corresponding Grid Canvas and Portal Page records in the target instance before you retrieve the update set.

1. In the source instance, navigate to Performance Analytics Dashboards.
2. Select the tab you want to copy.
3. Click the Copy URL icon

   ![Copy URL icon](image)

   and paste the tab’s URL in a text file.
4. Copy the sys_id of the tab parameter.
   For example, if the URL of the tab is my_instance.sn.com/$pa_dashboard.do?embedded=true&dashboard=ABC&tab=123, then the sys_id of the tab parameter is 123.
5. In the navigation filter enter pa_tabs.list.
6. Filter the list to show only the tab with the sys_id you copied.
7. Click on the Page value for the tab.

8. On the Portal page, click the context menu icon and select Copy sys_id. Paste this value into a text editor.

This value is the sys_id for the portal page. It is different than the sys_id for the tab that you have already used.


10. Filter the list to show only the portal page with the sys_id you copied.
11. Find the portal page record with the View value you previously recorded.

12. Right-click the record and select Unload Portal Page.

The page is added to the current update set.

13. To move a responsive dashboard, you must also unload its Grid Canvas, which contains the relationships between the responsive canvas and other dashboard objects. If you skip this step, the dashboard imports with empty tabs.

   a) Navigate to sys_grid_canvas.list and find the page with the PortalPage.Sys_ID value that you previously recorded.

   b) Right-click the record and select Unload Canvas Page.

   The page is added to the current update set.

14. Move the update set to another instance using standard update set functionality. For more information, see Retrieve an Update Set.
15. In the target instance, navigate to Performance Analytics Dashboards.
16. Select the dashboard that you want to add the tab to.
17. Add the tab.
   a) Click Edit.
   b) Click the plus icon next to the existing tabs to create a new tab.
   c) Name the tab and click Create tab.
18. Navigate to Performance Analytics Dashboard Administration.
19. In the Dashboard Tabs related list, click the name of the new tab.
   Note: You may need to configure the form to add the Dashboard Tabs Dashboard related list. For more information, see Add a related list.
20. In the Tab record, change the value of Page to the name of the portal page that you moved in the update set.
21. Change the value of Canvas page to the name of the canvas page that you moved in the update set.
   a) To show the Canvas page field if it is not visible, click the context menu and select Configure Form Layout
   b) Move Canvas page (+) to the Selected column and click Save.
22. Click Update.

Optimize widget rendering time on responsive dashboards

If the contents of your dashboards load slowly, you can use system properties to optimize how widgets load.

You can optimize widget rendering only on responsive dashboards.

Role required: admin
1. Enter sys_properties.list in the Navigation filter.
2. Use the following system properties to optimize rendering of dashboard widgets:
### ServiceNow Helsinki Performance Analytics and Reporting

<table>
<thead>
<tr>
<th>Name</th>
<th>Description</th>
<th>Note:</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>
<td>This system property applies to responsive dashboards only.</td>
</tr>
<tr>
<td></td>
<td>- Type: integer</td>
<td></td>
</tr>
<tr>
<td></td>
<td>- Default value: none</td>
<td></td>
</tr>
<tr>
<td></td>
<td>- Location: Add to the System Property (sys_properties) table.</td>
<td></td>
</tr>
</tbody>
</table>

| glide.canvas.grid.widget_render_concurrent_max | Defines the maximum number of widgets that can render simultaneously on a dashboard. With smaller values, individual widgets load more quickly. With larger values, fewer Ajax requests to the server are needed. You should set the value of this property to half of the number of widgets that are visible when your most-used dashboard loads. For example, if six widgets are visible on the dashboard set value to three. | This system property applies to responsive dashboards only. |
|                                               | - Type: integer                                                                                                                                                                                            |       |
|                                               | - Default value: none                                                                                                                                                                                      |       |
|                                               | - Location: Add to the System Property (sys_properties) table.                                                                                                                                             |       |

The values to use for these properties depend on the performance of your instance and the contents of its dashboards.

## Enable responsive canvas for dashboards

A system administrator can enable responsive canvas for dashboards for an entire ServiceNow instance. By default, responsive canvas is disabled.

**Role required:** admin

Do one of the following.

<table>
<thead>
<tr>
<th>Action</th>
<th>Instructions</th>
</tr>
</thead>
<tbody>
<tr>
<td>Enable responsive canvas for the first time</td>
<td>Activate the Responsive canvas plugin.</td>
</tr>
<tr>
<td>Re-enable responsive canvas after it has been disabled</td>
<td>Set the glide.cms.enable.responsive_grid_layout system property to true.</td>
</tr>
</tbody>
</table>

All new dashboards are responsive. Existing dashboards are not converted, and remain nonresponsive.
Disable responsive canvas for dashboards

You can disable responsive canvas for a ServiceNow instance, so all new dashboards are nonresponsive dashboards. Existing dashboards are not affected, so any existing responsive dashboards remain responsive.

Role required: admin

Add the glide.cms.enable.responsive_grid_layout system property, and set it to false.

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 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.
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