

Jakarta Software Asset Management

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Software Asset Management

Software Asset Management solutions help your organization manage software assets and compliance.

- [Software Asset Management](#)

The ServiceNow® Software Asset Management (SAM) application systematically tracks, evaluates, and manages software licenses, compliance, and optimization. You can reclaim unused software rights, purchase new software rights, and manage allocations for entitlements.

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The ServiceNow® Software Asset Management (SAM) application systematically tracks, evaluates, and manages software licenses, compliance, and optimization. You can reclaim unused software rights, purchase new software rights, and manage allocations for entitlements.

For the Software Asset Management plugin feature (com.snc.software_asset_management) of Asset Management, see [Software Asset Management plugin](#).

	Set up	
<p>Explore</p> <ul style="list-style-type: none"> • Software Asset Management release notes • Software Asset Management overview • Request Software Asset Management 	<ul style="list-style-type: none"> • Set up Software Asset Management • Add a software model • Add a software entitlement • Discovery models • Software Asset Management content service 	<p>Administer</p> <ul style="list-style-type: none"> • Software Asset Management administration • Add a software pattern normalization rule • Add a software reclamation rule

Use

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| <ul style="list-style-type: none"> • Get started with Software Asset Management • Software Asset Management dashboard • Software reconciliation for compliance • Run software reconciliation • Software installation optimization and usage | <p>Migrate</p> <ul style="list-style-type: none"> • Software Asset Management migration | <p>Troubleshoot and get help</p> <ul style="list-style-type: none"> • Ask or answer questions in the Software Asset Management community • Search the HI Knowledge Base for known error articles • Contact ServiceNow Support |
|--|--|--|

Request Software Asset Management

The Software Asset Management Premium (com.snc.samp) plugin requires a separate subscription and must be activated by ServiceNow personnel. This plugin includes demo data and activates related plugins if they are not already active.

Before you begin

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

Procedure

1. In the HI Service Portal, click Service Requests > Activate Plugin.
2. Fill out the form.

Target Instance	Instance on which to activate the plugin.
Plugin Name	Name of the plugin to activate.
Specify the date and time you would like this plugin to be enabled	Date and time must be at least 2 business days from the current time. 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.

Related Topics

- [List of Jakarta plugins](#)

Set up Software Asset Management

Set up Software Asset Management after you have received your subscription and before configuration.

Before you begin

Role required: sam_admin

About this task

Once you have [requested](#) and obtained your Software Asset Management subscription from ServiceNow personnel, complete these steps to set up Software Asset Management before you begin to use it.

Procedure

1. Determine whether you are currently running the Software Asset Management (com.snc.software_asset_management) plugin feature of Asset Management.

- If so, complete the [Software Asset Management migration](#) procedure.

This step automatically converts and adds new tables, forms and lists, fields and values, and disables deprecated functionality. It also contains manual procedures for you to complete for successful migration.

- If not, proceed to the next step.

2. Determine whether [Discovery is activated](#).

- If so, run the [Migrate software installs](#) script.

This step copies records from the [cmdb_software_instance] table to the [cmdb_sam_sw_install] table, so that any previously discovered software installs are utilized by the Software Asset Management application.

- If not, activate and [configure](#) Discovery, which is essential for Software Asset Management normalization.

For more information, see [Discovery](#).

3. Proceed to [Get started with Software Asset Management](#) to begin using Software Asset Management in your environment.

Get started with Software Asset Management

Get started with Software Asset Management to optimize management of software installations in your environment.

Before you begin

Role required: sam_admin

About this task

After you have [set up Software Asset Management](#), get started by completing these steps for basic configuration.

Procedure

1. Create a software model for common software, such as Microsoft Office 2013, for example.
 - a. Navigate to Software Asset > Licensing > Software Models.
 - b. Create a new record (see table for field descriptions).

Software model form

Field	Example
Publisher	Microsoft
Product	Office
Discovery Mapping	
Discovery map	Choose the discovery map that corresponds with the version edition, platform, and language. The remaining fields are automatically populated based on the discovery map.
Version	2013
Edition	Professional Plus
Platform	Windows
Language	Anything

2. Create a basic per-user or per-device entitlement for the software.
 - a. Open the software model record you created.

- b. Scroll down to the Software Entitlements related list, and create a new Software Entitlements record (see table for field descriptions). The Software model field is automatically populated.

Software Entitlements form

Field	Example
Software model	Microsoft Office 2013 Professional Plus
License metric	Per User
Purchased rights	200

- 3. After discovery of software installed, run reconciliation to reconcile software rights owned against software installed, with respect to discovery and software entitlements.
 - a. Navigate to Software Asset > Reconciliation > Run Reconciliation.
 - b. Select the publisher on which to run reconciliation, or select all publishers, and click Proceed.
Allow time for the reconciliation process to complete, especially if you selected all publishers.
- 4. View reconciliation results that show the compliance status of your software products.
 - a. Navigate to Software Asset > Reconciliation > Reconciliation Results.
 - b. Open the reconciliation result record to view product results.
 - c. Open product result records to view compliance status of specific software models, such as number of unlicensed installs and the true-up cost to become compliant.
 - d. Open a software model result to view license metric compliance, and then drill down further into the license metric results to view how rights were used. For non-compliant product results, you can execute a remediation option from the Remediation Option related list. You can also create a purchase order directly from the Remediation Option form, which is integrated with the [Procurement](#) application. The purchase order fields are automatically populated with the content from the software model result.

What to do next

Depending on the compliance status of your software installations, you can choose to optimize your environment further.

For example, you can add a reclamation rule to reclaim software rights that do not meet minimum usage requirements so they can be allocated elsewhere. You can also add a pattern normalization rule to normalize specific software products in your environment.

Software Asset Management overview

New functionality, roles, tables, scripts, UI policies, and business rules are added with this application.

Software Asset Management functionality consists of these main feature areas.

You can view the software installation results for your environment in the form of statistics and charts on the Software Asset Management dashboard.

Feature area	Description
Licensing	<p>Software models created for all installed software products are used to tie software installations (software being used) with entitlements (software owned).</p> <p>Entitlements define license details and are assigned to software models.</p>
Discovery	<p>A discovery process is used to discover the software installed in your environment.</p> <ul style="list-style-type: none"> • Discovery • Microsoft SCCM <p>A software discovery model is then matched to discovered software installations.</p>

Feature area	Description
<p>Normalization</p>	<p>The normalization process compares the discovered publisher, discovered product, and discovered version values against the ServiceNow repository of normalized equivalents.</p> <ul style="list-style-type: none"> • OOB Normalization Library • Optional Software Asset Management content service that updates the Normalization Library with pattern normalization rules <p>Normalized fields are then used to match up entitlements purchased.</p>
<p>Reconciliation</p>	<p>The reconciliation process calculates the compliance status of software products with respect to discovery and entitlements.</p> <p>Reclamation candidates are generated for unused software that can be used to reclaim software rights.</p>
<p>Optimization</p>	<p>The reclamation process remediates non-compliance by uninstalling software from devices and reclaiming those software rights.</p> <p>This process can be automated using Client Software Distribution (CSD).</p> <p>To purchase additional licenses, you can create a purchase order directly with Procurement integration.</p>

- [Software Asset Management dashboard](#)

View true-up costs, optimization results, and compliance trend charts on the Software Asset Management dashboard integrated with Performance Analytics.

- [Software Asset Management roles](#)

Software Asset Management adds the following roles.

- [Installed with Software Asset Management](#)

Tables, properties, user roles, script includes, client scripts, UI policies, and business rules are installed with Software Asset Management.

Software Asset Management dashboard

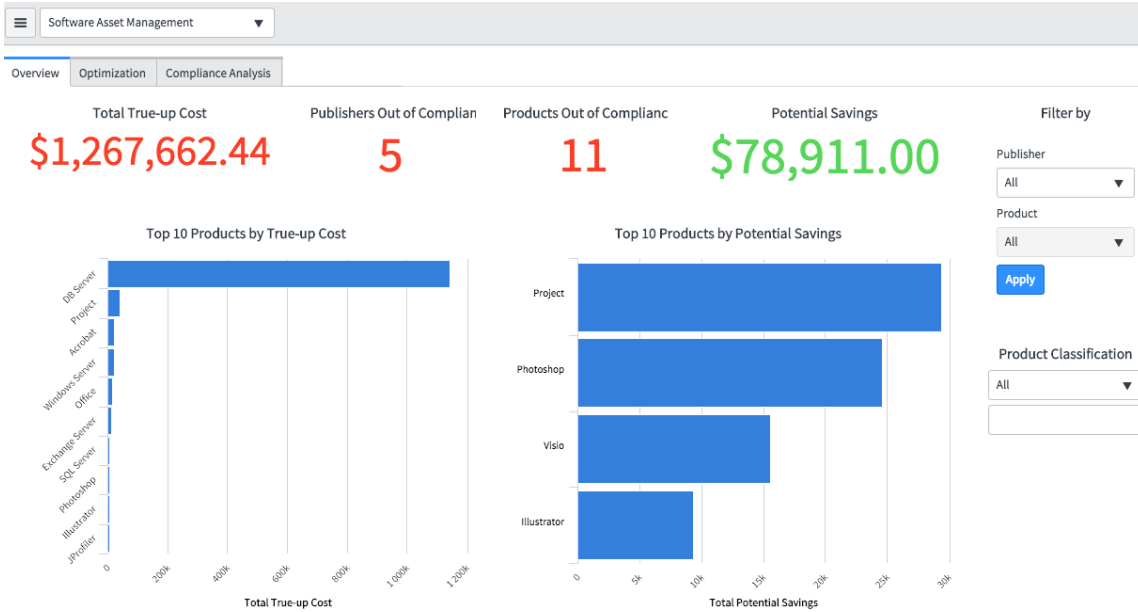
View true-up costs, optimization results, and compliance trend charts on the Software Asset Management dashboard integrated with Performance Analytics.

The Software Asset Management overview dashboard tab is accessed by navigating to Software Asset > Overview. Click an element within a report to see more information, or add and move widgets as needed.

Results are updated daily, or whenever a new reconciliation result is available, and can be refreshed by clicking the Refresh icon for each result. You can also save charts in PNG or JPG formats.

The graphs show important statistics about the software being tracked, including software that has been allocated but is not being used, and the total number of unallocated licenses. In the Overview and Optimization tabs, you can filter by publisher, product, and product classification to narrow the results.

Overview



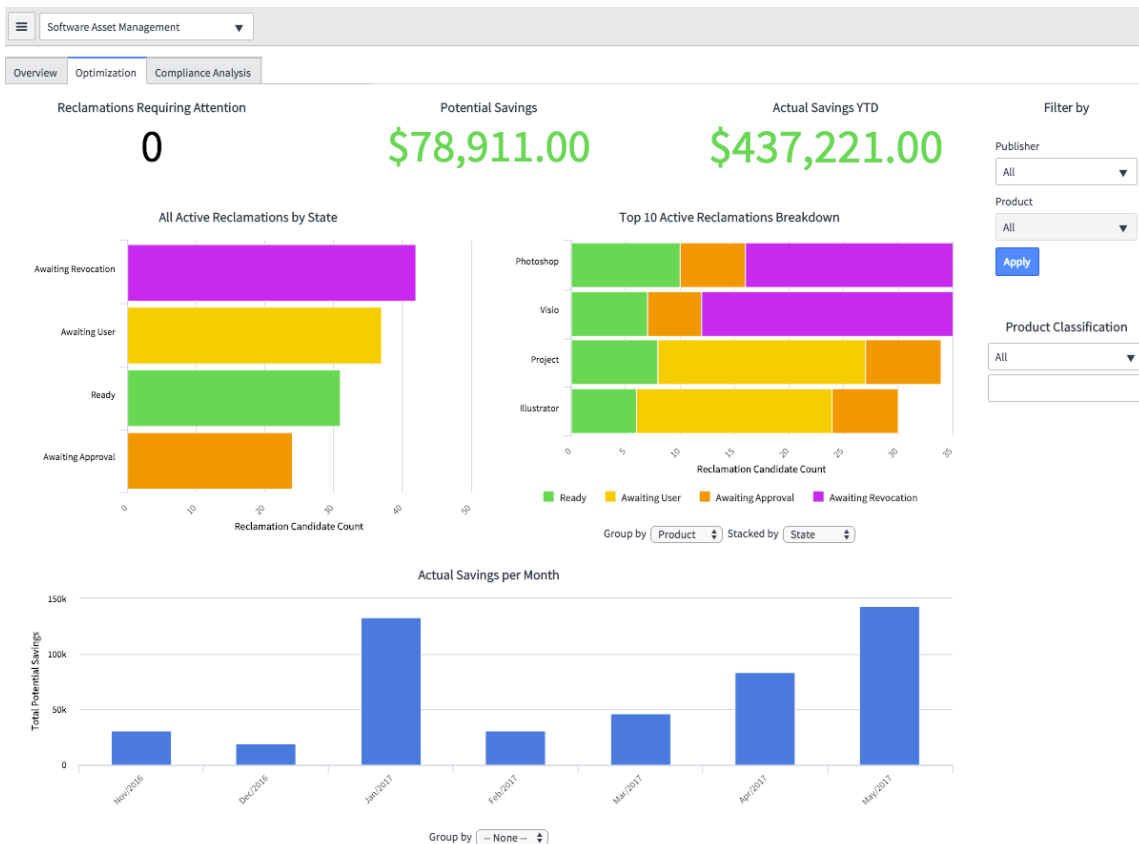
Overview tab

Report	Drill-down Navigation	Description
Total True-up Cost	Product Results list	Cost to be compliant based on the average prices for entitlements for the rights.
Publishers out of Compliance	Product Results list	Number of publishers that have at least one software model out of compliance.
Products out of Compliance	Product Results list	Number of products that have at least one software model out of compliance.
Potential Savings	Reclamation Candidates list	Cost saved if reclamation candidates are reclaimed.

Report	Drill-down Navigation	Description
Top 10 Products by True-up Cost	Product Results list	Greatest true-up costs by product.
Top 10 Products by Potential Savings	Reclamation Candidates list	Greatest potential savings by product.

Optimization

The source for optimization data is the Reclamation Candidate [samp_sw_reclamation_candidate] table.



Optimization tab

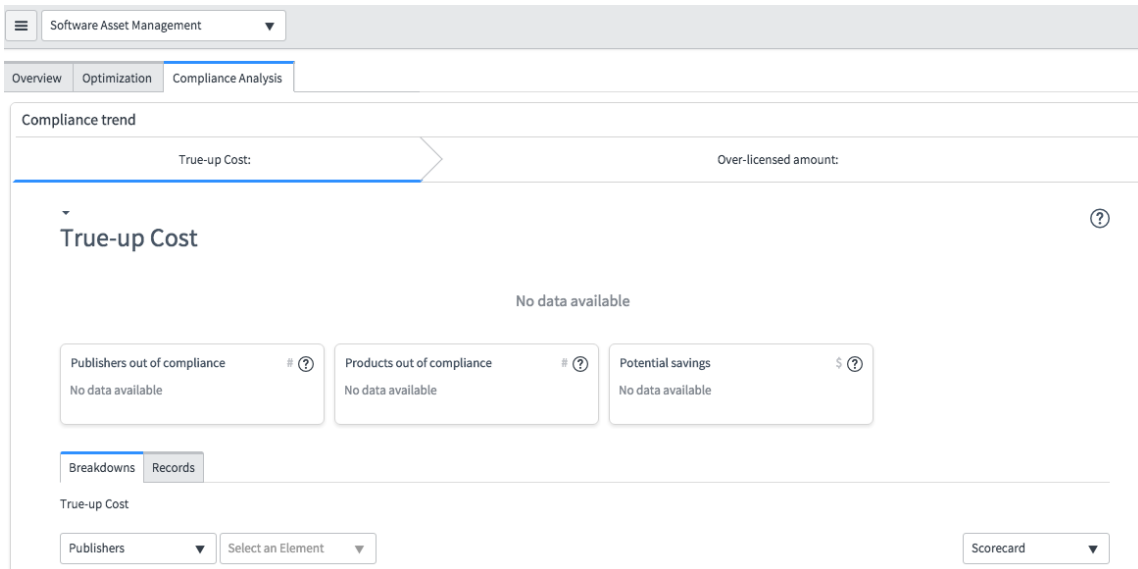
Report	Filter condition
Reclamations Requiring Attention	State is Attention Required
Potential Savings	<ul style="list-style-type: none"> Created on This Year OR Active is true OR <ul style="list-style-type: none"> Closed on This Year AND Opened on Last Year
Actual Savings YTD	Closed on This Year AND State is Closed Complete
All Active Reclamations by State	Active is true
Top 10 Active Reclamations Breakdown	Active is true
Actual Savings per Month	State is Closed Complete AND Closed in Last 12 Months

Reclamation candidate state color key:

Color	State
Red	Attention Required
Green	Ready
Yellow	Awaiting Use
Orange	Awaiting Approval
Purple	Awaiting Revocation
Blue	Closed Complete

Compliance Analysis

Compliance analysis consists of time-series data using Performance Analytics to show the compliance trends over time. The for compliance analysis data is the Product Result [samp_product_result] table.



Compliance trend: True-up Cost

Report	Description
True-up Cost	Cost to be compliant based on the average prices for entitlements for the rights.
Publishers out of compliance	Number of publishers that have at least one software model out of compliance.
Products out of compliance	Number of products that have at least one software model out of compliance.
Potential savings	Cost saved if reclamation candidates are reclaimed.
Breakdowns	Detailed list of the results.

Report	Description
Records	Detailed list of all product results, which can be filtered by the day the reconciliation was run.

Compliance trend: Over-licensed amount

Report	Description
Over-licensed amount	Cost of licenses owned but not being used.
Publishers over-licensed	Number of publishers that have at least one software right not being used.
Products over-licensed	Number of products that have at least one software right not being used.
Breakdowns	Detailed list of the results.
Records	Detailed list of all product results, which can be filtered by the day the reconciliation was run.

- [Software Asset Management Microsoft and Oracle dashboard tabs](#)

View compliance and optimization results related to Microsoft and Oracle on the Software Asset Management dashboard.

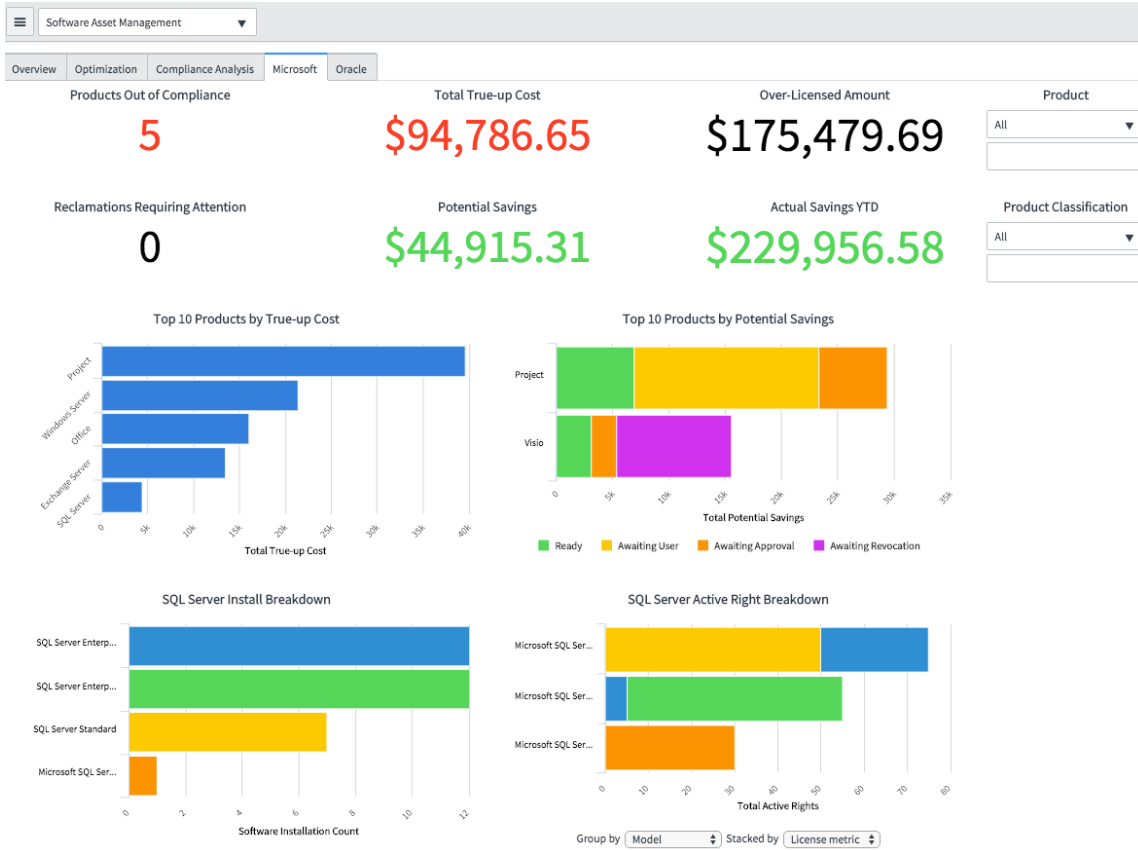
View compliance and optimization results related to Microsoft and Oracle on the Software Asset Management dashboard.

Results are updated daily, or whenever a new reconciliation result is available, and can be refreshed by clicking the Refresh icon for each result. You can also save charts in PNG or JPG formats.

Microsoft

You can manage Microsoft Server Software, such as SQL Server or Exchange Server, using Microsoft publisher pack.

Note: The add-on Microsoft content pack (com.snc.samp.microsoft) plugin must be installed to view the Microsoft dashboard tab.



Microsoft tab

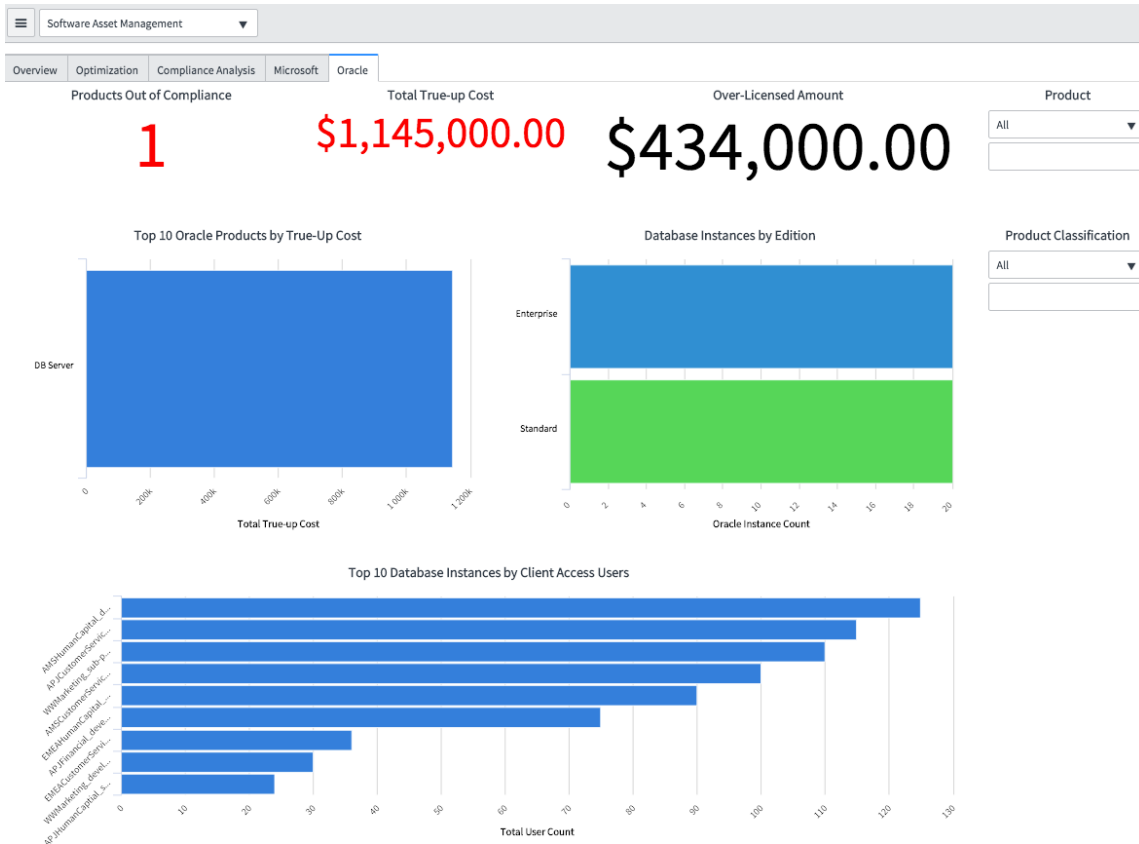
Report	Drill-down Navigation	Description
Products out of Compliance	Product Results list	Number of products that have at least one software model out of compliance.
Total True-up Cost	Product Results list	Cost to be compliant based on the average prices for entitlements for the rights.

Report	Drill-down Navigation	Description
Over-Licensed Amount	Product Results list	Cost of licenses owned but not being used.
Reclamations Requiring Attention	Reclamation Candidates list	State is Attention Required
Potential Savings	Reclamation Candidates list	Cost saved if reclamation candidates are reclaimed.
Actual Savings YTD	Reclamation Candidates list	Closed on This Year AND State is Closed Complete
Top 10 Products by True-up Cost	Product Results list	Greatest true-up costs by product.
Top 10 Products by Potential Savings	Reclamation Candidates list	Greatest potential savings by product.
SQL Server Install Breakdown	Software Installations list	Total software installations per SQL Server.
SQL Server Active Right Breakdown	Software Entitlements list	Number of total active rights per SQL Server.

Oracle

You can manage Oracle Server Software, such as Database Server, using Oracle publisher pack.

Note: The add-on Oracle content pack (com.snc.samp.oracle) [plugin](#) must be installed to view the Oracle dashboard tab.



Oracle tab

Report	Source	Filter condition
Products out of Compliance	Product Results list	Number of products that have at least one software model out of compliance.
Total True-up Cost	Product Results list	Cost to be compliant based on the average prices for entitlements for the rights.
Over-Licensed Amount	Product Results list	Cost of licenses owned but not being used.

Report	Source	Filter condition
Top 10 Oracle Products by True-up Cost	Product Results list	Greatest true-up costs by product.
Database Instances by Edition	Oracle Instances list	Total number of database instances by database edition.
Top 10 Database Instances by Client Access Users	Client Access list	Database instances with the greatest number of client access users.

Software Asset Management roles

Software Asset Management adds the following roles.

Roles

Role	Description
sam_admin	Inherits the sam_user role and has permission to run reconciliation and manage reclamation rules.
sam_user	Able to access all features except administrative.

Users with the sam_user or sam_admin role can view the overview page and refresh, add, delete, and rearrange reports and other widgets.

Installed with Software Asset Management

Tables, properties, user roles, script includes, client scripts, UI policies, and business rules are installed with Software Asset Management.

Activating the [Software Asset Management plugin](#) adds these components.

Demo data is available with Software Asset Management.

Tables

Software Asset Management adds the following tables.

Table	Description
Client Access [samp_sw_client_access]	Number of users or devices using a given software model.
Custom Software Product [samp_custom_sw_product]	Custom software products.
Custom Software Publisher [samp_custom_sw_publisher]	Custom software publishers.
Device Allocations [alm_entitlement_asset]	Allocation of software entitlement rights to a device.
License Key [samp_sw_license_key]	License keys and entitlements they are associated with.
License Metric Results [samp_license_metric_result]	Reconciliation results for a given software model and license metric.
Metric Attributes [samp_sw_metric_attribute]	Attributes to be used for reconciliation for specific metric group, license metric, and software model combination.
Oracle Options [samp_oracle_options]	Oracle options discovered which are enabled for Oracle enterprise database.
Pattern Normalization Rule [samp_pattern_normalization_client_rule]	Custom pattern normalization rules.
Processor Definition [samp_processor_definition]	Describes a computer in terms of the attributes IBM uses for its PVU licensing model. A row can be associated with one or more discovered computers if they are all identical in terms of the attributes used for PVU licensing.

Table	Description
Processor Mapping [samp_processor_mapping]	Encodes the information specified by the IBM Table of Processor Value Units per core and is used in matching a computer processor definition to a PVU cost for that computer. Each row in this table is a mapping between a set of processors and the associated PVU cost (per core).
Product Result [samp_product_result]	Reconciliation results at the software product level.
Reclamation Candidate [samp_sw_reclamation_candidate]	Reclamation candidates reclaim software resources.
Reclamation Rule [samp_sw_reclamation_rule]	Reclamation rules that created reclamation candidates.
Reconciliation Result [samp_reconciliation_result]	Top-level results for a given reconciliation run.
Remediation Option [samp_remediation_option]	Remediation options created providing different purchasing options.
Rights Used By [samp_entitlement_result]	User or device used the rights for the license metric results.
Software Discovery Model [cmdb_sam_sw_discovery_model]	A unique and definitive list of all software found by a discovery tool.
Software Entitlement [alm_license]	Entitlements created.
Software Installation [cmdb_sam_sw_install]	Association of software discovery models and the hardware on which they are installed.
Software Model [cmdb_software_product_model]	Discovery model mapping.

Table	Description
Software Model Result [samp_software_model_result]	Reconciliation results at the software model level.
Suite Component [cmdb_m2m_suite_model]	Suites and bundles.
Software Usage [samp_sw_usage]	Usage of software on a per-month basis.
User Allocations [alm_entitlement_user]	Allocation of software entitlement rights to a user.

Script includes

Software Asset Management adds the following script includes.

Name	Description
ContentServiceOptUtil	Utility for content service opt in and opt out.
ProcessorNormalizationUtils	Contains utilities for normalizing the processor names.
ReclamationCandidateAPI	Utilities for handling reclamation workflow.
SAMPCContent	Handles SAM content upload and download.
SAMPReclamationUtil	Contains utilities to map usage to reclamation flow.
SampReferenceQualifier	Contains utilities for reference qualifiers.
SAMPremiumUtils	Contains SAM Core Utilities.
SampSuiteEngine	Contains functions for handling suite inference on software installations.

Name	Description
SoftwareEntitlementAllocationFilter	Script that contains the filters for the allocation software models for software entitlements.
SoftwareEntitlementLicenseKeyFilter	Script that contains the filters for the license keys associated with a software entitlement.
SoftwareModelAPI	Creates a software model given a product definition sys_id.
SoftwarePackage	Manages software-package-related operations.

Client scripts

Software Asset Management adds the following client scripts.

Name	Table	Description
Change product when publisher changes	Software Usage [samp_sw_usage]	Changes product when publisher changes.
Changing Company blanks out Product	Pattern Normalization Rule [samp_pattern_normalization_client_rule]	After changing company, blank out product field.
Clear attribute value field	Metric Attributes [samp_sw_metric_attribute]	Clears attribute value when attribute value is unlimited is present.
Clear attribute value is unlimited field	Metric Attributes [samp_sw_metric_attribute]	Clears attribute value is unlimited when attribute value is present.

Name	Table	Description
Default Order	Downgrades/Upgrades [samp_downgrade_model]	Default value for the order field when creating new records.
Hide attribute unlimited for minimum	Default Metric Attributes [samp_sw_default_metric_attribute]	Hides Attribute value of Unlimited for minimum attributes.
Populate fields related to install	Reclamation Candidate [samp_sw_reclamation_candidate]	Populates fields related to software install.
Populate publisher for product if empty	Software Usage [samp_sw_usage]	Populates publisher for product if empty.
Set assignment group default value	Reclamation Candidate [samp_sw_reclamation_candidate]	Sets assignment group default value
Set Publisher from Product when empty	Content Pattern Normalization Rule [samp_pattern_normalization_rule]	If a Product is selected and the norm_publisher field is empty, the norm_publisher field should be set to the same manufacturer that is on the Software Product. The same logic applies for the Product Type field. If empty, set from the Product details.
Validate attribute value field	Default Metric Attributes [samp_sw_default_metric_attribute]	Validates the value of the attribute value field.

UI policies

Software Asset Management adds the following UI policies.

Name	Table
Checking empty publisher should clear publisher	Content Pattern Normalization Rule [samp_pattern_normalization_rule]
Control days before reclamation	Reclamation Rule [samp_sw_reclamation_rule]
Ensure non-negative counts	Client Access [samp_sw_client_access]
Hide edition when edition operator is not specific	Discovery Map [samp_sw_entitlement_definition]
Hide publishers field if reconciliation ran for all publishers	Reconciliation Result [samp_reconciliation_result]
Hide version when version operator is not specific	Discovery Map [samp_sw_entitlement_definition]
Make CI read only	Reclamation Candidate [samp_sw_reclamation_candidate]
Make fields read only after workflow trigger	Reclamation Candidate [samp_sw_reclamation_candidate]
Mark fields mandatory for custom products	Custom Software Product [samp_custom_sw_product]
Make install ready only after insert	Reclamation Candidate [samp_sw_reclamation_candidate]
Notify user change actions	Reclamation Candidate [samp_sw_reclamation_candidate]
Populating discovered publisher unchecks discovered publisher is empty	Content Pattern Normalization Rule [samp_pattern_normalization_rule]
Show Downgrades/Upgrades related list only for Per User and Per Device license metrics	License Metric Results [samp_license_metric_result]

Name	Table
Software product attributes should be read only for out of box software products	Software Product [samp_sw_product]

Business rules

Software Asset Management adds the following business rules.

Name	Table
Attribute value is unlimited is not true	Default Metric Attributes [samp_sw_default_metric_attribute]
Attribute value is unlimited is not true	Metric Attributes [samp_sw_metric_attribute]
Attribute value not empty	Default Metric Attributes [samp_sw_default_metric_attribute]
Attribute value not empty	Metric Attributes [samp_sw_metric_attribute]
Auto generate name	Reclamation Candidate [samp_sw_reclamation_candidate]
Build primary key on insert	Software Usage [samp_sw_usage]
Cache product	Product Result [samp_product_result]
Check integer fields not negative	Software Usage [samp_sw_usage]
Check product and publisher match	Software Usage [samp_sw_usage]
Check year is number	Software Usage [samp_sw_usage]
Clean product map upon deletion	Custom Software Product [samp_custom_sw_product]
Create delta product	Client Access [samp_sw_client_access]

Name	Table
Create delta product	Downgrades/Upgrades [samp_downgrade_model]
Date Validation	Downgrades/Upgrades [samp_downgrade_model]
Default Order	Downgrades/Upgrades [samp_downgrade_model]
Ensure non-negative counts on save	Client Access [samp_sw_client_access]
Ensure potential savings is not negative	Reclamation Candidate [samp_sw_reclamation_candidate]
License validation	Downgrades/Upgrades [samp_downgrade_model]
Link Core Company to SW Publisher	Pattern Normalization Rule [samp_pattern_normalization_client_rule]
Link the processor mapping	Processor definition [samp_processor_definition]
Metric result display name	License Metric Results [samp_license_metric_result]
Populate install related fields	Reclamation Candidate [samp_sw_reclamation_candidate]
Prevent duplicate key/entitlement	License Key [samp_sw_license_key]
Prevent duplicate reclamation candidate	Reclamation Candidate [samp_sw_reclamation_candidate]
Process before create or update action	Custom Software Product [samp_custom_sw_product]
Publisher should be empty if checked	Content Pattern Normalization Rule [samp_pattern_normalization_rule]

Name	Table
Rebuild primary key on update	Software Usage [samp_sw_usage]
Remediation result display name	Remediation Option [samp_remediation_option]
Set CDS Upload property	Software Asset Configuration [samp_configuration]
Set state ready when qualify	Reclamation Candidate [samp_sw_reclamation_candidate]
Validate attribute value change	Default Metric Attributes [samp_sw_default_metric_attribute]
Validate attribute value change	Metric Attributes [samp_sw_metric_attribute]
Validate days before auto-reclamation	Reclamation Candidate [samp_sw_reclamation_candidate]
Validate days before auto-reclamation	Reclamation Rule [samp_sw_reclamation_rule]
Validate total hours used	Reclamation Rule [samp_sw_reclamation_rule]
Upgrade delete logic	Upgrade Entitlement [samp_upgraded_entitlement]
Upgrade Insert and update logic	Upgrade Entitlement [samp_upgraded_entitlement]
Update manufacturer references	Software publisher [samp_sw_publisher]

Software license management

You can set up software entitlements that are used during reconciliation to compare software rights owned to software installed, including those for named users, devices, and cores.

Software licenses are based on [models](#) that you create to organize software licenses in meaningful ways. Different [license metric calculations](#) determine how software is counted.

Software licenses can also be associated with a contract which enables a company to cover software licenses for multiple assets or users. You can manage and track software contracts using the [Contract Management](#) application.

Software Entitlements

Software asset managers can allocate one or more rights to a user or device to use certain software.

For example, say a company purchases a software entitlement for 100 rights. From the software entitlement, 100 employee or machine allocations are created that are rightfully assigned a license. If Discovery finds the software installed on 200 machines, the software asset manager must identify the employees or machines that have the software installed without a license, and remediate the situation.

Built-in rules are used to help prevent allocating more rights than have been purchased. Asset tags can be used to track and identify specific software entitlements.

Benefits of using software entitlements:

- If the overall license allotment is exceeded, the asset manager can rapidly address the problem and return to compliant status by either removing unauthorized software or ordering more licenses.
- If the license allotment is not being used completely, the asset manager can respond by lowering the number of licenses purchased in the future.
- [Add a software model](#)

Software models are used to connect purchased software rights with discovered software installations. Additionally, software models can be used to manage suites of software as well as to publish requestable software to the Service Catalog.

- [Add a software entitlement](#)

Software entitlements enable you to define license details that are matched to software models.

- [Software license metrics](#)

License metrics are set in software entitlements and are used for reconciliation (metric group, license metric, and software model combination).

Add a software model

Software models are used to connect purchased software rights with discovered software installations. Additionally, software models can be used to manage suites of software as well as to publish requestable software to the Service Catalog.

Before you begin

Role required: sam_user or model_manager

About this task

Manage software available and tie software installations (software being used) with entitlements (software owned) using software models. Create software models for all software to be monitored.

Note: Users with the model_manager role can navigate to Product Catalog > Product Model > Software Models, but cannot administer all aspects of software models.

Procedure

1. Navigate to Software Asset > Licensing > Software Models and create a new record (see table for field descriptions).

Software Model form

Field	Description
Display name	<p>[Read-only] Name of the model. The system property glide.cmdb_model.display_name.shorten controls how software model display names are generated. System administrators can configure this property.</p> <p>Default format is publisher + product + version + edition.</p>

Field	Description
Publisher	<p>Publisher of the software. You can use the lookup list provided.</p> <p>Note: Publisher is a reference to the company [core_company]. Only companies you are using internally are shown.</p> <p>If the publisher and product do not exist, you can Add a custom software product.</p>
Product	<p>Software product name (of type Licensable). The same lookup list provided on the Software Discovery Models form.</p> <p>Note: If the relationship between the software publisher [samp_sw_publisher] and company [core_company] is not correct, products for that publisher may not be shown.</p>
General	
Short description	A brief description of the model.
Cost	The cost of a single unit of the software.
GA release date	Date the software became generally available to the market.
End of life date	Date the software was no longer supported by the publisher.
Next version	Reference to another software model of the same manufacturer which

Field	Description
	represents the next version of the product.
Owner	The person responsible for the model.
Status	The current status of the model. Options are In Production, Retired, and Sold.
Certified	The option that determines whether the model has been approved for use.
Discovery Mapping	
Discovery map	<p>A predefined set of conditions that determine which software discovery models get mapped to which software models. Purchased rights are only applied to software discovery models that meet the condition. This matching is important for reconciliation.</p> <p>There are discovery maps provided, or you can choose to specify the condition information directly instead.</p> <p>You can verify which discovery models get mapped to the software model by clicking the Show Matching Discovery Models related link.</p>
Version condition	<p>Condition qualifier for the Version field.</p> <ul style="list-style-type: none"> • starts with • is • is anything <p>Default is is anything</p>

Field	Description
Version	<p>Version of the software product.</p> <p>Required if version condition value is starts with or is.</p>
Edition condition	<p>Condition qualifier for the Edition field. Default is is anything.</p> <ul style="list-style-type: none"> • starts with • is • is anything
Edition	<p>Edition of the software product to use when searching for the normalized discovery model.</p> <p>Required if edition condition value is starts with or is.</p>
Platform	<p>Platform of the software product to use when searching for the normalized discovery model.</p> <p>Default is --Anything-- for Windows, Mac, Unix.</p>
Language	<p>Language of the software product to use when searching for the normalized discovery model, which is populated once it has been normalized or added manually.</p> <p>Default is --Anything--.</p>
Product Catalog	

Field	Description
Catalog Item	The information about the model as it appears in the product catalog and service catalog. Information only appears if the model has been published to the product catalog.
Description	Description of the software model as it appears in the product catalog.
Picture	An image of the software logo can be added. This logo appears in the Service Catalog if the software model is published.

The Software Suites related list consists of parent and child [software suite](#) configuration.

2. To show the list of discovery models that match the software publisher and product fields of the software model, under Related Links, click Show Matching Discovery Models.
The Discovery Models list is opened in a new browser tab for your information.
3. To publish the software model to the product catalog, under Related Links, click Publish to Software Catalog and select a category for the software model.
The values set in the Product Catalog related list are published.
4. To perform additional configuration, in the Software Models list, select the new software model record.
 - a. [Add a software entitlement](#).
 - b. [Create a vendor catalog item](#).
 - c. [Add a software client access record](#).
 - d. In the Metric Attributes related list, click a metric attribute to set the attribute value field (see table for field descriptions).

The Metric Attributes related list contains metric values set in [software entitlements](#) and is used for reconciliation (metric group, license metric, and software model combination).

For more information, see [Software license metrics](#).

Metric Attributes form

Field	Description
Software model	Software model associated with the metric attributes.
Metric group	Grouping for the software metric. If you have optional publisher packs installed that the software applies to, those options are shown. Otherwise, the metric group value is Common.
License metric	The license metric that the software license is counted against when reconciliation is run (per user, per device, for example).
Description	Attribute type description that is based on license metric value.
Attribute	Attribute type for reconciling entitlements license metric. <ul style="list-style-type: none"> • Maximum active OSEs per server • Maximum installs per OSE • Maximum installs per right: For Per User, Per Device, Per Named User, and Per Named Device. • Maximum processors per right • Minimum users per processor

Field	Description
	<ul style="list-style-type: none"> • Minimum cores per processor • Minimum cores per server
Attribute value	Value of the attribute (integer).
Attribute value is unlimited	If checked, the attribute is unlimited.

- [Create and manage a software suite](#)

Create a suite and add the corresponding components to the suite so the rights that your organization owns are counted accurately during reconciliation.

Create a suite and add the corresponding components to the suite so the rights that your organization owns are counted accurately during reconciliation.

Before you begin

Role required: sam_user or model_manager

About this task

A software suite is a group of related software offered as one unit. An example is the Microsoft Office Professional suite of office productivity software tools that includes PowerPoint, Word, Excel, Outlook, and Access.

For any software model, you have the option to specify whether the model is a suite (parent) or a component (child). A software model can be a component in multiple suites. For example, Microsoft Word is a component in Microsoft Office Standard and Microsoft Office Professional. Although you can set a single software model as both a suite and a component, software is not typically sold as nested suites.

Use the Inference percent and Mandatory fields for even greater control of suites.

- Inference percent: specifies what percentage of the components in the suite must be installed for the software to be identified as a suite.
- Mandatory: enforces whether a specific component in a suite must be installed to infer that the suite is installed. Choices are: Optional, Always Mandatory, Mandatory Group.

For example, say you specify the Inference percent as 80% and set the Mandatory field to Always Mandatory on Microsoft Access. These settings specify that Microsoft Access must be installed, along with three out of four other products (Microsoft Word, Microsoft Excel, Microsoft PowerPoint, and Microsoft Outlook) to infer that Microsoft Office Professional is installed on a device.

When a suite parent is detected during reconciliation, the suite components do not count for the individual license.

Note: Users with the model_manager role can navigate to Product Catalog > Product Model > Software Models, but cannot administer all aspects of software models.

Procedure

1. Navigate to Software Asset > Licensing > Software Models and open the software model record to add suite configuration to.
2. Configure the software model as a suite parent or child.
 - To make the software model a suite parent, in the Suite Components related list, create a record to specify the child software model to include in the suite (see table for field descriptions).

Suite Components fields

Field	Description
Inference percent	<p>The percentage of suite components that need to be present on a system to count as a suite. Used for suite management.</p> <p>Software installations on the same device and assigned to same user that meet the inference percent could be considered a suite.</p> <p>For example, if the inference percent for a suite of five products is set to 60% and three software installs on the same device, or assigned to the same</p>

Field	Description
	user, are discovered, all three installations are considered a suite.
Suite child	The child product or products of the suite. For example, Microsoft Word and Microsoft Excel are child products of Microsoft Office.
Mandatory	Determines whether a suite component is optional, mandatory, or part of a mandatory group. Set to Always Mandatory if the software must be installed to count the model as a suite.

- To make the software model a suite child item, in the Suite Parents related list, create a record to add the parent software model to which this software must belong (see table for field descriptions).

Suite Parents fields

Field	Description
Suite parent	The parent suites to which the software is assigned. For example, the parent suite for several common Microsoft products is a version of Microsoft Office.
Mandatory	Determines whether a suite component is optional, mandatory, or part of a mandatory group. Set to Always Mandatory if the software must be installed to count the model as a suite.

Add a software entitlement

Software entitlements enable you to define license details that are matched to software models.

Before you begin

Role required: sam_user

About this task

Software entitlements are stored in the Software Entitlement [alm_license] table.

Note: Entitlements are assigned to [software models](#), which are different than software discovery models.

Procedure

1. Navigate to Software Asset > Licensing > Software Entitlements and create a new record (see table for field descriptions).

Software Entitlement form

Field	Description
Display name	Automatically generated name based on asset tag and model.
Asset tag	Specify the serial number and the bar code for tracking the asset.
Publisher part number	Select publisher part number from the lookup list of predefined software that may have already been purchased. If the software model already exists, the Software model field is automatically populated.

Field	Description
	<p>If the software model does not exist, it will automatically create it for you directly from this form.</p>
Software model	<p>If the software model for the asset has not already been populated, select the software model to match the entitlement.</p> <p>Once the discovery map is selected, software model, product type, publisher, and license metric are automatically populated.</p> <p>If the software model discovery map is not on the lookup list, you can choose one from a list of discovery maps which will automatically replace the software model, product type, and license metric.</p> <p>Note: A warning message is shown if the publisher part number is not associated with the publisher and product for the software model. You can either change the software model, or save the entitlement as is.</p>
Database option	<p>Specify the Oracle Database option or management pack. Each purchased Oracle Database option requires a separate software entitlement.</p>

Field	Description
	<p>Note: This field is shown only when configuring entitlements that meet the following conditions:</p> <ul style="list-style-type: none"> • The Product field on the software model form is DB Server. • The Metric group field is set to Oracle, which requires special licensing.
Product type	<p>Specify the product type.</p> <ul style="list-style-type: none"> • Full • Upgrade <p>When upgrade is selected, the Upgraded Entitlements related list is shown, which is used to specify the entitlements you are upgrading from.</p> <p>This field becomes read-only after the form has been submitted.</p>
Metric group	<p>Select the metric group for the software. Each metric group has a set of license metrics that are specific to the publisher.</p> <ul style="list-style-type: none"> • Common • Microsoft (add-on) • Oracle (add-on) <p>Microsoft and Oracle publisher packs are available as add-ons that provide the capability to manage software</p>

Field	Description
	<p>licensed under Microsoft and Oracle licensing models.</p> <p>You can view Microsoft and Oracle compliance and optimization results on the Software Asset Management dashboard.</p>
License metric	<p>Select the license metric for the license group that the software license is counted against when reconciliation is run.</p> <p>Point to the reference field icon to view the license calculation.</p> <ul style="list-style-type: none"> • Common: <ul style="list-style-type: none"> Per Core, Per Device, Per Named Device, Per Named User, Per Processor (CPU count), and Per User • Microsoft (add-on): <ul style="list-style-type: none"> Device CAL, Per Core (Physical Core), Per Core (Virtual OSE), Per Core (with CAL), Per Device, Per Processor, Per User, Server (Per Instance), Server (Per Server), and User CAL • Oracle (add-on): <ul style="list-style-type: none"> Named User Plus and Per Processor <p>Note: For Oracle Per Processor metric type, Hyper-Threading must be enabled if you are using a virtual machine (VM) running Amazon Web Services (AWS)</p>

Field	Description
	For more information, see Software license metrics .
Agreement type	<p>Select the agreement type.</p> <ul style="list-style-type: none"> • Generic • Enterprise Level Agreement: Only shown when the License Metric Group field is Common or Microsoft • Unlimited Level Agreement: Only shown when the License Metric Group field is Oracle. <p>Note: If the agreement type is Enterprise License Agreement or Unlimited Level Agreement, the Status is Compliant even if there are unlicensed installations.</p>
Purchased rights	<p>Specify the number of rights that you are purchasing.</p> <p>The number of purchased rights for the new entitlement gets set in the Active rights field.</p>
Active rights	<p>Read-only. Specifies the number of entitlements to be granted for this license.</p> <p>Note: If an enterprise contract is attached to the license, the Active rights field is not shown.</p>
Allocations available	<p>Read-only. Specifies the number of user or device allocations that have not been created for an entitlement.</p>

Field	Description
	Allocations available = (number of active rights) - (sum of all allocation quantities)
General	
Serial number	Unique number assigned for identification of the asset.
Owned by	User or department with financial ownership of the asset. Can be different than the manager.
State	<p>Current state of the asset. Values include On order, In stock, In transit, In use, Consumed, In maintenance, Retired, and Missing.</p> <p>If the state is Retired, the Active rights field is set to 0.</p>
Substate	<p>More details about the software license stage. The available substate settings depend on the State selected.</p> <p>For example, if you select the Retired state, the substate options available are Disposed, Sold, Donated, and Vendor credit.</p>
Company	Company to which this asset belongs.
Location	Where the license is used. For example, a specific site, country, or region.
Department	Department of the person Assigned to this software license.

Field	Description
Financial	
Cost	<p>Cost of the software.</p> <p>Note: Required for total cost and savings calculations on the Software Asset Management dashboard.</p> <p>For additional field descriptions, see create assets in Asset Management.</p>

The Contracts related list contains [contract](#) details.

The User or Device Allocations related list contains entitlement [allocations](#).

Note: This related list is only shown when the License Metric field is Per User or Per Device

The Activities related list contains work notes for the [asset](#).

2. To perform additional configuration, in the Software Entitlements list, select the new software entitlement record.
 - a. To set upgrade and downgrade entitlements, in the Downgrades/Upgrades related list, create a new record to specify which software models to which you have upgrade or downgrade rights (see table for field descriptions). This allows you to set entitlement to previous or future versions of software (for example, the purchase of Office Professional Plus 2016 rights entitles you to Office Professional Plus 2013 as well).

Downgrades/Upgrades form

Field	Description
Software entitlement	Software entitlement with which the upgrade/downgrade is associated.
Software model	Software model of the entitlement.

Field	Description
Order	Order of the upgrade/downgrade.
Start date	Start date of the upgrade/downgrade.
End date	End date of the upgrade/downgrade.

- b. To set up cost-tracking details, configure [Expense Lines](#).
- c. To manage license keys, in the License Keys related list, create a new record to specify the licenses keys allocated to entitlements (see table for field descriptions).

License Key form

Field	Description
Is allocated	When checked, the license key has been allocated.
License key	License key value. Must be unique per entitlement.
Software entitlement	Software entitlement associated with the license key.

- d. If the product type is an upgrade, to specify the entitlements from which you are upgrading, in the Upgraded Entitlements related list, create a new record (see table for field descriptions).
 You can upgrade previously owned rights for a particular version of software to a newer version (for example, Office Professional Plus 2013 to Office Professional Plus 2016).
 You can add multiple upgrade entitlements in the Upgraded Entitlements related list.

Note: The rights from entitlements that you are upgrading from get deactivated when you upgrade because they are moved to the new entitlement.

Upgraded Entitlements form

Field	Description
From Entitlement	The entitlement from which rights are upgraded.
Number of rights	Number of rights to upgrade.

- [Add an entitlement allocation](#)

A user or device allocation can be added to a software entitlement to specify a user or device to which rights have been allocated.

A user or device allocation can be added to a software entitlement to specify a user or device to which rights have been allocated.

Before you begin

Role required: sam_user

About this task

User allocations are stored in the User Allocations [alm_entitlement_user] table. Device allocations are stored in the Device Allocations [alm_entitlement_asset] table.

Note: The total of all allocation quantities cannot exceed the total number of rights for the entitlement.

Procedure

1. Navigate to Software Asset > Licensing > Software Entitlements and open the software entitlement record to add allocations to.
2. Click the applicable allocations related list (User Allocations or Device Allocations) to configure (see table for field descriptions).

Note: The allocations related list that is shown pertains to the license metric that you chose. Only one related list for allocations is shown.

Allocations

Field	Description
User Allocations	
Assigned to	The user to which the license is allocated.
Software Model	Automatically set based on entitlements software model.
Quantity	Quantity of rights allocated to this user. Default is 1. Multiple rights come into play in the case where many rights are needed to fully license a device or user, such as with per core.
License Key	License key of the software.
Device Allocations	
Assigned to	The device to which the license is allocated.
Software Model	Automatically set based on entitlements software model.
Quantity	Quantity of licenses allocated to this user. Default is 1. Multiple licenses come into play in the case where licenses are allocated per core and multiple core rights are needed.
License Key	License key of the software.

Software license metrics

License metrics are set in software entitlements and are used for reconciliation (metric group, license metric, and software model combination).

Each metric group has a set of license metrics that are specific to the publisher.

You can view the Metric Attributes related list in [software models](#) to set the attribute value.

Microsoft and Oracle publisher packs are available as add-ons that provide the capability to manage software licensed under Microsoft and Oracle licensing models.

You can view the license calculation for a license metric by pointing to the reference field icon in the License metric field in the software entitlement.

License metrics

Metric group	License metric
Common	<ul style="list-style-type: none"> • Per Core: Licenses cores on a physical server or virtual machine. ([CPU core count] * [CPU count]) • Per Device: Licenses a device for a number of installations of software. • Per Named Device: Licenses a specific device for a number of installations of software. • Per Named User: Licenses a specific user for a number of installations of software. • Per Processor (CPU count): Licenses processors on either a physical server or virtual machine. • Per User: Licenses a user for a number of installations of software.

Metric group	License metric
<p>Microsoft (Add-on)</p> <p>Note: Not visible unless Microsoft content pack is installed.</p>	<ul style="list-style-type: none"> • Device CAL: Licenses a number of device client access licenses to server software. • Per Core (Physical Core): Licenses cores on a physical server. • Per Core (Virtual OSE): Licenses the virtual cores that support virtual machines. • Per Core (with CAL): Licenses cores on a physical server as well as a number of installs in physical and/or virtual Operating System Environments (OSE). • Per Device: Licenses a device for a number of installations of software. • Per Processor: Licenses a set number of processors on a physical server. • Per User: Licenses a user for a number of installations of software. • Server (Per Instance): Licenses a set number of software installs on either a physical server or virtual machine. • Server (Per Server): Licenses all software installs on a physical server and any virtual machines hosted by the physical server. • User CAL: Licenses a number of user client access licenses to server software.
<p>Oracle (Add-on)</p>	<ul style="list-style-type: none"> • Named User Plus: Licenses the number of users accessing a product.

Metric group	License metric
Note: Not visible unless Oracle content pack is installed.	<ul style="list-style-type: none"> Per Processor: Licenses the number of cores on a processor. <p>Note: For Oracle Per Processor license metric, Hyper-Threading must be enabled if you are using a virtual machine (VM) running Amazon Web Services (AWS).</p>

Oracle metric group database options

Oracle Database options and management packs that enhance the capabilities of Oracle Database in specific application environments are licensed separately. Therefore, separate entitlements are required for each product.

Note: The Oracle Database option field is shown only when configuring entitlements that meet the following conditions:

- The Product field on the software model form is DB Server.
- The Metric group field on the entitlements form is set to Oracle, which requires special licensing.

Oracle Database options

Category	Product
Oracle Database options	Active Data Guard
	Advanced Analytics
	Advanced Compression
	Advanced Security
	Airlines Data Model
	Communications Data Model
	Database In-Memory

Category	Product
	Database Vault
	Label Security
	Multitenant
	On-Line Analytical Processing (OLAP)
	Partitioning
	Real Application Clusters One Node
	Real Application Clusters (Oracle RAC)
	Real Application Testing
	Retail Data Model
	Spatial and Graph
	TimesTen Application-Tier Database Cache
	Utilities Data Model
Oracle management packs	Database Lifecycle Management Pack
	Diagnostics Pack
	Tuning Pack
	Cloud Management Pack for Oracle Database
	Data Masking and Subsetting Pack

Software discovery and normalization

ServiceNow Discovery is used to automatically populate the Software Installations table so the software can be normalized and reconciled.

Discovery

The discovery process consists of automatically discovering software used at your organization, which can be done either using ServiceNow Discovery, or using SCCM integration.

For more information, see [Collect software data with either SCCM or Discovery and Discovery with Software Asset Management](#).

Note: To use Discovery, the [Discovery plugin](#) must be activated.

Discovery uses patterns in the discovery process that can be created or customized. The base system contains a wide range of patterns that cover most industry standard network devices and applications. Software Asset Management automatically leverages SQL Server, Exchange Server, and Oracle Database Server specifically, but other patterns can be customized for use by Software Asset Management, if needed.

Discovered software is stored in the Software Installations [cmdb_sam_sw_install] table.

Note: If you are already running Discovery but have not used a version of Software Asset Management previously, run the [Migrate software installations](#) script to copy records from the [cmdb_software_instance] table to the [cmdb_sam_sw_install] table, so that any previously discovered software installs are utilized by the Software Asset Management application.

When software install records are written to the Software Installations table, a business rule verifies whether the unique combination of the discovered publisher, discovered product, and discovered version already exist in the Discovery Model table.

- If so, the reference to the discovery model is set in the Software Installations table.
- If not, a new record is created in the Discovery Model table, and that discovery model reference is set in the Software Installations table.

After discovery, normalization is run.

Normalization

The normalization process compares the discovered publisher, discovered product, and discovered version values against the ServiceNow repository of normalized equivalents. Matches are added to the corresponding normalized fields (publisher, product, and

version) of the Discovery Model table. The normalized fields are then used to match up entitlements purchased, and to compute license positions.

For example, the discovered publisher `Microsoft Corp` could be normalized to `Microsoft` for the normalized publisher field.

The second part of the normalization process looks for pattern matches between discovered fields and normalized values, and updates the normalized fields accordingly. This scheduled job runs daily by default but the frequency can be changed.

Both normalization processes must be completed for normalization to be effective. Since the scheduled job for normalization does not run in conjunction with additions to the Software Installations table, [View job results](#) to verify that the job ran successfully if normalization results do not look accurate.

The scheduled job for the normalization process is daily but it can be changed. Whenever a new discovery model is created, the normalization process is run.

Normalization status can have six different results:

Normalization status

Status	Description
Normalized	A discovery model was fully normalized based on publisher, product, version fields. No fields are editable.
Partially Normalized	A discovery model was partially normalized based on publisher and product fields only. In this case, the version field is editable and once that information is added the normalization status is changed to Manually Normalized.
Publisher Normalized	A discovery model partially normalized based on publisher field alone. In this case, the version and product fields are editable, and once that information is added the normalization process is changed to Manually Normalized.
Match Not Found	The normalization process could not match any of the three key fields of the

Status	Description
	<p>discovery model with a rule in the Software Library. In this case, all of the key fields are editable and once the information is added the normalization status is changed to Manually Normalized.</p> <p>Match Not Found status could occur if a normalization rule for the software does not exist.</p> <p>For example, if the organization created custom software specific to their organization.</p>
Manually Normalized	A discovery model was partially or publisher normalized and other key fields were filled in manually.
New	The software discovery model has not yet run through the normalization process.

You can opt in to the [Software Asset Management content service](#) that enables you to provide missed and not fully normalized software discovery models to ServiceNow for research. New content and rules created are provided back to customers to continually improve software normalization.

- [Software installations discovered](#)

The Software Installations list contains the software installed in your organization and is automatically populated by discovery.

- [Discovery models](#)

Software discovery models are automatically created during discovery to identify and normalize the software installed in your environment.

- [View a software job result](#)

You can view the results of Software Asset Management jobs that have run to verify completion.

- [Add a software pattern normalization rule](#)

You can add a pattern normalization rule to normalize specific software products in your environment based on a common pattern.

Software installations discovered

The Software Installations list contains the software installed in your organization and is automatically populated by discovery.

Installed software is placed in the Software Installation [cmdb_sam_sw_install] table by Discovery, and a primary key is built (using Publisher, Display Name, and Version fields).

Discovery then automatically matches the discovered software installation with a new or existing software discovery model using the primary key.

Software Installation form

Field	Description
Display name	Name of the software installation as it appears in the record lists. Can be a combination of the discovered product name and edition.
Discovery model	Software discovery model that represents the installed software.
Publisher	Publisher of the software.
Version	Version of the software.
Edition Override	<p>Override of the software edition setting.</p> <p>If the edition for the software was not discovered, you can edit this field to set the edition, if known, so reconciliation can be performed successfully.</p> <p>For more information, see Manually override edition value.</p>

Field	Description
Installation	
Prod id	Unique ID for the product assigned by the manufacturer. Found through discovery.
Install location	Reserved for third-party integration support. This field is not populated by default.
Install date	Date that the software was installed.
Revision	Revision of the software.
Instance key	Unique ID for the instantiation of the software. Automatically generated when the software is installed.
Installed on	Hardware on which the software is installed.
Uninstall string	Identifier used to uninstall the software.
ISO serial number	ISO number of the software.
Reconciliation	
Entitlement	The entitlement found to use with this installation.
Inferred suite	The inferred suite model this installation belongs to.
Omit from suites	Check box to omit counting the software install as a component of a suite during reconciliation.

- [Manually override edition value](#)

When the edition of a software install is not automatically discovered, you can specify the edition on the Software Installation form with the correct value (if known) so the software can be successfully reconciled.

- [Customize a Discovery pattern for Software Asset Management](#)

Software Asset Management automatically leverages SQL Server, Exchange, and Oracle Database Discovery patterns, but you can perform steps for Software Asset Management to utilize additional Discovery patterns, if needed.

When the edition of a software install is not automatically discovered, you can specify the edition on the Software Installation form with the correct value (if known) so the software can be successfully reconciled.

Before you begin

Role required: sam_admin

About this task

For reconciliation to run successfully, the publisher, product, version, and edition fields of the software must be set. When the edition is not discovered automatically (edition value is not included as part of the Display name field) but you know the edition, you can manually set it to the correct value (Enterprise, for example).

Once the edition value is set, the discovery model for the software install is automatically reset. If the appropriate discovery model does not exist, a new one is created.

Note: Not all software products consist of an edition. Of the software products consisting of an edition, not all edition values are automatically discoverable.

Procedure

1. Navigate to Software Asset > Discovery > Software Installations and open the software installation record for which to set the edition value.
2. Fill in the Edition override field, as appropriate.

Note: The Edition override field is a free-form field (no lookup list) therefore, since this field is used as a key, the value entered must be exact.

3. Click Update.

The software installation is associated to different discovery model containing the edition value as part of the primary key. If the appropriate discovery model does not exist, a new one is created.

Software Asset Management automatically leverages SQL Server, Exchange, and Oracle Database Discovery patterns, but you can perform steps for Software Asset Management to utilize additional Discovery patterns, if needed.

Before you begin

Role required: sam_admin

About this task

Discovery uses a series of scripts and operations (probes, sensors, and patterns) with the base system to collect data, process it, and update the CMDB. Although Software Asset Management is already set up to utilize three common patterns ([SQL Server](#), [Exchange](#), and [Oracle Database](#)), you can perform a configuration procedure to include additional patterns.

This customization automatically copies the records from the discovered pattern to the Software Installation [cmdb_sam_sw_install] table so Software Asset Management can utilize this data for reconciliation.

For more information on pattern customization, see [Pattern customization](#).

Procedure

1. Configure a post processing step in the discovery pattern.
 - a. Navigate to Pattern Designer > Discovery Patterns.
 - b. Open the pattern record from which you would like to collect data for Software Asset Management (for example, the discovery pattern for MySQL).
 - c. Select and copy the Class Name field value.
You will need to paste this class name value into a record field in the Software Installation Name Mapping [cmdb_sam_sw_name_mapping] table as part of this configuration procedure.
 - d. Click the Pre/Post Processing related link.
 - e. In the Sync Installed Software section, select the desired software from the list to add it (for example, MySQL).

Data discovered relating to the software you select is automatically copied into the Software Installation [cmdb_sam_sw_install] table as part of the discovery process.

- f. Click Update.
2. Add the pattern data to a new record in the Software Installation Name Mapping [cmdb_sam_sw_name_mapping] table.
 - a. Create a new record (see table for field descriptions).

Field	Description
Class name	Class name of the discovery pattern. Paste the value that you copied from the class field in discovery pattern.
Publisher	Publisher of the product (for example, Oracle).
Product	Product name (for example, MySQL).

- b. Click Submit.
When discovery is run, the records for the software product relating to the customized discovery pattern are utilized by Software Asset Management.

No further configuration is needed unless you know the software product consists of an edition that is not being discovered automatically.

What to do next

If the software product has an edition that is not being discovered, [Manually override edition value](#) so the software can be successfully reconciled.

Discovery models

Software discovery models are automatically created during discovery to identify and normalize the software installed in your environment.

Software discovery models are stored in the Software Discovery Model [cmdb_sam_sw_discovery_model] table. The normalization process is automatically run

when a new discovery model is created. Discovery models are not created for software installations that have a name containing `Security Update`.

There is a difference between [software models](#) and software discovery models.

- A software model is a specific version or configuration of software that is purchased and/or available to users.
- A software discovery model is a model created when a version of software is discovered in a network environment.

Multiple software discovery models can be associated to one software model. For example, a software model can be defined as follows:

- Publisher = X
- Product = Y
- Version = Starts with 10

If there are two separate installs of this product (version 10.1 and version 10.2), two discovery models are created. One of the discovery models has the discovered version set to 10.1, and the other discovery model has the discovered version set to 10.2. The reconciliation process associates both of these discovery models to the same software model since they both meet the version criterion of `Starts with 10`.

Software discovery models cannot be created manually. The following field combination, called the primary key, is used to match new software installations to a new or existing software discovery model.

Primary key: Publisher, Display Name, and Version

Note: When analyzing version numbers, an exact match is always searched for first, but rounds down to a major version number when an exact match is not found.

For example, if no match is found for version number 8.0.4, but version 8.0 is found, then version 8.0 is used in the Software model field.

Discovery Model form

Field	Description
Display name	Name of the discovery model as it appears in record lists. This value is

Field	Description
	generated automatically using the discovered publisher, discovered product, and discovered version.
Normalization status	<p>Status of the normalization process:</p> <ul style="list-style-type: none"> • Normalized • Partially Normalized • Publisher Normalized • Match Not Found • Manually Normalized • New
Publisher	Normalized publisher of the software.
Product	Normalized product name of the software.
Version	Normalized version of the software product.
Discovered publisher	Discovered publisher of the software.
Discovered product	Discovered name of the software.
Discovered version	Discovered version of the software.
Additional Information	
Product type	<p>Product types include:</p> <ul style="list-style-type: none"> • Child: a subcomponent of main software (not licensable). • Driver: software product that controls a device.

Field	Description
	<ul style="list-style-type: none"> • Licensable: software product that is licensable. • Not Licensable: software product that is not licensable. • Patch: software product designed to update, fix, or improve an existing computer program. <p>The reconciliation process only considers software discovery models that are licensable.</p>
Platform	<p>Platforms include:</p> <ul style="list-style-type: none"> • Windows • Mac • Unix
Language	<p>Languages include:</p> <ul style="list-style-type: none"> • Dutch • English • French • German • Italian • Spanish <p>Additional languages are generated if discovered.</p>
Edition	Normalized edition of the software.

Field	Description
Full version	Normalized full version of the software.
Exclude from content service	<p>Check box to keep the software discovery model from being shared in the Normalization Library. Default is to include software discovery models.</p> <p>Note: This field is only shown if you have opted in to the Software Asset Management content service.</p>

Revert Normalization

You can revert normalization if needed using the Revert Normalization related link.

Discovery models with a status of Normalized, Manually Normalized, Partially Normalized, or Publisher Normalized revert back to the status of Match Not Found. Fields are reset to their original values, and any rules associated with the software discovery model are deactivated.

Software Installations

All software installations matched to software discovery models are in the [Software Installations](#) related list.

- [Manually normalize a software discovery model](#)

You can edit a software discovery model to manually normalize discovered software that has not been fully normalized (partially normalized, publisher normalized, or match not found) on the Software Discovery Models form so that it can be reconciled.

You can edit a software discovery model to manually normalize discovered software that has not been fully normalized (partially normalized, publisher normalized, or match not found) on the Software Discovery Models form so that it can be reconciled.

Before you begin

Role required: sam_user

About this task

If the information automatically added to the software discovery model is incomplete, you can add the missing fields to manually normalize the software discovery model.

Procedure

1. Navigate to Software Asset > Discovery > Discovery models and open a discovery model record that has a normalization status of Partially Normalized, Publisher Normalized, or Match Not Found.
2. Fill in the Publisher, Product, and Version fields, as appropriate.
3. Click Normalize.
The normalization status is set to Manually Normalized.
4. (Optional) To revert normalization, click the Revert Normalization related link.

Note: Discovery models with a status of Normalized, Manually Normalized, Partially Normalized, or Publisher Normalized revert back to the status of Match Not Found.

Fields are reset to their original values, and any rules associated with the software discovery model are deactivated.

View a software job result

You can view the results of Software Asset Management jobs that have run to verify completion.

Before you begin

Role required: sam_admin

About this task

Job results included are discovery model normalization and software usage import jobs.

Procedure

Navigate to Software Asset Management > Administration > Job Results and open a record (see table for field descriptions).

Software Asset Job Result form

Field	Description
Number	Number of the job result that is generated when the job is run.
Name	Name of the job.
Status	Status of the job.
Created	Date and time job was created.
Updated	Date and time job was updated.

Add a software pattern normalization rule

You can add a pattern normalization rule to normalize specific software products in your environment based on a common pattern.

Before you begin

Role required: sam_admin

About this task

Note: When creating a pattern normalization rule for custom products and publishers, create the custom product and company records first.

Procedure

1. Navigate to Software Asset > Administration > Pattern Normalization Rules and create a new record (see table for field descriptions).

Pattern Normalization Rule form

Field	Description
Name	Specify a unique name for pattern normalization rule.

Field	Description
Discovered publisher contains	Specify text to search for in the software publisher field.
Discovered product contains	Specify text to search for in the product field.
Active	If checked, activates the rule.
Discovered publisher is empty	If checked, includes products that have an empty publisher field (the rule applies to discovery models where the publisher is unknown).
Normalized Attributes	
Publisher	Specify the normalized name of the publisher of the software.
Product	Specify the normalized name of the product.
Edition	Specify the product edition.
Product type	<p>Choose the product type.</p> <ul style="list-style-type: none"> • Child: a subcomponent of main software (not licensable). • Driver: software product that controls a device. • Licensable: software product that is licensable. • Not Licensable: software product that is not licensable. • Patch: software product designed to update, fix, or improve an existing computer program.

Field	Description
Version	Specify the version of the product.
Platform	Choose the platform. <ul style="list-style-type: none"> • Windows • Mac • Unix
Language	Choose the language. <ul style="list-style-type: none"> • Dutch • English • French • German • Italian • Spanish

- Once the rule is created, to apply the rule so applicable discovery models are normalized without delay, click the Apply Rule related link.

Software reconciliation for compliance

Automated license reconciliation keeps license positions accurate and up to date without manual calculations. Reconciliation runs weekly or on demand.

Reconciliation is a scheduled job that is run at a specified frequency (default is weekly). It can also be run on demand for a specific publisher or all publishers.

When reconciliation is run, a list of reconciliation results is created that shows the compliance status of software products with respect to discovery and entitlements. Users with the sam_user role can view reconciliation results.

Reconciliation results are listed in the navigation path Software Asset Management > Reconciliation > Reconciliation Results (see table for field descriptions).

Reconciliation Results form

Field	Description
Number	Unique identifying number that is generated during the reconciliation process.
Ran for	All publishers, or specific publishers.
Publishers	Only shown if a certain publisher was specified on which to run reconciliation.
Status	Status of the reconciliation. <ul style="list-style-type: none"> • Completed • In Progress
Last reconciled	Date of last reconciliation run.

Software product results

You can access Software Models, Unlicensed Installs, and Reclamation Candidates related lists from a product result record.

A product result for a licensable product is generated after reconciliation even if there are no software models defined for the product.

Note: A Software Model Results record is only created when a software model or entitlement exists for the product.

Software product results are listed in the navigation path Software Asset Management > Reconciliation > Product Results (see table for field descriptions).

Product Results form

Field	Description
Number	Unique product result number that is generated during the reconciliation process.

Field	Description
Publisher	Publisher of the software.
Product	Name of software product.
Reconciliation result	Reconciliation result number from which the product result was generated.
Latest	Indicates whether this product result is from the most recent reconciliation run.
Status	Status of the product. <ul style="list-style-type: none"> • Compliant • Not Compliant
True-up cost	Estimated cost of remediating non-compliance based on the least number of rights needed.
Over-licensed amount	Estimated cost of rights not being used.
Potential savings	Estimated cost of savings if software installations are harvested.

- [View software model results](#)

View compliance information for software model results from the Product Results list after reconciliation is run.

- [Run software reconciliation](#)

Reconciliation is run as a scheduled job (default is weekly), but you can also run reconciliation manually to reconcile software products in your environment on demand.

View software model results

View compliance information for software model results from the Product Results list after reconciliation is run.

Before you begin

Role required: sam_user

About this task

You can view License Metric Results, Remediation Options, Unlicensed Installs, and Reclamation Candidates related lists for a software model result from a Product Result record. When the [Procurement](#) application (com.snc.procurement) is active, you can also create and view purchase orders directly from the Remediation Options form.

For example, if the status of a product result shows that it is not compliant, you can drill down on the product result to view software model details, such as the number of unlicensed installs and the true-up cost to become compliant. Further, you can drill down on the software model result to view the license metric result, which is based on the entitlements for the product.

License metric result information includes rights owned and rights used as well as the license allocation breakdown so you can determine your options to become compliant. The Remediation Options related list shows the number of rights needed and calculates the cost of those rights for you, based on the license metrics.

Procedure

1. Navigate to Software Asset Management > Reconciliation > Product Results and open a record to view product results details.
2. In the Software Model Results related list, open a record to view the details (see table for field descriptions).

Software Model Results form

Field	Description
Software model	Software model associated with the product.
Product result	Unique product result number generated during the reconciliation process.

Field	Description
Agreement type	<p>Description of the agreement type.</p> <ul style="list-style-type: none"> • Generic • Enterprise Level Agreement (When the License Metric Group field is Common or Microsoft) • Unlimited Level Agreement (When the License Metric Group field is Oracle) <p>Note: If the agreement type is Enterprise Level Agreement or Unlimited Level Agreement, the Status is Compliant even if there are unlicensed installations.</p>
Latest	Indicates whether this software model result is from the most recent reconciliation run.
Status	<p>Status of the software model.</p> <ul style="list-style-type: none"> • Compliant • Not Compliant
Unlicensed installs	Number of unlicensed software installations that are not covered by any entitlements.
True-up cost	Estimated cost of remediating non-compliance based on the least number of rights needed (rights needed * average price per right from entitlements).

Field	Description
Over-licensed amount	Estimated cost of rights not being used.
License Metric Results	
License metric	License metric that the software license is counted against when reconciliation is run.
Rights owned	Sum of all active rights from entitlements that share a license metric.
Rights used	Sum of rights used during reconciliation (allocated + not allocated and installed).
Software model result	Software model with which the result is associated.
Unused rights	Sum of rights not used during reconciliation (rights owned - rights used).
Over-licensed amount	Estimated cost of unused rights.
Right Allocations	
Allocated in use	Rights that are allocated and have an equivalent number of installations.
Not allocated in use	Number of rights that have equivalent installations, but no allocations.
Allocated not in use	Rights that are allocated and do not have an equivalent number of installations.
Not allocated	Number of rights that have not been allocated (rights owned - allocated regardless of whether installed or not).

Field	Description
Allocations needed	Number of allocations needed for compliance. Only used for Per Named User and Per Named Device license metrics.
Remediation Options	
Display name	Calculated value that displays the license metric.
Purchase order	Purchase order number associated with the remediation option, if a purchase order was created.
Rights needed	Calculated number of rights needed to be compliant ([allocated + not allocated and installed] - rights owned).
True-up cost	Estimated cost of remediating non-compliance based on the least number of rights needed.

The Unlicensed Installs related list contains the [software installations](#) that are unlicensed.

The Reclamation Candidates related list contains [reclamation candidates](#) related to software installations.

- To create a [purchase order](#) for software models out of compliance, click the Purchase Order related link.

Note: The Purchase Order related link is only shown if Procurement is active.

Purchase order fields Part number, Metric group, License metric, and Ordered quantity are automatically populated with the content from the remediation option.

Metric group and License metric fields are added to the purchase order form so the entitlement can be automatically created when the order is complete.

Once a purchase order is created, the Purchase order field, containing the purchase order reference, is added to the remediation option.

Run software reconciliation

Reconciliation is run as a scheduled job (default is weekly), but you can also run reconciliation manually to reconcile software products in your environment on demand.

Before you begin

Role required: sam_admin

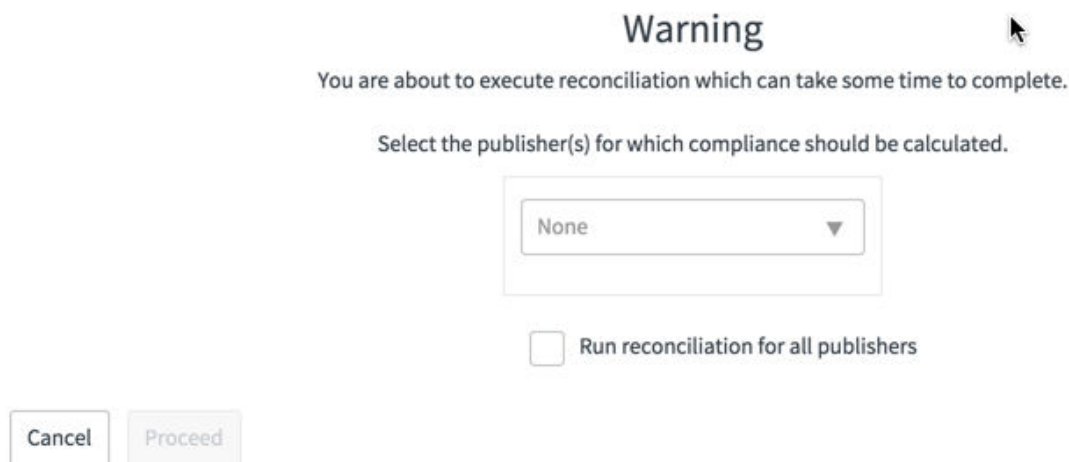
About this task

Reconciliation is run for products that have entitlements. When reconciliation is run manually, the Reconciliation Results list is shown.

When running reconciliation manually, allow enough time for the process to complete. For faster results, you can try narrowing the scope by selecting a specific publisher.

Procedure

1. Navigate to Software Asset Management > Reconciliation > Run Reconciliation and select the publishers for which compliance should be calculated, or select all publishers.



2. Click Proceed.
At least one publisher must be selected to click Proceed.
The Reconciliation Results list is shown.

Software installation optimization and usage

Use optimization to harvest unused software as well as reclaim unauthorized software in your environment. A usage record tracks the sum of usage on a monthly basis so that you can assess the software usage in your environment.

If a user is not using a software installed, or very infrequently, that software can be a candidate for reclamation (uninstalled and allocated to an individual who will use it more often). Reclamation candidates are used to reclaim software installations. This process can be automated using [Client Software Distribution \(CSD\)](#).

Software usage is integrated with Microsoft SCCM 2012. Therefore, monthly usage details (last used, and total usage time) for products being monitored through [Microsoft SCCM 2012](#) are imported to the Software Usage list. Only usage data for products associated with a reclamation rule are imported. You can also import usage information using ServiceNow [Import sets](#) feature. Users with the sam_user role can view the Software Usage list.

If you have a way of capturing information, for example a proxy server or gateway, you can capture the IP address and the name of the user accessing the license or software. The captured data can be imported directly into the Software Usage list.

Note: Configuration item (CI), user, product, and publisher values are used to identify a matching software installation.

Duplicate usage information cannot be created for the same CI, user, product, or publisher values in the same month and year.

Software usage records are listed in the navigation path Software Asset Management > Optimization > Software Usage (see table for field descriptions).

Software Usage form

Field	Description
Publisher	Publisher of the product.
Product	Product name.
Configuration Item	Configuration item (CI).
User	Name of the user of the software.

Field	Description
Usage Data	
Month	Month the software was used.
Year	Year the software was used.
Usage count	How many times the software was accessed.
Total seconds used	Amount of time (in seconds) the software was used.

- [Add a software reclamation rule](#)

You can add a reclamation rule to aggregate usage records and identify unused software. Reclamation rules aggregate usage over a period of time and specify a minimum number of hours the software must be used before being flagged for reclamation.

- [Add a software reclamation candidate](#)

Reclamation candidates reclaim software resources in your environment. They are created from reclamation rules, or can be created manually.

Add a software reclamation rule

You can add a reclamation rule to aggregate usage records and identify unused software. Reclamation rules aggregate usage over a period of time and specify a minimum number of hours the software must be used before being flagged for reclamation.

Before you begin

Role required: sam_admin

About this task

To avoid purchasing additional software rights for products with rights already allocated that are not being used, or that are not being used frequently enough to justify the

allocation, you can use reclamation rules to reclaim those software rights to be freed up and allocated elsewhere.

Monthly usage details (last used, and total usage time) are imported to the Software Usage list for products being monitored through [Microsoft SCCM 2012](#). Only usage data for products associated with a reclamation rule are imported.

Reclamation rules are configured to specify a period of time the software must be used before being flagged for reclamation.

If you configure the reclamation rule to notify the user, the user has a chance to respond with approval during the process of reclamation. If no response is received during a specified period of time, the software rights are automatically reclaimed. If the user declines approval, it becomes the responsibility of the manager to approve or decline the reclamation.

Procedure

Navigate to Software Asset > Administration > Reclamation Rules and create a new record (see table for field descriptions).

Note: You can edit the software members of the Software Products list once the reclamation rule is created.

Reclamation Rules form

Field	Description
Name	Specify a unique name for reclamation rule.
Notify user	If checked, the user assigned to the hardware on which the software is installed is contacted via email requesting permission to remove the software.
Days before auto-reclamation	Number of days after which, if no response is received from the user, the software is automatically reclaimed.
Usage Condition	
Aggregate usage by	Choose the time period over which to aggregate usage information.

Field	Description
	<ul style="list-style-type: none"> • Last month • Last 2 months • Last 3 months • Last 6 months
Total hours used	Specify the amount of time the software must be used to avoid being reclaimed.

Add a software reclamation candidate

Reclamation candidates reclaim software resources in your environment. They are created from reclamation rules, or can be created manually.

Before you begin

Role required: sam_user

About this task

Software reclamation is integrated with Workflow and Client Software Distribution to automate the process of uninstalling software from devices and harvesting software rights. During the workflow, the state of the reclamation candidate changes based on the progression within the workflow.

A reclamation candidate is automatically created for each software install that violates a reclamation rule.

Reclamation candidate state

State	Description
Attention Required	When the reclamation candidate is created automatically it is in the Attention Required state.

State	Description
Ready	Once a reclamation candidate is created it enters the Ready state. Click Reclaim to advance the workflow.
Awaiting User	If the Notify check box was selected, the user was sent a notification of the reclamation candidate to approve or deny.
Awaiting Approval	If the Notify check box was selected, the user can approve or deny the reclamation candidate. If denied, it becomes the responsibility of the manager to approve or decline the reclamation.
Awaiting Revocation	<p>The final step in the workflow. You can click Close Complete to reclaim software rights in the reclamation candidate manually.</p> <p>Otherwise, a weekly scheduled job (named Updating Existing Reclamation Candidates) automatically updates reclamation candidates in Awaiting Revocation state AND with the software install field empty to Closed Complete state.</p> <p>If the reclamation candidate is in any other state AND the software install is empty, it is updated to Closed Skipped state.</p>
Closed	Software rights have been reclaimed.

In the list of Reclamation Candidates, you can select individual records for reclamation, or Reclaim All to reclaim all qualifying reclamation candidates. Qualifying candidates are those in the Ready state, and also those in the Attention Required state as long as the Software User field is not empty.

You can also create a reclamation candidate manually.

Procedure

1. Navigate to Software Asset > Optimization > Reclamation Candidates and create a new record (see table for field descriptions).

Reclamation Candidate form

Field	Description
Number	Unique reclamation candidate number that is automatically generated.
Assignment group	Automatically set to the software managers group authorized to respond to reclamation candidates.

Field	Description
Assigned to	Person primarily responsible for working this task.
Name	Reclamation candidate name that is automatically generated. Contains the software installation display name.
Description	Description of why the task exists, and what the user must do if they receive an approval.
State	<p>Current state of the reclamation candidate.</p> <ul style="list-style-type: none"> • Attention Required • Ready • Awaiting User • Awaiting Approval • Approval • Awaiting Revocation • Closed Complete • Closed Skipped
Opened	Date the task was opened.
Closed	Date the task was closed.
Reclamation Candidate	
Software installation	The software installation being reclaimed.
Potential savings	Estimated cost of savings if all reclamation candidates are in Closed Complete state, meaning the software

Field	Description
	was uninstalled and the rights were harvested (unused rights * average price per right from entitlements).
Reclamation rule	The reclamation rule that created the reclamation candidate.
Configuration item	The device on which the software is installed.
User	Name of the user assigned to the software installation. This value can be changed so that another user receives the notification of software being uninstalled.
Notify user	If checked, the user assigned to the hardware on which the software is installed is contacted via email requesting permission to remove the software.
Activity	
Work notes	Used to track the actions that have been performed on this task.

2. Click Reclaim to start the workflow.
3. To view the reclamation status, click the Show Workflow related link.

Note: The Show Workflow related link is visible only when the workflow is triggered.

Software Asset Management administration

Software Asset Management administration tasks include adding client access and custom product records, and creating pattern normalization and reclamation rules. You can also view Software Asset Management job results, refresh processor definitions, and

migrate software installations. Software Asset Management content service can be enabled, and migration procedures are also included.

The sam_admin role is required to configure administrative tasks. However, the sam_user role can view and read configurations.

Software Asset Management job results show the status of discovery model normalization and software usage import jobs.

Software Asset Job Results records are listed in the navigation path Software Asset Management > Administration > Job Results (see table for field descriptions).

Software Asset Job Result form

Field	Description
Number	Number of the job result that is generated when the job is run.
Name	Name of the job.
Status	Status of the job.
Created	Date and time job was created.
Updated	Date and time job was updated.

- [Add a software client access record](#)

You can add a client access record to specify the number of devices or users that are accessing a particular version of software with a client access license (CAL).

- [Add a custom software product](#)

You can add a custom product if a software product does not exist in the Software Library. This enables you to normalize and account for homegrown software, or software that is not yet part of the Software Library.

- [Refresh processor definitions](#)

After activating Software Asset Management, refresh processor definitions to normalize processors on servers in the CMDB.

- [Migrate software installations](#)

If you are using Discovery, run this script after installing Software Asset Management to copy previously discovered software installation records from the [cmdb_software_instance] table to the [cmdb_sam_sw_install] table, which is used by Software Asset Management to store software installation records.

- [Software Asset Management content service](#)

You can opt in to the Software Asset Management content service that enables you to provide unnormalized rules (match not found) from your organization anonymously so that new rules can be created to improve the normalization service. Default is not opted in.

- [Software Asset Management migration](#)

Migrate from the Software Asset Management plugin feature of Asset Management to the Software Asset Management application to take advantage of more powerful features. Manual actions by the customer are required after plugin activation.

Add a software client access record

You can add a client access record to specify the number of devices or users that are accessing a particular version of software with a client access license (CAL).

Before you begin

Role required: sam_admin, sam_user can view and read but not create

About this task

Client access records are used when reconciling these Microsoft and Oracle license metrics.

Metric group	License metric
Microsoft	User CAL
	Device CAL
Oracle	Named User Plus

License metrics are set on the [software entitlements](#) form and can be accessed from the Metric Attributes related list on the [software models](#) form.

Procedure

Navigate to Software Asset > Administration > Client Access and create a new record (see table for field descriptions).

Client Access form

Field	Description
Name	Specify a unique name for the client access record.
Software model	Specify the software model for the client access record.
Database instance	Oracle database instance. Only shown for Oracle Named User Plus.
Total device count	Specify the number of unique devices allowed to access the product.
Total user count	Specify the number of unique users allowed to access the product.

Add a custom software product

You can add a custom product if a software product does not exist in the Software Library. This enables you to normalize and account for homegrown software, or software that is not yet part of the Software Library.

Before you begin

Role required: sam_admin

About this task

The product and publisher combination is used during discovery model normalization. If the custom product already exists, a message is shown.

Procedure

Navigate to Software Asset > Administration > Custom Software Products and create a new record (see table for field descriptions).

Custom Software Product form

Field	Description
Publisher	Publisher of the custom software product. If it does not exist, a new one is created when the form is saved.
Product	Name of the custom software product.
Product classification	Official UNSPSC classification.
Active	If checked, activates the rule.
Product type	<p>Product type of the custom software product.</p> <ul style="list-style-type: none"> • Child: a subcomponent of main software (not licensable). • Driver: software product that controls a device. • Licensable: software product that is licensable. • Not Licensable: software product that is not licensable. • Patch: software product designed to update, fix, or improve an existing computer program. • Unknown: software product that is unknown.

Refresh processor definitions

After activating Software Asset Management, refresh processor definitions to normalize processors on servers in the CMDB.

Before you begin

Role required: sam_admin

About this task

Refresh processor definitions after activating Software Asset Management and before running reconciliation. Refreshing processor definitions enables CPU types (name of the processor discovered) to be mapped to the correct processor definition.

Refreshing processor definitions can be time consuming when running for the first time. Allocate enough time to complete this task before proceeding.

Procedure

Navigate to Software Asset Management > Administration > Refresh Processor Definitions and click Proceed.
The Processor definitions list is shown.

Migrate software installations

If you are using Discovery, run this script after installing Software Asset Management to copy previously discovered software installation records from the [cmdb_software_instance] table to the [cmdb_sam_sw_install] table, which is used by Software Asset Management to store software installation records.

Before you begin

Role required: sam_admin

About this task

If you are running Discovery and have used a version of Software Asset Management previously, there is no need to run this script.

When running the Migrate Software Installs script, allow enough time for the process to complete.

Procedure

Navigate to Software Asset Management > Administration > Migrate Software Installs and click Proceed.

The Software Installations list is shown. If the data has already been migrated, a message is shown.

Software Asset Management content service

You can opt in to the Software Asset Management content service that enables you to provide unnormalized rules (match not found) from your organization anonymously so that new rules can be created to improve the normalization service. Default is not opted in.

Software Asset Management content service is an IT asset management (ITAM) shared service that provides customers continual software recognition improvement. By securely providing ServiceNow the unrecognized details of discovered software artifacts, the Software Asset Management content service will, in return, anonymously supply updates to the Normalization Library. This new content improves your normalization hit ratios and enable you to better manage your software assets.

The ServiceNow privacy policy ensures that software details sent to the content service remain anonymous and secure, and will be properly disposed of after they are reviewed. However, you can choose to exclude specific software models from being provided to ServiceNow on the [Software Discovery Model](#) form.

The normalization process acts only on active publishers, products, and rules. Obsolete rules are not used. You can deactivate any Normalization Library update version at any time, if desired.

Two KPIs are automatically enabled with Software Asset Management content service.

Software Asset Management content service KPIs

KPI	Definition	Details transferred
Software Discovery Models	A model created to classify and reduce duplication of software installs when new installs are identified. Only software discovery models with these status are transferred:	<ul style="list-style-type: none"> Discovered publisher Discovered product Discovered version Normalized publisher

KPI	Definition	Details transferred
	<ul style="list-style-type: none"> Match not found Publisher normalized Partially normalized Manually normalized 	<ul style="list-style-type: none"> Normalized product Normalized version Edition Language Platform Rule table Rule ID Status Associated software install count
Processor Names	<p>Processor identified on a configuration item (CI).</p> <p>Only processors mapped to the default processor factor are transferred.</p>	<ul style="list-style-type: none"> CPU type Core count Speed

Opting out

You can opt out of Software Asset Management content service at any time.

When you opt out, your company no longer contributes to the improvement of the normalization service, nor receives content updates specific to your unique software installation footprint that exists within your environment and CMDB. However, you still receive general incremental normalization service updates based on the updates from other sources.

Your company can rejoin the Software Asset Management content service at any time.

- [Enable Software Asset Management content service](#)

You must opt in to participate in Software Asset Management content service. However, you can opt out at any time.

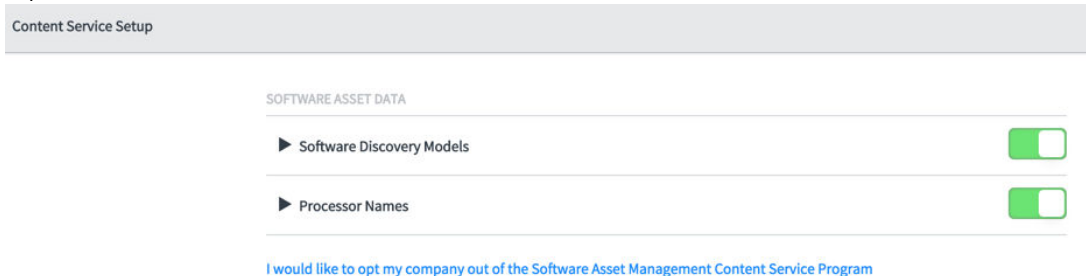
You must opt in to participate in Software Asset Management content service. However, you can opt out at any time.

Before you begin

Role required: sam_admin

Procedure

1. Navigate to Software Asset > Content Service Setup and click Opt-In Agreement to read the agreement.
2. After reading the agreement, click Done.
3. Select the Yes, I have read and accept the Opt-In Agreement check box, and click Opt-In.



The Software Discovery Models KPI and the Processor Names KPI shown are automatically enabled after you have opted in.

4. To disable a KPI, click the toggle bar and save.
5. To opt out, click I would like to opt my company out of the Software Asset Management Content Service Program and then click Opt-Out. The Software Discovery Models KPI and the Processor Names KPI are disabled and your unique normalization content is no longer provided to the Software Asset Management content service.

Software Asset Management migration

Migrate from the Software Asset Management plugin feature of Asset Management to the Software Asset Management application to take advantage of more powerful features. Manual actions by the customer are required after plugin activation.

After automatic changes are performed during plugin activation, successful migration from the Software Asset Management (com.snc.software_asset_management) plugin feature of Asset Management to the Software Asset Management application requires a [manual procedure](#) to be performed by the customer.

Customizations to forms and lists may need to be manually overwritten by the customer after plugin activation. In addition, certain fields in software models, software entitlements, user/device allocations forms require manual configuration by the customer after plugin activation.

Automatic changes

The Software Asset Management Premium (com.snc.samp) plugin performs these automatic changes:

- Tables

-

Table labels renamed

Table	Original Label	New Label
[alm_license]	Software License	Software Entitlement
[alm_entitlement_user]	User Entitlement	User Allocations
[alm_entitlement_asset]	Device Entitlement	Device Allocations

- Adds [new tables](#)
- Adds any string value in the Software Entitlements License key field to the License Key [samp_sw_license_key] table
- Field names and values
 - Inference mandatory field

For software models that have suite components (to bundle software models), the Inference mandatory field value is transferred to a new Mandatory field

- Rights field

The Software Entitlements (formerly Software Licenses) Rights field value is transferred to a new Purchased rights field, and name changed from Rights to Active rights

- The Software model field for a software entitlement allocation is automatically set to the software model on the entitlement
- The quantity for a software entitlement allocation is set to 1 unless there are multiple allocations

If there are multiple software entitlement allocations for the same user or device, the allocations are aggregated into one record, the quantity is set to the count of aggregated records, and duplicates are deleted

- Forms and lists
Software Models, Entitlements (formerly Software License), Discovery Models, and Software Installations form and list layouts are modified to fit the new application

Note: Any customizations to these forms and lists must be manually overwritten after plugin activation.

- Functionality

Functionality disabled

Functionality	Description
License and software counters	The scheduled job trigger for SAM License Counters is changed to None so that it is deactivated, and software counters are disabled.
Auto-match functionality	The auto-match functionality, which attempts to match a discovery model to a corresponding software model, is deactivated.
Navigation menu	The navigation menu for the Software Asset Management (com.snc.software_asset_management) plugin feature of Asset Management is deactivated and renamed Software Asset Classic.
Business rules	Legacy business rules applied to discovery models are disabled.

- [Overwrite customizations for Software Asset Management migration](#)

When migrating from the Software Asset Management plugin feature of Asset Management to the Software Asset Management application, further actions are required by the customer after plugin activation to ensure successful migration of customized forms and lists.

When migrating from the Software Asset Management plugin feature of Asset Management to the Software Asset Management application, further actions are required by the customer after plugin activation to ensure successful migration of customized forms and lists.

Before you begin

Role required: admin

About this task

If these lists and forms have been customized before the migration, they may have been skipped during plugin activation and, in that case, require further action.

- Software Entitlements (formerly Software Licenses)
- Software Allocations (formerly Software Entitlements)
- Software Models
- Discovery Models
- Software Installations

You can review plugin activation changes in the [Upgrade History](#) module to determine what changes have automatically been skipped so you can [resolve a skipped update](#), if needed.

Certain fields added by the migration also must be configured to take advantage of the new features offered.

Procedure

1. Navigate to System Diagnostics > Upgrade History.
2. Identify the records that correspond to the upgrade history for the activation of the Software Asset Management plugin.
The records in System Upgrades list that represent plugin activation contain the value n/a in the From field, and plugin name in the To field (such as com.snc.samp,

com.snc.samp.core, com.snc.sam.core, com.glide.data_services_canonicalization.client, com.snc.asset_management, com.snc.model, com.snc.procurement).

You can determine the list of related plugins based on the time stamp of when the Software Asset Management Premium (com.snc.samp) plugin was activated by sorting on the Upgrade started column.

3. Open a Software Asset Management upgrade record that has changes skipped.
4. In the Upgrade Details related list, open an Upgraded Details record, and then click Resolve Conflicts to view a side-by-side comparison of the base system file with the customized file.
5. Click Revert to Base System to overwrite the skipped change if it applies to form or list customization, and note down the changes. Repeat these steps for all upgrade entries with skipped changes relating to customizations.
6. In the Software Asset Management application, manually reconfigure your original form and list customizations.
7. In the Software Asset Management application, set new field values (added as part of the automatic changes performed by plugin activation) to take advantage of the new features offered.
 - a. Navigate to Software Asset > Licensing > Software Models.
 - Select the software product in the Product reference field.
 - Select a discovery map, or clear the Discovery Map field and set the discovery conditions to find all discovery models that correspond to the software model.
 - b. Navigate to Software Asset > Licensing > Software Entitlements (formerly Software Licenses).
 - Navigate to Software Asset > Licensing > Software Entitlements (formerly Software Licenses).
 - Select the License Metric that the software license is counted against when reconciliation is run.
 - Define the upgrade and downgrade scenarios covered by certain rights.
 - c. In the User Allocations and Device Allocations related lists (formerly User/Device Entitlements), verify that the number of allocated rights are not more than rights owned.

If so, delete allocations so that the number of allocations does not exceed the number of rights owned.

8. If you have entitlements that require management of license keys, you can create multiple license keys associated to the same entitlement, as well as allocate these license keys to a user or device.