Qualys CMDB Sync App

User Guide

Version 2.6.1

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About this guide

Welcome to Qualys Cloud Platform! We'll show you how to use the Qualys CMDB Sync App to synchronize Qualys IT asset discovery and classification with the ServiceNow Configuration Management Database (CMDB) system.

About Qualys

Qualys, Inc. (NASDAQ: QLYS) is a pioneer and leading provider of cloud-based security and compliance solutions. The Qualys Cloud Platform and its integrated apps help businesses simplify security operations and lower the cost of compliance by delivering critical security intelligence on demand and automating the full spectrum of auditing, compliance and protection for IT systems and web applications.

Founded in 1999, Qualys has established strategic partnerships with leading managed service providers and consulting organizations including Accenture, BT, Cognizant Technology Solutions, Deutsche Telekom, Fujitsu, HCL, HP Enterprise, IBM, Infosys, NTT, Optiv, SecureWorks, Tata Communications, Verizon and Wipro. The company is also a founding member of the Cloud Security Alliance (CSA). For more information, please visit www.qualys.com

Qualys Support

Qualys is committed to providing you with the most thorough support. Through online documentation, telephone help, and direct email support, Qualys ensures that your questions will be answered in the fastest time possible. We support you 7 days a week, 24 hours a day. Access support information at www.qualys.com/support/

Welcome to Qualys CMDB Sync App 2.6.1

The Qualys CMDB Sync App 2.6.1 for Configuration Management Database (CMDB) automatically synchronizes comprehensive information about your global IT resources that are continuously monitored by Qualys Asset Inventory. This leverages Qualys' highly distributed and scalable cloud platform, and various data collection tools, including Qualys' groundbreaking Cloud Agents, to compile and continually update a full inventory of your IT assets everywhere: on premises, in elastic clouds and mobile endpoints.

Key Features

- Support for third party asset import using Asset Identification Service (Beta)

- For CIs that are already present in the Qualys platform, you can enrich the information in Qualys with Asset and Business Metadata and create Dynamic tags based on the business information.

- Using the ServiceNow-to-Qualys schedule option, you can export missing CIs/IPs into the Qualys subscription.

- Asset information is automatically enriched with additional context such as lifecycle date and support stage, license category.

- For assets that already exist in both, asset metadata can be synchronized.

- Optionally, asset information is staged for user approval before being written to CMDB.

- Support for multiple Qualys accounts/API sources.

- Synchronization schedules can be configured and saved.

- Preconfigured table transform maps for open ports, assets, network interfaces, software, processors and volumes.

- Preconfigured reports and dashboards.

- Preconfigured CI Class Manager that pre-populates the source-destination field mappings and also allows you to create your own mappings for CI Class.

- Support for Cloud Data (metadata) synchronization for Amazon Web Services, Microsoft Azure, Google Cloud Platform cloud providers till staging area.

- The SSL certificate information can be synced to ServiceNow for the assets imported from Qualys.

What’s New

Here's what's new in Qualys CMDB Sync App 2.6.1

- In this release an issue is fixed for third party asset import.

- We have provided an option to decide the CI Operation approval - 'Insert' or 'Update' or 'Insert and Update' the CI.

- In the Add IP, it will be sent 100 IPs in one API request

- We have added a few improvements to Sync Certificate, such as Certificate API filter, Approve UI action, Auto Approve Certificates, Certificate Transform Map, etc. For this, it requires a Certificate View and VMDR license.

- The properties page contains the Download Batch Size, Download Processing Batch Size, and Auto Approval.

- Introduced the "Custom Attributes" feature added for ServiceNow to Qualys schedule.

- Introduced the "Asset Identification Service" (BETA) feature added for ServiceNow to Qualys schedule.

- Added Sync Queue Types for different API calls.

Migration of Assets after Upgrade

We do not support backward compatibility once you upgrade to Qualys CMDB Sync App 2.1 version. Once upgrade to 2.1 version and before you sync assets or create schedules, we recommend you to migrate all assets (that belong to Computer Extended tables) to the CMDB production tables. We provide a scheduled job for migration of such assets. For more information and detailed steps, refer to Migration Support.

Pre-requisites

You must have a valid Qualys account subscription with API Access and access to following modules:

- Qualys Subscription with CyberSecurity Asset Management (Qualys to ServiceNow Sync)

- Asset Inventory CMDB Sync enabled within your Qualys subscription (Qualys to ServiceNow Sync)

- Vulnerability Management (ServiceNow to Qualys Sync)

- To sync from ServiceNow to Qualys, you need a Qualys account with a Manager role.

- The user's role must have the "Update Asset" permission for the CSAM module.

(ServiceNow to Qualys Sync - Business Information Sync)

- Ensure that the "Enable ServiceNow integration" option from BO is enabled to allow business metadata sync in ServiceNow to Qualys flow.

- Qualys Certificate View subscription is needed for syncing SSL certificates from Qualys to ServiceNow.

- For ServiceNow to Qualys sync user requires specific tagging permission: Create User Tag, Edit User Tag, Delete User Tag, and Modify Dynamic Tag Rules.

Get Started

Here we'll help you with the initial configuration and setup needed to get started.

Quick Steps

Install the App - You'll get the app from the ServiceNow app store.

Add API Source- Provide the API Source details and use Test Connection to know if the connection between ServiceNow and the defined source is working fine.

Create Schedules - Provide details to create a schedule. Once a schedule is successfully created, the sync between the source and CMDB gets working as per the schedule.

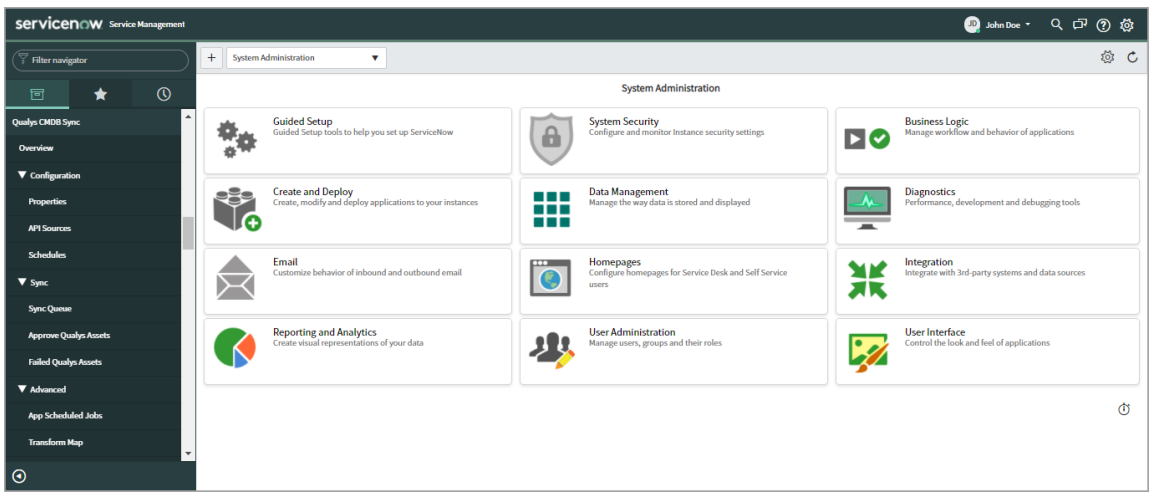
Update Properties - The Properties have pre-defined values, however you can always update a property to better suit your needs.

Install the App

Visit the ServiceNow Online Store.

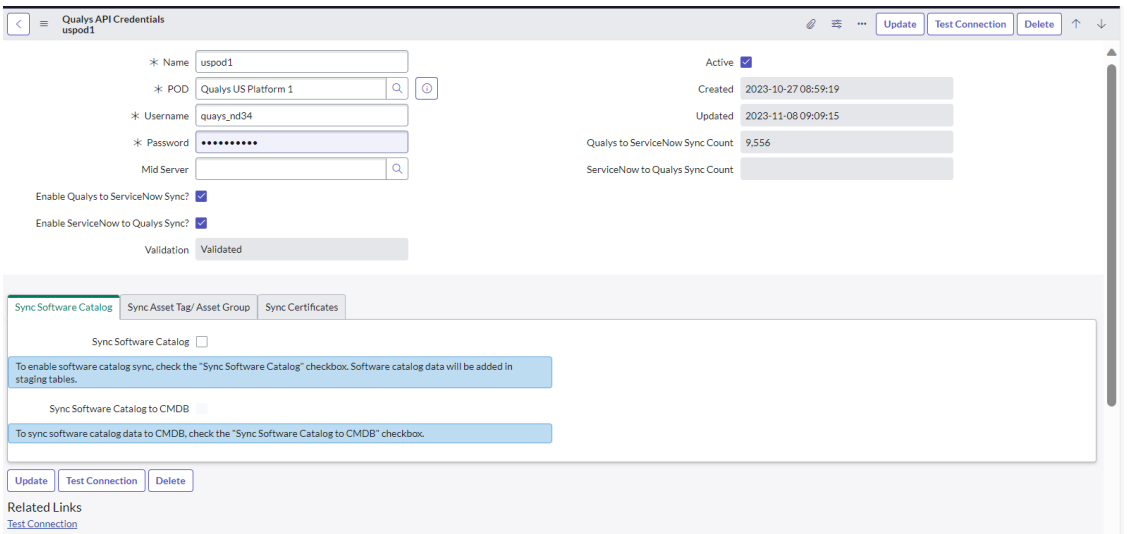
Search for Qualys CMDB Sync App, and click Contact Seller. Your Technical Account Manager (TAM) will contact you, and then ServiceNow provisions the app into an instance of your choice. The app then appears in the "Downloads" list of your instance. Click "Install" to start using the app.

In the Search field, type Qualys CMDB Sync, and then select Qualys CMDB Sync App from the left pane. After you are done, new module appears in your ServiceNow instance that looks like this:



Add API Source

Once you install the Qualys App, you need to add the API source. Go to Qualys CMDB Sync App > **Configuration** > **API Sources**, and click **New**.



Enter required details to create the source:

Name - Provide a name for the API source.

POD - Click and select the valid Qualys POD. The Private Cloud Platform (PCP) users can create and add details of their PCP environment. For information on how to add custom pod details, see Add Custom Pod (PCP).

Username and **Password** - Enter valid Qualys Cloud Platform credentials with API access enabled for the account on the selected POD.

Enable Qualys to ServiceNow Sync and **Enable ServiceNow to Qualys Sync** - Select these options to allow uninterrupted sync between Qualys and ServiceNow.

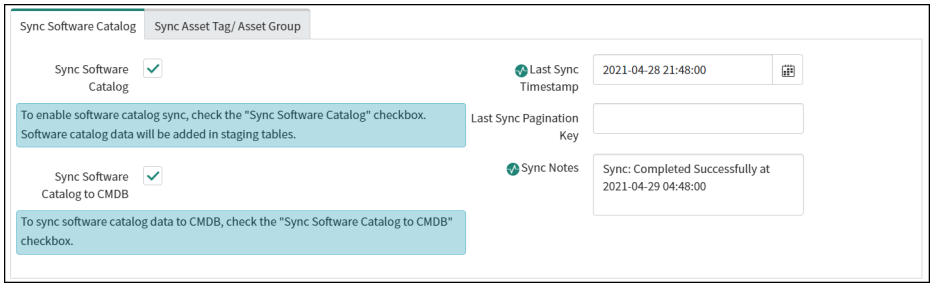
Active - Select this option to inform the source is active and assets should be synced from the active source. In case of multiple sources, you can use this option to activate or deactivate a source.

MID Server - The MID server can work as a proxy server/middleman between ServiceNow and Qualys pod, wherein the ServiceNow instance work with limited reachability to outside sources, you can use this option to activate or deactivate a source.

Validation -Reflects the status of usage of Test Connection button. When you create a new API source, the field is automatically set to Not Validated, by default indicating the API source is not yet tested. Once you click Test Connection (after completion of API source creation) the value changes to validated or validation failed depending on the test result.

Note: The Validation field is auto-populated and is not editable

Sync Software Catalog



Select Sync Software Catalog option to enable software sync to staging tables.

By default, this check box is disabled. Only after you enable the Sync Software Catalog check box, the Sync Software Catalog to CMDB check box is displayed. Use this check box to enable software sync and add the software data to CMDB tables. Once the sync cycle is complete, the sync details are populated in Last Sync Timestamp, Last Sync Key and in Sync notes fields.

Click **Submit** to create the API source.

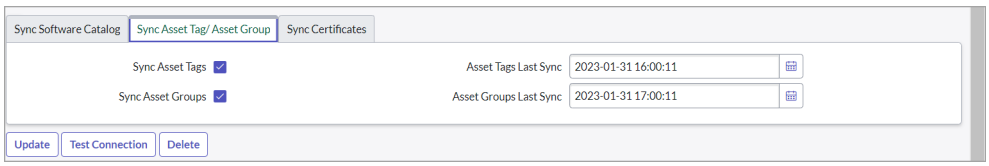
Then, after configuring and saving the API source, choose the record you just created from the API source list, open the record and click **Test Connection**.

Sync Asset Tag/Asset Group

Using this option you can sync asset tag or asset group from Qualys to ServiceNow. In this option, you can see the two checkboxes i) Sync Asset Tags ii) Sync Asset Groups.

If you want to sync the Asset Tags or Asset Groups from Qualys to ServiceNow, enable these checkboxes respectively.

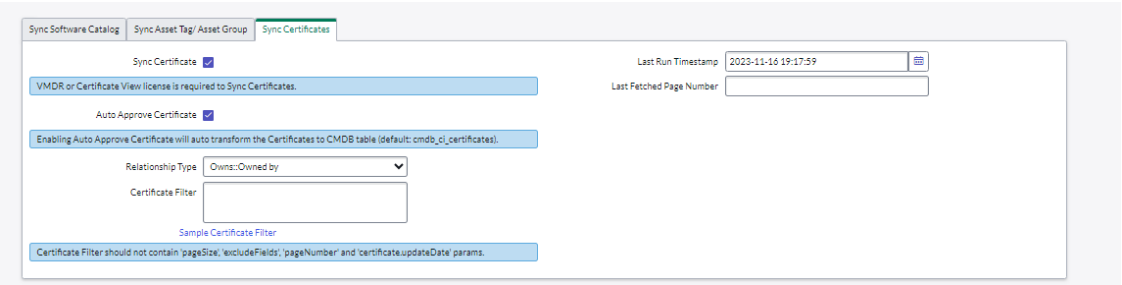
Note: By default, these checkboxes are enabled. Refer to the following screenshot.



Sync Certificates

Using this option, you can sync certificates from Qualys to ServiceNow.

Click **Sync Certificate**. You can see the Sync Certificates checkbox. Enable the **Sync Certificates** checkbox If you want to sync Certificates from Qualys.



You can also set up a relationship between CI records and certificates using the relation type listed in the **Relation Type** dropdown.

Note: By default, the relation type is Owns::Owned by.

Certificate Filter - Using this field, you can search the results using the QQL search tokens. Follow Qualys VMDR OT Online Help for how to create or use the Qualys QQL search token.

Click **Submit** to create the API source.

Then, after configuring and saving the API source, choose the record you just created from the API source list, open the record and click **Test Connection**.

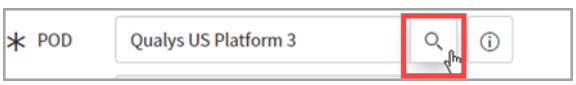
Add Custom Pod (PCP)

Qualys provides you with pre-defined pod details for Qualys platforms. If you are a PCP user, we also give you the option to create and add details of your PCP environment.

Here are the steps to add new POD entry/PCP URLs:

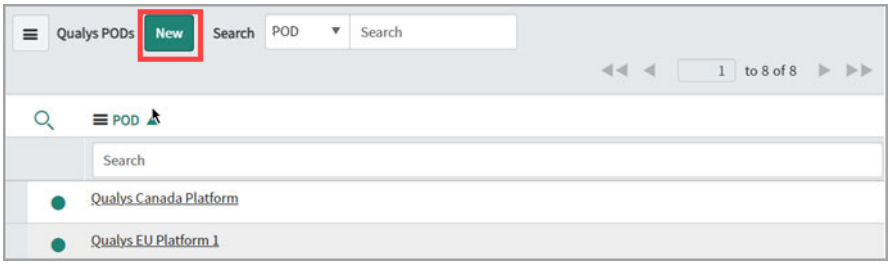
1. Go to Qualys CMDB Sync App > Configuration > API Sources, and click New.

2. Click the search icon in the POD field.



The list of PODs - 'Qualys PODs' table is displayed.

3. Click New to add POD information.



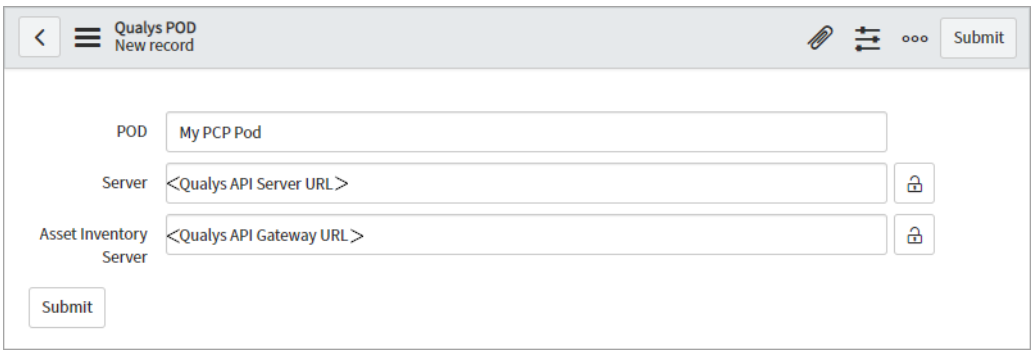
4. Provide the following information and save the custom record.

   a. POD: Name for the custom POD record

   b. Server: Click the unlock icon to provide the Server URL.

   c. Asset Inventory Server: Click the unlock icon to provide the Qualys API Gateway URL.

The Qualys API URL you should use for Server and Asset Inventory Server fields depends on the Qualys platform where your account is located. For more information on Qualys platform URLs, see Qualys Platforms.

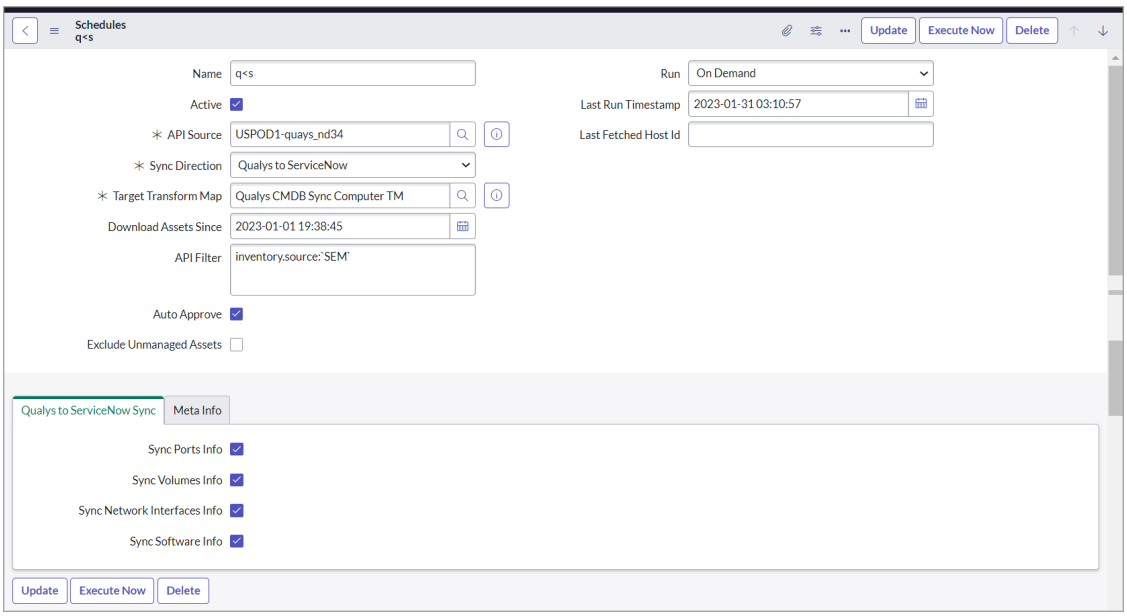


Create Schedules

You need to set up at least one schedule. You may eventually want many more. Once a schedule is successfully created, the sync between the source and CMDB gets working as per the defined schedule.

Qualys to ServiceNow Scheduling

Go to Qualys CMDB Sync App > **Schedules** and select “Qualys to ServiceNow” for Sync Direction.



Enter required details to configure the schedule:

Name - Provide a unique name for your schedule that helps you identify your schedule.

Active - Select to enable and activate the schedule you create. If you want to activate a schedule sometime later, you can disable this checkbox.

API Source - Select the API Source.

Sync Direction - Select Qualys to ServiceNow.

Target Transform Map - Select the custom transform map that tells us which destination table to put the assets in. Support of Configuration Item (CI) Class Selection allows you to define/customize the destination tables into which the pulled asset information should go after the assets are approved. For more information, refer to Transform Maps section.

Download Assets Since: The schedules will download the assets after the defined time. The number of assets to be downloaded depends on the Size of Download batch property. For more information on changing the number of assets to be downloaded, refer to the Update Properties section.

API Filter: Use search tokens to filter the assets as per the requirement.

Example: `operatingSystem.category1:'Linux'`

This token lists all the assets with the Linux operating system.

Click here for help on using the search tokens.

Run, Starting, Repeat Interval - Tell us the frequency of the schedule to be executed. For example, you could schedule it periodically every 15 minutes.

Auto-Approve - Select this to enable auto-approval of assets. This saves the effort of manually approving the assets to be staged on the production tables.

Exclude Unmanaged Assets - Enable this checkbox if you want to exclude unmanaged assets or do not want to sync unmanaged assets from Qualys to ServiceNow.

CI Operation - This field provides three CI operations on target CI Class.

Insert - Inserts new records if CI is absent.

Update - Updates the CI record if a CI is present.

Insert and Update - Updates existing CI records and creates a new record if it is absent.

Qualys to ServiceNow Sync - Select the information we should fetch for each asset: Sync Ports Info, Sync Volumes Info, Sync Network Interfaces Info, Sync Software Info.

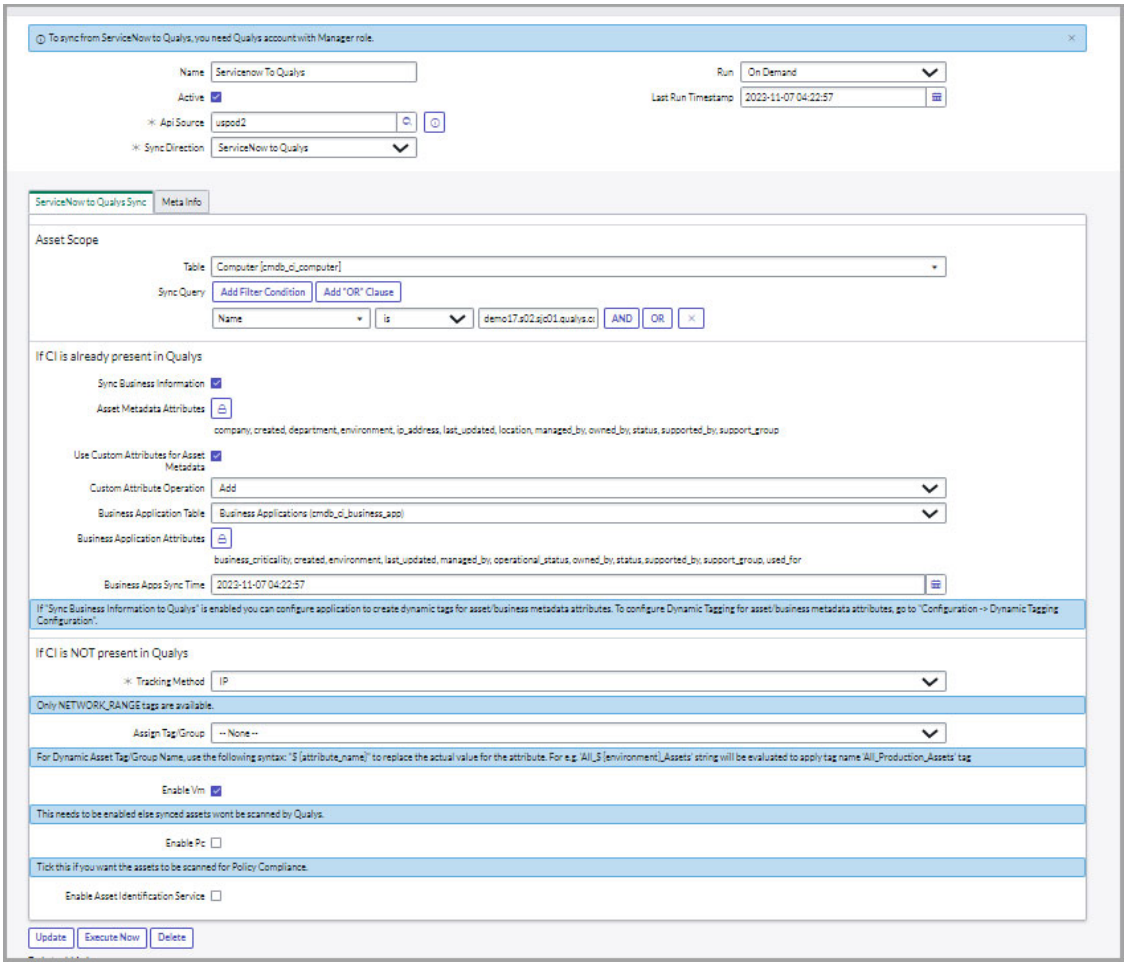
For initial sync from Qualys to ServiceNow, we recommend that you plan your schedules at an interval of every fifteen minutes.

Once you configure your selections, click **Submit** to create the schedule.

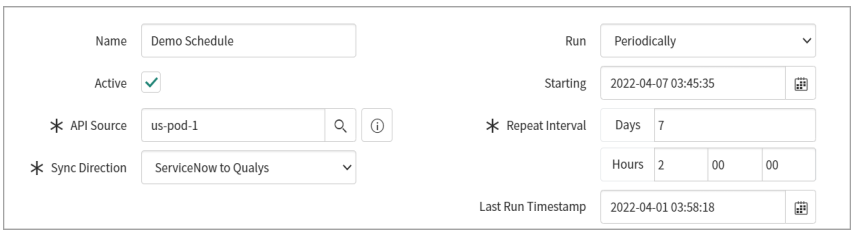
Note: The Meta Info fields and few other blank fields such as Last Run Timestamp, Last Fetched Host Id are populated with information only after the schedule is executed.0

ServiceNow to Qualys Scheduling

Go to Qualys CMDB Sync App > Schedules and select “ServiceNow to Qualys” for Sync Direction.



Enter required details to configure the schedule:



Name - Provide a unique name for your schedule that helps you identify your schedule.

Active - Select to enable and activate the schedule you create. If you want to activate a schedule sometime later, you can disable this option.

API Source - Select the API source.

Sync Direction - Select ServiceNow to Qualys.

Run, Starting, Repeat Interval - Tell us the frequency of the schedule to be executed. For example, we could configure to execute schedule only on-demand.

ServiceNow to Qualys Sync - You can sync the IPs and Asset Metadata from ServiceNow to Qualys.

For initial sync from ServiceNow to Qualys, we recommend that you plan your schedules at an interval of every ten minutes.

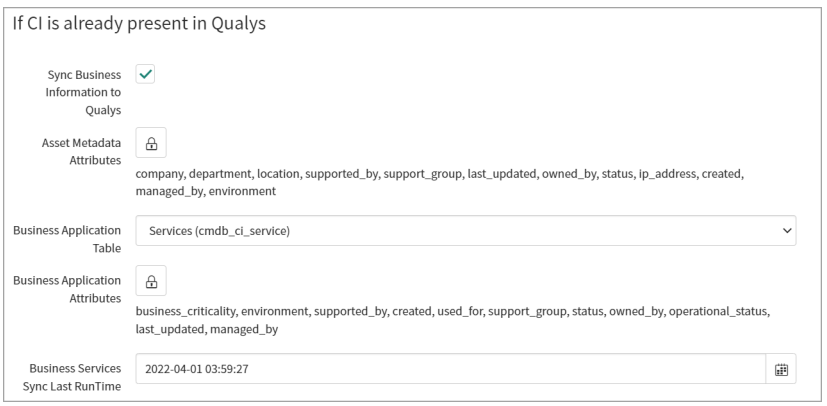
Asset Scope: - Define the scope of assets to be synced.

The **Table** and **Query** components allow you to select the asset metadata table as per your requirement.

Filter the query by choosing from the default fields to sync asset metadata to Qualys.

If CI is already present in Qualys

Configuration Item (CI) includes the base configuration for all the assets in the CMDB table.

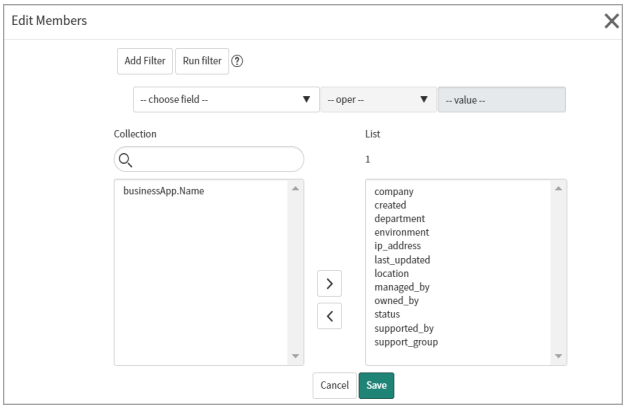


You can sync business information along with asset metadata to Qualys then enable the **Sync Business Information to Qualys** checkbox.

Note: If you do not enable the checkbox then the asset metadata do not get synced. Only the asset with new IP addresses get synced to Qualys.

Asset Metadata Attributes: Unlock the **Asset Metadata Attributes** option by clicking the unlock button > Click **Add/Remove multiple** option.

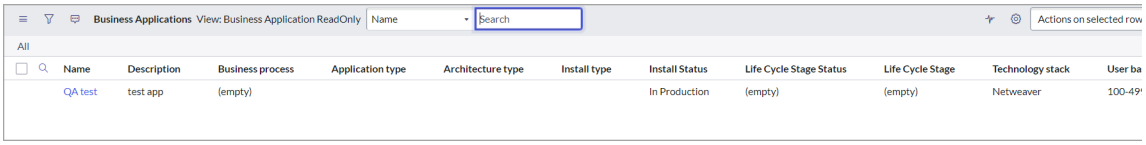
A new pop-up window appears, and you can select the attributes from the list. Use **Add Filter** and **Run Filter** options to isolate the records > click **Save** > Click the lock button to lock your selected attributes.



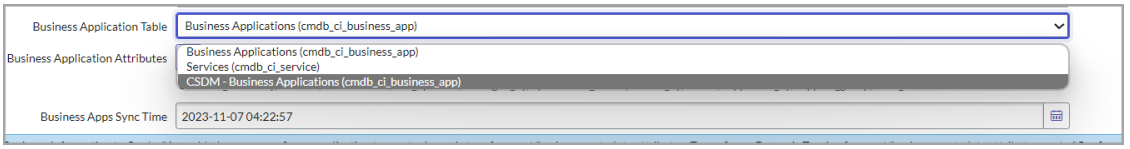
All of the selected attributes from the list can sync asset metadata from ServiceNow to Qualys. Refer to Appendix to view the mapping of the fields for asset and business application metadata

Business Application Table: Select the table for business applications or services to get sync from ServiceNow

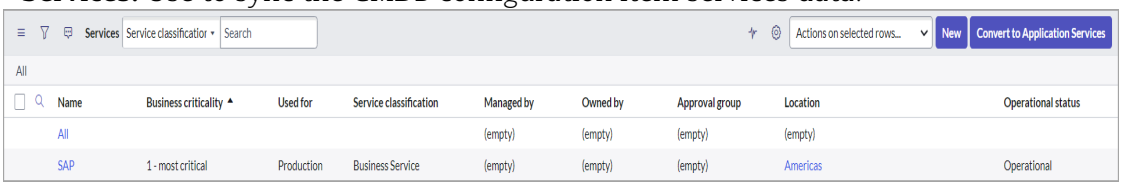
- Business applications: Use to sync the CMDB configuration item application data.



CSDM: Use to sync the Business application data which are linked to services of CMDB configuration item.

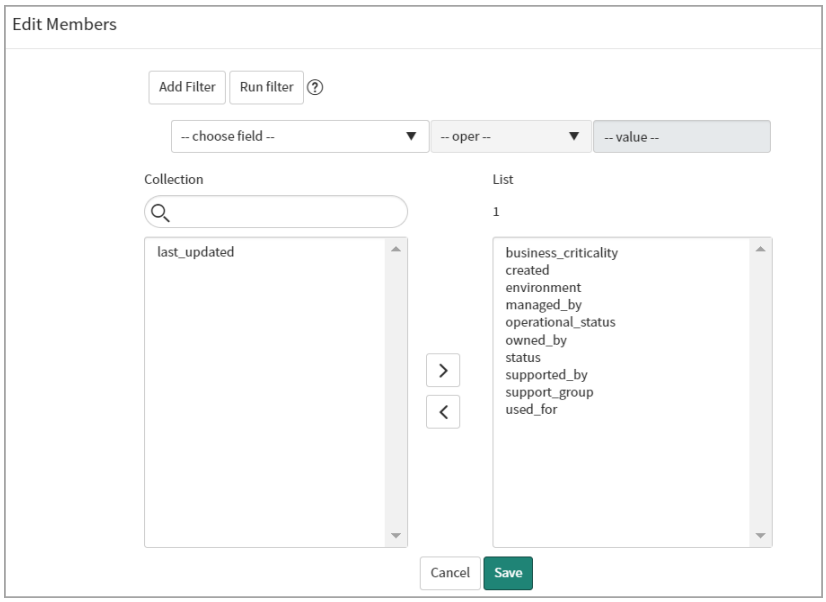


- Services: Use to sync the CMDB configuration item services data.



Business Application Attributes: Unlock the **Business Application Attributes** option by clicking the unlock button > Click **Add/Remove multiple** option.

A new pop-up window appears, and you can select the attributes from the list. Use **Add Filter** and **Run Filter** options to isolate the records > click **Save** > Click the lock button to lock your selected attributes.



All of the selected attributes for the business applications or services can get synced from ServiceNow to Qualys.

Note: For Business Metadata sync, if CI is present in Qualys, then it must be synced into ServiceNow and transformed to CMDB tables at least once. That CI is associated with a Qualys Asset ID, and it is used to sync Business Metadata from ServiceNow to Qualys.

Note: For Asset Metadata and Business Applications, 'created' and 'last updated' fields are mandatory for asset metadata sync and should not be removed; if these fields are removed, API calls to sync data fails.

If Sync Business Information to Qualys is enabled, you can configure the application to create dynamic tags for asset/business metadata attributes.

Use Custom Attributes for Asset Metadata

A custom attribute is a piece of information about the asset you wish to discover in the Qualys CSAM Inventory. You can specify any custom attributes from a list or fetch them with your script. The value is visible in Asset System information > Custom attributes. You can further filter assets or perform operations based on the custom attributes

1) **SET**: When Use Custom Attributes for Asset Metadata value is 'SET', the application deletes previously created custom attribute and will SET new attribute

2) **ADD**: When Use Custom Attributes for Asset Metadata value is 'ADD', the application adds a new attribute

How to Add a Custom Attribute

1) Click **New** on the Custom Attributes section. A new record screen opens up. The source table field is auto-populated with the asset scope table configured when selecting the ServiceNow to Qualys schedule.

2) Provide the Target key. The Target key is the custom attribute key displayed on the Qualys Portal once the custom attribute is synced from ServiceNow to Qualys.

3) Select the Source Type as Source Field to sync the value in the source table field below or select Script to sync the output of the custom script.

   a) For Source Field, select from the list of available source types, and the selected value is synced with Qualys Asset Inventory.

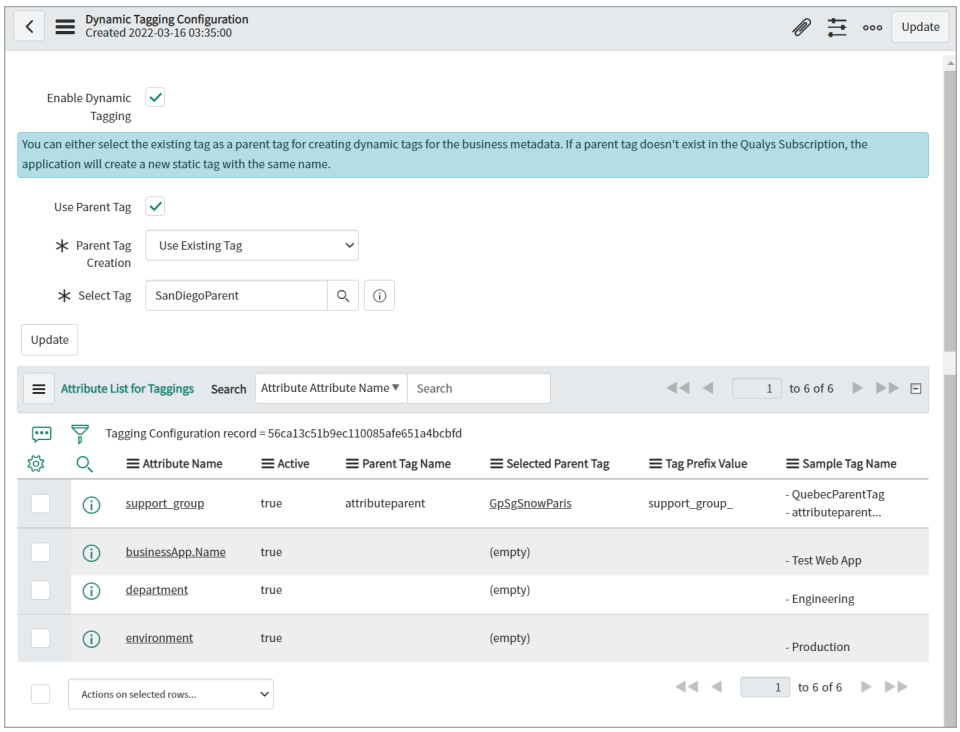
   b) For Script, provide the script to fetch the attribute data from a desired table.

4) Click Submit to create your Custom Attribute.

To configure Dynamic Tagging for asset/business metadata attributes, navigate to Configuration > Dynamic Tagging Configuration.

Dynamic Asset Tagging Configuration

We've added a new dynamic asset tagging configuration feature that allows you to automatically create and maintain tags based on CMDB business information (Status, Organization, Environment, Business Criticality, Business Application Attributes) and use them across all Qualys solutions/apps for VMDR prioritization, asset scoping, and organizing vulnerability scans and reports.



Enter required details to configure the dynamic asset tagging:

Enable Dynamic Tagging - Select the checkbox to enable the dynamic tagging configuration.

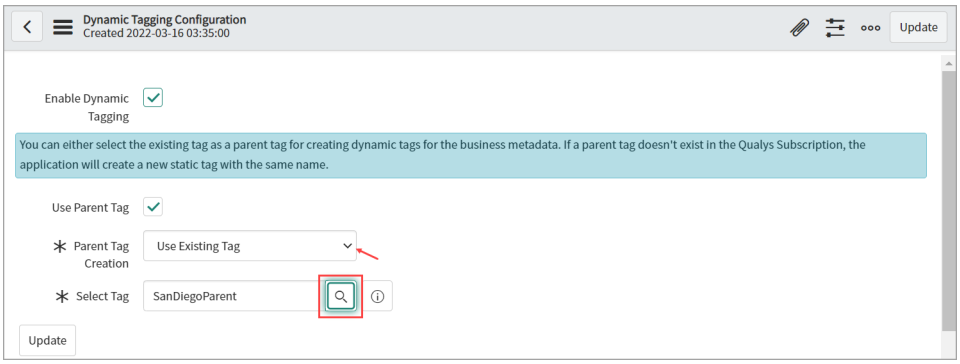
Once you enable the dynamic tagging configuration, a new option, Use Parent Tag option is available, and you to set the Parent Tag.

Use Parent Tag - Select the checkbox to enable the options to create or use any existing tag.

Note: If you do not enable the parent tag, then the dynamic tag is created without any hierarchy.

Parent Tag Creation - Use this option to create a new tag or select any existing tag.

Enter Parent Tag Name - Use this option to provide and set the name of your parent tag.



The Select Tag is available on the page if you select the **Use Existing Tag** option from the Parent Tag Creation field. With this you can choose the appropriate tag.

Select Tag - Use this option to select an existing tag. Select any existing tag from the Asset Tag List by using the Search button.

Note: You can select the existing tag as a parent tag to create dynamic tags for the business metadata. If a parent tag doesn't exist in the Qualys Subscription, the application creates a new static tag with the same name.

Save - Click save to save your parent tag configuration.

Once the tags for the attributes have created, the business metadata gets synced.

Note: If you don't want to tag to be created for any attribute, then make that attribute active false.

When the business metadata get synced, Qualys automatically generates the tags for the asset's attributes in the backend.

You can select or deselect attributes from the attribute list to create the tag according to your preferences.

Note: Before syncing the Asset Metadata, you need to configure the Dynamic Asset Tagging configuration. These steps are essential to apply Dynamic tagging automatically to your assets after syncing the Asset Metadata to Qualys.

Perform following steps to configure **Dynamic Asset Tagging configuration**:

1. Go to dynamic tagging configuration and enable it.

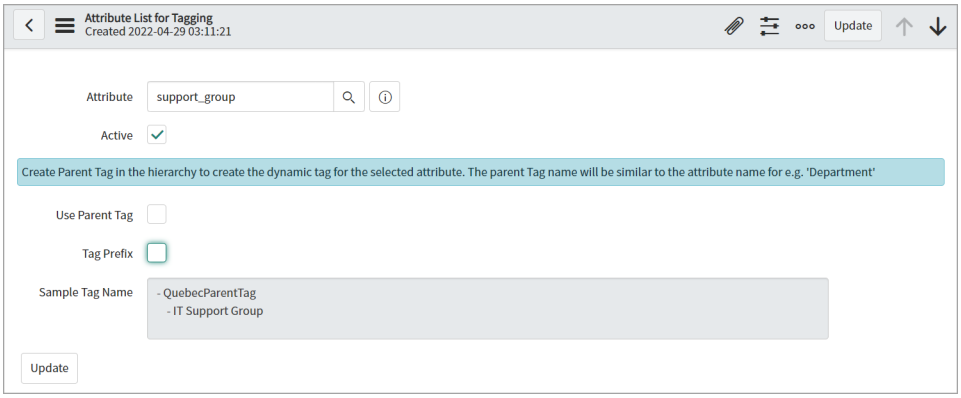
2. Then create the schedule ServiceNow to Qualys and configure asset metadata configuration in the schedule.

3. Save schedule.

4. Execute schedule.

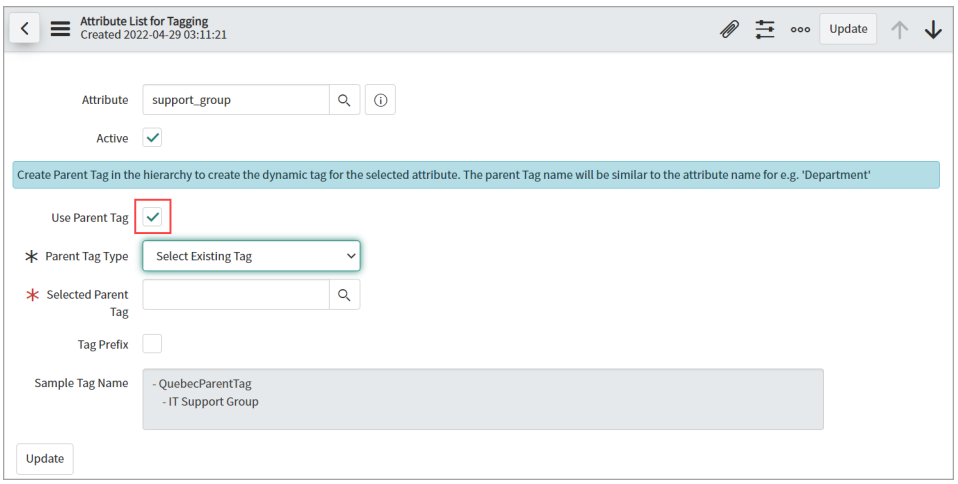
Attribute List for Tagging

In the attribute list for tagging section, you can create and add the parent tag.



Attribute - This field shows the attribute name and is similar to the parent tag name e.g. 'Department'

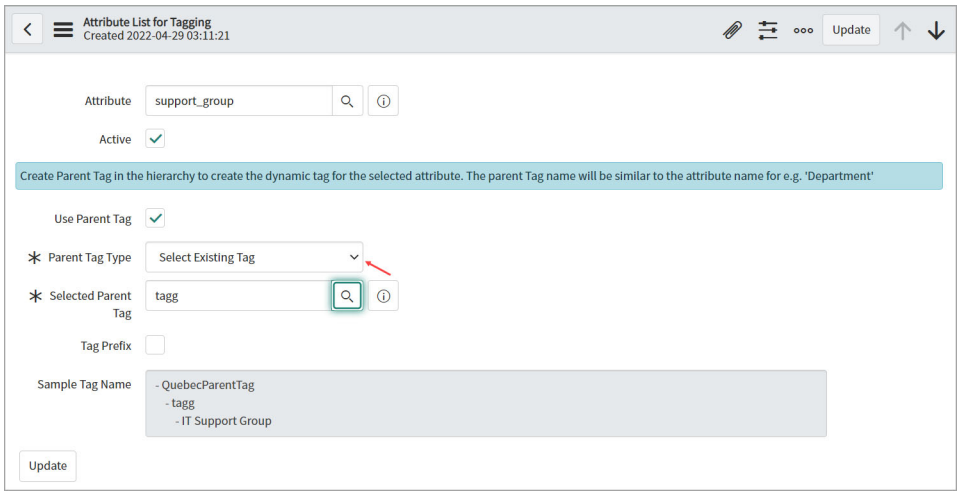
Active - Select the checkbox to activate the dynamic tag for the by default selected attribute.



Use Parent Tag - Select the checkbox to appear the new options on the page - It helps you to create a new tag or select any existing parent tag.

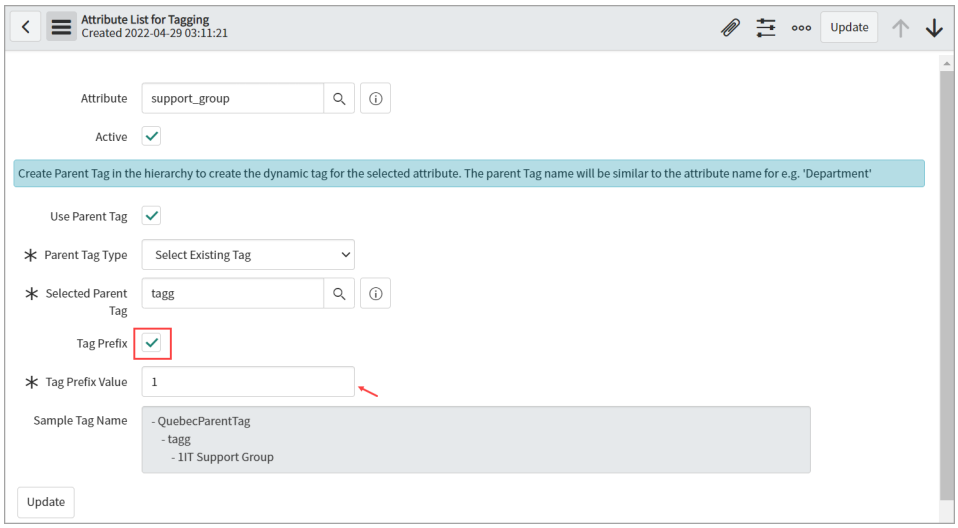
Parent Tag type - Use this option to create a new tag or select any existing parent tag.

Selected Parent Tag - Use this option to select any existing parent tag. Use the Search button to find and select any existing parent tag from the Asset Tag List.



The Parent Tag Name is available on the page if you select the **Create New Tag** option from the Parent Tag Type field. It is easier for you to give the appropriate name to your tag.

Parent Tag Name - Use this option to provide and set the name of your parent tag.



Once you enable the Tag Prefix checkbox then Tag Prefix Value text-box will appear on the page.

Tag Prefix - Select the checkbox and enable the tag prefix to add a prefix to your tag.

Tag Prefix Value - Use this field to enter your tag prefix value.

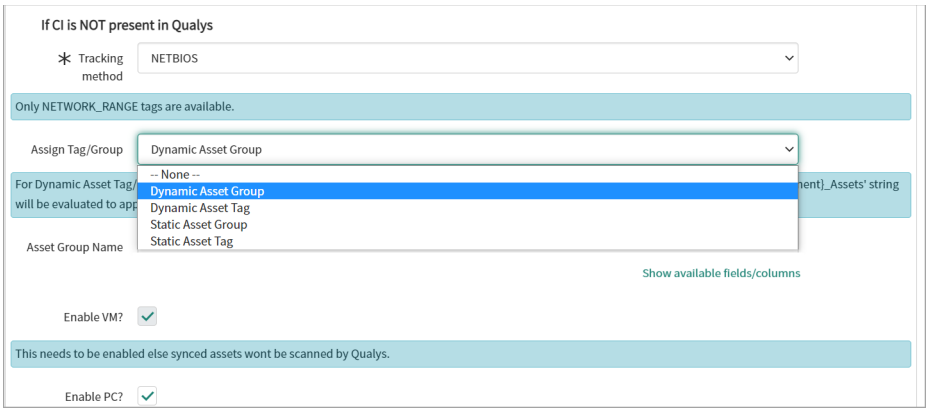
The prefix will be appended to that specific attribute tag once you enter it.

Sample Tag Name - This text box displays the details of your attribute tag.

Update - Click update to update your newly created parent tag attribute configuration.

If CI is NOT present in Qualys

If CI configuration does not exist in the Qualys configuration environment then you will get only IPs from ServiceNow to Qualys.



Tracking Method - Choose the tracking method from IP, DNS, or NETBIOS for assets when syncing from ServiceNow to Qualys.

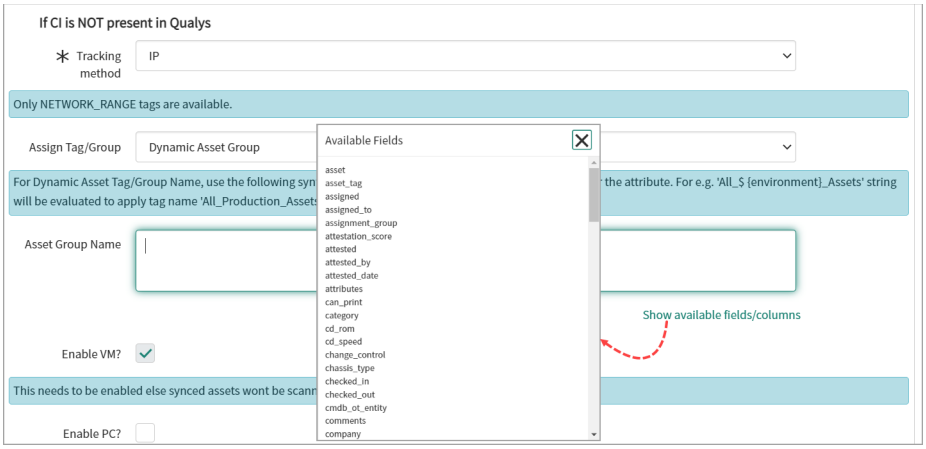
Assign Tag/Group (Optional) - We modified this functionality by adding a dropdown that includes Dynamic Asset Group, Dynamic Asset Tag, Static Asset Group, and Static Asset Tag.

When you select Dynamic Asset Group from the dropdown, an empty text box appears, which you can use to create the asset group on the runtime to sync the assets or CI with the Qualys.

When you select the Dynamic Asset Tag, an empty text box appears, which you can use to create a dynamic asset tag on the runtime to sync the assets or CI with the Qualys.

- To create the dynamic asset group name or tag name, a plain string and attributes name can be used. The attribute name can be used in format ${attribute name} e.g., ${environment}

You can use the **Show available fields/columns** option to add the attributes from the target table. It is a read-only list of available attributes from the target table, where you can copy the available attributes and paste them into the dynamic group or tag name field using the format ${attribute_name}



- If the dynamic tag name or group name is already present in staging tables, i.e., x_qual5_itam_nwapp_qualys_asset_groups or x_qual5_itam_nwapp_qualys_asset_tags - in that case, the Service graph connector will not initiate to create a call for another duplicate group or tag name. Instead, it will fetch and use the tag id or group id of the existing tag/group from staging tables.

When you select Static Asset Group, an empty text box appears, which you can use to search and enter the existing qualys asset group. Click the **Search** button to select the qualys asset group from the list.

When you select Static Asset Tag, an empty text box appears, which you can use to search and enter the existing qualys asset tag. Click the Search button to select the qualys asset tag from the list.

A Static Asset Tag or Static Asset Group. The "Static Asset Tag" or "Static Asset Group" box will assign that tag in Qualys Cloud Platform to any assets synced from ServiceNow.

Note: The Asset Tags that belong to only the NETWORK_RANGE type are populated. All other asset tags are ignored.

We also highly recommend adding filter conditions (at minimum IP Address) to assets to be synced. When selecting a TABLE, ensure that the table has a column with the "ip_address" name; otherwise, the ServiceNow > Qualys sync may not function.

VM (Vulnerability Management) is optional but enabled by default to scan the assets you sync. We recommend that you do not disable this option. It is optional to enable PC (Policy Compliance).

Note: If both VM and PC options are disabled, the Add IP flow will not work.

Once you configure your selections, click Submit to create the schedule.

Note: The Meta Info fields and few other blank fields such as Last Run Timestamp are populated with information only after the schedule is executed.

Enable Asset Identification Service

Asset Identification service discovers unmanaged assets based on the identification rules of the ServiceNow connector. An Unmanaged asset is the externally exposed asset that is unknown to you. As Qualys VMDR does not scan these assets, they are classified as unmanaged assets.

ServiceNow Configuration

To enable Asset Identification service for Unmanaged/Managed Asset, set the **Enable AIS (Beta) - Asset Identification Service to sync managed and unmanaged Asset to Qualys sync** option to true on the **Properties** page.

1. Next, go to Schedule and click **New**.

2. Create a **ServiceNow to Qualys** Schedule.

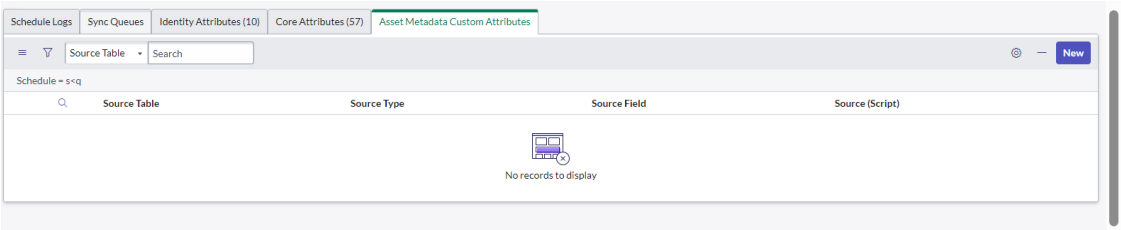
3.. Add **Configuration** in schedule.

4. Check option **Enable Asset Identification Service** to sync asset through Asset Identification Service.

5. Add **Connector UUID** - Provide the unique identifier of the Qualys ServiceNow Connector

Add a Custom Attribute

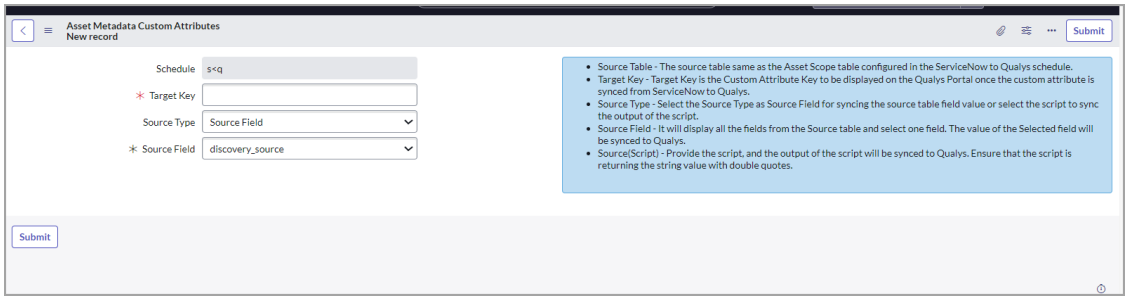
1. In Asset Metadata Custom Attributes related list, click **New**. A new record screen opens up. The source table field is auto-populated with the asset scope table configured when selecting the **ServiceNow to Qualys** schedule.



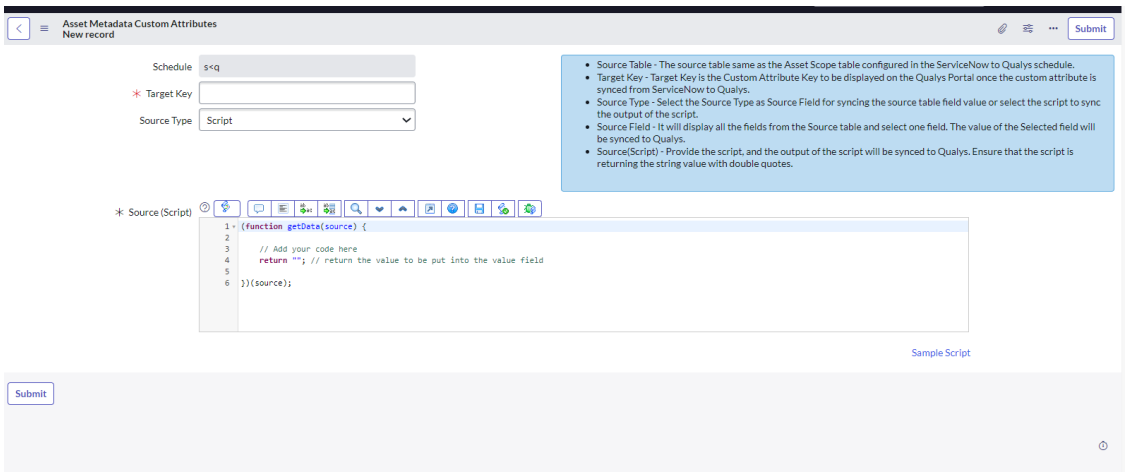
2. Provide the **Target Key**. The target key is the custom attribute key displayed on the Qualys Portal once the custom attribute is synced from ServiceNow to Qualys.

3) Select the Source Type as Source Field to sync the value in the source table field below or select Script to sync the output of the custom script.

a. For Source Field, select from the list of available source types, and the selected value is synced with Qualys Asset Inventory.



b. For Script, provide the script to fetch the attribute data from a desired table.



4) Click **Submit** to create your Custom Attribute.

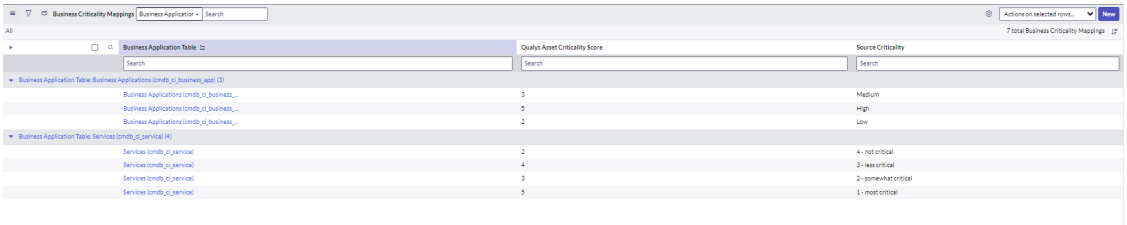
Run Schedules

Navigate to **Schedules** > **ServiceNow to Qualys** to run your schedule. Click **Execute Now** from the top right.

Navigate to the bottom of the screen to view the Sync Queues tab, which lists your current execution status. If the execution succeeds, you can see the changes on the Asset Inventory.

Business Criticality Mapping

The mapping of business capabilities is an important step in calculating the Qualys Asset Criticality Score from App/Services Business Criticality. The business criticality mappings provide a connection between the Business Applications Criticality and the Qualys Criticality.

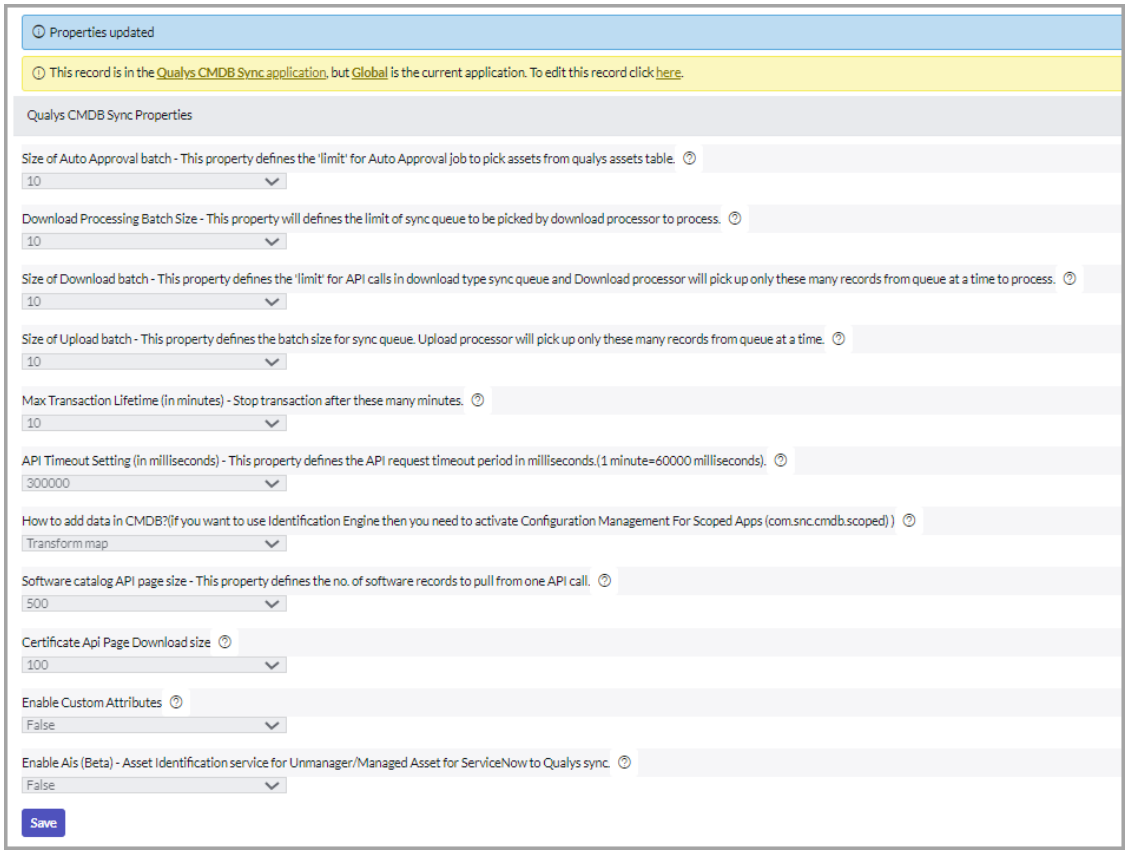


The business criticality mapping will be used while creating the tags for the asset criticality score. Asset criticality will be mapped to Business Name tags only. For business applications records, we currently support two tables (Business Applications and Services). The criticality score field in both of these tables has a different value. Each application has a level of criticality, which must be synced to Qualys. You can see the Source Criticality (Low, Medium, High, etc.) and its Qualys Severity Values in numbers. You can add new mapping or update existing once as required.

Note: Except for the business app.name, we do not create all the tags with criticality scores.

Update Properties

The Asset Sync Properties have pre-populated values. However, you can always change the values to suit your needs. To view the existing properties or update the values, go to **Qualys CMDB Sync App** > **Configuration** > **Properties**.



Let's take a look at how each property functions.

Size of Auto Approval batch - Define the number of assets to be approved in one scheduled job and the limit for the Auto-approval job to pick assets from the Qualys assets table.

Download Processing Batch Size - It defines the limit of sync queue to be picked by download processor to process.

Size of Download batch - Configure two properties using this setting:

- The maximum number of assets to be fetched in a single API request call made by the scheduler.

- The maximum number of records to be fetched and processed at one go from the queue by the download processor.

Size of Upload batch - Maximum number of records to be picked by the upload processor from the queue to be uploaded to Qualys.

Max Transaction Lifetime (in minutes) - The Qualys App has time restrictions on schedule run time. Although by default the time restriction is set to 10 minutes, you can change the time restriction to any time between 10 and 60 minutes. If you configure the schedule time to 20 minutes, the schedule is stopped after 20 minutes. In such a case, next scheduled run will resume from where the earlier run was stopped.

API Timeout Setting (in milliseconds) - The wait time (in milliseconds) for the response to the API request.

How to add data in CMDB - Choose a method to insert the data in CMDB:

- Transform Maps. Allows you to use single or multiple attributes but only single condition to define which assets to add/update to the CI records. For more information, see the Transform Maps section.

- Identification Engine. Allows you to use single or multiple attributes along with multiple conditions to define which assets to add/update to the CI records. or more information, see the Identification Engine section.

Software catalog API page size - The number of software catalog records to be fetched in a single API request call made by the Software Catalog Sync – Scheduled job.

Certificate API Page Download size - The maximum number of records to be fetched at one call by the Sync certificate processor.

Enable Custom Attributes -

• To enable Use Custom Attributes for Asset Metadata option, select 'True' and save page.

• To disable Use Custom Attributes for Asset Metadata option, select 'False' and save page.

Enable AIS (Beta) - Asset Identification Service to sync managed and unmanaged Asset to Qualys sync -

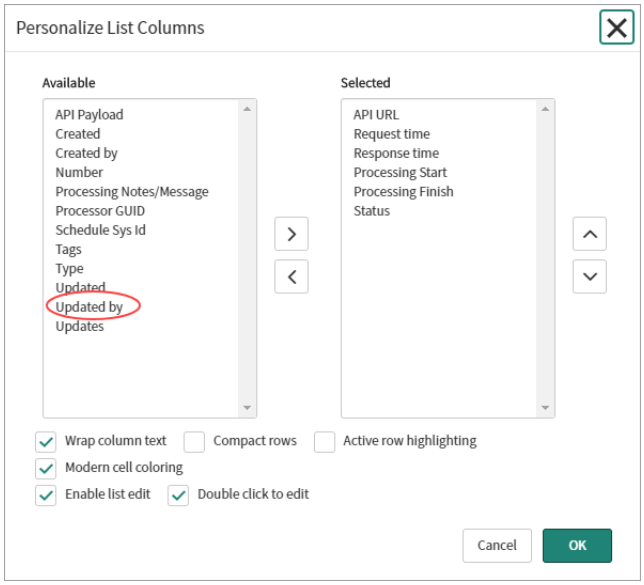
• To enable Use Asset Identification Service to sync managed and unmanaged Asset to Qualys option, select 'True' and save page.

• To disable Asset Identification Service to sync managed and unmanaged Asset to Qualys option, select 'False' and save page.

Customize Data List Columns

We display few columns in the data lists. You can customize which columns appear and change the column sequence. We'll show you an example for adding the column "Updated by" to data lists.

1) Click the icon in the main pane. The Personalize List Columns pop-up appears.



2) The Available list includes columns that are currently hidden. From this list, select the column you want to display. For example, double-click the column “Updated by” and you’ll see it moved to the Selected list.

3) Enable or disable other settings like Wrap column text, double click to edit, and so on.

4) Click OK.

You’ll start seeing the Updated by column. If for some columns, the data is not available, the value in the column will be empty.

Syncing

Start syncing your asset information between Qualys and ServiceNow CMDB.

In Summary

Sync Queue: This is where you'll see all jobs involved during the flow of assets between **Qualys** and **ServiceNow**.

Approve Qualys Assets: This is where you'll see assets that need manual approval when auto-approval is not enabled.

Failed Qualys Assets: This is where you'll see assets that failed to get transformed.

Sync Queue

The Sync Queue lists jobs of two types: Upload and Download. The Type column indicates the direction of the flow of assets.

Download Asset: Qualys to ServiceNow

This shows the list of jobs run from Qualys to ServiceNow assets. The status indicates whether the application was able to parse the XML response successfully. The XML that was transferred is also available here (usually attached as response.xml).

Download Certificate

Sync queue contains certificates which are synced from Qualys to ServiceNow.

Upload IP to Group: ServiceNow to Qualys

This is the list of assets to be synced from ServiceNow to Qualys Cloud Platform. Defining IP along with Asset Tag or Asset Group in Schedules will add two entries for an asset during upload: one for IP address and one for Asset Tag or Asset Group.

Upload IP: ServiceNow to Qualys

This is the list of assets to be synced from ServiceNow to Qualys Cloud Platform.This sync queue is for uploading new IP in Qualys.

Upload IP to Tag

This is the list of assets to be synced from ServiceNow to Qualys Cloud Platform. Defining IP along with Asset Tag in Schedules will add two entries for an asset during upload: one for IP address and one for Asset Tag.

Upload Metadata

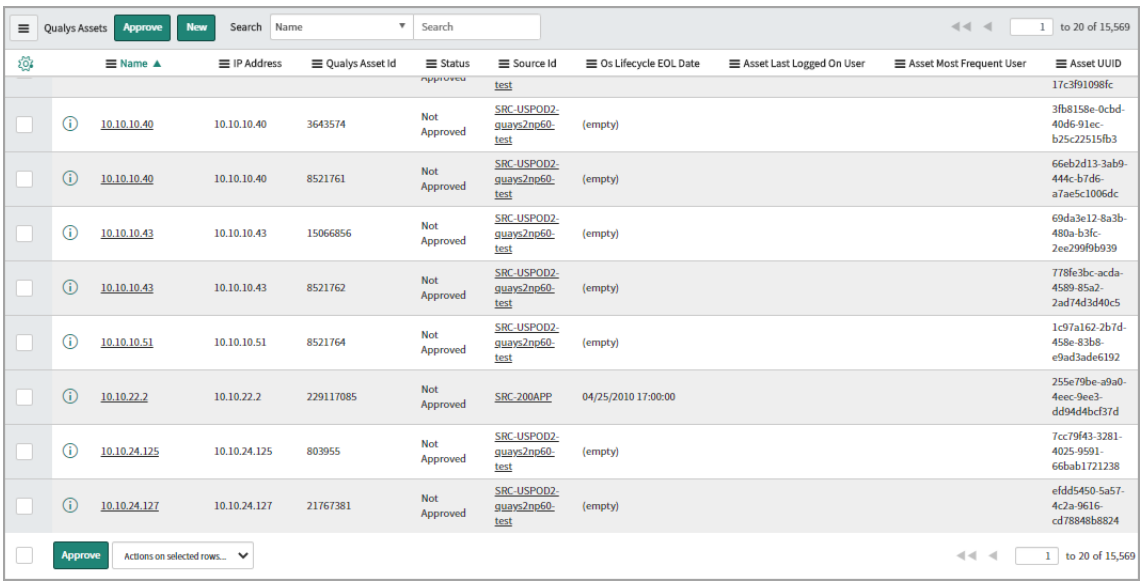
This is the list of assets to be synced from ServiceNow to Qualys Cloud Platform. using this sync queue type asset metadata is get synced to Qualys.

Upload Custom Attributes

This is the list of assets to be synced from ServiceNow to Qualys Cloud Platform using this sync queue type asset metadata custom attribute is get synced to Qualys.

Approve Qualys Assets

Assets imported from Qualys to ServiceNow will appear here for approval after successful processing in Sync Queue. If processing fails for any record in Sync Queue (status = Error), none of the host assets in that XML will be visible here. You'll need to approve each asset individually or one screen at a time. You will overwrite data in your CMDB when you approve the asset.



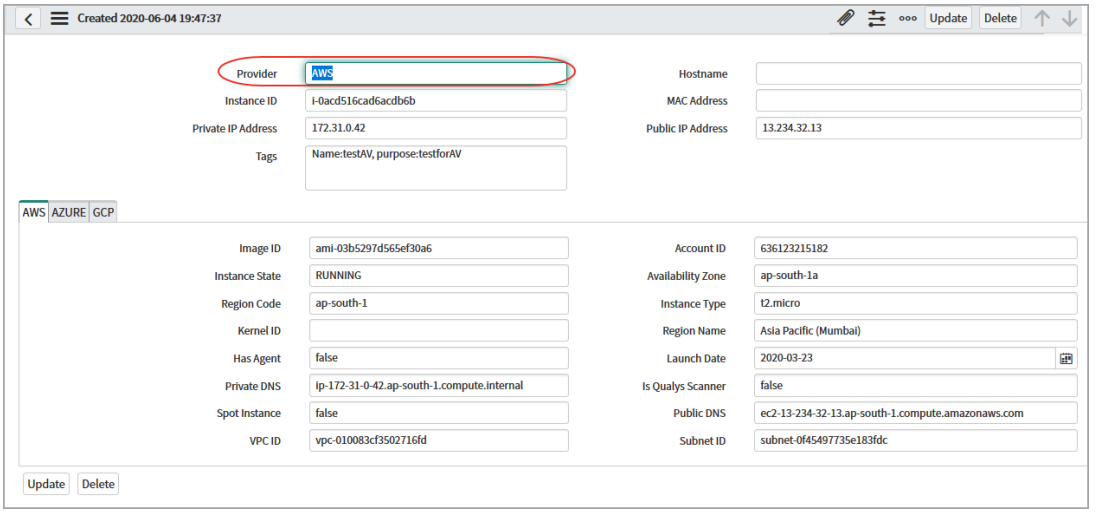
Save time by using auto-approval

Enabling auto-approval of assets saves you effort and time because you won't have to manually approve each asset. If you enable auto-approval, none of the assets are displayed in the Approve Qualys Assets list.

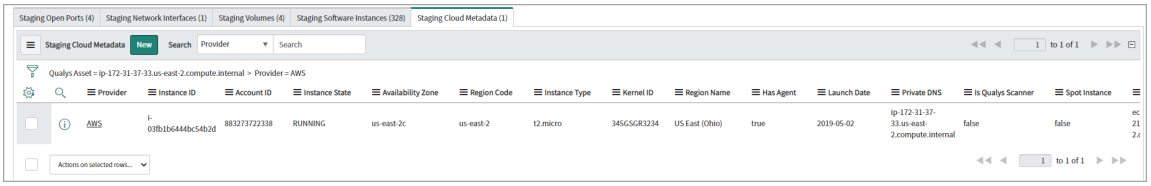
Support for Cloud Meta data

We currently support three cloud providers: Amazon Web Services (AWS), Microsoft Azure, Google Cloud Platform (GCP). All your cloud assets imported from Qualys to ServiceNow appear in Asset Details related tables for approval after successful processing in Sync Queue. Let us view few examples.

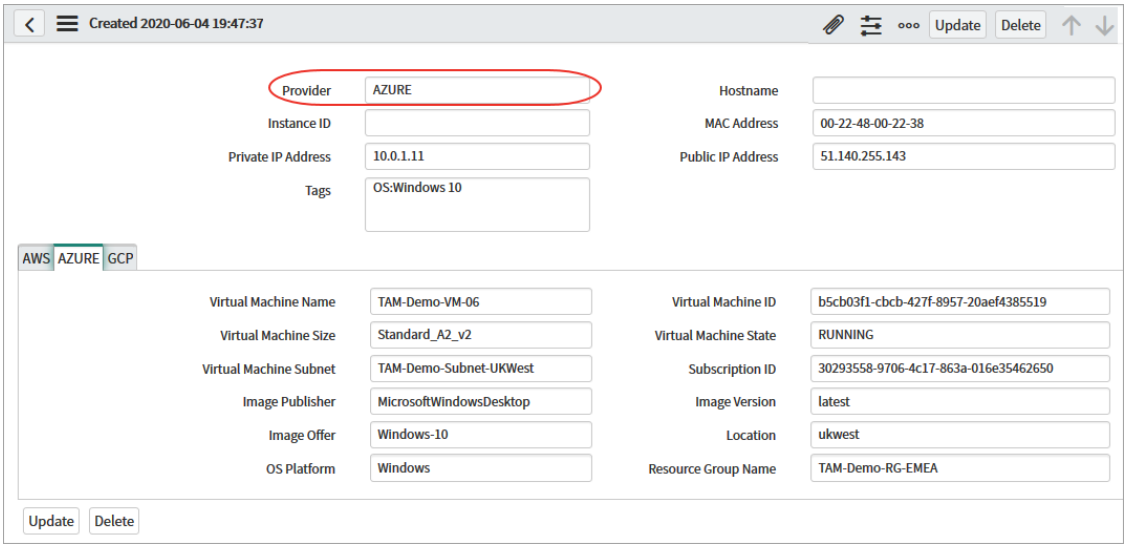
AWS



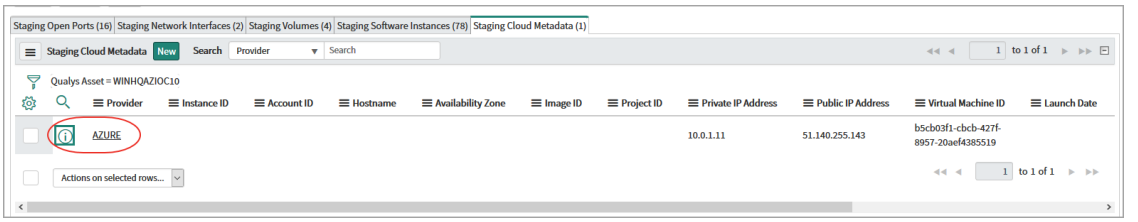
AWS: Staging Cloud Metadata



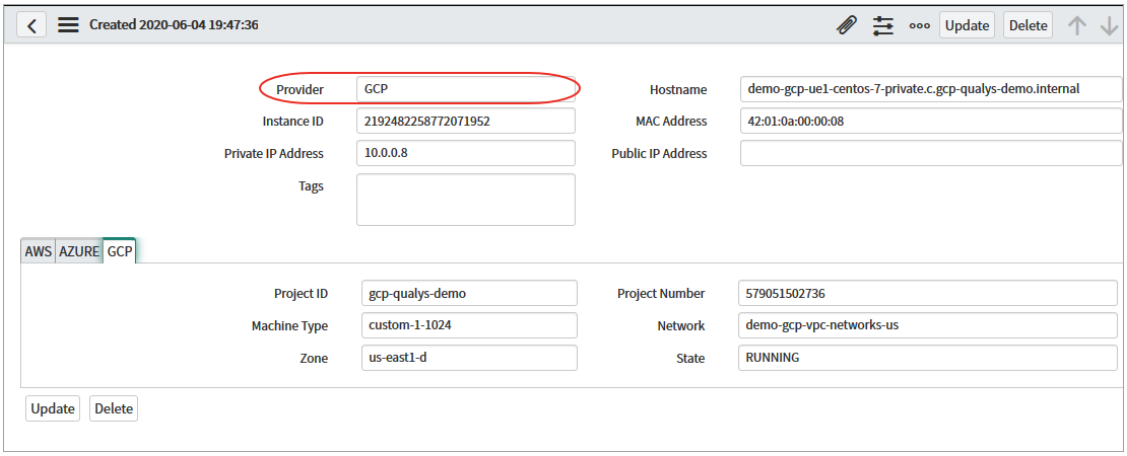
Microsoft Azure



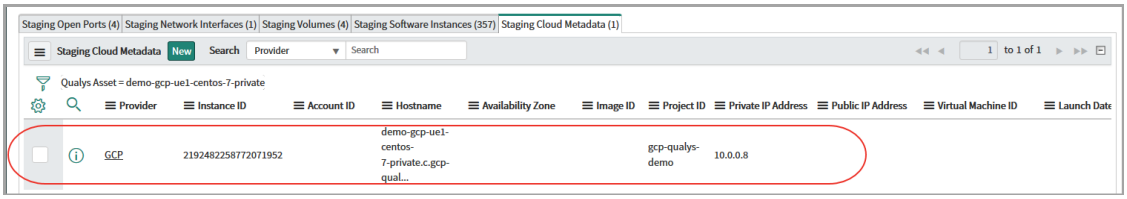
Microsoft Azure: Staging Cloud Metadata



GCP

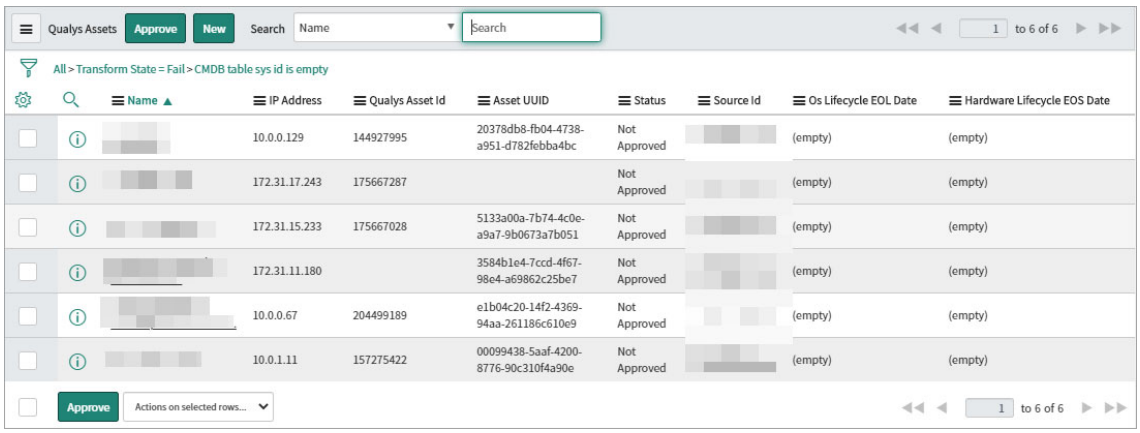


GCP: Staging Cloud Metadata



Failed Qualys Assets

All of the assets imported from Qualys to ServiceNow that fail to get transformed are listed in the Failed Qualys Assets list. The transformation from Qualys to ServiceNow could fail due to criteria not being matched. For example, if you define the method to add data as “Identification Engine” and there is no identifier in the app.



Advanced Configuration

The Advanced Configuration tells you about various pre-defined configurations and steps to customize them to your need. Transform Maps and Identification Engine are methods you can use to add data to your CMDB.

In Summary

App Scheduled Jobs - List of all scheduled jobs. Update or change the frequency of scheduled jobs as per your needs.

Transform Maps - Use transform mapping to map source and destination fields dynamically. Use predefined Transform Maps.

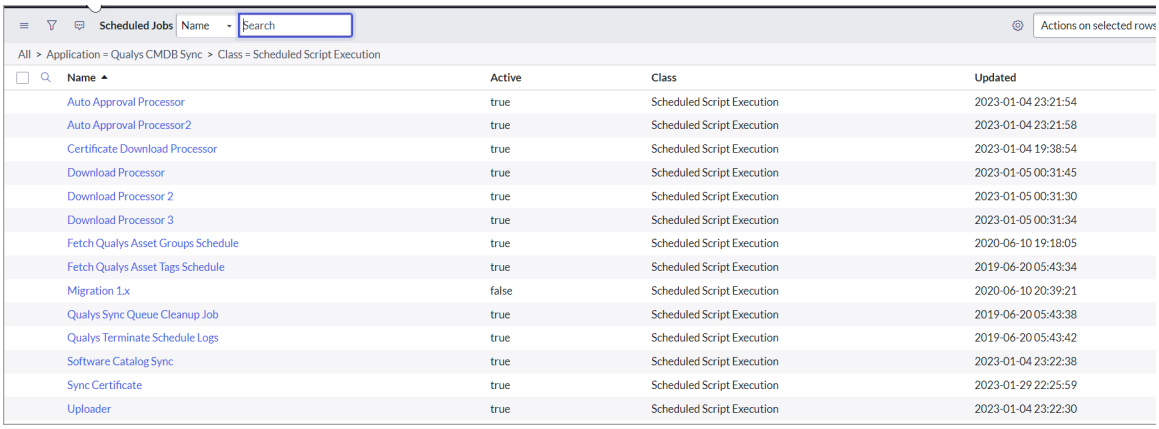
Identification Engine - Use this method to define the criteria using single or multiple attributes that uniquely identify the source assets and asset information before the assets get approved and are added to the CMDB system.

Qualys Category - CI Class Mappings - Provides pre-defined class mappings to identify source assets.

Application Log - All log entries related to the important activities in Qualys App.

App Scheduled Jobs

All of the App Scheduled Jobs are listed under Advanced > App Scheduled Jobs.



Name	Active	Class	Updated
Auto Approval Processor	true	Scheduled Script Execution	2023-01-04 23:21:54
Auto Approval Processor2	true	Scheduled Script Execution	2023-01-04 23:21:58
Certificate Download Processor	true	Scheduled Script Execution	2023-01-04 19:38:54
Download Processor	true	Scheduled Script Execution	2023-01-05 00:31:45
Download Processor 2	true	Scheduled Script Execution	2023-01-05 00:31:30
Download Processor 3	true	Scheduled Script Execution	2023-01-05 00:31:34
Fetch Qualys Asset Groups Schedule	true	Scheduled Script Execution	2020-06-10 19:18:05
Fetch Qualys Asset Tags Schedule	true	Scheduled Script Execution	2019-06-20 05:43:34
Migration 1.x	false	Scheduled Script Execution	2020-06-10 20:39:21
Qualys Sync Queue Cleanup Job	true	Scheduled Script Execution	2019-06-20 05:43:38
Qualys Terminate Schedule Logs	true	Scheduled Script Execution	2019-06-20 05:43:42
Software Catalog Sync	true	Scheduled Script Execution	2023-01-04 23:22:38
Sync Certificate	true	Scheduled Script Execution	2023-01-29 22:25:59
Uploader	true	Scheduled Script Execution	2023-01-04 23:22:30

We support the following App Scheduled Jobs. The function and frequency of execution of each job is described. However, you can always update or change the frequency of scheduled jobs as per your needs.

Auto Approval Processor - Checks the records to know which schedule does it belong to and processes it further. Only records that have auto-approval enabled are processed by the Auto Approval Processor.

Download Processor - Picks the records of type Download with Queued status from sync queue and parses the XML. The number of records to be picked in a batch is defined by the Size of Download batch setting in Properties section. Currently, we support three download processors that work in parallel to fasten the process.

Fetch Qualys Asset Groups Schedule - By default, this schedule is executed once daily. Once executed, it syncs all of the Asset Groups in Qualys Cloud Platform for use within the App. You may run this more than once a day if you generate Asset Groups in Qualys Cloud Platform frequently.

Fetch Qualys Asset Tags Schedule - By default, this schedule is executed once daily. Once executed, it syncs all of the Asset Tags in Qualys Cloud Platform for use within the App. You may run this more than once a day if you generate Asset Tags in Qualys Cloud Platform frequently.

Migration 1.x - By default, this job is deactivated. The purpose of this job is only for migration of approved assets that belong to Computer Extended table and need to be in production tables. To know more about the complete migration process, refer to Migration Support.

Qualys Sync Queue Cleanup Job - Clears the Sync Queue records with 'SUCCESS' status (older than 30 days) and records with 'ERROR' status (older than 60 days) on daily schedule.

Qualys Terminate Schedule Logs - Maintains a log of the transactions that are terminated due to exceeding the time required to execute the transaction.

Software Catalog Sync - This schedule fetches Software Catalog records from Qualys to ServiceNow. By default, this schedule is executed every 4 hours. Once executed, it syncs all the Software Catalog records from Qualys Cloud Platform. You may run this more than the default frequency (4 hours) if Software Catalog details get updated in Qualys Cloud Platform frequently.

Uploader - Picks the records of type Upload with Queued status from Sync Queue and sends it to Qualys.

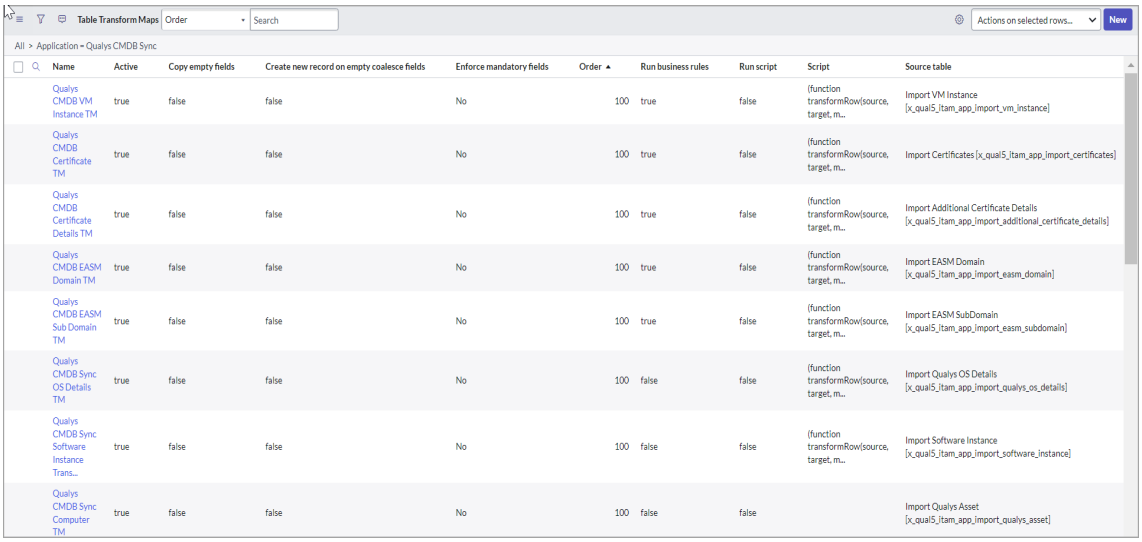
Sync Software Catalog - This can sync the software catalog details separately using Qualys software catalog APIs. This help in reducing the payload for asset list API.

Sync Certificate - Syncs the SSL certificate and its relationship with assets from Qualys to ServiceNow.

Transform Maps

A transform map is a set of field maps that determine the relationships between fields in an import set and fields in an existing ServiceNow table.

After creating a transform map, you can reuse it to map data from another import set to the same ServiceNow table. The Transform Maps module allows an administrator to define destinations for imported data on any ServiceNow table. Transform mapping can be as simple as a drag and drop operation to specify linking between source fields on an import set table and destination fields on any ServiceNow table.



Use transform mapping to map source and destination fields dynamically. You could easily use the predefined Transform Maps or create one to suit your need.

Qualys Pre-defined Transform Map	Type of Asset Information Affected
Qualys CMBD Sync OS Details Transform Map	Qualys OS Details
Qualys CMBD Sync Software Instance Transform Map	Software Instance
Qualys CMBD Sync Computer Transform Map	Computer
Qualys CMBD Sync Network Interface Transform Map	Network Adapter
Qualys CMBD Sync Master Software Transform Map	Software
Qualys CMBD Sync Hardware Details Transform Map	Additional Hardware Details
Qualys Migration Transform Map	Computer
Qualys CMBD Sync Software Details Transform Map	Additional Software Details
Qualys CMBD Sync Serial Numbers Transform Map	Serial Number
Qualys CMBD Sync Qualys Asset Details Transform Map	Qualys Asset Details

Qualys Pre-defined Transform Map	Type of Asset Information Affected
Qualys CMDB Sync Missing Software Transform Map	missing software
Qualys CMDB Sync Hardware Transform Map	Hardware
Qualys CMDB Sync Server Transform Map	Server
Qualys CMBD Sync Open Ports Transform Map	Asset Open ports
Qualys CMBD Sync IP Address Transform Map	IP Address
Qualys CMBD Sync Volumes Transform Map	File System
Qualys CMDB VM Instance TM	VM Instance
Qualys CMDB Certificate TM	Certificates
Qualys CMDB Certificate Details TM	Certificate Details
Qualys CMDB EASM Domain TM	EASM Domain
Qualys CMDB EASM Sub Domain TM	EASM Subdomain
Quays EASM WhoIs TM	EASM WhoIs
Qualys CMDB Tags Relation TM	Asset Tags Relation

Learn more

Please refer to the ServiceNow documentation to learn more about transform maps.

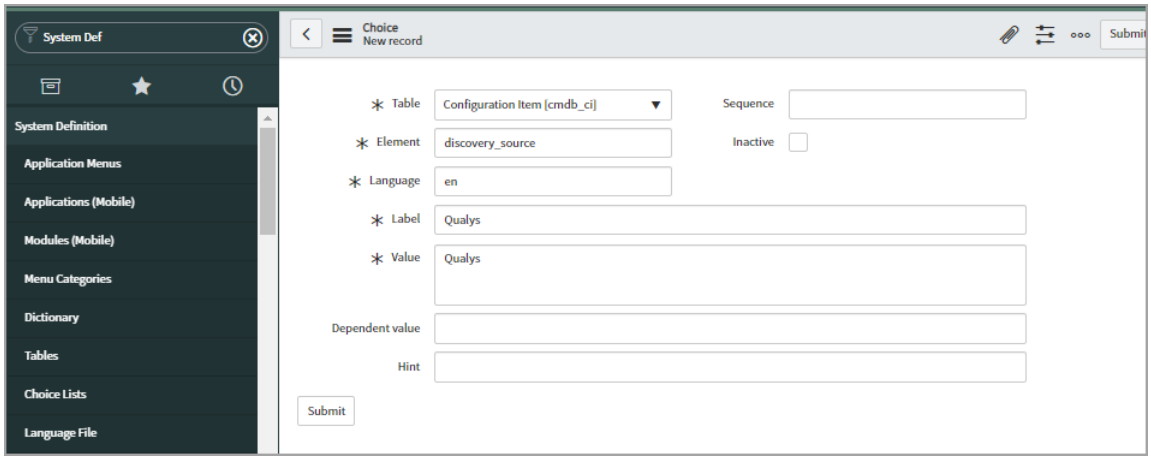
Identification Engine

You could opt to use Identification Engine instead of Transform Maps. Similar to transform maps, the identification engine helps you to decide which assets should be added to CMDB system. You can to define the criteria using single or multiple attributes that uniquely identify the source assets and asset information before the assets get approved and are added to the CMDB system.

Pre-requisites

- Identification Engine uses the “Configuration Management for Scoped Apps” plugin which must be installed before you start using it. Please refer to the ServiceNow documentation for detailed installation steps.

- Ensure that you add Qualys as Choices in the Discovery Source (column) of the Configuration Item (cmdb_ci table). Go to System Definition > Tables and search for Configuration Item table. In the table, open the Discovery Source column. Click New under Choices section and add Qualys as Label and Qualys as Value and click Submit.



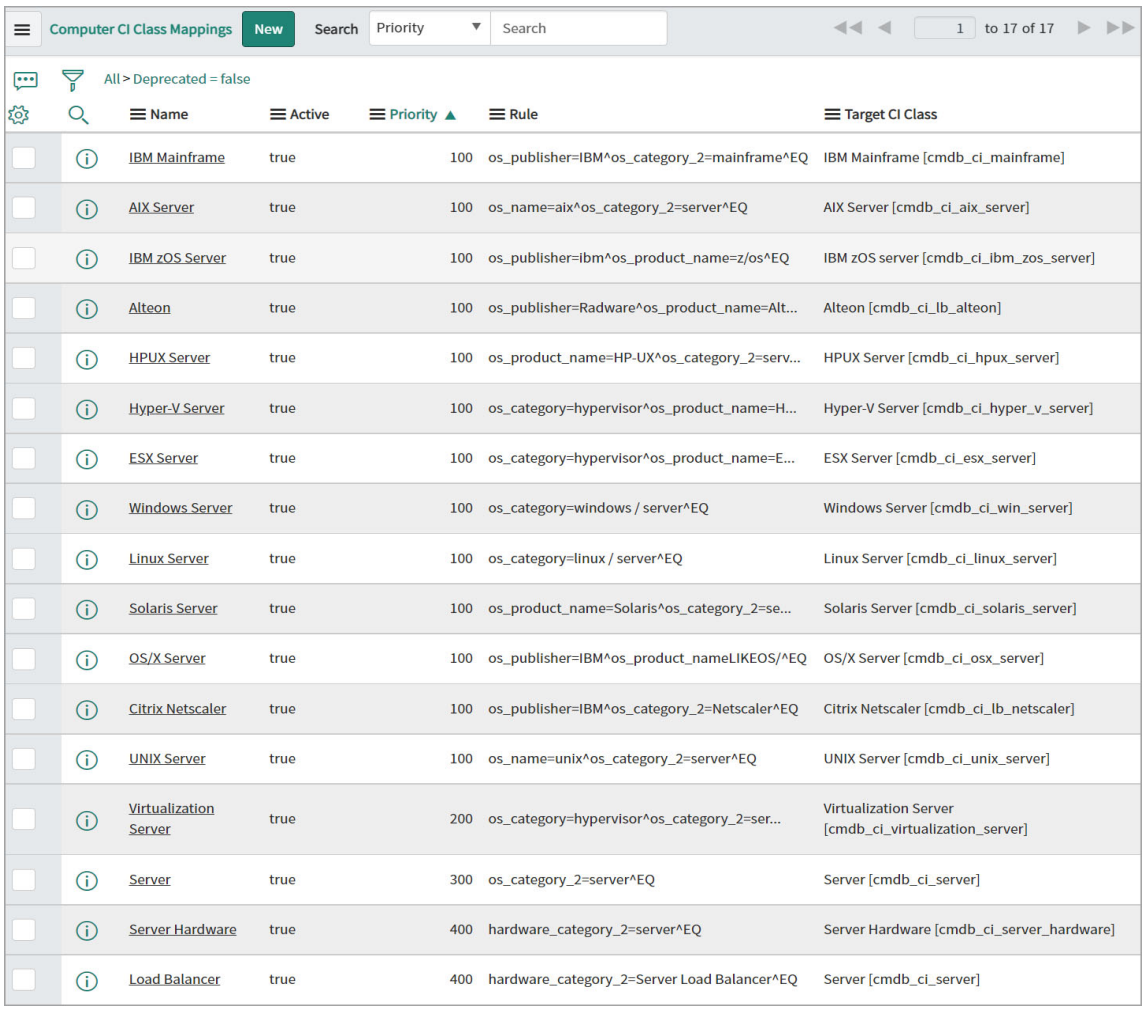
Qualys Category - CI Class Mappings

We have pre-defined tables that contains set of records with matching rules. The rules are defined using single or multiple attributes to uniquely identify source assets. The rules form the criteria to identify the assets to be picked from the source and then added to target CI classification.

The fields that could be mapped directly with the ServiceNow tables got listed in the classified tables. The custom fields that could not be directly mapped with the existing ServiceNow tables are listed in the related tables.

Classified Tables

The classified table includes the mapping of source fields with target fields that are recommended/used by ServiceNow.



Name	Active	Priority ▲	Rule	Target CI Class
IBM Mainframe	true	100	os_publisher=IBM^os_category_2=mainframe^EQ	IBM Mainframe [cmdb_ci_mainframe]
AIX Server	true	100	os_name=aix^os_category_2=server^EQ	AIX Server [cmdb_ci_aix_server]
IBM zOS Server	true	100	os_publisher=ibm^os_product_name=z/os^EQ	IBM zOS server [cmdb_ci_ibm_zos_server]
Alteon	true	100	os_publisher=Radware^os_product_name=Alt...	Alteon [cmdb_ci_lb_alteon]
HPUX Server	true	100	os_product_name=HP-UX^os_category_2=serv...	HPUX Server [cmdb_ci_hpux_server]
Hyper-V Server	true	100	os_category=hypervisor^os_product_name=H...	Hyper-V Server [cmdb_ci_hyper_v_server]
ESX Server	true	100	os_category=hypervisor^os_product_name=E...	ESX Server [cmdb_ci_esx_server]
Windows Server	true	100	os_category=windows / server^EQ	Windows Server [cmdb_ci_win_server]
Linux Server	true	100	os_category=linux / server^EQ	Linux Server [cmdb_ci_linux_server]
Solaris Server	true	100	os_product_name=Solaris^os_category_2=se...	Solaris Server [cmdb_ci_solaris_server]
OS/X Server	true	100	os_publisher=IBM^os_product_nameLIKEOS/^EQ	OS/X Server [cmdb_ci_osx_server]
Citrix Netscaler	true	100	os_publisher=IBM^os_category_2=Netscaler^EQ	Citrix Netscaler [cmdb_ci_lb_netscaler]
UNIX Server	true	100	os_name=unix^os_category_2=server^EQ	UNIX Server [cmdb_ci_unix_server]
Virtualization Server	true	200	os_category=hypervisor^os_category_2=ser...	Virtualization Server [cmdb_ci_virtualization_server]
Server	true	300	os_category_2=server^EQ	Server [cmdb_ci_server]
Server Hardware	true	400	hardware_category_2=server^EQ	Server Hardware [cmdb_ci_server_hardware]
Load Balancer	true	400	hardware_category_2=Server Load Balancer^EQ	Server [cmdb_ci_server]

Each column of the categorized CI class mappings is listed below:

Name: The pre-defined name given by Qualys to the CI class mapping.

Active: The status of the mapping indicating if the current mapping is active or not. True indicates mapping being active.

Deprecated: The status of the record if it is displayed in the table or not while creating new rule. This is a read-only field used by application for processing purposes.

Priority: The priority decides the sequence in which the mappings should be acted upon. In case of multiple mappings for similar fields, the mapping with lowest number gets higher priority. For example, if there are two mappings with priority 50 and 100. The mapping with priority 50 gets higher precedence than 100.

Rules: The rule that forms the criteria to select the assets from the source table (Qualys).

Table: The column used to hold reference to staging table on which rules conditions are being executed

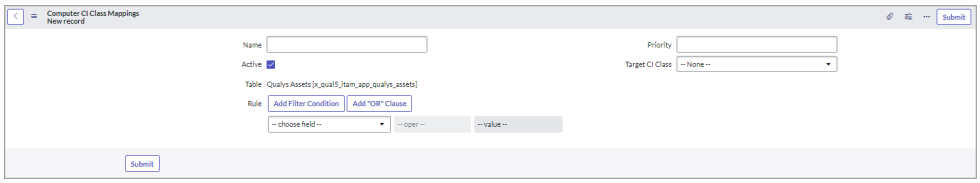
Target CI Class: The name of the destination/target table (defined by ServiceNow) on the production environment where the data should be inserted. If you want change destination table, you can change the target CI class for the corresponding source field.

For detailed list of field mappings for classified tables, refer to the Classified Tables.

CI Class Mapping for Custom Fields

Let us see an example of creating custom fields mapping based on the hardware manufacturer for Windows server.

Click **New** and the blank form to create a new record for CI class mapping is displayed.



1. Provide a name for the record you want to create. For example, Windows Server Sample as we are creating mapping for Windows server.

2. Select the **Active** check box to activate the mapping you create. If the check box is clear, it indicates that the current mapping will not be used for inserting data in production table of ServiceNow.

3. Define the priority for the mapping. For highest precedence, use the lowest number in priority.

4. Select the **Target CI Class** table from the pre-populated list. The table you choose forms the destination table for the mapping.

5. Define the rule that would form the criteria to choose the source assets to be picked and mapped. You could form a rule using single or multiple attributes and filters.

Click **Submit** to complete the mapping process.

Qualys Category - Hardware Device CI Mappings

Similar to Computer CI Class mappings, we have pre-defined tables that contains set of records with matching rules for hardware related fields. The rules are defined using two attributes to uniquely identify source assets. If an asset meets the attributes that match the attributes listed in category 1 and category 2, only then the source asset is moved to the target CI classification table.

Note: The Computer CI Class Mappings has precedence over hardware devices CI mappings.

For detailed mappings, see Hardware Data Mappings section.

Related Tables for Custom Fields

The custom fields that could not be accommodated in the classified tables are listed in separate tables called as related tables.

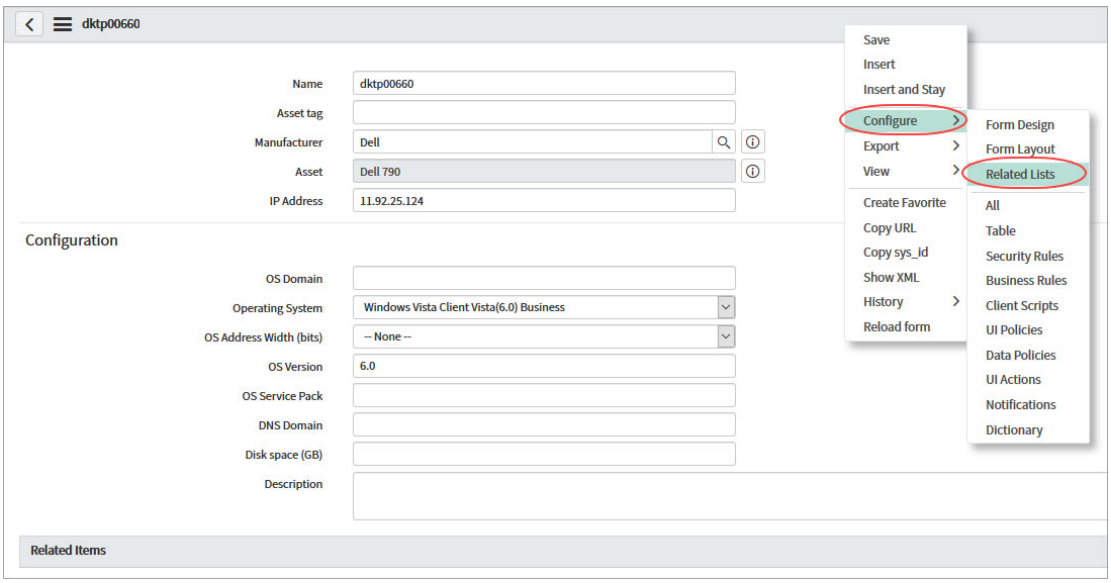
If you are using custom table that includes custom fields (excluding pre-defined fields), you need to create new mappings record to match the customizations.

Note: We do not recommend that you edit the mappings we provide in the related tables as it could lead to mismatch of the data and result it Identification Engine discarding the data.

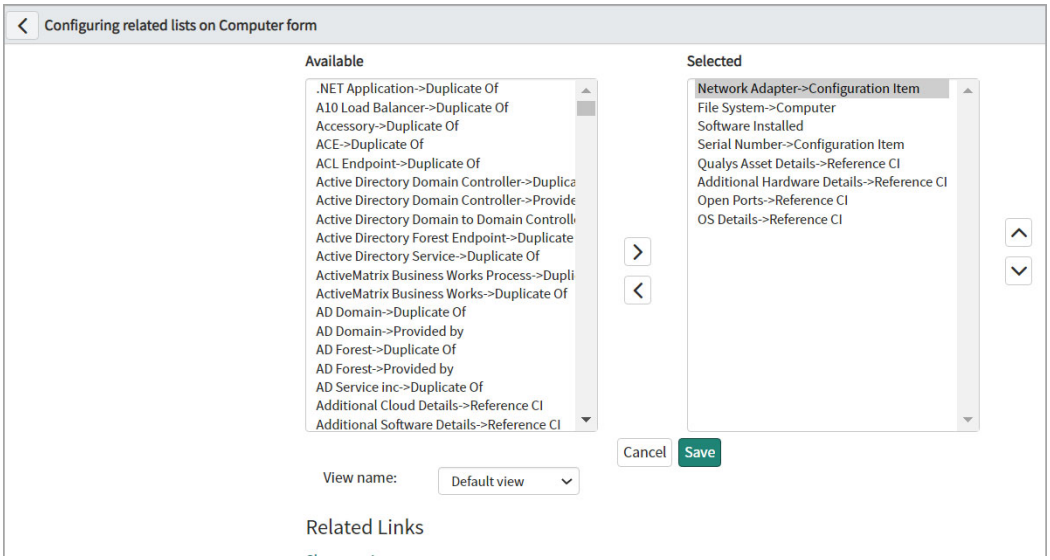
How to identify and view related table entries in out of the box table entries

1. Open the CMDB Table Record Entry (cmdb_ci_computer.list).

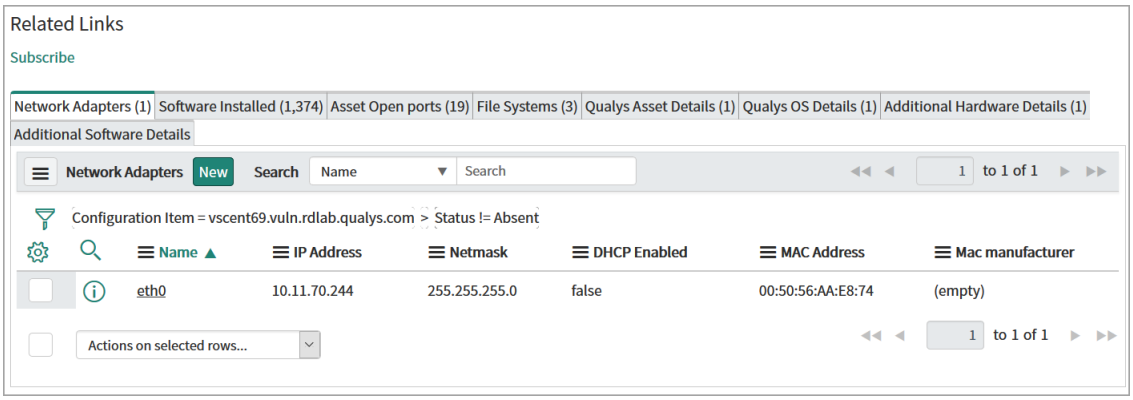
2. On the top grey bar, right-click and choose **Configure** > **Related lists** from the menu.



4. Select the required column names from **Available** and then click the **>** (Add) button to **Selected** check box and then click **Save**.

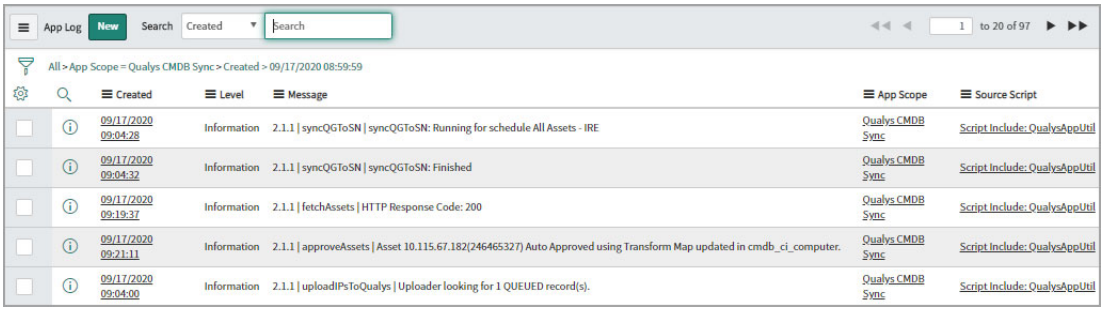


You can then view the details for the added columns in **Related Links** section.



Application Log

Log entries are listed under Advanced > Application Logs.



Logged activities include:

- API Response. For example, when you click Test Connection and if the account does not have access to Global IT Asset Inventory module.

- Schedule Lifecycle (Start, Run, and Finish)

- Lifecycle of Download Processor and Upload Processor (Start, Run, and Finish)

- Transform Type being used (Transform Map or Identification Engine)

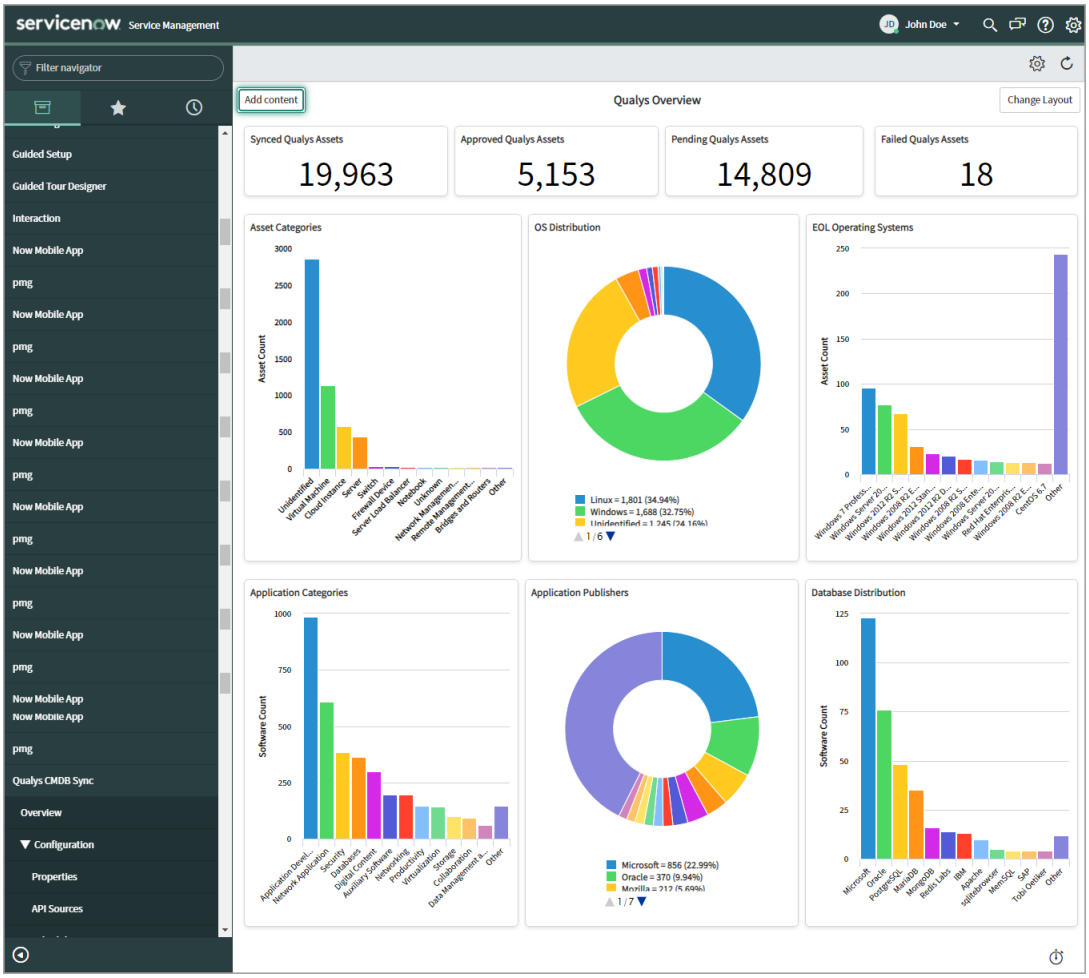
- Asset Approval type (Manual or Auto Approval)

- Fetching Asset Tags and Asset Groups

View Reports

Go to Qualys CMDB Sync App > Overview. The Overview page displays a consolidated view of all the reports. If you view this page before syncing the assets, it may display all values as zero.

Note: From version 1.0 onwards, the Reports option is merged in the Overview option. Thus, you will no longer see the Reports option in the menu.



Note: From v2.3.0 onwards all these widgets - Application Categories, Application Publishers, Database Distributors will get updated from the Additional software details table when software catalog sync for CMDB is enabled.

When the Overview page is launched for the first time, you see a list of 10 default reports. However, the reports can be customized based on your preference. For more information, see, Customize Overview Page.

Types of reports that you can configure:

Report Name	Description
Qualys Assets Reports	
Approved Qualys Assets	The Approved Qualys Assets report lists the assets auto/manually approved. This number is listed on the production table.
Asset Categories	The Asset Categories report gives a clear picture of the various types of assets across your organization. The chart is a diagrammatic representation of the asset categories. Click the bar to view additional details about the respective asset category.
End of Life Operating Systems	The End of Life (EOL) Operating Systems report gives a clear picture of the various types of operating systems with the end of life across your organization. The chart is a diagrammatic representation of the operating systems. Click the bar to view additional details about the respective operating system.
Failed Qualys Assets	The Failed Qualys Assets lists the number of assets that are not transformed into the CMDB table.
Hardware Manufacturers	The Hardware Manufacturers report gives a clear picture of the various manufacturers of hardware across your organization. The chart is a diagrammatic representation of the hardware manufacturers. Click the slice to view additional details about the respective manufacturer.
OS Distribution	The OS Distribution report gives a clear picture of the operating systems installed on the assets across your organization. The chart is a diagrammatic representation of the operating systems. Click the slice to view additional details about the respective operative system.
Pending Qualys Assets	The Pending Qualys Assets report lists the assets which are not approved.
Synced Qualys Assets	The Synced Qualys Assets report lists the assets synced from Qualys to ServiceNow.
Software Report	
Application Categories	The Application Categories report gives a clear picture of the various types of applications installed on the assets across your organization. The chart is a diagrammatic representation of the various applications. Click the bar to view additional details about the respective application category.
Application Publishers	The Application Publishers report gives a clear picture of the various publishers of the application installed on assets across your organization. The chart is a diagrammatic representation of the publishers. Click the bar to view additional details about the respective publisher.
Database Distribution	The Database Distribution report gives a clear picture of the various types of the database used across your organization. The chart is a diagrammatic representation of the database distribution. Click the bar to view additional details about the respective database type.

Report Name	Description
End of Life Application	The End of Life (EOL) Application report gives a clear picture of the various types of applications with end of life across your organization. The chart is a diagrammatic representation of the Application. Click the bar to view additional details about the respective operating system.
Software Distribution	The Software Distribution report gives a clear picture of the various types of software used across your organization. The chart is a diagrammatic representation of the software distribution. Click the bar to view additional details about the respective database type.
Software Lifecycle Stage	The Software Lifecycle Stage report lists the lifecycle stages of applications. Example: GA, EOL/EOS.

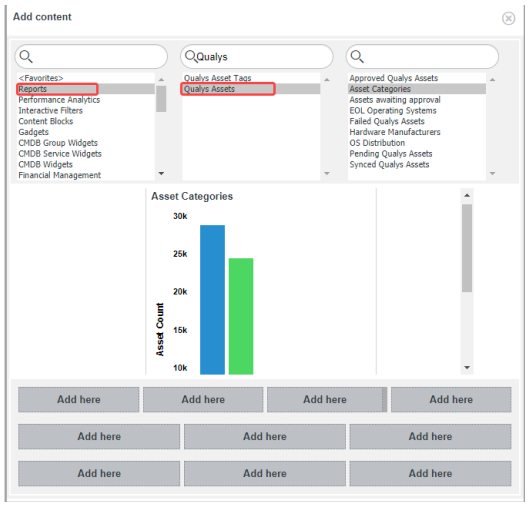
Customize Overview Page

You can add or remove the reports from the Overview page.

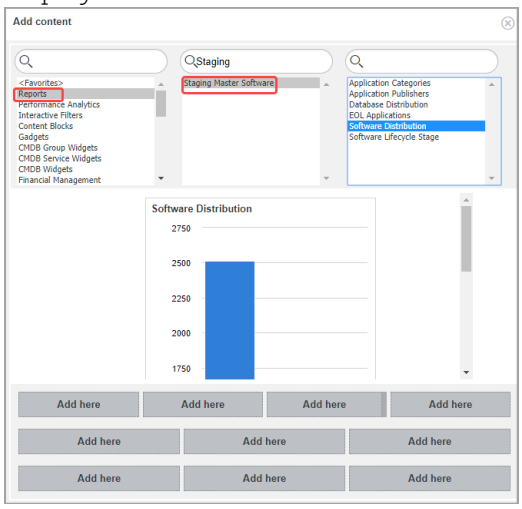
Add a Report

Click on **Add content**, the Add content pop-up appears. Select one of the following options to add reports:

-To add Qualys Assets reports: Select Reports from the first column, Qualys Assets from the second column and in the third column, select the required report from the displayed list.



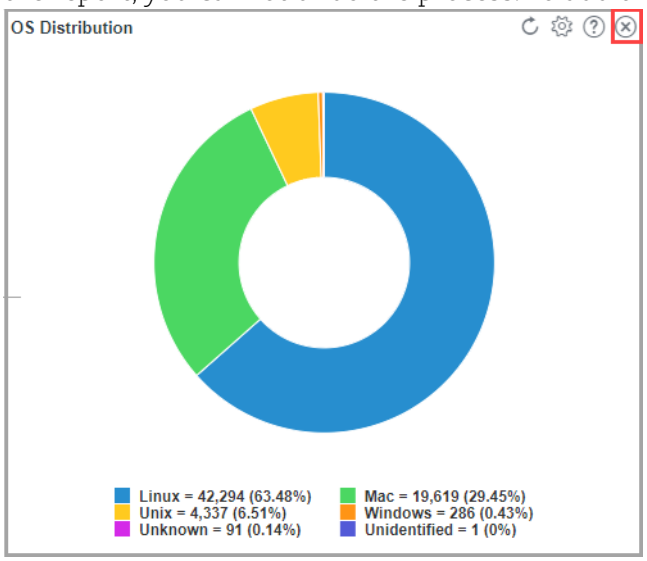
-To add Software reports: Select Reports from the first column, Staging Master Software from the second column and in the third column, select the required report from the displayed list.



Once you select the required report, click one of the **Add here** options. The 10 Add here options indicate different locations where you can add the report on the Overview page.

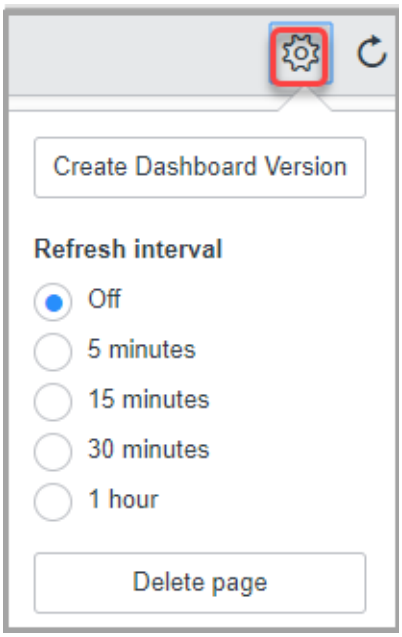
Remove a Report

To remove a report from the overview page, click on the close ⊗ option. Once you delete the report, you cannot undo the process. To add the same report again, see Add a Report.



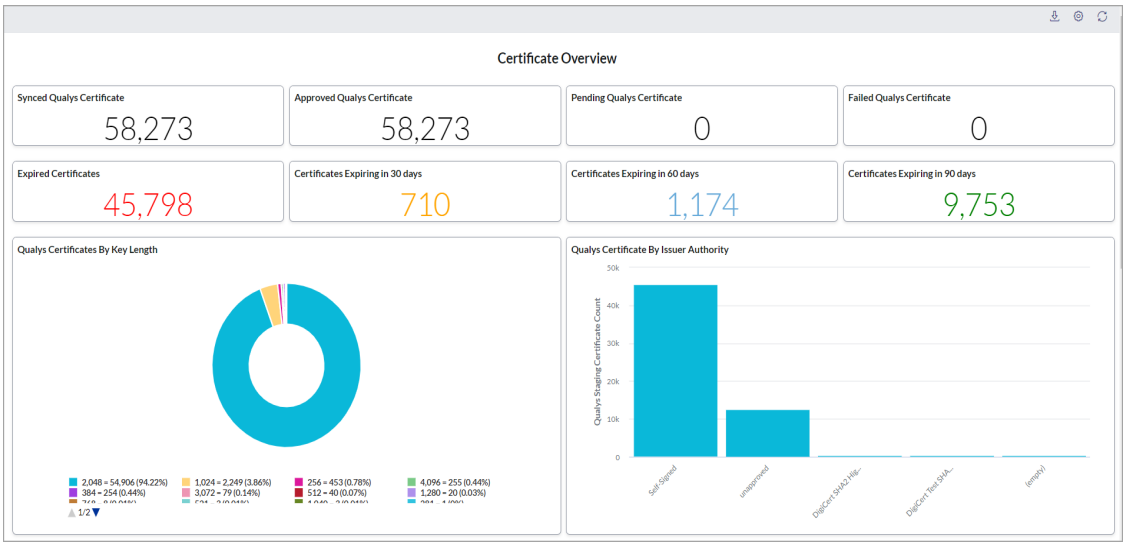
Refresh Overview page

To refresh all the reports on the Overview page at a fixed interval, click on the Homepage Settings ⚙ icon and select the required Refresh interval.



Certificate Overview Page

The certificate overview dashboard contains the following report.



- Synced Qualys Certificate: The Synced Qualys Certificates report lists the certificates synced from Qualys to ServiceNow.

- Approved Qualys Certificate: The Approved Qualys Certificates report lists the certificates transformed successfully into the CMDB tables.

- Pending Qualys Certificate: The Pending Qualys Certificate report lists the assets which are not transformed.

- Failed Qualys Certificate: The Failed Qualys Certificate lists the number of certificates that are not suc-cessfully transformed into the CMDB table.

- Expired Certificates: The count of expired and invalid certificates.

- Certificates Expiring in 30 Days: The count of certificates expiring between 0 to 30 days.

- Certificates Expiring in 60 Days: The count of certificates expiring between 30 to 60 days.

- Certificates Expiring in 90 Days: The count of certificates expiring between 60 to 90 days.

- Qualys Certificate By Issuer Authority: A chart that shows certificates by issuing authority.

- Qualys Certificates By Key Length: A Pie chart that shows certificates by key length.

- Qualys Certificate Sync Queue: This shows the list of Sync Queues for certificate download from Qualys.

- Sync Certificate Log: This lists the logs of the Sync Certificate schedule.

Debugging and Troubleshooting

Here are scenarios that will help you debug certain common issues.

How to debug

In case of any unexpected application behavior one should check the application logs.

The application log has four different levels of logging: Information, Error, Warning, Debug

The application writes log entries after important transitions. For example, Schedule run, on click of test connection to API Server [Qualys CMDB Sync App > Advanced > Application Log]

Observed Issues

Scenario: Sometimes clicking on 'Test Connection" gives 'error' response to user.

Workaround: Check the error message.

- Try to repeat the 'Test Connection' a couple more times (if all input parameters are correct then 'success' message will be displayed)

- One can get the error message under 'Schedule Logs' for related entries in schedule record

- If no valid error is displayed (i.e. you are sure that the credentials are correct but API reported "unauthorized"), try again after some time. If error persists, contact Qualys Support

Scenario: When Download processor takes too much time to process

Workaround: Go to Properties and lower the Size of Download batch.

Scenario: Download Processor failed to process Sync Queue record(s)

Workaround: This may leave the corresponding Sync Queue entry in 'Error' state and the error details can be verified from 'Processing Notes/Message'

User should manually change the status back to

- 'Queued', and reset the 'Processor GUID' if the user wants to process that response again.

If you reprocess any response, it will not lead to duplicate data, as application checks whether the record already exists in staging tables before inserting.

- 'Error', if the user does not want to process it again.

Scenario: Failed to approve asset using Identification Engine/Invalid Update

This error is displayed when the application finds some error with Identification and Reconciliation APIs.

To verify the issue, you can to navigate to Failed Qualys Assets > Open the asset record and see the Notes section. This section contains the detailed error response, as received from Identification and Reconciliation API.

Scenario: Sometimes it is observed that 'approving' manually multiple assets gives 'Transaction Timeout' by ServiceNow

Workaround:

- In such case there is no data loss observed in asset transformation

- To overcome transaction timeout error, it is recommended to use 'Auto Approval' in schedule

Scenario: Duplicate entries found in cmdb_ci_computer for assets which were synced from ServiceNow to Qualys, scanned and then synced back from Qualys to ServiceNow

Workaround:

- If the user has added only IP address for the asset in the 'cmdb_ci_computer' table

Reason: Name is a mandatory parameter for ServiceNow IRE mechanism.

- If user added both name (any dummy name) and IP Address for the asset in 'cmdb_ci_computer' table

Reason: After scanning the asset, the name discovered during the authenticated / unauthenticated scan and the dummy name that was provided could be different.

Note: There would be no duplicate entry in 'cmdb_ci_computer' if the name is exactly same for the asset before sending the data from ServiceNow to SericeNow

Identification Engine Issues

Scenario: When an asset transformation using identification engine is failing with an error IDENTIFICATION_RULE_MISSING

Ideally, you should get either of the following two errors in IRE notes.

IDENTIFICATION_RULE_MISSING

- In this error, you need to add an identification rule for the target class in question.

- Adding an identification rule will be your responsibility as it is outside the CMDB sync app scope.

Sample IRE notes containing the following error:

```
{
          "error": "IDENTIFICATION_RULE_MISSING",
          "message": "Identity Rule Missing for table
[cmdb_ci_ip_phone]"
        }
```

IDENTIFICATION_RULE_FOR_RELATED_ITEM_MISSING

- This error will be logged in IRE notes if the identification rule is present, but related entries for the target class in question are not present in the cmdb_related_entry table.

Also, it can be fixed by adding respective entries manually in the cmdb_related_entry table for the identifier table, e.g., IP phone (cmdb_ci_ip_phone). It is user configurable.

Sample IRE notes containing the following error:

```
{
          "error": "IDENTIFICATION_RULE_FOR_RELATED_ITEM_MISSING",
          "message": "Identity Rule for table [cmdb_ci_ip_phone]
missing Related Rule for class
[x_qual5_itam_app_qualys_asset_details]"
        },
```

Scenario: When Identifier is missing in table cmdb_identifier

- Related entry for any of the target class added from the CMDB sync app does not reflect in the 'cmdb_related_entry' table if the respective identifier is missing in table cmdb_identifier.

- The CMDB sync app can't create this identifier because it is outside of its scope.

In this case,

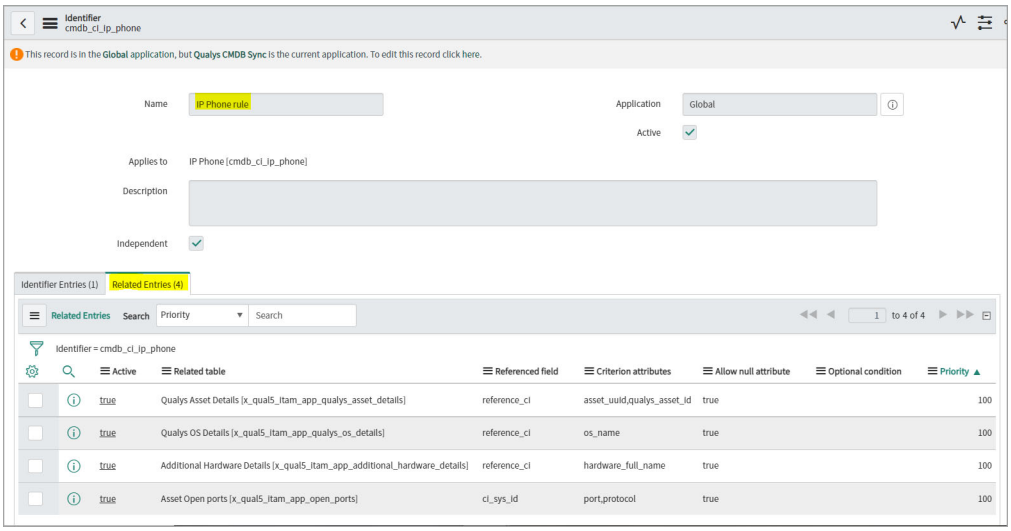
- Asset approval will fail with an error - IDENTIFICATION_RULE_FOR_RELATED_ITEM_MISSING

- If you check-in - My company applications > installed CMDB sync app > installed Files - > filter all the installed files by the class name 'Related Entry.'

- Here, you will notice the 'Identifier' field will be empty for some of the entries.

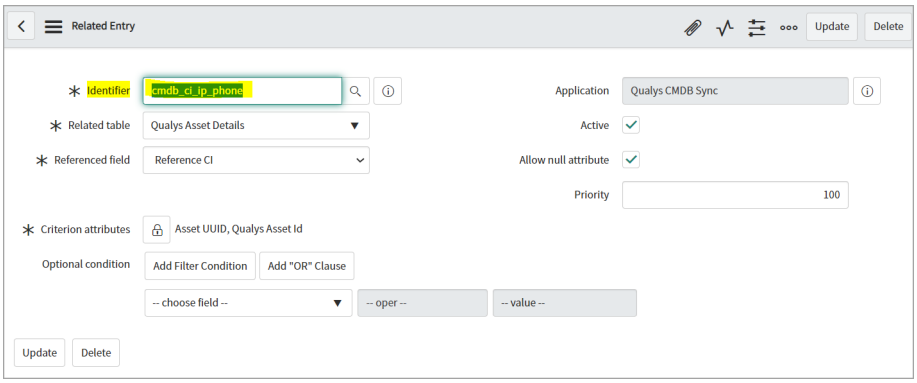
But this is again configuration dependency beyond the CMDB sync app scope, and you can fix it by using the steps in the below example:

1. Navigate to My company applications > installed CMDB sync app > installed Files -> filter all the installed files by the class name 'Related Entry.' Refer to the screenshot below



2. Here, open one of the four empty entries created for the IP Phone class.

3. Update the 'Identifier' field with 'cmdb_ci_ip_phone'



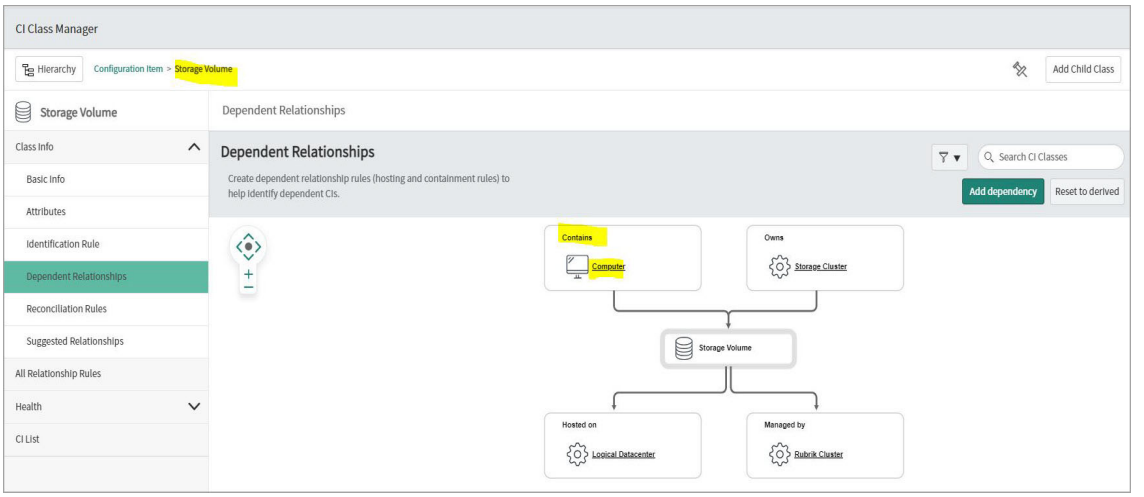
4. Repeat the same steps for the rest of the three entries as well.

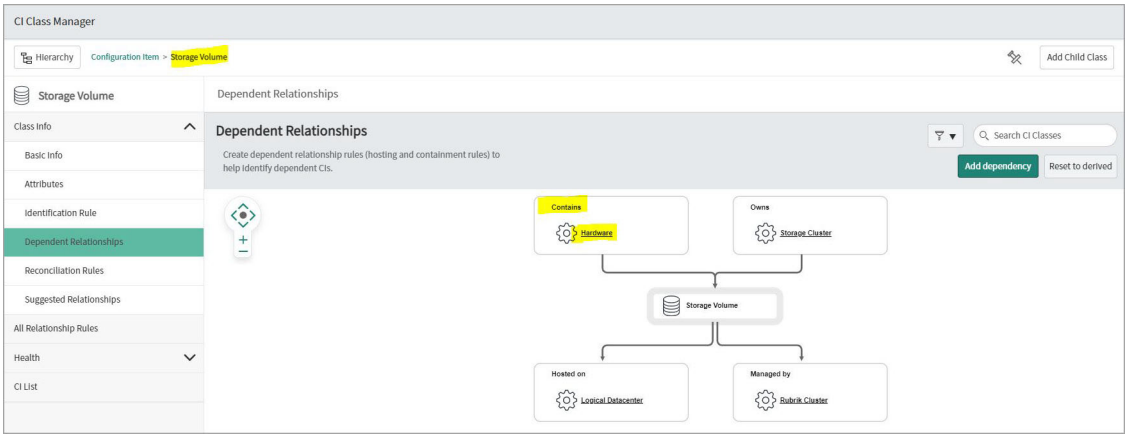
Missing Dependency | File system

This is due to the fact that the 'Storage Volume' class (parent of the file system class) required a 'Containedby: Contains' dependent relationship with the hardware class.

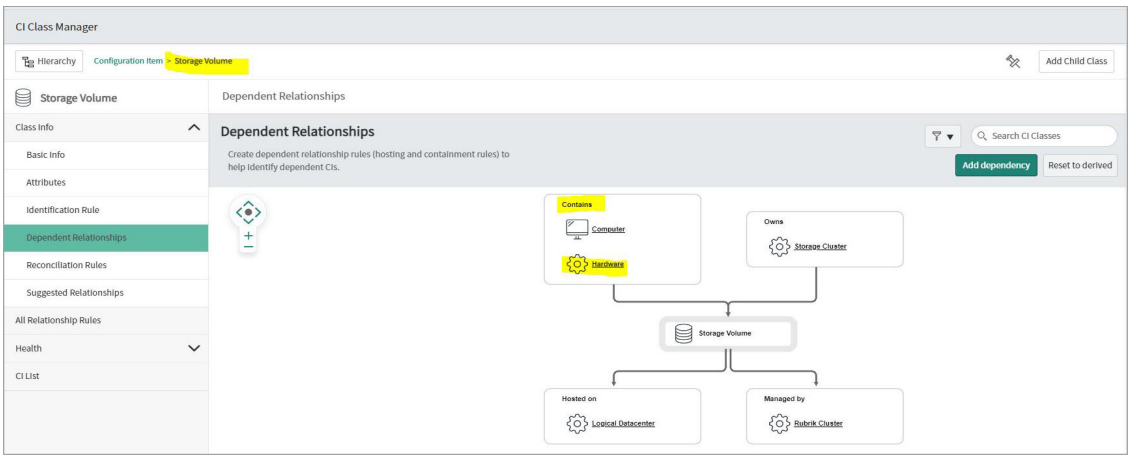
Also, this is a configurational issue that can be resolved by updating the dependent relationship of the Storage Volume class.

It should already contain the Containedby: contains relation with Computer class. Hence you can either update the existing dependent relation of the computer class by replacing the computer class with the hardware class. Refer to the following screenshot.





You can create additional dependent Containedby: contains relation with hardware class.



Scenario: When an asset belongs to hardware and its child class (except for the computer and its child classes) and contains volume information approved using the identification engine, approval fails with the 'MISSING_DEPENDENCY' error pointing cmdb_ci_file system class is logged in IRE notes.


```
"error": "MISSING_DEPENDENCY",
          "message": "In payload no relations defined for dependent class
[cmdb_ci_file_system] that matches any containment/hosting rules:
[cmdb_ci_storage_volume >> Managed by >>
cmdb_ci_rubrik_cluster,cmdb_ci_storage_volume >> Contained by >>
cmdb_ci_computer,cmdb_ci_storage_volume >> Owned by >>
cmdb_ci_storage_cluster,cmdb_ci_storage_volume >> Hosted on >>
cmdb_ci_logical_datacenter]. Add appropriate relations in payload for
'{\"className\":\"cmdb_ci_file_system\",\"values\":

{\"size_bytes\":\"53833891\",\"discovery_source\":\"Qualys\",\"name\":\"/
\",\"provided_by\":\"3a2402ac1b328510626e6579b04bcb10\",\"free_space_byte
s\":\"47112519\"}
,\"internal_id\":\"fe69ef14f7c38910252c174f3b9fd2a3\",\"sys_object_source
_info\":{\"source_name\":\"Qualys\"},\"settings\":{},\"sys_ire_info\":{\"
ire_received_time\":\"2022-04-20 10:29:44\"},\"display_values\":{}}'"
        },
```


MISSING_MATCHING_ATTRIBUTE

When the Target class has an identification entry with a specific attribute missing in the payload.

Scenario: When the asset approval fails due to an IRE with an error MISSING MATCHING ATTRIBUTE.

Workaround: We have given the following workaround for asset approval fails due to an IRE with an error missing matching attribute.

- Navigate to CI Class Manager.

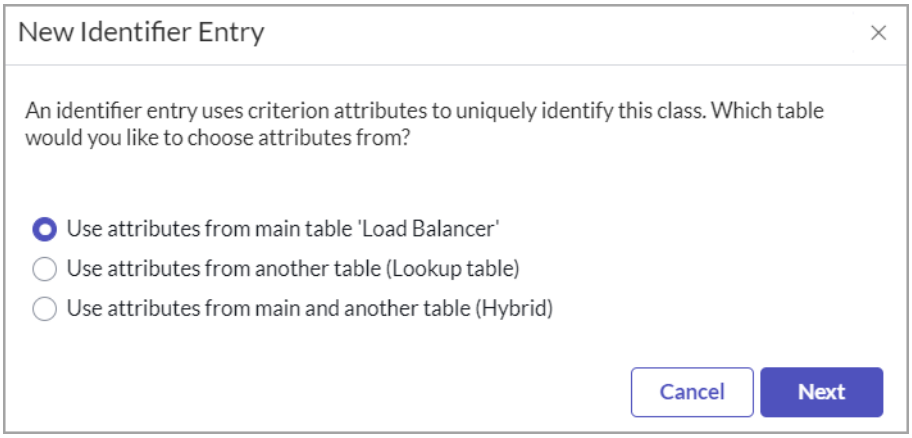
- Browse the specific target class throwing an error.

- Navigate to 'Identification Rule' Section.

- Go to sub-section 'Identifier entries'.

- Add an additional entry for the target class with,

- Select option 'Use attribute from main table 'target_class_name'.



- Provide input as,

Search On Table - target class

Priority - 100

Attribute - Name

Active - True

Re-approve the asset again after adding this entry.

Anticipated Issues

It is quite frequent to have error in opening/viewing attached ‘response.xml’ from sync queue records. Those response.xmls are considered as incomplete.

List of expected failure modes

- Qualys API server is undergoing maintenance/downtime

- Qualys subscription expired

- User credentials used are incorrect

- User credentials are correct, but user has no Qualys App subscription from Qualys

Common Questions

Do you currently support the Identification and Reconciliation API for CMDB CRUD actions?

Yes, Qualys App supports Identification and Reconciliation APIs. The goal of this API is to maintain the integrity of the database, and to correctly identify CIs so that new records are created only if CI is truly new to CMDB. See CMDB Identification and Reconciliation

You can change how to add data in CMDB from default Transform Map to Identification Engine from Properties page. You also need to create CI Identifier Rule for Target table.

Can user add data to ServiceNow app from different Qualys servers?

Yes, user can add asset data from different Qualys PODs. User needs to create different API Sources and Schedules as per Qualys servers.

What are Upload and Download type records in Queue?

It can be easily differentiated by Type field available in the table. For Downloading data to ServiceNow app (i.e syncing assets from Qualys to ServiceNow) Type will be Download. For Uploading data to Qualys (Syncing assets from ServiceNow to Qualys servers) Type will be Upload.

Where can I find Assets which failed to transform in ServiceNow table?

You'll find these assets in Failed Qualys Assets. Users can then approve these assets again.

Why do I view timestamps in GMT for schedules despite configuring a different timezone?

In the schedule scripts, we use ServiceNow's new GlideDateTime().getDisplayValueInternal(); function to update the schedule last_run_timestamp. When this object is directly instantiated and used (e.g. in scoped application background script), it returns time in GMT, irrespective of the timezone configured for user under whom this script runs. That's how it is designed.

Also, since ServiceNow does not allow scoped applications to set the timezone, the app cannot do that on behalf of the user who created the schedule. However, the time value you see on the UI is shown in the user set timezone - even if you set GMT date-time in this column. When the schedule runs next time, it fetches value in GMT, and not the one you see on UI. That may lead to confusion, and log entries show time in GMT, for this reason we recommend that the ServiceNow user sets their time to GMT.

The Schedules I defined pulled the data accurately till yesterday. But, today, the same schedule is unable to fetch any assets or related data.

Check your application logs. The reason the schedules are unable to fetch assets is because either your trial period or your subscription has expired. Contact your TAM to extend your subscription. Once you have an active subscription, you need to activate your API Source and the schedules will fetch the assets.

If an asset is purged from Qualys, what will its status be in ServiceNow CMDB?

The asset purged from Qualys will not automatically be purged in ServiceNow CMDB. The asset must be manually purged from ServiceNow.

What is the difference between Computer CI Class Mapping and Qualys Category Hardware Device CI Mappings?

The Computer CI Class Mapping is the main base table and contains the hierarchy for assets and tables. It also has higher priority in comparison to Qualys Category Hardware Device CI Mappings. As a result, assets to be transferred to destination tables are checked

against rules in Computer CI Class Mapping first. Only if they do not satisfy/meet any of the rules in Computer CI Class Mapping, the Qualys Category Hardware Device CI Mappings are used.

Backward Compatibility Issues and Observations

The Qualys CMDB Sync App 2.1.1 does not support backward compatibility. As a result, you may notice few scenarios that you may have not encountered earlier. We are highlighting some of the common scenarios that you may come across.

Application Log

After you upgrade 2.1.1 version, when the transformation mode set to 'Transform Map' and if you have assets in the staging area, on approval of such assets, the assets are transformed to the correct CI Classes. But, the application log may not reflect this correctly.

For example: Asset abcd (AssetID) Manually Approved using Transform Map updated in x_qual5_itam_app_computers_extended.

Although the asset has been correctly transformed to the CI Class, the application log incorrectly states name of computer extended table instead of the CI class name where the asset has been correctly moved.

Resolution: Ignore the application log in such cases.

Custom Transform Map Fails to Work

The latest version of the app is designed to move assets to the out of box tables provided by ServiceNow. As a result, the custom transform maps that were created in previous version will not work in version 2.1. However, the custom transform map that you create in 2.1 version will work fine.

Cause: The Import Set Row Tables have changed.

Resolution: Refrain usage of custom transform maps that were created in previous versions. If you need to use custom transform maps, you need to rewrite or create new transform map as per the new set of import set row tables.

Sync Queue is blank for Approved Assets

The 'Queue ID' is displayed empty in 'Approve Qualys Assets' for the approved Qualys assets. However, the clicking 'Preview' (on the 'i' icon) displays the correct the sync queue details.

Table structure has changed...updated fields

Resolution: Ignore Queue ID field and instead view the preview to verify the information.

Number Mismatch Between Staging and Production Tables: Software

Scenario: When transformation method is IRE, 100 assets in staging area, only 98 are moved to production after upgrade.

Causes for discrepancy:

- IRE version needs name and version of the data being transformed. Name being mandatory parameter for transformation. If name is missing for asset, then the asset may not get approved and instead get failed. Such entries are listed in the application log.

For example, if a software has no Name/Version: The software without a name doesn't make any sense, The Software (OOB table) uses a 'key' attribute consisting of name and version. Thus, empty names causes assets to fail.

- If there are multiple records with same name. Assets get approved, on production class, not all will be added as separate records. The first asset which is approved gets added as a separate record. All the other assets with same name get approved, but the IRE version creates multiple records or skips records.

For example, software have same name and version number in staging area. In such case, duplicate entries may be created. Check application log. Skipping duplicate entry.

Number Mismatch Between Staging and Production Tables: Assets

Assets with Same Name: When transformation method is IRE, 100 assets in staging area, only 98 are moved to production after upgrade. If there are multiple assets with same name. Assets get approved, on production class, not all will be added as separate records. The first asset which is approved gets added as a separate record. All the other assets with same name get approved, but the IRE version updates the same record.However, the same record may contain multiple values for same fields.

Discrepancy is observed in following scenarios:

- Assets discrepancy could be there in the production table if the assets have same names

- If serial number is missing and assets have same name,

Cause: IRE version uses name to identify the CI class. Name being mandatory parameter for transformation.

Field name missing in production tables

If you notice few fields that exist on Qualys UI or API response, but cannot locate it in ServiceNow out of box (OOB) tables.

Cause: Mapping for such fields may not exist. For complete list of mappings, refer to Field Mapping for Tables. If field mappings does not exist in the OOB tables, then such fields are not transformed to production tables.

For example, the 'hostname' for network adapter exists in staging table but missing from production table (cmdb_ci_network_adapter).

Cause: The cmdb_ci_network_adapter table does not have mapping for the hostname field. Hence the field value is not available in the production table.

Truncated Value

If the field value exceeds the field limit then the value may get truncated. The application does not update any of the OOB table structures: like field value lengths.

Asset Sync Properties Retained

The Asset Sync Properties are retained after the upgrade to 2.1. If the set default transform mode is Identification Engine, the same properties are available after application upgrade. However, if you install the app (and not upgrade from a previous version), the default transform mode is set to Identification Engine.

Recommendations

We recommend following tips for better and smooth data migration.

Partial data migration observed while switching transformation mode

We recommend to not switch the transformation mode when the data migration is in process. The change in transformation mode will not reflect during migration.

Transformation mode IRE

Configuring transformation mode as IRE is recommended as usage of Transform Maps can cause higher time for approval of assets.

Field Mapping for Tables

This chapter lists the detailed field mapping (source to target) for classified as well as related tables.

Classified Tables

The classified table includes the mapping of source fields with target fields that are recommended/used by ServiceNow

Asset Data Model

Computer (SN Table)

Qualys Staging Table Attributes	ServiceNow Production Table Attributes
manufacturer	manufacturer
memory	ram
bios_asset_tag	asset_tag
cleansed_os_name	os
os_update	os_service_pack
os_architecture	os_address_width
model	model_id
os_version	os_version
name	name
processor_cpu_counts	cpu_count
processor_description	cpu_name
ip_address	ip_address
processor_speed	cpu_speed
target_ci_class	sys_class_name
virtual	virtual
bios_serial_number	serial_number

Serial Number (SN Table)

Qualys Staging Table Attributes	ServiceNow Production Table Attributes
bios_serial_number	serial_number
<additional field>	serial_number_type
valid	valid
serial_number_type	serial_number_type

File System (SN Table)

Qualys Staging Table Attributes	ServiceNow Production Table Attributes
name	name
free_size	free_space_bytes
total_size	size_bytes

Network Adapter (SN Table)

Qualys Staging Table Attributes	ServiceNow Production Table Attributes
interface_name	name
mac_address	mac_address
hostname	fqdn
address	ip_address
type	category

IP Address (SN Table)

Qualys Staging Table Attributes	ServiceNow Production Table Attributes
ip_address	ip_address
ip_address	name
ip_version	ip_version

Software Data Model

Master Software (SN Table)

Qualys Staging Table Attributes	ServiceNow Production Table Attributes
name	name
version	version
<additional field>	key

Software Instance (SN Table)

Qualys Staging Table Attributes	ServiceNow Production Table Attributes
name	name
install_date	install_date
<additional field>	<Reference to cmdb_ci_package>
<additional field>	Reference to the CI the software is installed on

Related Tables

The related tables list the custom field mappings that could not be accommodated in the classified tables. We recommend that you do not alter the mappings in the related tables.

Asset Data Model

Qualys Asset details

Qualys Related Table Attributes	ServiceNow Production Table Attributes
asset_lastloggedonuser	asset_lastloggedonuser
asset_uuid	asset_uuid
bios_description	bios_description
last_boot	last_boot
last_modified_date	last_modified_date
timezone	timezone
qweb_host_id	qweb_host_id
netbios_name	netbios_name
isp	isp
asset_mostfrequentuser	asset_mostfrequentuser
last_scanned_date	last_scanned_date
type	type
qualys_asset_id	qualys_asset_id
dns_hostname	dns_hostname
asn	asn
risk_score	risk_score

Qualys Operating System details

Qualys Related Table Attributes	ServiceNow Production Table Attributes
os_category	os_category
os_category_1	os_category_1
os_category_2	os_category_2
os_category_type	os_category_type
os_edition	os_edition
os_lifecycle_confidence	os_lifecycle_confidence
os_lifecycle_eol_date	os_lifecycle_eol_date
os_lifecycle_eol_support_stage	os_lifecycle_eol_support_stage
os_lifecycle_eos_date	os_lifecycle_eos_date
os_lifecycle_eos_support_stage	os_lifecycle_eos_support_stage

os_lifecycle_ga	os_lifecycle_ga
os_lifecycle_stage	os_lifecycle_stage
os_market_version	os_market_version
os_product_name	os_product_name
os_publisher	os_publisher
os_architecture	os_architecture
os_full_name	os_full_name
os_install_date	os_install_date

Qualys Hardware details

Qualys Related Table Attributes	**ServiceNow Production Table Attributes**
hardware_category	hardware_category
hardware_category_1	hardware_category_1
hardware_category_2	hardware_category_2
hardware_category_type	hardware_category_type
hardware_lifecycle_confidence	hardware_lifecycle_confidence
hardware_lifecycle_eos_date	hardware_lifecycle_eos_date
hardware_lifecycle_ga	hardware_lifecycle_ga
hardware_lifecycle_intro_date	hardware_lifecycle_intro_date
hardware_lifecycle_obsolete_date	hardware_lifecycle_obsolete_date
hardware_lifecycle_stage	hardware_lifecycle_stage
hardware_product	hardware_product
hardware_full_name	hardware_full_name
hardware_uuid	hardware_uuid

Qualys Open Ports details

Qualys Related Table Attributes	**ServiceNow Production Table Attributes**
description	description
detected_service	detected_service
port	port
protocol	protocol

Qualys Processors details

Qualys Related Table Attributes	**ServiceNow Production Table Attributes**
processor_cpu_counts	processor_cpu_counts

processor_description	processor_description
processor_speed	processor_speed

Software Data Model

Qualys Software details

Qualys Related Table Attributes	ServiceNow Production Table Attributes
architecture	architecture
category	category
category_1	category_1
category_2	category_2
category_type	category_type
component	component
edition	edition
is_ignored	is_ignored
is_ignored_reason	is_ignored_reason
language	language
license_category	license_category
type	type
update	update
lifecycle_ga	lifecycle_ga
lifecycle_stage	lifecycle_stage
market_version	market_version
product	product
publisher	publisher
software_lifecycle_confidence	software_lifecycle_confidence
software_lifecycle_eol_support_stage	software_lifecycle_eol_support_stage
software_lifecycle_eos_date	software_lifecycle_eos_date
software_lifecycle_eos_support_stage	software_lifecycle_eos_support_stage
software_lifecycle_eol_date	software_lifecycle_eol_date
version	version
unique_key	unique_key
is_package	is_package
version_details	version_details
last_use_date	last_use_date

Hardware Data Mappings

The details of the hardware-data mappings are listed in the table below.

Note: ServiceNow has soft-deprecated the following classes for Qubec version:

- Human Machine Interface [cmdb_ci_hmi]

- Manufacturing Device [cmdb_ci_manufacturing]

- Programmable Logic Controller [cmdb_ci_plc]

For more information on alternative solutions, see ServiceNow notification.

Category1	Category2	Target CI Class	Active
Printers	Laser	cmdb_ci_printer	true
Communication Devices	IP Phones	cmdb_ci_hardware	true
Virtualized	Container	cmdb_ci_computer	true
Computers	Point of Sale (POS) Terminal	cmdb_ci_pos	true
Networking Device	Wireless Access Point	cmdb_ci_wap_network	true
Power Conditioning Equipment	Power Distribution Unit (PDU)	cmdb_ci_pdu	true
Wearable Devices	Smart Glasses	cmdb_ci_wearable	true
Printers	Line Matrix Printers	cmdb_ci_printer	true
Networking Device	Unidentified	cmdb_ci_netgear	true
Input Devices	RFID Device	cmdb_ci_iot	true
Mobile	Smartphone	cmdb_ci_hardware	true
Computers	Mainframe	cmdb_ci_mainframe_hardware	true
Building Automation Devices	Smart Appliance	cmdb_ci_iot	true
Power Conditioning Equipment	Uninterruptible Power Supply (UPS)	cmdb_ci_ups	true
Industrial Networking	Industrial Ethernet Switch	cmdb_ci_ip_switch	true
Industrial Control System (ICS)	Intelligent Electronic Device (IED)	cmdb_ci_manufacturing	true
Networking Device	Concentrators, Hubs, and Multiplexers	cmdb_ci_hub_network	true
Building Automation Devices	BACnet Controller	cmdb_ci_iot	true
Building Automation Devices	HVAC Control	cmdb_ci_iot	true

Computers	Assembled	cmdb_ci_computer	true
Audio and Visual Equipment	Portable Media Player	cmdb_ci_media_player	true
Communication Devices	Conferencing Equipment	cmdb_ci_hardware	true
Industrial Control System (ICS)	Distributed Control System (DCS)	cmdb_ci_manufacturing	true
Audio and Visual Equipment	Smart TV	cmdb_ci_stv	true
Industrial Control System (ICS)	Human Machine Interface (HMI)	cmdb_ci_hmi	true
Wearable Devices	Health and Activity Monitor	cmdb_ci_wearable	true
Field Instruments	Sensor	cmdb_ci_iot	true
Network Security Device	Firewall Device	cmdb_ci_firewall_device	true
Wearable Devices	Smart Footwear	cmdb_ci_wearable	true
Building Automation Devices	Security Camera	cmdb_ci_security	true
Networking Device	Bridges and Routers	cmdb_ci_ip_router	true
Industrial Control System (ICS)	Remote Terminal Unit (RTU)	cmdb_ci_manufacturing	true
Networking Device	Other	cmdb_ci_netgear	true
Audio and Visual Equipment	Media Streaming Device	cmdb_ci_media_player	true
Building Automation Devices	Other	cmdb_ci_hardware	true
Communication Devices	Other	cmdb_ci_hardware	true
Computers	Notebook	cmdb_ci_pc_hardware	true
Wearable Devices	Smart Apparel	cmdb_ci_wearable	true
Industrial Control System (ICS)	Industrial PC	cmdb_ci_computer	true
Printers	Multi-Function Printer (MFP)	cmdb_ci_mfp_printer	true
Field Instruments	Motion Control	cmdb_ci_iot	true
Building Automation Devices	BACnet Router	cmdb_ci_iot	true
Field Instruments	Field Device Management	cmdb_ci_iot	true

Call Management Systems or Accessories	Premise Branch Exchange (PBX)	cmdb_ci_hardware	true
Building Automation Devices	Leak Detection	cmdb_ci_iot	true
Industrial Networking	Industrial Wireless LAN	cmdb_ci_wap_network	true
Audio and Visual Equipment	Smart Earpiece	cmdb_ci_media_player	true
Computers	Other	cmdb_ci_computer	true
Printers	3D Printers	cmdb_ci_printer	true
Building Automation Devices	Intrusion Detection and Access Control	cmdb_ci_security	true
Networking Device	Access Servers	cmdb_ci_server	true
Field Instruments	Measurement Systems	cmdb_ci_iot	true
Networking Device	Server Load Balancer	cmdb_ci_server	true
Industrial Control System (ICS)	Programmable Logic Controller (PLC)	cmdb_ci_plc	true
Building Automation Devices	Lighting and Control	cmdb_ci_iot	true
Computers	Desktop	cmdb_ci_pc_hardware	true
Wearable Devices	Smart Watch	cmdb_ci_wearable	true
Storage Devices	Other	cmdb_ci_storage_device	false
Building Automation Devices	Power and Energy Monitoring	cmdb_ci_iot	true
Networking Device	Print Server	cmdb_ci_server	true
Printers	Thermal Tape Printers	cmdb_ci_printer	true
Networking Device	Modem	cmdb_ci_modem_network	true
Networking Device	Terminal Server	cmdb_ci_netgear	true
Wearable Devices	Wearable Camera	cmdb_ci_wearable	true
Building Automation Devices	Fire Safety	cmdb_ci_iot	true
Industrial Networking	Other	cmdb_ci_netgear	true
Communication Devices	Video Phone	cmdb_ci_hardware	true
Industrial Control System (ICS)	Safety Instrumented System (SIS)	cmdb_ci_manufacturing	true
Industrial Networking	Industrial Media Converter	cmdb_ci_netgear	true

Communication Devices	Answering Machine	cmdb_ci_hardware	true
Mobile	Tablet	cmdb_ci_hardware	true
Communication Devices	Keyphone System	cmdb_ci_hardware	true
Field Instruments	Robots	cmdb_ci_iot	true
Printers	Other	cmdb_ci_printer	true
Networking Device	Wireless Fidelity Base Stations Wifi	cmdb_ci_wap_network	true
Virtualized	Virtual Machine	cmdb_ci_vm_instance	false
Industrial Networking	Industrial Serial Device Server	cmdb_ci_hardware	true
Industrial Control System (ICS)	Other	cmdb_ci_manufacturing	true
Printers	Inkjet	cmdb_ci_printer	true
Audio and Visual Equipment	Projector	cmdb_ci_display	true
Field Instruments	Smart Meter	cmdb_ci_iot	true
Industrial Networking	IoT Gateway	cmdb_ci_iot_gateway	true
Networking Device	Switch	cmdb_ci_ip_switch	true
Industrial Networking	Communication Processor	cmdb_ci_netgear	true
Audio and Visual Equipment	Smart Speaker	cmdb_ci_media_player	true
Computers	Server	cmdb_ci_server	true
Computers	Unidentified	cmdb_ci_computer	true

Appendix

The below table shows the mapping between ServiceNow fields and Qualys.

Asset Metadata

ServiceNow Field Label	Qualys UI Field
Asset ID	Qualys Asset ID
name	Host Name
company	Company
created	First Seen (On Connector Screen)
department	Department
environment	Environment
ip_address	IPv4 Address
last_updated	Last Updated Date (On Connector screen)
location	Assigned Location
managed_by	Managed By
owned_by	Owner/Custodian
status	Operational Status
supported_by	Supported By
support_group	Support Group

Business App Metadata

ServiceNow Field Label	Qualys UI Field
name	Business App Name
business_criticality	Business Criticality
environment	environment
managed_by	Managed By
owned_by	owned_by
supported_by	Supported By
support_group	Support Group
operational_status	Operational Status

Migration Support

We provide you with migration scheduled job to assist you with data migration from your previous versions of Qualys CMDB Sync App to the latest version of the app. The Qualys CMDB Sync App 2.1 provides you with usage of out of box production tables by ServiceNow.

Once upgrade to 2.1 version and before you sync assets or create schedules, we recommend you to migrate assets available in computer extended tables to out of box production tables provided by ServiceNow. To ease migration task, we provide you with a scheduled job for migration of assets (optional).

Why Migration Needed?

In the previous versions, the assets were spread across various extended tables such as computer extended table or software extended table. Once you upgrade, if we do not opt for migration, the assets in these extended table may not be transformed to the correct tables in production as per thew new CI class mappings. To prevent this issue, you need to migrate the assets from the computer extended tables. You can activate the scheduled job to initiate the migration of assets (approved assets).

Get Started

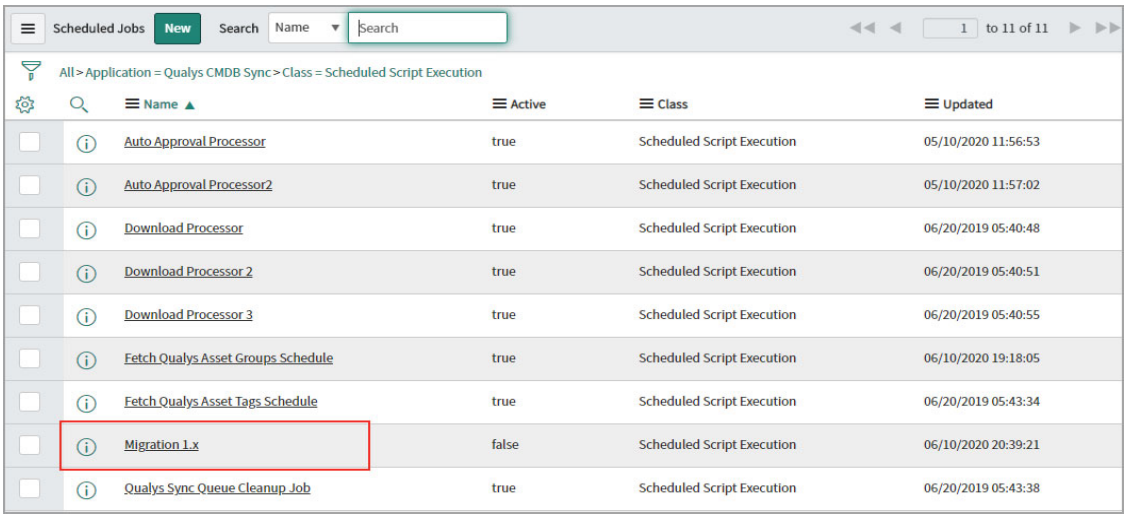
We provide the you with ready to use Migration 1.x app scheduled job. The function and frequency of execution this job is explained below. You can always update or change the frequency of the scheduled job as per your needs.

Migration 1.x- By default, this job is deactivated. The purpose of this job is only for migration of assets that belong to Computer Extended table and need to be migrated to production tables.

Assets that belong to Computer extended table are migrated to the respective CMDB tables on production. For example, assets in computer extended table that belong to Windows server are migrated to the Windows Server CI class.

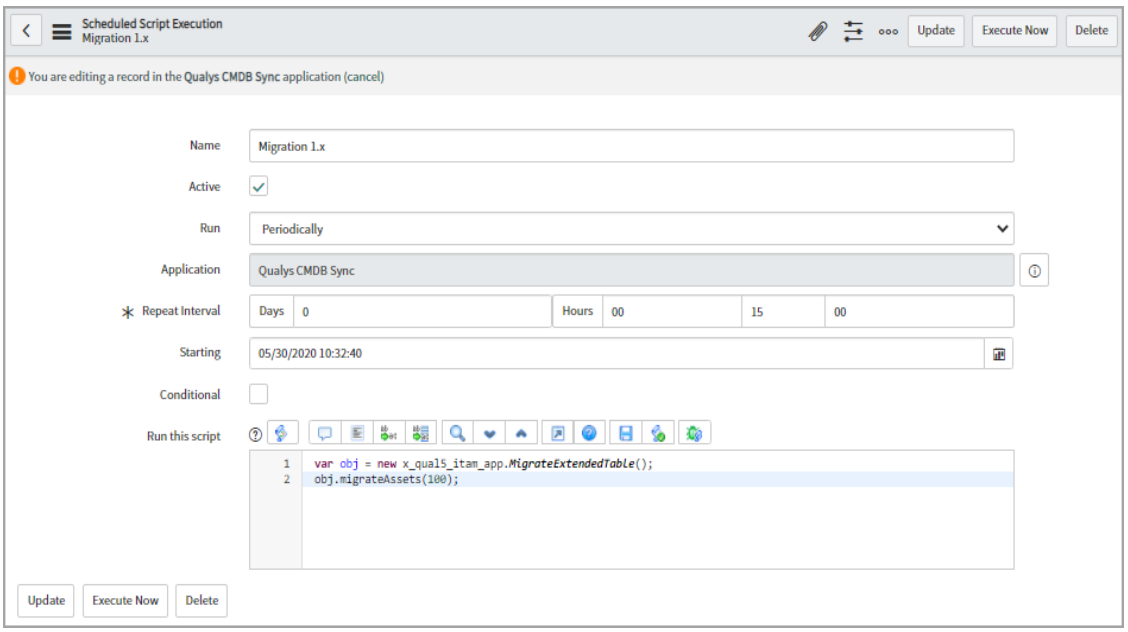
Steps to execute migration 1.x job.

1. Go to App Scheduled Jobs and click Migration 1.x job.



2. Click Edit.

3. Select Active check box to enable activation.



If activated, the default configured frequency is 100 assets for every 15 minutes. You can also alter the frequency to suit your requirements of asset migration.

4. Click Update.

Alternately, you could click Execute Now to immediately run the job.

Once the job is executed, the application logs reflect migration. Once the migration is completed, the application log lists the number of assets are migrated.

If any assets fail to migrate, the Migration State and Migration Notes indicate that the migration has failed. Migration Notes field is available only for assets whose criteria is defined by Identification engine rule. For assets using transform maps, only migration state is available.

To trigger migration for failed migration assets, reset the migration state to None for all such assets and clear the Migration Notes field.

Once, all the assets are migrated, you can de-activate the Migration 1.x job.

Known Issues

The following are the few known issues/limitations you may find in the CMDB Sync App:

- We have observed that in some cases, there is a discrepancy in certificate count between Cert View V2 API and Cert View Qualys UI. ServiceNow certificate details will be based on the API response, so in such cases, the discrepancy between ServiceNow and Qualys UI can be observed. We have logged a ticket for the Certificate View team to investigate it further.