Cisco DNA Center ITSM Integration Workflows

Cisco DNA Center Integration Supported Workflows

The following Cisco DNA Center ITSM integration workflows are supported:

- Cisco DNA Center ITSM integration with a generic REST endpoint: See Cisco DNA Center Integration with a Generic REST Endpoint, on page 1.

- Cisco DNA Center ITSM integration with ServiceNow without using the Cisco DNA application for ServiceNow: See Cisco DNA Center Integration with ServiceNow Without the Cisco DNA App, on page 5.

- Cisco DNA Center ITSM integration with ServiceNow using the Cisco DNA application for ServiceNow: See Cisco DNA Center Integration with ServiceNow Using the Cisco DNA App, on page 15.

- Cisco DNA Center ITSM endpoint attribute retrieval with ServiceNow using the Cisco DNA application for ServiceNow: See Cisco DNA Center Endpoint Attribute Retrieval with ServiceNow, on page 40.

Cisco DNA Center Integration with a Generic REST Endpoint

The following table describes the procedure for configuring Cisco DNA Center integration with a generic REST endpoint. You may wish to publish Network and Automation events to a generic REST endpoint, outside of a configuration management database, for performance, security, event response, or other reasons.

Table 1: Cisco DNA Center to Generic REST Endpoint Integration Procedure

Step	Description
Step 1	Install or upgrade to the latest Cisco DNA Center release. For information about installing Cisco DNA Center, see the *Cisco DNA Center Installation Guide*.

Step	Description
Step 2	Enable and configure bundles using the **Bundles** window in the Cisco DNA Center GUI. For more information about configuring bundles, see *Cisco DNA Center Platform User Guide*.
Step 3	In the configuration slide-in pane, click **Destination to receive events**.
Step 4	To send the data to a different staging table in ServiceNow, choose **Generic REST Endpoint in ServiceNow** as the destination to receive events. Determine the generic REST endpoint (destination Uri) for the publication of the Network and Automation events.
Step 5	Configure network event settings in **Event Settings**. The Cisco DNA Center platform and ITSM integration allows the user to choose from a list of events specific to the configured bundles, to create and modify the severity of events, incidents, or problems to match business priorities. For information, see Configure Event Settings, on page 4.
Step 6	Configure the integration settings. From the top-left corner, click the menu icon and choose **System** > **Settings** > **System Configuration** > **Integration Settings**. Enter your callback URL hostname or IP address.
Step 7	Access the generic REST endpoint in ITSM and review the network event data that has been posted using the REST APIs in this procedure. Begin to review and manipulate this data according to your business or network needs.

Configure Network Events

You can subscribe to specific events that may occur in your network. After you subscribe, you receive a notification whenever the network event occurs. You subscribe to an event using the **Event Notifications** window in the Cisco DNA Center platform GUI.

Figure 1: Cisco DNA Center Platform Events Window

Before you begin

- For subscribing to network events, you must have configured the required destination to deliver event notifications from the Cisco DNA Center platform. To access the **Destinations** window, click the menu icon and choose **System** > **Settings** > **External Services** > **Destinations**.

- You must have the appropriate permissions to perform the tasks described in this procedure. For information about role-based access control for the Cisco DNA Center platform, see the Cisco DNA Center Platform User Guide.

Step 1 From the top-left corner, click the menu icon and choose **Platform** > **Developer Toolkit** > **Event Notifications**.

The **Event Notifications** window opens.

Step 2 Click the **Notifications** tab to view the notification tiles.

Each notification is represented by a tile and contains link to view notification details. From the CHANNELS area in the left pane, click the radio button next to the notification channels to view the existing tiles with the selected channel.

Step 3 Follow the steps in the **Create a New Notification** wizard to create a new notification.

Click **Let's Do It** to go directly to the workflow.

Step 4 In the **Select Site and Events** window, select a site from the drop-down list and select the Network event or events that support the required notification channel.

Step 5 Click **Next**.

The **Select Channels** window opens.

Step 6 In the **Select Channels** window, select the notification channel.

Click **Next** to configure the values in the corresponding **Settings** window.

Step 7 Click **Next**.

The **Name and Description** window opens.

Step 8 Click **Next**.

The **Summary** window opens.

Step 9 In the **Summary** window, review the configuration settings.

To make any changes, click **Edit**.

Step 10 Click **Finish**.

The **Done! Your new notification is complete** window appears.

For more information, see **Work with Event Notifications** in the *Cisco DNA Center Platform User Guide* and **Create an Event Notification** in the *Cisco DNA Center User Guide*.

Configure Event Settings

The Cisco DNA Center platform and ITSM integration allows you choose from a list of possible issues to create and modify the severity of events, incidents, or problems in ServiceNow to match your business priorities. You perform these tasks in the **Events Settings** window. The **Events Settings** window is accessible from the **Configurations** menu option in the Cisco DNA Center platform.

Note For this release, there are no SWIM events to configure in **Event Settings**. You only configure network assurance events.

Important The **Event Settings** window and its functionality are applicable only to configure events for an ITSM integration and not for events that are configured to other destinations. To configure events to a webhook or other destination, click the link above the columns. Use the **Event Notifications** window to configure events for an email, webhook, or SNMP trap.

Figure 2: Events Settings Window

Before you begin

You must have the appropriate permissions to perform the tasks as described in this procedure. For information about role-based access control for the Cisco DNA Center platform, see the Cisco DNA Center Platform User Guide.

Step 1 From the top-left corner, click the menu icon and choose **Platform** > **Manage** > **Configurations**.

A **Configurations** window that contains an **Events Settings** section opens.

Step 2 Review the information presented in the **Event Settings** section:

- **Event Name**: Name of the Cisco DNA Center event.

- **Domain**: Domain of the Cisco DNA Center event.

- **Type**: Network, App, System, Security, or Integrations.

- **Category**: Error, Warn, Info, Alert, Task Progress, or Task Complete.

- **Severity**: 1 to 5.

  Note   Severity 1 is the most important or critical priority. You can edit the severity level of the event.

- **Workflow**: Incident, Problem, Event, or RFC (Request for Change).

- **Actions**: Edit.

To change what is displayed in the table, click the **Filter** icon or enter a keyword in the **Find** field. For example, to view all network notifications, enter **Network** in the **Find** field. To view all severity1 notifications, enter **1** in the **Find** field.

Step 3   To edit an event, click **Edit** in the **Actions** column.

To change any setting, click the down-arrow and choose a value from the available options.

Step 4   Click the box next to the event name to enable notifications.

You must choose the events in the **Event Settings** section to configure events for an ITSM integration. This enables notifications through Cisco DNA Center when the event occurs in the future.

Step 5   Click **Save**.

Cisco DNA Center Integration with ServiceNow Without the Cisco DNA App

The following table describes the procedure for configuring Cisco DNA Center integration with ServiceNow without using the Cisco DNA app. Follow the procedure to configure integration for network events, SWIM events, or both event types depending on the functionality that you require.

Note   You can also use the **Basic ITSM (ServiceNow) CMDB synchronization** bundle with this workflow. If you use this bundle, be sure to choose **Post device inventory details to a staging table** as the destination type. The other destination type (**Synchronize device inventory directly with CMDB**) requires the Cisco DNA app. Additionally, the **Post device inventory details to a staging table** destination type only sends data to the REST API endpoint. You will need to create a script to perform any further action on the data.

Table 2: Cisco DNA Center-to-ServiceNow Integration Without the Cisco DNA App Procedure

Step	Description
Step 1	Install or upgrade to the latest Cisco DNA Center release. For information about *installing* Cisco DNA Center, see the *Cisco DNA Center Installation Guide*.

Step	Description
Step 2	Install or upgrade to a compatible version of ServiceNow mentioned on the ServiceNow Store website. Click the following link to access the ServiceNow Store website: https://store.servicenow.com/sn_appstore_store.do#!/store/application/ 03eb0f4ddbf6ba00f27978b5ae96197b Refer to your ServiceNow documentation for its installation and upgrade procedures. **Note** This procedure must be performed by a ServiceNow administrator.
Step 3	Configure the **Network Issue Monitor and Enrichment for ITSM (ServiceNow)** bundle. For information, see Configure the Network Issue Monitor and Enrichment for ITSM (ServiceNow) Bundle, on page 6. This bundle enables Change Management between the two systems (Cisco DNA Center and ServiceNow). Change Management and Incident/Problem Management workflows should be enabled based on the automation or assurance use cases that you want to log tickets to in ServiceNow.
Step 4	Configure network event settings in **Event Settings**. For information, see Configure Event Settings, on page 10. **Note** The Cisco DNA Center platform and ITSM integration allows the user to choose from a list of possible issues to create and modify the severity of events, incidents, or problems in ServiceNow to match business priorities.
Step 5	Configure the **Cisco DNA Center Automation events for ITSM (ServiceNow)** bundle. For information, see Configure the Cisco DNA Center Automation Events for ITSM (ServiceNow) Bundle, on page 11. The **Cisco DNA Center Automation events for ITSM (ServiceNow)** bundle retrieves events relating to software image updates required for compliance, security or any other operational triggers from Cisco DNA Center. SWIM event notifications are sent from Cisco DNA Center to ServiceNow when they occur, not on a polling and notify schedule. For information, see About SWIM Closed Loop Automation
Step 6	Access your ServiceNow instance and review the network and SWIM event data that has been posted using the REST APIs in this procedure. Begin to review and manipulate this data in ServiceNow per your business or network needs.

Configure the Network Issue Monitor and Enrichment for ITSM (ServiceNow) Bundle

Perform this procedure to set up monitoring for network for assurance and maintenance issues, as well as publishing event details to a ServiceNow system.

✎

Note
- Event data can be published to the **Event** table in ServiceNow. This requires that you have the Event Management plug-in in your ServiceNow instance. If you do not have the Event Management plug-in in your ServiceNow instance, the bundle can be configured to send the data to a REST API endpoint in the Cisco DNA app.

- The Event Management and Generic REST API Endpoint options do not support automatic ticket creation and auto resolution of tickets for closed loop integration.

Before you begin

You must have the appropriate permissions to perform the tasks as described in this procedure. For information about role-based access control for the Cisco DNA Center platform, see the Cisco DNA Center Platform User Guide.

Step 1   From the top-left corner, click the menu icon and choose **Platform** > **Manage** > **Bundles**.

Review the displayed bundles and their current status.

Step 2   Click the **Network Issue Monitor and Enrichment for ITSM (ServiceNow)** bundle link or icon (colored square with initial) for additional information about the bundle.

Additional information provided may include the following:

- **General information**: Vendor, version, platform, tags displayed under the square icon.

- **Information**: Tab that displays general information (purpose of bundle and how bundle works in the network), sample schemas, configuration notes, and other data about the bundle.

- **Contents**: Tab that accesses the APIs and integration flows that make up the bundle, or provides information about the integration flows that make up the bundle.

- **Release Notes**: Tab that displays latest release information about the bundle, including its version.

Step 3   Click each of the above tabs and review the information about the bundle.

Step 4   Click the **Enable** button to enable the bundle.

An **Information** field appears in the window.

Step 5   In the **Information** field, click the **Enable** button to confirm enabling the bundle.

After clicking the **Enable** button to confirm, a success message appears.

Step 6   Click **OK** in the success message.

Step 7   Click the **Configure** button to configure at the bundle level.

A configuration slide-in pane appears.

Step 8   In the configuration slide-in pane, click **ServiceNow Access Settings** to configure a ServiceNow Connection instance.

Step 9   Click the radio button to configure either an existing ServiceNow Connection instance or configure a new instance.

Figure 3: Example of ServiceNow Instance Configuration Fields

Configure Network Issue Monitor and Enrichment for ITSM (ServiceNow)

Configure your bundle   ×

∨ ServiceNow Access Settings

>> Back to Select Instance

INFORMATION

Instance Name *

Description

SERVICENOW ACCESS SETTINGS

Host Name *
https://<servicenow-host-name>

Username *
<username-for-servicenow-host>

Password *
....   SHOW
                                                            Hint

Check connectivity

〉 Destination to receive events

                                                                    Cancel   Activate

For configuring an existing ServiceNow Connection instance, choose it from the drop-down menu in the window and click **Activate**.

Step 10   For configuring a new ServiceNow Connection instance, the following additional information must be entered:

   • **Instance Name**: Name of the instance.

   • **Description**: Descriptive text of the instance.

   • **Host name**: Hostname for the ServiceNow system.

   • **Username**: Username required to access the ServiceNow system.

   • **Password**: Password required to access the ServiceNow system.

Step 11   Click **Check Connectivity** to test whether you can connect to the server where the endpoint is located.

After a successful test of connectivity to the server, configure **Destination to receive events**.

Step 12   In the configuration slide-in pane, click **Destination to receive events** to configure a Destination Connection instance.

Step 13   Click the radio button to configure either an existing Destination Connection instance or configure a new instance.

Figure 4: Example of Destination to Receive Events Configuration Fields

Configure Network Issue Monitor and Enrichment for ITSM (ServiceNow)

Configure your bundle ✕

> ServiceNow Access Settings

∨ Destination to receive events

INFORMATION

Instance Name *

Description

DESTINATION TO RECEIVE EVENTS

Destination to receive events *

Destination Uri
Enter a custom endpoint

Cancel   **Activate**

For configuring an existing Destination Connection instance, choose it from the drop-down menu in the window and click **Activate**.

Step 14   For configuring a new Destination instance, the following additional information must be entered:

- **Instance Name**: Name of the instance.

- **Description**: Descriptive text of the instance.

- **Destination to receive events**: Choose one of the following:

    - **Event Management**: When setting up Cisco DNA Center integration with ServiceNow without using the Cisco DNA app, choose the **Event Management** option. The **Event Management** option also requires that you have the Event Management plug-in configured within the ServiceNow instance.

    - **REST API Endpoint**: The **REST API Endpoint** option can be used with the Cisco DNA app. With this option, data is sent to a REST API endpoint within the Cisco DNA app.

    - **Generic REST Endpoint in ServiceNow**: With this option, you can send the data to a different staging table in ServiceNow.

- **Destination URI**: Enter a destination URI (Uniform Resource Indicator) for the **Generic REST Endpoint in ServiceNow** option. This field is mandatory for this option.

After entering this information, proceed to the next step.

Step 15   Click **Activate** to save your changes and activate the bundle or click **Cancel** to cancel the configuration and close the slide-in pane.

The changes made to the bundle begin to take effect immediately. Additionally, the bundle status changes from **ENABLED** to **ACTIVE**.

Configure Event Settings

The Cisco DNA Center platform and ITSM integration permits you to choose from a list of possible issues to create and modify the severity of events, incidents, or problems in ServiceNow to match your business priorities. You perform these tasks in the **Events Settings** window. The **Events Settings** window is accessible from the **Configurations** menu option in the Cisco DNA Center platform.

Note   For this release, there are no SWIM events to configure in **Event Settings**. You only configure network assurance events.

Important   The **Event Settings** window and its functionality is only applicable to events for an ITSM (ServiceNow) integration and not for events configured to other destinations. For events being configured to a webhook or other destination, click the link above the columns to access the **Events** window. Use the **Events** window to configure events for an email, webhook, or SNMP trap.

Figure 5: Events Settings Window

Before you begin

You must have the appropriate permissions to perform the tasks as described in this procedure. For information about role-based access control for the Cisco DNA Center platform, see the Cisco DNA Center Platform User Guide.

Step 1   From the top-left corner, click the menu icon and choose **Platform** > **Manage** > **Configurations**.

A **Configurations** window opens that contains an **Events Settings** section.

Step 2   Review the **Event Settings** section, which contains the following information:

- **Event Name**: Name of the Cisco DNA Center event.

- **Domain**: Domain of the Cisco DNA Center event.

- **Type**: Network, App, System, Security, Integrations type.

- **Category**: Error, Warn, Info, Alert, Task Progress, Task Complete.

- **Severity**: P1 (Severity 1) through P5 (Severity 5).

  Note   Severity 1 is the most important or critical priority and should be assigned as such.

- **Workflow**: Incident, Problem, Event, or RFC (Request for Change).

- **Actions**: Edit.

You can adjust what is displayed in the table by clicking the **Filter** icon and using the filter, or by typing a keyword in the **Find** field. For example, to display all access point notifications, type `AP` in the **Find** field. To view all network notifications, type `Network` in the **Find** field. To view all severity notifications, type `1` in the **Find** field.

Step 3   Click **Edit** in the **Actions** column to edit an event.

Choose a setting by clicking on the downward pointing angle and adjust the value. For example, click **Network** and adjust to **App**. This changes the event type from a network type to an application type. Click **Severity** and adjust to **1** from **5**. This raises the severity level from 5 to 1.

Step 4   Click the box next to the Event name to enable notifications.

This enables notifications through Cisco DNA Center when the event occurs in the future.

Step 5   Click **Save**.

Configure the Cisco DNA Center Automation Events for ITSM (ServiceNow) Bundle

Perform this procedure to set up monitoring and publishing events requiring device provisioning activities, software image updates for compliance, security, or other operational triggers to a ServiceNow system.

Enabling ITSM in Cisco DNA Center enforces a ServiceNow approval process for better control of Cisco DNA Center software image updates and other device provisioning activities. For example, see SWIM Closed Loop Automation Workflow for information about the approval process in ServiceNow.

See the Configure System Settings chapter in the Cisco DNA Center Administrator Guide for information about enabling ITSM approval for device configuration changes.

Note	• You can publish the event data to the **Event** table in ServiceNow if you have the Event Management plug-in in your ServiceNow instance. If not, you can configure the bundle to send the data to a REST API endpoint in the Cisco DNA app.
	• The Event Management and Generic REST API Endpoint options do not support automatic ticket creation, approval/rejection workflow and auto resolution of tickets for closed loop integration.

Before you begin

You must have the appropriate permissions to perform the tasks as described in this procedure. For information about role-based access control for the Cisco DNA Center platform, see the Cisco DNA Center Platform User Guide.

Step 1 From the top-left corner, click the menu icon and choose **Platform** > **Manage** > **Bundles**.

Review the displayed bundles and their status.

Step 2 Click the **Cisco DNA Center Automation events for ITSM (ServiceNow)** bundle link or icon (colored square with initial) for additional information about the bundle.

Additional information that is provided may include the following:

  • **General information**: Vendor, version, platform, tags displayed under the square icon.

  • **Information**: Tab that displays general information (purpose of bundle and how bundle works in the network), sample schemas, configuration notes, and other data about the bundle.

  • **Contents**: Tab that accesses the APIs and integration flows that make up the bundle, or provides information about the integration flows that make up the bundle.

  • **Release Notes**: Tab that displays latest release information about the bundle, including its version.

Step 3 Click each of the preceding tabs and review the information about the bundle.

Step 4 Click the **Enable** button to enable the bundle.

An **Information** field appears in the window.

Step 5 Click the **Enable** button in the **Information** field to confirm enabling the bundle.

After clicking the **Enable** button to confirm, a success message appears.

Step 6 Click **OK** in the success message.

Step 7 Click the **Configure** button to configure at the bundle level.

A configuration slide-in pane appears.

Step 8 In the configuration slide-in pane, click **ServiceNow Access Settings** to configure a ServiceNow Connection instance.

Step 9 Click the radio button to configure either an existing ServiceNow Connection instance or configure a new instance.

Figure 6: Example of ServiceNow Instance Configuration Fields

Configure SWIM Events for ITSM (ServiceNow)
Configure your bundle   ✕

∨ ServiceNow Access Settings

>> Back to Select Instance

INFORMATION

Instance Name *

Description

SERVICENOW ACCESS SETTINGS
Host Name *
https://<servicenow-host-name>

Username *
<username-for-servicenow-host>

Password *
······································ SHOW
                                        Hint

Check connectivity

> Destination to receive events

Cancel   Activate

For configuring an existing ServiceNow Connection instance, choose it from the drop-down list in the window and click **Activate**.

Step 10   For configuring a new ServiceNow Connection instance, you must enter the following additional information:

- **Instance Name**: Name of the instance.

- **Description**: Descriptive text of the instance.

- **Host name**: Hostname for the ServiceNow system.

- **Username**: Username required to access the ServiceNow system.

- **Password**: Password required to access the ServiceNow system.

Step 11   Click **Check Connectivity** to test whether you can connect to the server where the endpoint is located.

After a successful test of connectivity to the server, activate the bundle.

Step 12   In the configuration slide-in pane, click **Destination to receive events** to configure an Destination Connection instance.

Step 13   Click the radio button to configure either an existing Destination Connection instance or configure a new instance.

Figure 7: Example of Destination to Receive Events Configuration Fields

For configuring an existing Destination Connection instance, choose it from the drop-down menu in the window and click **Activate**.

Step 14 For configuring a new Destination instance, you must enter the following additional information:

- **Instance Name**: Name of the instance.

- **Description**: Descriptive text of the instance.

- **Destination to receive events**: Choose one of the following:

    - **Event Management**: When setting up Cisco DNA Center integration with ServiceNow without using the Cisco DNA app, choose the **Event Management** option. The **Event Management** option requires that you have the Event Management plug-in that is configured within the ServiceNow instance.

    - **REST API Endpoint**: You can use the **REST API Endpoint** option with the Cisco DNA app. Data is sent to a REST API endpoint within the Cisco DNA app with the **REST API Endpoint** option.

    - **Generic REST Endpoint in ServiceNow**: For the **Generic REST Endpoint in ServiceNow** option, you can send the data to a different staging table in ServiceNow.

- **Destination URI**: Enter a destination Uniform Resource Indicator (URI) for the **Generic REST Endpoint in ServiceNow** option. This field is mandatory for this option.

After entering this information, proceed to the next step.

Step 15 Click **Activate** to save your changes and activate the bundle or click **Cancel** to cancel the configuration and close the slide-in pane.

Note By clicking **Activate**, you enable the changes that are made to the bundle and the changes take effect immediately. Additionally, the bundle's status changes from **ENABLED** to **ACTIVE**.

Cisco DNA Center Integration with ServiceNow Using the Cisco DNA App

Cisco DNA Center supports an application (Cisco DNA) that facilitates integration with ServiceNow. This application or app is designed to work with ServiceNow without its Event Management plug-in.

Ensure that the Cisco DNA app (version 2.2.0) is installed within the ServiceNow instance and performs the following tasks:

- Schedules the basic one-way synchronization of Cisco DNA Center discovered devices into the ServiceNow Configuration Management Database (CMDB) using Cisco DNA Center inventory as a source of truth. The Cisco DNA app supports CMDB synchronization from Cisco DNA Center to ServiceNow.

- Automatically triggers problem, incident, and change workflows for network events published by Cisco DNA Center.

- Enriches ITSM tickets with network details from Cisco DNA Center. The Cisco DNA app makes REST API calls into Cisco DNA Center. These API calls help in fetching enrichment information of various types such as device, issue, user, and client for a user created ticket.

- Supports integration of the Cisco DNA Center platform with ServiceNow for an automated way to create change request (CR) tickets in ServiceNow for network events.

The following table describes the procedure for configuring Cisco DNA Center integration with ServiceNow using the Cisco DNA app. Follow the procedure to configure integration for network events, SWIM events, or both event types depending upon the functionality that you require.

Table 3: Cisco DNA Center-to-ServiceNow Integration with Cisco DNA App Procedure

Step	Description
Step 1	Install or upgrade to the latest Cisco DNA Center release. For information about *installing* Cisco DNA Center, see the *Cisco DNA Center Installation Guide*.

Step	Description
Step 2	Install or upgrade to a compatible version of ServiceNow mentioned on the ServiceNow Store website. Click the following link to access the ServiceNow Store website: https://store.servicenow.com/sn_appstore_store.do#!/store/application/ 03eb0f4ddbf6ba00f27978b5ae96197b/2.2.0 Refer to your ServiceNow documentation for its installation and upgrade procedures. **Note** This procedure must be performed by a ServiceNow administrator.
Step 3	Click the following link to access the ServiceNow Store website where the Cisco DNA app is located: https://store.servicenow.com/sn_appstore_store.do#!/store/application/ 03eb0f4ddbf6ba00f27978b5ae96197b/2.2.0 Download and install the Cisco DNA app (version 2.2.0) into ServiceNow by following the documentation available at the website. **Note** This procedure is to be performed by a ServiceNow administrator. The Cisco DNA app versions 2.1.1 and 2.0.1 are compatible with the Tokyo and Utah releases of ServiceNow. If you want to use the Vancouver release of ServiceNow, you must first upgrade the Cisco DNA app to the latest version, 2.2.0.
Step 4	Review and ensure that the requirements are met for the Cisco DNA Center-to-ServiceNow integration. For information, see Requirements, on page 17.
Step 5	Access the Cisco DNA Center platform GUI and configure the **Basic ITSM (ServiceNow) CMDB Synchronization** bundle. For information, see Configure the Basic ITSM (ServiceNow) CMDB Synchronization Bundle, on page 18. **Note** Synchronizing the network device inventory with the ServiceNow CMDB is a prerequisite to enable the auto-generation of ITSM tickets. Therefore, the CMDB Sync must be enabled first (if it is not already done outside of Cisco DNA Center). Check with your ServiceNow administrator to see whether the CMDB Sync is being done elsewhere.
Step 6	Configure the **Network Issue Monitor and Enrichment for ITSM (ServiceNow)** bundle. For information, see Configure the Network Issue Monitor and Enrichment for ITSM (ServiceNow) Bundle, on page 6. This bundle enables data to be sent from Cisco DNA Center to create any type of workflow in ServiceNow. Change Management and Incident/Problem Management workflows should be enabled based on the automation or assurance use cases that you want to log tickets to in ServiceNow.
Step 7	Configure network event settings in **Event Settings**. For more information, see Configure Event Settings, on page 31. **Note** The Cisco DNA Center platform and ITSM integration allows the user to choose from a list of possible issues to create and modify the severity of events, incidents, or problems in ServiceNow to match business priorities.

Step	Description
Step 8	Configure the **Cisco DNA Center Automation events for ITSM (ServiceNow)** bundle. For information, see Configure the Cisco DNA Center Automation Events for ITSM (ServiceNow) Bundle, on page 11.
Step 9	Access your ServiceNow instance and review the network and SWIM event data that has been posted using the Cisco DNA Center REST APIs in this procedure. Begin to review and utilize this data per your business or network needs.

Requirements

Review and ensure that the following networking and systems requirements are met for the Cisco DNA Center-to-ServiceNow integration:

- Networking:

  - The Cisco DNA app is configured with the IP address and access information of the Cisco DNA Center installation that it is being integrated with.

  Note   Contact your Cisco DNA Center administrator to obtain this information.

  - HTTPS network access between Cisco DNA Center and ServiceNow.

  Note   Contact and work with your network administrator to establish this.

- Management, Instrumentation, and Discovery (MID) Server:

  - The MID server is up and running, as well as accessible from the ServiceNow instance.

  - The Cisco DNA Center platform is accessible from the MID server.

  - The Cisco DNA Center platform REST APIs are allowed from the MID server.

  Note   The MID server is used to proxy the REST requests from the ServiceNow instance.

  See the *Scope Certified Application Installation and Configuration Guide* on the ServiceNow Store website for MID server configuration information: https://store.servicenow.com/sn_appstore_store.do#!/store/application/03eb0f4ddbf6ba00f27978b5ae96197b

- Cisco DNA Center Platform:

  - The Cisco DNA Center platform is enabled in Cisco DNA Center.

  - The requisite bundle or bundles in the Cisco DNA Center platform are configured and activated (as described in the following procedures).

| **Note** | These bundles have the required APIs that integrate with the Cisco DNA app in ServiceNow. |

Configure the Basic ITSM (ServiceNow) CMDB Synchronization Bundle

Perform this procedure to either trigger or schedule a synchronization between the Cisco DNA Center devices and your ServiceNow CMDB system. If devices have not been synchronized between Cisco DNA Center and the ServiceNow CMDB system, this bundle must be activated as a prerequisite, before activating any other bundles.

| **Note** | The Cisco DNA Center CMDB synchronization cannot detect multiple instances of Cisco DNA Center:

• To identify the attributes that were synchronized from a particular Cisco DNA Center instance, each attribute is tagged with a Cisco DNA Center IP address.

• ServiceNow can now identify which Cisco DNA Center instance the attribute came from. An extra attribute for the Configuration Item (CI) has been added to retain the Cisco DNA Center IP address or hostname information. |

Before you begin

- Ensure that you have ServiceNow running on a system that you will integrate with Cisco DNA Center platform.

- Run a successful **Discovery** job in Cisco DNA Center. You can check whether a **Discovery** job is successful in **Device Inventory**. From the top-left corner, click the menu icon and choose **Provision** > **Inventory** to view the results.

- You must have the appropriate permissions to perform the tasks as described in this procedure. For information about role-based access control for the Cisco DNA Center platform, see the Cisco DNA Center Platform User Guide.

Step 1   From the top-left corner, click the menu icon and choose **Platform** > **Manage** > **Bundles**.

Review the displayed bundles and their current status.

Step 2   Click the **Basic ITSM (ServiceNow) CMDB synchronization** bundle link or icon (colored square with initial) for additional information about the bundle.

Additional information provided may include the following:

- **General information**: Vendor, version, platform, tags displayed under the square icon.

- **Information**: Tab that displays general information (purpose of bundle and how bundle works in the network), sample schemas, configuration notes, and other data about the bundle.

- **Contents**: Tab that accesses the integration flows and APIs that make up the bundle.

• **Release Notes**: Tab that displays latest release information about the bundle, including its version.

Step 3   Click the **Contents** tab.

Step 4   Click the **Integration Flows** header.

An integration flow or list of integration flows appear underneath the header.

Step 5   Click the **Enable** button to activate the integration flow links.

An **Information** field appears in the window.

Step 6   In the **Information** field, click the **Enable** button to confirm enabling the bundle.

After clicking the **Enable** button to confirm, a success message appears.

Step 7   Click **Okay** in the success message.

Step 8   Click the integration flow link to perform the tasks listed below:

• Review the **Description**, **Tags**, **How to Use this Flow**, and scheduler.

• Click **Run Now** (to run the scheduler now), **Run Later** (to schedule for a later time), or **Recurring** (to set up a recurring schedule).

For **Run Later**, you need to select a date, time, and time zone. For **Recurring**, you need to set a repeating interval (daily or weekly), an interval duration (minutes or hours), and a start and end date.

• Click **Schedule** to enable the scheduler.

| **Important** | Only configure and enable an integration flow schedule, after you have finished configuring the bundle itself as described in this procedure. You configure and enable an integration flow schedule by returning to this view and clicking **Schedule**, or by clicking the **View Flows** link in the **Configure Basic ITSM (ServiceNow) CMDB synchronization** slide-in pane (see following steps), or by clicking the menu icon (≡) > **Platform** > **Developer Toolkit** > **Integration Flows** > **Schedule to Publish Inventory Details-ServiceNow Connector**. |

Step 9   Click the **X** icon to return to the previous bundle window.

Step 10   Click the **Configure** button to configure at the bundle level.

A configuration slide-in pane appears. Review the CMDB synchronization information.

Step 11   Click the radio button to configure either existing or new ServiceNow access settings for the CMDB synchronization.

Figure 8: ServiceNow Access Settings

For configuring an existing setting, choose it from the drop-down menu in the window and click **Next**.

Step 12   For configuring a new access setting, the following instance information must be entered.

- **Instance Name**: Name of the instance.
- **Description**: Descriptive text of the instance.

Click **Next**.

Step 13   For configuring a new access setting, the following additional settings information must be entered.

Figure 9: ServiceNow Access Settings

Configure Basic ITSM (ServiceNow) CMDB synchronization

Configure your bundle   ✕

ServiceNow Access Settings

Host Name *
https://<servicenow-host-name>

Username *
<username-for-servicenow-host>

Password *
<password-to-connect-to-servicen

Check connectivity

⏎ Exit   Back   Next

- **Hostname**: Hostname or IP address of the ServiceNow server.

- **Username**: Username for access to the ServiceNow server.

- **Password**: Password for access to the ServiceNow server.

Click **Check Connectivity** to check access to the ServiceNow server.

Click **Next**.

Step 14   Click the radio button to configure either an existing instance or configure a new instance for the CMDB inventory settings.

Figure 10: CMDB Inventory Settings

Configure Basic ITSM (ServiceNow) CMDB synchronization

Configure your bundle   ✕

(i) This bundle has additional configurations for its Schedule-Based Integration Flows. View Flows

　　• Schedule to Publish Inventory Details - ServiceNow Connector - Unscheduled

CMDB Inventory Settings

This is used to specify the CMDB Configuration details for ServiceNow, which includes the list of device attributes(mandatory/optional) that needs to be synced, type of destination within ServiceNow to receive the CMDB details, connection settings to the ServiceNow instance, transformation mapping between Cisco DNA Center device families and ServiceNow CI classes, maximum number of devices that can be synced in a single API call and the discovery source details.

○ Select an existing instance　　　● Create a new instance

Instance Name *

Description

⏏ Exit   Back   Next

For configuring an existing instance, choose it from the drop-down menu in the window and click **Configure**.

Step 15　　For configuring a new instance, the following additional information must be entered.

　　• **Instance Name**: Name of the instance.

　　• **Description**: Descriptive text of the instance.

　　Click **Next**.

Step 16　　In the **Select Destination** window, enter the following information:

　　• **Destination Type**: There are two destination type options to choose from:

　　　　• **Synchronize device inventory directly with CMDB**

　　　　• **Post device inventory details to a staging table**

Note　　　　Use the **Synchronize device inventory directly with CMDB** destination type to send data to a REST API endpoint within the Cisco DNA app. You should use this destination type, if you are using the Cisco DNA app and do not have your own customized ServiceNow instance. Use the other destination type (**Post device inventory details to a staging table**) to send data to a REST API endpoint outside of the Cisco DNA app. Ensure that the created staging table has a field called `u_inventory_details`. The inventory details from the Cisco DNA app are mapped to this field. With the **Post device inventory details to a staging table** destination type, after data transfer you must write custom code to take the data from the staging table and map it to the ServiceNow CMDB.

• **Destination URI**: Uniform Resource Indicator of the ServiceNow server (CMDB) or staging table.

Figure 11: Select Destination Window

Click **Next**.

Step 17   In the **Select Inventory Data Fields** window, select the data fields to by synchronized.

> **Note**   Inventory data fields are Cisco created data types that can be designated as an attribute or reference to be synchronized into a CMDB or staging table.

Clicking the top check box in the **Select Inventory Data Fields** window will select all of the inventory data fields for synchronization. Click this top check box if you want to sync all of the inventory data fields. Otherwise, review and click one check box at a time to create a smaller subset of inventory data fields for synchronization.

Figure 12: Select Inventory Data Fields Window

Configure Basic ITSM (ServiceNow) CMDB synchronization

Configure your bundle

Select Inventory Data Fields

	Name	Description	Is Attribute / Is Reference
☑	Host Name	Hostname of the device	◉ Attribute ○ Reference
☑	MAC Address	MAC Address of the Device	◉ Attribute ○ Reference
☑	Device Id	Id of the Device	◉ Attribute ○ Reference
☑	IP Address	Management IP Address of the device	◉ Attribute ○ Reference
☑	Serial Number	Serial Number of the device	◉ Attribute ○ Reference
☐	Upgrade Failure Reason	Upgrade Failure Reason	◉ Attribute ○ Reference
☐	CurrentSMU Upgrade Date	CurrentSMU Upgrade Date	◉ Attribute ○ Reference
☐	CurrentSMU	CurrentSMU	◉ Attribute ○ Reference
☐	Prior Upgrade Date	Prior Upgrade Date	◉ Attribute ○ Reference
☐	Code Upgrade Date	Code Upgrade Date	◉ Attribute ○ Reference

Exit | Back | Next

The **Select Inventory Data Fields** window consists of the following columns:

- **Name**: Name of the inventory data field.

- **Description**: Brief description of the inventory data field.

- **Is Attribute/Is Reference**: Whether the inventory data field is an attribute or a reference. A reference data field is used to create a relationship between two tables in a database. This is used for querying purposes. An attribute data field is used to add more data to a table in a database.

Step 18   For the data fields selected to be synchronized in the preceding step, review their designation as either attribute or reference.

To change a data field's default designation, just click the desired data field designation (**Attribute** or **Reference**).

Currently, the integration only supports 'location', 'building', and 'part number' as reference fields.

After selecting the data fields to be synchronized and whether the data field is an attribute or reference, click **Next**.

Step 19   In the **Update Transforms** window, either accept or update the ServiceNow transformation mapping between Cisco DNA Center device families and ServiceNow CI classes.

Figure 13: Update Transforms Window

Configure Basic ITSM (ServiceNow) CMDB synchronization
Configure your bundle

Update Transforms

Device Family	CI Class
Routers	cmdb_ci_ip_router
Switches and Hubs	cmdb_ci_ip_switch

Device families are the Cisco DNA Center device classifications (for example, Unified AP, Routers, Wireless Controller, Switches, and Hubs), where the inventory attributes/references mapping to ServiceNow is already available in the existing Cisco DNA Center application in ServiceNow. The type and number of device families can vary depending upon the different Cisco devices in the user's network.

Note   Cisco DNA Center platform is able to automatically retrieve all of the device families in the user's Cisco DNA Center network and display them in this GUI window.

CI classes are the database tables for ServiceNow (for example, cmdb_ci_wap_network, cmdb_ci_ip_router, cmdb_ci_ip_switch, and x_caci_cisco_dna_wireless_lan_controller). The **CI Class** column in the GUI window is used to map the CI classes to their respective device families.

The following table displays the Cisco DNA Center default CI classes for each device family. The default CI classes can be modified by the user. In case of other device families not listed below, Cisco will not have any default values specified in the **CI Class** column. The ServiceNow application user needs to either manually create the corresponding CI Classes and attributes/references mapping or use a pre-existing CI class a 'parent' CI class. Ensure the pre-existing or newly created class is inherited from the Network Gear (cmdb_ci_netgear) class.

Table 4: Default Device Family to CI Class Mapping List

Device Family	Corresponding CI Class
Unified AP	cmdb_ci_wap_network
Wireless Controller	x_caci_cisco_dna_wireless_lan_controller

Device Family	Corresponding CI Class
Routers	cmdb_ci_ip_router
Switches and Hubs	cmdb_ci_ip_switch
Meraki Access Point	cmdb_ci_wap_network
Meraki Cameras	cmdb_ci_netgear
Meraki Dashboard	cmdb_ci_netgear
Meraki Security Appliances	cmdb_ci_netgear
Meraki Switches	cmdb_ci_ip_switch

After accepting or updating the information in this window, click **Next**.

Step 20 In the **Set Source Identifier and Operational Limit** window, configure the data source and maximum limit.

Figure 14: Set Source Identifier and Operational Limit Window

Configure the following values:

- **Enter Destination Type**: Enter the same value as previously selected or keep the value at its default, **Other Automated**.

  - **Synchronize device inventory directly with CMDB**

  - **Post device inventory details to a staging table**

Note   **Other Automated** is a preconfigured value for the discovery source attribute in an OOB ServiceNow instance. This is the value that indicates the data source from where the ServiceNow CI was discovered. As a default, Cisco uses one of the existing preconfigured values for the integration.

We recommend that the user creates their own discovery source, so as to uniquely identify the source from where the devices were fetched to sync into the ServiceNow instance. The steps to create a new discovery source are described in the ServiceNow App 'Installation and Configuration guide'.

- **Enter the Max Limit**: Maximum number of devices that can be synchronized in an iteration (single API call).

After entering the above information, click **Next**.

Step 21   In the **Summary** window, review the configuration summary.

Figure 15: Summary Window
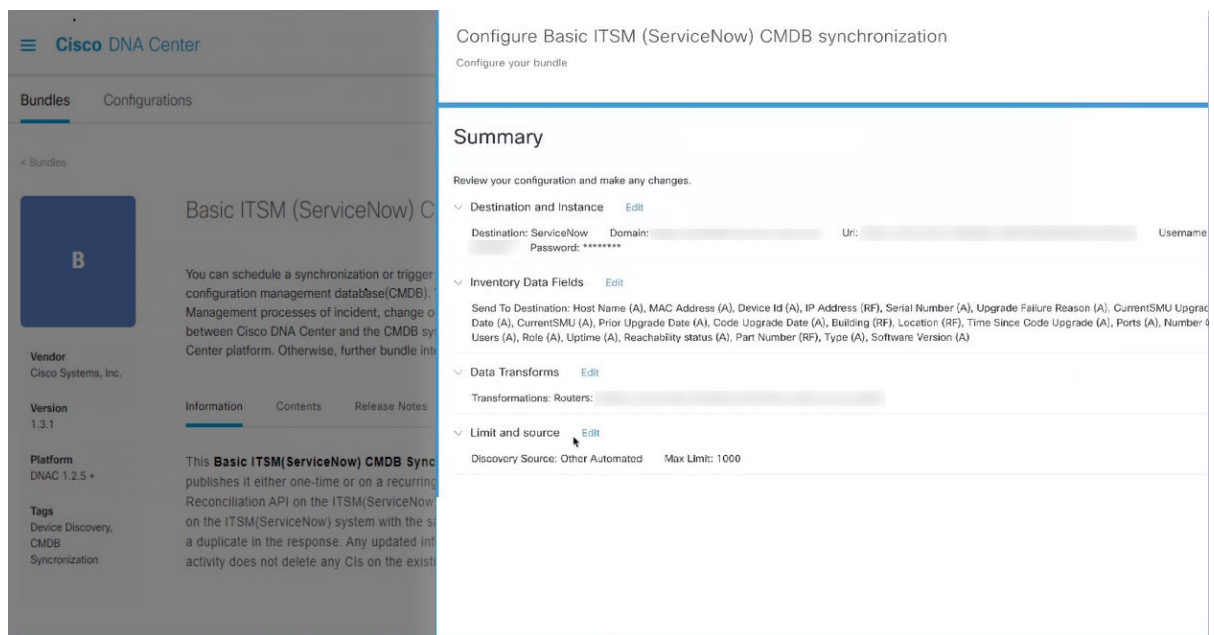
After reviewing the information, click **Configure**.

For a successful configuration, you will receive a **Done! Bundle Configured** message.

What to do next

Configure the Integration Flow for this bundle (**Schedule to Publish Inventory Details - ServiceNow Connector**), using one of the methods described in Step 8.

You can also test the CMDB synchronization by performing the following tasks:

- From the top-left corner, click the menu icon and choose **Platform** > **Runtime Dashboard** > **CMDB Synchronization Summary**. Click **Refresh** to refresh the GUI view. Review the inventory device synchronization status to ServiceNow.

- From the top-left corner, click the menu icon and choose **Platform** > **Runtime Dashboard** > **Event Summary**. Click **Refresh** to refresh the GUI view. Click the individual events in the window to view the event data and access links to ServiceNow.

- Go to ServiceNow and search for a synchronized device. Check the **Configuration** and **Other Attributes** tabs for synchronized data in that device's record.

Configure the Network Issue Monitor and Enrichment for ITSM (ServiceNow) Bundle

Perform this procedure to set up monitoring for network for assurance and maintenance issues, as well as publishing event details to a ServiceNow system.

Note

- Event data can be published to the **Event** table in ServiceNow. This requires that you have the Event Management plug-in in your ServiceNow instance. If you do not have the Event Management plug-in in your ServiceNow instance, the bundle can be configured to send the data to a REST API endpoint in the Cisco DNA app.

- The Event Management and Generic REST API Endpoint options do not support automatic ticket creation and auto resolution of tickets for closed loop integration.

Before you begin

You must have the appropriate permissions to perform the tasks as described in this procedure. For information about role-based access control for the Cisco DNA Center platform, see the Cisco DNA Center Platform User Guide.

Step 1   From the top-left corner, click the menu icon and choose **Platform** > **Manage** > **Bundles**.

Review the displayed bundles and their current status.

Step 2   Click the **Network Issue Monitor and Enrichment for ITSM (ServiceNow)** bundle link or icon (colored square with initial) for additional information about the bundle.

Additional information provided may include the following:

- **General information**: Vendor, version, platform, tags displayed under the square icon.

- **Information**: Tab that displays general information (purpose of bundle and how bundle works in the network), sample schemas, configuration notes, and other data about the bundle.

- **Contents**: Tab that accesses the APIs and integration flows that make up the bundle, or provides information about the integration flows that make up the bundle.

- **Release Notes**: Tab that displays latest release information about the bundle, including its version.

Step 3   Click each of the above tabs and review the information about the bundle.

Step 4   Click the **Enable** button to enable the bundle.

An **Information** field appears in the window.

Step 5 In the **Information** field, click the **Enable** button to confirm enabling the bundle.

After clicking the **Enable** button to confirm, a success message appears.

Step 6 Click **OK** in the success message.

Step 7 Click the **Configure** button to configure at the bundle level.

A configuration slide-in pane appears.

Step 8 In the configuration slide-in pane, click **ServiceNow Access Settings** to configure a ServiceNow Connection instance.

Step 9 Click the radio button to configure either an existing ServiceNow Connection instance or configure a new instance.

Figure 16: Example of ServiceNow Instance Configuration Fields

Configure Network Issue Monitor and Enrichment for ITSM (ServiceNow)
Configure your bundle   ×

∨ ServiceNow Access Settings

>> Back to Select Instance

INFORMATION

Instance Name *

Description

SERVICENOW ACCESS SETTINGS
Host Name *
https://<servicenow-host-name>

Username *
<username-for-servicenow-host>

Password *
••••••••••••••••••••••••••••••••   SHOW
                                       Hint
Check connectivity

> Destination to receive events

                                              Cancel   Activate

For configuring an existing ServiceNow Connection instance, choose it from the drop-down menu in the window and click **Activate**.

Step 10 For configuring a new ServiceNow Connection instance, the following additional information must be entered:

- **Instance Name**: Name of the instance.

- **Description**: Descriptive text of the instance.

- **Host name**: Hostname for the ServiceNow system.

- **Username**: Username required to access the ServiceNow system.

• **Password**: Password required to access the ServiceNow system.

Step 11   Click **Check Connectivity** to test whether you can connect to the server where the endpoint is located.

After a successful test of connectivity to the server, configure **Destination to receive events**.

Step 12   In the configuration slide-in pane, click **Destination to receive events** to configure a Destination Connection instance.

Step 13   Click the radio button to configure either an existing Destination Connection instance or configure a new instance.

Figure 17: Example of Destination to Receive Events Configuration Fields

Configure Network Issue Monitor and Enrichment for ITSM (ServiceNow)

Configure your bundle   ✕

> ServiceNow Access Settings

∨ Destination to receive events

   INFORMATION

   Instance Name *

   Description

   DESTINATION TO RECEIVE EVENTS

   Destination to receive events *   ∨

   Destination Uri
                        Enter a custom endpoint

                                                           Cancel   Activate

For configuring an existing Destination Connection instance, choose it from the drop-down menu in the window and click **Activate**.

Step 14   For configuring a new Destination instance, the following additional information must be entered:

• **Instance Name**: Name of the instance.

• **Description**: Descriptive text of the instance.

• **Destination to receive events**: Choose one of the following:

   • **Event Management**: When setting up Cisco DNA Center integration with ServiceNow without using the Cisco DNA app, choose the **Event Management** option. The **Event Management** option also requires that you have the Event Management plug-in configured within the ServiceNow instance.

   • **REST API Endpoint**: The **REST API Endpoint** option can be used with the Cisco DNA app. With this option, data is sent to a REST API endpoint within the Cisco DNA app.

- **Generic REST Endpoint in ServiceNow**: With this option, you can send the data to a different staging table in ServiceNow.

- **Destination URI**: Enter a destination URI (Uniform Resource Indicator) for the **Generic REST Endpoint in ServiceNow** option. This field is mandatory for this option.

After entering this information, proceed to the next step.

Step 15   Click **Activate** to save your changes and activate the bundle or click **Cancel** to cancel the configuration and close the slide-in pane.

The changes made to the bundle begin to take effect immediately. Additionally, the bundle status changes from **ENABLED** to **ACTIVE**.

Configure Event Settings

The Cisco DNA Center platform and ITSM integration lets you choose from a list of possible issues to create and modify the severity of events, incidents, or problems in ServiceNow to match your business priorities. You perform these tasks in the **Events Settings** window. The **Events Settings** window is accessible from the **Configurations** menu option in the Cisco DNA Center platform.

Note   For this release, there are no SWIM event to configure in **Event Settings**, you only configure network assurance events.

Important   The **Event Settings** window and its functionality is only applicable to events for an ITSM (ServiceNow) integration and not for events configured to other destinations. For events being configured to a webhook or other destination, click the link above the columns to access the **Events** window. Use the **Events** window to configure events for an email, webhook, or SNMP trap.

Figure 18: Events Settings Window
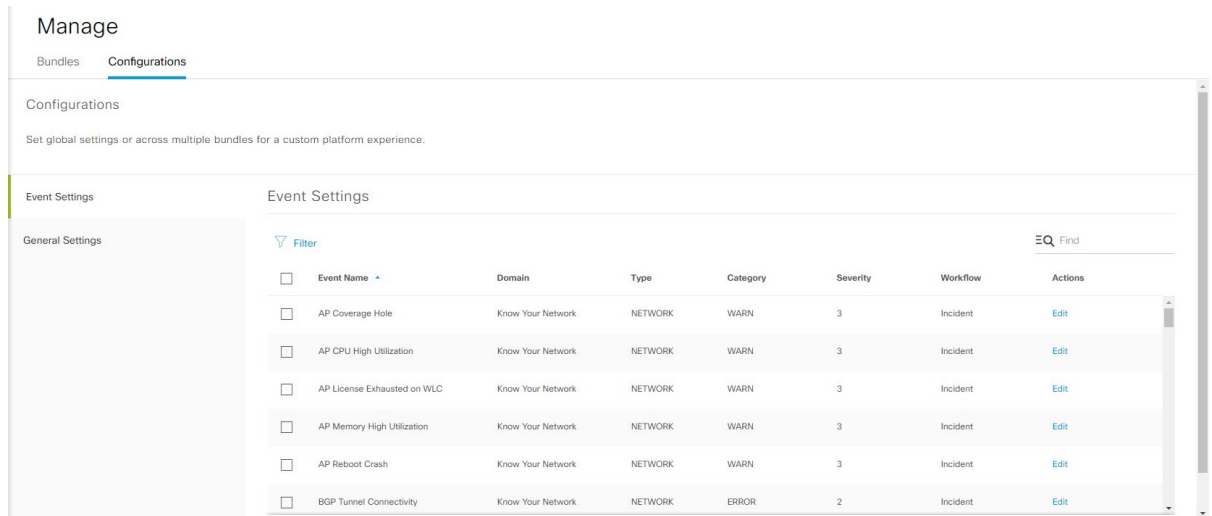
Before you begin

You must have the appropriate permissions to perform the tasks as described in this procedure. For information about role-based access control for the Cisco DNA Center platform, see the Cisco DNA Center Platform User Guide.

Step 1   From the top-left corner, click the menu icon and choose **Platform** > **Manage** > **Configurations**.

A **Configurations** window opens that contains an **Events Settings** section.

Step 2   Review the **Event Settings** section that appears.

The following **Event Settings** information is displayed:

- **Event Name**: Name of the Cisco DNA Center event.

- **Domain**: Domain of the Cisco DNA Center event.

- **Type**: Network, App, System, Security, Integrations type.

- **Category**: Error, Warn, Info, Alert, Task Progress, Task Complete.

- **Severity**: P1 (Severity 1) through P5 (Severity 5).

    Note   Severity 1 is the most important or critical priority and should be assigned as such.

- **Workflow**: Incident, Problem, Event, or RFC (Request for Change).

- **Actions**: Edit.

You can adjust what is displayed in the table by clicking the **Filter** icon and using the filter, or by typing a keyword in the **Find** field. For example, to display all access point notifications, type **AP** in the **Find** field. To view all network notifications, type **Network** in the **Find** field. To view all severity notifications, type **1** in the **Find** field.

Step 3   Click **Edit** in the **Actions** column to edit an event.

Choose a setting by clicking the downward pointing angle and adjust the value. For example, click **Network** and adjust to **App**. This changes the event type from a network type to an application type. Click **Severity** and adjust to **1** from **5**. This raises the severity level from 5 to 1.

Step 4   Click the box next to the Event name to enable notifications.

This enables notifications through Cisco DNA Center when the event occurs in the future.

Step 5   Click **Save**.

Configure the Cisco DNA Center Automation Events for ITSM (ServiceNow) Bundle

Perform this procedure to set up monitoring and publishing events requiring device provisioning activities, software image updates for compliance, security, or other operational triggers to a ServiceNow system.

Enabling ITSM in Cisco DNA Center enforces a ServiceNow approval process for better control of Cisco DNA Center software image updates and other device provisioning activities. For example, see SWIM Closed Loop Automation Workflow for information about the approval process in ServiceNow.

See the Configure System Settings chapter in the Cisco DNA Center Administrator Guide for information about enabling ITSM approval for device configuration changes.

Note

- You can publish the event data to the **Event** table in ServiceNow if you have the Event Management plug-in in your ServiceNow instance. If not, you can configure the bundle to send the data to a REST API endpoint in the Cisco DNA app.

- The Event Management and Generic REST API Endpoint options do not support automatic ticket creation, approval/rejection workflow and auto resolution of tickets for closed loop integration.

Before you begin

You must have the appropriate permissions to perform the tasks as described in this procedure. For information about role-based access control for the Cisco DNA Center platform, see the Cisco DNA Center Platform User Guide.

Step 1   From the top-left corner, click the menu icon and choose **Platform** > **Manage** > **Bundles**.

Review the displayed bundles and their status.

Step 2   Click the **Cisco DNA Center Automation events for ITSM (ServiceNow)** bundle link or icon (colored square with initial) for additional information about the bundle.

Additional information that is provided may include the following:

- **General information**: Vendor, version, platform, tags displayed under the square icon.

- **Information**: Tab that displays general information (purpose of bundle and how bundle works in the network), sample schemas, configuration notes, and other data about the bundle.

• **Contents**: Tab that accesses the APIs and integration flows that make up the bundle, or provides information about the integration flows that make up the bundle.

• **Release Notes**: Tab that displays latest release information about the bundle, including its version.

Step 3   Click each of the preceding tabs and review the information about the bundle.

Step 4   Click the **Enable** button to enable the bundle.

An **Information** field appears in the window.

Step 5   Click the **Enable** button in the **Information** field to confirm enabling the bundle.

After clicking the **Enable** button to confirm, a success message appears.

Step 6   Click **OK** in the success message.

Step 7   Click the **Configure** button to configure at the bundle level.

A configuration slide-in pane appears.

Step 8   In the configuration slide-in pane, click **ServiceNow Access Settings** to configure a ServiceNow Connection instance.

Step 9   Click the radio button to configure either an existing ServiceNow Connection instance or configure a new instance.

Figure 19: Example of ServiceNow Instance Configuration Fields

Configure SWIM Events for ITSM (ServiceNow)
Configure your bundle   ✕

∨ ServiceNow Access Settings

   >> Back to Select Instance

   INFORMATION

   Instance Name *

   Description

   SERVICENOW ACCESS SETTINGS
   Host Name *
   https://<servicenow-host-name>

   Username *
   <username-for-servicenow-host>

   Password *
   ·····································   SHOW
                                               Hint
   Check connectivity

› Destination to receive events

                                        Cancel   Activate

For configuring an existing ServiceNow Connection instance, choose it from the drop-down list in the window and click **Activate**.

Step 10   For configuring a new ServiceNow Connection instance, you must enter the following additional information:

- **Instance Name**: Name of the instance.

- **Description**: Descriptive text of the instance.

- **Host name**: Hostname for the ServiceNow system.

- **Username**: Username required to access the ServiceNow system.

- **Password**: Password required to access the ServiceNow system.

Step 11   Click **Check Connectivity** to test whether you can connect to the server where the endpoint is located.

After a successful test of connectivity to the server, activate the bundle.

Step 12   In the configuration slide-in pane, click **Destination to receive events** to configure an Destination Connection instance.

Step 13   Click the radio button to configure either an existing Destination Connection instance or configure a new instance.

Figure 20: Example of Destination to Receive Events Configuration Fields

Configure SWIM Events for ITSM (ServiceNow)

Configure your bundle   ✕

> ServiceNow Access Settings

∨ Destination to receive events

   INFORMATION

   Instance Name *

   Description

   DESTINATION TO RECEIVE EVENTS

   Destination to receive events *   ∨

   Destination Uri

                          Enter a custom endpoint

                                                                       Cancel   Activate

For configuring an existing Destination Connection instance, choose it from the drop-down menu in the window and click **Activate**.

Step 14   For configuring a new Destination instance, you must enter the following additional information:

- **Instance Name**: Name of the instance.

- **Description**: Descriptive text of the instance.

- **Destination to receive events**: Choose one of the following:

  - **Event Management**: When setting up Cisco DNA Center integration with ServiceNow without using the Cisco DNA app, choose the **Event Management** option. The **Event Management** option requires that you have the Event Management plug-in that is configured within the ServiceNow instance.

  - **REST API Endpoint**: You can use the **REST API Endpoint** option with the Cisco DNA app. Data is sent to a REST API endpoint within the Cisco DNA app with the **REST API Endpoint** option.

  - **Generic REST Endpoint in ServiceNow**: For the **Generic REST Endpoint in ServiceNow** option, you can send the data to a different staging table in ServiceNow.

- **Destination URI**: Enter a destination Uniform Resource Indicator (URI) for the **Generic REST Endpoint in ServiceNow** option. This field is mandatory for this option.

After entering this information, proceed to the next step.

Step 15 Click **Activate** to save your changes and activate the bundle or click **Cancel** to cancel the configuration and close the slide-in pane.

> **Note** By clicking **Activate**, you enable the changes that are made to the bundle and the changes take effect immediately. Additionally, the bundle's status changes from **ENABLED** to **ACTIVE**.

Configure the Cisco SD-Access Integration with ITSM (ServiceNow)

The Cisco SD-Access integration with ServiceNow monitors and publishes fabric events that require fabric role updates for security or other operational triggers to an ITSM (ServiceNow) system. It also allows you to trigger or schedule a synchronization between Cisco DNA Center devices and the ServiceNow CMDB system.

Before you begin

Ensure that you have ServiceNow running on a system that you will integrate with Cisco DNA Center platform.

- Run a successful **Discovery** job in Cisco DNA Center. You can check whether a **Discovery** job is successful in **Device Inventory**. From the top-left corner, click the menu icon and choose **Provision** > **Inventory** to view the results.

- You must have the appropriate permissions to perform the tasks as described in this procedure. For information about role-based access control for the Cisco DNA Center platform, see the Cisco DNA Center Platform User Guide.

Step 1 From the top-left corner, click the menu icon and choose **Platform** > **Manage** > **Bundles**.

Review the displayed bundles and their status.

Step 2 Enable and configure the **Basic ITSM (ServiceNow) CMDB Synchronization** bundle to configure data synchronization. For more information, see Configure the Basic ITSM (ServiceNow) CMDB Synchronization Bundle.

Step 3 Enable and configure the **Cisco DNAC Automation events for ITSM (ServiceNow)** bundle to monitor and publish a fabric event. For more information, see Configure the Cisco DNA Center Automation Events for ITSM (ServiceNow) Bundle, on page 11.

Step 4 Configure access settings to ServiceNow for the Cisco SD-Access-ServiceNow instance. From the top-left corner, click the menu icon and choose **System** > **Settings** > **External Services**.

Step 5 In the left pane, click **Destination** and choose **ITSM** to add or edit a ServiceNow instance. For more information, see **Configure ITSM Integration** in the Cisco DNA Center Platform User Guide.

Step 6 Add a device to the fabric and assign a role based on your requirement. The role can be control plane, border, or edge. From the top-left corner, click the menu icon and choose **Provision** > **Fabric**.

The window displays all the provisioned fabric domains.

Step 7 From the list of fabric domains, choose **SDA-ITSM-Fabric**.

Figure 21: Cisco DNA Center Platform Fabrics
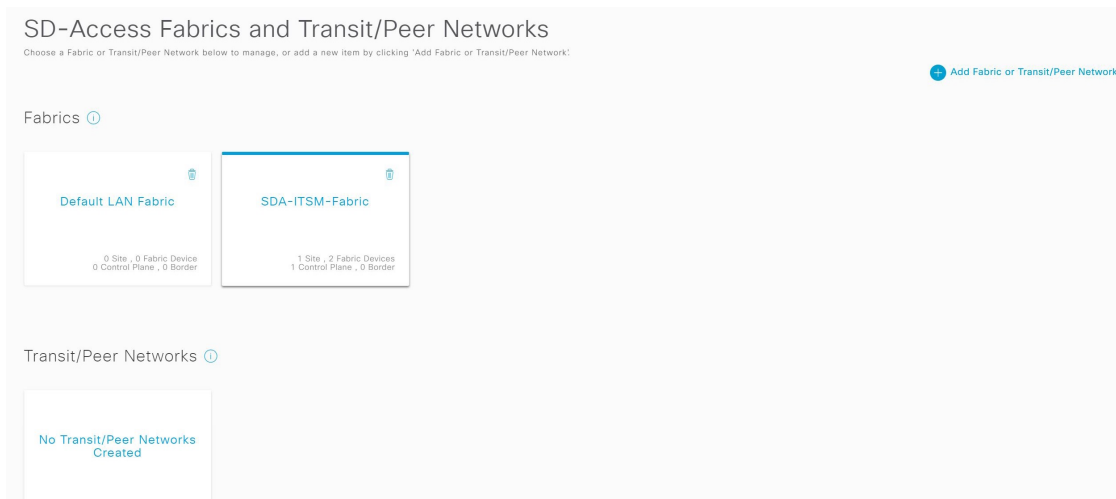
The resulting screen displays all the fabric sites in the fabric domain.

Step 8 Choose a fabric site.

The **Fabric Infrastructure** table lists all devices in the network that have been inventoried.

Note Any device that is added to the fabric is shown with a blue circle in the **Device Role** column.

Figure 22: List of Devices in Fabric Infrastructure

Step 9   In the list view, click a device. The device details window slides in with the following **Fabric** options:

Option	Description
Edge	Click the toggle button next to this option to enable the selected device as an edge node.
Border	Click the toggle button next to this option to enable the selected device as a border node.
Control Plane	Click the toggle button next to this option to enable the selected device as a control plane node.

Note
- To configure a device as a fabric-in-a-box, choose the **Control Plane**, **Border**, and **Edge** options.
- To configure the device as a control plane and a border node, choose both **Control Plane** and **Border**.
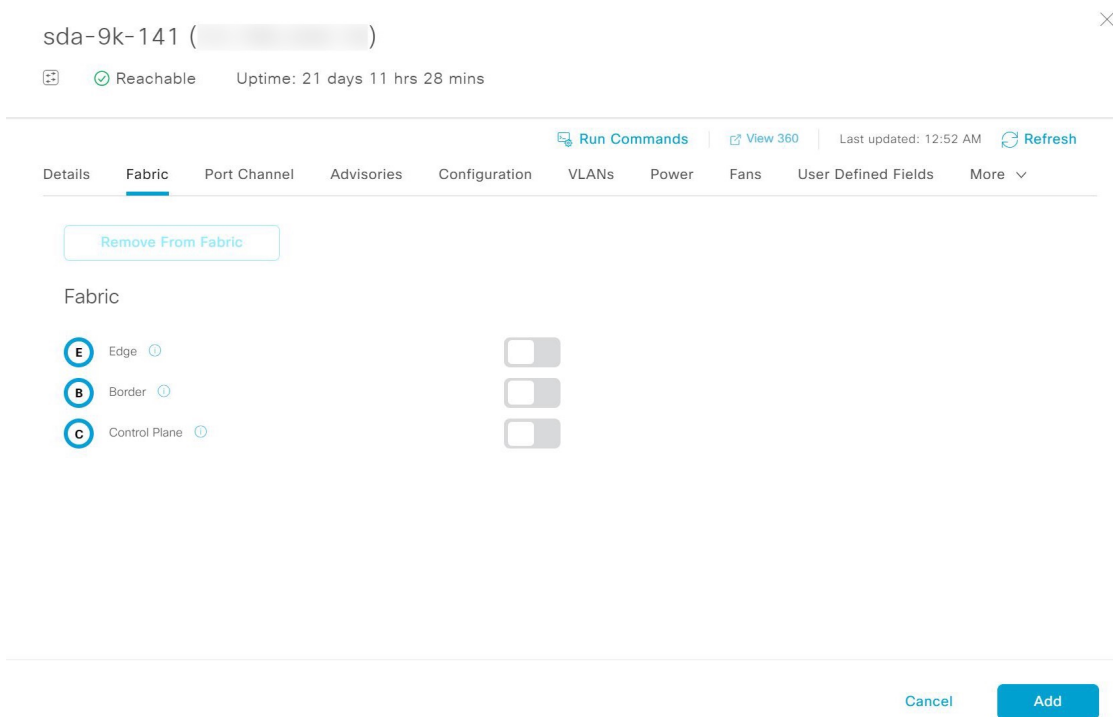
Step 10   Click **Add**.

Step 11   (Optional) To remove a device from the fabric, choose the device and in the device slide-in pane, click **Remove From Fabric**.

Figure 23: Device Roles of a Fabric

Step 12	Click **Deploy** to deploy the device role.
Step 13	In the **Modify Fabric Domain** window, click **Now** to create a ticket immediately or click **Later** to schedule the ticket creation at a specific time.
Step 14	Click **Apply**.

Note	If you choose **Later** to schedule a ticket creation at a specific time, the request goes to the Cisco DNA Center scheduler.

Step 15	From the top-left corner, click the menu icon and choose **Activity** > **Tasks** to view upcoming, in progress, success, and failed fabric tasks.
Step 16	In the **Tasks** window, the ticket status summary displays the following:

- Status of the fabric ticket request: Ticket Approved, Ticket Rejected, or Failed.

- Timestamp of the fabric ticket.

Figure 24: Status of Fabric Ticket Requests

Step 17   To view the event summary of the Cisco SD-Access provision creation request, click the menu icon and choose **Platform** > **Runtime Dashboard** > **SDA Provision Creation Request**.

The **SDA Provision Creation Request** slide-in pane displays the Event ID, Source, Destination, ITSM Workflow, ITSM Status, ITSM ID, ITSM Link, ITSM Last Updated Time, ITSM Entity Severity/Priority, and Event Severity of an individual fabric event. For more information, see **Review the Event Summary** in the Cisco DNA Center Platform User Guide.

Cisco DNA Center Endpoint Attribute Retrieval with ServiceNow

With this Cisco DNA Center release, you can configure Cisco DNA Center endpoint attribute retrieval with ServiceNow using the Cisco DNA app **(version 2.1.1)** that allows you to schedule a synchronization or trigger an update between the endpoint inventory and your ITSM (ServiceNow) configuration management database (CMDB). Endpoint attribute information from ServiceNow can be used to help profile endpoints in your network. ServiceNow appears in the endpoint profiling workspace as an additional probe. You may create custom profiling rules leveraging the attributes sent by ServiceNow.

Mapping between the ServiceNow CMDB fields and endpoint attributes occur at the platform level and is accomplished using the **Endpoint Attribute Retrieval with ITSM (ServiceNow)** bundle. This bundle supports the **Scheduler for ServiceNow Asset Sync** integration flow, which can be configured to run on a set schedule to invoke an internal Cisco API to retrieve the endpoint attribute information from ServiceNow.

The following table describes the procedure for configuring Cisco DNA Center endpoint attribute retrieval with ServiceNow.

Note   This procedure does not modify or delete any CIs on the existing ITSM (ServiceNow) tool.

Table 5: Cisco DNA Center Endpoint Attribute Retrieval with ServiceNow

Step	Description
Step 1	Install or upgrade to the latest Cisco DNA Center release.
	For information about installing Cisco DNA Center, see the *Cisco DNA Center Installation Guide*.
Step 2	Install or upgrade to a compatible version of ServiceNow mentioned on the ServiceNow Store website.
	Click the following link to access the ServiceNow Store website:
	https://store.servicenow.com/sn_appstore_store.do#!/store/application/ 03eb0f4ddbf6ba00f27978b5ae96197b/2.1.1
	Refer to your ServiceNow documentation for its installation and upgrade procedures.
	Note This procedure must be performed by a ServiceNow administrator.
Step 3	Download and install the Cisco DNA app (version 2.1.1) into ServiceNow by following the documentation available at the ServiceNow website.
	Note Cisco DNA Center supports an application (Cisco DNA) that facilitates endpoint attribute retrieval with an ITSM (ServiceNow). This application or app is designed to work with ServiceNow *without* its Event Management plug-in.
	Click this link to access the ServiceNow Store website where the Cisco DNA app is located:
	https://store.servicenow.com/sn_appstore_store.do#!/store/application/ 03eb0f4ddbf6ba00f27978b5ae96197b/2.1.1
	Note This procedure must be performed by a ServiceNow administrator. The Cisco DNA app versions 2.1.1 and 2.0.1 are compatible with the Tokyo and Utah releases of ServiceNow. If you want to use the Vancouver release of ServiceNow, you must first upgrade the Cisco DNA app to the latest version, 2.2.0.
Step 4	Review and ensure that the requirements are met for the Cisco DNA Center-to-ServiceNow integration.
	For information, see Requirements, on page 17.
Step 5	Configure the **Endpoint Attribute Retrieval with ITSM (ServiceNow)** bundle.
	For information, see Configure the Endpoint Attribute Retrieval Bundle with ITSM (ServiceNow), on page 42.

Requirements

Review and ensure that the following networking and systems requirements are met for the Cisco DNA Center-to-ServiceNow integration:

- Networking:
    - The Cisco DNA app is configured with the IP address and access information of the Cisco DNA Center installation that it is being integrated with.

| Note | Contact your Cisco DNA Center administrator to obtain this information. |

• HTTPS network access between Cisco DNA Center and ServiceNow.

| Note | Contact and work with your network administrator to establish this. |

• Management, Instrumentation, and Discovery (MID) Server:

  • The MID server is up and running, as well as accessible from the ServiceNow instance.

  • The Cisco DNA Center platform is accessible from the MID server.

  • The Cisco DNA Center platform REST APIs are allowed from the MID server.

| Note | The MID server is used to proxy the REST requests from the ServiceNow instance. |

See the *Scope Certified Application Installation and Configuration Guide* on the ServiceNow Store website for MID server configuration information: https://store.servicenow.com/sn_appstore_store.do#!/ store/application/03eb0f4ddbf6ba00f27978b5ae96197b

• Cisco DNA Center Platform:

  • The Cisco DNA Center platform is enabled in Cisco DNA Center.

  • The requisite bundle or bundles in the Cisco DNA Center platform are configured and activated (as described in the following procedures).

| Note | These bundles have the required APIs that integrate with the Cisco DNA app in ServiceNow. |

Configure the Endpoint Attribute Retrieval Bundle with ITSM (ServiceNow)

Perform this procedure to configure Cisco DNA Center endpoint attribute retrieval from the ServiceNow CMDB.

Before you begin

• Ensure that you have ServiceNow running on a system that you will integrate with Cisco DNA Center platform.

• You must have the appropriate permissions to perform the tasks as described in this procedure. For information about role-based access control for the Cisco DNA Center platform, see the *Cisco DNA Center Platform User Guide*.

• Ensure that you have installed or upgraded the latest Cisco DNA Center release with Cisco ISE version 3.1 or later.

> **Note** While configuring the **ISE Configuration** in the Cisco AI Endpoint Analytics configuration window, it is recommended to check the **Enhanced Authorization Integration** check box to avoid duplicate data being sent to ISE. For more information, see **Publish Authorization Attributes to Cisco ISE** in the *Cisco DNA Center User Guide*.

Step 1   From the top-left corner, click the menu icon and choose **Platform** > **Manage** > **Bundles**.

Review the displayed bundles and their current status.

Step 2   Click the **Endpoint Attribute Retrieval with ITSM (ServiceNow)** bundle link or icon (colored square with initial) for additional information about the bundle.

Additional information provided may include the following:

- **General information**: Vendor, version, platform, tags displayed under the square icon.

- **Information**: Tab that displays general information (purpose of bundle and how bundle works in the network), sample schemas, configuration notes, and other data about the bundle.

    > **Note** The specific endpoint attribute data that is retrieved is displayed in the **Information** tab. The following endpoint attribute data will be retrieved from ServiceNow (with the display name in Cisco DNA Center within the parenthesis):
    >
    > - Asset Tag (CMDB asset tag)
    > - Model Category (CMDB model category)
    > - Model (CMDB model)
    > - Managed by (CMDB managed by)
    > - Serial Number (CMDB serial number)
    > - Location (CMDB location)
    > - Department (CMDB department)
    > - MAC Address (CMDB MAC address)
    > - Display Name (CMDB display name)

- **Contents**: Tab that accesses the APIs and integration flows that make up the bundle, or provides information about the integration flows that make up the bundle.

- **Release Notes**: Tab that displays the latest release information about the bundle, including its version.

Step 3   Click the **Contents** tab.

Step 4   Click the **Integration Flows** header.

The integration flows appear underneath the header.

Step 5 Click the **Enable** button to activate the integration flow links.

An **Information** field appears in the window.

Step 6 In the **Information** field, click the **Enable** button to confirm enabling the bundle.

After clicking the **Enable** button to confirm, a success message appears.

Step 7 Click **Okay** in the success message.

Step 8 Click the link for the individual integration flow to perform the following tasks.

For the schedule-based integration flow (**Scheduler for ServiceNow Asset Sync**), perform the following tasks:

- Review the **Description**, **Tags**, **How to Use this Flow**, and scheduler.

- Click **Run Now** (to run the scheduler now), **Run Later** (to schedule for a later time), or **Recurring** (to set up a recurring schedule).

  For **Run Later**, you need to select a date, time, and time zone. For **Recurring**, you need to set a repeating interval (hourly, daily or weekly), an interval duration (minutes or hours), and a start and end date.

- Click **Schedule** to enable the scheduler.

  Important - Only configure and enable an integration flow schedule after you have finished configuring the bundle itself as described in this procedure. You can configure and enable an integration flow schedule by returning to this view and clicking **Schedule**. Or, click the **View Flows** link in the **Endpoint Attribute Retrieval with ITSM (ServiceNow)** slide-in pane (see the following steps). Or, click the menu icon and choose **Platform** > **Developer Toolkit** > **Integration Flows** > **Scheduler for ServiceNow Asset Sync**.

    - When you perform the synchronization once, it is always a full sync.

    - The incremental sync is performed only on the scheduled synchronization.

    - The **Recurring** synchronization is scheduled synchronization, while the **Run Later** synchronization is a one-time sync.

    - The first occurrence of recurring synchronization is also a full sync. You must configure a minimum of two occurrences for the recurring synchronization.

    - To complete the first full synchronization, you must configure the synchronization schedule with an hourly difference of at least two hours.

Figure 25: Scheduler for ServiceNow Asset Sync

Scheduler for ServiceNow Asset Sync

Not Scheduled

×

DESCRIPTION

This BAPI runs on defined schedule to invoke an other BAPI-Get CI Data from SNow

TAGS

CMDB   Asset   ITSM   Integration

HOW TO USE THIS FLOW

The integration flows can be scheduled to run periodically at a specified date/time. Configure scheduling the integration flow with the form provided.

* Schedule window cannot be lower than 1 hour with a concurrency of 1

⦿ Run Now
○ Run Later
○ Recurring

Schedule

Step 9	Click the **X** icon to return to the previous bundle window.	
Step 10	Click the **Configure** button to configure at the bundle level.	
	A configuration slide-in pane appears. Review the **Configure Endpoint Attribute Retrieval with ITSM (ServiceNow)** information.	
Step 11	Click the **Configure** button to configure at the bundle level.	
	A configuration slide-in pane appears.	
Step 12	In the configuration slide-in pane, click **ServiceNow Access Settings** to configure a ServiceNow Connection instance.	
Step 13	Click the radio button to configure either an existing ServiceNow Connection instance or configure a new instance.	

Figure 26: Example of ServiceNow Instance Configuration Fields

For configuring an existing ServiceNow Connection instance, choose it from the drop-down menu in the window and click **Activate**.

Step 14   For configuring a new ServiceNow Connection instance, the following additional information must be entered:

- **Instance Name**: Name of the instance.

- **Description**: Descriptive text of the instance.

- **Host name**: Hostname for the ServiceNow system.

- **Username**: Username required to access the ServiceNow system.

- **Password**: Password required to access the ServiceNow system.

Step 15   Click **Check Connectivity** to test whether you can connect to the server where the endpoint is located.

Step 16   Expand the **Synchronization Options** to define the incremental sync of endpoints and do the following:

a. Click the Create a new instance radio button and do the following to configure a new ServiceNow connection instance:

1. In the **INFORMATION** area enter the instance name and description.

2. In the **SYNCHRONIZATION OPTIONS** area check the **Incremental Sync** check box to select the incremental sync of endpoints and specify the maximum limit for incremental sync record to pull in each cycle.

It is recommended to use the **Incremental Sync** that allows you to first retrieve all the data from the service now and later retrieve only the modified data from the subsequent iterations.

Note	• You can specify a maximum of 100 incremental sync records.
	• When you set up the synchronization for the first time, it is performed in full sync, even if it is an incremental sync.
	• When you edit the synchronization settings, it is performed in full sync, even if it is an incremental sync.

Step 17   Click **Save** to save the bundle.

What to do next

Configure the integration flow (**Scheduler for ServiceNow Asset Sync**) for this bundle, using one of the methods described previously.