SWIM Closed Loop Automation

About SWIM closed loop automation

This release supports closed loop automation for software image management (SWIM) between Catalyst Center and ServiceNow. Closed-loop automation consists of a user configuring the provisioning of software device images in Catalyst Center. This configuration information is then communicated directly from Catalyst Center to ServiceNow as an immediate or scheduled change request. The ServiceNow administrator reviews the change request and either approves or rejects it in ServiceNow. The change request acceptance or rejection is then communicated back to Catalyst Center.

After receipt of an approved change request from ServiceNow, Catalyst Center does the software update at that time (immediately) or at its scheduled future time.

After Catalyst Center successfully does the software update, a notification (task completed) is sent back to ServiceNow. If the software update fails, then this is also communicated back to ServiceNow (task fail), so that the user can then manually do the software update in Catalyst Center.

Note If the SWIM provisioning is stopped by the user in Catalyst Center during this process, a task termination notification is sent to ServiceNow.

Ensure that the Cisco Catalyst app (version 2.2.0) is installed within the ServiceNow instance and do these procedures to enable SWIM closed loop automation between Catalyst Center and ServiceNow:

1. Review the requirements to ensure that the prerequisites for this feature have been met. See SWIM closed loop automation requirements, on page 2.

2. Review the SWIM closed loop automation workflow to ensure that the required Catalyst Center admin and ServiceNow admin tasks are done for this feature. See SWIM closed loop automation workflow, on page 2.

SWIM closed loop automation requirements

This table lists the requirements for SWIM closed loop automation.

Table 1: SWIM closed loop automation requirements

Software product, app, or procedure	Requirement
Catalyst Center	The latest Catalyst Center release.
Service Now	Any compatible version of ServiceNow mentioned on the ServiceNow Store website. Click this link to access the ServiceNow Store website: https://store.servicenow.com/sn_appstore_store.do#!/store/application/03eb0f4ddbf6ba00f27978b5ae96197b/2.2.0
Cisco Catalyst app	Cisco Catalyst app (version 2.2.0) This app is available through the ServiceNow website: https://store.servicenow.com/sn_appstore_store.do#!/store/application/03eb0f4ddbf6ba00f27978b5ae96197b/2.2.0 The Cisco Catalyst app must be installed in your ServiceNow instance by a ServiceNow administrator. The Cisco Catalyst 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 Catalyst app to the latest version, 2.2.0.
Catalyst Center-to-ServiceNow ITSM integration	See Catalyst Center integration with ServiceNow using the Cisco Catalyst app.

SWIM closed loop automation workflow

This table describes the SWIM closed loop automation workflow between Catalyst Center and ServiceNow.

Table 2: SWIM closed loop automation workflow
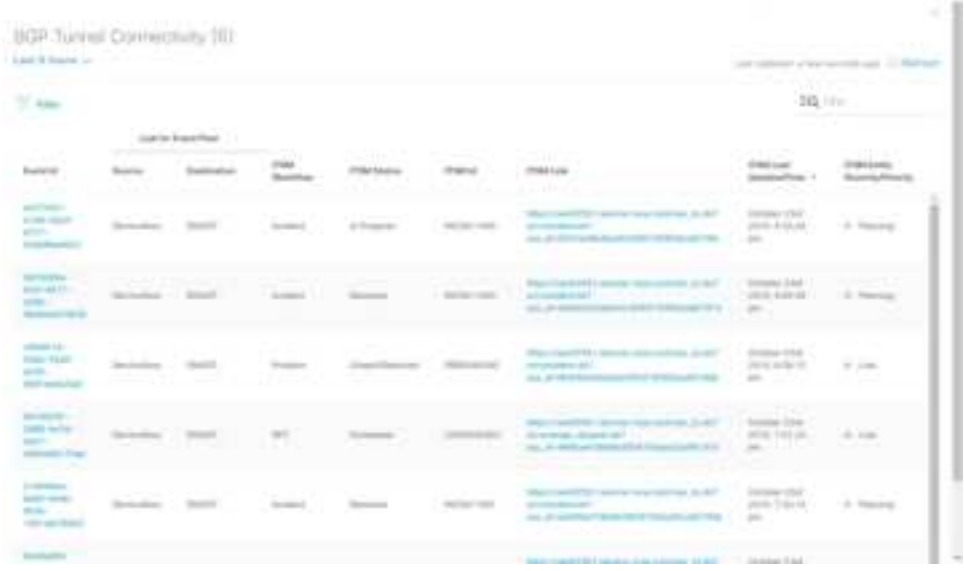
Step	Description
Step 1	The Catalyst Center admin configures the Image Repository to prepare for the provisioning of devices in the network. **Note** See the Manage Software Images chapter in the *Cisco Catalyst Center User Guide* for information about setting up the Image Repository, as well as to review the software image provisioning process.

Step	Description
Step 2	The Catalyst Center admin distributes the software image to a device or devices at the present time or schedules this activity for a later time. **Note** Before this step is done, ensure that the Automation Events for ITSM (ServiceNow) bundle is configured and activated. • From the Catalyst Center home page, the admin clicks **Provision**> **Inventory**. • From the **Focus** drop-down list, the admin selects **Software Images** and selects the device with the image to upgrade. • From the **Actions** drop-down list, the admin chooses **Software Images** > **Update Image** and does these tasks: • **Distribute**: Clicks **Now** to start the distribution immediately or clicks **Later** to schedule the distribution at a specific time. • Clicks **Next**. • **Activate**: Clicks **Now** to start the activation immediately or clicks **Later** to schedule the activation at a specific time. • **Confirm**: Clicks **Confirm** to confirm the update. **Figure 1: Cisco Catalyst Assurance provision** **Note** See the "Manage Software Images" chapter in the *Cisco Catalyst Center User Guide* for detailed information about this step.

Step	Description
Step 3	After a software image distribution is created in Catalyst Center (software image update to be activated immediately or later), a SWIM event is created and communicated directly to the ServiceNow ITSM as a change request ticket. This is done through the use of APIs from the Cisco Catalyst app. The change request ticket status is new. The SWIM event appears in the ServiceNow GUI in the ServiceNow **Change Requests** table. *Figure 2: ServiceNow Change Requests*
Step 4	In the **Change Requests** table, the ServiceNow admin clicks the change request number (identifier) to open and review its status and data. In the ServiceNow GUI, the ServiceNow admin can edit the change request. For example, the admin can change the **State** from 'New' to 'Scheduled' and enter 'Change Management' for the **Assignment group**. The ServiceNow admin can also identify the SWIM change request with information in the **Short Description** field. *Figure 3: Change Request*

Step	Description
Step 5	The ServiceNow admin now clicks the **Cisco Catalyst** tab in the change request. Important additional data synchronized from Catalyst Center to ServiceNow can be viewed in this tab. *Figure 4: Cisco Catalyst tab*
Step 6	The ServiceNow admin now either approves or rejects the change request ticket in the ServiceNow GUI. In the **Cisco Catalyst** tab, the ServiceNow admin clicks the **Approval Status** field and clicks either **Approved** to approve the request or **Rejected** to reject the request. **Note** Before the change request is executed, it must be approved in ServiceNow. Only after an approval in ServiceNow will the change request be executed in Catalyst Center. *Figure 5: Cisco Catalyst Approval Status field*

Step	Description
Step 7	After the ServiceNow admin approves the ticket and the status of the change request is changed to Implement, a notification is sent to Catalyst Center. In case the ticket is rejected, the update is sent to Catalyst Center in Scheduled state itself and the ServiceNow ticket is automatically canceled.
Step 8	After a successful software image update in Catalyst Center, a notification (task completed) is sent back to ServiceNow. ServiceNow then closes the change request ticket. The change request ticket closure is done through the use of APIs from the Cisco Catalyst app. **Note** For a failed software update, ServiceNow reports the failure so that the ServiceNow admin can manually take action on the change request ticket. For a terminated software update, the change request ticket is canceled in ServiceNow. The reporting of both a failed software image update and a terminated software image update are also done through the use of APIs from the Cisco Catalyst app.
Step 9	The Catalyst Center admin can review the SWIM event by choosing **Runtime Dashboard** > **Event Summary**. **Note** By clicking the individual events in the GUI window, the admin accesses additional GUI windows that permit direct access to the event in ServiceNow. *Figure 6: Event Summary*

Step	Description
Step 10	The Catalyst Center admin clicks an event name (link) to view additional detailed data. *Figure 7: Event history*
Step 11	The Catalyst Center admin clicks an event ID number (link) to view only data associated with that specific event. *Figure 8: Event ID data*

Step	Description
Step 12	The Catalyst Center admin clicks the ITSM Link to return to the ServiceNow Service Management GUI and specific incident. *Figure 9: ServiceNow Incident*