ServiceNow CMDB Synchronization PowerPack

Release Notes Version 3.1.0, rev1

Overview

The *ServiceNow Configuration Management Database (CMDB)* Synchronization PowerPack version 3.1.0 includes a number of significant updates to the "Sync Devices from SL1 to ServiceNow" integration application. This release also includes the new "Sync Discovery Templates from SL1 to ServiceNow" integration application along with additional new features and improvements.

NOTE: The label "SyncPack" is used in place of "Synchronization PowerPack" in the PowerFlow user interface.

This document includes the following topics:

System Requirements

The *ServiceNow CMDB* Synchronization PowerPack version 3.1.0 requires:

- **PowerFlow platform version**: 2.0.0 or later
- **PowerFlow ServiceNow Base Synchronization PowerPack version**: 3.0.0 or later. You must upload and install the *ServiceNow Base Synchronization PowerPack* before uploading and installing this Synchronization PowerPack.
- **SL1 version**: 8.12.2 or later. For details on upgrading SL1, see the appropriate SL1 Release Notes.
- **SL1 ap2 version**: 5.125.44 or later of the user interface for SL1. For more information, see the ***Introduction to SL1*** manual.
- **The "ScienceLogic SL1: CMDB & Incident Automation" application version**: 1.0.45.
- **ServiceNow version**: Madrid, New York, or Orlando with Web Services enabled.

NOTE: If your ServiceNow instance is domain-separated, install the latest "ScienceLogic Domain Separation (Global)" update set in ServiceNow. For more information, see the ***PowerFlow: ServiceNow CMDB Synchronization PowerPack*** manual.

The following table lists the port access required by PowerFlow for this Synchronization PowerPack:

Source IP	PowerFlow Destination	PowerFlow Source Port	Destination Port	Requirement
PowerFlow	SL1 API	Any	TCP 443	SL1 API Access
PowerFlow	ServiceNow API	Any	TCP 443	ServiceNow API Access
PowerFlow	SL1 Database	Any	TCP 7706	SL1 Database Access

Prerequisites for the Synchronization PowerPack

To install this Synchronization PowerPack, you must have administrator access to both SL1 and ServiceNow. Specifically, you will need:

- ScienceLogic administrator access to the Administration Portal
- ServiceNow administrator access

Additional information related to uploading and installing the Synchronization PowerPack:

- If you want to upload and install multiple ServiceNow Synchronization PowerPacks at the same time, you should upload *all* of the Synchronization PowerPacks first, and then install them to address any dependencies between the Synchronization PowerPacks.
- If you are upgrading from version 1.8.4 of the PowerFlow platform, you can first move to version 2.5.0 of the ServiceNow Synchronization PowerPack, then upgrade to version 2.0.x of the PowerFlow platform, and finally move to version 3.0.0 or later of the relevant ServiceNow Synchronization PowerPacks.
- If you made customizations to version 2.5.0 or earlier of the ServiceNow Synchronization PowerPack, you must make a copy of that Synchronization PowerPack and save it as a new Synchronization PowerPack to keep your customizations. For more information, see the ***SL1 PowerFlow for Developers*** manual.
- If you are starting out with version 2.0.x of the PowerFlow platform, you should skip version 2.5.0 of the ServiceNow Synchronization PowerPack and instead install version 3.0.0 of the relevant ServiceNow Synchronization PowerPacks.
- There is no backwards compatibility after you upgrade a ServiceNow Synchronization PowerPack from version 2.5.0 to 3.0.0 or later.

NOTE: ScienceLogic highly recommends that you disable all firewall session-limiting policies. Firewalls will drop HTTPS requests, which results in data loss.

Installing or Upgrading the Synchronization PowerPack

WARNING: If you are *upgrading* to this version of the Synchronization PowerPack from a previous version, make a note of any settings you made on the various integration applications in this Synchronization PowerPack, as these settings are *not* retained when you upgrade. However, any Device Class mappings you added to the **attribute_mappings** section for the "Sync Devices from SL1 to ServiceNow" integration application are retained when you upgrade.

NOTE: Also, if you are upgrading from version 3.0.0 to version 3.1.0 of the Synchronization PowerPack, you might get a "Run: failure" pop-up message and the following error in the **Step Log** pane for the "Install SyncPack" step in the Activate & Install SyncPack" integration application: "Step requires module servicenow_cmdb_syncpack.util.cmdb_params but it's not available in the environment". In this situation, go to the **SyncPacks** page to uninstall the Synchronization PowerPack, and then install version 3.1.0 again.

NOTE: If you are installing or upgrading to version 3.1.0 of the Synchronization PowerPack in an offline deployment, see *Installing or Upgrading in an Offline Environment*.

A Synchronization PowerPack file has the **.whl** file extension type. You can download the Synchronization PowerPack file from the ScienceLogic Support site.

To locate and download the Synchronization PowerPack:

1. Go to the ScienceLogic Support site at https://support.sciencelogic.com/s/.
2. Click the Product Downloads tab, select *PowerPacks*, and then click the "Synchronization" link. The **Synchronization PowerPack Downloads** page appears.
3. Click the name of the Synchronization PowerPack you want to install. The **PowerPack** page appears.
4. In the **Files** list, locate the Synchronization PowerPack.**whl** file, click the down arrow button, and select *Download*.

NOTE: Synchronization PowerPacks do not require a specific license. After you download a Synchronization PowerPack, you can import it to the PowerFlow platform using the PowerFlow user interface.

To import a Synchronization PowerPacks in the PowerFlow user interface:

1. On the **Synchronization PowerPacks** page, click **[Import Synchronization PowerPack]**. The **Import Synchronization PowerPack** page appears.
2. Click Browse and select the **.whl** file for the Synchronization PowerPack you want to install. You can also drag and drop a **.whl** file to the **Synchronization PowerPacks** page.

   TIP: You can also drag and drop a **.whl** file to the **SyncPacks** page.

3. Click Import. PowerFlow registers and uploads the Synchronization PowerPack. The Synchronization PowerPack is added to the **Synchronization PowerPacks** page.

NOTE: You cannot edit the content package in a Synchronization PowerPack published by ScienceLogic. You must make a copy of a ScienceLogic Synchronization PowerPack and save your changes to the new Synchronization PowerPack to prevent overwriting any information in the original Synchronization PowerPack when upgrading.

By default, the **SyncPacks** page only displays activated and installed Synchronization PowerPacks. If you do not see the Synchronization PowerPack that you want to install, click the toggle icon on the **SyncPacks** page and select *Show All SyncPacks* to see a list of the uninstalled Synchronization PowerPacks.

To install a Synchronization PowerPack in the PowerFlow user interface:

1. On the **SyncPacks** page, click the Actions button for the Synchronization PowerPack you want to install and select *Activate & Install*. The **Activate & Install SyncPack** modal appears.

   TIP: By default, the **SyncPacks** page displays only activated and installed PowerPacks. If you do not see the PowerPack that you want to install, click the toggle icon ( ) on the **SyncPacks** page and select *Show All SyncPacks* to see a list of the uninstalled PowerPacks.

2. Click Yes to confirm the activation and installation. When the Synchronization PowerPack is activated, the **SyncPacks** page displays a green check mark icon for that Synchronization PowerPack. If the activation or installation failed, then a red exclamation mark icon appears.
3. For more information about the activation and installation process, click the check mark icon or the exclamation mark icon in the **Activated** column for that Synchronization PowerPack. For a successful installation, the "Activate & Install Synchronization PowerPack" PowerFlow application appears, and you can view the Step Log for the steps. For a failed installation, the **Error Logs** window appears.

Installing or Upgrading in an Offline Deployment

Use the following procedure if you are installing or upgrading to version 3.1.0 of this Synchronization PowerPack in an offline deployment.

This release of the Synchronization PowerPack requires the following external files for an offline deployment:

- **Jinja2-2.11.1-py2.py3-none-any.whl**, available at this location at pypi.org.
- **MarkupSafe-1.1.1-cp37-cp37m-manylinux1_x86_64.whl**, available at this location at pypi.org.

To upload the required external files:

1. After downloading the two required external files, SCP the files to the master node.
2. Run the following commands on the host:

```
devpi use 'https://<is_username>:<is_password>@<is_
hostip>:3141/isadmin/dependencies'
devpi login <is_username> --password=<is_password>
cd /tmp/
devpi upload Jinja2-2.11.1-py2.py3-none-any.whl
devpi upload MarkupSafe-1.1.1-cp37-cp37m-manylinux1_x86_64.whl –force
```

> **NOTE:** If you cannot run these commands on the host, you can instead run them on the pypiserver container.

3. Perform a docker copy to both files (if you are running commands in the pypiserver container):

```
docker cp <file1-location> $(docker ps -q -f name=iservices_pypiserver):/tmp
docker cp <file2-location> $(docker ps -q -f name=iservices_pypiserver):/tmp
```

4. Run a docker exec on the host (if you are running commands in the pypiserver container):

```
docker exec -it <container_id> /bin/bash
```

5. Remove the docker services:

```
docker stack rm iservices
```

6. Open the **docker-compose -override.yml** file for editing by running the following command:

```
vi /opt/iservices/scripts/docker-compose-overide.yml
```

7. In the **docker-compose-override.yml** file, locate the **pypiserver** section.
8. Add the same environment settings for the proxy that are in the **steprunner service** section.

> **NOTE:** The **db_host** line will not be needed and if **no_proxy** has **isnet**, remove the asterisk (*).

9. Save and exit the **docker-compose-override.yml** file.
10. Run the compose override bash script to update the **docker-compose.yml** file:

```
bash /opt/iservices/scripts/compose-override.sh
```

11. Redeploy the Docker Swarm:

```
docker stack deploy -c /opt/iservices/scripts/docker-compose.yml
```

12. Open a browser and log into PowerFlow.
13. In the same browser, navigate to port **3141**. For example: **https://*<IS_server>*:3141/**.
14. Click the **dependencies** folder and confirm that the two **.whl** files were added to in the **dependencies** folder.
15. Follow the steps in *Installing the Synchronization PowerPack* to install and activate this Synchronization PowerPack.

Installing the "ScienceLogic SL1: CMDB & Incident Automation" in ServiceNow

You must install the "ScienceLogic SL1: CMDB & Incident Automation" application on the ServiceNow instance to enable this Synchronization PowerPack. The "ScienceLogic SL1: CMDB & Incident Automation" application is also known as the "Certified" or "Scoped" application.

The most recent version of the application is 1.0.45, which is required for all 3.1.x Synchronization PowerPacks.

NOTE: You must have a ServiceNow HI Service Account to request this application and download it onto your ServiceNow instance.

You must first request the "ScienceLogic SL1: CMDB & Incident Automation" application from the ServiceNow Store, and then you can install it.

To request and install the Certified Application:

1. Go to the ServiceNow Store at https://store.servicenow.com and search for "ScienceLogic SL1".
2. Select the "ScienceLogic SL1: CMDB & Incident Automation" application. The detail page for the application appears.
3. Click **Get** and log in with your HI credentials.

4. After the request is approved, log in to ServiceNow as an administrator and navigate to **Application Manager** (System Applications > Applications).
5. Click **Downloads** in the menu header or search for "ScienceLogic".
6. Click the version drop-down for the "ScienceLogic ServiceNow Integration" application listing to make sure you are using the correct version of the application that is compatible with your version of the *PowerFlow ServiceNow* Synchronization PowerPack.
7. Click **Install** for the "ScienceLogic ServiceNow Integration" application. The installation is complete when the button changes to **Installed**.
8. In the filter navigator, search for "ScienceLogic" and locate the application in the navigation menu in the left pane.

Included Features

The following features are included in the *ServiceNow CMDB Synchronization PowerPack* version 3.1.0:

- This release includes the following updates to the "Sync Devices from SL1 to ServiceNow" integration application:
    - This integration application was updated to add the ability to sync device assets from SL1 to ServiceNow. The **Configuration** pane for this integration application was updated by adding the default attributes fields to the **attribute_mappings** section, which in previous versions was named the **additional_attributes** section. Many of the attributes were renamed, and you can review the list of available device attributes in the ***PowerFlow: ServiceNow CMDB Synchronization PowerPack*** manual.

      WARNING: If you are upgrading to this version of the Synchronization PowerPack from a previous version, make a note of any settings you made in the **additional_attributes** section from the previous version. Those settings are *not* retained in the new **attribute_mappings** section when you upgrade. However, any Device Class mappings you added to the **mappings** section are retained when you upgrade.

    - The following fields were added to the **Configuration** pane:
        - ***enable_device_active***. Select this option to enable the **Device Active** block in the device GraphQL query, which contains information about the active state of the SL1 Device. Accessing this data in the attribute mappings requires use of a Jinja2 Template. For more information, see the ***Integration Service: ServiceNow CMDB Synchronization PowerPack*** manual.
        - ***enable_asset_networks***. Select this option to enables the **assetNetworks** block in the device GraphQL query, which returns a list of asset networks. Accessing this data in the attribute mappings also requires use of a Jinja2 Template.

        - ***drop_company***. Select this option if you do not want to add the ***sys_id*** for the ServiceNow Company to device payloads. Selecting this option has no effect if you selected the ***Domain_Separation*** option for this integration application.
        - ***exclude_inactive***. Select this option to prevent syncing devices to ServiceNow that are disabled, unavailable, or in maintenance. By default, this field is not selected.
    - The "Sync Devices from SL1 to ServiceNow" and "Sync CI Attributes from ServiceNow to SL1" integration applications were updated to enable the sync of complex, concatenated (linked) fields. You can add these complex values in the SL1 side of the **attribute_mappings** section of the **Configuration** pane for this application, and that value is mapped to one or many fields in ServiceNow. When you are syncing device attributes, you can map one or more Jinja2 Templates in the ServiceNow side of the **attribute_mappings** section to sync a complex field to a SL1 field.
    - The ***customer_ci_relation_overrides*** field in this integration application was updated to include default relationship overrides for VMware instead of direct parent/child relations. The "ScienceLogic_Identification_Engine_VMware.xml" update set for ServiceNow was also updated with the relationships and overrides needed to sync VMware trees.

- The "Sync Advanced Topology from SL1 to ServiceNow" integration application was updated to include the ***customer_ci_relation_overrides*** field, which includes the new VMware defaults from the "Sync Devices from SL1 to ServiceNow" integration application. As a result, this application can now use the overrides instead of direct parent/child relations.

> **NOTE:** You can also install the "ScienceLogic_Identification_Engine_VMware.xml" update set for ServiceNow to get access to additional relationships and overrides you might need to sync VMware trees. Depending on the plug-ins and custom configurations in your environment, you might need additional relationships. These mapping don't handle making classes independent, as that is based on the specific user environment. Identifier rules are not defined in this update set because they depend on the data in the SL1 environment. For more information about VMware relationships in ServiceNow, see https://docs.servicenow.com/bundle/orlando-it-operations-management/page/product/discovery/reference/r_VCenterDataCollected.html.

- If you are using the Service Catalog Discovery workflow, you can sync specific Discovery Sessions from SL1 and create a discovery template in ServiceNow. The new "Sync Discovery Templates from SL1 to ServiceNow" integration application syncs SL1 Discovery Sessions that contain a configured string to ServiceNow and creates Service Catalog templates in ServiceNow. You can use those templates for discovering or monitoring CIs.
- The "Sync CI Attributes from ServiceNow to SL1" integration application was updated to better handle large-scale syncs.
- A new event was created in the "ScienceLogic SL1: CMDB & Incident Automation" Application that returns the following asset information in the event payload: **sys_id, name, class, class_label, id, region, monitored and ip_address**. The ServiceNow MID Server is not needed for this event. The Integration Service uses this event and parses the payload to create discovery sessions in SL1.

- For ServiceNow users that do not use the **Company** field, the Synchronization PowerPack will use the SL1 **Region** value when aligning a Service Catalog template to a CI for monitoring to ensure that the CI is added to the correct SL1 stack.
- The "ScienceLogic SL1: CMDB & Incident Automation" (Scoped) Application was updated to prevent a sync if a ServiceNow instance is domain-separated and the payload from the PowerFlow is not domain-separated. Also, the PowerFlow user interface displays an error message.
- Updated the "Sync Service Requests from ServiceNow to SL1" integration application to cache the device information from ServiceNow if this application was sent for discovery requests. Also updated the "Sync Discovery Session Status from SL1 to ServiceNow" integration application to consume the newly cached data and to populate custom attribute fields in SL1 with the ***sys_id*** and ***ci_class*** of the newly discovered devices. You can use the following application variables in the "Sync Discovery Session Status" application to control where this data is sent:
    - ***ci_class_target***. Takes the ***ci_class*** value from the CI in the ServiceNow Service Request and populates it in the relevant field in SL1, such as ***c-ci_class***.
    - ***sys_id_target***. Takes the ***sys_id*** value from the CI in the ServiceNow Service Request and populates it in the relevant field in SL1, such as ***c-sys_id***.

    > **NOTE:** If these fields are not populated, this process is skipped.

- When you run Discovery Sync, the "Sync Discovery Requirements" integration application maps the CI ***hostname*** or ***ip_address*** value to the CI ***sys_id***. The discovered device directly updates the CI and skip the Identification and Reconciliation Engine by using the ***sys_id*** and CI ***class***. ServiceNow should be set as the ***Source of Truth*** in this situation.
- Discovery Sessions and Discovery Session Log stamps are now cached in the Integration Service database with the ***region*** key to prevent cross-pollination of data if you are using multiple SL1 systems with the Integration Service.
- In the **attribute_mappings** section on the **Configuration** pane of the "Sync Organizations from SL1 to ServiceNow" integration application, you can edit or create a mapping for any other company attributes, such as address and contact information, that you want to sync between SL1 and ServiceNow. You can use Jinja2 Templates in fields that are aligned with the "Source of Truth" you selected (the left column is for SL1, and the right column is for ServiceNow). A set of company attributes are already mapped by default.
- Added improved duplicate handling for CIs for integrations with ServiceNow New York or later. If you are using ServiceNow New York or a new ServiceNow instance running this version of the Synchronization PowerPack, the Synchronization PowerPack populates the ***duplicate_of*** field with name of the oldest (original, non-duplicate) CI. In ServiceNow Madrid or earlier, the Synchronization PowerPack marks the ***discovery_source*** field for a duplicate CI as *Duplicate*, and any CI with a ***discovery_source*** of *Duplicate* is removed from the integration.
- Updated the ***Integration Service: ServiceNow CMDB Synchronization PowerPack*** manual with a new section that describes how to use the ***customer_ci_relation_overrides*** field on the **Configuration** pane of the "Sync Devices from SL1 to ServiceNow" integration application to enable device sync for DCM trees.

Issues Addressed

The following issues were addressed in the *ServiceNow CMDB Synchronization PowerPack* version 3.1.0:

- Addressed an issue where you could only cache one set of Device Classes in the PowerFlow, which prevented you from syncing more than one SL1 system with the PowerFlow. With this update, the "Cache ServiceNow CIs and SL1 Device Classes" integration application creates a cache with the configured ***region*** value for that SL1 system, and whichever region ran last will have already populated that cache. Also, the "Sync Devices from SL1 to ServiceNow" and "Sync CI Attributes from ServiceNow to SL1" integration applications were updated to consume the region-specific caches to prevent mismatched names and IDs.
- Addressed an issue where the Service Request GET did not return device information.
- Addressed an issue where the "Sync Devices from SL1 to ServiceNow" integration application did not properly handle SL1 Device Classes with duplicate names in SL1.
- Updated the "Sync Devices from SL1 to ServiceNow" integration application when run in a domain-separated ServiceNow environment to address an issue where certain devices without a domain ***sys_id*** were not getting removed from the device payload.
- Addressed an issue where the "Sync Advanced Topology from SL1 to ServiceNow" integration application failed if interfaces were missing when trying to sync interface relationships such as DCMR, Layer2, or LLDP.
- Addressed an issue in which the last row for pagination had incorrectly applied the export limit, which prevented the PowerFlow from paging beyond 10,000 records.
- Addressed an issue where the API endpoint for Service Requests did not correctly handle the ***State*** value.

Known Issues

The *ServiceNow CMDB Synchronization PowerPack* contains the following known issues:

- When syncing multiple VMware trees from SL1 to ServiceNow, the **unique_id** field that is mapped by default to the **object_id** field in ServiceNow is not unique across multiple VMware trees. New Integration Service users should not use the **object_id** field as an identifier rule in ServiceNow due to this known issue. In a future release, the default **object_id** field will be updated with a field that is unique across multiple VMware trees.
- Applications and Application Components from SL1 are *not* synced by the PowerFlow from SL1 to ServiceNow.

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