

Synchronize Catalyst Center Inventory with ServiceNow CMDB System

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Introduction

This document describes the CMDB synchronization use case of Catalyst Center and ITSM (ServiceNow) integration.

Background Information

This document covers all the details pertaining to the CMDB synchronization starting from components involved, pre-requisites, events flow, configurations, workflow execution and troubleshooting scenarios. It is relevant if Cisco DNA App is installed on the ServiceNow instance.

The Cisco DNA app installed on SNOW instance schedules the basic one-way synchronization of Cisco Catalyst 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.

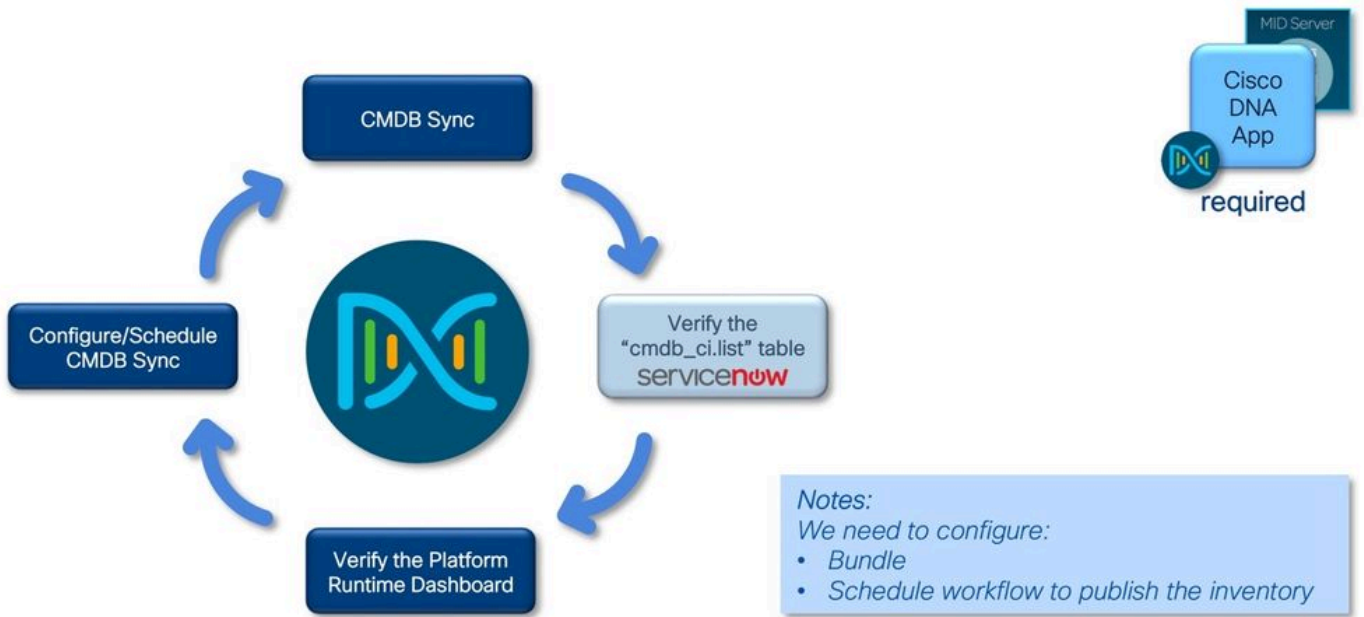
Cisco Catalyst Center-ITSM (ServiceNow) Integration

Refer to this document for details on Catalyst Center-ITSM integration:

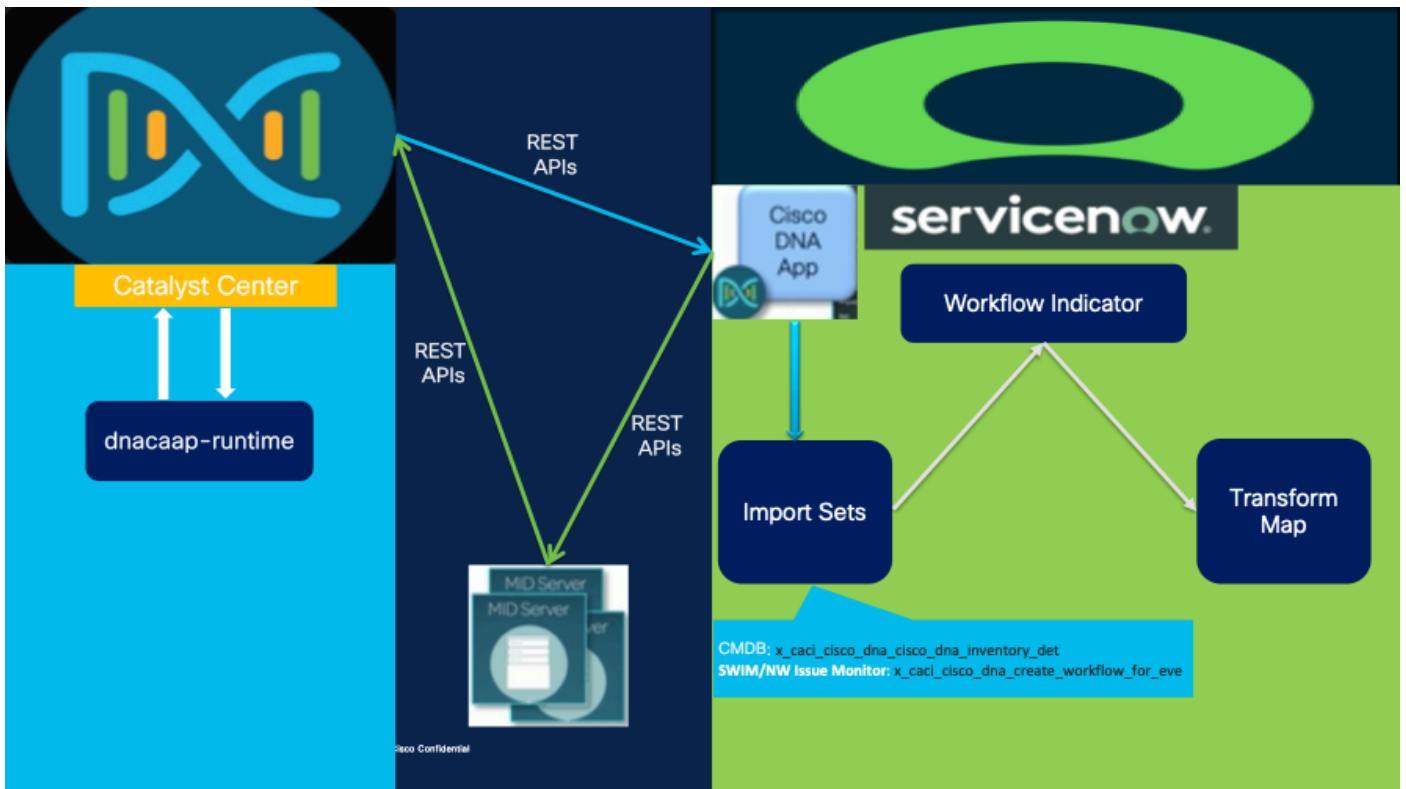
[Scope Underlying Concepts of Catalyst Center and ITSM Integration](#)

Architecture: CMDB Synchronization

CMDB Synchronization: High-Level Architecture



CMDB Synchronization Workflow: Under the Hood



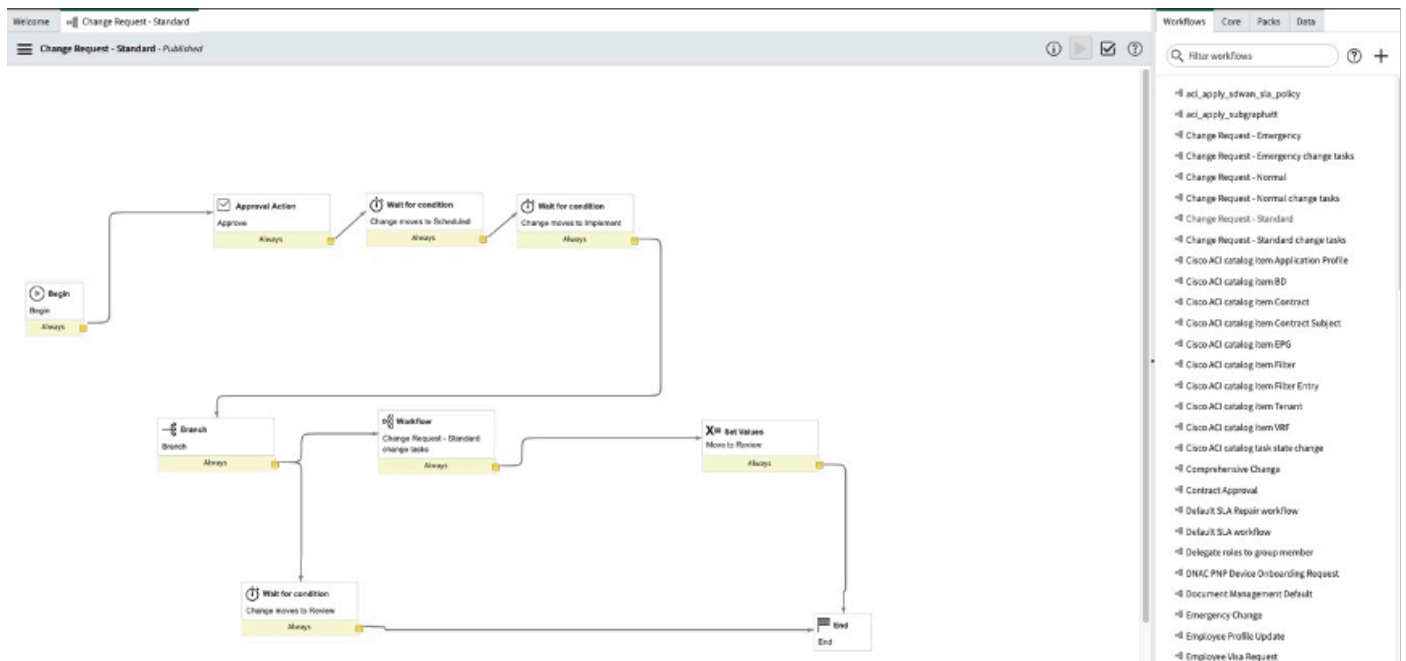
Events Flow: Catalyst Center

- When a CMDB Sync event is triggered the dnacaap-runtime service comes into play and the dnacaap-platform scheduler creates a job ScheduledDnaacaapJob which discovers the devices in the network in a scheduled frequency and extracts the required device information to be able to sync the Inventory with an ITSM system.
- Catalyst Center then makes REST API call to the Cisco DNA Application installed on SNOW Instance.

Events Flow: ITSM (ServiceNow)

- The Network Events (CMDB Sync, SWIM, Network Issues) that occur in the network and notified are picked from Cisco Catalyst Center and pushed to ServiceNow using ServiceNow Import Set APIs or Scripted REST APIs or Generic REST API endpoints in ServiceNow. The Import Set Table to which the data is posted to is `x_caci_cisco_dna_cisco_dna_inventory_det`.
- Cisco DNA application installed on SNOW uses the data from events happening in Cisco Catalyst Center. The associated Workflow Indicator selected by the Network Ops team for each event, along with other user selections such as Type, Category, Severity leads to creation of an Incident, Problem or RFC (Change Request).

Every event record from DNA has an associated Workflow Indicator that determines what kind of workflow the event can go through in ServiceNow. This snippet is an example of Workflow Indicator.



- Based on workflow indicator decision, one of the transform maps can get executed and the data in the staging table can be parsed and mapped to the appropriate target table (Incident/Problem or Change).

CMDB Synchronization Bundle Configuration

For CMDB Synchronization bundle configuration, refer to section Configure the Basic ITSM (ServiceNow) CMDB Synchronization Bundle of Cisco DNA Center ITSM Integration Guide ([Cisco DNA Center ITSM Integration Guide, Release 2.3.5](#)).

CMDB Synchronization Workflow Execution

Catalyst Center

1. Navigate to **Platform > Developer Toolkit > Integrations**; hover over **3 dots** and click **Schedule Flow**.

Schedule to Publish Inventory Details - ServiceNow Connector



Scheduled

DESCRIPTION

This scheduler discovers the devices in the network in a scheduled frequency and extracts the required device information to be able to sync the Inventory with an ITSM system.

TAGS

ServiceNow

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 24 hours

- Run Now
- Run Later
- Recurring

Schedule

2. Choose the **CMDB Schedule type** and click **Schedule**.

Integration Flow Summary

REST-Based (0) | 0 flows | **Schedule-Based (1) | 0 flows**

Filter | Export

Domain	Name	Version	Instances			Performance			
			All (X) +	🟢	🔴	🟢	Minimum	Maximum	Average
Integrations	Schedule to Publish Inventory Details - ServiceNow Connector	V3	1	0	0	1	23.303s	23.303s	23.303s

3. To view the status of the CMDB Synchronization Schedule status, navigate to **Platform > Runtime Dashboard > Integration Flow Summary**.

Schedule to Publish Inventory Details - ServiceNow Connector (1)

Schedule-Based Integration Flow

Export

Filter

Instance ID	Status	Start Time	End Time +	Duration
c1187910-b2b8-4a36-8132-e738c2c3cafd	🟢 SUCCESS	July 28th 2024, 12:36:56 pm	July 28th 2024, 12:37:19 pm	23303 ms

Schedule to Publish Inventory Details - ServiceNow Connector

c1187910-b2b8-4a36-9132-e738c2c3cafd Details

RUN SUMMARY				ERRORS
Start Time	July 28th 2024, 12:36:56 pm	Time Taken	23303 ms	Data is not Available
End Time	July 28th 2024, 12:37:19 pm	Status	SUCCESS	

LOGS

No Logs are available

4. The logs for the dnacaap-runtime service could be monitored to see the details like ScheduleID, bapi key, bapi id which could be used for debugging if the workflow fails.

```
| INFO | dnacaap-management-akka.actor.default-dispatcher-78546 | 200834 |
com.cisco.dna.commons.scheduler.repository.ScheduleDAO | scheduleid : 86d0b48f-
c1e3-4cfa-b207-85c3725c5604 | Insert schedule invoked for This scheduler discovers
the devices in the network in a scheduled frequency and extracts the required device
information to be able to sync the Inventory with an ITSM system. |

| INFO | dnacaap-management-akka.actor.default-dispatcher-78546 | 200834 |
com.cisco.dna.commons.scheduler.util.ScheduleUtil | Job ScheduleDnaacaapJob
created for schedule 86d0b48f-c1e3-4cfa-b207-85c3725c5604 |

| INFO | DefaultQuartzScheduler_Worker-1 | 95 |
com.cisco.dnacapp.components.scheduler.service.ScheduleDnaacaapJob | 86d0b48f-
c1e3-4cfa-b207-85c3725c5604 | Scheduling job with scheduleid 86d0b48f-c1e3-
4cfa-b207-85c3725c5604, bapi key 3a96-a800-4c2b-a29c ,bapi id c1187910-
b2b8-4a36-9132-e738c2c3cafd |

| INFO | OkHttp http://dnacaap-runtime.dnacaap.svc.cluster.local:8095/... | 200852 |
com.cisco.dna.commons.scheduler.util.ScheduleUtil | No more schedules available for
86d0b48f-c1e3-4cfa-b207-85c3725c5604 ,hence the schedule is marked to
completed |
```

The Instance ID mentioned on the Runtime Dashboard is the bapi id of the workflow.

Schedule to Publish Inventory Details - ServiceNow Connector (1)

Schedule-Based Integration Flow

Export

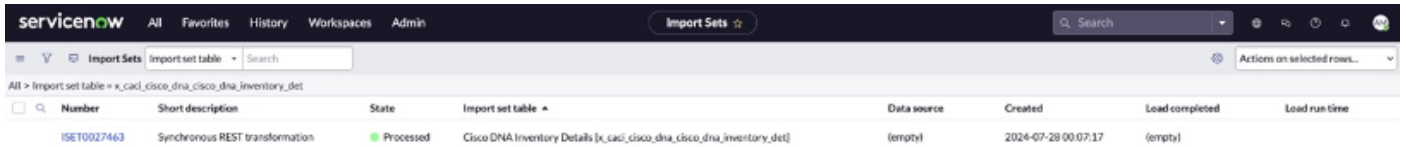
Filter EQ Find

Instance Id	Status	Start Time	End Time *	Duration
c1187910-b2b8-4a36-9132-e738c2c3cafd	● SUCCESS	July 28th 2024, 12:36:56 pm	July 28th 2024, 12:37:19 pm	23303 ms

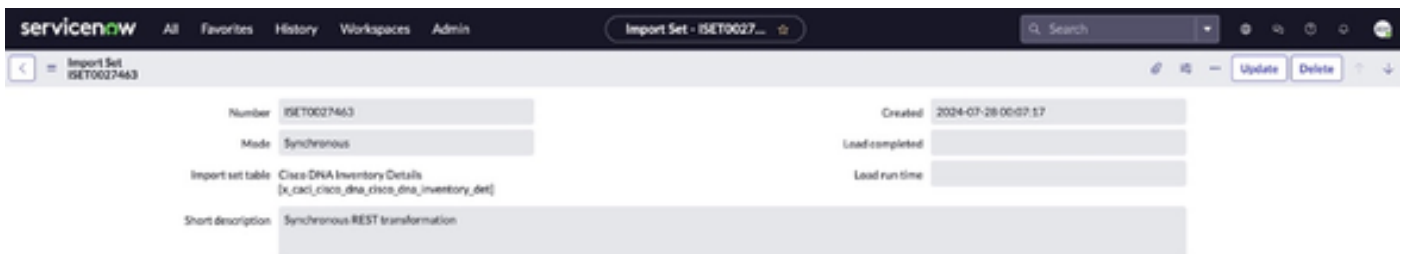
ITSM-ServiceNow

The CMDB Synchronization event from Cisco Catalyst Center is received by Import Set Table of ServiceNow. The data is pushed to ServiceNow using ServiceNow Import Set APIs or Scripted REST APIs or Generic REST API endpoints in ServiceNow.

- To check the data posted to ServiceNow from Cisco Catalyst Center navigate to Import Sets and look for the Import Set Entry for the table: `x_caci_cisco_dna_cisco_dna_inventory_det`



Number	Short description	State	Import set table	Data source	Created	Load completed	Load run time
ISET0027463	Synchronous REST transformation	Processed	Cisco DNA Inventory Details [x_caci_cisco_dna_cisco_dna_inventory_det]	(error)	2024-07-28 00:07:17	(empty)	



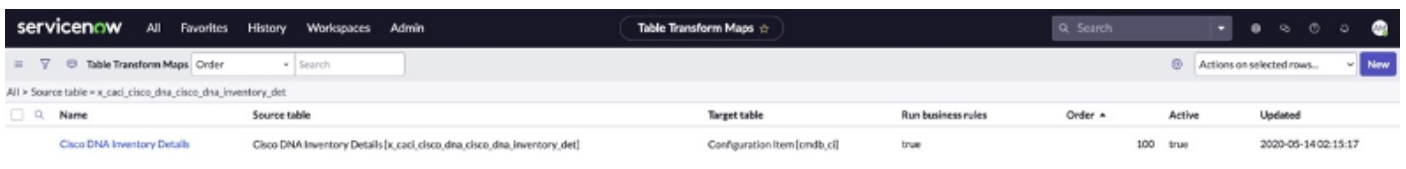
Number	ISET0027463	Created	2024-07-28 00:07:17
Mode	Synchronous	Load completed	
Import set table	Cisco DNA Inventory Details [x_caci_cisco_dna_cisco_dna_inventory_det]	Load run time	
Short description	Synchronous REST transformation		



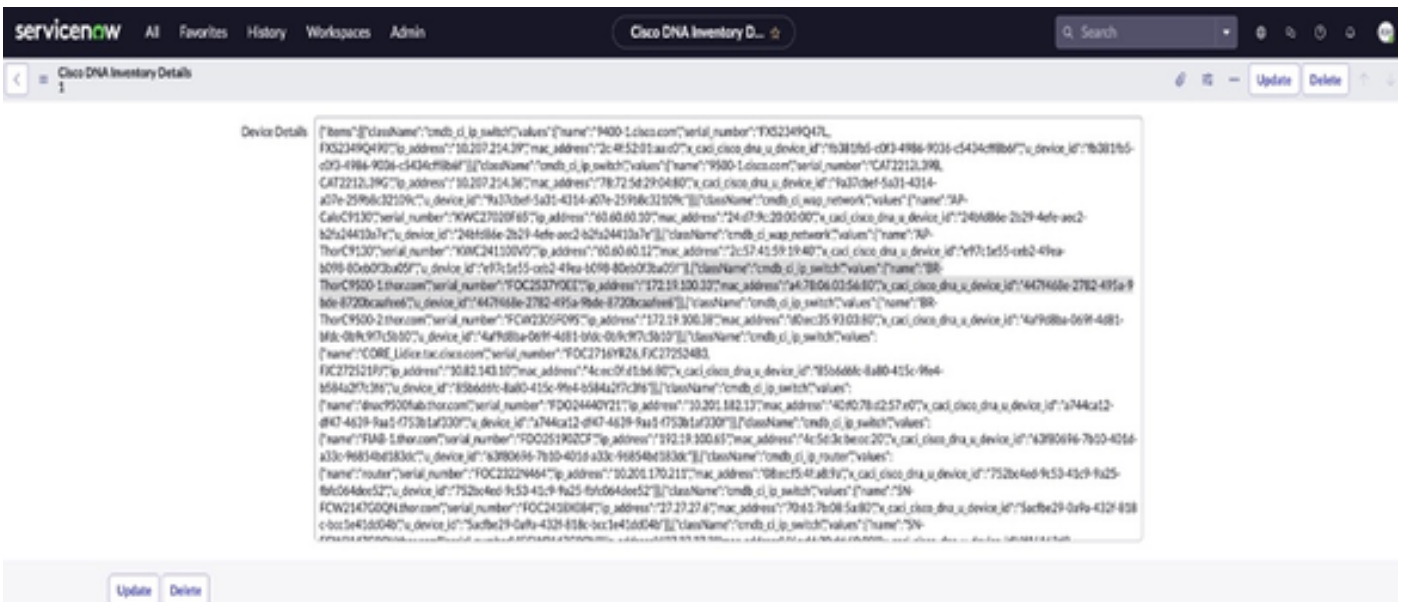
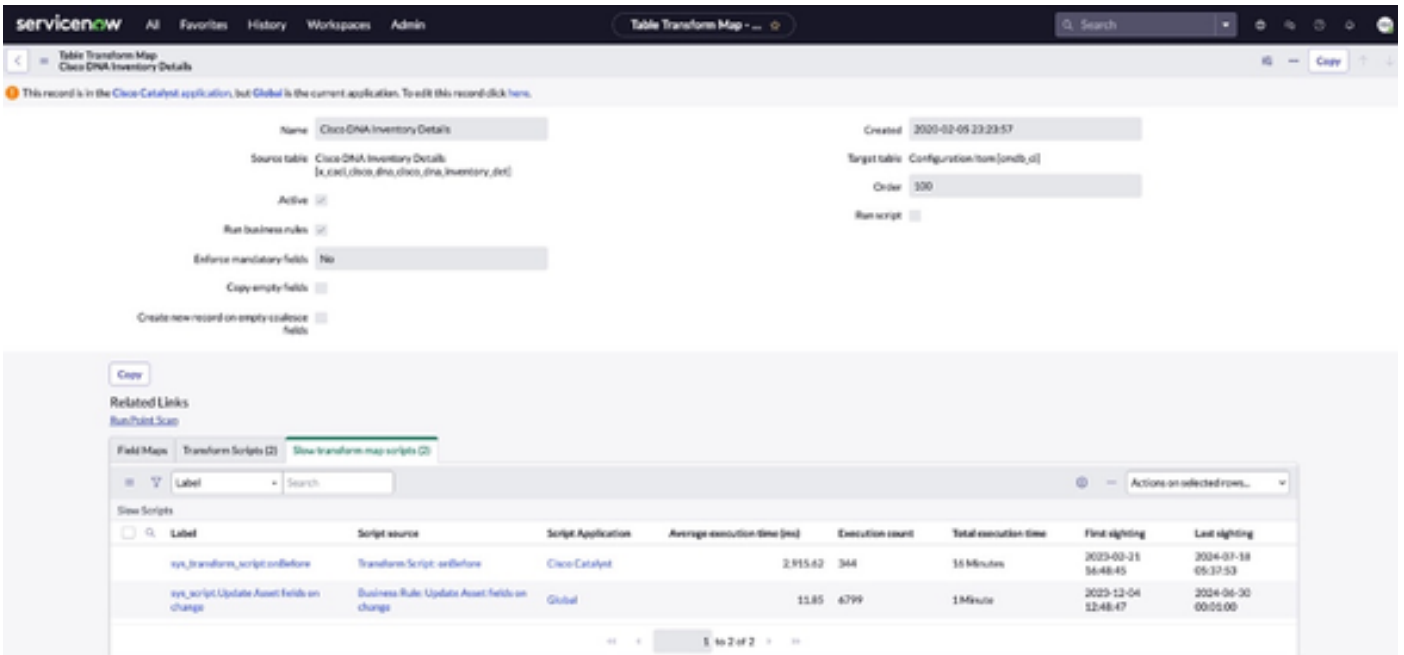
Created	Row	State	Target record	Error	Comment	Transform Map
2024-07-28 00:07:17	1	Ignored	(empty)	(empty)	<?xml version="1.0" encoding="UTF-8" ...	Cisco DNA Inventory Details

- Workflow Indicator determines the kind of workflow the event has to go through in ServiceNow; based on the workflow indicator decision, one of the transform maps gets executed.

Transform Map Table:



Name	Source table	Target table	Run business rules	Order	Active	Updated
Cisco DNA Inventory Details	Cisco DNA Inventory Details [x_caci_cisco_dna_cisco_dna_inventory_det]	Configuration Item [cmdb_ci]	true	100	true	2020-05-14 02:15:17



CMDB Synchronization Workflow Execution Validation

After successful CMDB Synchronization, the Inventory Details of Cisco Catalyst Center gets posted in ServiceNow's CMDB database.

To view the CI's that were synced from Cisco Catalyst Center to the ServiceNow CMDB, type cmdb_ci.LIST in the Global Search. A new tab opens which lists all the CIs available in the ServiceNow system.

DNAC CI entry in ServiceNow CMDB:

Name	Manufacturer	Location	Description	Class	Updated	Maintenance schedule
BR-ThorC9500-1.thor.com	(empty)	(empty)		IP Switch	2024-07-28 00:15:02	(empty)
BR-ThorC9500-2.thor.com	(empty)	(empty)		IP Switch	2024-07-28 00:15:02	(empty)

IP Switch
BR-ThorC9500-1.thor.com

Dashboard Form Update Delete

Name BR-ThorC9500-1.thor.com Company
Asset tag FOC2537VDEE
Manufacturer Unknown Model ID Unknown
Asset Unknown Firmware version
Assigned to

Configuration Other Attributes

Device type --None-- IP Address 172.19.100.33
Location Estimated bandwidth
Ports Firmware manufacturer
Channels Firmware version
Description

Related Items Search for CI + -

Related Information

- [Scope Underlying Concepts of Catalyst Center and ITSM Integration NEW\) 65 characters](#)
- [Use Catalyst Center Network Issue Monitor and Enrichment for ITSM](#)
- [Monitor Catalyst Center Automation \(SWIM\) Events for ITSM](#)
- [Cisco DNA Center ITSM Integration Guide, Release 2.3.5](#)