Scope Underlying Concepts of Catalyst Center and ITSM Integration

Contents

Introduction

This document describes that the scope of the integration is primarily to monitor customer's network for assurance and maintenance issues.

Background Information

This document also monitors events that require software image updates for compliance, security, or any other operational triggers.

Details about these issues are then published to an ITSM (ServiceNow) system or any REST endpoint.

This is achieved via Catalyst Center's bundles that are prebuilt solutions that enable integration between Cisco Catalyst Center capabilities and specific IT domains. These bundles can be configured and used:

- Basic ITSM (ServiceNow) CMDB Synchronization
- Cisco DNA Center REST API
- Endpoint Attribute Retrieval with ITSM (ServiceNow)
- Network Issue Monitor and Enrichment for ITSM (ServiceNow)
- Rogue and aWIPS

- Cisco DNA Center Automation Events for ITSM (ServiceNow)

The document covers all the details pertaining to the integration starting from Components involved, pre-requisites, bundle configurations, and troubleshooting scenarios.

✎ **Note**: This document is prepared in accordance to Catalyst Center Release 2.3.5.6 and Washington release of ServiceNow.

Components Involved

Cisco Catalyst Center (Formerly Known as DNAC)

Cisco Catalyst Center Platform (DNACP) is the Integration (or exposure or consumption) layer of Cisco Catalyst Center. Cisco Catalyst Center provides various capabilities, such as managing, monitoring, and analyzing a customer's network. To help customers' utilize these capabilities of Cisco Catalyst Center with their own applications and systems (such as an ITSM instance), DNACP provides integration capabilities.

By integrating with ITSM Systems like ServiceNow, Cisco Catalyst Center Center extends its intuitive approach to networking to the IT Service Management (ITSM) part of the IT value chain.

Catalyst Center Services Involved:

- scheduler-service
- dna-event-runtime
- dnacaap-runtime

Cisco DNA Application (Installed on SNOW)

The application leverages Cisco Catalyst Center's physical network topology information through a scheduled job or trigger initiated by the user and then maps the relevant information into ServiceNow CMDB tables to create a granular view of the network components of CMDB.

Furthermore, the application relies on Cisco Catalyst Center Assurance insights. The network issues that are monitored and published as ITSM Events by Cisco Catalyst Center intent APIs and integration flows are then leveraged by the custom application to automatically trigger problem, incident, or change workflows.

The Software Image Management (SWIM) events monitored and published by Cisco Catalyst Center Automation, can be leveraged by the application to automatically trigger a change workflow for software image update. This allows closed loop remediation by tying in Cisco Catalyst Center Automation workflows with approvals and change window information from ServiceNow. Finally, ITSM tickets created in ServiceNow - are automatically enriched with additional information if required.

ServiceNow MID Server (Management, Instrumentation and Discovery)

MID Server is an application running on Windows and Linux managed by SNOW instance that facilitates communication and movement of data between the ServiceNow platform and any external applications, data sources, and services (in your case DNACP).

MID server is required to be set up for any incoming messages to DNACP from ServiceNow.

Outbound messages from DNACP to ServiceNow are not routed to the MID Server.

Please refer to this link for SNOW and Mid-Server configuration. [ServiceNOW Store](#)
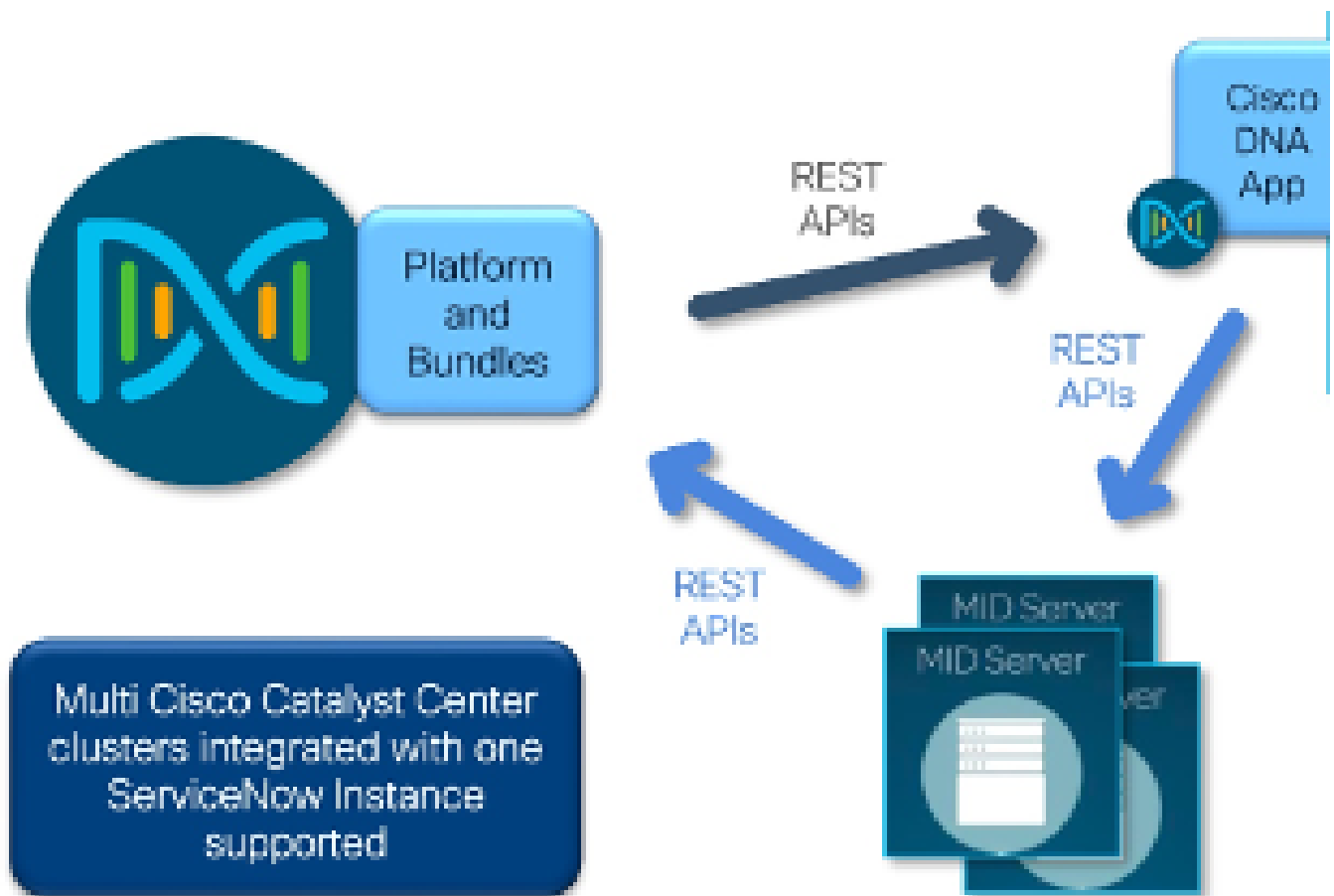
ServiceNow: Import Set Table

The Network Events that occur in the network and notified are picked from Cisco DNA Center and pushed to ServiceNow using ServiceNow Import Set APIs, or Scripted REST APIs, or Generic REST API endpoints in ServiceNow. These are the Import Set Tables for ITSM Use case:

CMDB Synchronization: x_caci_cisco_dna_cisco_dna_inventory_det

Network Issue Monitor: x_caci_cisco_dna_create_workflow_for_eve

Automation Event (SWIM): x_caci_cisco_dna_create_workflow_for_eve

ServiceNow: Workflow Indicator

Every event record from Catalyst Center has an associated Workflow Indicator that determines what kind of workflow the event has to go through in ServiceNow.
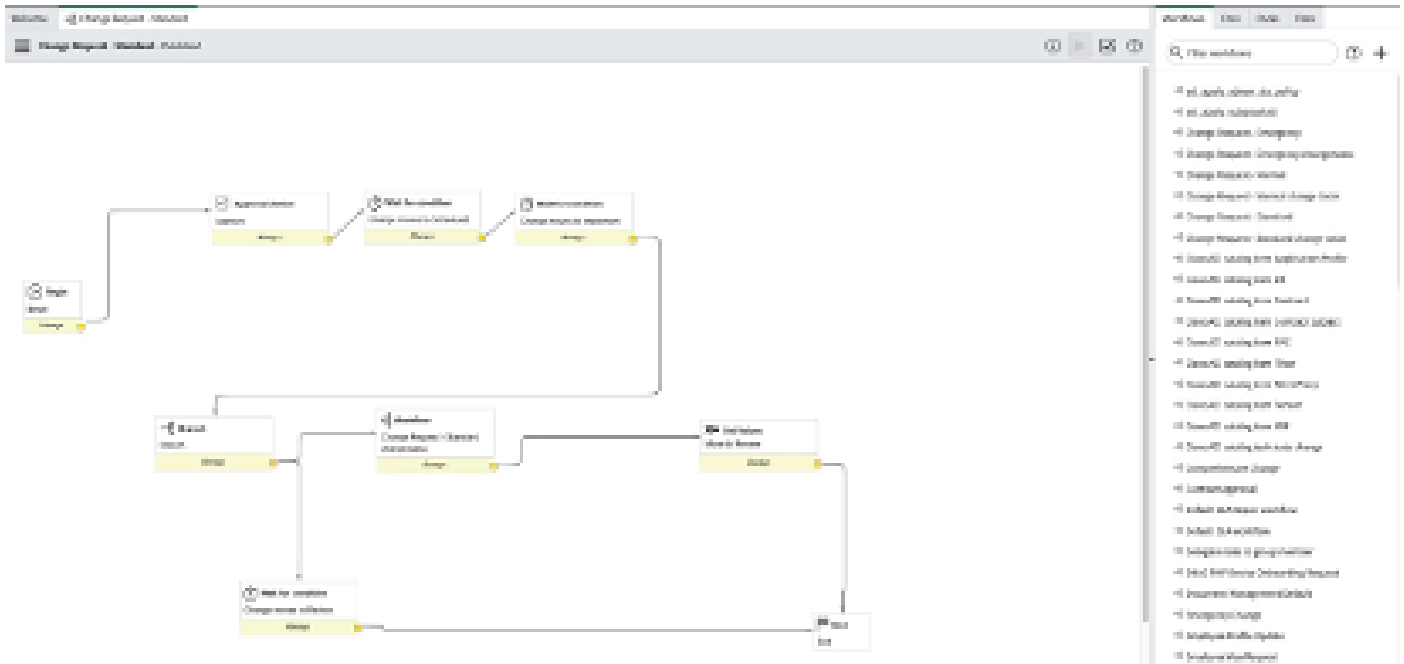
ServiceNow: Transform Map Table

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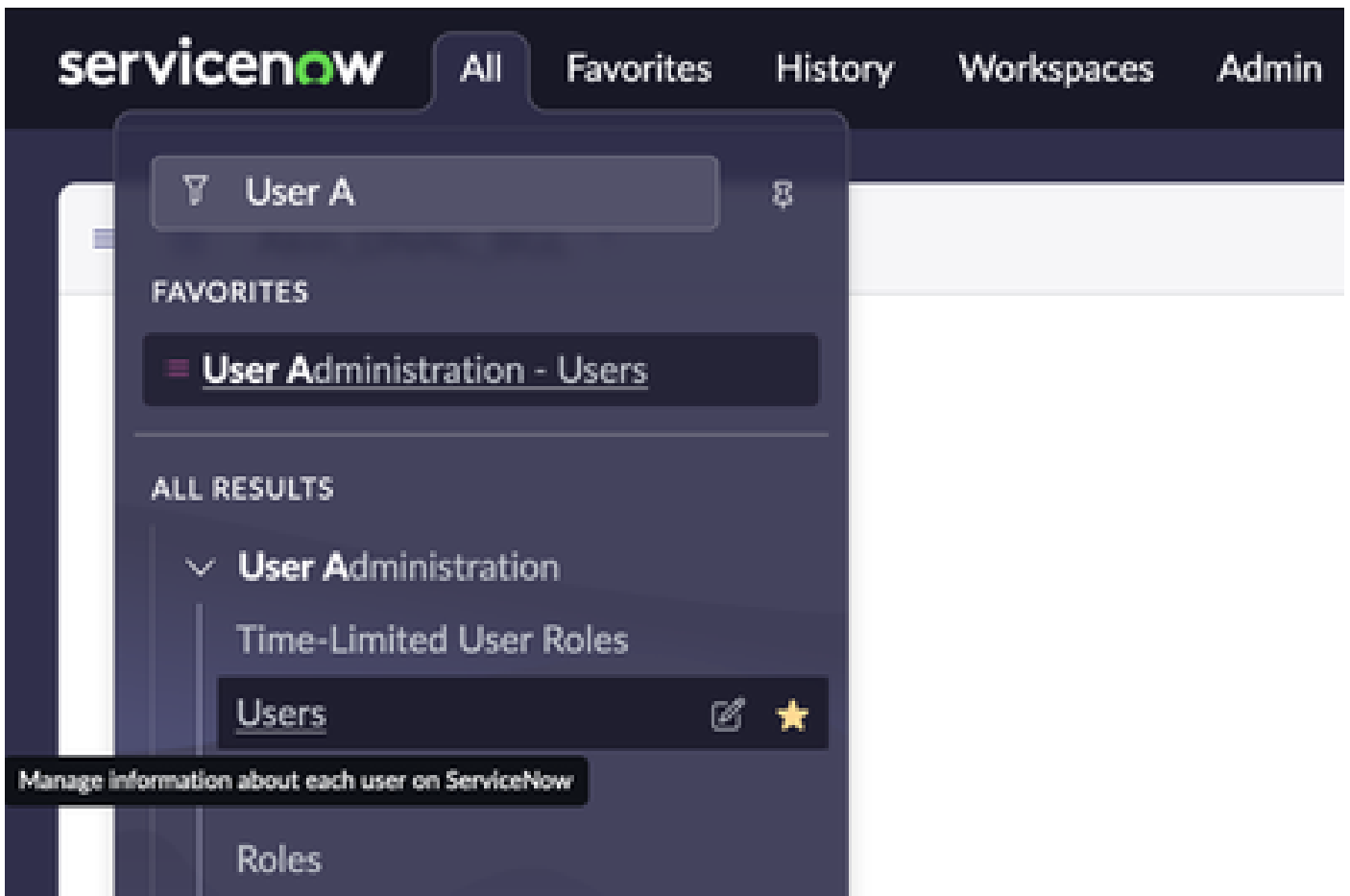

Catalyst Center-ITSM (ServiceNOW) Integration Prerequisites
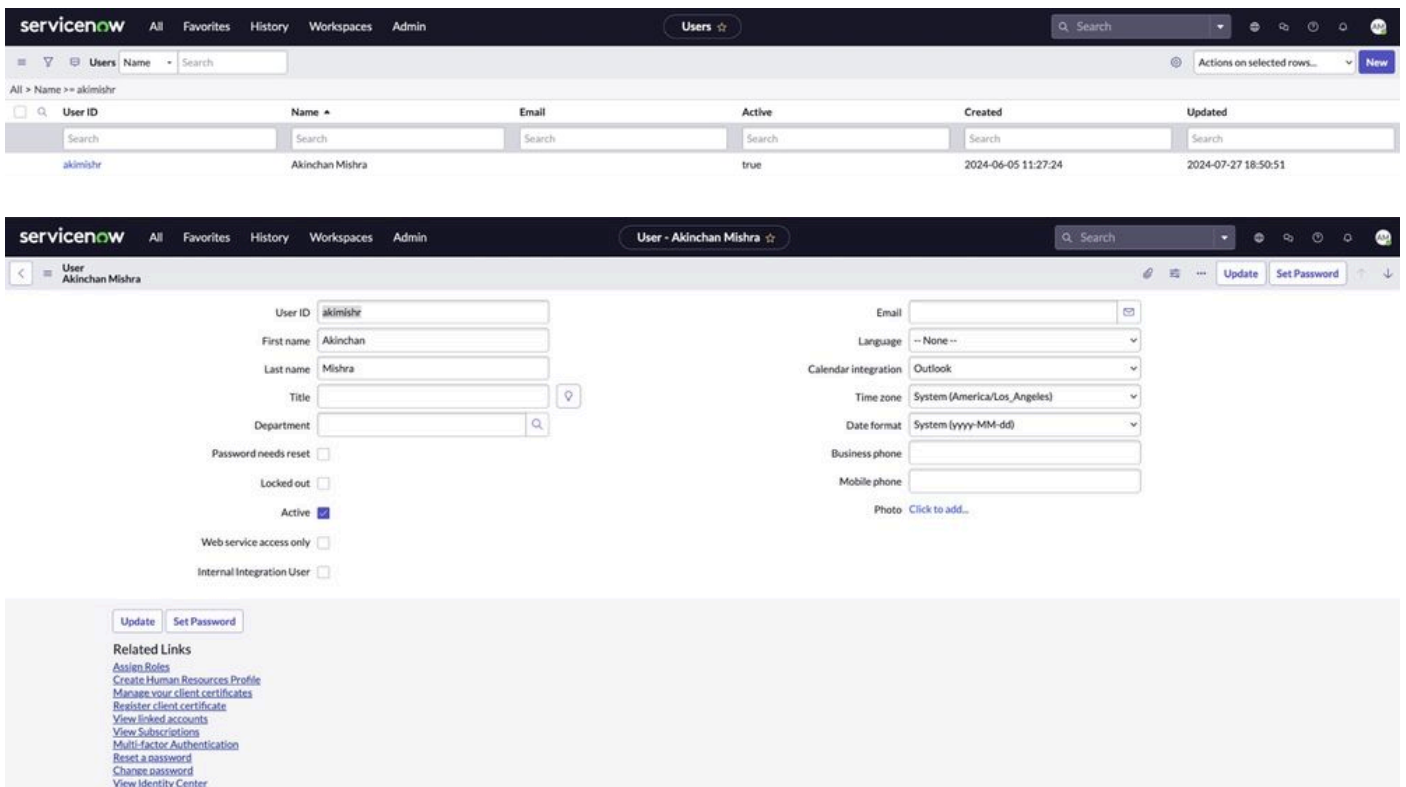
ServiceNOW Side Configurations

ServiceNow Instance Admin User Addition

1. **User Administration > Users**

2. Select **New** and fill in the details of the user.

SNOW Instance's MID Server Verification

Orchestration > Mid Server Configuration > MID Servers

The table at top shows MID Servers list:

	Name	Host name ▲	Status	Validated	Version	Last refreshed	Started	Stopped	Router	Logged in user
	csslab.dnac.pod3.01.Mid	phphasuk-u01	● Up	● Yes	● washingtondc-12-20-2023_patch4-hotfix1-...	2024-07-26 04:24:02	2024-07-05 21:50:14	2024-07-05 21:48:05	10.122.51.1	● csslab.dnac.pod3.01.Mid
	Midserver-asazhin	ubuntu-backup	● Up	● Yes	● washingtondc-12-20-2023_patch4-hotfix1-...	2024-07-26 04:24:02	2024-07-17 02:38:01	2024-07-17 02:36:00	192.168.199.1	● Midserver-asazhin

Catalyst Center Addition to SNOW Instance

1. **Cisco DNA Center > Cisco DNA Controller Properties**
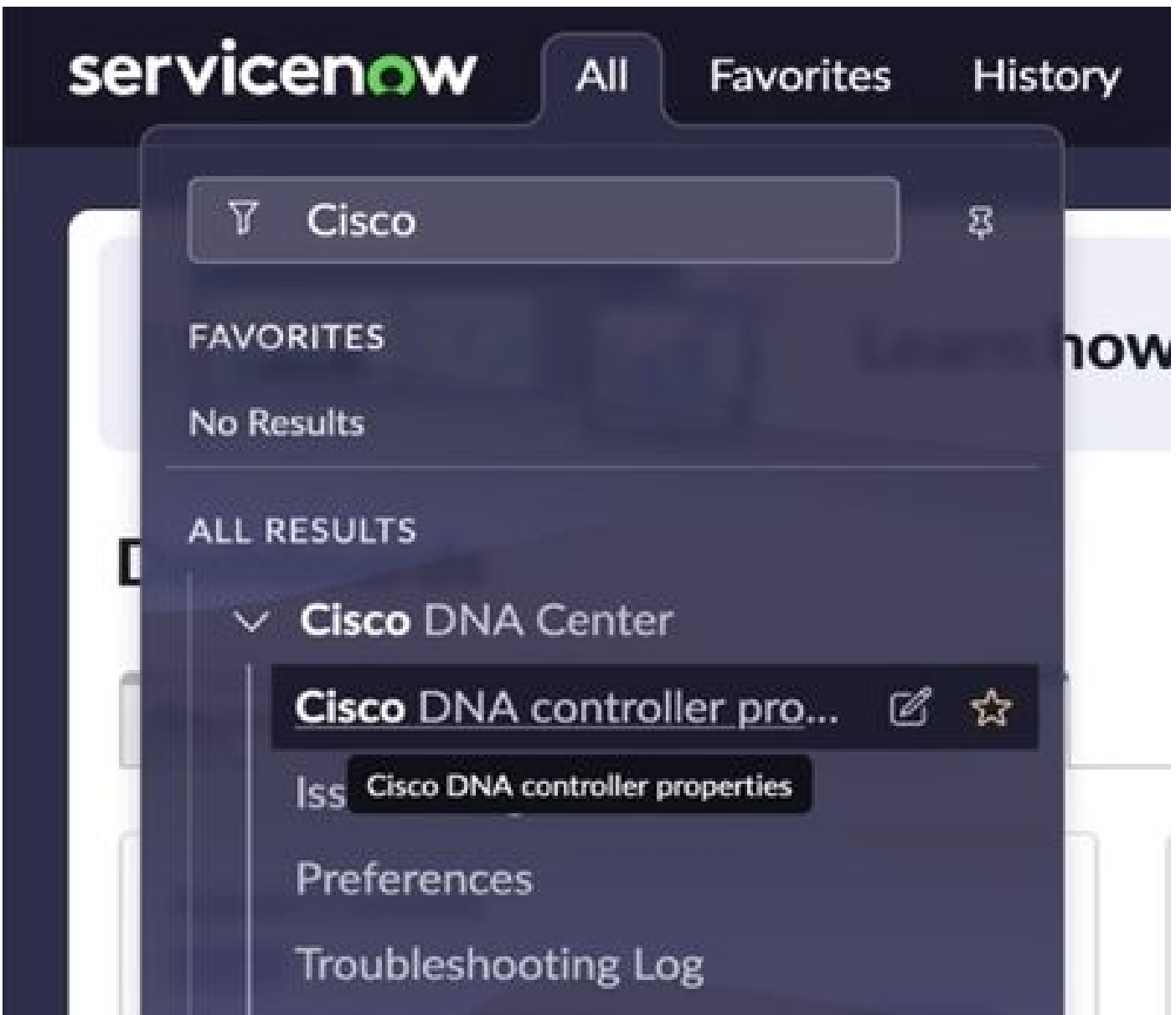
2. Select **New** and fill in the details of the Catalyst Center. Select the correct **Mid-Server**.

servicenow   All   Favorites   History   Workspaces   Admin   Cisco DNA controller p... ☆   Q Search

☰ ▽ ▣ Cisco DNA controller properties IP address of DNA E ▾ Search   ⚙ Actions on selected rows... ▾ New

All > IP address of DNA Engine controller >= 10.78.9.11

☐ Q   IP address of DNA Engine controller ▲   Password of the DNA Engine controller

        Search   Search

        10.78.9.11   ••••••••••

---

servicenow   All   Favorites   History   Workspaces   Admin   Cisco DNA controller p... ☆   Q Search

< ☰ Cisco DNA controller properties
       Created 2024-07-26 09:08:30   ⬚ ⇄ ··· Update Delete ↑ ↓

✳ IP address of DNA Engine controller   10.78.9.11

Password of the DNA Engine controller   ••••••••••

User Name of DNA Engine Controller   akimishr

MID Server used to connect to DNAC   csslab.dnac.pod3.01.Mid   ▾ ⓘ

Update   Delete

SNOW Instance Plugin Dependencies

System Plugin Dependencies

Cisco DNA has dependency on the following system plugin(s) that need to be installed separately.

| Plugin ID	Name
com.snc.change_request	Change Request
com.snc.cmdb	Configuration Management (CMDB)
com.snc.cmdb.scoped	Configuration Management For Scoped Apps (CMDB)
com.glide.data_lookup	Data Lookup and Record Matching Support
com.snc.incident	Incident
com.snc.problem	Problem Management
com.glide.system_import_set	System Import Sets

Example: CMDB Plugin
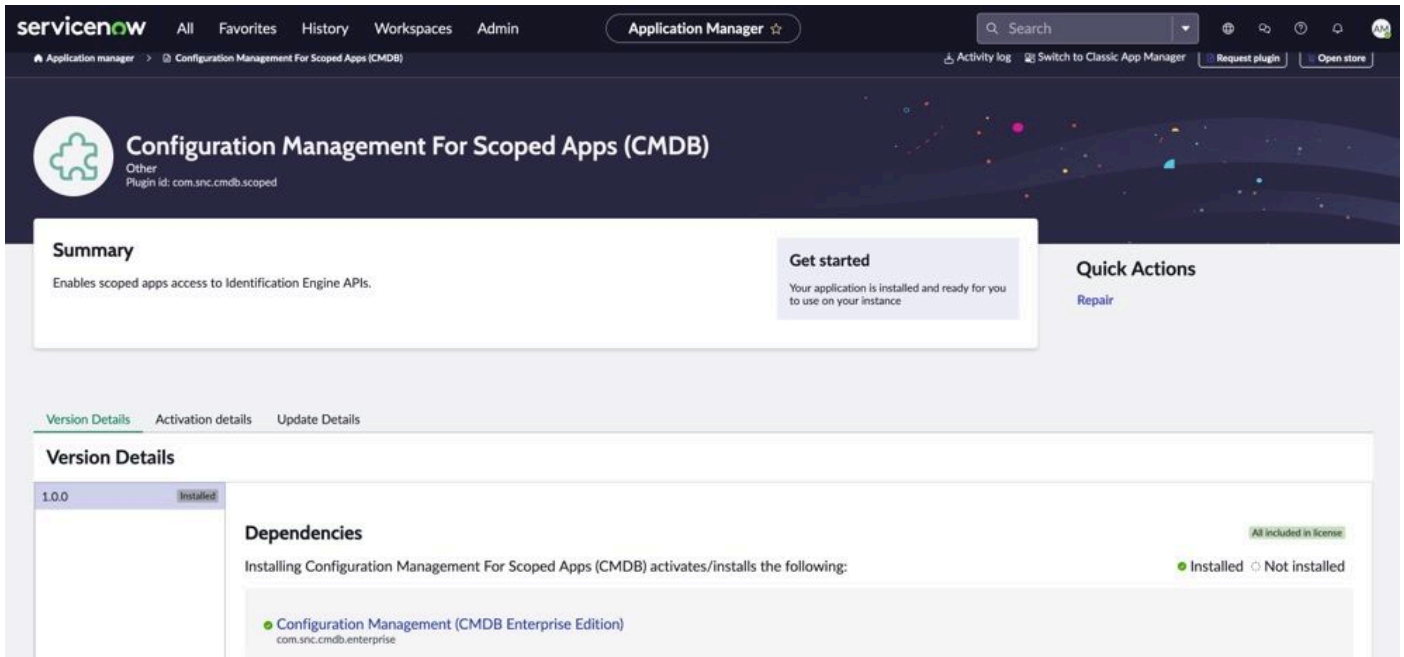
Catalyst Center Configurations

Addition of ITSM Instance to Catalyst Center

1. **System > Settings > Destinations > ITSM**
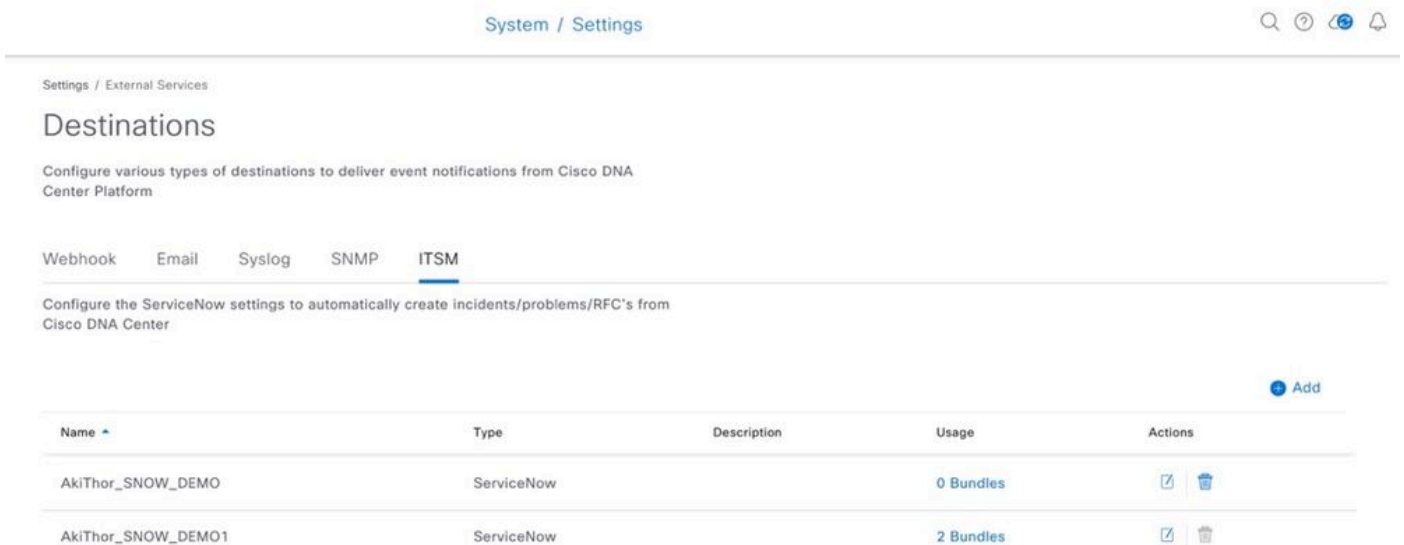
2. Click **Add** and provide the **ITSM Details**. Ensure to check **Connectivity**.
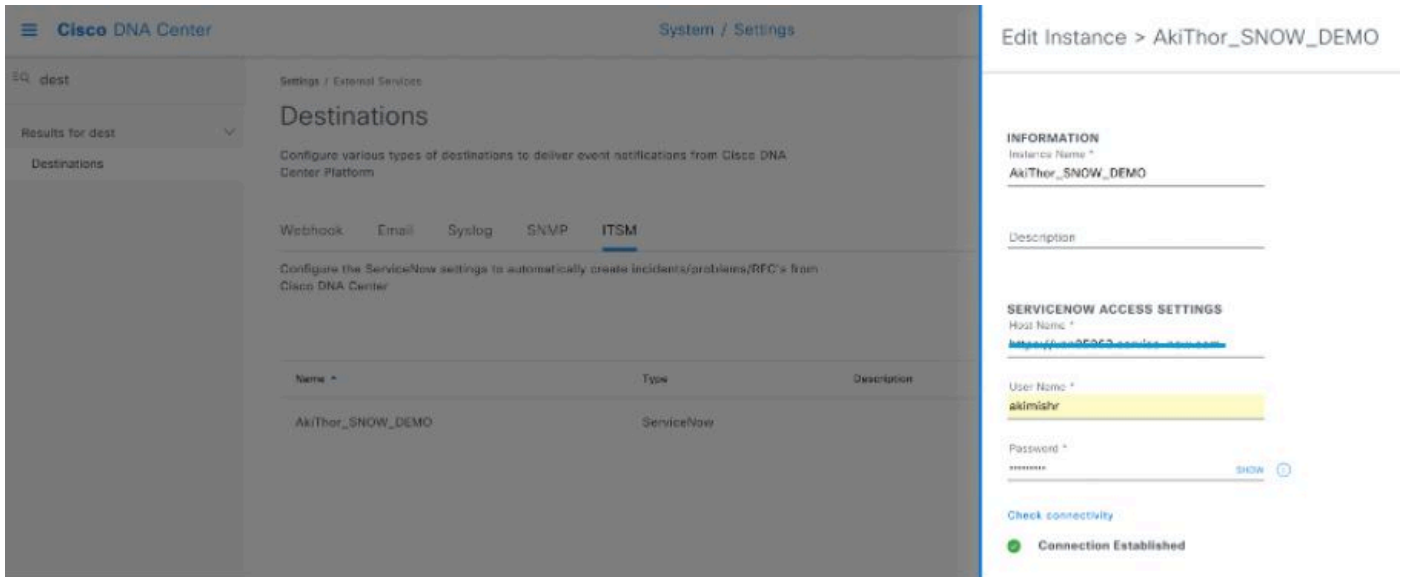
Architecture: Catalyst Center-ITSM Integration

Without Cisco DNA App

In this scenario, DNA App is not installed on SNOW instance and instead you use Staging and Event tables; be sure to choose **Post device inventory details to a staging table** as the destination type while configuring the ITSM bundle.

Additionally, the Post device inventory details to a staging table destination type that only sends data to the REST API endpoint. You need to create a script to perform any further action on the data.

With Cisco DNA App

Cisco Catalyst 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 is installed within the ServiceNow instance and performs these tasks:

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

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

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

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