Use Catalyst Center Network Issue Monitor and Enrichment for ITSM

Contents

Introduction

This document describes the Network Issue Monitor use case of Catalyst Center and ITSM (ServiceNow) integration.

Background Information

This document covers all the details pertaining to the Network Issue Monitor 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.
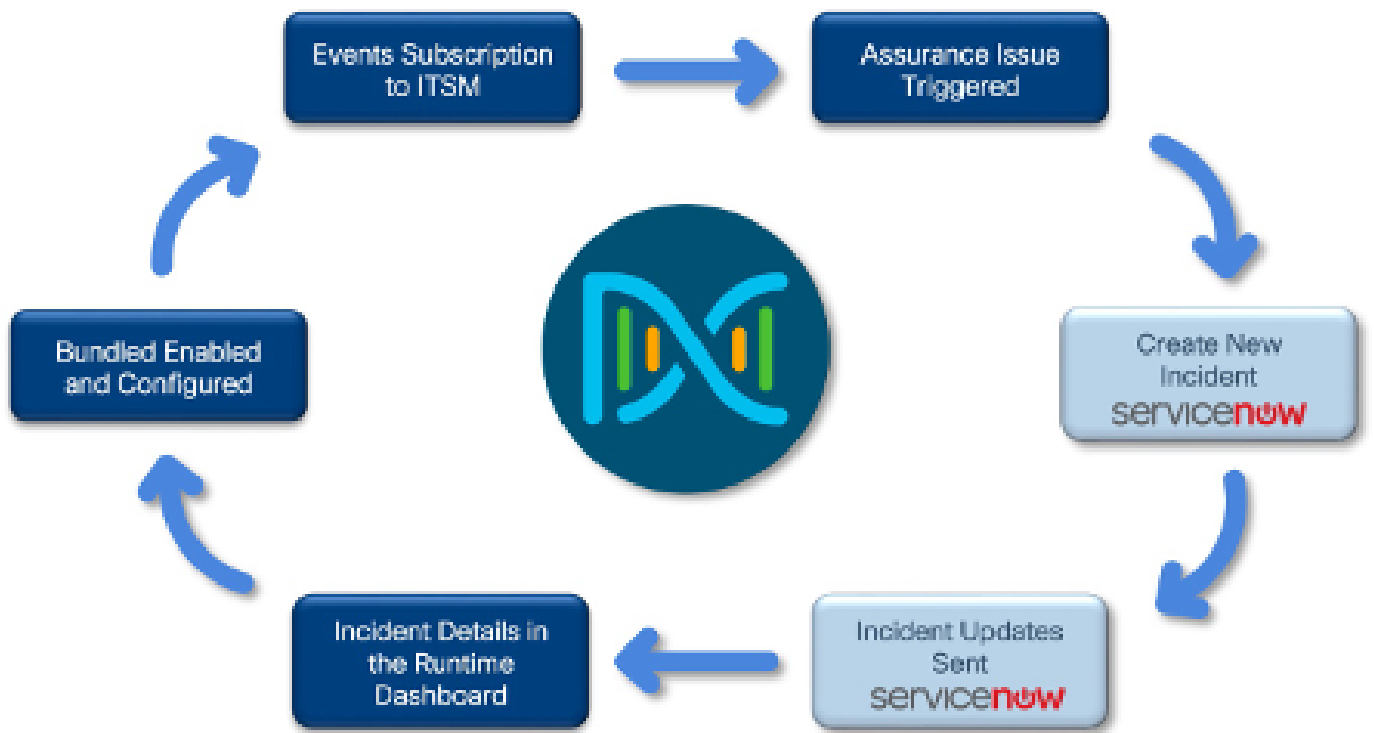
Cisco Catalyst Center-ITSM (ServiceNow) Integration

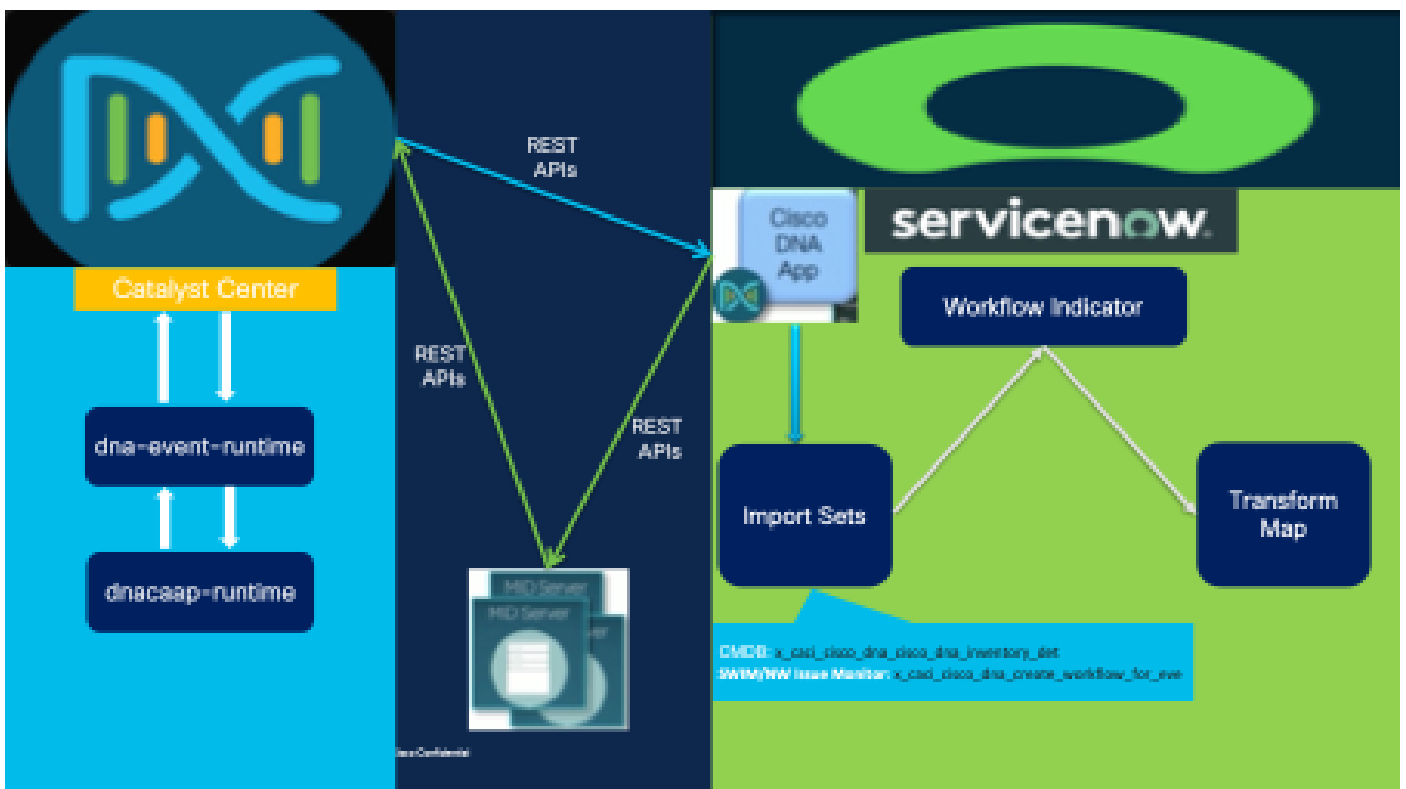Refer to this document for details on Catalyst Center-ITSM integration:

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

Architecture: Network Issue Monitor

Network Issue Monitor Workflow: High-Level Architecture

Network Issue Monitor Workflow: Under the Hood

Events Flow: Catalyst Center

- When a subscribed event is triggered in the network, the Assurance component of Catalyst Center lists that Issue on the Issues & Events dashboard and under Device 360 dashboard.
- The dna-event-runtime service of Catalyst Center receives the event and submits it to dnacaap-runtime service which then triggers the publishing of the event on Runtime dashboard.

dna-event-runtime Logs Snippet:

{"instant":{"epochSecond":1722414310,"nanoOfSecond":301000000},"thread":"dna-event-akka.actor.default-dispatcher-4","level":"INFO","loggerName":"com.cisco.dna.event.runtime.datapath.pipeline.actors.flow.sinks.RestSink","message":"RestSink submitting event [eventId:NETWORK-NON-FABRIC_WIRED-1-251 instanceId:a257cc99-07b1-443a-8e15-5d744bcdd530] request to URL http://dnacaap-runtime.dnacaap.svc.cluster.local:8095/dnacaap/core/v1/aes","endOfBatch":false,"loggerFqcn":"org.apache.logging.slf4j.Log4jLogger","threadId":36,"threadPriority":5,"tenantId":"nobody","requestId":"None","userId":"nobody","userName":"nobody","asctime":"2024-07-31 08:25:10,301","timeMillis":"1722414310301"}

{"instant":{"epochSecond":1722414310,"nanoOfSecond":358000000},"thread":"OkHttp http://dnacaap-runtime.dnacaap.svc.cluster.local:8095/...","level":"INFO","loggerName":"com.cisco.dna.event.runtime.datapath.pipeline.actors.flow.sinks.RestSink","message":"RestSink is SUCCESS for eventId:NETWORK-NON-FABRIC_WIRED-1-251 instanceId:a257cc99-07b1-443a-8e15-5d744bcdd530 subId:nesNew subName:null responseCode:202 responseBody:okhttp3.internal.http.RealResponseBody@49cc90d7 responseMessage:","endOfBatch":false,"loggerFqcn":"org.apache.logging.slf4j.Log4jLogger","threadId":6228,"threadPriority":5,"tenantId":"nobody","requestId":"None","userId":"nobody","userName":"nobody","asctime":"2024-07-31 08:25:10,358","timeMillis":"1722414310358"}

dnacaap-runtime Logs Snippet:

{"instant":{"epochSecond":1722414720,"nanoOfSecond":508000000},"thread":"dnacaap-runtime-akka.actor.default-dispatcher-6237","level":"INFO","loggerName":"com.cisco.dnacaap.flow.storage.BapiExecutionIgniteStore","message":"Creating Ignite Cache : bapiExecutionId: 740b2263-ab8b-44eb-ad98-833e5f395dc0, storageKey: issue_details_arr","endOfBatch":false,"loggerFqcn":"org.apache.logging.slf4j.Log4jLogger","threadId":50390,"threadPriority":5,"tenantId":"nobody","correlationId":"None","userId":"nobody","userName":"nobody","asctime":"2024-07-31T08:32:00.508Z","timeMillis":"1722414720508"}

{"instant":{"epochSecond":1722414720,"nanoOfSecond":625000000},"thread":"dnacaap-runtime-akka.actor.default-dispatcher-6236","level":"INFO","loggerName":"com.cisco.dnacaap.flow.storage.BapiExecutionIgniteStore","message":"Creating Ignite Cache : bapiExecutionId: 3c0a2789-e5db-4ebf-aaa8-b7a0be4b299f, storageKey: issue_details_arr","endOfBatch":false,"loggerFqcn":"org.apache.logging.slf4j.Log4jLogger","threadId":50389,"threadPriority":5,"tenantId":"TNT0","correlationId":"None","userId":"dna-event-runtime","userName":"dna-event-runtime","asctime":"2024-07-31T08:32:00.625Z","timeMillis":"1722414720625"}

- Catalyst Center then makes REST API call to the Cisco DNA Application installed on ServiceNow Instance.
- Cisco DNA App automatically triggers problem, incident, and change workflows for network events published by Cisco DNA Center.

Events Flow: ITSM (ServiceNow)

- The Network Events that occur in the network and are 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_create_workflow_for_eve**.

- Based on the Workflow Indicator value set in the event configuration, an Incident/problem ticket is created in ServiceNow based on transform scripts.

- Every Issue event record from DNA has an associated Workflow Indicator that determines what kind of workflow the event goes through in ServiceNow. This snippet is an example of Workflow Indicator.
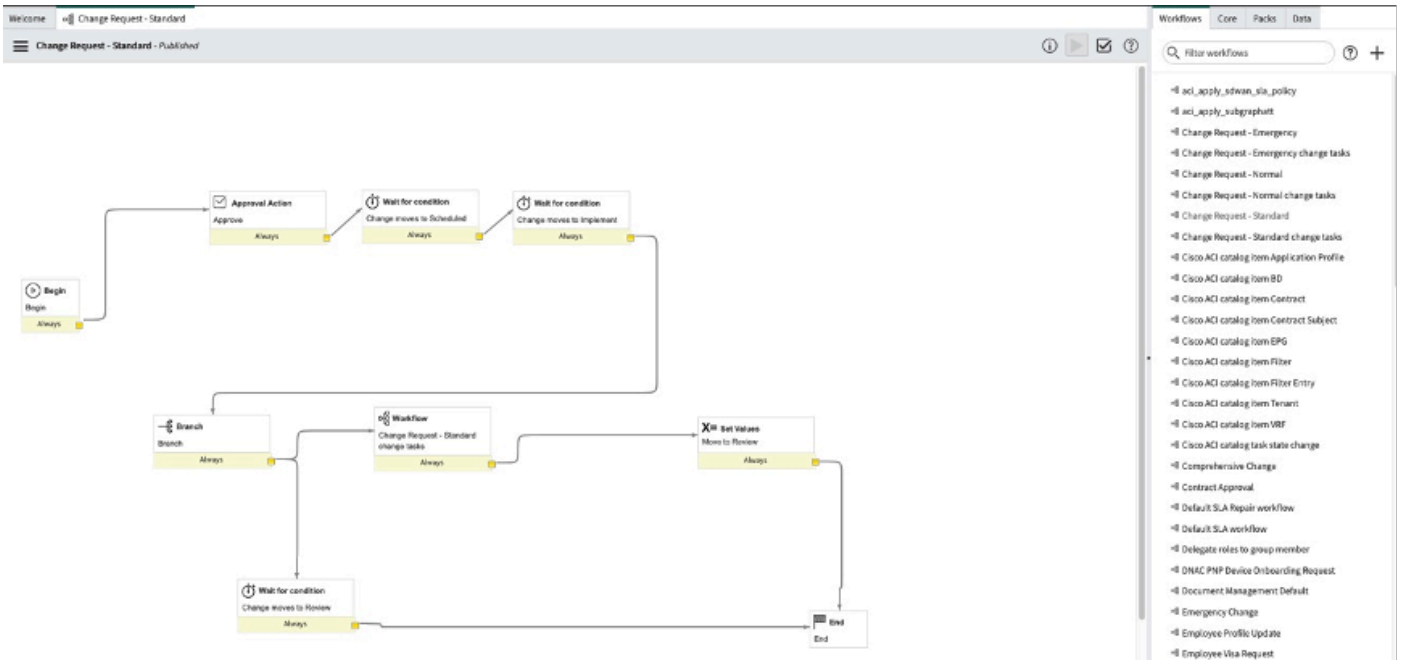
- Based on workflow indicator decision, one of the transform maps gets executed and the data in the staging table is parsed and mapped to the appropriate target table that is an incident in case of a Network Issue event.

- Cisco DNA App in the target artifacts 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.

Network Issue Monitor Bundle Configuration

The Network Issue Monitor and Enrichment for ITSM (ServiceNow) bundle retrieves events from Cisco Catalyst Center for any assurance and maintenance issues. The bundle then publishes the event data on a recurring schedule to an ITSM (ServiceNow) system.

This bundle also contains APIs that extract rich network context data. If your network devices have not yet been synchronized between Cisco Catalyst Center and the ITSM (ServiceNow CMDB) system, then it is recommended to activate the Basic ServiceNow CMDB synchronization bundle before activating this bundle. However, it is not mandatory to run CMDB synchronization as long as the CI entry is available in ServiceNow CMDB.

The events data can be published to the Event table in ServiceNow. If you do not have the Event Management plugin in your ServiceNow instance, then the bundle can be configured to receive events in any generic REST end-point in ServiceNow.

For Network Issue Monitor and Enrichment bundle configuration, Refer to section Configure the Network Issue Monitor and Enrichment for ITSM (ServiceNow) Bundle of Cisco DNA Center ITSM Integration Guide (Cisco DNA Center ITSM Integration Guide, Release 2.3.5)

Network Issue Monitor Workflow Execution

Catalyst Center

1. Assurance dashboard lists the Issues reported in the network and these issues are posted on Runtime Dashboard.

ii. The corresponding Issue gets listed as an Event on Platform Runtime dashboard of Catalyst Center.

Last Updated: a minute ago   ⟳ Refresh   Last 6 hours ⌄

Event Summary ⓘ

72
Events
published

DNA Event Severity	Count
1	72
2	0
3	0
4	0
5	0

▽ Filter   ☰Q Find

Domain ▲	Event Name	Count
Connectivity	Interface Connecting Network Devices is Down	72

‹ Interface Connecting Network Devices is Down

Event History = e15647e1-13c6-401f-a450-22b69268a740   Last Updated: a few seconds ago ⟳ Refresh

▽ Filter   ☰Q Find
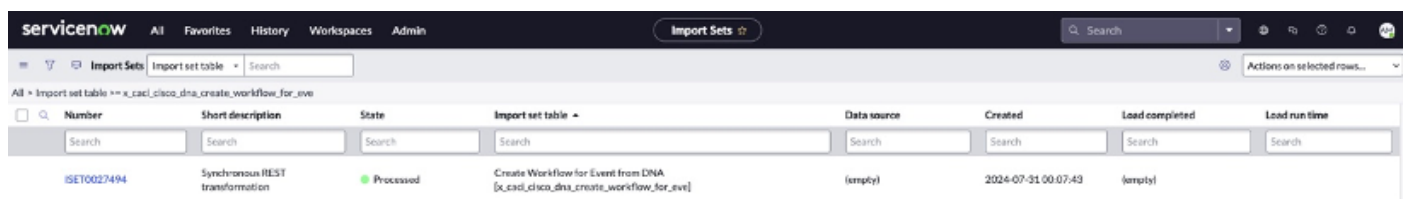
Source	Destination	ITSM Workflow	ITSM Status	ITSM Id	ITSM Link	ITSM Last Updated Time ▲	ITSM Entity Severity/Priority	DNA Event Severity
ServiceNow	Cisco DNA Center	Incident	Resolved	INC0314630	https://ven00983.service-now.com/nav_to.do?uri=incident.do?sys_id=11f8fe0e0dbbbb40d8a52f4607961863	August 6th 2024, 11:01:23 am	1 - Critical	1
Cisco DNA Center	ServiceNow	Incident	New	N/A	N/A	July 31st 2024, 12:13:41 pm	N/A	1

ITSM-ServiceNow

The Alerts events from Cisco Catalyst Center are 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**

1. Filter out the Import Set entry from the Import Set dashboard for the table x_caci_cisco_dna_cisco_dna_inventory_det.

servicenow All Favorites History Workspaces Admin   (Import Sets ☆)   Q Search ▼ ⊕ ↻ ⊙ ⚲ 😊

≡ ▽ ☷ **Import Sets** Import set table ▼ Search   ⊗ Actions on selected rows... ▼

All › Import set table >= x_caci_cisco_dna_create_workflow_for_eve

| ☐ Q	Number	Short description	State	Import set table ▲	Data source	Created	Load completed	Load run time
	Search	Search	Search	Search	Search	Search	Search	Search
	ISET0027494	Synchronous REST transformation	● Processed	Create Workflow for Event from DNA [x_caci_cisco_dna_create_workflow_for_eve]	(empty)	2024-07-31 00:07:43	(empty)	

ii. Check the details of Import Set and check the Import Set Rows for the respective Incident number.
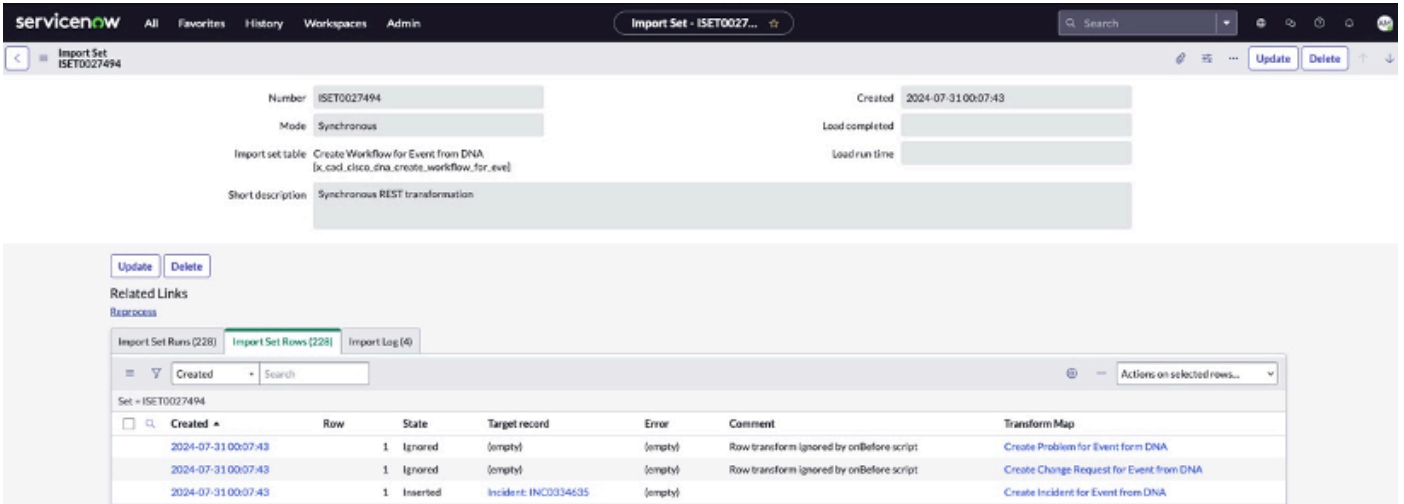
iii. Workflow Indicator determines the kind of workflow the event has to go through in ServiceNow; based on the workflow indicator decision, one of the transform maps gets executed.

iv. To check the details of Transform Map, click **Hyperlink** in **Transform Map Column** of **Import Set Rows**.
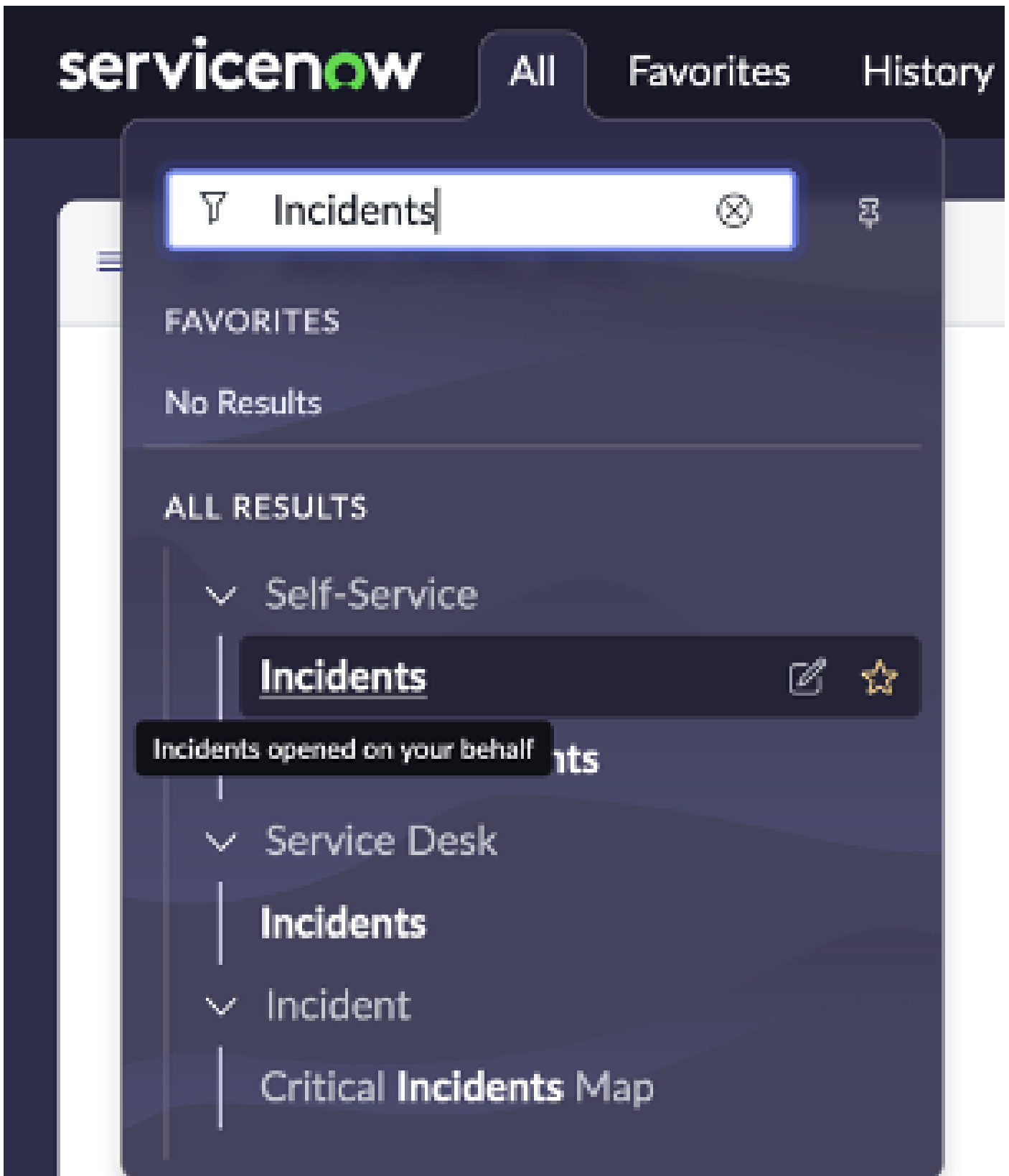
Transform Map Tables for Incident event:
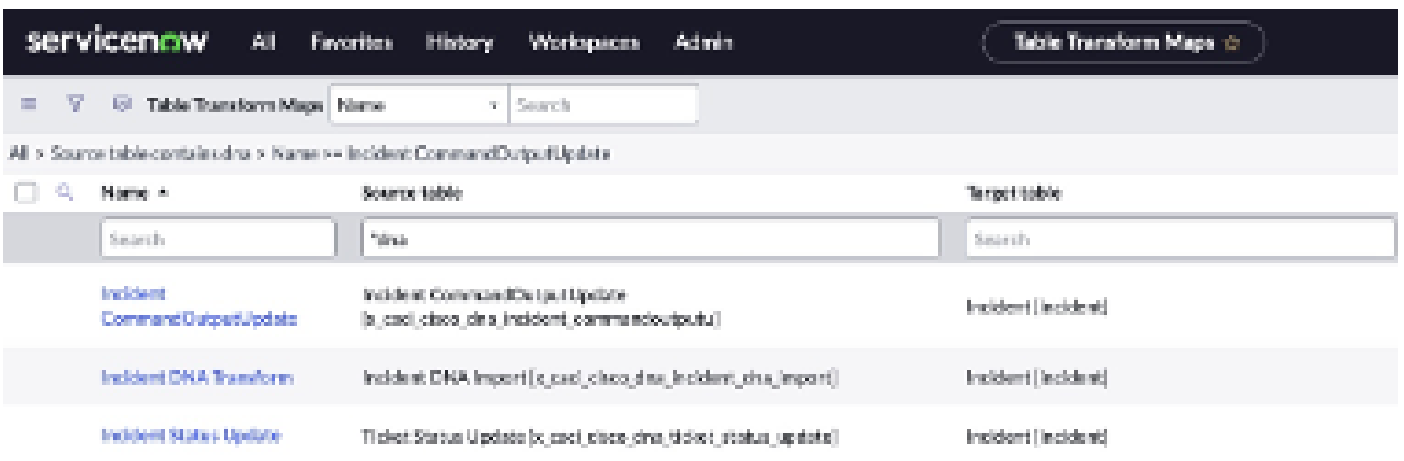
Network Issue Monitor Workflow Execution Validation

- Once the workflow is executed successfully, the Incident ticket can get created with the Issue details of the device for which the issue was reported.

1. **Global Search > Service Desk > Incidents**.

ii. Filter out the **Incident ticket** from the **Incident tickets** dashboard.

iii. Incident Ticket Details

a. Open the **Incident ticket** to see the details.

b. Cisco DNA tab of Incident Ticket has multiple sections and one is Device Enrichment information.

c. Cisco DNA Event details and Suggested Actions is another section.

Related Information

- Scope Underlying Concepts of Catalyst Center and ITSM Integration
- Synchronize Catalyst Center Inventory with ServiceNow CMDB System
- Monitor Catalyst Center Automation (SWIM) Events for ITSM