Integrate Catalyst SD-WAN with ServiceNow

Contents

Introduction

This document describes the step-by-step process to integrate Catalyst SD-WAN with ServiceNow for event-based ticket generation.

Prerequisites

Requirements

Cisco recommends:

- Knowledge of Cisco Catalyst SD-WAN solution.
- An active account in ServiceNow with admin privileges.
- Internet reachability from SD-WAN Manager transport Virtual Private Network (VPN).
  - If ServiceNow is hosted on-premises, then ensure connectivity towards it from SD-WAN Manager in VPN 0.

Components Used

The information in this document is based on these software and hardware versions:

- Cisco Catalyst SD-WAN Manager running 20.15.3.1 version.
- C8000v running Cisco IOS® XE Catalyst SD-WAN 17.15.3 version.

The information in this document was created from the devices in a specific lab environment. All of the devices used in this document started with a cleared (default) configuration. If your network is live, ensure that you understand the potential impact of any command.

Network Diagram

Connectivity diagram

Configurations

Tip: For this integration, we use Webhooks from SD-WAN Manager directly to ServiceNow.

There are two parts to this configuration:

1. Configuring ServiceNow API and making it ready to accept and process HTTP POST messages from SD-WAN Manager.
2. Configuring SD-WAN Manager Webhook.

ServiceNow Configuration

Create an Instance

1. Login to ServiceNow developer portal https://developer.servicenow.com/dev.do using your ServiceNow credentials.
2. On Welcome page, click "**Request your instance**" and chose any release (Zurich, Yokohama or Xanadu).

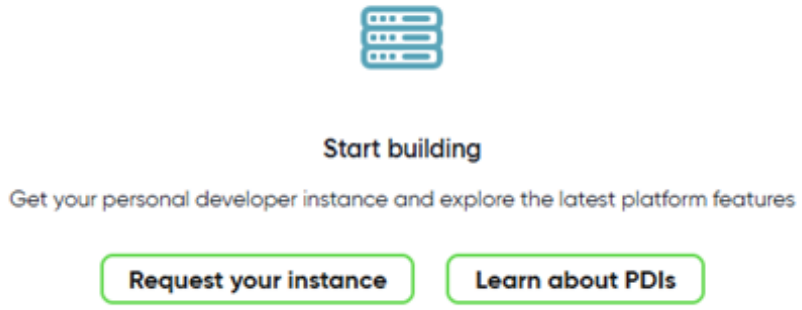


Figure-1

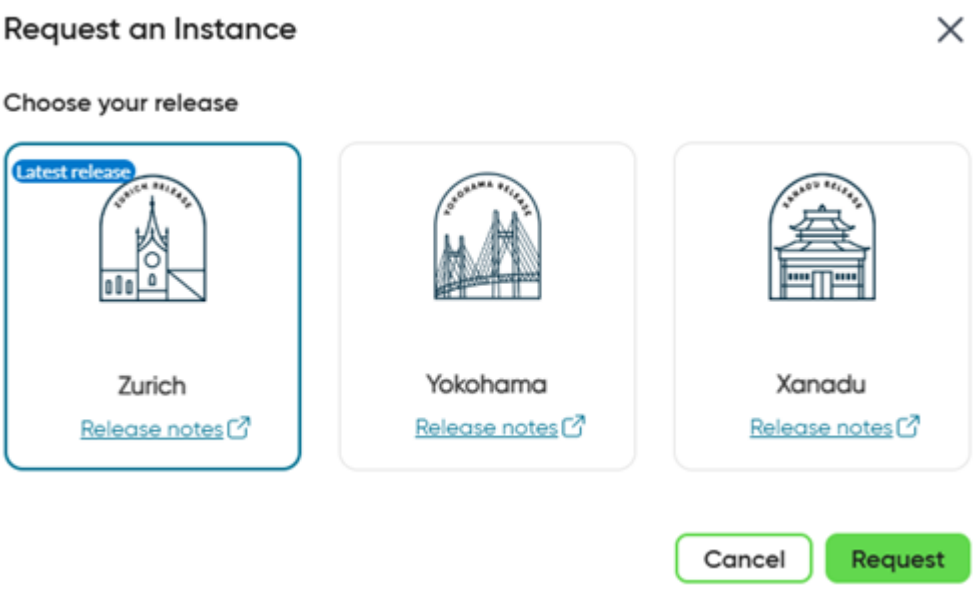


Figure-2

3. Wait for a few minutes while your instance gets ready.

4. Refresh your page after a few minutes and get your Personal Developer Instance (PDI) created.

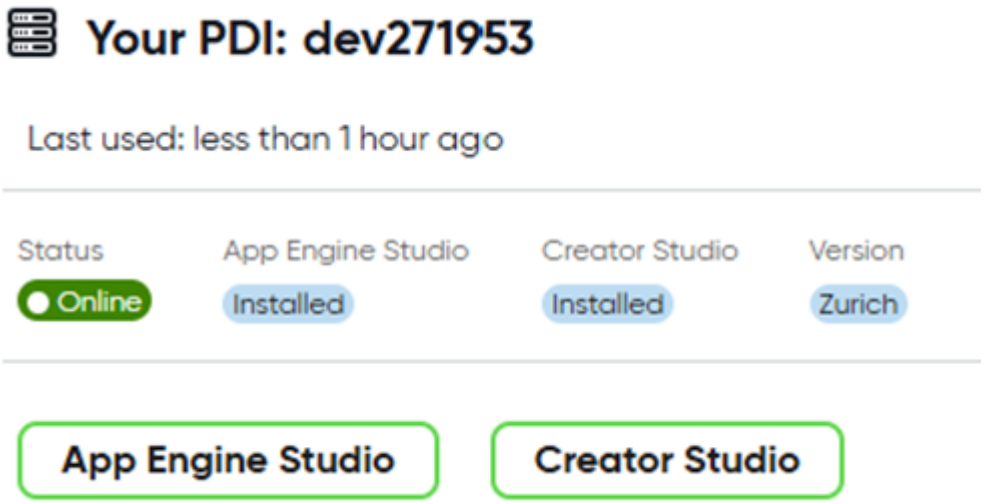


Figure-3

Create an App

5. Click **App Engine Studio**.

6. Close welcome dialog box.

7. Click **Create app**.

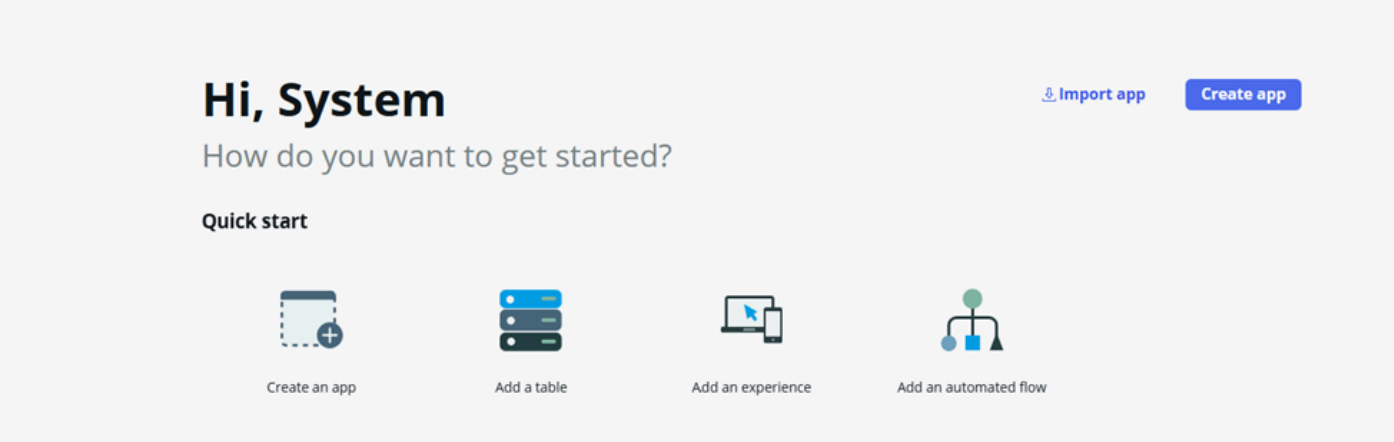


Figure-4

8. Give a name to this app and click **Continue**.

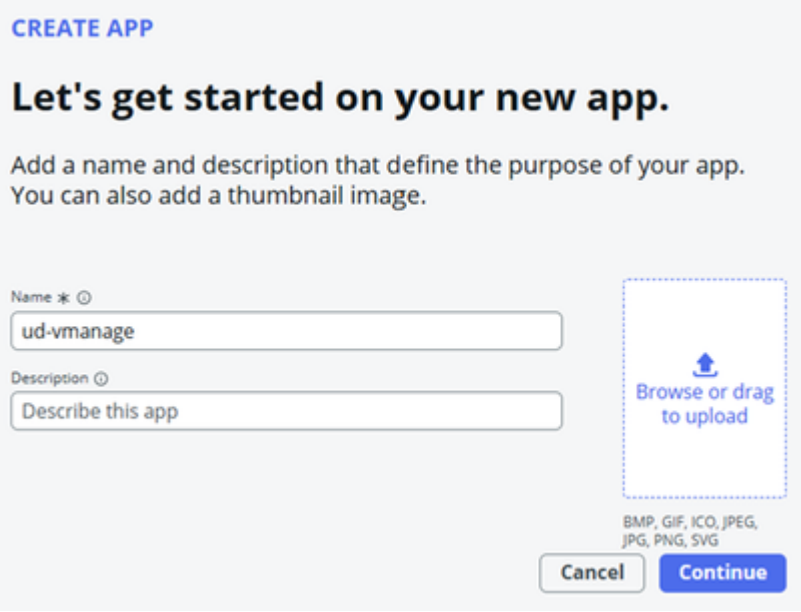


Figure-5

9. Leave roles as default and click **Continue**.

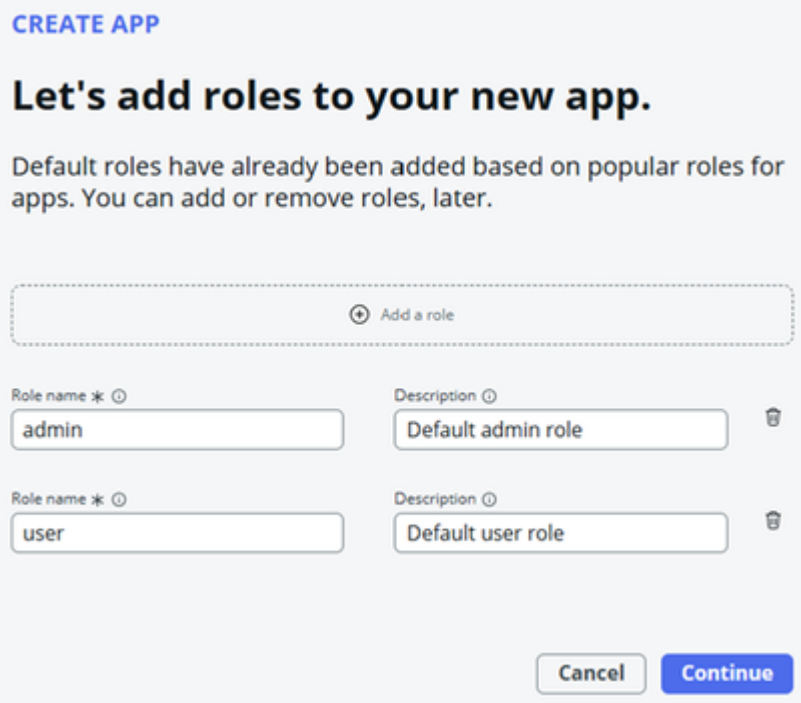
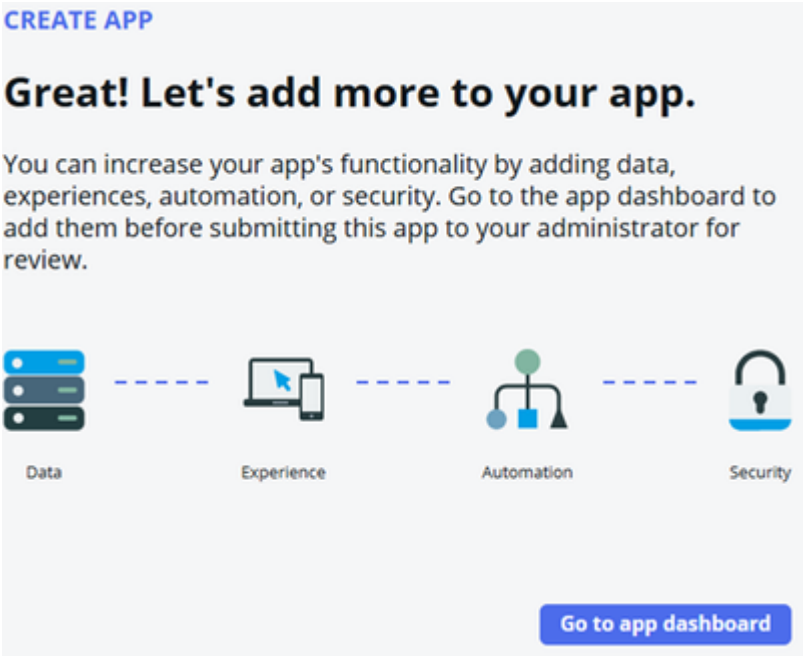


Figure-6

10. Wait for few minutes for this app to be created.

11. Go to **app dashboard**.



Create APP

12. From App Home, click "**Try it out**" to open ServiceNow Studio.

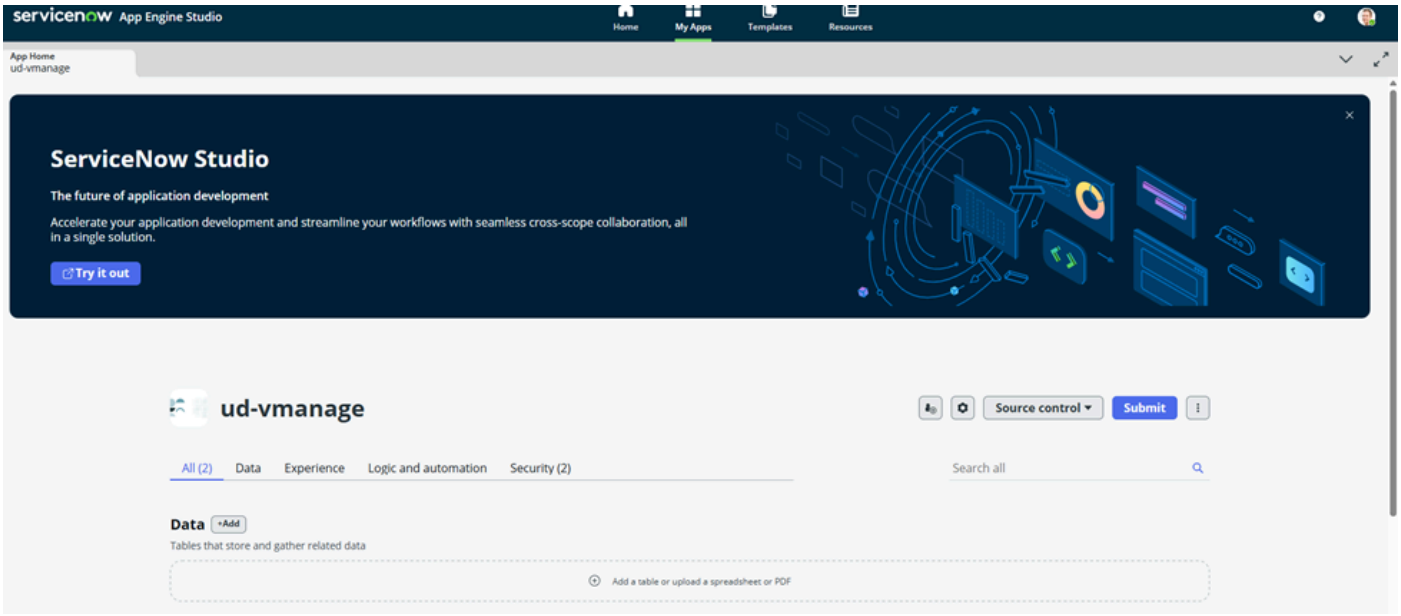


Figure-7

13. Notice the URL. It is something like *PDI-ID.service-now.com*.

14. In left navigation pane, click the app name. In this case: ud-vmanage.

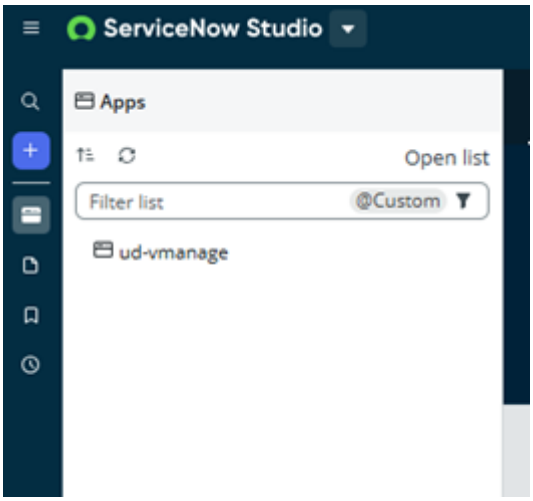
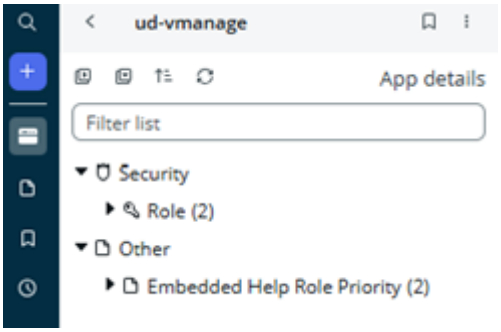


Figure-8

15. Click (+) icon and then click **Create File**.



Create file

16. Search and select **Scripted REST API.**

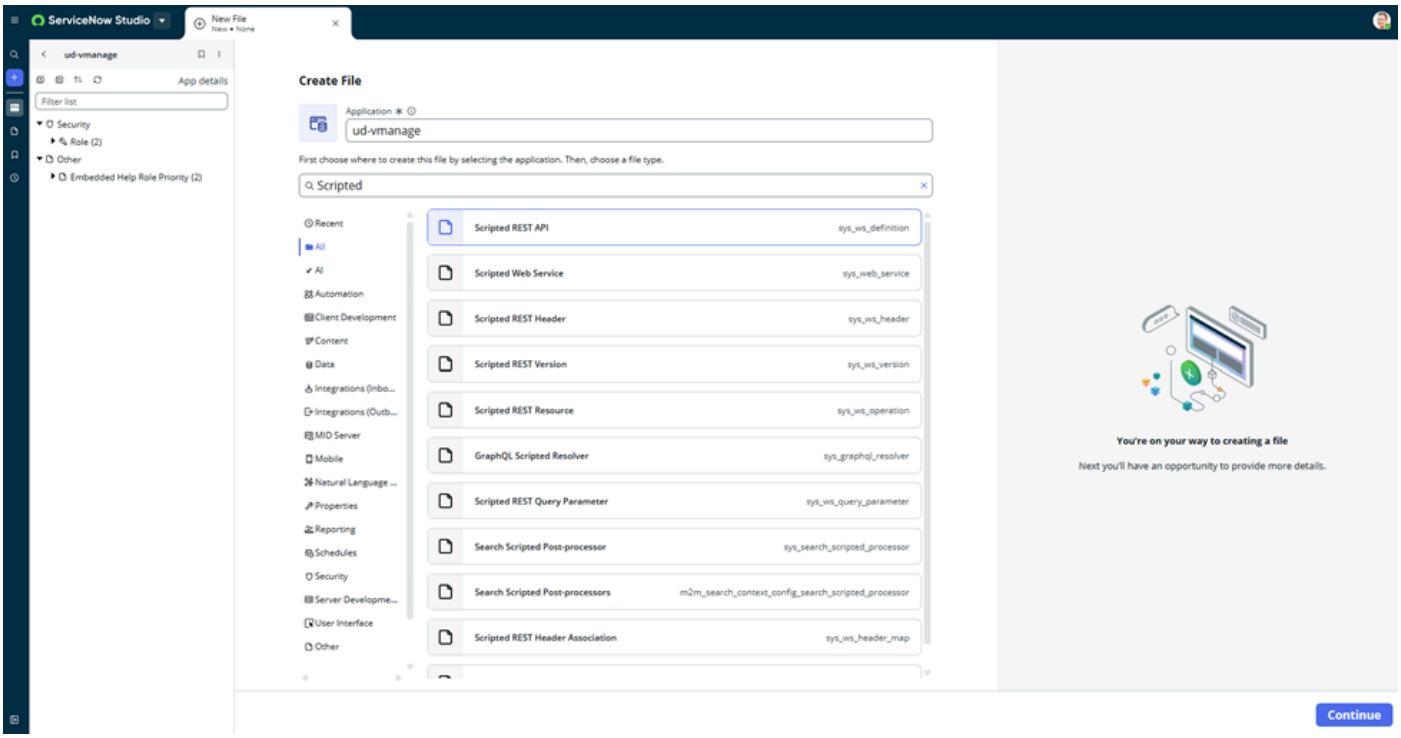


Figure-9

17. Click **Continue.**

18. Create a new record for Scripted REST Service.

    1. Enter API Name
    2. API ID
    3. Click on **Default ACLs lock icon**:
        1. Click on search button to select target record.
        2. In Access control search, search and click “**Scripted REST External Default**”.

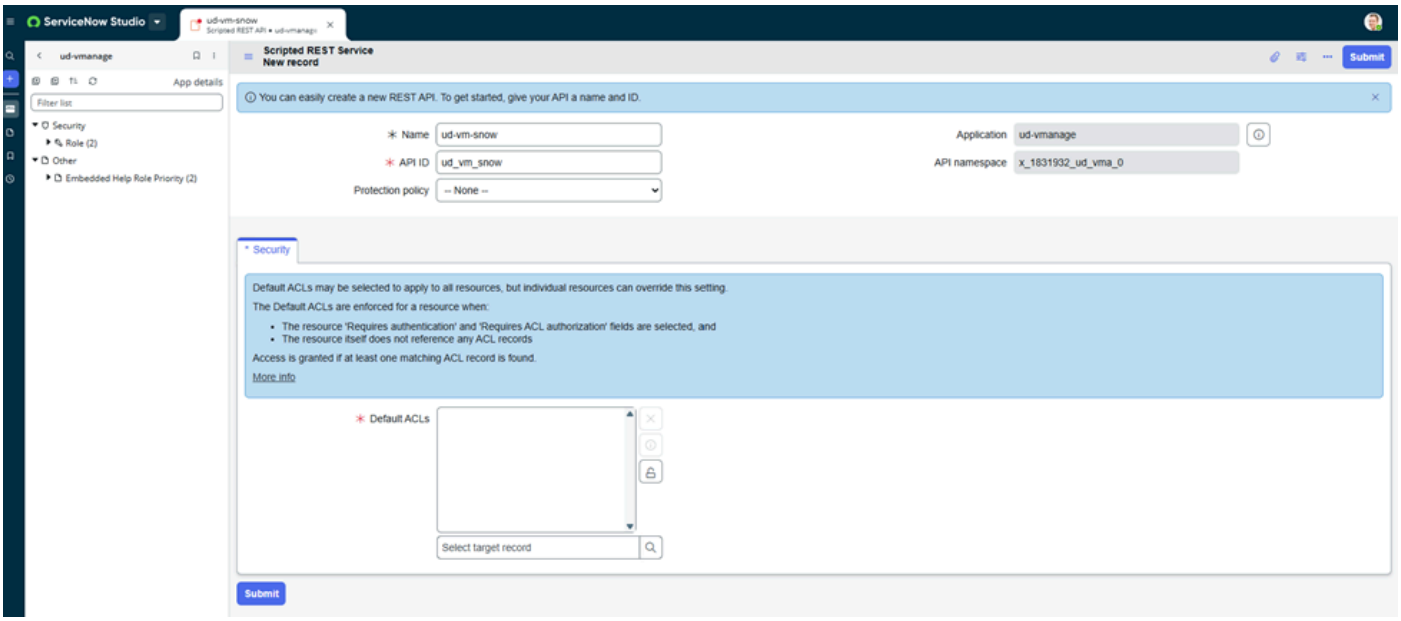


Figure-10

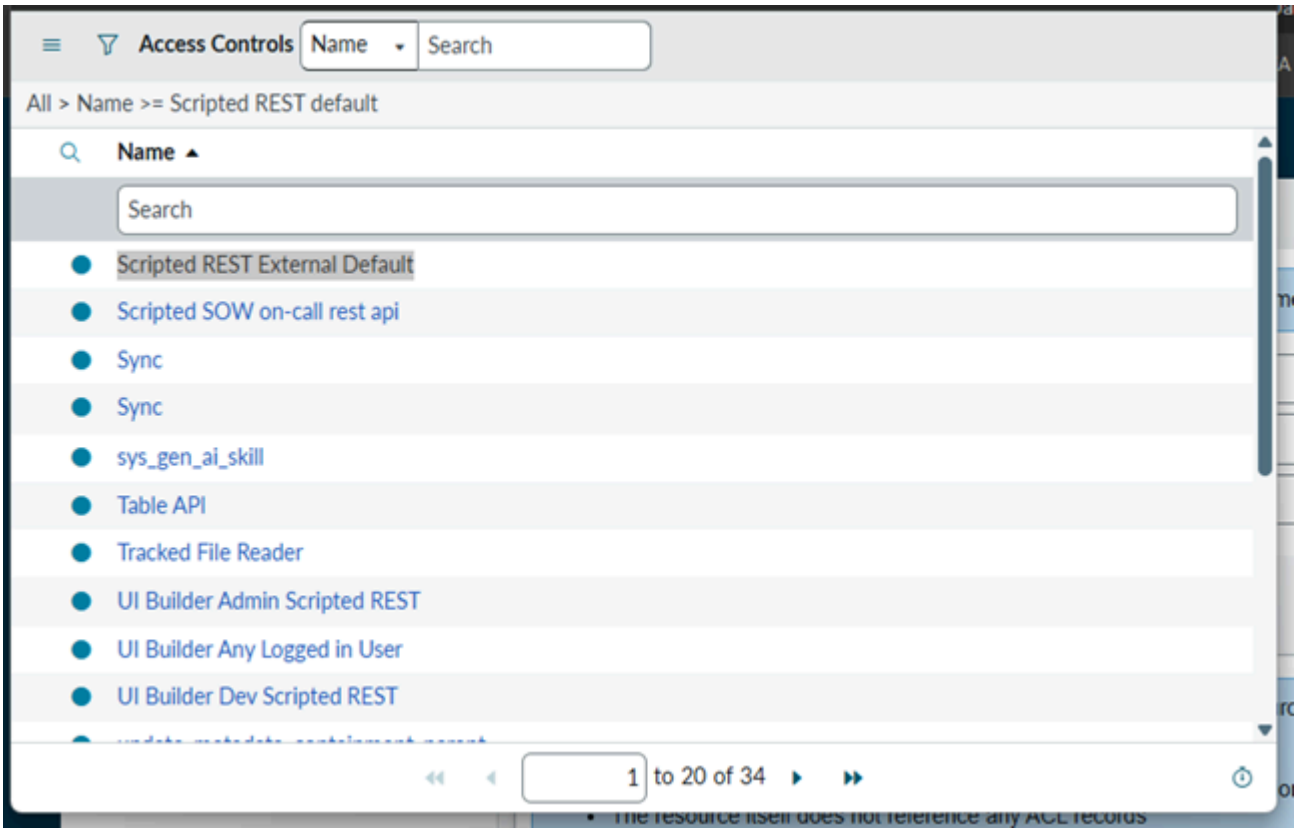
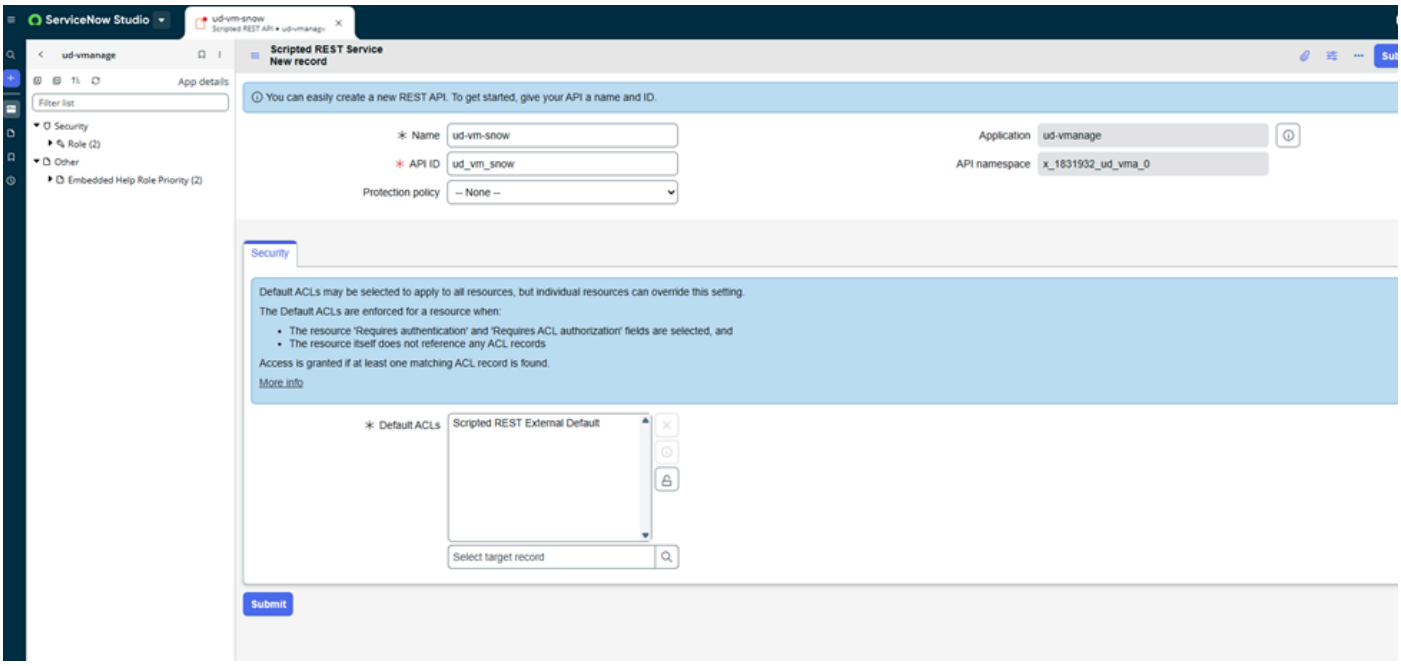


Figure-11

19. Click **Submit**.



Scripted REST Service New Record

20. Create a new resource.

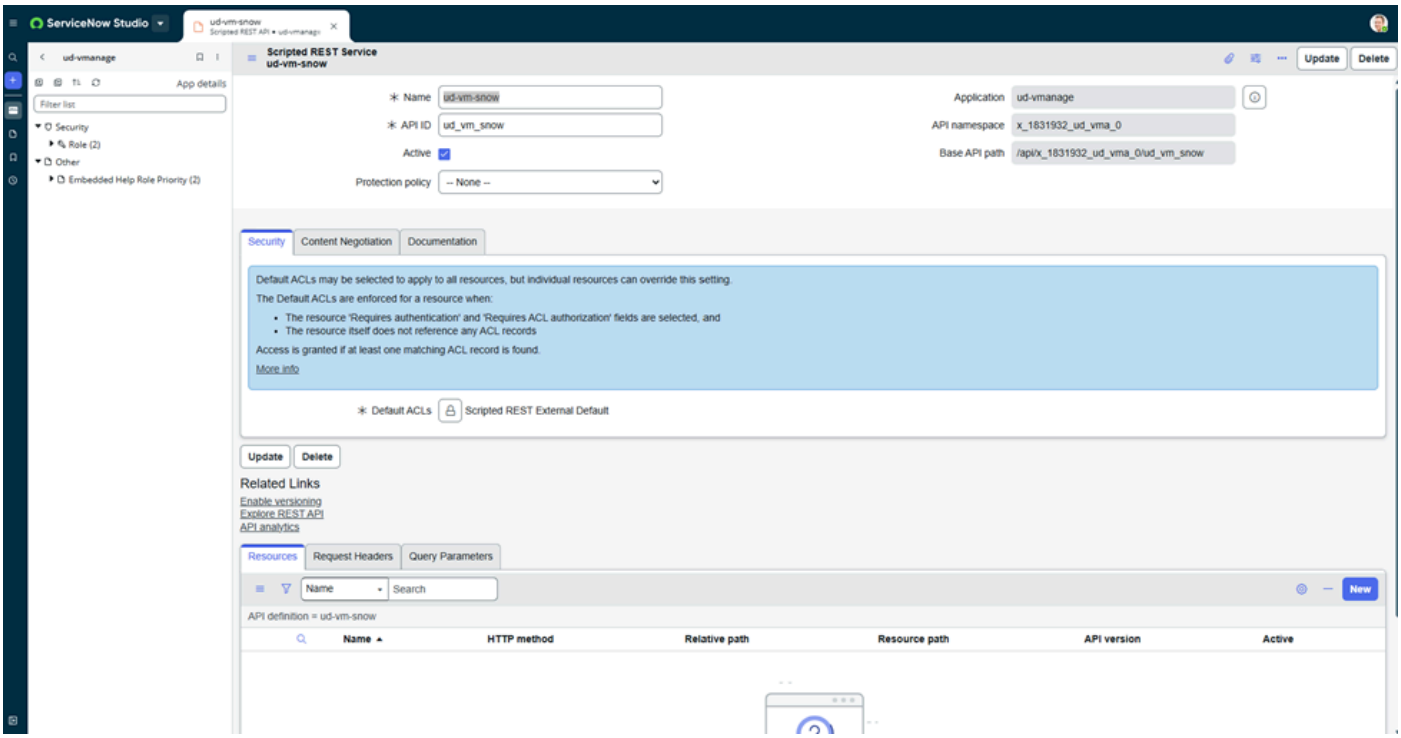


Figure-12

21. Give the name of this new resource, select **HTTP** method as **POST**.

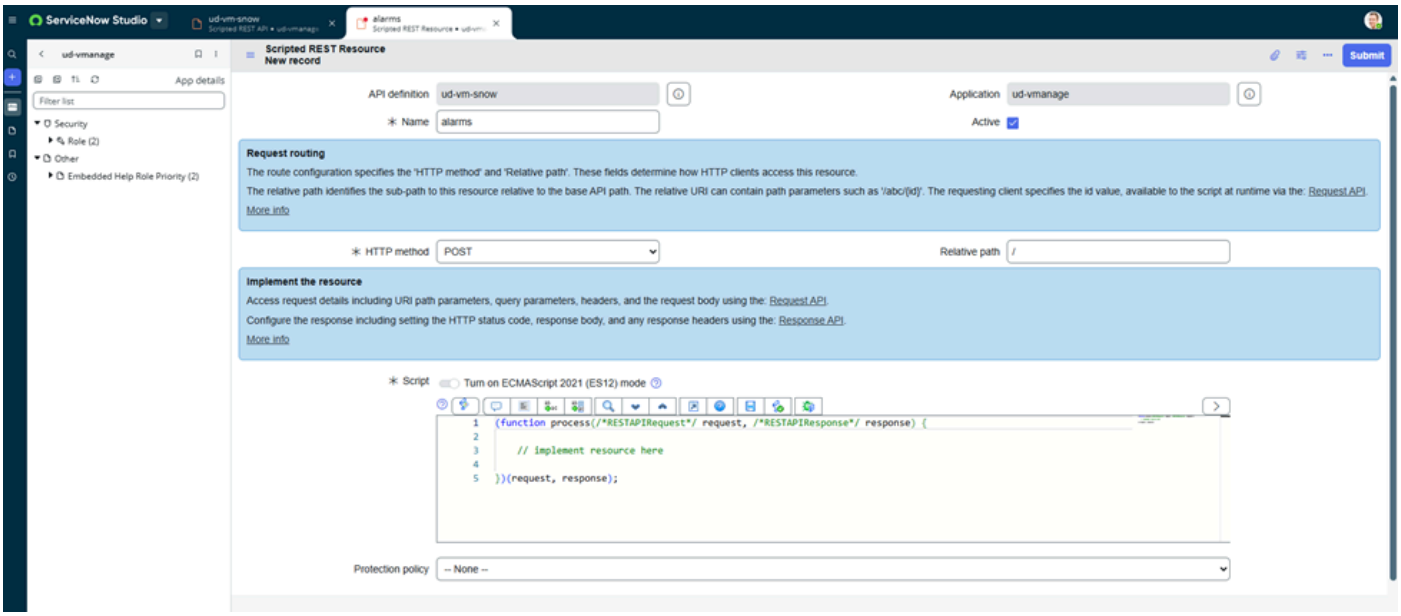


Figure-13

22. In script section, create a javascript to process the JSON from SD-WAN Manager and create tickets in ServiceNow.

Sample script:

```
(function process(request, response) {
   try {
       var payload = request.body.data;

       gs.info("�� vManage Webhook Received: " + JSON.stringify(payload));
```

```
        var alertMessage = payload.message || 'No message';
        var alertSeverity = payload.severity || 'medium';
        var deviceId = payload.deviceId || 'Unknown device';

        var inc = new GlideRecord('incident');
        inc.initialize();
        inc.short_description = "vManage Alert: " + alertMessage;
        inc.description = "Device ID: " + deviceId + "\nSeverity: " + alertSeverity + "\n\n" + JSON.stri
        inc.urgency = (alertSeverity === 'critical') ? 1 : 2;
        inc.impact = 2;
        inc.insert();

        response.setStatus(201);
        response.setBody({ message: "Webhook received and processed." });

    } catch (err) {
        gs.error("❌ vManage Webhook Error: " + err.message);
    response.setStatus(500);
    response.setBody({ error: "Error processing webhook: " + err.message });
  }
})(request, response);
```

Warning: This is a sample script. Please thoroughly validate the script before use in lab or production environment.

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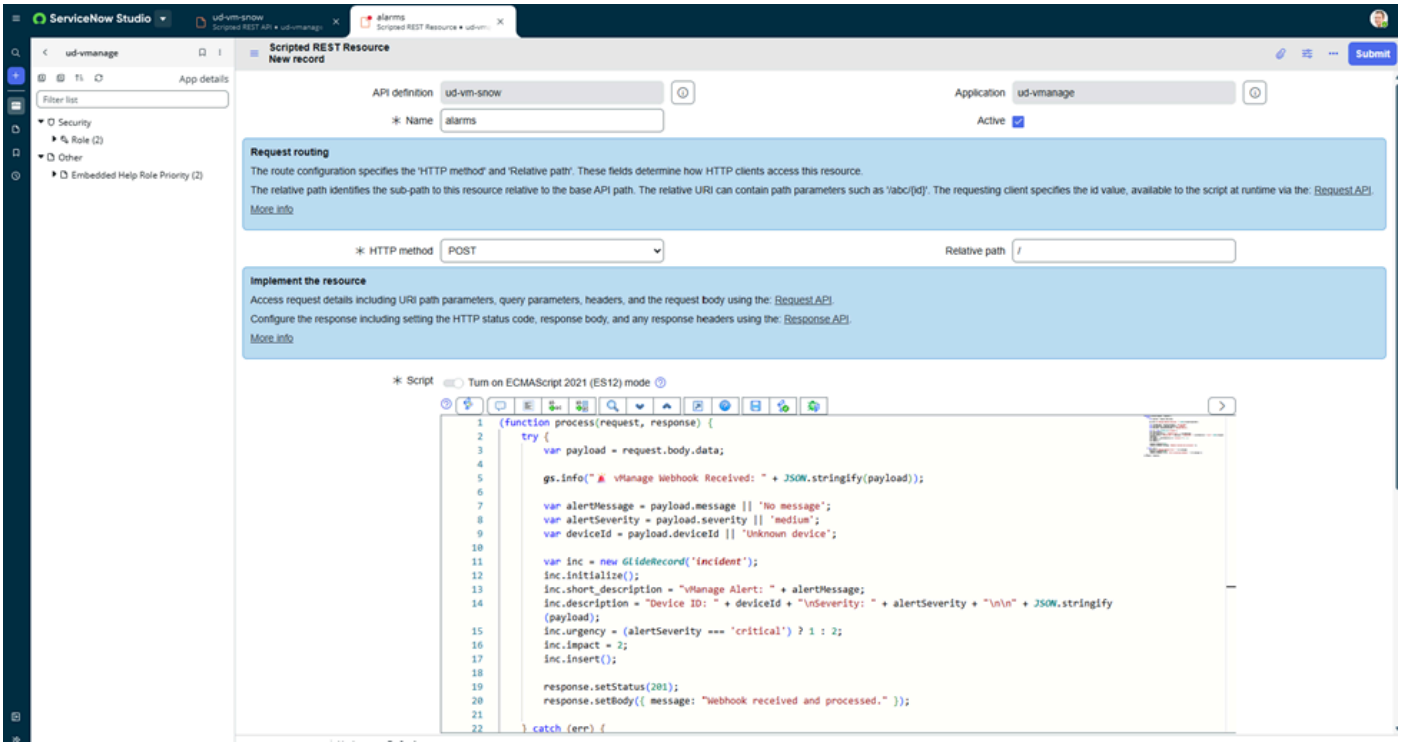
23. Click **Submit**.



Scripted REST Resource New Record

24. **Make a note of the resource path. This is the URL that we need to enter in SD-WAN Manager**

Webhook configuration.

25. Webhook URL: https://PDI.service-now.com/Resource_path.

Sample URL in this configuration guide: https://dev271953.service-now.com/api/x_1831932_ud_vma_0/ud_vm_snow

SD-WAN Manager Configuration

In this section, we configure SD-WAN Manager Webhook to send the alarms towards ServiceNow API: https://dev271953.service-now.com/api/x_1831932_ud_vma_0/ud_vm_snow

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Tip: For a Multi-tenant SD-WAN Manager, apply the respective configuration in tenant view to send Webhook events for that tenant. One can also apply this configuration in Provider view to recieve alarms from Provider domain devices.

SD-WAN Webhook

1. Login to SD-WAN Manager and navigate to **Monitor > Logs > Alarm Notifications.**

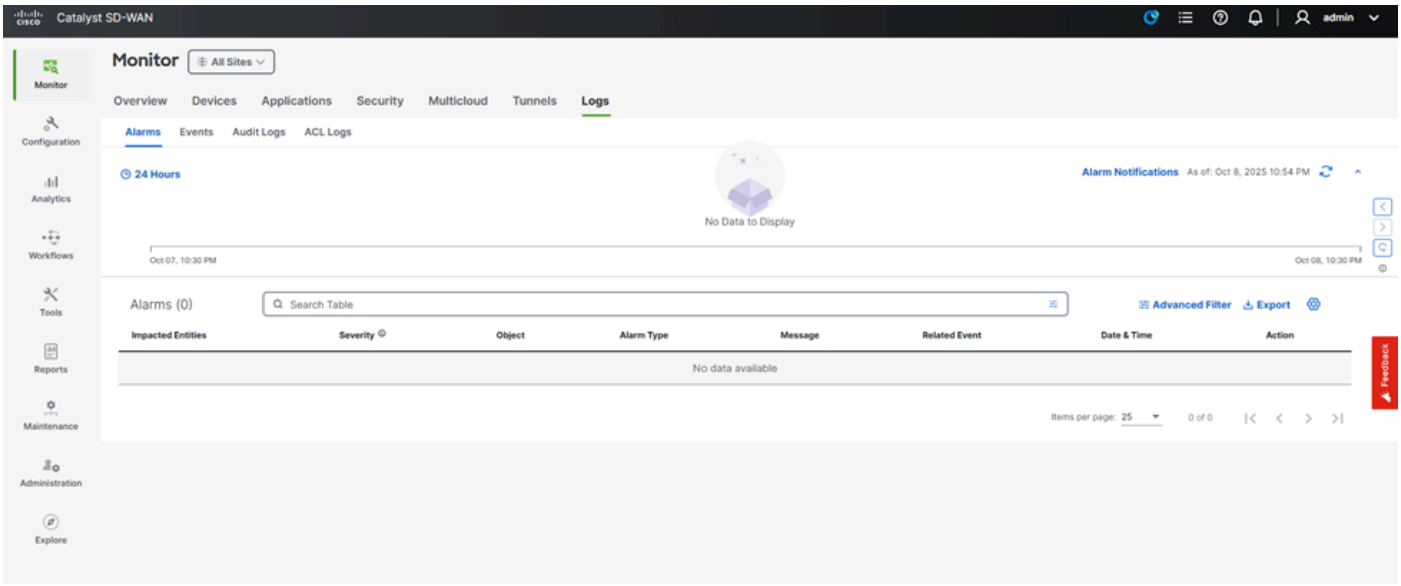


Figure-14

SD-WAN Alarm Notification

2. Click Add Alarm Notifications.

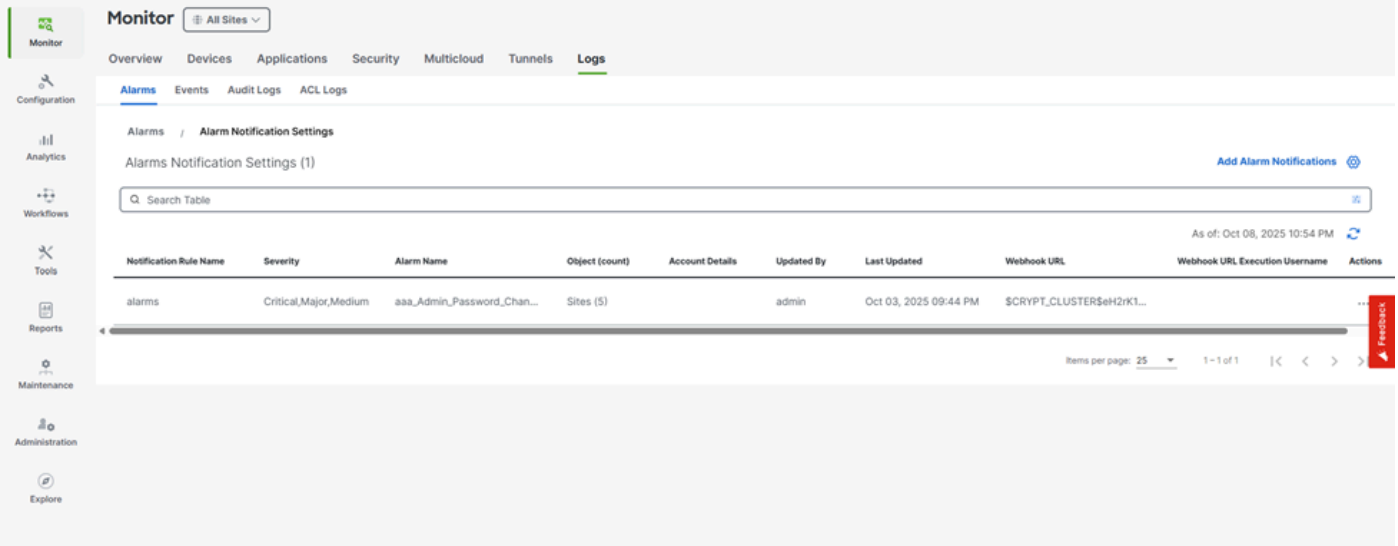


Figure-15

3. Enter respective fields to setup alarm notification.

1. Notification Name
2. Alarm Type
3. Delivery Method: WebHook

1. Choose a Channel for Webhook: Custom
2. WebHook URL (API created on step 24 in ServiceNow side configuration): https://dev271953.service-now.com/api/x_1831932_ud_vma_0/ud_vm_snow
3. WebHook Threshold: 100
4. Leave username and password blank.

⚠ **Caution**: Leaving username and password fields blank in production is a security risk. Move with caution.

---

4. Click **Add Notification**.

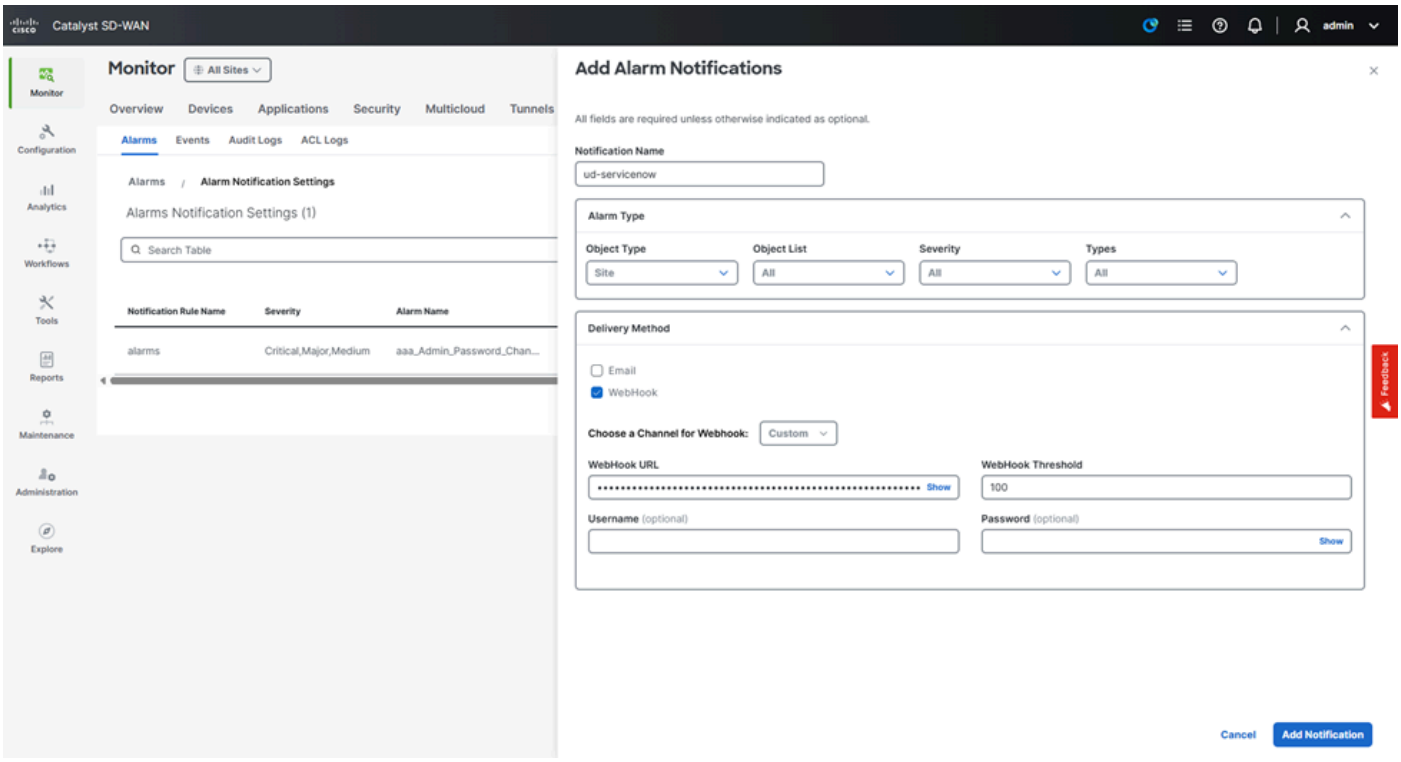
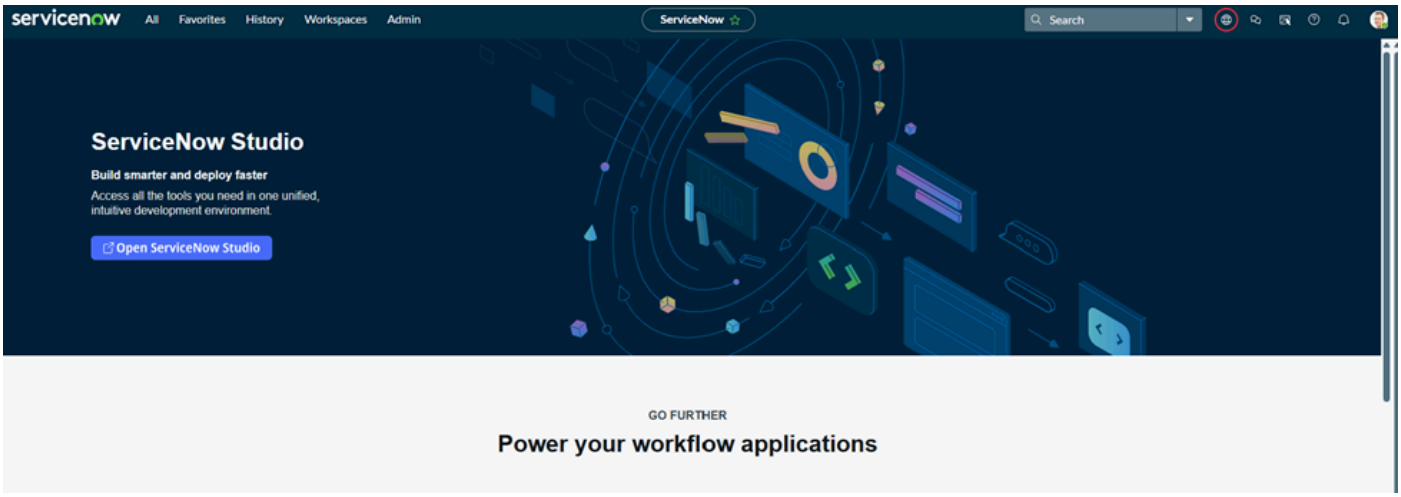


Figure-16

Verify

ServiceNow ticketing page

1. Let’s navigate to ServiceNow ticketing page.
    1. For this, use this URL to access ServiceNow main workspace. It is your *PDI.service-now.com/nav_to.do*.
        1. Example: https://dev271953.service-now.com/nav_to.do



ServiceNow workspace

2. Click **All** and search & click **Incidents**.

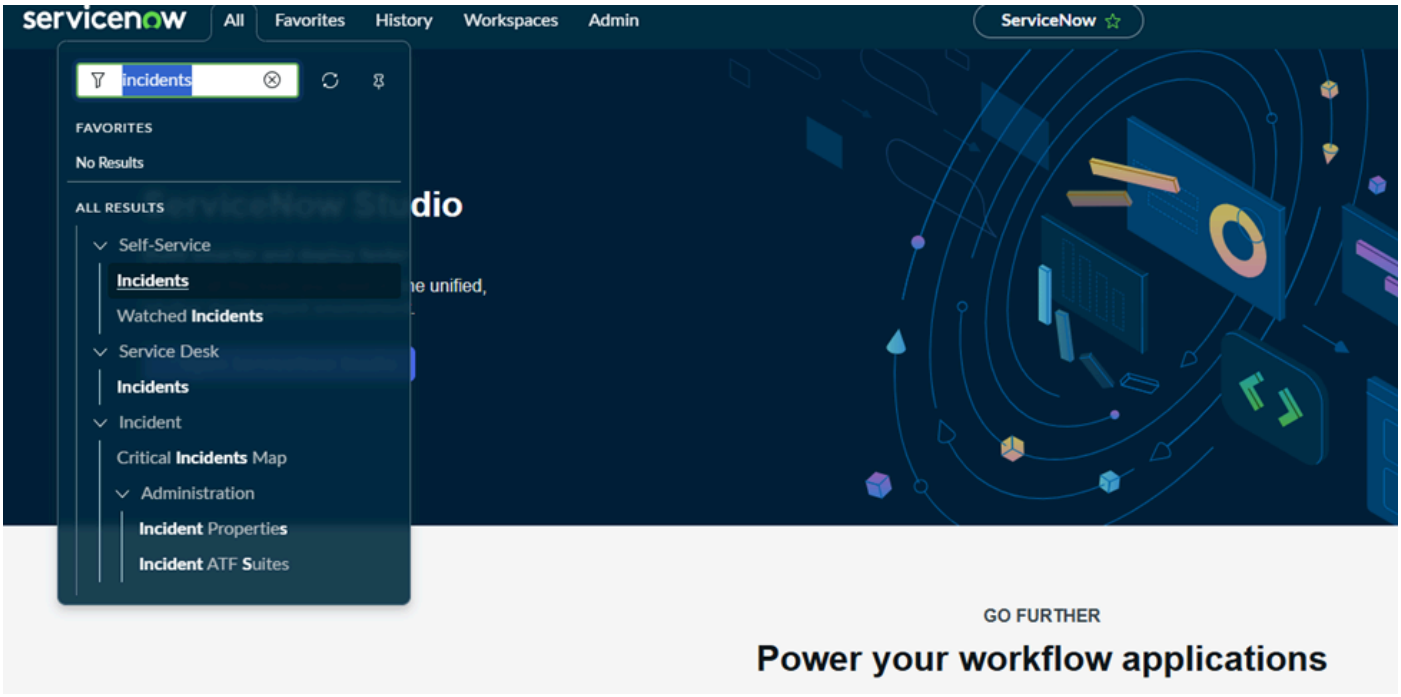


Figure-17

3. Incident page opens.

Incident page

4. From SD-WAN Manager CLI vshell, execute the CURL command towards ServiceNow:

curl -X POST "<your_webhook_url_towards_servicenow>"

Success message:

```
udutt-krk-dmz-vmanage:~$ curl -X POST "https://dev271953.service-now.com/api/x_1831932_ud_vma_0/ud_vm_s
{"result":{"message":"Webhook received and processed."}}
```

5. Notice an incident created on ServiceNow.

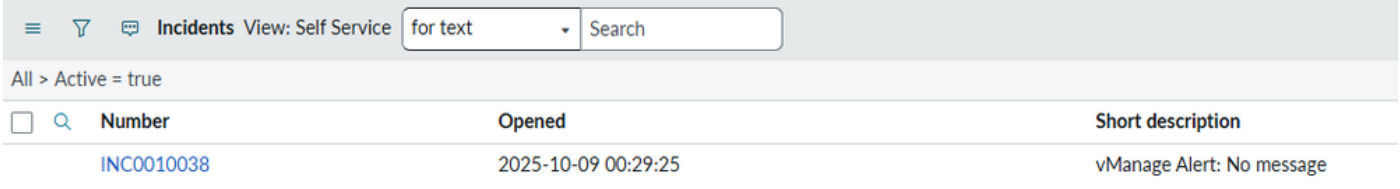


Figure-18

If you notice an authentication error in CURL like below:

```
udutt-krk-dmz-vmanage:~$ curl -X POST "https://dev271953.service-now.com/api/x_1831932_ud_vma_0/ud_vm_s
{"error":{"message":"User is not authenticated","detail":"Required to provide Auth information"},"statu
```

Steps to fix authentication error

1. Navigate back to ServiceNow Studio page, access your app (example: ud-vmanage) from left navigation pane and select your Scripted REST API (example ud-vm-snow).

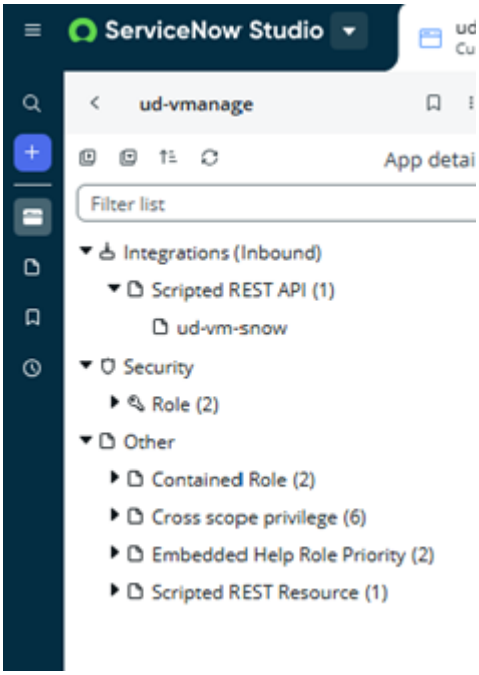


Figure-19

2. Scroll down to Resources and click the **resource** (example: alarms).

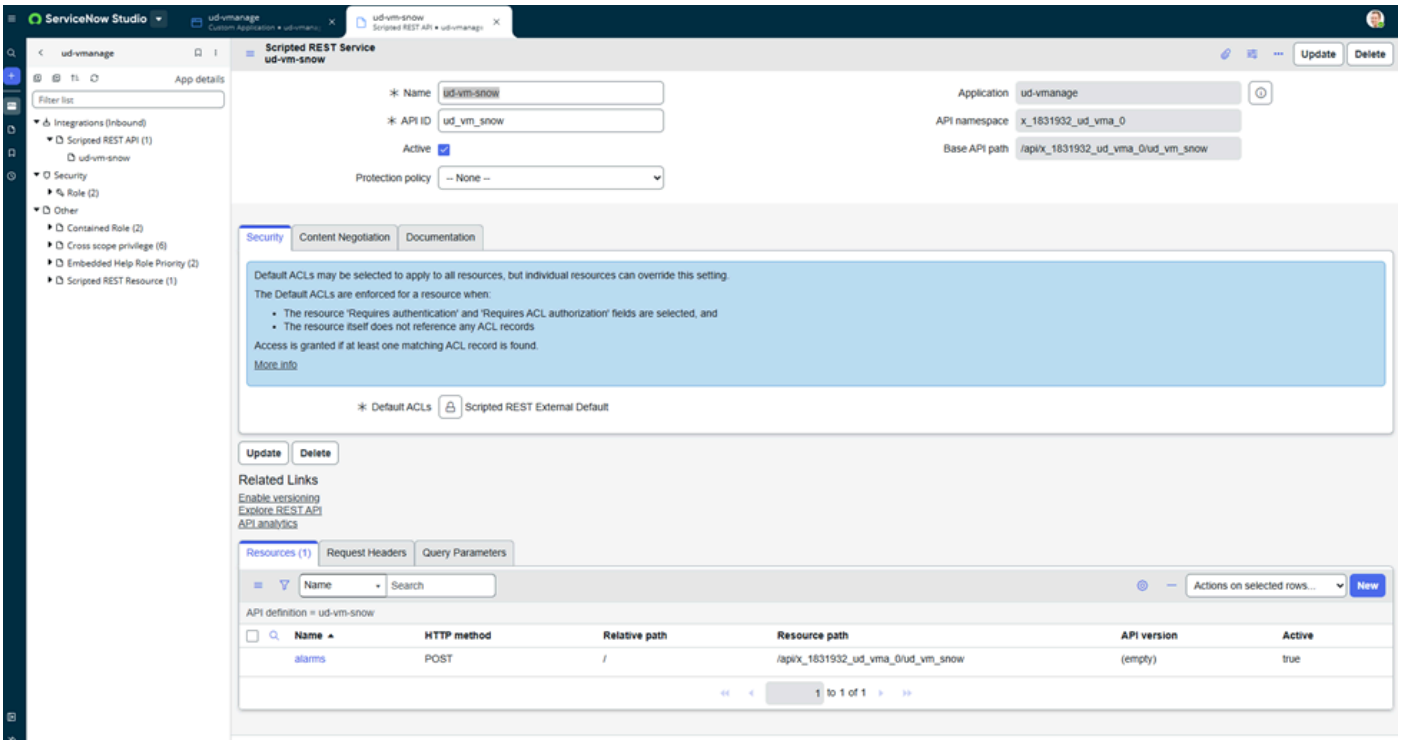


Figure-20

3. Scroll down to Security and **uncheck** authentication and ACL authorization as shown below.

a. Requires authentication

b. Requires ACL authorization

c. Click **Update**

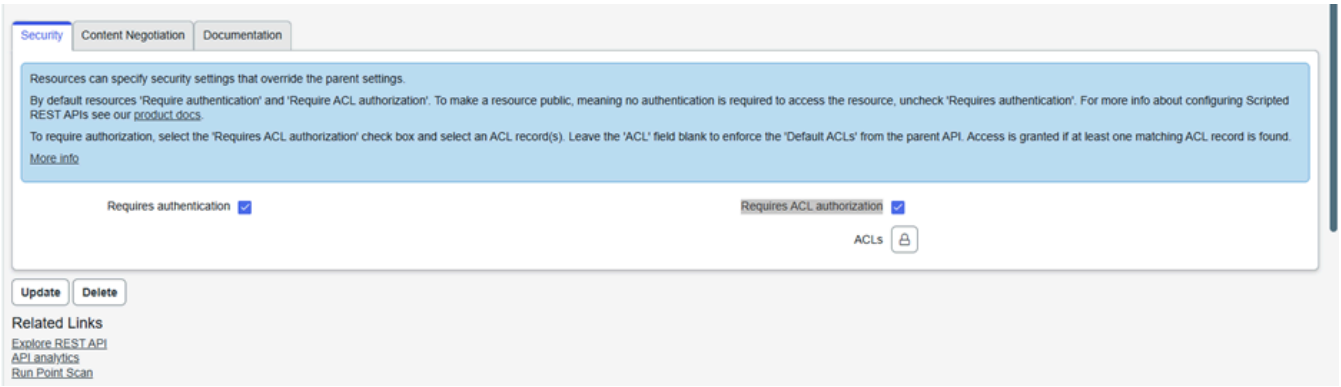


Figure-21

4. Execute CURL command again from SD-WAN Manager vshell which is successful this time.

Generating alarms

5. Now generate an alarm in SD-WAN Manager by, for example:

a. Shutting down an interface of one WAN Edge Router within your SD-WAN overlay.

b. Clearing control connections from any SD-WAN Manager or any WAN Edge Router.

c. Performing a port-hop.

Please check the intended site to generate alarms during Webhook configuration.

6. Notice Incidents created on ServiceNow page.

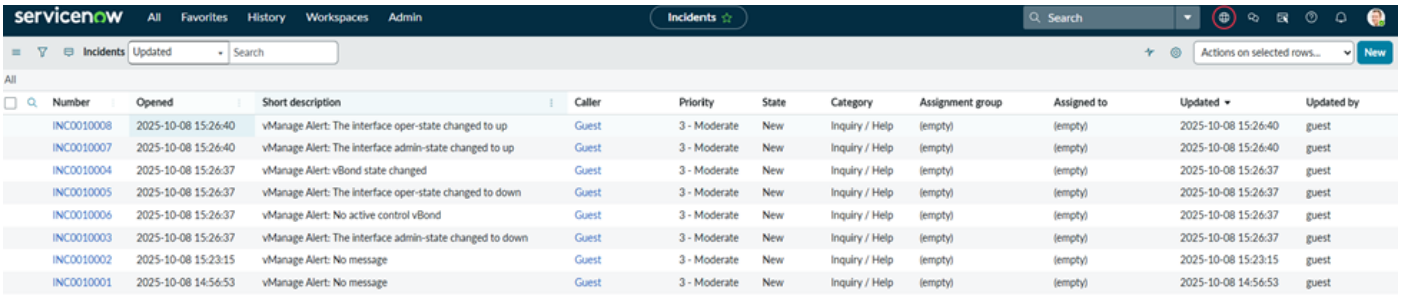


Figure-22

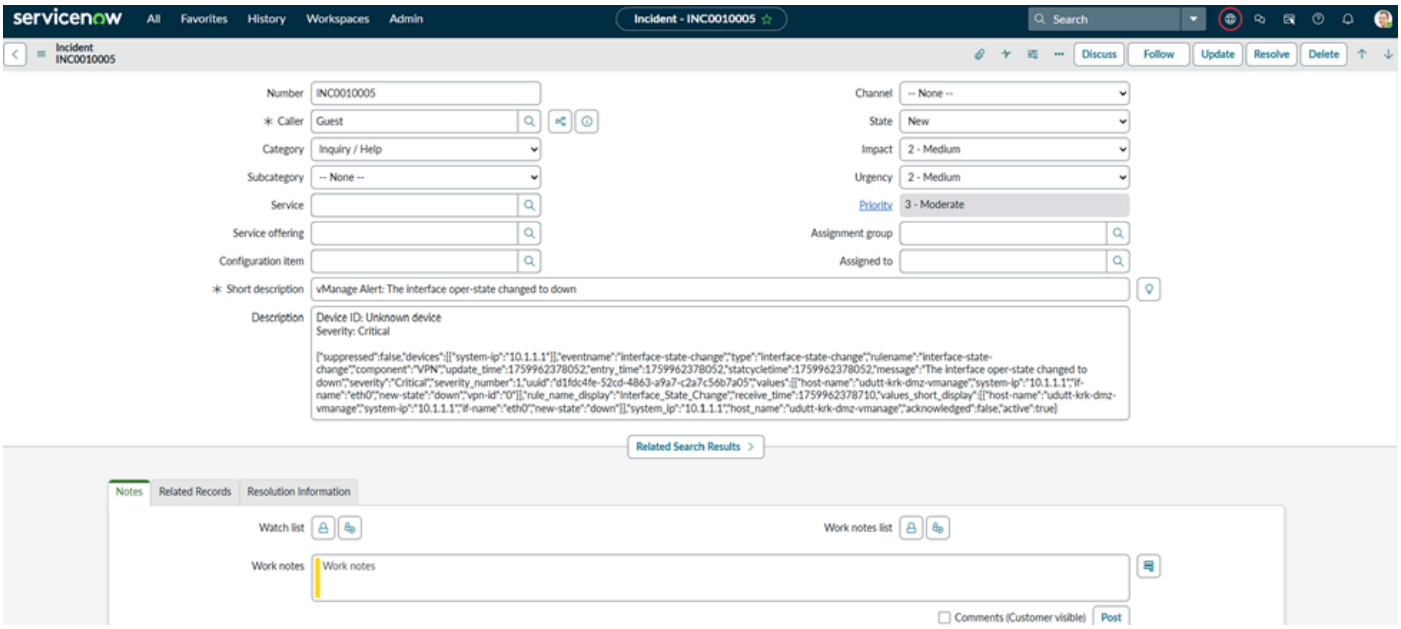


Figure-23

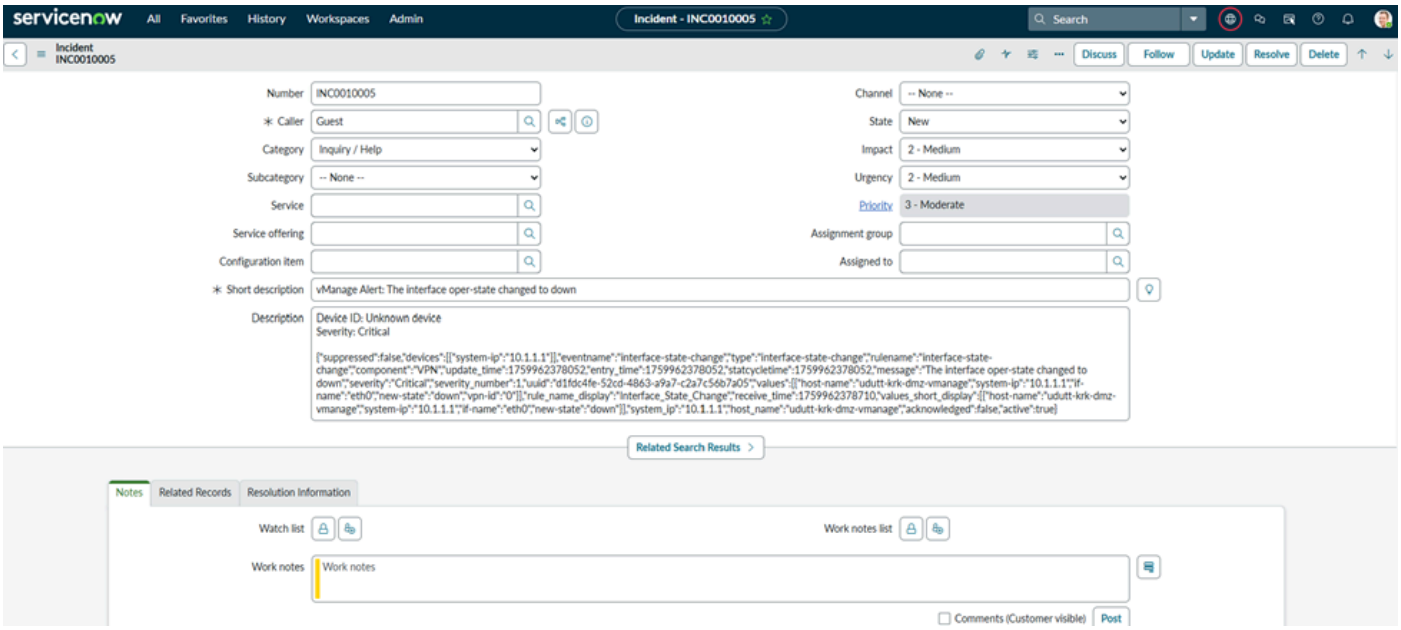


Figure-24

Troubleshoot

1. From the SD-WAN Manager side, check the content of **/var/log/nms/vmanage-server.log** for any errors related to HTTP POST messages.

Example of successful Webhook:

```
03-Oct-2025 12:21:05,394 UTC INFO  [] [udutt-krk-vmanage] [DataCollectionManager] (Thread-157) || *****
03-Oct-2025 12:21:05,677 UTC INFO  [] [udutt-krk-vmanage] [EventDataCollector] (device-event-processing
03-Oct-2025 12:21:05,677 UTC INFO  [] [udutt-krk-vmanage] [DataCollectionManager] (Thread-157) || *****
03-Oct-2025 12:21:06,745 UTC INFO  [] [udutt-krk-vmanage] [DeviceHistoryConfigurationDAO] (device-confi
03-Oct-2025 12:21:07,192 UTC INFO  [] [udutt-krk-vmanage] [NotificationsConsumer] (pool-59-thread-9) ||
03-Oct-2025 12:21:07,196 UTC INFO  [] [udutt-krk-vmanage] [NotificationsConsumer] (pool-59-thread-1) ||
```

Example of unsuccessful Webhook request:

```
03-Oct-2025 12:24:46,949 UTC INFO  [] [udutt-krk-vmanage] [DataCollectionManager] (Thread-157) || *****
03-Oct-2025 12:24:48,065 UTC INFO  [] [udutt-krk-vmanage] [DeviceHistoryConfigurationDAO] (device-confi
03-Oct-2025 12:24:48,305 UTC INFO  [] [udutt-krk-vmanage] [NotificationsConsumer] (pool-59-thread-15) |
03-Oct-2025 12:24:48,305 UTC INFO  [] [udutt-krk-vmanage] [NotificationsConsumer] (pool-59-thread-14) |
```

2. We can also perform packet capture to confirm healthy session between SD-WAN Manager and ServiceNow.

5	3.160694	172.19.34.6	8.8.8.8	DNS	85	Standard query 0xf3cd AAAA dev271953.service-now.com
6	3.204792	8.8.8.8	172.19.34.6	DNS	143	Standard query response 0xf3cd AAAA dev271953.service-now.com SOA edns140.ultradns.com
7	3.208661	8.8.8.8	172.19.34.6	DNS	101	Standard query response 0xfff2 A dev271953.service-now.com A
8	3.209253	172.19.34.6	[redacted]	TCP	66	46872 → 443 [SYN] Seq=0 Win=64240 Len=0 MSS=1460 SACK_PERM WS=128
9	3.352225	[redacted]	172.19.34.6	TCP	66	443 → 46872 [SYN, ACK] Seq=0 Ack=1 Win=29200 Len=0 MSS=1300 SACK_PERM WS=512
10	3.352693	172.19.34.6	[redacted]	TCP	54	46872 → 443 [ACK] Seq=1 Ack=1 Win=64256 Len=0

Packet capture with hidden public IP

Related Information

- SD-WAN Manager Webhook troubleshooting
- Technical Support & Documentation - Cisco Systems