

# Integrate Catalyst SD-WAN with ServiceNow

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## 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.

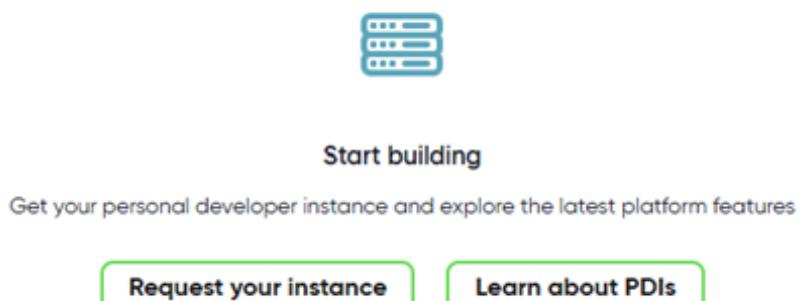
There are two parts to this configuration:

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*

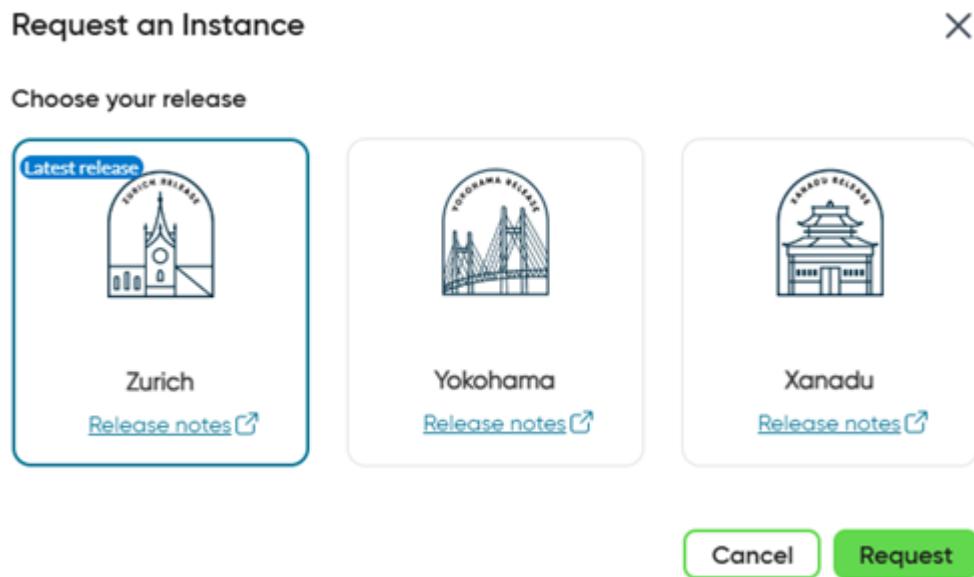


Figure-2

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.

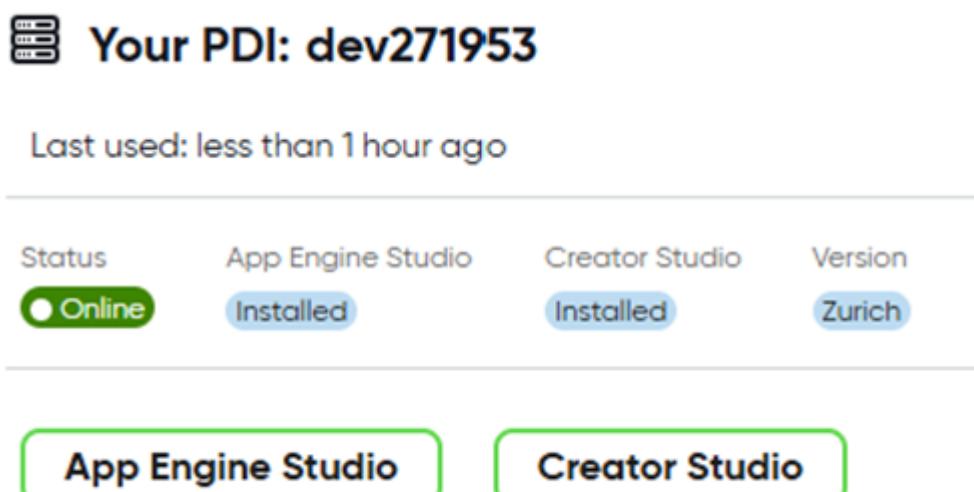


Figure-3

## Create an App

5. Click **App Engine Studio**.
6. Close welcome dialog box.
7. Click **Create app**.

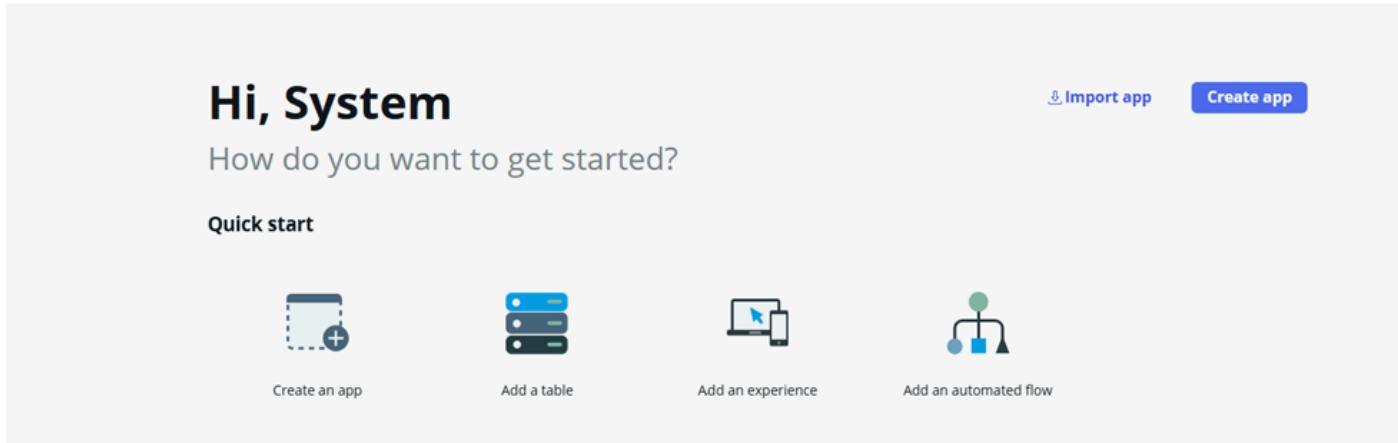


Figure-4

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

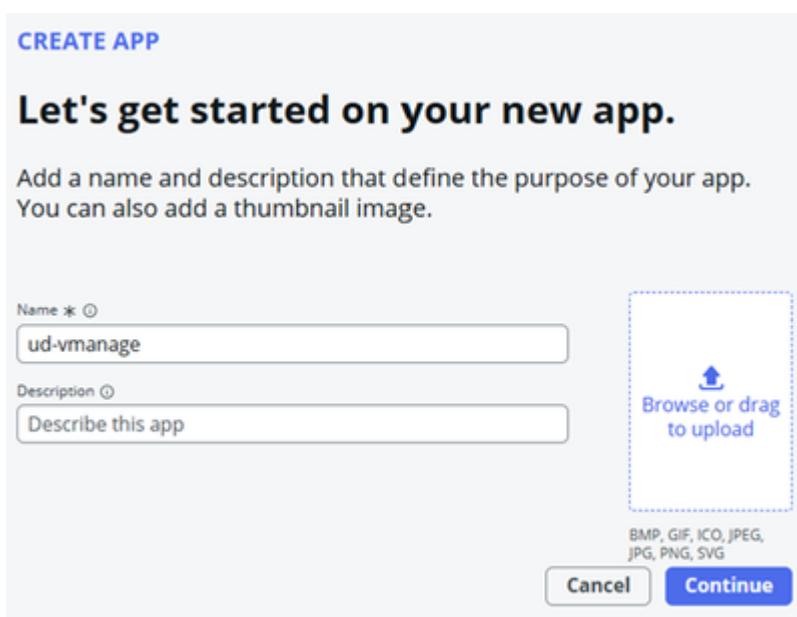


Figure-5

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

## CREATE APP

### Let's add roles to your new app.

Default roles have already been added based on popular roles for apps. You can add or remove roles, later.

Role name \* ⓘ admin Description ⓘ Default admin role

Role name \* ⓘ user Description ⓘ Default user role

Cancel Continue

Figure-6

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

11. Go to **app dashboard**.

CREATE APP

### Great! Let's add more to your app.

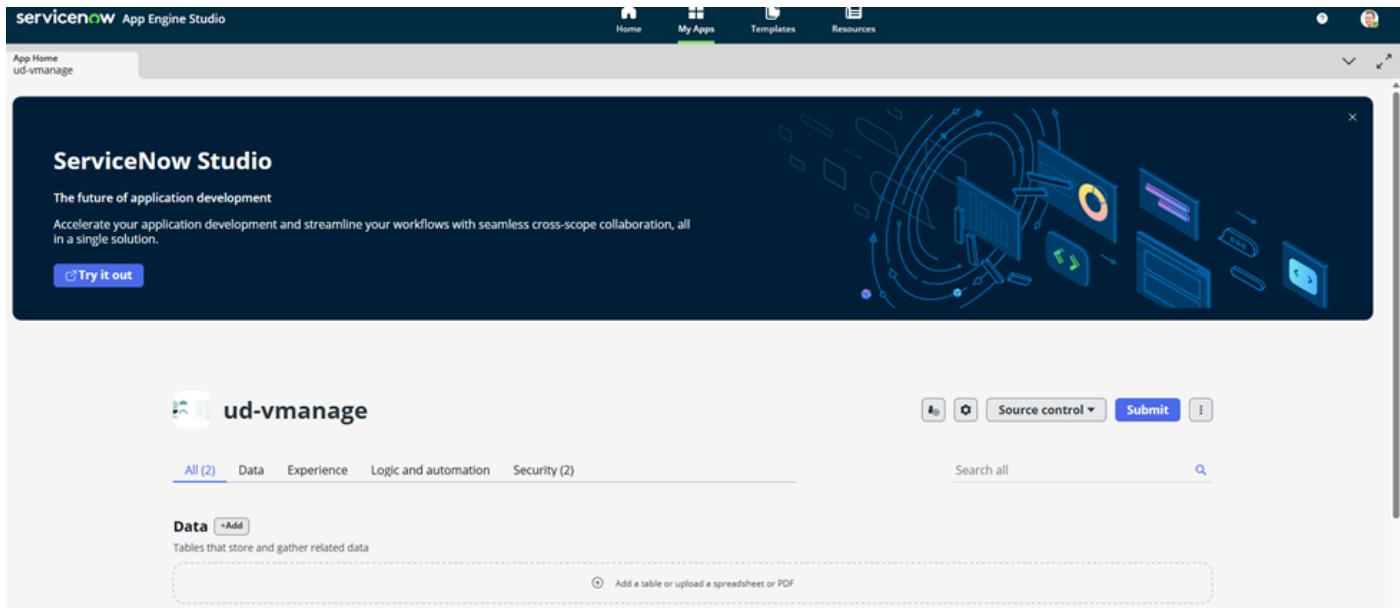
You can increase your app's functionality by adding data, experiences, automation, or security. Go to the app dashboard to add them before submitting this app to your administrator for review.

Data Experience Automation Security

Go to app dashboard

Create APP

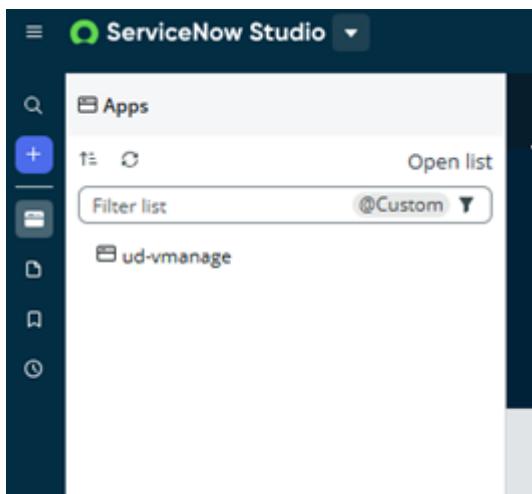
12. From App Home, click “**Try it out**” to open ServiceNow Studio.



The screenshot shows the ServiceNow App Engine Studio interface. At the top, there are navigation links: Home, My Apps (which is highlighted in green), Templates, and Resources. The main content area is titled "ServiceNow Studio" with a sub-section "The future of application development". It features a "Try it out" button and a circular graphic illustrating cross-scope collaboration. Below this, the "ud-vmanage" app is selected in the left navigation pane. The main content area shows the "ud-vmanage" app's details, including tabs for All (2), Data, Experience, Logic and automation, and Security (2). The "Data" tab is selected, showing a sub-section for "Tables that store and gather related data". A dashed box indicates where a table or spreadsheet can be added. There are also buttons for "Source control", "Submit", and a help icon.

Figure-7

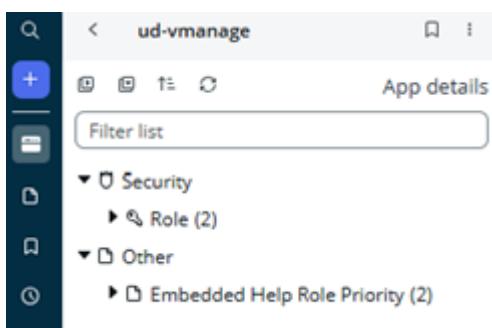
13. Notice the URL. It is something like *PDI-ID.service-now.com*.
14. In left navigation pane, click the app name. In this case: ud-vmanage.



The screenshot shows the "ud-vmanage" app details page in ServiceNow App Engine Studio. The left sidebar has a "Search" icon, a blue "+" icon for creating new items, and other navigation icons. The main content area is titled "ud-vmanage" and "App details". It includes a "Filter list" search bar and a "Security" section with a "Role (2)" item. A "Create file" button is visible at the bottom.

Figure-8

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



The screenshot shows the "Create file" dialog in ServiceNow App Engine Studio. The left sidebar has a "Search" icon, a blue "+" icon for creating new items, and other navigation icons. The main content area is titled "Create file" and "App details". It includes a "Filter list" search bar and a "Security" section with a "Role (2)" item. A "Create file" button is visible at the bottom.

*Create file*

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

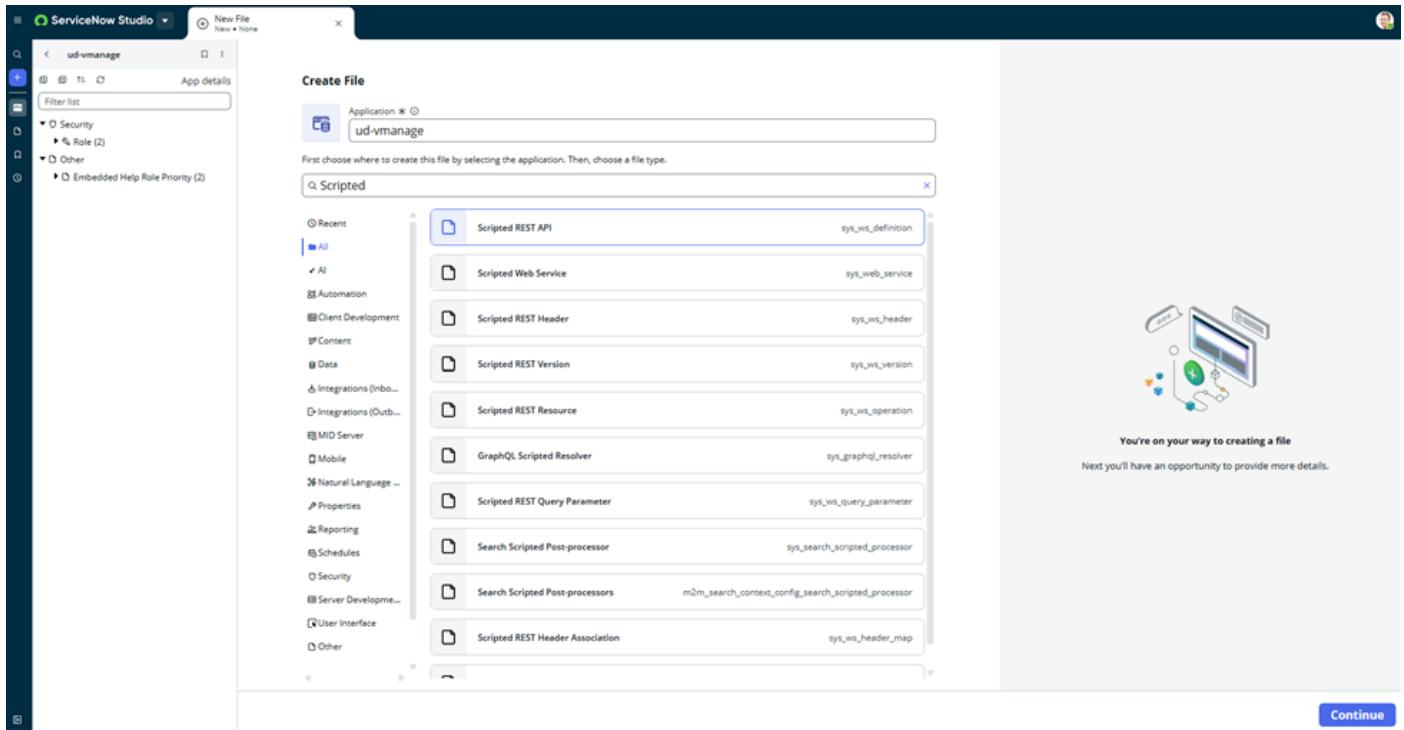


Figure-9

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.stringify(payload);
inc.urgency = (alertSeverity === 'critical') ? 1 : 2;
inc.impact = 2;
inc.insert();

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

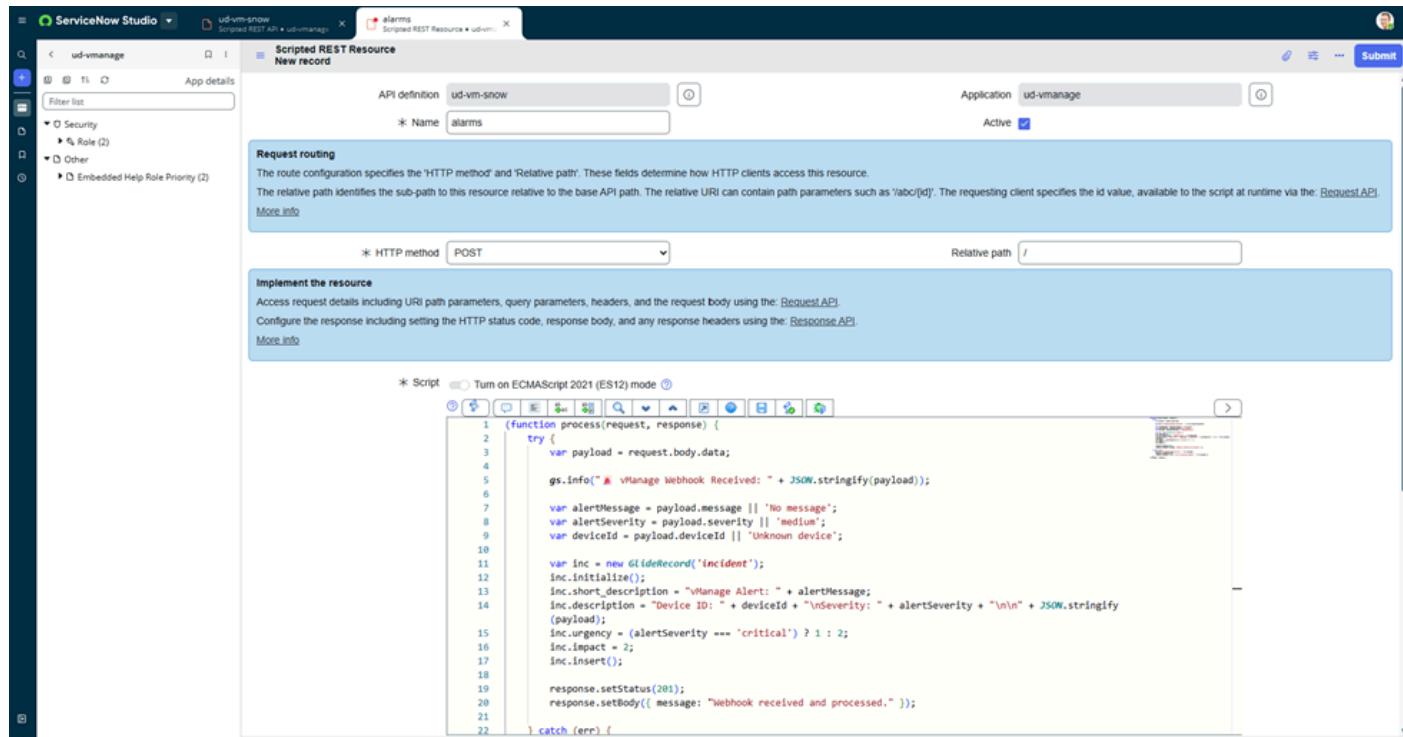
} catch (err) {
    gs.error("X vManage Webhook Error: " + err.message);
    response.setStatus(500);
    response.setBody({ error: "Error processing webhook: " + err.message });
}
})(request, response);

```



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

## 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](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](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](https://dev271953.service-now.com/api/x_1831932_ud_vma_0/ud_vm_snow)



**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 receive 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.

Notification Rule Name	Severity	Alarm Name	Object (count)	Account Details	Updated By	Last Updated	Webhook URL	Webhook URL Execution Username	Actions
alarms	Critical, Major, Medium	aaa_Admin_Password_Change	Sites (5)	admin		Oct 03, 2025 09:44 PM	\$CRYPT_CLUSTER\$eH2rK1...		...

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](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](https://dev271953.service-now.com/nav_to.do)

ServiceNow workspace

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

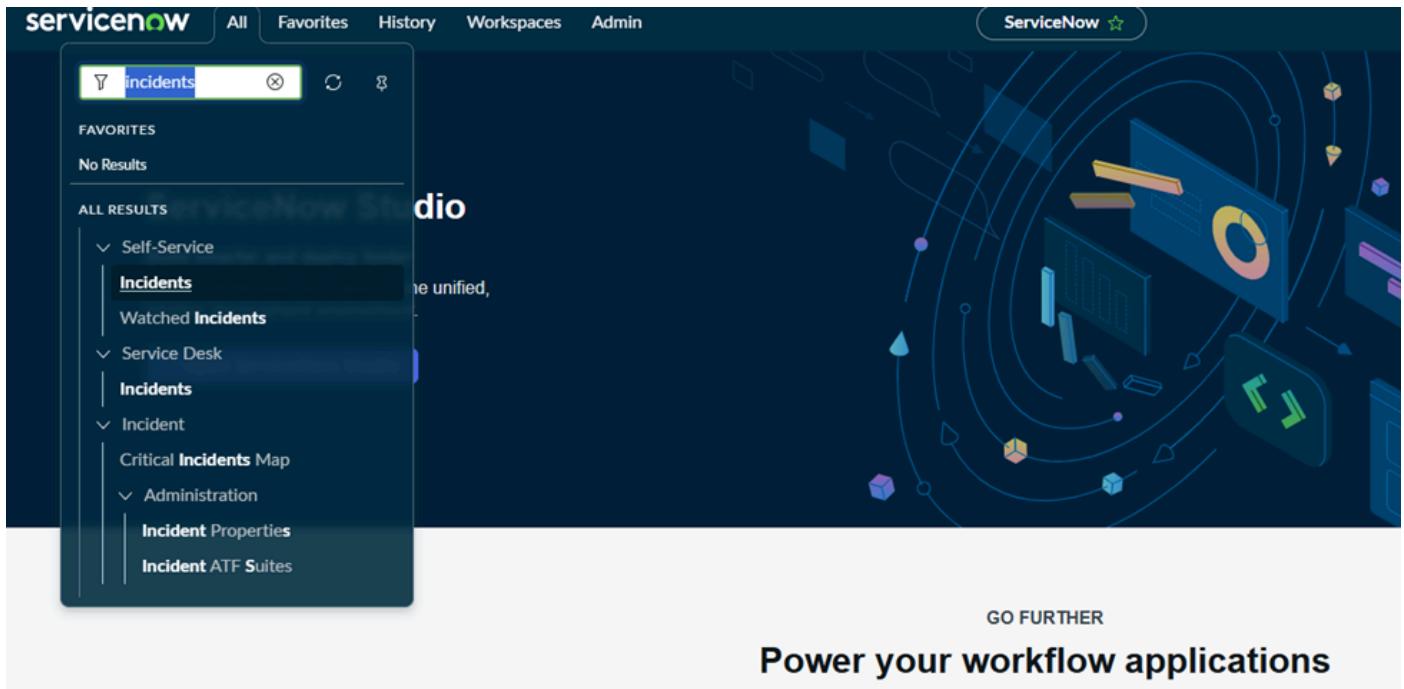


Figure-17

3. Incident page opens.

Number	Opened	Short description
INC0008111	2019-07-22 14:04:57	ATF : Test1

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.

Number	Opened	Short description
INC0010038	2025-10-09 00:29:25	vManage Alert: No message

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).

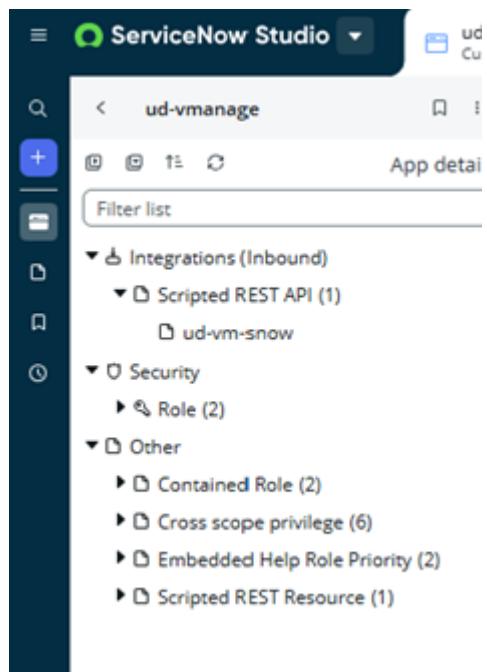


Figure-19

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

Scripted REST Service  
ud-vm-snow

Name: ud-vm-snow  
API ID: ud\_vm\_snow  
Active:   
Protection policy: None

Application: ud-vmanage  
API namespace: x\_1831932\_ud\_vma\_0  
Base API path: /api/x\_1831932\_ud\_vma\_0/ud\_vm\_snow

Default ACLs: Scripted REST External Default

Related Links: Enable versioning, Explore REST API, API analytics

Resources (1)

Name	HTTP method	Relative path	Resource path	API version	Active
alarms	POST	/	/api/x_1831932_ud_vma_0/ud_vm_snow	(empty)	true

Figure-20

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

- Requires authentication
- Requires ACL authorization
- Click **Update**

Requires authentication

Requires ACL authorization

ACLS

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:

- Shutting down an interface of one WAN Edge Router within your SD-WAN overlay.
- Clearing control connections from any SD-WAN Manager or any WAN Edge Router.
- Performing a port-hop.



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

## 6. Notice Incidents created on ServiceNow page.

Number	Opened	Short description	Caller	Priority	State	Category	Assignment group	Assigned to	Updated	Updated by
INC0010008	2025-10-08 15:26:40	vManage Alert: The interface oper-state changed to up	Guest	3 - Moderate	New	Inquiry / Help	(empty)	(empty)	2025-10-08 15:26:40	guest
INC0010007	2025-10-08 15:26:40	vManage Alert: The interface admin-state changed to up	Guest	3 - Moderate	New	Inquiry / Help	(empty)	(empty)	2025-10-08 15:26:40	guest
INC0010004	2025-10-08 15:26:37	vManage Alert: vBond state changed	Guest	3 - Moderate	New	Inquiry / Help	(empty)	(empty)	2025-10-08 15:26:37	guest
INC0010005	2025-10-08 15:26:37	vManage Alert: The interface oper-state changed to down	Guest	3 - Moderate	New	Inquiry / Help	(empty)	(empty)	2025-10-08 15:26:37	guest
INC0010006	2025-10-08 15:26:37	vManage Alert: No active control vBond	Guest	3 - Moderate	New	Inquiry / Help	(empty)	(empty)	2025-10-08 15:26:37	guest
INC0010003	2025-10-08 15:26:37	vManage Alert: The interface admin-state changed to down	Guest	3 - Moderate	New	Inquiry / Help	(empty)	(empty)	2025-10-08 15:26:37	guest
INC0010002	2025-10-08 15:23:15	vManage Alert: No message	Guest	3 - Moderate	New	Inquiry / Help	(empty)	(empty)	2025-10-08 15:23:15	guest
INC0010001	2025-10-08 14:56:53	vManage Alert: No message	Guest	3 - Moderate	New	Inquiry / Help	(empty)	(empty)	2025-10-08 14:56:53	guest

Figure-22

Incident - INC0010005

Number: INC0010005

Caller: Guest

Category: Inquiry / Help

Subcategory: -- None --

Service:

Service offering:

Configuration item:

Short description: vManage Alert: The interface oper-state changed to down

Description: Device ID: Unknown device  
Severity: Critical  
[Large JSON log block]

Related Search Results >

Notes

Related Records

Resolution Information

Watch list

Work notes list

Work notes

Comments (Customer visible)

Post

Figure-23

Incident - INC0010005

Number: INC0010005

Caller: Guest

Category: Inquiry / Help

Subcategory: -- None --

Service:

Service offering:

Configuration item:

Short description: vManage Alert: The interface oper-state changed to down

Description: Device ID: Unknown device  
Severity: Critical  
[Large JSON log block]

Related Search Results >

Notes

Related Records

Resolution Information

Watch list

Work notes list

Work notes

Comments (Customer visible)

Post

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-config)
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-config)
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 0xffff2 A dev271953.service-now.com A
8	3.209253	172.19.34.6		TCP	66	46872 → 443 [SYN] Seq=0 Win=64240 Len=0 MSS=1460 SACK_PERM WS=128
9	3.352225		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		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](#)