Configure SNMPv3 Trap on Cisco cEdge Router

Contents

Introduction

This document describes the configuration to enable Simple Network Management Protocol (SNMP) version 3 traps using a vManage feature template on a cEdge router.

Prerequisites

Requirements

Cisco recommends that you have knowledge of these topics:

- Cisco SDWAN solution
- Basic understanding of SNMP

Components Used

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

- Cisco Cloud Services Router 1000V (CSR1000v) router running 16.12.3
- vManage version running 19.2.2.

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.

> **Note**: cEdges in general do not need trap-groups. In vManage versions 20.x and later cEdge and vEdge templates are separate, dependency of having a trap-group is no more present.

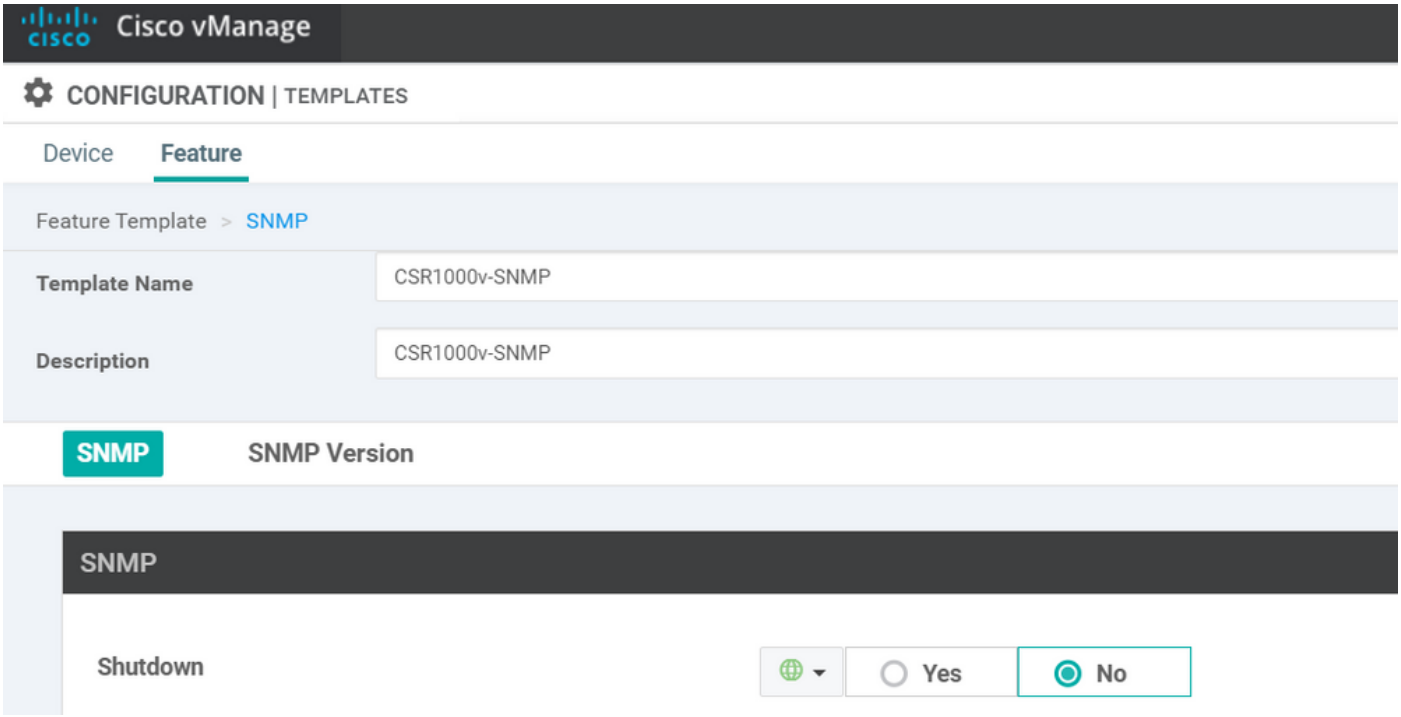
Configure

Configurations

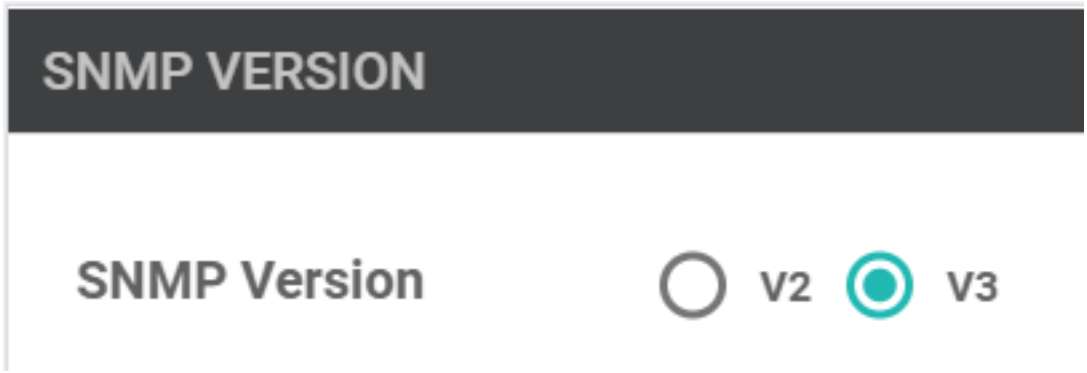
On vManage:

Step 1. In order to create an SNMP feature template, navigate to **CONFIGURATION > TEMPLATES > Feature Template > SNMP**.

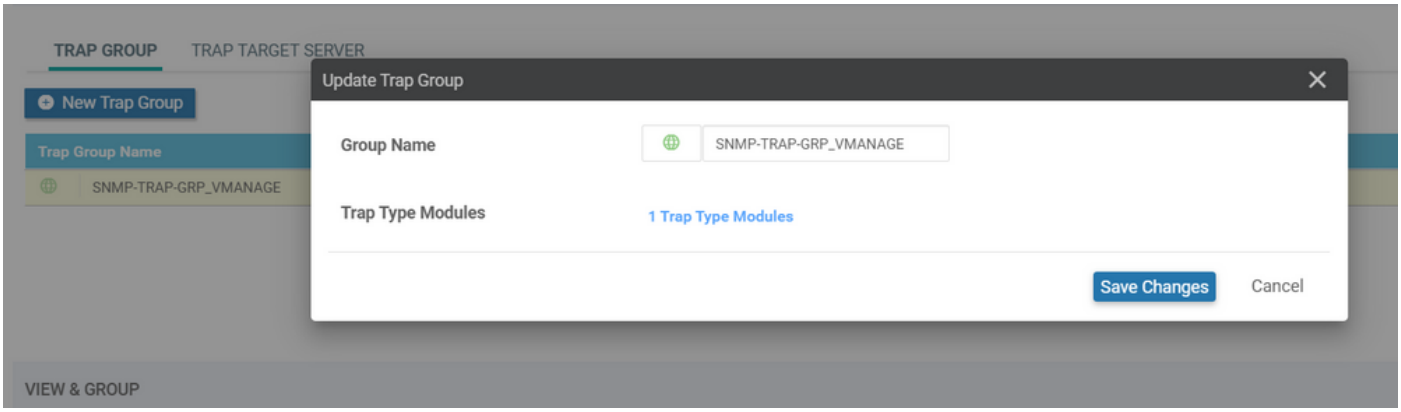
Enter a template name and description followed with SNMP no-shutdown, as shown in this image.

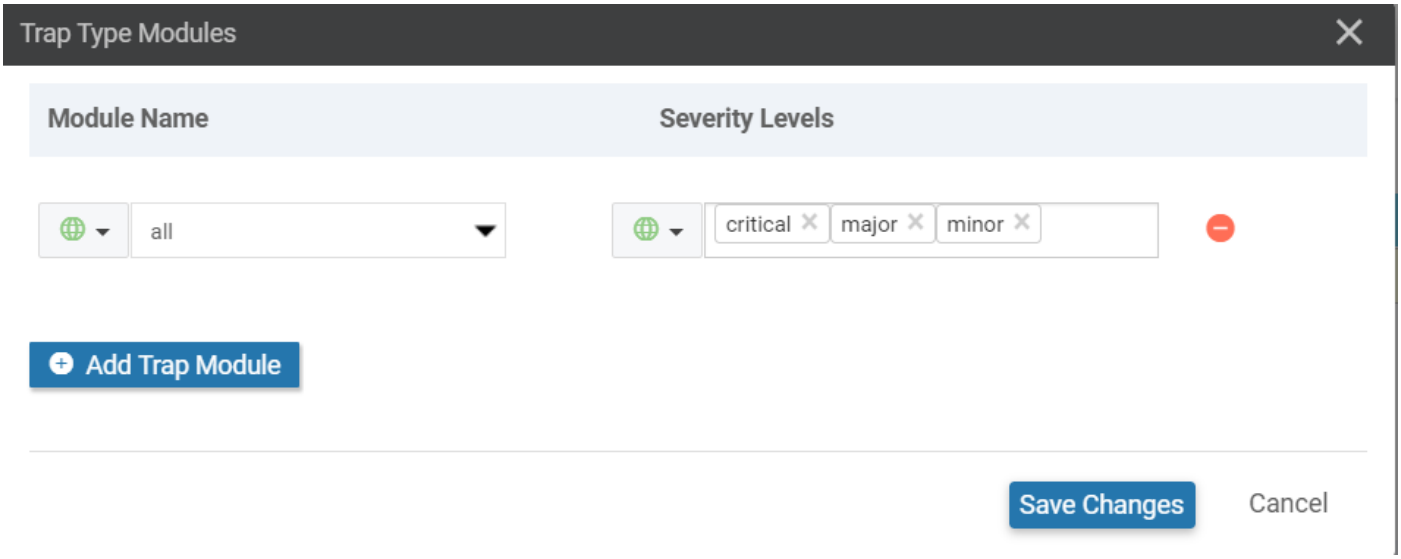


Step 2. Select the SNMP version. In this case - version 3.



Step 3. Create SNMP Trap Group and fill in trap modules, as shown in this image.

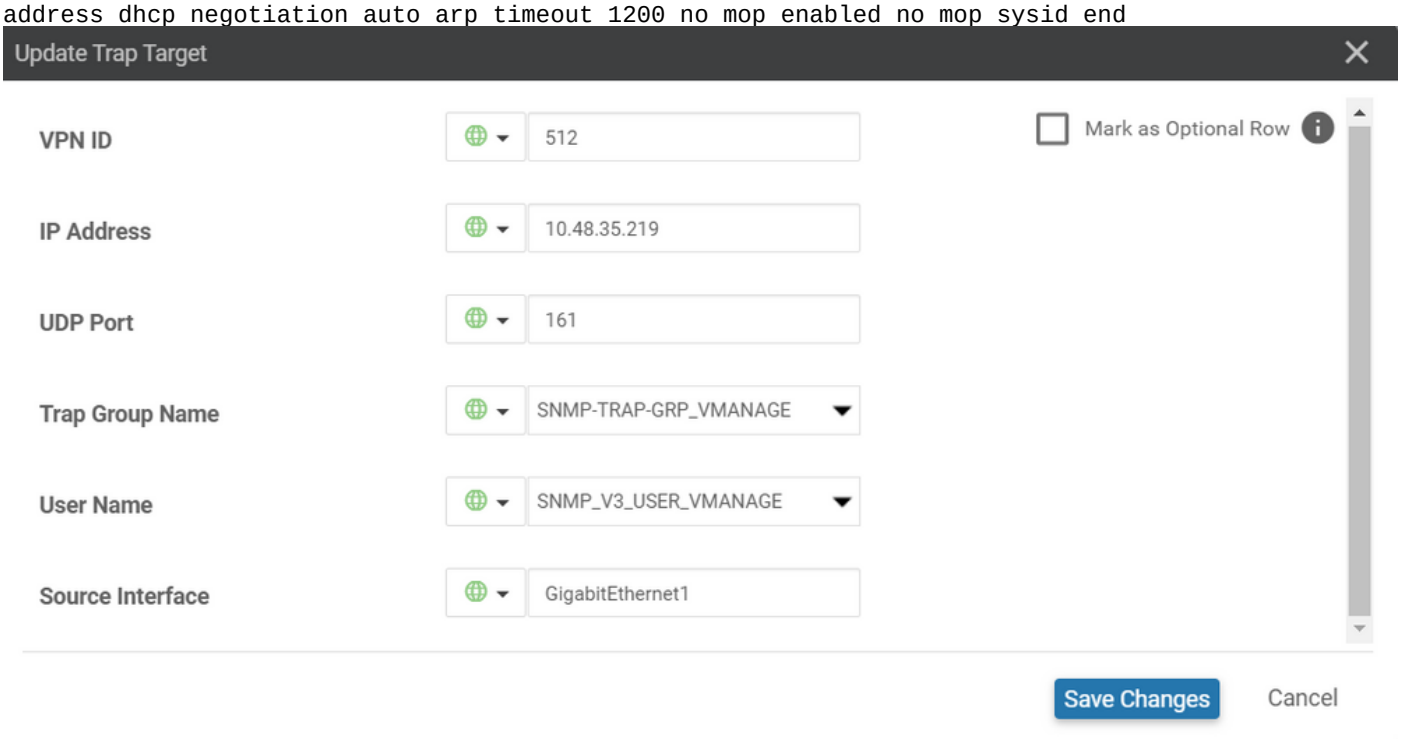




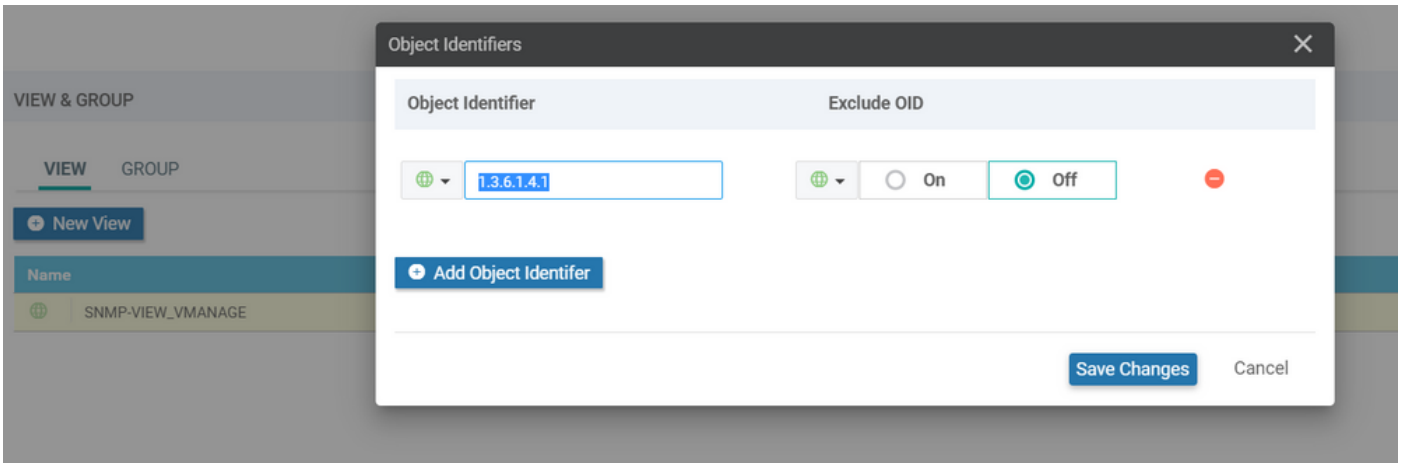
Step 4. Create an SNMP trap target server.

Here mgmt-intf Virtual Routing Forwarding (VRF) for sourcing SNMP traps is used.

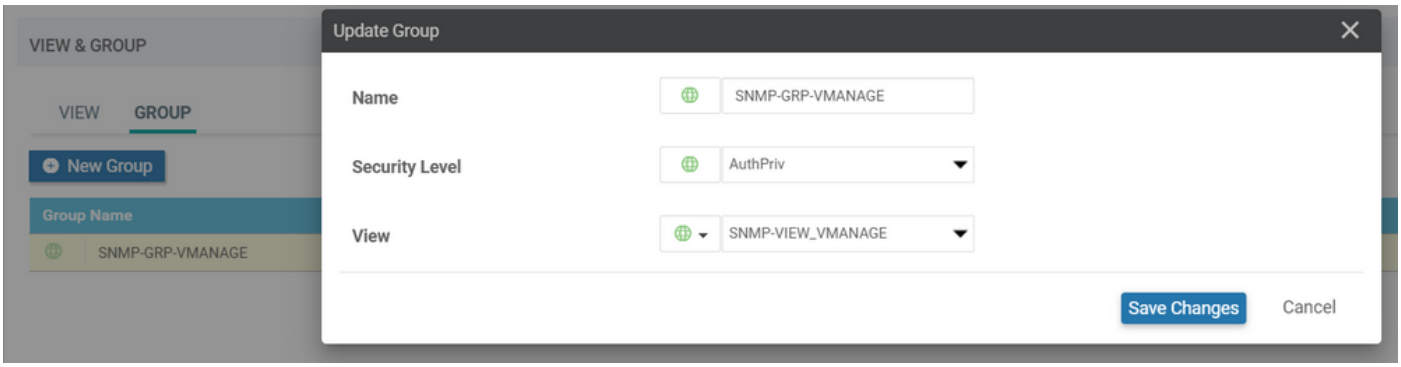
```
interface GigabitEthernet1 vrf forwarding Mgmt-intf ip dhcp client default-router distance 1 ip
address dhcp negotiation auto arp timeout 1200 no mop enabled no mop sysid end
```



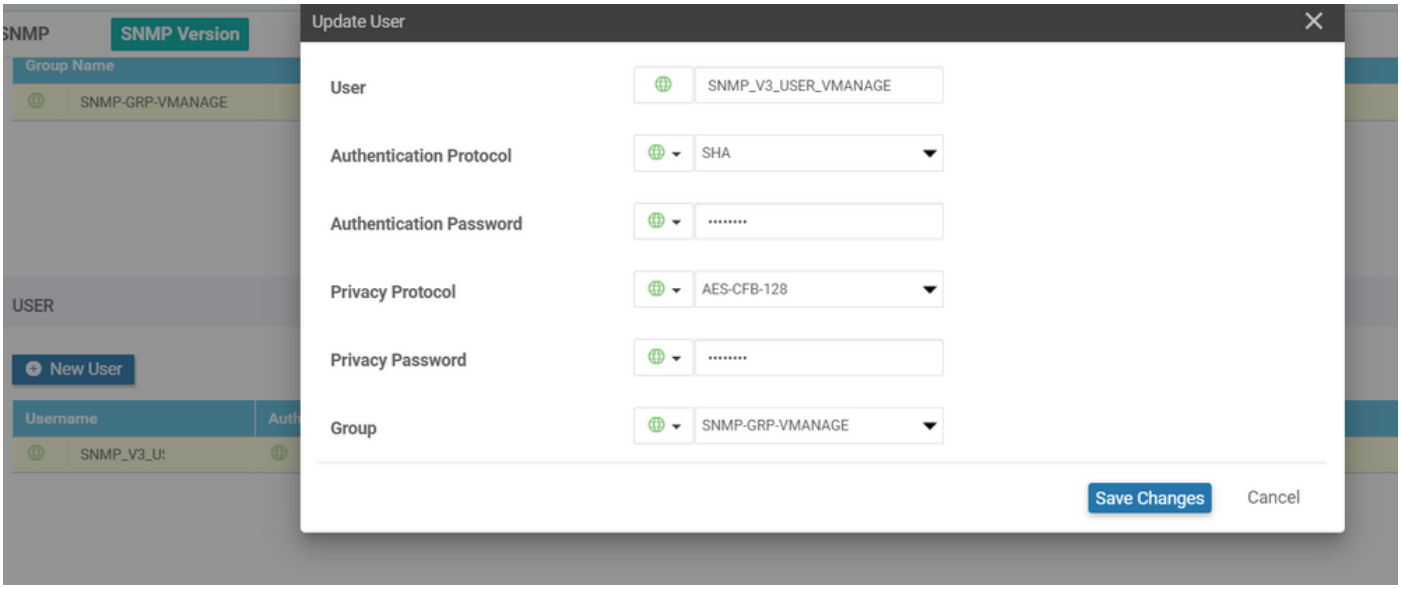
Step 5. Create SNMP View and add SNMP Object Identifier (OID).



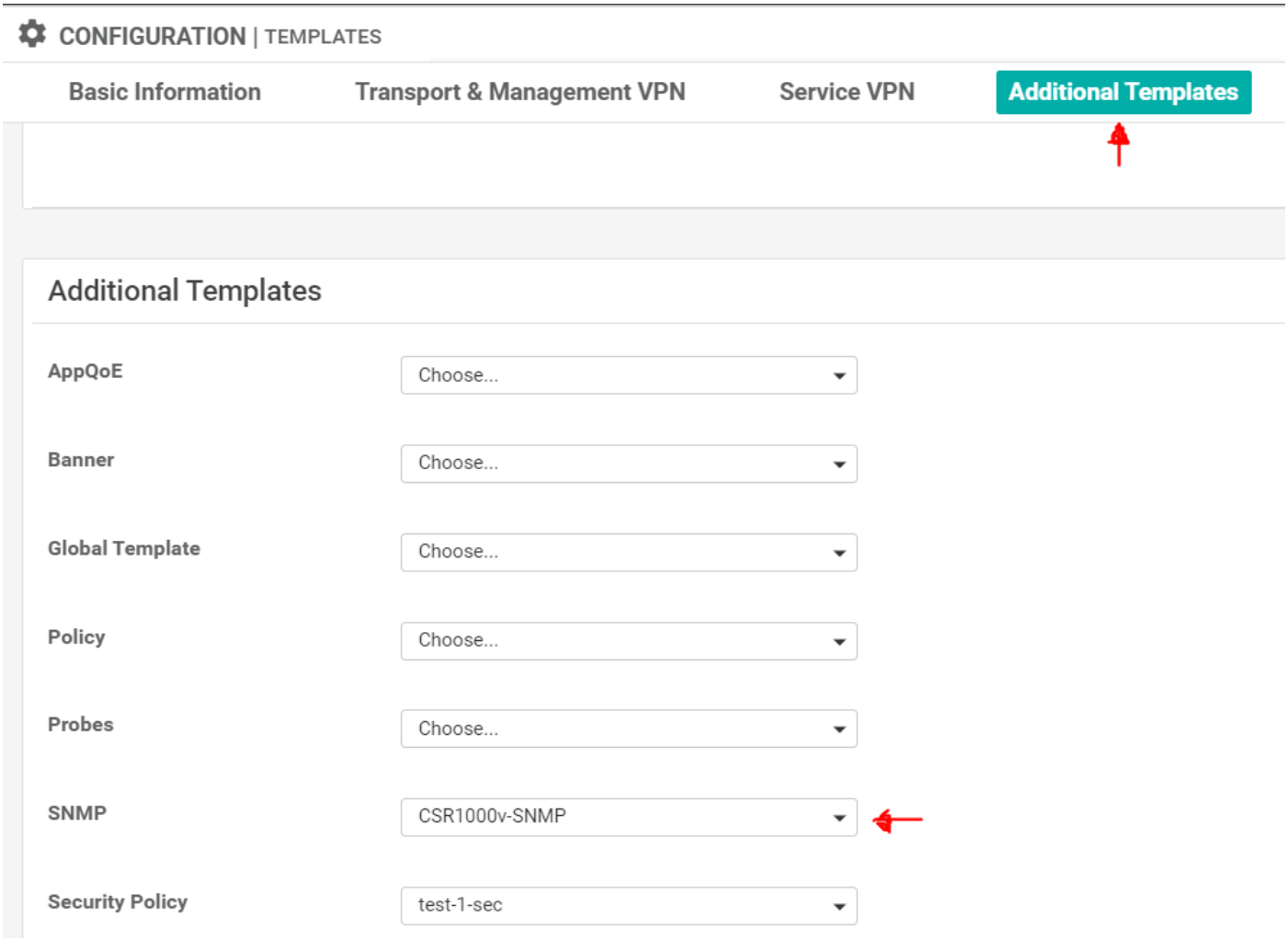
Step 6. Create SNMP Group and attach previously created SNMP view to it.



Step 7. Add SNMPv3 user, as shown in this image.



Step 8. Attach the SNMP feature template in the additional template section of device template:



Step 9. Attach the device template to the respective device.

Verify

On cEdge:

Enable these debugs:

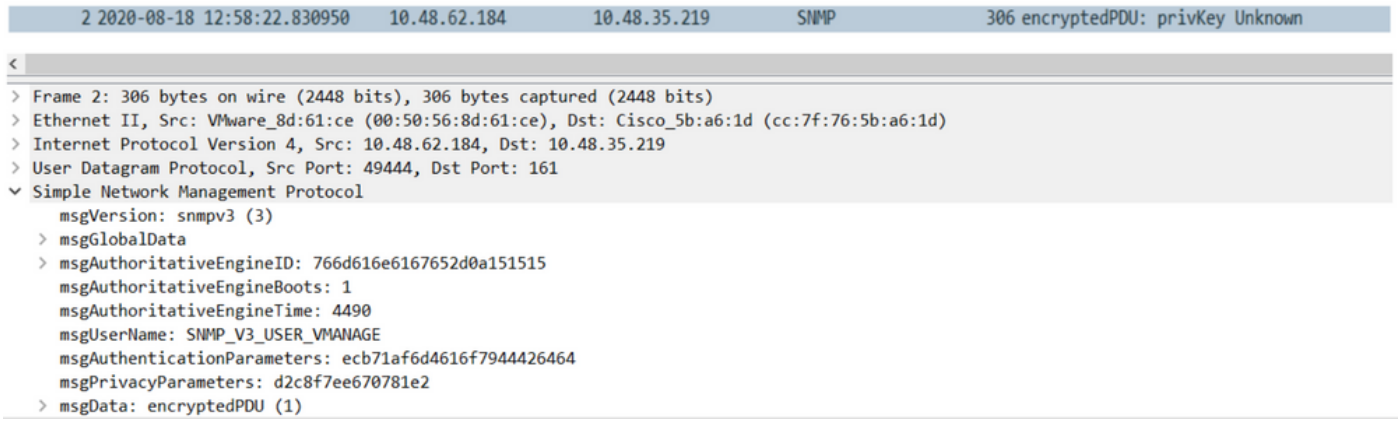
```
debug snmp packets debug snmp detail
```

Generate SNMP trap: **test snmp trap config**

```
cEdge#test snmp trap config Generating CONFIG-MAN-MIB Trap cEdge# Aug 19 14:26:03.124: SNMP:
Queuing packet to 10.48.35.219 Aug 19 14:26:03.124: SNMP: V2 Trap, reqid 5563, errstat 0, erridx
0 sysUpTime.0 = 233535801 snmpTrapOID.0 = ciscoConfigManEvent ccmHistoryEventCommandSource.2 = 1
ccmHistoryEventConfigSource.2 = 2 ccmHistoryEventConfigDestination.2 = 2
ccmHistoryEventTerminalUser.2 = test Aug 19 14:26:03.374: SNMP: Packet sent via UDP to
10.48.35.219
```

Here it is noticed that the SNMP trap is sent to the server 10.48.35.219.

Packet capture:



Sometimes, you may notice **"CheckMIBView: OID not in MIB view."** error in debugs.

Verify the SNMP view configuration above and add OID to it (for example: 1.3.6.1.4.1).

Troubleshoot

```
debug snmp detail debug snmp packets cEdge#test snmp trap config Generating CONFIG-MAN-MIB Trap
SPOKE-8#CheckMIBView: OID is in MIB view. CheckMIBView: OID is in MIB view. CheckMIBView: OID is
in MIB view. CheckMIBView: OID is in MIB view. CheckMIBView: OID is in MIB view. CheckMIBView:
OID is in MIB view. CheckMIBView: OID is in MIB view. SrCheckNotificationFilter: OID is
included. SrCheckNotificationFilter: OID is included. SrCheckNotificationFilter: OID is
included. SrCheckNotificationFilter: OID is included. SrCheckNotificationFilter: OID is
included. SrCheckNotificationFilter: OID is included. SrCheckNotificationFilter: OID is
included. Aug 19 14:30:16.527: SNMP: Queuing packet to 10.48.35.219Sr_send_trap: trap sent to
10.48.35.219:161:Mgmt-intf Aug 19 14:30:16.527: SNMP: V2 Trap, reqid 5564, errstat 0, erridx 0
sysUpTime.0 = 233561141 snmpTrapOID.0 = ciscoConfigManEvent ccmHistoryEventCommandSource.2 = 1
ccmHistoryEventConfigSource.2 = 2 ccmHistoryEventConfigDestination.2 = 2
ccmHistoryEventTerminalUser.2 = test SrV2GenerateNotification:Function has reached clean up
routine. Aug 19 14:30:16.777: SNMP: Packet sent via UDP to 10.48.35.219 cEdge#sh snmp | i sent
Logging to 10.48.35.219.161, 0/10, 3316 sent, 2039 dropped. cEdge#sh snmp user User name:
SNMP_V3_USER_VMANAGE Engine ID: 766D616E6167652D0A151515 storage-type: nonvolatile active
Authentication Protocol: SHA Privacy Protocol: AES128 Group-name: SNMP-GRP-VMANAGE cEdge#show
snmp group groupname: ILMI security model:v1 contextname: <no context specified> storage-type:
permanent readview : *ilmi writeview: *ilmi notifyview: <no notifyview specified> row status:
active groupname: ILMI security model:v2c contextname: <no context specified> storage-type:
permanent readview : *ilmi writeview: *ilmi notifyview: <no notifyview specified> row status:
active groupname: SNMP-GRP-VMANAGE security model:v3 priv contextname: <no context specified>
storage-type: nonvolatile readview : SNMP-VIEW_VMANAGE writeview: <no writeview specified>
notifyview: *tv.FFFFFFFF.FFFFFFFF.FFFFFFFF.F row status: active groupname: SNMP_V3_USER_VMANAGE
security model:v3 priv contextname: <no context specified> storage-type: nonvolatile readview :
<no readview specified> writeview: <no writeview specified> notifyview:
*tv.FFFFFFFF.FFFFFFFF.FFFFFFFF.F row status: active
```

Related Information

- **Embedded Packet Capture for Cisco IOS and IOS-XE Configuration Example**
- **Use SNMP Traps**
- **SNMP Object Navigator**
- **Technical Support & Documentation - Cisco Systems**