Configure Geneve Interfaces in Secure FTDv

Contents

Introduction

This document describes how to configure Geneve encapsulation for FTDv data interfaces in AWS.

Prerequisites

Requirements

Cisco recommends that you have knowledge of these topics:

- Secure Firepower Management Center configuration deployment
- Secure Firepower Threat Defense Virtual deployed in AWS
- AWS instance EC2 virtualization.

Configuring Geneve encapsulation for Cisco Secure Firepower Threat Defense in AWS, requires FTD version 7.1 or greater.

Performance Tier License of FTDv20 or greater is also required.

You can only configure one Virtual Tunnel Endpoint (VTEP) source interface per FTDv device. The VTEP is defined as a Network Virtualization Endpoint (NVE); Geneve encapsulation for VTEP is the only natively supported NVE at the time.

You can refer to this documentation to Deploy the Threat Defense Virtual on AWS.

Components Used

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

- Secure Firepower Management Center - 7.3.0
- Secure Firepower Threat Defense - 7.3.0
- AWS c5.2xlarge (4 core/8 GB) instance
- Performance tier license - FTDv50

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.

Configure

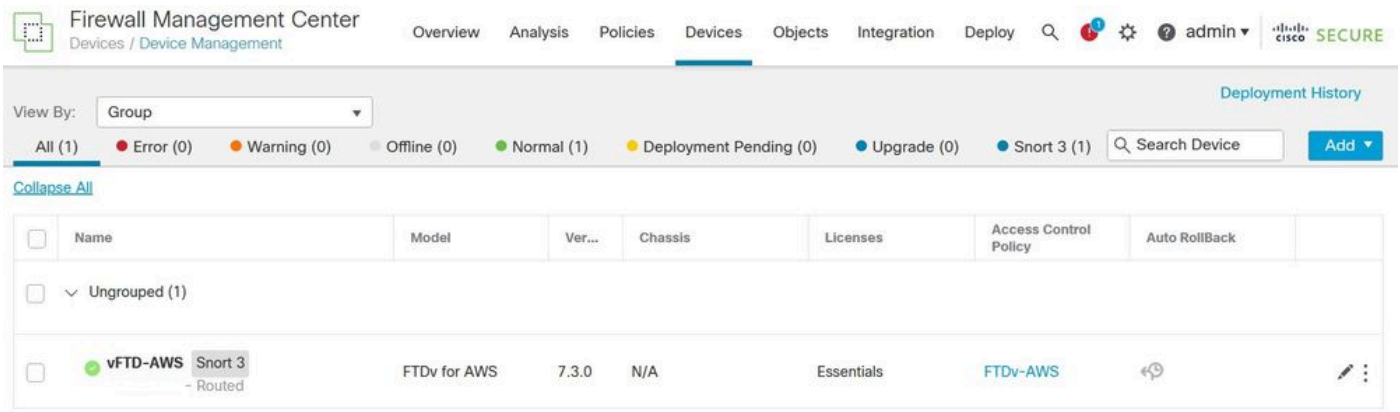
Configure Performance Tier License for FTDv

Use a supported browser to access your FMC GUI:

<#root>

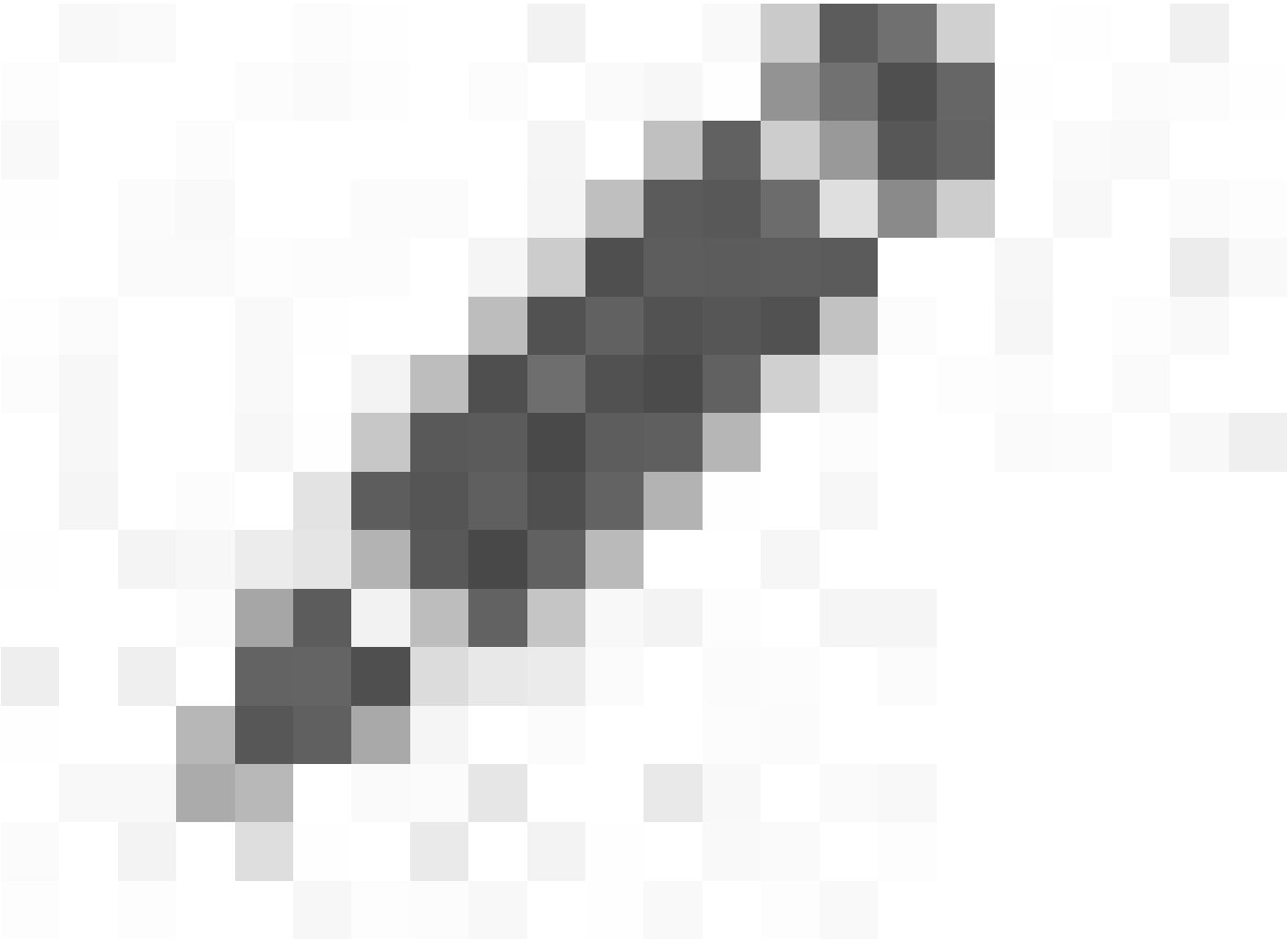
```
https://FMC_IP_Address
```

Navigate to **Devices** > **Device Management**:



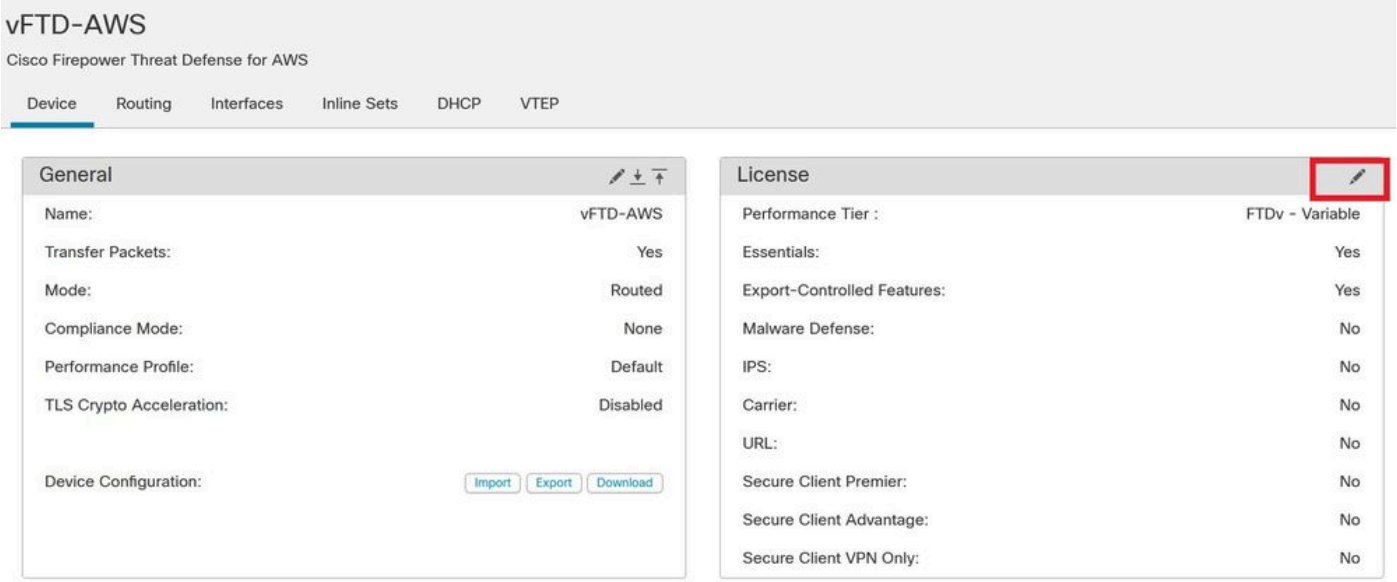
Device Management

Select the edit Icon for the FTDv in question:



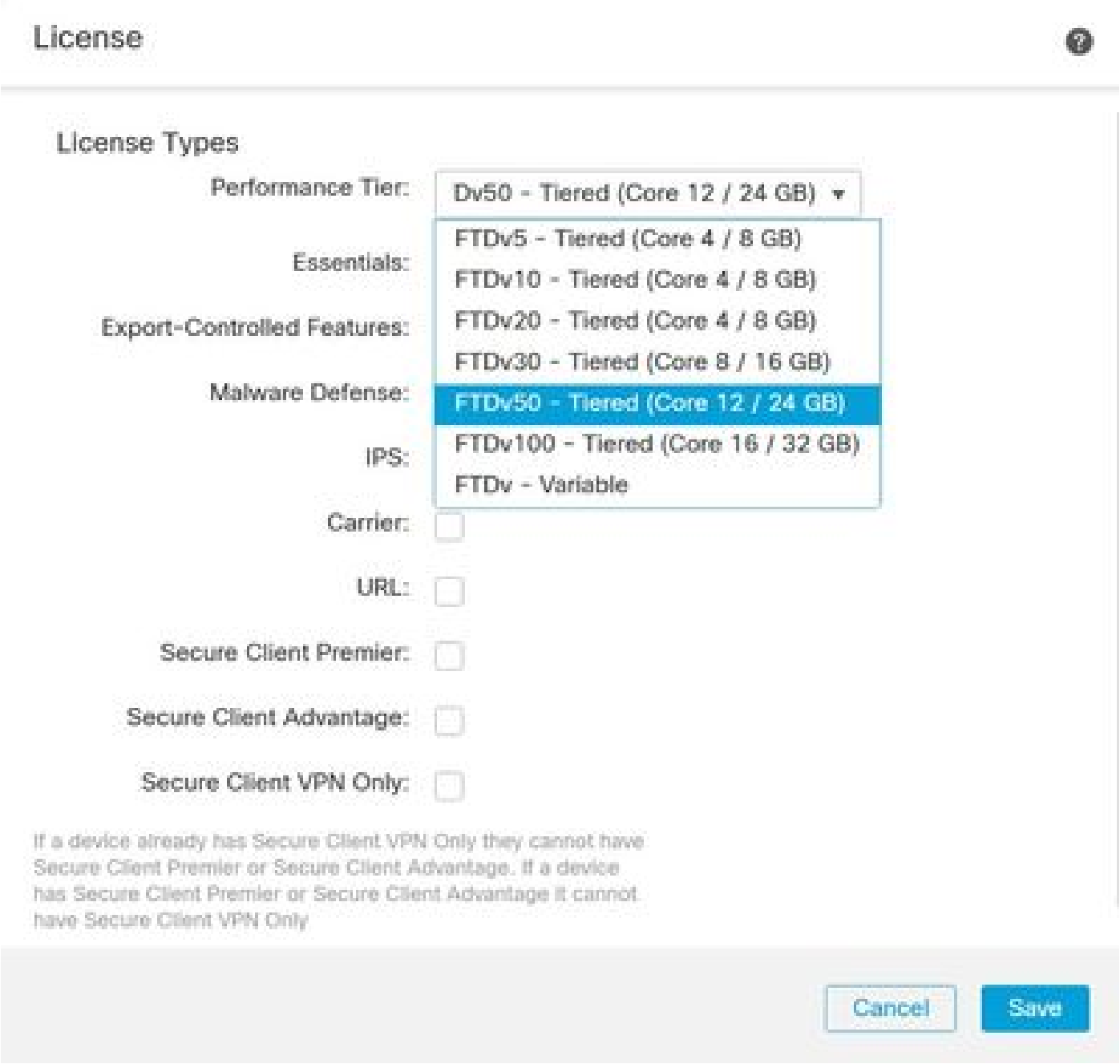
Edit

Click **Device** tab, then edit configuration in the **License** summary:



Device License

Select the **FTDv20 (Core 4 / 8 GB)** or greater from the **Performance Tier** drop-down list. For this example, FTDv50 Performance Tier License is selected as shown in this image:

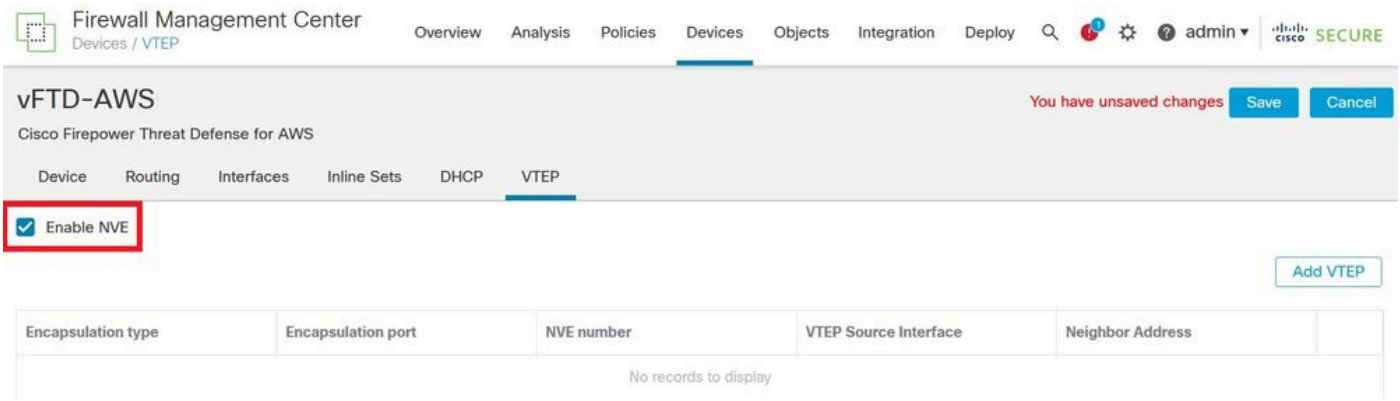


Choose Performance Tier License FTDv20 or Greater

Next, Select **Save** and **Deploy** the configuration to FTDv.

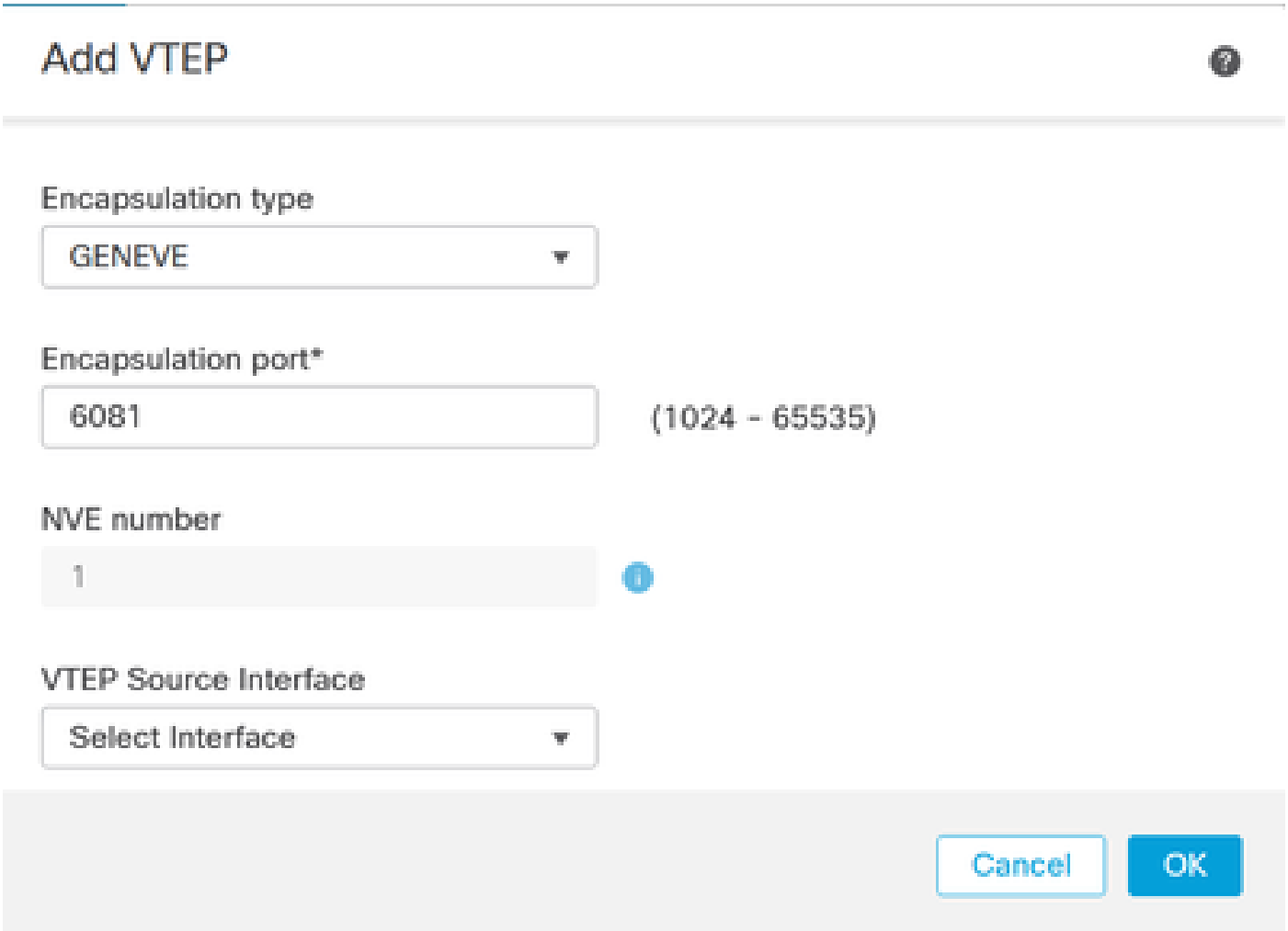
Configure the VTEP Source Interface

Navigate to **Devices** > **Device Management** > **Choose edit** > **VTEP** and select **Enable NVE**:



Enable VNE

Now, you can Select **Add VTEP**:



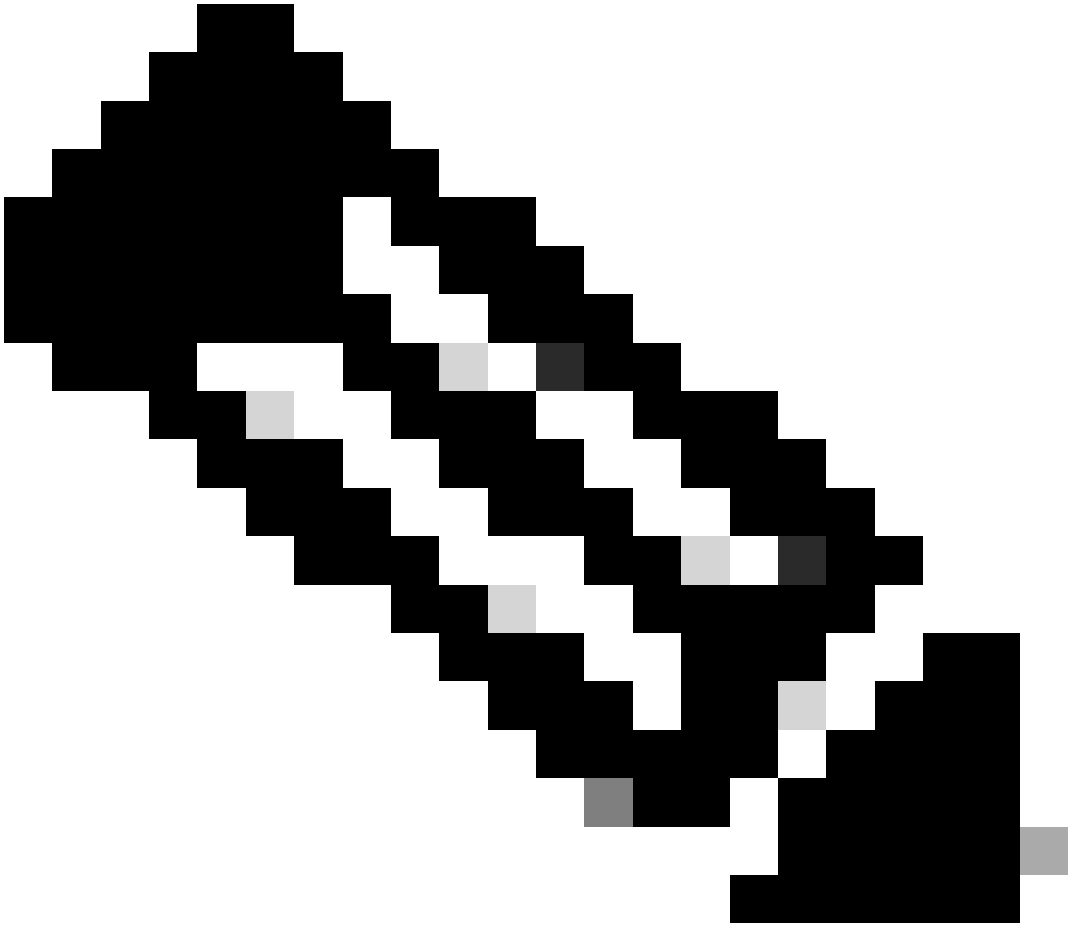
Add VTEP

Enter the value for the **Encapsulation port** within the specified range.

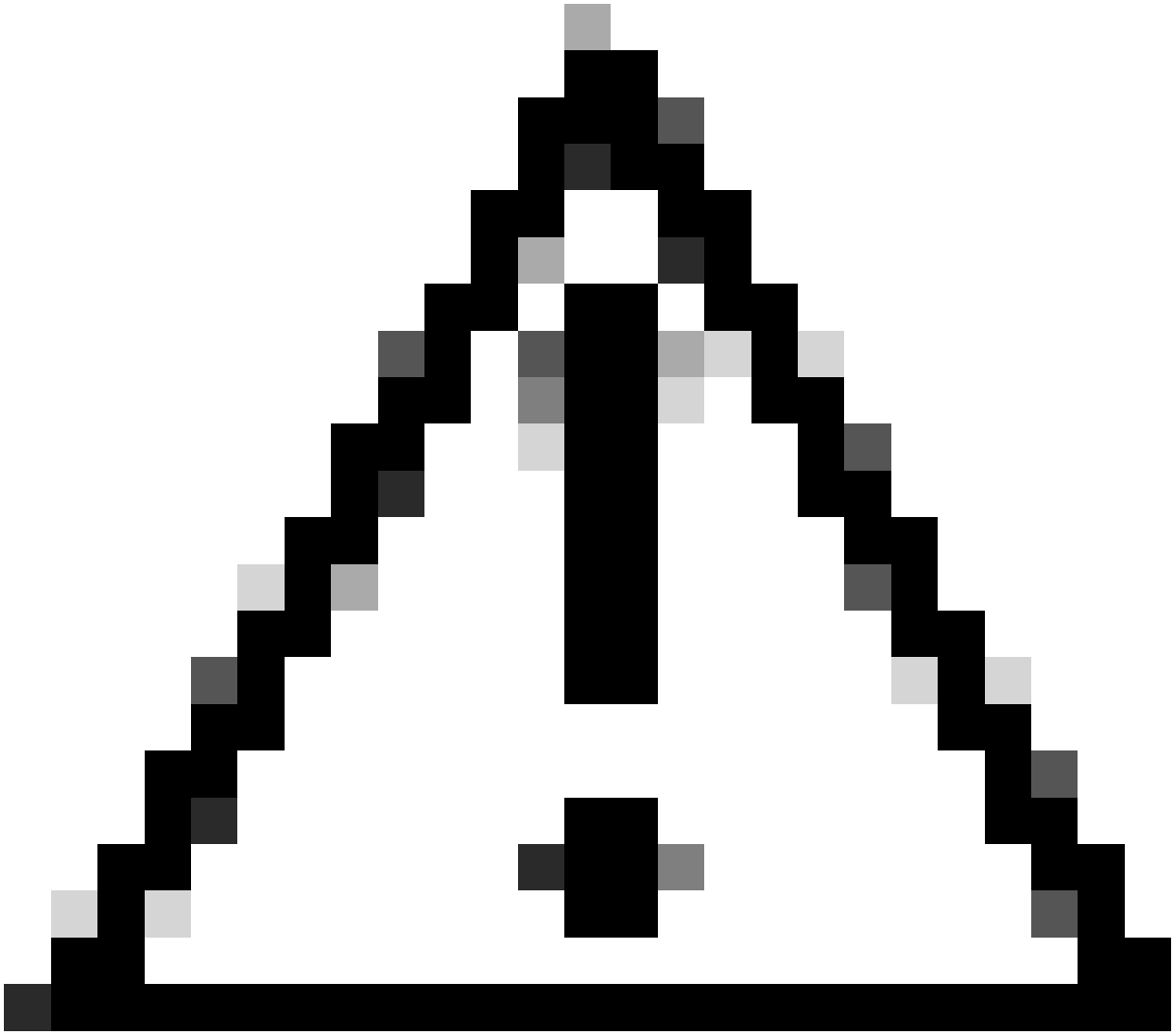
Warning: It is not recommend to change the Geneve port; AWS requires a port of 6081.

Next, you can Select the **VTEP Source Interface**.

Outside Interface as VTEP Source Interface

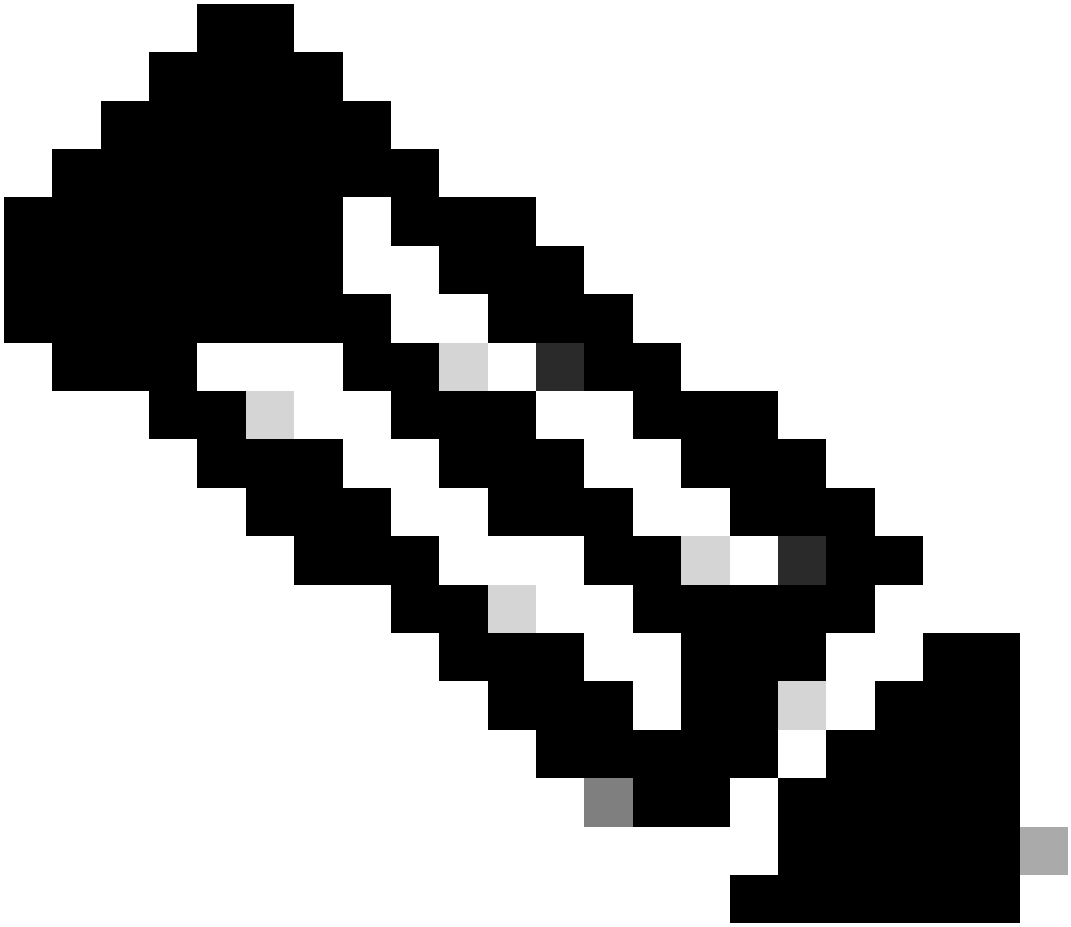


Note: Select from the list of available physical interfaces present on the device. In case the interface Name is not displayed in the list, you can validate if the desired interface is **Enabled** and has a **Name** configured.

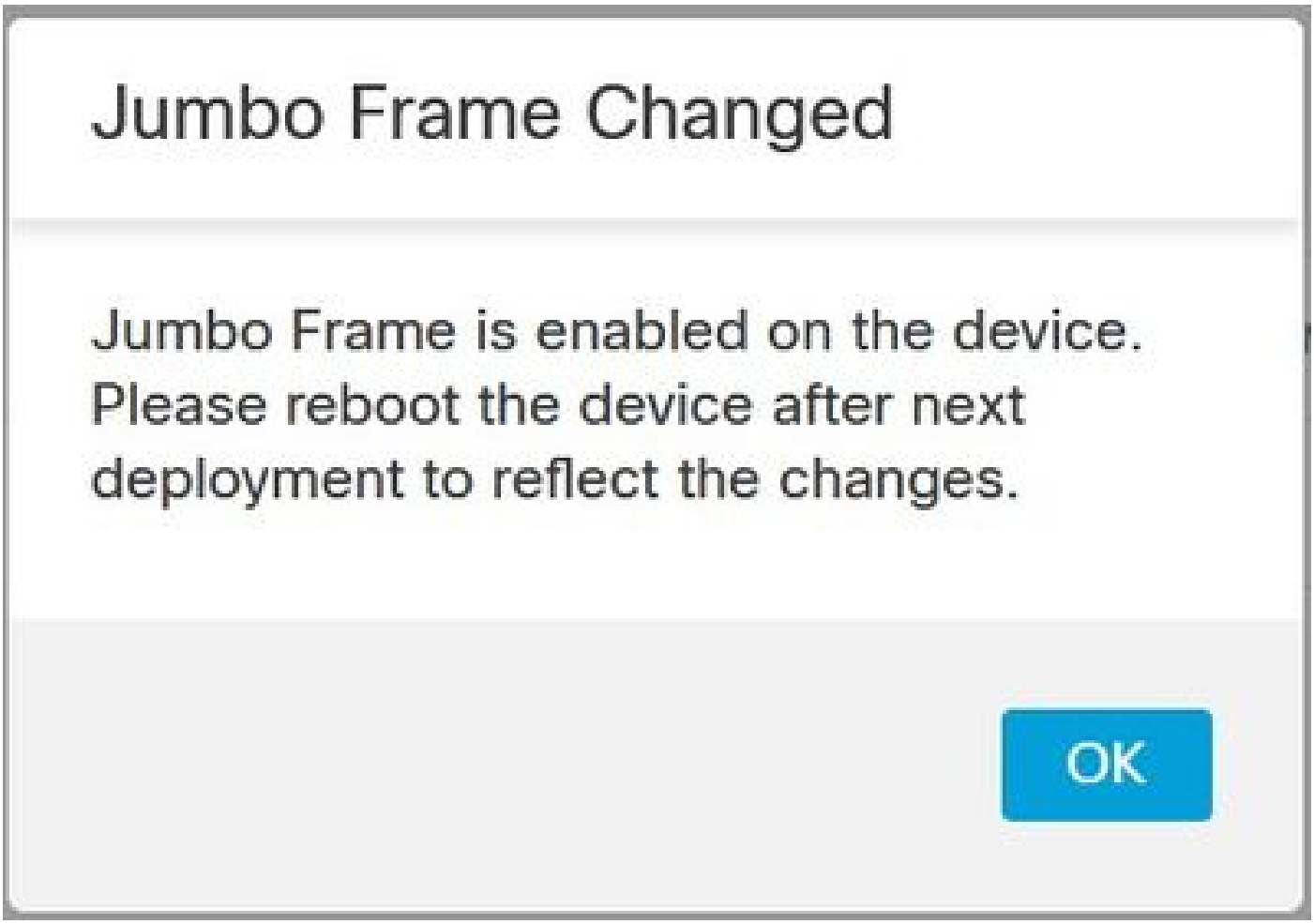


Caution: FMC automatically raises the MTU to 1806 bytes of the selected interface in case MTU is lower than 1806 bytes.

Next, Click **OK**.



Note: FMC shows Jumbo Frame is enabled:



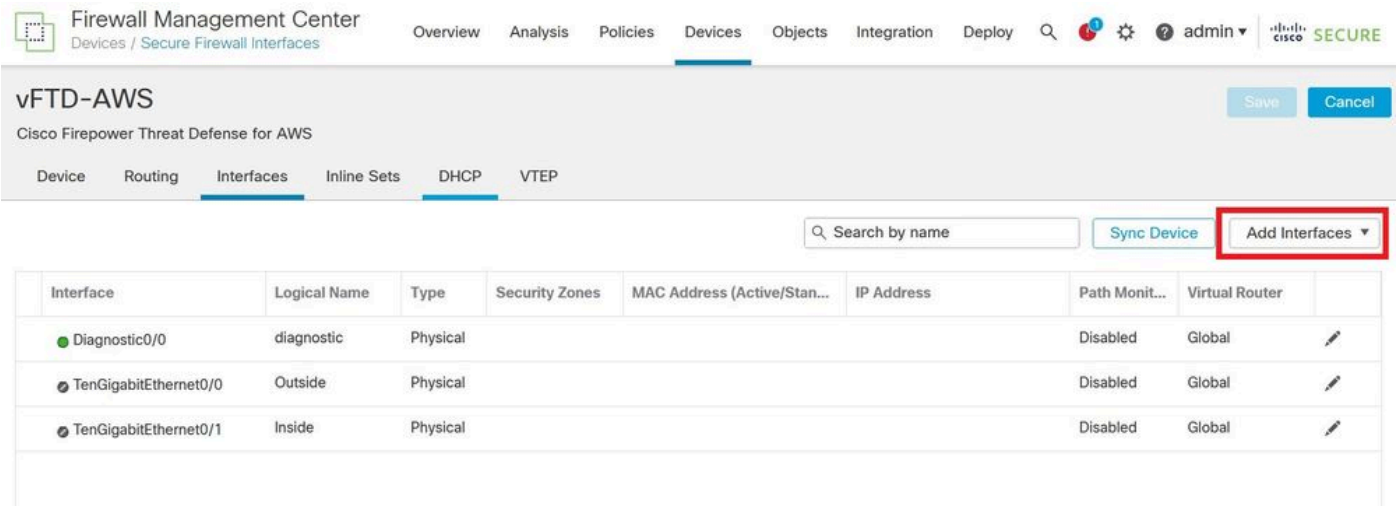
Jumbo Frame Changed

Select **Ok** and **Save**.

Configure the VNI interface

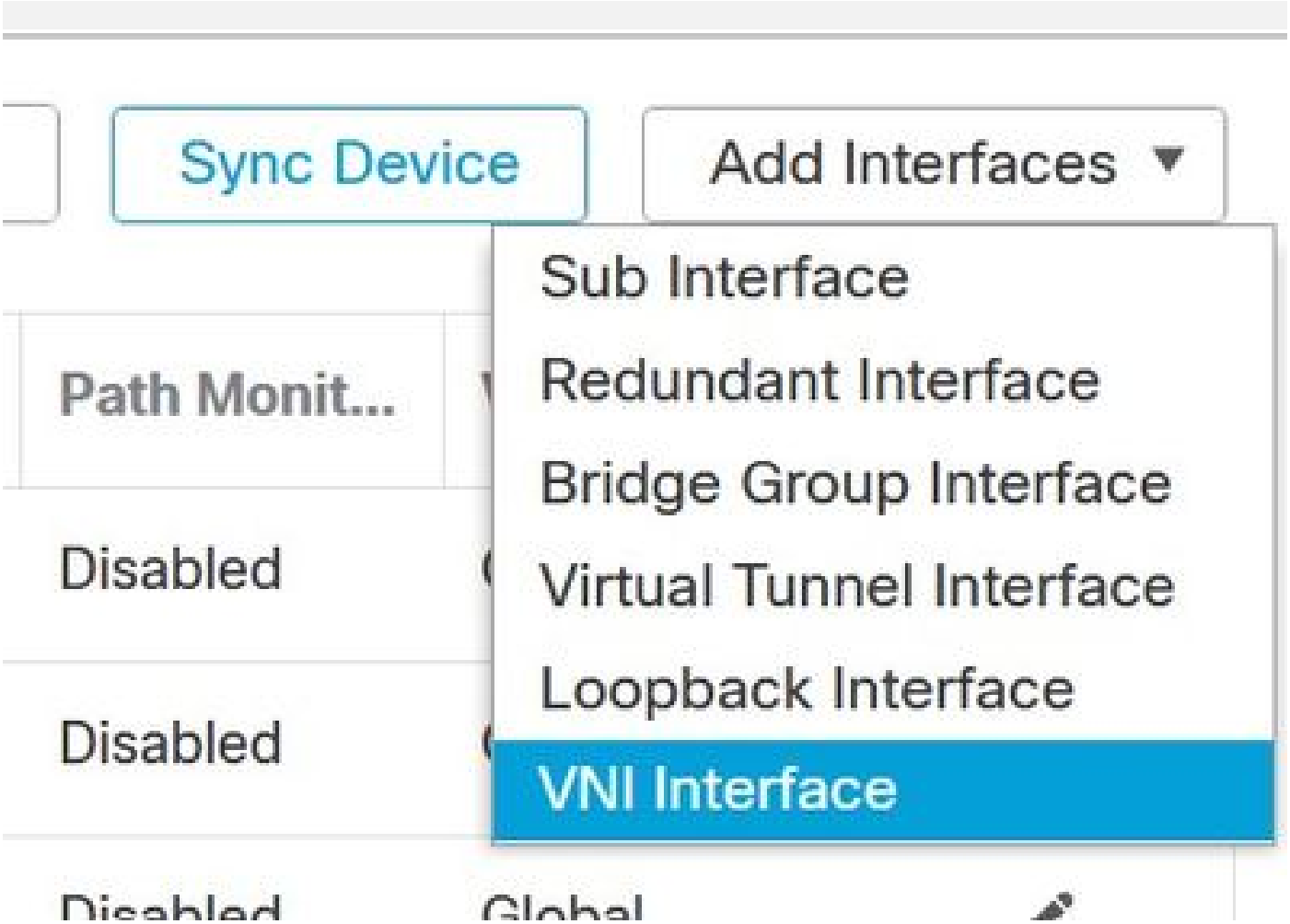
Add a Virtual Network Interface(VNI) interface, associate it with the VTEP source interface, and configure basic interface parameters.

Navigate to **Interfaces Tab** and click **Add Interfaces**.



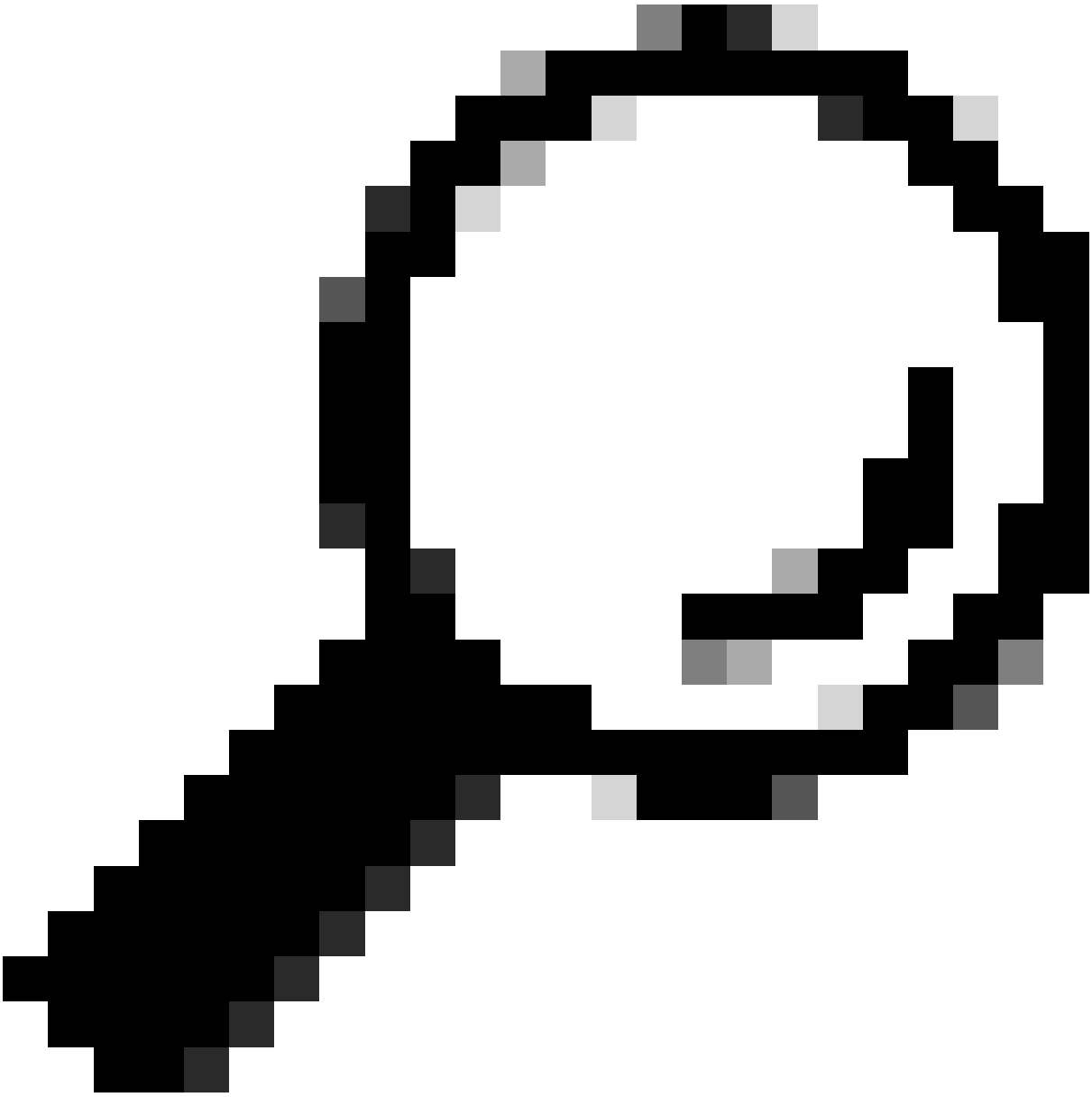
Add Interfaces

Choose **VNI Interface**.



Add VNI Interface

Specify the interface **Name**, **Description**, and **VNI ID** (between 1 and 10000).



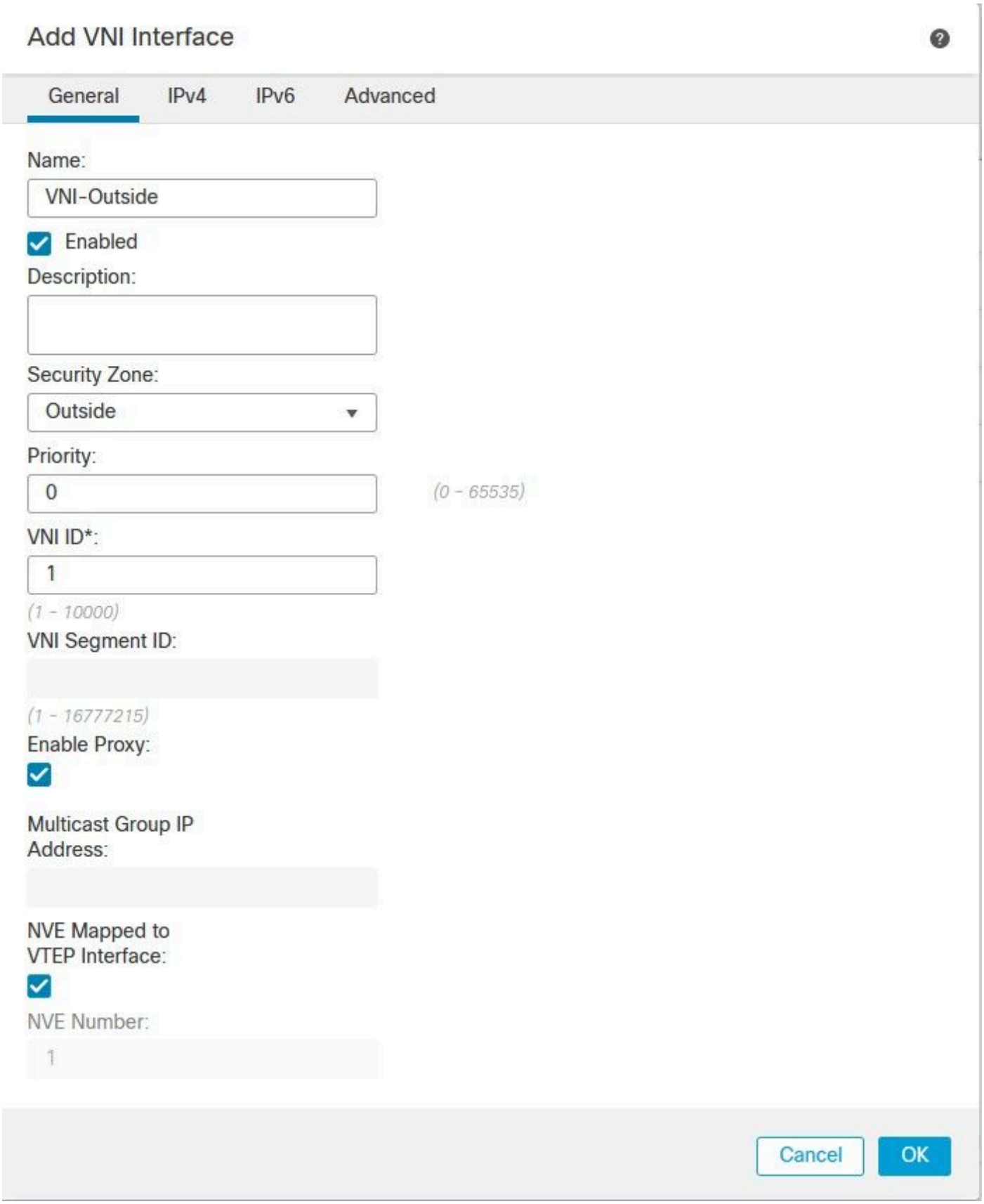
Tip: This ID is only an internal interface identifier.

Check **Enable Proxy**.

This option enables single-arm proxy, and allows traffic to exit the same interface it entered (U-turn traffic).

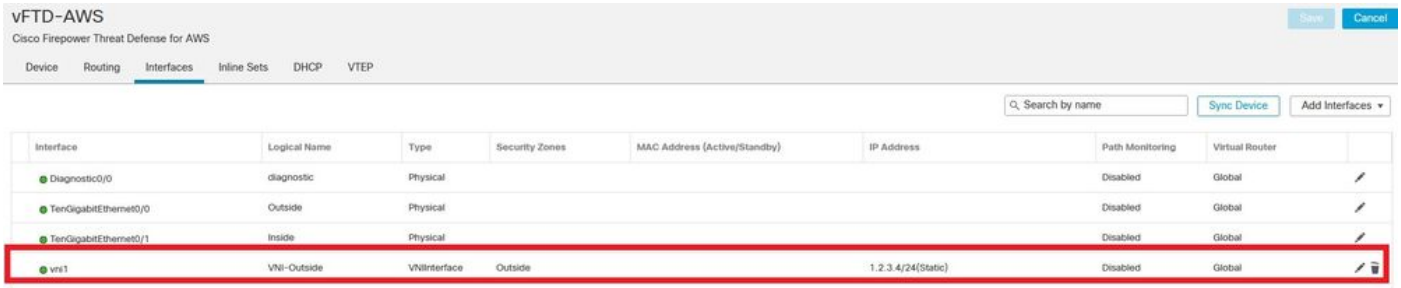
Warning: If you later edit the interface, you cannot disable single-arm proxy. To do that, you need to delete the existing interface and create a new VNI interface. This option is only available for a Geneve VTEP.

Select **NVE Mapped to VTEP Interface**. This associates this interface with the VTEP source interface.



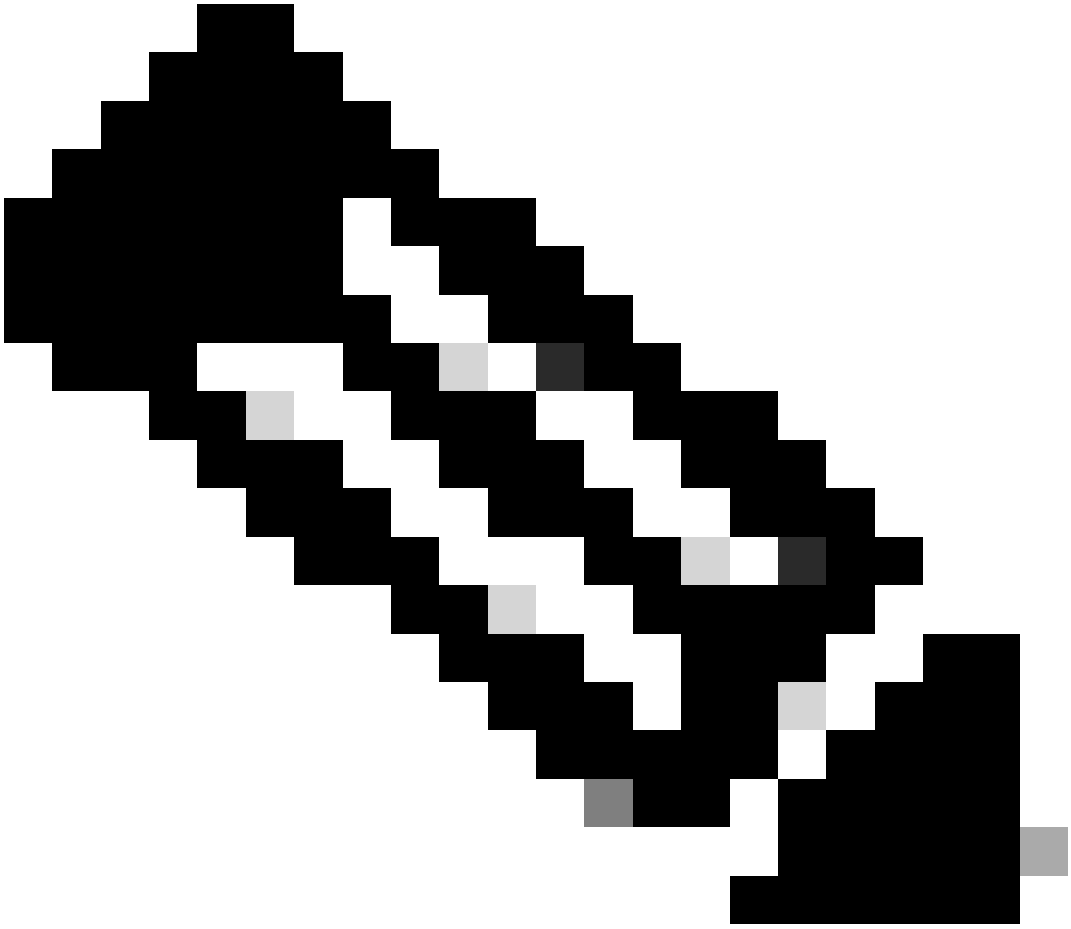
Add NVI Interface

Click **OK** and **Save**. You can see VNI interface is created as shown in this image:



VNI Interface is Created

Finally, **Deploy** the interface configuration.



> **Note**: You can configure the routed interface parameters required for your interface at this point. Interface IP address, static or Dynamic routing for VNI interface.

Verify

Connect to FTDv via SSH or console:

```
> system support diagnostic-cli
Attaching to Diagnostic CLI ... Press 'Ctrl+a then d' to detach.
Type help or '?' for a list of available commands.

admin> enable
Password:
admin#
```

Review Intreface details and VNI interface summary:

<#root>

```
admin# show ip

System IP Addresses:
Interface                Name                   IP address      Subnet mask     Method
Management0/0            diagnostic             10.0.0.61       255.255.255.0   DHCP
vni1                     VNI-Outside            1.2.3. 4         255.255.255.0   manual
Current IP Addresses:
Interface                Name                   IP address      Subnet mask     Method
Management0/0            diagnostic             10.0.0.61       255.255.255.0   DHCP
vni1                     VNI-Outside            1.2.3. 4         255.255.255.0   manual
```

```
admin# show interface VNI summary

Interface vni1 "VNI-Outside", is up, line protocol is up
        VTEP-NVE 1
        Tag-switching: disabled
        MTU: 1500
        MAC: 0206.104e.ed0f
        proxy mode: single-arm
        IP address 1.2.3. 4, subnet mask 255.255.255.0
        Multicast group not configured
```

You can confirm geneve encapsulation is enabled as shown in this command output:

<#root>

admin#

```
show running-config nve

nve 1


encapsulation geneve

 source-interface Outside
```

Troubleshoot

Verify bot VNI interface and VTEP source interface protocol and status are up/up. As shown next, interface TenGigabitEthernet0/0 and vni1 are up/up:

<#root>

```
# show interface ip brief

Interface                  IP-Address      OK? Method Status                Protocol
Internal-Control0/0        127.0.1.1       YES unset  up                    up
Internal-Control0/1        unassigned      YES unset  up                    up
Internal-Data0/0           unassigned      YES unset  down                  up
Internal-Data0/0           unassigned      YES unset  up                    up
Internal-Data0/1           169.254.1.1     YES unset  up                    up
Internal-Data0/2           unassigned      YES unset  up                    up
Management0/0              10.0.0.61       YES DHCP   up                    up

TenGigabitEthernet0/0      unassigned      YES unset  up                    up

TenGigabitEthernet0/1      unassigned      YES unset  up                    up

vni1                       1.2.3. 4         YES manual up                    up
```

Ensure vni interface single-arm and vtep association are present as shown in this outptut:

<#root>

```
# show run interface vni 1

!
interface vni1
 proxy single-arm
 nameif VNI-Outside
 security-level 0
 ip address 1.2.3. 4 255.255.255.0
 vtep-nve 1
```

Review interface counters for VNI interface:

<#root>

```
# show interface VNI detail
```

Refer to the Firepower Management Center Configuration Guide for additional information.