Configure VRF Aware Route-Based Site-to-Site VPN on FTD Managed by FDM

Contents

Introduction

This document describes how to configure VRF-aware route-based site-to-site VPN on FTD managed by FDM.

Prerequisites

Requirements

Cisco recommends that you have knowledge of these topics:

- Basic understanding of Virtual Private Networks (VPN)
- Basic understanding of Virtual Routing and Forwarding (VRF)
- Experience with Firepower Device Manager (FDM)

Components Used

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

- Cisco FTDv version 7.4.2
- Cisco FDM version 7.4.2
- Cisco ASAv version 9.20.3

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.

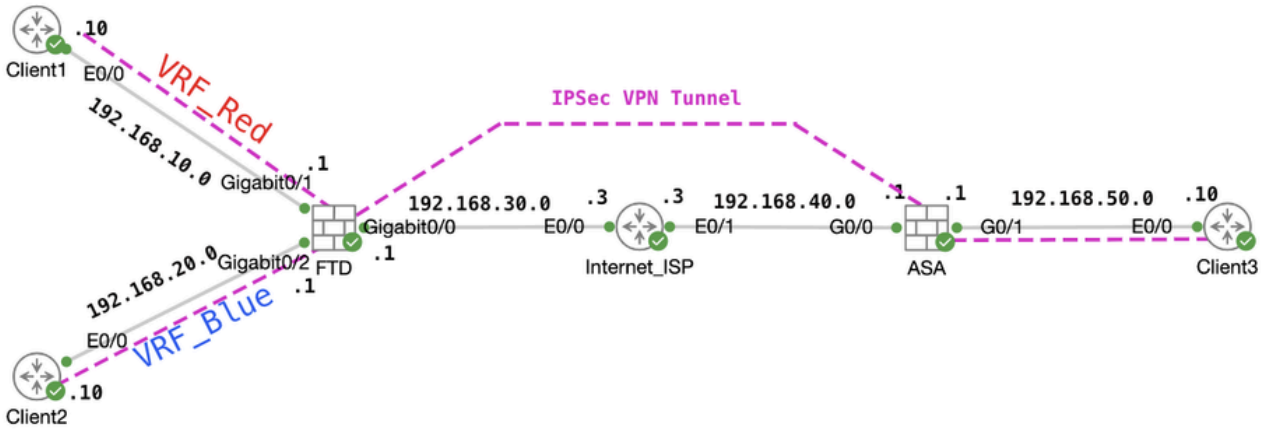
Background Information

VRF on FDM allows you to create multiple isolated routing instances on a single Firepower Threat Defense (FTD) device. Each VRF instance operates as a separate virtual router with its routing table, enabling logical separation of network traffic and providing enhanced security and traffic management capabilities.

This document explains how to configure VRF-aware IPSec VPN with VTI. VRF Red network and VRF Blue network are behind FTD. Client1 in VRF Red network and Client2 in VRF Blue would communicate with Client3 behind ASA through the IPSec VPN tunnel.

Configure

Network Diagram

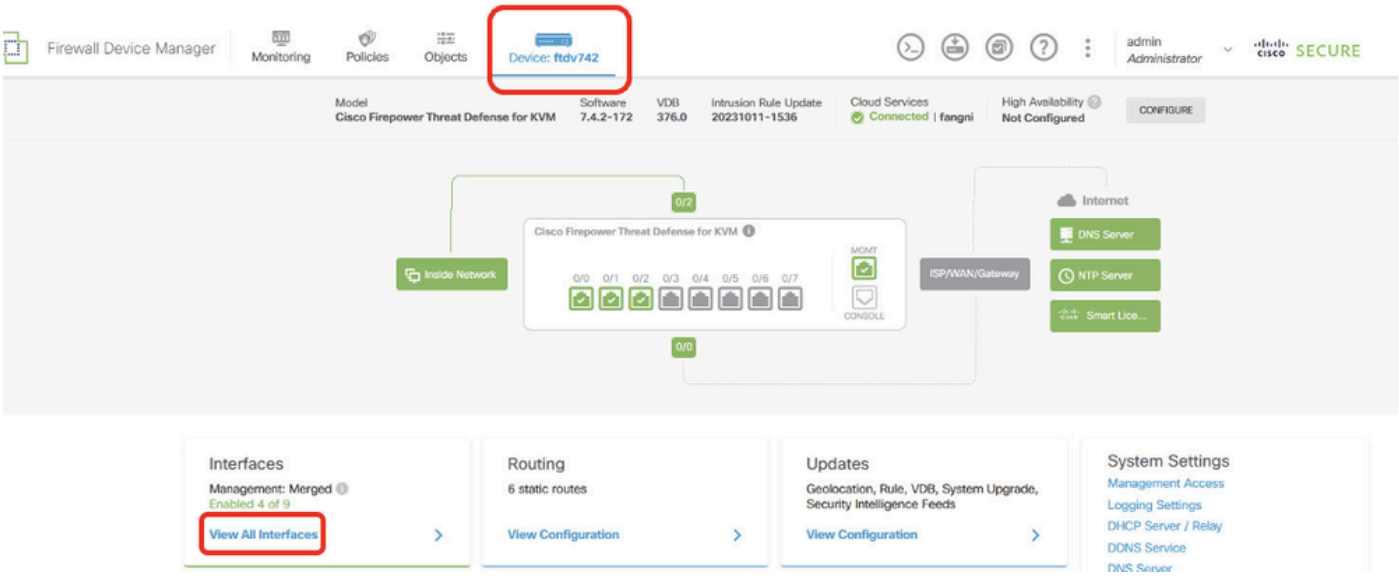


Topology

Configure the FTD

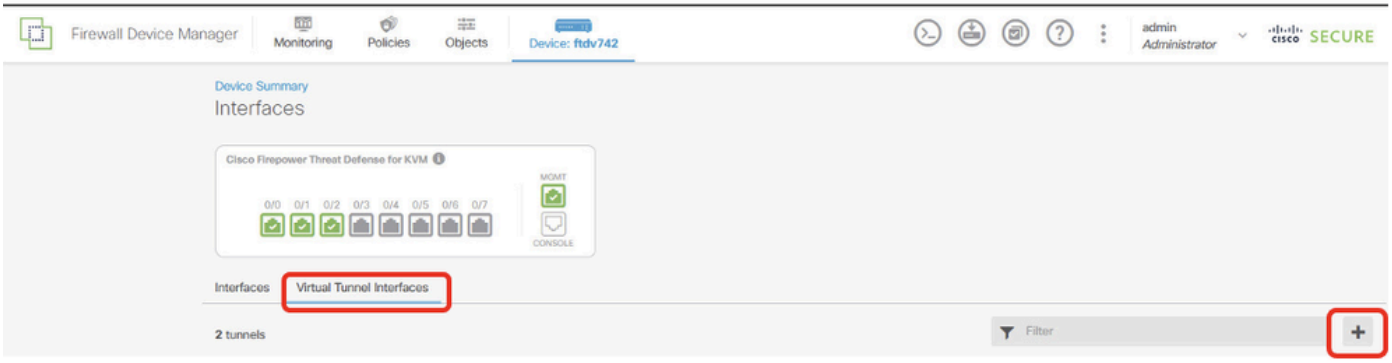
Step 1. It is essential to ensure that the preliminary configuration of IP interconnectivity between nodes has been completed. Client1 and Client2 have FTD inside IP addresses as gateways. Client3 is with ASA inside the IP address as a gateway.

Step 2. Create a virtual tunnel interface. Login the FDM GUI of FTD. Navigate to **Device > Interfaces**. Click **View All Interfaces**.



FTD_View_Interfaces

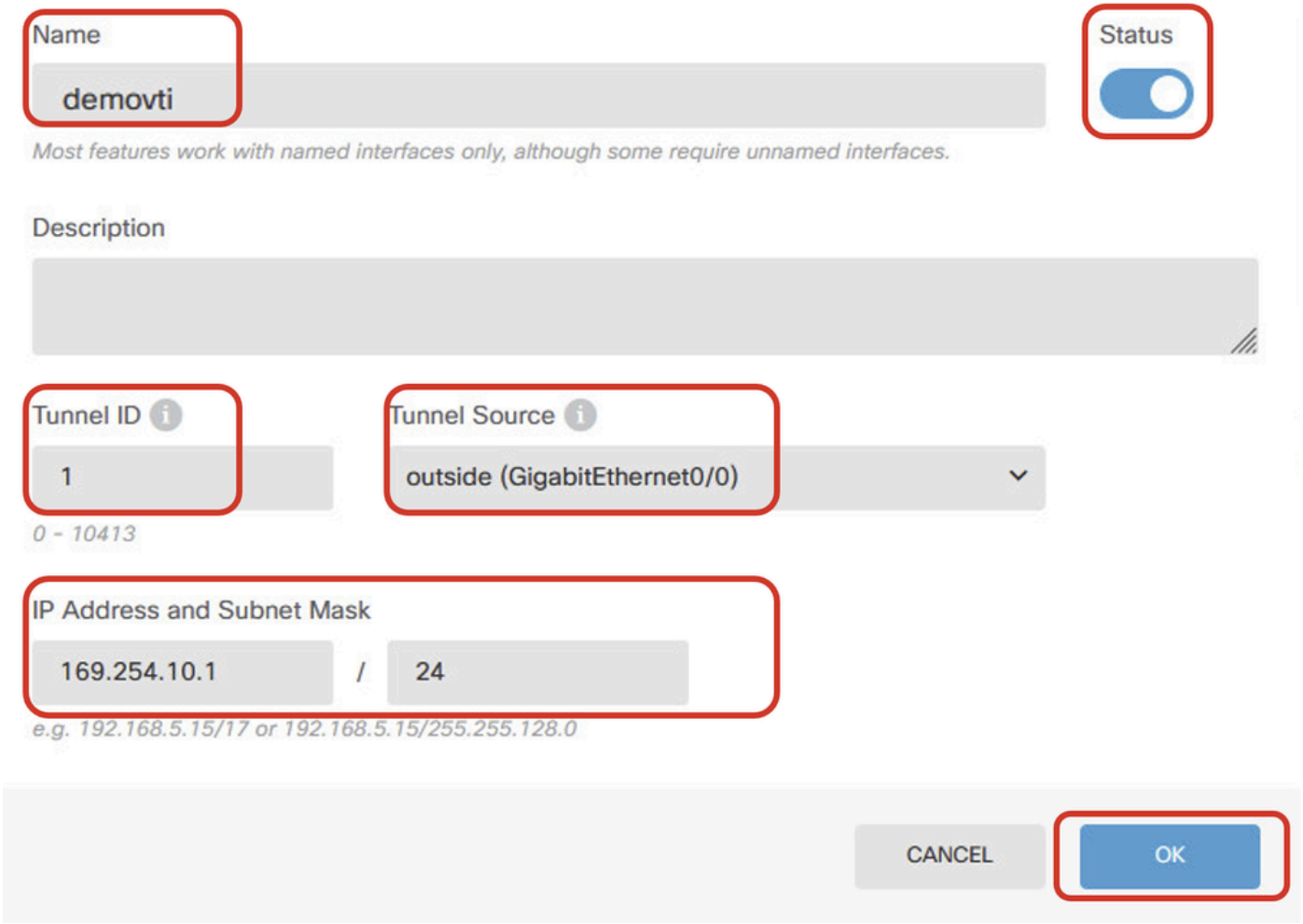
Step 2.1. Navigate to the **Virtual Tunnel Interfaces** tab and click the + button.



FTD_Create_VTI

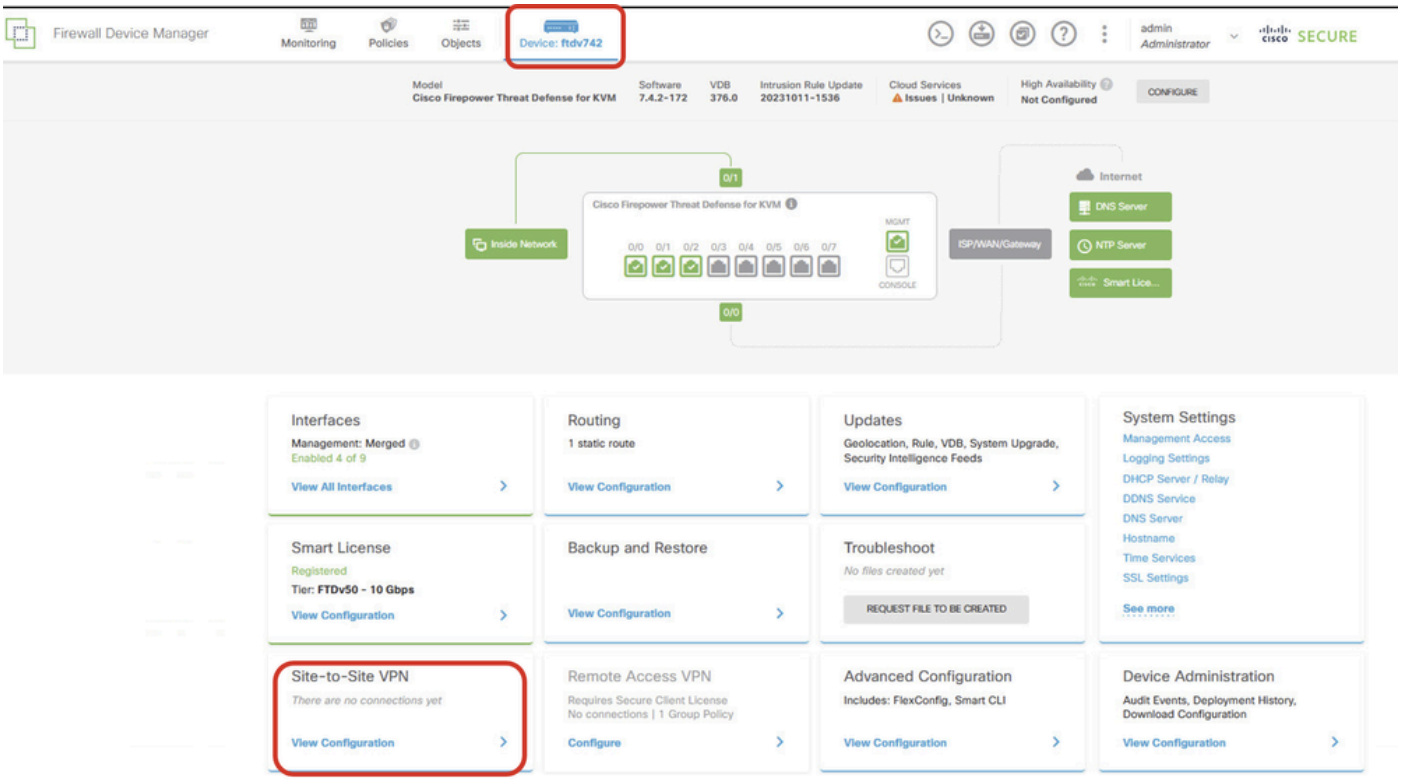
Step 2.2. Provide the necessary information and click the **OK** button.

- Name: demovti
- Tunnel ID: 1
- Tunnel Source: outside (GigabitEthernet0/0)
- IP Address And Subnet Mask: 169.254.10.1/24
- Status: click the slider to the Enabled position



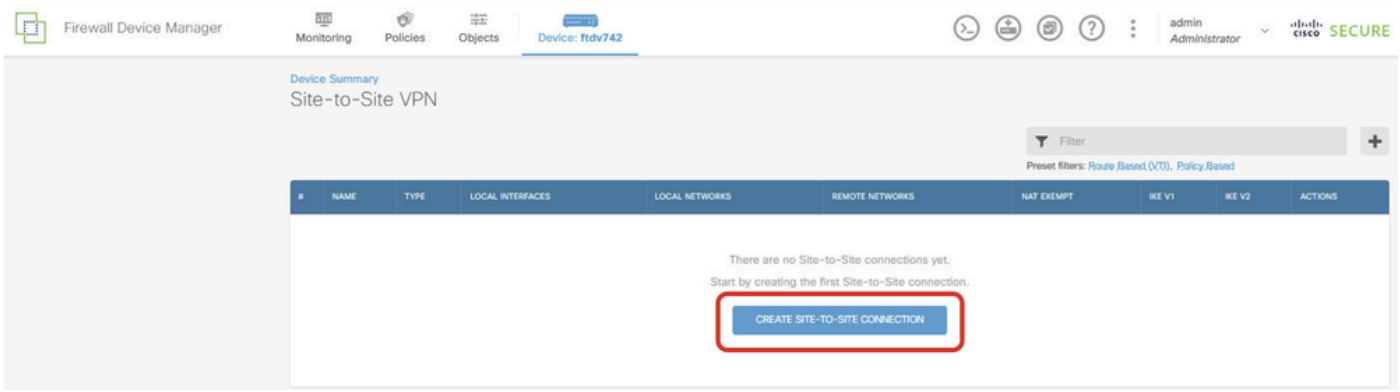
FTD_Create_VTI_Details

Step 3. Navigate to **Device > Site-to-Site VPN**. Click the **View Configuration** button.



FTD_Site-to-Site_VPN_View_Configurations

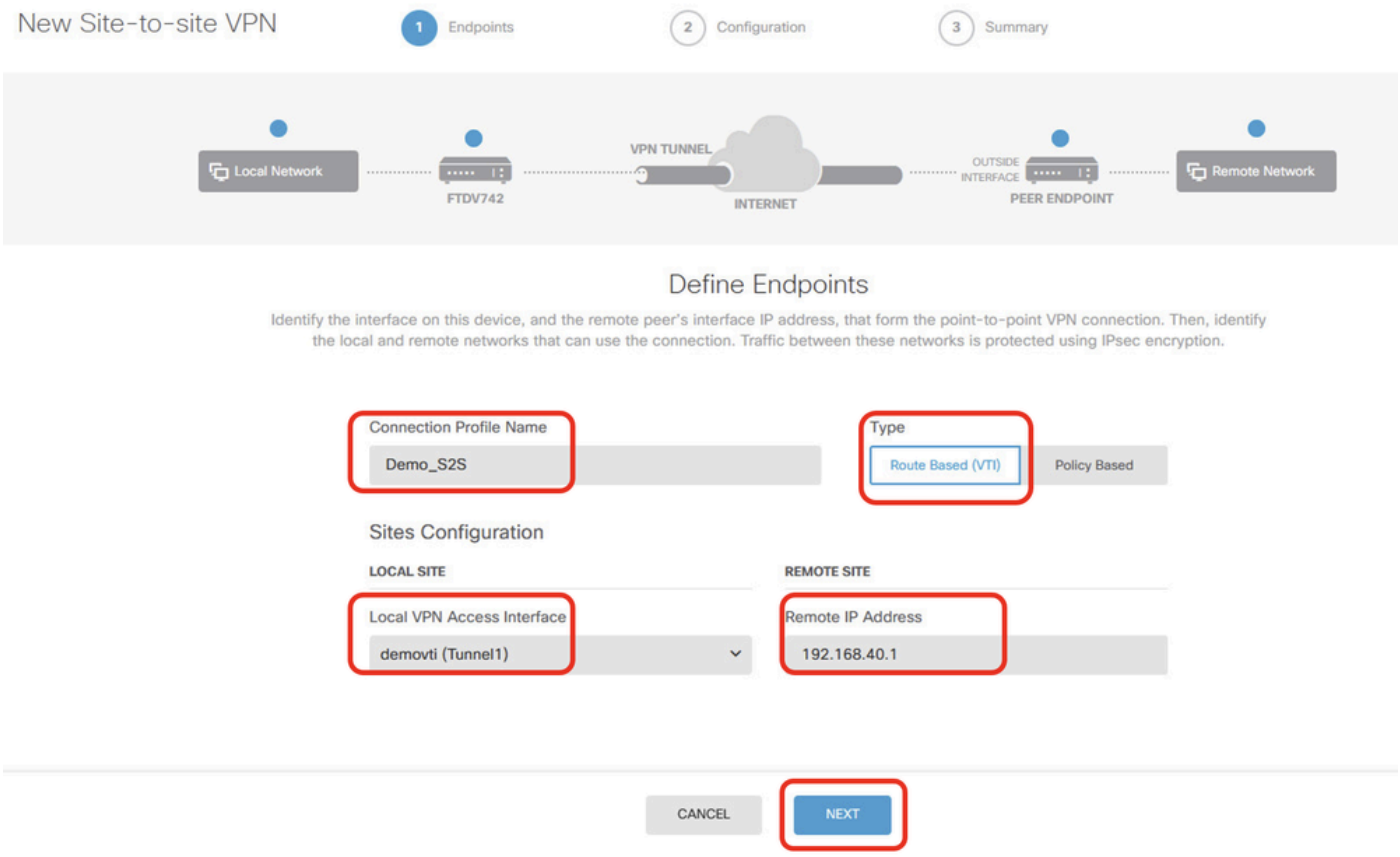
Step 3.1. Start to create a new site-to-site VPN. Click the **CREATE SITE-TO-SITE CONNECTION** or the + button.



FTD_Create_Site2Site_Connection

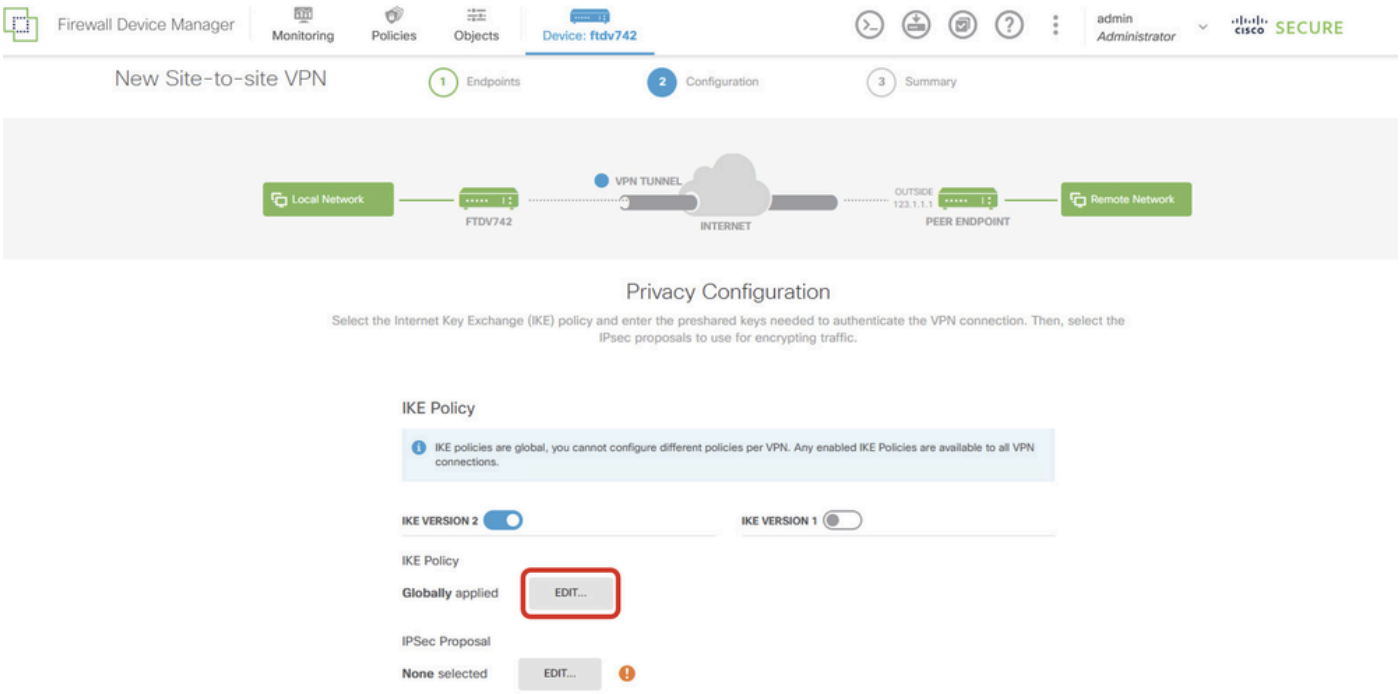
Step 3.2. Provide the necessary information and click **NEXT**.

- Connection Profile Name: Demo_S2S
- Type: Route Based (VTI)
- Local VPN Access Interface: demovti (created in Step 2)
- Remote IP Address: 192.168.40.1 (this is peer ASA outside IP address)



FTD_Site-to-Site_VPN_Endpoints

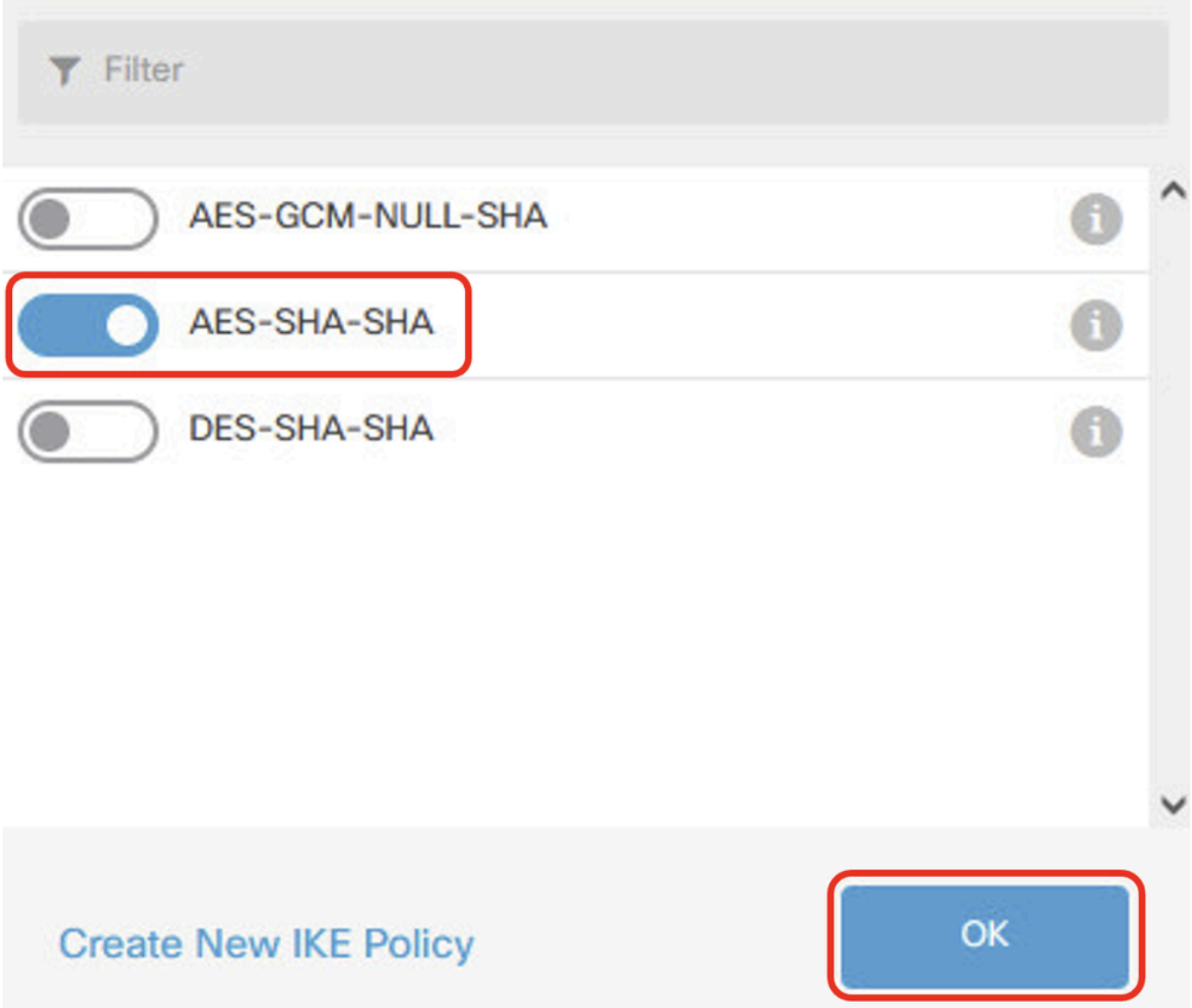
Step 3.3. Navigate to IKE Policy. Click the **EDIT** button.



FTD_Edit_IKE_Policy

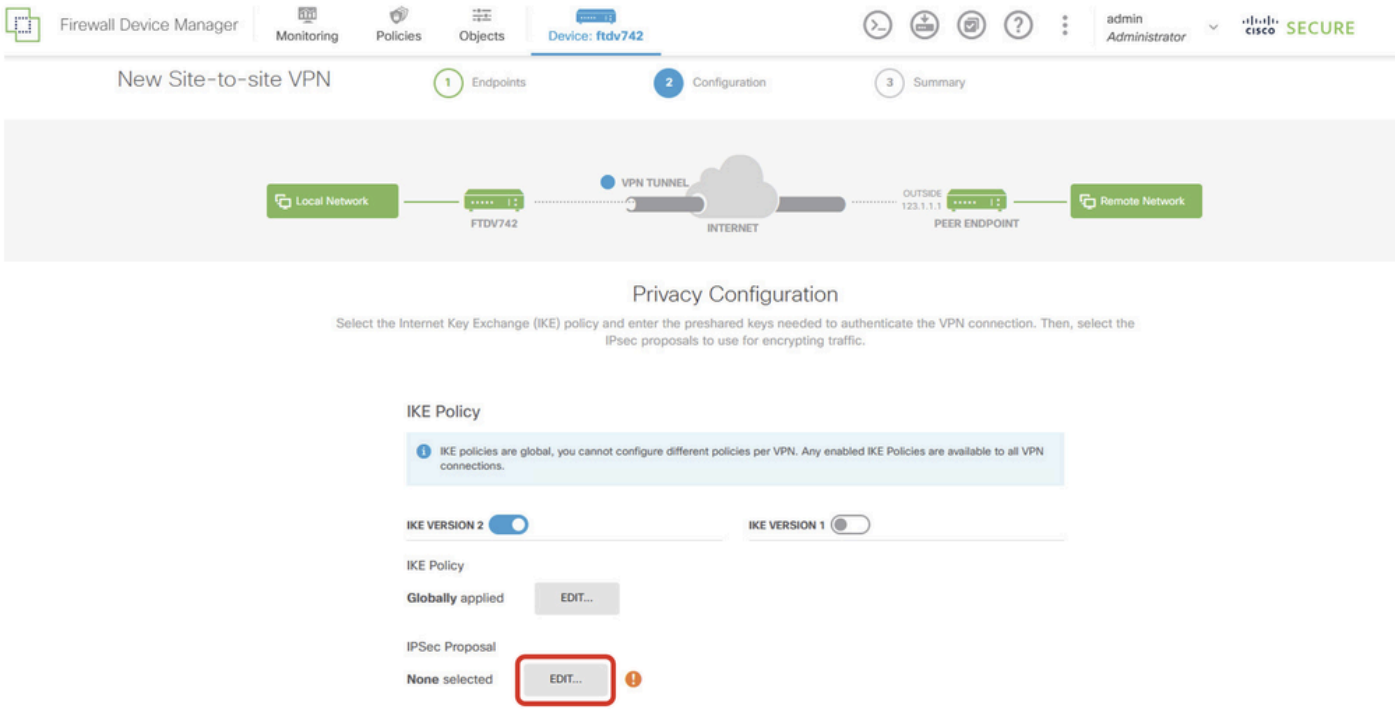
Step 3.4. For the IKE policy, you can use a pre-defined or you can create a new one by clicking **Create New IKE Policy**.

In this example, toggle an existing IKE policy name **AES-SHA-SHA** . Click the **OK** button in order to save.



FTD_Enable_IKE_Policy

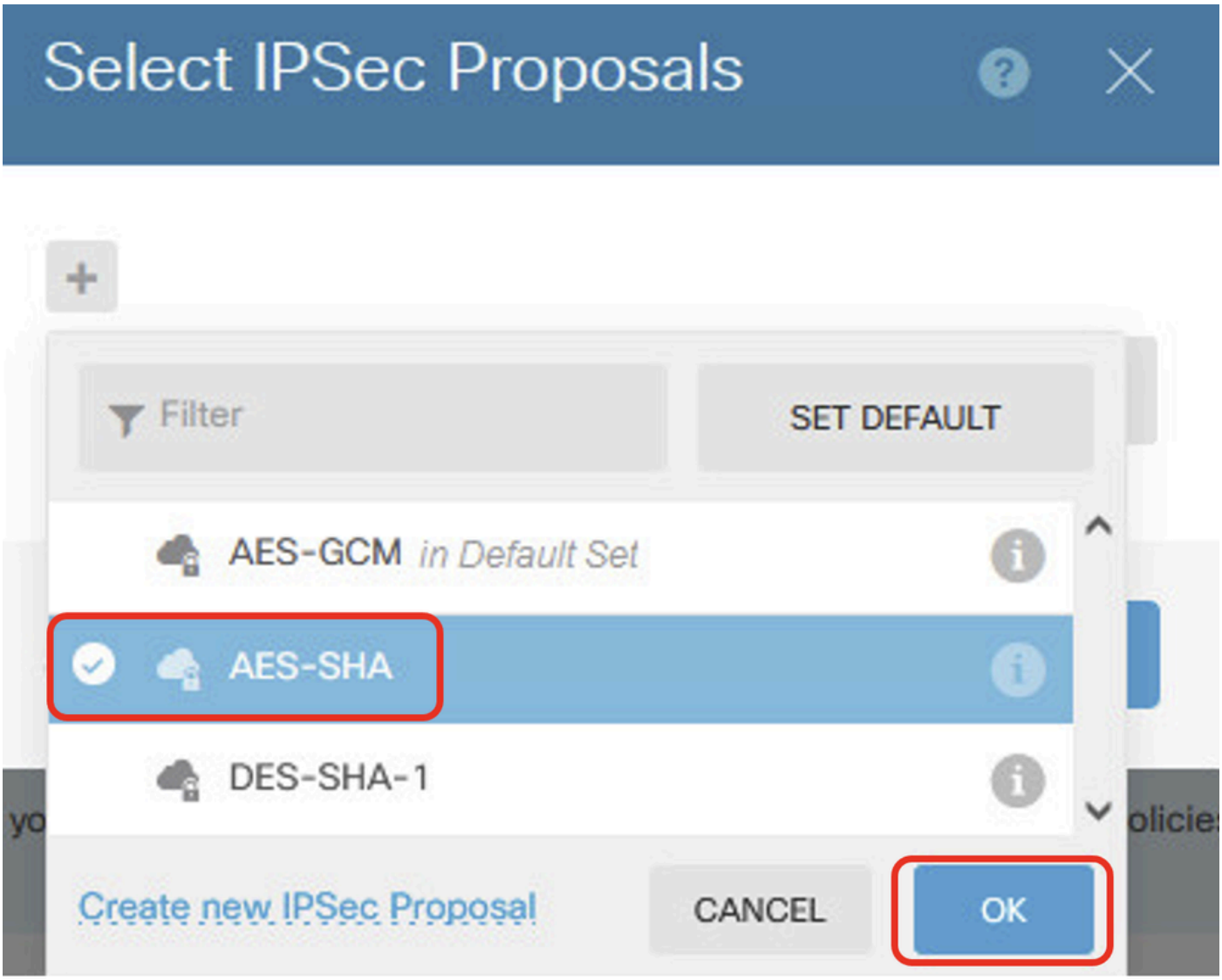
Step 3.5. Navigate to IPSec Proposal. Click the **EDIT** button.



FTD_Edit_IPSec_Proposal

Step 3.6. For the IPSec proposal, you can use a pre-defined or you can create a new one by clicking **Create new IPSec Proposal**.

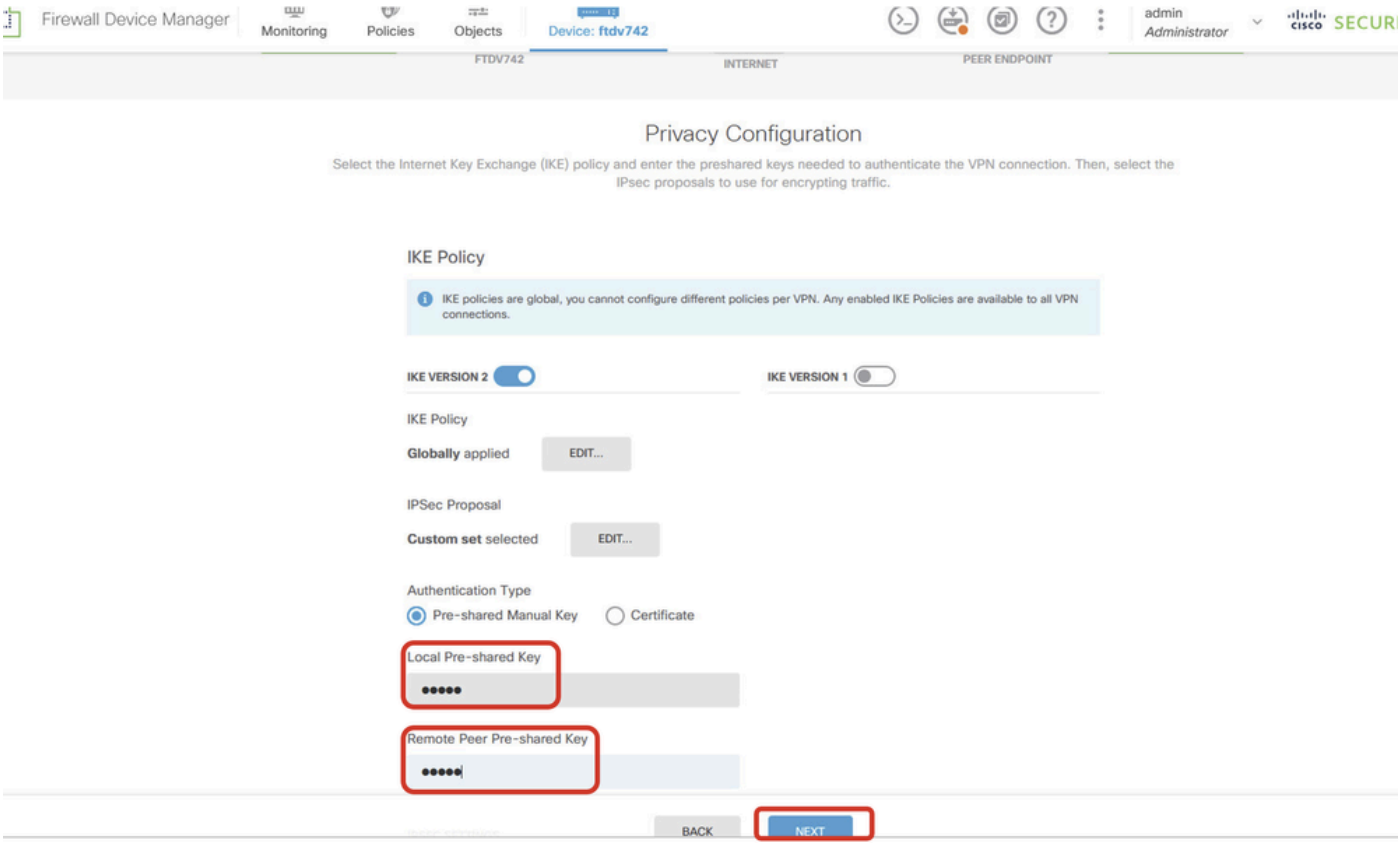
In this example, toggle an existing IPSec Proposal name **AES-SHA**. Click the **OK** button to save.



FTD_Enable_IPSec_Proposal

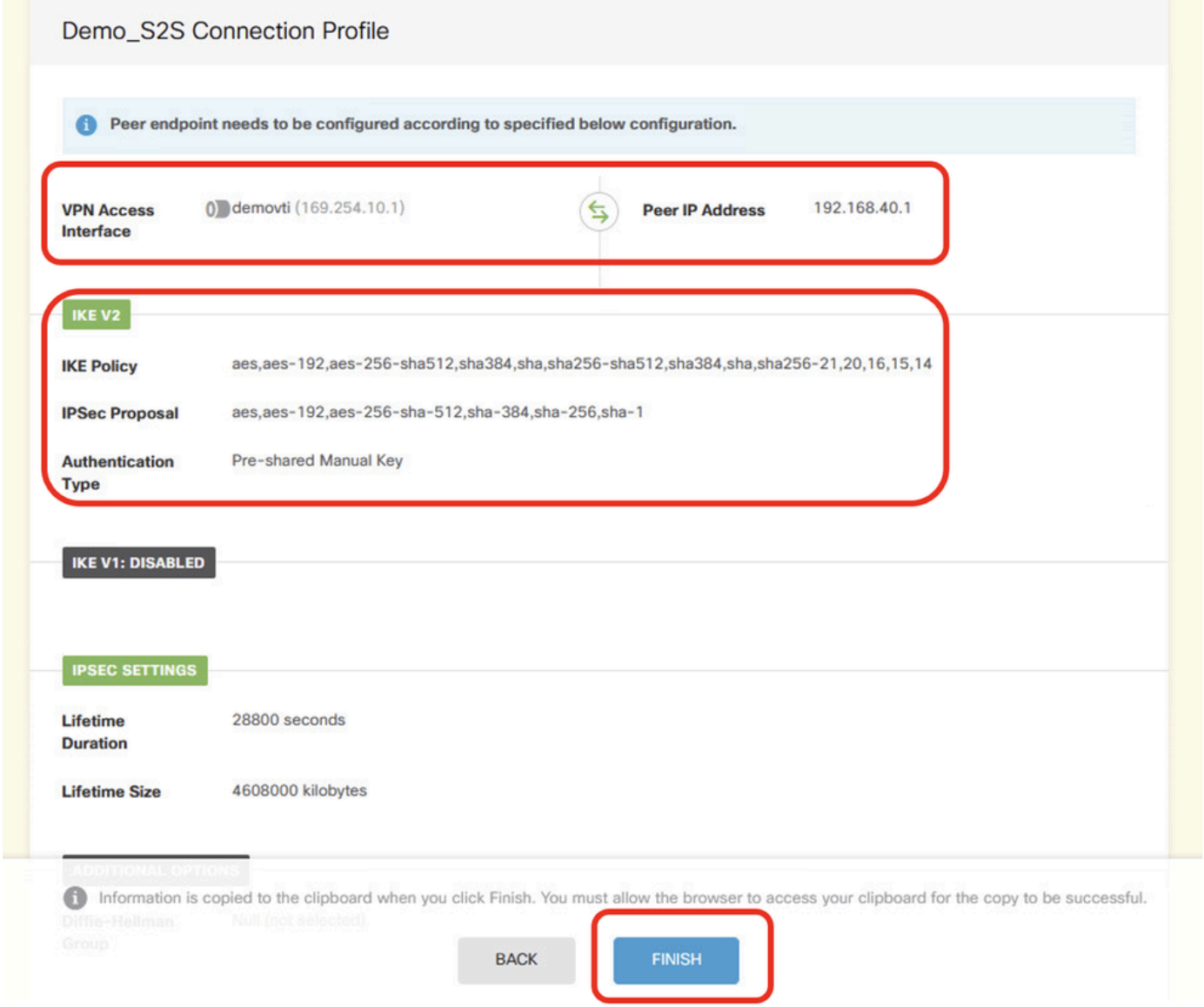
Step 3.7. Scroll down the page and configure the pre-shared key. Click **NEXT** button.

Note down this pre-shared key and configure it on ASA later.



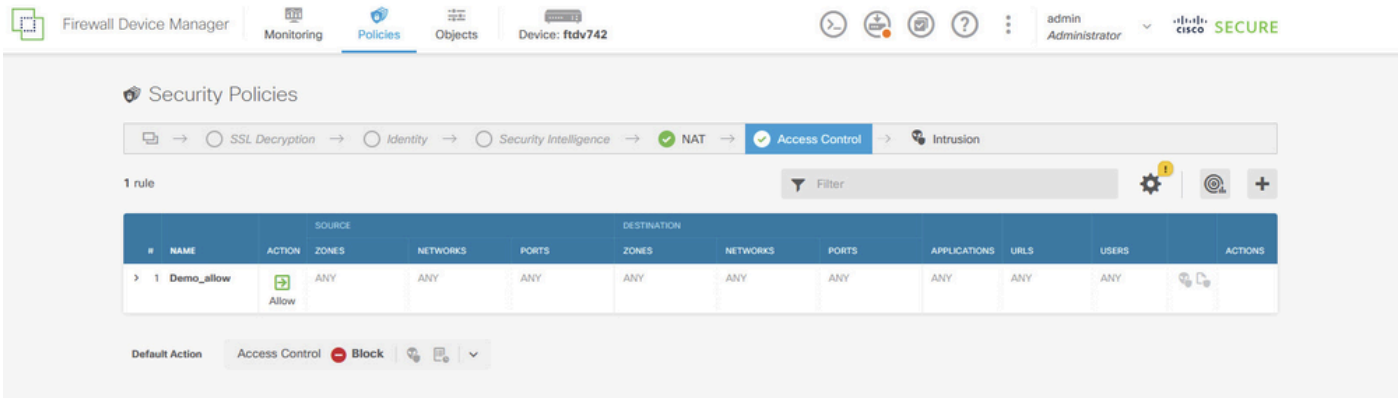
FTD_Configure_Pre_Shared_Key

Step 3.8. Review the VPN configuration. If anything needs to be modified, click the **BACK** button. If everything is good, click the **FINISH** button.



FTD_Review_VPN_Configuration

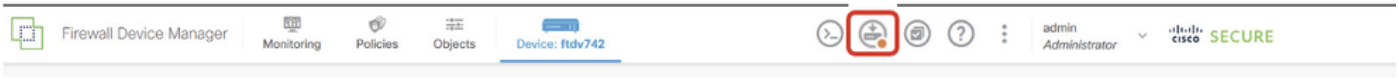
Step 3.9. Create an Access Control rule in order to allow traffic to pass through the FTD. In this example, allow all for demo purposes. Modify your policy based on your actual needs.



FTD_ACP_Example

Step 3.10. (Optional) Configure NAT exempt rule for the client traffic on FTD if there is dynamic NAT configured for the client to access the internet. In this example, there is no need to configure a NAT-exempt rule because there is no dynamic NAT configured on FTD.

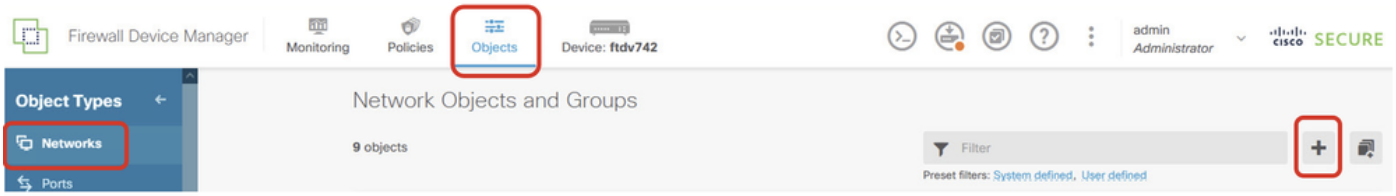
Step 3.11. Deploy the configuration changes.



FTD_Deployment_Changes

Step 4. Configure virtual routers.

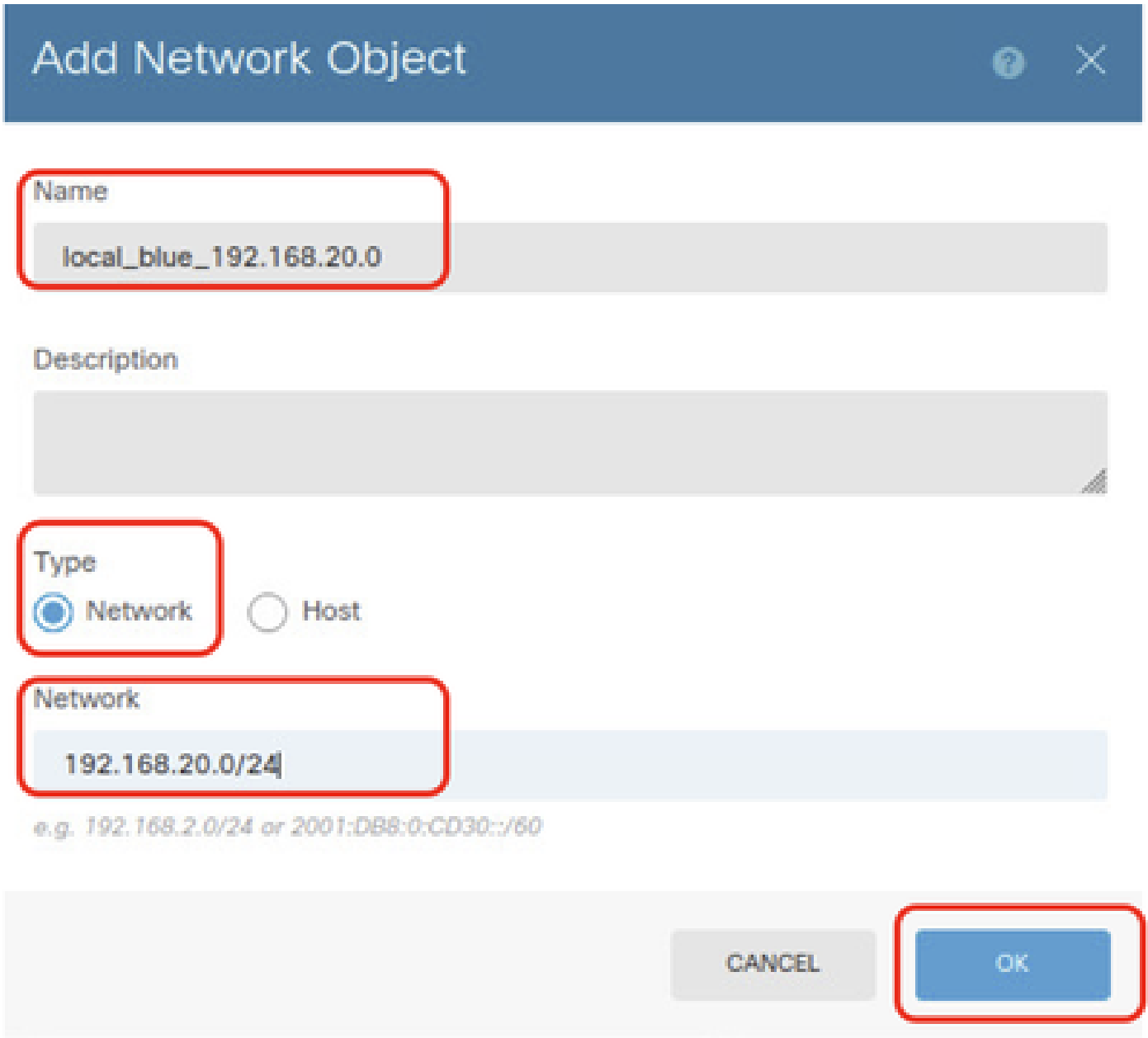
Step 4.1. Create network objects for static routes. Navigate to **Objects > Networks** and click the + button.



FTD_Create_NetObjects

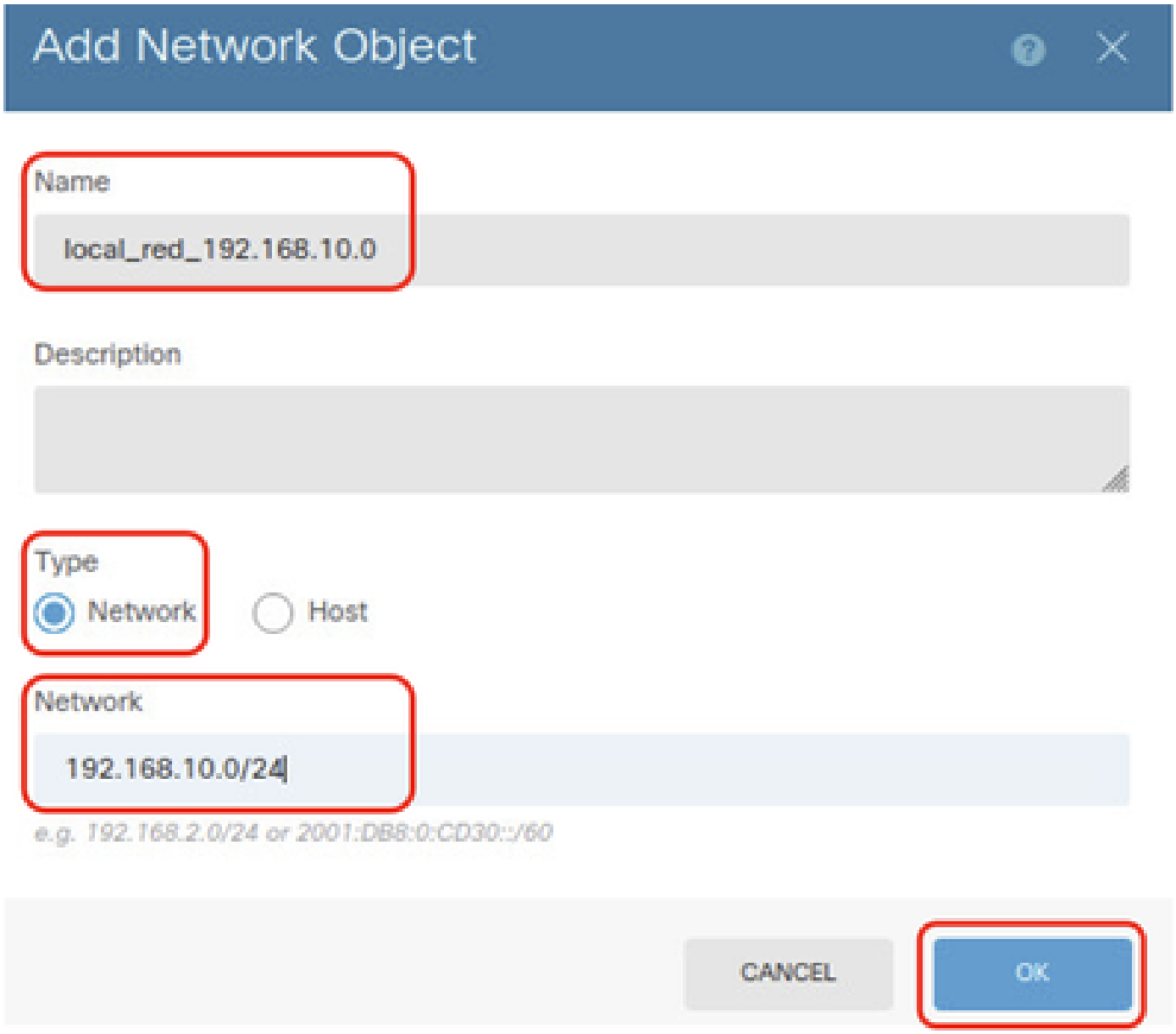
Step 4.2. Provide necessary information on each network object. Click the **OK** button.

- Name: local_blue_192.168.20.0
- Type: Network
- Network: 192.168.20.0/24



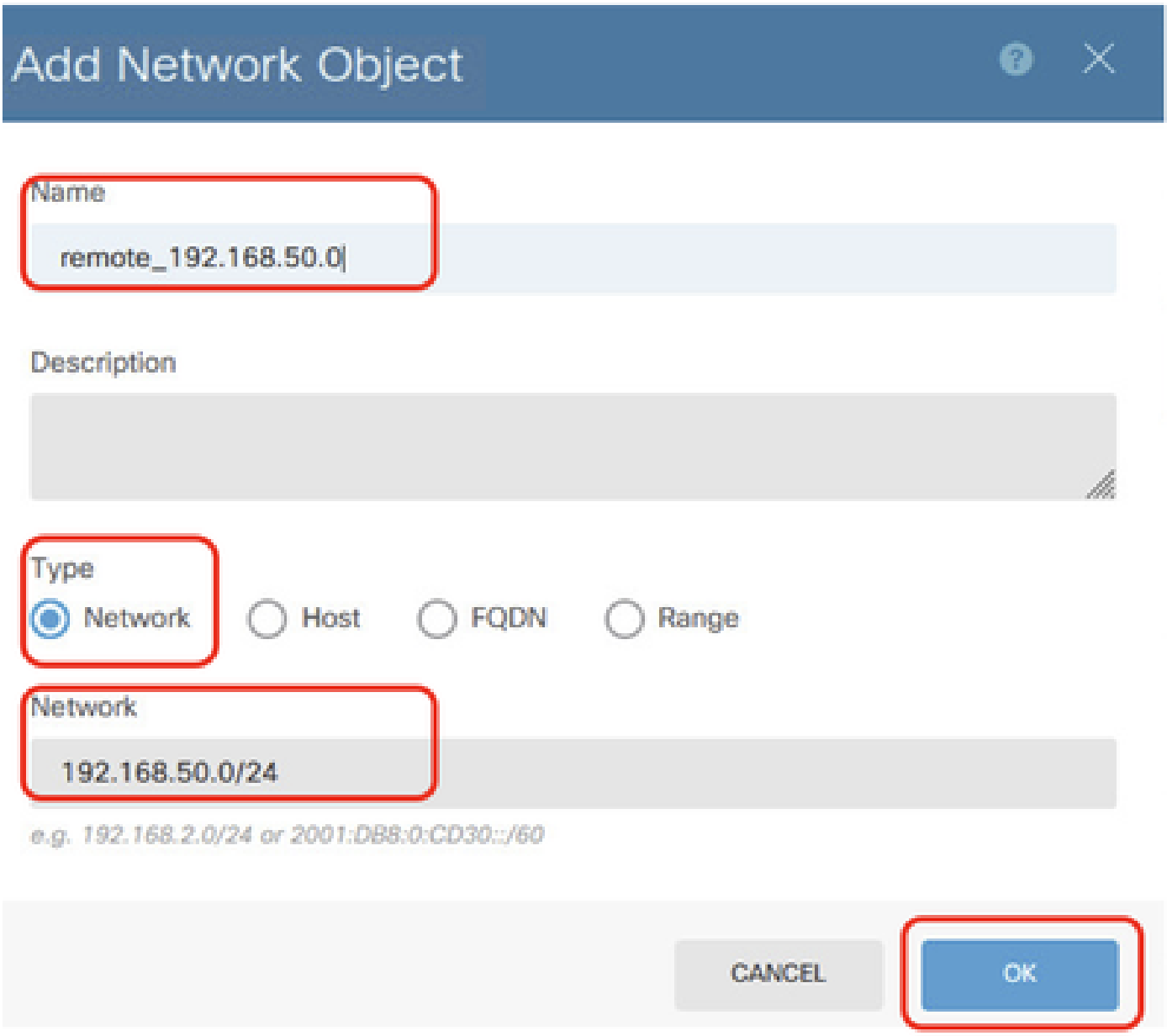
FTD_VRF_Blue_Network

- Name: local_red_192.168.10.0
- Type: Network
- Network: 192.168.10.0/24



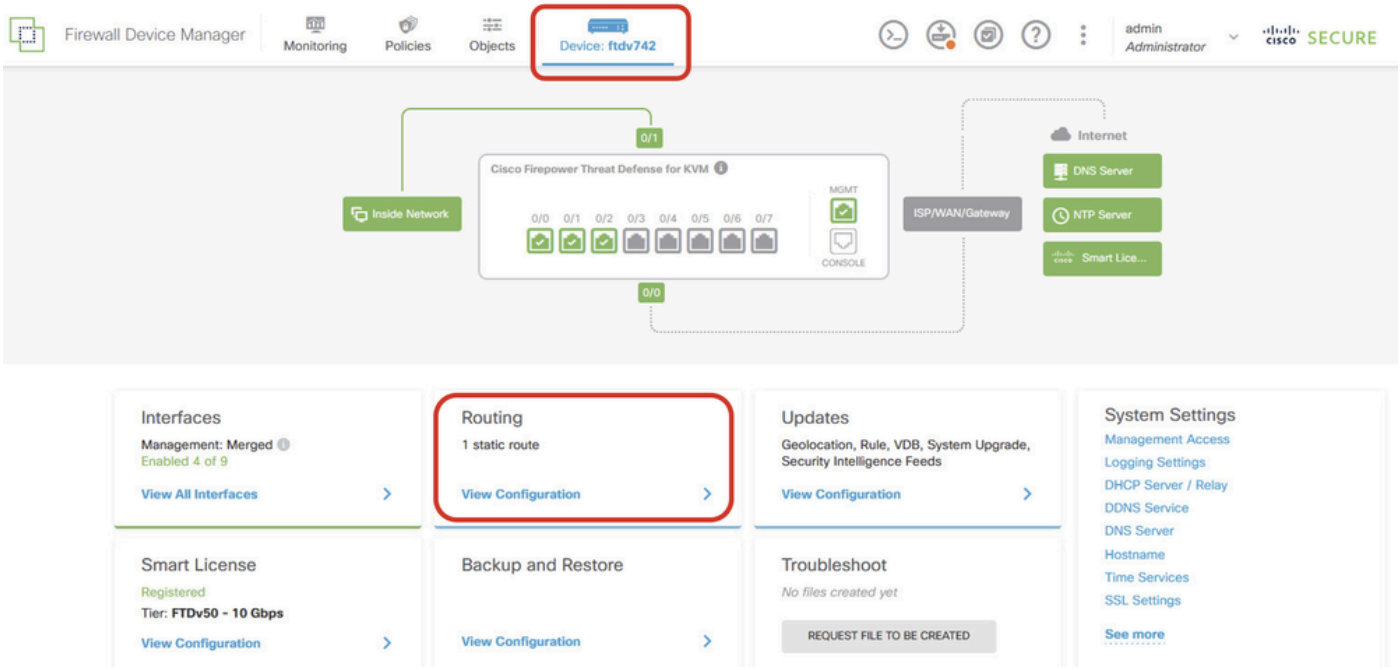
FTD_VRF_Red_Network

- Name: remote_192.168.50.0
- Type: Network
- Network: 192.168.50.0/24



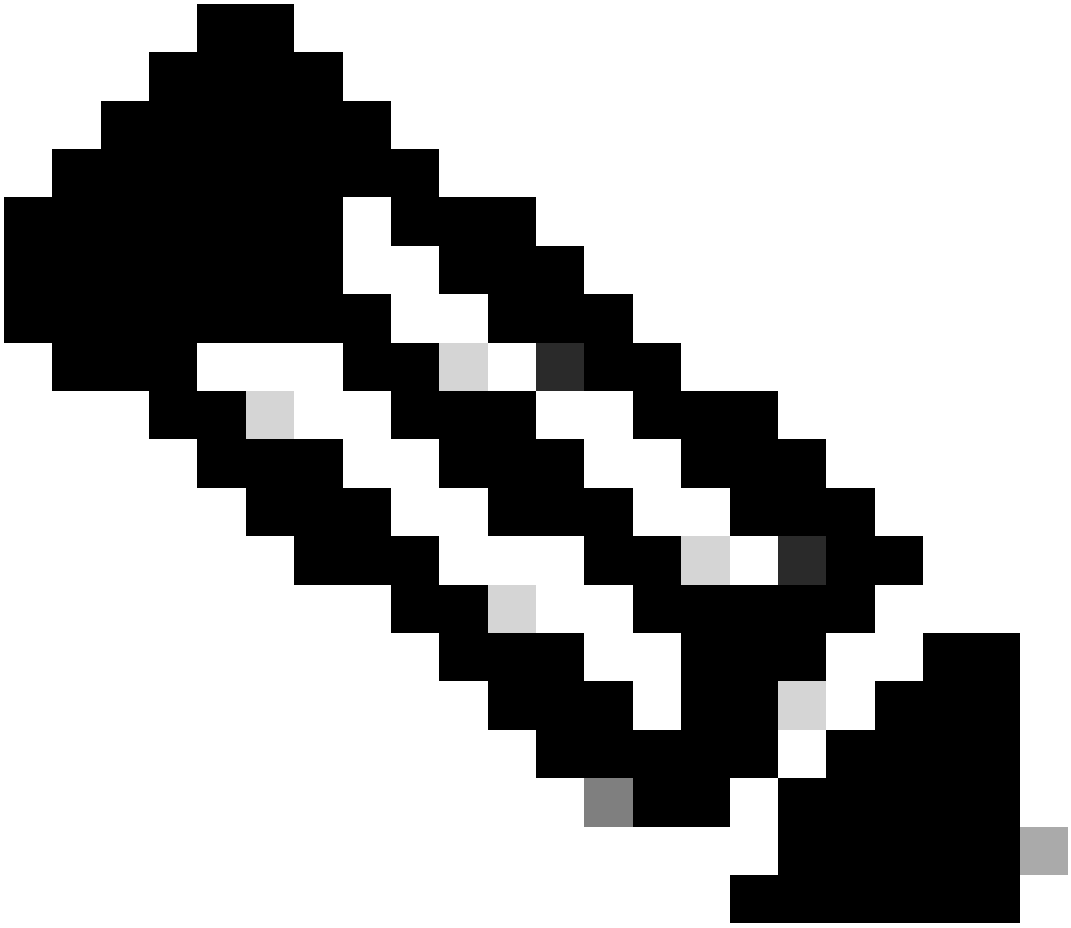
FTD_Remote_Network

Step 4.3. Create the first virtual router. Navigate to **Device > Routing** and click **View Configuration**.

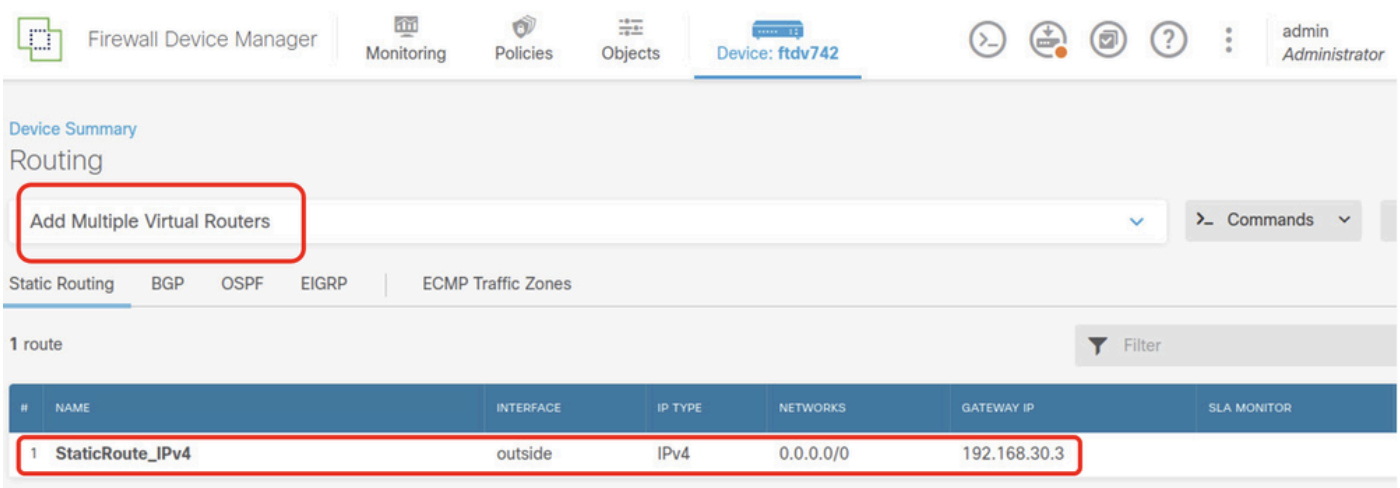


FTD_View_Routing_Configuration

Step 4.4. Click **Add Multiple Virtual Routers**.

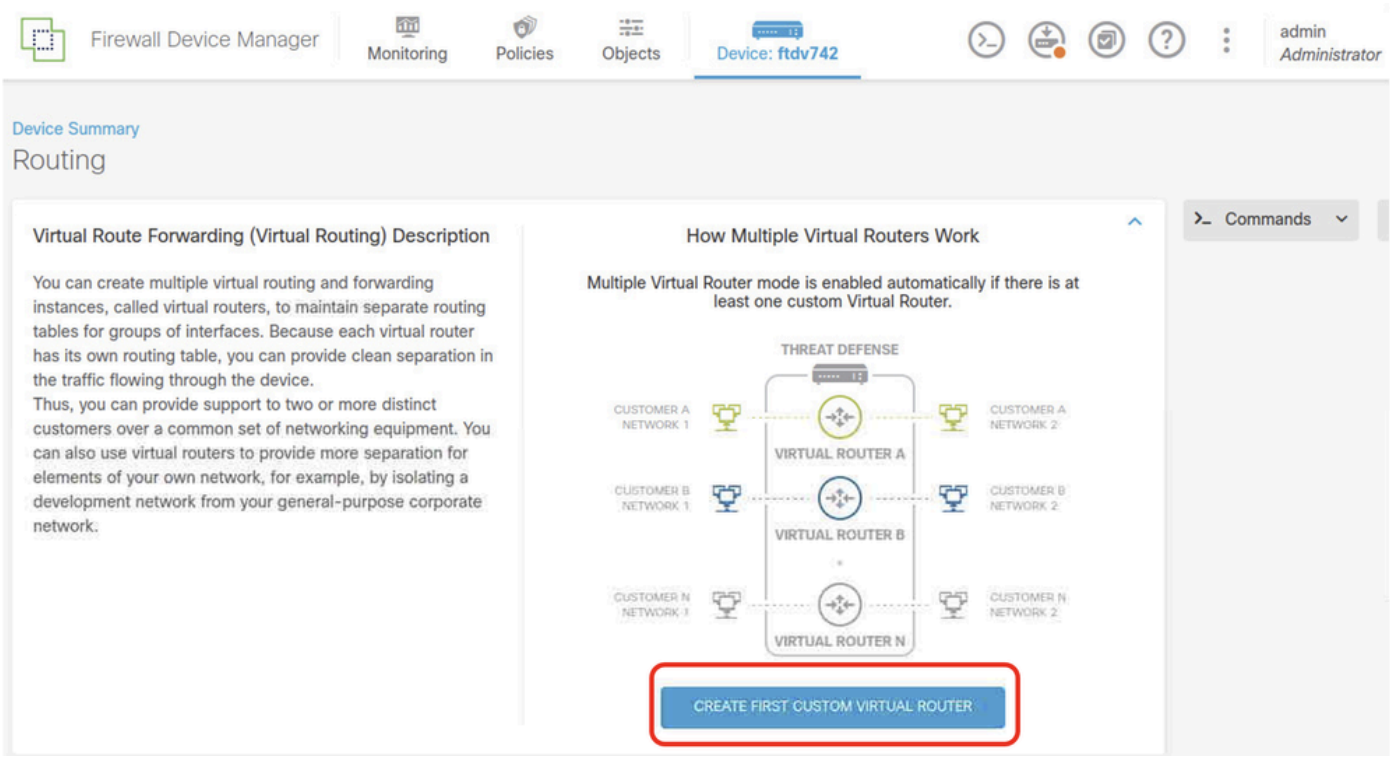


Note: A static route through an outside interface has already been configured during FDM initialization. If you do not have it, configure it manually.



FTD_Add_First_Virtual_Router1

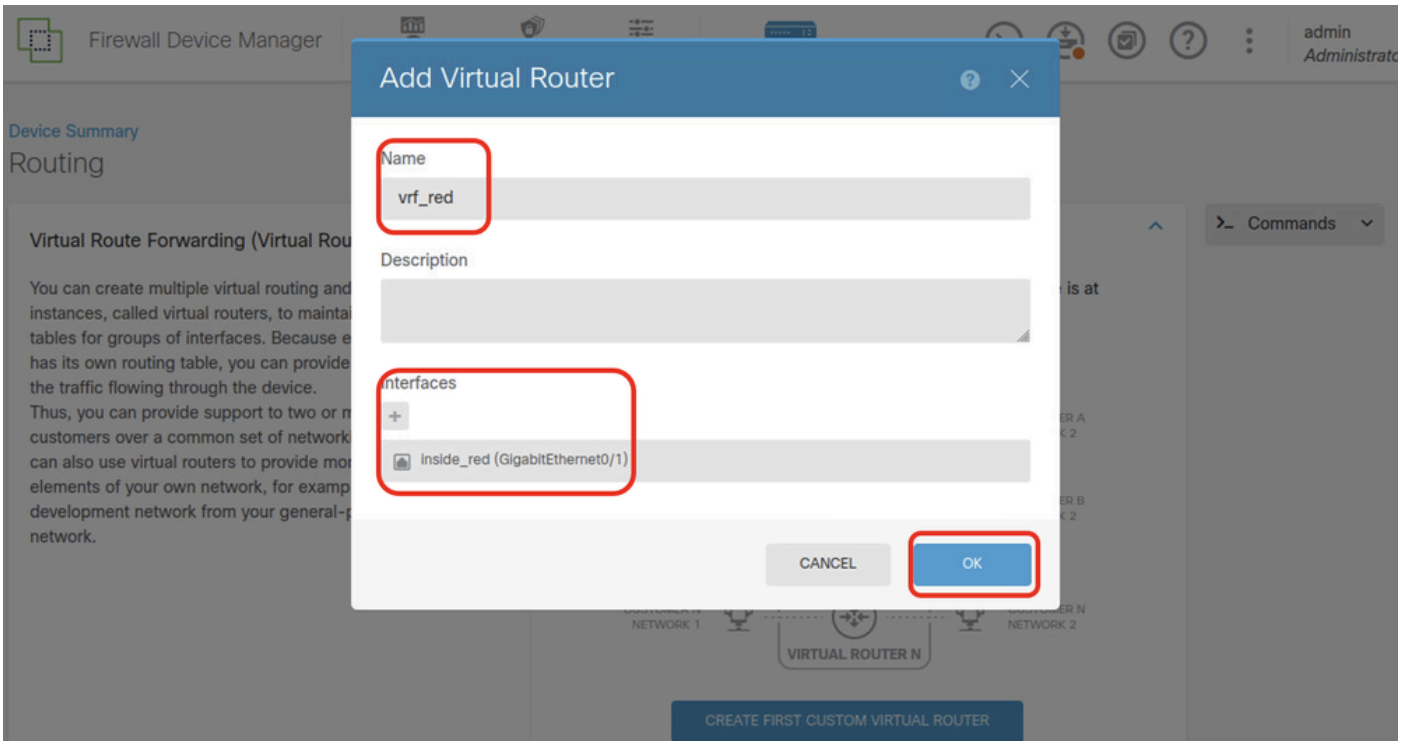
Step 4.5. Click **CREATE FIRST CUSTOM VIRTUAL ROUTER**.



FTD_Add_First_Virtual_Router2

Step 4.6. Provide necessary information on the first virtual router. Click the **OK** button. After the first virtual router creation, a VRF name **Global** is shown automatically.

- Name: vrf_red
- Interfaces: inside_red (GigabitEthernet0/1)



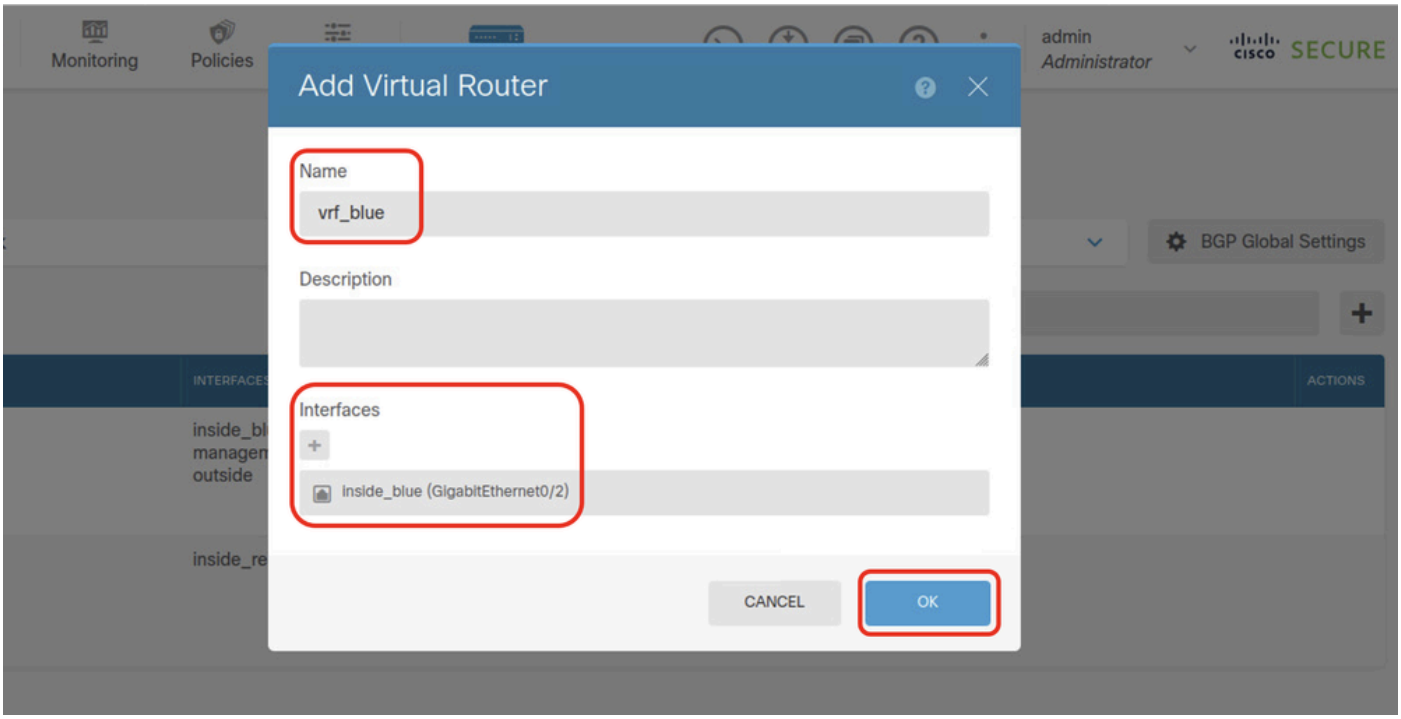
FTD_Add_First_Virtual_Router3

Step 4.7. Create a second virtual router. Navigate to **Device > Routing**. Click **View Configuration** and then the + button.

FTD_Add_Second_Virtual_Router

Step 4.8. Provide necessary information on the second virtual router. Click the **OK** button.

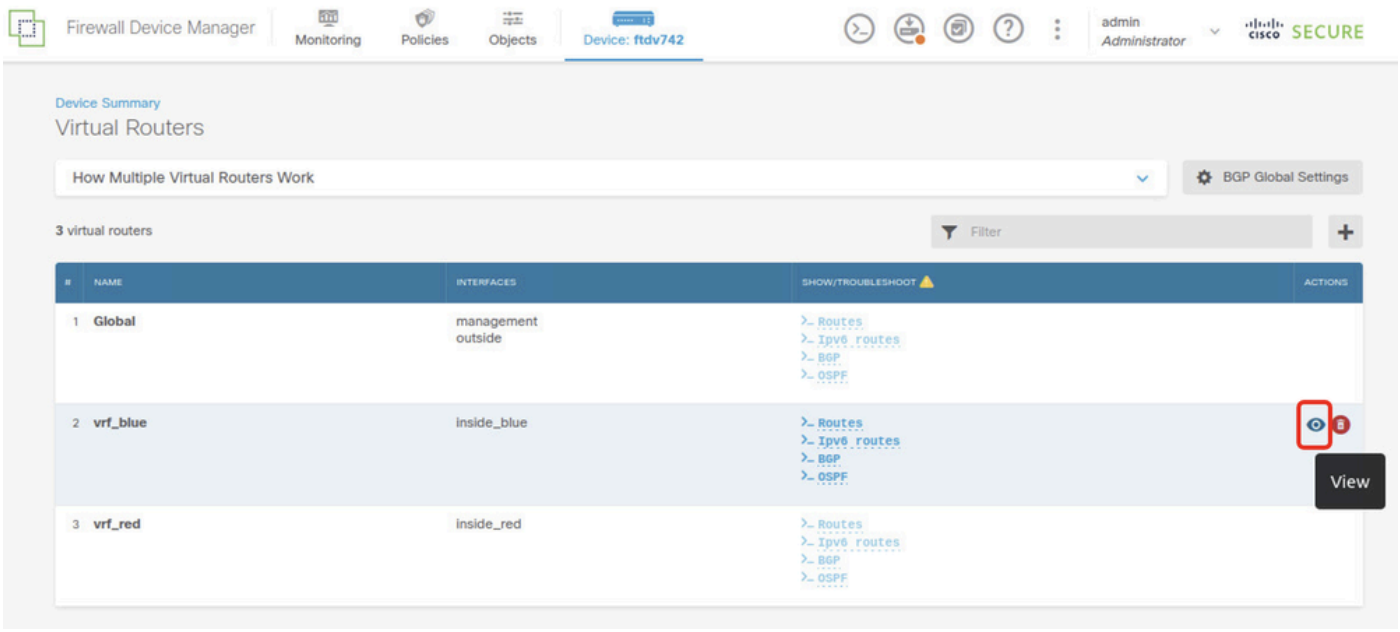
- Name: vrf_blue
- Interfaces: inside_blue (GigabitEthernet0/2)



FTD_Add_Second_Virtual_Router2

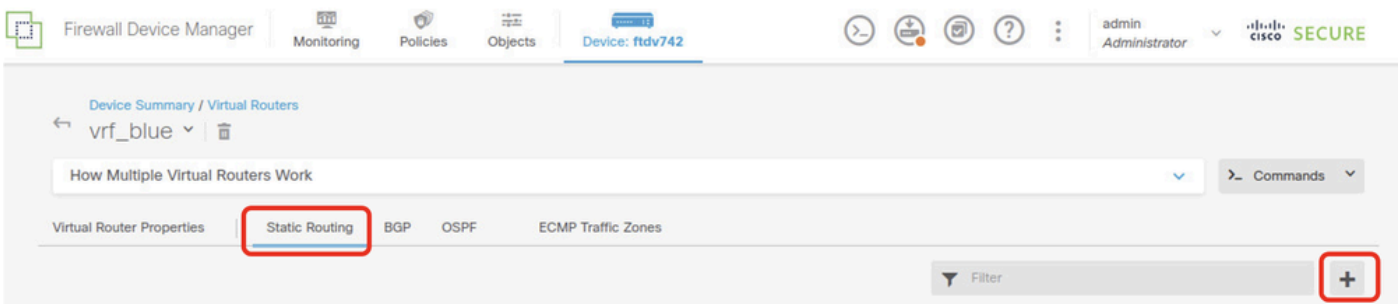
Step 5. Create route leak from vrf_blue to Global. This route allows endpoints on the 192.168.20.0/24 network to initiate connections that traverse the site-to-site VPN tunnel. For this example, the remote endpoint is protecting the 192.168.50.0/24 network.

Navigate to **Device > Routing**. Click **View Configuration** and then the **View** icon in the Action cell for the virtual router vrf_blue.



FTD_View_VRF_Blue

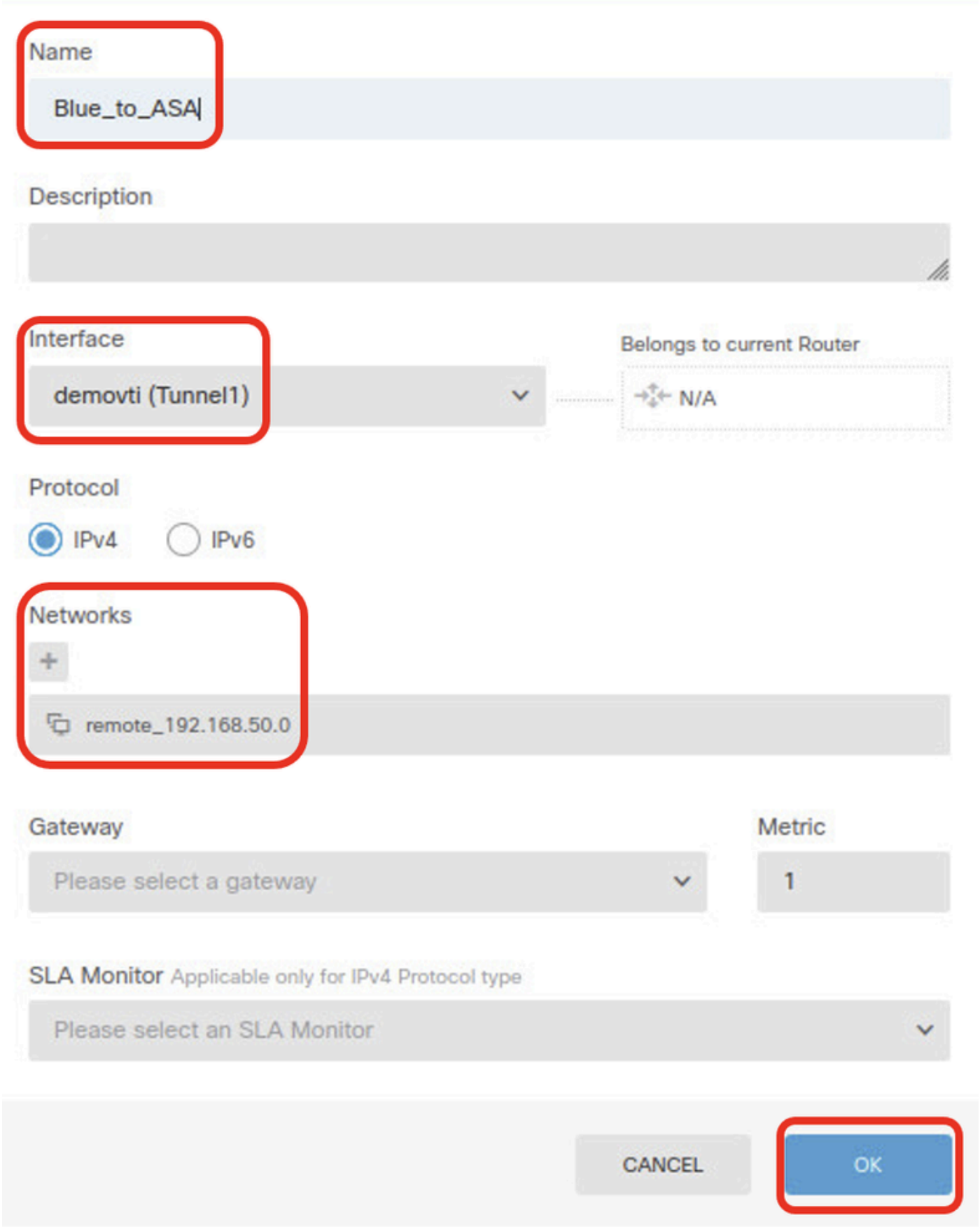
Step 5.1. Click the **Static Routing** tab and then the + button.



FTD_Create_Static_Route_VRF_Blue

Step 5.2. Provide necessary information. Click the **OK** button.

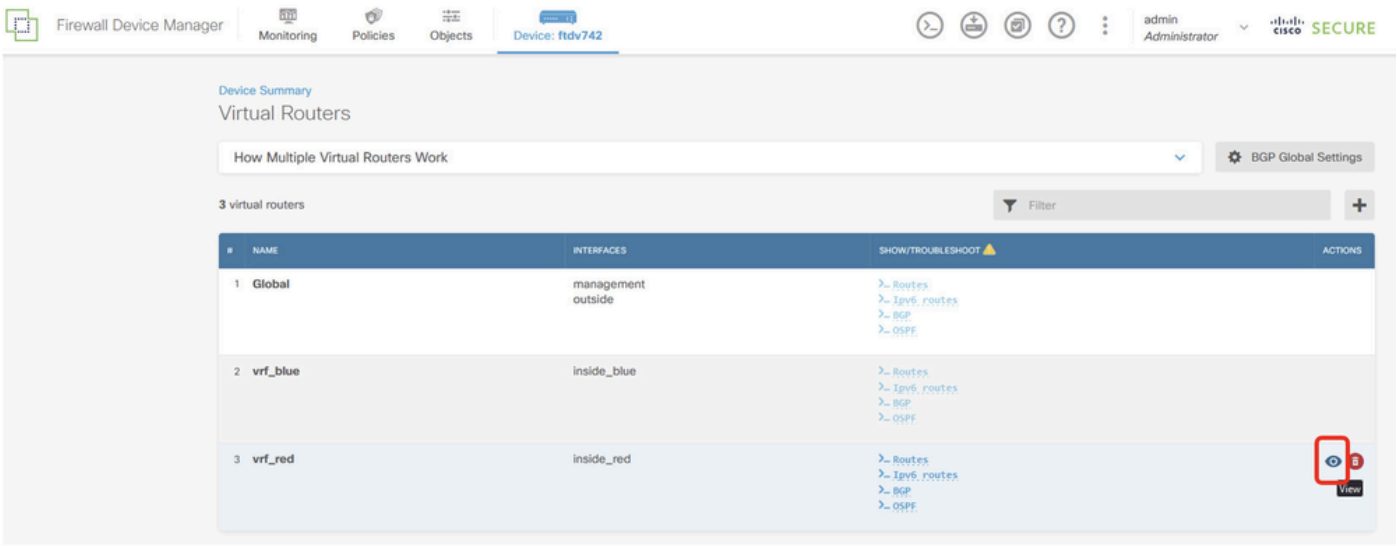
- Name: Blue_to_ASA
- Interface: demovti (Tunnel1)
- Networks: remote_192.168.50.0
- Gateway: Leave this item blank.



FTD_Create_Static_Route_VRF_Blue_Details

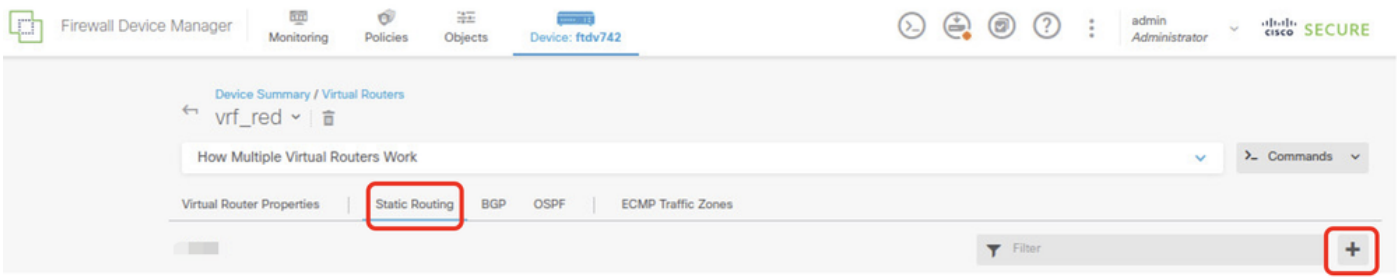
Step 6. Create route leak from vrf_red to Global. This route allows endpoints on the 192.168.10.0/24 network to initiate connections that traverse the site-to-site VPN tunnel. For this example, the remote endpoint is protecting the 192.168.50.0/24 network.

Navigate to **Device > Routing**, click **View Configuration**, and then the **View** icon in the Action cell for the virtual router vrf_red.



FTD_View_VRF_Red

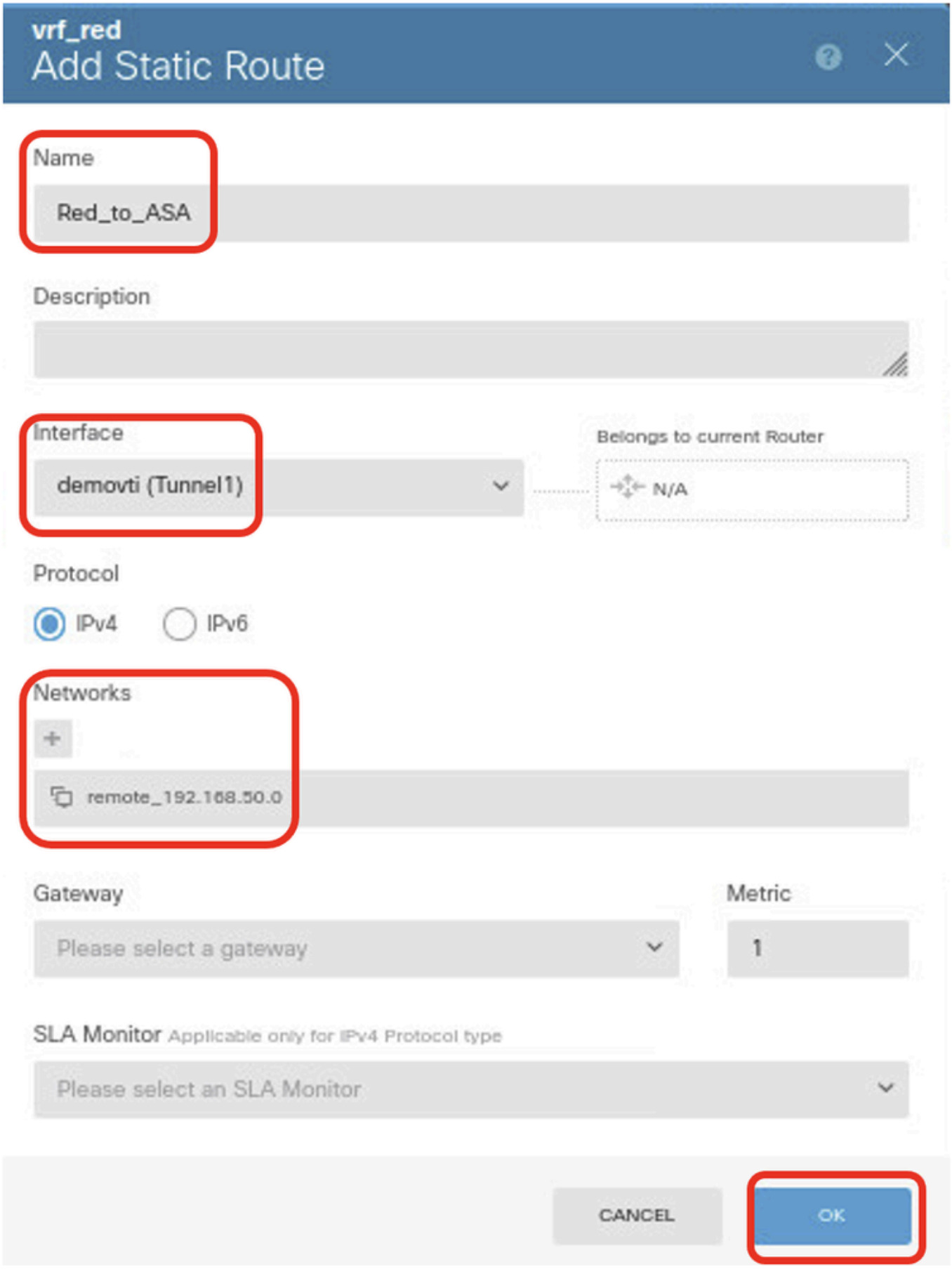
Step 6.1. Click the **Static Routing** tab and then the + button.



FTD_Create_Static_Route_VRF_Red

Step 6.2. Provide the necessary information and click the **OK** button.

- Name: Red_to_ASA
- Interface: demovti (Tunnel1)
- Networks: remote_192.168.50.0
- Gateway: Leave this item blank.

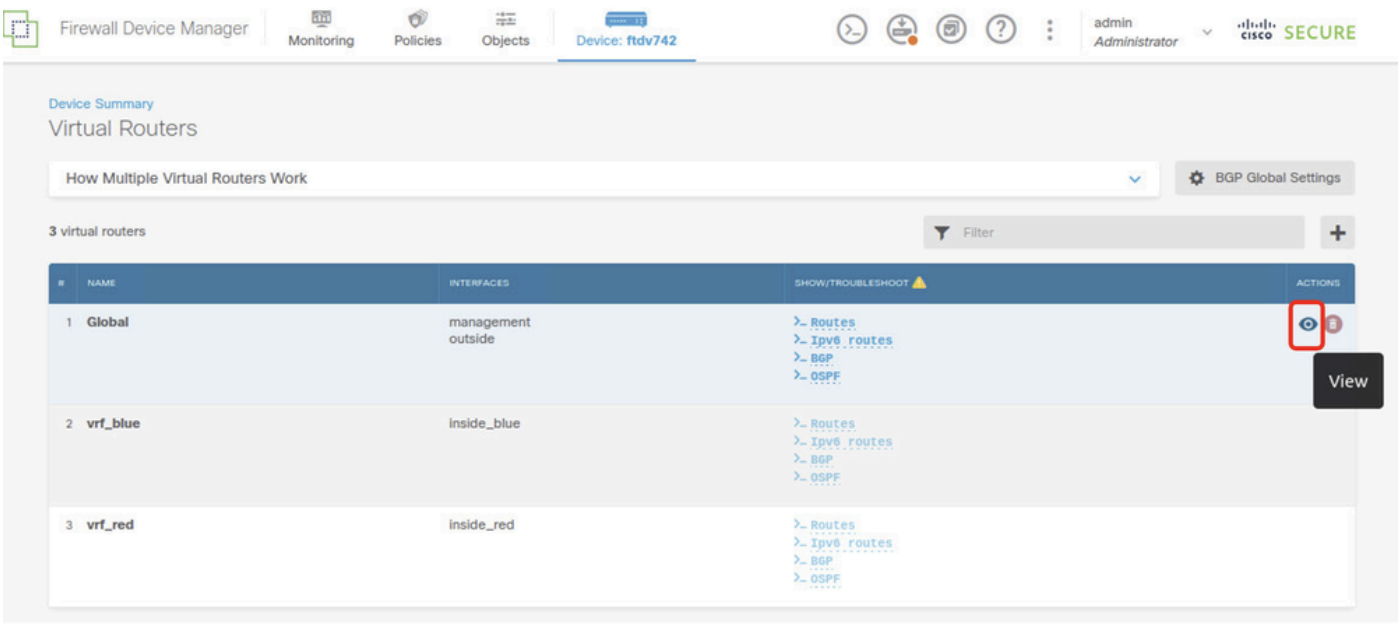


FTD_Create_Static_Route_VRF_Red_Details

Step 7. Create route leak from Global to virtual routers. The routes allow endpoints protected by the remote end of the site-to-site VPN to access the 192.168.10.0/24 network in the vrf_red virtual router and

192.168.20.0/24 network in the vrf_blue virtual router.

Navigate to **Device > Routing**, click **View Configuration**, and then click the **View** icon in the Action cell for the Global virtual router.



FTD_View_VRF_Global

Step 7.1. Click the **Static Routing** tab and then the + button.

FTD_Create_Static_Route_VRF_Global

Step 7.2. Provide the necessary information and click **OK**.

- Name: S2S_leak_blue
- Interface: inside_blue (GigabitEthernet0/2)
- Networks: local_blue_192.168.20.0
- Gateway: Leave this item blank.

Global

Add Static Route

Name

S2S_leak_blue

Description

The selected Interface belongs to a different virtual router. If you create this static route, the route will cross virtual router boundaries, with the risk that traffic from this virtual router will leak into another virtual router. Proceed with caution.

Interface

inside_blue (GigabitEthernet0/2)

Belongs to different Router

vrf_blue

Protocol

IPv4 IPv6

Networks

local_blue_192.168.20.0

Gateway

Please select a gateway

Metric

1

SLA Monitor Applicable only for IPv4 Protocol type

Please select an SLA Monitor

CANCEL OK

```
 encryption aes-256 aes-192 aes
 integrity sha512 sha384 sha256 sha
 group 21 20 16 15 14
 prf sha512 sha384 sha256 sha
 lifetime seconds 86400
```

Step 10. Create an IKEv2 ipsec-proposal that defines the same parameters configured on the FTD.

```
<#root>

crypto ipsec ikev2 ipsec-proposal

AES-SHA

 protocol esp encryption aes-256 aes-192 aes
 protocol esp integrity sha-512 sha-384 sha-256 sha-1
```

Step 11. Create an ipsec profile, referencing ipsec-proposal created in Step 10.

```
<#root>

crypto ipsec profile

demo_ipsec_profile

 set ikev2 ipsec-proposal

AES-SHA

 set security-association lifetime kilobytes 4608000
 set security-association lifetime seconds 28800
```

Step 12. Create a group policy allowing the IKEv2 protocol.

```
<#root>

group-policy

demo_gp_192.168.30.1

 internal
group-policy demo_gp_192.168.30.1 attributes
 vpn-tunnel-protocol ikev2
```

Step 13. Create a tunnel group for the peer FTD outside the IP address, referencing the group policy created in Step 12. and configuring the same pre-shared-key with FTD (created in Step 3.7).

```
<#root>
```

```
tunnel-group 192.168.30.1 type ipsec-l2l
tunnel-group 192.168.30.1 general-attributes
 default-group-policy
```

demo_gp_192.168.30.1

```
tunnel-group 192.168.30.1 ipsec-attributes
 ikev2 remote-authentication pre-shared-key *****
 ikev2 local-authentication pre-shared-key *****
```

Step 14. Enable IKEv2 on the outside interface.

```
crypto ikev2 enable outside
```

Step 15. Create a virtual tunnel.

<#root>

```
interface Tunnel1
 nameif demovti_asa
 ip address 169.254.10.2 255.255.255.0
 tunnel source interface outside
 tunnel destination 192.168.30.1
 tunnel mode ipsec ipv4
 tunnel protection ipsec profile
```

demo_ipsec_profile

Step 16. Create a static route.

```
route demovti_asa 192.168.10.0 255.255.255.0 169.254.10.1 1
route demovti_asa 192.168.20.0 255.255.255.0 169.254.10.1 1
route outside 0.0.0.0 0.0.0.0 192.168.40.3 1
```

Verify

Use this section in order to confirm that your configuration works properly.

Step 1. Navigate to the CLI of FTD and ASA via console or SSH in order to verify the VPN status of phase 1 and phase 2 through the commands **show crypto ikev2 sa** and **show crypto ipsec sa**.

FTD:

```
> system support diagnostic-cli
```

```
Attaching to Diagnostic CLI ... Press 'Ctrl+a then d' to detach.
Type help or '?' for a list of available commands.

ftdv742#
ftdv742# show crypto ikev2 sa

IKEv2 SAs:

Session-id:4, Status:UP-ACTIVE, IKE count:1, CHILD count:1

Tunnel-id Local                                                 Remote
 32157565 192.168.30.1/500                                      192.168.40.1/500                        G
      Encr: AES-CBC, keysize: 256, Hash: SHA512, DH Grp:21, Auth sign: PSK, Auth verify: PSK
      Life/Active Time: 86400/67986 sec
Child sa: local selector  0.0.0.0/0 - 255.255.255.255/65535
          remote selector 0.0.0.0/0 - 255.255.255.255/65535
          ESP spi in/out: 0x4cf55637/0xa493cc83

ftdv742# show crypto ipsec sa
interface: demovti
    Crypto map tag: __vti-crypto-map-Tunnel1-0-1, seq num: 65280, local addr: 192.168.30.1

      Protected vrf (ivrf): Global
      local ident (addr/mask/prot/port): (0.0.0.0/0.0.0.0/0/0)
      remote ident (addr/mask/prot/port): (0.0.0.0/0.0.0.0/0/0)
      current_peer: 192.168.40.1


      #pkts encaps: 30, #pkts encrypt: 30, #pkts digest: 30
      #pkts decaps: 30, #pkts decrypt: 30, #pkts verify: 30
      #pkts compressed: 0, #pkts decompressed: 0
      #pkts not compressed: 30, #pkts comp failed: 0, #pkts decomp failed: 0
      #pre-frag successes: 0, #pre-frag failures: 0, #fragments created: 0
      #PMTUs sent: 0, #PMTUs rcvd: 0, #decapsulated frgs needing reassembly: 0
      #TFC rcvd: 0, #TFC sent: 0
      #Valid ICMP Errors rcvd: 0, #Invalid ICMP Errors rcvd: 0
      #send errors: 0, #recv errors: 0

      local crypto endpt.: 192.168.30.1/500, remote crypto endpt.: 192.168.40.1/500
      path mtu 1500, ipsec overhead 94(44), media mtu 1500
      PMTU time remaining (sec): 0, DF policy: copy-df
      ICMP error validation: disabled, TFC packets: disabled
      current outbound spi: A493CC83
      current inbound spi : 4CF55637

    inbound esp sas:
      spi: 0x4CF55637 (1291146807)
         SA State: active
         transform: esp-aes-256 esp-sha-512-hmac no compression
         in use settings ={L2L, Tunnel, IKEv2, VTI, }
         slot: 0, conn_id: 13, crypto-map: __vti-crypto-map-Tunnel1-0-1
         sa timing: remaining key lifetime (kB/sec): (4055040/16867)
         IV size: 16 bytes
         replay detection support: Y
         Anti replay bitmap:
          0x00000000 0x00000001
    outbound esp sas:
      spi: 0xA493CC83 (2761149571)
         SA State: active
         transform: esp-aes-256 esp-sha-512-hmac no compression
         in use settings ={L2L, Tunnel, IKEv2, VTI, }
         slot: 0, conn_id: 13, crypto-map: __vti-crypto-map-Tunnel1-0-1
```

```
         sa timing: remaining key lifetime (kB/sec): (4285440/16867)
         IV size: 16 bytes
         replay detection support: Y
         Anti replay bitmap:
          0x00000000 0x00000001
```

ASA:

```
ASA9203# show crypto ikev2 sa

IKEv2 SAs:

Session-id:4, Status:UP-ACTIVE, IKE count:1, CHILD count:1

Tunnel-id Local                                           Remote
 26025779 192.168.40.1/500                                192.168.30.1/500                        G
      Encr: AES-CBC, keysize: 256, Hash: SHA512, DH Grp:21, Auth sign: PSK, Auth verify: PSK
      Life/Active Time: 86400/68112 sec
Child sa: local selector  0.0.0.0/0 - 255.255.255.255/65535
          remote selector 0.0.0.0/0 - 255.255.255.255/65535
          ESP spi in/out: 0xa493cc83/0x4cf55637
ASA9203#
ASA9203# show cry
ASA9203# show crypto ipsec sa
interface: demovti_asa
    Crypto map tag: __vti-crypto-map-Tunnel1-0-1, seq num: 65280, local addr: 192.168.40.1

      Protected vrf (ivrf): Global
      local ident (addr/mask/prot/port): (0.0.0.0/0.0.0.0/0/0)
      remote ident (addr/mask/prot/port): (0.0.0.0/0.0.0.0/0/0)
      current_peer: 192.168.30.1


      #pkts encaps: 30, #pkts encrypt: 30, #pkts digest: 30
      #pkts decaps: 30, #pkts decrypt: 30, #pkts verify: 30
      #pkts compressed: 0, #pkts decompressed: 0
      #pkts not compressed: 30, #pkts comp failed: 0, #pkts decomp failed: 0
      #pre-frag successes: 0, #pre-frag failures: 0, #fragments created: 0
      #PMTUs sent: 0, #PMTUs rcvd: 0, #decapsulated frgs needing reassembly: 0
      #TFC rcvd: 0, #TFC sent: 0
      #Valid ICMP Errors rcvd: 0, #Invalid ICMP Errors rcvd: 0
      #send errors: 0, #recv errors: 0

      local crypto endpt.: 192.168.40.1/500, remote crypto endpt.: 192.168.30.1/500
      path mtu 1500, ipsec overhead 94(44), media mtu 1500
      PMTU time remaining (sec): 0, DF policy: copy-df
      ICMP error validation: disabled, TFC packets: disabled
      current outbound spi: 4CF55637
      current inbound spi : A493CC83

    inbound esp sas:
      spi: 0xA493CC83 (2761149571)
         SA State: active
         transform: esp-aes-256 esp-sha-512-hmac no compression
         in use settings ={L2L, Tunnel, IKEv2, VTI, }
         slot: 0, conn_id: 4, crypto-map: __vti-crypto-map-Tunnel1-0-1
         sa timing: remaining key lifetime (kB/sec): (4101120/16804)
         IV size: 16 bytes
```

```
        replay detection support: Y
        Anti replay bitmap:
         0x00000000 0x00000001
    outbound esp sas:
      spi: 0x4CF55637 (1291146807)
        SA State: active
        transform: esp-aes-256 esp-sha-512-hmac no compression
        in use settings ={L2L, Tunnel, IKEv2, VTI, }
        slot: 0, conn_id: 4, crypto-map: __vti-crypto-map-Tunnel1-0-1
        sa timing: remaining key lifetime (kB/sec): (4055040/16804)
        IV size: 16 bytes
        replay detection support: Y
        Anti replay bitmap:
         0x00000000 0x00000001
```

Step 2. Verify the route of VRF and Global on FTD.

```
ftdv742# show route

Codes: L - local, C - connected, S - static, R - RIP, M - mobile, B - BGP
       D - EIGRP, EX - EIGRP external, O - OSPF, IA - OSPF inter area
       N1 - OSPF NSSA external type 1, N2 - OSPF NSSA external type 2
       E1 - OSPF external type 1, E2 - OSPF external type 2, V - VPN
       i - IS-IS, su - IS-IS summary, L1 - IS-IS level-1, L2 - IS-IS level-2
       ia - IS-IS inter area, * - candidate default, U - per-user static route
       o - ODR, P - periodic downloaded static route, + - replicated route
       SI - Static InterVRF, BI - BGP InterVRF
Gateway of last resort is 192.168.30.3 to network 0.0.0.0

S*       0.0.0.0 0.0.0.0 [1/0] via 192.168.30.3, outside
C        169.254.10.0 255.255.255.0 is directly connected, demovti
L        169.254.10.1 255.255.255.255 is directly connected, demovti
SI       192.168.10.0 255.255.255.0 [1/0] is directly connected, inside_red
SI       192.168.20.0 255.255.255.0 [1/0] is directly connected, inside_blue
C        192.168.30.0 255.255.255.0 is directly connected, outside
L        192.168.30.1 255.255.255.255 is directly connected, outside


ftdv742# show route vrf vrf_blue


Routing Table: vrf_blue
Codes: L - local, C - connected, S - static, R - RIP, M - mobile, B - BGP
       D - EIGRP, EX - EIGRP external, O - OSPF, IA - OSPF inter area
       N1 - OSPF NSSA external type 1, N2 - OSPF NSSA external type 2
       E1 - OSPF external type 1, E2 - OSPF external type 2, V - VPN
       i - IS-IS, su - IS-IS summary, L1 - IS-IS level-1, L2 - IS-IS level-2
       ia - IS-IS inter area, * - candidate default, U - per-user static route
       o - ODR, P - periodic downloaded static route, + - replicated route
       SI - Static InterVRF, BI - BGP InterVRF
Gateway of last resort is not set

C        192.168.20.0 255.255.255.0 is directly connected, inside_blue
L        192.168.20.1 255.255.255.255 is directly connected, inside_blue
SI       192.168.50.0 255.255.255.0 [1/0] is directly connected, demovti


ftdv742# show route vrf vrf_red
```

```
Routing Table: vrf_red
Codes: L - local, C - connected, S - static, R - RIP, M - mobile, B - BGP
       D - EIGRP, EX - EIGRP external, O - OSPF, IA - OSPF inter area
       N1 - OSPF NSSA external type 1, N2 - OSPF NSSA external type 2
       E1 - OSPF external type 1, E2 - OSPF external type 2, V - VPN
       i - IS-IS, su - IS-IS summary, L1 - IS-IS level-1, L2 - IS-IS level-2
       ia - IS-IS inter area, * - candidate default, U - per-user static route
       o - ODR, P - periodic downloaded static route, + - replicated route
       SI - Static InterVRF, BI - BGP InterVRF
Gateway of last resort is not set

C        192.168.10.0 255.255.255.0 is directly connected, inside_red
L        192.168.10.1 255.255.255.255 is directly connected, inside_red
SI       192.168.50.0 255.255.255.0 [1/0] is directly connected, demovti
```

Step 3. Verify ping test.

Before ping, check the counters of **show crypto ipsec sa | inc interface:|encap|decap** on FTD.

In this example, Tunnel1 shows 30 packets for both encapsulation and decapsulation.

```
ftdv742# show crypto ipsec sa | inc interface:|encap|decap
interface: demovti
      #pkts encaps: 30, #pkts encrypt: 30, #pkts digest: 30
      #pkts decaps: 30, #pkts decrypt: 30, #pkts verify: 30
      #PMTUs sent: 0, #PMTUs rcvd: 0, #decapsulated frgs needing reassembly: 0
ftdv742#
```

Client1 ping Client3 successfully.

```
Client1#ping 192.168.50.10
Type escape sequence to abort.
Sending 5, 100-byte ICMP Echos to 192.168.50.10, timeout is 2 seconds:
!!!!!
Success rate is 100 percent (5/5), round-trip min/avg/max = 5/299/620 ms
```

Client2 ping Client3 successfully.

```
Client2#ping 192.168.50.10
Type escape sequence to abort.
Sending 5, 100-byte ICMP Echos to 192.168.50.10, timeout is 2 seconds:
!!!!!
Success rate is 100 percent (5/5), round-trip min/avg/max = 11/297/576 ms
```

Check the counters of **show crypto ipsec sa | inc interface:|encap|decap** on FTD after ping successfully.

In this example, Tunnel1 shows 40 packets for both encapsulation and decapsulation after a successful ping. Additionally, both counters increased by 10 packets, matching the 10 ping echo requests, indicating that the ping traffic successfully passed through the IPSec tunnel.

```
ftdv742# show crypto ipsec sa | inc interface:|encap|decap
interface: demovti
      #pkts encaps: 40, #pkts encrypt: 40, #pkts digest: 40
      #pkts decaps: 40, #pkts decrypt: 40, #pkts verify: 40
      #PMTUs sent: 0, #PMTUs rcvd: 0, #decapsulated frgs needing reassembly: 0
```

Troubleshoot

This section provides information you can use in order to troubleshoot your configuration.

You can use those debug commands to troubleshoot the VPN section.

```
debug crypto ikev2 platform 255
debug crypto ikev2 protocol 255
debug crypto ipsec 255
debug vti 255
```

You can use those debug commands in order to troubleshoot the route section.

```
debug ip routing
```

Related Information

- Cisco Secure Firewall Device Manager Configuration Guide, Version 7.4
- Cisco Secure Firewall ASA VPN CLI Configuration Guide, 9.20
- Cisco Technical Support & Downloads