

Configure Route-Based Site-To-Site VPN Between ASA and FTD with BGP as Overlay

Contents

[Introduction](#)

[Prerequisites](#)

[Requirements](#)

[Components Used](#)

[Background Information](#)

[Configure](#)

[Network Diagram](#)

[Configurations](#)

[Configure IPSec VPN on FTD using FMC](#)

[Configure Loopback Interface on FTD using FMC](#)

[Configure IPSec VPN on ASA](#)

[Configure Loopback Interface on ASA](#)

[Configure Overlay BGP on FTD using FMC](#)

[Configure Overlay BGP on ASA](#)

[Verify](#)

[Outputs on FTD](#)

[Outputs on ASA](#)

[Troubleshoot](#)

Introduction

This document describes how to configure a route-based Site-to-Site VPN tunnel between Adaptive Security Appliance (ASA) and Firepower Threat Defense managed (FTD) by a Firepower Management Center (FMC) with dynamic routing Border Gateway Protocol (BGP) as an overlay.

Prerequisites

Requirements

Cisco recommends that you have knowledge of these topics:

- Basic understanding of IPsec site-to-site VPN
- BGP configurations on FTD and ASA
- Experience with FMC

Components Used

- Cisco ASA version 9.20(2)2
- Cisco FMC version 7.4.1
- Cisco FTD version 7.4.1

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

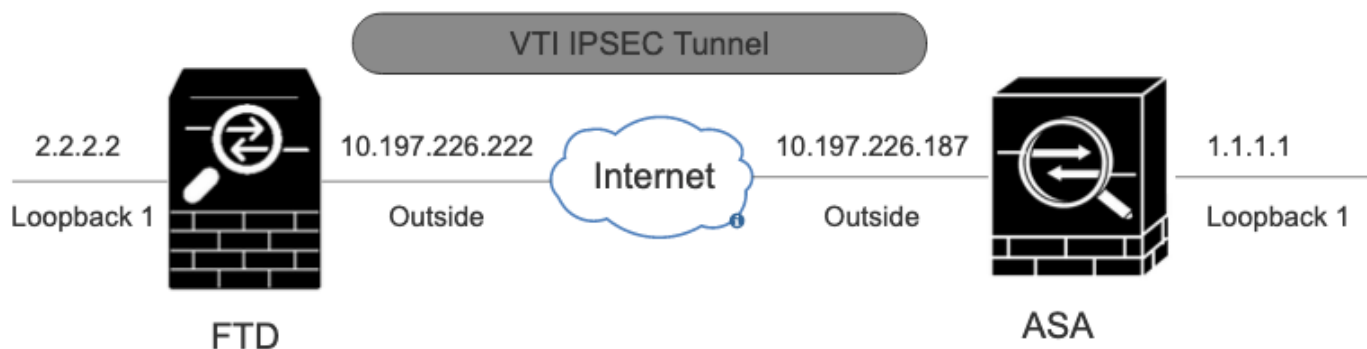
Route-based VPN allows the determination of interesting traffic to be encrypted, or sent over a VPN tunnel, and uses traffic routing instead of policy/access-list as in a Policy-based or Crypto-map-based VPN. The encryption domain is set to allow any traffic which enters the IPsec tunnel. IPsec Local and remote traffic selectors are set to 0.0.0.0/0.0.0.0. Any traffic routed into the IPsec tunnel is encrypted regardless of the source/destination subnet.

This document focuses on Static Virtual Tunnel Interface (SVTI) configuration with dynamic routing BGP as an overlay.

Configure

This section describes the configuration needed on the ASA and FTD to bring up BGP neighborship through an SVTI IPsec Tunnel.

Network Diagram



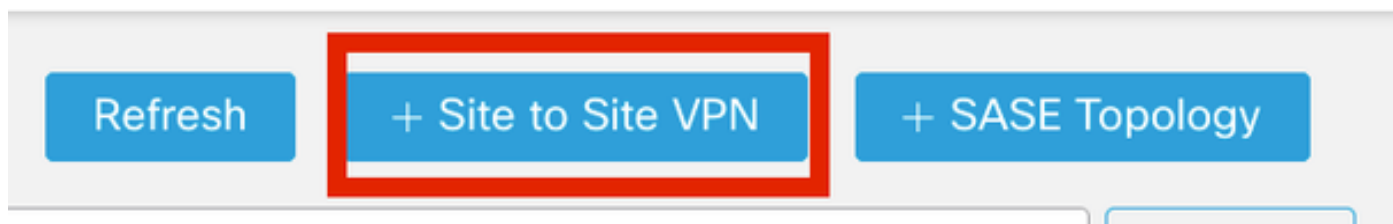
Network Diagram

Configurations

Configure IPsec VPN on FTD using FMC

Step 1. Navigate to `Devices > VPN > Site To Site` .

Step 2. Click on `+Site to Site VPN` .



Site-To-Site VPN

Step 3. Provide a `Topology Name` and select the Type of VPN as `Route Based (VTI)`. Choose the `IKE Version`.

For this demonstration:

Topology Name: ASAv-VTI

IKE Version: IKEv2

Edit VPN Topology ?

Topology Name:*

Policy Based (Crypto Map) Route Based (VTI)

Network Topology:

IKE Version:* IKEv1 IKEv2

VPN-Topology

Step 4. Choose the Device on which the tunnel needs to be configured. You can add a new Virtual Tunnel Interface (click on the + icon), or select one from the existing list.

Endpoints **IKE** IPsec Advanced

Node A

Device:*

Virtual Tunnel Interface:*
 +

Tunnel Source IP is Private [Edit VTI](#)

Send Local Identity to Peers

+ Add Backup VTI (optional)

▶ Advanced Settings

Endpoint Node A

Step 5. Define the parameters of the New Virtual Tunnel Interface. Click Ok.

For this demonstration:

Name: ASA-VTI

Description (Optional): VTI Tunnel with Extranet ASA

Security Zone: VTI-Zone

Tunnel ID: 1

IP Address: 169.254.2.1/24

Tunnel Source: GigabitEthernet0/1 (Outside)

IPsec Tunnel mode: IPv4

Add Virtual Tunnel Interface



General

Path Monitoring

Tunnel Type

- Static Dynamic

Name:*

ASAv-VTI

Enabled

Description:

VTI Tunnel with Extranet ASA

Security Zone:

VTI-Zone

Priority:

0

(0 - 65535)

Virtual Tunnel Interface Details

An interface named Tunnel<ID> is configured. Tunnel Source is a physical interface where VPN tunnel terminates for the VT.

Tunnel ID:*

3

(0 - 10413)

Tunnel Source:*

GigabitEthernet0/1 (Outside)

10.197.226.222

IPsec Tunnel Details

IPsec Tunnel mode is decided by VPN traffic IP type. Configure IPv4 and IPv6 addresses accordingly.

IPsec Tunnel Mode:*

- IPv4 IPv6

IP Address:*

Configure IP

169.254.2.1/24

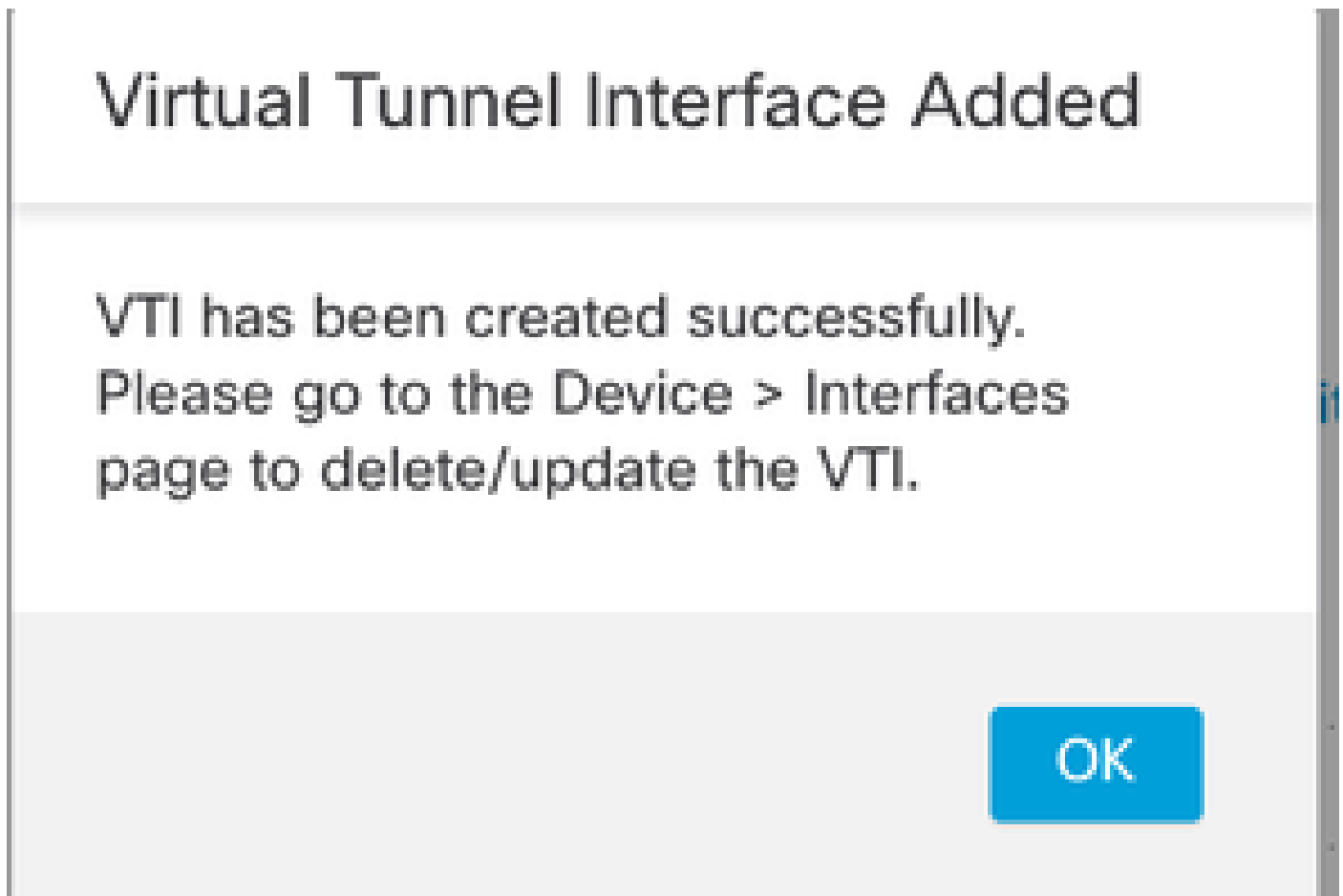
Borrow IP (IP unnumbered)

Loopback1 (loopback)

Cancel

OK

Step 6. Click OK on the popup mentioning that the new VTI has been created.



Virtual Tunnel Interface Added

Step 7. Choose the newly created VTI or a VTI under **Virtual Tunnel Interface**. Provide the information for Node B (which is the peer device).

For this demonstration:

Device: Extranet

Device Name: ASAv-Peer

Endpoint IP Address: 10.197.226.187

Node A

Device:*
FTD

Virtual Tunnel Interface:*
ASAv-VTI (IP: 169.254.2.1)

Tunnel Source: Outside (IP: 10.197.226.222) [Edit VTI](#)

Tunnel Source IP is Private

Send Local Identity to Peers

[+ Add Backup VTI \(optional\)](#)

Additional Configuration ⓘ

Route traffic to the VTI : [Routing Policy](#)

Permit VPN traffic : [AC Policy](#)

Node B

Device:*
Extranet

Device Name*:
ASAv-Peer

Endpoint IP Address*:
10.197.226.187

Endpoint Node B



Step 8. Navigate to the **IKE** tab. Click on . You can choose to use a pre-defined Policy or click the +button next to the Policytab to create a new one.

Step 9. (Optional, if you create a new IKEv2 Policy.) Provide a Namefor the Policy and select the Algorithms to be used in the policy. Click Save.

For this demonstration:

Name: ASAv-IKEv2-policy

Integrity Algorithms: SHA-256

Encryption Algorithms: AES-256

PRF Algorithms: SHA-256

Diffie-Hellman Group: 14

Edit IKEv2 Policy



Name:*

ASAv-IKEv2-Policy

Description:

Priority: (1-65535)

1

Lifetime: seconds (120-2147483647)

86400

	Available Algorithms		Selected Algorithms
<ul style="list-style-type: none">Integrity AlgorithmsEncryption AlgorithmsPRF AlgorithmsDiffie-Hellman Group	MD5 SHA SHA512 SHA256 SHA384 NULL	Add	SHA256

Cancel

Save

IKEv2-Policy

Step 10. Choose the newly created Policy or the Policy that exists. Select the Authentication Type. If a Pre-shared Manual Key is used, enter the key in the Key and Confirm Key box.

For this demonstration:

Policy: ASAv-IKEv2-Policy

Authentication Type: Pre-shared Manual Key

IKEv2 Settings

Policies:* ASAv-IKEv2-Policy

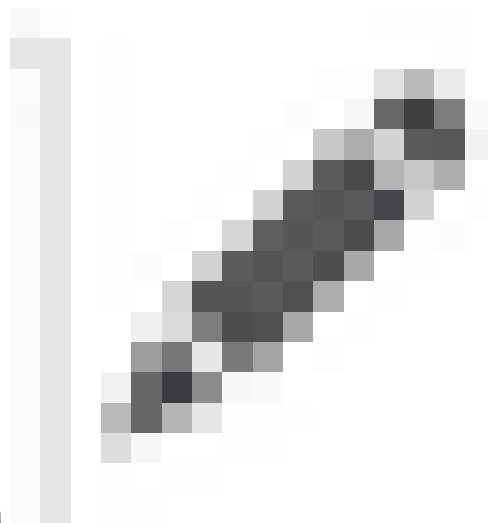
Authentication Type: Pre-shared Manual Key

Key:*

Confirm Key:*

Enforce hex-based pre-shared key only

Authentication



Step 11. Navigate to the IPsec tab. Click on can choose to use a pre-defined IKEv2 IPsec Proposal or create a new one. Click the +button next to the IKEv2 IPsec Proposal tab.

Step 12. (Optional, if you create a new IKEv2 IPsec Proposal.) Enter a Name for the Proposal and select the Algorithms to be used in the Proposal. Click Save.

For this demonstration:

Name: ASAv-IPSec-Policy

ESP Hash: SHA-256

ESP Encryption: AES-256

New IKEv2 IPsec Proposal



Name:*

ASAv-IPSec-Policy

Description:

ESP Hash

ESP Encryption

Available Algorithms

- SHA-512
- SHA-384
- SHA-256
- SHA-1
- MD5
- NULL

Add

Selected Algorithms

- SHA-256

Cancel

Save

IKEv2-IPsec-Proposal

Step 13. Choose the newly created Proposal or Proposal that exists from the list of proposals available. Click ok.

IKEv2 IPsec Proposal




Available Transform Sets

- AES-256-SHA-256
- AES-GCM
- AES-SHA
- ASAv-IPSec-Policy
- DES_SHA-1
- Umbrella-AES-GCM-256

Add

Selected Transform Sets

ASAv-IPSec-Policy 

Cancel

OK

Transform Set

Step 14. (Optional) Choose the Perfect Forward Secrecy settings. Configure the IPsec Lifetime Duration and Lifetime Size.



For this demonstration:

Perfect Forward Secrecy: Modulus Group 14

Lifetime Duration: 28800 (Default)

Lifetime Size: 4608000 (Default)

Endpoints **IKE** IPsec Advanced

Transform Sets: IKEv1 IPsec Proposals  IKEv2 IPsec Proposals* 

tunnel_aes256_sha ASAv-IPSec-Policy

Enable Security Association (SA) Strength Enforcement

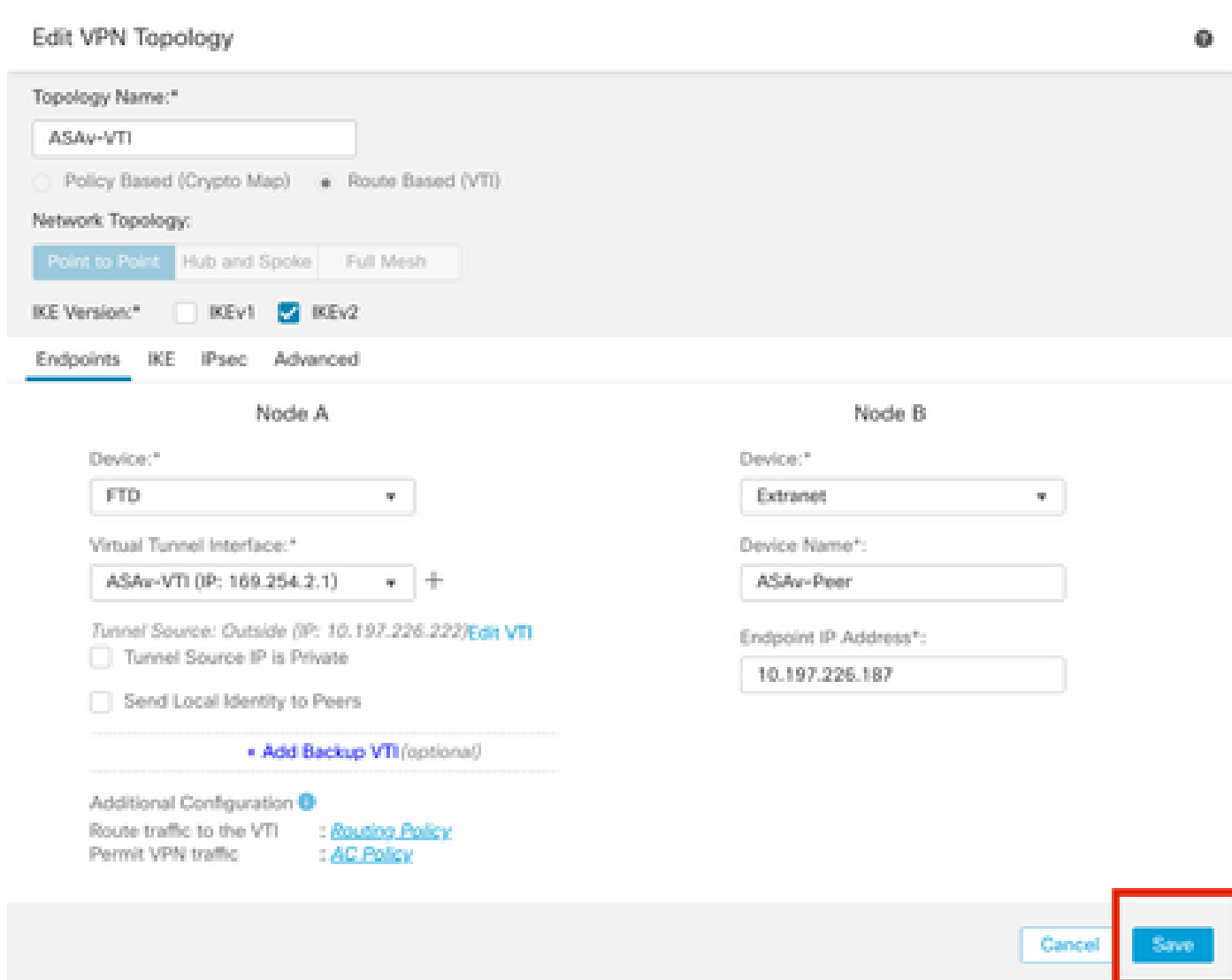
Enable Perfect Forward Secrecy

Modulus Group:

Lifetime Duration*: Seconds (Range 120-2147483647)

Lifetime Size: Kbytes (Range 10-2147483647)

Step 15. Check the configured settings. Click **Save**, as shown in this image.



Saving the configuration

Configure Loopback Interface on FTD using FMC

Navigate to **Devices > Device Management** . Edit the device where the loopback needs to be configured.

Step 1. Go to **Interfaces > Add Interfaces > Loopback Interface** .



Navigate to Loopback interface

Step 2. Enter the name "loopback", provide a loopback ID "1" and enable the interface.

Edit Loopback Interface



General

IPv4

IPv6

Name:

loopback

Enabled

Loopback ID:*

1

(1-1024)

Description

Cancel

OK

Enabling Loopback interface

Step 3. Configure the IP address for the interface, click OK.

Edit Loopback Interface



General

IPv4

IPv6

IP Type:

Use Static IP

IP Address:

2.2.2.2/24

e.g. 192.168.1.1/255.255.255.0 or 192.168.1.1/24

Cancel

OK

Provide Ip address to loopback interface

Configure IPSec VPN on ASA

!--- Configure IKEv2 Policy ---!

```
crypto ikev2 policy 1
encryption aes-256
integrity sha256
group 14
prf sha256
lifetime seconds 86400
```

!--- Enable IKEv2 on the outside interface ---!

```
crypto ikev2 enable outside
```

!---Configure Tunnel-Group with pre-shared-key---!

```
tunnel-group 10.197.226.222 type ipsec-l2l
tunnel-group 10.197.226.222 ipsec-attributes
ikev2 remote-authentication pre-shared-key *****
ikev2 local-authentication pre-shared-key *****
```

!--- Configure IPSec Policy ---!

```
crypto ipsec ikev2 ipsec-proposal ipsec_proposal_for_FTD
protocol esp encryption aes-256
protocol esp integrity sha-256
```

!--- Configure IPSec Profile ---!

```
crypto ipsec profile ipsec_profile_for_FTD
set ikev2 ipsec-proposal FTD-ipsec-proposal
set pfs group14
```

!--- Configure VTI ---!

```
interface Tunnel1
nameif FTD-VTI
ip address 169.254.2.2 255.255.255.0
tunnel source interface outside
tunnel destination 10.197.226.222
tunnel mode ipsec ipv4
tunnel protection ipsec profile ipsec_profile_for_FTD
```

!--- Configure the WAN routes ---!

```
route outside 0.0.0.0 0.0.0.0 10.197.226.1 1
```

Configure Loopback Interface on ASA

```
interface Loopback1
nameif loopback
ip address 1.1.1.1 255.255.255.0
```

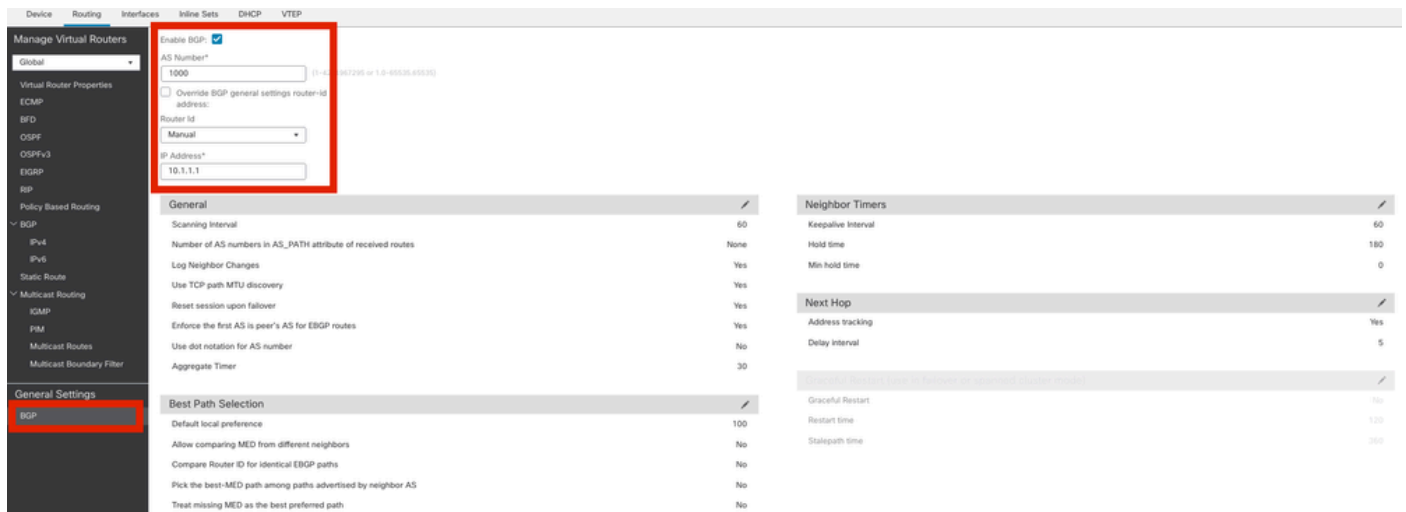
Configure Overlay BGP on FTD using FMC

Navigate to **Devices > Device Management**. Edit the device where the VTI tunnel is configured, then navigate to **Routing > General Settings > BGP**.

Step 1. Enable BGP and configure the Autonomous System (AS) Number and Router ID, as shown in this image.

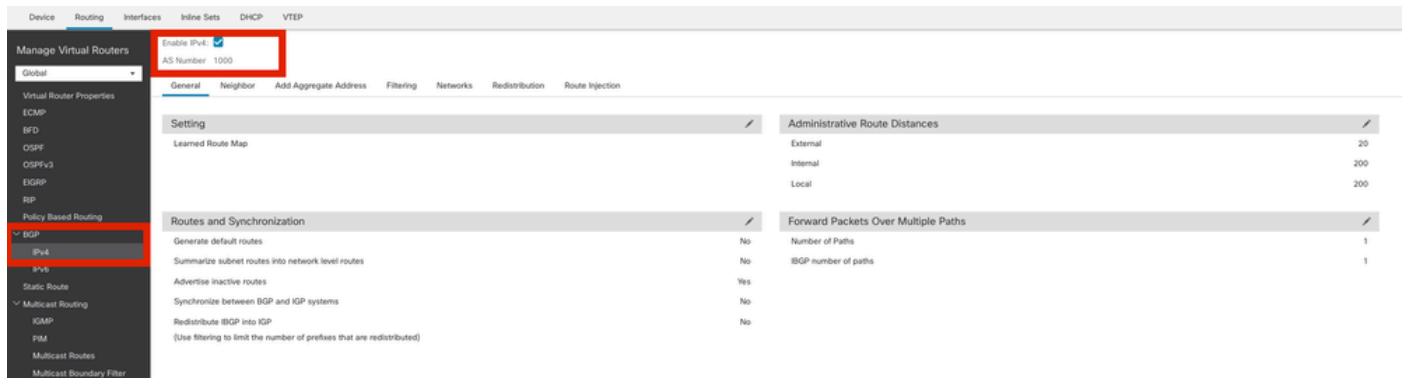
AS number needs to be the same on both the devices FTD and ASA.

Router ID is used to identify each router participating in BGP.



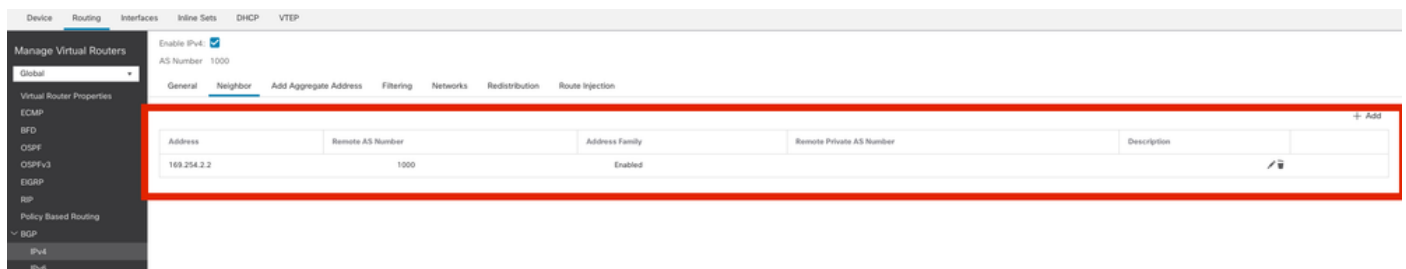
Navigate to configure BGP

Step 2. Navigate to BGP > IPv4 and enable BGP IPv4 on the FTD.



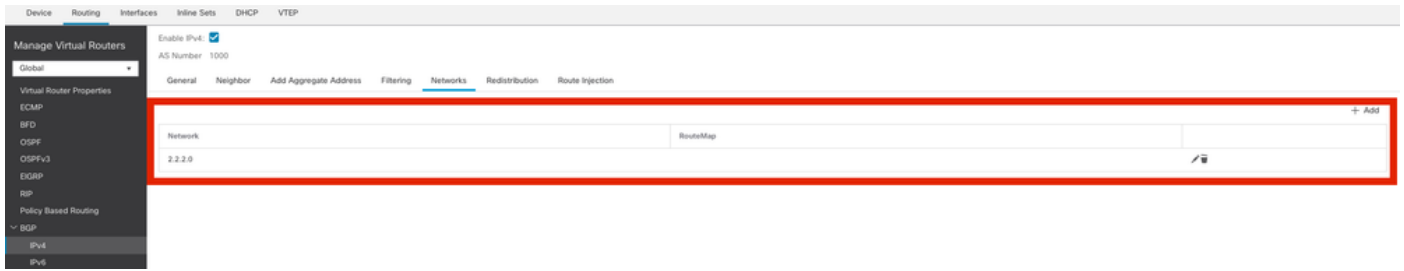
Enable BGP

Step 3. Under the Neighbor Tab, add the ASA v VTI tunnel ip address as a neighbor and enable the neighbor.



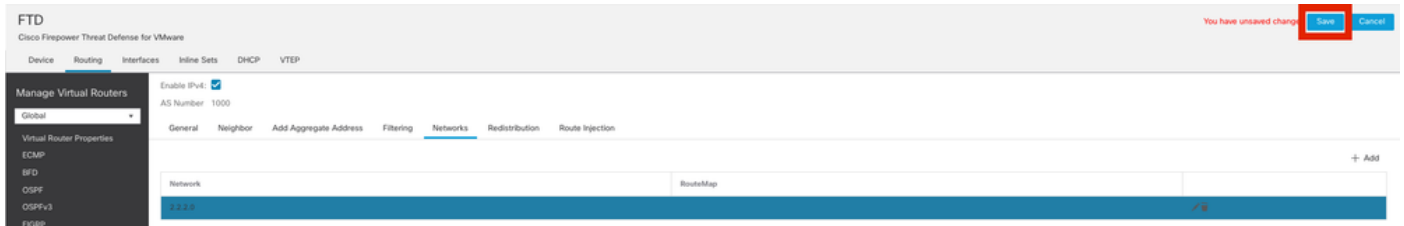
Add BGP neighbor

Step 4. Under Networks, add the networks you want to advertise through BGP that need to go through the VTI tunnel, in this case, loopback1.



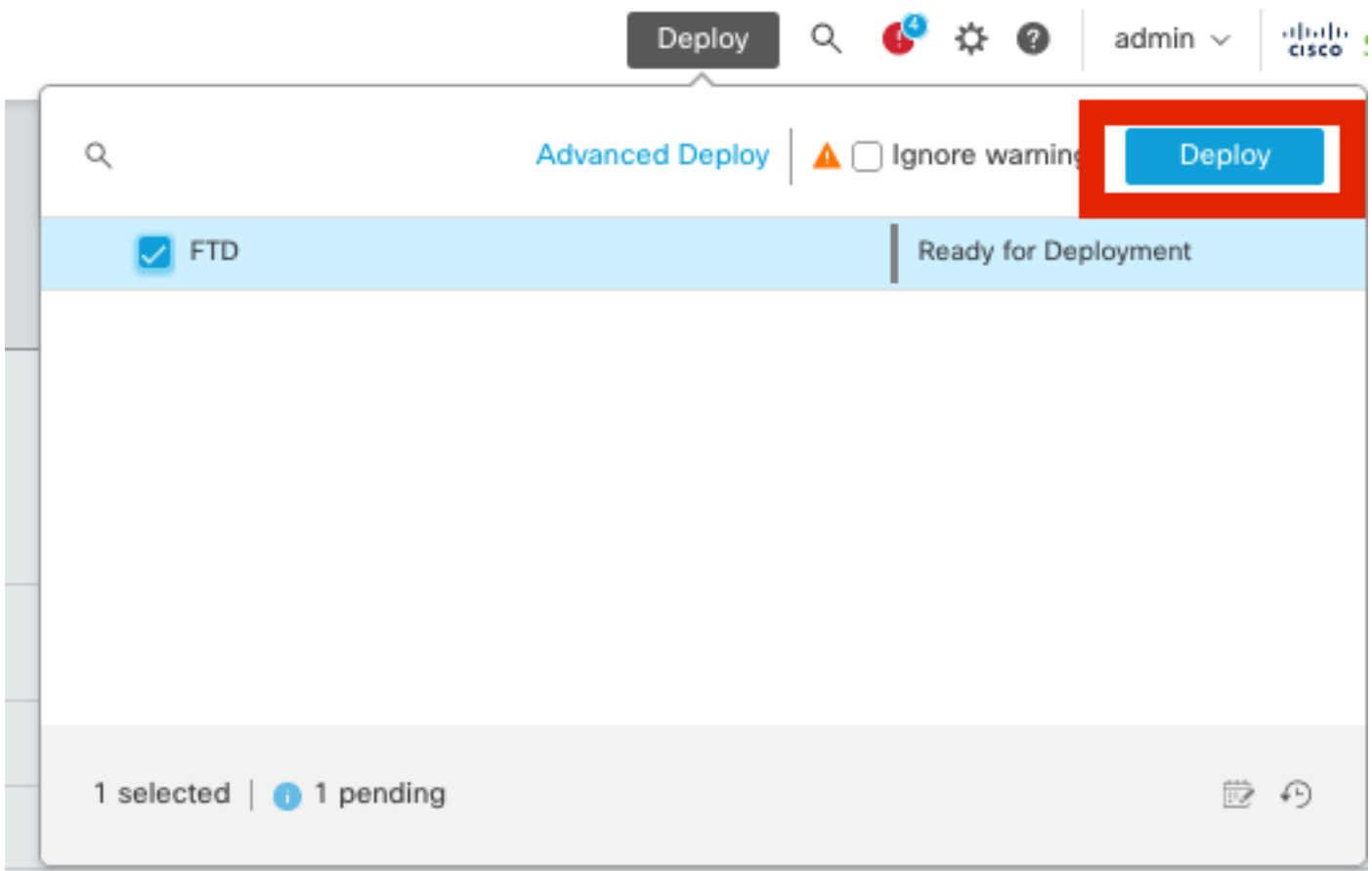
Add BGP Networks

Step 5. All other BGP settings are optional and you may configure them as per your environment. Verify the configuration and Click **Save**.



Save BGP configuration

Step 6. Deploy all the configurations.



Deployment

Configure Overlay BGP on ASA

```
router bgp 1000
  bgp log-neighbor-changes
  bgp router-id 10.1.1.2
  address-family ipv4 unicast
  neighbor 169.254.2.1 remote-as 1000
  neighbor 169.254.2.1 transport path-mtu-discovery disable
  neighbor 169.254.2.1 activate
  network 1.1.1.0 mask 255.255.255.0
  no auto-summary
  no synchronization
  exit-address-family
```

Verify

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

Outputs on FTD

```
<#root>
```

```
#show crypto ikev2 sa
```

```
IKEv2 SAs:
```

```
Session-id:20, Status:UP-ACTIVE, IKE count:1, CHILD count:1
```

Tunnel-id	Local	Remote	fvr/f/ivr/f	Status	Role
666846307	10.197.226.222/500	10.197.226.187/500	Global/Global	READY	RESPOND

Encr: AES-CBC, keysize: 256, Hash: SHA256, DH Grp:14, Auth sign: PSK, Auth verify: PSK
Life/Active Time: 86400/1201 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: 0xa14edaf6/0x8540d49e

```
#show crypto ipsec sa
```

```
interface: ASAv-VTI
```

```
Crypto map tag: __vti-crypto-map-Tunnel1-0-1, seq num: 65280, local addr: 10.197.226.222
```

```
Protected vrf (ivr/f): 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: 10.197.226.187
```

```
#pkts encaps: 45, #pkts encrypt: 45, #pkts digest: 45
```

```
#pkts decaps: 44, #pkts decrypt: 44, #pkts verify: 44
```

```
#pkts compressed: 0, #pkts decompressed: 0
```

```
#pkts not compressed:0, #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.: 10.197.226.222/500, remote crypto endpt.: 10.197.226.187/500
```

```
path mtu 1500, ipsec overhead 78(44), media mtu 1500
```

PMTU time remaining (sec): 0, DF policy: copy-df
ICMP error validation: disabled, TFC packets: disabled
current outbound spi: 8540D49E
current inbound spi : A14EDAF6

inbound esp sas:

spi: 0xA14EDAF6 (2706299638)
SA State: active
transform: esp-aes-256 esp-sha-256-hmac no compression
in use settings = {L2L, Tunnel, PFS Group 14, IKEv2, VTI, }
slot: 0, conn_id: 49, crypto-map: __vti-crypto-map-Tunnel1-0-1
sa timing: remaining key lifetime (kB/sec): (4331517/27595)
IV size: 16 bytes
replay detection support: Y
Anti replay bitmap:
000001FFF 0xFFFFFFFF

outbound esp sas:

spi: 0x8540D49E (2235618462)
SA State: active
transform: esp-aes-256 esp-sha-256-hmac no compression
in use settings = {L2L, Tunnel, PFS Group 14, IKEv2, VTI, }
slot: 0, conn_id: 49, crypto-map: __vti-crypto-map-Tunnel1-0-1
sa timing: remaining key lifetime (kB/sec): (4101117/27595)
IV size: 16 bytes
replay detection support: Y
Anti replay bitmap:
0x00000000 0x00000001

#show bgp summary

BGP router identifier 10.1.1.1, local AS number 1000
BGP table version is 5, main routing table version 5
2 network entries using 400 bytes of memory
2 path entries using 160 bytes of memory
2/2 BGP path/bestpath attribute entries using 416 bytes of memory
0 BGP route-map cache entries using 0 bytes of memory
0 BGP filter-list cache entries using 0 bytes of memory
BGP using 976 total bytes of memory
BGP activity 21/19 prefixes, 24/22 paths, scan interval 60 secs

Neighbor	V	AS	MsgRcvd	MsgSent	TblVer	InQ	OutQ	Up/Down
169.254.2.2	4	1000	22	22	5		0	0

#show bgp neighbors

BGP neighbor is 169.254.2.2, vrf single_vf, remote AS 1000, internal link
BGP version 4, remote router ID 10.1.1.2
BGP state = Established, up for 00:19:49
Last read 00:01:04, last write 00:00:38, hold time is 180, keepalive interval is 60 seconds
Neighbor sessions:
1 active, is not multisession capable (disabled)
Neighbor capabilities:
Route refresh: advertised and received(new)
Four-octets ASN Capability: advertised and received
Address family IPv4 Unicast: advertised and received
Multisession Capability:
Message statistics:
InQ depth is 0
OutQ depth is 0

	Sent	Rcvd
Opens	1	1
Notifications:	0	0
Updates:	2	2
Keepalives:	19	19
Route Refresh:	0	0
Total:	22	22

Default minimum time between advertisement runs is 0 seconds

For address family: IPv4 Unicast
 Session: 169.254.2.2
 BGP table version 5, neighbor version 5/0
 Output queue size : 0
 Index 15
 15 update-group member

	Sent	Rcvd	
Prefix activity:	----	----	
Prefixes Current:	1	1	(Consumes 80 bytes)
Prefixes Total:	1	1	
Implicit Withdraw:	0	0	
Explicit Withdraw:	0	0	
Used as bestpath:	n/a	1	
Used as multipath:	n/a	0	

	Outbound	Inbound
Local Policy Denied Prefixes:	-----	-----
Bestpath from this peer:	1	n/a
Invalid Path:	1	n/a
Total:	2	0

Number of NLRIs in the update sent: max 1, min 0

Address tracking is enabled, the RIB does have a route to 169.254.2.2
 Connections established 7; dropped 6
 Last reset 00:20:06, due to Peer closed the session of session 1
 Transport(tcp) path-mtu-discovery is disabled
 Graceful-Restart is disabled

#show route bgp

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 10.197.226.1 to network 0.0.0.0

B 1.1.1.0 255.255.255.0 [200/0] via 169.254.2.2, 00:19:55

Outputs on ASA

<#root>

#show crypto ikev2 sa

IKEv2 SAs:

Session-id:7, Status:UP-ACTIVE, IKE count:1, CHILD count:1

Tunnel-id	Local	Remote	fvr/f/ivrf	Status
442126361	10.197.226.187/500	10.197.226.222/500	Global/Global	READY

Encr: AES-CBC, keysize: 256, Hash: SHA256, DH Grp:14, Auth sign: PSK, Auth verify: PSK
Life/Active Time: 86400/1200 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: 0x8540d49e/0xa14edaf6

#show crypto ipsec sa

interface: FTD-VTI

Crypto map tag: __vti-crypto-map-Tunnel1-0-1, seq num: 65280, local addr: 10.197.226.187

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: 10.197.226.222

#pkts encaps: 44 #pkts encrypt: 44, #pkts digest: 44
#pkts decaps: 45, #pkts decrypt: 45, #pkts verify: 45
#pkts compressed: 0, #pkts decompressed: 0
#pkts not compressed:0, #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.: 10.197.226.187/500, remote crypto endpt.: 10.197.226.222/500
path mtu 1500, ipsec overhead 78(44), media mtu 1500
PMTU time remaining (sec): 0, DF policy: copy-df
ICMP error validation: disabled, TFC packets: disabled
current outbound spi: A14EDAF6
current inbound spi : 8540D49E

inbound esp sas:

spi: 0x8540D49E (2235618462)
SA State: active
transform: esp-aes-256 esp-sha-256-hmac no compression
in use settings = {L2L, Tunnel, PFS Group 14, IKEv2, VTI, }
slot: 0, conn_id: 9, crypto-map: __vti-crypto-map-Tunnel1-0-1
sa timing: remaining key lifetime (kB/sec): (4147198/27594)
IV size: 16 bytes
replay detection support: Y
Anti replay bitmap:
0x00000000 0x007FFFFFFF

outbound esp sas:

spi: 0xA14EDAF6 (2706299638)
SA State: active
transform: esp-aes-256 esp-sha-256-hmac no compression
in use settings = {L2L, Tunnel, PFS Group 14, IKEv2, VTI, }
slot: 0, conn_id: 9, crypto-map: __vti-crypto-map-Tunnel1-0-1
sa timing: remaining key lifetime (kB/sec): (3916798/27594)
IV size: 16 bytes
replay detection support: Y

Anti replay bitmap:
0x00000000 0x00000001

#show bgp summary

BGP router identifier 10.1.1.2, local AS number 1000
BGP table version is 7, main routing table version 7
2 network entries using 400 bytes of memory
2 path entries using 160 bytes of memory
2/2 BGP path/bestpath attribute entries using 416 bytes of memory
0 BGP route-map cache entries using 0 bytes of memory
0 BGP filter-list cache entries using 0 bytes of memory
BGP using 976 total bytes of memory
BGP activity 5/3 prefixes, 7/5 paths, scan interval 60 secs

Neighbor	V	AS	MsgRcvd	MsgSent	TblVer	InQ	OutQ	Up/Down	State/Pf
169.254.2.1	4	1000	22	22	7	0	0	00:19:42	1

#show bgp neighbors

BGP neighbor is 169.254.2.1, context single_vf, remote AS 1000, internal link
BGP version 4, remote router ID 10.1.1.1
BGP state = Established, up for 00:19:42
Last read 00:01:04, last write 00:00:38, hold time is 180, keepalive interval is 60 seconds
Neighbor sessions:
1 active, is not multiseession capable (disabled)

Neighbor capabilities:
Route refresh: advertised and received(new)
Four-octets ASN Capability: advertised and received
Address family IPv4 Unicast: advertised and received
Multiseession Capability:

Message statistics:

InQ depth is 0
OutQ depth is 0

	Sent	Rcvd
Opens:	1	1
Notifications:	0	0
Updates:	2	2
Keepalives:	19	19
Route Refresh:	0	0
Total:	22	22

Default minimum time between advertisement runs is 0 seconds

For address family: IPv4 Unicast

Session: 169.254.2.1
BGP table version 7, neighbor version 7/0
Output queue size : 0

Index 5

5 update-group member

	Sent	Rcvd	
Prefix activity:	----	----	
Prefixes Current:	1	1	(Consumes 80 bytes)
Prefixes Total:	1	1	
Implicit Withdraw:	0	0	
Explicit Withdraw:	0	0	
Used as bestpath:	n/a	1	
Used as multipath:	n/a	0	

Outbound

Inbound

```

Local Policy Denied Prefixes:  -----
Bestpath from this peer:      1      n/a
Invalid Path:                  1      n/a
Total:                          2      0
Number of NLRIs in the update sent: max 1, min 0

```

```

Address tracking is enabled, the RIB does have a route to 169.254.2.1
Connections established 5; dropped 4
Last reset 00:20:06, due to Peer closed the session of session 1
Transport(tcp) path-mtu-discovery is disabled
Graceful-Restart is disabled

```

```
#show route bgp
```

```

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 10.197.226.1 to network 0.0.0.0

```

```
B      2.2.2.0 255.255.255.0 [200/0] via 169.254.2.1, 00:19:55
```

Troubleshoot

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

```

debug crypto ikev2 platform 255
debug crypto ikev2 protocol 255
debug crypto ipsec 255
debug ip bgp all

```

- Supports only IPv4 interfaces, as well as IPv4, protected networks, or VPN payload (No Support for IPv6).