

ADVPN Troubleshooting:

Overlay Local IP and Remote IP

```
✓ HQ-FW × ✓ BR-FW ×
BR-FW #
BR-FW # diagnose ip address list | grep advpn
IP=172.16.1.3->172.16.1.3/255.255.255.255 index=14 devname=advpn
IP=172.16.1.3->172.16.1.2/255.255.255.255 index=21 devname=advpn_0
BR-FW #
```

Overlay Local-IP and Remote-IP

```
✓ HQ-FW × ✓ BR-FW
HQ-FW #
HQ-FW # diagnose ip address list | grep advpn
IP=172.16.1.1->172.16.1.254/255.255.255.0 index=14 devname=advpn
HQ-FW #
```

Tunnel to Hub and shortcut Tunnels

```
✓ HQ-FW × ✓ BR-FW
HQ-FW #
HQ-FW # get vpn ipsec tunnel summary
'advpn_0' 192.168.5.1:0 selectors(total,up): 1/1 rx(pkt,err): 198/0 tx(pkt,err): 197/0
'advpn_1' 192.168.3.1:0 selectors(total,up): 1/1 rx(pkt,err): 197/0 tx(pkt,err): 198/0
HQ-FW #
```

Tunnel to Hub Shortcut Tunnel

Tunnels Summary

```
HQ-FW # diagnose vpn ike status detailed

vd: root/0
name: advpn
version: 2
used-indices: 0-1
connection: 2/10
IKE SA: created 2/10 established 2/10 times 0/3/10 ms
IPsec SA: created 2/10 established 2/10 times 0/0/0 ms

HQ-FW #
```

Tunnel to towards the spoke

HQ-FW # diagnose vpn ike gateway list

```
vd: root/0
name: advpn_1
version: 2
interface: port1 3
addr: 192.168.1.1:500 -> 192.168.3.1:500
tun_id: 172.16.1.2/::10.0.0.9
remote_location: 0.0.0.0
network-id: 0
virtual-interface-addr: 172.16.1.1 -> 172.16.1.2
created: 5403s ago
auto-discovery: 1 sender
PPK: no
IKE SA: created 1/1 established 1/1 time 0/0/0 ms
IPsec SA: created 1/1 established 1/1 time 0/0/0 ms
```

Tunnel to towards the Hub

BR-FW # diagnose vpn ike gateway list

```
vd: root/0
name: advpn
version: 2
interface: port1 3
addr: 192.168.5.1:500 -> 192.168.1.1:500
tun_id: 192.168.1.1/::192.168.1.1
remote_location: 0.0.0.0
network-id: 0
virtual-interface-addr: 172.16.1.3 -> 172.16.1.1
created: 5490s ago
auto-discovery: 2 receiver
PPK: no
IKE SA: created 1/1 established 1/1 time 0/0/0 ms
IPsec SA: created 1/1 established 1/1 time 0/0/0 ms
```

Shortcut Tunnel towards spoke

```
vd: root/0
name: advpn_0
version: 2
interface: port1 3
addr: 192.168.5.1:500 -> 192.168.3.1:500
tun_id: 192.168.3.1/::192.168.3.1
remote_location: 0.0.0.0
network-id: 0
virtual-interface-addr: 172.16.1.3 -> 172.16.1.2
created: 5492s ago
auto-discovery: 2 receiver
PPK: no
IKE SA: created 1/1 established 1/1 time 80/80/80 ms
IPsec SA: created 1/1 established 1/1 time 80/80/80 ms
```

Verify the BGP Peers

```
BR-FW # get router info bgp summary
VRF 0 BGP router identifier 10.0.3.254, local AS number 65000
BGP table version is 2
1 BGP AS-PATH entries
0 BGP community entries
```

Neighbor	V	AS	MsgRcvd	MsgSent	TblVer	InQ	OutQ	Up/Down	State/PfxRcd
172.16.1.1	4	65000	294	292	1	0	0	04:13:40	2

Total number of neighbors 1

Verify BGP Table

```
BR-FW # get router info bgp network
VRF 0 BGP table version is 2, local router ID is 10.0.3.254
Status codes: s suppressed, d damped, h history, * valid, > best, i - internal,
               S Stale
Origin codes: i - IGP, e - EGP, ? - incomplete
```

Network	Next Hop	Metric	LocPrf	Weight	RouteTag	Path
*>i10.0.1.0/24	172.16.1.1	0	100	0	0	i <-/1>
*>i10.0.2.0/24	172.16.1.2	0	100	0	0	i <-/1>
*> 10.0.3.0/24	0.0.0.0		100	32768	0	i <-/1>

Total number of prefixes 3

```
BR-FW # get router info routing-table all
Codes: K - kernel, C - connected, S - static, R - RIP, B - BGP
        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
        i - IS-IS, L1 - IS-IS level-1, L2 - IS-IS level-2, ia - IS-IS inter area
        * - candidate default
```

```
Routing table for VRF=0
S* 0.0.0.0/0 [10/0] via 192.168.5.254, port1, [1/0]
B 10.0.1.0/24 [200/0] via 172.16.1.1 (recursive via advpn tunnel 192.168.1.1), 04:15:32
B 10.0.2.0/24 [200/0] via 172.16.1.2 (recursive is directly connected, advpn_0), 01:51:05
C 10.0.3.0/24 is directly connected, port2
S 172.16.1.0/24 [5/0] via advpn tunnel 192.168.1.1, [1/0]
S 172.16.1.1/32 [15/0] via advpn tunnel 192.168.1.1, [1/0]
C 172.16.1.2/32 is directly connected, advpn_0
C 172.16.1.3/32 is directly connected, advpn
C 192.168.5.0/24 is directly connected, port1
C 192.168.100.0/24 is directly connected, port5
```

Start ADVPN Debugs

diagnose vpn ike gateway flush

diagnose debug console timestamp enable

diagnose vpn ike log filter clear

diagnose vpn ike log filter mdst-addr4 192.168.1.1 192.168.5.1

diagnose debug application ike -1

diagnose debug enable

Stop ADVPN Debugs

diagnose debug reset

Start BGP Debugs

diag debug reset

diag debug console timestamp enable

diag ip router bgp all enable

diag ip router bgp level info

diag debug enable

Stop BGP Debugs

diag ip router bgp all disable

diag debug disable

Verification Commands
HQ-FW# diagnose vpn tunnel list
DC-FW# diagnose vpn tunnel list
BR-FW# diagnose vpn tunnel list
HQ-FW# get router info routing-table bgp
HQ-FW# diagnose ip address list grep advpn
BR-FW# diagnose ip address list grep advpn
DC-FW# diagnose ip address list grep advpn
BR-FW# diagnose vpn ike gateway list
BR-FW# get router info bgp summary
BR-FW# get router info bgp network
DC-FW# get router info bgp network
HQ-FW# get router info bgp network
DC-FW # diagnose vpn tunnel flush advpn_0
DC-FW # show vpn ipsec phase1-interface
DC-FW # show vpn ipsec phase2-interface
DC-FW # diag vpn ike gateway list
DC-FW # diag vpn ike gateway