Troubleshoot eBGP Adjacency Establishment Failure

Contents

Issue

The external Border Gateway Protocol (eBGP) adjacency between the firewall and the peer devices fails. These symptoms are observed:

1. The peer state on the firewall is idle:

<#root>

fw#

show bgp summary

BGP router identifier 192.0.2.2, local AS number 65001
BGP table version is 1, main routing table version 1

Neighbor V AS MsgRcvd MsgSent TblVer InQ OutQ Up/Down State/PfxRcd

198.51.100.2

4 65002 0 0 1 0 0 never

Idle

2. Only TCP SYN packets from the peer device are seen in the interface captures:

<#root>

fw#

cap capo interface WAN-Telekom

fw#

```
show cap capo



26 packets captured

   1: 06:22:44.990595       198.51.100.2.31242 > 192.0.2.2.179: S 2838607371:2838607371(0) win 16384 <m
   2: 06:22:46.990152       198.51.100.2.31242 > 192.0.2.2.179: S 2838607371:2838607371(0) win 16384 <m
   3: 06:22:50.991007       198.51.100.2.31242 > 192.0.2.2.179: S 2838607371:2838607371(0) win 16384 <m
   4: 06:22:58.991281       198.51.100.2.31242 > 192.0.2.2.179: S 2838607371:2838607371(0) win 16384 <m
```

3. An ICMP connection to the IP address of the peer device is successfully established:

```
<#root>

fw#

ping 198.51.100.2


Type escape sequence to abort.
Sending 5, 100-byte ICMP Echos to 198.51.100.2, timeout is 2 seconds:

!!!!!



Success rate is 100 percent (5/5), round-trip min/avg/max = 1/2/10 ms
```

This confirms IP network level reachability between the firewall and the peer device.

4. The debugging level syslog messages indicate discarded TCP request from the peer device:

```
<#root>

fw#

show logging


…

May 20 2026 06:32:58: %FTD-7-710005: TCP request discarded from 198.51.100.2/20217 to WAN-Telekom:192.0.


May 20 2026 06:33:00: %FTD-7-710005: TCP request discarded from 198.51.100.2/20217 to WAN-Telekom:192.0
May 20 2026 06:33:04: %FTD-7-710005: TCP request discarded from 198.51.100.2/20217 to WAN-Telekom:192.0
May 20 2026 06:33:12: %FTD-7-710005: TCP request discarded from 198.51.100.2/20217 to WAN-Telekom:192.0
```

5. The BGP debugs show the **“no route to peer”** message:

<#root>

fw#

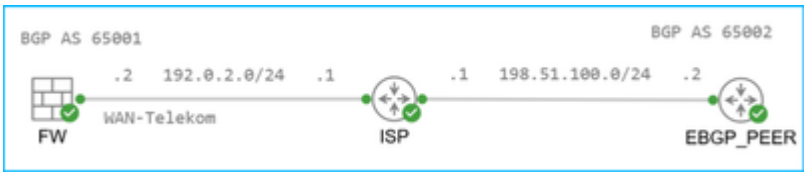
debug ip bgp

BGP debugging is on
    for address family: IPv4 Unicast
Successfully set for module BGP at level 1

BGP: 198.51.100.2 Active open failed - no route to peer, open active delayed 21504ms (35000ms max, 60% j

Environment

Topology



- Firepower 2110 running FTD 7.4.4 and managed by the Secure Firewall Management Center (FMC). Other hardware platforms and software versions can also be affected.
- The firewall has a static route to the peer address via **WAN-Telekom** interface connected to the Internet Service Provider (ISP):

<#root>

fw#

show route 198.51.100.2

Routing entry for 198.51.100.2 255.255.255.255

```
  Known via "static", distance 1, metric 0
  Routing Descriptor Blocks:

  * 192.0.2.1, via WAN-Telekom


Route metric is 0, traffic share count is 1
```

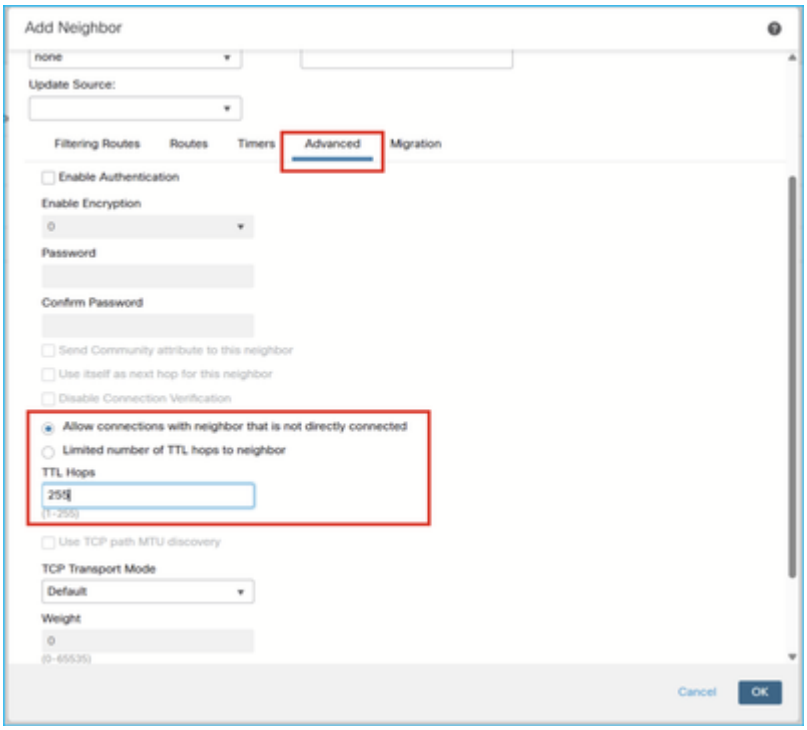
- The firewall has the BGP configuration. The peer 198.51.100.2 has a different autonomous system number, hence is external:

<#root>

```
fw#

show run router




router bgp 65001


 bgp log-neighbor-changes
 bgp graceful-restart
 address-family ipv4 unicast

  neighbor 198.51.100.2 remote-as 65002


  neighbor 198.51.100.2 transport path-mtu-discovery disable
  neighbor 198.51.100.2 update-source WAN-Telekom
  neighbor 198.51.100.2 activate
```

Resolution

The adjacency is established after enabling the **Allow connections with neighbor that is not directly connected** option in the **Advanced** section of the BGP neighbor configuration and setting the **TTL Hops** to 255:



Cause

By default, the firewall allows the eBGP adjacency between the directly connected peers, that is, the peers in the same subnet. In order to allow adjacency between non-directly connected peers, the option **Allow connections with neighbor that is not directly connected** must be enabled. Additionally, the user can limit the number of **TTL Hops** to peer and set the minimum expected **Time To Live** value in the IP header of the TCP packet received from the peer. The default value is 1.

Verification

1. The **Allow connections with neighbor that is not directly connected** optionis not configured:

<#root>

fw#

show bgp neighbors 198.51.100.2 | i External

External BGP neighbor not directly connected.

2. The **Allow connections with neighbor that is not directly connected** option is configured and TTL

Hops is set to 1:

```
<#root>

fw#

show run router bgp | i 198.51.100.2


  neighbor 198.51.100.2 remote-as 65002

  neighbor 198.51.100.2 ebgp-multihop 1


  neighbor 198.51.100.2 transport path-mtu-discovery disable
  neighbor 198.51.100.2 update-source WAN-Telekom
  neighbor 198.51.100.2 activate


fw#

show bgp neighbors 198.51.100.2 | i External



  External BGP neighbor not directly connected.
```

3. The **Allow connections with neighbor that is not directly connected** option is configured and TTL Hops is set to 255:

```
<#root>

fw#

show run router bgp | i 198.51.100.2


  neighbor 198.51.100.2 remote-as 65002

  neighbor 198.51.100.2 ebgp-multihop 255


  neighbor 198.51.100.2 transport path-mtu-discovery disable
  neighbor 198.51.100.2 update-source WAN-Telekom
  neighbor 198.51.100.2 activate


fw#

show bgp neighbors 198.51.100.2 | i External
```

```
External BGP neighbor may be up to 255 hops away.
```

Related Content

- Cisco Technical Support & Downloads