排除eBGP鄰接建立故障

目錄

問題

防火牆和對等裝置之間的外部邊界網關協定(eBGP)鄰接失敗。觀察到以下症狀：

1.防火牆上的對等體狀態為空閒：

<#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.在介面擷取中只能看到來自對等裝置的TCP SYN封包：

<#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.成功建立到對等裝置的IP地址的ICMP連線：

```
<#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
```

這可以確認防火牆和對等裝置之間的IP網路級別可達性。

4.調試級別的系統日誌消息表示從對等裝置丟棄的TCP請求：

```
<#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. BGP偵錯顯示「no route to peer」訊息：

<#root>

fw#

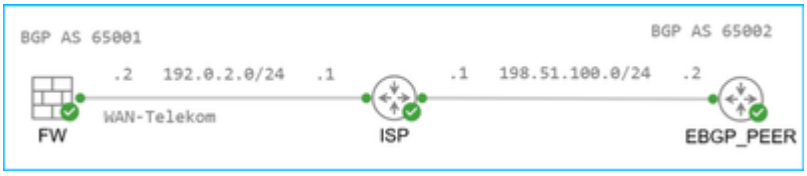
debug ip bgp

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

環境

拓撲



- 執行FTD 7.4.4且由安全防火牆管理中心(FMC)管理的Firepower 2110。 其他硬體平台和軟體版本也可能受到影響。
- 防火牆具有通過連線到網際網路服務提供商(ISP)的WAN-Telekom介面到達對等地址的靜態路由：

<#root>

fw#

show route 198.51.100.2

Routing entry for 198.51.100.2 255.255.255.255

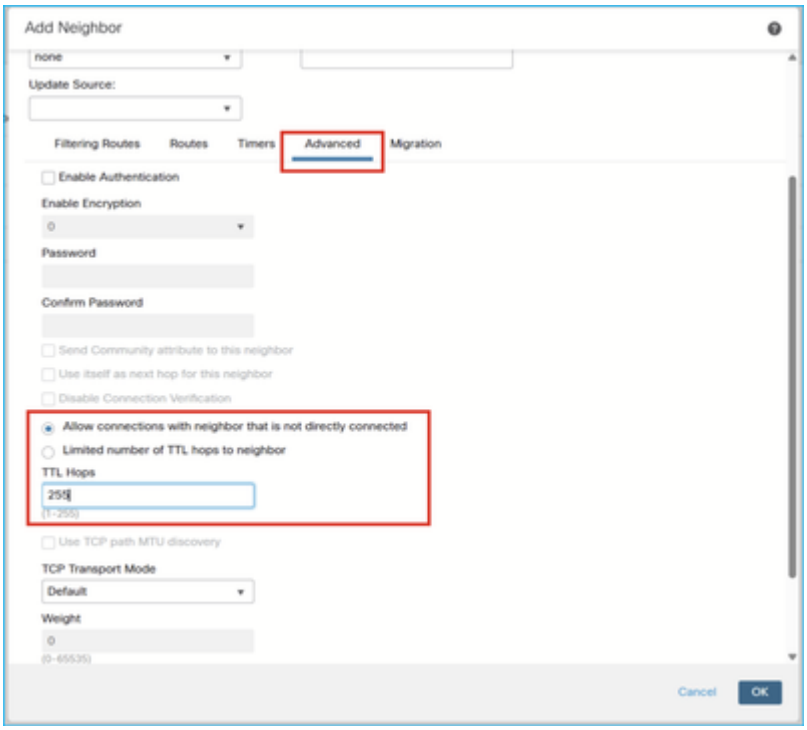
```
  Known via "static", distance 1, metric 0
  Routing Descriptor Blocks:

  * 192.0.2.1, via WAN-Telekom


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

- 防火牆具有BGP配置。對等體198.51.100.2具有不同的自治系統編號，因此是外部的：

```
<#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
```

解析

啟用BGP鄰居配置的Advanced部分中的Allow connections with neighbor that is not directly connected選項，並將TTL Hops設定為255後，鄰接關係即建立：



原因

預設情況下，防火牆允許直接連線的對等體（即同一子網中的對等體）之間的eBGP鄰接關係。為了允許非直接連線的對等體之間的鄰接，必須啟用Allow connections with neighbor that not directly connected選項。此外，使用者可以限制對等路由器的TTL跳數，並在從對等路由器收到的TCP資料包的IP報頭中設定最小預期生存時間值。預設值為 1。

驗證

1.未配置Allow connections with neighbor that is not directly connected選項：

<#root>

fw#

show bgp neighbors 198.51.100.2 | i External

External BGP neighbor not directly connected.

2.已配置「允許與未直接連線的鄰居連接」選項，並且「TTL跳」設定為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.已配置「允許與未直接連線的鄰居連接」選項，並且TTL跳數設定為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.
```

相關內容

- 思科技術支援與下載

關於此翻譯

思科已使用電腦和人工技術翻譯本文件，讓全世界的使用者能夠以自己的語言理解支援內容。請注意，即使是最佳機器翻譯，也不如專業譯者翻譯的內容準確。Cisco Systems, Inc. 對這些翻譯的準確度概不負責，並建議一律查看原始英文文件（提供連結）。