

# 設定BGP Maximum-Prefix功能

## 目錄

[簡介](#)

[必要條件](#)

[需求](#)

[採用元件](#)

[慣例](#)

[設定](#)

[網路圖表](#)

[組態](#)

[Maximum-Prefix Configured for Warning-Only Message When Threshold Exceeded Threshold Set](#)

[Maximum-Prefix配置為在閾值超過閾值設定時關閉鄰居關係](#)

[驗證和疑難排解](#)

[Maximum-Prefix Warning-Only](#)

[Maximum-Prefix配置為在閾值超過閾值設定時關閉會話](#)

[相關資訊](#)

## 簡介

本檔案提供邊界閘道通訊協定(BGP)Maximum-Prefix功能的設定和疑難排解資訊。

BGP Maximum-Prefix功能允許您控制可從鄰居接收的字首數量。預設情況下，此功能允許路由器在從該對等路由器收到的字首數量超過配置的Maximum-Prefix限制時關閉該對等路由器。此功能通常用於外部BGP對等體，但也可以應用於內部BGP對等體。

當在遠端對等站點的出站策略發生變化時，路由器開始接收超過路由器記憶體可採用的路由時，最大字首功能非常有用。如果這台路由器與BGP對等，並在網路中執行關鍵路由功能，則此開銷可能會變壞。BGP問題可能會中斷內部網路連線。使用**neighbor maximum-prefix** 指令，可以保護路由器免受此情況的影響。

計畫使用此功能時，請考慮以下要點：

- 瞭解遠端BGP對等路由器通常傳送的路由數量。
- 設定略高於正常操作期間預期接收的BGP字首數量的閾值。
- 知道當遠端BGP對等體傳送的字首多於預期的字首時要採取的操作。可用操作可以是關閉作業階段，並在使用**clear ip bgp x.x.x.x**命令之前保持BGP鄰居關係關閉，或者僅記錄警告訊息。

**註：** Cisco IOS<sup>®</sup>軟體版本12.0(22)S和12.2(15)T中引入了此功能的增強功能。此增強功能允許使用者自動重新建立已關閉的對等作業階段，因為已超出已設定的最大首碼限制。啟用此功能時，無需網路操作員干預。如需詳細資訊，請參閱[BGP Restart Session After Maximum-Prefix Limit](#)。

## 必要條件

### 需求

思科建議本文的讀者對[設定BGP網路](#)有基本瞭解。

## 採用元件

本文中的資訊係根據以下軟體和硬體版本：

Cisco IOS®軟體版本12.2(27)上的Cisco 2500系列路由器

本文中的資訊是根據特定實驗室環境內的裝置所建立。文中使用到的所有裝置皆從已清除（預設）的組態來啟動。如果您的網路正在作用，請確保您已瞭解任何指令可能造成的影響。

存取[Cisco Feature Navigator](#)（僅供[註冊](#)客戶使用），以確定可以使用此功能的Cisco IOS軟體版本。

## 慣例

如需文件慣例的詳細資訊，請參閱[思科技術提示慣例](#)。

## 設定

本節提供用於設定本文件中所述功能的資訊。

用於設定BGP Maximum-Prefix功能的命令語法為：

```
neighbor {ip-address | peer-group-name} maximum-prefix maximum [threshold] [restart restart-interval] [warning-only]
```

其中：

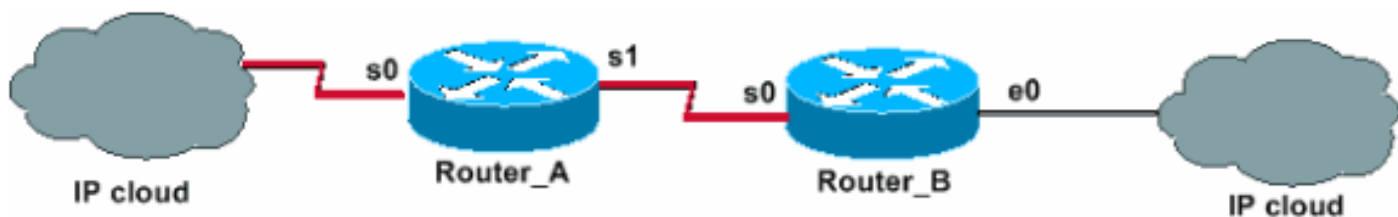
- **maximum** — 表示允許來自鄰居的最大字首數。
- **threshold** — 一個可選的整數值，指定配置的最大值百分比為多少。路由器開始生成警告消息。範圍為1到100%，預設值為75%。例如，如果配置的**maximum-value**為20且閾值為60，則當從鄰居獲取的BGP路由數超過20(12)個路由的60%時，路由器將生成警告消息。**restart-interval** — 重新建立對等會話的可選時間間隔（以分鐘為單位）。範圍為1至65535分鐘。**warning-only** — （可選）允許路由器在超出最大字首限制時生成日誌消息，而不是終止對等會話。

為了更好地說明用法，請考慮以下示例：

```
neighbor 10.1.1.1 maximum-prefix 3000
!--- Drops the peering to 10.1.1.1 when !--- more than 3000 prefixes are received. neighbor
10.1.1.1 maximum-prefix 3000 warning-only
!--- Logs a warning message when the peer sends !--- more than 3000 prefixes. neighbor 10.1.1.1
maximum-prefix 3000 50
!--- Logs a warning message at 1500 and drops the !--- peering when over 3000 prefixes are sent.
neighbor 10.1.1.1 maximum-prefix 3000 50 warning-only
!--- Initially warns at 1500 and re-warns !--- (different message) at 3000 prefixes received. !-
-- However, the BGP Peer is not disconnected.
```

## 網路圖表

本檔案會使用以下網路設定：



## 組態

本檔案會使用以下設定：

- [Maximum-Prefix Configured for Warning-Only Message When Threshold Exceeded Threshold Set](#)
- [Maximum-Prefix配置為在閾值超過閾值設定時關閉鄰居關係](#)

## [Maximum-Prefix Configured for Warning-Only Message When Threshold Exceeded Threshold Set](#)

在Maximum-Prefix warning-only配置中，Router\_B配置為當從Router\_A接收的字首數量超過設定的閾值時，僅記錄一條警告消息。兩台路由器的配置如下表所示。請注意，使用neighbor命令配置的warning-only關鍵字是否存在。

Router_A	Router_B
<pre>hostname Router_A ! interface Loopback0  ip address 10.0.0.1  255.255.255.255 ! interface Serial0  ip address 192.168.1.1  255.255.255.252 ! interface Serial1  ip unnumbered Loopback0 ! router bgp 200  no synchronization  bgp router-id 10.0.0.1  bgp log-neighbor- changes  neighbor 192.168.1.2 local-as 100  neighbor 10.0.0.2 remote-as 300  neighbor 10.0.0.2 ebgp- multihop 2  neighbor 10.0.0.2 update-source Loopback0  neighbor 10.0.0.2 version 4  no auto-summary ! ip route 10.0.0.2</pre>	<pre>hostname Router_B ! interface Loopback0  ip address 10.0.0.2  255.255.255.252 ! interface Ethernet0  ip address 10.0.1.1  255.255.255.0 ! interface Serial0  ip unnumbered Loopback0 ! router bgp 300  no synchronization  bgp router-id 10.0.0.2  bgp log-neighbor-changes  neighbor 10.0.0.1 remote-as 200  neighbor 10.0.0.1 ebgp- multihop 2  neighbor 10.0.0.1 update- source Loopback0  neighbor 10.0.0.1 version 4  <b>neighbor 10.0.0.1 maximum- prefix 10 80 warning-only</b> <i>!--- Enables warning message logging when the number !--- of BGP routes learned from neighbor !--- 10.0.0.1 exceeds eight.</i> no auto-summary ! ip</pre>

255.255.255.252 Serial1	route 10.0.0.1 255.255.255.252 Serial0
-------------------------	---

本檔案[驗證和疑難排解](#)一節的show和debug命令輸出會報告每當從Router\_A接收的字首數目超過設定的閾值時，Router\_B上實際發生的情況。

## Maximum-Prefix配置為在閾值超過閾值設定時關閉鄰居關係

在配置為關閉鄰居關係配置的Maximum-Prefix中，Router\_B配置為在從Router\_A接收的字首數量超過設定的閾值時生成警告消息。Router\_B也設定為超過最大首碼限制時關閉BGP鄰居。兩台路由器的配置如表所示。請注意，沒有使用neighbor命令設定warning-only關鍵字。

Router_A	Router_B
<pre>hostname Router_A ! interface Loopback0  ip address 10.0.0.1 255.255.255.255 ! interface Serial0  ip address 192.168.1.1 255.255.255.252 ! interface Serial1  ip unnumbered Loopback0 ! router bgp 200  no synchronization  bgp router-id 10.0.0.1  bgp log-neighbor- changes  neighbor 192.168.1.2 local-as 100  neighbor 10.0.0.2 remote-as 300  neighbor 10.0.0.2 ebgp- multihop 2  neighbor 10.0.0.2 update-source Loopback0  neighbor 10.0.0.2 version 4  no auto-summary ! ip route 10.0.0.2 255.255.255.252 Serial1</pre>	<pre>hostname Router_B ! interface Loopback0  ip address 10.0.0.2 255.255.255.252 ! interface Ethernet0  ip address 10.0.1.1 255.255.255.0 ! interface Serial0  ip unnumbered Loopback0 ! router bgp 300  no synchronization  bgp router-id 10.0.0.2  bgp log-neighbor-changes  neighbor 10.0.0.1 remote-as 200  neighbor 10.0.0.1 ebgp- multihop 2  neighbor 10.0.0.1 update- source Loopback0  neighbor 10.0.0.1 version 4  <b>neighbor 10.0.0.1 maximum- prefix 10 80</b> <i>!--- This forces the neighbor session to tear down !--- when the BGP learned routes from !- -- the neighbor exceeds 10. no</i> auto-summary ! ip route 10.0.0.1 255.255.255.252 Serial0</pre>

[驗證和疑難排解](#)區段中的show和debug命令輸出會報告，每當從Router\_A接收的字首數目超過設定的閾值時，Router\_B上實際發生的情況。

## 驗證和疑難排解

本節提供的資訊可用於確認您的組態是否正常運作。

本檔案所用功能的命令語法和預設值可在[BGP命令頁面](#)取得。

附註：使用 debug 指令之前，請先參閱[有關 Debug 指令的重要資訊](#)。

- [show ip bgp neighbor](#) — 顯示BGP鄰居狀態。
- [show ip bgp summary](#) — 顯示所有BGP連線的狀態。
- [debug ip bgp updates in](#) — 顯示與BGP更新相關的資訊。

## [Maximum-Prefix Warning-Only](#)

請注意以下數字：

- 同意的最大字首數：10
- 警告閾值：80%(8)

只要接收的字首數不高於設定的閾值，8就不再記錄消息。一旦從鄰居10.0.0.1獲知的BGP路由數量超過閾值限制8,Router\_B就會記錄此消息。當傳送了九個首碼時會模擬此情況：

```
%BGP-4-MAXPFX: No. of prefix received from 10.0.0.1 (afi 0) reaches 9, max 10
```

如果情況變糟，並超過Maximum-Prefix編號集10，則路由器會記錄此消息。當傳送了12個字首時，將會模擬此情況：

```
%BGP-3-MAXPFXEXCEED: No. of prefix received from 10.0.0.1 (afi 0): 11 exceed limit 10
```

在中啟用[debug ip bgp updates](#)時，您可以更詳細地瞭解發生的情況。但是，請勿在包含數千個字首的即時環境中使用此命令。圖中所示的情況是Router\_B已建立一個對等路由器。Router\_A向路由器B通告了六個字首。現在，對等體Router\_A通告了另外三個字首。

```
Router_B# debug ip bgp updates in
```

```
*Mar 12 07:31:18.944: BGP(0): 10.0.0.1 rcvd UPDATE w/ attr: nexthop 10.0.0.1, or  
igin i, metric 0, path 200  
*Mar 12 07:31:18.948: BGP(0): 10.0.0.1 rcvd 10.0.1.0/24...duplicate ignored  
*Mar 12 07:31:18.952: BGP(0): 10.0.0.1 rcvd 10.0.2.0/24...duplicate ignored  
*Mar 12 07:31:18.960: BGP(0): 10.0.0.1 rcvd 10.0.3.0/24...duplicate ignored  
*Mar 12 07:32:20.224: BGP(0): 10.0.0.1 rcvd 10.0.4.0/24...duplicate ignored  
*Mar 12 07:32:20.228: BGP(0): 10.0.0.1 rcvd 10.0.5.0/24...duplicate ignored  
*Mar 12 07:32:20.232: BGP(0): 10.0.0.1 rcvd 10.0.6.0/24...duplicate ignored  
*Mar 12 07:34:19.768: BGP(0): 10.0.0.1 rcvd 10.0.7.0/24  
*Mar 12 07:34:19.772: BGP(0): 10.0.0.1 rcvd 10.0.8.0/24  
*Mar 12 07:34:19.780: BGP(0): 10.0.0.1 rcvd 10.0.9.0/24  
*Mar 12 07:34:19.780:  
%BGP-4-MAXPFX: No. of prefix received from 10.0.0.1 (afi 0 ) reaches 9, max 10
```

```
*Mar 12 07:34:19.792: BGP(0): Revise route installing 1 of 1 route for 10.0.7.0/  
24 -> 10.0.0.1 to main IP table  
*Mar 12 07:34:19.796: BGP(0): Revise route installing 1 of 1 route for 10.0.8.0/  
24 -> 10.0.0.1 to main IP table  
*Mar 12 07:34:19.804: BGP(0): Revise route installing 1 of 1 route for 10.0.9.0/  
24 -> 10.0.0.1 to main IP table
```

```
Router_B#show ip bgp neighbor 10.0.0.1
```

```
BGP neighbor is 10.0.0.1, remote AS 200, external link  
BGP version 4, remote router ID 10.0.0.1  
BGP state = Established, up for 00:13:22  
Last read 00:00:21, hold time is 180, keepalive interval is 60 seconds
```

Neighbor capabilities:

Route refresh: advertised and received(old & new)  
Address family IPv4 Unicast: advertised and received  
IPv4 MPLS Label capability:  
Received 930 messages, 0 notifications, 0 in queue  
Sent 919 messages, 1 notifications, 0 in queue  
Default minimum time between advertisement runs is 30 seconds

For address family: IPv4 Unicast

BGP table version 30, neighbor version 30  
Index 1, Offset 0, Mask 0x2  
Route refresh request: received 0, sent 0  
**9 accepted prefixes** consume 432 bytes  
Prefix advertised 0, suppressed 0, withdrawn 0, **maximum limit 10 (warning-only**

)

**Threshold for warning message 80%**

Connections established 2; dropped 1  
Last reset 00:29:13, due to BGP Notification sent, update malformed  
Message received that caused BGP to send a Notification:

```
FFFFFFFF FFFFFFFFF FFFFFFFFF FFFFFFFFF
003C0200 00001940 01010040 02040201
00C84003 040A0000 01800404 00000000
180A000A 180A000B 180A000C
```

External BGP neighbor can be up to 2 hops away.

Connection state is ESTAB, I/O status: 1, unread input bytes: 0  
Local host: 10.0.0.2, Local port: 15668  
Foreign host: 10.0.0.1, Foreign port: 179

Enqueued packets for retransmit: 0, input: 0 mis-ordered: 0 (0 bytes)

Event Timers (current time is 0x3A46EB54):

Timer	Starts	Wakeups	Next
Retrans	18	0	0x0
TimeWait	0	0	0x0
AckHold	22	9	0x0
SendWnd	0	0	0x0
KeepAlive	0	0	0x0
GiveUp	0	0	0x0
PmtuAger	0	0	0x0
DeadWait	0	0	0x0

iss: 2047376434 snduna: 2047376784 sndnxt: 2047376784 sndwnd: 16035  
irs: 821061364 rcvnxt: 821062116 rcvwnd: 16188 delrcvwnd: 196

SRTT: 279 ms, RTTO: 500 ms, RTV: 221 ms, KRTT: 0 ms  
minRTT: 24 ms, maxRTT: 384 ms, ACK hold: 200 ms  
Flags: higher precedence, nagle

Datagrams (max data segment is 536 bytes):

Rcvd: 33 (out of order: 0), with data: 22, total data bytes: 751  
Sent: 29 (retransmit: 0, fastretransmit: 0), with data: 17, total data bytes: 349

Router\_B#show ip bgp summary

BGP router identifier 10.0.0.2, local AS number 300  
BGP table version is 30, main routing table version 30  
9 network entries and 9 paths using 1341 bytes of memory  
1 BGP path attribute entries using 60 bytes of memory

```
1 BGP AS-PATH entries using 24 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 activity 36/101 prefixes, 36/27 paths, scan interval 60 secs
```

Neighbor	V	AS	MsgRcvd	MsgSent	TblVer	InQ	OutQ	Up/Down	State/PfxRcd
10.0.0.1	4	200	932	921	30	0	0	00:15:08	9

假設情況變得更糟，並且Router\_A傳送了另外三個字首，這會將總數增加到12。

```
Router_B# debug ip bgp updates in
```

```
*Mar 12 07:39:21.192: BGP(0): 10.0.0.1 rcvd UPDATE w/ attr: nexthop 10.0.0.1, origin i, metric 0, path 200
*Mar 12 07:39:21.196: BGP(0): 10.0.0.1 rcvd 10.0.10.0/24
*Mar 12 07:39:21.200: %BGP-4-MAXPFX: No. of prefix received from 10.0.0.1 (afi 0) reaches 10, max 10
*Mar 12 07:39:21.208: BGP(0): 10.0.0.1 rcvd 10.0.11.0/24
*Mar 12 07:39:21.212: %BGP-3-MAXPFXEXCEED: No. of prefix received from 10.0.0.1 (afi 0): 11 exceed limit 10
*Mar 12 07:39:21.216: BGP(0): 10.0.0.1 rcvd 10.0.12.0/24
*Mar 12 07:39:21.228: BGP(0): Revise route installing 1 of 1 route for 10.0.10.0/24 -> 10.0.0.1 to main IP table
*Mar 12 07:39:21.236: BGP(0): Revise route installing 1 of 1 route for 10.0.11.0/24 -> 10.0.0.1 to main IP table
*Mar 12 07:39:21.240: BGP(0): Revise route installing 1 of 1 route for 10.0.12.0/24 -> 10.0.0.1 to main IP table
```

```
Router_B# show ip bgp neighbors 10.0.0.1
```

```
BGP neighbor is 10.0.0.1, remote AS 200, external link
  BGP version 4, remote router ID 10.0.0.1
  BGP state = Established, up for 00:19:56
  Last read 00:00:56, hold time is 180, keepalive interval is 60 seconds
  Neighbor capabilities:
    Route refresh: advertised and received(old & new)
    Address family IPv4 Unicast: advertised and received
    IPv4 MPLS Label capability:
  Received 937 messages, 0 notifications, 0 in queue
  Sent 925 messages, 1 notifications, 0 in queue
  Default minimum time between advertisement runs is 30 seconds
```

```
For address family: IPv4 Unicast
```

```
BGP table version 33, neighbor version 33
Index 1, Offset 0, Mask 0x2
Route refresh request: received 0, sent 0
12 accepted prefixes consume 576 bytes
Prefix advertised 0, suppressed 0, withdrawn 0, maximum limit 10 (warning-only)
Threshold for warning message 80%
```

```
Connections established 2; dropped 1
Last reset 00:35:47, due to BGP Notification sent, update malformed
Message received that caused BGP to send a Notification:
  FFFFFFFF FFFFFFFF FFFFFFFF FFFFFFFF
  003C0200 00001940 01010040 02040201
  00C84003 040A0000 01800404 00000000
  180A000A 180A000B 180A000C
External BGP neighbor can be up to 2 hops away.
```

Connection state is ESTAB, I/O status: 1, unread input bytes: 0

Local host: 10.0.0.2, Local port: 15668

Foreign host: 10.0.0.1, Foreign port: 179

Enqueued packets for retransmit: 0, input: 0 mis-ordered: 0 (0 bytes)

Event Timers (current time is 0x3A4CEA98):

Timer	Starts	Wakeups	Next
Retrans	24	0	0x0
TimeWait	0	0	0x0
AckHold	29	16	0x0
SendWnd	0	0	0x0
KeepAlive	0	0	0x0
GiveUp	0	0	0x0
PmtuAger	0	0	0x0
DeadWait	0	0	0x0

iss: 2047376434 snduna: 2047376898 sndnxt: 2047376898 sndwnd: 15921

irs: 821061364 rcvnxt: 821062290 rcvwnd: 16014 delrcvwnd: 370

SRTT: 290 ms, RTTO: 376 ms, RTV: 86 ms, KRRTT: 0 ms

minRTT: 24 ms, maxRTT: 384 ms, ACK hold: 200 ms

Flags: higher precedence, nagle

Datagrams (max data segment is 536 bytes):

Rcvd: 40 (out of order: 0), with data: 29, total data bytes: 925

Sent: 42 (retransmit: 0, fastretransmit: 0), with data: 23, total data bytes: 463

Router\_B#show ip bgp summary

BGP router identifier 10.0.0.2, local AS number 300

BGP table version is 33, main routing table version 33

12 network entries and 12 paths using 1788 bytes of memory

1 BGP path attribute entries using 60 bytes of memory

1 BGP AS-PATH entries using 24 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 activity 39/101 prefixes, 39/27 paths, scan interval 60 secs

Neighbor	V	AS	MsgRcvd	MsgSent	TblVer	InQ	OutQ	Up/Down	State/PfxRcd
10.0.0.1	4	200	939	927	33	0	0	00:21:28	<b>12</b>

從圖中所示的範例中可看到，即使相鄰路由器傳送的字首數超過原則允許的個數，BGP鄰居關係也會保留。結果是Router\_B僅記錄一條警告消息。Router\_B不會執行其他動作。

## Maximum-Prefix配置為在閾值超過閾值設定時關閉會話

此案例所需的初始條件為使BGP鄰居啟動並運行，且有六個字首由Router\_A傳送到Router\_B。如示例所示，當Router\_A通告更多字首（例如9）時，命令的輸出準確反映了Router\_B配置為僅記錄警告消息的情況下已經觀察到的內容。如果增加傳送的字首數並使Router\_A通告12，則Router\_B會關閉與Router\_A的鄰居關係。

Router\_B# debug ip bgp updates in

\*Mar 12 08:03:27.864: BGP(0): 10.0.0.1 rcvd UPDATE w/ attr: nexthop 10.0.0.1, or  
igin i, metric 0, path 200

\*Mar 12 08:03:27.868: BGP(0): 10.0.0.1 rcvd 10.0.1.0/24...duplicate ignored



```

*Mar 12 08:03:27.876: BGP(0): 10.0.0.1 rcvd 10.0.2.0/24...duplicate ignored
*Mar 12 08:03:27.880: BGP(0): 10.0.0.1 rcvd 10.0.3.0/24...duplicate ignored
*Mar 12 08:03:27.884: BGP(0): 10.0.0.1 rcvd 10.0.4.0/24...duplicate ignored
*Mar 12 08:03:27.892: BGP(0): 10.0.0.1 rcvd 10.0.5.0/24...duplicate ignored
*Mar 12 08:03:27.896: BGP(0): 10.0.0.1 rcvd 10.0.6.0/24...duplicate ignored
*Mar 12 08:03:27.900: BGP(0): 10.0.0.1 rcvd 10.0.7.0/24
*Mar 12 08:03:27.908: BGP(0): 10.0.0.1 rcvd 10.0.8.0/24
*Mar 12 08:03:27.912: BGP(0): 10.0.0.1 rcvd 10.0.9.0/24
*Mar 12 08:03:27.916: %BGP-4-MAXPFX: No. of prefix received from 10.0.0.1 (afi 0
) reaches 9, max 10
*Mar 12 08:03:27.924: BGP(0): 10.0.0.1 rcvd 10.0.10.0/24
*Mar 12 08:03:27.932: BGP(0): 10.0.0.1 rcvd 10.0.11.0/24
*Mar 12 08:03:27.932: %BGP-3-MAXPFXEXCEED: No. of prefix received from 10.0.0.1
(afi 0): 11 exceed limit 10
*Mar 12 08:03:27.940: %BGP-5-ADJCHANGE: neighbor 10.0.0.1 Down BGP Notification
sent
*Mar 12 08:03:27.940: %BGP-3-NOTIFICATION: sent to neighbor 10.0.0.1 3/1 (update
malformed) 0 bytes  FFFF FFFF FFFF FFFF FFFF FFFF FFFF FFFF 0060 0200 0000 1940
0101 0040 0204 0201 00C8 4003 040A 0000 0180 0404 0000 0000 180A 0001 180A 0002
180A 0003 180A 0004 180A 0005 180A 0006 180A 0007 180A 0008 180A 0009 180A 000A
180A 000B 180A 000C
*Mar 12 08:03:28.024: BGP(0): Revise route installing 1 of 1 route for 10.0.7.0/
24 -> 10.0.0.1 to main IP table
*Mar 12 08:03:28.032: BGP(0): Revise route installing 1 of 1 route for 10.0.8.0/
24 -> 10.0.0.1 to main IP table
*Mar 12 08:03:28.036: BGP(0): Revise route installing 1 of 1 route for 10.0.9.0/
24 -> 10.0.0.1 to main IP table
*Mar 12 08:03:28.044: BGP(0): Revise route installing 1 of 1 route for 10.0.10.0
/24 -> 10.0.0.1 to main IP table
*Mar 12 08:03:28.148: BGP(0): no valid path for 10.0.1.0/24
*Mar 12 08:03:28.152: BGP(0): no valid path for 10.0.2.0/24
*Mar 12 08:03:28.156: BGP(0): no valid path for 10.0.3.0/24
*Mar 12 08:03:28.156: BGP(0): no valid path for 10.0.4.0/24
*Mar 12 08:03:28.160: BGP(0): no valid path for 10.0.5.0/24
*Mar 12 08:03:28.164: BGP(0): no valid path for 10.0.6.0/24
*Mar 12 08:03:28.168: BGP(0): no valid path for 10.0.7.0/24
*Mar 12 08:03:28.168: BGP(0): no valid path for 10.0.8.0/24
*Mar 12 08:03:28.172: BGP(0): no valid path for 10.0.9.0/24
*Mar 12 08:03:28.176: BGP(0): no valid path for 10.0.10.0/24
*Mar 12 08:03:28.184: BGP(0): nettable_walker 10.0.1.0/24 no best path
*Mar 12 08:03:28.188: BGP(0): nettable_walker 10.0.2.0/24 no best path
*Mar 12 08:03:28.192: BGP(0): nettable_walker 10.0.3.0/24 no best path
*Mar 12 08:03:28.196: BGP(0): nettable_walker 10.0.4.0/24 no best path
*Mar 12 08:03:28.200: BGP(0): nettable_walker 10.0.5.0/24 no best path
*Mar 12 08:03:28.204: BGP(0): nettable_walker 10.0.6.0/24 no best path
*Mar 12 08:03:28.208: BGP(0): nettable_walker 10.0.7.0/24 no best path
*Mar 12 08:03:28.212: BGP(0): nettable_walker 10.0.8.0/24 no best path
*Mar 12 08:03:28.212: BGP(0): nettable_walker 10.0.9.0/24 no best path
*Mar 12 08:03:28.216: BGP(0): nettable_walker 10.0.10.0/24 no best path

```

Router\_B# show ip bgp summary

BGP router identifier 10.0.0.2, local AS number 300  
BGP table version is 87, main routing table version 87

Neighbor	V	AS	MsgRcvd	MsgSent	TblVer	InQ	OutQ	Up/Down	State/PfxRcd
10.0.0.1	4	200	965	948	0	0	0	00:02:24	Idle (PfxCt)

```
Router_B# show ip bgp neighbors 10.0.0.1
BGP neighbor is 10.0.0.1, remote AS 200, external link
  BGP version 4, remote router ID 0.0.0.0
  BGP state = Idle
  Last read 00:02:43, hold time is 180, keepalive interval is 60 seconds
  Received 965 messages, 0 notifications, 0 in queue
  Sent 948 messages, 2 notifications, 0 in queue
  Default minimum time between advertisement runs is 30 seconds
```

```
For address family: IPv4 Unicast
  BGP table version 87, neighbor version 0
  Index 1, Offset 0, Mask 0x2
  Route refresh request: received 0, sent 0, maximum limit 10
Threshold for warning message 80%
```

```
Connections established 2; dropped 2
Last reset 00:02:43, due to BGP Notification sent, update malformed
Message received that caused BGP to send a Notification:
```

```
FFFFFFFF FFFFFFFF FFFFFFFF FFFFFFFF
00600200 00001940 01010040 02040201
00C84003 040A0000 01800404 00000000
180A0001 180A0002 180A0003 180A0004
180A0005 180A0006 180A0007 180A0008
180A0009 180A000A 180A000B 180A000C
```

```
Peer had exceeded the max. no. of prefixes configured.
Reduce the no. of prefix and clear ip bgp 10.0.0.1 to restore peering
External BGP neighbor can be up to 2 hops away.
No active TCP connection
```

**注意：使用以下命令以還原對等項功能：**

```
Router_B# clear ip bgp 10.0.0.1
```

## **相關資訊**

- [BGP在Maximum-Prefix Limit之後重新啟動會話](#)
- [疑難排解 BGP](#)
- [BGP 個案研究](#)
- [技術支援與文件 - Cisco Systems](#)