

# BGP表版本

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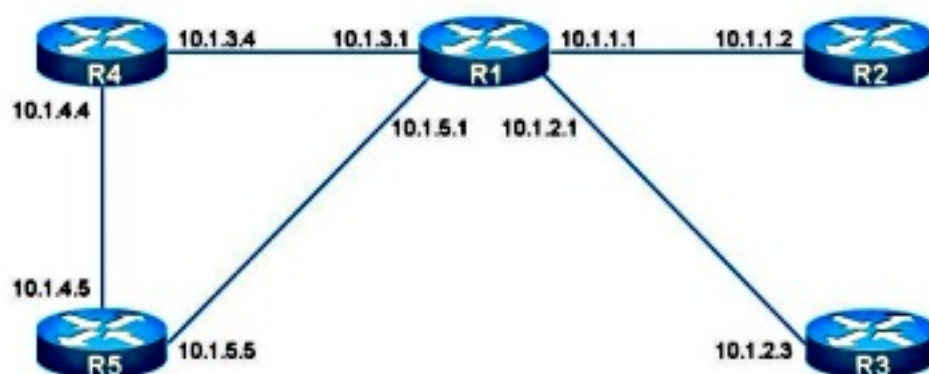
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## 简介

本文描述表格版本，是边界网关协议(BGP)用于的编号为了跟踪传播BGP前缀最佳路径更改BGP对等体。它是BGP软件使用的编号。您能查看表格版本编号，如果回车显示命令，帮助网络管理员排除故障问题。

## 网络图

这是使用此条款的网络图：



## 最佳路径

因为BGP前缀从不同的BGP对等体和来源，了解BGP前缀有一个或多个路径。

这是一个BGP前缀的示例用多条路径。有两个路径，并且最佳路径是第二个。

```
R1#show bgp ipv4 unicast 10.100.1.1
BGP routing table entry for 10.100.1.1/32, version 2
Paths: (2 available, best #2, table default)
  Advertised to update-groups:
    1
  Refresh Epoch 1
  5 4
    10.1.5.5 from 10.1.5.5 (10.1.5.5)
      Origin IGP, localpref 100, valid, external
      rx pathid: 0, tx pathid: 0
  Refresh Epoch 1
  4
    10.1.3.4 from 10.1.3.4 (10.100.1.1)
      Origin IGP, metric 0, localpref 100, valid, external, best
      rx pathid: 0, tx pathid: 0x0
```

仅一个路径选择作为根据BGP最佳路径算法的BGP最佳路径。这总是实际情形。参考[BGP最佳路径选择算法](#)条款欲知更多信息。

路径了解从一个BGP对等体或从一来源，例如从从路由协议的再分配到BGP里。当有一个变化在最佳路径上时，BGP必须通过发送更新或提取通知其对等体。当BGP前缀的最后路径删除时，提取发送。

这是前缀由网络命令来源本地的示例：

```
R4#show bgp ipv4 unicast 10.100.1.1
BGP routing table entry for 10.100.1.1/32, version 4
Paths: (1 available, best #1, table default)
  Advertised to update-groups:
    1
  Refresh Epoch 1
  Local
    0.0.0.0 from 0.0.0.0 (10.1.3.4)
      Origin IGP, metric 0, localpref 100, weight 32768, valid, sourced, local, best
      rx pathid: 0, tx pathid: 0x0
```

输出显示始发地IGP。

这是前缀由再分配连接的命令来源本地的示例：

```
R4#show bgp ipv4 unicast 10.100.1.1
BGP routing table entry for 10.100.1.1/32, version 7
Paths: (1 available, best #1, table default)
Flag: 0x820
Not advertised to any peer
Refresh Epoch 1
Local
  0.0.0.0 from 0.0.0.0 (10.1.3.4)
    Origin incomplete, metric 0, localpref 100, weight 32768, valid, sourced, best
    rx pathid: 0, tx pathid: 0x0
```

输出显示不完整的始发地。

## 表格版本的类型

表格版本编号是32位值，并且有表格版本的四种类型：

- BGP表版本
- 路由信息库(RIB)表格版本
- 对等体表格版本
- 前缀表格版本

这些在**表格版本部分使用情况**进一步解释。

## 最初的表格版本编号

当BGP未了解关于任何前缀时，全局表格版本、RIB表格版本和对等体表格版本是**1**，是表格版本编号的起点。

bgp命令与**概略**的关键字给您三个表格版本编号。概略的关键字可以为在BGP的所有地址家族提供。

```
R1#show bgp ipv4 unicast summary
```

```
BGP router identifier 10.1.3.1, local AS number 1
```

```
BGP table version is 1, main routing table version 1
```

Neighbor	V	AS	MsgRcvd	MsgSent	TblVer	InQ	OutQ	Up/Down	State/PfxRcd
10.1.1.2	4	2	4	4	1	0	0	00:01:15	0
10.1.2.3	4	3	4	4	1	0	0	00:01:06	0
10.1.3.4	4	4	4	4	1	0	0	00:01:33	0

如果在BGP表里，查看一个前缀您能查看前缀表格版本。

```
R1#show bgp ipv4 unicast 10.100.1.1/32
```

```
BGP routing table entry for 10.100.1.1/32, version 2
```

```
Paths: (1 available, best #1, table default)
```

```
Advertised to update-groups:
```

```
1
```

```
Refresh Epoch 1
```

```
4
```

```
10.1.3.4 from 10.1.3.4 (10.1.3.4)
```

```
Origin IGP, metric 0, localpref 100, valid, external, best
```

```
rx pathid: 0, tx pathid: 0x0
```

如果输入**show ip bgp内部命令**，您能查看表格版本：

```
R1#show ip bgp internal
```

```
Time left for bestpath timer: 964 secs
```

```
Consistency-checker not enabled
```

```
Update generation pool version 8, messages 0, in pool 0, below 00:00:24.432.
```

```
Enhanced Refresh EOR Stalepath-time disabled
```

```
Enhanced Refresh max-eor-time disabled
```

```
Total number of BGP Acceptor process: 50, Spawned count: 0
```

```
Total number of neighbors: 4
```

```
Total number of sessions : 4
```

```
Established : 4
```

```
OpenConfirm : 0
```

```
OpenSent : 0
```

```
Active : 0
```

```
Connect : 0
```

```
Idle : 0
```

```
Closing : 0
```

```
Uninitialized : 0
```

```
Address-family IPv4 Unicast, Mode : RW
```

```
Table Versions : Current 39 Init 2 RIB 39
```

```

Start time : 00:00:18.919    Time elapsed 22:15:38.198
First Peer up in : 00:00:06.830    Exited Read-Only in : 00:01:07.966
Done with Install in : 00:01:07.967    Last Update-done in : 00:01:07.969
0 updates expanded
L3VPN Tunnel Encapsulated Paths : 0
Slow-peer detection is disabled    BGP Nexthop scan:-
    penalty: 0, Time since last run: 21:19:42.174, Next due in: none
    Max runtime : 0 ms Latest runtime : 0 ms Scan count: 2
BGP General Scan:-
    Max runtime : 1 ms Latest runtime : 0 ms Scan count: 0

BGP future scanner version: 1333
BGP scanner version: 0
Address-family IPv4 Multicast, Mode : RW
Table Versions : Current 1 Init 1 RIB 1

```

```

Start time : 00:00:18.919    Time elapsed 22:15:38.199
First Peer up in : never    Exited Read-Only in : 00:00:10.286
Done with Install in : 00:00:10.286    Last Update-done in : never
0 updates expanded
L3VPN Tunnel Encapsulated Paths : 0
Slow-peer detection is disabled    BGP Nexthop scan:-
    penalty: 0, Time since last run: never, Next due in: none
    Max runtime : 0 ms Latest runtime : 0 ms Scan count: 0
BGP General Scan:-
    Max runtime : 1 ms Latest runtime : 0 ms Scan count: 0

```

```

BGP future scanner version: 1334
BGP scanner version: 0
Address-family MVPNV4 Unicast, Mode : RW
Table Versions : Current 1 Init 1 RIB 1

```

```

Start time : 00:00:18.919    Time elapsed 22:15:38.200
First Peer up in : never    Exited Read-Only in : 00:00:10.286
Done with Install in : 00:00:10.286    Last Update-done in : never
0 updates expanded
L3VPN Tunnel Encapsulated Paths : 0
Slow-peer detection is disabled    BGP Nexthop scan:-
    penalty: 0, Time since last run: never, Next due in: none
    Max runtime : 0 ms Latest runtime : 0 ms Scan count: 0
BGP General Scan:-
    Max runtime : 1 ms Latest runtime : 0 ms Scan count: 0

```

```

BGP future scanner version: 1334
TX VPN optimization enabled.

```

## 变化的条件在BGP表版本上

为了使更改BGP表的版本号，必须有一个变化在最佳路径上和被传播的一更改对RIB。如果前缀在RIB作为BGP前缀，对RIB的一更改BGP前缀的只发生。如果其他路由协议在路由安置前缀，则BGP前缀被标记作为RIB故障。在那种情况下，即使最佳路径更改，表格版本不更改。

这是示例BGP表版本不更改的地方。获知从R4在R1配置的静态路由也了解BGP前缀10.100.1.1/32。因此，R1安装在RIB的静态路由，并且在R1的BGP指示前缀作为RIB故障，因为安装在RIB的前缀的它不是BGP。此前缀的没有传播对BGP路径的任何更改对RIB。因此，即使有最佳路径更改，BGP表版本没有碰撞，因为没有更新对RIB。

```
R1#show bgp ipv4 unicast 10.100.1.1/32
```

```
BGP routing table entry for 10.100.1.1/32, version 8
Paths: (2 available, best #1, table default, RIB-failure(17))
Advertised to update-groups:
  2
Refresh Epoch 2
4
  10.1.3.4 from 10.1.3.4 (10.100.1.1)
    Origin IGP, metric 0, localpref 100, valid, external, best
    rx pathid: 0, tx pathid: 0x0
Refresh Epoch 2
5 4
  10.1.5.5 from 10.1.5.5 (10.1.5.5)
    Origin IGP, localpref 100, valid, external
    rx pathid: 0, tx pathid: 0
```

```
R1#show ip route 10.100.1.1
Routing entry for 10.100.1.1/32
  Known via "static", distance 1, metric 0 (connected)
  Routing Descriptor Blocks:
  * directly connected, via Loopback0
    Route metric is 0, traffic share count is 1
```

## 表格版本使用情况

当最佳路径更改BGP前缀时，一些工作必须发生：

- 必须通知RIB。
- BGP对等体一定是消息灵通的。
- 路由器必须跟踪哪个BGP对等体是消息灵通的哪最佳路径更改。

BGP表版本是使用的主要号码。此编号是相同的象所有BGP前缀最高的前缀表格版本具体地址家族的。假设有五个前缀在BGP表里，与前缀表格版本3，6，8，10和18。BGP表版本然后将是18。

对等体表格版本用于为了跟踪哪些对等体一定是有变化在最佳路径上的消息灵通的哪些前缀。每对等体对等体表格版本根据前缀的前缀表格版本核对。如果前缀的前缀表格版本比对等体表格版本更低，则BGP必须发送为该前缀的一次更新对该BGP对等体。例如，如果对等体10.1.1.2有对等体表格版本60，然后该对等体为与前缀表格版本的所有前缀是最新60并且降低。路由器必须发送所有前缀的一次BGP更新与高于60的前缀表格版本。

一旦路由器更新最佳路径更改的前缀的BGP对等体，路由器更新此对等体的对等体表格版本。此对等体表格版本值调节匹配所有前缀的最高的前缀表格版本的值此BGP对等体更新。假设对等体表格版本是60，并且有与前缀表格版本61和62的两个前缀。一旦路由器发送这两个前缀的新的最佳路径给该BGP对等体，然后对等体表格版本更新到62。

前缀表格版本是表格版本编号附加对BGP前缀。当最佳路径为该前缀时，更改它更改。每次最佳路径为一个BGP前缀更改，其前缀表格版本碰撞，含义更新是相等的与下个可用的版本编号。假设前缀10.0.0.0/8有前缀表格版本27，并且BGP表版本是30。在这种情况下，当最佳路径为前缀10.0.0.0/8时更改，其前缀表格版本碰撞到31。

RIB表格版本用于为了跟踪，如果RIB需要更新，在BGP最佳路径更改发生后。RIB一定是高于RIB表格版本有前缀的表格版本的消息灵通的BGP前缀。这些前缀，有RIB添加，删除或修改事件。

## 排除故障的使用情况

为了知道，当BGP聚合时，请输入**summary**命令的**show bgp**。如果对等体BGP表版本等于BGP表版本，该对等体聚合。如果主要路由表版本等于BGP表版本，RIB聚合。

```
R1#show bgp ipv4 unicast summary
BGP router identifier 10.1.3.1, local AS number 1
BGP table version is 2, main routing table version 2
1 network entries using 144 bytes of memory
1 path entries using 80 bytes of memory
1/1 BGP path/bestpath attribute entries using 144 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 using 392 total bytes of memory
BGP activity 1/0 prefixes, 1/0 paths, scan interval 60 secs
```

Neighbor	V	AS	MsgRcvd	MsgSent	TblVer	InQ	OutQ	Up/Down	State/PfxRcd
10.1.1.2	4	2	69	69	2	0	0	01:00:54	0
10.1.2.3	4	3	69	70	2	0	0	01:00:45	0
10.1.3.4	4	4	72	70	2	0	0	01:01:12	1

可以有对BGP表版本的许多更改，并且那不总是意味着某事是错误的。

假设，路由器连接到互联网，并且有完全互联网路由表。一般，有一些更改几乎在互联网BGP表的每秒钟。然后，路由器必须重新计算一些前缀的最佳路径，并且更新其RIB和其BGP对等体。这是预料之中的现象。

假设您结算BGP对等体(会话重置)，然后路由器必须通告其全双工BGP表对该对等体。预计为了该对等体能有增加的表格版本。当对等体再，接收BGP前缀表格版本增加。发送的BGP对等体不增加BGP前缀的表格版本。

下面是一个示例。表格版本从**28**开始。

```
R1#show bgp ipv4 unicast summary
BGP router identifier 10.1.3.1, local AS number 1
BGP table version is 28, main routing table version 281
network entries using 144 bytes of memory2 path entries using 160 bytes of memory
2/1 BGP path/bestpath attribute entries using 288 bytes of memory
2 BGP AS-PATH entries using 48 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 640 total bytes of memory
BGP activity 1/0 prefixes, 16/14 paths, scan interval 60 secs
```

Neighbor	V	AS	MsgRcvd	MsgSent	TblVer	InQ	OutQ	Up/Down	State/PfxRcd
10.1.1.2	4	2	117	125	28	0	0	01:43:50	0
10.1.2.3	4	3	117	125	28	0	0	01:43:53	0
10.1.3.4	4	4	10	12	28	0	0	00:04:22	1
10.1.5.5	4	5	55	63	28	0	0	00:45:45	1

```
R1#show bgp ipv4 unicast 10.100.1.1/32
BGP routing table entry for 10.100.1.1/32, version 28
```

Paths: (2 available, best #1, table default)

Advertised to update-groups:

1

Refresh Epoch 2

4

```
10.1.3.4 from 10.1.3.4 (10.100.1.1) <<< path from R4
Origin IGP, metric 0, localpref 100, valid, external, best
rx pathid: 0, tx pathid: 0x0
```

```
Refresh Epoch 2
5 4
10.1.5.5 from 10.1.5.5 (10.1.5.5) <<< path from R5
Origin IGP, localpref 100, valid, external
rx pathid: 0, tx pathid: 0
```

执行BGP会话的硬结算往在对等体10.1.3.4 (R4)的R1。对等体只通告往R1的一个前缀10.100.1.1/32。10.100.1.1/32从R4和R5了解。最佳路径是从R4的路径。

保证您有debug ip bgp内部已启用为了看到什么发生在BGP表版本。您应该安排debug ip bgp updates启用为了发现发生了什么，当更新到达。

```
R1#debug ip bgp updates
BGP updates debugging is on for address family: IPv4 Unicast
```

```
R1#debug ip bgp internal
BGP internal debugging is on
```

```
R1#show debugging
```

```
IP routing:
```

```
BGP internal debugging is on
```

```
BGP updates debugging is on for address family: IPv4 Unicast R1#
```

```
%BGP-5-NBR_RESET: Neighbor 10.1.3.4 reset (Peer closed the session) <<< BGP
session to R4 goes down
```

```
BGP: TX IPv4 Unicast Net global 10.100.1.1/32 Changed.
```

```
BGP: TX IPv4 Unicast Net global 10.100.1.1/32 RIB done.
```

```
BGP: TX IPv4 Unicast Net global 10.100.1.1/32 Changed.
```

```
BGP: TX IPv4 Unicast Mem global 1 1 10.1.3.4 Resetting counters.
```

```
BGP: TX IPv4 Unicast Mem global 1 1 10.1.3.4 Ignoring dummy policy change.
```

```
BGP: TX IPv4 Unicast Mem global 1 1 10.1.3.4 Resetting counters.
```

```
BGP: TX IPv4 Unicast Mem global 1 1 10.1.3.4 Ignoring dummy policy change.
```

```
BGP: TX IPv4 Unicast Mem global 1 1 10.1.3.4 Changing state from ACTIVE to DOWN
(session not established).
```

```
BGP: TX IPv4 Unicast Mem global 1 1 10.1.3.4 Removing from group (3 members left).
```

```
%BGP-5-ADJCHANGE: neighbor 10.1.3.4 Down Peer closed the session
```

```
%BGP_SESSION-5-ADJCHANGE: neighbor 10.1.3.4 IPv4 Unicast topology base removed
from session Peer
closed the session
```

```
BGP: TX IPv4 Unicast Mem global 10.1.3.4 State is DOWN (session not established).
```

```
BGP: net global:IPv4 Unicast:base 10.100.1.1/32 RIB-INSTALL Attempting to
install. <<< RIB gets informed
```

```
BGP: net global:IPv4 Unicast:base 10.100.1.1/32 RIB-INSTALL Built route type:
1024, flags: 200000, tag: 5,
metric: 0 path: 1.
```

```
BGP: net global:IPv4 Unicast:base 10.100.1.1/32 RIB-INSTALL Path 1, type: DEF,
gw: 10.1.5.5, idb: N/A,
topo_id: 0, src: 1.1.5.5, lbl: 1048577, flags: 0.
```

```
BGP: net global:IPv4 Unicast:base 10.100.1.1/32 RIB-INSTALL Installing 1 paths,
multipath limit 1 (from 1).
```

```
BGP(0): Revise route installing 1 of 1 routes for 10.100.1.1/32 -> 10.1.5.5
(global) to main IP table <<< The remaining path through R5 gets installed
in the RIB
```

```
BGP: net global:IPv4 Unicast:base 10.100.1.1/32 RIB-INSTALL Install successful.
```

```
BGP: TX IPv4 Unicast Net global 10.100.1.1/32 RIB done.
```

```
BGP: TX IPv4 Unicast Net global 10.100.1.1/32 RIB done.
```

```
BGP: TX IPv4 Unicast Tab RIB walk done version 29, added 1 topologies.
```

```
BGP: TX IPv4 Unicast Tab Executing.
```

```
BGP: TX IPv4 Unicast Wkr global 1 Cur Processing.
```

```
BGP: TX IPv4 Unicast Top global Appending nets from attr 0x9362CB4.
```

```
BGP: TX IPv4 Unicast Wkr global 1 Cur Attr change from 0x0 to 0x9362CB4.
```

```
BGP(0): (base) 10.1.1.2 send UPDATE (format) 10.100.1.1/32, next 10.1.1.1,
metric 0, path 5 4 <<< R1 sends update for 10.100.1.1/32 for Table Version 29.
(bestpath is still the one from R5, i.e. the only one R1 has at this moment)
```

BGP: TX IPv4 Unicast Wkr global 1 Cur Net 10.100.1.1/32 (Pxt 0x9F58FA0:0x0)  
Formatted.

BGP: TX IPv4 Unicast Top global No attributes with modified nets.

BGP: TX IPv4 Unicast Top global Added tail marker with version 29.

BGP: TX IPv4 Unicast Wkr global 1 Cur Reached marker with version 29.

BGP: TX IPv4 Unicast Top global No attributes with modified nets.

BGP: TX IPv4 Unicast Wkr global 1 Cur Replicating.

BGP: TX IPv4 Unicast Wkr global 1 Cur Done (end of list), processed 1 attr(s),  
1/1 net(s), 0 pos.

BGP: TX IPv4 Unicast Grp global 1 Checking EORs again (3/3).

BGP: TX IPv4 Unicast Grp global 1 Start minimum advertisement timer (30 secs).

BGP: TX IPv4 Unicast Wkr global 1 Cur Blocked (minimum advertisement interval).

BGP: TX IPv4 Unicast Wkr global 1 Cur Reached end of list.

BGP: TX IPv4 Unicast Grp global 1 Converged.

BGP: TX IPv4 Unicast Tab Processed 1 walker(s).

BGP: TX IPv4 Unicast Tab Generation completed.

BGP: TX IPv4 Unicast Top global Deleting first marker with version 28.

BGP: TX IPv4 Unicast Top global Collection reached marker 28 after 0 path  
extension(s).

BGP: TX IPv4 Unicast Top global Collection done on marker 29 after 1 path  
extension(s).

BGP: TX IPv4 Unicast Top global Collection done on marker 29 after 0 path  
extension(s).

BGP: TX IPv4 Unicast Mem global 10.1.3.4 Policy change while no group and  
member is DOWN.

BGP: TX IPv4 Unicast Mem global 10.1.3.4 Changing state from DOWN to WAIT  
(pending advertised bit allocation).

BGP: TX IPv4 Unicast Mem global 1 1 10.1.3.4 Added to group (now has  
4 members).

BGP: TX IPv4 Unicast Mem global 1 1 10.1.3.4 Continuing into ACTIVE state.

BGP: TX IPv4 Unicast Mem global 1 1 10.1.3.4 Refresh Start-of-rib for afi 1,  
safi 1.

BGP: TX IPv4 Unicast Mem global 1 1 10.1.3.4 Full refresh requested.

BGP: TX IPv4 Unicast Mem global 1 1 10.1.3.4 Refresh has to wait for pathext  
prepend.

**%BGP-5-ADJCHANGE: neighbor 10.1.3.4 Up <<< BGP session to R4 is up again.  
But, R1 did not learn the prefix 10.100.1.1/32 yet from R4.**

BGP: nbr\_topo global 10.1.3.4 IPv4 Unicast:base (0x63D50D0:1) rcvd Refresh  
Start-of-RIB

BGP: nbr\_topo global 10.1.3.4 IPv4 Unicast:base (0x63D50D0:1) refresh\_epoch  
is 2

BGP: TX IPv4 Unicast Top global Start pathext prepend.

BGP: TX IPv4 Unicast Tab Pathext prepend full table refresh.

BGP: TX IPv4 Unicast Tab Pathext prepend full table refresh.

BGP: TX IPv4 Unicast Top global Inserting initial marker.

BGP: TX IPv4 Unicast Top global Done pathext prepend (1 attrs).

BGP: TX IPv4 Unicast Grp global 1 Starting refresh after prepend completion.

BGP: TX IPv4 Unicast Mem global 1 1 10.1.3.4 Starting refresh (first member,  
1, 0, marker).

BGP: TX IPv4 Unicast Wkr global 1 Ref Start at marker 1.

BGP: TX IPv4 Unicast Wkr global 1 Ref Unblocked

BGP: TX IPv4 Unicast Top global Collection done on marker 1 after 0 path  
extension(s).

BGP: TX IPv4 Unicast Tab Executing.

BGP: TX IPv4 Unicast Wkr global 1 Ref Processing.

BGP: TX IPv4 Unicast Wkr global 1 Ref Attr change from 0x0 to 0x9362CB4.

BGP(0): (base) 10.1.1.2 send UPDATE (format) 10.100.1.1/32, next 10.1.1.1,  
metric 0, path 5 4

BGP: TX IPv4 Unicast Wkr global 1 Ref Net 10.100.1.1/32 (Pxt 0x9F58FA0:0x0)  
Formatted.

BGP: TX IPv4 Unicast Wkr global 1 Ref Reached marker with version 29.

BGP: TX IPv4 Unicast Wkr global 1 Ref Replicating (pending member\_pos  
processing).

BGP: TX IPv4 Unicast Mem global 1 1 10.1.3.4 Completed refresh.



BGP: TX IPv4 Unicast Mem global 1 1 10.1.3.4 Refresh stop.  
BGP: TX IPv4 Unicast Grp global 1 Refresh complete.  
BGP: TX IPv4 Unicast Wkr global 1 Ref Stop.  
BGP: TX IPv4 Unicast Wkr global 1 Ref Blocked (not in list).  
BGP: TX IPv4 Unicast Grp global 1 Converged.  
BGP: TX IPv4 Unicast Mem global 1 1 10.1.3.4 Send EOR.  
BGP: TX IPv4 Unicast Wkr global 1 Ref Suspending / blocked (member marker),  
processed 1 attr(s), 1/1 net(s),  
1 pos.  
BGP: TX IPv4 Unicast Tab Processed 1 walker(s).  
BGP: TX IPv4 Unicast Tab Generation completed.  
BGP: TX IPv4 Unicast Top global Deleting first marker with version 1.  
BGP: TX IPv4 Unicast Top global Collection reached marker 1 after 0 path  
extension(s).  
BGP: TX IPv4 Unicast Top global Collection done on marker 29 after 1 path  
extension(s).  
BGP: TX IPv4 Unicast Top global Collection done on marker 29 after 0 path  
extension(s).  
**BGP(0): 10.1.3.4 rcvd UPDATE w/ attr: nexthop 10.1.3.4, origin i, metric 0,  
merged path4, AS\_PATH**  
**BGP(0): 10.1.3.4 rcvd 10.100.1.1/32 <<< R1 received 10.100.1.1/32 from  
R4 again**  
BGP: TX IPv4 Unicast Net global 10.100.1.1/32 Changed.  
BGP: nbr\_topo global 10.1.3.4 IPv4 Unicast:base (0x63D50D0:1) rcvd Refresh  
End-of-RIB  
BGP: net global:IPv4 Unicast:base 10.100.1.1/32 RIB-INSTALL Attempting to install.  
BGP: net global:IPv4 Unicast:base 10.100.1.1/32 RIB-INSTALL Built route type:  
1024, flags: 200000, tag: 4, metric: 0 path: 1.  
BGP: net global:IPv4 Unicast:base 10.100.1.1/32 RIB-INSTALL Path 1, type: DEF,  
gw: 10.1.3.4, idb: N/A, topo\_id: 0, src: 1.1.3.4, lbl: 1048577, flags: 0.  
BGP: net global:IPv4 Unicast:base 10.100.1.1/32 RIB-INSTALL Installing 1 paths,  
multipath limit 1 (from 1).  
BGP(0): Revise route installing 1 of 1 routes for 10.100.1.1/32 -> 10.1.3.4  
(global) to main IP table  
BGP: net global:IPv4 Unicast:base 10.100.1.1/32 RIB-INSTALL Install successful.  
BGP: TX IPv4 Unicast Net global 10.100.1.1/32 RIB done.  
BGP: TX IPv4 Unicast Net global 10.100.1.1/32 RIB done.  
**BGP: TX IPv4 Unicast Tab RIB walk done version 30, added 1 topologies.**  
BGP: TX IPv4 Unicast Tab Executing.  
BGP: TX IPv4 Unicast Tab Generation completed.  
BGP: TX Member message pool under period (60 < 600).  
BGP: TX IPv4 Unicast Mem global 1 1 10.1.2.3 State is ACTIVE (ready).  
BGP: TX IPv4 Unicast Grp global 1 Minimum advertisement timer expired.  
BGP: TX IPv4 Unicast Wkr global 1 Cur Unblocked  
BGP: TX IPv4 Unicast Tab Executing.  
BGP: TX IPv4 Unicast Wkr global 1 Cur Processing.  
BGP: TX IPv4 Unicast Top global Appending nets from attr 0x9362D54.  
BGP: TX IPv4 Unicast Wkr global 1 Cur Attr change from 0x0 to 0x9362D54.  
**BGP(0): (base) 10.1.1.2 send UPDATE (format) 10.100.1.1/32, next 10.1.1.1,  
metric 0, path 4 <<< R1 sends an update for 10.100.1.1/32 for Table Version  
30 (bestpath is again the one from R4)**  
BGP: TX IPv4 Unicast Wkr global 1 Cur Net 10.100.1.1/32 (Pxt 0x9F58FA0:0x0)  
Formatted.  
BGP: TX IPv4 Unicast Top global No attributes with modified nets.  
BGP: TX IPv4 Unicast Top global Added tail marker with version 30.  
BGP: TX IPv4 Unicast Wkr global 1 Cur Reached marker with version 30.  
BGP: TX IPv4 Unicast Top global No attributes with modified nets.  
BGP: TX IPv4 Unicast Wkr global 1 Cur Replicating.  
BGP: TX IPv4 Unicast Wkr global 1 Cur Done (end of list), processed 1  
attr(s), 1/1 net(s), 0 pos.  
BGP: TX IPv4 Unicast Grp global 1 Checking EORs again (4/4).  
BGP: TX IPv4 Unicast Grp global 1 Start minimum advertisement timer (30 secs).  
BGP: TX IPv4 Unicast Wkr global 1 Cur Blocked (minimum advertisement interval).  
BGP: TX IPv4 Unicast Wkr global 1 Cur Reached end of list.

```

BGP: TX IPv4 Unicast Grp global 1 Converged.
BGP: TX IPv4 Unicast Tab Processed 1 walker(s).
BGP: TX IPv4 Unicast Tab Generation completed.
BGP: TX IPv4 Unicast Top global Deleting first marker with version 29.
BGP: TX IPv4 Unicast Top global Collection reached marker 29 after 0 path
extension(s).
BGP: TX IPv4 Unicast Top global Collection done on marker 30 after 1 path
extension(s).
BGP: TX IPv4 Unicast Top global Collection done on marker 30 after 0 path
extension(s).
BGP: TX IPv4 Unicast Tab RIB walk done version 30, added 0 topologies.

```

所有表格版本当前在**30**：

```

R1#show bgp ipv4 unicast summary
BGP router identifier 10.1.3.1, local AS number 1
BGP table version is 30, main routing table version 30
1 network entries using 144 bytes of memory
2 path entries using 160 bytes of memory
2/1 BGP path/bestpath attribute entries using 288 bytes of memory
2 BGP AS-PATH entries using 48 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 640 total bytes of memory
BGP activity 1/0 prefixes, 17/15 paths, scan interval 60 secs

```

Neighbor	V	AS	MsgRcvd	MsgSent	TblVer	InQ	OutQ	Up/Down	State/PfxRcd
10.1.1.2	4	2	127	135	30	0	0	01:52:42	0
10.1.2.3	4	3	126	136	30	0	0	01:52:45	0
10.1.3.4	4	4	12	14	30	0	0	00:06:25	1
10.1.5.5	4	5	64	73	30	0	0	00:54:37	1

```

R1#show bgp ipv4 unicast 10.100.1.1/32
BGP routing table entry for 10.100.1.1/32, version 30
Paths: (2 available, best #1, table default)
  Advertised to update-groups:
    1
  Refresh Epoch 2
  4
    10.1.3.4 from 10.1.3.4 (10.100.1.1)
      Origin IGP, metric 0, localpref 100, valid, external, best
      rx pathid: 0, tx pathid: 0x0
  Refresh Epoch 2
  5 4
    10.1.5.5 from 10.1.5.5 (10.1.5.5)
      Origin IGP, localpref 100, valid, external
      rx pathid: 0, tx pathid: 0

```

最后，在R1，有两最佳路径更改。因此，获得的表格版本由**2**碰撞。

首先，对等体**10.1.3.4**在R1去下来。最佳路径更改到从R5接收的路径。表格版本增加到下个可用的编号，是**29**。前缀表格版本碰撞到**29**。RIB更新与此新建的最佳路径。RIB的表格版本增加到**29**。然后，R1发送了更新给新的最佳路径的BGP对等体**10.1.1.2**并且更新对等体表格版本到**29**。其他对等体更新。

其次，曾经对等体**10.1.3.4**再是UP，R1接收为**10.100.1.1/32**的更新从R4并且重新计算最佳路径。从R4的路径是新的最佳路径，导致表格版本和前缀表格版本将碰撞对下可用的数量**30**。再次，RIB和其他BGP对等体更新，并且RIB和对等体表格版本更新到**30**。表格版本由一个每次仅碰撞此处。然而，如果其他BGP前缀进行了其他更改，此表格版本碰撞将由超过一个，因为每次跳到下个可用的编号。

如果输入**clear ip bgp out**命令为BGP对等体，该路由器再发出其BGP前缀给该对等体。这不在接收的BGP对等体的最佳路径上引起一个变化。因此，没有在表格版本上的变化在该对等体。

当您运行在接收路由器时的**debug ip bgp updates**，您看到：

```
BGP(0): 10.1.3.4 rcvd UPDATE w/ attr: nexthop 10.1.3.4, origin i,  
metric 0, merged path 4, AS_PATH  
BGP(0): 10.1.3.4 rcvd 10.100.1.1/32...duplicate ignored
```

已接收更新被认可作为重复项，因此忽略，并且最佳路径更改不发生。

假设您有有100.000前缀的一个路由器在BGP表里，并且BGP表版本每分钟增加100.000。这没有预计，并且必须检查行为。行为的一个原因可能是BGP前缀的下一跳为所有前缀每分钟拍动。

其中一种结果，当BGP表版本迅速地时增加是进程BGP路由器和BGP IO忙碌，也许导致常数高路由器CPU。