

---

## Show Commands

### router

<b>Syntax</b>	<b>router</b> [ <i>router-instance</i> ]
<b>Context</b>	show
<b>Description</b>	Displays router instance information.
<b>Parameters</b>	<i>router-instance</i> — Specify either the router-name or service-id
<b>Values</b>	router-name: Base, management service-id: 1 — 2147483647
<b>Default</b>	<b>Base</b>

### bgp

<b>Syntax</b>	<b>bgp</b>
<b>Context</b>	show>router
<b>Description</b>	Enables the context to display BGP related information.

### auth-keychain

<b>Syntax</b>	<b>auth-keychain</b> [ <i>keychain</i> ]
<b>Context</b>	show>router>bgp show>router>bgp>group show>router>bgp>group>neighbor
<b>Description</b>	This command displays BGP sessions using particular authentication key-chain.
<b>Parameters</b>	<i>keychain</i> — Specifies an existing keychain name.

#### Sample Output

```
*A:ALA-48# show router 2 bgp auth-keychain
=====
Sessions using key chains
=====
Peer address           Group      Keychain name
-----
10.20.1.3              1         eta_keychain1
30.1.0.2               1         eta_keychain1
```

## Show Commands

```
=====
*A:ALA-48#
*A:ALA-48>config>router>bgp# show router bgp group "To_AS_10000"
=====
BGP Group : To_AS_10000
-----
Group          : To_AS_10000
-----
Group Type      : No Type          State          : Up
Peer AS        : 10000             Local AS       : 200
Local Address   : n/a              Loop Detect    : Ignore
Import Policy  : None Specified / Inherited
Export Policy   : ospf3
Hold Time      : 90                Keep Alive     : 30
Cluster Id     : 0.0.0.100         Client Reflect : Enabled
NLRI           : Unicast           Preference     : 170
TTL Security   : Disabled          Min TTL Value  : n/a
Graceful Restart : Enabled          Stale Routes Time: 360
Auth key chain : testname

List of Peers
- 10.0.0.8 :
    To Router B - EBGp Peer
Total Peers   : 1                  Established    : 0
-----
Peer Groups : 1
=====
*A:ALA-48>config>router>bgp#

*A:ALA-48>config>router>bgp# show router bgp neighbor 10.0.0.8
=====
BGP Neighbor
-----
Peer   : 10.0.0.8
Group  : To_AS_10000
-----
Peer AS      : 10000          Peer Port      : 0
Peer Address : 10.0.0.8       Local Port     : 0
Local AS     : 200            Local Address   : 0.0.0.0
Peer Type    : External
State       : Active          Last State     : Idle
Last Event   : stop
Last Error   : Cease
Local Family : IPv4
Remote Family : Unused
Hold Time    : 90             Keep Alive     : 30
Active Hold Time : 0         Active Keep Alive : 0
Cluster Id   : 0.0.0.100
Preference   : 99            Num of Flaps   : 0
Recd. Paths  : 0
IPv4 Recd. Prefixes : 0      IPv4 Active Prefixes : 0
IPv4 Suppressed Pfxs : 0      VPN-IPv4 Suppr. Pfxs : 0
VPN-IPv4 Recd. Pfxs : 0       VPN-IPv4 Active Pfxs : 0
Mc IPv4 Recd. Pfxs. : 0       Mc IPv4 Active Pfxs. : 0
Mc IPv4 Suppr. Pfxs : 0       IPv6 Suppressed Pfxs : 0
IPv6 Recd. Prefixes : 0       IPv6 Active Prefixes : 0
Input Queue  : 0              Output Queue   : 0
=====
```

```

i/p Messages      : 0                o/p Messages      : 0
i/p Octets        : 0                o/p Octets        : 0
i/p Updates       : 0                o/p Updates       : 0
TTL Security      : Disabled         Min TTL Value     : n/a
Graceful Restart  : Enabled          Stale Routes Time : 360
Advertise Inactive : Disabled       Peer Tracking     : Disabled
Advertise Label   : None
Auth key chain    : testname
Local Capability  : RouteRefresh MP-BGP
Remote Capability :
Import Policy     : None Specified / Inherited
Export Policy     : ospf3

```

```
-----
Neighbors : 1
=====
```

```
*A:ALA-48>config>router>bgp#
```

```
*A:ALA-48>config>router>bgp# show router bgp auth-keychain testname
```

```
=====
Sessions using key chain: keychain
=====
```

Peer address	Group	Keychain name
10.0.0.8	To_AS_10000	testname

```
=====
*A:ALA-48>config>router>bgp#
```

## damping

**Syntax** **damping** [*damp-type*] [**detail**]  
**damping** [*ip-prefix* | *prefix-length*] [**detail**]

**Context** show>router>bgp

**Description** This command displays BGP routes which have been dampened due to route flapping. This command can be entered with or without a route parameter.

When the keyword **detail** is included, more detailed information displays.

When only the command is entered (without any parameters included except **detail**), then all dampened routes are listed.

When a parameter is specified, then the matching route or routes are listed.

When a **decayed**, **history**, or **suppressed** keyword is specified, only those types of dampened routes are listed.

**Parameters** *ip-prefix* — Displays damping information for the specified IP prefix and length.

Values	ipv4-prefix	a.b.c.d (host bits must be 0)
	ipv4-prefix-length	0 — 32
	ipv6-prefix	x:x:x:x:x:x:x (eight 16-bit pieces)
		x:x:x:x:x:d.d.d.d
		x: [0 — FFFF]H

## Show Commands

ipv6-prefix-length d: [0 — 255]D  
0 — 128

*damp-type* — Specifies the type of damping to display.

**Values** **decayed** — Displays damping entries that are decayed but are not suppressed.  
**history** — Displays damping entries that are withdrawn but have history. **suppressed** — Displays damping entries suppressed because of route damping.

**detail** — Displays detailed information.

**Output** **Damping Output Fields** — The following table describes BGP damping output fields.

Label	Description
BGP Router ID	The local BGP router ID.
The local BGP router ID.	The configured autonomous system number.
Local AS	The configured or inherited local AS for the specified peer group. If not configured, then it is the same value as the AS.
Network	Route IP prefix and mask length for the route.
Flag(s)	Legend: Status codes: u- used, s-suppressed, h-history, d-decayed, *-valid. If a * is not present, then the status is invalid. Origin codes: i-IGP, e-EGP, ?-incomplete, >-best
From	The originator ID path attribute value.
Reuse time	The time when a suppressed route can be used again.
From	The originator ID path attribute value.
Reuse time	The time when a suppressed route can be used again.
AS Path	The BGP AS path for the route.
Peer	The router ID of the advertising router.
NextHop	BGP nexthop for the route.
Peer AS	The autonomous system number of the advertising router.
Peer Router-Id	The router ID of the advertising router.
Local Pref	BGP local preference path attribute for the route.
Age	The length of time in hour/minute/second (HH:MM:SS) format.
Last update	The time when BGP was updated last in day/hour/minute (DD:HH:MM) format.
FOM Present	The current Figure of Merit (FOM) value.
Number of Flaps	The number of route flaps in the neighbor connection.

Label	Description (Continued)
Reuse time	The time when the route can be reused.
Path	The BGP AS path for the route.
Applied Policy	The applied route policy name.

### Sample Output

```
A:ALA-12# show router bgp damping
=====
BGP Router ID : 10.0.0.14      AS : 65206   Local AS : 65206
=====
Legend -
Status codes : u - used, s - suppressed, h - history, d - decayed, * - valid
Origin codes  : i - IGP, e - EGP, ? - incomplete, - best
=====
BGP Damped Routes
=====
Flag  Network           From           Reuse          AS-Path
-----
ud*i  12.149.7.0/24        10.0.28.1     00h00m00s     60203 65001 19855 3356
                                     1239 22406
si    24.155.6.0/23        10.0.28.1     00h43m41s     60203 65001 19855 3356
                                     2914 7459
si    24.155.8.0/22        10.0.28.1     00h38m31s     60203 65001 19855 3356
                                     2914 7459
si    24.155.12.0/22       10.0.28.1     00h35m41s     60203 65001 19855 3356
                                     2914 7459
si    24.155.22.0/23       10.0.28.1     00h35m41s     60203 65001 19855 3356
                                     2914 7459
si    24.155.24.0/22       10.0.28.1     00h35m41s     60203 65001 19855 3356
                                     2914 7459
si    24.155.28.0/22       10.0.28.1     00h34m31s     60203 65001 19855 3356
                                     2914 7459
si    24.155.40.0/21       10.0.28.1     00h28m24s     60203 65001 19855 3356
                                     7911 7459
si    24.155.48.0/20       10.0.28.1     00h28m24s     60203 65001 19855 3356
                                     7911 7459
ud*i  61.8.140.0/24        10.0.28.1     00h00m00s     60203 65001 19855 3356
                                     4637 17447
ud*i  61.8.141.0/24        10.0.28.1     00h00m00s     60203 65001 19855 3356
                                     4637 17447
ud*i  61.9.0.0/18          10.0.28.1     00h00m00s     60203 65001 19855 3356
                                     3561 9658 6163
. . .
ud*i  62.213.184.0/23     10.0.28.1     00h00m00s     60203 65001 19855 3356
                                     6774 6774 9154
=====
A:ALA-12#
```

## Show Commands

```
A:ALA-12# show router bgp damping detail
```

```
=====
BGP Router ID : 10.0.0.14      AS : 65206   Local AS : 65206
=====
Legend -
Status codes : u - used, s - suppressed, h - history, d - decayed, * -
valid
Origin codes : i - IGP, e - EGP, ? - incomplete, - best
=====
BGP Damped Routes
=====
Network : 12.149.7.0/24
-----
Network      : 12.149.7.0/24      Peer      : 10.0.28.1
NextHop      : 10.0.28.1         Reuse time : 00h00m00s
Peer AS      : 60203             Peer Router-Id : 32.32.27.203
Local Pref   : none
Age          : 00h22m09s         Last update  : 02d00h58m
FOM Present  : 738               FOM Last upd. : 2039
Number of Flaps : 2              Flags       : ud*i
Path         : 60203 65001 19855 3356 1239 22406
Applied Policy : default-damping-profile
-----
Network : 15.142.48.0/20
-----
Network      : 15.142.48.0/20    Peer      : 10.0.28.1
NextHop      : 10.0.28.1         Reuse time : 00h00m00s
Peer AS      : 60203             Peer Router-Id : 32.32.27.203
Local Pref   : none
Age          : 00h00m38s         Last update  : 02d01h20m
FOM Present  : 2011              FOM Last upd. : 2023
Number of Flaps : 2              Flags       : ud*i
Path         : 60203 65001 19855 3356 3561 5551 1889
Applied Policy : default-damping-profile
-----
Network : 15.200.128.0/19
-----
Network      : 15.200.128.0/19   Peer      : 10.0.28.1
NextHop      : 10.0.28.1         Reuse time : 00h00m00s
Peer AS      : 60203             Peer Router-Id : 32.32.27.203
Local Pref   : none
Age          : 00h00m38s         Last update  : 02d01h20m
FOM Present  : 2011              FOM Last upd. : 2023
Number of Flaps : 2              Flags       : ud*i
Path         : 60203 65001 19855 1299 702 1889
Applied Policy : default-damping-profile
-----
Network : 15.203.192.0/18
-----
Network      : 15.203.192.0/18   Peer      : 10.0.28.1
NextHop      : 10.0.28.1         Reuse time : 00h00m00s
Peer AS      : 60203             Peer Router-Id : 32.32.27.203
Local Pref   : none
Age          : 00h00m07s         Last update  : 02d01h20m
FOM Present  : 1018              FOM Last upd. : 1024
Number of Flaps : 1              Flags       : ud*i
Path         : 60203 65001 19855 1299 702 1889
Applied Policy : default-damping-profile
```

```

-----
A:ALA-12#
A:ALA-12# show router bgp damping 15.203.192.0/18 detail
=====
BGP Router ID : 10.0.0.14      AS : 65206   Local AS : 65206
=====
Legend -
Status codes : u - used, s - suppressed, h - history, d - decayed, * - valid
Origin codes : i - IGP, e - EGP, ? - incomplete, - best
=====
BGP Damped Routes 15.203.192.0/18
=====
Network : 15.203.192.0/18
-----
Network          : 15.203.192.0/18      Peer          : 10.0.28.1
NextHop         : 10.0.28.1            Reuse time   : 00h00m00s
Peer AS        : 60203                 Peer Router-Id : 32.32.27.203
Local Pref     : none
Age            : 00h00m42s             Last update  : 02d01h20m
FOM Present    : 2003                  FOM Last upd. : 2025
Number of Flaps : 2                     Flags        : ud*i
Path           : 60203 65001 19855 3356 702 1889
Applied Policy : default-damping-profile
-----
Paths : 1
=====
A:ALA-12#

```

```

A:ALA-12# show router bgp damping suppressed detail
=====
BGP Router ID : 10.0.0.14      AS : 65206   Local AS : 65206
=====
Legend -
Status codes : u - used, s - suppressed, h - history, d - decayed, * - valid
Origin codes : i - IGP, e - EGP, ? - incomplete, - best
=====
BGP Damped Routes (Suppressed)
=====
Network : 15.142.48.0/20
-----
Network          : 15.142.48.0/20      Peer          : 10.0.28.1
NextHop         : 10.0.28.1            Reuse time   : 00h29m22s
Peer AS        : 60203                 Peer Router-Id : 32.32.27.203
Local Pref     : none
Age            : 00h01m28s             Last update  : 02d01h20m
FOM Present    : 2936                  FOM Last upd. : 3001
Number of Flaps : 3                     Flags        : si
Path           : 60203 65001 19855 3356 702 1889
Applied Policy : default-damping-profile
-----
Network : 15.200.128.0/19
-----
Network          : 15.200.128.0/19      Peer          : 10.0.28.1
NextHop         : 10.0.28.1            Reuse time   : 00h29m22s
Peer AS        : 60203                 Peer Router-Id : 32.32.27.203
Local Pref     : none

```

## Show Commands

```
Age           : 00h01m28s           Last update    : 02d01h20m
FOM Present   : 2936                 FOM Last upd.  : 3001
Number of Flaps : 3                   Flags          : si
Path          : 60203 65001 19855 3356 702 1889
Applied Policy : default-damping-profile
-----
Network : 15.203.240.0/20
-----
Network      : 15.203.240.0/20      Peer           : 10.0.28.1
NextHop      : 10.0.28.1           Reuse time    : 00h29m22s
Peer AS      : 60203               Peer Router-Id : 32.32.27.203
Local Pref   : none
Age          : 00h01m28s           Last update    : 02d01h20m
FOM Present   : 2936                 FOM Last upd.  : 3001
Number of Flaps : 3                   Flags          : si
Path          : 60203 65001 19855 3356 702 1889
Applied Policy : default-damping-profile
-----
Network : 15.206.0.0/17
-----
Network      : 15.206.0.0/17      Peer           : 10.0.28.1
NextHop      : 10.0.28.1           Reuse time    : 00h29m22s
Peer AS      : 60203               Peer Router-Id : 32.32.27.203
Local Pref   : none
Age          : 00h01m28s           Last update    : 02d01h20m
FOM Present   : 2936                 FOM Last upd.  : 3001
Number of Flaps : 3                   Flags          : si
Path          : 60203 65001 19855 3356 702 1889
Applied Policy : default-damping-profile
-----
A:ALA-12#
```

## group

**Syntax** `group [name] [detail]`

**Context** `show>router>bgp`

**Description** This command displays group information for a BGP peer group. This command can be entered with or without parameters.

When this command is entered without a group name, information about all peer groups displays.

When the command is issued with a specific group name, information only pertaining to that specific peer group displays.

The 'State' field displays the BGP group's operational state. Valid states are:

Up — BGP global process is configured and running.

Down — BGP global process is administratively shutdown and not running.

Disabled — BGP global process is operationally disabled. The process must be restarted by the operator.

**Parameters** *name* — Displays information for the BGP group specified.

*detail* — Displays detailed information.



**Output Standard and Detailed Group Output** — The following table describes the standard and detailed command output fields for a BGP group.

Label	Description
Group	Displays the BGP group name.
Group Type	No Type — Peer type not configured. External — Peer type configured as external BGP peers. Internal — Peer type configured as internal BGP peers.
State	Disabled — The BGP peer group has been operationally disabled. Down — The BGP peer group is operationally inactive. Up — The BGP peer group is operationally active.
Peer AS	The configured or inherited peer AS for the specified peer group.
Local AS	The configured or inherited local AS for the specified peer group.
Local Address	The configured or inherited local address for originating peering for the specified peer group.
Loop Detect	The configured or inherited loop detect setting for the specified peer group.
Connect Retry	The configured or inherited connect retry timer value.
Authentication	None — No authentication is configured. MD5 — MD5 authentication is configured.
Bfd	Yes — BFD is enabled. No — BFD is disabled.
Local Pref	The configured or inherited local preference value.
MED Out	The configured or inherited MED value assigned to advertised routes without a MED attribute.
Min Route Advt.	The minimum amount of time that must pass between route updates for the same IP prefix.
Min AS Originate	The minimum amount of time that must pass between updates for a route originated by the local router.
Multihop	The maximum number of router hops a BGP connection can traverse.
Prefix Limit	No Limit — No route limit assigned to the BGP peer group. 1 — 4294967295 — The maximum number of routes BGP can learn from a peer.

## Show Commands

<b>Label</b>	<b>Description (Continued)</b>
Passive	Disabled — BGP attempts to establish a BGP connection with neighbor in the specified peer group.  Enabled — BGP will not actively attempt to establish a BGP connection with neighbor in the specified peer group.
Next Hop Self	Disabled — BGP is not configured to send only its own IP address as the BGP nexthop in route updates to neighbors in the peer group.  Enabled — BGP sends only its own IP address as the BGP nexthop in route updates to neighbors in the specified peer group.
Aggregator ID 0	Disabled — BGP is not configured to set the aggregator ID to 0.0.0.0 in all originated route aggregates sent to the neighbor in the peer group.  Enabled — BGP is configured to set the aggregator ID to 0.0.0.0 in all originated route aggregates sent to the neighbor in the peer group.
Remove Private	Disabled — BGP will not remove all private AS numbers from the AS path attribute in updates sent to the neighbor in the peer group.  Enabled — BGP removes all private AS numbers from the AS path attribute in updates sent to the neighbor in the peer group.
Damping	Disabled — The peer group is configured not to dampen route flaps.  Enabled — The peer group is configured to dampen route flaps.
Export Policy	The configured export policies for the peer group.
Import Policy	The configured import policies for the peer group.
Hold Time	The configured hold time setting.
Keep Alive	The configured keepalive setting.
Cluster Id	The configured route reflector cluster ID.  None — No cluster ID has been configured
Client Reflect	Disabled — The BGP route reflector will not reflect routes to this neighbor.  Enabled — The BGP route reflector is configured to reflect routes to this neighbor.
NLRI	The type of NLRI information that the specified peer group can accept.  Unicast — IPv4 unicast routing information can be carried.
Preference	The configured route preference value for the peer group.

Label	Description (Continued)
List of Peers	A list of BGP peers configured under the peer group.
Total Peers	The total number of peers configured under the peer group.
Established	The total number of peers that are in an established state.

### Sample Output

```
A:ALA-12# show router bgp group
=====
BGP Groups
-----
Group           : To_AS_40000
-----
Description     : Not Available
Group Type      : No Type           State           : Up
Peer AS         : 40000              Local AS        : 65206
Local Address   : n/a              Loop Detect     : Ignore
Export Policy   : direct2bgp
Hold Time       : 90
Cluster Id      : None              Keep Alive      : 30
NLRI            : Unicast            Client Reflect  : Enabled
Preference      : 170

List of Peers
- 10.0.0.1      : To_Jukebox
- 10.0.0.12     : Not Available
- 10.0.0.13     : Not Available
- 10.0.0.14     : To_SR1
- 10.0.0.15     : To_H-215

Total Peers     : 5                  Established     : 2
=====
A:ALA-12#
```

### Sample Detailed Output

```
A:ALA-12# show router bgp group detail
=====
BGP Groups (detail)
-----
Group           : To_AS_40000
-----
Description     : Not Available
Group Type      : No Type           State           : Up
Peer AS         : 40000              Local AS        : 65206
Local Address   : n/a              Loop Detect     : Ignore
Connect Retry   : 20                  Authentication  : None
Local Pref      : 100                  MED Out        : 0
Multihop        : 0 (Default)
Min Route Advt. : 30
Prefix Limit    : No Limit
Next Hop Self   : Disabled
Remove Private  : Disabled
Export Policy   : direct2bgp
Min AS Originate : 15
Passive         : Disabled
Aggregator ID 0 : Disabled
Damping         : Disabled
```

## Show Commands

```
Hold Time      : 90                Keep Alive      : 30
Cluster Id     : None              Client Reflect   : Enabled
NLRI           : Unicast           Preference      : 170
```

```
List of Peers
- 10.0.0.1      : To_Jukebox
- 10.0.0.12     : Not Available
- 10.0.0.13     : Not Available
- 10.0.0.14     : To_SR1
- 10.0.0.15     : To_H-215
```

```
Total Peers   : 5                Established     : 2
```

```
=====
A:ALA-12#
```

```
A:SetupCLI>show>router>bgp# group
```

```
=====
BGP Group
```

```
-----
Group          : bgp_group_1 34567890123456789012
-----
```

```
Description    : Testing the length of the group value for the DESCRIPTION
                  parameter of BGP
```

```
Group Type     : No Type                State           : Up
Peer AS        : n/a                    Local AS        : 100
Local Address  : n/a                    Loop Detect     : Ignore
Import Policy  : test i1
                : test i2
                : test i3
                : test i4
                : test i5 890123456789012345678901
Export Policy  : test e1
                : test e2
                : test e3
                : test e4
                : test e5 890123456789012345678901
```

```
Hold Time      : 120                Keep Alive      : 30
Cluster Id     : None              Client Reflect   : Disabled
NLRI           : Unicast           Preference      : 101
TTL Security   : Disabled          Min TTL Value   : n/a
Graceful Restart : Disabled        Stale Routes Time: n/a
Auth key chain : n/a                Bfd Enabled     : Yes
```

```
List of Peers
```

```
- 3.3.3.3 :
    Testing the length of the neighbor value for the DESCRIPTION parameter of
    BGP
```

```
Total Peers   : 1                Established     : 0
```

```
-----
Peer Groups : 1
=====
```

```
A:SetupCLI>show>router>bgp#
```

## neighbor

**Syntax** **neighbor** [*ip-address* [**detail**]]  
**neighbor** [*as-number* [**detail**]]  
**neighbor** *ip-address* [*family* [**type** *mvpn-type*]] *filter1* [**brief**]  
**neighbor** *ip-address* [*family*] *filter2*  
**neighbor** *as-number* [*family*] *filter2*  
**neighbor** *ip-address* **orf** [*filter3*]  
**neighbor** *ip-address* **graceful-restart**

**Context** show>router>bgp

**Description** This command displays BGP neighbor information. This command can be entered with or without any parameters.

When this command is issued without any parameters, information about all BGP peers displays.

When the command is issued with a specific IP address or ASN, information regarding only that specific peer or peers with the same AS displays.

When either **received-routes** or **advertised-routes** is specified, then the routes received from or sent to the specified peer is listed (see second output example).

Note: This information is not available by SNMP.

When either **history** or **suppressed** is specified, then the routes learned from those peers that either have a history or are suppressed (respectively) are listed.

The 'State' field displays the BGP peer's protocol state. In addition to the standard protocol states, this field can also display the 'Disabled' operational state which indicates the peer is operationally disabled and must be restarted by the operator.

**Parameters** *ip-address* — Display information for the specified IP address.

**Values**    *ipv4-address*:    a.b.c.d (host bits must be 0)  
               *ipv6-address*:    x:x:x:x:x:x:x[-interface])  
                                   x:x:x:x:x:x:d.d.d.d[-interface]  
                                   x:            [0 — FFFF]H  
                                   d:            [0 — 255]D  
                                   interface: 32 characters maximum, mandatory for link local addresses.

*as-number* — Display information for the specified AS number.

**Values**    1 — 65535

*family* — Specify the type of routing information to be distributed by this peer group.

**Values**    **evpn** — Displays the BGP Ethernet VPN routes.  
**ipv4** — Displays only those BGP peers that have the IPv4 family enable and not those capable of exchanging IP-VPN routes.  
**vpn-ipv4** — Displays the content of the multicast routing table.  
**ipv6** — Displays the BGP peers that are IPv6 capable.  
**mcast-ipv4** — Displays the BGP peers that are mcast-ipv4 capable.

## Show Commands

*filter1* — Display information for the specified IP address.

**Values**

- received-routes** — Displays the number of routes received from this peer.
- advertised-routes** — Displays the number of routes advertised by this peer.
- history** — Displays statistics for dampened routes.
- suppressed** — Displays the number of paths from this peer that have been suppressed by damping.
- detail** — Displays detailed information pertaining to *filter1*.

*filter2* — Display information for the specified AS number.

**Values**

- history** — Display statistics for dampened routes.
- suppressed** — Display the number of paths from this peer that have been suppressed by damping.
- detail** — Displays detailed information pertaining to *filter2*.

*filter3* — Displays path information for the specified IP address.

**Values**

- send** — Displays the number of paths sent to this peer.
- receive** — Displays the number of paths received from this peer.

**brief** — Displays information in a brief format. This parameter is only supported with received-routes and advertised-routes.

**orf** — Displays outbound route filtering for the BGP instance. ORF (Outbound Route Filtering) is used to inform a neighbor of targets (using target-list) that it is willing to receive. This mechanism helps lessen the update exchanges between neighbors and saves CPU cycles to process routes that could have been received from the neighbor only to be dropped/ignored.

**graceful-restart** — Displays neighbors configured for graceful restart.

### Output

**Standard and Detailed Neighbor** — The following table describes the standard and detailed command output fields for a BGP neighbor.

Label	Description
Peer	The IP address of the configured BGP peer.
Group	The BGP peer group to which this peer is assigned.
Peer AS	The configured or inherited peer AS for the peer group.
Peer Address	The configured address for the BGP peer.
Peer Port	The TCP port number used on the far-end system.
Local AS	The configured or inherited local AS for the peer group.
Local Address	The configured or inherited local address for originating peering for the peer group.
Local Port	The TCP port number used on the local system.
Peer Type	External — Peer type configured as external BGP peers. Internal — Peer type configured as internal BGP peers.

Label	Description (Continued)
Bfd	<p>Yes – BFD is enabled.</p> <p>No – BFD is disabled.</p>
State	<p>Idle – The BGP peer is not accepting connections.</p> <p>Active – BGP is listening for and accepting TCP connections from this peer.</p> <p>Connect – BGP is attempting to establish a TCP connections from this peer.</p> <p>Open Sent – BGP has sent an OPEN message to the peer and is waiting for an OPEN message from the peer.</p> <p>Open Confirm – BGP has received a valid OPEN message from the peer and is awaiting a KEEPALIVE or NOTIFICATION.</p> <p>Established – BGP has successfully established a peering and is exchanging routing information.</p>
Last State	<p>Idle – The BGP peer is not accepting connections.</p> <p>Active – BGP is listening for and accepting TCP connections from this peer.</p> <p>Connect – BGP is attempting to establish a TCP connections from this peer.</p> <p>Open Sent – BGP has sent an OPEN message to the peer and is waiting for an OPEN message from the peer.</p> <p>Open Confirm – BGP has received a valid OPEN message from the peer and is awaiting a KEEPALIVE or NOTIFICATION.</p>
Last Event	<p>start – BGP has initialized the BGP neighbor.</p> <p>stop – BGP has disabled the BGP neighbor.</p> <p>open – BGP transport connection opened.</p> <p>close – BGP transport connection closed.</p> <p>openFail – BGP transport connection failed to open.</p> <p>error – BGP transport connection error.</p> <p>connectRetry – Connect retry timer expired.</p> <p>holdTime – Hold time timer expired.</p> <p>keepAlive – Keepalive timer expired.</p> <p>recvOpen – Receive an OPEN message.</p>

## Show Commands

<b>Label</b>	<b>Description (Continued)</b>
	revKeepalive – Receive a KEEPALIVE message.
	recvUpdate – Receive an UPDATE message.
	recvNotify – Receive a NOTIFICATION message.
	None – No events have occurred.
Last Error	Displays the last BGP error and subcode to occur on the BGP neighbor.
Connect Retry	The configured or inherited connect retry timer value.
Local Pref.	The configured or inherited local preference value.
Min Route Advt.	The minimum amount of time that must pass between route updates for the same IP prefix.
Min AS Originate	The minimum amount of time that must pass between updates for a route originated by the local router.
Multihop	The maximum number of router hops a BGP connection can traverse.
Damping	Disabled – BGP neighbor is configured not to dampen route flaps. Enabled – BGP neighbor is configured to dampen route flaps.
Loop Detect	Ignore – The BGP neighbor is configured to ignore routes with an AS loop. Drop – The BGP neighbor is configured to drop the BGP peering if an AS loop is detected. Off – AS loop detection is disabled for the neighbor.
MED Out	The configured or inherited MED value assigned to advertised routes without a MED attribute.
Authentication	None – No authentication is configured. MD5 – MD5 authentication is configured.
Next Hop Self	Disabled – BGP is not configured to send only its own IP address as the BGP nexthop in route updates to the specified neighbor. Enabled – BGP will send only its own IP address as the BGP nexthop in route updates to the neighbor.
AggregatorID Zero	Disabled – The BGP Neighbor is not configured to set the aggregator ID to 0.0.0.0 in all originated route aggregates. Enabled – The BGP Neighbor is configured to set the aggregator ID to 0.0.0.0 in all originated route aggregates.



Label	Description (Continued)
Remove Private	<p>Disabled — BGP will not remove all private AS numbers from the AS path attribute, in updates sent to the specified neighbor.</p> <p>Enabled — BGP will remove all private AS numbers from the AS path attribute, in updates sent to the specified neighbor.</p>
Passive	<p>Disabled — BGP will actively attempt to establish a BGP connection with the specified neighbor.</p> <p>Enabled — BGP will not actively attempt to establish a BGP connection with the specified neighbor.</p>
Prefix Limit	<p>No Limit — No route limit assigned to the BGP peer group.</p> <p>1 — 4294967295 — The maximum number of routes BGP can learn from a peer.</p>
Hold Time	The configured hold time setting.
Keep Alive	The configured keepalive setting.
Active Hold Time	The negotiated hold time, if the BGP neighbor is in an established state.
Active Keep Alive	The negotiated keepalive time, if the BGP neighbor is in an established state.
Cluster Id	<p>The configured route reflector cluster ID.</p> <p>None — No cluster ID has been configured.</p>
Client Reflect	<p>Disabled — The BGP route reflector is configured not to reflect routes to this neighbor.</p> <p>Enabled — The BGP route reflector is configured to reflect routes to this neighbor.</p>
Preference	The configured route preference value for the peer group.
Num of Flaps	The number of route flaps in the neighbor connection..
Recd. Prefixes	The number of routes received from the BGP neighbor.
Active Prefixes	The number of routes received from the BGP neighbor and active in the forwarding table.
Recd. Paths	The number of unique sets of path attributes received from the BGP neighbor.
Suppressed Paths	The number of unique sets of path attributes received from the BGP neighbor and suppressed due to route damping.
Input Queue	The number of BGP messages to be processed.

## Show Commands

Label	Description (Continued)
Output Queue	The number of BGP messages to be transmitted.
i/p Messages	Total number of packets received from the BGP neighbor.
o/p Messages	Total number of packets sent to the BGP neighbor.
i/p Octets	Total number of octets received from the BGP neighbor.
o/p Octets	Total number of octets sent to the BGP neighbor.
Export Policy	The configured export policies for the peer group.
Import Policy	The configured import policies for the peer group.

### Sample Output

```
A:ALA-48# show router bgp neighbor
=====
BGP Neighbor
-----
Peer : 10.0.0.5          Group : headquarters1
-----
Peer AS      : 300          Peer Port    : 0
Peer Address : 10.0.0.5
Local AS     : 200          Local Port   : 0
Local Address : 10.0.0.104
Peer Type    : External
State        : Active      Last State   : Idle
Last Event   : stop
Last Error   : Cease
Local Family : IPv4        Remote Family : Unused
Hold Time    : 90          Keep Alive   : 30
Active Hold Time : 0      Active Keep Alive: 0
Cluster Id   : 0.0.0.100
Preference   : 170        Num of Flaps : 0
Recd. Prefixes : 0        Active Prefixes : 0
Recd. Paths   : 0        Suppressed Paths : 0
Input Queue   : 0          Output Queue  : 0
i/p Messages  : 0          o/p Messages  : 0
i/p Octets    : 0          o/p Octets    : 0
i/p Updates   : 0          o/p Updates   : 0
TTL Security  : Enabled    Min TTL Value : 255
Graceful Restart : Disabled Stale Routes Time: n/a
Local Capability : RouteRefresh MP-BGP
Remote Capability:
Import Policy  : None Specified / Inherited
Export Policy  : None Specified / Inherited
-----
Peer : 10.0.0.91        Group : Santa Clara
-----
Peer AS      : 100          Peer Port    : 0
Peer Address : 10.0.0.91
Local AS     : 200          Local Port   : 0
Local Address : 10.0.0.103
Peer Type    : External
```

```

State          : Connect          Last State     : Active
Last Event     : openFail
Last Error     : Cease
Local Family   : IPv4             Remote Family   : Unused
Hold Time      : 90               Keep Alive     : 30
Active Hold Time : 0             Active Keep Alive: 0
Cluster Id     : 0.0.0.100
Preference     : 170              Num of Flaps   : 0
Recd. Prefixes : 0               Active Prefixes : 0
Recd. Paths    : 0               Suppressed Paths : 0
Input Queue    : 0               Output Queue   : 0
i/p Messages   : 0               o/p Messages   : 1
i/p Octets     : 0               o/p Octets     : 0
i/p Updates    : 0               o/p Updates    : 0
TTL Security   : Disabled        Min TTL Value  : n/a
Graceful Restart : Disabled      Stale Routes Time: n/a
Local Capability : RouteRefresh MP-BGP
Remote Capability:
Import Policy  : None Specified / Inherited
Export Policy  : None Specified / Inherited
...

```

```
-----
A:ALA-48#
```

```
A:ALA-48# show router 2 bgp neighbor 10.20.1.3
```

```
=====
BGP Neighbor
=====
```

```
Peer   : 10.20.1.3
Group  : 1
```

```
-----
Peer AS          : 100           Peer Port       : 49725
Peer Address     : 10.20.1.3
Local AS        : 100           Local Port      : 179
Local Address    : 10.20.1.2
Peer Type       : Internal
State           : Established   Last State      : Established
Last Event      : rcvKeepAlive
Last Error      : Cease
Local Family    : IPv4
Remote Family   : IPv4
Hold Time       : 3             Keep Alive      : 1
Active Hold Time : 3           Active Keep Alive : 1
Cluster Id      : None
Preference      : 170          Num of Flaps    : 0
Recd. Paths     : 1
IPv4 Recd. Prefixes : 11      IPv4 Active Prefixes : 10
VPN-IPv4 Recd. Pfxs : 0       VPN-IPv4 Suppr. Pfxs : 0
VPN-IPv4 Active Pfxs : 0     VPN-IPv4 Active Pfxs : 0
Mc IPv4 Recd. Pfxs. : 0       Mc IPv4 Active Pfxs. : 0
Mc IPv4 Suppr. Pfxs : 0       IPv6 Suppressed Pfxs : 0
IPv6 Recd. Prefixes : 0       IPv6 Active Prefixes : 0
Input Queue     : 0           Output Queue    : 0
i/p Messages    : 471         o/p Messages    : 473
i/p Octets      : 3241        o/p Octets      : 3241
i/p Updates     : 4           o/p Updates     : 4
TTL Security    : Disabled    Min TTL Value   : n/a
Advertise Inactive : Disabled  Peer Tracking   : Disabled
Advertise Label  : None

```

## Show Commands

```
Auth key chain      : eta_keychain1
Local Capability    : RouteRefresh MP-BGP
Remote Capability   : RouteRefresh MP-BGP
Import Policy       : None Specified / Inherited
Export Policy       : static2bgp
```

```
-----
Neighbors : 1
```

```
=====
A:ALA-48#
```

```
A:ALA-12# show router bgp neighbor 10.0.0.11 orf
```

```
=====
BGP Neighbor 10.0.0.11 ORF
```

```
-----
Send List (Automatic)
```

```
-----
target:65535:10
target:65535:20
```

```
=====
A:ALA-12
```

```
A:ALA-22 show router bgp neighbor 10.0.0.1 orf
```

```
=====
BGP Neighbor 10.0.0.1 ORF
```

```
-----
Receive List
```

```
-----
target:65535:10
target:65535:20
```

```
=====
A:ALA-22
```

### Sample Detailed Output

```
A:ALA-12# show router bgp neighbor detail
```

```
=====
BGP Neighbor (detail)
```

```
-----
Peer : 10.0.0.15          Group : To_AS_40000
```

```
-----
Peer AS      : 65205          Peer Port    : 0
Peer Address : 10.0.0.15     Local Port   : 0
Local AS     : 65206          Local Port   : 0
Local Address : 10.0.0.16
Peer Type    : External
State        : Active        Last State    : Connect
Last Event   : openFail
Last Error   : Hold Timer Expire
Connect Retry : 20           Local Pref.  : 100
Min Route Advt. : 30        Min AS Orig. : 15
Damping      : Disabled     Loop Detect   : Ignore
MED Out      : No MED Out   Authentication : None
Next Hop Self : Disabled    AggregatorID Zero: Disabled
Remove Private : Disabled   Passive      : Disabled
Prefix Limit  : No Limit
Hold Time     : 90          Keep Alive   : 30
```

```

Active Hold Time : 0
Cluster Id       : None
Preference       : 170
Recd. Prefixes  : 0
Recd. Paths     : 0
Input Queue     : 0
i/p Messages    : 0
i/p Octets      : 0
i/p Updates     : 0
Export Policy   : direct2bgp

Active Keep Alive: 0
Client Reflect  : Enabled
Num of Flaps   : 0
Active Prefixes : 0
Suppressed Paths : 0
Output Queue   : 0
o/p Messages   : 0
o/p Octets     : 0
o/p Updates    : 0

```

```
=====
A:ALA-12#
```

```
*A:SetupCLI>show>router>bgp# neighbor
```

```
=====
BGP Neighbor
=====
```

```
Peer   : 3.3.3.3
```

```
Group  : bgp_group_1 34567890123456789012
```

```
-----
Peer AS           : 20
Peer Address      : 3.3.3.3
Local AS          : 100
Local Address     : 0.0.0.0
Peer Type         : Internal
State             : Active
Last Event        : stop
Last Error        : Cease
Local Family      : IPv4
Remote Family     : Unused
Hold Time         : 10
Active Hold Time  : 0
Cluster Id        : 2.2.3.4
Preference        : 101
Recd. Paths       : 0
IPv4 Recd. Prefixes : 0
IPv4 Suppressed Pfxs : 0
VPN-IPv4 Recd. Pfxs : 0
Mc IPv4 Recd. Pfxs. : 0
Mc IPv4 Suppr. Pfxs : 0
IPv6 Recd. Prefixes : 0
Input Queue       : 0
i/p Messages      : 0
i/p Octets        : 0
i/p Updates       : 0
TTL Security      : Disabled
Graceful Restart  : Enabled
Advertise Inactive : Disabled
Advertise Label   : None
Auth key chain    : n/a
Local Capability   : RouteRefresh MP-BGP
Remote Capability  :
Import Policy      : test i1
                  : test i2
                  : test i3
                  : test i4
                  : test i5 890123456789012345678901
Export Policy      : test e1

Peer Port         : 0
Local Port        : 0
Last State        : Idle
Keep Alive        : 30
Active Keep Alive : 0
Num of Flaps      : 0
IPv4 Active Prefixes : 0
VPN-IPv4 Suppr. Pfxs : 0
VPN-IPv4 Active Pfxs : 0
Mc IPv4 Active Pfxs. : 0
IPv6 Suppressed Pfxs : 0
IPv6 Active Prefixes : 0
Output Queue      : 0
o/p Messages      : 0
o/p Octets        : 0
o/p Updates       : 0
Min TTL Value     : n/a
Stale Routes Time : 360
Peer Tracking     : Enabled
Bfd Enabled       : Yes

```

## Show Commands

```
: test e2
: test e3
: test e4
: test e5 890123456789012345678901
```

```
-----
Neighbors : 1
=====
```

```
*A:vRR>config>router>bgp>group# show router bgp neighbor 2.2.2.2 detail
```

```
=====
BGP Neighbor
=====
```

```
-----
Peer          : 2.2.2.2
Description   : (Not Specified)
Group        : cisco
-----
Peer AS       : 65002           Peer Port      : 53257
Peer Address  : 2.2.2.2
Local AS     : 65002           Local Port     : 179
Local Address : 1.1.1.1
Peer Type     : Internal
State        : Established     Last State     : Established
Last Event   : recvKeepAlive
Last Error   : Cease (Connection Collision Resolution)
Local Family : IPv4
Remote Family : IPv4
Connect Retry : 120           Local Pref.   : 100
Min Route Advt. : 30
Multihop     : 0 (Default)   AS Override   : Disabled
Damping      : Disabled     Loop Detect    : Ignore
MED Out      : No MED Out   Authentication : None
Next Hop Self : Disabled     AggregatorID Zero : Disabled
Remove Private : Disabled   Passive       : Disabled
Peer Identifier : 2.2.2.2       Fsm Est. Trans : 1
Fsm Est. Time : 01h17m16s  InUpd Elap. Time : 01h19m03s
Hold Time    : 90           Keep Alive    : 30
Min Hold Time : 0
Active Hold Time : 90       Active Keep Alive : 30
Cluster Id   : None        Client Reflect : Disabled
Preference  : 170         Num of Update Flaps : 0
Recd. Paths : 1
IPv4 Recd. Prefixes : 1   IPv4 Active Prefixes : 1
IPv4 Suppressed Pfxs : 0   VPN-IPv4 Suppr. Pfxs : 0
VPN-IPv4 Recd. Pfxs : 0   VPN-IPv4 Active Pfxs : 0
Mc IPv4 Recd. Pfxs. : 0   Mc IPv4 Active Pfxs. : 0
Mc IPv4 Suppr. Pfxs : 0   IPv6 Suppressed Pfxs : 0
IPv6 Recd. Prefixes : 0   IPv6 Active Prefixes : 0
VPN-IPv6 Recd. Pfxs : 0   VPN-IPv6 Active Pfxs : 0
VPN-IPv6 Suppr. Pfxs : 0
Mc IPv6 Recd. Pfxs. : 0   Mc IPv6 Active Pfxs. : 0
Mc IPv6 Suppr. Pfxs : 0   L2-VPN Suppr. Pfxs : 0
L2-VPN Recd. Pfxs : 0   L2-VPN Active Pfxs : 0
MVPN-IPv4 Suppr. Pfxs : 0   MVPN-IPv4 Recd. Pfxs : 0
MVPN-IPv4 Active Pfxs : 0   MDT-SAFI Suppr. Pfxs : 0
MDT-SAFI Recd. Pfxs : 0   MDT-SAFI Active Pfxs : 0
Flow-IPv4 Suppr. Pfxs : 0   Flow-IPv4 Recd. Pfxs : 0
Flow-IPv4 Active Pfxs : 0   Rte-Tgt Suppr. Pfxs : 0
```

```

Rte-Tgt Recd. Pfxs      : 0
Backup IPv4 Pfxs       : 0
Mc Vpn Ipv4 Recd. Pf*  : 0
Mc Vpn Ipv4 Suppr. P*  : 0
Backup Vpn IPv4 Pfxs   : 0
Input Queue            : 0
i/p Messages           : 158
i/p Octets              : 3090
i/p Updates            : 1
MVPN-IPv6 Suppr. Pfxs : 0
MVPN-IPv6 Active Pfxs : 0
Flow-IPv6 Suppr. Pfxs : 0
Flow-IPv6 Active Pfxs : 0
Evpn Suppr. Pfxs      : 0
Evpn Active Pfxs      : 0
MS-PW Suppr. Pfxs     : 0
MS-PW Active Pfxs     : 0
TTL Security           : Disabled
Graceful Restart       : Disabled
Restart Time           : n/a
Advertise Inactive     : Disabled
Advertise Label        : None
Auth key chain         : n/a
Disable Cap Nego       : Disabled
Flowspec Validate      : Disabled
Aigp Metric            : Disabled
Damp Peer Oscillatio*  : Disabled
GR Notification        : Disabled
Rem Idle Hold Time     : 00h00m00s
Next-Hop Unchanged     : None
L2 VPN Cisco Interop   : Disabled
Local Capability       : RtRefresh MPBGP 4byte ASN
Remote Capability      : RtRefresh MPBGP 4byte ASN
Local AddPath Capabi*  : Disabled
Remote AddPath Capab*  : Send - None
                       : Receive - None
Import Policy          : link-bw
Export Policy          : None Specified / Inherited
Origin Validation      : N/A
EBGP Link Bandwidth    : n/a
IPv4 Rej. Pfxs        : 0
VPN-IPv4 Rej. Pfxs    : 0
Mc IPv4 Rej. Pfxs     : 0
MVPN-IPv4 Rej. Pfxs   : 0
Flow-IPv4 Rej. Pfxs   : 0
L2-VPN Rej. Pfxs     : 0
Rte-Tgt Rej. Pfxs    : 0
Mc Vpn Ipv4 Rej. Pfxs : 0
Rte-Tgt Active Pfxs   : 0
Backup IPv6 Pfxs      : 0
Mc Vpn Ipv4 Active P* : 0
Backup Vpn IPv6 Pfxs  : 0
Output Queue          : 0
o/p Messages          : 157
o/p Octets             : 3009
o/p Updates            : 0
MVPN-IPv6 Recd. Pfxs : 0
Flow-IPv6 Recd. Pfxs : 0
Evpn Recd. Pfxs      : 0
MS-PW Recd. Pfxs     : 0
Min TTL Value         : n/a
Stale Routes Time     : n/a
Peer Tracking         : Disabled
Bfd Enabled           : Disabled
Default Route Tgt     : Disabled
Split Horizon         : Disabled
Update Errors         : 0
Fault Tolerance       : Disabled

```

```

=====
Prefix Limits Per Address Family
=====

```

Family	Limit	Idle Timeout	Threshold	Log Only	Post Import
ipv4	1000	forever	90	Disabled	Enabled
vpnIpv4	1000	forever	90	Disabled	Enabled

```

-----
Neighbors : 1

```

## Show Commands

=====  
\* indicates that the corresponding row element may have been truncated.

**Advertised and Received Routes Ouput** — The following table describes the command output for both the standard and detailed information for a neighbor.

Label	Description
BGP Router ID	The local BGP router ID.
AS	The configured autonomous system number.
Local AS	The configured local AS setting. If not configured, then it is the same value as the AS.
Flag	u — used s — suppressed h — history d — decayed * — valid i — igp e — egp ? — incomplete > — best
Network	Route IP prefix and mask length for the route.
Next Hop	BGP nexthop for the route.
LocalPref	BGP local preference path attribute for the route.
MED	BGP Multi-Exit Discriminator (MED) path attribute for the route.
AS Path	The BGP AS path for the route.

### Sample Output

```
A:ALA-12# show router bgp neighbor 10.0.0.16 received-routes
=====
BGP Router ID : 10.0.0.16      AS : 65206   Local AS : 65206
=====
Legend -
Status codes : u - used, s - suppressed, h - history, d - decayed, * - valid
Origin codes  : i - IGP, e - EGP, ? - incomplete, > - best
=====
BGP Neighbor
=====
Flag Network                Nexthop                LocalPref MED                As-Path
```



```

-----
?   10.0.0.16/32      10.0.0.16      100      none     No As-Path
?   10.0.6.0/24       10.0.0.16      100      none     No As-Path
?   10.0.8.0/24       10.0.0.16      100      none     No As-Path
?   10.0.12.0/24      10.0.0.16      100      none     No As-Path
?   10.0.13.0/24     10.0.0.16      100      none     No As-Path
?   10.0.204.0/24    10.0.0.16      100      none     No As-Path
=====
A:ALA-12#

A:core_east# show router bgp neighbor 10.193.0.10 graceful-restart
=====
BGP Neighbor 10.193.0.10 Graceful Restart
=====
Graceful Restart locally configured for peer: Enabled
Peer's Graceful Restart feature           : Enabled
NLRI(s) that peer supports restart for    : IPv4-Unicast IPv4-MPLS IPv4-VPN
NLRI(s) that peer saved forwarding for    : IPv4-Unicast IPv4-MPLS IPv4-VPN
NLRI(s) that restart is negotiated for    : None
NLRI(s) of received end-of-rib markers    : IPv4-Unicast
NLRI(s) of all end-of-rib markers sent    : IPv4-Unicast
Restart time locally configured for peer  : 120 seconds
Restart time requested by the peer        : 390 seconds
Time stale routes from peer are kept for  : 360 seconds
Graceful restart status on the peer       : Not currently being helped
Number of Restarts                        : 328
Last Restart at                           : 08/20/2006 12:22:06
=====
A:core_east#

```

## next-hop

**Syntax** `next-hop [family] [ip-address] [detail]`

**Context** `show>router>bgp`

**Description** Displays BGP next-hop information.

**Parameters** *family* — Specify the type of routing information to be distributed by the BGP instance.

**Values**

- ipv4** — Displays only those BGP peers that have the IPv4 family enable and not those capable of exchanging IP-VPN routes.
- vpn-ipv4** — Displays the BGP peers that are IP-VPN capable.
- ipv6** — Displays the BGP peers that are IPv6 capable.
- mcast-ipv4** — Displays the BGP peers that are mcast-ipv4 capable.

*ip-address* — Displays the next hop information for the specified IP address.

**Values**

- ipv4-address: a.b.c.d (host bits must be 0)
- ipv6-address: x:x:x:x:x:x:x (eight 16-bit pieces)
- x:x:x:x:x:d.d.d.d
- x [0 — FFFF]H
- d [0 — 255]D

## Show Commands

**detail** — Display the longer, more detailed version of the output.

**Output** **Show Next-Hop Output** — The following table describes the command output fields for a BGP next hop.

Label	Description
BGP ID	The local BGP router ID.
AS	The configured autonomous system number.
Local AS	The configured local AS setting. If not configured, then the value is the same as the AS.
Next Hop	The next-hop address.
Resolving Prefix	Displays the prefix of the best next hop.
Owner	Displays the routing protocol used to derive the best next hop.
Preference	Displays the BGP preference attribute for the routes.
Reference Count	Displays the number of routes using the resolving prefix.
Resolved Next Hop	The IP address of the next hop.

### Sample Output

```
*A:Dut-C# show router bgp next-hop
=====
BGP Router ID:10.20.1.3      AS:5000      Local AS:5000
=====

BGP Next Hop
=====
Next Hop                                Pref Owner
  Resolving Prefix                      Metric
  Resolved Next Hop                     Ref. Count
-----
10.20.1.1                                7  RSVP
  10.20.1.1/32                          1000
  10.10.2.1                              2
10.20.1.2                                7  RSVP
  10.20.1.2/32                          1000
  10.10.3.2                              2
10.20.1.4                                7  RSVP
  10.20.1.4/32                          1000
  10.10.11.4                             2
-----
Next Hops : 3

A:ALA-49>show>router>bgp# next-hop 192.168.2.194
=====
BGP Router ID : 10.10.10.104      AS : 200      Local AS : 200
=====
```

```

BGP Next Hop
=====
Next Hop      Resolving      Owner  Preference Reference  Resolved
                Prefix                               Count      Next Hop
-----
A:ALA-49>show>router>bgp# next-hop 10.10.10.104

```

## paths

**Syntax** paths

**Context** show>router>bgp

**Description** This command displays a summary of BGP path attributes.

**Output** **Show Path Output** — The following table describes the command output fields for a BGP path.

Label	Description
BGP Router ID	The local BGP router ID.
AS	The configured autonomous system number.
Local AS	The configured local AS setting. If not configured, then the value is the same as the AS.
Path	The AS path attribute.
Origin	EGP — The NLRI is learned by an EGP protocol. IGP — The NLRI is interior to the originating AS. INCOMPLETE — NLRI was learned another way.
Next Hop	The advertised BGP nexthop.
MED	The Multi-Exit Discriminator value.
Local Preference	The local preference value. This value is used if the BGP route arrives from a BGP peer without the Local Pref attribute set. It is overridden by any value set via a route policy.
Refs	The number of routes using a specified set of path attributes.
ASes	The number of autonomous system numbers in the AS path attribute.
Segments	The number of segments in the AS path attribute.
Flags	EBGP-learned — Path attributes learned by an EBGP peering. IBGP-Learned — Path attributes learned by an IBGP peering.
Aggregator	The route aggregator ID.
Community	The BGP community attribute list.

## Show Commands

Label	Description (Continued)
Originator ID	The originator ID path attribute value.
Cluster List	The route reflector cluster list.

### Sample Output

```
=====
BGP Router ID : 10.0.0.14      AS : 65206   Local AS : 65206
=====
BGP Paths
=====
Path: 60203 65001 19855 3356 15412
-----
Origin      : IGP                Next Hop    : 10.0.28.1
MED         : 60203              Local Preference : none
Refs        : 4                  ASes       : 5
Segments    : 1
Flags       : EBGP-learned
Aggregator  : 15412 62.216.140.1
-----
Path: 60203 65001 19855 3356 1 1236 1236 1236 1236
-----
Origin      : IGP                Next Hop    : 10.0.28.1
MED         : 60203              Local Preference : none
Refs        : 2                  ASes       : 9
Segments    : 1
Flags       : EBGP-learned
```

## route-target

**Syntax** route-target

**Context** show>router>bgp

**Description** This command displays a summary of route-target.

### Sample Output

```
*A:Dut-D# show router bgp routes route-target
=====
BGP Router ID:10.20.1.4      AS:100      Local AS:100
=====
Legend -
Status codes : u - used, s - suppressed, h - history, d - decayed, * - valid
Origin codes  : i - IGP, e - EGP, ? - incomplete, > - best, b - backup
```

```

=====
BGP RT Constrain Routes
=====
Flag      Route Target                               LocalPref  MED
          Nexthop
          As-Path
-----
u*?      0:0:0/0                                     None       0
          10.10.9.6
          106 106
-----
Routes : 1
=====

```

## routes

**Syntax**

```

routes [family] [brief]
routes [family] prefix [detail | longer | hunt [brief]]
routes family prefix [detail | longer | hunt [brief]]
routes [family] [type mvpn-type] community comm-id
routes [family] [type mvpn-type] aspath-regex reg-ex
routes vpn-ipv4 prefix [rd rd] [detail | longer | hunt [brief]]
routes vpn-ipv6 prefix [rd rd] [detail | longer | hunt [brief]]
routes mvpn-ipv4 type mvpn-type {rd rd | originator-ip ip-address | source-ip ip-address |
group-ip ip-address | source-as as-number} [hunt| detail]
routes [family] [l2vpn-type] [brief]
routes [family] [l2vpn-type] community comm-id
routes [family] [l2vpn-type] aspath-regex reg-ex
routes l2-vpn [l2vpn-type] {rd rd | [site-id site-id] | [veid veid] [offset vpls-base-offset ]}
routes mdt-safi [rd rd] [grp-address mcast-grp-address] [brief]
routes ms-pw [rd rd] [aii-type2 aii-type2] [brief]
routes flow-ipv4
routes evpn inclusive-mcast [hunt | detail] [rd rd] [originator-ip ip-address] [next-hop ip-
address] [community comm-id] [tag vni-id]
routes evpn ip-prefix [hunt | detail] [rd rd] [prefix ip-prefix/mask] [community comm-id] [tag
vni-id] [next-hop ip-address]
routes evpn mac [hunt | detail] [rd rd] [next-hop ip-address] [mac-address mac-address]
[community comm-id] [tag vni-id]

```

**Context** show>router>bgp

**Description** This command displays BGP route information.

When this command is issued without any parameters, then the entire BGP routing table displays.

When this command is issued with an IP prefix/mask or IP address, then the best match for the parameter displays.

## Show Commands

**Parameters** *family* — Specify the type of routing information to be distributed by the BGP instance.

**Values**  
**evpn** — Displays the BGP information related to Ethernet VPN.  
**ipv4** — Displays only those BGP peers that have the IPv4 family enable and not those capable of exchanging IP-VPN routes.  
**vpn-ipv4** — Displays the BGP peers that are IP-VPN capable.  
**ipv6** — Displays the BGP peers that are IPv6 capable.  
**mcast-ipv4** — Displays the BGP peers that are mcast-ipv4 capable.

*mvpn-type* — Specifies the mvpn-type

**Values** intra-ad, inter-ad, spmsi-ad, leaf-ad, source-ad, shared-join, and source-join.

**received** — Specifies to show the BGP routes received from the neighbor,

*prefix* — Specifies the type of routing information to display.

**Values** **Syntax:** <rd>[[<rd>:]<ip-prefix[/ip-prefix-length]>  
rd {<ip-addr:comm-val>|<2byte-asnumber:ext-comm-val>|<4byte-  
asnumber:comm-val>}  
comm-val [0..65535]  
2byte-asnumber [0..65535]  
ext-comm-val [0..4294967295]  
4byte-asnumber asn1.asn2 (two 2-byte pieces)  
asn1 - [1..65535]  
asn2 - [0..65535]  
ip-address a.b.c.d  
ipv4-prefix a.b.c.d  
ipv4-prefix-le [0..32]  
ipv6-prefix[/pref\* ipv6-prefix x:x:x:x:x:x:x (eight 16-bit pieces)  
x:x:x:x:x:d.d.d.d  
x: [0 — FFFF]H  
d: [0 — 255]D  
prefix-length 0 — 128

*filter* — Specifies route criteria.

**Values**  
**hunt** Displays entries for the specified route in the RIB-In, RIB-Out, and RTM.  
**longer** Displays the specified route and subsets of the route.  
**detail** Display the longer, more detailed version of the output.

**aspath-regex** “*reg-exp*” — Displays all routes with an AS path matching the specified regular expression *reg-exp*.

**community** *comm-id* — Displays all routes with the specified BGP community.

**Values** [*as-number1:comm-val1* | *ext-comm* | *well-known-comm*]  
ext-comm type: {ip-address:comm-val1 | as-number1:comm-val2 | as-  
number2:comm-val1}  
as-number1 0 — 65535  
comm-val1 0 — 65535  
type target, origin  
ip-address a.b.c.d  
comm-val2 0 — 4294967295

as-number2 0 — 4294967295  
 well-known-comm no-export, no-export-subconfed, no-advertise

**brief** — Provides a summarized display of the set of peers to which a BGP route is advertised.

*rd* — Allows more precise definition of the RD vs. prefix for VPN-IPv6 routes.

**Values** ip-addr:comm-va  
 2byte-asnumber:ext-comm-val  
 4byte-asnumber:comm-val}

*veid* — Specifies a two byte identifier that represents the local bridging instance in a VPLS and is advertised through the BGP NLRI. This value must be lower than or equal to the max-ve-id.

**Values** 0 — 4294967295

*vpls-base-offset* — Specifies a two byte identifier advertised through the NLRI that is used to indicate which VE-ID should use the advertised NLRI at the receiving PE according to the following rule: if the offset <= local VE-ID <= offset+VBS-1 (VBS = virtual block size = 8 in our implementation) then the NLRI is processed. Otherwise it is ignored. The NLRI with this offset is generated as soon as the first VE-ID value between (offset, offset + VBS-1) is advertised in the network.

**Values** 0 — 4294967295

*site-id* — Specifies a two byte identifier usually employed for the BGP multi-homing solution. It identifies the BGP multi-homing site associated with one or a set of objects (SAP(s), pseudowire (s) or combination). The site-id must be identical between the two PEs carrying the connection to the access device multi-homed to the PEs.

**Values** 0 — 4294967295

*l2vpn-type* — Specifies a 12-byte Virtual Switch Instance identifier (VSI-ID) type.

**Values** bgp-ad, bgp-vpls, multi-homing

**ms-pw [rd rd] [aai-type2 aii-type2] [brief]** — Displays routes for ms-pw family.

**routes evpn inclusive-mcast [hunt | detail] [rd rd] [originator-ip ip-address] [next-hop ip-address] [community comm-id] [tag vni-id]** — Displays inclusive multicast routes for evpn family.

**routes evpn ip-prefix [hunt | detail] [rd rd] [prefix ip-prefix/mask] [community comm-id] [tag vni-id] [next-hop ip-address]** — Displays inclusive ip-prefix routes for evpn family.

**routes evpn mac [hunt | detail] [rd rd] [next-hop ip-address] [mac-address mac-address] [community comm-id] [tag vni-id]** — Displays mac routes for evpn family.

**tag vni-id** — Displays all routes with the specified ethernet-tag. For VXLAN tunnels, the ethernet-tag encodes the VNI (VXLAN Network Identifier).

**Values** 1 — 16777215

## — Output

**BGP Route** — The following table describes the command output fields for BGP routes.

Label	Description
BGP Router ID	The local BGP router ID.
AS	The configured autonomous system number.

## Show Commands

Label	Description (Continued)
Local AS	The configured local AS setting. If not configured, then the value is the same as the AS.
Route Dist.	Displays the route distinguisher identifier attached to routes that distinguishes the VPN it belongs.
VPN Label	Displays the label generated by the PE's label manager.
Network	The IP prefix and mask length.
Nexthop	The BGP nexthop.
From	The advertising BGP neighbor's IP address.
Res. Nexthop	The resolved nexthop.
Local Pref.	The local preference value. This value is used if the BGP route arrives from a BGP peer without the Local Pref attribute set. It is overridden by any value set via a route policy.
Flag	<ul style="list-style-type: none"> <li>u — used</li> <li>s — suppressed</li> <li>h — history</li> <li>d — decayed</li> <li>* — valid</li> <li>i — igp</li> <li>e — egp</li> <li>? — incomplete</li> <li>&gt; — best</li> <li>S — sticky</li> </ul>
Aggregator AS	The aggregator AS value. none — Aggregator AS attributes are not present.
Aggregator	The aggregator attribute value. none — Aggregator attributes are not present.
Atomic Aggr.	Atomic — The atomic aggregator flag is set. Not Atomic — The atomic aggregator flag is not set.
MED	The MED metric value. none — MED metrics are present.
Community	The BGP community attribute list.



Label	Description (Continued)
Cluster	The route reflector cluster list.
Originator Id	The originator ID path attribute value.  none – The originator ID attribute is not present.
Peer Router Id	The router ID of the advertising router.
AS-Path	The BGP AS path attribute.
VPRN Imported	Displays the VPRNs where a particular BGP-VPN received route has been imported and installed.
TieBreakReason	Displays the step in the BGP decision process where a BGP route lost the tie-break with the next better BGP route for the same prefix.  LocalPref - This route is not the best because the next better route has a higher LOCAL_PREF. AIGP - This route is not the best because the next better route has a lower derived AIGP metric value. ASPathLen - This route is not the best because the next better route has a shorter AS PATH length. Origin - This route is not the best because the next better route has a lower Origin value. MED - This route is not the best because the next better route has a lower MED, and MED comparison of the routes was allowed. IBGP - This IBGP route is not the best because the next better route is an EBGp route. NHCost - This route is not the best because the next better route has a lower metric value to reach the BGP NEXT HOP. BGPID - This route is not the best because the next better route has a lower Originator ID or BGP Identifier. ClusterLen This route is not the best because the next better route has a shorter Cluster list length. PeerIP - This route is not the best because the next better route has a lower neighbor IP address.

### Sample Output

```
*A:7750SR7-PE# show router bgp routes 215.0.0.0/24 detail
=====
BGP IPv4 Routes
=====
-----
Original Attributes
Network       : 215.0.0.0/24
NextHop       : 202.50.0.2
Path Id       : None
```

## Show Commands

```
From          : 202.50.0.2
Res. Nexthop  : 202.50.0.2
Local Pref.   : n/a
Aggregator AS : None
Atomic Aggr.  : Not Atomic
Community     : No Community Members
Cluster       : No Cluster Members
Originator Id : None
Fwd Class     : None
Flags         : Used Valid Best IGP
Route Source  : External
AS-Path       : 5000
Modified Attributes
Network       : 215.0.0.0/24
Nexthop      : 202.50.0.2
Path Id      : None
From         : 202.50.0.2
Res. Nexthop : 202.50.0.2
Local Pref.  : 150
Aggregator AS : None
Atomic Aggr.  : Not Atomic
Community     : 4713:10 4713:510
Cluster       : No Cluster Members
Originator Id : None
Fwd Class     : None
Flags         : Used Valid Best IGP Sticky
TieBreakReason : MED
Route Source  : External
AS-Path       : 5000
-----
PMSI Tunnel Attribute :
Tunnel-type   : LDP P2MP LSP
MPLS Label    : 0
Root-Node     : 10.20.1.2
Flags         : Leaf not required
LSP-ID        : 8193
-----

*A:Dut-C# show router bgp routes l2-vpn detail
=====
BGP Router ID:10.20.1.3      AS:1000      Local AS:1000
=====
Legend -
Status codes : u - used, s - suppressed, h - history, d - decayed, * - valid
Origin codes  : i - IGP, e - EGP, ? - incomplete, > - best, b - backup
=====
BGP L2VPN Routes
=====
Route Type      : AutoDiscovery
Route Dist.     : 10.20.1.1:1
Prefix          : 10.20.1.1
Nexthop         : 10.20.1.1
From           : 10.20.1.1
Res. Nexthop    : n/a
Local Pref.     : 100
Aggregator AS   : None
Atomic Aggr.    : Not Atomic
AIGP Metric     : Not Atomic
Community       : target:4455:4455 target:1.20.30.40:6543
                  l2-vpn/vrf-imp:100.1.200.1:65535
Interface Name  : NotAvailable
Aggregator     : None
MED            : 0
```

```

Cluster          : No Cluster Members
Originator Id   : None                Peer Router Id : 10.20.1.1
Flags           : Used Valid Best IGP
Route Source    : Internal
AS-Path        : No As-Path
-----
PMSI Tunnel Attribute :
Tunnel-type     : RSVP-TE P2MP LSP      Flags           : Leaf not required
MPLS Label     : 0
P2MP-ID        : 1001                  Tunnel-ID       : 61440
Extended-Tunne*: 10.20.1.1

```

```
*A:Dut-C# show router bgp routes l2-vpn detail
```

```
=====
BGP Router ID:10.20.1.3      AS:1000      Local AS:1000
=====
```

```
Legend -
```

```
Status codes : u - used, s - suppressed, h - history, d - decayed, * - valid
Origin codes  : i - IGP, e - EGP, ? - incomplete, > - best, b - backup
=====
```

```
BGP L2VPN Routes
```

```
=====
Route Type      : AutoDiscovery
Route Dist.    : 10.20.1.1:1
Prefix         : 10.20.1.1
Nextthop      : 10.20.1.1
From           : 10.20.1.1
Res. Nextthop : n/a
Local Pref.    : 100                    Interface Name : NotAvailable
Aggregator AS : None                    Aggregator    : None
Atomic Aggr.  : Not Atomic              MED           : 0
AIGP Metric   : Not Atomic
Community     : target:4455:4455 target:1.20.30.40:6543

```

```
l2-vpn/vrf-imp:100.1.200.1:65535
```

```

Cluster          : No Cluster Members
Originator Id   : None                Peer Router Id : 10.20.1.1
Flags           : Used Valid Best IGP
Route Source    : Internal
AS-Path        : No As-Path
-----

```

```

PMSI Tunnel Attribute :
Tunnel-type     : RSVP-TE P2MP LSP      Flags           : Leaf not required
MPLS Label     : 0
P2MP-ID        : 1001                  Tunnel-ID       : 61440
Extended-Tunne*: 10.20.1.1

```

```
*A:Dut-C>show>router>bgp# routes l2-vpn 10.20.1.1 rd 10.20.1.1:1 hunt
```

```
=====
BGP Router ID:10.20.1.3      AS:None      Local AS:100
=====
```

```
Legend -
```

```
Status codes : u - used, s - suppressed, h - history, d - decayed, * - valid
Origin codes  : i - IGP, e - EGP, ? - incomplete, > - best, b - backup
=====
```

```
BGP L2VPN-AD Routes
```

## Show Commands

```
=====
Route Type      : AutoDiscovery
Route Dist.    : 10.20.1.1:1
Prefix         : 10.20.1.1
Nextthop       : 10.20.1.1
From           : 10.20.1.2
Res. Nextthop  : n/a
Local Pref.    : 100
Aggregator AS  : None
Atomic Aggr.   : Not Atomic
AIGP Metric    : None
Connector      : None
Community      : target:1.20.30.40:6543
                l2-vpn/vrf-imp:100.1.200.1:65535
Cluster        : 1.1.1.1
Originator Id  : 10.20.1.1
Peer Router Id : 10.20.1.2
Flags          : Used Valid Best IGP
Route Source   : Internal
AS-Path        : No As-Path
-----
RIB Out Entries
-----
Routes : 1
=====
*A:Dut-C>show>router>bgp#

*A:Dut-C>show>router>bgp# routes vpn-ipv4 6.6.6.6/32 rd 10.20.1.4:1 hunt
=====
BGP Router ID:10.20.1.3      AS:None      Local AS:100
=====
Legend -
Status codes : u - used, s - suppressed, h - history, d - decayed, * - valid
Origin codes : i - IGP, e - EGP, ? - incomplete, > - best, b - backup
=====
BGP VPN-IPv4 Routes
=====
RIB In Entries
-----
Network      : 6.6.6.6/32
Nextthop     : 10.20.1.4
Route Dist.  : 10.20.1.4:1
Path Id      : None
From         : 10.20.1.4
Res. Nextthop : n/a
Local Pref.  : 100
Aggregator AS : None
Atomic Aggr. : Not Atomic
AIGP Metric  : None
Connector    : None
Community    : target:100:100
Cluster      : No Cluster Members
Originator Id : None
Peer Router Id : 10.20.1.4
Fwd Class    : None
Priority      : None
Flags        : Used Valid Best Incomplete
Route Source : Internal
AS-Path      : 106
```

```

VPRN Imported : 1
-----
RIB Out Entries
-----

Routes : 1
=====
*A:Dut-C>show>router>bgp#
*A:Dut-C>show>router>bgp# routes vpn-ipv4 6.6.6.6/32 hunt<< SAME AS ABOVE BUT RD NOT SPEC-
IFIED.I.E. ANY RD (RD is optional).
=====
BGP Router ID:10.20.1.3      AS:None      Local AS:100
=====
Legend -
Status codes : u - used, s - suppressed, h - history, d - decayed, * - valid
Origin codes : i - IGP, e - EGP, ? - incomplete, > - best, b - backup
=====
BGP VPN-IPv4 Routes
=====

RIB In Entries
-----
Network      : 6.6.6.6/32
Nexthop      : 10.20.1.4
Route Dist.  : 10.20.1.4:1      VPN Label    : 131070
Path Id      : None
From         : 10.20.1.4
Res. Nexthop : n/a
Local Pref.  : 100              Interface Name : int_to_D
Aggregator AS : None           Aggregator   : None
Atomic Aggr. : Not Atomic      MED          : None
AIGP Metric  : None
Connector    : None
Community    : target:100:100
Cluster      : No Cluster Members
Originator Id : None           Peer Router Id : 10.20.1.4
Fwd Class    : None           Priority      : None
Flags        : Used Valid Best Incomplete
Route Source : Internal
AS-Path      : 106
VPRN Imported : 1
-----

RIB Out Entries
-----

Routes : 1
=====
*A:Dut-C>show>router>bgp#

*A:Dut-C>show>router>bgp# routes 3FFE::606:609/128 vpn-ipv6 hunt
=====
BGP Router ID:10.20.1.3      AS:None      Local AS:100
=====
Legend -
Status codes : u - used, s - suppressed, h - history, d - decayed, * - valid
Origin codes : i - IGP, e - EGP, ? - incomplete, > - best, b - backup
=====
BGP VPN-IPv6 Routes

```

## Show Commands

```
=====
-----
RIB In Entries
-----
Network      : 3FFE::606:609/128
Nextthop    : ::FFFF:A14:104
Route Dist.  : 10.20.1.4:1          VPN Label      : 131070
Path Id      : None
From         : 10.20.1.4
Res. Nextthop : n/a
Local Pref.  : 100                  Interface Name : int_to_D
Aggregator AS : None                Aggregator     : None
Atomic Aggr. : Not Atomic           MED            : None
AIGP Metric  : None
Connector    : None
Community    : target:100:100
Cluster      : No Cluster Members
Originator Id : None                Peer Router Id : 10.20.1.4
Fwd Class    : None                 Priority        : None
Flags        : Used Valid Best Incomplete
Route Source : Internal
AS-Path      : 106
VPRN Imported : 1
-----
RIB Out Entries
-----
Routes : 1
=====
*A:Dut-C>show>router>bgp#

*A:Dut-C>show>router>bgp# routes vpn-ipv6 3FFE::606:607/128 rd 10.20.1.4:1 hunt
=====
BGP Router ID:10.20.1.3      AS:None      Local AS:100
=====
Legend -
Status codes : u - used, s - suppressed, h - history, d - decayed, * - valid
Origin codes  : i - IGP, e - EGP, ? - incomplete, > - best, b - backup
=====
BGP VPN-IPv6 Routes
=====
-----
RIB In Entries
-----
Network      : 3FFE::606:607/128
Nextthop    : ::FFFF:A14:104
Route Dist.  : 10.20.1.4:1          VPN Label      : 131070
Path Id      : None
From         : 10.20.1.4
Res. Nextthop : n/a
Local Pref.  : 100                  Interface Name : int_to_D
Aggregator AS : None                Aggregator     : None
Atomic Aggr. : Not Atomic           MED            : None
AIGP Metric  : None
Connector    : None
Community    : target:100:100
Cluster      : No Cluster Members
Originator Id : None                Peer Router Id : 10.20.1.4
```

```

Fwd Class      : None                Priority      : None
Flags          : Used Valid Best Incomplete
Route Source   : Internal
AS-Path        : 106
VPRN Imported  : 1
-----
RIB Out Entries
-----
-----
Routes : 1
=====
*A:Dut-C>show>router>bgp# routes vpn-ipv6 3FFE::606:607/128 rd 10.20.1.4:2 hunt
=====
BGP Router ID:10.20.1.3      AS:None      Local AS:100
=====
Legend -
Status codes : u - used, s - suppressed, h - history, d - decayed, * - valid
Origin codes  : i - IGP, e - EGP, ? - incomplete, > - best, b - backup
=====
BGP VPN-IPv6 Routes
=====
No Matching Entries Found
=====
*A:Dut-C>show>router>bgp#

*A:Dut-C# show router bgp routes hunt 1.1.1.1/32
=====
BGP Router ID:10.20.1.3      AS:5000      Local AS:5000
=====
Legend -
Status codes : u - used, s - suppressed, h - history, d - decayed, * - valid
Origin codes  : i - IGP, e - EGP, ? - incomplete, > - best
=====
BGP IPv4 Routes
=====
-----
RIB In Entries
-----
Network      : 1.1.1.1/32
Nextthop     : 10.20.1.1
From         : 10.20.1.1
Res. Nextthop : 10.20.1.1 (RSVP LSP: 1)
Local Pref.  : 100
Aggregator AS : None
Atomic Aggr. : Not Atomic
Community    : No Community Members
Cluster      : No Cluster Members
Originator Id : None
Peer Router Id : 10.20.1.1
Flags        : Used Valid Best Incomplete
AS-Path      : No As-Path
-----
RIB Out Entries
-----
-----
Routes : 1
=====

```

## Show Commands

```
A:ALA-12>config>router>bgp# show router bgp routes family ipv4
=====
BGP Router ID : 10.10.10.103      AS : 200      Local AS : 200
=====
Legend -
Status codes : u - used, s - suppressed, h - history, d - decayed, * - valid
Origin codes : i - IGP, e - EGP, ? - incomplete, > - best
=====
BGP Routes
=====
Flag Network                               Nexthop           LocalPref  MED
   VPN Label                               As-Path
-----
No Matching Entries Found
=====
A:ALA-12>config>router>bgp#

A:ALA-12>config>router>bgp# show router bgp routes 13.1.0.0/24 de
=====
BGP Router ID : 10.128.0.161 AS : 65535 Local AS : 65535
=====
Legend - Status codes : u - used, s - suppressed, h - history, d - decayed, * -
valid Origin codes : i - IGP, e - EGP, ? - incomplete, > - best
=====
BGP Routes
=====
Original Attributes
Network      : 13.1.0.0/24      Nexthop      : 10.20.1.20
Route Dist. : 10070:100      VPN Label    : 152784
From        : 10.20.1.20      Res. Nexthop : 10.130.0.2
Local Pref. : 100
Aggregator AS : none      Aggregator   : none
Atomic Aggr. : Not Atomic  MED          : none
Community    : target:10070:1
Cluster      : No Cluster Members
Originator Id : None      Peer Router Id : 10.20.1.20
Flags        : Used Valid Best IGP
AS-Path      : 10070 {14730}
Modified Attributes

Network      : 13.1.0.0/24      Nexthop      : 10.20.1.20
Route Dist. : 10001:100      VPN Label    : 152560
From        : 10.20.1.20      Res. Nexthop : 10.130.0.2
Local Pref. : 100
Aggregator AS: none      Aggregator   : none
Atomic Aggr. : Not Atomic  MED          : none
Community    : target:10001:1
Cluster      : No Cluster Members
Originator Id: None      Peer Router Id : 10.20.1.20
Flags        : Used Valid Best IGP
AS-Path      : No As-Path
-----
...
=====
A:ALA-12>config>router>bgp#

A:SR-12# show router bgp routes 100.0.0.0/30 hunt
```



```

=====
BGP Router ID : 10.20.1.1   AS : 100Local AS : 100
=====
Legend -
Status codes : u - used, s - suppressed, h - history, d - decayed, * - valid
Origin codes : i - IGP, e - EGP, ? - incomplete, > - best
=====
BGP Routes
=====
RIB In Entries
-----
Network      : 100.0.0.0/30
Nextthop    : 10.20.1.2
Route Dist. : 10.20.1.2:1      VPN Label    : 131070
From        : 10.20.1.2
Res. Nextthop : 10.10.1.2
Local Pref. : 100
Aggregator AS : none           Interface Name: to-sr7
Atomic Aggr. : Not Atomic    Aggregator   : none
Community    : target:10.20.1.2:1
Cluster      : No Cluster Members
Originator Id : None           Peer Router Id: 10.20.1.2
Flags        : Used Valid Best IGP
AS-Path      : No As-Path
VPRN Imported : 1 2 10 12
-----
RIB Out Entries
-----
Routes : 1
=====
A:SR-12#

*A:praragon-sim1# /show router bgp routes mvpn-ipv4
=====
BGP Router ID:10.20.1.3      AS:200      Local AS:200
=====
Legend -
Status codes : u - used, s - suppressed, h - history, d - decayed, * - valid
Origin codes : i - IGP, e - EGP, ? - incomplete, > - best
=====
BGP MVPN-IPv4 Routes
=====
Flag RouteType      OriginatorIP      LocalPref  MED  VPNLabel
      RD              SourceAS
      Nextthop        SourceIP
      As-Path         GroupIP
-----
u*>i  Intra-Ad        10.20.1.4        100       0
      1:1             -
      10.20.1.4      -
      No As-Path     -
u*>i  Source-Ad      -                 100       0
      1:1             -
      10.20.1.4      130.100.1.2
      No As-Path     227.0.0.0
u*>i  Source-Join    -                 100       0
      1:1             200
      10.20.1.4      150.100.1.2

```

## Show Commands

```

                No As-Path                226.0.0.0
-----
Routes : 3
=====
*A:praragon-sim1#

*A:praragon-sim1# show router bgp routes mvpn-ipv4 brief
=====
BGP Router ID:10.20.1.3      AS:200      Local AS:200
=====
Legend -
Status codes : u - used, s - suppressed, h - history, d - decayed, * - valid
Origin codes : i - IGP, e - EGP, ? - incomplete, > - best
=====
BGP MVPN-IPv4 Routes
=====
Flag  RouteType                OriginatorIP                SourceIP
      RD                    SourceAS                    GroupIP
-----
u*>i  Intra-Ad                10.20.1.4                  -
      1:1                    -                            -
u*>i  Source-Ad                -                            130.100.1.2
      1:1                    -                            227.0.0.0
u* >i  Source-Join              -                            150.100.1.2
      1:1                    200                          226.0.0.0
-----
Routes : 3
=====
*A:praragon-sim1#

*A:praragon-sim1# show router bgp routes mvpn-ipv4 type source-join source-as
200 source-ip 150.100.1.2 group-ip 226.0.0.0 detail
=====
BGP Router ID:10.20.1.3      AS:200      Local AS:200
=====
Legend -
Status codes : u - used, s - suppressed, h - history, d - decayed, * - valid
Origin codes : i - IGP, e - EGP, ? - incomplete, > - best
=====
BGP MVPN-IPv4 Routes
=====
Route Type      : Source-Join
Route Dist.     : 1:1
Source AS       : 200
Source IP       : 150.100.1.2
Group IP        : 226.0.0.0
Nextthop       : 10.20.1.4
From            : 10.20.1.4
Res. Nextthop   : 0.0.0.0
Local Pref.     : 100
Aggregator AS   : None
Atomic Aggr.    : Not Atomic
Community       : target:10.20.1.3:2
Cluster         : No Cluster Members
Originator Id   : None
Flags           : Used Valid Best IGP
Peer Router Id  : 10.20.1.4
Interface Name  : NotAvailable
Aggregator      : None
MED             : 0
```

```

AS-Path      : No As-Path
-----
Routes : 1
=====
*A:praragon-sim1#

*A:Dut-C# show router bgp routes mvpn-ipv4 type spmsi-ad detail
=====
BGP Router ID:10.20.1.3      AS:46000      Local AS:46000
=====
Legend -
Status codes : u - used, s - suppressed, h - history, d - decayed, * - valid
              l - leaked
Origin codes  : i - IGP, e - EGP, ? - incomplete, > - best, b - backup
=====
BGP MVPN-IPv4 Routes
=====
Original Attributes

Route Type      : Spmsi-Ad
Route Dist.     : 10.1.200.41:1
Originator IP   : 10.20.1.4
Source IP       : 10.1.101.2
Group IP        : 225.100.0.0

<snip>

Last Modified   : 00h18m52s
VPRN Imported   : 1
-----
PMSI Tunnel Attribute :
Tunnel-type      : None                Flags      : Leaf required
MPLS Label      : 0
-----
=====
*A:Dut-C#

*A:Dut-C# show router bgp routes mvpn-ipv6 type spmsi-ad detail
=====
BGP Router ID:10.20.1.3      AS:46000      Local AS:46000
=====
Legend -
Status codes : u - used, s - suppressed, h - history, d - decayed, * - valid
              l - leaked
Origin codes  : i - IGP, e - EGP, ? - incomplete, > - best, b - backup
=====
BGP MVPN-IPv6 Routes
=====
Original Attributes

Route Type      : Spmsi-Ad
Route Dist.     : 10.1.200.41:1
Originator IP   : 10.20.1.4
Source IP       : 2001:10:1:101::2
Group IP        : ff0e:225:100::

```

## Show Commands

```
<snip>

VPRN Imported : 1
-----
PMSI Tunnel Attribute :
Tunnel-type : None          Flags : Leaf required
MPLS Label : 0
-----
=====
*A:Dut-C#

*A:Dut-C# show router bgp routes ms-pw
=====
BGP Router ID:10.20.1.3      AS:100      Local AS:100
=====
Legend -
Status codes : u - used, s - suppressed, h - history, d - decayed, * - valid
Origin codes : i - IGP, e - EGP, ? - incomplete, > - best, b - backup
=====
BGP MSPW Routes
=====
Flag Network RD
Nexthop AII-Type2/Preflen
As-Path
-----
? 3:10.20.1.3 100:3
10.20.1.5 3:10.20.1.3:0/64
200 100
? 3:10.20.1.3 100:4
10.20.1.5 3:10.20.1.3:0/64
200 100
u*>? 6:10.20.1.6 100:6
10.20.1.5 6:10.20.1.6:0/64
200 300 400
-----
Routes : 3
=====

*A:DUT# show router bgp routes ipv4 detail
=====
BGP Router ID:1.1.1.1      AS:100      Local AS:100
=====
Legend -
Status codes : u - used, s - suppressed, h - history, d - decayed, * - valid
Origin codes : i - IGP, e - EGP, ? - incomplete, > - best, b - backup
=====
BGP IPv4 Routes
=====
-----
Original Attributes

Network : 11.1.1.1/32
Nexthop : 192.168.1.1
Path Id : None
From : 192.168.1.1
Res. Nexthop : 192.168.1.1
Local Pref. : n/a          Interface Name : net
```

```

Aggregator AS : None                      Aggregator      : None
Atomic Aggr.  : Not Atomic                 MED             : 5000
AIGP Metric   : 100
Community     : None
Cluster       : No Cluster Members
Originator Id : None                      Peer Router Id  : 2.2.2.2
Fwd Class     : None                      Priority        : None
Flags         : Used Valid Best Incomplete
Route Source  : External
AS-Path       : 200 400 500

```

## Modified Attributes

```

Network       : 11.1.1.1/32
Nextthop     : 192.168.1.1
Path Id      : None
From         : 192.168.1.1
Res. Nextthop : 192.168.1.1
Local Pref.  : None                      Interface Name  : net
Aggregator AS : None                      Aggregator     : None
Atomic Aggr. : Not Atomic                 MED           : 5000
AIGP Metric   : 110
Community     : None
Cluster       : No Cluster Members
Originator Id : None                      Peer Router Id  : 2.2.2.2
Fwd Class     : None                      Priority        : None
Flags         : Used Valid Best Incomplete
Route Source  : External
AS-Path       : 200 400 500

```

```

-----
Routes : 1
=====

```

```
*A:DUT# show router bgp routes 11.1.1.1/32 hunt
```

```

=====
BGP Router ID:1.1.1.1      AS:100      Local AS:100
=====

```

## Legend -

```

Status codes : u - used, s - suppressed, h - history, d - decayed, * - valid
Origin codes  : i - IGP, e - EGP, ? - incomplete, > - best, b - backup
=====

```

## BGP IPv4 Routes

## RIB In Entries

```

-----
Network       : 11.1.1.1/32
Nextthop     : 192.168.1.1
Path Id      : None
From         : 192.168.1.1
Res. Nextthop : 192.168.1.1
Local Pref.  : None                      Interface Name  : net
Aggregator AS : None                      Aggregator     : None
Atomic Aggr. : Not Atomic                 MED           : 5000
AIGP Metric   : 110
Community     : None
Cluster       : No Cluster Members

```

## Show Commands

```
Originator Id : None Peer Router Id : 2.2.2.2
Fwd Class : None Priority : None
Flags : Used Valid Best Incomplete
Route Source : External
AS-Path : 200 400 500
-----
RIB Out Entries
-----
Network : 11.1.1.1/32
Nexthop : 1.1.1.1
Path Id : None
To : 3.3.3.3
Res. Nexthop : n/a
Local Pref. : 100 Interface Name : NotAvailable
Aggregator AS : None Aggregator : None
Atomic Aggr. : Not Atomic MED : 5000
AIGP Metric : 150
Community : None
Cluster : No Cluster Members
Originator Id : None Peer Router Id : 3.3.3.3
Origin : Incomplete
AS-Path : 200 400 500
-----
Routes : 2
=====

*A:DUT#
=====
*A:Dut-A>config>router>bgp# show router bgp routes
=====
BGP Router ID:10.20.1.1 AS:1 Local AS:1
=====
Legend -
Status codes : u - used, s - suppressed, h - history, d - decayed, * - valid
Origin codes : i - IGP, e - EGP, ? - incomplete, > - best, b - backup
=====
BGP IPv4 Routes
=====
Flag Network LocalPref MED
Nexthop Path-Id Label
As-Path
-----
u*>i 20.0.0.1/32 100 2010
10.20.1.2 None 131057
2
ub*i 20.0.0.1/32 100 2010
10.20.1.3 None 131067
2
-----
Routes : 2
=====
*A:DUT-A>config>router>bgp#

*A:Dut-A# show router bgp routes evpn mac mac-address 00:00:01:00:01:02 hunt
=====
BGP Router ID:10.20.1.1 AS:100 Local AS:100
=====
```

Legend -

Status codes : u - used, s - suppressed, h - history, d - decayed, \* - valid  
Origin codes : i - IGP, e - EGP, ? - incomplete, > - best, b - backup

=====

BGP EVPN Mac Routes

=====

-----

RIB In Entries

-----

Network : N/A  
Nexthop : 10.20.1.2  
From : 10.20.1.2  
Res. Nexthop : N/A  
Local Pref. : 100 Interface Name : NotAvailable  
Aggregator AS : None Aggregator : None  
Atomic Aggr. : Not Atomic MED : 0  
AIGP Metric : None  
Connector : None  
Community : target:100:1 bgp-tunnel-encap:VXLAN  
mac-mobility:Seq:0/Static  
Cluster : No Cluster Members  
Originator Id : None Peer Router Id : 10.20.1.2  
Flags : Used Valid Best IGP  
Route Source : Internal  
AS-Path : 111  
EVPN type : MAC  
ESI : 0:0:0:0:0:0:0:0:0 Tag : 1  
IP Address : N/A Route Dist. : 10.20.1.2:1  
Mac Address : 00:00:01:00:01:02  
MPLS Label1 : X MPLS Label2 : Y  
Route Tag : Z  
Neighbor-AS : 111  
Orig Validation: N/A  
Source Class : 0 Dest Class : 0

-----

RIB Out Entries

-----

-----

Routes : 1

=====

\*A:Dut-A# show router bgp routes evpn ip-prefix prefix 3.0.1.6/32 detail

=====

BGP Router ID:10.20.1.1 AS:100 Local AS:100

=====

Legend -

Status codes : u - used, s - suppressed, h - history, d - decayed, \* - valid  
Origin codes : i - IGP, e - EGP, ? - incomplete, > - best, b - backup

=====

BGP EVPN IP-Prefix Routes

=====

-----

Original Attributes

Network : N/A

## Show Commands

```
Nexthop      : 10.20.1.2
From         : 10.20.1.2
Res. Nexthop : N/A
Local Pref.  : 100
Aggregator AS : None
Atomic Aggr. : Not Atomic
AIGP Metric  : None
Connector    : None
Community    : target:100:1 mac-nh:00:00:01:00:01:02
              bgp-tunnel-encap:VXLAN
Cluster      : No Cluster Members
Originator Id : None
Flags        : Used Valid Best IGP
Route Source : Internal
AS-Path      : No As-Path
EVPN type    : IP-PREFIX
ESI          : N/A
Gateway Address: 00:00:01:00:01:02
Prefix       : 3.0.1.6/32
MPLS Label   : X
Route Tag     : Z
Neighbor-AS  : N/A
Orig Validation: N/A
Source Class  : 0
Interface Name : NotAvailable
Aggregator    : None
MED           : 0
Peer Router Id : 10.20.1.2
Tag           : 1
Route Dist.   : 10.20.1.2:1
Dest Class    : 0
```

### Modified Attributes

```
Network      : N/A
Nexthop      : 10.20.1.2
From         : 10.20.1.2
Res. Nexthop : N/A
Local Pref.  : 100
Aggregator AS : None
Atomic Aggr. : Not Atomic
AIGP Metric  : None
Connector    : None
Community    : target:100:1 mac-nh:00:00:01:00:01:02
              bgp-tunnel-encap:VXLAN
Cluster      : No Cluster Members
Originator Id : None
Flags        : Used Valid Best IGP
Route Source : Internal
AS-Path      : 111
EVPN type    : IP-PREFIX
ESI          : N/A
Gateway Address: 00:00:01:00:01:02
Prefix       : 3.0.1.6/32
MPLS Label   : X
Route Tag     : W
Neighbor-AS  : 111
Orig Validation: N/A
Source Class  : 0
Interface Name : NotAvailable
Aggregator    : None
MED           : 0
Peer Router Id : 10.20.1.2
Tag           : 1
Route Dist.   : 10.20.1.2:1
Dest Class    : 0
```

-----  
Routes : 1  
=====



## policy-test

**Syntax** `policy-test policy-name family family prefix prefix/pfxlen [longer] [neighbor neighbor] [display-rejects] [detail]`

**Context** `show>router router-id>bgp>routes`

**Description** This command allows an operator to evaluate an existing policy against the RIB to identify what prefixes are matched/not matched by the policy prior to attaching it to a routing neighbor or instance.

**Parameters** *policy-name* — Must be the name of an existing configured and committed policy.

*family* — ipv4 or ipv6

**Default** `ipv4`

*prefix/pfxlen* — The IPv4 or IPv6 prefix/mask to be evaluated. The keyword **longer** may be specified to evaluate longer prefix matches. (optional)

*neighbor* — The BGP neighbor. (optional)

**display-rejects** — Display routes that were rejected by the policy. If not specified, only a count of rejected routes will be shown. (optional)

**detail** — When the policy modifies route attributes, it displays the modifications made to the routes. This command requires an exact prefix to be specified. (optional)

## Sample Output

```
A:sim-1# show router bgp policy-test bgpprefix6 family ipv4 prefix 0.0.0.0/0
longer neighbor 220.0.0.2
=====
BGP Router ID:11.11.11.10      AS:11      Local AS:11
=====
Legend -
Status codes  : u - used, s - suppressed, h - history, d - decayed, * - valid
Origin codes  : i - IGP, e - EGP, ? - incomplete, > - best, b - backup
=====
BGP IPv4 Routes
=====
Flag  Network                LocalPref  MED
      Nexthop                Path-Id    VPNLabel
      As-Path
-----
Accepted by Policy
u*>?  4.0.0.6/32              None       None
      220.0.0.2             None       -
      14
-----
Total Routes : 17 Routes rejected : 16
=====

A:sim-1# show router bgp policy-test bgpprefix6 prefix 0.0.0.0/0 longer neighbor
220.0.0.2
=====
BGP Router ID:11.11.11.10      AS:11      Local AS:11
=====
```

## Show Commands

```
Legend -
Status codes : u - used, s - suppressed, h - history, d - decayed, * - valid
Origin codes : i - IGP, e - EGP, ? - incomplete, > - best, b - backup
=====
BGP IPv4 Routes
=====
Flag Network
-----
Accepted by Policy
u*>? 4.0.0.6/32
-----
Total Routes : 17 Routes rejected : 16
=====
A:sim-1# show router bgp policy-test bgpprefix6 family ipv4 prefix 0.0.0.0/0
longer neighbor 220.0.0.2 display-rejects brief
=====
BGP Router ID:11.11.11.10      AS:11      Local AS:11
=====
Legend -
Status codes : u - used, s - suppressed, h - history, d - decayed, * - valid
Origin codes : i - IGP, e - EGP, ? - incomplete, > - best, b - backup
=====
BGP IPv4 Routes
=====
Flag Network
-----
Rejected by Default action
u*>? 2.2.2.2/32
Rejected by Default action
u*>? 4.0.0.1/32
Rejected by Default action
u*>? 4.0.0.2/32
Rejected by Default action
u*>? 4.0.0.3/32
Rejected by Default action
u*>? 4.0.0.4/32
Rejected by Default action
u*>? 4.0.0.5/32
Accepted by Policy
u*>? 4.0.0.6/32
Rejected by Default action
u*>? 6.0.0.1/32
Rejected by Default action
u*>? 7.0.0.1/32
Rejected by Default action
u*>i 10.0.4.0/24
Rejected by Default action
*i 10.12.0.0/24
Rejected by Default action
*i 10.14.0.0/24
Rejected by Default action
u*>i 10.24.0.0/24
Rejected by Default action
*i 12.12.12.12/32
Rejected by Default action
*i 220.0.0.2/32
Rejected by Default action
*i 220.0.0.3/32
```

```

Rejected by Default action
u*>i 221.0.0.2/32
-----
Total Routes : 17 Routes rejected : 16
=====
A:sim-1# show router bgp policy-test bgpprefix6 prefix 0.0.0.0/0 longer neighbor
220.0.0.2 display-rejects
=====
BGP Router ID:11.11.11.10      AS:11      Local AS:11
=====
Legend -
Status codes : u - used, s - suppressed, h - history, d - decayed, * - valid
Origin codes : i - IGP, e - EGP, ? - incomplete, > - best, b - backup
=====
BGP IPv4 Routes
=====
Flag Network LocalPref MED
      Nexthop Path-Id VPLabel
      As-Path
-----
Rejected by Default action
u*>? 2.2.2.2/32 None None
      220.0.0.2 None -
      14
Rejected by Default action
u*>? 4.0.0.1/32 None None
      220.0.0.2 None -
      14
Rejected by Default action
u*>? 4.0.0.2/32 None None
      220.0.0.2 None -
      14
Rejected by Default action
u*>? 4.0.0.3/32 None None
      220.0.0.2 None -
      14
Rejected by Default action
u*>? 4.0.0.4/32 None None
      220.0.0.2 None -
      14
Rejected by Default action
u*>? 4.0.0.5/32 None None
      220.0.0.2 None -
      14
Accepted by Policy
u*>? 4.0.0.6/32 None None
      220.0.0.2 None -
      14
Rejected by Default action
u*>? 6.0.0.1/32 None None
      220.0.0.2 None -
      14
Rejected by Default action
u*>? 7.0.0.1/32 None None
      220.0.0.2 None -
      14
Rejected by Default action
u*>i 10.0.4.0/24 None None

```

## Show Commands

```

                220.0.0.2                None      -
                14
Rejected by Default action
*i 10.12.0.0/24                None      20
    220.0.0.2                None      -
    14
Rejected by Default action
*i 10.14.0.0/24                None      None
    220.0.0.2                None      -
    14
Rejected by Default action
u*>i 10.24.0.0/24              None      None
    220.0.0.2                None      -
    14
Rejected by Default action
*i 12.12.12.12/32              None      20
    220.0.0.2                None      -
    14
Rejected by Default action
*i 220.0.0.2/32                None      None
    220.0.0.2                None      -
    14
Rejected by Default action
*i 220.0.0.3/32                None      10
    220.0.0.2                None      -
    14
Rejected by Default action
u*>i 221.0.0.2/32              None      None
    220.0.0.2                None      -
    14

```

```
-----
Total Routes : 17 Routes rejected : 16
=====
```

```
A:sim-1# show router bgp policy-test bgpprefix6 prefix 4.0.0.1/32 detail neighbor
220.0.0.2 display-rejects
```

```
-----
BGP Router ID:11.11.11.10      AS:11      Local AS:11
=====
```

```
Legend -
```

```
Status codes : u - used, s - suppressed, h - history, d - decayed, * - valid
```

```
Origin codes : i - IGP, e - EGP, ? - incomplete, > - best, b - backup
```

```
=====
BGP IPv4 Routes
=====
```

```
Rejected by Default action
```

```
Network      : 4.0.0.1/32
```

```
Nexthop     : 220.0.0.2
```

```
Path Id     : None
```

```
From        : 220.0.0.2
```

```
Res. Nexthop : 10.14.0.4
```

```
Local Pref. : None
```

```
Interface Name : to-sim-6
```

```
Aggregator AS : None
```

```
Aggregator     : None
```

```
Atomic Aggr.  : Not Atomic
```

```
MED            : None
```

```
AIGP Metric   : None
```

```
Connector     : None
```

```
Community     : target:65530:20
```

```
Cluster       : No Cluster Members
```

```
Originator Id : None
```

```
Peer Router Id : 14.14.14.10
```

```

Fwd Class      : None          Priority      : None
Flags          : Used Valid Best Incomplete
Route Source   : External
AS-Path       : 14

```

```

-----
Total Routes : 1 Routes rejected : 1
=====

```

```

A:sim-1# show router bgp policy-test bgpprefix6 family ipv4 prefix 4.0.0.6/32
neighbor 220.0.0.2

```

```

-----
BGP Router ID:11.11.11.10      AS:11          Local AS:11
=====

```

```

Legend -

```

```

Status codes : u - used, s - suppressed, h - history, d - decayed, * - valid
Origin codes : i - IGP, e - EGP, ? - incomplete, > - best, b - backup

```

```

=====
BGP IPv4 Routes
=====

```

```

Accepted by Policy
-----

```

```

Original Attributes

```

```

Network      : 4.0.0.6/32
Nextthop    : 220.0.0.2
Path Id     : None
From        : 220.0.0.2
Res. Nextthop : 10.14.0.4
Local Pref. : n/a
Aggregator AS : None
Atomic Aggr. : Not Atomic
AIGP Metric  : None
Connector   : None
Community   : target:65530:20
Cluster     : No Cluster Members
Originator Id : None
Fwd Class   : None
Flags       : Used Valid Best Incomplete
Route Source : External
AS-Path     : 14
Interface Name : to-sim-6
Aggregator    : None
MED           : None
Peer Router Id : 14.14.14.10
Priority       : None

```

```

Modified Attributes

```

```

Network      : 4.0.0.6/32
Nextthop    : 220.0.0.2
Path Id     : None
From        : 220.0.0.2
Res. Nextthop : 10.14.0.4
Local Pref. : None
Aggregator AS : None
Atomic Aggr. : Not Atomic
AIGP Metric  : None
Connector   : None
Community   : 2:11 2:12 2:13 target:65530:20
Cluster     : No Cluster Members
Originator Id : None
Fwd Class   : None
Interface Name : to-sim-6
Aggregator    : None
MED           : None
Peer Router Id : 14.14.14.10
Priority       : None

```

## Show Commands

```
Flags          : Used Valid Best Incomplete
Route Source   : External
AS-Path        : 14
```

```
-----
Routes : 1
=====
```

```
A:sim-1# show router bgp policy-test bgpprefix6 family ipv4 prefix 4.0.0.6/32
longer neighbor 220.0.0.2
```

```
-----
BGP Router ID:11.11.11.10      AS:11      Local AS:11
=====
```

```
Legend -
```

```
Status codes : u - used, s - suppressed, h - history, d - decayed, * - valid
Origin codes  : i - IGP, e - EGP, ? - incomplete, > - best, b - backup
```

```
-----
BGP IPv4 Routes
=====
```

Flag	Network	LocalPref	MED
	Nexthop	Path-Id	VPNLabel
	As-Path		

```
-----
Accepted by Policy
```

u*>?	4.0.0.6/32	None	None
	220.0.0.2	None	-
	14		

```
-----
Routes : 1
=====
```

```
A:sim-1# show router bgp policy-test bgpprefix6 family ipv4 prefix 4.0.0.6/32
longer neighbor 220.0.0.2 detail
```

```
-----
BGP Router ID:11.11.11.10      AS:11      Local AS:11
=====
```

```
Legend -
```

```
Status codes : u - used, s - suppressed, h - history, d - decayed, * - valid
Origin codes  : i - IGP, e - EGP, ? - incomplete, > - best, b - backup
```

```
-----
BGP IPv4 Routes
=====
```

```
Flag Network
```

```
-----
Accepted by Policy
```

```
u*>? 4.0.0.6/32
```

```
-----
Routes : 1
=====
```

```
A:sim-1# show router bgp policy-test bgpprefix6 family ipv4 prefix 4.0.0.0/24
longer neighbor 220.0.0.2 brief
```

```
-----
BGP Router ID:11.11.11.10      AS:11      Local AS:11
=====
```

```
Legend -
```

```
Status codes : u - used, s - suppressed, h - history, d - decayed, * - valid
Origin codes  : i - IGP, e - EGP, ? - incomplete, > - best, b - backup
```

```

=====
BGP IPv4 Routes
=====
Flag Network
-----
Accepted by Policy
u*>? 4.0.0.6/32
-----
Total Routes : 6 Routes rejected : 5
=====
A:sim-1# show router bgp policy-test bgpprefix6 family ipv4 prefix 4.0.0.0/24
longer neighbor 220.0.0.2 display-rejects detail
=====
BGP Router ID:11.11.11.10      AS:11      Local AS:11
=====
Legend -
Status codes : u - used, s - suppressed, h - history, d - decayed, * - valid
Origin codes  : i - IGP, e - EGP, ? - incomplete, > - best, b - backup
=====
BGP IPv4 Routes
=====
Flag Network
-----
Rejected by Default action
u*>? 4.0.0.1/32
Rejected by Default action
u*>? 4.0.0.2/32
Rejected by Default action
u*>? 4.0.0.3/32
Rejected by Default action
u*>? 4.0.0.4/32
Rejected by Default action
u*>? 4.0.0.5/32
Accepted by Policy
u*>? 4.0.0.6/32
-----
Total Routes : 6 Routes rejected : 5
=====
A:sim-1# show router bgp policy-test bgpprefix6 family ipv4 prefix 4.0.0.0/24
longer neighbor 220.0.0.2 display-rejects
=====
BGP Router ID:11.11.11.10      AS:11      Local AS:11
=====
Legend -
Status codes : u - used, s - suppressed, h - history, d - decayed, * - valid
Origin codes  : i - IGP, e - EGP, ? - incomplete, > - best, b - backup
=====
BGP IPv4 Routes
=====
Flag Network                                LocalPref  MED
Nexthop                                       Path-Id    VPNLabel
As-Path
-----
Rejected by Default action
u*>? 4.0.0.1/32                                None       None
      220.0.0.2                                None       -

```

## Show Commands

```

      14
Rejected by Default action
u*>?  4.0.0.2/32                None      None
      220.0.0.2                None      -
      14
Rejected by Default action
u*>?  4.0.0.3/32                None      None
      220.0.0.2                None      -
      14
Rejected by Default action
u*>?  4.0.0.4/32                None      None
      220.0.0.2                None      -
      14
Rejected by Default action
u*>?  4.0.0.5/32                None      None
      220.0.0.2                None      -
      14
Accepted by Policy
u*>?  4.0.0.6/32                None      None
      220.0.0.2                None      -
      14
-----
Total Routes : 6 Routes rejected : 5
=====
A:sim-1# show router bgp policy-test bgpprefix6 family ipv4 prefix 4.0.0.0/24
longer neighbor 220.0.0.2 display-rejects brief
=====
BGP Router ID:11.11.11.10      AS:11      Local AS:11
=====
Legend -
Status codes : u - used, s - suppressed, h - history, d - decayed, * - valid
Origin codes : i - IGP, e - EGP, ? - incomplete, > - best, b - backup
=====
BGP IPv4 Routes
=====
Flag Network
-----
Rejected by Default action
u*>?  4.0.0.1/32
Rejected by Default action
u*>?  4.0.0.2/32
Rejected by Default action
u*>?  4.0.0.3/32
Rejected by Default action
u*>?  4.0.0.4/32
Rejected by Default action
u*>?  4.0.0.5/32
Accepted by Policy
u*>?  4.0.0.6/32
-----
Total Routes : 6 Routes rejected : 5
=====
A:sim-1# show router bgp policy-test bgpprefix6 family ipv4 prefix 4.0.0.0/24
longer neighbor 220.0.0.2
=====
BGP Router ID:11.11.11.10      AS:11      Local AS:11
=====
```



Legend -

Status codes : u - used, s - suppressed, h - history, d - decayed, \* - valid  
Origin codes : i - IGP, e - EGP, ? - incomplete, > - best, b - backup

=====

BGP IPv4 Routes

=====

Flag	Network	LocalPref	MED
	NextHop	Path-Id	VPNLabel
	As-Path		

-----

Accepted by Policy

u*>?	4.0.0.6/32	None	None
	220.0.0.2	None	-
	14		

-----

Total Routes : 6 Routes rejected : 5

A:sim-1# show router bgp policy-test bgpprefix44rej family vpn-ipv4 prefix 0.0.0.0/0  
longer neighbor display-rejects

=====

BGP Router ID:11.11.11.10 AS:11 Local AS:11

=====

Legend -

Status codes : u - used, s - suppressed, h - history, d - decayed, \* - valid  
Origin codes : i - IGP, e - EGP, ? - incomplete, > - best, b - backup

=====

BGP VPN-IPv4 Routes

=====

Flag	Network	LocalPref	MED
	NextHop	Path-Id	VPNLabel
	As-Path		

-----

Accepted by Policy

u*>i	1:30:192.14.15.0/24	None	None
	220.0.0.2	None	131069
	14		

Accepted by Policy

u*>i	65530:20:8.0.0.1/32	None	None
	220.0.0.2	None	131070
	14		

Accepted by Policy

u*>i	65530:20:10.0.3.0/24	None	None
	220.0.0.2	None	131070
	14 101		

Accepted by Policy

u*>i	65530:20:10.13.0.0/24	None	None
	220.0.0.2	None	131070
	14 101		

Accepted by Policy

u*>i	65530:20:10.23.0.0/24	None	None
	220.0.0.2	None	131070
	14 101		

Accepted by Policy

u*>i	65530:20:13.13.13.13/32	None	None
	220.0.0.2	None	131070

## Show Commands

```
14 101
Accepted by Policy
u*>i 65530:20:20.20.20.5/32          None      None
220.0.0.2                          None      131070
14
Accepted by Policy
u*>i 65530:20:20.20.20.6/32          None      None
220.0.0.2                          None      131070
14
Rejected by Policy Entry = 10
u*>i 65530:20:44.44.44.0/24         None      None
220.0.0.2                          None      131070
14 101
Accepted by Policy
u*>i 65530:20:192.14.15.0/24        None      None
220.0.0.2                          None      131070
14
Accepted by Policy
u*>i 65530:20:192.14.16.0/24        None      None
220.0.0.2                          None      131070
14
Accepted by Policy
u*>i 65530:20:192.14.17.0/24        None      None
220.0.0.2                          None      131070
14
Accepted by Policy
u*>i 65530:20:192.14.18.0/24        None      None
220.0.0.2                          None      131070
14
Accepted by Policy
u*>i 65530:20:192.14.19.0/24        None      None
220.0.0.2                          None      131070
14
Accepted by Policy
u*>i 65530:20:192.14.20.0/24        None      None
220.0.0.2                          None      131070
14
Accepted by Policy
u*>i 65530:20:192.14.21.0/24        None      None
220.0.0.2                          None      131070
14
Accepted by Policy
u*>i 65530:20:192.14.22.0/24        None      None
220.0.0.2                          None      131070
14
Accepted by Policy
u*>i 65530:20:192.14.23.0/24        None      None
220.0.0.2                          None      131070
14
Accepted by Policy
u*>i 65530:20:192.14.25.0/24        None      None
220.0.0.2                          None      131070
14
Accepted by Policy
u*>i 65530:20:196.34.0.0/24         None      None
220.0.0.2                          None      131070
14
Accepted by Policy
u*>i 220.0.0.2:50:192.50.50.0/24    None      None
```

```

                220.0.0.2                None                131067
                14
Accepted by Policy
u*>i 220.0.0.2:50:220.0.0.2/32          None                None
                220.0.0.2                None                131067
                14
-----
Total Routes : 22 Routes rejected : 1
=====

```

## summary

**Syntax** **summary** [**all**]  
**summary** [**family** *family*] [**neighbor** *ip-address*]

**Context** show>router>bgp

**Description** This command displays a summary of BGP neighbor information.

If confederations are not configured, that portion of the output will not display.

The “State” field displays the global BGP operational state. The valid values are:

Up — BGP global process is configured and running.

Down — BGP global process is administratively shutdown and not running.

Disabled — BGP global process is operationally disabled. The process must be restarted by the operator.

For example, if a BGP peer is operationally disabled, then the state in the summary table shows the state ‘Disabled’

**Parameters** **family** — Specify the type of routing information to be distributed by the BGP instance.

**Values** **ipv4** — Displays only those BGP peers that have the IPv4 family enabled.

**vpn-ipv4** — Displays the BGP peers that are IP-VPN capable.

**ipv6** — Displays the BGP peers that are IPv6 capable.

**mcast-ipv4** — Displays the BGP peers that are mcast-ipv4 capable.

**neighbor** *ip-address* — Clears damping information for entries received from the BGP neighbor.

**Values** ipv4-address: a.b.c.d  
 ipv6-address: x:x:x:x:x:x:x (eight 16-bit pieces)  
 x:x:x:x:x:d.d.d.d  
 x: [0 — FFFF]H  
 d: [0 — 255]D

**Output** **BGP Summary Output** — The following table describes the command output fields for a BGP summary.

Label	Description
BGP Router ID	The local BGP router ID.
AS	The configured autonomous system number.

## Show Commands

Label	Description (Continued)
Local AS	The configured local AS setting. If not configured, then the value is the same as the AS.
BGP Admin State	Down – BGP is administratively disabled. Up – BGP is administratively enabled.
BGP Oper State	Down – BGP is operationally disabled. Up – BGP is operationally enabled.
Bfd	Yes – BFD is enabled. No – BFD is disabled.
Confederation AS	The configured confederation AS.
Member Confederations	The configured members of the BGP confederation.
Number of Peer Groups	The total number of configured BGP peer groups.
Number of Peers	The total number of configured BGP peers.
Total BGP Active Routes	The total number of BGP routes used in the forwarding table.
Total BGP Routes	The total number of BGP routes learned from BGP peers.
Total BGP Paths	The total number of unique sets of BGP path attributes learned from BGP peers.
Total Path Memory	Total amount of memory used to store the path attributes.
Total Suppressed Routes	Total number of suppressed routes due to route damping.
Total History Routes	Total number of routes with history due to route damping.
Total Decayed Routes	Total number of decayed routes due to route damping.
Total VPN Peer Groups	The total number of configured VPN peer groups.
Total VPN Peers	The total number of configured VPN peers.
Total VPN Local Rts	The total number of configured local VPN routes.
Total VPN Remote Rts	The total number of configured remote VPN routes.
Total VPN Remote Active Rts.	The total number of active remote VPN routes used in the forwarding table.

Label	Description (Continued)
Local AS	The configured local AS setting. If not configured, then the value is the same as the AS.
BGP Admin State	Down – BGP is administratively disabled. Up – BGP is administratively enabled.
BGP Oper State	Down – BGP is operationally disabled. Up – BGP is operationally enabled.
Bfd	Yes – BFD is enabled. No – BFD is disabled.
Confederation AS	The configured confederation AS.
Member Confederations	The configured members of the BGP confederation.
Number of Peer Groups	The total number of configured BGP peer groups.
Number of Peers	The total number of configured BGP peers.
Total BGP Active Routes	The total number of BGP routes used in the forwarding table.
Total BGP Routes	The total number of BGP routes learned from BGP peers.
Total BGP Paths	The total number of unique sets of BGP path attributes learned from BGP peers.
Total Path Memory	Total amount of memory used to store the path attributes.
Total Suppressed Routes	Total number of suppressed routes due to route damping.
Total History Routes	Total number of routes with history due to route damping.
Total Decayed Routes	Total number of decayed routes due to route damping.
Total VPN Peer Groups	The total number of configured VPN peer groups.
Total VPN Peers	The total number of configured VPN peers.
Total VPN Local Rts	The total number of configured local VPN routes.
Total VPN Remote Rts	The total number of configured remote VPN routes.
Total VPN Remote Active Rts.	The total number of active remote VPN routes used in the forwarding table.

## Show Commands

Label	Description (Continued)
Total VPN Supp.Rts.	Total number of suppressed VPN routes due to route damping.
Total VPN Hist. Rts.	Total number of VPN routes with history due to route damping.
Total VPN Decay Rts.	Total number of decayed routes due to route damping.
Neighbor	BGP neighbor address.
AS (Neighbor)	BGP neighbor autonomous system number.
PktRcvd	Total number of packets received from the BGP neighbor.
PktSent	Total number of packets sent to the BGP neighbor.
InQ	The number of BGP messages to be processed.
OutQ	The number of BGP messages to be transmitted.
Up/Down	The amount of time that the BGP neighbor has either been established or not established depending on its current state.
State Rcv/Actv/ Sent	The BGP neighbor's current state (if not established) or the number of received routes, active routes and sent routes (if established).

### Sample Output

```
A:Dut-C# show router bgp summary neighbor 3FFE::A0A:1064
=====
BGP Router ID : 10.20.1.3      AS : 100      Local AS : 100
=====
BGP Admin State      : Up          BGP Oper State      : Up
Number of Peer Groups : 4          Number of Peers     : 5
Total BGP Paths      : 8          Total Path Memory   : 1212
Total BGP Active Rts. : 0          Total BGP Rts.     : 0
Total Supressed Rts. : 0          Total Hist. Rts.   : 0
Total Decay Rts.     : 0

Total VPN Peer Groups : 0          Total VPN Peers     : 0
Total VPN Local Rts.  : 0
Total VPN Remote Rts. : 0          Total VPN Remote Active Rts.: 0
Total VPN Supp. Rts.  : 0          Total VPN Hist. Rts. : 0
Total VPN Decay Rts.  : 0

Total IPv6 Remote Rts. : 5          Total IPv6 Rem. Active Rts. : 4
=====
BGP Summary
=====
Neighbor
      AS      PktRcvd InQ  Up/Down  State|Rcv/Act/Sent (IPv4)
              PktSent OutQ              Rcv/Act/Sent (VpnIPv4)
                              Rcv/Act/Sent (IPv6)
```

```

                                     Rcv/Act/Sent (MCastIPv4)
-----
3FFE::A0A:1064
          103      489      0 00h40m28s IPv4 Incapable
          569      0          VPN-IPv4 Incapable
                                     1/1/3
                                     MCAST-IPv4 Incapable
=====
A:Dut-C#

```

```
A:Dut-C# show router bgp summary neighbor 10.20.1.4 family ipv6
```

```

=====
BGP Router ID : 10.20.1.3      AS : 100      Local AS : 100
=====
BGP Admin State      : Up          BGP Oper State      : Up
Number of Peer Groups : 4          Number of Peers     : 5
Total BGP Paths      : 8          Total Path Memory   : 1212
Total BGP Active Rts. : 0          Total BGP Rts.     : 0
Total Supressed Rts. : 0          Total Hist. Rts.   : 0
Total Decay Rts.     : 0

Total VPN Peer Groups : 0          Total VPN Peers     : 0
Total VPN Local Rts.  : 0
Total VPN Remote Rts. : 0          Total VPN Remote Active Rts.: 0
Total VPN Supp. Rts.  : 0          Total VPN Hist. Rts. : 0
Total VPN Decay Rts.  : 0

Total IPv6 Remote Rts. : 5          Total IPv6 Rem. Active Rts. : 4
=====
BGP IPv6 Summary

```

```

Neighbor
          AS PktRcvd PktSent  InQ OutQ Up/Down  State|Rcv/Actv/Sent
-----
10.20.1.4
          100      554      572   0   0 00h41m27s 1/0/3
=====

```

```
A:Dut-C#
```

```
A:SetupCLI>show>router# bgp summary
```

```

=====
BGP Router ID : 21.3.4.5      AS : 35012      Local AS : 100
=====
BGP Admin State      : Up          BGP Oper State      : Up
Confederation AS     : 40000
Member Confederations : 35012 65205 65206 65207 65208
Rapid Withdrawal     : Disabled
Bfd Enabled           : Yes

Number of Peer Groups : 1          Number of Peers     : 1
Total BGP Paths      : 3          Total Path Memory   : 396
Total BGP Active Rts. : 0          Total BGP Rts.     : 0
Total Supressed Rts. : 0          Total Hist. Rts.   : 0
Total Decay Rts.     : 0

Total VPN Peer Groups : 1          Total VPN Peers     : 1
Total VPN Local Rts.  : 0

```

## Show Commands

```

Total VPN Remote Rts.      : 0                Total VPN Remote Active Rts.: 0
Total VPN Supp. Rts.       : 0                Total VPN Hist. Rts.        : 0
Total VPN Decay Rts.       : 0

Total IPv6 Remote Rts.     : 0                Total IPv6 Rem. Active Rts. : 0
=====
BGP Summary
=====
Neighbor
      AS      PktRcvd InQ  Up/Down  State|Rcv/Act/Sent (IPv4)
              PktSent OutQ              Rcv/Act/Sent (VpnIPv4)
                                      Rcv/Act/Sent (IPv6)
                                      Rcv/Act/Sent (MCastIPv4)
-----
3.3.3.3      20        0    0    01h55m56s Active
              0    0
=====
A:SetupCLI>show>router#

```

## fib

**Syntax** **fib** *slot-number* [*family*] [*ip-prefix/prefix-length* [**longer**]]  
 [**secondary**] [**qos**] [**accounting-class**]  
**fib** *slot-number* [**ipv4|ipv6**] **summary**  
**fib** *slot-number* **nh-table-usage**

**Context** show>router>fib

**Description** This command displays FIB information for a specific IOM.

**Parameters** *slot-number* — Specifies the slot number.

**Values** 1 — 10

*family* — Specify the type of routing information to be distributed by the instance.

**Values** **ipv4** — Displays only those peers that have the IPv4 family enabled.  
**ipv6** — Displays the peers that are IPv6 capable.

*ip-prefix* — The IP prefix for prefix list entry in dotted decimal notation.

**Values** ipv4-address: a.b.c.d  
 ipv6-address: x:x:x:x:x:x:x (eight 16-bit pieces)  
 x:x:x:x:x:d.d.d.d  
 x: [0 — FFFF]H  
 d: [0 — 255]D

*prefix-length* — Specifies prefix length.

ipv4-prefix-length: 0 — 32  
 ipv6-prefix-length: 0 — 128

**longer** — Specifies the prefix list entry matches any route that matches the specified ip-prefix and prefix mask length values equal to or greater than the specified mask.

**secondary** — Specifies a secondary FIB.



**summary** — Displays a summary of the FIB information.

**nh-table-usage** — Shows next-hop table usage.

**qos** — Specifies the QoS.

**accounting-class** — Specifies the accounting class.

## Output

### Sample Output

```
*A:pe1# show router fib 1

=====
FIB Display
=====
Prefix [Flags]                               Protocol
  NextHop
  Src-Class
-----
180.10.0.1/32 [S]                             BGP
  10.10.10.1 Indirect (lag1-to-server1)
  10.10.10.5 Indirect (lag2-to-server2)
  10.10.10.10 Indirect (lag3-to-server3)
-----
Total Entries : 1
Flags: S = sticky ECMP supported

-----
=====
show router fib 1 nh-table-usage

=====
FIB Next-Hop Summary
=====
IPv4/IPv6           Active           Available
-----
IP Next-Hop         4                16383
Tunnel Next-Hop    16519            993279
ECMP Next-Hop      511998           512000
ECMP Tunnel Next-Hop 33030           261120
=====
```

## mvpn

**Syntax** mvpn

**Context** show>router

**Description** This command displays Multicast VPN related information.

### Sample Output

```
*A:praragon-sim1# show router 100 mvpn

=====
MVPN 100 configuration data
=====
```

## Show Commands

```
i-pmsi          : 224.100.201.101 ssm  admin status      : Up
hello-interval  : 30 seconds           hello-multiplier   : 35 * 0.1
three-way-hello : Disabled             tracking support    : Disabled

s-pmsi range    : 0.0.0.0/0           data-delay-interval: 3 seconds
join-tlv-packing : N/A

signaling       : Bgp
vrf-import      : N/A
vrf-export      : N/A
vrf-target      : N/A
=====
*A:praragon-sim1#
```

## route-table

**Syntax** **route-table** [*family*] [*ip-prefix/prefix-length*] [**longer**|**exact**|**protocol** *protocol-name*] [**all**] [**next-hop-type** *type*] [**qos**] [**alternative**] [**accounting-class**]  
**route-table** [*family*] **summary**  
**route-table** **tunnel-endpoints** [*ip-prefix/prefix-length*] [**longer**|**exact**] [**detail**]

**Context** show>router>route-table

**Description** This command displays route-table information.

**Parameters** *family* — Specifies the type of routing information to be distributed by the BGP instance.  
**ipv4** — Displays only those BGP peers that have the IPv4 family enabled and not those capable of exchanging IP-VPN routes.  
**mcast-ipv4** — Displays the BGP peers that are mcast-ipv4 capable.  
**ipv6** — Displays the BGP peers that are IPv6 capable.  
**mcast-ipv6** — Displays the BGP peers that are mcast-ipv6 capable.

*ip-prefix* — The IP prefix for prefix list entry in dotted decimal notation.

<b>Values</b>	ipv4-prefix:	a.b.c.d (host bits must be 0)
	ipv6-address:	x:x:x:x:x:x:x (eight 16-bit pieces)
		x:x:x:x:x:d.d.d.d
		x: [0 — FFFF]H
		d: [0 — 255]D

*prefix-length* — Specifies prefix length.

ipv4-prefix-length:	0 — 32
ipv6-prefix-length:	0 — 128

**longer** — Specifies the prefix list entry matches any route that matches the specified ip-prefix and prefix mask length values equal to or greater than the specified mask.

**exact** — Specifies the prefix list entry matches any route that matches the specified ip-prefix and prefix mask length values of the specified mask.

*protocol-name* — Specifies the protocol name. One of the following:

local | sub-mgmt | managed | static | ldp | ospf | ospf3 | isis | rip | bgp | bgp-vpn | bgp-evpn | aggregate | vpn-leak | tms | nat | periodic | dhcpv6-pd | dhcpv6-na | dhcpv6-ta | dhcpv6-pd-excl | ripng | ipsec

**all** — Includes all inactive routes.

**alternative** — Displays LFA and backup route details.

**detail** — All output is displayed in the detailed format.

## Output Sample Output

```
show router route-table 180.10.0.1/32
```

```
=====
Route Table (Router: Base)
=====
Dest Prefix[Flags]                               Type   Proto   Age           Pref
  Next Hop[Interface Name]                       Metric
-----
180.10.0.1/32 [B][S]                             Remote BGP     00h00m49s    170
      10.10.10.1                                   0
180.10.0.1/32 [B][S]                             Remote BGP     00h00m49s    170
      10.10.10.5                                   0
180.10.0.1/32 [B][S]                             Remote BGP     00h00m49s    170
      10.10.10.10                                  0
-----
No. of Routes: 1
Flags: n = Number of times nexthop is repeated
      B = BGP backup route available
      L = LFA nexthop available
      S = sticky ECMP requested
=====
```

```
*A:vRR>config>router# show router route-table extensive 200.200.200.200/32
```

Examples of the **show router route-table extensive** command output with unequal-cost ECMP BGP routes are shown below:

```
=====
Route Table (Router: Base)
=====
Dest Prefix           : 200.200.200.200/32
Protocol              : BGP
Age                   : 01h20m41s
Preference            : 170
Indirect Next-Hop    : 10.0.0.2
  QoS                  : Priority=n/c, FC=n/c
  Source-Class        : 0
  Dest-Class          : 0
  ECMP-Weight         : 9
Resolving Next-Hop   : 10.0.0.2
  Interface           : to_bridge_br2
  Metric              : 0
  ECMP-Weight         : N/A
Indirect Next-Hop    : 192.0.2.2
  QoS                  : Priority=n/c, FC=n/c
  Source-Class        : 0
  Dest-Class          : 0
  ECMP-Weight         : 5
=====
```

## Show Commands

```
Resolving Next-Hop : 192.0.2.2
Interface          : to_bridge_br3
Metric            : 0
ECMP-Weight       : N/A
-----
No. of Destinations: 1
=====
*A:vRR>config>router# show router fib 1 extensive 200.200.200.200/32
=====
FIB Display (Router: Base)
=====
Dest Prefix          : 200.200.200.200/32
Protocol            : BGP
Indirect Next-Hop   : 10.0.0.2
  QoS                : Priority=n/c, FC=n/c
  Source-Class      : 0
  Dest-Class        : 0
  ECMP-Weight       : 9
  Resolving Next-Hop : 10.0.0.2
    Interface       : to_bridge_br2
    ECMP-Weight     : 1
  Indirect Next-Hop : 192.0.2.2
    QoS             : Priority=n/c, FC=n/c
    Source-Class    : 0
    Dest-Class      : 0
    ECMP-Weight     : 5
    Resolving Next-Hop : 192.0.2.2
      Interface     : to_bridge_br3
      ECMP-Weight   : 1
=====
Total Entries : 1
=====
*A:Dut-C>config>router>mpls>lsp# show router route-table 5.3.0.1/32 extensive
=====
Route Table (Router: Base)
=====
Dest Prefix          : 5.3.0.1/32
Protocol            : BGP
Age                 : 00h00m59s
Preference          : 170
Indirect Next-Hop   : 10.0.0.1
  QoS                : Priority=n/c, FC=n/c
  Source-Class      : 0
  Dest-Class        : 0
  ECMP-Weight       : 1
  Resolving Next-Hop : 1.0.0.2 (RSVP tunnel:115)
    Metric           : 10
    ECMP-Weight     : 1
  Resolving Next-Hop : 1.0.0.2 (RSVP tunnel:61443)
    Metric           : 10
    ECMP-Weight     : 1
  Indirect Next-Hop : 10.0.0.2
    QoS             : Priority=n/c, FC=n/c
    Source-Class    : 0
    Dest-Class      : 0
    ECMP-Weight     : 30
    Resolving Next-Hop : 1.0.0.3 (RSVP tunnel:94)
```

Metric : 10  
ECMP-Weight : 20  
Resolving Next-Hop : 1.0.0.3 (RSVP tunnel:61442)  
Metric : 10  
ECMP-Weight : 1

-----  
No. of Destinations: 1  
=====

---

## Clear Commands

### damping

**Syntax** **damping** *[[ip-prefix/ip-prefix-length] [neighbor ip-address]] | [group name]*

**Context** clear>router>bgp

**Description** This command clears or resets the route damping information for received routes.

**Parameters** *ip-prefix/ip-prefix-length* — Clears damping information for entries that match the IP prefix and prefix length.

<b>Values</b>	ipv4-prefix:	a.b.c.d (host bits must be 0)
	ipv4-prefix-length:	0 — 32
	ipv6-prefix:	x:x:x:x:x:x:x (eight 16-bit pieces) x:x:x:x:x:d.d.d.d x: [0 — FFFF]H d: [0 — 255]D
	ipv6-prefix-length:	0 — 128

**neighbor ip-address** — Clears damping information for entries received from the BGP neighbor.

<b>Values</b>	ipv4-address:	a.b.c.d
	ipv6-address:	x:x:x:x:x:x:x (eight 16-bit pieces) x:x:x:x:x:d.d.d.d x: [0 — FFFF]H d: [0 — 255]D interface: 32 chars maximum, mandatory for link local addresses

**group name** — Clears damping information for entries received from any BGP neighbors in the peer group.

**Values** 32 characters maximum

### flap-statistics

**Syntax** **flap-statistics** *[[ip-prefix/mask] [neighbor ip-address]] | [group group-name] | [regex reg-exp] | [policy policy-name]*

**Context** clear>router>bgp

**Description** This command clears route flap statistics.

**Parameters** *ip-prefix/mask* — Clears route flap statistics for entries that match the specified IP prefix and mask length.

<b>Values</b>	ip-prefix:	a.b.c.d (host bits must be 0)
	mask:	0 — 32

**neighbor** *ip-address* — Clears route flap statistics for entries received from the specified BGP neighbor.

<b>Values</b>	ipv4-address:	a.b.c.d
	ipv6-address:	x:x:x:x:x:x:x (eight 16-bit pieces)
		x:x:x:x:x:d.d.d.d
		x: [0 — FFFF]H
		d: [0 — 255]D

**group** *group-name* — Clears route flap statistics for entries received from any BGP neighbors in the specified peer group.

**regex** *reg-exp* — Clears route flap statistics for all entries which have the regular expression and the AS path that matches the regular expression.

**policy** *policy-name* — Clears route flap statistics for entries that match the specified route policy.

## neighbor

**Syntax** **neighbor** {*ip-address* | **as** *as-number* | **external** | **all**} [**soft** | **soft-inbound**]  
**neighbor**{*ip-address* | **as** *as-number* | **external** | **all**} **statistics**  
**neighbor** *ip-address* **end-of-rib**

**Context** clear>router>bgp

**Description** This command resets the specified BGP peer or peers. This can cause existing BGP connections to be shutdown and restarted.

**Parameters** *ip-address* — Resets the BGP neighbor with the specified IP address.

<b>Values</b>	ipv4-address:	a.b.c.d
	ipv6-address:	x:x:x:x:x:x:x[-interface]
		x:x:x:x:x:d.d.d.d[-interface]
		x: [0 — FFFF]H
		d: [0 — 255]D
		interface: 32 characters maximum, mandatory for link local addresses

**as** *as-number* — Resets all BGP neighbors with the specified peer AS.

**Values** 1 — 65535

**external** — Resets all EBGp neighbors.

**all** — Resets all BGP neighbors.

**soft** — The specified BGP neighbor(s) re-evaluates all routes in the Local-RIB against the configured export policies.

**soft-inbound** — The specified BGP neighbor(s) re-evaluates all routes in the RIB-In against the configured import policies.

**statistics** — The BGP neighbor statistics.

**end-of-rib** — Clears the routing information base (RIB). This command applies when the SR OS node is helping the BGP neighbor through a BGP graceful restart. When the **clear router bgp neighbor**

## Clear Commands

command is issued without the end-of-rib option and the neighbor is in the process of restarting, stale routes from the neighbor will be retained until the stale-routes-time is reached or else the neighbor exits graceful restart. When the command is issued with the end-of-rib option, stale routes from the neighbor are deleted immediately and graceful restart procedures are aborted.

### protocol

<b>Syntax</b>	<b>protocol</b>
<b>Context</b>	clear>router>bgp
<b>Description</b>	Resets the entire BGP protocol.



---

## Debug Commands

### events

**Syntax** **events** [**neighbor** *ip-address* | **group** *name*]  
**no events**

**Context** debug>router>bgp

**Description** This command logs all events changing the state of a BGP peer.

**Parameters** **neighbor** *ip-address* — Debugs only events affecting the specified BGP neighbor.

**Values**

ipv4-address:	a.b.c.d (host bits must be 0)
ipv6-address:	x:x:x:x:x:x:x [-interface] (eight 16-bit pieces)
	x:x:x:x:x:d.d.d.d [-interface]
	x [0 — FFFF]H
	d [0 — 255]D
	interface: 32 characters maximum, mandatory for link local addresses

**group** *name* — Debugs only events affecting the specified peer group and associated neighbors.

### graceful-restart

**Syntax** **graceful-restart** [**neighbor** *ip-address* | **group** *name*]  
**no graceful-restart**

**Context** debug>router>bgp

**Description** This command enables debugging for BGP graceful-restart.  
The no form of the command disables the debugging.

**Parameters** **neighbor** *ip-address* — Debugs only events affecting the specified BGP neighbor.

**Values**

ipv4-address:	a.b.c.d (host bits must be 0)
ipv6-address:	x:x:x:x:x:x:x[-interface]
	x:x:x:x:x:d.d.d.d[-interface]
	x: [0 — FFFF]H
	d: [0 — 255]D
	interface: 32 characters maximum, mandatory for link local addresses)

**group** *name* — Debugs only events affecting the specified peer group and associated neighbors.

## Debug Commands

### keepalive

**Syntax** **keepalive** [*neighbor ip-addr* | **group name**]  
**no keepalive**

**Context** debug>router>bgp

**Description** This command decodes and logs all sent and received keepalive messages in the debug log.

**Parameters** **neighbor ip-address** — Debugs only events affecting the specified BGP neighbor.

**Values**

ipv4-address:	a.b.c.d (host bits must be 0)
ipv6-address:	x:x:x:x:x:x:x[-interface] x:x:x:x:x:d.d.d.d[-interface] x: [0 — FFFF]H d: [0 — 255]D interface: 32 characters maximum, mandatory for link local addresses)

**group name** — Debugs only events affecting the specified peer group and associated neighbors.

### notification

**Syntax** **notification** [*neighbor ip-address* | **group name**]  
**no notification**

**Context** debug>router>bgp

**Description** This command decodes and logs all sent and received notification messages in the debug log.

**Parameters** **neighbor ip-address** — Debugs only events affecting the specified BGP neighbor.

**Values**

ipv4-address:	a.b.c.d (host bits must be 0)
ipv6-address:	x:x:x:x:x:x:x[-interface] x:x:x:x:x:d.d.d.d[-interface] x: [0 — FFFF]H d: [0 — 255]D interface: 32 characters maximum, mandatory for link local addresses)

**group name** — Debugs only events affecting the specified peer group and associated neighbors.

### open

**Syntax** **open** [*neighbor ip-address* | **group name**]  
**no open**

**Context** debug>router>bgp

**Description** This command decodes and logs all sent and received open messages in the debug log.

**Parameters** **neighbor *ip-address*** — Debugs only events affecting the specified BGP neighbor.

**Values**

- ipv4-address: a.b.c.d (host bits must be 0)
- ipv6-address: x:x:x:x:x:x:x[-interface]
- x:x:x:x:x:x:d.d.d.d[-interface]
- x: [0 — FFFF]H
- d: [0 — 255]D
- interface: 32 characters maximum, mandatory for link local addresses)

**group *name*** — Debugs only events affecting the specified peer group and associated neighbors.

## outbound-route-filtering

**Syntax** **[no] outbound-route-filtering**

**Context** debug>router>bgp

**Description** This command enables debugging for for all BGP outbound route filtering (ORF) packets. ORF is used to inform a neighbor of targets (using target-list) that it is willing to receive.

## packets

**Syntax** **packets [neighbor *ip-address* | group *name*]**  
**packets**

**Context** debug>router>bgp

**Description** This command decodes and logs all sent and received BGP packets in the debug log.

**Parameters** **neighbor *ip-address*** — Debugs only events affecting the specified BGP neighbor.

**Values**

- ipv4-address: a.b.c.d (host bits must be 0)
- ipv6-address: x:x:x:x:x:x:x[-interface]
- x:x:x:x:x:x:d.d.d.d[-interface]
- x: [0 — FFFF]H
- d: [0 — 255]D
- interface: 32 characters maximum, mandatory for link local addresses)

**group *name*** — Debugs only events affecting the specified peer group and associated neighbors.

## Debug Commands

### route-refresh

**Syntax** **route-refresh** [*neighbor ip-address* | **group name**]  
**no route-refresh**

**Context** debug>router>bgp

**Description** This command enables and disables debugging for BGP route-refresh.

**Parameters** **neighbor ip-address** — Debugs only events affecting the specified BGP neighbor.

**Values**

ipv4-address:	a.b.c.d (host bits must be 0)
ipv6-address:	x:x:x:x:x:x:x[-interface] x:x:x:x:x:d.d.d.d[-interface] x: [0 — FFFF]H d: [0 — 255]D interface: 32 characters maximum, mandatory for link local addresses)

**group name** — Debugs only events affecting the specified peer group and associated neighbors.

### rtm

**Syntax** **rtm** [*neighbor ip-address* | **group name**]  
**no rtm**

**Context** debug>router>bgp

**Description** This command logs RTM changes in the debug log.

**Parameters** **neighbor ip-address** — Debugs only events affecting the specified BGP neighbor.

**Values**

ipv4-address:	a.b.c.d (host bits must be 0)
ipv6-address:	x:x:x:x:x:x:x[-interface] x:x:x:x:x:d.d.d.d[-interface] x: [0 — FFFF]H d: [0 — 255]D interface: 32 characters maximum, mandatory for link local addresses)

**group name** — Debugs only events affecting the specified peer group and associated neighbors.

## socket

**Syntax** **socket** [*neighbor ip-address* | **group name**]  
**no socket**

**Context** debug>router>bgp

**Description** This command logs all TCP socket events to the debug log.

**Parameters** **neighbor ip-address** — Debugs only events affecting the specified BGP neighbor.

**Values**

ipv4-address:	a.b.c.d (host bits must be 0)
ipv6-address:	x:x:x:x:x:x:x[-interface] x:x:x:x:x:d.d.d[-interface] x: [0 — FFFF]H d: [0 — 255]D interface: 32 characters maximum, mandatory for link local addresses)

**group name** — Debugs only events affecting the specified peer group and associated neighbors.

## timers

**Syntax** **timers** [*neighbor ip-address* | **group name**]  
**no timers**

**Context** debug>router>bgp

**Description** This command logs all BGP timer events to the debug log.

**Parameters** **neighbor ip-address** — Debugs only events affecting the specified BGP neighbor.

**Values**

ipv4-address:	a.b.c.d (host bits must be 0)
ipv6-address:	x:x:x:x:x:x:x[-interface] x:x:x:x:x:d.d.d[-interface] x: [0 — FFFF]H d: [0 — 255]D interface: 32 characters maximum, mandatory for link local addresses)

**group name** — Debugs only events affecting the specified peer group and associated neighbors.

## Debug Commands

### update

**Syntax** **update** [*neighbor ip-address* | **group name**]  
**no update**

**Context** debug>router>bgp

**Description** This command decodes and logs all sent and received update messages in the debug log.

**Parameters** **neighbor ip-address** — Debugs only events affecting the specified BGP neighbor.

**Values**

ipv4-address:	a.b.c.d (host bits must be 0)
ipv6-address:	x:x:x:x:x:x:x[-interface]
	x:x:x:x:x:d.d.d.d[-interface]
	x: [0 — FFFF]H
	d: [0 — 255]D
	interface: 32 characters maximum, mandatory for link local addresses)

**group name** — Debugs only events affecting the specified peer group and associated neighbors.