BGP Debug Commands on Cisco IOS XR Software

This chapter describes the commands used to debug Border Gateway Protocol (BGP) for IP Version 4 (IPv4), IP Version 6 (IPv6), Virtual Private Network Version 4 (VPNv4), Virtual Private Network Version 6 (VPNv6) on Cisco IOS XR software.

debug bgp

To display debugging information related to the acquisition of the Border Gateway Protocol (BGP) router ID and the sending and receiving of BGP messages, use the **debug bgp** command in EXEC mode. To disable debugging output, use the **no** form of this command.

debug bgp [*ip-address*] [**vrf** [*vrf-name* | **all**]] [**in** | **out**] [**bpm** | **brib** *brib-id* | **speaker** *speaker-id* | **test-policy** [**level** {**errors** | **warning** | **summary** | **detail** | **verbose**}] | **commlib**[**level** {**errors** | **warning** | **summary** | **detail** | **verbose**}

no debug bgp [*ip-address*] [**vrf** [*vrf-name* | **all**]] [**in** | **out**] [**bpm** | **brib** *brib-id* | **speaker** *speaker-id* | **test-policy**] [**level** {**errors** | **warning** | **summary** | **detail** | **verbose**}] | **commlib** [**level** {**errors** | **warning** | **summary** | **detail** | **verbose**}]

Syntax Description

ip-address	(Optional) IP address of the neighbor for which you want to limit the output.
vrf	(Optional) A BGP VPN routing and forwarding (VRF) instance.
vrf-name	(Optional) Name of the BGP VRF instance.
all	(Optional) Specifies all BGP VRF instances.
in	(Optional) Displays debugging information for BGP updates in the inbound direction only.
out	(Optional) Displays debugging information for BGP updates in the outbound direction only.
bpm	(Optional) Displays output of a BGP process manager (BPM) process.
brib	(Optional) Displays output of a BGP Routing Information Base (BRIB) process.
brib-id	(Optional) ID of the BRIB process. Range is 1 to 3.
speaker	(Optional) Displays output of a BGP speaker process.
speaker-id	(Optional) ID of the speaker process. Range is 1 to 15.
test-policy	(Optional) Displays route-policy process-testing output.
commlib	(Optional) Displays communicaitons library output.
level	(Optional) Displays debug messages based on severity. Debug messages are filtered by the severity of the event the debug message is describing.
errors	Displays the highest level of debugging messages. This level of debug filtering displays error conditions.
warning	Displays the second-highest level of debugging messages. This level of debug filtering displays warning conditions.
summary	Displays the third-highest level of debugging messages. This level of debug filtering displays debug summaries.
detail	Displays the fourth-highest level of debugging messages. This level of debug filtering displays debug details.
verbose	Displays the lowest level of debugging messages. This level of debug filtering displays a hex dump of messages sent and received.

Defaults

Inbound and outbound information is displayed.
All processes are displayed.
The severity is summary.

Command Modes

EXEC

Command History

Release	Modification
Release 2.0	This command was introduced on the Cisco CRS-1.
Release 3.0	No modification.
Release 3.2	This command was supported on the Cisco XR 12000 Series Router.
Release 3.3.0	Support was added for the **vrf** keyword.
Release 3.4.0	The *brib-id* argument was added. The *speaker-id* range was changed to 1 to 15.
Release 3.5.0	The **test-policy** keyword was added.
Release 3.6.0	No modification.
Release 3.7.0	The **commlib** keyword was added.

Usage Guidelines

To use this command, you must be in a user group associated with a task group that includes the proper task IDs. For detailed information about user groups and task IDs, see the *Configuring AAA Services on Cisco IOS XR Software* module of the *Cisco IOS XR System Security Configuration Guide*.

Debugging output is assigned high priority in the CPU process and, therefore, can affect system performance. For more information about the impact on system performance when using debug commands, refer to *Using Debug Commands on Cisco IOS XR Software*.

BGP messages referred to here include open messages and the BGP capability advertisements contained in them, notification messages, and route-refresh messages.

Caution The **debug bgp** command generates a substantial amount of output. Use the command only when traffic on the IP network is low so that other activity on the system is not adversely affected.

Task ID

Task ID	Operations
bgp	read

Examples

The following example shows how to enable debugging information for BGP router ID and sending and receiving of BGP messages:

```
RP/0/RP0/CPU0:router# debug bgp
```

Related Commands

Command	Description
undebug	Enters debug mode to disable or reset multiple active **debug** command sessions.

debug bgp address-family

To display debugging information related to the acquisition of Border Gateway Protocol (BGP) router ID Management Information Base (MIB) traps, deletion of routes received from a neighbor, change of state of a neighbor, and sending notification to a neighbor, use the **debug bgp address-family** command in EXEC mode. To disable debugging output, use the **no** form of this command.

debug bgp address-family [**vrf** [*vrf-name* | **all**]] [**ipv4** {**unicast** | **multicast** | **labeled-unicast** | **all**} | **ipv6** {**unicast** | **multicast** | **all**} | **all** {**unicast** | **multicast** | **all**} | **vpnv4 unicast** | **vpnv6 unicast**] [**route-policy** *route-policy-name*] [**bpm** | **brib** *brib-id* | **speaker** *speaker-id*] [**level** {**errors** | **warning** | **summary** | **detail** | **verbose**}] [**location** [*location-address*]]

no debug bgp address-family [**vrf** [*vrf-name* | **all**]] [**ipv4** {**unicast** | **multicast** | **labeled-unicast** | **all**} | **ipv6** {**unicast** | **multicast** | **all**} | **all** {**unicast** | **multicast** | **all**} | **vpnv4 unicast** | **vpnv6 unicast**] [**route-policy** *route-policy-name*] [**bpm** | **brib** *brib-id* | **speaker** *speaker-id*] [**level** {**errors** | **warning** | **summary** | **detail** | **verbose**}] [**location** [*location-address*]]

Syntax Description

vrf	(Optional) A BGP VPN routing and forwarding (VRF) instance.
vrf-name	(Optional) Name of the BGP VRF instance.
all	(Optional) Specifies all BGP VRF instances.
ipv4	(Optional) Specifies IP Version 4 (IPv4) address prefixes.
unicast	(Optional) Specifies unicast address prefixes.
multicast	(Optional) Specifies multicast address prefixes.
labeled-unicast	(Optional) Specifies labeled unicast address prefixes.
all	(Optional) For IPv4, displays unicast, labeled-unicast, and multicast subaddress prefixes. For IPv6, displays unicast and multicast subaddress prefixes.
ipv6	(Optional) Specifies IP Version 6 (IPv6) address prefixes.
all	(Optional) Displays both IPv4 and IPv6 address prefixes.
vpnv4 unicast	(Optional) Specifies VPN Version 4 (VPNv4) address prefixes.
vpnv6 unicast	(Optional) Specifies VPN Version 6 (VPNv6) address prefixes.
route-policy	(Optional) Specifies a route policy.
route-policy-name	(Optional) Name of the route policy.
bpm	(Optional) Displays output of a BGP process manager (BPM) process.
brib	(Optional) Displays output of a BGP Routing Information Base (BRIB) process.
brib-id	(Optional) ID of the BRIB process. Range is 1 to 3.
speaker	(Optional) Displays output of a BGP speaker process.
speaker-id	(Optional) ID of the speaker process. Range is 1 to 15.
level	(Optional) Displays debug messages based on severity. Debug messages are filtered by the severity of the event the debug message is describing.
errors	Displays the highest level of debugging messages. This level of debug filtering displays error conditions.

warning	Displays the second-highest level of debugging messages. This level of debug filtering displays warning conditions.
summary	Displays the third-highest level of debugging messages. This level of debug filtering displays debug summaries.
detail	Displays the fourth-highest level of debugging messages. This level of debug filtering displays debug details.
verbose	Displays the lowest level of debugging messages. This level of debug filtering displays a hex dump of messages sent and received.
location	(Optional) Specifies a location.
location-address	(Optional) Address of a specific location.

Defaults

The address family indicator (AFI) is IPv4.
The subaddress family indicator (SAFI) is unicast.
All processes are displayed.
The severity is summary.

Command Modes

EXEC

Command History

Release	Modification
Release 2.0	This command was introduced on the Cisco CRS-1.
Release 3.0	No modification.
Release 3.2	This command was supported on the Cisco XR 12000 Series Router.
Release 3.3.0	Support was added for the **vpn** keyword. The **labeled-unicast** keyword was added to the **ipv4** option. The command was rearranged to account for differences in the options for **the ipv4** and **ipv6** keywords. Support was added for the **vpnv4 unicast** keyword.
Release 3.4.0	The *brib-id* argument was added. The *ip-address* argument was removed. The *speaker-id* range was changed to 1 to 15.
Release 3.5.0	The **vpnv6 unicast** and **route-policy** keywords were added.
Release 3.6.0	No modification.
Release 3.7.0	No modification.

Usage Guidelines

To use this command, you must be in a user group associated with a task group that includes the proper task IDs. For detailed information about user groups and task IDs, see the *Configuring AAA Services on Cisco IOS XR Software* module of the *Cisco IOS XR System Security Configuration Guide*.

Debugging output is assigned high priority in the CPU process and, therefore, can affect system performance. For more information about the impact on system performance when using debug commands, refer to *Using Debug Commands on Cisco IOS XR Software*.

Use the **debug bgp address-family** command for analyzing messages traveling between BGP neighbors.

Caution The **debug bgp address-family** command generates a substantial amount of output. Use the command only when traffic on the IP network is low so that other activity on the system is not adversely affected.

Task ID

Task ID	Operations
bgp	read

Examples

The following example shows how to enable debugging information related to the acquisition of BGP router ID MIB traps, deletion of routes received from a neighbor, change of state of a neighbor, and sending notification to a neighbor:

```
RP/0/RP0/CPU0:router# debug bgp address-family
```

Related Commands

Command	Description
undebug	Enters debug mode to disable or reset multiple active **debug** command sessions.

debug bgp brib-update

To display debugging information about the formatting of messages sent between the Border Gateway Protocol (BGP) speakers and the BGP Routing Information Base (BRIB) when BGP is running in distributed mode, use the **debug bgp brib-update** command in EXEC mode. To disable debugging output, use the **no** form of this command.

debug bgp brib-update [*ip-address*] [**vrf** [*vrf-name* | **all**]] [**ipv4** {**unicast** | **multicast** | **labeled-unicast** | **all**} | **ipv6** {**unicast** | **multicast** | **all**} | **all** {**unicast** | **multicast** | **all**} | **vpnv4 unicast** | **vpnv6 unicast**] [**in** | **out**] [**route-policy** *route-policy-name*] [**brib** *brib-id* | **speaker** *speaker-id*] [**level** {**errors** | **warning** | **summary** | **detail** | **verbose**}] [**location** [*location-address*]]

no debug bgp brib-update [*ip-address*] [**vrf** [*vrf-name* | **all**]] [**ipv4** {**unicast** | **multicast** | **labeled-unicast** | **all**} | **ipv6** {**unicast** | **multicast** | **all**} | **all** {**unicast** | **multicast** | **all**} | **vpnv4 unicast** | **vpnv6 unicast**] [**in** | **out**] [**route-policy** *route-policy-name*] [**brib** *brib-id* | **speaker** *speaker-id*] [**level** {**errors** | **warning** | **summary** | **detail** | **verbose**}] [**location** [*location-address*]]

Syntax Description

ip-address	(Optional) IP address of the neighbor for which you want to limit the output.
vrf	(Optional) A BGP VPN routing and forwarding (VRF) instance.
vrf-name	(Optional) Name of the BGP VRF instance.
all	(Optional) Specifies all BGP VRF instances.
ipv4	(Optional) Specifies IP Version 4 (IPv4) address prefixes.
unicast	(Optional) Specifies unicast address prefixes.
multicast	(Optional) Specifies multicast address prefixes.
labeled-unicast	(Optional) Specifies labeled unicast address prefixes.
all	(Optional) For IPv4, displays unicast, labeled-unicast, and multicast subaddress prefixes. For IPv6, displays unicast and multicast subaddress prefixes.
ipv6	(Optional) Specifies IP Version 6 (IPv6) address prefixes.
all	(Optional) Displays both IPv4 and IPv6 address prefixes.
vpnv4 unicast	(Optional) Specifies VPN Version 4 (VPNv4) address prefixes.
vpnv6 unicast	(Optional) Specifies VPN Version 6 (VPNv6) address prefixes.
in	(Optional) Displays debugging information for BGP updates in the inbound direction only.
out	(Optional) Displays debugging information for BGP updates in the outbound direction only.
route-policy	(Optional) Specifies a route policy.
route-policy-name	(Optional) Name of the route policy.
brib	(Optional) Displays output to the BRIB process.
brib-id	(Optional) ID of the BRIB process. Range is 1 to 3.
speaker	(Optional) Displays output to the BGP speaker process.
speaker-id	(Optional) ID of the speaker process. Range is 1 to 15.

level	(Optional) Displays debug messages based on severity. Debug messages are filtered by the severity of the event the debug message is describing.
errors	Displays the highest level of debugging messages. This level of debug filtering displays error conditions.
warning	Displays the second-highest level of debugging messages. This level of debug filtering displays warning conditions.
summary	Displays the third-highest level of debugging messages. This level of debug filtering displays debug summaries.
detail	Displays the fourth-highest level of debugging messages. This level of debug filtering displays debug details.
verbose	Displays the lowest level of debugging messages. This level of debug filtering displays a hex dump of messages sent and received.
location	(Optional) Specifies a location.
location-address	(Optional) Address of a specific location.

Defaults

The address family indicator (AFI) is IPv4.
The subaddress family indicator (SAFI) is unicast.
Inbound and outbound information is displayed.
The severity is summary.

Command Modes

EXEC

Command History

Release	Modification
Release 2.0	This command was introduced on the Cisco CRS-1.
Release 3.0	No modification.
Release 3.2	This command was supported on the Cisco XR 12000 Series Router.
Release 3.3.0	Support was added for the **vpn** keyword. The **labeled-unicast** keyword was added to the **ipv4** option. The command was rearranged to account for differences in the options for **the ipv4** and **ipv6** keywords. Support was added for the **vpnv4 unicast** keyword.
Release 3.4.0	The **brib** {**1** | **2**} keywords were changed to **brib** *brib-id.* The *speaker-id* range was changed to 1 to 15.
Release 3.5.0	The **vpnv6 unicast** and **route-policy** keywords were added.
Release 3.6.0	No modification
Release 3.7.0	No modification.

Usage Guidelines

To use this command, you must be in a user group associated with a task group that includes the proper task IDs. For detailed information about user groups and task IDs, see the *Configuring AAA Services on Cisco IOS XR Software* module of the *Cisco IOS XR System Security Configuration Guide*.

Debugging output is assigned high priority in the CPU process and, therefore, can affect system performance. For more information about the impact on system performance when using debug commands, refer to *Using Debug Commands on Cisco IOS XR Software.*

The debugging information resulting from this command includes the formatting of messages in both the speakers and the BRIB, the transmission of messages sent by the speaker and received by the BRIB and the transmission of messages sent by the BRIB and received by the speakers.

Use the **debug bgp brib-update** command to analyze messages traveling between BGP speakers and the BRIB process or from the BRIB to the BGP speakers.

Caution The **debug bgp brib-update** command generates a substantial amount of output. Use the command only when traffic on the IP network is low so that other activity on the system is not adversely affected.

Task ID

Task ID	Operations
bgp	read

Examples

The following example shows how to enable debugging information about formatting messages sent between BGP speakers and the BRIB when BGP is running in distributed mode:

```
RP/0/RP0/CPU0:router# debug bgp brib-update
```

Related Commands

Command	Description
undebug	Enters debug mode to disable or reset multiple active **debug** command sessions.

debug bgp commlib

To display debugging information about Border Gateway Protocol (BGP) communication library, use the **debug bgp commlib** command in EXEC mode. To disable debugging output, use the **no** form of this command.

debug bgp commlib [**level** {**errors** | **warning** | **summary** | **detail** | **verbose**}] [**location** [*location-address*]]

no debug bgp commlib [**level** {**errors** | **warning** | **summary** | **detail** | **verbose**}] [**location** [*location-address*]]

Syntax Description

level	(Optional) Displays debug messages based on severity. Debug messages are filtered by the severity of the event the debug message is describing.
errors	Displays the highest level of debugging messages. This level of debug filtering displays error conditions.
warning	Displays the second-highest level of debugging messages. This level of debug filtering displays warning conditions.
summary	Displays the third-highest level of debugging messages. This level of debug filtering displays debug summaries.
detail	Displays the fourth-highest level of debugging messages. This level of debug filtering displays debug details.
verbose	Displays the lowest level of debugging messages. This level of debug filtering displays a hex dump of messages sent and received.
location	(Optional) Specifies a location.
location-address	(Optional) Address of a specific location.

Defaults

The severity is summary.

Command Modes

EXEC

Command History

Release	Modification
Release 3.7.0	This command was introduced on the Cisco CRS-1 and Cisco XR 12000 Series Router.

Usage Guidelines

To use this command, you must be in a user group associated with a task group that includes the proper task IDs. For detailed information about user groups and task IDs, see the *Configuring AAA Services on Cisco IOS XR Software* module of the *Cisco IOS XR System Security Configuration Guide*.

Debugging output is assigned high priority in the CPU process and, therefore, can affect system performance. For more information about the impact on system performance when using debug commands, refer to *Using Debug Commands on Cisco IOS XR Software*.

TTask ID

Task ID	Operations
bgp	read

Examples

The following example shows how to enable debugging information for BGP communications library:

```
RP/0/RP0/CPU0:router# debug bgp commlib
```

debug bgp dampening

To display debugging information about the creation of dampening structures, the penalization of routes, the decay of that penalty, and the suppression and the unsuppression of routes, use the **debug bgp dampening** command in EXEC mode. To disable debugging output, use the **no** form of this command.

debug bgp dampening [**vrf** [*vrf-name* | **all**]] [**ipv4** {**unicast** | **multicast** | **labeled-unicast** | **all**} | **ipv6** {**unicast** | **multicast** | **all**} | **all** {**unicast** | **multicast** | **all**} | **vpnv4 unicast** | **vpnv6 unicast**] [**route-policy** *route-policy-name*] [**speaker** *speaker-id*] [**level** {**errors** | **warning** | **summary** | **detail** | **verbose**}]

no debug bgp dampening [**vrf** [*vrf-name* | **all**]] [**ipv4** {**unicast** | **multicast** | **labeled-unicast** | **all**} | **ipv6** {**unicast** | **multicast** | **all**} | **all** {**unicast** | **multicast** | **all**} | **vpnv4 unicast** | **vpnv6 unicast**] [**route-policy** *route-policy-name*] [**speaker** *speaker-id*] [**level** {**errors** | **warning** | **summary** | **detail** | **verbose**}]

Syntax Description

vrf	(Optional) A BGP VPN routing and forwarding (VRF) instance.
vrf-name	(Optional) Name of the BGP VRF instance.
all	(Optional) Specifies all BGP VRF instances.
ipv4	(Optional) Specifies IP Version 4 (IPv4) address prefixes.
unicast	(Optional) Specifies unicast address prefixes.
multicast	(Optional) Specifies multicast address prefixes.
labeled-unicast	(Optional) Specifies labeled unicast address prefixes.
all	(Optional) For IPv4, displays unicast, labeled-unicast, and multicast subaddress prefixes. For IPv6, displays unicast and multicast subaddress prefixes.
ipv6	(Optional) Specifies IP Version 6 (IPv6) address prefixes.
all	(Optional) Displays both IPv4 and IPv6 address prefixes.
vpnv4 unicast	(Optional) Specifies VPN Version 4 (VPNv4) address prefixes.
vpnv6 unicast	(Optional) Specifies VPN Version 6 (VPNv6) address prefixes.
route-policy	(Optional) Specifies a route policy.
route-policy-name	(Optional) Name of the route policy.
speaker	(Optional) Displays output of a BGP speaker process.
speaker-id	(Optional) ID of the speaker process. Range is 1 to 15.
level	(Optional) Displays debug messages based on severity. Debug messages are filtered by the severity of the event the debug message is describing.
errors	Displays the highest level of debugging messages. This level of debug filtering displays error conditions.
warning	Displays the second-highest level of debugging messages. This level of debug filtering displays warning conditions.
summary	Displays the third-highest level of debugging messages. This level of debug filtering displays debug summaries.

detail	Displays the fourth-highest level of debugging messages. This level of debug filtering displays debug details.
verbose	Displays the lowest level of debugging messages. This level of debug filtering displays a hex dump of messages sent and received.

Defaults

The address family indicator (AFI) is IPv4.
The subaddress family indicator (SAFI) is unicast.
All speaker processes are displayed.
The severity is summary.

Command Modes

EXEC

Command History

Release	Modification
Release 2.0	This command was introduced on the Cisco CRS-1.
Release 3.0	No modification.
Release 3.2	This command was supported on the Cisco XR 12000 Series Router.
Release 3.3.0	Support was added for the **vpn** keyword. The **labeled-unicast** keyword was added to the **ipv4** option. The command was rearranged to account for differences in the options for **the ipv4** and **ipv6** keywords. Support was added for the **vpnv4 unicast** keyword.
Release 3.4.0	The *speaker-id* range was changed to 1 to 15.
Release 3.5.0	The **vpnv6 unicast** and **route-policy** keywords were added.
Release 3.6.0	No modification.
Release 3.7.0	No modification.

Usage Guidelines

To use this command, you must be in a user group associated with a task group that includes the proper task IDs. For detailed information about user groups and task IDs, see the *Configuring AAA Services on Cisco IOS XR Software* module of the *Cisco IOS XR System Security Configuration Guide*.

Debugging output is assigned high priority in the CPU process and, therefore, can affect system performance. For more information about the impact on system performance when using debug commands, refer to *Using Debug Commands on Cisco IOS XR Software*.

Use the **debug bgp dampening** command to analyze the dampening of a flapping route.

Caution The **debug bgp dampening** command generates a substantial amount of output. Use the command only when traffic on the IP network is low so that other activity on the system is not adversely affected.

Task ID

Task ID	Operations
bgp	read

Examples

The following example shows how to enable debugging information about the creation of dampening structures, the penalization of routes, the decay of that penalty, and the suppression and the unsuppression of routes:

```
RP/0/RP0/CPU0:router# debug bgp dampening
```

Related Commands

Command	Description
undebug	Enters debug mode to disable or reset multiple active **debug** command sessions.

debug bgp event

To display debugging information about significant Border Gateway Protocol (BGP) events, use the **debug bgp event** command in EXEC mode. To disable debugging output, use the **no** form of this command.

debug bgp event [**vrf** [*vrf-name* | **all**]] [**ipv4** {**unicast** | **multicast** | **labeled-unicast** | **all**} | **ipv6** {**unicast** | **multicast** | **all**} | **all** {**unicast** | **multicast** | **all**} | **vpnv4 unicast** | **vpnv6 unicast**] [**bpm** | **brib** *brib-id* | **speaker** *speaker-id* | **test-policy**] [**level** {**errors** | **warning** | **summary** | **detail** | **verbose**}] [**location** [*location-address*]]

no debug bgp event [**vrf** [*vrf-name* | **all**]] [**ipv4** {**unicast** | **multicast** | **labeled-unicast** | **all**} | **ipv6** {**unicast** | **multicast** | **all**} | **all** {**unicast** | **multicast** | **all**} | **vpnv4 unicast** | **vpnv6 unicast**] [**bpm** | **brib** *brib-id* | **speaker** *speaker-id* | **test-policy**] [**level** {**errors** | **warning** | **summary** | **detail** | **verbose**}] [**location** [*location-address*]]

Syntax Description

vrf	(Optional) A BGP VPN routing and forwarding (VRF) instance.
vrf-name	(Optional) Name of the BGP VRF instance.
all	(Optional) Specifies all BGP VRF instances.
ipv4	(Optional) Specifies IP Version 4 (IPv4) address prefixes.
unicast	(Optional) Specifies unicast address prefixes.
multicast	(Optional) Specifies multicast address prefixes.
labeled-unicast	(Optional) Specifies labeled unicast address prefixes.
all	(Optional) For IPv4, displays unicast, labeled-unicast, and multicast subaddress prefixes. For IPv6, displays unicast and multicast subaddress prefixes.
ipv6	(Optional) Specifies IP Version 6 (IPv6) address prefixes.
all	(Optional) Displays both IPv4 and IPv6 address prefixes.
vpnv4 unicast	(Optional) Specifies VPN Version 4 (VPNv4) address prefixes.
vpnv6 unicast	(Optional) Specifies VPN Version 6 (VPNv6) address prefixes.
bpm	(Optional) Displays output of a BGP process manager (BPM) process.
brib	(Optional) Displays output of a BGP Routing Information Base (BRIB) process.
brib-id	(Optional) Displays debugging information for a specific BRIB process. Range is 1 to 3.
speaker	(Optional) Displays output of a BGP speaker process.
speaker-id	(Optional) ID of the speaker process. Range is 1 to 15.
test-policy	(Optional) Displays output of a test route policy process.
level	(Optional) Displays debug messages based on severity. Debug messages are filtered by the severity of the event the debug message is describing.
errors	Displays the highest level of debugging messages. This level of debug filtering displays error conditions.
warning	Displays the second-highest level of debugging messages. This level of debug filtering displays warning conditions.

summary	Displays the third-highest level of debugging messages. This level of debug filtering displays debug summaries.
detail	Displays the fourth-highest level of debugging messages. This level of debug filtering displays debug details.
verbose	Displays the lowest level of debugging messages. This level of debug filtering displays a hex dump of messages sent and received.
location	(Optional) Specifies a location.
location-address	(Optional) Address of a specific location.

Defaults

The address family indicator (AFI) is IPv4.
The subaddress family indicator (SAFI) is unicast.
All processes are displayed.
The severity is summary.

Command Modes

EXEC

Command History

Release	Modification
Release 2.0	This command was introduced on the Cisco CRS-1.
Release 3.0	No modification.
Release 3.2	This command was supported on the Cisco XR 12000 Series Router.
Release 3.3.0	Support was added for the **vpn** keyword. The **labeled-unicast** keyword was added to the **ipv4** option. The command was rearranged to account for differences in the options for **the ipv4** and **ipv6** keywords. Support was added for the **vpnv4 unicast** keyword.
Release 3.4.0	The **brib** {**1** | **2**} keywords were changed to **brib** *brib-id.* The *speaker-id* range was changed to 1 to 15.
Release 3.5.0	The **vpnv6 unicast** and **test-policy** keywords were added.
Release 3.6.0	No modification.
Release 3.7.0	No modification.

Usage Guidelines

To use this command, you must be in a user group associated with a task group that includes the proper task IDs. For detailed information about user groups and task IDs, see the *Configuring AAA Services on Cisco IOS XR Software* module of the *Cisco IOS XR System Security Configuration Guide*.

Debugging output is assigned high priority in the CPU process and, therefore, can affect system performance. For more information about the impact on system performance when using debug commands, refer to *Using Debug Commands on Cisco IOS XR Software*.

Use the **debug bgp event** command to analyze various BGP external and internal events. Events include BGP neighbor creation, deletion, and reset; BGP scanner runs; Routing Information Base (RIB) connect and disconnect events; and BGP internal state transitions.

Caution The **debug bgp event** command generates a substantial amount of output. Use the command only when traffic on the IP network is low so that other activity on the system is not adversely affected.

Task ID

Task ID	Operations
bgp	read

Examples

The following example shows how to enable debugging information about significant BGP events:

```
RP/0/RP0/CPU0:router# debug bgp event
```

Related Commands

Command	Description
undebug	Enters debug mode to disable or reset multiple active **debug** command sessions.

debug bgp ha

To display debugging information about Border Gateway Protocol (BGP) high availability (HA), use the **debug bgp ha** command in EXEC mode. To disable debugging output, use the **no** form of this command.

debug bgp ha [**level** {**errors** | **warning** | **summary** | **detail** | **verbose**}] [**location** [*location-address*]]

no debug bgp ha [**level** {**errors** | **warning** | **summary** | **detail** | **verbose**}] [**location** [*location-address*]]

Syntax Description

level	(Optional) Displays debug messages based on severity. Debug messages are filtered by the severity of the event the debug message is describing.
errors	Displays the highest level of debugging messages. This level of debug filtering displays error conditions.
warning	Displays the second-highest level of debugging messages. This level of debug filtering displays warning conditions.
summary	Displays the third-highest level of debugging messages. This level of debug filtering displays debug summaries.
detail	Displays the fourth-highest level of debugging messages. This level of debug filtering displays debug details.
verbose	Displays the lowest level of debugging messages. This level of debug filtering displays a hex dump of messages sent and received.
location	(Optional) Specifies a location.
location-address	(Optional) Address of a specific location.

Defaults

The severity is summary.

Command Modes

EXEC

Command History

Release	Modification
Release 3.4.0	This command was introduced on the Cisco CRS-1 and Cisco XR 12000 Series Router.
Release 3.5.0	No modification.
Release 3.6.0	No modification.
Release 3.7.0	No modification.

Usage Guidelines

To use this command, you must be in a user group associated with a task group that includes the proper task IDs. For detailed information about user groups and task IDs, see the *Configuring AAA Services on Cisco IOS XR Software* module of the *Cisco IOS XR System Security Configuration Guide*.

Debugging output is assigned high priority in the CPU process and, therefore, can affect system performance. For more information about the impact on system performance when using debug commands, refer to *Using Debug Commands on Cisco IOS XR Software*.

Caution The **debug bgp ha** command generates a substantial amount of output. Use the command only when traffic on the IP network is low so that other activity on the system is not adversely affected.

Task ID

Task ID	Operations
bgp	read

Examples

The following example shows how to enable debugging information for BGP HA:

```
RP/0/RP0/CPU0:router# debug bgp ha
```

Related Commands

Command	Description
undebug	Enters debug mode to disable or reset multiple active **debug** command sessions.

debug bgp import

To display debugging information about Border Gateway Protocol (BGP) import processing, use the **debug bgp import** command in EXEC mode. To disable debugging output, use the **no** form of this command.

debug bgp import [*ip-address*] [**vrf** [*vrf-name* | **all**]] [**ipv4** {**unicast** | **multicast** | **labeled-unicast** | **all**} | **ipv6** {**unicast** | **multicast** | **all**} | **all** {**unicast** | **multicast** | **all**} | **vpnv4 unicast** | **vpnv6 unicast**] [**route-policy** *route-policy-name*] [**brib** *brib-id* | **speaker** *speaker-id*] [**level** {**errors** | **warning** | **summary** | **detail** | **verbose**}] [**location** [*location-address*]]

no debug bgp import [*ip-address*] [**vrf** [*vrf-name* | **all**]] [**ipv4** {**unicast** | **multicast** | **labeled-unicast** | **all**} | **ipv6** {**unicast** | **multicast** | **all**} | **all** {**unicast** | **multicast** | **all**} | **vpnv4 unicast** | **vpnv6 unicast**] [**route-policy** *route-policy-name*] [**brib** *brib-id* | **speaker** *speaker-id*] [**level** {**errors** | **warning** | **summary** | **detail** | **verbose**}] [**location** [*location-address*]]

Syntax Description

ip-address	(Optional) IP address of the neighbor for which you want to limit the output.
vrf	(Optional) A BGP VPN routing and forwarding (VRF) instance.
vrf-name	(Optional) Name of the BGP VRF instance.
all	(Optional) Specifies all BGP VRF instances.
ipv4	(Optional) Specifies IP Version 4 (IPv4) address prefixes.
unicast	(Optional) Specifies unicast address prefixes.
multicast	(Optional) Specifies multicast address prefixes.
labeled-unicast	(Optional) Specifies labeled unicast address prefixes.
all	(Optional) For IPv4, displays unicast, labeled-unicast, and multicast subaddress prefixes. For IPv6, displays unicast and multicast subaddress prefixes.
ipv6	(Optional) Specifies IP Version 6 (IPv6) address prefixes.
all	(Optional) Displays both IPv4 and IPv6 address prefixes.
vpnv4 unicast	(Optional) Specifies VPN Version 4 (VPNv4) address prefixes.
vpnv6 unicast	(Optional) Specifies VPN Version 6 (VPNv6) address prefixes.
route-policy	(Optional) Specifies a route policy.
route-policy-name	(Optional) Name of the route policy.
brib	(Optional) Displays output of a BGP Routing Information Base (BRIB) process.
brib-id	(Optional) Displays debugging information for a specific BRIB process. Range is 1 to 3.
speaker	(Optional) Displays output of a BGP speaker process.
speaker-id	(Optional) ID of the speaker process. Specify a value in the range from 1 to 15.
level	(Optional) Displays debug messages based on severity. Debug messages are filtered by the severity of the event the debug message is describing.
errors	Displays the highest level of debugging messages. This level of debug filtering displays error conditions.

warning	Displays the second-highest level of debugging messages. This level of debug filtering displays warning conditions.
summary	Displays the third-highest level of debugging messages. This level of debug filtering displays debug summaries.
detail	Displays the fourth-highest level of debugging messages. This level of debug filtering displays debug details.
verbose	Displays the lowest level of debugging messages. This level of debug filtering displays a hex dump of messages sent and received.
location	(Optional) Specifies a location.
location-address	(Optional) Address of a specific location.

Defaults

The severity is summary.

Command Modes

EXEC

Command History

Release	Modification
Release 3.4.0	This command was introduced on the Cisco CRS-1 and Cisco XR 12000 Series Router.
Release 3.5.0	The **vpnv6 unicast** and **route-policy** *route-policy-name* keywords and argument were added.
Release 3.6.0	No modification.
Release 3.7.0	No modification.

Usage Guidelines

To use this command, you must be in a user group associated with a task group that includes the proper task IDs. For detailed information about user groups and task IDs, see the *Configuring AAA Services on Cisco IOS XR Software* module of the *Cisco IOS XR System Security Configuration Guide*.

Debugging output is assigned high priority in the CPU process and, therefore, can affect system performance. For more information about the impact on system performance when using debug commands, refer to *Using Debug Commands on Cisco IOS XR Software*.

Caution The **debug bgp import** command generates a substantial amount of output. Use the command only when traffic on the IP network is low so that other activity on the system is not adversely affected.

Task ID

Task ID	Operations
bgp	read

Examples

The following example shows how to enable debugging information for BGP import processing:

```
RP/0/RP0/CPU0:router# debug bgp import
```

Related Commands

Command	Description
undebug	Enters debug mode to disable or reset multiple active **debug** command sessions.

debug bgp io

To display debugging information about the handling of Border Gateway Protocol (BGP) TCP connections, use the **debug bgp io** command in EXEC mode. To disable debugging output, use the **no** form of this command.

debug bgp io [*ip-address*] [**vrf** [*vrf-name* | **all**]] [**in** | **out**] [**speaker** *speaker-id*] [**level** {**errors** | **warning** | **summary** | **detail** | **verbose**}] [**location** [*location-address*]]

no debug bgp io [*ip-address*] [**vrf** [*vrf-name* | **all**]] [**in** | **out**] [**speaker** *speaker-id*] [**level** {**errors** | **warning** | **summary** | **detail** | **verbose**}] [**location** [*location-address*]]

Syntax Description

ip-address	(Optional) IP address of the neighbor for which you want to limit the output.
vrf	(Optional) A BGP VPN routing and forwarding (VRF) instance.
vrf-name	(Optional) Name of the BGP VRF instance.
all	(Optional) Specifies all BGP VRF instances.
in	(Optional) Displays debugging information for BGP updates coming in the inbound direction only.
out	(Optional) Displays debugging information for BGP updates coming in the outbound direction only.
speaker	(Optional) Displays output of a BGP speaker process.
speaker-id	(Optional) ID of the speaker process. Range is 1 to 15.
level	(Optional) Displays debug messages based on severity. Debug messages are filtered by the severity of the event the debug message is describing.
errors	Displays the highest level of debugging messages. This level of debug filtering displays error conditions.
warning	Displays the second-highest level of debugging messages. This level of debug filtering displays warning conditions.
summary	Displays the third-highest level of debugging messages. This level of debug filtering displays debug summaries.
detail	Displays the fourth-highest level of debugging messages. This level of debug filtering displays debug details.
verbose	Displays the lowest level of debugging messages. This level of debug filtering displays a hex dump of messages sent and received.
location	(Optional) Specifies a location.
location-address	(Optional) Address of a specific location.

Defaults

Inbound and outbound information is displayed.

Command Modes

EXEC

Command History

Release	Modification
Release 2.0	This command was introduced on the Cisco CRS-1.
Release 3.0	No modification.
Release 3.2	This command was supported on the Cisco XR 12000 Series Router.
Release 3.3.0	Support was added for the **vrf** keyword.
Release 3.4.0	The *speaker-id* range was changed to 1 to 15.
Release 3.5.0	No modification.
Release 3.6.0	No modification.
Release 3.7.0	No modification.

Usage Guidelines

To use this command, you must be in a user group associated with a task group that includes the proper task IDs. For detailed information about user groups and task IDs, see the *Configuring AAA Services on Cisco IOS XR Software* module of the *Cisco IOS XR System Security Configuration Guide*.

Debugging output is assigned high priority in the CPU process and, therefore, can affect system performance. For more information about the impact on system performance when using debug commands, refer to *Using Debug Commands on Cisco IOS XR Software*.

Use the **debug bgp io** command to display set TCP parameters, opened and closed TCP connections, read from and written to TCP connections, and notifications of passive and active open attempts.

Caution The **debug bgp io** command generates a substantial amount of output. Use the command only when traffic on the IP network is low so that other activity on the system is not adversely affected.

Task ID

Task ID	Operations
bgp	read

Examples

The following example shows how to enable debugging information about the handling of BGP TCP connections:

```
RP/0/RP0/CPU0:router# debug bgp io
```

Related Commands

Command	Description
undebug	Enters debug mode to disable or reset multiple active **debug** command sessions.

debug bgp keepalive

To display debugging information about sending and receiving Border Gateway Protocol (BGP) keepalive messages, use the **debug bgp keepalive** command in EXEC mode. To disable debugging output, use the **no** form of this command.

debug bgp keepalive [*ip-address*] [**vrf** [*vrf-name* | **all**]] [**in** | **out**] [**speaker** *speaker-id*] [**level** {**errors** | **warning** | **summary** | **detail** | **verbose**}] [**location** [*location-address*]]

no debug bgp keepalive [*ip-address*] [**vrf** [*vrf-name* | **all**]] [**in** | **out**] [**speaker** *speaker-id*] [**level** {**errors** | **warning** | **summary** | **detail** | **verbose**}] [**location** [*location-address*]]

Syntax Description

ip-address	(Optional) IP address of the neighbor for which you want to limit the output.
vrf	(Optional) A BGP VPN routing and forwarding (VRF) instance.
vrf-name	(Optional) Name of the BGP VRF instance.
all	(Optional) Specifies all BGP VRF instances.
in	(Optional) Displays debugging information for BGP updates coming in the inbound direction only.
out	(Optional) Displays debugging information for BGP updates coming in the outbound direction only.
speaker	(Optional) Displays output of a BGP speaker process.
speaker-id	(Optional) ID of the speaker process. Range is 1 to 15.
level	(Optional) Displays debug messages based on severity. Debug messages are filtered by the severity of the event the debug message is describing.
errors	Displays the highest level of debugging messages. This level of debug filtering displays error conditions.
warning	Displays the second-highest level of debugging messages. This level of debug filtering displays warning conditions.
summary	Displays the third-highest level of debugging messages. This level of debug filtering displays debug summaries.
detail	Displays the fourth-highest level of debugging messages. This level of debug filtering displays debug details.
verbose	Displays the lowest level of debugging messages. This level of debug filtering displays a hex dump of messages sent and received.
location	(Optional) Specifies a location.
location-address	(Optional) Address of a specific location.

Defaults

Inbound and outbound information is displayed.
All speaker processes are displayed.
The severity is summary.

Command Modes EXEC

Command History

Release	Modification
Release 2.0	This command was introduced on the Cisco CRS-1.
Release 3.0	No modification.
Release 3.2	This command was supported on the Cisco XR 12000 Series Router.
Release 3.3.0	Support was added for the **vrf** keyword.
Release 3.4.0	The *speaker-id* range was changed to 1 to 15.
Release 3.5.0	No modification.
Release 3.6.0	No modification.
Release 3.7.0	No modification.

Usage Guidelines To use this command, you must be in a user group associated with a task group that includes the proper task IDs. For detailed information about user groups and task IDs, see the *Configuring AAA Services on Cisco IOS XR Software* module of the *Cisco IOS XR System Security Configuration Guide*.

Debugging output is assigned high priority in the CPU process and, therefore, can affect system performance. For more information about the impact on system performance when using debug commands, refer to *Using Debug Commands on Cisco IOS XR Software*.

Caution The **debug bgp keepalive** command generates a substantial amount of output. Use the command only when traffic on the IP network is low so that other activity on the system is not adversely affected.

Task ID

Task ID	Operations
bgp	read

Examples The following example shows how to enable debugging information about sending and receiving BGP keepalive messages:

```
RP/0/RP0/CPU0:router# debug bgp keepalive
```

Related Commands

Command	Description
undebug	Enters debug mode to disable or reset multiple active **debug** command sessions.

debug bgp label

To display debugging information about Border Gateway Protocol (BGP) label processing, use the **debug bgp label** command in EXEC mode. To disable debugging output, use the **no** form of this command.

debug bgp label [*ip-address*] [**vrf** [*vrf-name* | **all**]] [**ipv4** {**unicast** | **multicast** | **labeled-unicast** | **all**} | **ipv6** {**unicast** | **multicast** | **all**} | **all** {**unicast** | **multicast** | **all**} | **vpnv4 unicast** | **vpnv6 unicast**] [**route-policy** *route-policy-name*] [**brib** *brib-id* | **speaker** *speaker-id*] [**level** {**errors** | **warning** | **summary** | **detail** | **verbose**}] [**location** [*location-address*]]

no debug bgp label [*ip-address*] [**vrf** [*vrf-name* | **all**]] [**ipv4** {**unicast** | **multicast** | **labeled-unicast** | **all**} | **ipv6** {**unicast** | **multicast** | **all**} | **all** {**unicast** | **multicast** | **all**} | **vpnv4 unicast** | **vpnv6 unicast**] [**route-policy** *route-policy-name*] [**brib** *brib-id* | **speaker** *speaker-id*] [**level** {**errors** | **warning** | **summary** | **detail** | **verbose**}] [**location** [*location-address*]]

Syntax Description

ip-address	(Optional) IP address of the neighbor for which you want to limit the output.
vrf	(Optional) A BGP VPN routing and forwarding (VRF) instance.
vrf-name	(Optional) Name of the BGP VRF instance.
all	(Optional) Specifies all BGP VRF instances.
ipv4	(Optional) Specifies IP Version 4 (IPv4) address prefixes.
unicast	(Optional) Specifies unicast address prefixes.
multicast	(Optional) Specifies multicast address prefixes.
labeled-unicast	(Optional) Specifies labeled unicast address prefixes.
all	(Optional) For IPv4, displays unicast, labeled-unicast, and multicast subaddress prefixes. For IPv6, displays unicast and multicast subaddress prefixes.
ipv6	(Optional) Specifies IP Version 6 (IPv6) address prefixes.
all	(Optional) Displays both IPv4 and IPv6 address prefixes.
vpnv4 unicast	(Optional) Specifies VPN Version 4 (VPNv4) address prefixes.
vpnv6 unicast	(Optional) Specifies VPN Version 6 (VPNv6) address prefixes.
route-policy	(Optional) Specifies a route policy.
route-policy-name	(Optional) Name of the route policy.
brib	(Optional) Displays output of a BGP Routing Information Base (BRIB) process.
brib-id	(Optional) Displays debugging information for a specific BRIB process. Range is 1 to 3.
speaker	(Optional) Displays output of a BGP speaker process.
speaker-id	(Optional) ID of the speaker process. Range is 1 to 15.
level	(Optional) Displays debug messages based on severity. Debug messages are filtered by the severity of the event the debug message is describing.
errors	Displays the highest level of debugging messages. This level of debug filtering displays error conditions.

warning	Displays the second-highest level of debugging messages. This level of debug filtering displays warning conditions.
summary	Displays the third-highest level of debugging messages. This level of debug filtering displays debug summaries.
detail	Displays the fourth-highest level of debugging messages. This level of debug filtering displays debug details.
verbose	Displays the lowest level of debugging messages. This level of debug filtering displays a hex dump of messages sent and received.
location	(Optional) Specifies a location.
location-address	(Optional) Address of a specific location.

Defaults

The severity is summary.

Command Modes

EXEC

Command History

Release	Modification
Release 3.4.0	This command was introduced on the Cisco CRS-1 and Cisco XR 12000 Series Router.
Release 3.5.0	The **vpnv6 unicast** and **route-policy** *route-policy-name* keywords and argument were added.
Release 3.6.0	No modification.
Release 3.7.0	No modification.

Usage Guidelines

To use this command, you must be in a user group associated with a task group that includes the proper task IDs. For detailed information about user groups and task IDs, see the *Configuring AAA Services on Cisco IOS XR Software* module of the *Cisco IOS XR System Security Configuration Guide*.

Debugging output is assigned high priority in the CPU process and, therefore, can affect system performance. For more information about the impact on system performance when using debug commands, refer to *Using Debug Commands on Cisco IOS XR Software*.

Caution The **debug bgp label** command generates a substantial amount of output. Use the command only when traffic on the IP network is low so that other activity on the system is not adversely affected.

Task ID

Task ID	Operations
bgp	read

Examples

The following example shows how to enable debugging information for BGP label processing:

```
RP/0/RP0/CPU0:router# debug bgp label
```

Related Commands

Command	Description
undebug	Enters debug mode to disable or reset multiple active **debug** command sessions.

debug bgp nexthop

To display debugging information about Border Gateway Protocol (BGP) next-hop processing, use the **debug bgp nexthop** command in EXEC mode. To disable debugging output, use the **no** form of this command.

debug bgp nexthop [*ip-address*] [**vrf** [*vrf-name* | **all**]] [**ipv4** {**unicast** | **multicast** | **labeled-unicast** | **all**} | **ipv6** {**unicast** | **multicast** | **all**} | **all** {**unicast** | **multicast** | **all**} | **vpnv4 unicast** | **vpnv6 unicast**] [**in** | **out**] [**speaker** *speaker-id*] [**level** {**errors** | **warning** | **summary** | **detail** | **verbose**}] [**location** [*location-address*]]

no debug bgp nexthop [*ip-address*] [**vrf** [*vrf-name* | **all**]] [**ipv4** {**unicast** | **multicast** | **labeled-unicast** | **all**} | **ipv6** {**unicast** | **multicast** | **all**} | **all** {**unicast** | **multicast** | **all**} | **vpnv4 unicast** | **vpnv6 unicast**] [**in** | **out**] [**speaker** *speaker-id*] [**level** {**errors** | **warning** | **summary** | **detail** | **verbose**}] [**location** [*location-address*]]

Syntax Description

ip-address	(Optional) IP address of the neighbor for which you want to limit the output.
vrf	(Optional) A BGP VPN routing and forwarding (VRF) instance.
vrf-name	(Optional) Name of the BGP VRF instance.
all	(Optional) Specifies all BGP VRF instances.
ipv4	(Optional) Specifies IP Version 4 (IPv4) address prefixes.
unicast	(Optional) Specifies unicast address prefixes.
multicast	(Optional) Specifies multicast address prefixes.
labeled-unicast	(Optional) Specifies labeled unicast address prefixes.
all	(Optional) For IPv4, displays unicast, labeled-unicast, and multicast subaddress prefixes. For IPv6, displays unicast and multicast subaddress prefixes.
ipv6	(Optional) Specifies IP Version 6 (IPv6) address prefixes.
all	(Optional) Displays both IPv4 and IPv6 address prefixes.
vpnv4 unicast	(Optional) Specifies VPN Version 4 (VPNv4) address prefixes.
vpnv6 unicast	(Optional) Specifies VPN Version 6 (VPNv6) address prefixes.
in	(Optional) Displays debugging information for BGP updates in the inbound direction only.
out	(Optional) Displays debugging information for BGP updates in the outbound direction only.
speaker	(Optional) Displays output of a BGP speaker process.
speaker-id	(Optional) ID of the speaker process. Range is 1 to 15.
level	(Optional) Displays debug messages based on severity. Debug messages are filtered by the severity of the event the debug message is describing.
errors	Displays the highest level of debugging messages. This level of debug filtering displays error conditions.
warning	Displays the second-highest level of debugging messages. This level of debug filtering displays warning conditions.

summary	Displays the third-highest level of debugging messages. This level of debug filtering displays debug summaries.
detail	Displays the fourth-highest level of debugging messages. This level of debug filtering displays debug details.
verbose	Displays the lowest level of debugging messages. This level of debug filtering displays a hex dump of messages sent and received.
location	(Optional) Specifies a location.
location-address	(Optional) Address of a specific location.

Defaults

Inbound and outbound information is displayed.
All processes are displayed.
The severity is summary.

Command Modes

EXEC

Command History

Release	Modification
Release 3.4.0	This command was introduced on the Cisco CRS-1 and Cisco XR 12000 Series Router.
Release 3.5.0	The **vpnv6 unicast** keywords were added.
Release 3.6.0	No modification.
Release 3.7.0	No modification.

Usage Guidelines

To use this command, you must be in a user group associated with a task group that includes the proper task IDs. For detailed information about user groups and task IDs, see the *Configuring AAA Services on Cisco IOS XR Software* module of the *Cisco IOS XR System Security Configuration Guide*.

Debugging output is assigned high priority in the CPU process and, therefore, can affect system performance. For more information about the impact on system performance when using debug commands, refer to *Using Debug Commands on Cisco IOS XR Software*.

Caution The **debug bgp nexthop** command generates a substantial amount of output. Use the command only when traffic on the IP network is low so that other activity on the system is not adversely affected.

Task ID

Task ID	Operations
bgp	read

Examples

The following example shows how to enable debugging information for BGP next-hop processing:

```
RP/0/RP0/CPU0:router# debug bgp nexthop
```

Related Commands

Command	Description
undebug	Enters debug mode to disable or reset multiple active **debug** command sessions.

debug bgp policy-execution

To display debugging information about the Routing Policy Language (RPL) function and the application of configured RPL policies within Border Gateway Protocol (BGP), use the **debug bgp policy-execution** command in EXEC mode. To disable debugging output, use the **no** form of this command.

debug bgp policy-execution {**events** | **internal** | **run**} [**vrf** [*vrf-name* | **all**]] [**route-policy** *route-policy-name*] [**attach-point** *attach-point-name*] [**brib** *brib-id* | **speaker** *speaker-id* | **test-policy**] [**instance** *string*] [**location** [*location address*]]

no debug bgp policy-execution {**events** | **internal** | **run**} [**vrf** [*vrf-name* | **all**]] [*route-policy-name*] [**attach-point** *attach-point-name*] [**brib** *brib-id* | **speaker** *speaker-id* | **test-policy**] [**instance** *string*] [**location** [*location-address*]]

Syntax Description

events	Displays policy attachment events and errors.
internal	Displays low-level policy events.
run	Displays trace through individual policy runs.
vrf	(Optional) Displays a BGP VPN routing and forwarding (VRF) instance.
vrf-name	(Optional) Name of the BGP VRF instance.
all	(Optional) Specifies all BGP VRF instances.
route-policy	(Optional) Specifies a route policy.
route-policy-name	(Optional) Name of the route policy.
attach-point	(Optional) Displays a specific policy attach point.

attach-point-name	(Optional) Name of the policy attach point. The attach points are: • aggregation—aggregation attach point • allocate-label—allocate Label attach point • clear—**clear** command attach point • dampening—dampening attach point • debug—**debug** command attach point • default-originate—default-originate attach point • export—export attach point • import—import attach point • neighbor-in—neighbor-in attach point • neighbor-orf—neighbor ORF attach point • neighbor-out—neighbor-out attach point • network—network attach point • nexthop—next-hop attach point • redistribution—redistribution attach point • retain-rt—retain RT attach point • rib-install—rib-install attach point • show—**show** command attach point
brib	(Optional) Displays output of a BGP Routing Information Base (BRIB) process.
brib-id	(Optional) Displays debugging information for a specific BRIB process. Range is 1 to 3.
speaker	(Optional) Displays output of a BGP speaker process.
speaker-id	(Optional) ID of the speaker process. Range is 1 to 15.
test-policy	(Optional) Displays output of a test route-policy process.
instance	(Optional) Displays the policy attach-point instance.
string	(Optional) The attach point instance. The string must be enclosed in '<>'.
location	(Optional) Specifies a location.
location-address	(Optional) Address of a specific location.

Defaults

All BRIB and speaker processes are displayed.

Command Modes

EXEC

Command History

Release	Modification
Release 2.0	This command was introduced on the Cisco CRS-1.
Release 3.0	No modification.

Release	Modification
Release 3.2	This command was supported on the Cisco XR 12000 Series Router.
Release 3.3.0	Support was added for the **vpn** keyword. The **labeled-unicast** keyword was added to the **ipv4** option. The command was rearranged to account for differences in the options for **the ipv4** and **ipv6** keywords. Support was added for the **vpnv4 unicast** keyword.
Release 3.4.0	The command was changed to **debug bgp policy-execution** {**events** | **internal** | **run**} [**vrf** [*vrf-name* | **all**]] [*route-policy-name*] [**attach-point** *attach-point-name*] [**brib** *brib-id* | **speaker** *speaker-id*] [**instance** *string*]. The *speaker-id* range was changed to 1 to 15. The **brib** {**1** | **2**} keywords were changed to **brib** *brib-id.*
Release 3.5.0	The **route-policy** and **test-policy** keywords were added.
Release 3.6.0	No modification.
Release 3.7.0	No modification.

Usage Guidelines

To use this command, you must be in a user group associated with a task group that includes the proper task IDs. For detailed information about user groups and task IDs, see the *Configuring AAA Services on Cisco IOS XR Software* module of the *Cisco IOS XR System Security Configuration Guide*.

Debugging output is assigned high priority in the CPU process and, therefore, can affect system performance. For more information about the impact on system performance when using debug commands, refer to *Using Debug Commands on Cisco IOS XR Software*.

Caution The **debug bgp policy-execution** command generates a substantial amount of output. Use the command only when traffic on the IP network is low so that other activity on the system is not adversely affected.

Task ID

Task ID	Operations
bgp	read

Examples

The following example shows how to enable debugging information about the RPL function and the application of configured RPL policy events within BGP:

```
RP/0/RP0/CPU0:router# debug bgp policy-execution events
```

Related Commands

Command	Description
undebug	Enters debug mode to disable or reset multiple active **debug** command sessions.

debug bgp postit

To display debugging information about Border Gateway Protocol (BGP) postit messages between active and standby nodes, use the **debug bgp postit** command in EXEC mode. To disable debugging output, use the **no** form of this command.

debug bgp postit [*ip-address*] [**level** {**errors** | **warning** | **summary** | **detail** | **verbose**}] [**location** [*location-address*]]

no debug bgp postit [*ip-address*] [**level** {**errors** | **warning** | **summary** | **detail** | **verbose**}] [**location** [*location-address*]]

Syntax Description

ip-address	(Optional) IPv4 or IPv6 address of the neighbor.wwwww
level	(Optional) Displays debug messages based on severity. Debug messages are filtered by the severity of the event the debug message is describing.
errors	Displays the highest level of debugging messages. This level of debug filtering displays error conditions.
warning	Displays the second-highest level of debugging messages. This level of debug filtering displays warning conditions.
summary	Displays the third-highest level of debugging messages. This level of debug filtering displays debug summaries.
detail	Displays the fourth-highest level of debugging messages. This level of debug filtering displays debug details.
verbose	Displays the lowest level of debugging messages. This level of debug filtering displays a hex dump of messages sent and received.
location	(Optional) Specifies a location.
location-address	(Optional) Address of a specific location.

Defaults

The severity is summary.

Command Modes

EXEC

Command History

Release	Modification
Release 3.7.0	This command was introduced on the Cisco CRS-1 and Cisco XR 12000 Series Router.

Usage Guidelines

To use this command, you must be in a user group associated with a task group that includes the proper task IDs. For detailed information about user groups and task IDs, see the *Configuring AAA Services on Cisco IOS XR Software* module of the *Cisco IOS XR System Security Configuration Guide*.

Debugging output is assigned high priority in the CPU process and, therefore, can affect system performance. For more information about the impact on system performance when using debug commands, refer to *Using Debug Commands on Cisco IOS XR Software*.

TTask ID

Task ID	Operations
bgp	read

Examples

The following example shows how to enable debugging information for BGP postit messages:

```
RP/0/RP0/CPU0:router# debug bgp postit
```

debug bgp progress

Command	Description
undebug	Enters debug mode to disable or reset multiple active **debug** command sessions.

To display debugging information about Border Gateway Protocol (BGP) initialization processing, use the **debug bgp progress** command in EXEC mode. To disable debugging output, use the **no** form of this command.

debug bgp progress [**vrf** [*vrf-name* | **all**]] [**ipv4** {**unicast** | **multicast** | **labeled-unicast** | **all**} | **ipv6** {**unicast** | **multicast** | **all**} | **all** {**unicast** | **multicast** | **all**} | **vpnv4 unicast** | **vpnv6 unicast**] [**bpm** | **brib** *brib-id* | **speaker** *speaker-id*] [**level** {**errors** | **warning** | **summary** | **detail** | **verbose**}] [**location** [*location-address*]]

no debug bgp progress [**vrf** [*vrf-name* | **all**]] [**ipv4** {**unicast** | **multicast** | **labeled-unicast** | **all**} | **ipv6** {**unicast** | **multicast** | **all**} | **all** {**unicast** | **multicast** | **all**} | **vpnv4 unicast** | **vpnv6 unicast**] [**bpm** | **brib** *brib-id* | **speaker** *speaker-id*] [**level** {**errors** | **warning** | **summary** | **detail** | **verbose**}] [**location** [*location-address*]]

Syntax Description

vrf	(Optional) A BGP VPN routing and forwarding (VRF) instance.
vrf-name	(Optional) Name of the BGP VRF instance.
all	(Optional) Specifies all BGP VRF instances.
ipv4	(Optional) Specifies IP Version 4 (IPv4) address prefixes.
unicast	(Optional) Specifies unicast address prefixes.
multicast	(Optional) Specifies multicast address prefixes.
labeled-unicast	(Optional) Specifies labeled unicast address prefixes.
all	(Optional) For IPv4, displays unicast, labeled-unicast, and multicast subaddress prefixes. For IPv6, displays unicast and multicast subaddress prefixes.
ipv6	(Optional) Specifies IP Version 6 (IPv6) address prefixes.
all	(Optional) For address family, specifies that both IP v4 and IPv6 prefixes be displayed.
vpnv4 unicast	(Optional) Specifies VPN Version 4 (VPNv4) address prefixes.
vpnv6 unicast	(Optional) Specifies VPN Version 6 (VPNv6) address prefixes.
bpm	(Optional) Displays output of a BGP process manager (BPM) process.
brib	(Optional) Displays output of a BGP Routing Information Base (BRIB) process.
brib-id	(Optional) ID of the BRIB process. Range is 1 to 3.
speaker	(Optional) Displays output of a BGP speaker process.
speaker-id	(Optional) ID of the speaker process. Range is 1 to 15.
level	(Optional) Displays debug messages based on severity. Debug messages are filtered by the severity of the event the debug message is describing.
errors	Displays the highest level of debugging messages. This level of debug filtering displays error conditions.

warning	Displays the second-highest level of debugging messages. This level of debug filtering displays warning conditions.
summary	Displays the third-highest level of debugging messages. This level of debug filtering displays debug summaries.
detail	Displays the fourth-highest level of debugging messages. This level of debug filtering displays debug details.
verbose	Displays the lowest level of debugging messages. This level of debug filtering displays a hex dump of messages sent and received.
location	(Optional) Specifies a location.
location-address	(Optional) Address of a specific location.

Defaults

All processes are displayed.
The severity is summary.

Command Modes

EXEC

Command History

Release	Modification
Release 3.4.0	This command was introduced on the Cisco CRS-1 and Cisco XR 12000 Series Router.
Release 3.5.0	The **vpnv6 unicast** keywords were added.
Release 3.6.0	No modification.
Release 3.7.0	No modification.

Usage Guidelines

To use this command, you must be in a user group associated with a task group that includes the proper task IDs. For detailed information about user groups and task IDs, see the *Configuring AAA Services on Cisco IOS XR Software* module of the *Cisco IOS XR System Security Configuration Guide*.

Debugging output is assigned high priority in the CPU process and, therefore, can affect system performance. For more information about the impact on system performance when using debug commands, refer to *Using Debug Commands on Cisco IOS XR Software*.

Caution The **debug bgp progress** command generates a substantial amount of output. Use the command only when traffic on the IP network is low so that other activity on the system is not adversely affected.

Task ID

Task ID	Operations
bgp	read

Examples

The following example shows how to enable debugging information for BGP initialization progress:

```
RP/0/RP0/CPU0:router# debug bgp progress
```

Related Commands

Command	Description
undebug	Enters debug mode to disable or reset multiple active **debug** command sessions.

debug bgp rib

To display debugging information about Border Gateway Protocol (BGP) route installation into the Routing Information Base (RIB) and the redistribution of routes from the RIB, use the **debug bgp rib** command in EXEC mode. To disable debugging output, use the **no** form of this command.

debug bgp rib [**vrf** [*vrf-name* | **all**]] [**ipv4** {**unicast** | **multicast** | **labeled-unicast** | **all**} | **ipv6** {**unicast** | **multicast** | **all**} | **all** {**unicast** | **multicast** | **all**} | **vpnv4 unicast** | **vpnv6 unicast**] [**route-policy** *route-policy-name*] [**brib** *brib-id*] [**level** {**errors** | **warning** | **summary** | **detail** | **verbose**}] [**location** [*location-address*]]

no debug bgp rib [**vrf** [*vrf-name* | **all**]] [**ipv4** {**unicast** | **multicast** | **labeled-unicast** | **all**} | **ipv6** {**unicast** | **multicast** | **all**} | **all** {**unicast** | **multicast** | **all**} | **vpnv4 unicast** | **vpnv6 unicast**] [**route-policy** *route-policy-name*] [**brib** *brib-id*] [**level** {**errors** | **warning** | **summary** | **detail** | **verbose**}] [**location** [*location-address*]]

Syntax Description

vrf	(Optional) A BGP VPN routing and forwarding (VRF) instance.
vrf-name	(Optional) Name of the BGP VRF instance.
all	(Optional) Specifies all BGP VRF instances.
ipv4	(Optional) Specifies IP Version 4 (IPv4) address prefixes.
unicast	(Optional) Specifies unicast address prefixes.
multicast	(Optional) Specifies multicast address prefixes.
labeled-unicast	(Optional) Specifies labeled unicast address prefixes.
all	(Optional) For IPv4, displays unicast, labeled-unicast, and multicast subaddress prefixes. For IPv6, displays unicast and multicast subaddress prefixes.
ipv6	(Optional) Specifies IP Version 6 (IPv6) address prefixes.
all	(Optional) Displays both IPv4 and IPv6 address prefixes.
vpnv4 unicast	(Optional) Specifies VPN Version 4 (VPNv4) address prefixes.
vpnv6 unicast	(Optional) Specifies VPN Version 6 (VPNv6) address prefixes.
route-policy	(Optional) Specifies a route policy.
route-policy-name	(Optional) Name of the route policy.
brib	(Optional) Displays output to BGP Routing Information Base (BRIB) process.
brib-id	(Optional) Displays debugging information for a specific BRIB process. Range is 1 to 3.
level	(Optional) Displays debug messages based on severity. Debug messages are filtered by the severity of the event the debug message is describing.
errors	Displays the highest level of debugging messages. This level of debug filtering displays error conditions.
warning	Displays the second-highest level of debugging messages. This level of debug filtering displays warning conditions.
summary	Displays the third-highest level of debugging messages. This level of debug filtering displays debug summaries.

detail	Displays the fourth-highest level of debugging messages. This level of debug filtering displays debug details.
verbose	Displays the lowest level of debugging messages. This level of debug filtering displays a hex dump of messages sent and received.
location	No modification.
location-address	(Optional) Address of a specific location.

Defaults

The address family indicator (AFI) is IPv4.
The subaddress family indicator (SAFI) is unicast.
All BRIB and speaker processes are displayed.
The severity is summary.

Command Modes

EXEC

Command History

Release	Modification
Release 2.0	This command was introduced on the Cisco CRS-1.
Release 3.0	No modification.
Release 3.2	This command was supported on the Cisco XR 12000 Series Router.
Release 3.3.0	Support was added for the **vpn** keyword. The **labeled-unicast** keyword was added to the **ipv4** option. The command was rearranged to account for differences in the options for **the ipv4** and **ipv6** keywords. Support was added for the **vpnv4 unicast** keyword.
Release 3.4.0	The **brib** {**1** | **2**} keywords were changed to **brib** *brib-id.*
Release 3.5.0	The **route-policy** and **vpnv6 unicast** keywords were added.
Release 3.6.0	No modification.
Release 3.7.0	No modification.

Usage Guidelines

To use this command, you must be in a user group associated with a task group that includes the proper task IDs. For detailed information about user groups and task IDs, see the *Configuring AAA Services on Cisco IOS XR Software* module of the *Cisco IOS XR System Security Configuration Guide*.

Debugging output is assigned high priority in the CPU process and, therefore, can affect system performance. For more information about the impact on system performance when using debug commands, refer to *Using Debug Commands on Cisco IOS XR Software*.

Use the **debug bgp rib** command to analyze updates to RIB.

Caution The **debug bgp rib** command generates a substantial amount of output. Use the command only when traffic on the IP network is low so that other activity on the system is not adversely affected.

Task ID

Task ID	Operations
bgp	read

Examples

The following example shows how to enable debugging information about BGP route installation into the RIB and the redistribution of routes from the RIB:

```
RP/0/RP0/CPU0:router# debug bgp rib
```

Related Commands

Command	Description
undebug	Enters debug mode to disable or reset multiple active **debug** command sessions.

debug bgp sync

To display debugging information about Border Gateway Protocol (BGP) syncronization between the active and standby nodes, use the **debug bgp sync** command in EXEC mode. To disable debugging output, use the **no** form of this command.

debug bgp sync [**level** {**errors** | **warning** | **summary** | **detail** | **verbose**}] [**location** [*location-address*]]

no debug bgp sync [**level** {**errors** | **warning** | **summary** | **detail** | **verbose**}] [**location** [*location-address*]]

Syntax Description

level	(Optional) Displays debug messages based on severity. Debug messages are filtered by the severity of the event the debug message is describing.
errors	Displays the highest level of debugging messages. This level of debug filtering displays error conditions.
warning	Displays the second-highest level of debugging messages. This level of debug filtering displays warning conditions.
summary	Displays the third-highest level of debugging messages. This level of debug filtering displays debug summaries.
detail	Displays the fourth-highest level of debugging messages. This level of debug filtering displays debug details.
verbose	Displays the lowest level of debugging messages. This level of debug filtering displays a hex dump of messages sent and received.
location	(Optional) Specifies a location.
location-address	(Optional) Address of a specific location.

Defaults

The severity is summary.

Command Modes

EXEC

Command History

Release	Modification
Release 3.7.0	This command was introduced on the Cisco CRS-1 and Cisco XR 12000 Series Router.

Usage Guidelines

To use this command, you must be in a user group associated with a task group that includes the proper task IDs. For detailed information about user groups and task IDs, see the *Configuring AAA Services on Cisco IOS XR Software* module of the *Cisco IOS XR System Security Configuration Guide*.

Debugging output is assigned high priority in the CPU process and, therefore, can affect system performance. For more information about the impact on system performance when using debug commands, refer to *Using Debug Commands on Cisco IOS XR Software*.

TTask ID

Task ID	Operations
bgp	read

Examples

The following example shows how to enable debugging information for BGP sync of active and standby nodes:

```
RP/0/RP0/CPU0:router# debug bgp sync
```

debug bgp test-policy

To display debugging information for testing the policy execution for a static set of routes, use the **debug bgp test-policy** command in EXEC mode. To disable debugging output, use the **no** form of this command.

debug bgp test-policy [*ip-address*] [**vrf** [*vrf-name* | **all**]] [**ipv4** {**unicast** | **multicast** | **labeled-unicast** | **all**} | **ipv6** {**unicast** | **multicast** | **all**} | **all** {**unicast** | **multicast** | **all**} | **vpnv4 unicast** | **vpnv6 unicast**] [**in** | **out**] [**level** {**errors** | **warning** | **summary** | **detail** | **verbose**}]

no debug bgp test-policy [*ip-address*] [**vrf** [*vrf-name* | **all**]] [**ipv4** {**unicast** | **multicast** | **labeled-unicast** | **all**} | **ipv6** {**unicast** | **multicast** | **all**} | **all** {**unicast** | **multicast** | **all**} | **vpnv4 unicast** | **vpnv6 unicast**] [**in** | **out**] [**level** {**errors** | **warning** | **summary** | **detail** | **verbose**}]

Syntax Description

ip-address	(Optional) IP address of the neighbor for which you want to limit the output.
vrf	(Optional) A BGP VPN routing and forwarding (VRF) instance.
vrf-name	(Optional) Name of the BGP VRF instance.
all	(Optional) Specifies all BGP VRF instances.
ipv4	(Optional) Specifies IP Version 4 (IPv4) address prefixes.
unicast	(Optional) Specifies unicast address prefixes.
multicast	(Optional) Specifies multicast address prefixes.
labeled-unicast	(Optional) Specifies labeled unicast address prefixes.
all	(Optional) For IPv4, displays unicast, labeled-unicast, and multicast subaddress prefixes. For IPv6, displays unicast and multicast subaddress prefixes.
ipv6	(Optional) Specifies IP Version 6 (IPv6) address prefixes.
all	(Optional) Displays both IPv4 and IPv6 address prefixes.
vpnv4 unicast	(Optional) Specifies VPN Version 4 (VPNv4) address prefixes.
vpnv6 unicast	(Optional) Specifies VPN Version 6 (VPNv6) address prefixes.
in	(Optional) Displays debugging information for BGP updates in the inbound direction only.
out	(Optional) Displays debugging information for BGP updates in the outbound direction only.
level	(Optional) Displays debug messages based on severity. Debug messages are filtered by the severity of the event the debug message is describing.
errors	Displays the highest level of debugging messages. This level of debug filtering displays error conditions.
warning	Displays the second-highest level of debugging messages. This level of debug filtering displays warning conditions.
summary	Displays the third-highest level of debugging messages. This level of debug filtering displays debug summaries.
detail	Displays the fourth-highest level of debugging messages. This level of debug filtering displays debug details.
verbose	Displays the lowest level of debugging messages. This level of debug filtering displays a hex dump of messages sent and received.

Defaults

The severity is summary.

Command Modes

EXEC

Command History

Release	Modification
Release 3.5.0	This command was introduced on the Cisco CRS-1 and Cisco XR 12000 Series Router.
Release 3.6.0	No modification.

Usage Guidelines

To use this command, you must be in a user group associated with a task group that includes the proper task IDs. For detailed information about user groups and task IDs, see the *Configuring AAA Services on Cisco IOS XR Software* module of the *Cisco IOS XR System Security Configuration Guide*.

Debugging output is assigned high priority in the CPU process and, therefore, can affect system performance. For more information about the impact on system performance when using debug commands, refer to *Using Debug Commands on Cisco IOS XR Software*.

Caution The **debug bgp test-policy** command generates a substantial amount of output. Use the command only when traffic on the IP network is low so that other activity on the system is not adversely affected.

Task ID

Task ID	Operations
bgp	read

Examples

The following example shows how to enable debugging information about the output of a test route policy process:

```
RP/0/RP0/CPU0:router# debug bgp test-policy
```

Related Commands

Command	Description
undebug	Enters debug mode to disable or reset multiple active **debug** command sessions.

debug bgp update

To display debugging information related to inbound and outbound Border Gateway Protocol (BGP) update messages, BGP Outbound Route Filtering (ORF) messages, and BGP soft-reconfiguration events, use the **debug bgp update** command in EXEC mode. To disable debugging output, use the **no** form of this command.

debug bgp update [*ip-address*] [**vrf** [*vrf-name* | **all**]] [**ipv4** {**unicast** | **multicast** | **labeled-unicast** | **all**} | **ipv6** {**unicast** | **multicast** | **all**} | **all** {**unicast** | **multicast** | **all**} | **vpnv4 unicast** | **vpnv6 unicast**] [**in** | **out**] [**route-policy** *route-policy-name*] [**brib** *brib-id* | **speaker** *speaker-id* | **test-policy**] [**level** {**errors** | **warning** | **summary** | **detail** | **verbose**}] [**location** [*location-address*]]

no debug bgp update [*ip-address*] [**vrf** [*vrf-name* | **all**]] [**ipv4** {**unicast** | **multicast** | **labeled-unicast** | **all**} | **ipv6** {**unicast** | **multicast** | **all**} | **all** {**unicast** | **multicast** | **all**} | **vpnv4 unicast** | **vpnv6 unicast**] [**in** | **out**] [**route-policy** *route-policy-name*] [**brib** *brib-id* | **speaker** *speaker-id* | **test-policy**] [**level** {**errors** | **warning** | **summary** | **detail** | **verbose**}] [**location** [*location-address*]]

Syntax Description

ip-address	(Optional) IP address of the neighbor for which you want to limit the output.
vrf	(Optional) A BGP VPN routing and forwarding (VRF) instance.
vrf-name	(Optional) Name of the BGP VRF instance.
all	(Optional) Specifies all BGP VRF instances.
ipv4	(Optional) Specifies IP Version 4 (IPv4) address prefixes.
unicast	(Optional) Specifies unicast address prefixes.
multicast	(Optional) Specifies multicast address prefixes.
labeled-unicast	(Optional) Specifies labeled unicast address prefixes.
all	(Optional) For IPv4, displays unicast, labeled-unicast, and multicast subaddress prefixes. For IPv6, displays unicast and multicast subaddress prefixes.
ipv6	(Optional) Specifies IP Version 6 (IPv6) address prefixes.
all	(Optional) Displays both IPv4 and IPv6 address prefixes.
vpnv4 unicast	(Optional) Specifies VPN Version 4 (VPNv4) address prefixes.
vpnv6 unicast	(Optional) Specifies VPN Version 6 (VPNv6) address prefixes.
in	(Optional) Displays debugging information for BGP updates in the inbound direction only.
out	(Optional) Displays debugging information for BGP updates in the outbound direction only.
route-policy	(Optional) Specifies a route policy.
route-policy-name	(Optional) Name of the route policy.
brib	(Optional) Displays output to the BGP Routing Information Base (BRIB) process.
brib-id	(Optional) Displays debugging information for a specific BRIB process. Range is 1 to 3.
speaker	(Optional) Displays output to the BGP speaker process.

speaker-id	(Optional) ID of the speaker process. Range is 1 to 15.
test-policy	(Optional) Displays output of a test route policy process.
level	(Optional) Displays debug messages based on severity. Debug messages are filtered by the severity of the event the debug message is describing.
errors	Displays the highest level of debugging messages. This level of debug filtering displays error conditions.
warning	Displays the second-highest level of debugging messages. This level of debug filtering displays warning conditions.
summary	Displays the third-highest level of debugging messages. This level of debug filtering displays debug summaries.
detail	Displays the fourth-highest level of debugging messages. This level of debug filtering displays debug details.
verbose	Displays the lowest level of debugging messages. This level of debug filtering displays a hex dump of messages sent and received.
location	(Optional) Specifies a location.
location-address	(Optional) Address of a specific location.

Defaults

The address family indicator (AFI) is IPv4.
The subaddress family indicator (SAFI) is unicast.
All BRIB and speaker processes are displayed.
The severity is summary.

Command Modes

EXEC

Command History

Release	Modification
Release 2.0	This command was introduced on the Cisco CRS-1.
Release 3.0	No modification.
Release 3.2	This command was supported on the Cisco XR 12000 Series Router.
Release 3.3.0	Support was added for the **vpn** keyword. The **labeled-unicast** keyword was added to the **ipv4** option. The command was rearranged to account for differences in the options for **the ipv4** and **ipv6** keywords. Support was added for the **vpnv4 unicast** keyword.
Release 3.4.0	The *speaker-id* range was changed to 1 to 15. The **brib** {**1** | **2**} keywords were changed to **brib** *brib-id.*
Release 3.5.0	The **vpvn6 unicast**, **route-policy**, and **test-policy** keywords were added.
Release 3.6.0	No modification.
Release 3.7.0	No modification.

Usage Guidelines

To use this command, you must be in a user group associated with a task group that includes the proper task IDs. For detailed information about user groups and task IDs, see the *Configuring AAA Services on Cisco IOS XR Software* module of the *Cisco IOS XR System Security Configuration Guide*.

Debugging output is assigned high priority in the CPU process and, therefore, can affect system performance. For more information about the impact on system performance when using debug commands, refer to *Using Debug Commands on Cisco IOS XR Software*.

The **debug bgp update** command is useful for sending updates to peers.

Caution Because the **debug bgp update** command generates a substantial amount of output, use it only when traffic on the IP network is low, so other activity on the system is not adversely affected.

Task ID

Task ID	Operations
bgp	read

Examples

The following example shows how to enable debugging information related to BGP update messages, BGP ORF messages, and BGP soft-reconfiguration events:

```
RP/0/RP0/CPU0:router# debug bgp update
```

Related Commands

Command	Description
undebug	Enters debug mode to disable or reset multiple active **debug** command sessions.