# Cisco-BGP-MIBv2

The Cisco-BGP-MIBv2 feature supports CISCO-BGP-MIB, which allows MIBv2 traps to be generated. CISCO-BGP-MIB supports IPv4, IPv6, VPNv4, and VPNv6 address families. Its MIB objects and SNMP notifications can keep track of prefix counters and capabilities related to BGP sessions.

## Finding Feature Information

Your software release may not support all the features documented in this module. For the latest caveats and feature information, see Bug Search Tool and the release notes for your platform and software release. To find information about the features documented in this module, and to see a list of the releases in which each feature is supported, see the feature information table at the end of this module.

Use Cisco Feature Navigator to find information about platform support and Cisco software image support. To access Cisco Feature Navigator, go to www.cisco.com/go/cfn. An account on Cisco.com is not required.

## Information About Cisco-BGP-MIBv2

### Benefits of Cisco-BGP-MIBv2

The benefits of CISCO-BGP-MIB are as follows:

- MIB objects and SNMP notifications can keep track of prefix counters and capabilities related to BGP sessions.
- The following address families are supported: IPv4, IPv6, VPNv4, VPNv6.

• New traps are added to CISCO-BGP4-MIB that allow data to be returned for both IPv4 and IPv6 peers.

# Cisco-BGP-MIBv2 Read-Only Objects

**Cisco BGP Peer Table—cbgpPeer2Table**

This table is an augmentation of the former Cisco BGP Peer Table, with flexible indexing to support both IPv4 and IPv6. This table contains one entry per BGP peer about the connections with BGP peers. MIB objects in this table are:

- cbgpPeer2Type
- cbgpPeer2RemoteAddr
- cbgpPeer2State
- cbgpPeer2AdminStatus
- cbgpPeer2NegotiatedVersion
- cbgpPeer2LocalAddr
- cbgpPeer2LocalPort
- cbgpPeer2LocalAs
- cbgpPeer2LocalIdentifier
- cbgpPeer2RemotePort
- cbgpPeer2RemoteAS
- cbgpPeer2RemoteIdentifier
- cbgpPeer2InUpdates
- cbgpPeer2OutUpdates
- cbgpPeer2InTotalMessages
- cbgpPeer2OutTotalMessages
- cbgpPeer2LastError
- cbgpPeer2FsmEstablishedTransitions
- cbgpPeer2FsmEstablishedTime
- cbgpPeer2ConnectRetryInterval
- cbgpPeer2HoldTime
- cbgpPeer2KeepAlive
- cbgpPeer2HoldTimeConfigured
- cbgpPeer2KeepAliveConfigured
- cbgpPeer2MinAsOriginationInterval
- cbgpPeer2MinRouteAdvertisementInterval
- cbgpPeer2InUpdateElapsedTime

- cbgpPeer2LastErrorTxt

- cbgpPeer2PrevState

### BGP Session Capability Table—cbgpPeer2CapsTable

This table is an augmentation of the former Cisco BGP Session Capability Table, with flexible indexing to support both IPv4 and IPv6. BGP sessions can have multiple capabilities, which are sent to the peer in BGP OPEN messages. BGP_CAP_TYPE_AS4 is the only new capability support added from the previous version of cbgpPeerCapsTable. This table contains an entry corresponding to a capability code and an index. The MIB object in this table is:

- cbgpPeer2CapCode

### Peer Address Family Table—cbgpPeer2AddrFamilyTable

This table is an augmentation of the former Cisco Peer Address Family Table, with flexible indexing to support both IPv4 and IPv6. This table contains supported address families. Only the following address families are supported: IPv4, VPNv4, IPv6, and VPNv6. Output is similar to the original MIB Object Identifier (OID): cbgpPeerAddrFamilyTable. The MIB object in this table is:

- cbgpPeer2AddrFamilyName

### Prefix CounterTable—cbgpPeer2AddrFamilyPrefixTable

This table is an augmentation of the former Cisco Prefix Counter Table, with flexible indexing to support both IPv4 and IPv6. This table contains per peer route prefix counters for all of the supported address families. Only the following address families are supported: IPv4, VPNv4, IPv6, and VPNv6. Output is similar to the original MIB OID: cbgpPeerAddrFamilyPrefixTable. The MIB objects in this table are:

- cbgpPeer2AcceptedPrefixes

- cbgpPeer2DeniedPrefixes

- cbgpPeer2PrefixAdminLimit

- cbgpPeer2PrefixThreshold

- cbgpPeer2PrefixClearThreshold

- cbgpPeer2AdvertisedPrefixes

- cbgpPeer2SuppressedPrefixes

- cbgpPeer2WithdrawnPrefixes

### cbgpNotifsEnable

This global object contains information about which traps are enabled. When the **snmp-server enable traps bgp cbgp2** command is configured, the following traps are sent:

### cbgpPeer2FsmStateChange

This notification is an augmentation of the former FSM State Change Notification, with support for IPv6. This notification contains the following MIB objects:

- cbgpPeer2LastError

- cbgpPeer2State

- cbgpPeer2LastErrorTxt

- cbgpPeer2PrevState

### cbgpPeer2BackwardTransition

This notification is an augmentation of the former Backward Transition Notification, with support for IPv6. This is sent when BGP FSM moves from a higher numbered state to a lower numbered state. This notification contains the following MIB objects:

- cbgpPeer2LastError
- cbgpPeer2State
- cbgpPeer2LastErrorTxt
- cbgpPeer2PrevState

### cbgpPeer2PrefixThresholdExceeded

This notification is an augmentation of the former Prefix Threshold Exceeded Notification, with support for IPv6. This is sent when the prefix count for an address family on a BGP session exceeds the configured threshold value. This notification contains the following MIB objects:

- cbgpPeer2PrefixAdminLimit
- cbgpPeer2PrefixThreshold

### cbgpPeer2PrefixThresholdClear

This notification is an augmentation of the former Prefix Threshold Clear Notification, with support for IPv6. It is sent when the prefix count drops below the clear trap limit for an address family on a BGP session after the generation of cbgpPeer2PrefixThresholdExceeded notification. This notification contains the following MIB objects:

- cbgpPeer2PrefixAdminLimit
- cbgpPeer2PrefixClearThreshold

### cbgpPeer2BackwardTransNotification

This notification is generated when the BGP FSM moves from a higher numbered state to a lower numbered state. It contains the following MIB objects:

- cbgpPeer2LastError
- cbgpPeer2State
- cbgpPeer2LastErrorTxt
- cbgpPeer2PrevState

# Cisco-BGP-MIBv2 Trap Objects

### cbgpPeer2EstablishedNotification

This notification is generated when the BGP FSM enters the established state. The MIB objects are:

- cbgpPeer2LastError
- cbgpPeer2State

**cbgpPeer2BackwardTransNotification**

This notification is generated when the BGP FSM moves from a higher numbered state to a lower numbered state. The MIB objects are:

- cbgpPeer2LastError
- cbgpPeer2State

**cbgpPeer2FsmStateChange**

This notification is generated for every BGP FSM state change. The MIB objects are:

- cbgpPeer2LastError
- cbgpPeer2State
- cbgpPeer2LastErrorTxt
- cbgpPeer2PrevState

**cbgpPeer2BackwardTransition**

This notification is generated when the BGP FSM moves from a higher numbered state to a lower numbered state. The MIB objects are:

- cbgpPeer2LastError
- cbgpPeer2State
- cbgpPeer2LastErrorTxt
- cbgpPeer2PrevState

**cbgpPeer2PrefixThresholdExceeded**

This notification is generated when the prefix count exceeds the configured warning threshold on a session for an address family. The MIB objects are:

- cbgpPeer2PrefixAdminLimit
- cbgpPeer2PrefixThreshold

**cbgpPeer2PrefixThresholdClear**

This notification is generated when the prefix count drops below the configured clear threshold on a session for an address family once cbgpPeer2PrefixThresholdExceeded is generated. This notification is not generated if the peer session goes down after the generation of cbgpPrefixThresholdExceeded. The MIB objects are:

- cbgpPeer2PrefixAdminLimit
- cbgpPeer2PrefixClearThreshold

# How to Configure Cisco-BGP-MIBv2

## Enabling Cisco-BGP-MIBv2 Traps

**SUMMARY STEPS**

1. **enable**
2. **configure terminal**
3. **snmp-server enable traps bgp cbgp2** [[**state-changes** [**all**] [**backward-trans**] [**limited**]] | [**threshold prefix**]]
4. **exit**

**DETAILED STEPS**

| | Command or Action | Purpose |
|---|---|---|
| **Step 1** | **enable**<br><br>**Example:**<br><br>`Device> enable` | Enables privileged EXEC mode.<br><br>• Enter your password if prompted. |
| **Step 2** | **configure terminal**<br><br>**Example:**<br><br>`Device# configure terminal` | Enters global configuration mode. |
| **Step 3** | **snmp-server enable traps bgp cbgp2** [[**state-changes** [**all**] [**backward-trans**] [**limited**]] | [**threshold prefix**]]<br><br>**Example:**<br><br>`Device(config)# snmp-server enable traps bgp cbgp2` | Enables generation of Cisco-BGP-MIBv2 traps.<br><br>• The **bgp** keyword enables generation of original MIB traps.<br><br>• The **bgp cbgp2** keywords enable generation of MIBv2 traps.<br><br>• The original MIB and MIBv2 can be enabled or disabled individually. If both the original MIB and MIBv2 are enabled, both traps are generated. If only one of the MIB versions is enabled, only that version of traps is generated. |
| **Step 4** | **exit**<br><br>**Example:**<br><br>`Device(config)# exit` | Exits global configuration mode and enters privileged EXEC mode. |

# Configuration Examples for Cisco-BGP-MIBv2

## Example: Enabling Cisco-BGP-MIBv2

```
Device(config)# snmp-server enable traps bgp cbgp2
```

# Additional References

### Related Documents

| Related Topic | Document Title |
|---|---|
| Cisco IOS commands | Cisco IOS Master Command List, All Releases |
| BGP commands | Cisco IOS IP Routing: BGP Command Reference |
| CISCO-BGP4-MIB support | "BGP MIB Support" module in the *IP Routing: BGP Configuration Guide* |
| Information about SNMP and SNMP operations | SNMP Configuration Guide |

### MIBs

| MIB | MIBs Link |
|---|---|
| CISCO-BGP-MIB | To locate and download MIBs for selected platforms, Cisco software releases, and feature sets, use Cisco MIB Locator found at the following URL: http://www.cisco.com/go/mibs |

### Technical Assistance

| Description | Link |
|---|---|
| The Cisco Support and Documentation website provides online resources to download documentation, software, and tools. Use these resources to install and configure the software and to troubleshoot and resolve technical issues with Cisco products and technologies. Access to most tools on the Cisco Support and Documentation website requires a Cisco.com user ID and password. | http://www.cisco.com/cisco/web/support/index.html |

# Feature Information for Cisco-BGP-MIBv2

The following table provides release information about the feature or features described in this module. This table lists only the software release that introduced support for a given feature in a given software release train. Unless noted otherwise, subsequent releases of that software release train also support that feature.

Use Cisco Feature Navigator to find information about platform support and Cisco software image support. To access Cisco Feature Navigator, go to www.cisco.com/go/cfn. An account on Cisco.com is not required.

**Table 1: Feature Information for Cisco-BGP-MIBv2**

| Feature Name | Releases | Feature Information |
|---|---|---|
| Cisco-BGP-MIBv2 | 15.2(1)E | The Cisco-BGP-MIBv2 feature supports CISCO-BGP-MIB, which allows MIBv2 traps to be generated. CISCO-BGP-MIB supports IPv4, IPv6, VPNv4, and VPNv6 address families. Its MIB objects and SNMP notifications can keep track of prefix counters and capabilities related to BGP sessions. <br><br> The following command was modified: **snmp-server enable traps bgp**. |