



# Configuring BGP Consistency Checker

The BGP Consistency Checker feature provides a way to identify certain types of BGP route inconsistencies with peers: next-hop label inconsistency, RIB-out inconsistency, and aggregation inconsistency. Upon finding such an inconsistency, the system sends a syslog error message and takes appropriate action if configured to do so.

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## Information About BGP Consistency Checker

### BGP Consistency Checker

A BGP route inconsistency with a peer occurs when an update or a withdraw is not sent to a peer resulting in a null route. To identify that issue, BGP consistency checker was created as a low-priority process that does nexthop-label, RIB-out, and aggregation consistency checks at a configurable interval. When enabled, BGP consistency checker is performed for all address families. Configuring BGP consistency checker is recommended.

Once the process identifies such an inconsistency, it will report the inconsistency with a syslog message and optionally take action if the **auto-repair** keyword is specified. The action taken depends on the type of inconsistency found.

- **Next-Hop Label Consistency Check**—When two paths have the same next hop because they are advertised by the same provider edge router (PE), they should also have the same next-hop label. If the labels are different, there is an inconsistency. If the **auto-repair** keyword is specified, the system will send a route-refresh request.
- **RIB-Out Consistency Check**—If a network passes an outbound policy and is not sent, or if a network does not pass an outbound policy and is sent, there is an inconsistency. If the **auto-repair** keyword is specified, the system will send a route-refresh request.
- **Aggregation Consistency Check**—If specific routes and the aggregated route become out of sync, an inconsistency can occur. Either the **error-message** keyword or the **auto-repair** keyword will trigger aggregation reevaluation.

In the unlikely event that you receive a syslog message about an inconsistency, notify your Cisco technical support representative with the syslog message exactly as it appears. The following are examples of such syslog messages:

- “Net 10.0.0.0/32 has Nexthop-Label inconsistency.”
- “Net 10.0.0.0/32 in IPv4 Unicast has rib-out inconsistency for update-group 4 - outbound-policy fails.”

# How to Configure BGP Consistency Checker

## Configure BGP Consistency Checker

### SUMMARY STEPS

1. **enable**
2. **configure terminal**
3. **router bgp** *autonomous-system-number*
4. **bgp consistency-checker** {*error-message* | **auto-repair**} [*interval minutes*]
5. **end**
6. **show ip bgp** [*vpn4* | *vpn6*] **all inconsistency nexthop-label**

### DETAILED STEPS

	Command or Action	Purpose
<b>Step 1</b>	<b>enable</b> <b>Example:</b> <pre>Router&gt; enable</pre>	Enables privileged EXEC mode. <ul style="list-style-type: none"> <li>• Enter your password if prompted.</li> </ul>
<b>Step 2</b>	<b>configure terminal</b> <b>Example:</b> <pre>Router# configure terminal</pre>	Enters global configuration mode.
<b>Step 3</b>	<b>router bgp</b> <i>autonomous-system-number</i> <b>Example:</b> <pre>Router(config)# router bgp 500</pre>	Configures a BGP routing process.
<b>Step 4</b>	<b>bgp consistency-checker</b> { <i>error-message</i>   <b>auto-repair</b> } [ <i>interval minutes</i> ] <b>Example:</b> <pre>Router(config-router)# bgp consistency-checker auto-repair interval 720</pre>	Enables BGP consistency checker. <ul style="list-style-type: none"> <li>• The default interval is 1440 minutes (one day). The range is 5 to 1440 minutes.</li> </ul>

	Command or Action	Purpose
<b>Step 5</b>	<b>end</b> <b>Example:</b> <pre>Router(config-router)# end</pre>	Ends the current configuration and returns to privileged EXEC mode.
<b>Step 6</b>	<b>show ip bgp [vpnv4   vpnv6] all inconsistency nexthop-label</b> <b>Example:</b> <pre>Router# show ip bgp all inconsistency nexthop-label</pre>	(Optional) Displays routes that have a nexthop-label inconsistency found. <ul style="list-style-type: none"> <li>This step is not part of configuring the feature; it is provided in case you receive a syslog message about a nexthop-label inconsistency and you want to display those routes.</li> </ul>

## Configuration Examples for BGP Consistency Checker

### Example: Configuring BGP Consistency Checker

The following example configures BGP consistency checker with auto-repair at the default interval of one day:

```
router bgp 65000
  bgp consistency-checker auto-repair
```

## Additional References

### Related Documents

Related Topic	Document Title
Cisco IOS commands	<a href="#">Cisco IOS Master Command List, All Releases</a>
BGP commands	<a href="#">Cisco IOS IP Routing: BGP Command Reference</a>
Enabling BGP MIB support	“BGP MIB Support” module in the <i>IP Routing: BGP Configuration Guide</i>
Configuring SNMP Support	<i>SNMP Configuration Guide</i> in the <i>Cisco IOS Network Management Configuration Guide Library</i>
SNMP Commands	<i>Cisco IOS SNMP Support Command Reference</i>

### Standards

Standard	Title
None	—

**MIBs**

MIB	MIBs Link
—	To locate and download MIBs for selected platforms, Cisco IOS releases, and feature sets, use Cisco MIB Locator found at the following URL: <a href="http://www.cisco.com/go/mibs">http://www.cisco.com/go/mibs</a>

**RFCs**

RFC	Title
RFC 1657	<i>BGP-4 MIB</i>
RFC 1771	<i>A Border Gateway Protocol 4 (BGP-4)</i>
RFC 2547	<i>BGP/MPLS VPNs</i>
RFC 2858	<i>Multiprotocol Extensions for BGP-4</i>

**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.	<a href="http://www.cisco.com/cisco/web/support/index.html">http://www.cisco.com/cisco/web/support/index.html</a>

## Feature Information for BGP Consistency Checker

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](http://www.cisco.com/go/cfn). An account on Cisco.com is not required.

*Table 1: Feature Information for BGP Consistency Checker*

Feature Name	Releases	Feature Information
BGP Consistency Checker	Cisco IOS XE Release 3.3S Cisco IOS XE Release 3.4SG	<p>The BGP Consistency Checker feature provides a way to identify three types of BGP route inconsistencies with peers: next-hop label inconsistency, RIB-out inconsistency, and aggregation inconsistency. Upon finding such inconsistency, the system sends a syslog error message and takes appropriate action if configured to do so.</p> <p>The following command was introduced: <b>bgp consistency-checker</b></p> <p>The following command was modified: <b>show ip bgp vpnv4</b>.</p>

