Maintenance Function: BGP Routing Protocol

From Cisco IOS XE Everest 16.4.1 release, the event trace functionality is supported for BGP. Event Trace provides the functionality to capture BGP traces by enabling the event trace using commands. You can disable the command if you do not want to log traces. When convergence happens and connection states are getting changed, the BGP traces are logged into Event Trace infrastructure.

Information About Maintenance Function: BGP Routing Protocol

BGP Event trace supports the following functionalities:

- BGP Event Trace creates buffers for peer connection state change and updates event logging. The size of the buffer is 100,000, which means 100,000 trace entries will be stored at a time. The buffer can be resized by using configuration command and maximum size of the buffer can be extended till 1,000,000.
- These buffers are circular in nature, that is, if the buffer reaches the end then it starts logging from the beginning. If "one-shot" is not configured, it continuously logs from the beginning.
- Considering the contribution is a small addition to performance, BGP event trace will be disabled by default. It can be enabled by executing the **enable** command in EXEC mode.
- BGP Event Traces:
  - Neighbor: All the peer events such as state changes, error handling, unrecognized/malformed packet handling will be captured into this buffer.
- BGP logs the traces in binary format into corresponding buffers on runtime, which helps in logging the trace efficiently. Use the **monitor event-trace bgp neighbor** command to print the traces in human-readable format on the console. This command provides the functionality of dumping the event traces into the file in binary or human-readable format as well.
- The show commands are provided with afi/safi/vrf/neighbor address filtering options to display the event logs. Event Trace logging under different afi/safi/vrf is completely based on the different traces.

Configuring BGP Event Trace in Global Configuration Mode

BGP Event Trace provides the commands in global configuration and privileged EXEC mode for connection state event traces. Use the following configuration steps to enable the event-traces for BGP. With this configuration, BGP traces are enabled after the active/standby router is rebooted because of a crash or switchover.

SUMMARY STEPS

1. **enable**
2. **configure terminal**
3. **monitor event-trace bgp neighbor** {**dump-file** *filename* | **size** *entries*}
4. **end**

DETAILED STEPS

	Command or Action	Purpose
Step 1	**enable** **Example:** `Device> enable`	Enables privileged EXEC mode. • Enter your password if prompted.
Step 2	**configure terminal** **Example:** `Device# configure terminal`	Enters global configuration mode.
Step 3	**monitor event-trace bgp neighbor** {**dump-file** *filename*	**size** *entries*} **Example:** `Device(config)# monitor event-trace bgp neighbor size 10`	Enables event traces for BGP. Use the **no monitor event-trace bgp neighbor** command to disable the event traces. • **dump-file**—Set the name of the trace dump file. • **size**—Set the size of trace.
Step 4	**end** **Example:** `Device(config)# end`	Exits global configuration mode and enters privileged EXEC mode.

Configuring BGP Event Trace in EXEC Mode

SUMMARY STEPS

1. **enable**

2. **monitor event-trace bgp neighbor** {**clear** | **continuous** | **destroy-buffer** | **disable** | **dump** *filename* | **enable** | **one-shot**}
3. **exit**

DETAILED STEPS

	Command or Action	Purpose
Step 1	**enable** **Example:** `Device> enable`	Enables privileged EXEC mode. • Enter your password if prompted.
Step 2	**monitor event-trace bgp neighbor** {**clear**	**continuous**	**destroy-buffer**	**disable**	**dump** *filename*	**enable**	**one-shot**} **Example:** `Device# monitor event-trace bgp neighbor enable`	Enables event traces for BGP. Use the **no monitor event-trace bgp neighbor** command to disable the event traces. • **clear**--Clear the event trace buffer. • **continuous**--Display the event traces getting logged continuously on the console. • **destroy-buffer**--Destroy buffer allocated for traces. • **disable**--Disable the event trace functionality. This command must be given on active and standby to disable both nodes. • **dump** *filename*--Dump all neighbor event traces into file in binary or ASCII format. • **enable**--Enable the event trace functionality. This command must be given on active and standby to enable both nodes. • **one-shot**--Log the event trace only once. When the buffer is full, the event-trace logging will stop.
Step 3	**exit** **Example:** `Device# exit`	Exits the privileged EXEC configuration mode.

Verifying the BGP Event Traces

You can use the following **show** commands to browse through the event traces captured. These **show** commands will filter the traces based on the AFI/SAFI/VRF/neighbor address and different combinations.

- **show monitor event-trace bgp all**
- **show monitor event-trace bgp back**
- **show monitor event-trace bgp clock**
- **show monitor event-trace bgp from-boot**
- **show monitor event-trace bgp ipv4** {**all** | **back** | **clock** | **flowspec** | **from-boot** | **latest** | **mdt** | **multicast** | **mvpn** | **unicast**}

- **show monitor event-trace bgp ipv4 flowspec neighbors**
- **show monitor event-trace bgp ipv4 mdt vrf**
- **show monitor event-trace bgp ipv6** {**all** | **back** | **clock** | **flowspec** | **from-boot** | **latest** | **multicast** | **mvpn** | **unicast**}
- **show monitor event-trace bgp l2vpn** {**all** | **back** | **clock** | **evpn** | **from-boot** | **latest** | **vpls**}
- **show monitor event-trace bgp latest**
- **show monitor event-trace bgp neighbors**
- **show monitor event-trace bgp nsap**
- **show monitor event-trace bgp parameters**
- **show monitor event-trace bgp rtfilter**
- **show monitor event-trace bgp vpnv4** {**all** | **back** | **clock** | **from-boot** | **latest** | **vrf**}
- **show monitor event-trace bgp vpnv6** {**all** | **back** | **clock** | **flowspec** | **from-boot** | **latest** | **multicast** | **unicast**}

Feature Information for Maintenance Function: BGP Routing Protocol

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 Maintenance Function: BGP Routing Protocol

Feature Name	Releases	Feature Information
Maintenance Function: BGP Routing Protocol	Cisco IOS XE Everest 16.4.1 Release	From Cisco IOS XE Everest 16.4.1 release, the event trace functionality is supported for BGP. Event Trace provides the functionality to capture BGP traces by enabling the event trace using commands. You can disable the command if you do not want to log traces. When convergence happens and connection states are getting changed, the BGP traces are logged into Event Trace infrastructure.