



CHAPTER **27**

Using the Multiprotocol Label Switching/Virtual Private Network Border Gateway Protocol Login Event Generator Command Line Utility

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Introduction

This chapter describes the Multiprotocol Label Switching (MPLS)/Virtual Private Network (VPN) Border Gateway Protocol (BGP) Login Event Generator (LEG) command-line utility (CLU).

Information About the MPLS/VPN BGP LEG CLU

The **p3bgp** utility controls the operation of the BGP LEG and displays its status. The command format is `p3bgp <operation>[parameter]`.

Table 27-1 lists the **p3bgp** operations.

Table 27-1 *p3bgp Operations*

Operation	Description
<code>--start</code>	Starts the BGP LEG.
<code>--stop</code>	Stops the BGP LEG.
<code>--restart</code>	Restarts the BGP LEG.
<code>--status</code>	Displays a short status line for each PE/RR.
<code>--show</code>	Displays a detailed status for a specific PE/RR.
<code>--show-all</code>	Displays a detailed status for each PE/RR.
<code>--refresh</code>	Sends a refresh request to specific PE/RR to receive updated information on all routes.
<code>--refresh-all</code>	Sends a refresh request to all PE/RR to receive updated information on all routes. Use this operation when the PE/RR is disconnected from the LEG and you want to make sure that all the BGP information is propagated to the SCE devices. The refresh is for new information only; obsolete labels are not checked for validity.
<code>--force-sync</code>	Used together with <code>--refresh-all</code> . Sends a refresh request to all PE/RR to receive updated information on all routes, and then synchronizes this information with all SCE devices. After this operation is completed, the SCE devices are updated with the BGP information. Use this operation when the PE/RR is disconnected from the LEG and you want to make sure that all the BGP information is propagated to the SCE devices. This operation also makes sure that obsolete labels are removed from the SCE devices.
<code>--load-config</code>	Loads the configuration file to the BGP LEG. This operation also restarts the BGP LEG.
<code>--help</code>	Displays the available p3bgp commands.

BGP LEG Status

The following is an example of the **p3bgp** command-line utility using the status operation:

ID	Peer IP	PE Name	Updates rcv	Notify rcv	K.Alive sent	K.Alive rcv	Hold Time
1	1.2.3.4	PE101	150	0	58	57	157
2	1.2.3.5	PE102	183	0	34	33	77

The following list is a description of the status operation output:

- Peer IP—The IP of the PE/RR that is connected to the LEG.
- PE name—The name of the PE/RR as configured in the configuration file.
- Updates rcv—A counter for all the BGP updates received from this PE/RR.
- Notify rcv—A counter for all the BGP notifications received from this PE/RR.
- K.Alive sent—A counter for all the BGP keep alives sent to this PE/RR.
- K.Alive rcv—A counter for all the BGP keep alives received from this PE/RR.
- Hold Time—The remaining time-out for the next keep alive.

BGP LEG Detailed Status

The following is an example of the **p3bgp** command line utility using the **show** operation on a specific PE router named PE101:

```

1 : PE101
connects                : 1
rcv UPDATE              : 150
rcv KEEPALIVE          : 57
sent KEEPALIVE         : 58
rcv NOTIFY             : 0
current holdtime       : 157
TCP sndwnd             : 16384
TCP rcvwnd            : 87380
Connection up time     : 0 Days, 1 Hrs, 7 Min, 59 Sec
refresh requests       : 2
rcv PE AddRoute messages : 2
send SM AddRoute messages : 10
send SM not connected  : 0
BGP state              : Established

```

The following list is a description of the show operation output:

- connects—The number of successful connections established with this PE/RR since the LEG is up.
- rcv UPDATE—A counter for all the BGP updates received from this PE/RR.
- rcv KEEPALIVE—A counter for all the BGP keep alives received from this PE/RR.
- sent KEEPALIVE—A counter for all the BGP keep alives sent to this PE/RR.
- rcv NOTIFY—A counter for all the BGP notifications received from this PE/RR.
- current holdtime—The remaining time-out for the next keep alive.
- TCP sndwnd—The TCP send window buffer size.

- TCP rcvwnd—The TCP receive window size.
- Connection up time—The time since the connection to this PE/RR was established.
- refresh requests—A counter for the number of refresh requests requested for this PE/RR.
- rcv PE AddRoute messages—A counter for BGP add-route messages received from the PE/RR.
- send SM AddRoute message—A counter for successful add routes invocations performed on the SM for this PE/RR.
- send SM not connected—A counter for SM invocations that were kept in an internal buffer due to disconnected SM.
- BGP state—The state of the BGP connection to this PE/RR.