HA Support for MLDP

The HA Support for MLDP feature enables Cisco Multicast Label Distribution Protocol (MLDP) to checkpoint sufficient signaling and forwarding information for repopulating the necessary database on a dual Route Processor (RP) platform on which Stateful Switchover/Nonstop Forwarding (SSO/NSF) and Label Distribution Protocol (LDP) Graceful Restart are configured, after a switchover.

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.

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.

Prerequisites for HA Support for MLDP

- Stateful Switchover/Nonstop Forwarding (SSO/NSF) and LDP Graceful Restart must be configured on the dual Route Processor (RP) platform.

- LDP Graceful Restart must be configured on the NSF router peers.

- The Cisco IOS release software installed on the active and standby RPs must support MLDP-based MVPN and HA Support for MLDP.

Restrictions for HA Support for MLDP

- If Label Distribution Protocol (LDP) Graceful Restart is not enabled on the dual Route Processor (RP) platform, Nonstop Forwarding (NSF) peers will remove existing forwarding and label information from their Multicast Label Distribution Protocol (MLDP) database entries immediately following a switchover.

Information About HA Support for MLDP

The HA Support for MLDP feature enables MLDP to checkpoint label forwarding or path set information. To support NSF, MLDP uses existing PIM HA architecture to checkpoint the information to the standby RP.

MDT data group creation is a dynamic event triggered by traffic exceeding a specified threshold. When the threshold is exceeded (requiring an MDT data group to be created) or when traffic falls below the threshold (requiring the MDT data group to be deleted), the router detecting the event creates, deletes, or updates an MDT data "send" entry, creates the corresponding (S,G) state, if necessary, and sends a message to PE peers to create, delete, or update a corresponding MDT data "receive" entry and the corresponding (S,G) state.

The active RP will checkpoint the current state of the MLDP peer, paths to peers, root, paths to root, and the database and replication/branch entry onto the standby RP and use this state to recreate the MLDP state after a switchover.

How to Montior HA Support for MLDP

Displaying Check Pointed Information

SUMMARY STEPS

1. **enable**
2. **show mpls mldp ha database**
3. **show mpls mldp ha database summary**
4. **show mpls mldp ha neighbor**
5. **show mpls mldp ha root**
6. **show mpls mldp ha count**

DETAILED STEPS

	Command or Action	Purpose
Step 1	**enable** **Example:** `PE2> enable`	Enables privileged EXEC mode. - Enter your password if prompted.

	Command or Action	Purpose
Step 2	**show mpls mldp ha database** **Example:** `PE2# show mpls mldp ha database`	Displays checkpoint data information.
Step 3	**show mpls mldp ha database summary** **Example:** `PE2# show mpls mldp ha database summary`	Displays synched database information only.
Step 4	**show mpls mldp ha neighbor** **Example:** `PE2# show mpls mldp ha neighbor`	Displays information about synched peers.
Step 5	**show mpls mldp ha root** **Example:** `PE2# show mpls mldp ha root`	Displays synched root information.
Step 6	**show mpls mldp ha count** **Example:** `PE2# show mpls mldp ha count`	Displays number of trees.

Displaying Data MDT Mappings for MLDP on Standby Device

SUMMARY STEPS

1. **enable**
2. **show ip pim vrf** *vrf* **mdt send**
3. **show ip pim vrf** *vrf* **mdt recv**

DETAILED STEPS

	Command or Action	Purpose
Step 1	**enable** **Example:** `PE1-standby> enable`	Enables privileged EXEC mode. • Enter your password if prompted.
Step 2	**show ip pim vrf** *vrf* **mdt send** **Example:** `PE1-standby# show ip pim vrf blue mdt send`	Displays data MDT mappings for MLDP.
Step 3	**show ip pim vrf** *vrf* **mdt recv** **Example:** `PE1-standby# show ip pim vrf blue mdt recv`	Displays data MDT mappings for MLDP.

Additional References

Related Documents

Related Topic	Document Title
Cisco IOS commands	Cisco IOS Master Commands List, All Releases
IP Multicast commands	Cisco IOS IP Multicast Command Reference
Cisco HA	*High Availability Configuration Guide*

Standards and RFCs

Standard/RFC	Title
No new or modified standards are supported, and support for existing standards has not been modified.	--
No new or modified RFCs are supported, and support for existing RFCs has not been modified.	--

MIBs

MIB	MIBs Link
--	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 HA Support for MLDP

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 HA Support for MLDP

Feature Name	Releases	Feature Information
HA Support for MLDP	15.1(3)S 15.1(1)SY Cisco IOS XE Release 3.8S	The HA Support for MLDP feature enables Cisco Multicast Label Distribution Protocol (MLDP) to checkpoint sufficient signaling and forwarding information for repopulating the necessary database on a dual Route Processor (RP) platform on which Stateful Switchover/Nonstop Forwarding (SSO/NSF) and Label Distribution Protocol (LDP) Graceful Restart are configured, after a switchover. The following commands were introduced or modified: **show ip pim mdt recv**, **show ip pim mdt send**, **show mpls mldp ha database** , **show mpls mldp ha neighbor**, **show mpls mldp ha root**.