MPLS Infrastructure Changes Introduction of MFI and Removal of MPLS LSC and LC-ATM Features

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This document explains the new MPLS Forwarding Infrastructure (MFI) and removal of support for MPLS label switch controller (LSC) and label-controlled ATM (LC-ATM) features and commands.

Finding Feature Information

Your software release may not support all the features documented in this module. For the latest feature information and caveats, see 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 document.

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 MPLS Infrastructure Changes

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Introduction of the MPLS Forwarding Infrastructure

The MPLS control plane software is enhanced to make MPLS more scalable and flexible. The MFI, which manages MPLS data structures used for forwarding, replaces the Label Forwarding Information Base (LFIB).

Note The MFI and LFIB do not coexist in the same image. For a list of supported releases, see the "Feature Information for MPLS Forwarding Infrastructure."

Introduction of IP Rewrite Manager

Cisco software introduces a module called the MPLS IP Rewrite Manager (IPRM) that manages the interactions between Cisco Express Forwarding, the IP Label Distribution Modules (LDMs), and the MFI. MPLS IPRM is enabled by default. You need not configure or customize the IPRM. These commands are related to IPRM:

- **clear mpls ip iprm counters**
- **debug mpls ip iprm**
- **debug mpls ip iprm cef**
- **debug mpls ip iprm events**
- **debug mpls ip iprm ldm**
- **debug mpls ip iprm mfi**
- **show mpls ip iprm counters**
- **show mpls ip iprm ldm**

For information about these commands, see the *Cisco IOS Debug Command Reference* and the *Cisco IOS MPLS Command Reference*.

Removal of Support for MPLS LSC and LC-ATM Features

The following MPLS LSC and LC-ATM features are no longer supported, starting with Cisco IOS Release 12.4(20)T:

- MPLS LSC
- LC-ATM
- MPLS Scalability Enhancements for LSC and ATM LSR
- MPLS LSC Redundancy
- MPLS--OAM Insertion and Loop Detection on LC-ATM
- MPLS CoS Multi-VC Mode for PA-A3
- MPLS over ATM: Virtual Circuit Merge
- MPLS Diff-Serv Aware Traffic Engineering over ATM
- VSI Master MIB

MPLS LSC and LC-ATM Configurations

Before upgrading to Cisco IOS Release 12.4(20)T, remove all the MPLS LSC and LC-ATM configurations from the routers in your network. If your core network has ATM links, you can use packet-based MPLS.

See the MPLS Label Distribution Protocol Overview for more information. If you provide ATM access to customers, you can use the Any Transport over MPLS: ATM over MPLS feature. See Any Transport over MPLS for more information.

If you have MPLS LSC or LC-ATM features configured and you upgrade to Cisco IOS Release 12.4(20)T, the configuration is not accepted. The system displays “unrecognized command” errors for any commands that are no longer supported.

Removal of Support for MPLS LSC and LC-ATM Commands

The following commands are no longer supported, starting with Cisco IOS Release 12.4(20)T:

- **debug mpls atm-cos**
- **debug mpls atm-ldp api**
- **debug mpls atm-ldp failure**
- **debug mpls atm-ldp routes**
- **debug mpls atm-ldp states**
- **debug mpls xmpls cross-connect**
- **debug mpls xmpls errors**
- **debug mpls xmpls events**
- **debug mpls xmpls vc**
- **debug mpls xtagatm cross-connect**
- **debug mpls xtagatm errors**
- **debug mpls xtagatm events**
- **debug mpls xtagatm vc**
- **debug vsi api**
- **debug vsi errors**
- **debug vsi events**
- **debug vsi packets**
- **debug vsi param-groups**
- **extended-port**
- **interface xtagatm**
- **mpls atm control-vc**
- **mpls atm cos**
- **mpls atm disable-headend-vc**
- **mpls atm multi-vc**
- **mpls atm vpi**
- **mpls atm vp-tunnel**
- **mpls cos-map**
- **mpls ldp atm control-mode**
- **mpls ldp atm vc-merge**s
- **mpls prefix-map**
- **mpls request-labels for**
- **mpls traffic-eng atm cos global-pool**
- **mpls traffic-eng atm cos sub-pool**
- **show controllers vsi control-interface**
- **show controllers vsi descriptor**
- **show controllers vsi session**

- **show controllers vsi status**
- **show controllers vsi traffic**
- **show controllers xmpls**
- **show controllers xtagatm**
- **show interface xtagatm**
- **show mpls atm-ldp bindings**
- **show mpls atm-ldp bindwait**
- **show mpls atm-ldp capability**
- **show mpls atm-ldp summary**
- **show mpls cos-map**
- **show mpls prefix-map**
- **show xtagatm cos-bandwidth-allocation**
- **show xtagatm cross-connect**
- **show xtagatm vc**
- **snmp-server enable traps vsimaster**
- **tag-control-protocol vsi**

Additional References

Related Documents

Related Topic	Document Title
MPLS commands	*Cisco IOS MPLS Command Reference*
MPLS Label Distribution Protocol	MPLS Label Distribution Protocol Overview
Layer 2 VPN features over MPLS	Any Transport over MPLS

Technical Assistance

Description	Link
The Cisco Support website provides extensive online resources, including documentation and tools for troubleshooting and resolving technical issues with Cisco products and technologies. To receive security and technical information about your products, you can subscribe to various services, such as the Product Alert Tool (accessed from Field Notices), the Cisco Technical Services Newsletter, and Really Simple Syndication (RSS) Feeds. Access to most tools on the Cisco Support website requires a Cisco.com user ID and password.	http://www.cisco.com/techsupport

Feature Information for MPLS Infrastructure Changes

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 MPLS Infrastructure Changes

Feature Name	Releases	Feature Information
MPLS Infrastructure Changes	12.4(20)T Cisco IOS XE Release 3.5S	In Cisco IOS Release 12.4(20)T, this feature was introduced. In Cisco IOS XE Release 3.5S, support was added for the Cisco ASR 903 Router.