# New Cisco IOS Software Release 12.2(40)SE for Cisco Catalyst 3750 Metro, Cisco ME 3400 and ME 2400 Series Ethernet Access Switches

PB428554

Cisco® announces Cisco IOS® Software updates for Cisco Catalyst® 3750 Metro, Cisco ME 3400 and ME 2400 Series Ethernet Access Switches. This release furthers Cisco leadership by providing integrated services for high availability, multicast, and manageability for Metro Ethernet deployments.

This product bulletin contains content and delivery information for Cisco IOS Software Release 12.2(40)SE.

The following new features are available with Cisco IOS software release 12.2(40)SE for Metro Ethernet switches:

- Resilient Ethernet Protocol (REP): REP is a Cisco technology that allows fast convergence and high availability in a switch ring topology. The capability provides loop prevention and does not utilize spanning tree.
- IP SLAs for Metro Ethernet: Metro Ethernet based SLAs are important for customers. IP SLAs for Metro Ethernet utilize IEEE 802.1ag Ethernet Operation, Administration, and Maintenance (OAM) capabilities to automatically validate end-to-end connectivity, jitter, and latency in a Metro Ethernet network.
- IP SLAs Label Switch Path (LSP) Health Monitor: The ability to analyze an LSP is useful in a Multiprotocol Label Switched (MPLS) network. IP SLAs LSP Health Monitor automates the testing of LSPs in a Layer 3 MPLS VPN network by utilizing MPLS OAM capabilities within Cisco IOS Software. Each LSP is tested periodically and automatically to determine if connectivity exists between provider edge devices.
- MPLS OAM RFC 4379: This feature includes support for LSP ping RFC version (RFC4379) and MPLS OAM tree trace, which allows the tracing of LSPs across an MPLS network.
- IP Service-Level Agreements (IP SLAs) Support: Cisco IOS IP SLAs help enable customers to assure new business-critical IP applications, as well as IP services that utilize data, voice, and video. With Cisco IOS IP SLAs, users can verify service guarantees, increase network reliability by validating network performance, proactively identify network issues, and increase return on investment (ROI) by easing the deployment of new IP services. Cisco IOS IP SLAs use active monitoring to generate traffic in a continuous, reliable, and predictable manner, thus facilitating the measurement of network performance and health.
- IP SLAs Enhanced Object Tracking: IP SLAs Enhanced Object Tracking support will allow switches utilizing HSRP to track IP SLA measurements and trigger hot standby failover based upon jitter, packet loss, or latency.

All contents are Copyright © 2007 Cisco Systems, Inc. All rights reserved. This document is Cisco Public Information.

- Source-Specific Multicast (SSM): The SSM capability is an efficient and optimized multicast protocol that is used for one-to-many multicast applications such as video. The protocol is easier to deploy than traditional multicast protocols and utilizes Internet Group Management Protocol version 3 (IGMPv3).
- Multicast Virtual Routing and Forwarding (VRF) Lite: VRF Lite allows the customer to configure multiple private routing domains for network virtualization and virtual private networks. Multicast support has now been added to VRF Lite allowing multicast traffic per VRF.
- Support for 512 Multicast VLAN Registration (MVR) Groups: MVR is useful for dedicating a VLAN to multicast streams in a network. It is now possible to utilize 512 multicast groups within MVR.
- Internet Group Management Protocol (IGMP) Proxy: This capability allows the switch to forward a host's request to join a multicast stream to a specific IP destination address.
- VRF-Aware IP Services: Various IP Services can now obtain information per VRF and are now VRF aware. The following services are now VRF aware: Address Resolution Protocol (ARP), ping, traceroute, Simple Network Management Protocol (SNMP), syslog, HSRP, IP SLAs, TFTP, FTP, and Unicast Reverse Path Forwarding (uRPF).
- Configuration Replace: The configuration replacement and configuration rollback feature provides the capability to replace the current running configuration with any saved Cisco IOS configuration file. This functionality can be used to revert to a previous configuration state, effectively rolling back any configuration changes that were made since that configuration file was saved. This feature simplifies and reduces operational overhead.
- Embedded Event Manager (EEM): Cisco IOS EEM is a powerful tool for system management and automation. The capability will automate troubleshooting and network deployment and reduce operational expense. EEM helps enable customers to utilize the network intelligence intrinsic to Cisco IOS Software and customize the behavior based on real network events. Customers can define policies to take specific actions for certain events using built-in event detectors.
- Link Layer Discovery Protocol Media Extensions (LLDP-MED) Location Support: LLDP support has been extended to include client location information using the LLDP Media Extensions. The device location information can be used by inventory management for emergency response services, such as Enhanced 911 (E911).
- Cisco Media Access Control (MAC) Notification MIB: The MAC Notification MIB enables the switch to track MAC addresses that are learned or removed. Histories of the MAC addresses that are learned and deleted from the switch are tracked, and notifications can be generated based on threshold limits.
- DHCP Snooping Statistics: DHCP snooping statistics provide the total count of the packets processed along with counts for various conditions that can cause a packet to be dropped.

All contents are Copyright © 2007 Cisco Systems, Inc. All rights reserved. This document is Cisco Public Information.

Table 1 describes product support for new features of Cisco IOS Software Release 12.2(40)SE for Metro Ethernet Switches, and Table 2 lists the supported Metro Ethernet switches.

**Table 1.** Cisco IOS Software Release 12.2(40)SE New Features for Cisco Catalyst Metro Ethernet Switches

| Feature | Cisco Catalyst 3750 Metro Advanced Services | Cisco Catalyst 3750 Metro IP Services | Cisco Catalyst 3750 Metro IP Base | Cisco ME 3400 Metro IP Access | Cisco ME 3400 Metro Access | Cisco ME 3400 Metro Base | Cisco ME 2400 |
|---|---|---|---|---|---|---|---|
| **Resilient Ethernet Protocol** | Yes | Yes | Yes | Yes | Yes | No | No |
| **IP SLAs for Metro Ethernet** | Yes | Yes | Yes | Yes | Yes | No | No |
| **IP SLAs for Metro Ethernet Responder** | Yes | Yes | Yes | Yes | Yes | Yes | No |
| **IP SLAs** | Yes | Yes | Yes | Yes | Yes | No | No |
| **IP SLAs Responder** | Yes | Yes | Yes | Yes | Yes | Yes | Yes |
| **IP SLAs LSP Health Monitor** | Yes | Yes | Yes | No | No | No | No |
| **IP SLAs LSP Health Monitor Responder** | Yes | Yes | Yes | No | No | No | No |
| **IP SLAs Enhanced Object Tracking (EOT)** | Yes | Yes | Yes | Yes | Yes | No | No |
| **MPLS/OAM RFC 4379** | Yes | No | No | No | No | No | No |
| **Support for 512 MVR Groups** | Yes | Yes | Yes | Yes | Yes | Yes | Yes |
| **DHCP Snooping Statistics** | Yes | Yes | Yes | Yes | Yes | Yes | Yes |
| **Embedded Event Manager** | Yes | Yes | No | Yes | Yes | No | No |
| **Multicast VRF Lite** | Yes | Yes | No | Yes | No | No | No |
| **VRF-Aware Services** | Yes | Yes | No | Yes | No | No | No |
| **Source-Specific Multicast** | Yes | Yes | No | Yes | No | No | No |
| **IGMP Proxy** | Yes | Yes | No | Yes | No | No | No |
| **Configuration Replace** | Yes | Yes | Yes | Yes | Yes | Yes | Yes |
| **LLDP-MED Location Support** | Yes | Yes | Yes | Yes | Yes | No | No |
| **Cisco MAC Notification MIB** | Yes | Yes | Yes | Yes | Yes | Yes | Yes |

In Table 1, Yes = Feature supported, No = Feature not supported.

All contents are Copyright © 2007 Cisco Systems, Inc. All rights reserved. This document is Cisco Public Information.

**Table 2.** Cisco Catalyst Metro Ethernet Switches Supported with Cisco IOS Software Release 12.2(40)SE

| Cisco Catalyst 3750 Metro Series Switches and Software Licenses | Cisco ME 3400 Series Switches and Software Images | Cisco ME 2400 Series Switches |
|---|---|---|
| • ME-C3750-24TE-M<br>• ME3750-IPSVC-LIC<br>• ME3750-IPSVC-LIC=<br>• ME3750-ADVIP-LIC<br>• ME3750-ADVIP-LIC=<br>• ME3750-UPGRD-LIC= | • ME-3400-24TS-A<br>• ME-3400-24TS-D<br>• ME-3400-24FS-A<br>• ME-3400G-12CS-A<br>• ME-3400G-12CS-D<br>• ME-3400G-2CS<br>• CD-ME3400-B2A=<br>• CD-ME3400-B2I=<br>• CD-ME3400-A2I=<br>• S340XA-12237SE<br>• S340XAT-12237SE<br>• S340XAK9-12237SE<br>• S340XAK9T-12237SE<br>• S340XB-12237SE<br>• S340XBT-12237SE<br>• S340XBK9-12237SE<br>• S340XBK9T-12237SE<br>• S340XI-12237SE<br>• S340XIT-12237SE<br>• S340XIK9-12237SE<br>• S340XIK9T-12237SE | • ME-2400-24TS-A<br>• ME-2400-24TS-D |

## Additional Resources

### Software Download

Software is available for download from the following links:

Cisco IOS Upgrade Planner: http://www.cisco.com/cgi-bin/Software/Iosplanner/Planner-tool/iosplanner.cgi?majorRel=.

Guest Level Access Planner: http://www.cisco.com/kobayashi/sw-center/index.shtml.

You must purchase the EMI/IP Services or Advanced IP Services software upgrade kit when upgrading a switch from SMI/IP Base to EMI/IP Services or Advanced IP Services software. Downloads of SMI/IP Base, EMI/IP Services, and Advanced IP Services files are monitored for adherence to this requirement.

Because of export restrictions on strong cryptography software, a separate image is required for the cryptographic features (SSH, SNMPv3, and Kerberos Protocol). These software images can be downloaded from the corresponding Triple Data Encryption Standard (3DES) area of the links provided in this section. Note that the Cisco Advanced IP Services license is available only in cryptographic format.

All contents are Copyright © 2007 Cisco Systems, Inc. All rights reserved. This document is Cisco Public Information.

### Product Information

Additional product information is available at the following URLs:

- Cisco Catalyst 3750 Metro Series Switches: http://www.cisco.com/go/catalyst3750metro
- Cisco ME 3400 Series Switches: http://www.cisco.com/en/US/products/ps6580/index.html
- Cisco ME 2400 Series Switches: http://www.cisco.com/en/US/products/ps6581/index.html
- Cisco Catalyst 3750 Metro and ME 3400/2400 series release notes:
  - http://www.cisco.com/univercd/cc/td/doc/product/lan/cat3750m/index.htm
  - http://www.cisco.com/univercd/cc/td/doc/product/metro/me3400/index.htm
  - http://www.cisco.com/univercd/cc/td/doc/product/metro/me2400/index.htm

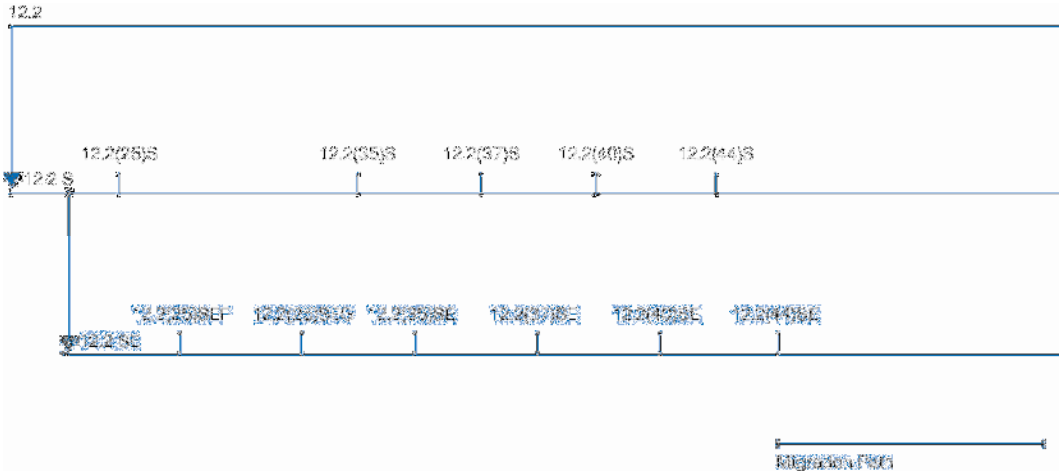
### Support

Cisco IOS Software Release 12.2(40)SE follows the standard Cisco support policy indicated at http://www.cisco.com/en/US/products/products_end-of-life_policy.html.

### Software Image Migration Guide

Figure 1 displays Cisco IOS Software Release 12.2(40)SE functions relative to the 12.2S and 12.2SE releases and identifies the recommended migration path.

**Figure 1.** Cisco IOS Software Release 12.2 Release Train




Americas Headquarters
Cisco Systems, Inc.
170 West Tasman Drive
San Jose, CA 95134-1706
USA
www.cisco.com
Tel: 408 526-4000
800 553-NETS (6387)
Fax: 408 527-0883

Asia Pacific Headquarters
Cisco Systems, Inc.
168 Robinson Road
#28-01 Capital Tower
Singapore 068912
www.cisco.com
Tel: +65 6317 7777
Fax: +65 6317 7799

Europe Headquarters
Cisco Systems International BV
Haarlerbergpark
Haarlerbergweg 13-19
1101 CH Amsterdam
The Netherlands
www-europe.cisco.com
Tel: +31 0 800 020 0791
Fax: +31 0 20 357 1100

Cisco has more than 200 offices worldwide. Addresses, phone numbers, and fax numbers are listed on the Cisco Website at www.cisco.com/go/offices.

CCVP, the Cisco logo, and the Cisco Square Bridge logo are trademarks of Cisco Systems, Inc.; Changing the Way We Work, Live, Play, and Learn is a service mark of Cisco Systems, Inc.; and Access Registrar, Aironet, BPX, Catalyst, CCDA, CCDP, CCIE, CCIP, CCNA, CCNP, CCSP, Cisco, the Cisco Certified Internetwork Expert logo, Cisco IOS, Cisco Press, Cisco Systems, Cisco Systems Capital, the Cisco Systems logo, Cisco Unity, Enterprise/Solver, EtherChannel, EtherFast, EtherSwitch, Fast Step, Follow Me Browsing, FormShare, GigaDrive, HomeLink, Internet Quotient, IOS, iPhone, IP/TV, iQ Expertise, the iQ logo, iQ Net Readiness Scorecard, iQuick Study, LightStream, Linksys, MeetingPlace, MGX, Networking Academy, Network Registrar, Packet, PIX, ProConnect, ScriptShare, SMARTnet, StackWise, The Fastest Way to Increase Your Internet Quotient, and TransPath are registered trademarks of Cisco Systems, Inc. and/or its affiliates in the United States and certain other countries.

All other trademarks mentioned in this document or Website are the property of their respective owners. The use of the word partner does not imply a partnership relationship between Cisco and any other company. (0705R)

Printed in USA C25-428554-00 09/07

All contents are Copyright © 2007 Cisco Systems, Inc. All rights reserved. This document is Cisco Public Information.