



Product Bulletin No. 3288

## New Cisco IOS Software Release 12.2(25)SEG for Cisco Catalyst 3750 Metro Series Switches, ME 3400 and 2400 Series Ethernet Access Switches, and Catalyst Express 500 Series Switches

**Cisco Systems® announces Cisco IOS® Software updates for Cisco® Catalyst® 3750 Metro Series Switches, ME 3400 and 2400 Series Ethernet Access Switches, and Catalyst Express 500 Series Switches. This new release furthers Cisco leadership in providing secure, reliable, and feature-rich Metro Ethernet switching solutions as well as localization on the Cisco Catalyst Express 500 Series.**

This product bulletin contains content and delivery information for Cisco IOS Software Release 12.2(25)SEG.

The following new features are available with Cisco IOS Software Release 12.2(25)SEG:

- Cisco Catalyst Express 500 localization: The device manager for the Cisco Catalyst Express 500 now comes in six additional languages: Japanese, Chinese (simplified), French, Italian, German, and Spanish. Individual languages may be selected when accessing the device manager during express setup.
- Ingress per-port per-virtual LAN (VLAN) policing: Provides ingress quality-of-service (QoS) policing on a per-VLAN basis on a trunk port.
- 802.1ag connectivity fault management Ethernet Operations, Administration and Maintenance (OAM). 802.1ag is the IEEE standard for Layer 2 ping, Layer 2 traceroute, and end-to-end connectivity check of Ethernet “circuit.”
- Ethernet Local Management Interface (ELMI): ELMI is a protocol between the service provider network and the customer equipment. It lets the customer equipment communicate its status and different service characteristics to the service provider network to ease troubleshooting and deployments.
- Configurable per-VLAN MAC learning: Allows disabling MAC address learning on a VLAN to limit the size of the MAC address table.
- Open Shortest Path First (OSPF) network types—point-to-point and nonbroadcast: Supports two additional OSPF network types: point-to-point and nonbroadcast.
- Layer 2 Protocol Tunneling (L2PT) on trunk port: Allows service providers to tunnel their enterprise customers’ Layer 2 protocols on trunk ports.
- Intermediate System-to-Intermediate System (IS-IS): IS-IS is an Open Systems Interconnection (OSI) link-state hierarchical routing protocol based on DECnet Phase V routing, whereby intermediate systems (routers) exchange routing information based on a single metric to determine network topology.
- Network Node Interface (NNI) on all ports on MetroIPAccess image: Currently, Cisco ME3400 Series Ethernet Access Switches have a limit of four NNIs. This provides a configurable option to allow the restriction to be removed on the MetroIPAccess image.
- IEEE 802.1S compliance: This enhancement brings the Cisco Multiservice Transport Protocol (MSTP) implementation up to the IEEE 802.1s standard, while retaining backward compatibility with the Cisco prestandard implementation.
- Non-stop forwarding (NSF) awareness: This feature enhances the Border Gateway Protocol (BGP), IS-IS, OSPF, and Enhanced Interior Gateway Routing Protocol (EIGRP) routing protocols so that they are “aware” of being connected to a router supporting Cisco NSF. It speeds convergence when the NSF router goes through a failover sequence.

- **Secure Copy Protocol (SCP):** SCP allows a user with appropriate authorization to copy any file that exists in the Cisco IOS Software file system to and from a switch by using the copy command. This protocol uses the Secure Shell (SSH) Protocol as a transport mechanism for file copy operations, so that software images, configuration files, and so on can be transferred to or from the switch over a secure channel. It also uses authentication, authorization, and accounting (AAA) to authorize a user's privilege level.
- **FlexLinks bidirectional fast convergence:** Improves the downstream convergence time for FlexLinks ports by triggering the upstream switch to flush its MAC address. The message is sent after FlexLinks failover. With the MAC address table flushed, the next packet downstream will be flooded out all ports rebuilding the MAC address table.
- **FlexLinks reemption:** Currently within FlexLinks, the switch port backup interface feature allows users to configure a Layer 2 interface to back up another Layer 2 interface. The two interfaces provide mutual backup to each other: that is, only one of the interfaces forwards traffic and is called the “active interface.” The other one is in backup mode, which is not forwarding traffic and is ready to take over in case the forwarding interface is down and is called the “backup interface.” When the active interface goes down, the backup interface takes over as active and starts forwarding traffic.

With this enhancement the customer can control the behavior of the “original” active interface when it comes back up:

- If preemption mode is off, this interface will go into backup mode.
- Configure preemption mode to always force a switchover to the “original” active.
- Configure preemption mode to switch over to higher available bandwidth interface.
- **CISCO-PORT-QOS-MIB:** Provides information about QoS statistics, which are currently available using the command-line interface (CLI) using Simple Network Management Protocol (SNMP).
- **CISCO-DHCP-SNOOPING-MIB:** Provides SNMP support for the Dynamic Host Configuration Protocol (DHCP) Snooping capability.
- **Link state tracking:** Link state tracking, also known as trunk failover, provides Layer 2 redundancy in the network when used in conjunction with server network interface card (NIC) adapter teaming.
- **DHCP option 82 configurable remote ID and circuit ID:** DHCP option 82 provides customers a great deal of flexibility when it comes to identifying individual users for various reasons—for example, location of attachmen, or controlling how many IP addresses a device or user is allowed from the DHCP server. This enhancement provides customers additional flexibility to determine what information is provided within the option 82 remote ID suboption and option 82 circuit ID suboption.
  - **Remote ID:** The customer now has the option to use a switch's configured hostname or specify an ASCII text string. Both are subject to a maximum length of 63 bytes. The default is to provide the MAC address of the switch.
  - **Circuit ID:** The customer now has the option to configure an ASCII text string up to 63 bytes and override the default circuit ID, which is vlan-module-port in binary format.
- **CNS Image Agent:** Enhances the existing CNS functionality implemented on the Cisco CNS 2100 Series Intelligence Engine with support of the new CNS Image Agent capability. CNS Image Agent works with the CNS Image Server and allows for the distribution of images to the switch.

Table 1 shows new features of Cisco IOS Software Release 12.2(25)SEG.

**Table 1.** Cisco IOS Software Release 12.2(25)SEG New Features

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	Cisco Catalyst Express 500
Cisco Catalyst CE500 localization	N	N	N	N	N	N	N	X
Ingress per-port per-VLAN policing	E	E	E	X	X	N	N	N
802.1ag connectivity fault management Ethernet OAM	X	X	X	X	X	N	N	N
ELMI	X	X	X	X	X	N	N	N
Configurable per-VLAN MAC learning	X	X	X	E	E	N	N	N
OSPF network types: point-to-point and nonbroadcast	E	E	E	X	N	N	N	N
L2TP on trunk port	E	E	E	X	X	N	N	N
IS-IS	E	E	E	X	N	N	N	N
NNI on all ports	–	–	–	X	N	N	N	N
IEEE 802.1S compliance	X	X	X	X	X	X	X	N
NSF awareness	X	X	X	X	N	N	N	N
SCP	X	X	X	X	X	X	X	N
FlexLinks bidirectional fast convergence	E	E	E	X	X	N	N	N
FlexLinks preemption	E	E	E	X	X	N	N	N
CISCO-PORT-QOS-MIB	X	X	X	X	X	X	X	N
CISCO-DHCP-SNOOPING-MIB	X	X	X	X	X	X	X	N
Link state tracking	E	E	E	X	X	N	N	N
DHCP option 82 configurable remote ID and circuit ID	E	E	E	X	X	X	X	N
CNS image agent	X	X	X	X	X	X	X	N

E = Feature exists for this platform.

N = No plans to add platform support for this feature.

X = Feature is new for this platform.

Table 2 lists the Cisco Catalyst switches supported with this software release.

**Table 2.** Cisco Catalyst Switches Supported with Cisco IOS Software Release 12.2(25)SEG

Cisco Catalyst 3750 Metro Series Switches and Software Licenses	Cisco ME 3400 Series Switches and Software Images	Cisco ME 2400 Series Switches	Cisco Catalyst Express 500 Series
ME-C3750-24TE-M ME3750-IPSV-LIC ME3750-IPSV-LIC= ME3750-ADVIP-LIC ME3750-ADVIP-LIC= ME3750-UPGRD-LIC=	ME-3400-24-TS-A ME-3400-24-TS-D CD-ME3400-B2A= CD-ME3400-B2I= CD-ME3400-A2I= S340XA-12225SEG S340XAT-12225SEG S340XAK9-12225SEG S340XAK9T-12225SEG S340XB-12225SEG S340XBT-12225SEG S340XBK9-12225SEG S340XBK9T-12225SEG S340XI-12225SEG S340XIT-12225SEG S340XIK9-12225SEG S340XIK9T-12225SEG	ME-2400-24-TS-A ME-2400-24-TS-D	WS-CE500-24TT WS-CE500-24LC WS-CE500-24PC WS-CE500G-12TC

## ADDITIONAL RESOURCES

### Software Download

Software images for products described in this bulleting can be downloaded from

<http://www.cisco.com/cgi-bin/Software/Iosplanner/Planner-tool/iosplanner.cgi?majorRel=12.2>

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.

### 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 Express 500 Series Switches: <http://www.cisco.com/go/ce500>

### Support

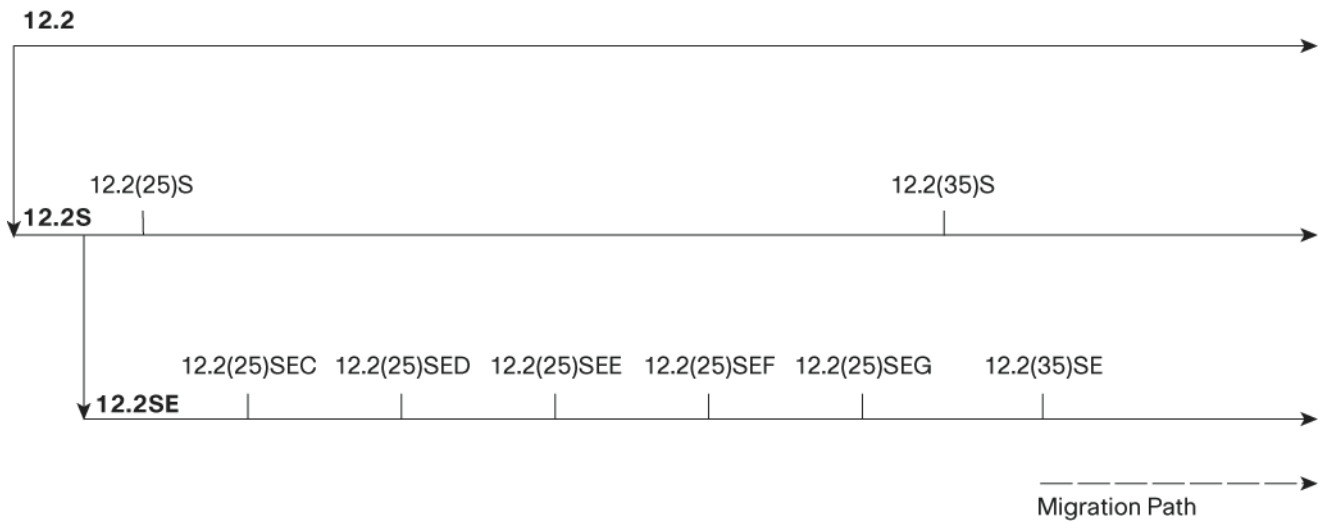
Cisco IOS Software Release 12.2(25)SEG follows the standard Cisco support policy indicated at

[http://www.cisco.com/en/US/products/products\\_end-of-life\\_policy.html](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(25)SEG 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 and 12.2(25)SEG Migration Path





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