

# New Cisco IOS Software Release 12.1(14)AX for Cisco Catalyst 3750 Metro Series Switches

## Introduction

Cisco Systems® announces Cisco IOS® Software for the Cisco® Catalyst® 3750 Metro Series switches. Cisco Catalyst 3750 Metro Series switches are new premier switches that bring greater intelligence the metro Ethernet, enabling the delivery of more differentiated metro Ethernet services.

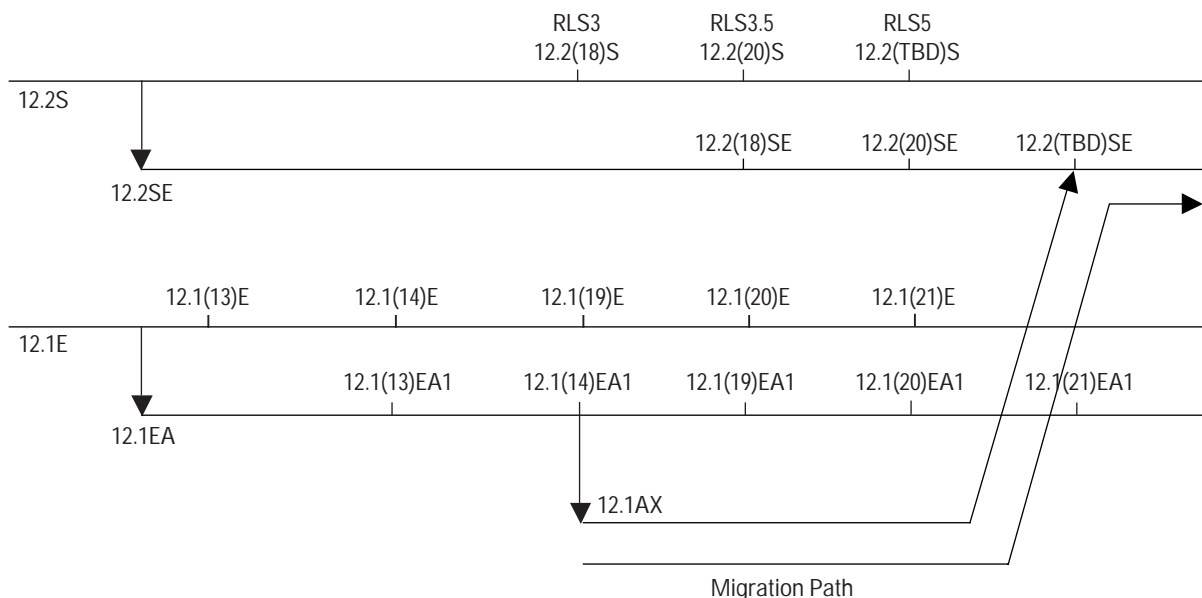
This product bulletin describes content and delivery information about Cisco IOS Software Release 12.1(14)AX. Release 12.1(14)AX is an Early Deployment release based on Cisco IOS Software Release 12.1(14)EA1 for the Cisco Catalyst 3750 Switch. Release 12.1(14)AX is the first release that provides support for Cisco Catalyst 3750 Metro Series switches. This release provides all the features of Cisco

IOS Software Release 12.1E up to and including release 12.1(14)EA1 for the Catalyst 3750 Series.

Cisco IOS Software Release 12.1(14)AX should not be used for the Cisco Catalyst 3750, 3550, 2970, 2950, 2950 LRE, 2940 series or the Cisco 2955 intelligent Ethernet switches.

The platform and features delivered with this Early Deployment release will be immediately incorporated into Cisco IOS Software Release 12.2S. Note that Cisco is not planning maintenance releases for this Early Deployment release. In addition, please note the migration path to the S release. Customers should prepare to upgrade using this migration path.

Figure 1  
Cisco IOS Software Release 12.1(14)AX and Migration Guide





## New Features in Cisco IOS Software Release 12.1(14)AX

Table 1 shows the features in Cisco IOS Software Release 12.1(14)AX.

Table 1 New Features in Cisco IOS Software Release 12.1(14)AX

New Feature	Catalyst 3750 Metro: IP Base Feature License	Catalyst 3750 Metro: IP Services Feature License	Catalyst 3750 Metro: Advance IP Feature License	Catalyst 3750 Metro: IP Services to Advance IP Upgrade License
Hierarchical Queuing Framework (HQF) <sup>1</sup>	X	X	X	–
Intelligent 802.1Q tunneling <sup>1</sup>	X	X	X	–
VLAN translation <sup>1</sup>	X	X	X	–
Multiprotocol Label Switching (MPLS) <sup>1</sup>	–	–	X	X
MPLS VPN <sup>1</sup>	–	–	X	X
Ethernet over Multiprotocol Label Switching (EoMPLS) <sup>1</sup>	–	–	X	X
Intermediate System-to-Intermediate System (IS-IS) Protocol	–	X	X	–
Custom Ethertype <sup>1</sup>	X	X	X	–
Layer 2 Protocol Tunneling (L2PT) enhancements	X	X	X	–

1. Supported on enhanced services ports only.

See the next section for documents that address details on these new features. Before deploying any Early Deployment software release in a production network, first use the software in a test network.



## Detailed Information

Table 2 Detailed Information

New Feature	Description
HQF	The hierarchical implementation of this framework helps service providers to manage their quality of service (QoS) at three levels: The physical interface level (ES ports), the VLAN level (VLANs within each port), and marked class level (classes with each VLAN) providing the most granularity and flexibility to deliver their service-level agreements (SLAs).
Intelligent 802.1Q tunneling	Cisco Catalyst 3750 Metro Series supports an intelligent enhanced version of 802.1Q tunneling QoS in which the enterprise customer's Layer 2 or Layer 3 QoS information can be mapped from the inner VLAN tag to the outer service provider VLAN tag.
VLAN translation	The VLAN feature translates a customer VLAN ID to a service provider VLAN ID as the packet enters the service provider network and as the packet exits the service provider network.
MPLS	MPLS works on a route-once, forward-many model. Unlike IP routing, where a decision must be made on the best of many possible ways to get to the destination with every packet, MPLS uses a label switching method. In this method, the paths are set up in advance and the switches and routers simply map the incoming label to the output label.
MPLS VPN	The MPLS VPN model is a true peer VPN model that enforces traffic separations by assigning unique VPN route forwarding tables (VRFs) to each customer's VPN. Thus, users in a specific VPN cannot see traffic outside their VPN. Traffic separation occurs without tunneling or encryption because it is built directly into the network.
EoMPLS	EoMPLS is a tunneling mechanism that allows the service provider to tunnel customer Layer 2 traffic through a Layer 3 MPLS network.
IS-IS	IS-IS Protocol is an intra-domain OSI dynamic routing protocol specified in International Organization for Standardization (ISO) 10589. It is a link state protocol that enables fast convergence with large scalability.
Custom Ethertype	Custom Ethertype enables the user to change the Ethertype value on a port to any value to support network devices that do not use the standard 0x8100 Ethertype field value on 802.1Q-tagged or 802.1p-tagged frames.
L2PT enhancements	L2PT on trunk port enhancement allows the L2PT to be enabled on trunk port, in addition to 802.1Q tunnel ports and access ports. Another new enhancement allows the customer protocol data units (PDUs) not be processed by the switch CPU but are forwarded like other data packets.

For more detailed information about the platforms and features being delivered in Cisco IOS Software Release 12.1(14)AX, see the following documents:

<http://www.cisco.com/univercd/cc/td/doc/product/lan/cat3750m/12114ax/index.htm>

### Support

Cisco IOS Software Release 12.1(14)AX follows the standard Cisco support policy as 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)



## Product Numbers

Table 3 Cisco IOS Software Release 12.1(14)AX Feature Sets and Feature Licenses

Platform	Software Feature Set
ME-C3750-24TE-MA	IP Base Feature license—Layer 2 switching, Hierarchical QoS, VLAN translation, Intelligent 802.1Q tunneling, RIP, and static routing Upgradable to IP Services or Advance IP Feature license
ME-C3750-24TE-MD	IP Base Feature license—Layer 2 switching, Hierarchical QoS, VLAN translation, Intelligent 802.1Q tunneling, RIP, and static routing Upgradable to IP Services or Advance IP Feature License
ME3750-IPSVC-LIC=	Cisco Catalyst 3750 Metro IP Services license (Enhanced Interior Gateway Routing Protocol [EIGRP], Open Shortest Path First [OSPF] Protocol, IS-IS, PBR, multi-VRF CE, HSRP, PIM, DVMRP tunneling, and IP Base features)
ME3750-ADVIP-LIC=	Cisco Catalyst 3750 Metro Advanced IP license (including Border Gateway Protocol [BGP], MPLS, MPLS VPN, EoMPLS, and IP Services and IP Base features)
ME3750-UPGRD-LIC=	Requires IP Services Feature license Cisco Catalyst 3750 Metro IP Services to Advance IP Upgrade license (including BGP, MPLS, MPLS VPN, and EoMPLS)

## Detailed Information

For more information about the Cisco Catalyst 3750 Metro Series, see the product information at:

<http://www.cisco.com/go/catalyst3750metro>

For more information about features delivered in Cisco IOS Software Release 12.1(14)AX and the platforms that support it, see the release notes at:

<http://www.cisco.com/univercd/cc/td/doc/product/lan/cat3750m/12114ax/index.htm>

<http://www.cisco.com/univercd/cc/td/doc/product/lan/cat3750/12119ea1/index.htm>

## Download Information

Customers can download Cisco IOS Software Release 12.1(14)AX from the Software Center on Cisco.com at:

12.1(14)AX LAN Switching CCO: non-crypto: <http://www.cisco.com/cgi-bin/tablebuild.pl/ME-cat3750>

crypto: <http://www.cisco.com/cgi-bin/tablebuild.pl/ME-cat3750-crypto>

12.1(14)AX IOS CCO link: <http://www.cisco.com/cgi-bin/Software/Iosplanner/Planner-tool/iosplanner.cgi>

Software download—Software available February 9, 2004:

Cisco Catalyst 3750 Metro Series—<http://www.cisco.com/cgi-bin/tablebuild.pl/ME-cat3750>

Because of export restrictions on strong cryptography, a separate image is required for the cryptographic features (Secure Shell [SSH] Protocol, Simple Network Management Protocol Version 3 [SNMPv3], and Kerberos Protocol). These software images can be downloaded from: <http://www.cisco.com/cgi-bin/tablebuild.pl/ME-cat3750-crypto>



Corporate 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: 408 526-4100

European Headquarters  
Cisco Systems International BV  
Haarlerbergpark  
Haarlerbergweg 13-19  
1101 CH Amsterdam  
The Netherlands  
www-europe.cisco.com  
Tel: 31 0 20 357 1000  
Fax: 31 0 20 357 1100

Americas Headquarters  
Cisco Systems, Inc.  
170 West Tasman Drive  
San Jose, CA 95134-1706  
USA  
www.cisco.com  
Tel: 408 526-7660  
Fax: 408 527-0883

Asia Pacific Headquarters  
Cisco Systems, Inc.  
Capital Tower  
168 Robinson Road  
#22-01 to #29-01  
Singapore 068912  
www.cisco.com  
Tel: +65 6317 7777  
Fax: +65 6317 7799

Cisco Systems has more than 200 offices in the following countries and regions. Addresses, phone numbers, and fax numbers are listed on the  
**Cisco Web site at [www.cisco.com/go/offices](http://www.cisco.com/go/offices)**

Argentina • Australia • Austria • Belgium • Brazil • Bulgaria • Canada • Chile • China PRC • Colombia • Costa Rica • Croatia  
Czech Republic • Denmark • Dubai, UAE • Finland • France • Germany • Greece • Hong Kong SAR • Hungary • India • Indonesia • Ireland  
Israel • Italy • Japan • Korea • Luxembourg • Malaysia • Mexico • The Netherlands • New Zealand • Norway • Peru • Philippines • Poland  
Portugal • Puerto Rico • Romania • Russia • Saudi Arabia • Scotland • Singapore • Slovakia • Slovenia • South Africa • Spain • Sweden  
Switzerland • Taiwan • Thailand • Turkey • Ukraine • United Kingdom • United States • Venezuela • Vietnam • Zimbabwe

All contents are Copyright © 1992–2004 Cisco Systems, Inc. All rights reserved. Catalyst, Cisco, Cisco Systems, the Cisco Systems logo, and Cisco IOS are registered trademarks of Cisco Systems, Inc. and/or its affiliates in the U.S. and certain other countries.

All other trademarks mentioned in this document or Web site 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.  
(0304R) ETMG 203190—JR 02.04