Product Bulletin No. 364873

Cisco IOS Software Release 12.2(31)SGA for Cisco Catalyst 4900 Series Switches

This product bulletin describes the hardware and software features supported by Cisco IOS® Software Release 12.2(31)SGA for the Cisco® Catalyst® 4900 and Cisco ME-4900 Series Switches.

KEY RELEASE MESSAGE

A new Cisco 4900 fixed configuration platform—Cisco ME-4924-10GE is introduced in this release for Broadband Aggregation. The ME-4924-10GE has 28 Gigabit Ethernet (Small Form-Factor Pluggable [SFP]) and two 10 Gigabit Ethernet (X2) wire-rate ports. This new switch is 1 RU and features 1+1 redundant internal AC or DC power supplies and a hot swappable fan tray. It will run the same images as the Catalyst 4900 Series Switch; see Table 2 for details.

NEW SOFTWARE FEATURES

Trunk Port Security over EtherChannel

Trunk port security over EtherChannel® is an extension of trunk port security where redundant links from a single station are connected to a Catalyst 4500/4900 using EtherChannel. The feature enables customers to block access to the Catalyst 4500/4900 by MAC addresses other than the ones specified (or learned) on EtherChannel trunk interfaces. It preserves all the advantages of port security and EtherChannel, including redundancy and load sharing. This feature is typically deployed in data center environments with dual network interface card (NIC) servers connecting to a Catalyst 4500/4900 using EtherChannel.

Match CoS for Non-IPv4 Traffic

The match class of service (CoS) feature helps a service provider to classify packets based on CoS values while preserving its customers' packet differentiated services code point (DSCP) values inside the service provider network. The match Cos for non-IPv4 feature provides uniform class-level quality-of-service (QoS) semantics irrespective of traffic type on a dot1q-tunnel and regular trunk ports. This is typically deployed in a Q-in-Q environment, where double-tagged IPv4 packets are forwarded as non-IPV4 packets.

L2PT over Trunk

Layer 2 Protocol Tunneling (L2PT) allows customer switches to participate in L2 protocols across a service provider network. This is achieved by encapsulating Layer 2 protocol packets, such as Cisco Discovery Protocol (CDP), Spanning Tree Protocol (STP), or VLAN Trunking Protocol (VTP), before sending them across the service provider network. As a result, the customer premises equipment (CPE) switches on either side of the service provider network can continue to process the L2 protocol control packets as if they were being received from a directly connected neighboring switch. The existing implementation allowed L2PT to be used only on tunnel ports. This feature will extend the functionality so that L2PT will be available on trunk ports configured with dot1q encapsulation.

CoS Mutation

The CoS mutation feature enables Service Providers to provide differentiated services for video, voice, and data within the service provider network. In a typical L2 VPN offered by service providers, double tagged Q-in-Q traffic is forwarded with the outer tag representing the service provider's VLAN and the inner tag representing the customer's VLAN. Service providers could either retain the CoS values from the customer tag in the service provider tag or change the CoS value of the outer service provider tag based on inner customer QoS matching and classification. As a result, differentiated levels of service can be provided within the service provider network.

IP Unnumbered for SVI

IP unnumbered interface configuration enables IP processing on an interface without assigning it an explicit IP address. IP Unnumbered for SVI extends the current support for point-to-point links to switched virtual interfaces (SVIs). This feature is crucial in large service provider environments where SVIs are used to terminate L2 traffic from the CPE. This feature helps to conserve IP addresses space and simplify configuration and address management.

CISCO IOS SOFTWARE PACKAGING FOR THE CISCO CATALYST 4900 AND ME 4900 SERIES

A new Cisco IOS Software package for the Cisco Catalyst 4900 Series Switches was introduced in Cisco IOS Software Release 12.2(25)SG. It is a new foundation for features and functionality and provides consistency across all Cisco Catalyst switches. The new Cisco IOS Software release train is designated as 12.2SG.

Prior Cisco IOS Software images for the Cisco Catalyst 4900 Series, formally known as "Basic Layer 3" and "Enhanced Layer 3" images, now map to "IP Base" and "Enterprise Services," respectively. Border Gateway Protocol (BGP) is now included in the "Enterprise Services" image. Unless otherwise specified, all currently shipping Cisco Catalyst 4900 software features based on Cisco IOS Software are supported in the IP Base image of Release 12.2(31)SGA, with a few exceptions:

The IP Base image does not support any enhanced routing related features (including BGP, EIGRP, OSPF, Intermediate System–to–Intermediate System (IS-IS) Protocol, Internetwork Packet Exchange [IPX] Protocol, AppleTalk, VRF-lite and PBR)

The IP Base image supports EIGRP-Stub for limited routing on Cisco Catalyst 4900 and ME 4900 Series Switches. For more information about EIGRP-Stub functionality, go to
http://www.cisco.com/en/US/technologies/tk648/tk365/technologies_white_paper0900aecd8023df6f.shtml.

The Enterprise Services image supports all Cisco Catalyst 4900 Series software features based on Cisco IOS Software, including enhanced routing. BGP capability is included in the Enterprises Services package. Table 1 provides a more detailed description of the feature differences between the IP Base and Enterprise Services (ES) images as they relate to the Cisco Catalyst 4900 Series Switches.

Table 1. Feature Comparison for Cisco IOS Software Release 12.2(31)SGA IP Base and Enterprise Services

Feature	IP Base Image	Enterprise Services Image
Network Admission Control (NAC) v2.0	Yes	Yes
RIP and Static Route	Yes	Yes
NSF-aware	No	Yes
EIGRP	No	Yes
EIGRP-Stub	Yes	Yes
NSF-aware EIGRP-stub	Yes	Yes
OSPF/IS-IS	No	Yes
BGP	No	Yes
VRF-lite	No	Yes
AppleTalk	No	Yes
IPX	No	Yes
PBR	No	Yes

Cisco Catalyst 4900 IOS Software Migration Guide

Figure 1 displays the Cisco IOS Software Release 12.2(31)SG plan relative to the 12.2S release train and identifies the recommended migration path. Note that 12.2(31)SGA will be the base release for a new maintenance train: the 12.2(31)SGA maintenance train. Moving forward, the Catalyst 4500 will have two active maintenance trains: 12.2(25)EWA and 12.2(31)SGA.

Figure 1. Cisco IOS Software Release Plan for the Cisco Catalyst 4900 Series
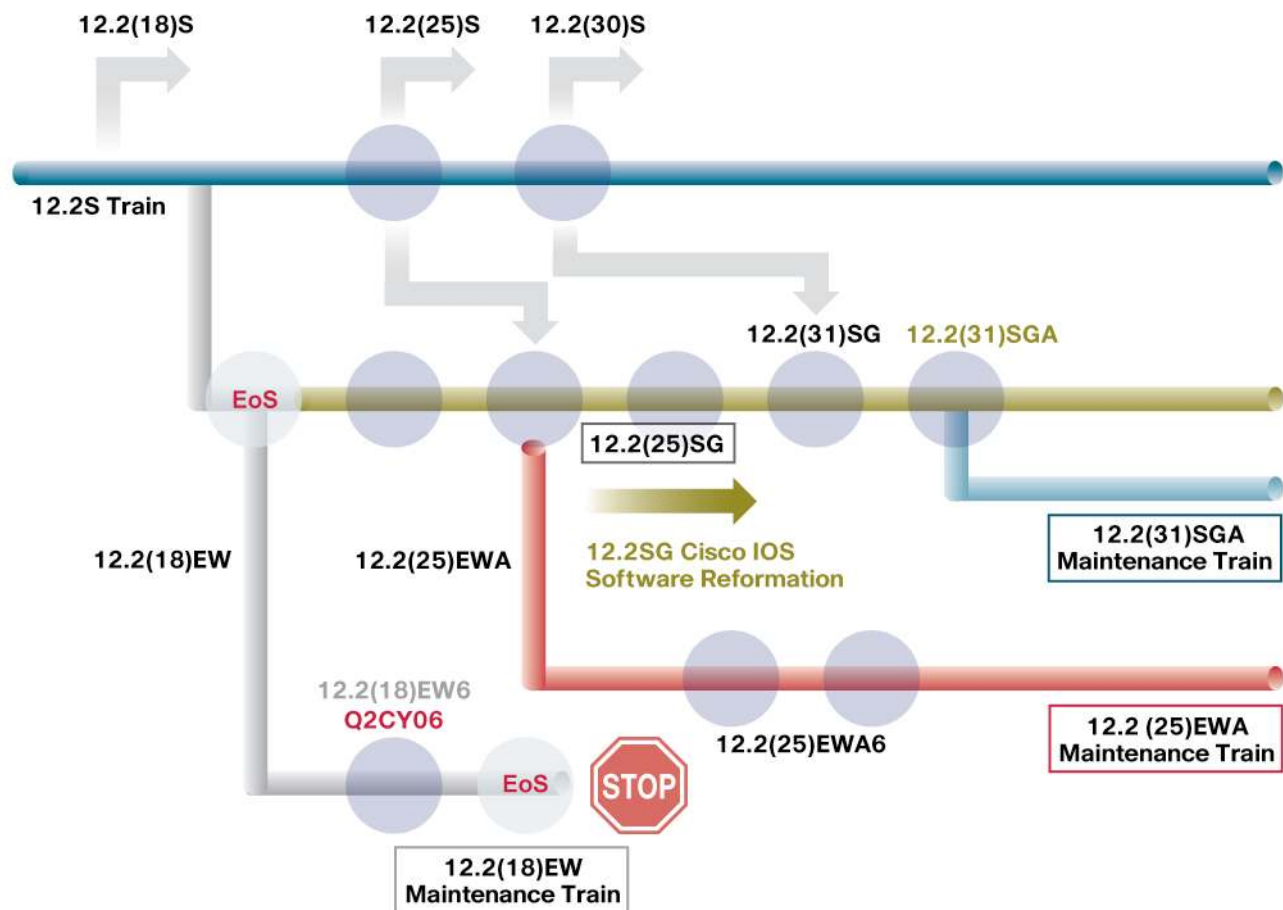
* EoS: end of sale.

Summary of migration plan:

- Customers requiring the latest Cisco Catalyst 4500 Series hardware and software features should migrate to Cisco IOS Software Release 12.2(31)SGA.
- Cisco IOS Software Release 12.2(25)EWA will continue offering maintenance releases. The latest release from the 12.2(25)EWA maintenance train was 12.2(25)EWA6.
- Cisco IOS Software Release 12.2(18)EW6 has been reached its end of sale. 12.2(18)EW was the last image from the 12.2(18) maintenance train.

SUPPORT

Support for Cisco IOS Software Release 12.2(31)SGA follows the standard Cisco Systems® support policy, available at
http://www.cisco.com/en/US/products/products_end-of-life_policy.html

For more information about the Cisco Catalyst 4900 Series, visit http://www.cisco.com/en/US/products/ps6021/index.html

ORDERING INFORMATION

Tables 2 and 3 provide product numbers and ordering information for Cisco IOS Software Release 12.2(31)SGA and supporting hardware.

Table 2.   Cisco IOS Software Release 12.2(31)SGA Product Numbers and Images

Product Number	Description	Image
S49IPB-12231SGA(=)	Cisco IOS Software for Cisco Catalyst 4900 Series Switches (IP Base image)	cat4500-ipbase-mz
S49IPBK9-12231SGA(=)	Cisco IOS Software for Cisco Catalyst 4900 Series Switches (IP Base image with Triple Data Encryption Standard [3DES])	cat4500-ipbasek9-mz
S49ES-12231SGA(=)	Cisco IOS Software for Cisco Catalyst 4900 Series Switches (Enterprise Services image with BGP support)	cat4500-entservices-mz
S49ESK9-12231SGA(=)	Cisco IOS Software for Cisco Catalyst 4900 Series Switches (Enterprise Services image with 3DES and BGP support)	cat4500-entservicesk9-mz

Table 3.   Cisco IOS Software Release 12.2(31)SGA Hardware Support

Product Number	Description
WS-C4948	Cisco Catalyst 4948 Switch, optional software image, optional power supplies, fan tray
WS-C4948-S	Cisco Catalyst 4948 Switch, IP Base image, one AC power supply, fan tray
WS-C4948-E	Cisco Catalyst 4948 Switch, Enterprise Services image, one AC power supply, fan tray
WS-C4948-10GE	Cisco Catalyst 4948-10GE Switch, optional software image, optional power supplies, fan tray
WS-C4948-10GE-S	Cisco Catalyst 4948-10GE Switch, IP Base image, one AC power supply, fan tray
WS-C4948-10GE-E	Cisco Catalyst 4948-10GE Switch, Enterprise Services image, one AC power supply, fan tray
ME-4924-10GE	ME 4924 Switch—optional software image, optional power supplies, fan tray

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