



PRODUCT BULLETIN NO. 2589

## CISCO IOS SOFTWARE RELEASE 12.2(20)EWA FOR THE CISCO CATALYST 4500 SUPERVISOR ENGINES II-PLUS, II-PLUS-TS, IV AND V

This product bulletin lists the hardware and software features that are supported in Cisco IOS® Software Release 12.2(20)EWA for the Cisco® Catalyst® 4500 Series Supervisor Engine II-Plus, Cisco Catalyst 4503 Supervisor Engine II-Plus-TS, Cisco Catalyst 4500 Supervisor Engine IV, and Cisco Catalyst 4500 Supervisor Engine V.

Cisco IOS Software Release 12.2(20)EWA is not supported on the Cisco Catalyst 4000 Supervisor Engine I or II or on Cisco routing platforms.

### CISCO IOS SOFTWARE RELEASE 12.2(20)EWA SUPPORT

#### New Hardware Features

##### Cisco Catalyst 4503 Supervisor Engine II-Plus-TS

The Cisco Catalyst 4503 Supervisor Engine II-Plus-TS delivers enterprise-class reliability and security for the medium-sized business. It provides twelve 10/100/1000 ports with Power over Ethernet (PoE) and eight Small Form-Factor Pluggable (SFP) ports for uplinks or server aggregation. It works in the Catalyst 4503 chassis to deliver up to 116 ports of any combination of 10/100 and 10/100/1000 data access as well as 10/100 and 10/100/1000 PoE access.

##### Cisco Catalyst 4500 Series 6-Port Alternatively Wired 10/100/1000 PoE or SFP Line Card (WS-X4506-GB-T)

The Cisco Catalyst 4500 Series 6-port nonblocking line card provides the flexibility of two connection options per port: 10/100/1000 (IEEE 802.3af and Cisco prestandard PoE) RJ-45 or 1000BASE-X SFP. This line card provides the ability to mix and match interface types without incurring extra costs.

#### New Software Features

- Stateful Switchover (SSO)
- Non-Stop Forwarding Awareness (NSF-aware)
- 802.1x with Voice VLAN ID (VVID)
- Forced 10/100 Auto Negotiation

#### Stateful Switchover

Stateful switchover (SSO) offers zero interruption to Layer 2 sessions in a redundant supervisor engine configuration on Cisco Catalyst 4507R and Cisco Catalyst 4510R chassis. Stateful switchover synchronizes changes in switch configuration and Layer 2 protocol/service state information from the active to the hot standby supervisor engine.

When a failure on the active supervisor engine is detected or if a manual graceful switchover is performed, the hot standby supervisor engine automatically takes control and becomes the active supervisor engine. Subsecond switchover is achieved through stateful switchover without causing link flaps.

Stateful switchover dramatically increases system and network availability while maintaining continuous network access and services. Voice-over-IP calls do not drop, video multicast does not freeze, and user access security does not disappear. Stateful switchover is typically deployed in the network access layer to enhance system availability with a single chassis.

### Non-Stop Forwarding Awareness

The Non-Stop Forwarding Awareness (NSF-aware) feature helps NSF-capable switches and routers perform nonstop packet forwarding during their switchovers. It enables neighboring NSF-capable devices to maintain the integrity and accuracy of Layer 3 routing protocol databases. Supported routing protocols include Open Shortest Path First (OSPF), Intermediate System-to-Intermediate System (IS-IS), Enhanced Interior Gateway Routing Protocol (EIGRP), and Border Gateway Protocol (BGP). NSF-aware is fully integrated with Cisco IOS Software Release 12.2(20)EWA and is enabled by default. It requires no configuration for EIGRP/OSPF/IS-IS protocols. It is compatible with non-NSF-aware and non-NSF-capable neighbors.

### 802.1x with Voice VLAN ID

802.1x with Voice VLAN ID (VVID) allows an IP phone without 802.1x supplicant capability to operate through an 802.1x port. When a Cisco IP phone is recognized through Cisco Discovery Protocol, the switch allows phone traffic on the auxiliary VLAN without 802.1x authentication. If a workstation is connected to the Cisco IP phone, standard 802.1x authentication is performed for the workstation. 802.1x VVID enables uniform 802.1x switch port configuration, with or without IP phones.

### Forced 10/100 Autonegotiation

The forced 10/100 autonegotiation feature provides an option to limit interface speed autonegotiation to 100 Mbps or less on a 10/100/1000BASE-T port. It offers investment protection for Cisco Catalyst 4500 Series 10/100/1000 and 10/100/1000 PoE modules. The wire speed 1000 Mbps can be enabled or disabled through switch port configuration changes. Customers can deploy 10/100/1000 modules today and selectively enable 1000-Mbps wire speed in the network for design, rollout, or other business reasons.

### SUPPORT

Cisco IOS Software Release 12.2(20)EWA follows the standard Cisco Systems® support policy, available 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)

For more information about the Cisco Catalyst 4500 Series, visit: <http://www.cisco.com/univercd/cc/td/doc/product/lan/cat4000/index.htm>

### MIGRATION PATHS

Cisco IOS Software Release 12.2EW train offers the latest features for the Cisco Catalyst 4500 Series. Customers with Cisco Catalyst 4500 Series switches that need the latest hardware support and software features should migrate to Cisco IOS Software Release 12.2(20)EWA.

Cisco IOS Software Release 12.1(19)E1 and all subsequent 12.1E maintenance releases have only the feature set based on Cisco IOS Software Release 12.1(12c)EW1 for the Cisco Catalyst 4500 Series. Customers with Cisco Catalyst 4500 Series switches who require the stability of a general deployment release could stay with Cisco IOS Software Release 12.1E train.

Cisco IOS Software Release 12.2(18)EW1 and all subsequent 12.2(18)EW maintenance releases have only the feature set based on Cisco IOS Software Release 12.2(18)EW for the Cisco Catalyst 4500 Series. Customers with Cisco Catalyst 4500 Series switches who require the stability of a bug fix maintenance release could stay with the Cisco IOS Software Release 12.2(18)EW maintenance releases.

### PRODUCT NUMBERS

Tables 1 and 2 provide product numbers and ordering information for Cisco IOS Software Release 12.2(20)EWA and for supporting hardware.

**Table 1.** Cisco IOS Software Release 12.2(20)EWA Feature Sets, Images, and Software Licenses

Product Number	Description	Image
S4KL3-12220EWA	Cisco IOS Software for the Cisco Catalyst 4500 Series Supervisor Engine II-Plus, II-Plus-TS and, Cisco Catalyst 4500 Supervisor Engine IV and V Basic Layer 3 and voice software image, including RIP versions 1 and 2, static routes, AppleTalk, and Internetwork Packet Exchange (IPX) software routing	cat4000-i9s-mz.122-20.EWA
S4KL3E-12220EWA	Cisco IOS Software for the Cisco Catalyst 4500 Supervisor Engine IV and V Enhanced Layer 3 and voice software image, including OSPF, IS-IS, and EIGRP	cat4000-i5s-mz.122-20.EWA
S4KL3K9-12220EWA	Cisco IOS Software for the Cisco Catalyst 4500 Series Supervisor Engine II-Plus, II-Plus-TS and Catalyst 4500 Supervisor Engine IV and V with Triple Data Encryption Standard (3DES) strong encryption Basic Layer 3 and voice software image, including Secure Shell (SSH) Protocol versions 1 and 2, RIP v1/v2, static routes, AppleTalk, and IPX software routing	cat4000-i9k91s-mz.122-20.EWA
S4KL3EK9-12220EWA	Cisco IOS Software for the Cisco Catalyst 4500 Supervisor Engine IV and V, with 3DES strong encryption Enhanced Layer 3 and voice software image, including OSPF, IS-IS, and EIGRP	cat4000-i5k91s-mz.122-20.EWA
FR-IRC4	Cisco IOS Software for the Cisco Catalyst 4500 Supervisor Engine IV and V Interdomain routing feature license, including Border Gateway Protocol v4 (BGP4)	N/A

**Table 2.** Cisco IOS Software Release 12.2(20)EWA Hardware Support

Product Number	Description
WS-X4013+	Cisco Catalyst 4500 Series Supervisor Engine II-Plus
WS-X4013+2	Cisco Catalyst 4500 Series Redundant Supervisor Engine II-Plus
WS-X4013+TS	Cisco Catalyst 4500 Series Supervisor Engine II-Plus-TS
WS-X4014	Cisco Catalyst 4500 Supervisor Engine III
WS-X4515	Cisco Catalyst 4500 Supervisor Engine IV
WS-X4515/2	Cisco Catalyst 4500 Redundant Supervisor Engine IV
WS-X4516	Cisco Catalyst 4500 Supervisor Engine V
WS-X4516/2	Cisco Catalyst 4500 Redundant Supervisor Engine V
WS-C4503	Cisco Catalyst 4503 chassis
WS-C4506	Cisco Catalyst 4506 chassis
WS-C4507R	Cisco Catalyst 4507R chassis
WS-C4510R	Cisco Catalyst 4510R chassis
WS-C4006-S3	Cisco Catalyst 4006 chassis with Supervisor Engine III and two AC power supplies
WS-C4006-S3-DC	Cisco Catalyst 4006 chassis with Supervisor Engine III and two DC power supplies

Product Number	Description
WS-C4006-S4	Cisco Catalyst 4006 chassis with Supervisor Engine IV and two AC power supplies
WS-C4006-S4-DC	Cisco Catalyst 4006 chassis with Supervisor Engine IV and two DC power supplies
WS-C4006-S2+	Cisco Catalyst 4006 chassis with Supervisor Engine II-Plus and two AC power supplies
WS-C4006-S2+-DC	Cisco Catalyst 4006 chassis with Supervisor Engine II-Plus and two DC power supplies
WS-X4124-FX-MT (=)	Cisco Catalyst 4500 Series 24-port Fast Ethernet switching module, 100BASE-FX multimode fiber (MMF) (MT-RJ)
WS-X4124-RJ45 (=)	Cisco Catalyst 4500 Series 24-port 10/100 module (RJ-45)
WS-X4148-FX-MT (=)	Cisco Catalyst 4500 Series 48-port Fast Ethernet switching module, 100BASE-FX MMF (MT-RJ)
WS-X4148-FE-LX-MT(=)	Cisco Catalyst 4500 Series 48-port Fast Ethernet switching module, 100BASE-LX10 single-mode fiber (SMF) (MT-RJ)
WS-X4148-RJ (=)	Cisco Catalyst 4500 Series 48-port 10/100 module (RJ-45)
WS-X4148-RJ21 (=)	Cisco Catalyst 4500 Series 48-port 10/100 module, telco (4xRJ-21)
WS-X4148-RJ45V (=)	Cisco Catalyst 4500 Series 48-port inline power 10/100 module (RJ-45)
WS-X4148-FE-BD-LC(=)	Cisco Catalyst 4500 Series 48-port 100BASE-BX10-D line card
WS-X4224-RJ45V (=)	Cisco Catalyst 4500 Series 24-port PoE 10/100 module (RJ-45)
WS-X4232-GB-RJ (=)	Cisco Catalyst 4500 Series 32-port 10/100 (RJ-45), 2 Gigabit Ethernet gigabit interface converter (GBIC) module
WS-X4232-RJ-XX (=)	Cisco Catalyst 4500 Series 32-port 10/100 (RJ-45) with modular uplink slot
WS-X4248-RJ45V (=)	Cisco Catalyst 4500 Series 48-port PoE 10/100 (RJ-45)
WS-X4248-RJ21V (=)	Cisco Catalyst 4500 Series 48-port PoE 10/100, telco (4xRJ-21)
WS-X4424-GB-RJ45 (=)	Cisco Catalyst 4500 Series 24-port 10/100/1000 module (RJ-45)
WS-X4306-GB (=)	Cisco Catalyst 4500 Series 6-port Gigabit Ethernet module (GBIC)
WS-X4302-GB (=)	Cisco Catalyst 4500 Series 2-port Gigabit Ethernet line card (GBIC)
WS-X4412-2GB-T (=)	Cisco Catalyst 4500 Series 12-port Gigabit Ethernet module, 1000BASE-T (RJ-45) with two 1000BASE-X GBICs
WS-X4418-GB (=)	Cisco Catalyst 4500 Series 18-port Gigabit Ethernet module, server switching (GBIC)
WS-X4448-GB-LX (=)	Cisco Catalyst 4500 Series 48-port 1000BASE-LX (SFP)
WS-X4448-GB-RJ45 (=)	Cisco Catalyst 4500 Series 48-port 10/100/1000 module (RJ-45)
WS-X4448-GB-SFP (=)	Cisco Catalyst 4500 Series 48-port 1000BASE-X (SFP)
WS-X4506-GB-T (=)	Cisco Catalyst 4500 Series 6-Port Alternatively Wired 10/100/1000 PoE or 1000BASE-X SFP
WS-X4524-GB-RJ45V (=)	Cisco Catalyst 4500 Series 24-port PoE 10/100/1000 line card (RJ-45)
WS-X4548-GB-RJ45 (=)	Cisco Catalyst 4500 Series 48-port 10/100/1000 line card (RJ-45)
WS-X4548-GB-RJ45V (=)	Cisco Catalyst 4500 Series 48-port PoE 10/100/1000 line card (RJ-45)
WS-U4504-FX-MT (=)	Cisco Catalyst 4500 Series 4-port uplink daughter card 100BASE-FX (MT-RJ)
WS-G5483=	1000BASE-T GBIC
WS-G5484 (=)	1000BASE-SX short-wavelength GBIC (multimode only)
WS-G5486 (=)	1000BASE-LX/LH long-haul GBIC (single-mode or multimode)
WS-G5487 (=)	1000BASE-ZX extended-reach GBIC (single-mode)

Product Number	Description
MEM-C4K-FLD64M (=)	Cisco Catalyst 4500 Series Compact Flash, 64-MB option
MEM-C4K-FLD128M (=)	Cisco Catalyst 4500 Series Compact Flash, 128-MB option
WS-X4095-PEM (=)	Cisco Catalyst 4000 Series DC power entry module (PEM)
PWR-C45-2800ACV	2800W AC power supply for Cisco Catalyst 4503, 4506, and 4507R chassis
PWR-C45-1400DC-P	Cisco Catalyst 4500 Series 1400W DC power supply with integrated PEM
PWR-C45-1400AC	Cisco Catalyst 4500 Series 1400W AC power supply (data only)
PWR-C45-1300ACV	1300W AC power supply for Cisco Catalyst 4503, 4506, and 4507R chassis
PWR-C45-1000AC	1000W AC power supply for Cisco Catalyst 4503, 4506, and 4507R chassis (data only)
CWDM-GBIC-xxxx	Cisco 1000BASE coarse wavelength-division multiplexing (CWDM) xxxx nm GBIC, where xxxx is the number 1470, 1490, 1510, 1530, 1550, 1570, 1590, or 1610
DWDM-GBIC-xx.yy	Cisco 1000BASE dense wavelength-division multiplexing (DWDM) ITU 100-GHz grid 15xx.yy nm GBIC
WDM-GBIC-REC=	Cisco receive-only 1000BASE-WDM GBIC
WS-F4531 (=)	NetFlow Services Card for Cisco Catalyst 4500 Supervisor Engine IV and V

Cisco IOS Software Release 12.2(20)EWA is derived from Cisco IOS Software 12.2S.



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