

# Cisco IOS Software Release 12.1(8a)E and 12.1(8a)E3 for Cisco Catalyst 6500 Series

Use this publication if you have the Cisco IOS® Software for the Catalyst 6500 Series switching product, which runs Cisco IOS Software Release 12.1(8a)E or 12.1(8a)E3 on the Supervisor engine.

## New Hardware Features in Release 12.1(8a)E3

Hardware Features	Hardware/Software Description
<b>Packet-over-SONET (POS) Optical Services Modules</b>	Parallel Express Forwarding (PXF) IP service processors provide high-performance packet forwarding and a wide range of IP services for traffic shaping, security, accounting, and priority queuing. These modules are supported with Supervisor Engine 2 with Multiservice Feature Card 2 (MSFC2) only.
<b>8-port and 16-port OC-3c / STM-1c POS</b> <b>OSM-8OC3-POS-MM</b> <b>OSM-8OC3-POS-SI</b> <b>OSM-8OC3-POS-SL</b> <b>OSM-16OC3-POS-MM</b> <b>OSM-16OC3-POS-SI</b> <b>OSM-16OC3-POS-SL</b>	Eight-port and 16-port OC-3c or STM-1c Packet over SONET module with multimode (MM) and single-mode intermediate reach (SI) or long reach (SL) connectors
<b>2-port and 4-port OC-12c / STM-4c POS</b> <b>OSM-2OC12-POS-MM</b> <b>OSM-2OC12-POS-SI</b> <b>OSM-2OC12-POS-SL</b> <b>OSM-4OC12-POS-MM</b> <b>OSM-4OC12-POS-SI</b> <b>OSM-4OC12-POS-SL</b>	Two-port and 4-port OC-12c or STM-4c Packet over SONET module with MM, SI or SL connectors
<b>1-port OC-48c / STM-16c POS</b> <b>OSM-1OC48-POS-MM</b> <b>OSM-1OC48-POS-SI</b> <b>OSM-1OC48-POS-SL</b>	One port OC-48c or STM-16c POS module with MM, SI or SL connectors



## New Hardware Features in Release 12.1(8a)E

Hardware Features	Hardware/Software Description
Catalyst 6500 13-Slot Chassis WS-C6513	Catalyst 6513, the new 13-slot chassis in the Catalyst 6500 Series, delivers the industry's most scalable performance and richest set of intelligent network services. With up to 576 10/100 ports and 194 Gigabit ports per chassis, the Catalyst 6513 provides 1152 10/100 and 388 Gigabit ports per 7-foot rack.
Switch Fabric Module 2 WS-X6500-SFM2	The Switch Fabric Module 2 provides a framework for delivering the 256-Gbps high-bandwidth architecture for the Catalyst 6500 Series, including the new 6513 chassis. In combination with distributed forward switching line cards, a Switch Fabric Module 2-enabled system can provide up to 24 Mpps of local forwarding per individual line card.
Catalyst 6500 Content Switching Module on Supervisor Engine 2 WS-X6066-SLB-APC	The Content Switching Module is a high-performance Layer 4 and Layer 7 Server Load Balancing module for the Catalyst 6500 system. It allows full regular expression pattern matching to define URLs and cookies. It always operates in directed mode (server network address translation [NAT]), with optional client NAT. It supports many different server load balancing algorithms: Round Robin, Weighted Round Robin, Least Active Connections, Weighted Least Active Connections, client IP hash (with subnet), and connection watermarks. Client connections can be sent to the same real server by several methods: source IP, source IP subnet, cookie, SSL ID, or HTTP Redirect. TCP and UDP protocols are supported. This software release supports the module on both Supervisor Engine 2 and Supervisor Engine 1.
WS-X6182-2PA on Supervisor Engine 2	The FlexWAN module is supported on Supervisor Engine 2 with this release. With this addition, FlexWAN is now supported on both supervisor engines.

**Note:** If you are running Catalyst software on the Supervisor Engine and Cisco IOS Software only on the MSFC, refer to the following release notes for MSFC publication: <http://www.cisco.com/univercd/cc/td/doc/product/lan/cat6000/relnotes/index.htm>

### Other Hardware Supported

The system supports all cards previously supported by the Cisco IOS Software on the Catalyst 6500 Series Supervisor Engine 1A and Supervisor Engine 2. All LAN line cards are now supported on both Supervisor Engine 1A and Supervisor Engine 2 with the exception of WS-X6816-GBIC and WS-F6K-DFC, which are only supported on Supervisor Engine 2.

## New Software Features in Release 12.1(8a)E3

Software Feature	Description
None	



## New Software Features in Release 12.1(8a)E

Software Feature	Description
<b>Switched Port Analyzer (SPAN) on Supervisor Engine 2</b>	SPAN enables a user to analyze network traffic passing through the ports in a switched network. Network traffic passing through one or more source ports, or through all ports in one or more source VLANs can be monitored by SPAN. SPAN does not affect switching of network traffic for any of the source ports, because a copy of the packets received or transmitted by the source ports is sent to the destination port for that SPAN session. With this release, SPAN is now supported on both supervisor engine configurations.
<b>Maximum-paths routing protocol command enhancement (also known as 8-way CEF load balancing)</b>	Destination IP prefixes are added to the routing table by routing protocols or static routes. Each path is a valid route to reach the destination prefix. The set of active paths is the set of paths with the best cost. Cisco Express Forwarding (CEF) load balancing is the ability to share the traffic to a destination prefix over up to eight active paths (an increase from the previous support of six active paths). Load among the active paths can be distributed per destination.
<b>Unicast RPF exist-only mode</b>	Unicast Reverse Path Forwarding (RPF) discards IP packets without a verifiable IP source address. With this feature, unicast RPF forwarding is extended to the ISP-to-ISP edge of the network along with the previous strict checking mode for the customer-to-ISP edge.
<b>Enhanced password security (Phase 1)</b>	Message Digest 5 (MD5) encrypted username passwords can be configured. MD5 encryption is a one-way hash function that provides strong encryption protection.
<b>Backup server farms</b>	Backup server farm is a new feature in IOS server load balancing. A backup server farm is a server farm that can be used when none of the real servers in a primary server farm is available to accept new connections. A server farm can act as both a primary and backup at the same time, however the same real server cannot be defined in both the primary and backup server farms at the same time.
<b>Dynamic Feedback Protocol</b>	Dynamic Feedback Protocol (DFP) support is a new feature in IOS server load balancing. IOS SLB can act as a DFP manager, DFP agent, or both. A DFP manager initiates a TCP connection with a DFP agent. Thereafter, the DFP agent collects status information from one or more real servers, converts the information to relative weights, and reports the weights to the DFP manager. The DFP manager uses the weights when load balancing the real servers. This features enables a single device to perform global load balancing managed by Cisco Distributed Director and local load balancing managed by IOS SLB.

### Features Not Supported in Cisco IOS Software Releases 12.1(8a)E and 12.1(8a)E3

None. All features currently supported by previous Cisco IOS Supervisor software releases are also supported in Cisco IOS Software Releases 12.1(8a)E and 12.1(8a)E3.

### Orderable Software Images

The following table lists the software versions and applicable ordering information for the Catalyst 6500 Series Supervisor Engine 1A and Supervisor Engine 2 software. Cisco IOS software runs on the Distributed Forwarding Card (DFC) to provide Distributed Cisco Express Forwarding (DCEF) support. This image is bundled as part of the c6sup22 image and is not released separately.



**Note: Caution:** Always back up the switch configuration file before upgrading or downgrading the switch software to avoid losing all or part of the configuration stored in NVRAM. When downgrading switch software, you will lose your configuration. Back up your configuration to a Trivial File Transfer Protocol (TFTP) server or Flash device before proceeding.

Orderable Product Number	Description	Image
<b>S6SUP11AK2-12108E</b>	Catalyst 6000 Supervisor 1/MSFC IOS Enterprise with Versatile Interface Processor (VIP) Secure Shell (SSH), Software Release 12.1(8a)E	c6sup11-jk2sv-mz.121-8.E
<b>S6SUP11AK2-12108E=</b>	Spare	
<b>S6SUP11AV-12108E</b>	Catalyst 6000 Supervisor 1/MSFC IOS Enterprise with VIP, Software Release 12.1(8a)E	c6sup11-jsv-mz.121-8.E-
<b>S6SUP11AV-12108E=</b>	Spare	
<b>S6SUP11BV-12108E</b>	Catalyst 6000 Supervisor 1/MSFC IOS Desktop with VIP, Software Release 12.1(8a)E	c6sup11-dsv-mz.121-8.E
<b>S6SUP11BV-12108E=</b>	Spare	
<b>S6SUP11DV-12108E</b>	Catalyst 6000 Supervisor 1/MSFC IOS IP/IPX with VIP, Software Release 12.1(8a)E	c6sup11-dsv-mz.121-8.E
<b>S6SUP11DV-12108E=</b>	Spare	
<b>S6SUP11ZK2-12108E</b>	Catalyst 6000 Supervisor 1/MSFC IOS Service Provider with VIP SSH 3DES, Software Release 12.1(8a)E	c6sup11-pk2sv-mz.121-8.E
<b>S6SUP11ZK2-12108E=</b>	Spare	
<b>S6SUP11ZV-12108E</b>	Catalyst 6000 Supervisor 1/MSFC IOS Service Provider with VIP, Software Release 12.1(8a)E	c6sup11-psv-mz.121-8.E
<b>S6SUP11ZV-12108E=</b>	Spare	
<b>S6SUP12AV-12108E</b>	Catalyst 6000 Supervisor 1/MSFC2 IOS Enterprise with VIP, Software Release 12.1(8a)E	c6sup12-jsv-mz.121-8.E
<b>S6SUP12AV-12108E=</b>	Spare	
<b>S6SUP12BV-12108E</b>	Catalyst 6000 Supervisor 1/MSFC2 IOS Desktop with VIP, Software Release 12.1(8a)E	c6sup12-dsv-mz.121-8.E
<b>S6SUP12BV-12108E=</b>	Spare	
<b>S6SUP12DV-12108E</b>	Catalyst 6000 Supervisor 1/MSFC2 IOS IP/IPX with VIP, Software Release 12.1(8a)E	c6sup12-dsv-mz.121-8.E
<b>S6SUP12DV-12108E=</b>	Spare	
<b>S6SUP12ZV-12108E</b>	Catalyst 6000 Supervisor 1/MSFC2 IOS Service Provider with VIP, Software Release 12.1(8a)E	c6sup12-psv-mz.121-8.E
<b>S6SUP12ZV-12108E=</b>	Spare	



Orderable Product Number	Description	Image
S6SUP22AK2-12108E	Catalyst 6000 Supervisor 2/MSFC2 IOS Enterprise with VIP SSH, Software Release 12.1(8a)E	c6sup22-jk2sv-mz.121-8.E
S6SUP22AK2-12108E=	Spare	
S6SUP22AV-12108E	Catalyst 6000 Supervisor 2/MSFC2 IOS Enterprise with VIP, Software Release 12.1(8a)E	c6sup22-jsv-mz.121-8.E
S6SUP22AV-12108E=	Spare	
S6SUP22BV-12108E	Catalyst 6000 Supervisor 2/MSFC2 IOS Desktop with VIP, Software Release 12.1(8a)E	c6sup22-dsv-mz.121-8.E
S6SUP22BV-12108E=	Spare	
S6SUP22DV-12108E	Catalyst 6000 Supervisor 2/MSFC2 IOS IP/IPX with VIP, Software Release 12.1(8a)E	c6sup22-dsv-mz.121-8.E
S6SUP22DV-12108E=	Spare	
S6SUP22ZK2-12108E	Catalyst 6000 Supervisor 2/MSFC2 IOS Service Provider with VIP SSH 3DES, Software Release 12.1(8a)E	c6sup22-pk2sv-mz.121-8.E
S6SUP22ZK2-12108E=	Spare	
S6SUP22ZV-12108E	Catalyst 6000 Supervisor 2/MSFC2 IOS Service Provider with VIP, Software Release 12.1(8a)E	c6sup22-psv-mz.121-8.E
S6SUP22ZV-12108E=	Spare	

**For more detailed information concerning this software release, refer to the Catalyst 6000 Series release notes at:**

<http://www.cisco.com/univercd/cc/td/doc/product/lan/cat6000/reInotes/index.htm>

**Also, review the Catalyst 6500 Series documentation at:**

<http://www.cisco.com/univercd/cc/td/doc/product/lan/cat6000/>



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