8700 Watt Enhanced AC Power Supply for Cisco Catalyst 6500 Series Switches

Product Overview

The 8700 Watt (W) enhanced AC power supply for Cisco® Catalyst® 6500 Series Switches (Figure 1) is a triple AC input power supply with remote restart capability. The 8700W enhanced AC power supply is designed for the 6-, 9-, and 13-slot Cisco Catalyst 6500 Series Switch chassis. A Cisco Catalyst 6500 Series Switch configured with the 8700W enhanced AC power supply will support up to 420 IEEE 802.3af Class 3 (15.4W) Power over Ethernet (PoE) devices with full redundancy in a single chassis, providing superior PoE scalability. A Cisco Catalyst 6500 Series Switch along with the 8700W enhanced AC power supply is PoE plus ready with ability to support up to 1750W of power per slot.

The 8700W enhanced AC power supply provides the ability to remotely power cycle or shut down Cisco Catalyst 6500 Series Switches for maintenance using Normally Open (NO) or Normally Closed (NC) built-in external relay contacts using a front-panel terminal block interface. The power supply relay contacts can be controlled through any appropriate third-party relay controller.
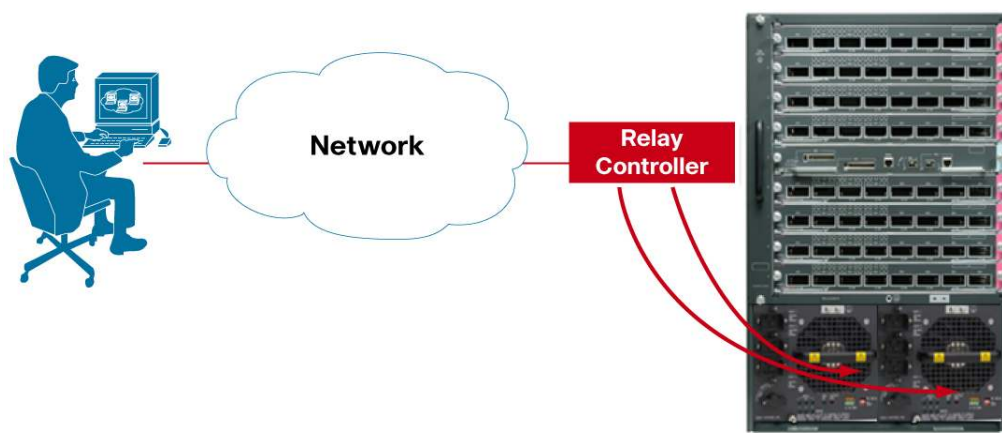
Figure 1.   Cisco 8700W Enhanced AC Power Supply for Cisco Catalyst 6500 Series Switches

Applications

The 8700W enhanced AC power supply allows a Cisco Catalyst 6500 Series Switch to be remotely power cycled or shut down even with no access to the console or CLI of the switch for maintenance using an appropriate third-party relay controller, as shown in Figure 2. This feature reduces the maintenance cost and improves mean-time-to-repair (MTTR).

Figure 2. Remote Power Cycle or Shutdown of Cisco Catalyst 6500 Series Switch Using the 8700W Enhanced AC Power Supply

Features and Benefits

Table 1 lists the 8700W enhanced AC power supply features and benefits.

Table 1. Features and Benefits

Feature	Benefits
PoE scalability	Supports up to 420 IEEE 802.3af Class 3 (15.4W) PoE devices in a single chassis with full redundancy, thus reducing total cost of ownership for high-density PoE deployments in the campus access layer.
Remote power restart using external relay controller	Remotely power cycles or shuts down the Cisco Catalyst 6500 Series Switch using any appropriate third-party relay controller without needing access to the supervisor engine CLI, thereby reducing maintenance costs and improving MTTR.
Remote power restart using Cisco IOS® Software CLI	Remotely power cycle or shut down the Cisco Catalyst 6500 Series Switch using the Cisco IOS Software CLI, reducing maintenance costs and improving MTTR.
Multiple input	Remote power cycle scales the system power depending on the need (scale as you grow) with fully isolated inputs, providing flexibility.
Universal multiple (triple) input (110–220VAC, 50–60Hz)	Flexibility to provision circuits with either high-input voltage (200-220V) or low-input voltage (100-120V) depending on availability and power output needs.
Compatible with 6-, 9-, and 13-slot chassis	Investment protection: the 8700W enhanced AC power supply can be installed into existing Cisco Catalyst 6500 Series Switch chassis: both E- and non-E series Cisco Catalyst 6500 Series Switch chassis. **Note:** Available power is limited to 4000W in Cisco Catalyst 6506 and 6509 Switches, 4500W in the Cisco Catalyst 6509-NEB-A Switch and 6000W in the Cisco Catalyst 6513 Switch. Full power available in the Cisco Catalyst 6506-E and 6509-E Switches.
Hot swappable	Eliminates downtime when replacing power supply.
Mixed power supply operation (along with lower capacity AC or DC power supply)	Eliminates downtime when upgrading to the new 8700W enhanced AC power supply.

Product Architecture

The 8700W enhanced AC power supply provides highest capacity AC power supply on Cisco Catalyst 6500 Series Switches. Table 2 compares the AC power supply options on a Cisco Catalyst 6500 Series Switch.

Table 2. AC Power Supply Options for the 6-, 9-, and 13-Slot Chassis for Cisco Catalyst 6500 Series Switches

	3000WAC		6000WAC		8700WAC	
Number of power input (16A)	1		2		3	
Type of interface	10/100*	10/100/1000**	10/100*	10/100/1000**	10/100*	10/100/1000**
Number of IEEE Class 3 devices supported with 220V input	124	110	304	286	420***	384
Number of IEEE Class 3 devices supported with 110V input	42	42	124	114	193	179
Remote power restart and shutdown	No		No		Yes	

All calculations are based on a single Cisco Catalyst 6500 Supervisor Engine 32 on a Cisco Catalyst 6506-E or 6509-E Switch.
*Calculations based on WS-X6148-45AF.
**Calculations based on WS-X6148-GE-AF.
***Calculations based on WS-X6148X2-45AF.

Table 3 shows the output power with various input modes on the 8700W enhanced AC power supply.

Table 3. Available Output Power on the 8700W Enhanced AC Power Supply Based on Input Power

Number of Inputs	Type of Input	Output Power	Number of IEEE 802.3af Class 3 Devices Supported*
1	110v	—	—
2	110v	2800W	110
3	110v	4200W	179
1	220v	2800W	110
2	220v	5800W	262
3	220v	8700W	384 (420**)

* Calculations are based on Cisco Catalyst 6500 Supervisor Engine 32, WS-X6148A-GE-AF and E-Series chassis.
** Calculations are based on Cisco Catalyst 6500 Supervisor Engine 32, WS-X6148X2-45AF and 6509-E-Series chassis.

Product Specifications

Table 4 provides product specifications for the 8700W enhanced AC power supply, and Table 5 provides power supply cable specification for various locales.

Table 4.   8700W Enhanced AC Power Supply Specifications

Chassis compatibility	Cisco Catalyst 6506, 6506-E, 6509, 6509-E, 6509-NEB-A, and 6513 Switches and Cisco 7609 and 7613 Routers
Software compatibility	Cisco IOS Software Release: • 12.2(18)SXF7 and later • 12.1E: not supported Cisco Catalyst OS: not supported
Supervisor compatibility	Cisco Catalyst 6500 Series Supervisor Engine 720 Cisco Catalyst 6500 Supervisor Engine 32 Cisco Catalyst 6500 Series Supervisor Engine 2
Physical specification	(H x W x D): 7.2 x 8 x 16.3 (in) Weight: 40 lb (18 kg)
Input-voltage range and frequency	100-240VAC, 47-63 Hz
Input current (each input)	16A max at nominal line voltage (110VAC or 220VAC)
Input-frequency range, output power	See Table 3
Output holdup time	20 ms minimum
Power-supply input receptacles	IEC 320-C19
Power cord rating	16A
BTU	~ 34800 BTUs per hour (at 8700W) ~ 23200 BTUs per hour (at 5800W) ~ 16800 BTUs per hour (at 4200W) ~ 11200 BTUs per hour (at 2800W) **Note**: ~90% of PoE power is dissipated at the PoE device and along the cabling and not at the switch closet itself. Plan for cooling capacity for the switch closet accordingly.
Environmental Conditions	Operating temperature: 32 to 104°F (0 to 40°C) Storage temperature: -40 to 158 °F (-40C to 70°C) Relative humidity operating, noncondensing: 10% to 90% Relative humidity nonoperating, noncondensing: 10% to 95% MTBF: Demonstrated 300,000 hrs
EMI and EMC Compliance	FCC Part 15 (CFR 47) Class A ICES-003 Class A EN 55022 Class A CISPR 22 Class A AS/NZS 3548 Class A VCCI Class A EN 55024 EN300 386 EN 50082-1 EN 61000-3-2 EN 61000-3-3 EN 61000-6-1 CISPR24
Safety Compliance	UL 60950 CAN/CSA-C22.2 NO. 60950 EN 60950 IEC 60950

LED Indicators	3 green "INPUT OK," illuminate when input voltage is 85VAC or greater
	3 green "INPUT 220VAC" illuminate when input voltage is 170VAC or greater in addition to the 3 green "INPUT OK" LED
	1 green "FAN OK," illuminates when the power supply fan is operating
	1 red "OUTPUT FAIL," normally is off but illuminates when power supply outputs are out of regulation limits
Reliability and availability	Hot swappable and supports hitless failover to the redundant power supply
MIBS	POWER-ETHERNET-MIB, CISCO-POWER-ETHERNET-EXT-MIB-MY, CISCO-ENTITY-FRU-CONTROL-MIB
Network management	Power restart and shutdown via an external relay controller
Additional specifications	Normally Closed (NC) relay controller – Min 200mA DC Rating
	Normally Open (NO) relay controller – Min 200mA DC Rating

Table 5.   8700W Enhanced AC Power Supply Cable Specifications

Locale	Part Number	Cord Length	Plug Type Wall Appliance	Wall Plug Rating
Australia, New Zealand	CAB-AC-16A- AUS	14 ft (4.3 m)	AU20S3	250VAC, 16A
People's Republic of China	CAB-AC16A-CH	14 ft (4.3 m)	GB16C	250VAC, 16A
Continental Europe	CAB-AC-2500W-EU	14 ft (4.3 m)	CEE 7/7	250VAC, 16A
International	CAB-AC-2500W-INT	14 ft (4.3 m)	IEC 309	250VAC, 16A
Israel	CAB-AC-2500W-ISRL	14 ft (4.3 m)	SI16S3	250VAC, 16A
Japan, North America (nonlocking) 200-240VAC operation*	CAB-AC-2500W-US1	14 ft (4.3 m)	NEMA 6-20	250VAC, 16A
Japan North America (locking) 200-240VAC operation	CAB-AC-C6K-TWLK	14 ft (4.3 m)	NEMA L6-20	250VAC, 16A
Japan, North America 100-120VAC operation1	CAB-7513AC	14 ft (4.3 m)	NEMA 5-20	125VAC, 20A
Power Distribution Unit**	CAB-C19-CBN	14 ft (4.3 m)	IEC 60320 C19 IEC 60320 C20	250VAC, 16A
Switzerland	CAB-ACS-16	14 ft (4.3 m)	SEV 5934-2 Type 23	250VAC, 16A

* The 8700W power supply operating on 110VAC delivers 4200W.
** The PDU power cable is designed for users who power their switch from a PDU. The end of the cable that plugs into the Cisco Catalyst 6500 Series Switch chassis has a C19 connector; the other end of the cable that plugs into the PDU has a C20 connector.

Ordering Information

To place an order, visit the [Cisco Ordering homepage](#). Table 6 lists the ordering information for the 8700W power supply.

Table 6.   Ordering Information

Product Name	Part Number
Catalyst 6500 Series 8700W enhanced AC power supply	WS-CAC-8700W-E
Power Cord, 250VAC, 16A, Australia C19	CAB-AC-16A-AUS
16A AC Power Cord For China	CAB-AC16A-CH
Power Cord, 250VAC, 16A, Europe	CAB-AC-2500W-EU
Power Cord, 250VAC, 16A, International	CAB-AC-2500W-INT
Power Cord, 250VAC, 16A, Israel	CAB-AC-2500W-ISRL

Power Cord, 250VAC, 16A, twist lock NEMA L6-20 plug, United States	CAB-AC-C6K-TWLK
Power Cord, 250VAC, 16A, straight blade NEMA 6-20 plug, United States	CAB-AC-2500W-US1
AC Power Cord, North America (110V)	CAB-7513AC
Cabinet Jumper Power Cord, 250VAC 16A, C20-C19 Connectors	CAB-C19-CBN
AC Power Cord (Swiss) 16A	CAB-ACS-16

A separate relay controller is needed to use the remote power restart and shutdown of the 8700WAC power supply. These relays can be purchased directly from any appropriate third-party vendors. Cisco has verified the proper operation of the remote power restart feature with relay controllers from Dataprobe Inc (http://www.dataprobe.com).

Service and Support

Using the Cisco Lifecycle Services approach, Cisco and its partners provide a broad portfolio of end-to-end services and support that can help increase your network's business value and return on investment. This approach defines the minimum set of activities needed, by technology and by network complexity, to help you successfully deploy and operate Cisco technologies and optimize their performance throughout the lifecycle of your network.

For More Information

For more information about Cisco Catalyst 6500 Series Switches, visit http://www.cisco.com/en/US/products/hw/switches/ps708/index.html or contact your local account representative.