Connection Requirements

This chapter describes the equipment required to connect the Cisco RPS to external devices. The Cisco RPS includes two fully redundant AC input power modules and four DC output power modules for connection to external devices. The Cisco RPS supports a quasi-redundant configuration for all devices, fully redundant configuration for the referenced Cisco routers and concentrator, and redundant-with-reboot configurations for the referenced hubs and switches. However, the redundant-with-reboot configuration is not recommended because a power supply failure will cause an interruption while the hub or switch reboots. For an explanation of power source configurations, refer to Chapter 1, "Overview."

⚠️

Caution   The Cisco RPS AC input power modules are power-factor-corrected to comply with certain International Electrotechnical Commission (IEC) standards. Do not connect the Cisco RPS to an uninterruptible power supply (UPS) that has not been tested and designed for power-factor-corrected power systems. Do not connect the Cisco RPS to a ferro-resonant transformer. If you do either of these things, you could damage the Cisco RPS.

This chapter contains the following sections:

Tools and Equipment Required

You might need to order the following equipment:

- One-to-one 22-pin to 8-pin cable—Needed for Cisco 2500 series routers and Cisco MC3810 multiservice concentrators

- Y-cable—Needed for fully redundant power configurations

- Upgrade kit—Needed for routers that originally came with AC or DC power supplies (Cisco 2500 and Cisco 2600 series routers; Cisco 3620, Cisco 3640, and Cisco 3725 routers; Cisco 4000 series routers; and the Cisco MC3810 multiservice concentrator)

Cabling Options

The external devices have different configuration and cabling options outlined below and are discussed in detail under the referenced section of this manual:

- The Cisco 1516M hub (HP 10BASE-T Hub-16M) only supports a one-to-one cable for quasi-redundant configuration. This hub does not support connection of its AC power cable for redundancy with reboot or the use of the Y-cable for full redundancy.

- FastHub 400 series 100BASE-T hubs support:

  - One-to-one cable for quasi-redundancy

  - One-to-one cable with the switch AC power cable connected for redundancy with reboot (not recommended)

  Refer to the "Connecting Hubs" section on page 4-2 for illustrations and procedures.

- Catalyst 1900 series switches, Catalyst 2820 switches, Catalyst 2900 series XL switches, and Catalyst 3500 series XL switches support:

  - One-to-one cable for quasi-redundancy

  - One-to-one cable with the switch AC power cable connected for redundancy with reboot (not recommended)

  See the "Connecting Switches" section on page 4-6 for illustrations and procedures.

- Cisco 2500 and Cisco 2600 series routers; Cisco 3620, Cisco 3640, and Cisco 3725 routers; Cisco 4000 series routers; and the Cisco MC3810 multiservice concentrator support:

    – One-to-one cable for quasi-redundancy

    – Two-to-one Y-cable for full redundancy

      Refer to the "Connecting Routers and the Cisco MC3810 Concentrator" section on page 4-13 for illustrations and procedures.

Ordering Cables

The Cisco RPS ships in either of the following configurations:

- With cables (Cisco RPS number PWR600-AC-RPS-CAB)—Includes four one-to-one (22-pin to 18-pin) cables for connecting to hubs and switches or for quasi-redundant support for Cisco 2600 series routers; Cisco 3620, Cisco 3640, and Cisco 3725 routers; and Cisco 4000 series routers.

- Without cables (Cisco RPS number PWR600-AC-RPS-NCAB)—Cables must be ordered separately:

    – One-to-one (22-pin to 18-pin) cables for connecting to hubs and switches or for quasi-redundant support for Cisco 2600 series routers; Cisco 3620, Cisco 3640, and Cisco 3725 routers; and Cisco 4000 series routers

    – One-to-one (22-pin to 8-pin) cables for quasi-redundant support for Cisco 2500 series routers and Cisco MC3810 multiservice concentrators

    – Two-to-one Y cables (22-pin to 18-pin, or 22-pin to 8-pin) for fully redundant support for routers or concentrators only

Note   The fully redundant configuration is supported only for routers, not for hubs or switches.

Figure 3-1 and Figure 3-2 show the cables you can order, and Table 3-1 includes cable descriptions and lists the corresponding product order numbers. For ordering information, contact 800 553-6387, 408 526-7208, or cs-rep@cisco.com. See also the "Obtaining Documentation" section on page xviii.

*Figure 3-1   Two-to-One Y-Shaped Cable*

Cisco RPS side
22 pins

Load unit
8 or 18 pins
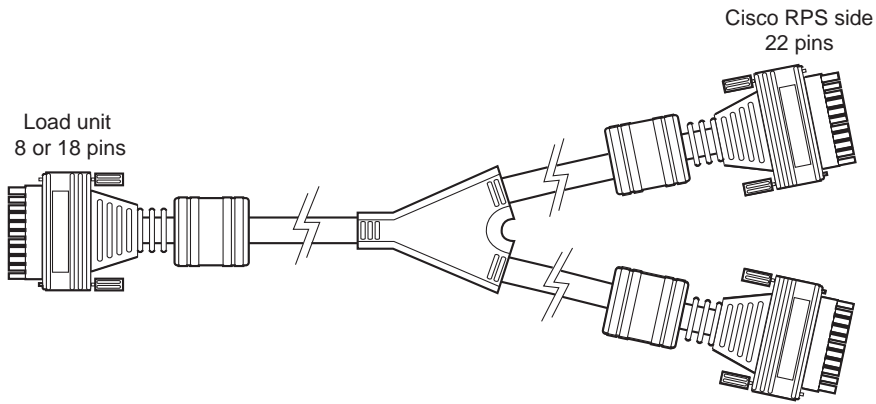
11538

Product number	External device
CAB-RPSY-2208	Cisco 2500 series routers and Cisco MC3810 multiservice concentrators
CAB-RPSY-2218	Cisco 2600 series routers, Cisco 3620, Cisco 3640, and Cisco 3725 routers, and Cisco 4000 series routers

Figure 3-2   One-to-One Cable

Load unit
8 or 18 pins

RPS side
22 pins
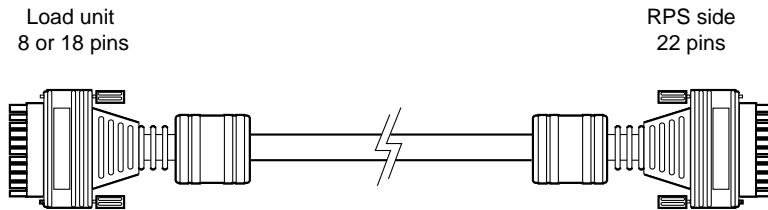
11539

Product number	External device
CAB-RPS-2208	Cisco 2500 series routers and Cisco MC3810 multiservice concentrator
CAB-RPS-2218	All others

Table 3-1   Cable Order Numbers

Redundancy Configuration	For Use With	Cable Description	Cable Order Number
Quasi-redundant	Cisco 1516M hub (HP 10BASE-T Hub-16M), FastHub 400 series hubs, Catalyst 1900 series and Catalyst 2820 switches, Catalyst 2900 series and Catalyst 3500 series XL switches, Cisco 2600 series routers, Cisco 3620, Cisco 3640, and Cisco 3725 routers, and Cisco 4000 series routers	One-to-one cable, 22-pin to 18-pin, 4 ft (1.22 m)[1]	CAB-RPS-2218=
	Cisco 2500 series routers and access servers and Cisco MC3810 multiservice concentrators	One-to-one cable, 22-pin to 8-pin, 4 ft (1.22 m)[1]	CAB-RPS-2208=
Fully redundant	Cisco 2600 series routers, Cisco 3620, Cisco 3640, and Cisco 3725 routers, and Cisco 4000 series routers	Two-to-one cable, 22-pin to 18-pin, 4 ft (1.22 m)[1]	CAB-RPSY-2218=
	Cisco 2500 series routers and access servers and Cisco MC3810 multiservice concentrators	Two-to-one cable, 22-pin to 8-pin, 4 ft (1.22 m)[1]	CAB-RPSY-2208=
Redundant with reboot[2]	FastHub 400 series hubs, Catalyst 1900 series and Catalyst 2820 switches, and Catalyst 2900 series and Catalyst 3500 series XL switches	One-to-one cable, 22-pin to 18-pin, 4 ft (1.22 m)[1]	CAB-RPS-2218=

1. The cables come in only one length. Custom cable-lengths are not available. Excessive voltage drop and marginal or failed operation can occur with cables of different lengths. Use of cables other than the ones listed can cause damage to the Cisco RPS or external device.

2. This configuration is *not* recommended due to the 30-second reboot and downtime.

Upgrade Kit with Power Adapter Plate for Routers and Concentrators

External devices operated with the Cisco RPS must have a Cisco RPS connector. Cisco 2600 series routers, Cisco 3620, Cisco 3640, and Cisco 3725 routers, and Cisco 4000 series routers, and the Cisco MC3810 concentrator do not automatically ship with an RPS connector.

✎ **Note** The FastHub 400 series hubs, Cisco 1516M hub (HP 10ASE-T Hub-16M), Catalyst 1900 series and Catalyst 2820 switches, and Catalyst 2900 series and Catalyst 3500 series XL switches ship with an RPS connector and do not require a power adapter plate.

If you did not order your router or concentrator with a Cisco RPS connector installed, you must order a power adapter plate that provides compatibility and must install the plate in place of your existing power supply.

If you need to order a power adapter plate for your router or concentrator, see Table 3-2, which lists adapter plates and corresponding product order numbers. Contact Cisco Customer Service at 800 553-6387, 408 526-7208, or cs-rep@cisco.com for ordering information. (See also the "Obtaining Documentation" section on page xviii.)

Table 3-2   Power Adapter Plate Product Numbers

Description	Product Number
Cisco 2500 series, Cisco MC3810 adapter plate	ACS-2500RPS=
Cisco 2600 series adapter plate	ACS-2600RPS=
Cisco 3620 adapter plate	ACS-3620RPS=
Cisco 3640 adapter plate	ACS-3640RPS=
Cisco 3725 adapter plate	??
Cisco 4000 series adapter plate	ACS-4000RPS=

Device-specific instructions for installing the RPS adapter plate are shipped with the plate and are also available on Cisco.com at http://www.cisco.com.