



Supported Hardware Components

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Supported EPAs

The following table lists the supported EPAs on the Cisco ASR 1002-HX Router.

PID	Description
EPA-CPAK-2X40GE	EPA-CPAK-2X40GE uses a CPAK module and a 2x40 GE breakout cable to provide network connectivity See #unique_30 unique_30_Connect_42_table_D5AF1079DAA94FBABC3594E2DC1EEAA6 for supported CPAKs.

PID	Description
EPA-1X40GE and EPA-2X40GE	QSFP-40G-BD-RX QSFP-40G-ER4 QSFP-40G-LR4-S QSFP-40G-CSR4 QSFP-40G-SR4 QSFP-40G-SR4-S QSFP-40G-SR-BD QSFP-40G-LR4 QSFP-H40G-AOC1M QSFP-H40G-AOC2M QSFP-H40G-AOC3M QSFP-H40G-AOC5M QSFP-H40G-AOC7M QSFP-H40G-AOC10M QSFP-H40G-AOC15M QSFP-H40G-AOC20M QSFP-H40G-ACU7M QSFP-H40G-ACU10M

An EPA has two types of LEDs: an A/L (Active/Link) LED for each port on the EPA, and a STATUS LED, as shown in the following figure.

1	A/L	2	STATUS
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Table 1: EPA LEDs

Function	Color or State	Description
A/L (Active/Link)	Green	Port is enabled and the link is up.
	Amber	Port is enabled and the link is down.
	Off	Port is not enabled.
Status	Green	EPA is ready and operational.
	Amber	EPA power is on and good, and the EPA is being configured.
	Off	EPA power is off.

Related Topics[Removing and Replacing an EPA](#)

Supported NIMs

The following table lists the supported NIMs on the Cisco ASR 1002-HX router.

PID	Description
NIM-SSD	The solid state drive (SSD) carrier card network interface module (NIM) enables SSD support on the platform NIM slot. It provides flash storage to the platform and supports dual 2.5" (7mm max) SATA SSDs. The carrier card fits into the NIM slot in the router. The router supports only a single SSD Carrier Card NIM.

Supported Transceivers

The Cisco ASR 1001-HX Router and Cisco ASR 1002-HX Router support the following small form-factor pluggable (SFP) optical transceiver types:

Bay	Ports	Cisco ASR 1002-HX Router
Bay 0	Ports GE0 – GE7	SFP
Bay 1	Ports TE0 – TE3 operate in 10GE mode only, use 10GE SFP+ Ports TE4 – TE7 operate in both 1GE and 10GE modes. Use SFP in 1GE and 10GE SFP+ in 10GE mode.	SFP+
Bay 2		CPAK
Bay 3	NIM	Not supported in this software release.

Table 2: Supported SFP Transceivers

PID	Description
GLC-GE-100FX	100BASE-FX SFP transceiver module, MMF, 1310nm
GLC-SX-MMD	1000BASE-SX SFP transceiver module, MMF, 850nm, DOM
GLC-LH-SMD	1000BASE-LX/LH SFP transceiver module, MMF/SMF, 1310nm, DOM
SFP-GE-T	1000BASE-T SFP (NEBS 3 ESD)
GLC-BX-U	1000BASE-BX SFP, 1310nm

PID	Description
GLC-BX-D	1000BASE-BX SFP, 1490nm
GLC-TE	1000BASE-T SFP transceiver module for category 5 copper wire
GLC-SX-MM	GE SFP, LC connector SX transceiver
GLC-LH-SM	GE SFP, LC connector LX/LH transceiver
GLC-EX-SMD	GE SFP, LC Connector, EX transceiver
GLC-ZX-SMD	1000BASE-ZX SFP transceiver module, SMF, 1550nm, DOM
DWDM-SFP	1000BASE DWDM
CWDM-SFP	1000BASE CWDM

Table 3: Supported SFP+ Transceivers

PID	Description
SFP-10G-SR	10GBASE-SR SFP+ Module for MMF
SFP-10G-SR-X	10GBASE-SR SFP+ Module for Extended Temp range
SFP-10G-LR	10GBASE-LR SFP+ Module for SMF
SFP-10G-LR-X	10GBASE-LR SFP+ Module for Extended Temp range
SFP-10G-ER	10GBASE-ER SFP+ Module for SMF
SFP-H10GB-ACU7M	10GBASE-CU SFP+ Cable 7 Meter, active
SFP-H10GB-ACU10M	10GBASE-CU SFP+ Cable 10 Meter, active
DWDM-SFP10G-C	10GBASE DWDM SFP+ Tunable Optic



Note On Cisco ASR1001-HX platform, 1G SFP or 10G SFP+ can be configured with dual-rate 10GE ports as follows:

- **10G SFP+ on dual-rate 10GE Interface:** Auto-negotiation protocol is not supported, and automatic negotiation cannot be configured using the **negotiation auto** command.
- **1G SFP on dual-rate 10GE Interface:** Auto-negotiation protocol is supported, and automatic negotiation can be configured using **negotiation auto** command. To disable auto negotiation, use **no negotiation auto** command.

Supported Crypto Module

The supports the following crypto module:

PID	Description
ASR1002HX-IPSECHW	Cisco ASR1002-HX crypto module with no default crypto throughput. You can upgrade the throughput (8 Gbps, 16 Gbps, or 25 Gbps) by applying a software-activated performance upgrade license.

Related Topics

[Removing and Replacing the Crypto Module in a Cisco ASR 1001-HX Router](#)

[Removing and Replacing the Crypto Module in a Cisco ASR 1002-HX Router](#)

Supported DIMM Upgrade

The supports the following DIMM upgrade:

PID	Description
M-ASR1002HX-32GB	The Cisco ASR 1002-HX Router has four DIMM slots and supports 16-GB configuration by default (two 8-GB DIMMS), and can be upgraded to 32-GB (four 8-GB DIMMS) configuration.

Related Topics

[Removing and Replacing a DIMM](#)

Power Supplies

The Cisco ASR 1001-HX Router and Cisco ASR 1002-HX Router support AC or DC power supply options. The modular chassis configurations support the installation of two power supplies for redundancy. When an external power supply fails or is removed, the other power supply provides power requirements for the chassis. This allows you to hot-swap the power supply without impacting the functionality of the router.



Caution

A router can support two AC or two DC power supplies. Do not install mixed AC and DC power supply units in the same chassis.

The power supplies are used in a 1 + 1 redundant configuration. There is no input switch on the faceplate of the power supplies. A power supply is switched from Standby to On by way of a system chassis power switch.

The following table lists the power supplies that you can order:

Part Number	Power Supply
ASR1000X-AC-750W	Cisco ASR 1002-HX Router power supply module with plug-side intake airflow, A/C, 750W, 85–264V

Part Number	Power Supply
ASR1000X-AC-750W=	Cisco ASR 1002-HX Router power supply module with plug-side intake airflow, A/C, 750W, 85–264V, spare
ASR1000X-DC-950W	Cisco ASR 1002-HX Router power supply module with plug-side intake airflow, DC 950W
ASR1000X-DC-950W=	Cisco ASR 1002-HX Router power supply module with plug-side intake airflow, DC 950W, spare

Related Topics

[Removing and Replacing the Power Supplies](#)

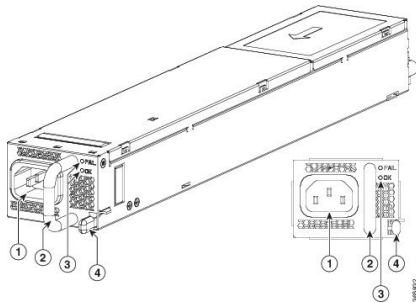
AC Power Supply



Note The direction of the airflow is different for the Cisco ASR 1001-HX Router and the Cisco ASR 1002-HX Router as shown by the arrows in the illustrations below.

The following figure shows the Cisco ASR 1001-HX Router AC power supply.

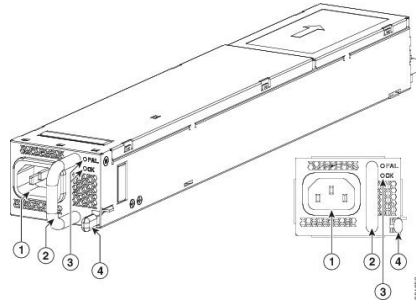
Figure 1: ASR1KX-AC-750W-R Power Supply Used in the Cisco ASR 1001-HX Router



1	AC power connector	3	FAIL and OK LEDs
2	Handle		Retaining latch

The following figure shows the Cisco ASR 1002-HX Router AC power supply.

Figure 2: ASR1000X-AC-750W AC Power Supply Used in the Cisco ASR 1002-HX Router



1	AC power connector	3	FAIL and OK LEDs
2	Handle		Retaining latch

DC Power Supply

The ASR1000X-DC-950W input connector is a two-wire connector with connection polarity from left to right (when facing the unit) of positive (+) negative (-).

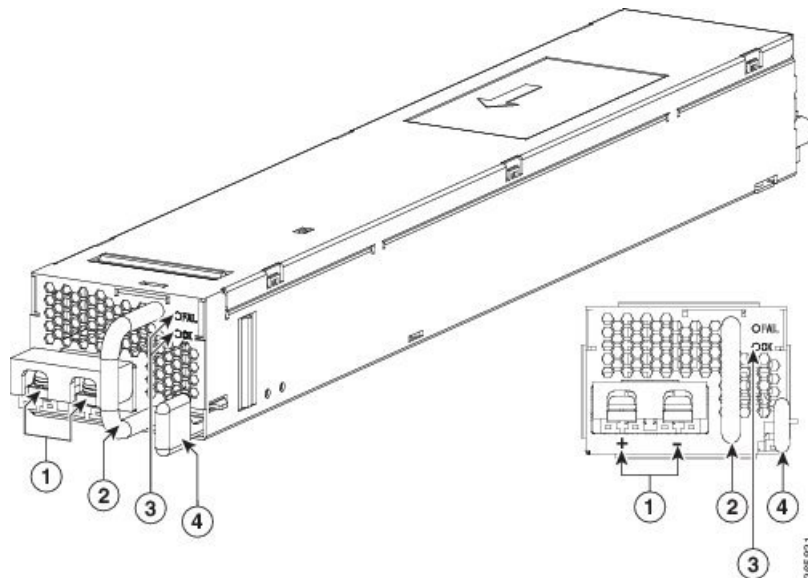
The power supply has a handle to be used for insertion and extraction. The module must be supported with one hand because of its length.



Note The direction of the airflow is different for the Cisco ASR 1001-HX Router and the Cisco ASR 1002-HX Router as shown by the arrows in the illustrations below.

The following figure shows the Cisco ASR 1001-HX Router DC power supply.

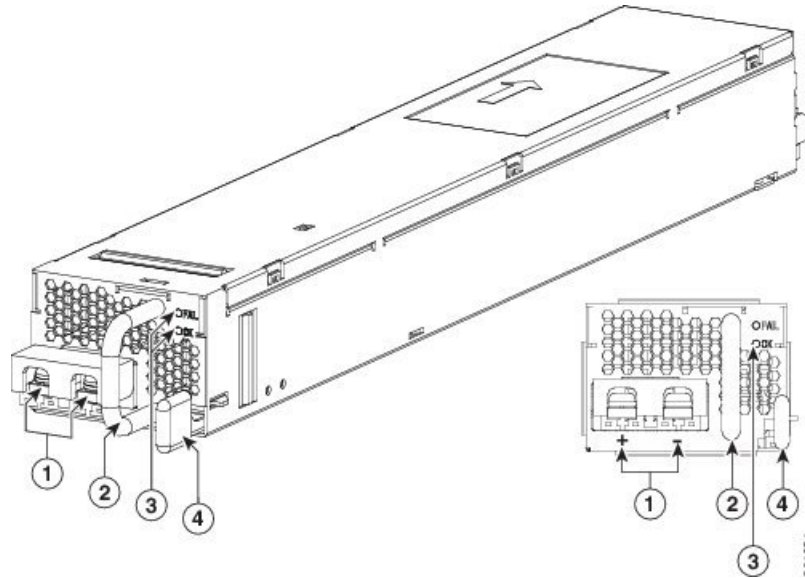
Figure 3: ASR1KX-DC-950W-R DC Power Supply Used in the Cisco ASR 1001-HX Router



1	DC power connections	3	FAIL and OK LEDs
2	Handle		Retaining latch

The following figure shows the Cisco ASR 1002-HX Router DC power supply.

Figure 4: ASR1000X-DC-950W DC Power Supply Used in the Cisco ASR 1002-HX Router



1	DC power connections	3	FAIL and OK LEDs
2	Handle		Retaining latch

Power Supply LEDs

The following table describes the power supply LEDs.

Table 4: AC and DC Power Supply LEDs

Power Supply Condition	Green (OK) LED Status	Amber (FAIL) LED Status
No AC power to all power supplies	OFF	OFF
Power Supply Failure (includes over voltage, over current, over temperature and fan failure)	OFF	ON
Power Supply Warning events where the power supply continues to operate (high temperature, high power and slow fan)	OFF	1Hz Blinking
AC Present/3.3VSB on (PSU OFF)	1Hz Blinking	OFF
Power Supply ON and OK	ON	OFF

Power Supply Fans

The fans in the power supply module are used for cooling the power supply module itself while system-level cooling is provided by fans within the chassis. The power supplies do not depend on the system-level fans for cooling. Fan failure is determined by fan-rotation sensors.



Note The fans in the power supply modules will run as soon as the power supply is plugged in, even if the power switch is in the Standby position.

Power Cords

The following table lists the supported power cords.

Power Cord Item Number	Description
CAB-AC	Power Cord, 110 V
CAB-ACA Plug	Power Cord, Australia, 10 A
CAB-ACC	Power Cord, China
CAB-ACE AC	Power Cord, Europe, C13, CEE 7, 1.5 M
CAB-ACI AC	Power Cord, Italy, C13, CEI 23-16, 2.5 m
CAB-ACR AC	Power Cord, Argentina, C13, EL 219 (IRAM 2073), 2.5m
CAB-ACS AC	Power Cord, Switzerland, C13, IEC 60884-1, 2.5 m
CAB-ACU AC	Power Cord, UK, C13, BS 1363, 2.5 m
CAB-IND AC	Power Cord, India
CAB-JPN AC	Power Cord, Japan, C13, JIS C 8303, 2.5 m
CAB-L620P-C13-US	Power Cord, 250 VAC, 15A, NEMA L6-20 to C13, U.S.
CAB-L620P-C13-JPN	Power Cord, 250 VAC, 15A, NEMA L6-20 to C13, Japan
CAB-C13-CBN Cabinet Jumper	Power Cord, 250 VAC 10 A, C14-C13 Connectors
CAB-C13-C14-JMPR Cabinet Jumper	Power Cord, 250 VAC 13 A, C14-C15 Connector
CAB-C13-C14-2M	Power Cord Jumper, C13-C14 Connectors, 2-Meter Length
CAB-C13-C14-AC	Power Cord Jumper, C13-C14 Connectors, 3-Meter Length

