Cisco 7606-S Router

Enhanced Performance, Versatility, High Availability, and Reliability at the Provider Edge.

The Cisco® 7606-S Router is a compact, high-performance router designed in a 6-slot form factor for deployment at the network edge, where robust performance and IP/Multiprotocol Label Switching (MPLS) services are necessary to meet the requirements of both enterprises and service providers. It enables Carrier Ethernet service providers to deploy an advanced network infrastructure that supports a range of IP video and triple-play (voice, video, and data) system applications in both the residential and business services markets. The Cisco 7606-S also delivers WAN and metropolitan-area network (MAN) networking solutions at the enterprise edge.

With a powerful combination of speed and services in a compact form factor, the Cisco 7606-S is an outstanding choice for multiple applications. Whether deployed as a high-speed WAN aggregator, as a device for peering, as a residential broadband services aggregator, or as a device for Metro Ethernet aggregation and uplink, the Cisco 7606-S meets requirements for redundancy, high availability, and rack density. In the point-of-presence (POP) data center or the metropolitan network, the Cisco 7606-S sets new standards as part of the industry-leading Cisco 7600 Series Routers (Figure 1).

Figure 1.   Cisco 7606-S Chassis

With a forwarding rate of up to 240-Mpps distributed and 480-Gbps total throughput, the Cisco 7606-S provides performance and reliability with options for redundant route processors and power supplies. The inclusion of two Gigabit Ethernet ports on the Cisco Catalyst® 6500 Series Supervisor Engine 720 with the Multilayer Switch Feature Card 3 (MSFC-3) or the new Cisco Route Switch Processor 720 (RSP 720) with the MSFC-4 used in the Cisco 7606-S eliminates the need for a line-card slot for uplink ports. The result of this design is more efficient use of available line-card slots and increased deployment flexibility. Four Gigabit Ethernet ports are available for use in dual-route processor configurations.

As part of the Cisco 7600 Series, the Cisco 7606-S Router is an enhancement on the highly successful 6-slot chassis (Cisco 7606). This enhanced chassis delivers numerous design improvements, including:

- Improved failover mechanisms in the hardware, which when paired with the proper Cisco IOS® Software image can achieve 100 ms failover
- Ability to deliver higher power of up to 750W per slot
- High-speed fan tray module with five speeds on a side-to-side airflow design
- Better thermal flow measurement and management

The power supplies supported on the Cisco 7606-S are the 2700W AC and DC power supplies (refer to Table 1).

Shared port adaptors (SPAs) on the SPA interface processors (SIPs) are available on the Cisco 7600 Series with interface speeds ranging from OC-3 to OC-192 and from Fast Ethernet to 10 Gigabit Ethernet. The Cisco 7600 Series can also use the Cisco 7600 Series/Catalyst 6500 Series Enhanced FlexWAN Module to take advantage of most Cisco 7200 and 7500 Port Adapters for terminating DS-0 to OC-3 speeds. By using the Cisco Catalyst 6000 Series of Ethernet line cards in conjunction with the SIP-based SPAs and the enhanced FlexWAN module, the Cisco 7600 Series provides a multitude of options to scale WAN connectivity from DS-0 to OC-192 and LAN connectivity from 10-Mbps Ethernet through 10 Gigabit Ethernet.

The Cisco 7606-S chassis accommodates a broad selection of line cards supporting numerous applications, including:

- SPAs and SIPs (Cisco 7600 Series SPA Interface Processor-200 [SIP-200], SIP-400, and SIP-600):
  - Channelized T1/E1, Channelized T3, and Channelized OC-3/STM-1
  - OC-3/STM-1, OC-12/STM-4, OC-48/STM-16 Packet over SONET/SDH (PoS), and OC-192/STM-64 PoS
  - OC-3/STM-1 ATM, OC-12/STM-4 ATM, and OC-48/STM-16 ATM
  - Fast Ethernet, Gigabit Ethernet, and 10 Gigabit Ethernet
- Enhanced FlexWAN module: Supporting Cisco 7200 and 7500 WAN Port Adapters from DS-0 to OC-3 for channelized and ATM interfaces and also Fast Ethernet port adapters
- High-density Ethernet services modules: 10/100 Mbps, Gigabit Ethernet, and 10-Gigabit Ethernet
- Services modules: IP Security (IPsec), firewall, distributed denial of service, intrusion detection systems, network analysis, and content switching commonly used, for example, in the Cisco Mobile Exchange solution
- Supervisor engine support:
  - Cisco Route Switch Processor 720 (RSP720-3C-GE and RSP720-3CXL-GE)
  - Cisco Route Switch Processor 720-10GE (RSP720-3C-10GE and RSP720-3CXL-10GE)
  - Cisco Catalyst 6500 Supervisor Engine 32 (WS-SUP32-GE-3B and WS-SUP32-10GE-3B)
  - Cisco Catalyst 6500 Supervisor Engine 720 (WS-SUP720-3B and WS-SUP720-3BXL)

Understanding the need to use rack space efficiently, Cisco designed this router to be a compact 12.25 inches tall (7 rack units [RUs]), with single-side connection management for both interface and power terminations. This setup allows placement of up to six Cisco 7606-S units per standard 7-foot rack.

Applications

The flexible Cisco 7606-S Router is ideal for addressing high-performance applications such as:

- High-end customer premises equipment (CPE)
- Leased line
- IP/MPLS provider edge
- Metro Ethernet access
- Enterprise WAN aggregation
- Mobile Radio Access Network (RAN) aggregation
- Residential subscriber aggregation

Feature Summary

Cisco 7606-S Chassis Features

- Seven-RU (12.25-in.) compact chassis, up to 6 chassis per 7-foot rack
- Two interface slots plus 2 supervisor-mounted Gigabit Ethernet ports (gigabit interface controllers [GBICs])
- Network Equipment Building Standards (NEBS) Level 3 compliance
- Route processor protection capability: 1 + 1
- Power-supply protection option, AC or DC: 1 + 1
- Single-side connection management for both interface and power terminations
- Side-to-side airflow

Cisco 7606-S System Features

- Up to 240-Mpps distributed forwarding rate (requires distributed forwarding cards [DFCs])
- Total throughput: 480 Gbps

Table 1 gives ordering information for the Cisco 7606-S.

Table 1. Cisco 7606-S Chassis Ordering Information

Part Number	Description
Spare Units	**Note that "=" denotes a spare order**
CISCO7606-S=	Cisco 7606-S chassis, mounting kit, and cable guide
PWR-2700-AC=	2700W AC power supply for CISCO7606/CISCO7606-S chassis
PWR-2700-DC=	2700W DC power supply for CISCO7606/CISCO7606-S chassis
PWR-4500-DC=	4500W DC power supply for CISCO7606-S chassis (minimum software release 12.2(33)SRE)
CAB-GSR16-US=	AC power cord (United States) with NEMAL6-20 Plug
CAB-GSR16-EU=	AC power cord (Europe)
CAB-AC16A-90L-IN=	AC power cord (International)
FAN-MOD-6SHS=	High speed fan module for CISCO7606-S chassis
KIT-MNTG-CG-6=	Mounting kit and cable guide for CISCO7606/CISCO7606-S chassis
	Mounting kit and cable guide for CISCO7606-S for the optional 23-in. rack
PWR-06S-CVR=	Blank Power Supply Cover for the 7606-S chassis
CLK-7600=	Clock card for CISCO7606/CISCO7606-S chassis

Technical Specifications

- Seven-RU (12.25-in. [31.11-cm]) chassis
- Six-slot chassis
- Dimensions (H x W x D): 12.20 x 17.25 x 21.50 in. (30.98 x 43.81 x 54.61 cm)
- Chassis weight: 40.8 lb (18.52 kg)
- Power-supply weight: 11 lb (4.99 kg)
- Power requirements: 208 to 240 VAC recommended or -48 to -60 VDC
- Predicted Mean time between failure (MTBF): 400,000 hours
- Environmental conditions:
  - Operating temperature: 32 to 104°F (0 to 40°C)
  - Storage temperature: -4 to 149°F (-20 to 65°C)
  - Relative humidity, operating: 10 to 85%, noncondensing
  - Relative humidity, storage: 5 to 95%, noncondensing
  - Operating altitude: -500 to 10,000 ft

Regulatory Compliance

EMC

- FCC Part 15 (CFR 47) Class A
- ICES-003 Class A
- EN55022 Class A
- CISPR22 Class A
- AS/NZS 3548 Class A
- VCCI Class A
- EN55024
- ETS300 386
- EN50082-1
- EN61000-3-2
- EN61000-3-3

Regulatory Compliance

- UL 60950
- IEC 60825-1, -2
- IEC 60950
- EN 60950
- EN 60825-1, -2
- CAN/CSA-C22.2 No. 60950-00
- AS/NZS 3260-1993
- 21CFR1040

Safety and Environmental Standard Compliance

- GR-63-Core NEBS Level 3
- GR-1089-Core NEBS Level 3
- ETSI 300 019 Storage Class 1.1
- ETSI 300 019 Transportation Class 2.3
- ETSI 300 019 Stationary Use Class 3.1

Minimum Software Release

- Cisco IOS 12.2(33)SRB1

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