C H A P T E R 1

Product Overview

The Cisco 7513 router is part of the Cisco 7500 series.The 13-slot Cisco 7513 router supports multiprotocol, multimedia routing and bridging with a wide variety of protocols and any combination of Asynchronous Transfer Mode (ATM), Ethernet, Fast Ethernet, Token Ring, Fiber Distributed Data Interface (FDDI), serial, High-Speed Serial Interface (HSSI), channel attachment, and multichannel media.

Network interfaces reside on interface processors that provide a direct connection between the two Cisco Extended Buses (CyBuses) and your external networks. The Cisco 7513 has thirteen slots: interface processor slots 0 through 5, Route Switch Processor (RSP2) slots 6 and 7, and interface processor slots 8 through 12.

There are bays for up to two AC-input or DC-input power supplies. The chassis will operate with one power supply. While a second power supply is not required, it allows load sharing and increased system availability.

⚠ **Caution**   Because of agency compliance and safety issues, mixing AC-input and DC-input power supplies in the same Cisco 7513 is not a supported configuration and should not be attempted. Doing so might cause damage.

Following is a list of acronyms that identify the system components and features:

- CxBus—Cisco Extended Bus. A 533-megabits-per-second (Mbps) data bus for interface processors (used in the Cisco 7000 series routers; CxBus interface processors will operate in the Cisco 7513).

- CyBus—Cisco Extended Bus. A 1.067-gigabits-per-second (Gbps) data bus for interface processors (two CyBuses are used in the Cisco 7507).

- AIP—Asynchronous Transfer Mode (ATM) Interface Processor.

- CIP—Channel Interface Processor.

- EIP—Ethernet Interface Processor.

- FEIP—Fast Ethernet Interface Processor.

- FIP—FDDI (Fiber Distributed Data Interface) Interface Processor.

- FRU—Field-replaceable unit (as opposed to a spare part). An FRU can only be replaced by a Cisco certified technician. The arbiter board is categorized as an FRU; interface processors are categorized as spare parts.

- FSIP—Fast Serial Interface Processor.

- HIP—High-Speed Serial Interface (HSSI) Interface Processor.

- MIP—MultiChannel Interface Processor.

- OIR—Online insertion and removal. This feature allows you to replace interface processors and redundant power supplies without interrupting system power.

- PA—Port adapter. For example, the FSIP or MIP daughter card.

- RSP2—Route Switch Processor. The system processor board.

- TRIP—Token Ring Interface Processor.

Figure 1-1 shows a view of the interface-processor end of the Cisco 7513 with AC-input power supplies installed.

Figure 1-1   Cisco 7513, Rear View
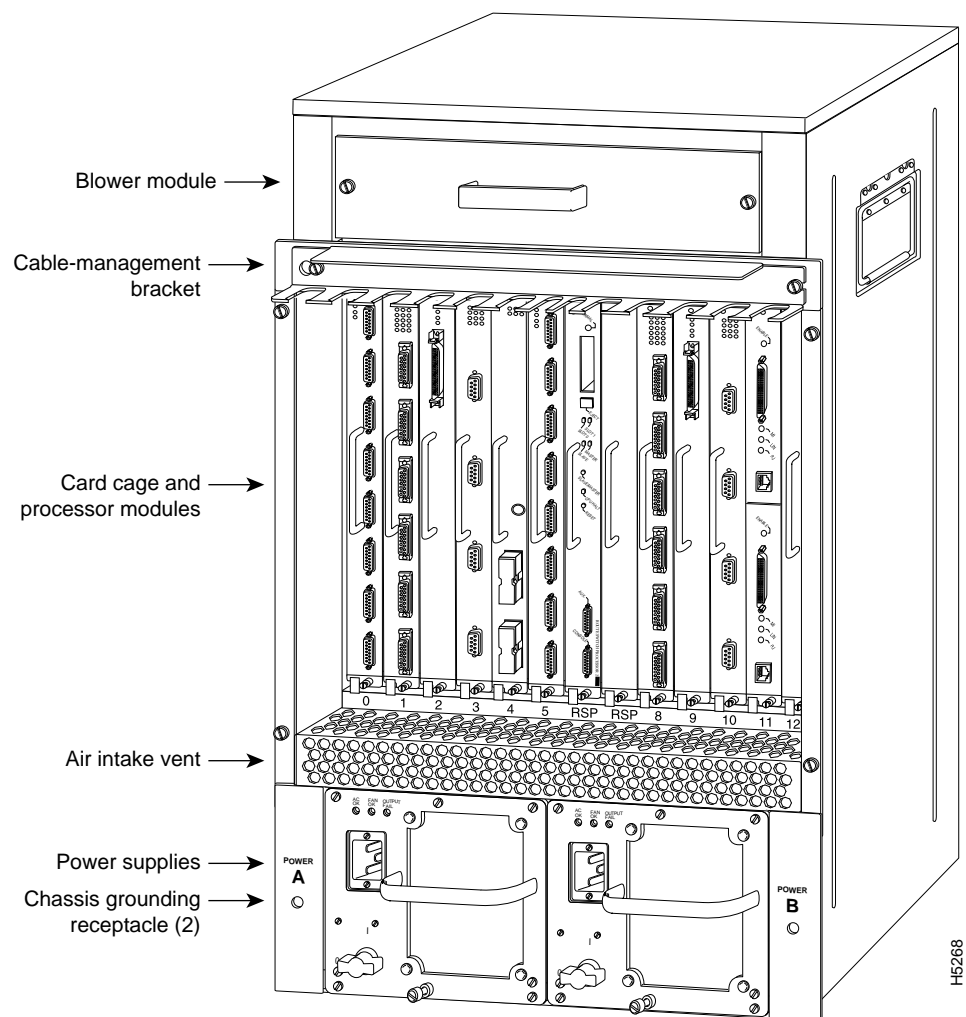
Dual-CyBus Backplane

The dual-CyBus backplane has 13 slots: six interface processor slots, 0 through 5 (CyBus 0), five interface processor slots, 8 through 12 (CyBus 1), and two RSP slots (6 and 7), as shown in Figure 1-2.

Figure 1-2   Cisco 7513 Dual CyBus Backplane

CyBus 0 (slots 0 through 5)   CyBus 1 (slots 8 through 12)
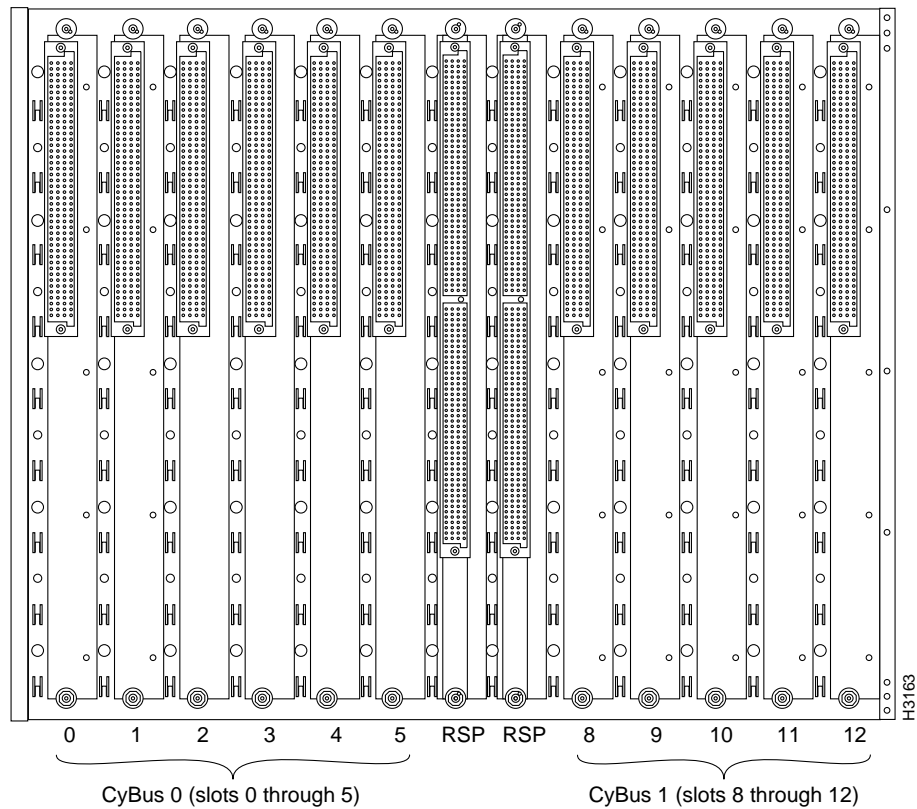
An RSP2 in either slot 6 or slot 7 controls both CyBus 0 and CyBus 1. The dual-CyBus backplane in the Cisco 7513 has an aggregate bandwidth of 2.134 gigabits per second (Gbps). Interface processors connected to one CyBus are unaffected by the traffic generated by the interfaces processors connected to the other CyBus. The two CyBuses are independent of one another.

System Specifications

Table 1-1 lists the specifications for the Cisco 7513 system.

Table 1-1   Cisco 7513 Specifications

Description	Specification
Backplane	Two 1.0677-Gbps CyBuses: 11 interface processor slots, two RSP slots
Dimensions (H x W x D)	33.75 x 17.5 x 22" (85.73 x 44.45 x 55.88 cm) Chassis width including rack-mount flanges is 18.93" (48.1 cm) Chassis depth including power cables and cable management bracket is 24" (60.96 cm)
Weight	Chassis with blower module: 75 lbs (34.02 kg) Chassis with blower module and one power supply: 100 lbs (45.36 kg) Chassis with blower module and two power supplies: 125 lbs (56.7 kg) Chassis with blower module, two power supplies, and all slots filled: ~160 lbs (72.58 kg), each processor module weighs ~2.5 lbs (1.13 kg)
Power dissipation	1600W with a maximum configuration and one AC-input power supply 1600W with a maximum configuration and one DC-input power supply 1700W nominal with a maximum configuration and either two AC-input or two DC-input power supplies
Heat dissipation	1600W (5461 Btu/hr)
AC-input voltage	100 to 240 VAC
Frequency	50/60 Hz
AC-input cable	12 AWG (American Wire Gauge), with three leads and an IEC-320 plug on the router end and a country-dependent plug on the power source end

| Description	Specification
AC-input voltage and current	100 VAC[1] at 16 amps (A) maximum, wide input with power factor correction (PFC) 240 VAC at 7 A maximum
DC-input voltage and current	–48 VDC[2] nominal, at 35 amps (A) in North America (–60 VDC at 35A in the E.C.)
DC-input cable	8 AWG (American Wire Gauge, recommended minimum), with three leads and rated for at least 194 F (90 C)
DC voltages supplied and maximum, steady-state current (AC- and DC-input)	+5.2 VDC @ 75 A +12 VDC @ 15A –12 VDC @ 3A +24 VDC @ 5A
Air flow/noise level	Bottom to top through chassis by variable-speed blower (62 to 70 dBA)
Temperature	32 to 104 F (0 to 40 C), operating; –4 to 149 F (–20 to 65 C), nonoperating
Relative humidity	10 to 90%, noncondensing
Software requirement	Cisco IOS Release 10.3(571) or later for the RSP2 and Cisco 7513
Agency approvals	Safety: UL 1950, CSA 22.2-950, EN60950, EN41003, TS001, AS/NZS 3260 EMI: FCC Class A, EN60555-2, EN55022 Class B, VDE 0878 Part 3, 30 Class B Immunity: EN55101/2 (ESD), EN55101/3 (RFI), EN55101/4 (Burst), EN55101/5 (Surge), EN55101/6 (Conducted), IEC77B (AC Disturbance)

1. VAC = volts alternating current.
2. VDC = volts direct current.

Airflow Considerations

The blower on the Cisco 7513 provides cooling air for the processor modules. The blower pulls air into the chassis and up through the card cage, as shown in Figure 1-3.

Figure 1-3   Cisco 7513 Airflow
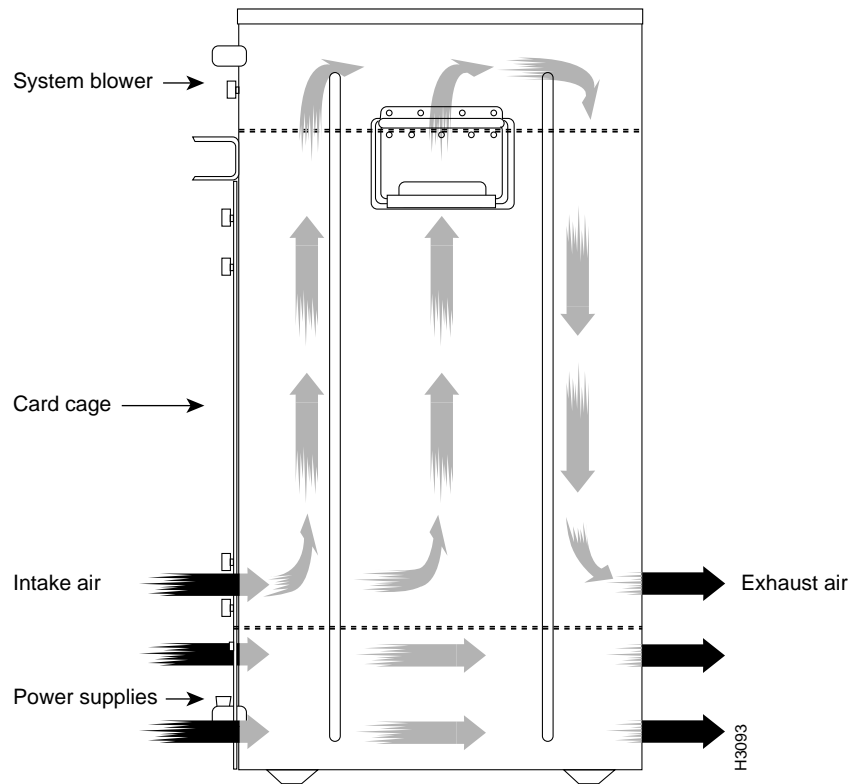
The exhaust air is forced out the front of the chassis behind the card cage. The power supplies have their own fans whose airflow is independent of the chassis airflow. Ensure that there is minimum front and back clearance of six inches.

For complete information on the blower, airflow, and environmental considerations, refer to the *Cisco 7513 Hardware Installation and Maintenance* publication, which is available on UniverCD or as a printed copy.