



# CHAPTER 1

## Overview of Cisco 2600 Series Routers

Cisco 2600 series routers are modular access routers with LAN and WAN connections that can be configured by means of interchangeable modules and WAN interface cards.

This guide discusses the router models listed in [Table 1-1](#).

This chapter includes the following sections:

- [Hardware Features, page 1-1](#)
- [Reading the Front-Panel LEDs, page 1-3](#)
- [Reading the Rear-Panel LEDs, page 1-5](#)
- [Interface Numbering, page 1-9](#)
- [System Specifications, page 1-11](#)
- [Regulatory Compliance, page 1-12](#)

## Hardware Features

[Table 1-1](#) lists the router models described in this guide and summarizes the LAN interfaces supported on each model. These router models are similar in functionality, but differ in the number of interfaces that are supported as well as the system specifications. (See [Table 1-6](#).)

**Table 1-1 Summary of Cisco 2600 Series LAN Interfaces**

Model	Ethernet (10BASE-T)	Token Ring (RJ-45)	Fast Ethernet (10/100)	Network Module Slot	WAN Interface Card Slots	Advanced Integration Module Slots
Cisco 2610	1	—	—	1	2	1
Cisco 2610XM	—	—	1	1	2	1
Cisco 2611	2	—	—	1	2	1
Cisco 2611XM	—	—	2	1	2	1
Cisco 2612	1	1	—	1	2	1
Cisco 2613	—	1	—	1	2	1
Cisco 2620	—	—	1	1	2	1
Cisco 2620XM	—	—	1	1	2	1
Cisco 2621	—	—	2	1	2	1

**Table 1-1 Summary of Cisco 2600 Series LAN Interfaces (continued)**

Model	Ethernet (10BASE-T)	Token Ring (RJ-45)	Fast Ethernet (10/100)	Network Module Slot	WAN Interface Card Slots	Advanced Integration Module Slots
Cisco 2621XM	—	—	2	1	2	1
Cisco 2650	—	—	1	1	2	1
Cisco 2650XM	—	—	1	1	2	1
Cisco 2651	—	—	2	1	2	1
Cisco 2651XM	—	—	2	1	2	1
Cisco 2691	—	—	2	1	3	2

In addition to the interfaces listed in [Table 1-1](#), Cisco 2600 series routers include the following hardware features:

- Dynamic random-access memory (DRAM) for main memory and shared memory (Cisco 261x and Cisco 262x routers)
- Synchronous dynamic random-access memory (SDRAM) for main memory and shared memory (Cisco 26xxXM, Cisco 265x, and Cisco 2691 routers)
- Nonvolatile random-access memory (NVRAM) for storing configuration information
- Flash memory—Stores the operating system software image. In Cisco 2691 routers, flash memory is a CompactFlash memory card. In all other Cisco 2600 series routers, flash memory is a single inline memory module (SIMM).
- EIA/TIA-232 (RJ-45) console port for local system access by using a console terminal
- EIA/TIA-232 (RJ-45) auxiliary port for remote system access or dial backup by using a modem

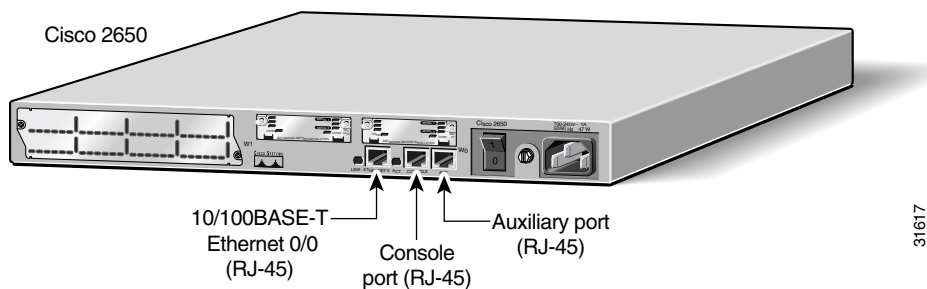
[Figure 1-1](#) and [Figure 1-2](#) show examples of Cisco 2600 series routers.

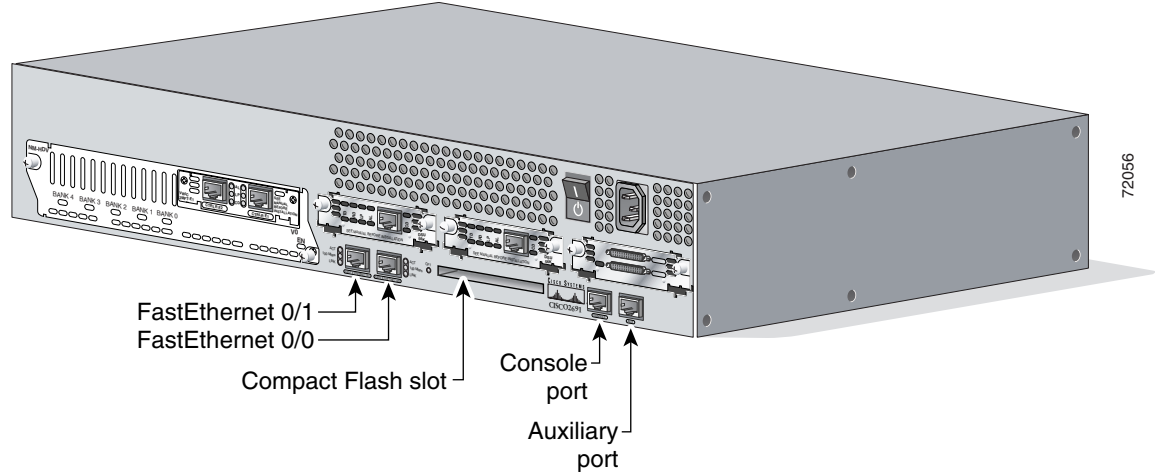
**Note**

Cisco 2600 series routers are either single rack-unit (1RU) or two rack-unit (2RU) high.

**Note**

The number and type of interfaces vary, depending on the specific router.

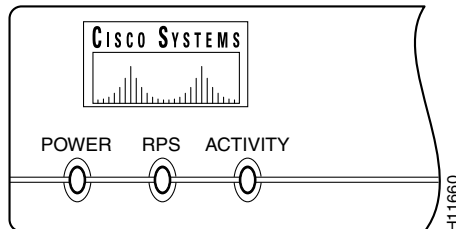
**Figure 1-1 Cisco 2600 Series Router Rear Panel—Example of 1RU Router**

**Figure 1-2 Cisco 2600 Series Router Rear Panel—Example of 2RU Router**

## Reading the Front-Panel LEDs

The LEDs indicate the current operating condition of the router. By observing the LEDs, you can note any fault condition that the router is encountering, and then contact your system administrator or customer service, when necessary.

Figure 1-3 and Figure 1-4 show the locations of the LEDs on the front panel of Cisco 2600 series routers. Table 1-3 and Table 1-3 describe these LEDs.

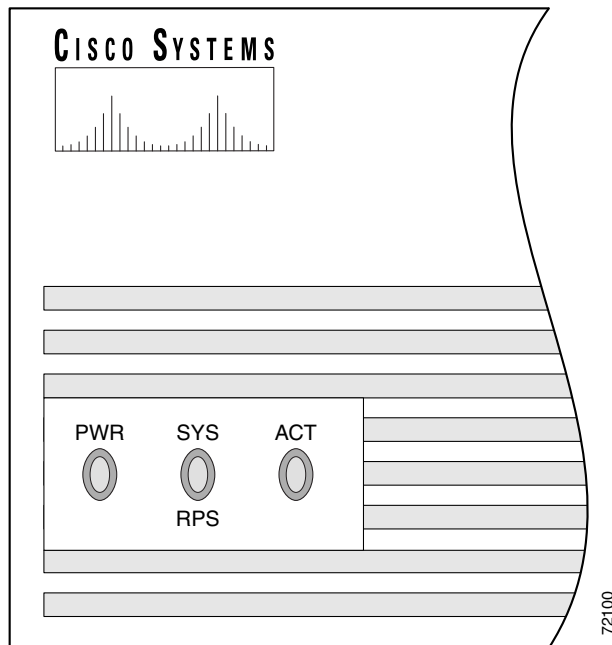
**Figure 1-3 Cisco 2600 Series Routers with 1-RU Chassis Height—Front-Panel LEDs****Table 1-2 Cisco 2600 Series Routers with 1-RU Chassis Height—Front-Panel LED Descriptions**

LED	Description
POWER	Indicates the router's operating status. Comes on when power is supplied to the router and the router is operational.

**Table 1-2 Cisco 2600 Series Routers with 1-RU Chassis Height—Front-Panel LED Descriptions**

LED	Description (continued)
RPS	Off—No RPS <sup>1</sup> is attached. On—RPS is attached and operational. Blinking—RPS is attached, but has a failure.
ACTIVITY	Off—In the Cisco IOS software, but no network activity. Blink (500 ms ON, 500 ms OFF)—In ROMMON, no errors. Blink (500 ms ON, 500 ms OFF, 2 seconds between codes)—In ROMMON, error detected. Blink (less than 500 ms)—In the Cisco IOS software, the blink rate reflects the level of activity.

1. RPS = Redundant Power System

**Figure 1-4 Cisco 2691—Front-Panel LEDs****Table 1-3 Cisco 2691—Front-Panel LED Descriptions**

LED	Description
PWR	On—Power is applied to the router.
SYS/RPS	Rapid blinking—System is booting Slow blinking—System error On—System okay
ACTIVITY	Off—No system activity Blinking—System activity

# Reading the Rear-Panel LEDs

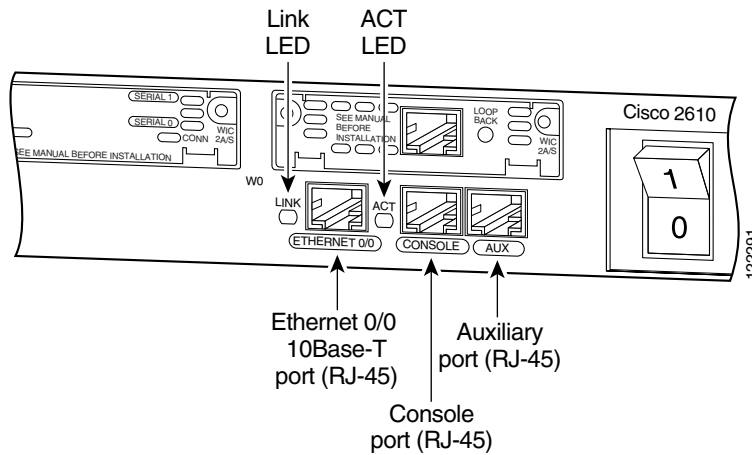
Figure 1-4 through Figure 1-10 show the location of the Cisco 2600 series rear-panel LEDs. Table 1-4 and Table 1-5 describe these LEDs.



**Note**

Not all router models are shown in these illustrations. The speed and number of Ethernet and Token Ring interfaces varies depending on the router model. LED labels and functionality also vary depending on the router model.

**Figure 1-5 Cisco 2610—Rear-Panel LEDs**



**Figure 1-6 Cisco 2611—Rear-Panel LEDs**

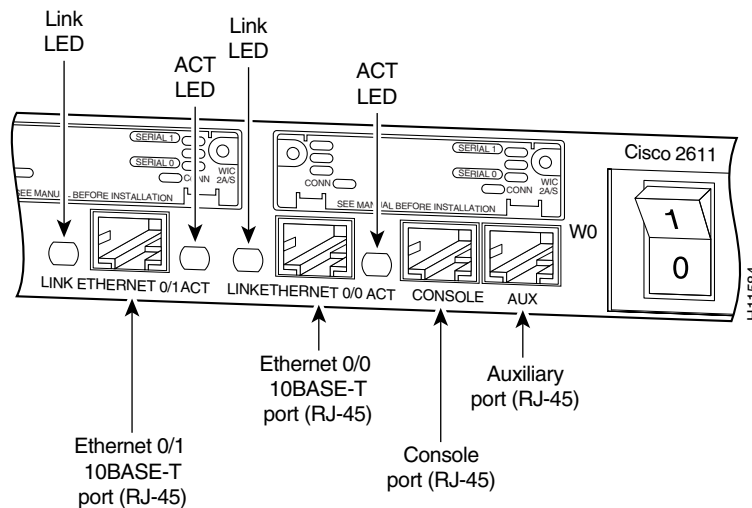


Figure 1-7 Cisco 2613—Rear-Panel LEDs

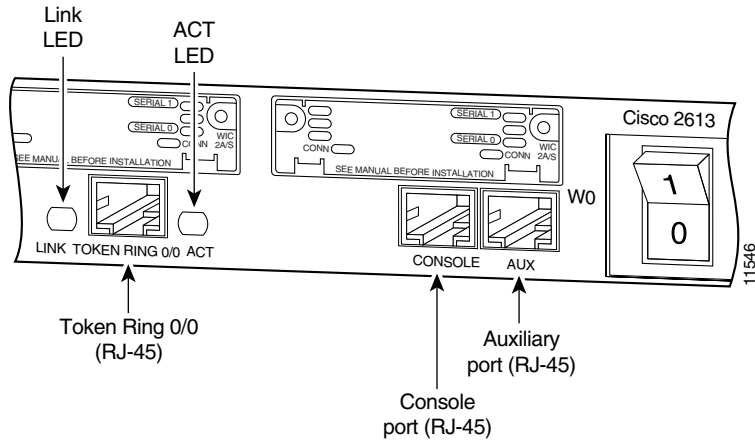


Figure 1-8 Cisco 2621—Rear-Panel LEDs

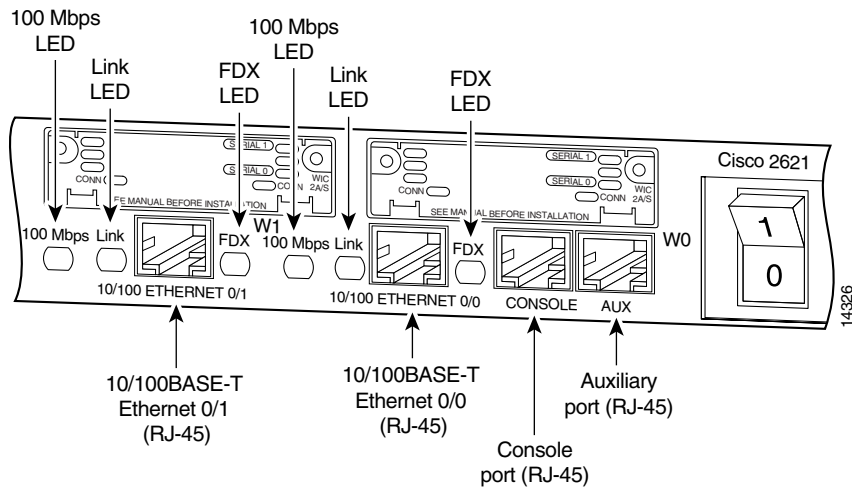


Figure 1-9 Cisco 2651—Rear-Panel LEDs

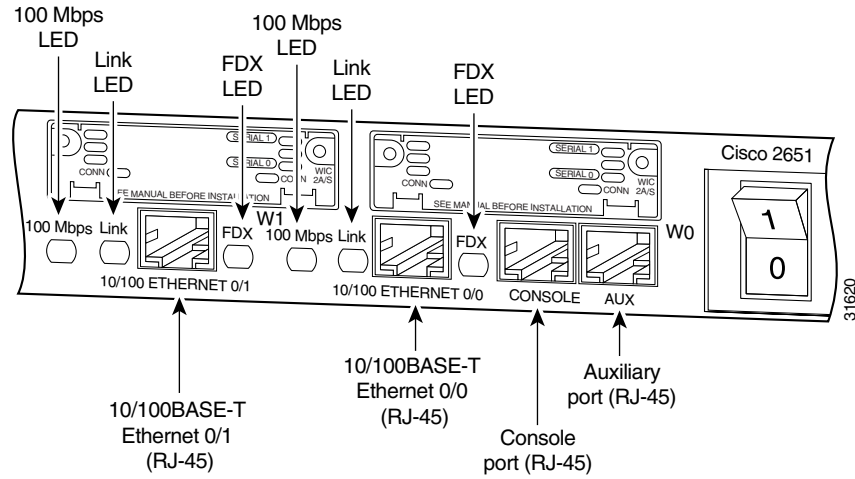


Table 1-4 Cisco 261x, Cisco 262x, Cisco 26xxXM, and Cisco 265x Series Routers—Rear-Panel LEDs

LED	Description
LINK	When on, a link has been established with the hub or switch at the other end of the cable.
ACT	Packets are being transmitted or received on the Ethernet interface.
FDX	When on, the interface is in full-duplex mode. When off, the interface is in half-duplex mode.
100 Mbps	When on, the speed of the interface is 100 Mbps. When off, the speed of the interface is 10 Mbps.

Figure 1-10 Cisco 2691—Rear-Panel LEDs

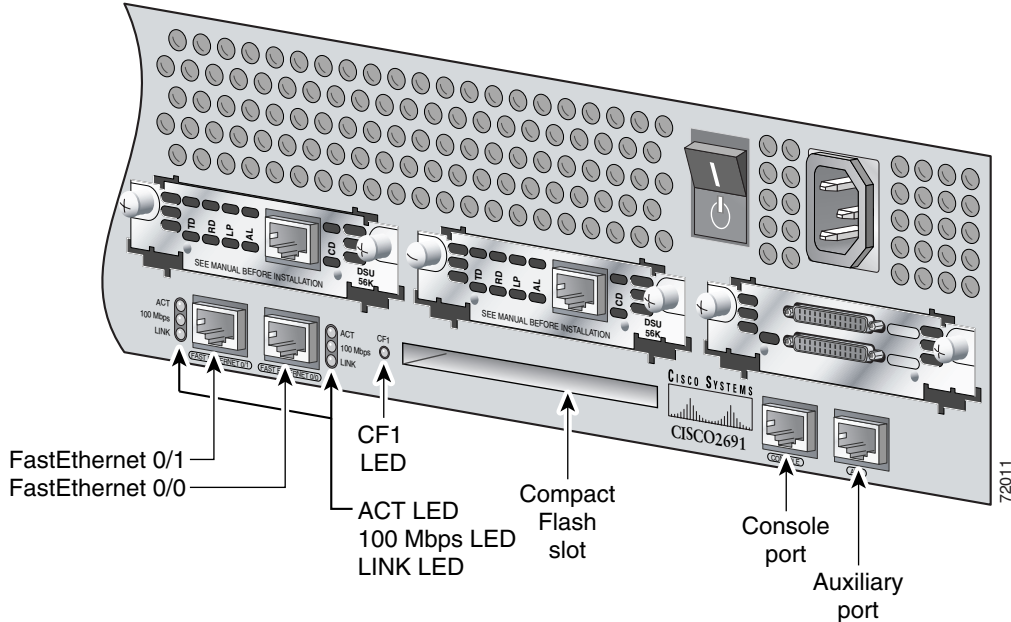


Table 1-5 Cisco 2691—Rear-Panel LEDs

LED	Description
LINK	On when a link has been established with the hub or switch at the other end of the cable.
ACT	On when packets are being transmitted or received on the Ethernet interface.
100 Mbps	On when the speed of the interface is 100 Mbps. Off when the speed of the interface is 10 Mbps.
CF1	On when flash memory is being accessed—either READ or WRITE.

## Modules, Interface Cards, and Memory

The latest information on network modules, WAN interface cards (WICs), voice interface cards (VICs), advanced integration modules (AIMs), and memory is available online and on the documentation CD-ROM.

- For information on installing network modules, refer to the following documents:
  - [Quick Start Guide: Network Modules for Cisco 2600 Series, Cisco 3600 Series, and Cisco 3700 Series Routers](#)
  - [Cisco Network Modules Hardware Installation Guide](#)
- For information on installing WICs and VICs, refer to the following documents:
  - [Quick Start Guide: Interface Cards for Cisco 1600, 1700, 2600, 3600, and 3700 Series](#)
  - [Cisco Interface Cards Installation Guide](#)



- For information on installing AIMs, refer to the following documents:
  - [AIM Installation Quick Start Guide: Cisco 2600, 3600, and 3700 Series](#)
  - [Installing Advanced Integration Modules in Cisco 2600 Series, Cisco 3600 Series, and Cisco 3700 Series Routers](#)
- For information about installing DRAM, SDRAM, NVRAM, and flash memory SIMMs, refer to the following hardware configuration note:
  - [Upgrading System Memory, Internal Flash Memory, and Root ROM in Cisco 2600 Series Routers](#)
- For information about installing CompactFlash memory cards, refer to the following hardware configuration note:
  - [Installing and Formatting Cisco 2691, Cisco 3631, and Cisco 3700 Compact Flash Memory Cards](#)

## Interface Numbering

Each interface (port) on a Cisco 2610, Cisco 2620, and Cisco 2650 series router is identified by number as described in the following sections.

### WAN and LAN Interface Numbering

Cisco 2600 series routers contain the following WAN and LAN interface types:

- Built-in LAN interfaces: Ethernet, FastEthernet, Token Ring
- Two or three slots in which you can install WAN interface cards (WICs)
- One slot in which you can install a network module

The numbering format is *interface-type slot-number/Interface-number*. Two examples are:

- Ethernet 0/0
- Serial 1/2

The slot number is 0 for all built-in interfaces and 0 for all WIC interfaces; the slot number is 1 for network module interfaces.

Interface (port) numbers begin at 0 for each interface type, and continue from right to left and (if necessary) from bottom to top.

Figure 1-11 shows a router of 1-RU height with:

- A WIC in each WIC slot (containing interface Serial 0/0 in physical slot W0, and interface Serial 0/1 in physical slot W1)
- A 4-serial-port network module in slot 1 (containing the following ports: Serial 1/0, Serial 1/1, Serial 1/2, and Serial 1/3)
- First built-in Ethernet interface—Ethernet 0/0
- Second built-in Ethernet interface—Ethernet 0/1, or optionally in Cisco 2612 and Cisco 2613 routers only: Token Ring interface 0/0

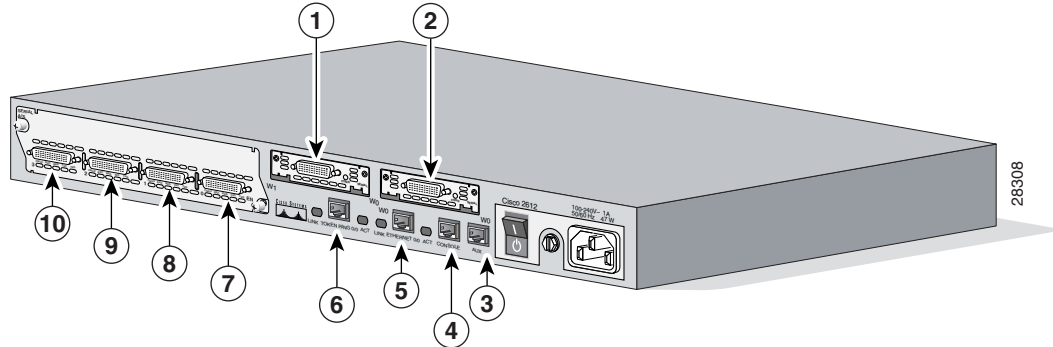
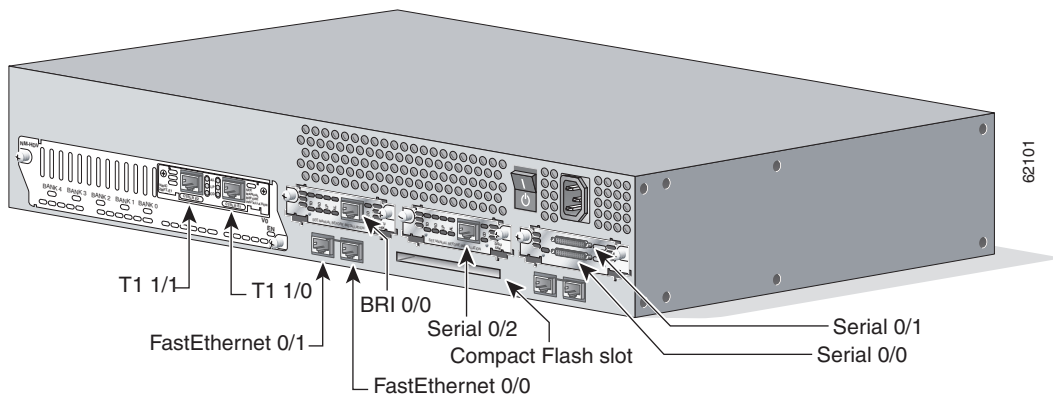
**Figure 1-11 Interface Numbering in Chassis with 1-RU Height**

Figure 1-12 shows a router of 2-RU height with:

- A 2-port T1 network module in slot 1 (containing the following ports: T1 1/0 and T1 1/1)
- Two built-in Ethernet 10/100 interfaces—Fast Ethernet 0/0 and Fast Ethernet 0/1
- A WIC in each WIC slot (containing interfaces Serial 0/0 and Serial 0/1 in physical slot W0, interface Serial 0/2 in physical slot W1, and interface BRI 0/0 in physical slot W2)
  - If physical slot W0 is empty and physical slot W1 contains a 1-port serial WIC, the interface number in the WIC is numbered Serial 0/0.
  - If slot W0 contains a 2-port serial WIC and slot W1 contains a 1-port serial WIC, the interfaces in physical slot W0 are numbered Serial 0/0 and Serial 0/1, and the interface in physical slot W1 is numbered Serial 0/2.
  - If slot W0 contains a 2-port serial WIC and slot W1 contains a 1-port BRI WIC, the interfaces in physical slot W0 are numbered Serial 0/0 and Serial 0/1, and the interface in physical slot W1 is numbered BRI 0/0.



**Note** The slot number for all WIC interfaces is always 0. (The W0 and W1 slot designations are for physical slot identification only.) Interfaces in the WICs are numbered from right to left, starting with 0/0 for each interface type, regardless of which physical slot the WICs are installed in.

**Figure 1-12 Interface Numbering in Cisco 2691 Routers**

## Voice Interface Numbering

Voice interfaces are numbered as follows:

*chassis-slot/voice-module-slot/voice-interface*

If a 4-channel voice network module is installed in chassis slot 1, the voice interfaces are:

- 1/0/0—Chassis slot 1/Voice module slot 0/Voice interface 0
- 1/0/1—Chassis slot 1/Voice module slot 0/Voice interface 1
- 1/1/0—Chassis slot 1/Voice module slot 1/Voice interface 0
- 1/1/1—Chassis slot 1/Voice module slot 1/Voice interface 1

## System Specifications

**Table 1-6 Cisco 261x, Cisco 262x, and Cisco 265x System Specifications**

Description	Specification
Dimensions (H x W x D)	1.69 x 17.5 x 11.8 in. (4.3 x 44.5 x 30 cm), one rack unit height
Weight	10.25 lb (4.66 kg)
Input voltage, AC power supply	100 to 240 VAC
Current	1.5 A
Frequency	47 to 63 Hz
Power dissipation	75 W (maximum), 260 Btus <sup>1</sup> /hr
Input voltage, DC power supply	-38 to -75 VDC
Current	2.0 A
Power dissipation	75 W (maximum), 260 Btus/hr
Operating environment	32 to 104°F (0 to 40°C)
Nonoperating temperature	-40 to 158°F (-40 to 70°C)
Operating humidity	5 to 95 percent, noncondensing
Noise level	38 dBA (minimum)
Regulatory compliance	FCC Class B and Canadian DOC Class A  For more compliance information, refer to the <a href="#">Cisco 2600 Series, Cisco 3600 Series, and Cisco 3700 Series Regulatory Compliance and Safety Information</a> document that accompanied your router.
Safety compliance	UL 60950; CAN/CSA C22.2 No. 60950-00; IEC 60950; AS/NZS 3260; TS001

1. Btus = British thermal units

**Table 1-7 Cisco 2691 System Specifications**

Description	Specification
Dimensions (H x W x D)	3.46 x 17.07 x 11.20 in. (8.78 x 45.36 x 28.45 cm), two rack unit height
Weight	15 lb (6.80 kg)
Input voltage, AC power supply	100 to 120, 120 VAC 200 to 240, 230 VAC
Current emissions (AC)	0.93 min. @ 120 VAC 60 Hz (when loaded at 50% or higher)
Frequency	47 to 63 Hz
Line surge (120 VAC)	160 VAC - 1/2 cycle 140 VAC - 5 cycles
Line surge (240 VAC)	320 VAC - 1/2 cycle 280 VAC - 5 cycles
Power dissipation	105 W (maximum)
Console and auxiliary ports	RJ-45 connector
Operating humidity	5 to 95%, noncondensing
Operating temperature	32 to 104°F (0 to 40°C)
Nonoperating temperature	-40 to 158°F (-40 to 70°C)
Noise level	45 dBA (maximum)
Regulatory compliance	FCC Part 15 Class A.  For more compliance information, refer to the <i>Cisco 2600 Series, Cisco 3600 Series, and Cisco 3700 Series Regulatory Compliance and Safety Information</i> document that accompanied the router.
Safety compliance	UL 60950; CAN/CSA C22.2 No. 60950-00; IEC 60950; AS/NZS 3260; TS001

## Regulatory Compliance

For compliance information, refer to the *Cisco 2600 Series, Cisco 3600 Series, and Cisco 3700 Series Regulatory Compliance and Safety Information* document that accompanied your router.