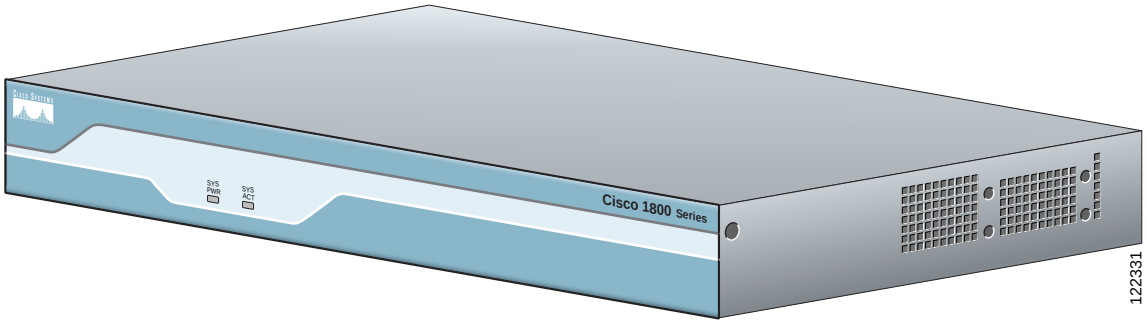
Overview of Cisco 1800 Series Routers (Modular)

Cisco 1800 series integrated services routers (modular) are modular routers with LAN and WAN connections that can be configured by means of interchangeable interface cards and advanced integration modules (AIMs). The modular design of the routers provides flexibility, allowing you to configure or reconfigure your router according to your needs.

There is one router in the Cisco 1800 series (modular). The Cisco 1841 router is a data-only device for desktop use.

Figure 1 shows the Cisco 1841 router.

Figure 1 The Cisco 1841 Router



This chapter describes the features and specifications of the router and includes the following sections:

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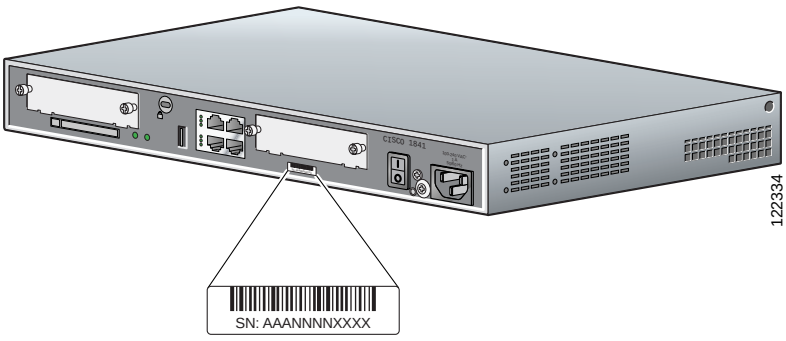
Hardware Features

This section describes the basic features of Cisco 1800 series routers. It contains the following:

Product Serial Number Location

The serial number label for Cisco 1841 router is located on the rear of the chassis, underneath interface card slot 0. (See Figure 2.)

Figure 2 Serial Number Location



Note The serial number for Cisco 1841 router is 11 characters long.

Cisco Product Identification Tool

The Cisco Product Identification (CPI) tool provides detailed illustrations and descriptions showing where to locate serial number labels on Cisco products. It includes the following features:

- A search option that allows browsing for models using a tree-structured product hierarchy
- A search field on the final results page making it easier to look up multiple products
- End-of-sale products are clearly identified in results lists

The tool streamlines the process of locating serial number labels and identifying products. Serial number information expedites the entitlement process and is important for access to support services.

The Cisco Product Identification tool can be accessed at the following URL:

http://tools.cisco.com/Support/CPI/index.do

Built-In Interfaces

This section summarizes the interfaces available on the Cisco 1800 series routers:

- Two Fast Ethernet ports (RJ-45 connectors)
- High-speed console and auxiliary ports, up to 115.2 kbps each (RJ-45 connectors)
- One USB port (version 1.1), intended for future use

Removable and Interchangeable Modules

Various optional modules can be installed in the router to provide specific capabilities. These modules can be installed either by inserting them into slots on the chassis, or by opening the chassis and plugging them into connectors inside.

- Flash memory and interface cards fit into slots on the chassis and can be installed or removed without opening the chassis.

  There are three types of interface cards for the 1800 series modular routers:

  – WAN interface cards (WICs)

  – Voice WAN interface cards (VWICs—in data mode only on the Cisco 1841)

  – High-speed WAN interface cards (HWICs)

- The following components plug into connectors inside the chassis and can be installed or removed only by opening the chassis:

  – Advanced integration module (AIM)

  – Synchronous dynamic RAM (SDRAM) small-outline dual in-line memory module (SODIMM)

Table 1 summarizes the optional modules:

Table 1 Summary of Cisco 1800 Series Removable and Interchangeable Modules

Model	CompactFlash Memory	Interface Cards	AIMs	SDRAM SODIMM
Cisco 1841	1	2 single-wide cards	1	1

Memory

Cisco 1800 series routers contain the following types of memory:

- SDRAM—Serves two functions. It stores the running configuration and routing tables, and it is used for packet buffering by the network interfaces. Cisco IOS software executes from SDRAM.
- Flash memory—Stores the operating system software image, configuration files, and log files. It is implemented in an external CompactFlash memory card.
- Boot/NVRAM—Serves two functions. It stores the ROM monitor, which allows you to boot an operating system software image from flash memory. It also stores the system configuration file and the virtual configuration register.

Table 2 lists the memory specifications for Cisco 1800 series routers.

Table 2 Router Memory Specifications

Description	Specification
SDRAM	128 MB, expandable to 384 MB; default is 128 MB
Flash memory	32, 64, or 128 MB; default is 32MB
Boot/NVRAM	2/4 MB flash memory

Note SDRAM and the flash memory are user-upgradable, but the boot/NVRAM is permanently soldered to the router's motherboard and is not upgradable.

LED Indicators

Table 3 summarizes the LED indicators that are located in the router bezel or chassis, but not in the interface cards.

For descriptions of the LEDs in the interface cards, refer to the *Cisco Interface Card Installation Guide*.

Table 3 Summary of Cisco 1800 Series LED Indicators

LED	Color	Description	Location:
SYS PWR	Green	Router has successfully booted up and the software is functional. This LED blinks while booting or in the ROM monitor.	Front
SYS ACT	Green	Blinking when any packets are transmitted or received on any WAN or LAN, or when monitoring system activity.	Front
CF	Green	On when flash memory is busy. Do not remove the CompactFlash memory card when this light is on.	Back
FDX (FE 0/0)	Green	On indicates full-duplex operation. Off indicates half-duplex operation.	Back
100 (FE 0/0)	Green	On indicates a 100-Mbps link. Off indicates a 10-Mbps link.	Back
Link (FE 0/0)	Green	On when the router is correctly connected to a local Ethernet LAN through Ethernet port 0.	Back
FDX (FE 0/1)	Green	On indicates full-duplex operation. Off indicates half-duplex operation.	Back
100 (FE 0/1)	Green	On indicates a 100-Mbps link. Off indicates a 10-Mbps link.	Back
Link (FE 0/1)	Green	On when the router is correctly connected to a local Ethernet LAN through Ethernet port 1.	Back
AIM	Green	On indicates presence of an AIM in the internal AIM slot.	Back

Chassis Ventilation

An internal three-speed fan provides chassis cooling. An onboard temperature sensor controls the fan speed. The fan is always on when power is applied to the router. Under most conditions, the fan operates at the slowest speed to conserve power and reduce fan noise. It operates at the higher speeds when necessary under conditions of higher ambient temperature.

Real-Time Clock

An internal real-time clock with battery backup provides the system software with time of day on system power up. This allows the system to verify the validity of a certification authority (CA) certificate. The backup battery is a socketed lithium battery. This battery lasts the life of the router under the operating environmental conditions specified for the router, and is not field replaceable.

Note If the lithium battery in a Cisco 1841 router should fail, the router must be returned to Cisco for repair. Do not replace the battery yourself. Although the battery is not intended to be field replaceable, the safety agencies require the following warning be included in this document.

Warning **There is the danger of explosion if the battery is replaced incorrectly. Replace the battery only with the same or equivalent type recommended by the manufacturer. Dispose of used batteries according to the manufacturer's instructions.** Statement 1015

Chassis Security

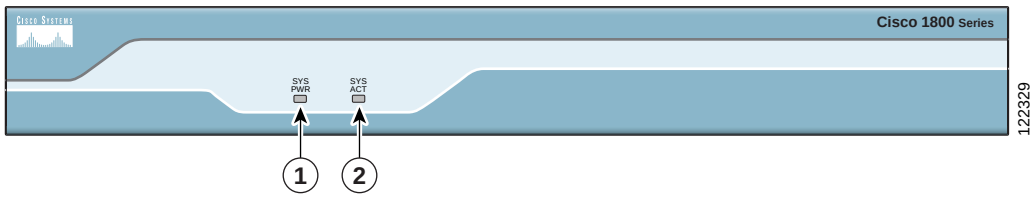
The chassis of the Cisco 1841 router is constructed with a Kensington™ security slot on the back panel. It can be secured to a desktop or other surface by using Kensington™ lockdown equipment.

Chassis Views

This section contains views of the front and rear panels of Cisco 1800 series routers, showing the locations of the power and signal interfaces, the interface card slots, and the status indicators.

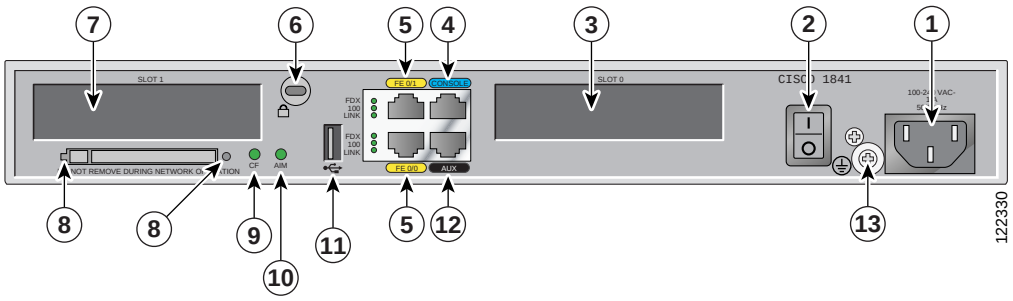
Figure 3 shows the front panel of a Cisco 1841 router. Figure 4 shows the back panel.

Figure 3 Front Panel of the Cisco 1841 Router



1	System Power (SYS PWR) LED	2	System Activity (SYS ACT) LED

Figure 4 Back Panel of the Cisco 1841 Router



1	Input power connection	**8**	CompactFlash memory card slot
2	On/Off switch	**9**	CompactFlash (CF) LED
3	Slot 0 (WIC, VWIC—data only, or HWIC)	**10**	AIM LED
4	Console port	**11**	USB port
5	Fast Ethernet ports and LEDs	**12**	Aux port
6	Kensington™ security slot	**13**	Chassis ground connection
7	Slot 1 (WIC, VWIC—data only, or HWIC)		

Interface Numbering

Each individual interface (port) on a Cisco 1841 router is identified by a number. A Cisco 1841 router contains the following wide-area network (WAN) and local-area network (LAN) interface types:

- Two onboard Fast Ethernet LAN interfaces
- Two slots in which you can install WICs, VWICs (data only), and HWICs.

The numbering format for the slots is *interface-type 0/slot-number/interface-number*. Table 4 summarizes the interface numbering.

Table 4 Interface Numbering

Slot Number	Slot Type	Slot Numbering Range	Example[1]
Onboard Ports	Fast Ethernet	0/0 and 0/1	interface fastethernet 0/0
Slot 0	HWIC/WIC/VWIC[2]	0/0/0 to 0/0/3	interface serial 0/0/0 line async 0/0/0
Slot 1	HWIC/WIC/VWIC[2]	0/1/0 to 0/1/3	interface serial 0/1/0 line async 0/1/0

1. The interfaces listed are examples only; other possible interface types are not listed.
2. VWICs are data-only in a Cisco 1841 router.

Note On the Cisco 1841 router, the numbering format for configuring an async interface is *0/slot/port*. To configure the line associated with an async interface, simply use the interface number to specify the async line. For example, line 0/0/0 specifies the line associated with interface serial 0/0/0 on a WIC-2A/S in slot 0. Similarly, line 0/1/1 specifies the line associated with interface async 0/1/1 on a WIC-2AM in slot 1.

Specifications

Table 5 lists the specifications for Cisco 1800 series routers.

Table 5 1841 Router Specifications

Description	Specification
Dimensions without rubber feet (H x W x D)	1.73 x 13.5 x 10.8 in. (4.4 x 34.3 x 27.4 cm) With rubber feet, height is 1.87 in. (4.75 cm)
Weight (no modules installed)	6.1 lb. (2.77 kg)
Input voltage, AC power supply Frequency	100 to 240 VAC, autoranging 47 to 63 Hz
Power consumption	20 W maximum for an unloaded unit. With two WICs and an AIM installed, power consumption will be less than 50 W.
Console and auxiliary ports	RJ-45 connectors
Operating humidity	5 to 95%, noncondensing
Operating temperature	32 to 104˚F (0 to 40˚C)
Nonoperating temperature shock	–13 to 158˚F (–25 to 70˚C) at 9˚ F (5˚ C)/minute minimum
Noise level	Normal operating temperature (< 78˚ F or 26˚ C): 34 dBa From (78˚ F or 26˚ C) through (104˚ F or 40˚ C): 37 dBa >104˚ F or 40˚ C: 42 dBa
Regulatory compliance	For detailed regulatory compliance information, refer to the *Regulatory Compliance and Safety Information for Cisco 1840 Routers* document that accompanies the router.
Electromagnetic compatibility	FCC Part 15 Class A.
Safety compliance	UL 60950; CSA 60950; IEC 60950; EN 60950; AS/NZS 3260; NOM-019-SCFI-1998.

Regulatory Compliance

For compliance information, refer to the *Regulatory Compliance and Safety Information for Cisco 1840 Routers* document that accompanies the router.