



Power Up and Initial Configuration Procedures for Cisco 2800 Series Routers

This document describes how to power up your Cisco 2800 series integrated services router and perform an initial configuration to provide network access. It includes the following sections:

- [Powering Up Cisco 2800 Series Routers, page 1](#)
- [Configuring the Router, page 4](#)

Powering Up Cisco 2800 Series Routers



Blank faceplates and cover panels serve three important functions: they prevent exposure to hazardous voltages and currents inside the chassis; they contain electromagnetic interference (EMI) that might disrupt other equipment; and they direct the flow of cooling air through the chassis. Do not operate the system unless all cards, faceplates, front covers, and rear covers are in place. Statement 1029

This section covers the following topics:

- [Checklist for Power Up, page 1](#)
- [Power Up Procedure, page 2](#)
- [Verifying the Front Panel LED Indications, page 3](#)
- [Verifying the Hardware Configuration, page 4](#)

Checklist for Power Up

You are ready to power up the Cisco router if the following steps are completed:

- Chassis is securely mounted and grounded.
- Power and interface cables are connected.



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- The external CompactFlash memory card is properly seated into its slot. For installation instructions, see the online document [“Removing and Installing CompactFlash Memory Cards in Cisco 2800 Series Routers.”](#)
- PC with terminal emulation program (hyperTerminal or equivalent) is connected to the console port and powered up.
- Your PC terminal emulation program is configured for 9600 baud, 8 data bits, 1 stop bit, no parity, and flow control is set to “none.”
- Suitable PC COM port is selected in the terminal emulation program.
- You have selected passwords for access control.
- You have determined the IP addresses for the Ethernet and serial interfaces.

Power Up Procedure

To power up your Cisco router and verify that it goes through its initialization and self-test, follow the procedure below. When the procedure is finished, the Cisco router is ready to configure.

If you encounter problems when you power on the router, refer to the [“Troubleshooting Cisco 2800 Series Routers”](#) online document.

For information about the ROM monitor and the bootstrap program, refer to the [Using the ROM Monitor](#) document. For information about the configuration register, refer to the [Changing the Configuration Register Settings](#) document.



Note

To view the boot sequence, you must have a console connection to the Cisco router *before* it powers up.

Step 1 Make sure that your PC is powered up and connected as described in the [“Checklist for Power Up”](#) section on page 1.

Step 2 Move the power switch to the ON position.

The following indications appear:

- The SYS PWR LED on the front of the chassis blinks green.
- The fans operate.

Depending on your installation, some LEDs on the rear of the chassis and on installed modules might also come on.

If you encounter problems when you power up the router, refer to the [“Troubleshooting Cisco 2800 Series Routers”](#) online document.

Startup messages appear in your terminal emulation program window. When the startup messages end, the SYS PWR LED comes on solid green.



Caution

Do not press any keys on the keyboard until the messages stop and the SYS PWR LED is solid green. Any keys pressed during this time are interpreted as the first command typed when the messages stop, which might cause the router to power off and start over. It takes a few minutes for the messages to stop.

You may see different startup messages:

- If you see the following messages, the router has booted with a configuration file and is ready for initial configuration using Cisco Router and Security Device Manager (SDM).

```
yourname con0 is now available

Press RETURN to get started.
```

If the messages above do not appear, SDM and the *Cisco Router and Security Device Manager (SDM) Quick Start Guide* were not shipped with your router. If SDM is installed on your router, we recommend using SDM to perform the initial configuration. To learn how to configure your router using SDM, or how to obtain SDM and install it on your router, see the [“Initial Configuration Using Cisco Router and Security Device Manager”](#) section on page 5.

- If you see the following messages, the router has booted and is ready for initial configuration using the setup command facility or the command-line interface (CLI).

```
--- System Configuration Dialog ---

At any point you may enter a question mark '?' for help.
Use ctrl-c to abort configuration dialog at any prompt.
Default settings are in square brackets '['].

Would you like to enter the initial configuration dialog? [yes/no]:
```

To learn how to use the setup command facility to configure the router, see the [“Initial Configuration Using the Setup Command Facility”](#) section on page 5.

To learn how to use the CLI to configure the router, see the [“Initial Configuration Using the Cisco CLI—Manual Configuration”](#) section on page 8.



Note

If the `rommon 1>` prompt appears, your system has booted in ROM monitor mode. For information on the ROM monitor, see the [Using the ROM Monitor](#) document.

Verifying the Front Panel LED Indications

The front-panel indicator LEDs described in [Table 1](#) provide power, activity, and status information useful during powerup. The built-in LED indicators in the front and rear panels are described in [Table 6 on page 9](#). For more detailed information about the LEDs, refer to the [“LED Indicators”](#) section of the [“Overview of Cisco 2800 Series Routers”](#) online document.

Table 1 Cisco 2800 Series LED Indicators

LED Label	LED Color or State	Meaning
SYS PWR	Solid green	System is operating normally
	Blinking green	System is booting or is in ROM monitor mode
	Amber	System error
	Off	Power is off or power fault

Table 1 Cisco 2800 Series LED Indicators (continued)

LED Label	LED Color or State	Meaning
AUX/ PWR	Green	IP phone power operating normally (if installed), or Cisco Redundant Power System (RPS) operating normally (if installed)
	Amber	IP phone power fault (if installed), or Cisco Redundant Power System (RPS) fault (if installed)
	Off	IP phone power and Cisco RPS are not installed
SYS ACT	Blinking green or solid green	Packet transfers are occurring or internal monitoring activities are occurring
	Off	No packet transfers are occurring
CF	Blinking green or solid green	Flash memory is being accessed; do not eject the CompactFlash memory card
	Off	Flash memory is not being accessed; okay to eject the CompactFlash memory card

Verifying the Hardware Configuration

To display and verify the hardware features, enter the following commands:

- **show version**—Displays the system hardware version; the installed software version; the names and sources of configuration files; the boot images; and the amount of installed DRAM, NVRAM, and flash memory.
- **show diag**—Lists and displays diagnostic information about the installed controllers, interface processors, and port adapters; typical examples are network modules, interface cards (VICs, WICs, HWICs), and advanced integration modules (AIMs).

Configuring the Router

This section covers the following topics:

- [Initial Configuration Using Cisco Router and Security Device Manager, page 5](#)
- [Initial Configuration Using the Setup Command Facility, page 5](#)
- [Initial Configuration Using the Cisco CLI—Manual Configuration, page 8](#)
- [Verifying the Initial Configuration, page 9](#)
- [Completing the Configuration, page 9](#)

You can configure your router by using one of the following tools:

- Cisco Router and Security Device Manager—See the “[Initial Configuration Using Cisco Router and Security Device Manager](#)” section on page 5.
- Setup command facility—See the “[Initial Configuration Using the Setup Command Facility](#)” section on page 5.
- Command-line interface (CLI)—See the “[Initial Configuration Using the Cisco CLI—Manual Configuration](#)” section on page 8.

**Note**

If you need help with the interface and port numbering, refer to the “[Interface Numbering](#)” section of the “[Overview of Cisco 2800 Series Routers](#)” online document.

Initial Configuration Using Cisco Router and Security Device Manager

The following messages appear at the end of the startup sequence:

```
yourname con0 is now available
```

```
Press RETURN to get started.
```

For instructions on configuring your router by using SDM, refer to the *Cisco Router and Security Device Manager (SDM) Quick Start Guide* that shipped with your router. If the messages above do not appear, SDM and the *Cisco Router and Security Device Manager (SDM) Quick Start Guide* were not shipped with your router. If you want to use SDM, you can download the latest version of SDM and instructions for installing it on your router from the following location:

```
http://www.cisco.com/cgi-bin/tablebuild.pl/sdm
```

To obtain the SDM quick start guide, SDM release notes, and other SDM documentation, go to www.cisco.com/go/sdm and click the Technical Documentation link.

For help with interface and port numbering, refer to the “[Interface Numbering](#)” section of the “[Overview of Cisco 2800 Series Routers](#)” online document.

Initial Configuration Using the Setup Command Facility

This section shows how to use the setup command facility to configure a hostname for the router, set passwords, and configure an interface for communication with the management network. If you see the following messages at the end of the startup sequence, the setup command facility has been invoked automatically:

```
--- System Configuration Dialog ---
```

```
At any point you may enter a question mark '?' for help.
Use ctrl-c to abort configuration dialog at any prompt.
Default settings are in square brackets '[]'.
```

```
Would you like to enter the initial configuration dialog? [yes/no]:
```

The setup command facility prompts you for basic information about your router and network, and it creates an initial configuration file. After the configuration file has been created, you can use the CLI or Cisco Router and Security Device Manager to perform additional configuration.

The prompts in the setup command facility vary, depending on your router model, the installed interface modules, and the software image. The following example and the user entries (in **bold**) are shown as examples only.

For a description of the interface numbering, refer to the “[Interface Numbering](#)” section of the “[Overview of Cisco 2800 Series Routers](#)” online document.

**Note**

If you make a mistake while using the setup command facility, you can exit and run the setup facility again. Press **Ctrl-c**, and type **setup** at the privileged EXEC mode prompt (Router#).

Step 1 To proceed using the setup command facility, enter **yes** when the power-up messages have ended:

Would you like to enter the initial configuration dialog? [yes/no]: **yes**

Step 2 When the following messages appear, press **Return** to enter basic management setup:

At any point you may enter a question mark '?' for help.
Use ctrl-c to abort configuration dialog at any prompt.
Default settings are in square brackets '['].

Basic management setup configures only enough connectivity for management of the system, extended setup will ask you to configure each interface on the system

Would you like to enter basic management setup? [yes/no]: **yes**

Step 3 Enter a hostname for the router (this example uses **Router**):

Configuring global parameters:

Enter host name [Router]: **Router**

Step 4 Enter an enable secret password. This password is encrypted (more secure) and cannot be seen when viewing the configuration:

The enable secret is a password used to protect access to privileged EXEC and configuration modes. This password, after entered, becomes encrypted in the configuration.

Enter enable secret: **xxxxxx**

Step 5 Enter an enable password that is different from the enable secret password. This password is *not* encrypted (less secure) and can be seen when viewing the configuration:

The enable password is used when you do not specify an enable secret password, with some older software versions, and some boot images.

Enter enable password: **xxxxxx**

Step 6 Enter the virtual terminal password, which prevents unauthenticated access to the router through ports other than the console port:

The virtual terminal password is used to protect access to the router over a network interface.

Enter virtual terminal password: **xxxxxx**

Step 7 Respond to the following prompts as appropriate for your network:

Configure SNMP Network Management? [yes]:

Community string [public]:

A summary of the available interfaces appears:



Note The interface numbering that appears is dependent on the type of Cisco modular router platform and on the installed interface modules and cards.

Current interface summary

Controller	Timeslots	D-Channel	Configurable modes	Status
T1	0/0/0	24	23	pri/channelized Administratively up

Interface	IP-Address	OK?	Method	Status	Prol
FastEthernet0/0	unassigned	NO	unset	up	up

```
FastEthernet0/1          unassigned      NO  unset  up          dow
```

Step 8 Select one of the available interfaces for connecting the router to the management network:

Enter interface name used to connect to the management network from the above interface summary: **fastethernet0/0**

Step 9 Respond to the following prompts as appropriate for your network:

```
Configuring interface FastEthernet0/0:
Use the 100 Base-TX (RJ-45) connector? [yes]: yes
Operate in full-duplex mode? [no]: no
Configure IP on this interface? [yes]: yes
  IP address for this interface: 172.1.2.3
  Subnet mask for this interface [255.255.0.0] : 255.255.0.0
  Class B network is 172.1.0.0, 16 subnet bits; mask is /16
```

The configuration is displayed:

The following configuration command script was created:

```
hostname Router
enable secret 5 $1$D5P6$PYx41/lQIASK.HcSbf05q1
enable password xxxxxx
line vty 0 4
password xxxxxx
snmp-server community public
!
no ip routing

!
interface FastEthernet0/0
no shutdown
media-type 100BaseX
half-duplex
ip address 172.1.2.3 255.255.0.0
!
interface FastEthernet0/1
shutdown
no ip address
!
end
```

Step 10 Respond to the following prompts. Select [2] to save the initial configuration:

```
[0] Go to the IOS command prompt without saving this config.
[1] Return back to the setup without saving this config.
[2] Save this configuration to nvram and exit.
```

```
Enter your selection [2]: 2
Building configuration...
Use the enabled mode 'configure' command to modify this configuration.
```

Press RETURN to get started!

The user prompt appears.

```
Router>
```

Step 11 Verify the initial configuration. See the [“Verifying the Initial Configuration”](#) section on page 9 for verification procedures.

Initial Configuration Using the Cisco CLI—Manual Configuration

This section shows how to display a command-line interface (CLI) prompt for configuration using the CLI, and it directs you to documentation for the CLI configuration. You can use the CLI if you see the following messages at the end of the startup sequence:

```
--- System Configuration Dialog ---
```

```
At any point you may enter a question mark '?' for help.
Use ctrl-c to abort configuration dialog at any prompt.
Default settings are in square brackets '['].
```

```
Would you like to enter the initial configuration dialog? [yes/no]:
```

If these messages do not appear, SDM and a default configuration file were installed on the router at the factory. To use SDM to configure your router, see the [“Initial Configuration Using Cisco Router and Security Device Manager”](#) section on page 5.

For help with interface and port numbering, refer to the [“Interface Numbering”](#) section of the [“Overview of Cisco 2800 Series Routers”](#) online document.

Step 1 To proceed with manual configuration using the CLI, enter **no** when the power-up messages end:

```
Would you like to enter the initial configuration dialog? [yes/no]: no
```

Step 2 Press **Return** to terminate autoinstall and continue with manual configuration:

```
Would you like to terminate autoinstall? [yes] Return
```

Several messages are displayed, ending with a line similar to the following:

```
...
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Compiled <date> <time> by <person>
```

Step 3 Press **Return** to bring up the Router> prompt.

```
...
flashfs[4]: Initialization complete.
Router>
```

Step 4 Type **enable** to enter privileged EXEC mode:

```
Router> enable
Router#
```

Step 5 For configuration procedures, refer to the online [Cisco 2800 series software configuration](#) documents.



Note To avoid losing work you have completed, be sure to save your configuration occasionally as you proceed. Use the **copy running-config startup-config** command to save the configuration to NVRAM.

Step 6 When you have finished the initial configuration, verify the initial configuration. See the [“Verifying the Initial Configuration”](#) section on page 9 for verification procedures.

Verifying the Initial Configuration

Verify that the new interfaces are operating correctly by performing the following tests:

- To verify that the interfaces are operating correctly and that the interfaces and line protocol are in the correct state—up or down—enter the **show interfaces** command.
- To display a summary status of the interfaces configured for IP, enter the **show ip interface brief** command.
- To verify that you configured the correct hostname and password, enter the **show configuration** command.

When you have completed and verified the initial configuration, your Cisco router is ready to configure for specific functions. See the “[Completing the Configuration](#)” section on page 9 for information about locating documentation for advanced configuration procedures.

Completing the Configuration

When you have completed and verified the initial configuration, your Cisco router is ready to configure for specific functions. For advanced configuration procedures, use either SDM or the CLI.

For configuration procedures using SDM, refer to the *Cisco Router and Security Device Manager (SDM) Quick Start Guide* that shipped with your router.

For configuration procedures using the CLI, refer to the online [Cisco 2800 series software configuration documents](#). The software configuration documents include information about the following topics:

- Basic software configuration
- Feature documentation
- Configuration examples
- Troubleshooting and maintenance
- Cisco 2800 series cards and modules

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