



# Cisco Router Initial Configuration

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This chapter guides you through a basic router configuration, which is sufficient for you to access your network. Complex configuration procedures are beyond the scope of this publication and can be found in the modular configuration and modular command reference publications in the Cisco IOS software configuration documentation set that corresponds to the software release installed on your Cisco hardware.

To configure the Cisco Router from a console, you need to connect a terminal to the router console port.

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## Checking Conditions Prior to System Startup

Ensure that the following conditions are addressed before starting up the router:

- The Route Switch Processor (RSP) is installed.
- The optional Gigabit Ethernet Management port cable is installed.
- The chassis is securely mounted and grounded.
- The power and interface cables are connected.
- Your 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.
- You have selected passwords for access control.
- Captive installation screws are tight on all removable components.
- The console terminal is turned on.
- You have determined the IP addresses for the Ethernet and serial interfaces.
- Empty card slots or card bays are filled with card blanks. This ensures proper air flow through the chassis and electromagnetic compatibility (EMC).

# Powering Up the Cisco Router

Make certain that all card slots and compartments are closed off. Install blank faceplates on any empty slots. Always have power supply slots filled. If you leave a power supply slot uncovered, then you risk exposure to hazardous voltages on the power pins on the midplane.



**Warning** 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

After installing your Cisco Router and connecting cables, start the router and follow these steps:

## Procedure

**Step 1** Activate the DC power supply using the steps described in [Activating the DC Power Supply](#).

**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.

**Note** This is only an example of what can display. The system boots differently depending upon the configuration that ships with your system.

**Step 2** Observe the initialization process. When the system boot is complete (the process takes a few seconds), the Cisco Router RSP begins to initialize.

**Note** The boot image is located in a partition of the bootflash directory. Post initial system boot, depending on your requirement, you must configure the system boot variable to either bootflash:/Image/packages.conf (for sub-package mode boot) or bootflash:/Image/image\_name (for consolidated mode boot). For more information about software package modes, see the [Installing and Upgrading Software section in the High Availability Configuration Guide, Cisco IOS XE Release 3S \(ASR 900\)](#).

### Example:

Loading the Default System Boot Image

```
Current image running: Boot ROM0
Last reset cause: PowerOn
UEA platform with 2097152 Kbytes of main memory

rommon 1 > boot
Located asr902.bin
Image size 240888408 inode num 13, bks cnt 58811 blk size 8*512
#####
Boot image size = 240888408 (0xe5baa58) bytes

Package header rev 0 structure detected
Calculating SHA-1 hash...done
```

```
validate_package: SHA-1 hash:
calculated fe76800b:4343b84e:3861a949:368a3710:134383bc
expected fe76800b:4343b84e:3861a949:368a3710:134383bc
Image validated
Passing control to the main image..
```

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San Jose, California 95134-1706

```
Router#show version
Cisco IOS XE Software, Cisco IOS Software, ASR903 Software PPC_LINUX_IOSD-UNIVERSALK9_NPE-M),
  Version 15.4
Copyright (c) 1986-2014 by Cisco Systems, Inc.
Compiled Sun 05-Jan-14 20:59 by mcpre
```

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ROM: IOS-XE ROMMON

```
Router uptime is 2 minutes
Uptime for this control processor is 5 minutes
System image file is "bootflash:/asr902.bin"
Last reload reason: PowerOn
This product contains cryptographic features and is subject to United States and local country laws governing import, export, transfer and use. Delivery of Cisco cryptographic products does not imply third-party authority to import, export, distribute or use encryption. Importers, exporters, distributors and users are responsible for compliance with U.S. and local country laws. By using this product you agree to comply with applicable laws and regulations. If you are unable to comply with U.S. and local laws, return this product immediately.
A summary of U.S. laws governing Cisco cryptographic products may be found at:
http://www.cisco.com/wwl/export/crypto/tool/stqrg.html
If you require further assistance please contact us by sending email to
export@cisco.com.
License Level: metroservices
License Type: Default. No valid license found.
Next reload license Level: metroservices
cisco ASR-902 processor with 425945K/6147K bytes of memory.
Processor board ID
31 Gigabit Ethernet interfaces
32768K bytes of non-volatile configuration memory.
2097152K bytes of physical memory.
1328927K bytes of SD flash at bootflash:.
```

```
Configuration register is 0x2102
Router#
```

During the boot process, observe the system LEDs. The LEDs on the shared port adapter go on and off in an irregular sequence. Once the router has booted, the green STATUS LED comes on and stays on.

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## Verifying the Front Panel LEDs

The front-panel indicator LEDs provide power, activity, and status information useful during bootup. For more detailed information about the LEDs, see [Troubleshooting](#).

## 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 slot**—Displays the IDPROM information for the assemblies in the chassis.

## Checking Hardware and Software Compatibility

To check the minimum software requirements of the Cisco IOS software with the hardware installed on your Cisco Router, Cisco maintains the Software Research tool on Cisco.com. The tool provides the minimum Cisco IOS requirements for individual hardware modules and components.



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**Note** To access this tool, you must have a Cisco.com login account.

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To access the Software Research tool

1. Click **Login** at Cisco.com.
2. Type **Software Advisor** in the search box and click **Go**.
3. Click the link for the Software Advisor Tool.
4. Choose a product family or enter a specific product number to search for the minimum supported software needed for your hardware.

## Configuring the Cisco Router at Startup

This section explains how to create a basic running configuration for your Cisco Router.



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**Note** You need to acquire the correct network addresses from your system administrator or consult your network plan to determine correct addresses before you can complete the router configuration.

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Before continuing the configuration process, check the current state of the router by entering the **show version** command. The **show version** command displays the release of Cisco IOS software that is available on the router.

For information on modifying the configuration after you create it, see the Cisco IOS configuration and command reference guides.

To configure a Cisco Router from the console, you must connect a terminal or terminal server to the console port on the Cisco Router RSP. To configure the Cisco Router using the management Ethernet port, you must have the router's IP address available.

## Accessing the CLI Using the Console

To access the command line interface using the console, follow these steps:

### Procedure

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**Step 1** When your system is booting, type No at the prompt.

**Example:**

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

**Step 2** Press Return to enter user EXEC mode. The following prompt appears:

```
Router>
```

**Step 3** From the user EXEC mode, enter the enable command as shown in the following example:

```
Router> enable
```

**Step 4** At the password prompt, enter your system password, as shown in the following example. If an enable password has not been set on your system, this step may be skipped.

```
Password: enablepass
```

When your enable password is accepted, the privileged EXEC mode prompt is displayed:

```
Router#
```

You now have access to the CLI in privileged EXEC mode and you can enter the necessary commands to complete your desired tasks.

**Step 5** To exit the console session, enter the quit command as shown in the following example:

**Example:**

```
Router# quit
```

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## Configuring Global Parameters

When you first start the setup program, you must configure the global parameters. These parameters are used for controlling system-wide settings. Perform the following steps to enter the global parameters:

### Procedure

**Step 1** Connect a console terminal to the console port, and then boot the router. For more information on connecting a console terminal, see [Connecting Console Cables](#) section.

**Note** This is only an example of the output display; prompts may vary.

When you see this information, it means that you have successfully booted your router:

#### Example:

```
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170 West Tasman Drive
San Jose, California 95134-1706
.
.
.
--- System Configuration Dialog ---

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

Press RETURN to get started!
```

**Step 2** The first sections of the configuration script appear only at an initial system startup. On subsequent uses of the setup facility, the script begins with a System Configuration Dialog as shown below: When you are prompted about whether you want to enter the initial configuration dialog, enter yes.

#### Example:

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

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.
```

Basic management setup configures enough connectivity for managing the system; extended setup will ask you to configure each interface on the system. For detailed information about setting global parameters, refer to the [Cisco ASR 900 Series Router Software Configuration Guide](#).

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## Checking the Running Configuration Settings

To check the value of the settings you have entered, enter the `show running-config` command at the Router# prompt:

```
Router# show running-config
```

To review changes you make to the configuration, use the EXEC mode `show startup-config` command to see the changes and copy run-start stored in NVRAM.

## Saving the Running Configuration to NVRAM

To store the configuration or changes to your startup configuration in NVRAM, enter the `copy running-config startup-config` command at the Router# prompt:

```
Router# copy running-config startup-config
```

Using this command saves the configuration settings that you created in the router using configuration mode and the setup facility. If you fail to do this, your configuration will be lost the next time you reload the router.

## Safely Powering Off the Cisco Router

This section explains how to shut down the Cisco Router. It is recommended that before turning off all power to the chassis, you issue the `reload` command. This insures that the operating system cleans up all the file systems. Once the reload operation is complete, then the Cisco Router can be powered off safely.

To remove power from the Cisco Router safely, follow this procedure and see the examples:

### Procedure

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- Step 1** Slip on the ESD-preventive wrist strap that was included in the accessory kit.
- Step 2** Enter the `reload` command.
- Step 3** Confirm the reload command.

### Example:

```
Router# reload
Proceed with reload? [confirm]
*Sep 7 09:00:40.084 IST:%SYS-5-RELOAD: Reload requested by console. Reload Reason: Reload
Command.
Aug 17 00:06:47.051 R0/0: %PMAN-5-EXITACTION: Process manager is exiting: prs exit with
reload chassis code
```

- Step 4** After confirming the reload command, wait until the system bootstrap message displays before powering off the system.

**Example:**

```
System Bootstrap, Version 15.3(1r)S1, RELEASE SOFTWARE (fc1)
Technical Support: http://www.cisco.com/techsupport
Copyright (c) 2012 by cisco Systems, Inc.
```

```
Current image running: Boot ROM0
Last reset cause: RSP-Board
UEA platform with 2097152 Kbytes of main memory
```

**Step 5** Remove any power cables from the Cisco Router.

- a) For power supplies with a circuit breaker switch, position the switch to the Off (O) position.
- b) For power supplies with a Standby switch, place the Standby switch in the Standby position.

**Note** After powering off the router, wait a minimum of 30 seconds before powering it on again.

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