



Basic Router Configuration

This chapter provides procedures for configuring the basic parameters of your Cisco router, including global parameter settings, routing protocols, interfaces, and command-line access.

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Basic Router Configuration

This chapter provides procedures for configuring the basic parameters of your Cisco router, including global parameter settings, routing protocols, interfaces, and command-line access.

Note: Individual router models may not support every feature described in this guide. Features that are not supported by a particular router are indicated whenever possible.

This chapter includes configuration examples and verification steps, as available.

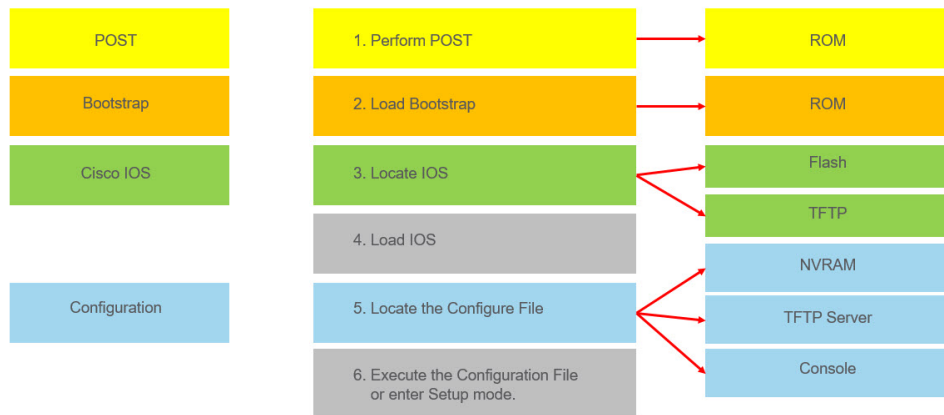
Default Configuration

When you first boot up your Cisco router, some basic configuration has already been performed. All of the LAN and WAN interfaces have been created, and the console and vty ports are configured.

Bootstrap Sequence

The following graphic illustrates how the IR807 goes through its bootup process.

Figure 1: IR807 Boot



Displaying the platform information

Use the **show platform version** command to display information about the IR807:

```
IR807#sh platform version
Platform Revisions/Versions :
=====
CPLD : 0xDD
Rework Rev : 0
CPU Name : P1024SEC
CPU Ver : 1.1 [Val = SVR:0x80EC0211]
Core Rev : 5.1 [Val = PVR:0x80212051]
CCB CLOCK : 277 MHz
IOS :
Cisco IOS Software, IR800L Software (IR800L-UNIVERSALK9-M), Version 15.7M0a
Technical Support: http://www.cisco.com/techsupport
Copyright (c) 1986-2017 by Cisco Systems, Inc.
Compiled Wed 27-Sep-17 07:52 by rasurend
ROMMON (Upgrade) :
System Bootstrap, Version 15.5(20170504:175929) [
Copyright (c) 1994-2017 by cisco Systems, Inc.
```

If you are setting up 4G:

- You must have service availability on the IR807 from a carrier, and you must have network coverage where your router will be physically placed.
- You must subscribe to a service plan with a wireless service provider and obtain a SIM card.
- You must install the required antennas before you configure the 4G for the IR807. See the following URL for instructions on how to install the antennas:

<https://www.cisco.com/c/en/us/td/docs/routers/connectedgrid/antennas/installing-combined/industrial-routers-and-industrial-wireless-antenna-guide.html>

Where to find Software

The latest downloads for the IR807 can be found at:

<https://software.cisco.com/download/navigator.html?mdfid=286287045&flowid=75322>

Click on the link to take you to the specific software you are looking for.

IOS Image Files

The IOS release for the IR807 is Cisco IOS 15.8(3)M, and includes the following Cisco IOS images and additional information:

- IOS Image: ir800l-universalk9-mz.SPA.158-3.M
- Minimum Memory - DRAM 512 MB Flash 1024 MB
- Size - 61.55 MB

Upon download to your device, your flash directory will contain:

```
1 -rw-      3802056  Feb 24 1907 19:23:44 +00:00 2.7.1.SSA
2 drw-         0   Sep 3 2017 16:35:38 +00:00 eem
3 -rw-     64727636  Sep 3 2017 16:39:38 +00:00 ir800l-universalk9-mz.SSA.
4 -rw-     64765500  Oct 16 2017 21:35:56 +00:00 ir800l-universalk9-mz.SSA
```

You can verify your download using the following series of commands:

```
IR807#verify /md5 flash:ir800l-universalk9-mz.SSA
.....
.....MD5 of flash:ir800l-universalk9-mz.SSA Done!
verify /md5 (flash:ir800l-universalk9-mz.SSA) = 4623f2fbe458516b9f2166d11405569c
IR807#show software authenticity file flash:ir800l-universalk9-mz.SSA
File Name           : flash:ir800l-universalk9-mz.SSA
Image type          : Special
  Signer Information
    Common Name      : CiscoSystems
    Organization Unit : C8xx
    Organization Name : CiscoSystems
    Certificate Serial Number : 59CBBBA8
    Hash Algorithm    : SHA512
    Signature Algorithm : 2048-bit RSA
    Key Version       : A
IR807#show software authenticity keys
Public Key #1 Information
-----
Key Type           : Production (Primary)
Public Key Algorithm : RSA
Modulus (256 bytes) :
    C8:AE:59:5E:E2:52:8C:64:55:6C:C6:AB:89:FA:56:53:
    06:2B:72:6D:18:A5:24:8A:37:35:BC:88:24:97:47:5D:
    93:76:D0:09:AF:16:EB:86:68:3B:66:CC:80:53:A8:ED:
    17:00:D1:F9:2D:15:0A:F2:29:BC:7E:9C:FF:85:31:C6:
    B1:5D:C7:44:A3:01:0E:D8:85:C9:12:77:61:AE:07:B3:
    E4:CA:84:AD:FC:C0:4E:E9:87:A2:4F:61:D4:93:C8:0F:
    37:D0:11:7F:B7:FB:92:EE:EB:91:56:F3:13:FA:E7:27:
    0E:57:4C:EE:F2:78:5A:62:6D:A9:C3:49:AC:96:A0:B8:
    E8:06:02:14:E0:2F:17:E3:6A:96:34:17:5A:B5:46:1C:
    AA:D1:F4:F6:3B:4D:4B:6E:1E:1A:09:45:95:44:B4:7C:
    85:AD:CB:C7:CE:0A:7D:4A:5D:F3:6B:1B:31:01:A8:78:
    BE:2D:A0:3E:33:1A:80:D3:29:4F:53:D8:66:CE:7D:AB:
    DF:AE:1A:D3:1D:61:D1:73:1F:01:FB:7D:02:3E:71:6C:
    1A:1E:4B:2D:D0:C3:E9:05:EB:57:D4:D0:A3:89:36:91:
    80:85:09:5A:0D:1A:71:31:D0:95:A9:2F:E6:2F:D2:E9:
    BA:A0:47:96:B0:D9:32:66:F5:34:35:51:36:E3:17:4D
Exponent (4 bytes)  : 10001
Key Version         : A
Public Key #2 Information
```

```

-----
Key Type                : Special (Primary)
Public Key Algorithm    : RSA
Modulus (256 bytes)    :
    CE:BE:7A:25:8C:E4:45:79:5C:77:B8:1D:9E:94:78:61:
    B6:3D:64:4E:3C:36:25:11:9C:26:FF:D9:42:10:4C:86:
    F5:1C:AD:F1:49:A5:87:D3:4C:69:BF:08:E5:55:1C:59:
    CD:DA:62:9D:65:33:0D:B6:F1:F1:D1:AC:98:99:6B:CB:
    0B:3F:DA:E9:94:06:71:B3:78:B5:AA:85:C8:BE:64:CA:
    43:72:F2:B5:4B:C5:4D:FA:D9:CF:51:78:AD:45:9F:E8:
    CD:41:5A:A6:DE:B7:2E:75:85:EB:8C:7D:68:F2:D4:A1:
    5D:DD:B2:26:63:BB:7C:EB:79:80:33:80:05:B9:59:34:
    27:89:AA:92:04:61:0C:7D:E5:A5:DE:A0:40:60:73:64:
    5A:A7:06:C0:8A:04:CD:3A:1C:99:8D:B7:5C:C8:FE:97:
    70:9C:54:DF:AB:A7:8F:04:80:11:08:51:FF:7B:F5:73:
    C2:A1:C3:E3:A3:45:04:70:90:2D:EA:1E:AD:2C:75:5E:
    FF:55:EE:0D:75:D3:19:00:59:5C:F6:4C:E2:B7:5F:7A:
    8F:3E9B:21:AC:59:6F:7C:63:B0:62:B5:AA:B4:D8:04:
    65:07:8B:56:94:18:14:E3:12:AC:A5:3F:B0:BA:97:D4:
    83:22:2E:EC:38:2F:D5:01:39:BA:60:A5:A8:5F:85:87
Exponent (4 bytes)    : 10001
Key Version            : A
Public Key #3 Information
-----
Key Type                (Primary)
Public Key Algorithm    : RSA
Modulus (256 bytes)    :
    C8:AE:59:5E:E2:52:8C:64:55:6C:C6:AB:89:FA:56:53:
    06:2B:72:6D:18:A5:24:8A:37:35:BC:88:24:97:47:5D:
    93:76:D0:09:AF:16:EB:86:68:3B:66:CC:80:53:A8:ED:
    17:00:D1:F9:2D:15:0A:F2:29:BC:7E:9C:FF:85:31:C6:
    B1:5D:C7:44:A3:01:0E:D8:85:C9:12:77
E4:CA:84:AD:FC:C0:4E:E9:87:A2:4F:61:D4:93:C8:0F:
    37:D0:11:7F:B7:FB:92:E1:56:F3:13:FA:E7:27:
    0E:57:4C:EE:F2:78:5A:62:6D:A9:C3:49:AC:96:A0:B8:
    E8:06:02:14:E0:2F:17:E3:6A:96:34:17:5A:B5:46:1C:
    AA:D1:F4:F6:3B:4D:4B:6E:1E:1A:09:45:95:44:B4:7C:
    85:AD:CB:C7:CE:0A:7D:4A:5D:F3:6B:1B:31:01:A8:78:
    BE:2D:A0:3E:33:1A:80:D3:29:4F:53:D8:66:CE:7D:AB:
    DF:AE:1A:D3:1D:61:D1:73:1F:01:FB:7D:02:3E:71:6C:
    1A:1E:4B:2D:D0:C3:E9:05:EB:57:D4:D0:A3:89:36:91:
    80:85:09:5A:OD::31:D0:95:A9:2F:E6:2F:D2:E9:
    BA:A0:47:96:B0:D9:32:66:F5:34:35:51:36:E3:17:4D
Exponent (4 bytes)    : 10001
Key Version            : A

```

Configuring Command-Line Access

To configure parameters to control access to the router, perform the following steps, beginning in global configuration mode:

SUMMARY STEPS

1. line [aux | console | tty | vty] line-number
2. password password
3. login
4. exec-timeout minutes [seconds]
5. line [aux | console | tty | vty] line-number

6. password password
7. login
8. end

DETAILED STEPS

Step	Command or Action	Purpose
1	line [aux console tty vty] line-number Example: Router(config)# line console 0	Enters line configuration mode and specifies the type of line. This example specifies a console terminal for access.
2	password password Example: Router(config-line)# password 5dr4Hepw3	Specifies a unique password for the console terminal line.
3	login Example: Router(config-line)# login authentication default	Enables password checking at terminal session login.
4	exec-timeout minutes [seconds] Example: Router(config-line)# exec-timeout 5 30	Sets the time interval that the EXEC command interpreter waits until user input is detected. The default is 10 minutes. Optionally, add seconds to the interval value. This example shows a timeout of 5 minutes and 30 seconds. Entering a timeout of 0 0 specifies never to time out.
5	line [aux console tty vty] line-number Example: Router(config-line)# line vty 0 4	Specifies a virtual terminal for remote console access.
6	password password Example: Router(config-line)# password aldf2ad1	Specifies a unique password for the virtual terminal line.
7	login Example: Router(config-line)# login authentication default	Enables password checking at the virtual terminal session login.
8	end Example: Router(config-line)# end	Exits line configuration mode, and returns to privileged EXEC mode.

Configuring Global Parameters

To configure selected global parameters for your router, perform these steps:

SUMMARY STEPS

1. configure terminal
2. hostname name
3. enable secret password
4. no ip domain-lookup

DETAILED STEPS

Step	Command or Action	Purpose
1	configure terminal Example: Router# configure terminal	Enters global configuration mode when using the console port. If you are connecting to the router using a remote terminal, use the following: telnet router name or address Login: login id Password: ***** Router> enable
2	hostname name Example: Router(config)# hostname Router	Specifies the name for the router.
3	enable secret password Example: Router(config)# enable secret cr1ny5ho	Specifies an encrypted password to prevent unauthorized access to the router.
4	no ip domain-lookup Example: Router(config)# no ip domain-lookup	Disables the router from translating unfamiliar words (typos) into IP addresses.

No Service Password Recovery

The No Service Password-Recovery is a Cisco IOS Platform independent feature which is available in Cisco IOS classic devices.

The following events will cause the router to go into rommon mode as standard behavior:

- Manual boot setting was done in IOS mode
- If flash is corrupt



Note Ensure a valid Cisco IOS image is present in flash before enabling this feature.

For complete configuration information, refer to the following: https://www.cisco.com/c/en/us/td/docs/ios-xml/ios/sec_usr_cfg/configuration/15-mt/sec-usr-cfg-15-mt-book/sec-no-svc-pw-recvry.html

Configuring WAN Interfaces

Configure the WAN interface for your router using one of the following as appropriate:

Configuring a Fast Ethernet Layer-3 Interface

To configure the Fast Ethernet interface, perform these steps, beginning in global configuration mode:

SUMMARY STEPS

1. interface type number hostname name
2. ip address ip-address mask
3. no shutdown
4. exit

DETAILED STEPS

Step	Command or Action	Purpose
1	interface type number Example: Router(config)# interface fastethernet 0 Router(config-if)#	Enters the configuration mode for a Fast Ethernet WAN interface on the router.
2	ip address ip-address mask Example: Router(config)# ip address 192.168.1.5 255.255.255.0 Router(config-if)#	Sets the IP address and subnet mask for the specified Fast Ethernet interface.
3	no shutdown Example: Router(config-if)# no shutdown	Enables the Ethernet interface, changing its state from administratively down to administratively up.
4	exit Example: Router(config-if)# exit	Exits configuration mode for the Fast Ethernet interface and returns to global configuration mode.

Configuring the Cellular Wireless WAN Interface

The IR807 series provides a wireless interface supporting 4G/LTE networks.

To configure the cellular wireless interface, follow these guidelines and procedures:

Prerequisites for Configuring the Wireless Interface

The following are prerequisites to configuring the wireless interface:

- You must have wireless service from a carrier, and you must have network coverage where your router will be physically placed.
- You must subscribe to a service plan with a wireless service provider.
- You must check your LEDs for signal strength.

Restrictions for Configuring the Cellular Wireless Interface

The following restrictions apply to configuring the Cisco wireless interface:

- A data connection can be originated only by the wireless interface. Remote dial-in is not supported.
- Because of the shared nature of wireless communications, the experienced throughput varies depending on the number of active users or the amount of congestion in a given network.
- Cellular networks have higher latency than wired networks. Latency rates depend on the technology and carrier. Latency may be higher when there is network congestion.
- VoIP is not currently supported.
- Any restrictions that are part of the terms of service from your carrier also apply to the Cisco wireless interface.

Configuring Router for Image and Configuration Recovery Using Push Button

A push button feature is available on the IR807. The reset button on the front panel of the router enables this feature.

Perform the following steps to use this feature:

1. Unplug power.
2. Press the reset button on the front panel of the router.
3. Power up the system while holding down the reset button. The system LED blinks four times indicating that the router has accepted the button push.

Using this button takes effect only during ROMMON initialization. During a warm reboot, pressing this button has no impact on performance. The following table shows the high level functionality when the button is pushed during ROMMON initialization.

ROMMON Behavior	IOS Behavior
<ul style="list-style-type: none"> • Boots using default baud rate. • Performs auto-boot. • Loads the *.default image if available on compact flash. Note: If no *.default image is available, the ROMMON will boot up with the first Cisco IOS image on flash. <p>Examples of names for default images: ir800l-universalk9-mz.SPA.157-3.M0a.default</p>	<p>If the configuration named customer-config.SN (SN is the serial number of the device) is available in nvram storage or flash storage, IOS will perform a backup of the original configuration and will boot up using this configuration.</p> <p>Note: You can only have one configuration file with customer-config.SN option. Having more than one file will result in uncertain operational behavior.</p>

Use the `show platform` command to display the current bootup mode for the router. The following sections show sample outputs when the button is not pushed and when the button is pushed.

Output When Button Is Not Pushed: Example

```
router# show platform boot-record
Platform Config Boot Record :
=====
Configuration Register at boot time : 0x0
Reset Button Status at Boot Time   : Not Pressed
```

Output When Button Is Pushed: Example

```
router# show platform boot-record
Platform Config Boot Record :
=====
Configuration Register at boot time : 0x0
Reset Button Status at Boot Time   : Pressed
Golden config file at location     : flash:/pnp-reset-config.cfg
Config Recovery Status             : Ok
```

Configuring a Loopback Interface

The loopback interface acts as a placeholder for the static IP address and provides default routing information. Perform these steps to configure a loopback interface, beginning in global configuration mode.

SUMMARY STEPS

1. interface type number
2. ip address ip-address mask
3. exit

DETAILED STEPS

Step	Command or Action	Purpose
1	interface type number Example: Router(config)# interface Loopback 0 Router(config-if)#	Enters configuration mode for the loopback interface.
2	ip address ip-address mask Example: Router(config-if)# ip address 192.168.1.1 255.255.255.0 Router(config-if)#	Sets the IP address and subnet mask for the loopback interface.
3	exit Example: Router(config-if)# exit Router(config)#	Exits configuration mode for the loopback interface and returns to global configuration mode.

Additional Information

Several additional resources for configuring IOS are available at:

<https://www.cisco.com/c/en/us/support/ios-nx-os-software/ios-software-release-15-6m-t/products-installation-and-configuration-guides-list.html>