CHAPTER 3

First-Time Configuration

This chapter contains information with which you should be familiar before you begin to configure your router for the first time, including information about understanding boot images, interface numbering, and what you should do before you turn on your router. This chapter also describes how to use the **setup** command facility to configure your Cisco 3825 Mobile Wireless Edge Router.

This chapter includes the following sections:

Understanding Boot Images

The first file on the compact flash device in slot0: *must* be the Cisco IOS software image that you want to use. If it is not, the Cisco 3825 router will not be able to boot.

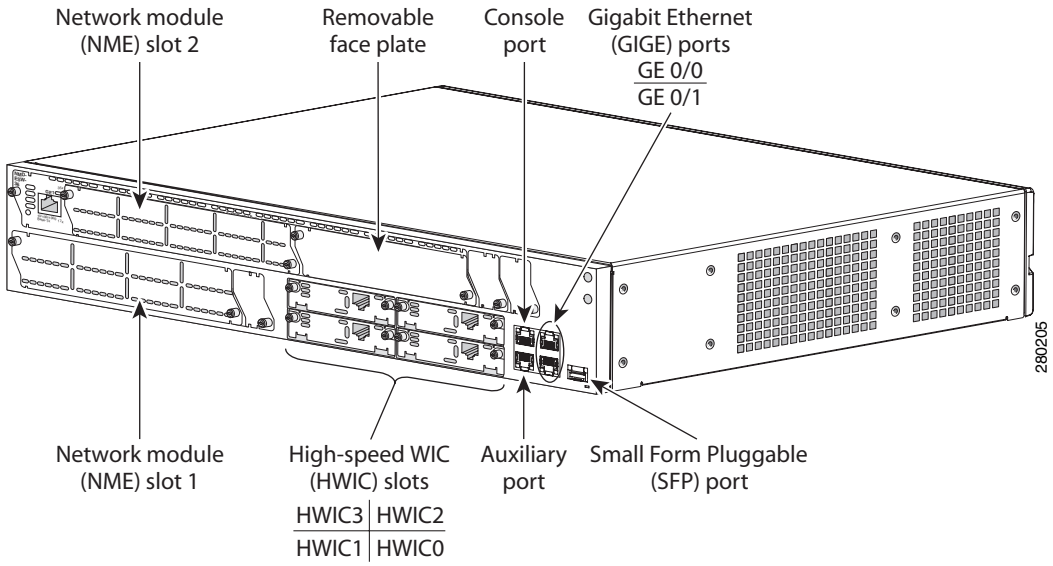
Understanding the Cisco 3825 Router Interface Numbering

Each network interface on a Cisco 3825 router is identified by a slot number, subslot number, and a port number.

Figure 3-1 on page 3-2 shows an example of interface numbering on a Cisco 3825 router:

- A Cisco 2-port T1/E1-RAN interface card in each of the four Cisco 2-port T1/E1-RAN slots (labeled HWIC0, HWIC1, HWIC2, and HWIC3) [high-speed WIC]
- Two built-in Gigabit Ethernet (GE) interfaces (labeled GE 0/0 and GE 0/1)

Figure 3-1 Cisco 3825 Router Slot and Port Numbers



Slot and Port Numbering

The Cisco 3825 router chassis contains the following LAN and WAN interface types:

- One Small Form Pulggable (SFP) port—industry standard Gigabit interface convertor
- Two built-in Gigabit Ethernet LAN interfaces (labeled GE 0/0 and GE 0/1)
- Four slots for installing Cisco 2-port T1/E1-RAN interface cards (labeled HWIC0, HWIC1, HWIC2, and HWIC3)
- Two slots for installing NM-2W network modules (supports up to four additional Cisco 2-port T1/E1-RAN interface cards)

Note A removable face plate allows for installation of a double-wide NMD network module into NME slot 2.

The logical slot numbers are as follows:

- 0 for all built-in Cisco 2-port T1/E1-RAN interface card slots
- 1 for the lower network module slot
- 2 for the upper network module slot

The numbering format is:

<Interface type> <Slot number> / <Subslot number> / <Port number>

For example:

```
Serial 0/0/0 (HWIC slot 0)

Serial 1/0/0 (NM slot 1)
```

Interface (port) numbers begin at logical 0 for each interface type; ports are numbered from right to left.

- The two built-in Gigabit Ethernet 10/100/1000 logical interfaces are GE 0/0 and GE 0/1.
- The logical slot number for all Cisco 2-port T1/E1-RAN interfaces in the built-in Cisco 2-port T1/E1-RAN interface card slot is always 0. (The HWIC0, HWIC1, HWIC2, and HWIC3 slot designations are for physical slot identification only.) Interfaces in the Cisco 2-port T1/E1-RAN interface cards are numbered from right to left, starting with logical 0/0/0 for each interface type, regardless of the physical slot in which the Cisco 2-port T1/E1-RAN interface cards are installed.

  For example, if you have a Cisco 2-port T1/E1-RAN interface card in two of the 2-port T1/E1-RAN interface card slots (physical slots HWIC0 and HWIC1), then the logical interfaces are:

  – Serial 0/0/0 and Serial 0/0/1 in physical slot HWIC0
  – Serial 0/1/0 and Serial 0/1/1 in physical slot HWIC1

  However, if you install a Cisco 2-port T1/E1-RAN interface card in physical slot HWIC1 (leaving slot HWIC0 empty), the logical interfaces in slot HWIC1 are Serial 0/0/0 and Serial 0/0/1. If you later add a Cisco 2-port T1/E1-RAN interface card to slot HWIC0, the interface numbering will shift. The configuration that you created for logical interfaces Serial 0/0/0 and Serial 0/0/1 will now be applied to the Cisco 2-port T1/E1-RAN interface card in slot HWIC0, and you will need to create a new configuration for the interfaces that you previously configured on HWIC1 (which will now be Serial 0/1/0 and Serial 0/1/1).
- The slot number of the Cisco 2-port T1/E1-RAN interfaces installed in slot 1 using an NM-2W network module is always logical 1, and the interfaces are always numbered from the right to left.

Setup Command Facility

The **setup** command facility prompts you for information that is needed to start a router functioning quickly. The facility steps you through a basic configuration, including LAN interfaces.

If you prefer to configure the router manually or if you wish to configure a module or interface that is not included in the **setup** command facility, proceed to "Chapter 2, "Cisco IOS Software Basics" to familiarize yourself with the command-line interface (CLI) and then proceed to Chapter 4, "Configuring the Cisco 3825 Mobile Wireless Edge Router in a RAN-O Solution with the Command-Line Interface" for instructions on configuring your Cisco 3825 router.

Before Starting Your Router

Before you power on your router and begin using the **setup** command facility, follow these steps:

Step 1 Set up the hardware and connect the console and network cables as described in the "Connecting Cables to Cisco 3800 Series Routers" section of the *Cisco 3800 Series Hardware Installation* guide.

Step 2 Configure your PC terminal emulation program for 9600 baud, 8 data bits, no parity, and 1 stop bit.

Using the Setup Command Facility

The **setup** command facility is displayed in your PC terminal emulation program window.

To create a basic configuration for your router, do the following:

- Complete the steps in the "Configuring Global Parameters" section on page 3-4.
- Complete the steps in the "Completing the Configuration" section on page 3-7.

Note If you make a mistake while using the setup command facility, you can exit the facility and run it again. Press **Ctrl-C**, and type **setup** at the enable mode prompt (`1900#`).

Configuring Global Parameters

Step 1 Power on the router.

Messages will begin to appear in your terminal emulation program window.

Caution *Do not press any keys on the keyboard until the messages stop*. Any keys that you press during this time will be interpreted as the first command entered after the messages stop, which might cause the router to power off and start over. Wait a few minutes. The messages will stop automatically.

The messages look similar to the following:

Note The messages vary, depending on the Cisco IOS software image and interface modules in your router. The screen displays in this section are for reference only and might not match the messages on your console.

```
rommon 1 >boot
program load complete, entry point: 0x8000f000, size: 0xc0c0

Initializing ATA monitor library.......

program load complete, entry point: 0x80010000, size: 0x2888ab0
Self decompressing the image :
################################################################################
[OK]

Smart Init is enabled
smart init is sizing iomem
 ID     MEMORY_REQ            TYPE
00042A      0X010D78F3 C3825 motherboard
0000D6      0X000D8A10 FE Port Module, 2 WAN
0000D6      0X000D8A10 FE Port Module, 2 WAN
        0X00288860 Onboard PVDM2 SIMM
        0X000021B8 OnboardUSB
000587      0X0030FEF2 ATM AIM-8 with SAR only, no DSPs
000587      0X0030FEF2 ATM AIM-8 with SAR only, no DSPs
        0X00660670 public buffer pools
        0X0078F000 public particle pools
TOTAL:      0X02922B7F
```

```
If any of the above Memory requirements
are "UNKNOWN", you may be using an unsupported
configuration or there is a software problem and
system operation may be compromised.
Rounded IOMEM up to: 42Mb.
Using 8 percent iomem. [42Mb/512Mb]

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Software clause at DFARS sec. 252.227-7013.

           cisco Systems, Inc.
           170 West Tasman Drive
           San Jose, California 95134-1706

Cisco IOS Software, 3800 Software (C3825-IPRANK9-M), Version 12.4(16)MR1, RELEASE SOFTWARE
(fc1)
Technical Support: http://www.cisco.com/techsupport
Copyright (c) 1986-2008 by Cisco Systems, Inc.
Compiled Thu 10-Jan-08 14:09 by prod_rel_team
Image text-base: 0x600010930, data-base: 0x62C1F030

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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.

Cisco 3825 (revision 1.0) with 481280K/43008K bytes of memory.
Processor board ID FHK0902F51G
2 Gigabit Ethernet interfaces
16 Channelized (E1 or T1)/PRI ports
2 ATM/Voice AIMs
DRAM configuration is 64 bits wide with parity disabled.
479K bytes of NVRAM.
125440K bytes of ATA System CompactFlash (Read/Write)
```

Step 2 When the following message appears, enter **yes** to begin the initial configuration dialog:

```
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
Configuring global parameters:
```

Step 3 Enter a hostname for the router (this example uses 3825-1):

```
Configuring global parameters:

 Enter host name [Router]: 3825-1
```

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: ciscoenable
```

Note When you enter the enable secret password, it will be seen while you type the password. After entering it, it becomes encrypted in the configuration.

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: ciscoenable
```

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: ciscoterminal
```

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

```
Configure SNMP Network Management? [yes]:
    Community string [public]: public
```

Step 8 The summary of interfaces is displayed. This list varies, depending on what network modules, if any, are installed in your router.

```
Current interface summary

Any interface listed with OK? value "NO" does not have a valid configuration

Interface              IP-Address      OK? Method Status        Protocol
GigabitEthernet0/0     unassigned      NO unset up up
GigabitEthernet0/1     unassigned      NO unset up up
```

Step 9 Specify the interface to be used to connect to the network management system.

```
Enter interface name used to connect to the
management network from the above interface summary: GigabitEthernet0/0
```

Step 10 Configure the specified interface as prompted.

```
Configuring interface GigabitEthernet0/0:
    Use the 100 Base-TX (RJ-45) connector? [yes]: yes
    Operate in full-duplex mode? [no]: yes
    Configure IP on this interface? [yes]:yes
    IP address for this interface: 178.18.44.233
    Subnet mask for this interface [255.255.0.0] : 255.255.255.128
    Class B network ia 178.18.0.0, 25 subnet bits; mask is /25
```

Completing the Configuration

When you have provided all the information prompted for by the setup command facility, the configuration appears. Messages will be displayed that are similar to the following:

```
The following configuration command script was created:

!
hostname 3825-1
enable secret 5 $1$5fH0$Z6Pr5EgtR5iNJ2nBg3i6y1 enable password ciscoenable line vty 0 4
password ciscoenablesnmp-server community public !
no ip routing

!
interface GigabitEthernet0/0
no shutdown
media-type 100BaseX
full-duplex
ip address 178.18.44.233 255.255.255.128
!
interface GigabitEthernet0/1
shutdown
no ip address
!
end
```

To complete your router configuration, do the following:

Step 1 A setup command facility prompt asks whether you want to save this 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...
[OK]

Use the enabled mode 'configure' command to modify this configuration.


Press RETURN to get started!
```

If you answer **no**, the configuration information that you entered is *not* saved, and you return to the router enable prompt. Type **setup** to return to the System Configuration Dialog.

If you answer **yes**, the configuration is saved, and you return to the EXEC prompt.

Step 2 When the messages stop displaying on your screen, press **Return** to get the command line prompt.

The `3825-1>` prompt indicates that you are now at the CLI and you have just completed a basic router configuration. However, this is *not* a complete configuration. You must configure additional parameters by using the Cisco IOS software CLI as described in Chapter 4, "Configuring the Cisco 3825 Mobile Wireless Edge Router in a RAN-O Solution with the Command-Line Interface."