CHAPTER 3

First-Time Configuration

This chapter describes the actions to take before turning on your router for the first time. This chapter includes the following sections:

Understanding the Cisco MWR 2941-DC Router Interface Numbering

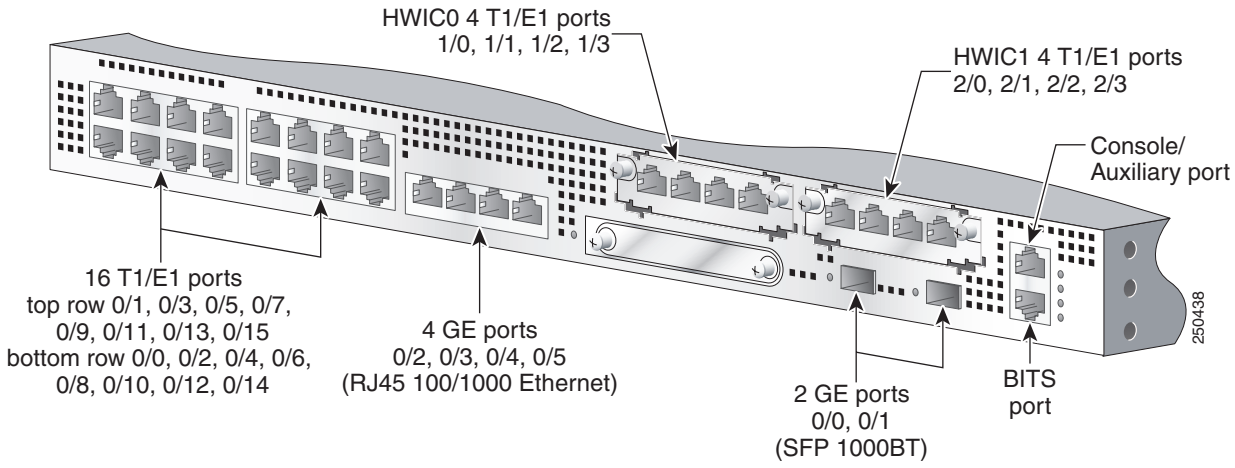
Each network interface on a Cisco MWR 2941-DC router is identified by a slot number and a port number.

Figure 3-1 on page 3-2 shows an example of interface numbering on a Cisco MWR 2941-DC router:

- A Cisco HWIC-4T1/E1 interface card in both HWIC slots
- Two built-in Gigabit Ethernet small form-factor pluggable (SFP) interfaces (labeled GE0 and GE1)
- Four built-in Gigabit Ethernet interfaces (labeled L2–L5)
- 16 E1/T1 ports (labeled C1AL–C15AL)

Note The two HWIC cards shown in Figure 3-1 are not included with the Cisco MWR 2941-DC router; you must order them separately.

Figure 3-1 Cisco MWR 2941-DC Router Port Numbers



Slot and Port Numbering

The Cisco MWR 2941-DC router chassis contains the following interface types:

- 16 T1/E1 ports, labeled “T1/E1”
- 4 RJ-45 jacks for copper Ethernet ports, labeled “100/1000” Ethernet
- 2 HWIC slots, labeled “HWIC0” and “HWIC1”
- 1 compact FLASH Type-II connector, labeled “Compact Flash”
- 2 SFP connectors for optical GE ports, labeled “GE0” and “GE1”
- 1 RJ-45 connector for Console/Auxiliary, labeled “CON/AUX”
- 1 RJ-45 jack for BITS interface, labeled “BITS”

The logical slot numbers are 0 for all built-in interfaces.

The numbering format is:

```
Interface type Slot number/Interface number
```

Interface (port) numbers begin at logical 0 for each interface type.

Following is an explanation of the slot/port numbering:

- Logical interface numbering for the built-in T1/E1 ports runs from 0/0 through 0/15. Interfaces are hardwired; therefore, port 0 is always logical interface 0/0, port 1 is always logical interface 0/1, and so on. Built-in T1/E1 ports are numbered bottom to top, left to right (bottom row numbered 0-2-4-6-8-10-12-14, top row numbered 1-3-5-7-9-11-13-15).
- When the 2 HWIC slots are used to expand the T1/E1 port density to 20 or 24 ports, logical interface numbering continues from 1/0 through 1/3 and 2/0 through 2/3. Logical interfaces for HWIC0 are always 1/0 through 1/3 and logical interfaces for HWIC1 are always 2/0 through 2/3. Because the interfaces are hardwired, HWIC0 port 0 is always logical interface 1/0, HWIC0 port 1 is always logical interface 1/1, HWIC1 port 0 is always logical interface 2/0, HWIC1 port 1 is always logical interface 2/1, and so on. Ports are numbered left to right for each HWIC.

Logical interface numbering for the built-in Ethernet ports runs from 0/0 through 0/5. Because the interfaces are hardwired, port 0 is always logical interface 0/0, port 1 is always logical interface 0/1, and so on. SFP ports are numbered left to right, 0 and 1; 100/1000 Ethernet ports are numbered left to right, 2 through 5.

Setup Command Facility

The **setup** command facility prompts you for information that is required 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 to configure a module or interface that is not included in the **setup** command facility, go to "Chapter 2, "Cisco IOS Software Basics" to familiarize yourself with the command-line interface (CLI). Then, go to Chapter 4, "Configuring the Cisco MWR 2941-DC Router Using the CLI."

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" section of the *Cisco MWR 2941-DC Router 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 appears 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 3-3
- Complete the steps in the "Completing the Configuration" section on page 3-6

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

Use the following procedure to configure global parameters.

Step 1 Power on the router. Messages appear in the 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 are 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 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. This section is for reference only, and output might not match the messages on your console.

```
rommon 1 >boot
program load complete, entry point:0x80008000, size:0xc200

Initializing ATA monitor library.......
program load complete, entry point:0x80008000, size:0xc200

Initializing ATA monitor library.......
program load complete, entry point:0x80008000, size:0xc35eec
Self decompressing the image:
################################################################################
################################################################################
################################################################################
################################################################################
################################################################################
################################################################################
################################################################################
######################## [OK]

Smart Init is enabled
smart init is sizing iomem
    ID  MEMORY_REQTYPE
0035C   0X005F3C00 MWR2941 Mainboard
        0X000F3BB0 public buffer pools
        0X00843000 public particle pools
TOTAL:  0X06894CB0

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: 104Mb.
Using 20 percent iomem. [104Mb/512Mb]

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

Cisco IOS Software, 2900 Software (MWR2900-IPRAN-M),
Experimental Version 12.4(20050412:070057),
Copyright (c) 1986-2009 by Cisco Systems, Inc.
```

```
Compiled Sat 10-Jan-09 03:19 by cbrezove
Image text-base:0x60008F60, data-base:0x6106A000

Cisco Systems, Inc. MWR-2941-DC (MPC8347E) processor (revision 0x400) with 41719
6K/107092K bytes of memory.
Processor board ID
MPC8347E CPU Rev: Part Number 0x8032, Revision ID 0x300
1 RTM Module: ASM-M2900-TOP daughter card
6 Gigabit Ethernet interfaces
1 terminal line
128K bytes of non-volatile configuration memory.
125440K bytes of ATA CompactFlash (Read/Write)

--- System Configuration Dialog ---
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 '[]'.
```

Step 2 To begin the initial configuration dialog, enter **yes** when the following message appears:

```
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 2941-1).

```
Configuring global parameters:

 Enter host name [Router]: 2941-1
```

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, the password is visible while you type the it. After you enter the password, 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 To prevent unauthenticated access to the router through ports other than the console port, enter the virtual terminal password.

```
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 appears. This list varies, depending on the network modules 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:
    Configure IP on this interface? [no]:
```

Completing the Configuration

When you have provided all of the information prompted for by the setup command facility, the configuration appears. Messages similar to the following appear:

```
The following configuration command script was created:

!
hostname 2941-1
enable secret 5 $1$5fH0$Z6Pr5EgtR5iNJ2nBg3i6y1 enable password ciscoenable line vty 0 4
password ciscoenablesnmp-server community public !
no ip routing

!
interface GigabitEthernet0/0
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 you 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. To return to the system configuration dialog, enter **setup**.
- **yes—**The configuration is saved, and you return to the EXEC prompt.

Step 2 When the messages stop displaying in your window, press **Return** to view the command line prompt.

The `2941-1>` 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 MWR 2941-DC Router Using the CLI."