Understanding Interface Numbering and Cisco IOS Software Basics

This chapter provides an overview of interface numbering in the Cisco VG224 voice gateway (VG). It also describes how to use the Cisco IOS software commands.
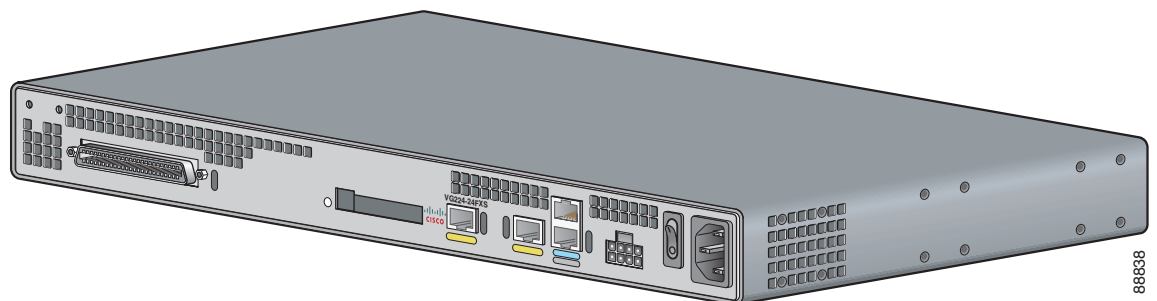
This chapter presents the following major topics:

Identifying the Cisco VG224

Figure 1-1 shows the back panel and identifies the features of the Cisco VG224.

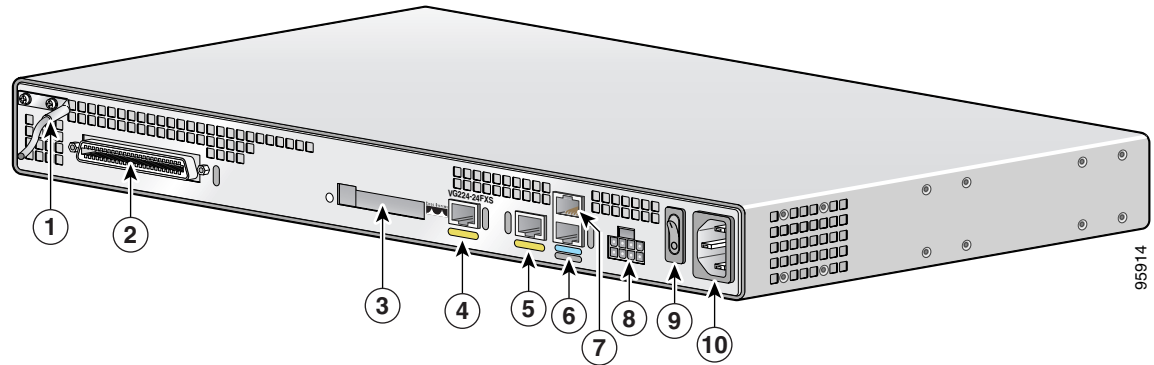**Figure 1-1   Identifying the Cisco VG224**

- RJ-21 analog voice interface
- FE ports: 2
- External compact flash memory card

Port Numbering Conventions

The Cisco VG224 is used as an example. See

Figure 1-2   Back-Panel Functions and Options (Cisco VG224 shown)

1	Chassis ground connection	6	AUX port
2	RJ-21 connector	7	Console port
3	Compact flash port	8	DC power input[1]
4	Fast Ethernet port 1	9	On/off switch
5	Fast Ethernet port 0	10	AC power input

1. This is not a redundant failover power supply connection. You must use either AC or DC.

Note   The Console port is above the AUX port.

Port numbering convention for the Cisco VG224 is as follows:

- Analog foreign exchange station (FXS) voice port numbering begins at 2/0 and extends up to 2/23.
- An external compact flash memory card is numbered CF 0.
- 10/100BASE-T Fast Ethernet ports are numbered Fast Ethernet 0/0 and Fast Ethernet 0/1, from right to left.

Understanding Cisco IOS Software Basics

This section describes what you need to know about the Cisco IOS software before you configure the router using the command-line interface (CLI). This chapter includes the following:

Understanding these concepts will save time as you begin to use the CLI. If you have never used Cisco IOS software or need a refresher, take a few minutes to read this chapter before you proceed to the next chapter.

If you are already familiar with Cisco IOS software, proceed to Chapter 2, "Using the setup Command."

Getting Help

Use the question mark (?) and arrow keys to help you enter commands:

- For a list of available commands, enter a question mark:

  ```
  Router> ?
  ```

- To complete a command, enter a few known characters followed by a question mark (with no space):

  ```
  Router> s?
  ```

- For a list of command variables, enter the command followed by a space and a question mark:

  ```
  Router> show ?
  ```

- To redisplay a command you previously entered, press the up arrow key. You can continue to press the up arrow key for more commands.

Command Modes

The Cisco IOS user interface is divided into different modes. Each command mode permits you to configure different components on your router. The commands available at any given time depend on which mode you are currently in. Entering a question mark (**?**) at the prompt displays a list of commands available for each command mode. Table 1-1 lists the most common command modes.

Table 1-1   Common Command Modes

Command Mode	Access Method	Router Prompt Displayed	Exit Method
User EXEC	Log in.	`Router>`	Use the **logout** command.
Privileged EXEC	From user EXEC mode, enter the **enable** command.	`Router#`	To exit to user EXEC mode, use the **disable**, **exit**, or **logout** command.
Global configuration	From the privileged EXEC mode, enter the **configure terminal** command.	`Router (config)#`	To exit to privileged EXEC mode, use the **exit** or **end** command, or press **Ctrl-Z**.
Interface configuration	From the global configuration mode, enter the **interface** *type number* command, such as **interface serial 0/0**.	`Router (config-if)#`	To exit to global configuration mode, use the **exit** command. To exit directly to privileged EXEC mode, press **Ctrl-Z**.

Timesaver   Each command mode restricts you to a subset of commands. If you are having trouble entering a command, check the prompt, and enter the question mark (**?**) for a list of available commands. You might be in the wrong command mode or using the wrong syntax.

In the following example, notice how the prompt changes after each command to indicate a new command mode:

```
Router> enable
Password: <enable password>
Router# configure terminal
Router(config)# interface serial 0/0
Router#
%SYS-5-CONFIG_I: Configured from console by console
```

The last message is normal and does not indicate an error. Press **Return** to get the `Router#` prompt.

Note   You can press **Ctrl-Z** in any mode to immediately return to enable mode (`Router#`), instead of entering **exit**, which returns you to the previous mode.

Undoing a Command or Feature

If you want to undo a command you entered or disable a feature, enter the keyword **no** before most commands; for example, **no ip routing**.

Saving Configuration Changes

You need to enter the **copy running-config startup-config** command to save your configuration changes to nonvolatile random-access memory (NVRAM), so the changes are not lost if there is a system reload or power outage. For example:

```
Router# copy running-config startup-config
Building configuration...
```

It might take a minute or two to save the configuration to NVRAM. After the configuration has been saved, the following appears:
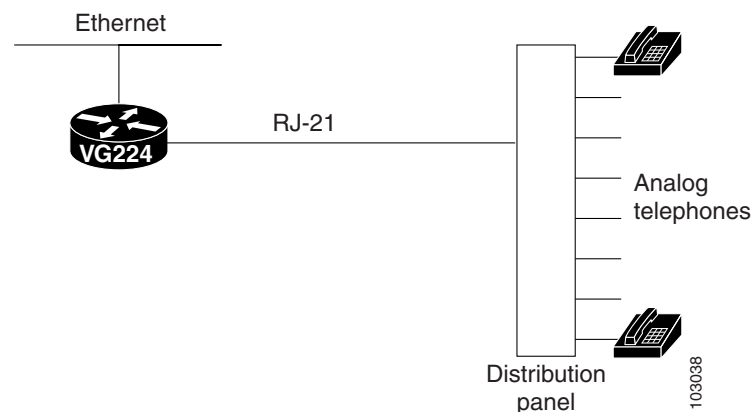
```
[OK]
Router#
```

Upgrading to a New Cisco IOS Release

To install or upgrade to a new Cisco IOS release, see How to Update/Upgrade Cisco IOS Software.

Cisco VG224 Deployment Scenario

Figure 1-3 shows a typical deployment scenario for the Cisco VG224 voice gateway.

Figure 1-3   Analog FXS User Interfaces with Metro Ethernet Interface

Where to Go Next

Now that you have learned some Cisco IOS software basics, you can begin to configure the router using the CLI.

Remember that:

- You can use the question mark (?) and arrow keys to help you enter commands.

- Each command mode restricts you to a set of commands. If you have difficulty entering a command, check the prompt and then enter the question mark (**?**) for a list of available commands. You might be in the wrong command mode or using the wrong syntax.

- To disable a feature, generally enter the keyword **no** before the command; for example, **no ip routing**.

- You need to save your configuration changes to NVRAM so the changes are not lost if there is a system reload or power outage.

Proceed to Chapter 2, "Using the setup Command," to begin configuring the router.