

First-Time Startup

This chapter takes you through first-time startup. Use the information you entered on the Global Configuration Worksheet and the Interface Configuration Worksheet as you interact with the **setup** command facility's System Configuration Dialog. If you have not completed the worksheets, read the "Preparing for First-Time Startup" chapter before starting up.

This chapter includes sample worksheets filled in to show you how this information is used when the **setup** command facility runs through the System Configuration Dialog.

Note Some configuration parameters discussed in this document (and shown on the configuration worksheets) apply only to routers that have the protocol translation option. If your router does not have protocol translation, the interactive **setup** command facility does not prompt you for these parameters.

Overview of the First-Time Startup Process

The first time you start up the system, the **setup** command facility operates automatically. An interactive dialog called the System Configuration Dialog appears on the system console screen. The dialog navigates you through the configuration process by prompting you for the information you have recorded on the configuration worksheets. The **setup** command facility also provides default values and help text for the configuration parameters, as described later in this section.

The **setup** command facility detects which interfaces are installed and prompts you for configuration information for each installed interface. When you finish configuring one interface, the **setup** command software prompts you for the next interface and continues until they are all configured.

At first-time startup, you must do the following:

- Power up your router and if necessary, test for problems with system memory and CPU.
- Verify software version and installed hardware and software options.
- Configure global parameters.
- Configure interface parameters.
- Store the configuration in nonvolatile memory.

Default Values Using the Setup Command Facility

Many prompts in the System Configuration Dialog include default answers, shown in square brackets following the question. To accept a default, press the Return key. If the system was previously configured, the defaults that appear are the currently configured values. If you are configuring the system for the first time, the defaults that appear are factory defaults. If no factory default exists, as in the case of passwords, nothing appears after the question mark.

Help Text Using the Setup Command Facility

At any time during use of the **setup** command facility, you can request help by typing a question mark (?) at a prompt. If the prompt requires a Yes or No answer, no further help is available. If the prompt offers a range of acceptable answers, the help facility gives you some guidance. For example, if the **setup** command facility prompts you to select the number of bits in a subnet mask for your previously entered Class B IP address, the help facility prompts you to choose a decimal number between 0 and 14.

Additionally, if you enter invalid information at a prompt, the help facility automatically asks you for the correct information. For example, if you answer “okay” instead of “yes” at a prompt, the help facility guides you with the following information:

```
%Please answer 'yes' or 'no'.
```

As another example, if you answer a prompt with a value of 0 and the required value must be a decimal between 1 and 65535, then the help facility automatically prompts you with the following message:

```
%A decimal number between 1 and 65535
```

Powering Up Your System

Before powering up your system, check for correct AC power voltages.



Caution Check the voltage rating label at the back of the unit for correct voltage configuration. The factory configures the AGS+ for either 110 VAC or 220 VAC operation, as requested when ordered. MGS, CGS, Cisco 3000, and Cisco 7000 products automatically configure the power supply for the applied input voltage and can be connected to any AC source from 90 to 264 VAC. All U.K. version products are configured at the factory for 240 VAC operation only.

Now you can safely power up your system by flipping the switch on the back of the router.

Verifying Installed Software and Hardware

When you first power up your console and network router, a script similar to the following appears on the screen. The script shown is for a Cisco 3000 with an IGS-BFPX image. The first section of the script displays the banner information, including the software version and the System Configuration Dialog. (A sample of the complete configuration script is included at the end of this chapter.)

```
Restricted Rights Legend
```

```
Use, duplication, or disclosure by the Government is
subject to restrictions as set forth in subparagraph
(c) of the Commercial Computer Software - Restricted
Rights clause at FAR sec. 52.227-19 and subparagraph
(c) (1) (ii) of the Rights in Technical Data and Computer
Software clause at DFARS sec. 252.227-7013.
```

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

```
Cisco Internetwork Operating System Software
IOS (tm) 3000 Software (IGS-BFPX), Version 10.3
Copyright (c) 1986-1994 by cisco Systems, Inc.
Compiled Fri 02-Dec-94 17:40 by chansen
Image text-base: 0x03000060, data-base: 0x00001000
```

The next portion of the script lists installed hardware and software options, such as bridging and X.25. The system presents the appropriate interfaces for these options during the configuration process.

```
cisco 3000 (68030) processor (revision A) with 8192K/2048K bytes of memory.
Processor board serial number 00743954
X.25 software, Version 2.0, NET2, BFE and GOSIP compliant.
ISDN software, Version 1.0.
Bridging software.
SuperLAT software (copyright 1990 by Meridian Technology Corp).
1 Ethernet/IEEE 802.3 interface.
2 Serial network interfaces.
1 ISDN Basic Rate interface.
128K bytes of non-volatile configuration memory.
4096K bytes of flash memory sized on embedded flash.
Configuration register is 0x10F
```

Note The first two sections of the configuration script (the banner and the installed hardware) appear only at initial system startup. On subsequent uses of the **setup** command facility, the script begins with the System Configuration Dialog.

The System Configuration Dialog appears, and asks whether you want to begin the configuration dialog.

```
- System Configuration Dialog -  
At any point you may enter a question mark '?' for help.  
Refer to the 'Getting Started' Guide for additional help.  
Use ctrl-c to abort configuration dialog at any prompt.  
Default settings are in square brackets '['].
```

```
Would you like to enter the initial configuration dialog? [yes]:
```

At this point, you can choose to exit the System Configuration Dialog by answering No at the prompt. To begin the initial configuration process, answer Yes. If you answer Yes, the System Configuration Dialog asks whether you want to view the current interface summary. Answer Yes to see the summary.

```
First, would you like to see the current interface summary? [yes]:
```

In the following example, the summary shows a router at first-time startup. That is, nothing has been configured, and the summary reflects that fact.

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

Interface	IP-Address	OK?	Method	Status	Protocol
BRI0	unassigned	NO	not set	down	down
Ethernet0	unassigned	NO	not set	up	down
Serial0	unassigned	NO	not set	down	down
Serial1	unassigned	NO	not set	down	down

The interface summary contains six columns. The Interface column lists the router's installed interfaces. The IP-Address column lists the IP address for each interface or states that an IP address for an interface is currently unassigned. Because this example shows the summary at first-time startup (that is, prior to configuration), no IP addresses have yet been assigned. The OK? column describes whether an interface has a valid configuration. Again, no configuration exists, so the OK? column contains NO for each interface. The Method column describes where an interface gets its configuration information—manually or from NVRAM. If you have not configured the interface with an IP address, the column shows “not set” for the interface. The Status column indicates whether an interface is up, down, or administratively down. Ethernet interfaces have a default status of up. Therefore, when you power up your router, Ethernet interfaces are usually up. Serial interfaces are not up unless they receive the correct carrier detect signal on the line. The Protocol column lists the line protocol for an interface. A line protocol tells you whether the interface line missed the last three keepalives. If so, the column shows “down” for that interface.

After displaying the interface summary, the dialog begins to prompt you for global configuration parameters. You can press Ctrl-C to abort the process at any time. Ctrl-C returns you to the privileged EXEC prompt (router#). Refer to the *Router Products Configuration Guide* for information about configuring the router. Refer to the publication *Protocol Translation Configuration Guide and Command Reference* for information about configuring protocol translation.

If a --More-- prompt appears during the dialog, press the space bar to continue.

Configuring Global and Interface Parameters

The System Configuration Dialog prompts you for global parameters, then interface parameters. Enter the values you recorded on the two configuration worksheets. To accept default settings that appear in square brackets, press the Return key.

Storing the Configuration in Nonvolatile Memory

When you complete the configuration process for all installed interfaces on your router, the **setup** command facility shows you the configuration command script that was created. It also asks you if you want to use this configuration. If you answer Yes, the configuration is saved to nonvolatile memory. If you answer No, the configuration is not saved and the process begins again. There is no default for this prompt; you must answer either Yes or No.

Once you have answered Yes to this last question, your system is now ready for use. If you want to modify the configuration you have just established, see the “Where to Go from Here” chapter.

Note If there are any problems with the configuration file pointed to in nonvolatile memory, or if the ignore nonvolatile memory bit is set in the configuration register, the router enters the streamlined **setup** command facility. See “Using the Streamlined Setup Command Facility” in the “Where to Go from Here” chapter.

Sample Configuration

Figure 3-1 and Figure 3-2 show sample completed worksheets for a first-time startup configuration. Following the worksheets is the screen output for the **setup** command facility at first-time startup, showing the user responses from the completed worksheets. The screen output includes both the interactive configuration process and the resulting script that was created. The sample output is from a Cisco 3000 running an IGS-BFPX image with an ISDN BRI.

In the sample System Configuration Dialog, when it appears that no response was made, the user pressed the Return key to accept the default.

Note Although the Cisco 3000 router in the following sample configuration has an ISDN BRI, the system prompts for ISDN parameters only while configuring global parameters. To continue configuring an ISDN BRI, you invoke the **configure** command to enter global configuration mode. Refer to the *Router Products Configuration Guide* for more information about configuring an ISDN BRI.

Figure 3-1 Completed Global Configuration Worksheet

System Serial No.: 12345678 Number of Interfaces: 4

Global Parameters

Host Name:	<u>sandbox</u>		
Enable Secret:	<u>trowel</u>		
Enable Password:	<u>shovel</u>		
Virtual Terminal Password:	<u>pail</u>		
SNMP:	<input checked="" type="radio"/> Yes	<input type="radio"/> No	Community String: <u>public</u>
XRemote Font Server:	<input checked="" type="radio"/> Yes	<input type="radio"/> No	
	IP Address:	<u>123.123.123.243</u>	
	IP Address:	<u>123.123.123.244</u>	
	IP Address:	<u>123.123.123.245</u>	
	IP Address:	<u>123.123.123.246</u>	
DECnet:	<input checked="" type="radio"/> Yes	<input type="radio"/> No	
	Area No.:	<u>1</u>	
	Node No.:	<u>1</u>	
	Area (Level 2) Routing:	<input checked="" type="radio"/> Yes	<input type="radio"/> No
IP:	<input checked="" type="radio"/> Yes	<input type="radio"/> No	
	Routing Protocol (choose one):		
	IGRP	<input checked="" type="radio"/> Yes	<input type="radio"/> No IGRP Autonomous System: <u>15</u>
	RIP	<input type="radio"/> Yes	<input type="radio"/> No
IPX:	<input checked="" type="radio"/> Yes	<input type="radio"/> No	
XNS:	<input checked="" type="radio"/> Yes	<input type="radio"/> No	
AppleTalk:	<input checked="" type="radio"/> Yes	<input type="radio"/> No	
	Multizone:	<input checked="" type="radio"/> Yes	<input type="radio"/> No
Apollo:	<input checked="" type="radio"/> Yes	<input type="radio"/> No	
	Routing No.:	<u>123</u>	
CLNS:	<input checked="" type="radio"/> Yes	<input type="radio"/> No	
	Router Tag:	<u>pubsgroup</u>	
	Domain:	<u>72.8885</u>	
	Area:	<u>0013</u>	
	Station ID:	<u>use default</u>	
Banyan VINES:	<input checked="" type="radio"/> Yes	<input type="radio"/> No	
Bridging:	<input checked="" type="radio"/> Yes	<input type="radio"/> No	
LAT	(Yes / No)	Ethernet0 <u>yes</u>	Serial0 <u>yes</u>
ISDN BRI	Switch Type:	<u>none</u>	

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Figure 3-2 Completed Interface Configuration Worksheet

System Hardware Information:

System Type: Cisco 3000 System Serial No.: 12345678 Host Name: sandbox No. of Interfaces: 4

Interface Parameters

Interface Name	<i>BR10</i>	<i>Ethernet0</i>	<i>Serial0</i>	<i>Serial1</i>
Interface In Use (Yes/No)	<i>no</i>	<i>yes</i>	<i>yes</i>	<i>yes</i>
Speed (Token Ring Only)	<i>N/A</i>	<i>N/A</i>	<i>N/A</i>	<i>N/A</i>
IP: (Yes / No)	<i>N/A</i>	<i>yes</i>	<i>yes</i>	<i>yes</i>
IP Unnumbered (Yes / No)		<i>N/A</i>	<i>no</i>	<i>yes</i>
Interface Name		<i>N/A</i>	<i>N/A</i>	<i>Ethernet0</i>
IP Address		<i>131.108.6.67</i>	<i>131.108.97.67</i>	
Subnet Mask Bits		<i>0</i>	<i>0</i>	
DECnet (Yes / No)	<i>N/A</i>	<i>yes</i>	<i>no</i>	<i>no</i>
Cost		<i>10</i>		
IPX (Yes / No)	<i>N/A</i>	<i>yes</i>	<i>no</i>	<i>no</i>
Network No.		<i>10</i>		
XNS (Yes / No)	<i>N/A</i>	<i>yes</i>	<i>no</i>	<i>no</i>
Network No.		<i>default</i>		
AppleTalk (Yes / No)	<i>N/A</i>	<i>yes</i>	<i>yes</i>	<i>yes</i>
Extended (Ethernet/Serial Only)		<i>yes</i>	<i>no</i>	<i>yes</i>
Starting Cable Range		<i>0</i>		<i>0</i>
Ending Cable Range				
Network No. (Nonextended)			<i>1</i>	<i>2</i>
Zone Name			<i>twilight</i>	<i>dawn</i>
Zone Name				
Zone Name				
Apollo (Yes / No)	<i>N/A</i>	<i>no</i>	<i>no</i>	<i>no</i>
Network No.				
CLNS (Yes / No)	<i>N/A</i>	<i>yes</i>	<i>yes</i>	<i>no</i>
Banyan VINES (Yes / No)	<i>N/A</i>	<i>yes</i>	<i>yes</i>	<i>no</i>
Bridging (Yes / No)	<i>N/A</i>	<i>yes</i>	<i>yes</i>	<i>no</i>
LAT (Yes / No)	<i>N/A</i>	<i>yes</i>	<i>yes</i>	<i>no</i>

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Sample Configuration

```
--- System Configuration Dialog ---

At any point you may enter a question mark '?' for help.
Refer to the 'Getting Started' Guide for additional help.
Use ctrl-c to abort configuration dialog at any prompt.
Default settings are in square brackets '['].
Would you like to enter the initial configuration dialog? [yes]:

First, would you like to see the current interface summary? [yes]:

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

Interface      IP-Address      OK? Method      Status          Protocol
BRI0           unassigned      NO  not set        down            down
Ethernet0      unassigned      NO  not set        up              down
Serial0        unassigned      NO  not set        down            down
Serial1        unassigned      NO  not set        down            down

Configuring global parameters:

Enter host name [Router]: sandbox
Enter enable password: shovel
Enter virtual terminal password: pail
Configure SNMP Network Management? [no]: yes
  Community string [public]:
Configure XRemote font servers? [no]: yes
  Enter a font server IP address or press RETURN to exit: 123.123.123.243
  Enter a font server IP address or press RETURN to exit: 123.123.123.244
  Enter a font server IP address or press RETURN to exit: 123.123.123.245
  Enter a font server IP address or press RETURN to exit: 123.123.123.246
  Enter a font server IP address or press RETURN to exit:
Configure DECnet? [no]: yes
  Your area number [1]:
  Your node number [1]:
  Area (level 2) routing? [no]: yes
Configure IP? [yes]:
  Configure IGRP routing? [yes]:
    Your IGRP autonomous system number [1]: 15
  Configure RIP routing? [no]:
Configure IPX? [no]: yes
Configure XNS? [no]: yes
Configure AppleTalk? [no]: yes
  Multizone networks? [no]: yes
Configure Apollo? [no]: yes
  Apollo routing number [1]: 123
Configure CLNS? [no]: yes
  CLNS router tag [area_1]: pubsgroup
  CLNS domain [49]: 72.8885
  CLNS area [0001]: 0013
  CLNS station id [0000.0C01.0D1D]:
Configure Vines? [no]: yes
Configure bridging? [no]: yes
Configure LAT? [no]: yes
Enter ISDN BRI Switch Type [none]:

Configuring interface parameters:

Configuring interface BRI0:
  Is this interface in use? [no]:
Configuring interface Ethernet0:
  Is this interface in use? [no]: yes
  Configure IP on this interface? [no]: yes
    IP address for this interface: 131.108.6.67
    Number of bits in subnet field [0]:
    Class B network is 131.108.0.0, 0 subnet bits; mask is 255.255.0.0
```



```

Configure DECnet on this interface? [no]: yes
  DECnet cost [10]:
Configure IPX on this interface? [no]: yes
  IPX network number [2]: 10
Configure XNS on this interface? [no]: yes
  XNS network number [2]:
Configure AppleTalk on this interface? [no]: yes
  Extended AppleTalk network? [no]: yes
  AppleTalk starting cable range [0]:
Configure Apollo on this interface? [no]:
Configure CLNS on this interface? [no]: yes
Configure Vines on this interface? [no]: yes
Configure bridging on this interface? [no]: yes
Configure LAT on this interface? [no]: yes
!
Configuring interface Serial0:
Is this interface in use? [no]: yes
Configure IP on this interface? [no]: yes
Configure IP unnumbered on this interface? [no]:
  IP address for this interface: 131.108.97.67
  Number of bits in subnet field [0]:
  Class B network is 131.108.0.0, 0 subnet bits; mask is 255.255.0.0
Configure DECnet on this interface? [no]:
Configure IPX on this interface? [no]:
Configure XNS on this interface? [no]:
Configure AppleTalk on this interface? [no]: yes
  Extended AppleTalk network? [no]:
  AppleTalk network number [1]:
  AppleTalk zone name [myzone]: twilight
Configure Apollo on this interface? [no]:
Configure CLNS on this interface? [no]: yes
Configure Vines on this interface? [no]: yes
Configure bridging on this interface? [no]: yes
Configure LAT on this interface? [no]: yes
!
Configuring interface Serial1:
Is this interface in use? [no]: yes
Configure IP on this interface? [no]: yes
Configure IP unnumbered on this interface? [no]: yes
Assign to which interface?: Ethernet0
Configure DECnet on this interface? [no]:
Configure IPX on this interface? [no]: no
Configure XNS on this interface? [no]: no
Configure AppleTalk on this interface? [no]: yes
  Extended AppleTalk network? [no]: yes
  AppleTalk starting cable range [0]:
  AppleTalk network number [2]:
  AppleTalk zone name [myzone]: dawn
Configure Apollo on this interface? [no]:
Configure CLNS on this interface? [no]:
Configure Vines on this interface? [no]:
Configure bridging on this interface? [no]:
Configure LAT on this interface? [no]:

```

The following configuration command script was created:

```

hostname sandbox
enable password shovel
line vty 0 4
password pail
snmp-server community
xremote tftp host 123.123.123.246
!

```

Sample Configuration

```
ip routing
decnet routing 1.1
decnet node-type area
ipx routing
xns routing
appletalk routing
apollo routing
clns routing
router iso-igrp pubsgroup
net 78.8885.0013.0000.0C01.0D1D.00
vines routing
bridge 1 protocol dec
no mop enabled
!
interface BRI0
no ip address
!
interface Ethernet0
ip address 131.108.6.67 255.255.255.0
ipx network 10
xns network 2
appletalk cable-range 0-0 0.0
appletalk discovery
clns router iso-igrp pubsgroup
vines metric
bridge-group 1
no mop enabled
lat enabled
!
interface Serial0
ip address 131.108.97.67
appletalk address 1.75
appletalk zone twilight
clns router iso-igrp pubsgroup
vines metric
bridge-group 1
no mop enabled
no lat enabled
!
interface Serial1
no ip address
ip unnumbered
interface name Ethernet0
appletalk address 1.75
appletalk cable-range 0-0 0.0
appletalk zone dawn
no mop enabled
no lat enabled
!
router igrp 15
network 131.108.0.0
!
end

Use this configuration? [yes/no]: yes
[OK]
Use the enabled mode 'configure' command to modify this configuration.

Press RETURN to get started!
```

First-time startup is complete. Your router is now ready for use. To modify the configuration you have just established during first-time startup, use the **setup** command facility described in the next chapter, “Where to Go from Here.” To perform advanced configurations, use the **configure** command, as described in the publications *Router Products Configuration Guide* and *Router Products Command Reference*. To configure protocol translation, refer to the *Protocol Translation Configuration Guide and Command Reference* publication.

