First-Time Startup

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

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

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, is displayed on the screen of the system console. The dialog navigates you through the configuration process by prompting you for the information you should have already determined and 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 knows 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
- 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

For many of the prompts in the System Configuration Dialog of the **setup** command facility, default answers appear in square brackets following the question. By pressing the Return key, you accept the defaults. 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 factory defaults are provided. If there is no factory default, as in the case of passwords, nothing is displayed 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. However, if the prompt offers a range of acceptable answers, the help facility will give you some guidance. For example, if you are prompted to select the number of bits in a subnet mask, the help facility might inform you that you can choose a decimal number between 0 and 16.

Powering Up Your System

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

Caution Check the voltage rating label at the rear of the unit for correct voltage configuration. The AGS+ is configured at the factory 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) (ii) of the Rights
in Technical Data and Computer Software clause at
DFARS sec. 252.227-7013.

Cisco Systems, Inc.
170 W. Tasman Drive
San Jose, California

Cisco Internetwork Operating System Software
IOS (tm) 3000-BPRX Software, Version 10.0(1.0)
Copyright (c) 1986-1994 by cisco Systems, Inc.
Compiled Tue 24-May-94 06:34 by daveu
```

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 and asks if you want to continue.

The System Configuration Dialog appears next, and prompts for configuration information. The router gives you the opportunity to view the configuration, if any, for each interface. To accept the default settings, which appear in square brackets, press the Return key. The following example shows an AGS+ with four interfaces: TokenRing, Ethernet, Serial, and FDDI.

```
          - 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
TokenRing0    unassigned      YES  not set    down              down
Ethernet0     unassigned      YES  not set    down              down
Serial0       unassigned      YES  not set    down              down
Fddi0         unassigned      YES  not set    down              down
```

At this point, you can choose not to continue with the System Configuration Dialog and exit by answering No at the prompt. To begin the initial configuration process, answer Yes. 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 Translator Configuration Guide and Command Reference* for information about configuring protocol translation.

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

Configuring Global Parameters

You are prompted for global parameters at the console. Enter the values you wrote in on your Global Configuration Worksheet.

Configuring Interface Parameters

You are prompted for parameters for each installed interface at the console. Enter the values you wrote in on your Interface Configuration Worksheet.

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 to be used. If you want to modify the configuration you have just established, see the chapter "Where to Go from Here."

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

Sample Configuration

This section contains a sample first-time startup configuration using sample completed worksheets. Figure 3-1 shows a completed Global Configuration Worksheet and Figure 3-2 shows a completed Interface Configuration Worksheet. These samples include the actual screen output for the **setup** command facility at first-time startup. 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 Though 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 further set up 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.

System Serial No.: __12345678__ **Number of Interfaces:** __4__

Global Parameters

Host Name: sandbox
Enable Secret: trowel
Enable Password: shovel
Virtual Terminal Password: pail
SNMP: (Yes) No   **Community String:** public
XRemote Font Server: (Yes) No   **IP Address:** __123.123.123.243__   **IP Address:** __123.123.123.244__   **IP Address:** __123.123.123.245__   **IP Address:** __123.123.123.246__
DECnet: (Yes) No   **Area No.:** __1__   **Node No.:** __1__   **Area (Level 2) Routing:** (Yes) No
IP: (Yes) No   **Routing Protocol (choose one):**   **IGRP** (Yes) No   **IGRP Autonomous System:** __15__   **RIP** Yes No
IPX: (Yes) No
XNS: (Yes) No
AppleTalk: (Yes) No   **Multizone:** (Yes) No
Apollo: (Yes) No   **Routing No.:** __123__
CLNS: (Yes) No   **Router Tag:** __pubsgroup__   **Domain:** __72.8885__   **Area:** __0013__   **Station ID:** __use default__
Banyan VINES: (Yes) No
Bridging: (Yes) No
LAT **(Yes / No)** **Ethernet0** __yes__ **Serial0** __yes__
ISDN BRI **Switch Type:** __none__

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Figure 3-1   Completed Global Configuration Worksheet

System Hardware Information:

System Type: _Cisco 3000_ **System Serial No.:** _12345678_ **Host Name:** _sandbox_ **No. of Interfaces:** _4_

Interface Parameters

Interface Name	BRI0	Ethernet0	Serial0	Serial1
Interface In Use (Yes/No)	no	yes	yes	yes
Speed (Token Ring Only)	N/A	N/A	N/A	N/A
IP: (Yes / No)	N/A	yes	yes	yes
IP Unnumbered (Yes / No)		N/A	no	yes
Interface Name		N/A	N/A	Ethernet0
IP Address		131.108.6.67	131.108.97.67	
Subnet Mask Bits		0	0	
DECnet (Yes / No)	N/A	yes	no	no
Cost		10		
IPX (Yes / No)	N/A	yes	no	no
Network No.		10		
XNS (Yes / No)	N/A	yes	no	no
Network No.		default		
AppleTalk (Yes / No)	N/A	yes	yes	yes
Extended (Ethernet/Serial Only)		yes	no	yes
Starting Cable Range		0		0
Ending Cable Range				
Network No. (Nonextended)			1	2
Zone Name			twilight	dawn
Zone Name				
Zone Name				
Apollo (Yes / No)	N/A	no	no	no
Network No.				
CLNS (Yes / No)	N/A	yes	yes	no
Banyan VINES (Yes / No)	N/A	yes	yes	no
Bridging (Yes / No)	N/A	yes	yes	no
LAT (Yes / No)	N/A	yes	yes	no

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Figure 3-2   Completed Interface Configuration Worksheet

```
                 --- 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      YES  not set   down                  down
Ethernet0     unassigned      YES  not set   down                  down
Serial0       unassigned      YES  not set   down                  down
Serial1       unassigned      YES  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
  Configure XRemote font servers? [no]: yes
    Enter a font server IP address or press RETURN to exit: 123.123.123.246
  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 IPX? [no]: yes
  Configure XNS? [no]: yes
  Configure AppleTalk? [no]: yes
    Multizone networks? [no]: yes
  Configure Apollo? [no]: yes
    Apollo routing number [12345]: 123
  Configure CLNS? [yes]:
    CLNS router tag [area_1]: pubsgroup
    CLNS domain [49]: 72.8885
    CLNS area [0001]: 0013
    CLNS station id [0000.0C01.0D1D]: 72.8885.0000.0C01.0D1D.00
  Configure Vines? [no]: yes
  Configure bridging? [no]: yes
  Configure LAT? [no]: yes

Configuring interface parameters:
Configuring interface Ethernet0:
  Is this interface in use? [yes]:
  Configure IP on this interface? [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? [yes]:
    DECnet cost [10]:
  Configure IPX on this interface? [yes]:
    Novell network number [2]:
  Configure XNS on this interface? [yes]:
    XNS network number [2]:
  Configure AppleTalk on this interface? [yes]:
    Extended AppleTalk network? [no]: yes
    AppleTalk starting cable range [4172]: 0
```

```
    Configure Apollo on this interface? [no]:
    Configure CLNS on this interface? [yes]:
    Configure Vines on this interface? [yes]:
    Configure bridging on this interface? [yes]:
    Configure LAT on this interface? [no]: yes
!
Configuring interface Serial0:
  Is this interface in use? [yes]:
  Configure IP on this interface? [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? [yes]: no
  Configure IPX on this interface? [yes]: no
  Configure XNS on this interface? [yes]: no
  Configure AppleTalk on this interface? [yes]:
    Extended AppleTalk network? [no]:
    AppleTalk network number [1]:
    AppleTalk zone name [twilight]:
  Configure Apollo on this interface? [no]:
  Configure CLNS on this interface? [yes]:
  Configure Vines on this interface? [yes]:
  Configure bridging on this interface? [yes]:
  Configure LAT on this interface? [no]: yes
!
Configuring interface Serial1:
  Is this interface in use? [yes]:
  Configure IP on this interface? [yes]: no
  Configure IP unnumbered on this interface? [no]: yes
  Interface name Ethernet0
  Configure DECnet on this interface? [no]:
  Configure IPX on this interface? [yes]: no
  Configure XNS on this interface? [yes]: no
  Configure AppleTalk on this interface? [yes]:
    Extended AppleTalk network? [no]: yes
    AppleTalk starting cable range [4172]: 0
    AppleTalk network number [1]:
    AppleTalk zone name [dawn]:
  Configure Apollo on this interface? [no]:
  Configure CLNS on this interface? [yes]: no
  Configure Vines on this interface? [yes]: no
  Configure bridging on this interface? [yes]: 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
!
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 2
        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. If you want to change the configuration you have just established during first-time startup, use the **setup** command facility described in the 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 publication *Protocol Translator Configuration Guide and Command Reference*.