Preparing for First-Time Startup

This chapter provides the information you need to prepare for first-time startup. Read it *before* you power up your communication server.

By preparing for first-time startup, you can take advantage of the full range of configurations available on the communication server. You are not required to plan your network before sitting at the console and using the **setup** command facility for the first time, but you must connect to the console port, as described in Chapter 1, "Overview." By separating the planning tasks from the configuration tasks, you can set up the server in one sitting. You can also tailor the server to meet your needs and to fit within a consistent scheme.

This chapter describes how to fill in the Communication Server Configuration Worksheet. The values on this worksheet map to the configuration process of the **setup** command facility which is automatically invoked at first-time startup. You will specify *global* or system-wide configuration information in addition to information about each individual interface. You will use the values you have filled in on the Communication Server Configuration Worksheet. A blank configuration worksheet has been provided in Appendix A for your convenience.

In the following descriptions of the parameters that you will determine, the factory default is marked with the **Default:** label.

Filling in the Communication Server Configuration Worksheet

The Communication Server Configuration Worksheet, if properly filled in, will contain all the values you need to enter at the System Configuration Dialog portion of the **setup** command facility. Remember, the **setup** command facility is automatically invoked at first-time startup. You want all your preparations to be complete so that you can get your system up and running quickly and uneventfully.

The worksheet can assist you in gathering and maintaining information about your system. Three levels of information are listed on the worksheet:

- System hardware information

- Global parameters

- Interface parameters

System hardware information is *not* requested at first-time startup, but is useful to write on the worksheet to complete your records. Global and interface parameters, however, are requested at first-time startup.

In the following parameter descriptions, the action you need to take to fill in the worksheet is marked with the **Action:** label.

The Communication Server Configuration Worksheet is shown in Figure 2-1. Retrieve the blank worksheet provided in Appendix A before continuing. As you proceed through the following descriptions, record your information on it.

System Hardware Information:

**System Type: ASM-CS   500-CS
(circle one)**

System Serial No.: _____   **Number of Async Lines:** _____

Global Parameters

Host Name:
Enable Password:
Virtual Terminal Password:
SNMP: Yes   No

XRemote Font   Yes   No
Server:
 	
         IP address: _____
 	
         IP address: _____
 	
         IP address: _____
 	
         IP address: _____

Interface Parameters

Interface Name				
IP address				
Subnet mask bits				
LAT (Yes / No)				

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Figure 2-1   Communication Server Configuration Worksheet

Determining System Hardware Information

This section contains information that helps you record the system hardware information on the Communication Server Configuration Worksheet. This information is not requested at first-time startup.

System Type

Several communication servers have been designed to accommodate a wide variety of needs. Customers can choose from single-board 508-CS or 516-CS or the card-based ASM-CS chassis. The communication server models available are as follows:

- ASM-CS

- 500-CS

Each of these systems provide protocol translation and routing capability.

Note For ASM-CS chassis, configurations are installed at the factory according to customer specifications. If you have an existing ASM-CS system and want to change the factory preconfigurations, you will need to order the card separately and consult the configuration notes accompanying the new component for installation instructions.

Default: None

Action: Circle your system type on the worksheet, or write it in.

System Serial Number

Each system has a serial number placed on the back or bottom panel. This information may be useful in tracking your physical inventory.

Default: None

Action: Write your system serial number on the worksheet.

Number of Asynchronous Lines

The number of asynchronous lines depends on the type of system you have. If you are installing a new system, it will be preconfigured at the factory; this means the number of asynchronous lines is determined when you order the system. If you have a 500-CS, you can have 8 or 16 asynchronous terminal lines. If you have an ASM, you can have 16 to 112 asynchronous lines (in increments of 16).

Check the back of your communication server to determine the number of asynchronous lines.

Default: None

Action: Write the number of interfaces on the worksheet.

Determining Global Parameters

This section contains information about each global parameter that can be configured through the **setup** command facility. Use this information to complete the Global Parameters portion of the Communication Server Configuration Worksheet.

Host Name

The host name is the name of the communication server. The name you specify is used in the system prompts and can contain from 1 to 80 uppercase and lowercase alphanumeric characters. The host name is case sensitive.

Try to use names that will help you identify the location of the communication server, or to whom it is providing services. If you will be naming more than one host within your network, try to devise a consistent naming scheme so that host identification is easy.

Default: CS

Action: Write the host name on the worksheet the way you want it to appear in the system prompts.

Enable Password

Your system has two levels of security: user and privileged. The commands available at the user level are a subset of those available at the privileged level. Because many of the privileged commands are used to set operating parameters, these should be password-protected to prevent unauthorized use.

The enable password allows users access to the privileged command level. There is no default enable password. However, the enable password you set during first-time startup will display as the default the next time you run the **setup** command facility.

An enable password can contain from 1 to 80 uppercase and lowercase alphanumeric characters; a number cannot be the first character. Spaces are also valid password characters; for example, "two words" is a valid password. Leading spaces are ignored, though trailing spaces are recognized. For example, " woolly" is interpreted as "woolly" (without the space). On the other hand, "woolly " is recognized as "woolly " (with the space).

For more information about enable passwords, refer to the *Communication Server Configuration Guide* or the *Communication Server Command Reference* publication.

Default: None

Action: Write the enable password on the worksheet.

Virtual Terminal Password

In addition to the enable password, each virtual terminal line can also have an individual password. Virtual terminals require a password. If you do not set a password, the system will respond to attempted connections by displaying an error message and closing the connection. (Virtual terminals are used when you access the communication server remotely via the network.)

A virtual terminal password can contain from 1 to 80 uppercase and lowercase alphanumeric characters; a number cannot be the first character. Spaces are also valid password characters; for example, "two words" is a valid password. Leading spaces are ignored, though trailing spaces are recognized. For example, " woolly" is interpreted as "woolly" (without the space). On the other hand, "woolly " is recognized as "woolly " (with the space).

The virtual terminal password is case sensitive. There is no default virtual terminal password. However, the virtual terminal password you set during first-time startup will display as the default the next time you run the **setup** command facility.

If desired, you can allow line connections without a password. Refer to the *Communication Server Configuration Guide* for more information. Refer to the *Communication Server and Protocol Translator Connection Guide* to make line connections.

Default: None

Action: Write the virtual terminal password on the worksheet.

SNMP

The Simple Network Management Protocol (SNMP) is the most widely supported open standard for network management. It provides a means to access and set configuration and run-time parameters of routers and communication servers. SNMP defines a set of functions that may be used to monitor and control network elements.

SNMP is configured on a global basis only; it cannot be specified for individual interfaces.

Default: No

Action: If you want to configure SNMP on a system-wide basis, circle Yes on the worksheet. At first-time startup, this value configures read-only SNMP with a blank password. If you do not want to run SNMP on your system, circle No.

XRemote Font Server

Your communication server supports the Network Computing Device, Inc. XRemote feature on all communication servers and protocol translators. When fonts used by X applications are not included in ROM on the NCD terminal, one or more font servers must be identified from which the communication server and the NCD terminal can obtain fonts from a location other than ROM. You can identify as many XRemote font servers as you need; it is unlikely that you will ever reach the maximum number that the software allows you to identify.

Default: No

Action: If you want to configure one or more XRemote font servers, circle Yes on the worksheet. If you do not want to configure XRemote font servers on your system, circle No.

If you will be using one or more XRemote font servers, you must also provide an IP address for each XRemote font server. This step is equivalent to specifying the IP address of a font server using the **xremote tftp host** configuration command. However, you cannot specify an XRemote host name through the **setup** command facility because the name service facility is not yet running.

Indicate an IP addresses on the worksheet for the XRemote font server as follows:

* IP address for the XRemote font server

  Internet addresses are 32-bit values assigned to hosts that use the IP protocols. These addresses are written in dotted decimal format (four decimal numbers separated by periods) such as 192.17.5.100. Each number is an 8-bit value between 0 and 255.

  The addresses are divided into three classes; the classes differ in the number of bits allocated to the *network* and *host* portions of the address.

  The Class A Internet address format allocates the highest 8 bits to the network field and sets the highest-order bit to 0 (zero). The remaining 24 bits form the host field.

  The Class B Internet address allocates the highest 16 bits to the network field and sets the two highest-order bits to 1, 0. The remaining 16 bits form the host field.

  The Class C Internet address allocates the highest 24 bits to the network field and sets the three highest-order bits to 1, 1, 0. The remaining 8 bits form the host field.

Default: None

Action: Enter your Internet address in dotted decimal form (for example, 131.108.2.5) on the worksheet. Repeat this for each of the installed interfaces you plan to configure.

Table 2-1 provides a summary of subnetting parameters.

Table 2-1   Summary of Subnetting Parameters

First Class	First Byte	Network Bits	Host Bits
A	1-126	8	24
B	128-191	16	16
C	192-223	24	8

For more information about XRemote configuration and management information, refer to the *Communication Server Configuration Guide*. For information about making XRemote connections, refer to the *Communication Server and Protocol Translator Connection Guide*.

Determining Interface Parameters

This section contains information about each interface parameter that can be configured through the **setup** command facility for the installed network. Use this information to complete the Interface Parameters portion of the worksheet.

Interface Names

The **setup** command facility automatically presents the installed network interface for you to configure. The interface is presented the same as installed in the chassis. For example, if you had an Ethernet interface, you would be prompted to configure interface Ethernet0.

Default: The default is based on the interface installed in the chassis.

Action: Write the interface name on the top of the worksheet in the row labeled "Interface Name."

IP Information for an Interface

You must also provide the IP address and subnet mask bits for the installed interface. Indicate the value on the worksheet as follows:

- IP address for the interface

    Internet addresses are 32-bit values assigned to hosts that use IP. These addresses are written in dotted decimal format (four decimal numbers separated by periods) such as 192.17.5.100. Each number is an eight-bit value between 0 and 255.

    For more information about IP addresses, refer to the XRemote discussion earlier in this chapter.

    Default: None

    Action: Enter your Internet address in dotted decimal form (for example, 131.108.2.5). Repeat this for each of the installed interfaces.

- Subnet mask bits

Subnetting is an extension of the Internet addressing scheme, which allows multiple, physical networks to exist within a single Class A, B, or C network. The usual practice is to use a few of the far left bits in the host portion of the network address for a subnet field. The subnet mask controls whether or not subnetting is in effect on a network.

Internet addressing conventions allow 24 bits for the subnet mask for a Class A address, 16 bits for a Class B address, or 8 bits for a Class C address. However, because the last two of these bits must be available for host addresses, the **setup** command facility allows you to specify up to 22, 14, or 6 bits for your subnet mask respectively.

Default: 0

Action: Subnet mask bits should be defined as a decimal number between 0 and 22 for Class A addresses, 0 and 14 for Class B addresses, or 0 and 6 for Class C addresses. Do not specify 1 as the number of bits for the subnet field, because this value is reserved by Internet conventions. Repeat this for each of the installed interfaces you plan to configure.

LAT for the Interface

The local area transport (LAT) protocol from Digital Equipment Corporation (Digital) is the protocol used most often to connect to Digital hosts. LAT is a Digital-proprietary protocol. Cisco uses LAT technology licensed from Digital.

The LAT protocol allows a user to establish a connection to a host then passes the user's keystrokes to the host. A user can establish a LAT connection through the communication server to a Digital host simply by entering the host name.

LAT cannot be routed because Digital's LAT protocol includes its own transport protocol (Layer 4 of the OSI reference model), which runs directly over Ethernet Layer 2 of the OSI reference model) rather than a standard routing layer. LAT must be bridged to pass between different network segments. The communication server provides the option of transporting LAT in protocol translation mode. With communication servers, you can establish a configuration so that the communication server software will translate LAT to Telnet or X.25 for transmission over a WAN, which can be translated back to LAT on the other end of the connection. You can configure this WAN to LAT translation to be transparent to the user. This configuration also avoids LAT time-out problems, which are common in WAN bridged LAT. For more information about LAT, refer to the *Communication Server Configuration Guide*.

Default: Yes

Action: If you plan to use LAT on the interface, write Yes on the worksheet. If you do not want to use LAT on the interface, write No. Repeat this for each of the installed interfaces you plan to configure.

Note   If you configure LAT for an interface, the Digital Maintenance Operation Protocol (MOP) is automatically configured as well. If you do not configure LAT for an interface, MOP is not configured for that interface.