System Configuration

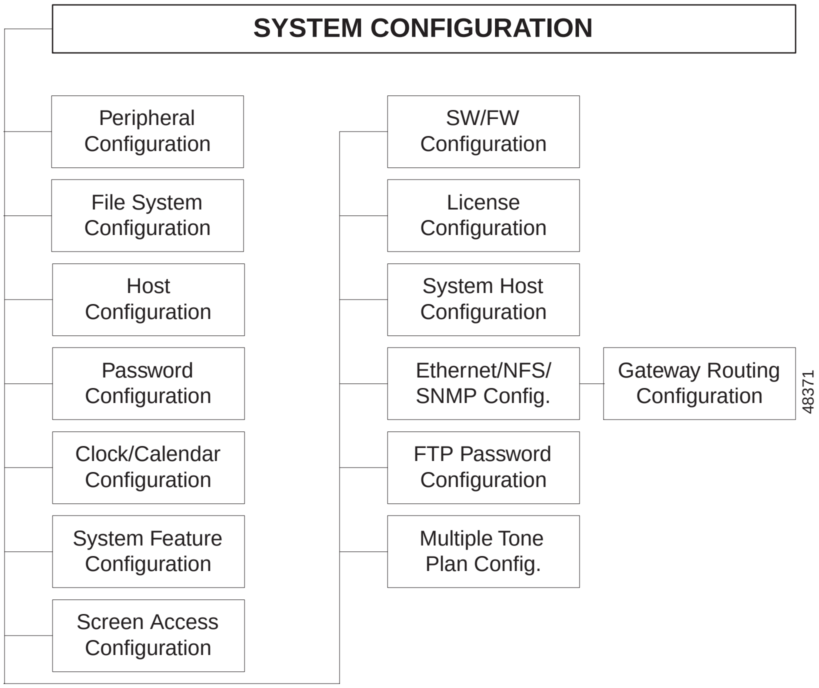
Use the System Configuration menu option to specify the system's interaction with peripheral equipment, storage devices, and host computers.

Use the System Configuration Menu screen, to perform the following tasks:

- Specify devices and directories for file system storage and retrieval
- Configure host parameters, interfaces, and software overlays
- Define operating parameters for system printers and local or remote master consoles, including Ethernet Telnet connections (if applicable)
- Add system users and modify passwords and access levels
- Assign access levels and map function keys to each system administration screen

Figure 4-1 shows the options accessible from the System Configuration menu.

Figure 4-1 System Configuration Menu Structure


SYSTEM CONFIGURATION
Peripheral Configuration
File System Configuration
Host Configuration
Password Configuration
Clock/Calendar Configuration
System Feature Configuration
Screen Access Configuration
SW/FW Configuration
License Configuration
System Host Configuration
Ethernet/NFS/ SNMP Config.
Gateway Routing Configuration
FTP Password Configuration
Multiple Tone Plan Config.
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Accessing the System Configuration Menu Screen

Complete the following steps to access the System Configuration Menu screen.

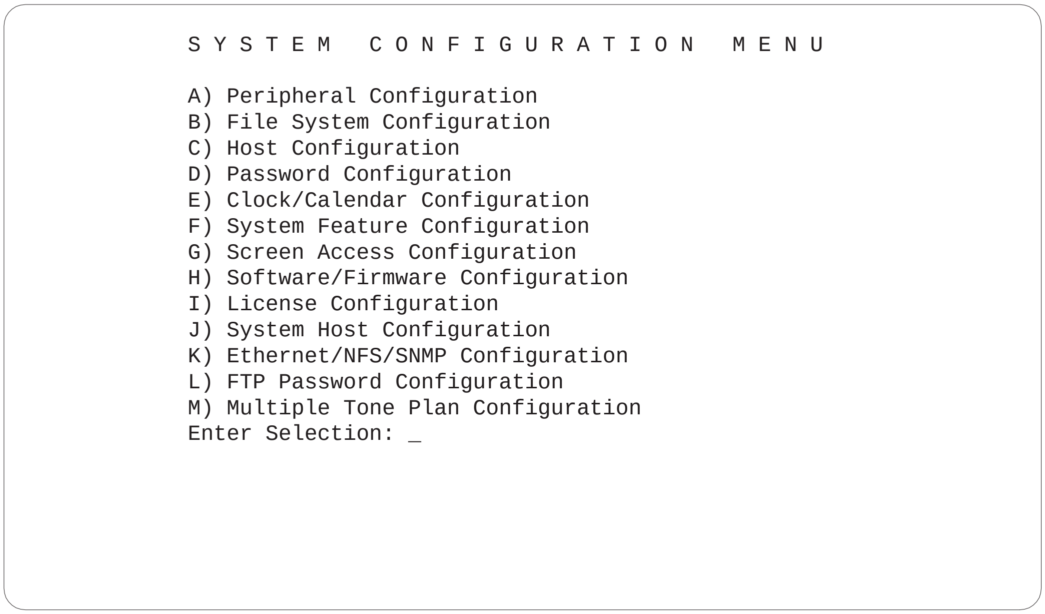
Step 1 Access the Administrator Main Menu screen.

Step 2 Type **B** and press **Enter**.

The System Configuration Menu screen appears (see Figure 4-2). The cursor is located in the Enter Selection field.

Step 3 Type the letter that precedes the option you want and press **Enter**.

Figure 4-2 System Configuration Menu



```
S Y S T E M   C O N F I G U R A T I O N   M E N U

A) Peripheral Configuration
B) File System Configuration
C) Host Configuration
D) Password Configuration
E) Clock/Calendar Configuration
F) System Feature Configuration
G) Screen Access Configuration
H) Software/Firmware Configuration
I) License Configuration
J) System Host Configuration
K) Ethernet/NFS/SNMP Configuration
L) FTP Password Configuration
M) Multiple Tone Plan Configuration
Enter Selection: _
```

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The remainder of this chapter describes each function within the System Configuration menu option.

Peripheral Configuration

Use Peripheral Configuration to define operating parameters for system peripheral equipment. System peripherals include local master console, remote master console connected to the system by a modem, and system printers.

You can perform system administration tasks through one of three interface types:

- Master Console
- Remote TTY
- Telnet TTY (if the system is equipped with the Ethernet Communications option)

Master consoles are connected to your system with EIA/TIA-232 cables. These cables attach to the Serial Port 1/Console port on the front panel of the CPU-TM card.

Use the Peripheral Configuration screen to define the keyboard type, baud rate, stop bits, bits per character, and parity protocols for communication between the local console and the system.

You can perform remote system administration via a remote maintenance modem. The modem connects to your system with EIA/TIA-232 cables. These cables attach to the Serial Port 2/TTY01 port on the front panel of the CPU-TM card. The communication parameters for remote consoles are the same as for local consoles. You must match the setup parameters for remote consoles to the communication parameters you define from the Peripheral Configuration screen.

Note The system acknowledges a remote login attempt when it detects a CONNECT message (in ASCII) followed by a carriage return (CR) or line feed (LF) over the TTY01/Modem port. These connect signals are automatically generated by the 9600 etc/e modem recommended and supplied by Cisco Systems.

You can perform system administration functions over a Telnet connection with the Telnet TTY option. An RJ-45 connector from a network source connects to a transceiver unit. This unit, in turn, attaches to the Ethernet port located on the front panel of the CPU-TM card. Refer to the *Cisco VCO/4K Ethernet Guide* for detailed information regarding Telnet operation requirements.

The default keyboard type for the local console and remote TTY01/modem settings is a VT220/320 terminal. Additional keyboard configurations are also supported for local/ remote master consoles. The keyboard type setting determines how the system interprets the application keypad and function keys for data input from the terminal. Refer to Appendix C, “Administration Keyboard Types,” for an explanation of how the application and function keys are mapped for each keyboard type.

Note VT220/320 terminals use a series of command menus (outside of system administration) that prompt you for console setup parameters. These setup parameters must match the protocols defined for the console from the Peripheral Configuration screen for successful communication. Instructions for configuring VT220/320 terminals are contained in the *Cisco VCO/4K Hardware Installation Guide*. For other types of consoles, refer to the OEM instructions supplied with the master console for navigating through setup menus. Default peripheral settings in the system database are described in “Peripheral Configuration Screen Field Definitions” section on page 4-5.

VCO/4K system software provides XON/XOFF support for both local and remote consoles; this option is configured only at the console level and cannot be modified through system administration.

Only parallel printers are supported by systems. Select the end-of-line terminator(s) (CR, LF, or both) to match the setting required for specific parallel printers. Refer to the *Cisco VCO/4K Technical Descriptions* for descriptions of CPU serial/parallel port locations and usage.

In redundant systems the peripheral configuration information is not transferred over the update channel; you must configure it for both CPUs.

Accessing the Peripheral Configuration Screen

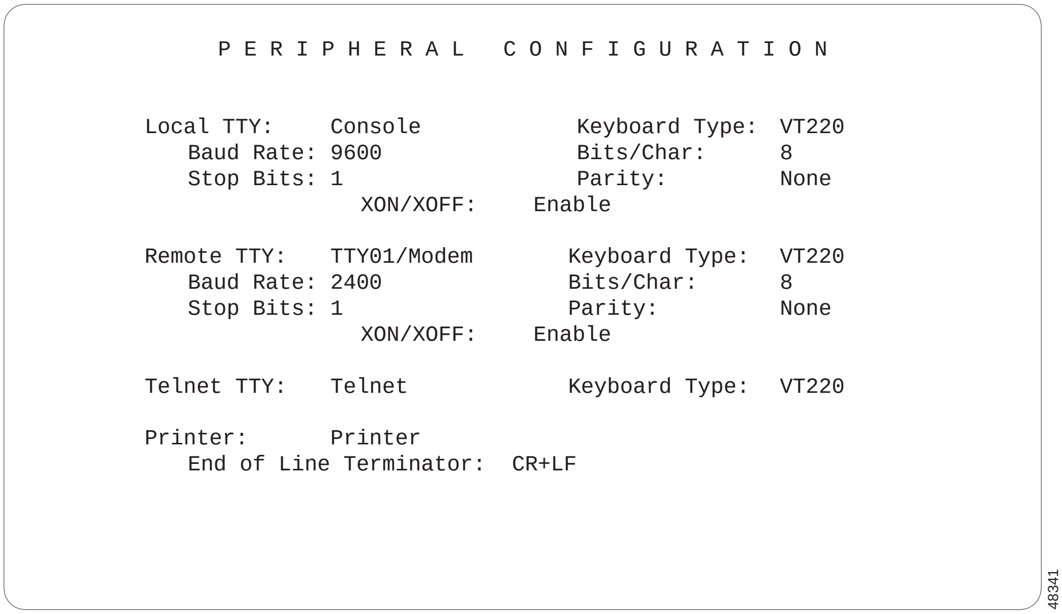
Complete the following steps to access the Peripheral Configuration screen:

Step 1 Access the System Configuration Menu screen (refer to the “Accessing the System Configuration Menu Screen” section on page 4-2).

Step 2 Type **A** and press **Enter**.

The Peripheral Configuration screen is displayed (see Figure 4-3). The cursor is located in the **Local TTY** field.

Figure 4-3 Peripheral Configuration Screen



```
             P E R I P H E R A L   C O N F I G U R A T I O N


        Local TTY:     Console            Keyboard Type:  VT220
           Baud Rate: 9600                Bits/Char:      8
           Stop Bits: 1                   Parity:         None
                        XON/XOFF:    Enable

        Remote TTY:    TTY01/Modem        Keyboard Type:  VT220
           Baud Rate: 2400                Bits/Char:      8
           Stop Bits: 1                   Parity:         None
                        XON/XOFF:    Enable

        Telnet TTY:    Telnet             Keyboard Type:  VT220

        Printer:       Printer
           End of Line Terminator:  CR+LF
```

The Peripheral Configuration menu consists of one screen. Use the **Print Screen** key to obtain a hard copy of this screen.

You can define the peripheral settings from the Peripheral Configuration screen prior to saving the configurations in the system database (by pressing **Enter** only after all changes have been made).

Caution Use caution when defining the communication parameters for each master console, especially when selecting the keyboard type. If the configuration stored in the database does not match the actual equipment and/or protocols used, the master console will be unable to communicate with the system when a user attempts to log in. If this condition occurs, you must reselect the keyboard type from the Login screen.

Complete the following steps to reselect the keyboard type, if necessary:

Step 1 Press the **Ctrl** and **K** keys simultaneously.

The following message appears in the bottom right corner of the login screen:

```
Keybrd: VT220 (V), Sun (S), Xview (X), Univ (U)
```

Step 2 Select the new keyboard type by pressing the appropriate letter.

The reselection is complete.

Peripheral Configuration Screen Field Definitions

The Peripheral Configuration screen contains the following fields:

Local TTY—*Display only.* The only valid value is Console. It specifies that the master console is local VDT with VT100 display emulation.

You must configure the console Keyboard Type, Baud Rate, Stop Bits, Bits/Char, and Parity fields using the **Next Field** and **Select** keys.

Note For four-span cards, you must specify a span as well as a slot.

XON/XOFF (local)—*Data entry via Select key.* Valid values are Enable (default) or Disable. When enabled, the XON/XOFF flow control protocol for asynchronous serial transmission is active for the local TTY.

Remote TTY—*Display only.* The only valid value is TTY01/Modem. It specifies that the master console is on a remote system.

> You must configure the console Keyboard Type, Baud Rate, Stop Bits, Bits/Char, and Parity fields using the **Next Field** and **Select** keys.

XON/XOFF (remote)—*Data entry via Select key.* Valid values are Enable (default) or Disable. When enabled, the XON/XOFF flow control protocol for asynchronous serial transmission is active for the remote TTY.

Telnet TTY—*Display only.* The only valid value is Telnet. It specifies that you are accessing the system through an Ethernet Telnet connection (optional Ethernet software must be installed). You only need to configure the keyboard type when you select this field.

Note Once the Telnet connection is established, the local master console is disabled. (That is, a login screen is not displayed at the local TTY console.) A Telnet session can be established from a host computer; the host must be equipped with the appropriate terminal emulation software. For more information on Telnet connections, refer to the *Cisco VCO/4K Ethernet Guide*.

Keyboard Type—*Data entry via Select key.* Specifies how the system interprets the application keypad and function keys on the local master console for data input. Valid values are:

> VT220—Standard VT220/230 escape codes for the application keys and F6 to F20 function keys. Default setting.
>
> Sunview—Sun escape codes for the application keypad and F2 to F12 function keys.
>
> Xview—Sun escape codes for the application keypad and F2 to F10 function keys when using Xterm (VT100 terminal emulator) within Sun's Openlook windows environment.
>
> Universal—Accommodates keyboards that do not support any of the previous escape code sequences. Allows users to generate application and function key escape codes through two- and three-key sequences. The **Num Lock** key must be set for Universal keyboard operation.

Baud Rate—Applies to Console and TTY01/Modem options. The baud rate specifies the speed (in bits per second) at which data is transmitted over the link. Valid values are 300, 1200, 2400, 4800, 9600, and 19200 bps. The default value for Console is 9600. The default value for TTY01/Modem is 2400.

Bits/Char—Applies to Console and TTY01/Modem options. Specifies the number of bits used to represent a character, excluding parity and stop bits. Valid values are 7 and 8. The default value is 8.

Stop Bits—Applies to Console and TTY01/Modem options. Specifies the number of stop bits used. Valid values are 1 and 2. The default value is 1.

Parity—Applies to Console and TTY01/Modem options. Specifies whether error checking using a parity bit is to be performed. Valid values are NONE, EVEN, and ODD. The default setting is NONE.

Printer—Specifies the type of system printer supported. Currently, only parallel printers are supported for system operation.

End of Line Terminator—Specifies the terminating character(s) used to indicate the end of a printer line. The value in this field must match the terminator specified in the printer setup (refer to the documentation supplied with the printer). Valid values for this field are CR (carriage return), LF (line feed), and CR+LF (carriage return and line feed).

Using the Peripheral Configuration Screen

Complete the following steps when you finish configuring the peripherals:

Step 1 Verify your configuration selections.

Step 2 Press **Enter**.

The “Enter to Confirm New Configuration(s)” message appears.

Step 3 Press **Enter**

The configuration is saved to the system. No changes are made to the database unless you press **Enter**. When the system finishes updating the database with the new information, the **“**PRM039: Peripheral Configuration Updated” message appears.

To exit the Peripheral Configuration screen without making any changes, press the **Exit**, **Prev Menu**, or **Main Menu** key.

Note For VT220/320 terminals, press the **F3** key to access the Modify VT220 Setup and configure the protocol parameters to match the screen. For other terminal types, refer to the documentation supplied with the terminal to modify the operating parameters. Once all changes are made, return to the Peripheral Configuration screen and press any key.

File System Configuration

Use File System Configuration to specify the devices/directories for storing and retrieving the system log and system trace files. System log files list all error and status messages generated by the diagnostic, fault recovery, and maintenance generic tasks. System trace files list the messages passed between the system and the host, and/or internal messages sent between the NBC and service circuit/network interface cards.

The storage device and directory for boot/download files and system database files is fixed.

The Network File System (NFS) directory specifications must be unique for each system CPU handled by a host. In a redundant system, the following pathnames could be used:

- F:/System_Name/Log/A/

- F:/System_Name/Trace/A/
- F:/System_Name/Log/B/
- F:/System_Name/Trace/B/

From the File System Configuration screen, you can specify the diskette drive (device A:) to store and retrieve system log and trace files. However, the system does not create the necessary directory while configuring the file system. If there is not a directory on the diskette, a PRM 018 message is generated when the system attempts to write the log/trace file to the diskette. To correct this problem, create a directory for the log or trace files on the diskette.

In redundant systems, the file system configuration information is not transferred over the update channel. Therefore, you must configure it for both CPUs.

Accessing the File System Configuration Screen

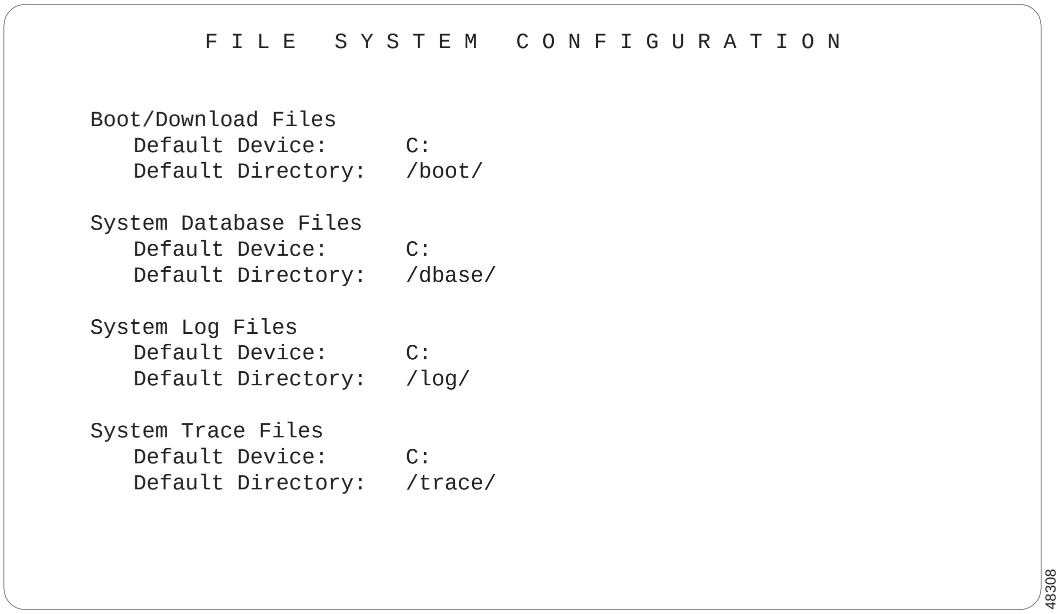
Complete the following steps to access the File System Configuration screen:

Step 1 Access the System Configuration Menu screen (refer to the "Accessing the System Configuration Menu Screen" section on page 4-2).

Step 2 Type **B** and press **Enter**.

The File System Configuration screen is displayed (see Figure 4-4). The cursor is located in the Default Device field corresponding to the system log files.

Figure 4-4 File System Configuration Screen



```
               F I L E   S Y S T E M   C O N F I G U R A T I O N


      Boot/Download Files
         Default Device:      C:
         Default Directory:   /boot/

      System Database Files
         Default Device:      C:
         Default Directory:   /dbase/

      System Log Files
         Default Device:      C:
         Default Directory:   /log/

      System Trace Files
         Default Device:      C:
         Default Directory:   /trace/
```

File System Configuration consists of one screen. Use the **Print Screen** key to obtain a hard copy of this screen.

File System Configuration Screen Field Definitions

The File System Configuration screen contains two types of user-definable fields. These fields are accessible only in the System Log Files and System Trace Files areas of information.

Default Device—Data entry via Select key. Indicates the default device for storing and retrieving files. Valid values and their meanings are:

A—Floppy disk drive

C—Hard disk drive

F—NFS device accessed via Ethernet link

Default Directory—Data entry via main keypad. Indicates the standard directory for storing and retrieving each system file. You can include uppercase or lowercase alphanumeric characters and special characters in directory names. Insert a slash character (/) between directory names to specify a series of subdirectories.

Defining File System Configurations

Complete the following steps to define file system configurations:

Note You cannot define (modify) the file system configurations for boot/download and database files.

Step 1 Display the File System Configuration screen (refer to the "Accessing the File System Configuration Screen" section on page 4-7).

The cursor is located in the Default Device field corresponding to the Log Files.

Step 2 Use the **Prev Field** and **Next Field** keys to position the cursor in the Default Device or Default Directory field corresponding to the file type you want to change.

- To change the Default Device setting, use the **Select** and **Reverse Select** keys to step through the values until the correct device is shown.
- To change the Default Directory, specify the directory name (in MS-DOS or NFS format) using upper- and/or lowercase alphanumeric characters and / characters to indicate subdirectories.

Step 3 Repeat Step 2 for each file system setting you want to change.

Step 4 Press **Enter**.

The system verifies the configuration information. If the information is valid, the "Enter To Confirm New Configuration(s)" message appears.

Step 5 Press **Enter**.

The "Changing XXXXX File System" message appears, where XXXXX is the name of each file system modified. This message appears for each file system change. Once all file system changes are made, the "File System(s) Successfully Configured" message appears.

Note If you do not create a diskette directory for the log/trace file, a PRM 018 message is generated when the system attempts to write the files to the diskette.

To exit the File System Configuration screen without making any changes, press **Exit**, **Prev Menu**, or **Main Menu**. No changes are made to the database unless you press **Enter**.

Host Configuration

Use Host Configuration to configure host interfaces and software overlays and to indicate the status of alarm conditions for host interfaces. You can configure up to eight external (host computer) and one internal (software overlay) interfaces for the system.

The following constraints are placed on the host configuration:

- In general, the larger the number of defined host interfaces, the more system processing time that is dedicated to host interface processing. This is especially true of multiple Ethernet interfaces.
- You may define up to two ADLC interfaces. ADLC support is standard on all systems. You can configure both links for the maximum baud rate of 19.2 kbps.
- You may define up to eight Ethernet interfaces (sockets). Ethernet support is available as an option on all systems.
- You may define a total of eight external interfaces. These interfaces can be any mix of ADLC or Ethernet, within the limits stated above.
- Configure the internal interface only if the TeleRouter software overlay is to be used. If you do not configure the internal interface, TeleRouter call routing is not performed.

For additional information on the ADLC protocol and the Ethernet communication option, refer to the *Cisco VCO/4K Host Communication Guide* and the *Cisco VCO/4K Ethernet Guide*. TeleRouter is documented in the *Cisco VCO/4K TeleRouter Reference Guide*.

In redundant systems the host configuration information is not transferred over the update channel. Therefore, it must be configured for both CPUs.

If you select an inactive host, an alarm is set and is displayed on the System Alarm Display screen until the host is activated.

The host communication parameters to be defined differ, in accordance with the specified interface. These parameters are listed in Table 4-1. For example, if the Interface field of the Host Configuration screen specifies the Internal interface, you must define the host name, overlay name and trace parameters only.

Table 4-1 Host Interface and Applicable Parameters

Interface	Parameter
Internal	Host Name (fixed Overlay)
	Overlay Name (TeleRouter or blank space)
	Trace

Table 4-1 Host Interface and Applicable Parameters (continued)

Interface	Parameter
SIO Port 3	Host Name
SIO Port 4	Poll Timeout
	Baud Rate
	Retry Counter
	Parity
	Trace
	Block Factor
	Modem
	Protocol (fixed at ADLC)
	Format
	Reset Time
	Alarm State
Ethernet	Host Name
	Connect Password (for local port)
	Loc. Port (logical port number of local port)
	Remote Internet Address
	Remote (logical port number of remote port)
	Trace
	Protocol (fixed TCP)
	Alarm State
	Reset Time

Host Configuration Call Teardown Upon Host Link Failure Feature

The call teardown upon host link failure feature is implemented on a per-host-link basis. The Host Configuration screen processing includes a field that defines the action to be taken upon host link failure—the Failure Action field. This field allows you to select one of the following actions:

- No action—Causes no processing to occur for calls controlled by a failed host link.
- Clear controlling host identifier—Allows the software to clear the controlling host identifier on all calls controlled by a host if that host fails. Subsequently, the clearing of the controlling host association facilitates the ability of an alternate host link to take over for the failed host.
- Call teardown—Is processed within call processing upon notification from the Host Manager that the host link has failed. All calls controlled by the failed host link are torn down. Line/trunk ports marked as Always Off-hook class of service are sent back to idle state. All other line/trunk ports are processed through Permanent Signaling Conditioning.

Accessing the Host Configuration Screen

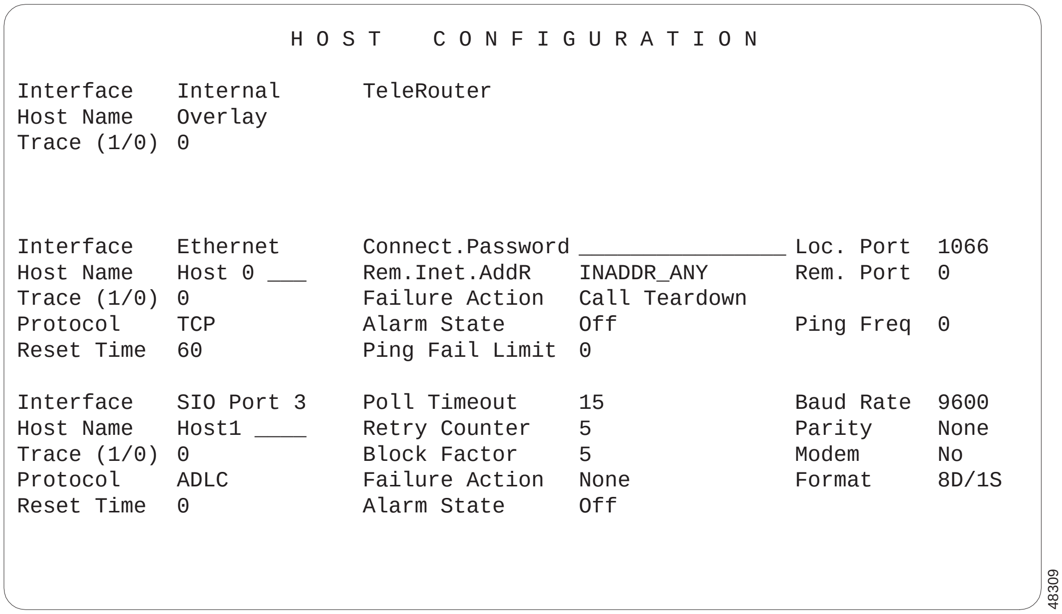
Complete the following steps to access the Host Configuration screen:

Step 1 Access the System Configuration Menu screen (refer to the “Accessing the System Configuration Menu Screen” section on page 4-2).

Step 2 Type **C** and press **Enter**.

The Host Configuration screen is displayed (see Figure 4-5). The cursor is located in the first Interface field.

Figure 4-5 Host Configuration Screen



```
                      H O S T   C O N F I G U R A T I O N

Interface     Internal      TeleRouter
Host Name     Overlay
Trace (1/0)   0



Interface     Ethernet      Connect.Password ________________ Loc. Port  1066
Host Name     Host 0 ___    Rem.Inet.AddR    INADDR_ANY       Rem. Port  0
Trace (1/0)   0             Failure Action   Call Teardown
Protocol      TCP           Alarm State      Off              Ping Freq  0
Reset Time    60            Ping Fail Limit  0

Interface     SIO Port 3    Poll Timeout     15               Baud Rate  9600
Host Name     Host1 ____    Retry Counter    5                Parity     None
Trace (1/0)   0             Block Factor     5                Modem      No
Protocol      ADLC          Failure Action   None             Format     8D/1S
Reset Time    0             Alarm State      Off
```

Note The Host Configuration screen contents adjust dynamically, depending on the value you specified in the Interface field. Figure 4-5 shows the possible combinations of fields that can be displayed for the Internal, SIO/ADLC, and Ethernet interfaces. All possible fields for this screen are identified in Table 4.1, and described in the “Host Configuration Screen Field Definitions” section on page 4-11.

Host Configuration Screen Field Definitions

You can configure up to three types of host interfaces from the Host Configuration screen. The displayed host interface fields are determined by the value specified in the Interface field, and are divided into two groups: General and Interface Specific. The fields are defined as follows.

Host Configuration Screen General Fields

Interface—*Data entry via Select key.* Specifies the type of interface being configured. Also determines what data entry fields are displayed on the screen. Valid selections are:

Internal—Internal software overlay; optional TeleRouter software currently supported. You can specify only one internal interface.

SIO Port 3—ADLC asynchronous communication via port 3 on the CPU-TM card. You can specify only one SIO Port 3 interface.

SIO Port 4—ADLC asynchronous communication via port 4 on the CPU-TM card. You can specify only one SIO Port 4 interface.

Ethernet—Ethernet TCP/IP communication via the Ethernet port on the CPU-TM card. You can specify up to eight Ethernet interfaces.

Host Name—*Data entry via main keypad*. Required entry. Identifies the interface. The host name can be up to 10 alphanumeric characters, uppercase and lowercase.

Note If you select an inactive host, an alarm is set and displayed on the System Alarm Display screen until the host is activated.

Trace—*Data entry via main keypad*. Specifies whether the trace utility is enabled for this interface. The system trace function is described in the "System Trace Configuration" section on page 6-34. Valid values and their meanings are:

0—Trace facility not enabled.

1—Trace facility enabled; trace messages output to printer and/or trace file.

Failure Action—*Data entry via Select key.* Specifies the action to take when a host link fails. Valid selections are:

None—No action is taken for the calls controlled by the failed host (default).

Call Teardown—All calls controlled by the failed host link are torn down.

Clear Cntrl Host—The controlling host identifier flag is cleared on all calls controlled by the failed host, so that any other available host can take control of the call.

Alarm State—*Display only.* Indicates the current alarm state for a host interface. Valid values and their meanings are:

Off—No alarm condition exists for this host interface link.

On—An alarm condition exists for this host interface link. The presence of an alarm state for an interface indicates that link is currently out of service due to an error condition on either the system or host end. Refer to logfile messages to determine the cause of the link failure.

Host Configuration Screen Interface Specific Fields—Ethernet

Connect Password—*Data entry via main keyboard*. The ASCII string the host must issue in reply to the system when establishing a socket; used only when the Enable Host Password Check feature is set to Y. Up to 16 ASCII characters are allowed. Valid values depend on the application. This field may be blank if password checking is not performed.

Loc. Port—*Data entry via main keyboard*. The local port number from which this socket accepts data. Valid values are a valid Ethernet port number greater than 1023. The value must be supplied by the Ethernet administrator.

Host Name—*Data entry via main keyboard*. The host link used in system error and logfile messages. Up to 10 alphanumeric characters are allowed. Each link should have a unique name.

Rem. Inet Addr—*Data entry via main keyboard or via Select key.* (Remote Internet Address) The internet address of the host running the socket application. Use the INADDR_ANY wildcard character to enable communication with any host. If a specific host is required, a valid internet address is required in hexadecimal notation; convert the UNIX dot format to hexadecimal then precede the address with 0x. To disable all pinging for Ethernet host detection failure, set the Remote Internet Address to INADDR_ANY. The remote internet address should be supplied by the Ethernet administrator, otherwise, use a wildcard.

Rem. Port—*Data entry via main keyboard*. (Remote Port) Specifies the Ethernet port address from which the system controller accepts data. Valid values are 0 or a valid Ethernet Port number greater than 1023. The value must be supplied by the Ethernet administrator.

Trace—*Data entry via main keyboard*. The system trace facility is enabled for this socket (refer to the *Cisco VCO/4K System Administrator's Guide*). Valid values are 0 and 1. A value of 0 indicates that trace is not enabled. A value of 1 indicates that trace is enabled; messages will be sent to the printer and log file. A value of 0 is recommended for normal operation; 1 for troubleshooting.

Failure Action—*Data entry via Select key.* Specifies the action to take when a host link fails. Refer to the "Host Configuration Call Teardown Upon Host Link Failure Feature" section on page 4-10 for a complete description of this field. Valid values and their meanings are:

> None—action is taken for the calls controlled by the failed host (default)
>
> Call Teardown—all calls controlled by the failed host link are torn down
>
> Clear Cntrl Host—the controlling host identifier flag is cleared on all calls controlled by the failed host, so that any other available host can take control of the call

Protocol—*Display only.* Defines the data transfer protocol used on this host link. The value for Ethernet is fixed at TCP.

Alarm State—*Display only.* Indicates the current alarm state for a host interface. Valid values are Off and On. Off means that no alarm condition exists for this host interface link. On means that an alarm condition exists for this host interface link. The presence of an alarm state for an interface indicates that link is currently out of service due to an error condition on either the system or host end. Refer to logfile messages to determine the cause of the link failure.

Ping Freq—*Data entry via main keyboard*. When the host is configured with Ethernet, you may enter data for the detection of an Ethernet link failure. Ping Freq specifies the time, in seconds, between probes. Valid values are from 0 to 60. To disable the host detection failure feature, set the Ping Freq and Ping Fail Limit fields to zero; probe once every minute. See also Rem.Inet.Addr. The default value is 0, indicating that probing should occur once every minute.

Reset Time—*Data entry via main keyboard*. Specifies the amount of time, in seconds, that the system waits after a link failure/reset before reestablishing the link. Valid values are from 0 to 999; the system requires a value of at least 1 minute (60 seconds). The default value is 60 (1 minute).

Ping Fail Limit—*Data entry via main keyboard*. Defines the number of consecutive failed probes to determine that an Ethernet connection is lost—see also Ping Freq. Valid values are from 0 to 10. The default value is 1 if the Ping Frequency is non-zero. (The default of 1 can be overridden with any value other than 0.) The default is 0 if the Ping Frequency is 0. (The default of 0 cannot be overridden.) This is once-a-minute probing. Any missing probe is declared a lost connection; the switch closes the connection by freeing up all sockets tied to the local ports and generates alarm messages. See also Rem.Inet.Addr.

Host Configuration Screen Interface Specific Fields—SIO-Port 3 and SIO-Port 4

Protocol—*Display only*. Defines the data transfer protocol used on this host link. Value for SIO-Port 3 and SIO-Port 4 is fixed at ADLC.

Reset Time—*Data entry via main keypad*. Specifies the amount of time, in seconds, the system waits after a link failure/reset before reestablishing the link. Valid values are from 0 to 999. A value of 60 seconds is recommended.

Poll Timeout—*Data entry via Select key*. Specifies the amount of time the system waits to be polled by the host before the system assumes an error condition exists on the link. Valid values are from 0 to 300 in increments of 1. Each count specifies a 1-second interval. A value of 15 seconds is recommended.

Note A value of 0 means there is an infinite wait; a value of 0 is not recommended for this timer because the system uses this timeout to determine when a link failure has occurred.

Retry Counter—*Data entry via main keypad*. Specifies the number of times the system retransmits a message before it assumes that an error condition exists on the link. Valid values are from 0 to 255. A value of 5 is recommended.

Block Factor—*Data entry via main keypad*. Specifies the number of messages allowed in a multiblocked transmission. The system allows transmit blocks to be constructed with a message count up to this value. Valid values are from 1 to 32 in increments of 1. A value of 5 is recommended.

Format—*Data entry via Select key*. Specifies the number of stop bits used with the 8-bit data character. Valid selections are:

8 Data/1 Stop—8 data bits and 1 stop bit.

8 Data/2 Stop—8 data bits and 2 stop bits.

Baud Rate—*Data entry via Select key*. Specifies the speed (in bits per second), at which data is transmitted over the link. Valid selections are 300, 1200, 2400, 4800, 9600, and 19200.

Parity—*Data entry via Select key*. Specifies whether error checking using a parity bit is to be performed. Valid selections are:

NONE—No parity bit error checking performed.

ODD—Odd parity bit error checking performed.

EVEN—Even parity bit error checking performed.

Modem—*Data entry via Select key*. Specifies if a modem is used between this port and the host computer. Valid values are No and Yes. If Yes, full modem control signaling is used.

Defining Host/Overlay Configurations

Configure each link between the system and a host computer from the Host Configuration screen. These links include the internal link between system call processing and the TeleRouter software overlay. Configure each link by specifying the interface (either internal or a physical port on the CPU-TM card) and assigning a set of parameters to that interface. You must define host links/overlays for both CPUs in a redundant system.

The Host Configuration screen consists of three data entry screens. The first screen contains data fields for configuring the internal link and up to two host links; the other two screens contain data fields for configuring up to three host links. Use the **Tab** key to move from one Interface field to the next. Use the

Next Field and **Prev Field** keys to move from field to field within an interface specification. After you have finished specifying all link parameters, press **Enter**. The links are then reset and the configuration information is implemented.

Note If you select an inactive host, an alarm is set and is displayed on the System Alarm Display screen until the host is activated.

Complete the following steps to define link configurations:

Step 1 Access the Host Configuration screen (refer to the “Accessing the Host Configuration Screen” section on page 4-11).

The cursor is located in the Interface Internal field.

- If no internal interface is to be defined, press the **Tab** key. The cursor moves to the **Interface** field for the first external link. Go to Step 3.
- If a TeleRouter interface is to be defined, press the **Select** key until TELEROUTER is displayed in the field. Press the **Next Field** key. The cursor moves to the Trace data entry field.

Step 2 Type the correct value to enable or disable tracing for the Internal interface.

- If additional interfaces are to be defined, go to Step 3.
- If no additional interfaces are to be defined, go to Step 5.

Step 3 To define an external interface, use the **Select** key to display the correct interface value.

The values displayed are determined by the value specified in the Interface field.

Step 4 Use the **Prev Field** and **Next Field** keys to move to the data entry field to be specified. Fill in the field using the **Select** or **Reverse Select** key, or the main keypad. Repeat this process for all fields required for the link configuration to be defined.

- If additional interfaces are to be defined, press the **Tab** key to move to the next Interface field and repeat Step 3 through Step 4.
- If no additional interfaces are to be defined, go to Step 5.

Step 5 Press **Enter**.

Step 6 The “Press Enter to update configuration” message appears.

Step 7 Press **Enter**.

The “Host configuration updated” message appears. The configuration data is written to the database, and the link is taken out of service and reestablished. This process takes several seconds.

Step 8 Press the **Exit** key to return to the System Configuration menu.

Password Configuration

Use Password Configuration to create or change system passwords and set access levels for up to 16 users. You must identify each system user with a unique username, an alphanumeric password, and an access level. The ability to update this configuration information is limited by a user’s access level.

The system supports four levels of system administration access: Levels 0, 1, 2, and 3. Only Level 0 (highest access) users can add and delete system users. Users with lower access levels can only change their own password. Only users can change their password.

Access levels determine the user’s ability to modify screen information and update the system database. Access levels are linked to each administration screen via the Screen Access Configuration screen. For more information on limiting screen modifications, refer to the “Screen Access Configuration” section on page 4-30.

The Password Configuration screen has two main areas: a display area that lists the current users and their associated access levels, and a data entry area in which you can add, delete, or change user password configuration information.

Accessing the Password Configuration Screen

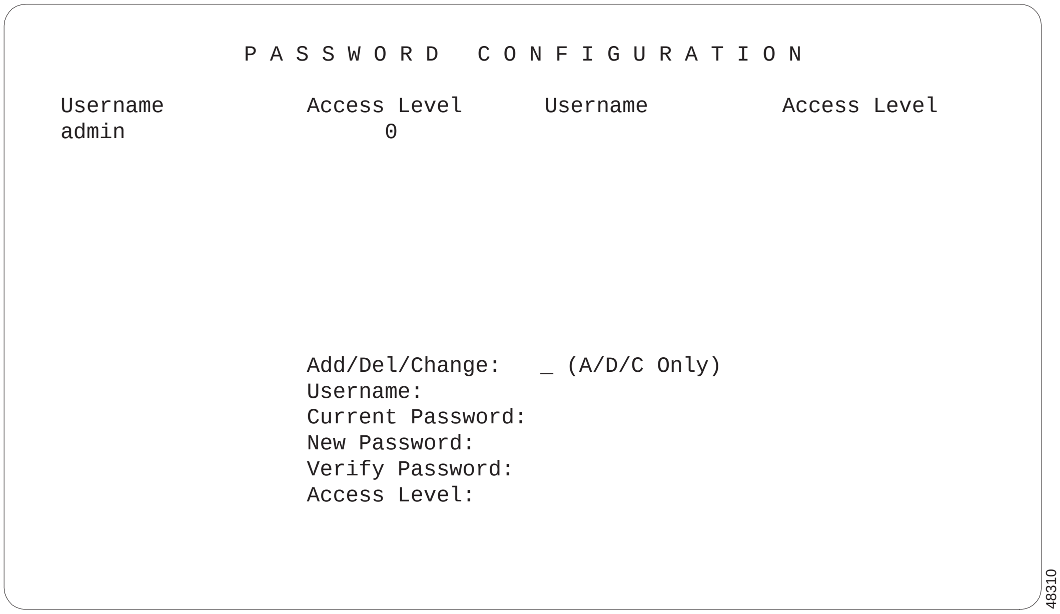
Complete the following steps to access the Password Configuration screen:

Step 1 Access the System Configuration Menu screen (refer to the “Accessing the System Configuration Menu Screen” section on page 4-2).

Step 2 Type **D** and press **Enter**.

The Password Configuration screen is displayed (see Figure 4-6). The cursor is located in the Add/Del/Change field.

Figure 4-6 Password Configuration Screen



```
              P A S S W O R D   C O N F I G U R A T I O N

  Username          Access Level      Username          Access Level
  admin                  0







                    Add/Del/Change:   _ (A/D/C Only)
                    Username:
                    Current Password:
                    New Password:
                    Verify Password:
                    Access Level:
```

Password Configuration consists of one screen. Use the **Print Screen** key to obtain a hard copy of this screen.

Password Configuration Screen Field Definitions

The Password Configuration screen contains the following fields:

Username—*Display only.* Shows the functional name assigned to each system user.

Access Level—*Display only.* Shows the current access level of each system user. Valid values are 0, 1, 2 and 3.

Add/Delete/Change (A,D,C only)—Data entry via main keypad. Specifies the function you want to perform. Valid values are:

A—Add a username to the database.

D—Delete a username from the database.

C—Change a password or access level in the database.

Username—*Data entry via main keypad*. Specifies the name assigned to the system user. From 3 to 15 uppercase and/or lowercase alphanumeric characters are allowed in this field. You must enter the username for all command functions.

Current Password—*Data entry via main keypad*. Specifies the password currently associated with the username entered. From 4 to 12 uppercase and/or lowercase alphanumeric characters are allowed in this field. This field is accessible only when you select C at the Add/Delete/Change (A,D,C only) field. All data entered in this field is hidden by asterisk (*) characters for security.

New Password—*Data entry via main keypad*. Specifies the new password assigned to the user (after you choose the A or C command). From 4 to 12 uppercase and/or lowercase alphanumeric characters are allowed in this field. All data entered in this field is hidden by asterisk (*) characters for security.

Verify Password—*Data entry via main keypad*. Verifies the exact spelling and case of the new password (after you select the A or C command). The data in this field must exactly match the contents of the New Password field. All data entered in this field is hidden by asterisk (*) characters for security.

Access Level—*Data entry via main keypad*. Specifies the access level assigned to each user. Database update is limited based on access level (refer to the “Screen Access Configuration” section on page 4-30 for information on the Screen Access Configuration screen). Valid values are:

0—Read and database update access to all screens.

1—Varies based on Screen Access Configuration.

2—Varies based on Screen Access Configuration.

3—Read access only to all screens.

Adding a New User

You can add a new user to the system database with the Add function of the Password Configuration screen. Only a Level 0 user can add other system users to the database. To complete this command, a Level 0 user must enter the Add (**A**) command, user name, password, and access level information. The default access level (if no level is specified) for new users is Level 3; however, any access level (0, 1, 2 and 3) can be assigned.

Complete the following steps to add a user to the database:

Step 1 Display the Password Configuration screen (refer to the “Accessing the Password Configuration Screen” section on page 4-16).

The cursor is located in the Add/Del/Change: (A/D/C Only) field.

Step 2 Type **A** and press the **Next Field** key.

The cursor moves to the Username field.

Step 3 Type the user’s functional username and press the **Next Field** key.

The cursor moves to the New Password field.

Step 4 Type the new password and press the **Next Field** key.

The cursor moves to the Verify Password field.

Step 5 Type the password again to verify the entry and press the **Next Field** key.

The entry must exactly match the value entered in the New Password field. If the password is correctly reproduced, the cursor moves to the Access Level field. If the password is not verified, the “This Does Not Match The New Password” message appears.

Step 6 Type the access level and press **Enter**.

The database is automatically updated and the screen shows the addition of the user to the list. The cursor returns to the Add/Del/Change: (A/D/C Only) field.

Step 7 Repeat Step 2 through Step 6 to add all additional users to the system.

Step 8 Press the **Exit** key to return to the System Configuration menu.

To exit the Password Configuration screen without making any changes, press the **Exit**, **Prev Menu**, or **Main Menu** key. No changes are made to the database until you press **Enter**.

Deleting a User

To delete a user from the system database, use the Delete function. To complete this command, enter the Delete (**D**) command and username. Only a Level 0 user can delete other system users from the database. Users cannot delete themselves while they are currently logged in to the system.

Complete the following steps to delete a user from the database:

Step 1 Display the Password Configuration screen (refer to the “Accessing the Password Configuration Screen” section on page 4-16).

The cursor is located in the Add/Del/Change: (A/D/C Only) field.

Step 2 Type **D** and press the **Next Field** key.

The cursor moves to the Username field.

Step 3 Type the user’s functional username and press **Enter**.

The “Enter to Delete User xxxxx” message appears, where xxxxx = the username of the system user to delete.

Step 4 Press **Enter**.

The database is automatically updated and the screen is updated to reflect the deletion. The cursor returns to the Add/Del/Change: (A/D/C Only) field.

Step 5 Repeat Step 2 through Step 4 for all users you want to delete.

Press the **Exit** key to return to the System Configuration menu.

To exit the Password Configuration screen without making any changes, press the **Exit**, **Prev Menu**, or **Main Menu** key. No changes are made to the database until you press **Enter**.

Changing a Password/Access Level

All system users can change their own password in the system database. To complete this command, the user must enter the Change (**C**) command, username, current and new passwords, and access level information.

Complete the following steps to change a user's password:

Step 1 Display the Password Configuration screen (refer to the "Accessing the Password Configuration Screen" section on page 4-16).

The cursor is located in the Add/Del/Change: (A/D/C Only) field.

Step 2 Type **C** and press the **Next Field** key.

The cursor moves to the Username field.

Step 3 Type the user's functional username and press the **Next Field** key.

The cursor moves to the Current Password field.

Step 4 Type the user's current password, exactly as it exists in the database, and press the **Next Field** key.

The cursor moves to the New Password field.

Step 5 Type the new password (or the current password if you are only changing the access level) and press the **Next Field** key.

The cursor moves to the Verify Password field.

Step 6 Type the new/current password again to verify the entry and press the **Next Field** key. The entry must exactly match the value entered in the New Password field.

If you type the password correctly, the cursor moves to the Access Level field. If the password is not verified, the "This Does Not Match The New Password" message appears.

Step 7 To modify an access level, type the new access level and press **Enter**; otherwise, do not type and press **Enter**.

The database is automatically updated and the cursor returns to the Add/Del/Change: (A/D/C Only) field.

Step 8 Repeat Step 2 through Step 7 for all remaining passwords to be modified.

Step 9 Press the **Exit** key to return to the System Configuration menu.

To exit the Password Configuration screen without making any changes, press **Exit**, **Prev Menu**, or **Main Menu**. No changes are made to the database unless **Enter** is pressed.

Clock/Calendar Configuration

Use the Clock/Calendar Configuration screen to change the system date and time settings. The time can also be reset by the host with the Configure VCA/Set System Clock ($C0 00) command.

The clock should be set by the host on a regular basis to ensure that host time and system time are synchronized. This is especially important if you need to determine the cause of system errors by comparing the log files kept by the system to any log files kept by the host.

Accessing the Clock/Calendar Configuration Screen

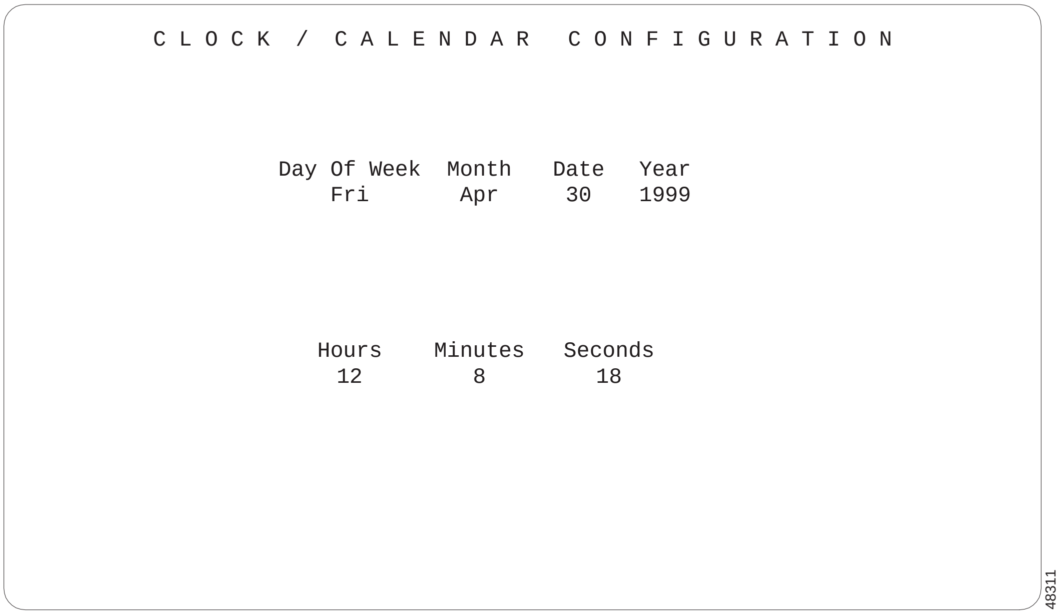
Complete the following steps to access the Clock/Calendar Configuration screen:

Step 1 Access the System Configuration Menu screen (refer to the “Accessing the System Configuration Menu Screen” section on page 4-2)

Step 2 Type **E** and press **Enter**.

The Clock/Calendar Configuration screen appears (see Figure 4-7). The cursor is located in the Month field.

Figure 4-7 Clock/Calendar Configuration Screen



```
           C L O C K  /  C A L E N D A R   C O N F I G U R A T I O N



                    Day Of Week  Month   Date   Year
                        Fri       Apr     30    1999




                       Hours    Minutes   Seconds
                        12         8         18
```

Clock/Calendar Configuration consists of one screen. Use the **Print Screen** key to obtain a hard copy of this screen. The Day of Week field is display only.

Setting the System Clock/Calendar

When you are changing the settings on the system clock/calendar, and a field is to be left unchanged, no entry is required in that field.

Complete the following steps to change the system clock/calendar setting:

Step 1 Display the Clock/Calendar Configuration screen (refer to the "Accessing the Clock/Calendar Configuration Screen" section on page 4-20).

The current system date/time information is displayed. The cursor is located in the Month field.

Step 2 Use the **Select** and **Reverse Select** keys to scroll through the selections until the correct month is shown.

- If no other field is to be changed, press **Enter**. The database is automatically updated and the new date/time is displayed on the screen.
- If other changes are required, press the **Next Field** key. The cursor moves to the Date field.

Step 3 Type the date—the data for this field may be one or two digits.

- If no other field is to be changed, press **Enter**. The database is automatically updated and the new date/time is displayed on the screen.
- If other changes are required, press the **Next Field** key. The cursor moves to the Year field.

Step 4 Type the year—the data for this field must be four digits; only values of 1991 or later are accepted.

- If no other field is to be changed, press **Enter**. The database is automatically updated and the new date/time is displayed on the screen.
- If other changes are required, press the **Next Field** key. The cursor moves to the Hours field.

Step 5 Type the hour in 24-hour format [00 (midnight) through 23 (11 PM)]—the data for this field may be one or two digits.

- If no other field is to be changed, press **Enter**. The database is automatically updated and the new date/time is displayed on the screen.
- If other changes are required, press the **Next Field** key. The cursor moves to the Minutes field.

Step 6 Type the minutes (00 through 59)—the data for this field may be one or two digits.

- If no other field is to be changed, press **Enter**. The database is automatically updated and the new date/time is displayed on the screen.
- If other changes are required, press the **Next Field** key. The cursor moves to the Seconds field.

Step 7 Type the seconds (00 through 59)—he data for this field may be one or two digits.

- If no other field is to be changed, press **Enter**. The database is automatically updated and the new date/time is displayed on the screen.
- If other changes are required, press the **Next Field** key. The cursor moves to the Day of Week field.

Step 8 Press the **Exit** key to return to the System Configuration menu.

To exit the Clock/Calendar Configuration screen without making any changes, press the **Exit**, **Prev Menu**, or **Main Menu** key. No changes are made to the database unless you press **Enter**.

System Feature Configuration

Use System Feature Configuration to view all currently enabled system feature flags from the System Feature screen. From this screen, you can modify system operating characteristics to meet specific application requirements.

Accessing the System Feature Configuration Screen

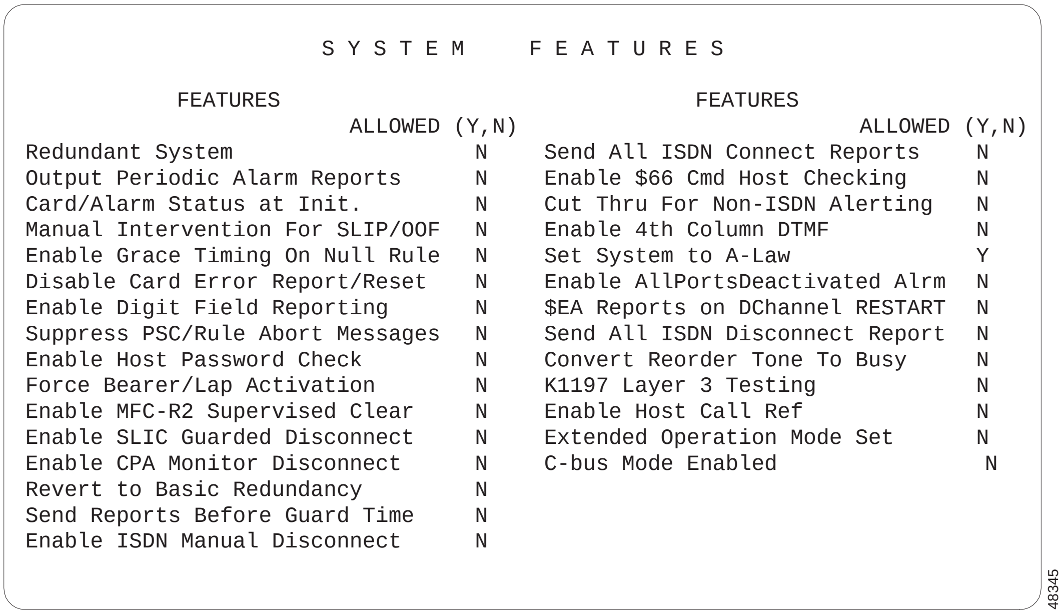
Complete the following steps to access the System Feature Configuration screen:

Step 1 Access the System Configuration Menu screen (refer to the “Accessing the System Configuration Menu Screen” section on page 4-2).

Step 2 Type **F** and press **Enter**.

The System Features screen appears (see Figure 4-8). The cursor is located in the first Allowed (Y,N) field.

Figure 4-8 System Features Screen



```
                         S Y S T E M    F E A T U R E S

          FEATURES                                      FEATURES
                       ALLOWED (Y,N)                                 ALLOWED (Y,N)
Redundant System                 N    Send All ISDN Connect Reports    N
Output Periodic Alarm Reports    N    Enable $66 Cmd Host Checking     N
Card/Alarm Status at Init.       N    Cut Thru For Non-ISDN Alerting   N
Manual Intervention For SLIP/OOF N    Enable 4th Column DTMF           N
Enable Grace Timing On Null Rule N    Set System to A-Law              Y
Disable Card Error Report/Reset  N    Enable AllPortsDeactivated Alrm  N
Enable Digit Field Reporting     N    $EA Reports on DChannel RESTART  N
Suppress PSC/Rule Abort Messages N    Send All ISDN Disconnect Report  N
Enable Host Password Check       N    Convert Reorder Tone To Busy     N
Force Bearer/Lap Activation      N    K1197 Layer 3 Testing            N
Enable MFC-R2 Supervised Clear   N    Enable Host Call Ref             N
Enable SLIC Guarded Disconnect   N    Extended Operation Mode Set      N
Enable CPA Monitor Disconnect    N    C-bus Mode Enabled                N
Revert to Basic Redundancy       N
Send Reports Before Guard Time   N
Enable ISDN Manual Disconnect    N
```

48345

The System Features screen consists of one screen. Use the **Print Screen** key to obtain a hard copy.

Note When you change a system feature setting, you may need to reboot the system for the change to take effect. Refer to Table 4-2 for a list of system feature flags and the activation method for each flag.

Table 4-2 System Feature Flag Activation Method

System Feature Flag	Takes Effect Immediately	Switch Needs Rebooting
Redundant System		X
Output Periodic Alarm Reports		X
Card/Alarm Status at Init.		X
Manual Intervention For SLIP/OOF	X	

Table 4-2 System Feature Flag Activation Method (continued)

System Feature Flag	Takes Effect Immediately	Switch Needs Rebooting
Enable Grace Timing On Null Rule	X	
Disable Card Error Report/Reset	X	
Enable Digit Field Reporting	X	
Suppress PSC/Rule Abort Messages	X	
Enable Host Password Check	X	
Force Bearer/Lap Activation	X	
Enable MFC-R2 Supervised Clear	X	
Enable SLIC Guarded Disconnect	X	
Enable CPA Monitor Disconnect	X	
Revert to Basic Redundancy	X	
Send Reports Before Guard Time	X	
Enable ISDN Manual Disconnect	X	
Send All ISDN Connect Reports	X	
Enable $66 Cmd Host Checking	X	
Cut Thru For Non-ISDN Alerting	X	
Enable 4th Column DTMF	X	
Set System to A-Law	X[1]	
Enable AllPortsDeactivated Alrm	X	
$EA Reports on DChannel RESTART	X	
Send All ISDN Disconnect Report	X	
Convert Reorder Tone To Busy	X	
K1197 Layer 3 Testing	X	
Enable Host Call Ref	X	
Extended Operational Mode Set	Display Only	
C-bus Mode Enabled	Display Only	

[1] ICC and SPC cards need to be removed from service and reactivated before the setting takes effect.

System Features Screen Field Definitions

The System Features screen consists of the following fields:

FEATURES—*Display only.* Shows the system features. Feature definitions are listed in the “System Feature Descriptions” section on page 4-24.

ALLOWED (Y,N)—*Data entry via main keypad*. Indicates whether the corresponding feature is enabled or disabled. Valid values are Y and N.

System Feature Descriptions

This section describes current system features. If the feature flags on the System Features screen differ from Figure 4-8, contact Cisco Systems TAC.

Note The **Suppress PSC/Rule Abort Messages** feature flag applies only when the optional TeleRouter software overlay is installed on the system. The **Enable Host Password Check** feature flag applies only when the optional Ethernet software is installed on the system.

Redundant System

Informs the initialization software whether the system control configuration is redundant or nonredundant. Redundant systems contain a second system controller and an additional NBC. However, even with the proper hardware, a system will not function as a redundant system unless this feature is enabled. If you change this feature setting, you must reboot the system for the change to take effect.

Output Periodic Alarm Reports

When enabled, major/minor alarm reports are output to the system printer 5 minutes after system initialization is complete, and every 30 minutes thereafter. If you anticipate heavy call traffic, disable this feature to reduce processing overhead on the system. If you change this feature setting, you must reboot the system for the change to take effect.

Card/Alarm Status at Init.

When enabled, this feature blocks the printing of card restored and alarm messages for every card during the initial ten minutes following a system boot. The card restored and alarm messages in large systems slow the system boot and lead to performance problems; in those systems, you should enable this feature. If you change this feature setting, you must reboot the system for the change to take effect.

Manual Intervention for SLIP/OOF

The system automatically takes a programmable trunk card out of service when the Slip or out-of-frame (OOF) limit is reached. The limit for OOFs is 17; the error threshold of slips is 256. Both error threshold counters are reset at midnight. If you set this feature to **Y**, the system takes the card out of service and does not attempt to reset it. You must manually set the card back to active from the Card Maintenance screen. If you set this feature to **N**, the card returns to active automatically when the condition clears.

Enable Grace Timing on Null Rule

The null outpulse rule (rule 0) performs an outward seizure (SEIZE token), a wait for final answer (FINAL SUP A token), and starts a 30-second grace timer. If you set this feature to Y, the outgoing port is considered answered if either true answer is detected or the grace timer expires. If you set this feature to N, only detection of true answer supervision is accepted as the final answer. Refer to the *Cisco VCO/4K Standard Programming Reference* and the *Cisco VCO/4K Extended Programming Reference* for more information on the null outpulse rule.

Disable Card Error Reporting and Card Error Threshold Reset

Set this feature to **Y** to disable printing the card error report and prevent resetting the card error threshold counters. Normally, a card error report is printed at its occurrence and the threshold counters are reset at midnight.

Enable Digit Field Reporting

Enable this feature to cause the Optional Field Designator byte to appear in MF Digit ($D0), DTMF Digit ($D1), and Spoken Digit ($D4) reports. The Optional Field Designator byte indicates the field that the system stores the digits reported. When you set this feature to **Y**, the Optional Field Designator byte appears in the byte offset position normally reserved for the digit string, and the digit string is shifted to the next byte offset. Refer to the *Cisco VCO/4K Standard Programming Reference* and the *Cisco VCO/4K Extended Programming Reference* for more information on digit reporting.

Suppress PSC/Rule Abort Messages

For use only with the optional TeleRouter software overlay. When enabled, this feature prevents Permanent Signal Condition and inpulse rule abort messages from being written to the system log while operating TeleRouter in an unhosted environment. Certain types of line equipment use the tones issued during Permanent Signal processing to determine disconnects. This feature suppresses the PSC messages generated by this normal occurrence with these line types. Also, certain situations may generate Inpulse Rule abort messages due to incoming call abandons prior to call routing. This feature prevents system log files from becoming filled with inpulse rule abort messages.

Enable Host Password Check

Set to **N** to disable Ethernet password checking. This allows a link to be established without requiring that the correct password be received on that link. This feature is useful when a small, closed network is used for host-to-system communication. Ethernet passwords are defined with the Host Configuration screen; refer to the "Host Configuration" section on page 4-9 for more information.

Force Bearer/Lap Activation

During Diagnostic procedures, use this feature to force ISDN B-channels to Active without the D-channel being active. Set this feature to **Y** to enable the function or **N** to disable the function. The default is **N**.

Note Use this feature under the direction of Cisco Systems TAC.

Enable MFC-R2 Supervised Clear

A system-wide feature that supports automatic call release on outgoing ports in response to backward MFCR2 supervision tones. If you set this feature to **Y**, an outgoing port is released when the system detects a specified backward tone during R2 signaling. (Note that backward tones are country specific.) The system performs disconnect processing appropriate for the port type involved and generates an Outgoing Port Change of State ($DA) report indicating a supervision error and specifying the backward tone detected. Refer to your country supplement for information on the backward supervision tones.

Note This system feature enables/disables automatic call release on a system-wide basis. If the feature is enabled (feature flag set to **Y**), any outgoing port receiving the backward error tones is automatically released. If the feature is disabled (feature flag set to **N**), the outgoing port remains in setup state unless out-of-band supervision or a host command changes the port state.

Enable SLIC Guarded Disconnect

Enables or disables the Guarded Disconnect option, which is available for special SLIC cards. If you set the feature flag to **Y**, the special SLIC card can send an out-of-band Calling Party Disconnect signal to the two-wire devices connected to the card. If you set the feature to **N**, the Guarded Disconnect option is disabled. The default value is **N**, which is also the value for normal operation.

Enable CPA Monitor Disconnect

Enables the UTC devices that cannot pass out-of-band end-of-call signals to detect in-band tones when the calling party abandons the call. When the system receives this tone, it treats it as a positive disconnect. Set the flag to **Y** to enable the feature. However, in order for it to function, make sure the following conditions also exist:

- A CPA port must be attached to the UTC throughout the call to monitor the in-band tone. This is done automatically when the feature flag is enabled and the incoming UTC is answered using an Answer token in the inpulse rule.
- The BUSY in Supervision Template #24 must be specified as OK and the template must be downloaded to the CPA.

The default value for the flag is **N**, which is also the value for normal operation.

Revert to Basic Redundancy

Enhanced redundancy enables both system controllers to consistently track conference calls and ports in SETUP. Set the Revert to Basic Redundancy feature to **Y** to disable tracking. Set the feature to **N** to enable tracking.

Send Reports Before Guard Time

Specifies whether to send the Incoming Port Change of State Report ($DB) before or after guard timing completes. If you set the feature flag to **Y**, the $DB is sent to the host before guard timing is complete. If you set the feature flag to **N**, the $DB report is sent to the host after guard timing is complete.

Enable ISDN Manual Disconnect

Allows the host to control disconnects. If you enable this feature (set the flag to **Y**), the system reports the DISCONNECT message to the host via the ISDN Port Change of State ($EA) report. The RELEASE message will not be sent until an ISDN Port Control ($49) command is received by the system from the host.

If you disable this feature (set the flag to **N**), the system processes the DISCONNECT automatically. All DISCONNECT IEs are reported to the host via the $EA report, and a RELEASE message is returned to the network.

Send All ISDN Connect Reports

Specifies whether to send the ISDN Port Change of State ($EA) report each time an ISDN Connect message event is received from an ISDN D-channel. If you set the feature flag to **Y**, the $EA report is sent to the host for every ISDN Connect message received. If you set the feature flag to **N**, the ISDN supervision template configuration or an ISDN Port Control ($49) command controls how $EA reports for Connect messages are sent.

Enable $66 Command Host Checking

Enables or disables the host checking of the Voice Path Control ($66) command. If you set this feature flag to **Y**, the system accepts $66 commands only from the host link assigned to the call. (The controlling host assigns the link based on the Incoming Call Distribution field configuration.) If you set this flag to **N**, the system accepts $66 host commands from any host link, regardless of the host link assigned as controlling host.

Note that this feature flag is valid only when the Host Control Checking option is enabled. (Refer to the "System Host Configuration" section on page 4-38 for information on Host Control Checking.) If Host Control Checking is disabled, the $66 Command Host Checking flag is ignored (i.e., $66 commands are accepted from any host link even though the flag is set to **Y**).

Cut Thru For Non-ISDN Alerting

Enables or disables the sending of ringback tones to the incoming ports, or the ability to let incoming ports listen to outgoing ports when alerting messages are received in ISDN to non-ISDN connections.

If you set this feature flag to **Y**, the incoming ports listen to the outgoing ports when alerting messages are received in ISDN to non-ISDN connections.

If you set this feature flag to **N**, a ringback tone is sent to incoming ports in ISDN to non-ISDN connections.

Enable 4th Column DTMF

If you enable this feature, $D1 segments attached to $DD or $ED reports follow the enhanced format.

Set System to A-Law

Determines the backplane law for the system. This flag is used to configure the MVDC, ICC, and SPC cards. Refer to the *Cisco VCO/4K Technical Descriptions* to determine the method for setting backplane law for other card types. To prevent an incorrect system configuration, ensure that all service circuit cards and port interface cards are configured for the same law.

Valid values are **Y** and **N**. If you set the flag to **Y**, the system backplane law is set to A-law (European standard). If you set the flag to **N**, the system is set to Mu-law (North American standard). The default is **N**.

Note If you change the value of this feature flag, the ICC and SPC do not detect the change until you take the card out of service and then bring the card back into service.

Note When in the System Features screen, you are setting the backplane law. When in the Programmable Trunk Configuration screen, you are setting the network law. In the ICC Programmable Trunk Configuration screen, the SYS value set in the LAW field will cause the network law configuration for that port to match the system backplane law. This is especially useful for configuring signaling channels which should not undergo any law conversions.

Enable All Ports Deactivated Alarm

If you set this feature flag to **Y**, this option raises a PRI/N card alarm when all the ports on the card are deactivated. An Alarm Condition ($F0) report is sent to the host specifying which card caused the alarm. A minor system alarm is raised and the event is logged if the system alarm condition does not already exist.

The new alarm is raised only when all the ports are deactivated from the Card Maintenance screen, the $90 command from the host, or through a far end port-state transition to out of service.

When at least one of the deactivated ports becomes available for use, the card alarm is cleared and the event is logged. An $F0 is generated to the host, specifying the card in which the alarm condition is cleared. The minor system alarm is cleared and the event is logged if there are no other occurrences of the same alarm.

For the alarm to clear, a port which has been deactivated must be made available from the Card Maintenance screen, the $90 command from the host, or through a far end port-state transition to out of service.

When all the ports of a PRI/N card are deactivated, a card alarm is raised and this event is logged.

$EA Reports on DChannel RESTART

For use with ISDN. This feature allows you to enable/disable the generation of ISDN Port Change of State ($EA) reports for the D-channel, and all associated B-channels, when the system receives a D-channel RESTART message by setting the feature flag to either **Y** to enable, or **N** to disable.

If you enable this feature, an $EA report is generated for the D-channel, and all associated B-channels, when the system receives a D-channel RESTART message.

If you disable this feature, $EA reports are not generated for D-channel RESTART messages.

Send All ISDN Disconnect Report

For use with Japanese ISDN. This feature allows you to enable/disable the sending of ISDN Port Change of State ($EA) reports each time a DISCONNECT message is received from an ISDN D-channel by setting this feature flag to either **Y** to enable, or **N** to disable.

When set to **N** (disabled), disconnect report handling is consistent with system software releases prior to V4.2 FSR00. When set to **Y** (enabled), the system functions properly with Japanese ISDN.

Convert Reorder Tone To Busy

For use with Japanese networks. Allows you to select an alternate busy tone for Japanese networks which use a normal busy tone instead of the reorder tone during PSC (Permanent Signaling Condition) processing on a port.

Valid values are **N** and **Y**. When set to **N**, the normal reorder tone is presented during PSC. When set to **Y**, the normal busy tone is presented.

K1197 Layer 3 Testing

Not for customer use. This flag is used during tests performed with the K1197 Conformance tester. Valid values are **Y** and **N**. Set to **Y** (enabled) and the Datalink Release report is ignored. Enabling this feature also causes Sync Source switching to stop. Set to **N** to disable conformance testing.

Enable Host Call Ref

For use with ISDN configurations. Allows you to enable/disable the 2 B-channel transfer feature by setting the feature flag to either **Y** to enable, or **N** to disable.

If you enable this feature, the system passes the call reference up to the host, which enables the host application to support 2 B-channel transfer. The call reference value is sent to the host in byte offsets 20 and 21 of the ISDN Port Change of State ($EA) report with standard mode API. The call reference value is sent to the host in byte offsets 25 and 26 of the $EA report with extended mode API.

For ISDN message types, with the exception of RELEASE COMPLETE, the VCO/4K sends the call reference value to the host. If the VCO/4K receives a RELEASE COMPLETE message, the call reference value is not sent to the host, but instead sends a replacement call reference value, xFFFE.

For incoming ISDN calls, the network switch is responsible for generating the call reference value. For outgoing ISDN calls, the VCO/4K is responsible for generating the call reference value.

If you disable this feature, the 2 B-channel transfer feature is disabled.

Extended Operation Mode Set

This flag is read-only. If enabled (set to **Y**), extended operational mode is activated. Activate extended mode during the installation process by selecting the Set Extended Operational Mode option from the Installation Utilities screen. To configure your VCO system for 4,000+ ports, both the **Extended Operation Mode Set** and **C-bus Mode Enabled** flags must be set to **Y**.

C-bus Mode Enabled

This flag is read-only. If set to **Y**, C-bus is enabled, and the switch can take advantage of the 4,000+ ports. If set to **N**, C-bus is disabled, and your system is limited to 2,000+ ports. To configure your VCO system for 4,000+ ports, both the **C-bus Mode Enabled** and E**xtended Operation Mode Set** flags must be set to **Y**.

Enabling and Disabling System Features

Complete the following steps to enable or disable a system feature flag:

Step 1 Display the System Features screen (refer to the "Accessing the System Feature Configuration Screen" section on page 4-22).

The cursor is located in the first Allowed (Y/N) field.

Step 2 Use the **Prev Field** and **Next Field** keys to position the cursor in the Allowed (Y/N) field corresponding to the feature you want to enable or disable.

Step 3 Type **Y** or **N**, depending on the setting you want for that feature.

Step 4 Repeat Step 2 and Step 3 for each feature setting you want to change.

Step 5 Press **Enter**.

The database is automatically updated.

Step 6 Press the **Exit** key to return to the System Configuration menu.

To exit the System Features screen without making any changes, press the **Exit**, **Prev Menu**, or **Main Menu** key. No changes are made to the database unless you press **Enter**.

Screen Access Configuration

Use Screen Access Configuration to control database access and function key assignments for all system administration screens and menus. This function applies the same access levels (0, 1, 2, and 3) assigned to each system user from the Password Configuration screen. Refer to the "Password Configuration" section on page 4-15 for more information on assigning access levels to system users.

All system users, including Level 3, can view all administration screens and functions. On the other end of the range, Level 0 users can both view and modify all system database tables.

The ability of Level 1 and Level 2 users to modify database tables depends entirely on the values entered in the Screen Access Configuration screen. These settings work in a pyramid fashion. Level 2 users can modify database tables for all screens marked with Level 2 or Level 3 access. Similarly, Level 1 users can modify the tables for all screens marked with Level 1, Level 2 or Level 3 access. Level 0 users reside at the top of the pyramid; they can change database information for screens marked with any access level.

You can also use Screen Access Configuration to map up to 15 programmable function keys to system administration menus and screens. VT220/320 keys marked **F6** through **F20** can be used for single keystroke access, including the keys labeled **Help** and **Do**. Refer to Appendix C, "Administration Keyboard Types," for function key mapping for keyboard types other than VT220/320.

Accessing the Screen Access Configuration Screen

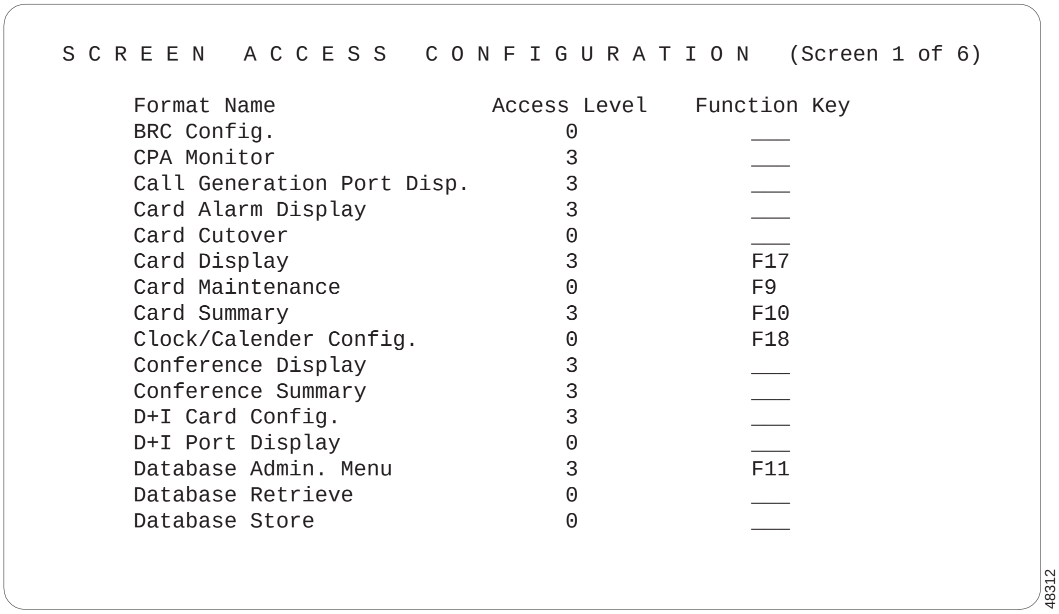
Complete the following steps to access the Screen Access Configuration screen:

Step 1 Access the System Configuration Menu screen (refer to the "Accessing the System Configuration Menu Screen" section on page 4-2).

Step 2 Type **G** and press **Enter**.

The Screen Access Configuration screen appears (see Figure 4-9). The cursor is located in the Access Level field.

Figure 4-9 Screen Access Configuration Screen



```
 S C R E E N   A C C E S S   C O N F I G U R A T I O N   (Screen 1 of 6)

       Format Name                Access Level    Function Key
       BRC Config.                      0              ___
       CPA Monitor                      3              ___
       Call Generation Port Disp.       3              ___
       Card Alarm Display               3              ___
       Card Cutover                     0              ___
       Card Display                     3              F17
       Card Maintenance                 0              F9
       Card Summary                     3              F10
       Clock/Calender Config.           0              F18
       Conference Display               3              ___
       Conference Summary               3              ___
       D+I Card Config.                 3              ___
       D+I Port Display                 0              ___
       Database Admin. Menu             3              F11
       Database Retrieve                0              ___
       Database Store                   0              ___
```

The Screen Access Configuration option consists of six screens. Use the **Print Screen** key to obtain a hard copy of each screen.

Screen Access Configuration Screen Field Definitions

The Screen Access Configuration screens consist of the following fields:

Format Name—*Display only.* Shows the title of the screen format, listed alphabetically.

Access Level—*Data entry via main keypad.* Specifies the access level assigned to the screen format. Valid values are 0 to 3.

Function Key—*Data entry via Select key.* Specifies the function key assigned to the screen to provide single keystroke access. VT220/320 keys marked **F6** to **F20** can be used; the **F15** selection corresponds to the **Help** key on VT220/32 keyboards, while **F16** indicates the **Do** key. Use function keys only for screens residing immediately under a menu; you cannot assign function keys to screens residing under submenus (such as the Line/Trunk/PRI card configuration screens).

Note Function key mapping varies for keyboard types other than VT220/320. Refer to Appendix C, "Administration Keyboard Types," for more information.

Configuring Screen Access

Screen Access Configuration contains six pages of screen titles, listed in alphabetical order. Only Level 0 users can perform screen access changes. Access levels can be modified for most screens. All menu screens and the System Login and Password Configuration screens are permanently assigned Level 3 access; the access level for these screens cannot be changed. Similarly, the access level for the System Feature Configuration screen is fixed at Level 0.

You can assign function keys to all menus and all screens immediately residing under a menu. You cannot assign function keys to screens residing under submenus (requiring data entry on the submenu before they can be accessed). When a function key is assigned to a screen, it is removed from the available listing.

Complete the following steps to assign access levels and programmable function keys:

Step 1 Access the Screen Access Configuration screen (refer to the “Accessing the Screen Access Configuration Screen” section on page 4-30).

The cursor is located in the first Access Level field.

Step 2 Use the **Next Field** and **Prev Field** keys to position the cursor in the Access Level or Function Key field that corresponds to the screen assignment you want to change. The fields that cannot be modified (access levels permanently set or screens residing under submenus) are bypassed.

- To change the access level, type the level number (**0**, **1**, **2** or **3**) and press the **Next Field** key.
- To assign a function key, use the **Select** and **Reverse Select** keys to step through the values until the correct function key is shown and press the **Next Field** key.

Step 3 Repeat Step 2 for each screen assignment you want to change.

Step 4 Press **Enter**.

The “Screen Access Table Updated” message appears and the database is automatically updated.

To exit the Screen Access Configuration screen without making any changes, press the **Exit**, **Prev Menu**, or **Main Menu** key. No changes are made to the database until you press **Enter**.

Software/Firmware Configuration

Use Software/Firmware Configuration to display the following items for the system controller (Side A or B) to which the system administration terminal is currently connected:

- Version revision, field service release (FSR), PUN, and checksum for all system software (generic) executable files on the floppy disk drive, hard disk drive, or loaded into system memory (DRAM)
- Version revision, PUN, and checksum for each data download file on the floppy disk drive (boot.sds file must be present), hard disk drive, or loaded into system memory (DRAM)
- Version and revision of the VRTX operating system currently installed

Accessing the Software/Firmware Configuration Screen

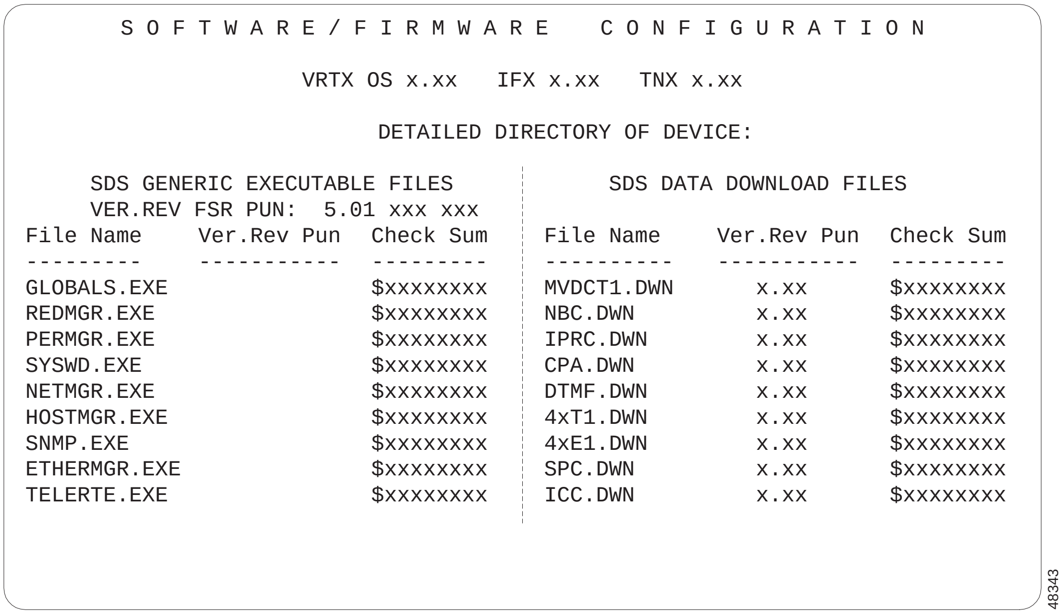
Complete the following steps to access the Software/Firmware Configuration screen:

Step 1 Access the System Configuration Menu screen (refer to the "Accessing the System Configuration Menu Screen" section on page 4-2).

Step 2 Type **H** and press **Enter**.

The Software/Firmware Configuration screen appears (see Figure 4-10). The cursor is located in the DETAILED DIRECTORY OF DEVICE field.

Figure 4-10 Software/Firmware Configuration Screen



```
        S O F T W A R E / F I R M W A R E   C O N F I G U R A T I O N

                      VRTX OS x.xx   IFX x.xx   TNX x.xx

                            DETAILED DIRECTORY OF DEVICE:

     SDS GENERIC EXECUTABLE FILES     |      SDS DATA DOWNLOAD FILES
     VER.REV FSR PUN:  5.01 xxx xxx   |
File Name     Ver.Rev Pun  Check Sum  | File Name     Ver.Rev Pun  Check Sum
---------     -----------  ---------  | ----------    -----------  ---------
GLOBALS.EXE                $xxxxxxxx  | MVDCT1.DWN       x.xx      $xxxxxxxx
REDMGR.EXE                 $xxxxxxxx  | NBC.DWN          x.xx      $xxxxxxxx
PERMGR.EXE                 $xxxxxxxx  | IPRC.DWN         x.xx      $xxxxxxxx
SYSWD.EXE                  $xxxxxxxx  | CPA.DWN          x.xx      $xxxxxxxx
NETMGR.EXE                 $xxxxxxxx  | DTMF.DWN         x.xx      $xxxxxxxx
HOSTMGR.EXE                $xxxxxxxx  | 4xT1.DWN         x.xx      $xxxxxxxx
SNMP.EXE                   $xxxxxxxx  | 4xE1.DWN         x.xx      $xxxxxxxx
ETHERMGR.EXE               $xxxxxxxx  | SPC.DWN          x.xx      $xxxxxxxx
TELERTE.EXE                $xxxxxxxx  | ICC.DWN          x.xx      $xxxxxxxx
```

Software/Firmware Configuration consists of one screen. Use the **Print Screen** key to obtain a hard copy of this screen.

Software/Firmware Configuration Screen Field Definitions

The Software/Firmware Configuration screen consists of the following fields:

VRTX OS—*Display only.* Shows the version and revision (x.xx) of the operating system firmware PROM installed on the CPU board to which the administration terminal is connected.

IFX—*Display only.* Shows the version and revision (x.xx) of the file system component of the operating system firmware PROM installed on the CPU board to which the administration terminal is attached.

TNX—*Display only.* Shows the version and revision (x.xx) of the network component of the operating system firmware PROM installed on the CPU board to which the master console is attached.

DETAILED DIRECTORY OF DEVICE—*Data entry via Select key.* Specifies the device for which to display the configuration information. Valid values are:

A—Display configuration for files on device A: (floppy drive)

C—Display configuration for files on device C: (hard drive)

<SYSTEM> GENERIC EXECUTABLE FILES—*Display only.* Shows the filename, version and revision (x.x), field service release (FSR), and checksum for all V5.x files resident on the device selected. The fields are arranged according to the descriptions that follow.

VER.REV FSR PUN—Specifies the version revision level, field service release (FSR) level, and PUN of the generic release.

File Name—Specifies the name of the executable file for which information is displayed. Executable files are indicated by the .exe file extension.

Ver.Rev Pun—The version revision level and PUN of the executable file is not displayed for each executable file. The system software .exe files, with the exception of optional software products, share the same software version number displayed in the VER. REV FSR PUN field on the left side of the screen.

Note If you are running a customer patch, you may see an inconsistency in the SPC.DWN and ICC.DWN file version revision numbers listed in this column. The inconsistency is due to the two character field length; customer patch version revision numbers are greater than two digits and the system converts them to binary coded digits for display purposes. Formal releases always contain two digits and do not experience this inconsistency.

Check Sum—Specifies the checksum calculated for the file on the hard disk.

<SYSTEM> DATA DOWNLOAD FILES—*Display only.* Indicates the filename, version and revision (x.xx), PUN, and checksum for all data download files resident on the device selected. The fields are arranged according to the descriptions that follow.

File Name—Specifies the name of the download file for which information is displayed. Download files are indicated by the .dwn extension. Examples of some of the valid values and their meanings are:

Ver.Rev Pun—Specifies the version revision level and PUN level of the download file.

Check Sum—Specifies the checksum calculated for the file on the hard disk.

Displaying System Software/Firmware Configuration

Complete the following steps to display the system software/firmware configuration for a particular device:

Step 1 Access the Software/Firmware Configuration screen (refer to the “Accessing the Software/Firmware Configuration Screen” section on page 4-32).

The cursor is located in the Detailed Directory of Device field.

Step 2 Use the **Select** key to specify the value of the device for which you want to view the configuration.

Step 3 Press **Enter**.

The configuration information for the device selected is displayed.

Step 4 Repeat Step 2 and Step 3 for all devices for which the configuration is to be displayed.

Press the **Exit** key to return to the System Configuration menu.

License Configuration

Use License Configuration to update your Timeslot Allocation License or display the system's current usage of time slots. This section describes Timeslot Allocation Licensing and the License Configuration screen.

Timeslot Allocation Licensing

With a few exceptions, each port on the system uses a time slot. VCO/4K systems are shipped with 1024 preallocated time slots, which support up to 1,024 individual ports. Once your system configuration reaches 1024 ports, you cannot add more cards to the system until you upgrade your timeslot license. Timeslot licenses are sold in 536-slot increments, up to a maximum of 4088 time slots for VCO/4K systems and 1936 for VCO/20 systems. (See your sales representative for further information on upgrading your Timeslot Allocation License.)

Note DRC24 and DRC48 ports do not consume time slots.

Timeslot Allocation Licensing is nontransferable; you cannot take the license from one system and use it on another.

Accessing the License Configuration Screen

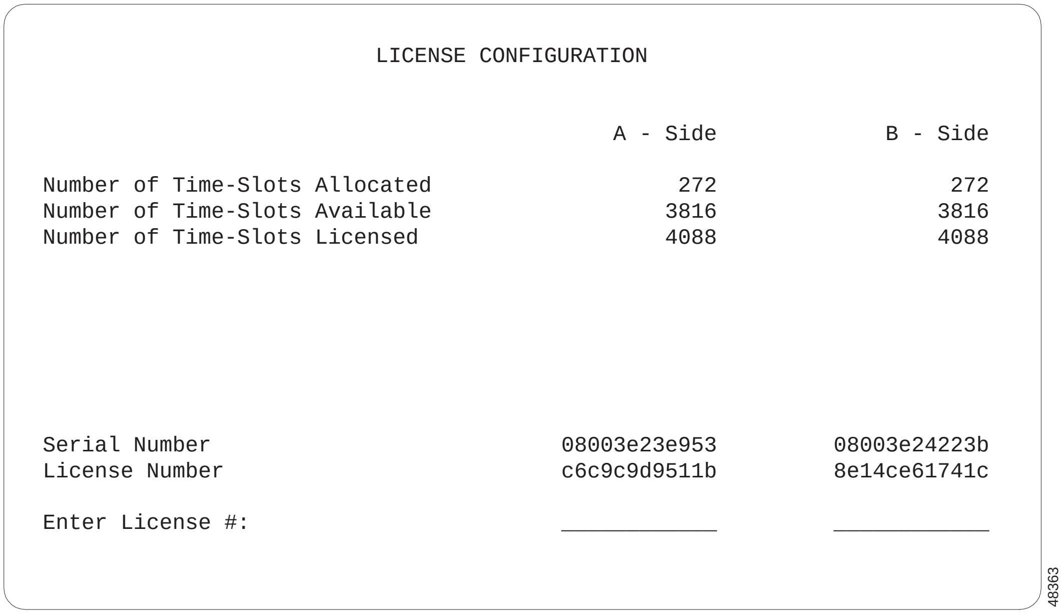
Complete the following steps to access the License Configuration screen:

Step 1 Access the System Configuration Menu screen (refer to the "Accessing the System Configuration Menu Screen" section on page 4-2).

Step 2 Type **I** and press **Enter**.

The License Configuration screen appears (see Figure 4-11). The cursor is located in the Enter License # field.

Figure 4-11 License Configuration Screen



```
                          LICENSE CONFIGURATION


                                         A - Side            B - Side

Number of Time-Slots Allocated                272                 272
Number of Time-Slots Available               3816                3816
Number of Time-Slots Licensed                4088                4088







Serial Number                        08003e23e953        08003e24223b
License Number                       c6c9c9d9511b        8e14ce61741c

Enter License #:                     ____________        ____________
```

The sample shown in Figure 4-11 is from a redundant system. The screen on a nonredundant system does not include the column of information listed under B-Side.

License Configuration Screen Field Definitions

The License Configuration screen contains the following fields:

Number of Time-Slots Allocated—*Display only.* Shows the number of time slots that are currently assigned within the system.

Number of Time-Slots Available—*Display only.* Shows the maximum number of time slots available within your system, including the “free” DTG time slots.

Number of Time-Slots Licensed—*Display only.* Shows the number of time slots purchased for your system.

The values for these fields increase and decrease as you add and delete cards from the system database. If you continue to add cards until the Number of Time-Slots Allocated field exceeds the Number of Time-Slots Licensed field, the system will operate normally, but the last card (and any subsequent cards) will not be added to the database. (Refer to *Cisco VCO/4K System Messages* for information on warning and error messages.)

In addition, the number of time slots available may be more or less than the number of time slots licensed for the following reasons:

- A 2K system may have more than 2000 time slots licensed. The maximum number of time slots available in a 2K system is 1936.
- The DTG time slots are “free,” that is, provided at no charge by Cisco. The number of time slots available is adjusted upward to reflect the free DTG time slots.

Note Timeslot information is also displayed on the Card Maintenance and main menu screens.

Serial Number—*Display only.* Shows the serial number of the system’s CPU card. This number is encoded in the card at the factory and cannot be altered. A unique license number is associated with this serial number.

License Number—*Display only.* Displays the license number associated with the serial number of your CPU. If your system does not have a Timeslot Allocation License, this field is blank.

Enter License #—*Data entry via main keyboard*. Use this field to enter a new license number when you update your Timeslot Allocation License or when you replace the CPU card.

The serial number and license number are directly correlated; there is only one valid license number for each CPU serial number and port configuration. To obtain the value for this field, contact Cisco TAC.

If you enter an invalid number in the Enter License # field, the Invalid License Number error message appears and the value in the License Number field is not updated. Note that any attempts to change the license number are entered in the log file.

Updating the Timeslot Allocation License

You must update the Timeslot Allocation License each time you replace the system’s CPU card or purchase a license for additional time slots.

When you update the Timeslot Allocation License on redundant systems, keep the following points in mind:

- License both sides of redundant systems for the same amount of time slots. If the number of time slots is different, the system uses the lower number for both sides.
- Both sides have access to the Licensing Configuration screen, and both the active and the standby side can be updated from the active controller. However, the standby controller only allows you to display information.

Complete the following steps to update the Timeslot Allocation License:

Step 1 If your system is redundant, make sure that you are operating from the active side.

Step 2 Access the License Configuration screen (refer to the “Accessing the License Configuration Screen” section on page 4-35).

The cursor is located in the Enter License # field.

Step 3 If you are using VCO/4K system software Version 5.1(3) or lower, proceed to Step 3a. If using VCO/4K system software Version 5.1(4) or higher, proceed to Step 3b.

a. Contact Cisco TAC, if using system software Version 5.1(3) or lower, and advise them of the number shown in the Serial Number field. If you have a redundant system, advise them of the number for side A. Proceed to Step 4.

b. Enter the Universal License Code, **summa4**, in both the A-Side and the B-Side Enter License # fields. Do not enter a license number in this field; it is not necessary to obtain a license number from Cisco Systems to obtain time slots. The system is configured for the maximum number of time slots available. 2K systems receive 1936 time slots, and 4K systems receive 4088 time slots. Proceed to Step 6.

Step 4 When TAC allocates a new license number to you, enter the number in the Enter License # field and press **Enter**. If you entered the serial number correctly, the License Configuration is updated. If you did not enter the license number correctly, the “Invalid License Number” error message appears. Reenter the number and press **Enter**.

Step 5 If you have a redundant system, advise TAC of the serial number listed under side B. Repeat Step 4 for side B from the active controller.

Step 6 Press the **Prev Menu** or **Exit** key to exit the License Configuration screen.

You can exit the License Configuration screen by pressing the **Enter** key without entering any numbers.

System Host Configuration

Use System Host Configuration to define general system-wide host configuration parameters, including host setup timer functionality, response to all host link failure conditions, host control of call load, host control verification, distribution of new incoming calls, reporting no host alarms at initialization, and reporting system initialization to all hosts.

Accessing the System Host Configuration Screen:

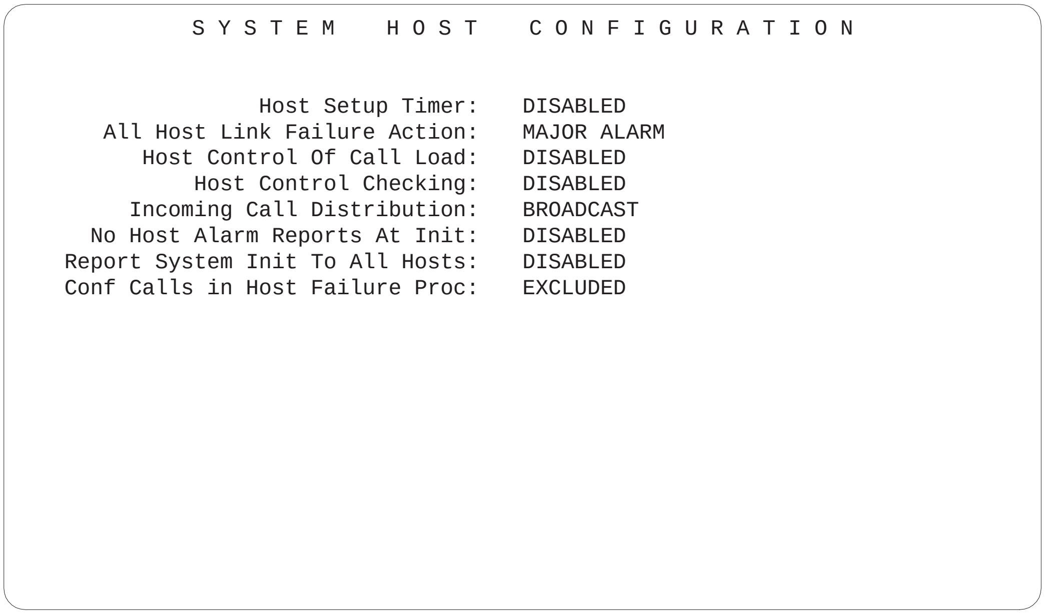
Complete the following steps to access the System Host Configuration screen:

Step 1 Access the System Configuration Menu screen (refer to the "Accessing the System Configuration Menu Screen" section on page 4-2).

Step 2 Type **J** and press **Enter**.

The System Host Configuration screen appears (see Figure 4-12). The cursor is located in the Host Setup Timer field.

Figure 4-12 System Host Configuration Screen



```
              S Y S T E M   H O S T   C O N F I G U R A T I O N


                  Host Setup Timer:    DISABLED
      All Host Link Failure Action:    MAJOR ALARM
         Host Control Of Call Load:    DISABLED
             Host Control Checking:    DISABLED
          Incoming Call Distribution:  BROADCAST
     No Host Alarm Reports At Init:    DISABLED
    Report System Init To All Hosts:   DISABLED
    Conf Calls in Host Failure Proc:   EXCLUDED
```

Host Load Sharing

Host load sharing is controlled by the Incoming Call Distribution field. Set this parameter field to CYCLIC to enable load sharing. A list of all active host links is maintained by the system. When load sharing is enabled, this list is referred to for each new call attempt to obtain the next active host link, which is then assigned to the call. As other host links become active, they are added to the list. As host links fail, they are removed from the list, so that the load is always shared among all active links. Refer to the "Redundancy Modifications" section on page 4-40 for related enhancements on redundant systems.

If a command is received for a call in which no controlling host has been assigned, the host issuing the command will be assigned. In addition, commands received from a host that is not controlling the call are rejected if you have enabled Host Control Checking.

Host Setup Timer, if enabled, is performed for the assigned host link. If the assigned host process does not respond to the initial call report within the defined setup timer interval, the call is torn down. A line/trunk port marked as Always Off-hook class of service is set back to idle state. Line/trunk ports with other classes of service are processed through permanent signaling conditioning (PSC).

Use the NO HOST token in an inpulse rule to modify the processing performed upon expiry of the host setup timer. In the event of a host timeout, the NO HOST token forces rule processing to execute the inpulse rule specified in the data field of the NO HOST token. This behavior can cause delays in tearing down a call which is not responded to by a host. Note that a self-referential NO HOST rule token can cause the inpulse rule to loop indefinitely.

TeleRouter

The distribution of call reports does not apply to the informational routing reports generated by the TeleRouter software overlay (internal host). The routing reports are sent to either the controlling host associated with a given port involved in a call routing action, or are broadcast to all hosts.

Call Processing Behavior for the All Host Link Failure Action Parameter

The enhancements to the call processing behavior are summarized as follows:

- Host Setup Timer—This feature uses a configurable timer (1 to 60 seconds) to trap the condition where a host link fails to respond to a call attempt. If the timer expires and no host has responded to the call, the call is torn down and sent through PSC (or idled for Always Off-hook). This behavior also covers the case where no host is available to process the call.
- Default inpulse rule processing modifies the behavior of the Host Setup Timer parameter processing. If you define an inpulse rule for a port, then the Host Setup Timer is started upon rule completion. This means that the call may not be immediately torn down in this case. Note also the modified behavior when using the NO HOST inpulse rule token; this behavior is described in the "Host Load Sharing" section on page 4-39.
- Fatal Alarm on All Host Link Failure Action—This feature causes a fatal alarm condition if all host links fail. The fatal condition initiates a system controller switchover in a redundant system. The standby controller becomes active and processes all new call attempts; the previously active controller reboots. This existing system feature may also be useful for handling the failure of all host links.
- Conditional Switchover—Supports the capability to switch over on failures of all host links, assuming the standby side is online and has active links.

Screen Modifications

The host setup timer processing provides the reorder sequence when no host link is available to control the call (provided the NO HOST token is not used to modify this behavior; refer to Host Load Sharing for a description). Use the Host Setup Timer field in the System Host Configuration screen to enable or disable host setup timing, as well as to configure the duration of the timer.

Use the All Host Link Failure Action field to generate a fatal alarm (system shutdown and reboot) or perform a conditional switchover (no reboot; redundant systems only) when all host links fail.

Call Processing Modifications

In the case of fatal alarm processing associated with the failure of all host links, no check for active host links on the standby controller are made before switching over and shutting down.

A system switchover occurs only if the standby controller is online (file synchronization complete) and has active host links. The active controller that switches to standby will not reboot following the conditional switchover. Redundant systems will not switch over when all hosts fail and the standby is not online (that is, ready to process calls) when conditional switchover is enabled. Furthermore, should a host link become active on the standby controller following the loss of all host links on the active controller, no switchover is initiated. However, the active host on the standby controller can initiate a switchover via a host command, thereby taking over call processing responsibilities.

Redundancy Modifications

To support the conditional switchover functionality, each side of a redundant switch must be aware of the number of active external host links on the other side.

Following file synchronization after a system boot, the number of active external host links associated with each side of a redundant system is transmitted by that side to the other side. Furthermore, any time the number of active host links changes on either side, that fact is transmitted to the other side. This allows both sides of a redundant switch to be aware of the number of active host links on each side.

System Host Configuration Screen Field Definitions

The System Host Configuration screen contains the following fields:

Host Setup Timer—*Data entry via Select key and the main keypad*. Enables or disables host setup timer functionality, and configures the duration of the setup timer. The setup timer refers to the length of time that a host has to respond to a new call report. The valid range for the setup timer is from 1 to 60 seconds. The default value is 6. When host setup timing is disabled, the timer duration is not displayed. Valid selections are:

> Disabled—Host setup timer processing is not performed.
>
> Enabled—Host setup timer processing is performed based on the specified host setup timer value. This is the default selection.

All Host Link Failure Action—*Data entry via Select key.* Specifies the action that will be taken if all host links fail during system operation. Valid selections are:

> Major Alarm—A major alarm is generated if all host links fail. This is the default selection.
>
> Fatal Alarm—A fatal alarm is generated if all host links fail. The system controller will shut down and reboot, and if the system is redundant, initiate a system switchover.

Conditional Switchover—A major alarm is generated if all host links fail. A system switchover will be initiated if the standby controller is online (file synchronization completed) and has active host links. No system reboot will be performed following a conditional switchover.

Host Control Of Call Load—*Data entry via Select key.* Enables or disables host control of call load feature. This feature is in effect when the host links are marked as ready to process calls. No call reports are issued to a host link until it is marked as available to process calls. Valid selections are:

Disabled—Host links are marked as available as soon as the link is established. This is the default value.

Enabled—Host links are not marked as available until a Host Call Load Control ($C0 04) command is received from the host.

Host Control Checking—*Data entry via Select key.* Enables or disables host control verification. Valid selections are:

Disabled—No host control verification is performed. Commands are accepted from any host link, regardless of the host link assigned as controlling host. This is the default.

Enabled—Commands are accepted only from the host link assigned to the call. Controlling host assignment is made based on the Incoming Call Distribution field selection.

Incoming Call Distribution—*Data entry via Select key.* Specifies how new incoming calls are distributed to available host links. Valid selections are:

Broadcast—Reports for new calls are sent to all available host links. The first host to respond to the report will be assigned as controlling host. This is the default.

Cyclic—Reports for new calls are uniformly distributed among all available host links. One host link will be assigned to the call by the system and all reports for that call will be sent only to the assigned host link. If Host Control Checking is enabled, then resource commands for the call will only be accepted from the assigned host link. The reports that are eligible for cyclic distribution are:

- $D0—MF digit collection
- $D1—DTMF digit collection
- $D4—Speech report
- $DA—Outgoing port change of state
- $DB—Incoming port change of state
- $EA—ISDN port change of state
- $ED—ISDN inpulse rule complete

No Host Alarm Reports At Init—*Data entry via Select key.* Enables or disables the suppression of alarm reports during the first five minutes following system initialization. During system initialization, several alarm conditions are set and cleared as part of normal processing. An Alarm Condition ($F0) report is normally issued to all active host links whenever an alarm condition is set or cleared. Enabling this feature suppresses these reports until the system is beyond the initialization period.

Disabled—$F0 alarm reports are issued to all active host links during initialization. This is the default.

Enabled—$F0 alarm reports are suppressed for the first five minutes following system initialization.

Report System Init To All Hosts—*Data entry via Select key.* Enables or disables the sending of Active/Standby Mode ($DC) reports to indicate that the system has completed initialization and is ready to process calls.

Disabled—No Active/Standby Mode ($DC) report is issued when Phase 3 system initialization has completed. This is the default.

Enabled—Active/Standby Mode ($DC) report is issued when Phase 3 system initialization has completed.

Conf Calls in Host Failure Proc—*Data entry via Select key.* Determines whether to include the voice path to/from a conference in the alarm message if a host link fails. (Refer to the All Host Link Failure Action field definition earlier in this section for detailed information regarding the actions that will be taken if all host links fail during system operation.) Valid selections are:

Included—Conference call voice paths are included in the alarm messages generated if a host link fails.

Excluded—Conference call voice paths are not included in the alarm messages generated if a host link fails.

Ethernet/NFS/SNMP Configuration

Use Ethernet/NFS/SNMP Configuration to configure the Ethernet/NFS/SNMP optional software.

Accessing the Ethernet/NFS/SNMP Configuration Screen

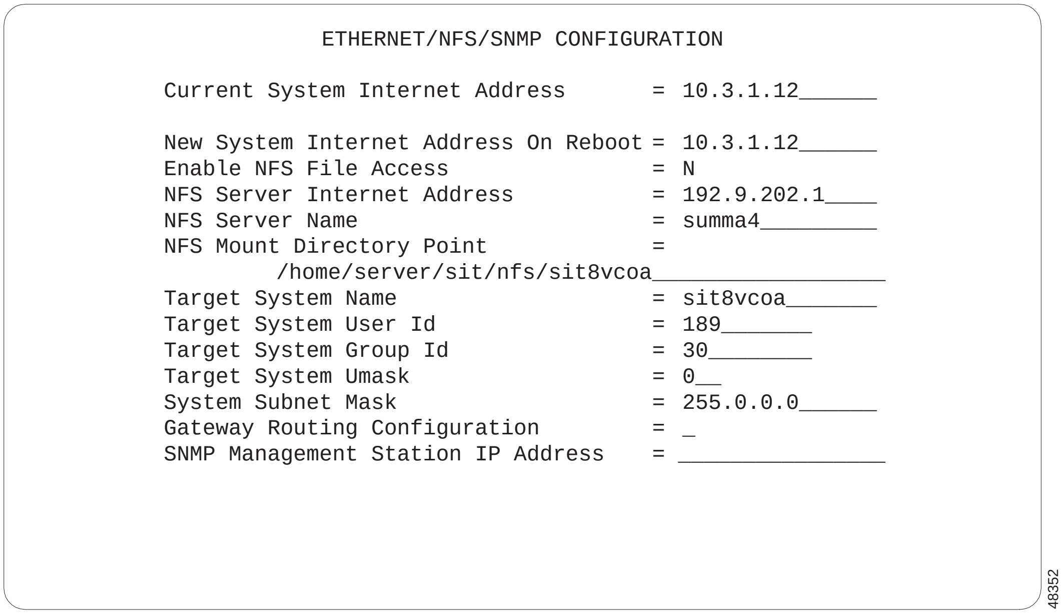
Complete the following steps to access the Ethernet/NFS/SNMP Configuration screen:

Step 1 Access the System Configuration Menu screen (refer to the “Accessing the System Configuration Menu Screen” section on page 4-2).

Step 2 Type **K** and press **Enter**.

Step 3 The Ethernet/NFS/SNMP Configuration screen appears (see Figure 4-13). The cursor is located in the Current System Internet Address field.

Figure 4-13 Ethernet/NFS/SNMP Configuration Screen



```
                  ETHERNET/NFS/SNMP CONFIGURATION

      Current System Internet Address      = 10.3.1.12______

      New System Internet Address On Reboot= 10.3.1.12______
      Enable NFS File Access               = N
      NFS Server Internet Address          = 192.9.202.1____
      NFS Server Name                      = summa4_________
      NFS Mount Directory Point            =
               /home/server/sit/nfs/sit8vcoa__________________
      Target System Name                   = sit8vcoa_______
      Target System User Id                = 189_______
      Target System Group Id               = 30________
      Target System Umask                  = 0__
      System Subnet Mask                   = 255.0.0.0______
      Gateway Routing Configuration        = _
      SNMP Management Station IP Address   = ________________
```

Ethernet/NFS/SNMP Configuration consists of one screen. Use the **Prev Field** and **Next Field** keys to move through the fields. Use the **Print Screen** key to obtain a hard copy of this screen.

IP Subnet Mask Configuration

When Ethernet is initially installed, the system reads the information in the Current System Internet Address field and supplies a default value for class A, B, or C subnets in the System Subnet Mask field. If you want to change the class after the initial installation, type an IP address class type value into the System Subnet Mask field. The values corresponding to the class type are:

- A—255.0.0.0
- B—255.255.0.0
- C—255.255.255.0

If you assign a new class of IP address at some point after the initial installation, you must also type in the appropriate system subnet mask. The system will not automatically reconfigure subnet mask based on your new IP address. You must reboot the system after changing the subnet mask in order for the new value to take effect.

Ethernet/NFS/SNMP Configuration Screen Field Definitions

The Ethernet/NFS/SNMP Configuration screen contains the following fields.

Current System Internet Address—*Display only*. Shows the Internet address for the switch.

New System Internet Address On Reboot—*Data entry via main keypad*. Specifies the VCO system Internet address to change to on reboot.

Note If you have already disabled NFS Access, you can skip over the NFS-related fields and continue on to configure the Gateway Routing Table parameters.

Enable NFS File Access—*Data entry via main keypad*. Specifies whether NFS file access is enabled. Valid values are N for not enabled, or Y for enabled.

NFS Server Internet Address—*Data entry via main keypad*. Indicates the Internet address assigned to the device (usually the host computer) on which the log and trace files are to be stored. This value must be supplied by the Ethernet administrator.

NFS Server Name—*Data entry via main keypad*. Indicates the name assigned to the device (usually the host computer) on which the log and trace files are to be stored. This value must be supplied by the Ethernet administrator.

NFS Mount Directory Point—*Data entry via main keypad*. Indicates the name of the mount directory device into which the log and trace files are to be stored. This value must be supplied by the Ethernet administrator.

Target System Name—*Data entry via main keypad*. Indicates the name assigned to the system by the Ethernet administrator.

Target System User ID—*Data entry via main keypad*. Indicates the UNIX user ID assigned to the system by the Ethernet administrator.

Target System Group ID—*Data entry via main keypad*. Indicates the UNIX group ID assigned to the system by the Ethernet administrator.

Target System Umask—*Data entry via main keypad*. Indicates the user mask assigned to the system by the Ethernet administrator. Cisco Systems, Inc. recommends a value of 0x0 unless used on the LAN.

System Subnet Mask—*Data entry via main keypad*. Indicates the value of the IP address class type (class A, B, or C subnets). Valid values include nonnull characters.

Gateway Routing Configuration—*Data entry via main keypad*. Provides access to the Gateway Routing Configuration screen. Type any character and press **Enter**.

SNMP Management Station IP Address—*Data entry via main keypad*. Allows the user to enter an IP address of the SNMP station; the IP address can be changed as needed and there is no need for rebooting the system. The new IP address is saved to memory and to NVRAM. Type the IP address, then press **Enter**.

Gateway Routing Configuration

Use the Gateway Routing screen to gain access to a Cisco switch over a gateway.

Accessing the Gateway Routing Screen

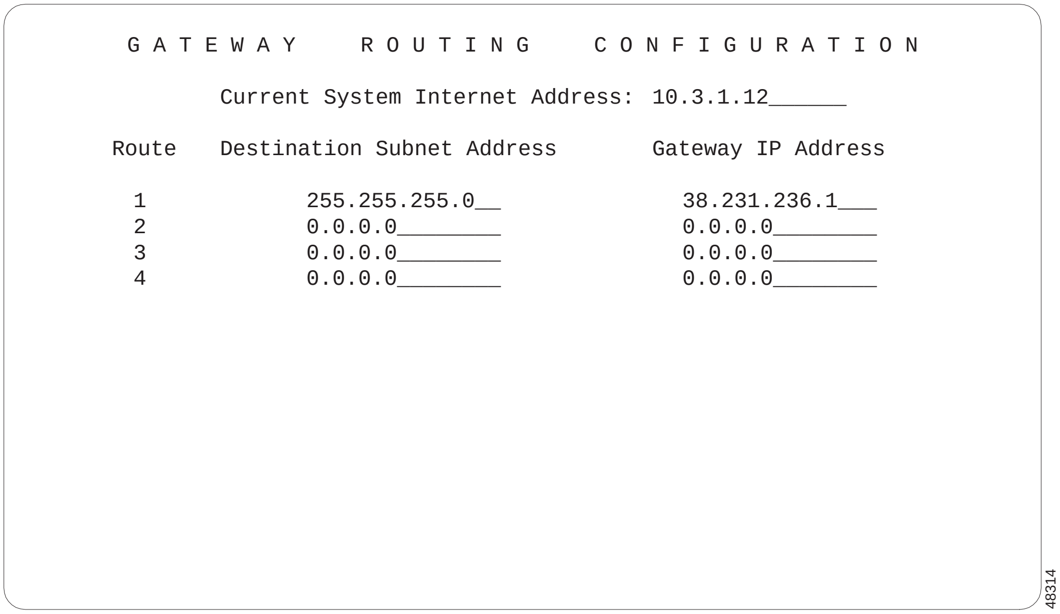
Complete the following steps to access the Gateway Routing screen:

Step 1 Access the Ethernet/NFS/SNMP Configuration screen (refer to the “Accessing the Ethernet/NFS/SNMP Configuration Screen” section on page 4-42).

Step 2 Enter any character and press **Enter**.

The Gateway Routing Configuration screen appears (see Figure 4-14).

Figure 4-14 Gateway Routing Configuration Screen



```
         G A T E W A Y    R O U T I N G    C O N F I G U R A T I O N

               Current System Internet Address: 10.3.1.12______

        Route   Destination Subnet Address       Gateway IP Address

         1            255.255.255.0__              38.231.236.1___
         2            0.0.0.0________              0.0.0.0________
         3            0.0.0.0________              0.0.0.0________
         4            0.0.0.0________              0.0.0.0________
```

Gateway Routing Configuration consists of one screen. Use the **Prev Field** and **Next Field** keys to move through the fields. Use the **Print Screen** key to obtain a hard copy of this screen.

Gateway Routing Configuration Screen Field Definitions

The Gateway Routing Configuration screen has various fields. The data entry fields correspond to the following supported gateways:

Current System Internet Address—*Display only*. Shows the current Internet address for the gateway.

Destination Subnet Address—*Data entry via main keypad*. Indicates the Internet address of the destination host or the destination network. A valid Internet address in standard notation (12.13.14.15) must be supplied by the Ethernet administrator.

Gateway IP Address—*Data entry via main keypad*. Indicates the address assigned to the gateway through which the destination host can be accessed. A valid Internet address in standard notation (12.13.14.15) must be supplied by the Ethernet administrator.

FTP Password Configuration

Use file transfer protocol (FTP) to create and remove directories, rename and delete files, and move files between a remote host and the VCO/4K switch. For example, use FTP to transfer VCO/4K core dump files from the VCO/4K to a remote host. The file can then be compressed or split (refer to the “FTP quote Command” section on page 4-50) and sent to Cisco for analysis.

To grant FTP access permission to the VCO, you must add privileged users to the database via the FTP Password Configuration screen.

Accessing the FTP Password Configuration Screen

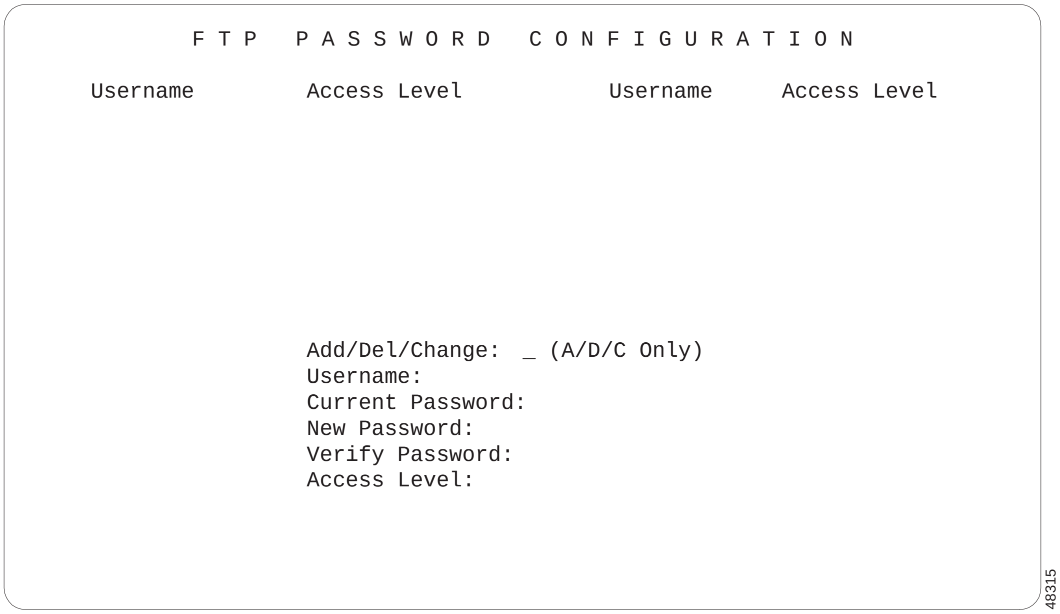
Complete the following steps to access the FTP Password Configuration screen:

Step 1 Access the System Configuration screen (refer to the "Accessing the System Configuration Menu Screen" section on page 4-2).

Step 2 Type **L** and press **Enter**.

The FTP Password Configuration screen appears (see Figure 4-15).

Figure 4-15 FTP Password Configuration Screen



```
             F T P   P A S S W O R D   C O N F I G U R A T I O N

      Username         Access Level           Username      Access Level









                       Add/Del/Change:  _ (A/D/C Only)
                       Username:
                       Current Password:
                       New Password:
                       Verify Password:
                       Access Level:
```

To add a user, you must identify each user with a unique username, an alphanumeric password, and an access level. The access level must be set at 0, 1, 2, or 3 but has no affect on FTP usage.

The FTP Password Configuration screen contains a display-only area that lists the current users and their associated access levels, and a data entry area in which you can add, delete, or change user password configuration information.

FTP Password Configuration Screen Field Definitions

The FTP Password Configuration screen contains the following fields:

Username—*Display only*. Shows the functional name assigned to each system user.

Access Level—*Display only*. Shows the current access level of each system user. Valid values are 0, 1, 2 and 3. (This field has no affect on FTP usage.)

Add/Delete/ Change (A/D/C only)—*Data entry via main keypad*. Specifies the function you want to perform. Valid values are:

A—Adds a username to the database.

D—Deletes a username from the database.

C—Changes a password or access level in the database.

Username—*Data entry via main keypad*. Specifies the name assigned to the system user. A username can consist of 3 to 15 uppercase and/or lowercase alphanumeric characters. You must enter the username for all command functions.

Current Password—*Data entry via main keypad*. Use when changing a user password, to specify the password currently associated with the username entered. Note that this field is accessible only when you type C in the Add/Delete/ Change (A/D/C only) field. All data entered in this field is hidden by asterisk (*) characters for security.

New Password—*Data entry via main keypad*. Use when entering a new user or when changing a user's password, to specify the new password assigned to the user. Note that this field is accessible after you type either A or C in the Add/Delete/ Change (A/D/C only) field. A password can consist of 4 to 12 uppercase and/or lowercase alphanumeric characters. All data entered in this field is hidden by asterisk (*) characters for security.

Verify Password—*Data entry via main keypad*. Verifies the exact spelling/case of the new password (after you type A or C in the Add/Delete/ Change (A/D/C only) field). The data in this field must exactly match the contents of the New Password field. All data entered in this field is hidden by asterisk (*) characters for security.

Access Level—*Data entry via main keypad*. Specifies the access level assigned to each user. Valid values are 0, 1, 2 and 3. Although this field must be set for each user, it has no affect on FTP usage.

FTP Transfer of Files

The remote file transfer process is based on standard FTP, which involves two connections:

- Remote site—For the transfer of commands and reports.
- VCO/4K—For the transfer of data (file data transfer, directory listing transfer, etc.).

Note FTP is a TCP/IP or Internet tool and requires implementation on the remote site.

The following limitations apply:

- The data connection uses a specific address and is opened dynamically as required, then closed after transfer of data. The networking software in use has a limitation: an address, once used, cannot be used again for approximately 2 minutes. Therefore, it is strongly recommended that for successful transfer of data, an approximate 2-minute interval be scheduled between successive file transfers.

Note Due to the 2-minute limitation, do not use wildcards to transfer files as this would open data transfer connections in rapid succession.

- Transfer binary files in binary mode only.
- The current implementation of FTP restricts access to the C:\ drive only on the VCO/4K system.
- In accordance with the DOS file system, the file and directory names should be limited to eleven characters as follows:
  – Eight characters for the primary name.

– Three characters for the extension.

If the filename exceeds these limits and the files are transferred from the remote site to the VCO/4K, an unsuccessful file creation error occurs on the VCO/4K.

Accessing the VCO/4K via FTP

Complete the following steps to access the VCO/4K through FTP:

Step 1 Configure the VCO system for access. Add the users who will be allowed access to the VCO/4K through FTP. Use the FTP Password Configuration screen to add users.

Step 2 Invoke FTP from the FTP workstation. Type **ftp hostname**, where *hostname* is the IP address of the VCO. If the connection is successful, you are prompted for a username at the FTP prompt.

Step 3 Log in to the VCO/4K. If you enter a valid username, the system prompts for the password. If you enter an invalid username or password, the system returns the “Login failed” message.

Note Only one user can access the system through FTP at a time. If a user is already logged in to the system, any subsequent login does not proceed until the current FTP user exits. Then the login procedure continues.

After you connect and log in to the VCO/4K system, you can create or remove directories, rename or delete files, or move files between the remote host and the VCO/4K.

Note There is no correlation between the VCO/4K login (refer to the “Password Configuration” section on page 4-15) and the FTP login.

Examples of valid FTP commands are described in the following sections:

- “Transferring Files via FTP” section on page 4-48.
- “FTP quote Command” section on page 4-50.
- “Additional FTP Commands” section on page 4-52.

Note Although FTP supports other commands, only the commands listed in this document are supported. If you encounter difficulties with unsupported commands, log out of the application and log in.

Transferring Files via FTP

You can transfer files between a remote host and the VCO/4K. Use the procedures described in the following sections to transfer files:

- “Setting the Mode for FTP”.
- “Transferring Files from the VCO/4K to a Remote Host”.
- “Transferring Files from a Remote Host to the VCO/4K”.

Setting the Mode for FTP

Complete the following steps to set the mode for FTP:

Step 1 Log in to the system (refer to the "Accessing the VCO/4K via FTP" section on page 4-48).

Step 2 Type **type** at the FTP prompt to verify the current mode for the transfer of files.

Note Binary files must be transferred in binary mode only.

The system responds by displaying the current mode.

Step 3 Type **ascii** to set the ASCII mode for file transfer, if needed. This is the default mode.

Step 4 Type **bin** to set the binary mode for file transfer.

Transferring Files from the VCO/4K to a Remote Host

Complete the following steps to transfer files from the VCO/4K to a remote host:

Step 1 Log in to the system (refer to the "Accessing the VCO/4K via FTP" section on page 4-48).

Step 2 Set the file transfer mode to binary (refer to the "Setting the Mode for FTP" section on page 4-49).

Step 3 Type **cd <pathname>** to navigate to the directory on the remote host where to transfer the files.

Note The *pathname* is the directory on the remote host. For example: **cd C:/temp/dir**.

Step 4 Type **get <filename>** to transfer the file from the current directory on the VCO/4K to the directory on the remote host indicated in Step 1.

Note The *filename* is the name of the file to transfer. For example: get C:/corel. If you want to change the name of the *filename* as you transfer it to the remote host, use the following command: **get <filename> <newfilename>**. The *newfilename* is the designated filename on the remote host after the transfer. The original *filename* remains unchanged on the VCO/4K.

Transferring Files from a Remote Host to the VCO/4K

Complete the following steps to transfer files from the remote host to the VCO/4K:

Step 1 Log in to the system (refer to the "Accessing the VCO/4K via FTP" section on page 4-48).

Step 2 Set the file transfer mode to binary (refer to the "Setting the Mode for FTP" section on page 4-49).

Step 3 Type **cd <pathname>** to navigate to the directory on the remote host where the file to be transferred resides.

Note The *pathname* is the directory on the remote host. For example: **cd C:/temp/dir**.

Step 4 Type **put <filename>** to transfer the file from the remote host to the current directory on the VCO/4K.

Note The *filename* is the name of the file to be transferred.

FTP quote Command

You can invoke the compress, uncompress, split, and join functions through FTP. You can also invoke these functions on the VCO/4K from the Disk Utilities screen. Refer to the "Disk Utilities" section on page 5-12 for information on these Disk Utilities functions.

Use the **quote** command at the FTP prompt to execute the functions described in the following sections:

- "Compressing a File" section on page 4-50.
- "Uncompressing a File" section on page 4-50.
- "Splitting a File" section on page 4-50.
- "Joining a File" section on page 4-51.

Note The **quote** command is case sensitive; it must be typed in lowercase. The compress, uncompress, split, and join commands are not case sensitive; they may be typed in uppercase or lowercase.

Compressing a File

Type **quote compress <filename>** to compress a file, where *filename* is the name of the file to be compressed. For example, **quote compress C:core1**.

Note The name of the file to be compressed cannot contain a file extension.

Uncompressing a File

Type **quote uncompress <filename>** to uncompress a file, where *filename* is the name of the file to be uncompressed. For example, **quote uncompress C:core1**.

Splitting a File

Type **quote split <filename> <file_size>** to split a file, where *filename* is the name of the file to be split, and *file_size* is the desired size (in bytes) of the file segments. For example: **quote split C:core1 1440000**

Note The recommended split size for floppy disks is 1,440,000 bytes.

Joining a File

Type **quote join <destination_filename> <source_filename>** to join a file, where *destination_filename* is the name of the file that is to contain all the file segments to be joined, and *source_filename* is the file segment(s) to be joined or appended to the *destination_filename.*

The destination file (i.e., *destination_filename*) is the file defined to be the composite of all the split files. After all file segments are joined, the destination file is identical to the original file before the split process occurred.

Note If the destination filename already exists, the source files are appended to it.

The source files (*source_filename*) are the files that will comprise the new (destination) file. The source files are the file segments that resulted from the split file function.

You can specify the source file by filename with no extension. If the filename is designated without an extension, all files with that filename are joined. For example, **quote join c:joinfile core1**

In the example above, the files are joined as if the extension was designated with the multicharacter (*) wildcard. The order is based on the alpha character ordering of the file's extension.

The join operation supports alphabetic ordered wildcard symbols. You can specify the source file with one of the following single character wildcards:

- The question mark (?).
- The asterisk (*).

The join operation automatically appends the split files in alphabetic order to the destination file. For example, use of the **?** wildcard in the file extension, **quote join c:joinfile core1.x??** This command joins all files named core1 with an extension beginning with x, followed by any two characters, to a file named joinfile. It joins multiple files because of the use of the **?** wildcard.

For example, use of the ***** wildcard in the file extension: **quote join c:joinfile core1.*** This command joins all files named core1, with *any* extension, to a file named joinfile. It joins *all* files because of the use of the * wildcard.

You may also initiate the join operation for each individual split file by indicating the specific filename with the full extension. For example, **quote join c:joinfile core1.xaa**. If you use this method, you must specify the files in the correct order by file extension (alphabetic order) in order to reproduce the original file. If there are additional file segments to be added to the destination file, you must use the syntax above to append each one. For example, the next command would be **quote join c:joinfile core1.xab**.

If you issued this command after the **quote join c:joinfile core1.xaa** command, the file named core1.xab would be appended to the file named joinfile, after the contents of the file core1.xaa.

Note If you append one file at a time, you must append the files in the order which you want them added to the destination file.

Additional FTP Commands

You can type the following additional FTP commands at an FTP prompt to manipulate files and directories:

ls—Lists the files in the current directory.

dir—Lists the file and directory names in the current VCO/4K directory, along with additional information such as size, date of creation, and date of recent modification.

pwd—Displays the current directory pathname.

cd <pathname>—Changes the current directory to the directory indicated by *pathname*. The *pathname* is a directory. Use only absolute pathnames starting with /. All absolute pathnames are relative to the C: drive.

mkdir <dirname>—Creates a new directory under the current directory. The *dirname* is the directory name. If you are unable to create a directory (typically as a result of restricted privileges), an error message is displayed.

rmdir <dirname>—Removes the directory indicated. The *dirname* is the directory name. The directory must be empty. The directory must be located in the current directory. If the directory does not exist, an error message is displayed.

delete <filename>—Deletes the *filename* indicated from the current directory. If the *filename* does not exist, an error message is displayed. If the *filename* does not reside in the current directory, include a pathname in the command.

rename <filename new_filename>—Renames the *filename* to the *new_filename*.

rename <dirname new_dirname>—Renames the *dirname* to the *new_dirname*.

bye—Exits the FTP application.

close—Closes the FTP session but does not exit the FTP application.

Multiple Tone Plan Configuration

Use the Multiple Tone Plan Configuration screen to configure the tone plans associated with the multiple tone plan feature. Several tone plans can be configured in a single VCO/4K, with no more than six of the tone plans containing MFCR2 tones. Refer to the *Cisco VCO/4K System Software Version 5.2(n) Release Notes* for a list of currently available tone plans.

The DTG/DTG2 cards are not supported for users of the multiple tone plan feature. Complete the following steps before using the VCO/4K system administration multiple tone plan feature configuration menu options:

Step 1 Ensure that the default multiple tone plan SPC-TONE card type is in service (SPC-TONE provides the same functionality as DTG/DTG2).

Step 2 Ensure that the SPC-OUTP outpulsing resource is in service and added to a resource group.

Step 3 Take the DTG/DTG2 cards out of service (OOS).

You are now ready to configure the multiple tone plan feature.

Accessing the Multiple Tone Plan Configuration Screen

Complete the following steps to access the Multiple Tone Plan Configuration screen:

Step 1 Access the Administrator Main Menu screen.

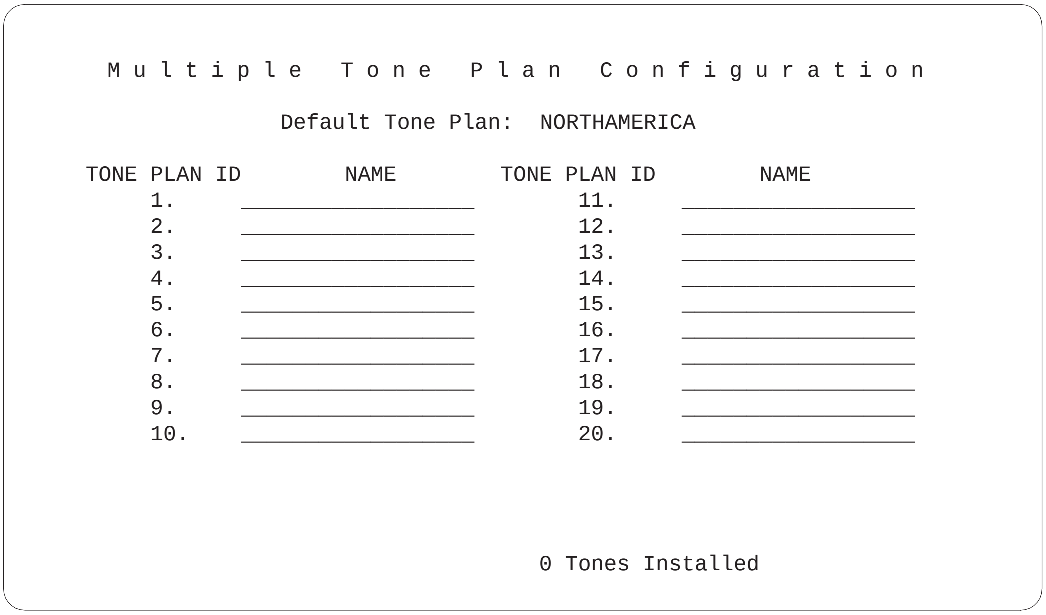
Step 2 Type **B** and press **Enter**.

The System Configuration Menu screen is displayed. The cursor is located at the Enter Selection prompt.

Step 3 Type **M** and press **Enter**.

The Multiple Tone Plan Configuration screen appears (see Figure 4-16).

Figure 4-16 Multiple Tone Plan Configuration Screen



```
        M u l t i p l e   T o n e   P l a n   C o n f i g u r a t i o n

                    Default Tone Plan:  NORTHAMERICA

      TONE PLAN ID        NAME        TONE PLAN ID        NAME
           1.     __________________       11.     __________________
           2.     __________________       12.     __________________
           3.     __________________       13.     __________________
           4.     __________________       14.     __________________
           5.     __________________       15.     __________________
           6.     __________________       16.     __________________
           7.     __________________       17.     __________________
           8.     __________________       18.     __________________
           9.     __________________       19.     __________________
           10.    __________________       20.     __________________



                                        0 Tones Installed
```

The Multiple Tone Plan Configuration screen consists of one screen. The data that this screen contains is used to identify specific tone plans with which to further configure the VCO/4K system via the following administration screens and extended mode commands:

- SPC-TONE Plan Configuration screen
- Inpulse Rules Table screen
- Outpulse Rules Table screen
- ISDN Port Control ($49) command
- Voice Path Control ($66) command
- DTMF Collection Control ($67 Standard) command
- DTMF Collection Control ($67 Enhanced) command
- MF Collection Control ($68) command
- Outgoing Port Control ($69) command

- Incoming Port Control ($6A) command

Refer to the *Cisco VCO/4K Extended Programming Reference* for more information on extended mode commands.

Multiple Tone Plan Configuration Screen Field Definitions

The Multiple Tone Plan Configuration screen contains the following fields.

Default Tone Plan—*Data entry via Select key.* Identifies the name of the default tone plan installed.

Note Any installed tone plan can be the default tone plan.

Tone Plan ID—*Display only.* Describes the tone plan ID number associated with the Name directly to its right.

Name—*Date entry via Select key.* Identifies the name of the tone plan associated with the Tone Plan ID directly to its left.

n Tones Installed—*Display only.* Identifies the number of tone plans, other than the default, installed on the VCO/4K system. Access the Tone Files Installation/Removal screen to determine the names of the tone plans installed.

Configure the Multiple Tone Plan Feature

Complete the following steps to assign multiple tone plan names to ID numbers in the system database:

Step 1 Access the Multiple Tone Plan Configuration screen (refer to the “Accessing the Multiple Tone Plan Configuration Screen” section on page 4-53).

The cursor is located at the Default Tone Plan entry field.

Step 2 Use the Select key to select the appropriate default tone plan for your configuration requirements.

Note If the correct default tone plan is listed, proceed to Step 3.

Step 3 Use the **Next Field** key to position the cursor in the Name entry field associated with the first Tone Plan ID.

Step 4 Use the **Select** key to select an appropriate tone plan for your configuration requirements.

Step 5 Press the **Next Field** key to position the cursor in the next available Name entry field.

Step 6 Use the **Select** key to select an appropriate tone plan for your configuration requirements.

Step 7 Repeat Step 5 and Step 6 for the remaining Name fields, as needed.

Step 8 Press **Enter**.

The following message appears at the bottom of the screen:

```
Press ‘Y’ to Confirm Change
```

Step 9 Press **Y**.

The following message appears at the bottom of the screen:

```
Tone Configuration Changed!
```

Note Your configuration may not require that all available tone plan selections be made; select only those needed. Refer to the *Cisco VCO/4K System Software Version 5.2(n) Release Notes* as you configure the multiple tone plans in the VCO/4K system to ensure that the limit of six MFCR2 tone plans in one system is not exceeded.

The selections are saved to the VCO/4K system configuration table; the data is now backed up and can be restored after a system reboot.

You have assigned multiple tone plan names to ID numbers. Refer to the "SPC-TONE Plan Configuration" section on page 3-79 to assign specific tone plans to individual SPC spans of the VCO/4K.