

Understanding the User Interface

The user interface for your server product has several different command modes. This publication focuses on just one command mode: user EXEC mode. For information about privileged EXEC mode, refer to the configuration guide or command reference guide for your server product.

In addition to actions that can be carried out through commands, the user interface also allows an administrator to create menus so that users can perform operations without having to know anything about the underlying command-level user interface.

Specifically, this chapter contains the following sections:

- Understanding the User EXEC Command Mode
- Getting Context-Sensitive Help
- Checking Your Syntax
- Using the Command History
- Using the Editing Features
- Using Menus

Understanding the User EXEC Command Mode

The EXEC commands at the user level are generally used to connect to remote systems, temporarily change terminal settings, perform basic tests, and list system information. Refer to the configuration guide for your server product for information about entering privileged EXEC mode.

You enter commands at the system prompt. The system prompt indicates the server product's host name followed by an angle bracket (>). The default host name is "router" for a server product, unless it was changed with the **setup** command during initial configuration. The following example shows an access server prompt and a router prompt:

```
Router>
```

```
Router>
```

You can also use the **hostname** command to change the server's name as described in your server product's configuration guide.

You can enter commands in uppercase, lowercase, or a mix of both. You can abbreviate commands and keywords to the number of characters that allow a unique abbreviation. For example, you can abbreviate the **show** command to **sh**. Press the Return key to execute a command.

To list the user EXEC commands, enter a question mark (?) at the user EXEC prompt.

Example

The following example shows the commands available in user EXEC mode on an access server:

```
Router-1> ?
Exec commands:
 <1-99>          Session number to resume
 connect         Open a terminal connection
 disconnect      Disconnect an existing telnet session
 enable         Turn on privileged commands
 exit           Exit from the EXEC
 help           Description of the interactive help system
 lat            Open a lat connection
 lock           Lock the terminal
 login          Log in as a particular user
 logout         Exit from the EXEC
 name-connection Name an existing telnet connection
 ping           Send echo messages
 resume         Resume an active telnet connection
 rlogin         Open an rlogin connection
 show           Show running system information
 systat         Display information about terminal lines
 telnet         Open a telnet connection
 terminal        Set terminal line parameters
 tn3270         Open a tn3270 connection
 where          List active telnet connections
 xremote        Enter XRemote mode
```

Your list might vary slightly from this example, depending on how your server product is configured.

Getting Context-Sensitive Help

You can get a list of any command's keywords and arguments with the context-sensitive help. You can enter the following commands for online help:

Task	Command
See a brief description of the help system.	help
See a list of commands that begin with a specific character string.	<i>abbreviated-command-entry?</i>
Recall a complete command name. Refer to the later section "Use the Tab Key to Complete a Command Name."	<i>abbreviated-command-entry<Tab></i>
List all available commands.	?
List the keywords for a command.	<i>command ?</i>
List the arguments for a command.	<i>command keyword ?</i>

The space or lack of a space before the question mark (?) is significant. To see a list of commands that begin with a particular character set, enter those characters followed immediately by the question mark. Do not include a space. This is called *word help*, because it completes a word for you.

To list keywords or arguments, enter a question mark after the command in place of a keyword or argument. Include a space before the question mark. This is called *command syntax help*, because it lists the keywords or arguments for the command, keywords, and arguments you have entered.

Examples

The following is some sample output from the **help** command:

```
Router-1> help
```

Help may be requested at any point in a command by entering a question mark '?'. If nothing matches, the help list will be empty and you must backup until entering a '?' shows the available options.

Two styles of help are provided:

1. Full help is available when you are ready to enter a command argument (e.g. 'show ?') and describes each possible argument.
2. Partial help is provided when an abbreviated argument is entered and you want to know what arguments match the input (e.g. 'show pr?'.)

The following is the list of keywords displayed with the **resume** command:

```
Router-1> resume ?
 /debug      Print parameter changes & messages
 /echo       Perform local echo
 /line       Enable telnet line mode
 /nodebug    Do not print parameter changes & messages
 /noecho     Disable local echo
 /noline     Disable telnet line mode
 /nostream   Disable stream processing
 /set        Set X3 connection options
 /stream     Enable stream processing
 <1-20>     The number of an active telnet connection
 <cr>
 WORD       The name of an active telnet connection or Connection options
```

Checking Your Syntax

The user interface can help you check the accuracy of your syntax. If your syntax has an error, the error location is indicated by a caret (^) at the point in the command string where you entered an incorrect command, keyword, or argument. This convention allows you to easily find and correct any syntax errors.

In the following example, the **rlogin** command is entered incorrectly:

```
dunes> rlogin 131.108.32.208 my-host
                               ^
Invalid input detected at '^' marker.
```

The caret symbol and help response indicate that an incorrect entry was made at “my-host.” Enter the command again up to the point of the error indicator and put a question mark at the end of the string to bring up context-sensitive help.

Using the Command History

The user interface can provide a history of the commands you have entered. To use the command history feature, complete the steps described in the following sections:

- Specify the Number of Commands the System Will Record
- Recall Commands
- Disable the Command History

Specify the Number of Commands the System Will Record

To set the number of command lines the system will maintain as a history, enter the following command:

terminal history size *number-of-lines*

Syntax Description

number-of-lines Specifies the number of command lines that the system will record in its history buffer. The range is 0–256 and the default is 10 lines.

Recall Commands

To recall commands from the history buffer, enter any of the following key sequences:

Task	Keystrokes
Recall commands in the history buffer in a backward sequence, beginning with the most recent command. Repeat the key sequence to recall successively older commands.	Ctrl-P (or the Up Arrow) ¹
Return to more recent commands in the history buffer after recalling commands with Ctrl-P or the Up Arrow. Repeat the key sequence to recall successively more recent commands.	Ctrl-N (or the Down Arrow) ¹
While in EXEC mode, list the commands you have just entered.	show history

1. The arrow keys function only on ANSI-compatible terminals, such as VT100s.

Disable the Command History

The command history feature is automatically enabled. You can disable it in configuration mode for all subsequent sessions or in user EXEC mode for the current session. For information about configuration mode commands, refer to the configuration guide or command reference guide for your server product. To disable the command history in user mode, enter the following command:

no terminal history size

Using the Editing Features

Enhanced editing mode provides a set of key editing functions similar to those of the EMACS editor. Enhanced editing mode is enabled by default.

You can enter commands in uppercase, lowercase, or a mix of both. Only passwords are case-sensitive. You can abbreviate commands and keywords to the number of characters that allow a unique abbreviation. For example, you can abbreviate the **show** command to **sh**. After entering the command line at the system prompt, press the Return key to execute the command.

Editing functions are described in the following sections:

- Enable Enhanced Editing Mode
- Move Around on the Command Line
- Complete a Command Name
- Paste in Buffer Entries
- Delete Characters on the Command Line
- Scroll Down a Line or a Screen
- Redisplay the Current Command Line
- Transpose Mistyped Characters
- Control Capitalization
- Designate a Keystroke as a Command Entry
- Disable Enhanced Editing Mode

Enable Enhanced Editing Mode

Enhanced editing mode is enabled by default, but you can disable it and revert to the editing mode of previous software releases.

You can re-enable the enhanced editing mode in user EXEC mode. Enter the following command:

```
terminal editing
```

Move Around on the Command Line

The following keystrokes move the cursor back and forth on the command line for editing.

Task	Keystrokes
Move the cursor back one character.	Ctrl-B or the Left Arrow key ¹
Move the cursor forward one character.	Ctrl-F or the Right Arrow key ¹
Move the cursor to the start of the command line.	Ctrl-A
Move the cursor to the end of the command line.	Ctrl-E
Move the cursor back one word.	Esc-B
Move the cursor forward one word.	Esc-F

1. The arrow keys function only on ANSI-compatible terminals, such as VT100s.

Complete a Command Name

If you cannot remember a complete command name, you can use the Tab key and the system will complete the partial entry. Enter the first few letters of the command and press the Tab key. If your keyboard does not have a Tab key, press Ctrl-I instead.

Example

In the following example, when “term” is entered and the Tab key is pressed, the system provides the complete command:

```
ganges> term<Tab>  
ganges> terminal
```

If you enter a set of characters that could indicate more than one command, the system beeps. Enter a question mark (?) for a list of commands that begin with those characters.

For example, two commands in user mode start with “log”:

```
mayday> log?  
login logout  
mayday> logout
```

Paste in Buffer Entries

The system has a buffer containing the last ten items you deleted. You can recall these items and paste them in the command line by entering the following commands:

Task	Keystrokes
Recall the most recent entry in the buffer.	Ctrl-Y
Recall the next buffer entry.	Esc-Y

If you press **Esc-Y** more than ten times, you will cycle back to the first buffer entry.

Delete Characters on the Command Line

Use the following keystrokes to delete characters or mistakes on the command line:

Task	Keystrokes
Erase the character to the left of the cursor.	Delete or Backspace key
Delete the character at the cursor.	Ctrl-D
Delete all characters from the cursor to the end of the command line.	Ctrl-K
Delete all characters from the cursor to the beginning of the command line.	Ctrl-U or Ctrl-X
Delete the word to the left of the cursor.	Ctrl-W
Delete from the cursor to the end of the word.	Esc-D

Scroll Down a Line or a Screen

When you use help to list commands, the list might be longer than your screen can display. In such cases, a ---more--- prompt appears at the bottom of the screen. To scroll down one line to display the remaining commands, press the Return key. To scroll down one full screen, press the Space bar. Press any other key to return to the prompt.

Redisplay the Current Command Line

If you are entering a command and the system interrupts with a message to your screen, you can recall your current command line entry by pressing **Ctrl-L** or **Ctrl-R**.

Transpose Mistyped Characters

If you mistype a command entry, you can transpose the mistyped characters to the left of the cursor by pressing **Ctrl-T**.

Control Capitalization

You can change a set of letters to uppercase or lowercase with the following key sequences:

Task	Keystrokes
Capitalize the first letter of the word to the right of the cursor.	Esc-C
Change the word to the right of the cursor from upper to lowercase.	Esc-L
Capitalize the word to the right of the cursor.	Esc-U

Designate a Keystroke as a Command Entry

You can insert a code to indicate that the next keystroke should be treated as a command entry, and not as an editing key. This code is useful when you want to use a particular keystroke as an executable command. Enter the following command to insert a system code for this purpose:

Ctrl-V or **Esc-Q**

Disable Enhanced Editing Mode

Enhanced editing mode is the default. If you are more comfortable with the editing mode of previous software releases, you can disable enhanced editing mode by entering the following command:

no terminal editing

Use the following editing keys and functions for Software Release 9.1 and earlier.

Task	Keystrokes
Erase the character to the left of the cursor.	Delete or Backspace
Erase a word.	Ctrl-W
Erase a line.	Ctrl-U
Redisplay a line.	Ctrl-R
End configuration mode and return to the EXEC prompt.	Ctrl-Z
Execute single-line commands.	Return

To disable enhanced editing mode from within configuration mode, refer to the configuration guide or command reference manual for your server product.

Using Menus

A menu is a displayed list of actions from which you can select without having to know anything about the underlying command-level details. One typical menu use is making connections and switching between connections, but there are many varied operations that an administrator can build into menus.

Your administrator will notify you if menus have been created for your use.

Invoking a Menu

To invoke the menu, perform the following task at the EXEC prompt:

Task	Command
Specify the name of the menu to be invoked.	menu <i>menu name</i>

The following example invokes the OnRamp menu:

```
cs101> menu OnRamp

Welcome to OnRamp Internet Services

1  Read email
2  UNIX Internet access
8  Set terminal type
9  Exit menu system
```

Understanding the Parts of a Menu

A typical menu usually consists of a “banner” or title and up to nine menu entries.

The menu title is the identifying name for the menu. The menu title can be one or more lines of text that identify the menu, plus any other brief information about the use of the menu.

Each displayed menu entry consists of the selection number for that line and the text describing the action to be performed. To perform an operation listed in the menu, type the selection number listed to the left of the operation and press the Return key.

Menu selection numbers do not need to be contiguous. For the sake of consistency across menus, a particular number might be reserved for a special function (Help, Exit, etc.), regardless of the number of menu entries in a given menu. For example, menu entry 1 might be reserved for help across all menus, while menu entry 9 might be reserved as the exit.

Some menus contain submenus that are opened by selecting a higher-level menu entry. For example, menu entry 8 in the OnRamp menu example invokes the following submenu:

```
1  DEC VT420 or similar
2  Heath H-19
3  IBM 3051 or equivalent
4  Macintosh with gterm emulator
9  Return to previous menu
```