Chapter **2**   **Introduction to Managing Sessions**

Chapter Overview

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Chapter Overview

This chapter introduces NCSA Telnet's capability for multiple connections with one or more hosts. The chapter describes standard VT100 key emulation, keys for some common EDT operations, how to work with multiple sessions, and operations with the capture file.

Keyboard Usage

When NCSA Telnet is running, the PC appears to the host as a VT100 terminal. For keys that the PC keyboard and the VT100 keyboard have in common, NCSA Telnet transmits the keystrokes unmodified. However, the VT100 keyboard has some keys that the PC keyboard does not have, and also treats other PC board keys differently. Furthermore, many VT100 keys have special meanings when they are transferred to the host. To provide full VT100 functionality, telnet programmers have designated some PC keys to emulate the operation of VT100 keys.

Table 2.1 lists the PC keys to use for VT100 terminal emulation.

Table 2.1 **Keys Used for VT100 Terminal Emulation**

To Send the VT100 Code	Press PC Key(s)
RETURN	ENTER
DELETE*	BACKSPACE*
BACKSPACE*	CTRL- BACKSPACE*
LINE FEED	CTRL-ENTER
Keypad ENTER (not identical to RETURN)	Keypad ENTER
Keypad . (decimal point)	Keypad .
Keypad - (hyphen)	Keypad -
Keypad , (comma)	Keypad ,
Keypad 0 to 9	Keypad 0 to 9
↑, ↓, ←, →	CTRL-Keypad ↑, ↓, ←, →
PF1 to PF4	F1 to F4

NOTE: "Keypad" refers to the numbers and characters on the right-hand side of your keyboard.

For Extended Keyboards:

↑, ↓, ←, →   Grey ↑, ↓, ←, →

*See Chapter 3, "More About Managing Sessions," and Chapter 7, "Installation and Configuration," for information on how to switch the designations of these keys.

Multiple Sessions

Opening Multiple Initial Sessions

When you first run NCSA Telnet, you can start up multiple sessions with a single command.

```
C:\> telnet machinename [machinename ...]
```

where machinename is the name of the machine you want to connect to. For example, if you enter `telnet yoyodyne` you would be connecting to the machine named yoyodyne.

To start up multiple sessions, enter the additional machinenames on the same line. Even if you do not choose multiple sessions when you first run NCSA Telnet, you can add sessions later.

Using the Status Line

Because only 24 lines are needed for VT100 terminal emulation, line 25 on your PC screen is used to indicate the connection status of your terminal sessions. For each host you are connected to, a session name appears in reverse video. The name in the lower-left corner of the screen is the current session. Beside each name is a status box that indicates various attributes of a session:

gray   Connection is established, waiting
small box   Active connection, always in lower left corner
*   Connection pending, trying to connect to host
/ or \   Text has been written to this invisible session

Flags appear in the lower-right corner if you are either in the Scrollback mode or have a capture file open. If you are transferring files, the FTP status appears in the lower-right corner as well. Finally, a clock appears in the lower-right corner if you enable the clock mode.

Opening Additional Sessions

When you've initially opened a connection to a single host, you can open a second connection, to that host or a different one, by pressing ALT-A (A for *add*). NCSA Telnet responds by prompting you for the name of a computer to which it should attempt a connection.

Indicating the Host

NCSA Telnet can only communicate with host computers that have IP addresses. You or the NCSA Telnet program can look up IP addresses in several different ways.

1. Use any name that is in the configuration file. (Your system administrator can tell you the names listed there.)

2. Your system administrator can configure NCSA Telnet to use the domain-based nameserver to look up host names. Any name that can be resolved by the domain nameserver can be used. An example is `sri-nic.arpa`.

3. Use the full IP number of the machine, in decimal, separated by periods, such as `192.17.22.20`.If the machine is on the same Ethernet,

4. If the machine is on the same Ethernet, enter a pound sign (#), followed by the host number it uses on your Ethernet. The host number the machine determined by the class of addressing and the subnet mask (which your system administrator can determine for you). For example, if your PC is host `192.17.22.20`, you can access host `192.17.22.30` by entering `#30` for the host address.

NCSA Telnet allows you to specify which port number (on the host) you are connecting to. When you enter the host number, enter a # symbol right after the IP number, then enter the port number you wish to connect to. For example, if you enter 141.142.221.17#2000, this command connects you to the machine `141.142.221.17`, port number 2000.

Estimating the Host Response Time

NCSA Telnet attempts to make a login connection with the named host. Usually the connection is instantaneous, and the host machine prompts you for a login name immediately. However, the connection attempt may take several seconds. Even after NCSA Telnet completes the connection, it may take additional time (up to two minutes) to prompt you for a login name if a remote host is heavily loaded.

When the connection is established, the asterisk (*) in the status box for the connection disappears or changes to a small box. If NCSA Telnet makes the connection, but the remote host does not let you log in, you may want to press ALT-X to end the connection.

Using Scrollback Mode

The SCROLL LOCK key performs two functions. It prevents the screen from scrolling when new text arrives, and also puts you into scrollback mode. In scrollback mode, both the up and down arrow keys and PG UP and PG DN keys scroll the screen backwards and forwards. When you press the SCROLL LOCK key again, it ends scrollback mode and resets the working area of the screen.

The number of lines the program saves is limited by the amount of memory in your machine and its setting in the configuration file. If your PC runs out of memory, or the specified number of lines have already been stored, NCSA Telnet starts dropping the lines at the top of the scrollback as you add new lines to the bottom.

NOTE: No other commands work while you are using scrollback mode.

Using the Cut and Paste Functions

The cut and paste functions allow you to copy blocks of text from one session to another, or within the same session. To use these functions, follow these steps:

1. Enter Scrollback mode via Scrl_Lock or the right mouse button.

2. Move the cursor to the beginning position of the text you wish to copy, and press the space bar.

3. Move the cursor to the end of the text and press the space bar again. This action selects the area to copy.

4. Press ALT-C while still in scrollback mode. This action copies the text into a buffer.

5. Exit Scrollback mode, and switch sessions by pressing ALT-N or ALT-B, if you desire.

6. Position the cursor where you wish to insert the text, and press ALT-V. This action inserts the text at the current position as if you had typed it in.

You can use the copy and paste functions without touching the keyboard if you have a Microsoft-compatible mouse attached and driver loaded.

1. Press the right mouse button to enter Scrollback mode.

2. Scroll to the beginning of the text you wish to copy, and press the left mouse button.

3. Move the cursor to the end of the text, and press the left mouse button again.

4. Press and hold the left mouse button, press the right mouse button, then release both buttons. This action copies the text into the buffer.

5. Exit Scrollback mode by pressing the right mouse button.

To paste the buffer to the screen, press and hold the right mouse button, then press the left mouse button, then release them both. The text should appear as if you typed it in.

Switching Between Sessions (ALT-N)

The status line at the bottom of the screen indicates the active telnet sessions. To rotate to the next session, press ALT-N (for *next*). This action makes the next session the current one and moves its name to the lower left corner of the screen. Any characters you now type on the keyboard are sent to this, the current session.

To move back one session, press ALT-B (for back).

Displaying Console Messages (ALT-Z)

In the process of connecting and communicating with other hosts via TCP/IP, NCSA Telnet provides you with information on the console (message) screen. To see this screen, press ALT-Z. Your sessions are still running; however, you cannot see them. When you have viewed the messages, press any key to return to your session. The information on the console screen can tell you about errors, warnings, FTP access to your PC, and network conditions that may be of concern to network administrators.

Exiting the Present Connection (ALT-X)

To close the current session, press ALT-X. A dialog box appears prompting you to confirm that the connection should be closed. Once confirmed, the connection shuts down. The close may take several seconds to complete.

NOTE: You can press ALT-X to log out of a host as well as terminate a given session, but the command bypasses normal conventions and may cause problems for the host. The correct way to close a connection with a host is to log out of the host using the normal logout procedure for that host.

Capture File Operations

Text that appears on the screen can be captured and sent to a file or the local printer. When you press ALT-C, capture is turned on. Pressing ALT-C again toggles capture off. Any text that appears on the screen is captured and appended to the capture file. NCSA Telnet never erases the capture file, only appends text to it. The default capture file is named `capfile`, but you can change that, as discussed in the next session.

Designating a Capture File

You can designate a different capture file by using the Parameter menu. When you press ALT-P the Parameter menu appears. (Most of the Parameter menu choices are discussed in Chapter 3, "More About Managing Sessions.") Use the arrow keys to select the Parameter menu entry for the capture filename. Press RETURN to clear the current entry and then enter your new filename. After you've changed the name of the capture file, all subsequent ALT-C commands will use the new capture file. You can also change the name of the capture file "permanently" in the configuration file (see Chapter 6, "Installation and Configuration.").

Using PRN

If you want to send all captured text directly to a local printer, follow the directions above for naming new filenames. Enter `prn` as the new filename. This name is the default filename for printing in the NCSA Telnet program. PC-DOS reserves this filename for the printer.

A common problem can occur while you are capturing files to the printer that can cause NCSA Telnet to abort. If the printer is off-line or out of paper when a capture begins, the message:

```
Error, A(bort) R(etry) or I(gnore)?
```

appears on the screen. For the former problem, turn the printer on and off and then press R for *retry*. *Do not press* A at this point because it will abort NCSA Telnet and cut off all of your network connections.

Using One Capture at a Time

You can capture text to a file or the printer in any session, but not for more than one session at a time. When a capture is active for a session in the background, you cannot invoke capture on the current session. If you attempt to do so, you will not get the confirmation message on line 25 and NCSA Telnet reminds you of the error. The capture procedure will continue to capture all text for the background session while you interact with the current session.

If you press ALT-D, NCSA Telnet dumps the contents of the current session screen into the capture file if one is not already open. If a capture file is open, nothing happens when you press ALT-D.

NOTE: If you press ALT-D, NCSA Telnet dumps only the contents of the current session screen into the capture file. If you press ALT-C, however, NCSA dumps everything from your current session into the capture file.