Advanced Features

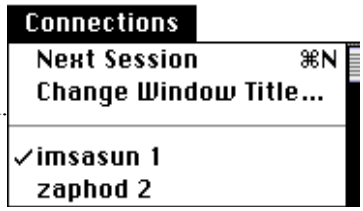
This chapter covers more advanced aspects of the working environment of NCSA Telnet for the Macintosh®. It describes how to open multiple sessions, change window titles, position the session cursor using the mouse, use authentication and encryption, and use telnet options and network-related commands.

Opening Multiple Connections

NCSA Telnet allows you to have multiple connections, either to a single host or to several different hosts. To open another connection, just repeat the procedure for opening a connection (presented in Chapter-1, "Getting Started") or load a set as instructed in the section "Saved Sets" in Chapter 2, "Configuration".

The connection with which you are currently working is the *active* session. Generally, its session window appears frontmost on your desktop.

To switch between active sessions and place the active session window in front, either click on the session window for the desired connection or select the associated session name from the **Connections** menu.



To activate the next session, select **Next Session** from the **Connections** menu. If you are using command-key mode, press ⌘-N (for next) to activate the session window directly beneath the current session window.

When opening multiple sessions, NCSA Telnet opens new windows on the screen relative to the number of windows currently opened. You can specify that these windows be staggered by just a few pixels or by the whole window title bar. For more information see the "Staggered Windows" subsection of the section "Global Preferences" in Chapter 2, "Configuration."

Rules for Session Names

When you have multiple connections to a single host, it is useful to specify session names (other than the hostname) for the connections. NCSA Telnet allows you to use any of the following for session names:

- the host's full Internet address, such as 192.17.22.20.
- any session configuration record alias (See the section "Session Configuration Records" in Chapter 2, "Configuration" for more information.)
- any name, such as sri-nic.arpa, that can be resolved by the domain-based nameserver.

NOTE: Some systems, such as MFENET, do not use the standard telnet port number 23. If you need access via the telnet protocol to a different port number, in the Open Connection dialog box enter the port number after the session name; the session name and port number must be separated by one or more spaces. For example, to open a connection to port 23 of myhost.network.arpa, enter myhost.network.arpa in the text box labeled **Host/Session Name**. Similarly, to open a connection to port number 911 of the same host, enter myhost.network.arpa 911. Alternate port numbers may also be specified in session configuration records.

The Connections Menu

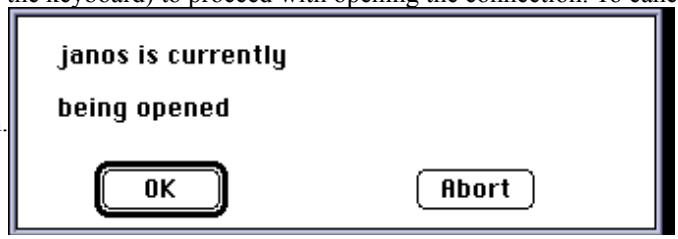
You can specify titles other than session names for your session windows. Doing so allows you to easily distinguish between multiple sessions and session windows.

To specify a window title, enter the name in the **Window Name** box in the Open Connection dialog box.

NOTE: If you leave the window name blank when you open a connection, NCSA Telnet automatically numbers the session. Each time you open a session, the number increases regardless of how many sessions are currently open.

The **Connections** menu contains the window names for current connections as well as the status of each session. A checkmark (_) next to a window name indicates an active session, and a diamond (◆) or circle (•) next to a session name indicates an attempted connection that has not yet been successfully opened. More specifically, a diamond indicates that NCSA Telnet is checking the nameserver to find the session name or hostname; a circle means NCSA Telnet is trying to open the session. Once the connection is established, the diamond or circle next to the session name goes away and the session window appears.

NOTE: If you do not remember the meaning of the symbols used in the **Connections** menu, just select the connection in question from the Connections menu. The Connection Status dialog box appears to report the name and status of the connection. After reading the message, click on the **OK** button in the dialog box (or press RETURN on the keyboard) to proceed with opening the connection. To cancel the attempt, click on the **Abort** button.



Aborting Connection Attempts

To abort a connection attempt:

Select the desired connection from the **Connections** menu. The Connection Status dialog box appears, reporting the name and status of the connection.

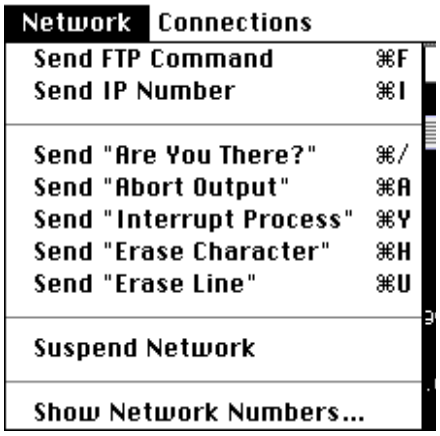
Click on the **Abort** button in the Connection Status dialog box.

Changing a Window Title

By selecting **Change Window Title…** from the **Connections** menu, you may change the window title of the frontmost window.

Telnet Options

The five telnet options provided by NCSA Telnet are included in the **Network** menu:



Send FTP Command

When you select this item, NCSA Telnet sends ftp w.x.y.z (where w.x.y.z is the IP address of your Macintosh) followed by a return character to the remote machine. If the FTP server is in anonymous mode, NCSA Telnet sends ftp -n w.x.y.z followed by a return character to the remote machine, unless the shift key is down. Holding the shift key down forces NCSA Telnet not to use the -n option. See Chapter 4, "File Transfer," for more information about FTP commands.

Send IP Number

After selecting this item, NCSA Telnet sends the IP address of the Macintosh you are using to the remote machine as if you had typed it in manually.

Send "Are You There?"

Every once in a while, perhaps because the host is bombarded with incoming information or tied up by a large number of users, it seems as if the host is not responding to your commands. When this happens and your terminal appears to have locked up, you can verify that you are still connected to the host by selecting **Send "Are You There?"** from the **Network** menu or by pressing --/.

The host is supposed to respond, if able, with a readable message. Some machines answer [Yes]; others answer with more informative messages. Use this command whenever you are unsure whether the network and host are up.

Send "Abort Output"

The **Send "Abort Output"** command is supposed to throw away all output from the currently running process and then resume when there is a pause. Very few hosts implement this command correctly.

Send "Interrupt Process"

The Internet standard telnet protocol defines several special commands that NCSA Telnet supports. Each host telnet implementation treats these commands differently, so they may have no effect on some hosts.

Available on nearly every telnet host, the **Send "Interrupt Process"** command stops the current process and throws away all pending data for the connection. The **Interrupt Process** command is equivalent to pressing CONTROL-C on most UNIX systems. NCSA Telnet can also map CONTROL-C to the **Send "Interrupt Process"** command. You can change this key combination using the **Setup Keys** command in the **Session** menu, as described in the "Changing Configuration After the Session Has Been Created" section of Chapter 2, "Configuration."

Send "Erase Character" and "Erase Line"

When you enter commands you can erase the last character or the current line by issuing the **Send "Erase Character"** and **Send "Erase Line"** commands, respectively. Many hosts do not implement these commands, but use their own special characters instead.

Network-Related Commands

Two of NCSA Telnet's network-related commands (**Suspend Network**, and **Show Network Numbers**) appear in the **Network** menu.

Suspend Network Command

To temporarily suspend all network communications, select **Suspend Network** from the **Network** menu. This command disables all receive functions. All of your connections are kept alive, but you do not see any incoming text.

NOTE: Generally you should use the **Suspend** and **Resume** commands discussed in the "Interrupt, Suspend, and Resume" subsection of the section "Session Configuration Records" in Chapter-2, "Configuration," rather than the **Suspend Network** command.

Show Network Numbers Command

Since NCSA Telnet now uses MacTCP for all network communications, this item is largely unnecessary. However, for purposes of continuity, this item will display a dialog box with your Macintosh's IP address if selected. This command does not transmit your IP address. Click on the dialog box to remove it.

Cursor Positioning with the Mouse

You can use the mouse to position the session cursor when using a full screen editor that supports the arrow keys, such as vi. Holding OPTION down while the mouse cursor is over a session window will change the mouse cursor into a rectangle. Pressing the mouse button while the mouse cursor is in the session window and the OPTION key is held down will tell NCSA Telnet to send a sequence of arrow keys to move to that position on the screen. NOTE: If you are using EMACS rather than vi, you should set the option **EMACS arrow keys** in the session configuration record, or check the **EMACS arrow mapping** item in the **Session** menu.

Authentication and Encryption

To use Authentication or Encryption, you'll need to get the Kerberos Client extension and KConfig application from NCSA's FTP server. Please refer to Appendix C, "Obtaining NCSA Software" for more information regarding retrieving files from NCSA's FTP server.

NCSA Telnet uses Cornell's Kdriver package for Kerberos and encryption support routines. KConfig, an application written by Rick Watson, is used to configure settings for Kdriver.

If you use a version of the Cornell Kerberos driver obtained from a source besides NCSA, encryption will not be supported, some settings changes made by KConfig won't be saved in the preferences file, and the ticket display may show garbage for the user realm.

Kdriver supports Kerberos V4. Kdriver requires that each Kerberos server host also be running a UDP daytime server.

NCSA Telnet supports the Telnet Authentication and Encryption options described in RFC1411/1416 and IETF drafts dated July 1991. Future versions may support the IETF draft AUTH_ENCRYPT option described in the draft dated April 1993.

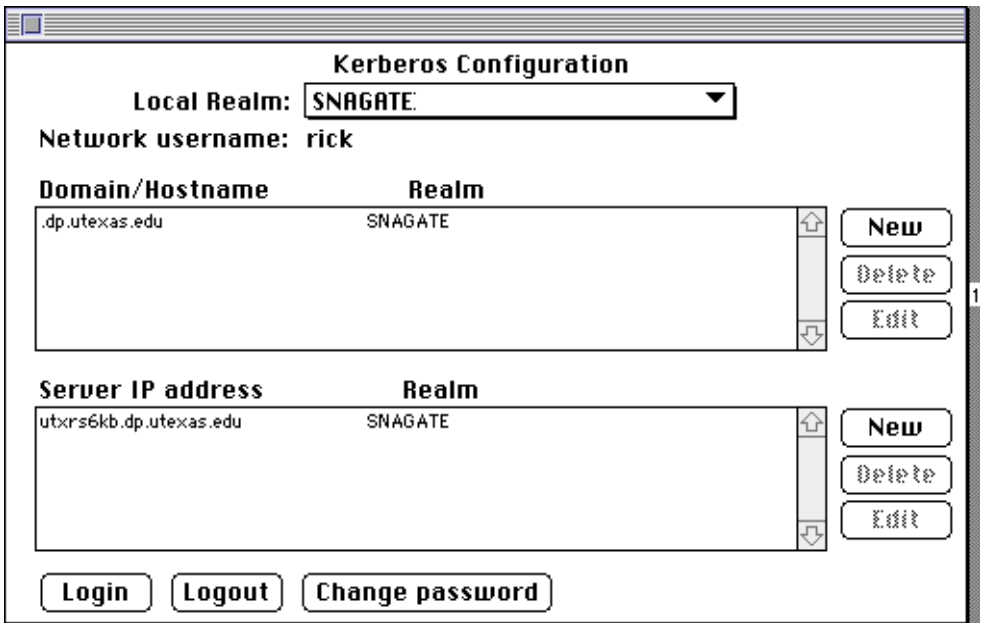
Installation

Kdriver must be installed in your System Folder to work. Drag the Kerberos Client extension to your closed System Folder. On System 7 machines, you will be asked to verify that the file will be placed into your Extensions folder.

Reboot your Macintosh and use KConfig to configure settings for your Kerberos environment.

Using KConfig

This section assumes you are familiar with Kerberos.



Domain/Hostname to Realm maps are useful if you are supporting more than one Kerberos realm. The map will attempt to match up a Kerberos realm with IP domain names.

Enter Kerberos server IP addresses or hostnames for each Kerberos realm that you are using. After you have entered your Kerberos servers, you can pick your local realm using the **Local Realm** popup menu at the top of the configuration dialog.

The **Login** button will allow you to authenticate to a Kerberos server and obtain an initial ticket granting ticket for other services. You don't have to login using KConfig, NCSA Telnet will prompt you when a password is needed.

The **Logout** button destroys all tickets.

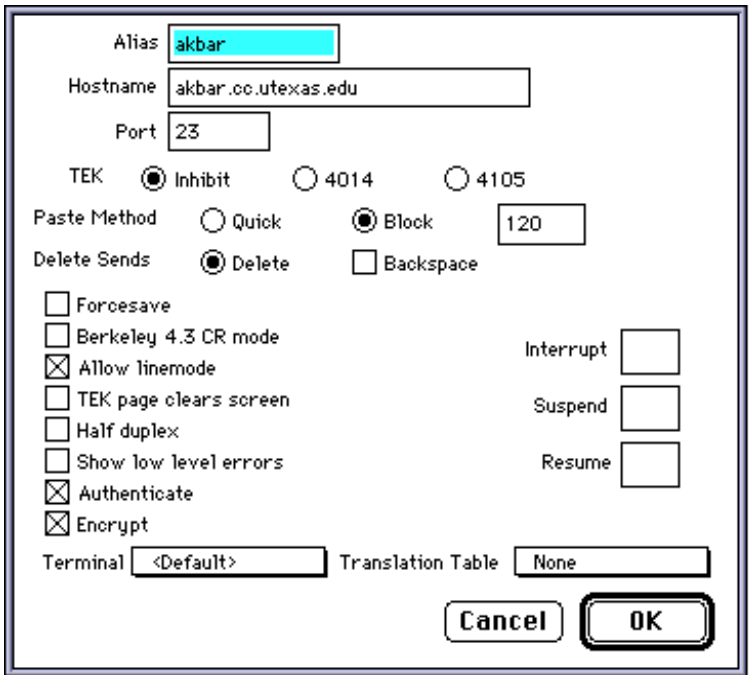
Use the **Show Credentials** menu item in the **File** menu to display all your Kerberos tickets.

The **Change Password** button allows you to change your Kerberos password.

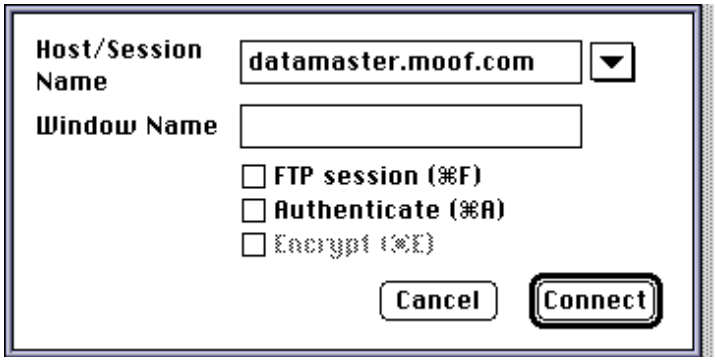
You may (or may not) have to reboot after making initial settings.

Activating Authentication and Encryption in NCSA Telnet

Options to Authenticate and/or Encrypt a session occur in two places in NCSA Telnet.



Select the appropriate options for each session that you configure, including the Default session. Options for the default session will be presented in the Open Connection dialog box.



You may select the **Authenticate** and **Encrypt** options when opening a session. The **Authenticate** option is required for Encryption. Ftp sessions cannot currently be authenticated or encrypted.

Encryption Active Indicators.

Padlock indicators serve as a visual indicator that a session is encrypted. For NCSA Telnet, this is displayed next to the zoom box in the window's titlebar.

If anything other than the padlock is displayed, the session is not two-way encrypted. An arrow indicates that the session is encrypted in one direction only. This is probably evidence of a bug in the NCSA Telnet code or your telnet server. The absence of any indicator means that no encryption is taking place.

Acknowledgments

A great deal of thanks goes to Rick Watson for his help in incorporating his code for authentication and encryption into NCSA Telnet and for his permission to use parts of his documentation for this manual.