Chapter 8 System Administrator Information

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Chapter Overview

This chapter contains information for system administrators and other experienced users to use in installing and customizing a system. Specifically, the chapter discusses the Configure Network Parameters dialog box, the config.tel file, the domain name lookup feature, passwords for FTP, and compatibility issues.

NCSA Version and MacTCP Version

Starting with version 2.3, NCSA Telnet has been split into two versions—the MacTCP version and NCSA version. The MacTCP version is dependent on the Apple MacTCP drivers for its networking capabilities. The NCSA version, on the other hand, has all of the networking built into the application. The minor differences in configuration are documented throughout this chapter. All other features of the two versions of NCSA Telnet remain identical. The single source code distribution includes both versions.

Reliance upon MacTCP drivers is important for the growth of TCP/IP use on the Macintosh for two reasons: (1) it places the responsibility of networking code where it belongs—as part of the manufacturer's system software efforts, and (2) it allows much more flexibility for applications designers. By relying upon MacTCP drivers, developers can split applications into more manageable pieces that all run under MultiFinder. For example, a client FTP application can now be run under MultiFinder along with NCSA Telnet. To ease the transition to MacTCP, we will continue to support our own TCP/IP in the NCSA version of NCSA Telnet.

Configuring Network Parameters

To use the NCSA Telnet Configure Network Parameters dialog box (shown in Figures 8.1 and 8.2) to set up copies of NCSA Telnet for each Macintosh on the network:

1. Copy the software to the hard disk or floppy disk where it will be run

for each machine.

2. Set up the networking parameters for each Macintosh.

When NCSA Telnet is run for the first time, the Configure Network Parameters dialog box should appear automatically; if it does not, select Configure Network from the Network menu.

For the NCSA version, you should enter the IP number for the machine, the subnet mask, and the default host. For the MacTCP version, just set the default host in the Configure Network Parameters dialog box. Set up the other networking parameters using the Control Panel item for MacTCP. These must be correctly set up before NCSA Telnet will work.

NOTE: The setting of built-in AppleTalk versus EtherTalk in the Control Panel does not affect NCSA Telnet; however, the EtherTalk-compatible driver must be installed in the system file for the Ethernet device to be used.

Figure 8.1 Configure Network Parameters Dialog Box (MacTCP Version)

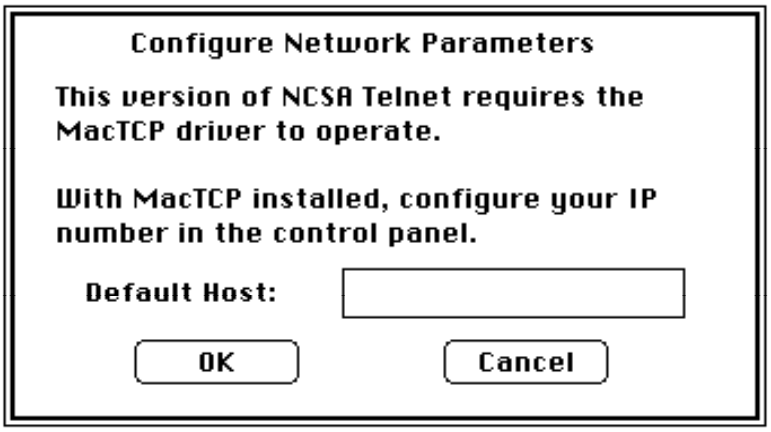
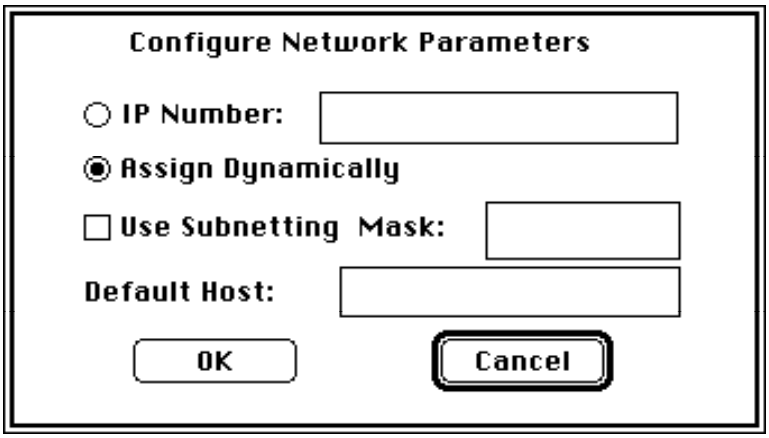


Figure 8.2 Configure Network Parameters Dialog Box (NCSA Version)



Assigning an Internet Number (NCSA Version)

For the NCSA version, the first step in configuring your copy of NCSA Telnet is setting the IP number. You should assign the IP number in one of the four ways described in the following sections, depending on two factors: (1) whether the serving gateway is using direct Ethernet (via EtherTalk), the Croft gateway software, or the Kinetics gateway software, and (2) whether dynamic numbers or static numbers are to be used.

Static IP Numbers (EtherTalk, Croft, or Kinetics)

To use static IP numbers on an EtherTalk, Croft, or Kinetics network configuration:

1. Select the radio button labeled IP Number.

2. Enter your four-byte internet address with a period (.) between each of the decimal numbers (for example, 192.17.20.10) in the text box labeled IP Number.

3. Click OK.

The specified address is saved as the IP number in the NCSA Telnet Settings file in your System Folder. You need only change the IP number when your machine's internet address changes (which it should not do frequently).

Dynamic IP Addressing

This section covers dynamic IP addressing for EtherTalk, Croft, and Kinetics gateway software.

RARP (EtherTalk)

NCSA Telnet for the Macintosh is capable of retrieving assigned IP numbers from a network administration machine running the Remote

Address Resolution Protocol (RARP) daemon. The RARP daemon is documented in the manuals for the host which is running the RARP server, and the protocol is documented in RFC903. Their availability is dependent upon your network configuration and the software running on the hosts on your network. If you have a UNIX host, you will find the RARP documentation under the name rarpd in section 8 of the manual.

If you have a machine that can provide RARP service, just enter the Ethernet address of the Macintosh and its corresponding IP number into the RARP database and your server should be ready.

NOTE: If you are using a UNIX RARP daemon, you need to make sure that the Ethernet numbers are not zero-filled. For example, 8:0:89:f0:5:0 is appropriate; 08:00:89:f0:05:00 is not.

If your network uses RARP dynamic IP addressing, then select the radio button labeled Assign Dynamically in the Configuration dialog box.

To view the IP address, choose Show Network Numbers from the Network menu (see "Network-Related Commands" in Chapter 6).

Administered (Croft)

The Croft gateway software (which runs in the Kinetics FastPath and is also known as the KIP software) and the K-Star gateway software from Kinetics allow for administered dynamic IP assignment. The assignment can either be unique to each copy of the program and for each machine or can be dynamic.

If your network uses dynamic IP addressing, select the radio button labeled Assign Dynamically in the Configuration dialog box.

AppleTalk-Based (Croft or Kinetics)

To address the IP number dynamically using the AppleTalk address as a basis:

1. Select the button labeled IP Number.

2. Type in the IP number in the normal location, substituting the codes presented in Table 8.1 where appropriate.

Table 8.1 Dynamic IP Codes

Code	Meaning
`h`	High-order byte of the network number (Net Number/256)
`l`	Low-order byte of the network number (Net Number mod 256)
`n`	AppleTalk node number

For example, Table 8.2 demonstrates the results of substituting codes in three sample addresses.

Table 8.2 Sample Dynamic IP Assignment

IP #	AppleTalk #		Resultant IP#
128.174.h.n	Net: 1230	Node: 35	128.174.4.35
128.174.20.n	Net: 1230	Node: 35	128.174.20.35

128.h.l.n Net: 1230 Node: 35 128.4.206.35

NOTE: This method of dynamic addressing is expressly prohibited on EtherTalk, because AppleTalk is not initialized by NCSA Telnet when running over EtherTalk.

Internet Subnetting

If your site uses a subnetted network (as specified in RFC950: Internet Subnetting):

1. Check the box labeled Use Subnetting Mask in the Configuration dialog box.

2. Enter the subnet mask in the neighboring text box, in hexadecimal. The format of the subnet mask is eight hexadecimal digits with no periods; for example, enter ffffff00 for 24 bits for network, 8 bits for host.

NCSA Telnet Settings File

All of the user-selectable settings for NCSA Telnet (Configure Network parameters and Preferences selections) are stored in the NCSA Telnet Settings file which is placed in the System Folder upon creation.

Configuration File

The configuration file (config.tel) contains information regarding local operating parameters, plus a list of commonly accessed hosts and optional network tuning parameters for each of these hosts. config.tel is a text file that can be edited with any text editor, such as TeachText.

The configuration file is accessed once when the program is initiated and is not used again. All of the machine names are read into memory, so it saves memory to limit the number of machine names you specify in the file.

NOTE: Editing the config.tel file while the program is running has no effect on the program's operation. To effect the changes, you must restart telnet.

Placing the Configuration File

For ease of use, place the config.tel file either in your System Folder or in the folder containing NCSA Telnet. If NCSA Telnet does not find the configuration file in either of these places, or if there is an error in the file, the following error message appears:

```
cannot find or open configuration file.
```

This message is described in Appendix A.

Entry Syntax

The configuration file is a list of keywords and legal values. The overall requirement for the entries in the file is that they alternate—keyword, value, keyword, value, and so forth.

Many different formats using any of the allowable delimiters are possible. The delimiters are the colon (:), semicolon (;), equal sign (=), and any of the whitespace characters. To include delimiters in a value field, enclose the field in double quotes. Quotes cannot be a part of any value field. Wherever a pound sign (#) is found, everything from # to the end of line is treated as a comment.

Though multiple formats can be used in the same file, you will probably want to find and keep a consistent format. For example, the entries in Figure 8.3 specify the same information.

NOTE: Example #3 is not a recommended format, but is included as an example of how strange an entry may look.

Figure 8.3 Same Information in Different Entry Formats

```
name=nic    # comment field to end of line ->
host=sri-nic.arpa
hostip=10.0.0.51
scrollback=300
contime=60

       - - - - - -Example #1- - - - - - - - -


name=nic; host=sri-nic.arpa; hostip="10.0.0.51"; scrollback=300;
contime=60


       - - - - - -Example #2- - - - - - - - -

name
nic
host sri-nic.arpa : hostip=10.0.0.51; scrollback=300; contime:60


       - - - - - -Example #3- - - - - - - - -
```

Entering Macintosh Information

The first entries in the configuration file are the Macintosh environment entries. These specify what types of hardware are to be used and other parameters. In this list, sample values are included after the equal (=) signs to indicate the correct format.

Table 8.3 Macintosh Information Entries

Entry	Specification
arptime=5	†Time in seconds to continue trying to reach a host on the local wire. A value of 5 works fine for the network at NCSA, but larger values may be needed for hosts that are slow to respond. Smaller values are more convenient to use.

domaintime=2	Time in seconds to wait between the first domain lookup and the second. If you only have one nameserver, then this is the same as a simple timeout. If you want to rotate nameservers quickly—for example, because the first one may be down—set this to a smaller number.
domainretry=4	Number of times to query domain nameserver(s). Each time a retry is sent, the timeout value (domaintime) is doubled. Each time a retry occurs, NCSA Telnet tries the next nameserver, wrapping around to the first nameserver when there are no more.
domain="ncsa.uiuc.edu"	Default root for domain lookups. If a domain request does not contain a period (.), then this domain suffix is appended to the request before it is sent to the nameserver.

Table 8.3 Macintosh Information Entries (Continued)

Keyword	Specification
ftp=yes	Default FTP serving. Access to your Macintosh can be controlled by the FTP password file. To disable FTP serving by default, change this line to ftp=no.
	NOTE: This setting can be toggled in the File menu as well (see "Transferring Files" in Chapter 5).
passfile="ftppass"	The file in which FTP usernames and passwords can be found. There is no default name for this file. If the file is specified, then FTP will prompt for the username and password for all FTP attempts. If the file is not specified, then there is no password checking for FTP. For more information, consult the section of this chapter entitled "FTP Password Protection."
timeslice=3	Amount of time you are willing to wait between processing information. This option is useful only when you are using MultiFinder, as it lets you run other programs in the background. The default is three Macintosh clock ticks. You should increase this number if the background operations are more important or decrease it if telnet operations are more important.
hardware=AppleTalk	†Ethernet device. NCSA Telnet can support several different kinds of Ethernet devices. AppleTalk is the most common configuration, used with AppleTalk to Ethernet gateways. For direct Ethernet users, consult the section of this chapter entitled "Hardware Options" to determine the correct setting.
termtype="dec-vt100"	The string to be returned by NCSA Telnet in response to the telnet terminal type negotiation command. The default value for this field is DEC-VT100. Because many host systems do

not have a record for this terminal type, you may wish to change it to VT100.

Table 8.3 Macintosh Information Entries (Continued)

Keyword	Specification
zone="KIPzone"	†Zone containing the desired gateway. In some situations, an AppleTalk to Ethernet gateway may be used even if that gateway is not in the local AppleTalk zone. If you specify a particular zone name here, the query to find the gateway is directed to that particular zone. This option only works when running KIP-compatible software in the gateway; it is not compatible with all networking configurations.
block=120	Size of block of text characters to be read from the network. CONTROL-C, the Interrupt Process command, and all other keypresses are handled only between blocks. For faster turnaround on typed commands and CONTROL-C, set this value to a lower number. For better overall throughput to the screen, set this value to a higher number. The parameter for this command can range from 100 (good response time) to 4000 (fast throughput). Note that setting your color screen to two-color mode can improve throughput and scrolling speed also.

†Ignore these items when using the MacTCP driver version.

Entering Host-Specific Parameters

After the Macintosh configuration options, you may have zero or more hosts, with host-specific information for each. Typically, the first host listed will be name=default, which stores the default values for the other hosts. Any keyword listed under later hosts overrides the default setting for that host.

NOTE: The keyword `name` is special because it separates entries.

The parameters following `name` up to the next keyword `name` are all associated with the session name. The parameters are installed whenever a connection is opened with that session name.

Table 8.4 Host-Specific Parameters

Entry	Specification
name=nic	The primary name associated with a list of parameters. It is common to have more than one session name for a host, each with different parameters, perhaps with different colors or amounts of scrollback. A name keyword is required for each session entry because it separates entries.
host=sri-nic.arpa	Hostname or alternate name. If you want to associate both a session name and a hostname with a particular set of parameters, you may include both. Note that the name parameter is required, while the host parameter is optional. The rule of thumb is: When you have only a hostname, insert it as name=*hostname*. If you have both

	a session name and a hostname, enter both name=*sessionname* and host=*hostname*. When you want to open a new connection, either the hostname or sessionname works.
hostip=10.0.0.51	The IP address of the host. If this is not present, the domain nameserver must be queried to get the IP number of the host. For efficiency, include the IP addresses of all commonly accessed hosts. IP addresses of gateways and nameservers are required to be in the configuration file.
gateway=1	†The gateway precedence for this host. To reach hosts not connected to your local network, you must have at least one gateway entry. The hostip keyword must be present for this host. Gateway numbers must start at 1 and increase by ones. Gateway 1 has the highest precedence, but the first gateway to respond to an ARP will be used. ICMP redirects can affect how gateways are used, but not permanently.
nameserver=1	The nameserver precedence for this host. NCSA Telnet uses UDP to query domain nameservers for machine names that are not in the configuration file. Each machine that is to be used as a nameserver must have this keyword listed. The hostip keyword must be present for this host. Nameserver 1 has the highest precedence. Nameserver numbers must start at 1 and increase by ones.

Table 8.4 Host-Specific Parameters (Continued)

Entry	Specification
scrollback=100	The number of lines of scrollback for this session. Be aware that scrollback occupies at least 86 bytes per line saved. There can be a different number of lines of scrollback for each session. Plan your use of scrollback wisely unless you have memory to spare.
erase=delete	The backspace translation for this host. Some hosts prefer the BACKSPACE key to send delete and some prefer the BACKSPACE key to send backspace. Set this value erase=delete or erase=backspace.
crmap=4.3bsdcrnul	End of line character. This example is a special compatibility option for 4.3 BSD UNIX. There is now an official UNIX bug fix to take care of the problem, but some hosts may still want crnul to be used for end-of-line. The default is crmap=CRLF, which sends CRLF when you press RETURN. In line mode, CRLF is always used.
duplex=half	Echo mode setting. This parameter only applies to hosts that negotiate non-echoing mode but do not expect local line editing. If set to half, all character keys are sent and echoed to the screen immediately, otherwise the characters are echoed locally and queued until a RETURN or CONTROL character is sent. This parameter has no effect in echo mode; that is, when local echo is off.
contime=10	†The connection timeout in seconds. When you are making a connection attempt, NCSA Telnet gives up on

	opening the connection and deletes the window after this amount of time has elapsed. For congested or slow networks, this value should be made larger.
retrans=25	†The initial retransmission timeout in 60ths of a second. Increasing the value of this parameter may help in reducing the initial burst of retries that is typical of connections with high round-trip times.
mtu=512	†The largest amount of data to put in the packets that are sent. If you are sending to the ARPANET, you should use mtu=512. If you are sending to local hosts and are using EtherTalk, you should use mtu=1024.

NOTE: Do not set mtu to be greater than 512 if you are using an AppleTalk gateway.

Table 8.4 Host-Specific Parameters (Continued)

Entry	Specification
maxseg=512	†The largest segment that can be received. This value can control the size of packets that are sent over the connection. Reducing this value can eliminate IP fragmentation that we cannot reassemble. A value of maxseg=512 should force the sending host to never fragment. As with the mtu setting, do not set it larger than 512 if you are using an AppleTalk to Ethernet gateway.
rwin=512	†Receive window size. Unfortunately, some of the popular Ethernet hardware cannot handle receiving back-to-back packets. This requires us to limit the TCP receive window that we advertise to other hosts. For communicating to slower hosts or when using high performance hardware, a larger window (4096 is the maximum) may work better.
port=23	The TCP port number to use when connecting for this session. The default telnet port is 23, the Internet standard port number for the telnet protocol. Some networks—for example, MFENET (port=911)—use other port numbers, so this option should be specified for hosts on those networks.
nfcolor={0,0,0}	Normal, foreground color
nbcolor={0,0,0}	Normal, background color
bfcolor={0,0,0}	Blink, foreground color
bbcolor={0,0,0}	Blink, background color
	These options can be used to specify default colors for Macintosh computers which can handle color sessions. The format of the color specifier is {*red*, *green*, *blue*}, where red, green, and blue are the integer numbers corresponding to the requested colors (as shown in the standard Macintosh Color Wheel dialog box, shown in Figure 3.7). These options have no effect on non-color Macintosh computers, and their presence is harmless.
vtwrap=yes	Wrap mode setting. The VT102 terminal maintains an internal setting to determine whether characters

printed off of the right hand side of the screen causes the terminal to wrap or not. If the terminal is set to wrap, the new characters appear on the next line of the screen (scrolling if necessary). If wrap mode is off, each new character replaces the last character on the current line and the cursor does not move. Set this option to yes or no to indicate the initial setting for this session.

NOTE: Host software commonly sets the wrap mode, overriding this setting. You may also override this setting in the Session menu (see "Using the Session Menu" in Chapter 3).

vtwidth=132 Screen width. When a session is opened, memory is allocated for a screen width of 80 or 132 characters, depending upon the setting of vtwidth. These correspond to the two legal screen widths for a VT102 terminal.

clearsave=yes Whether or not to save the screen when a clear screen command is received. Scrollback is now updated when the screen is cleared. When clearing the screen, all of the visible lines are saved into the scrollback region. If you prefer not to have the text saved when the screen clears, specify clearsave=no. In the case of host programs which clear the screen one line at a time, the lines are never saved into the scrollback region.

font="Monaco" Default font for each session. The font name is a text string and must exactly match the name of the desired font in your System File.

fsize=9 Default font size (in points) for each session.

vtlines=24 Number of lines of text to appear in the VT102 emulation window. When the connection opens, NCSA Telnet creates the appropriate size window for the the font type and size and the number of lines to display.

NOTE: The VT102 terminal has exactly 24 lines. If you create a window larger or smaller, your host system may not be able to correctly update the screen. If you have problems, reset your screen to 24 lines with the Set Usable Lines command in the Session.

copyfrom=nic Setting of unspecified parameters. The copyfrom parameter is probably the most important—it causes all unspecified parameters to be copied from a previous entry. Note that the entry to copy from must appear above the entry to copy to. For machines of a similar type, only one entry has to be customized and the rest include copyfrom commands. For a given host, parameters that are specified along with a copyfrom command override the copyfrom directive.

Converting UNIX /etc/ hosts Files

Included with the distribution of NCSA Telnet is an awk script called newh. The script is also listed in Appendix C. Used with the following command under 4.XBSD UNIX, the scripts converts the /etc/hosts file into a format compatible with NCSA Telnet's configuration file. Note that domain name lookup should make this operation obsolete, or make it

apply to only a small subset of your /etc/hosts file. At the prompt enter:

```
awk -f newh /etc/hosts >config.temp
```

After creating this new file, prepend the Macintosh-specific information and download it to the Macintosh.

Hardware Options (NCSA Version)

This section discusses the various hardware options available for the NCSA Version of NCSA Telnet.

Combined Network Drivers

For NCSA Telnet Version 2.3 (NCSA version), all of the network drivers are combined into one application. You must use the hardware entry in the configuration file to inform NCSA Telnet which method of Ethernet connection you are using. Choose from the list in Table 8.5.

NOTE: If you have The MacTCP version of NCSA Telnet Version 2.3, the network is configured in the MacTCP driver and the hardware entry of the configuration file is ignored.

Table 8.5 Ethernet Values for Hardware Options Supported by NCSA Telnet

Value	Ethernet Connection
Ether	Attempt to figure out which device and (if applicable) slot
Ether9	EtherTalk board or other EtherTalk compatible Ethernet board in slot 9
Ethern	EtherTalk board or other EtherTalk compatible Ethernet board in slot n
EtherSC	SCSI Ethernet device
EtherSE	Mac SE internal Ethernet board
AppleTalk	AppleTalk network (default value)

AppleTalk and EtherTalk

NCSA Telnet works best over an Ethernet interface. The term EtherTalk has two referents: AppleTalk protocols on Ethernet and a device independent way of using Ethernet for applications. AppleTalk protocols on Ethernet allow fast access to Appleshare servers, and so forth. NCSA Telnet does not require these protocols, so the setting of built-in AppleTalk versus EtherTalk in the Control Panel does not affect NCSA Telnet. NCSA Telnet does require you to install EtherTalk to use an Ethernet device, but you do not have to enable AppleTalk for that device.

If you do not have an Ethernet device, you must have an Ethernet to AppleTalk gateway in order to run NCSA Telnet (see the hardware list in Table 8.1). In such situations, NCSA Telnet communicates with the gateway using TCP/IP encapsulated in AppleTalk packets.

Performance Tuning

The values of maxseg, mtu, and rwin in the configuration file must be set correctly to get maximum data transfer throughput between machines.

Here are some rules of thumb to use when setting these values.

- The maximum reasonable values for these parameters are:
  rwin=4096
  mtu=1024
  maxseg=1024

- The setting required for users running NCSA Telnet over AppleTalk protocols, and any other troublesome network situation, also the most conservative setting, is:
  rwin=512
  mtu=512
  maxseg=512

- The best setting for local network use with an Ethernet board is:
  rwin=4096
  mtu=1024
  maxseg=1024

- The best setting for ARPANET use (or any situation with a lot of unknown gateways, but with an Ethernet board) is:
  rwin=4096
  mtu=512
  maxseg=512

rwin specifies how much data the other computer is allowed to send you at any one time, so it depends mostly upon your local Ethernet board. If the board can handle it, always specify rwin=4096.

maxseg is used to avoid fragmentation. If you ever get fragmented packets, lower the value of maxseg for that host until fragmentation stops occurring.

Domain Name Lookup

When NCSA Telnet cannot find a name in the configuration file, it may still find the IP number if you are running a domain nameserver. At least one nameserver entry is required in the configuration file, but there may be more. If one nameserver fails to respond, the one with the next higher precedence is queried. As soon as a response is received, NCSA Telnet attempts to open a telnet connection.

Domain Search Order

When you enter a name to open a connection, there is a specific domain search order:

1. The name is looked up as a session name from the configuration file.

2. The name is looked up as a hostname from the configuration file.

3. The name is sent as a domain query to the first nameserver.

4. The query is repeated if the domain request times out, but to another nameserver. This is repeated until the maximum number of retries is

reached or a response is received.

With the domain nameserver, the number of hosts in the configuration file can be kept to a minimum. Each host in the configuration file will be a commonly used computer. The IP addresses for rarely used hosts will be accessible if the domain name retrieval system can resolve those hosts.

Default Domain

NCSA Telnet can append a default root domain if desired. To enable this feature, use the domain=keyword (as discussed in the section entitled "Configuration File") to specify the root domain that you want appended. If a hostname which is not in the Configuration File is requested and that name does not contain a period (.), the domain request is made with the default domain appended to that name.

FTP Password Protection

The presence of the passfile keyword in the configuration file enables FTP password protection. If you include the password file keyword, FTP will not allow any FTP connections to open without a correct username and password. In order to use the FTP server to access any folder on your local disk, you should include the password file name as a full path name. For example,

```
passfile="hd40:NCSA Telnet:mypassfile"
```

You can have several usernames and individual passwords for each user. The passwords are encrypted, but not with a secure encryption system. Only trusted users should have access to the password file. Use the program Telpass (included with the NCSA Telnet distribution) to encode passwords.

Compatibility

Ping

NCSA Telnet responds to ping (ICMP echo) requests. This may be used by other hosts to determine whether your Macintosh is online.

VT102

The VT102 emulator is nearly complete. VT102 features not emulated are double width and double height characters, and VT52 mode.

ICMP Redirects

Some gateway configurations, do not support ICMP redirects. ICMP redirects currently work only with the EtherTalk-based configurations.

Trailers

Trailers were invented for an old version of Berkeley UNIX and have been haunting us ever since. NCSA Telnet does not support trailers. Your host machine must have trailers turned off for NCSA Telnet to work with

your host. Some versions of ULTRIX from Digital Equipment Corporation have been shipped with trailers left on by default. If NCSA Telnet hangs up when you type out large text files, check the trailers setting for that host's ifconfig.

FTP

The FTP server in NCSA Telnet is close to the DARPA specification for the minimum implementation. Exceptions are:

- The command connection does not perform telnet negotiation.
- Block mode of FTP is not supported.
- Some error conditions may display as command not understood instead of returning more appropriate messages.

Telnet

The standard Telnet protocol has several potential options that can be invoked if both parties of the telnet connection agree. NCSA Telnet refuses most of these options, but accepts echo (option 1); suppress go ahead (option 3); and terminal type (option 23). There are some obscure features of the telnet specification that are not supported in this implementation: out-of-band interrupts are not available, go ahead signals do nothing, and telnet acknowledge signals are not acknowledged. If there are any problems with the limitations of NCSA Telnet, please submit a bug report using the form provided at the end of this manual.

Limitations

There is a 20-session limit for NCSA Telnet. This is somewhat arbitrary and may be altered if there appears to be a need for it. NCSA Telnet can run out of memory, often before the 20-session limit. You are notified on the screen if this happens.