

## The Telnet Application

The Telnet application allows you to login to other computers across the network and access services that those computers provide to their local terminals. When you are connected, it is as if your keyboard and monitor are connected directly to that computer (the host system). You can execute commands, run certain programs, and access many special services offered by the remote computer.

The Telnet application provides full emulation of the Digital Equipment Corp. VT220, VT102, and VT52 terminals, and communicates with a remote system (called a host system) using the Telnet protocol. With the Telnet application, you can run script files, create and use login scripts, and redefine the keyboard to better match the terminal you are emulating.

**Note:** To use Telnet, you must be familiar with the commands and other user interface conventions of the computer to which you connect.

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## Getting Started with Telnet

The Telnet application contains a wide range of features that help you to communicate with remote hosts. The information provided in this section demonstrates the basic Telnet features so that you can start using the Telnet application with the default settings. Once you are familiar with the basic features, you can continue to explore other Telnet features with the help of the [Telnet Reference](#).

This section discusses the following topics:

[Starting the Telnet Application](#)

[Connecting to a Host System](#)

[Disconnecting from a Host System](#)

[Other Telnet Features](#)

## **Starting the Telnet Application**

To start the Telnet application, double-click on the Telnet icon in the TCP Pro program group.

## Connecting to a Host System

Before you attempt to establish a connection to a host system, you need to know the information listed below. This information can be obtained from your network administrator, or from the person whose system you want to access.

- The host name or IP address of the host system
- The login information you need to enter to connect to the host system. (Your user name and, if necessary, your password.)

Once you have obtained the above information, you can establish a connection to the host system by following the steps below:

1. Select Connect from the Connect menu to open the Telnet Connect dialog box.
2. In the Host Name field, enter the host name or IP address of the host system to which you want to connect, then click on the OK button to establish a connection.

The login prompt for the system you specified appears in the Telnet window.

3. Enter your login at the login prompt and if necessary, enter your password at the password prompt then press Return.

You are now logged-in to the host system.

You can change the default Telnet settings to better match the host system you are emulating by selecting [Telnet Setup](#) from the Options menu. You can also associate specific settings with a host system and save the information under a session name. This makes it possible to reestablish connections to specific host systems at a later time and maintain the same settings for each host system.

## **Disconnecting from a Host System**

To disconnect from the host system to which you are currently connected, either logout of the remote system or select Disconnect from the Connect menu. You can also select Exit from the File menu to quit the Telnet application.

## Other Telnet Features

Now that you are familiar with the basic features, you can continue to explore the many features that the Telnet application has to offer. With Telnet, you can:

- Save to a file or print the data in the terminal screen area by selecting the appropriate menu item from the [File menu](#).
- Run script files during a connection by selecting [Run Script](#).
- Copy and paste data between the Windows clipboard and the terminal screen by selecting the appropriate menu item from the [Edit menu](#).
- Redefine the keys on your keyboard to better match the terminal you are emulating by selecting [Keyboard Setup](#) from the Options menu.
- Modify certain characteristics of a session to better match the host system environment by selecting [Telnet Setup](#) from the Options menu.
- Configure the Telnet application to use a login script to login to a host system automatically by selecting [Telnet Setup](#) from the Options menu.
- Save to a file a record all characters received during a connection and any error messages generated while the application is in use by selecting [Log to File](#) from the Options menu.



## Telnet Reference

This section introduces you to the main window of the Telnet application and describes each pulldown menu, menu item, and dialog box in detail.

When you start the Telnet application, the Telnet window appears on your screen. The Telnet window is the main window of the Telnet application. It contains the following:

- A [Terminal Screen Area](#)

- A [Status Bar](#)

- The [File Menu](#)

- The [Edit Menu](#)

- The [Connect Menu](#)

- The [Options Menu](#)

## **Terminal Screen Area**

The Terminal screen area of the Telnet window displays the login prompt during connection to a host system, and once connected, displays all interactions with the host system.

## Status Bar

The status bar is located at the bottom of the Telnet window. It contains four areas described from left to right.

- A screen size area, which indicates the width of the terminal screen in characters followed by the height of the screen in lines.
- A cursor position area, which indicates the position of the cursor on the terminal screen.
- A help message area, which displays error messages and information about the feature you are using.
- A status area, which indicates if a connection is established with a host system (Ready) and displays the host name or the IP address of the system to which you are connected.

## File Menu

The File pulldown menu contains the following menu items:

[Print Screen](#)

[Printer Setup](#)

[Run Script](#)

[Save Screen](#)

[Exit](#)

## Print Screen

The Print Screen menu item sends an image of the terminal screen to a printer.

**Note:** To specify a printer, select Printer Setup from the File menu.

## **Printer Setup**

The Printer Setup menu item lets you select a printer from which to print a screen image. Selecting Printer setup presents the Print Setup dialog box. This dialog box lets you select a printer locally or on the network. You can also select the orientation and size of the paper.

## **Run Script**

The Run Script menu item lets you run script files during a connection. When you select Run Script, the Run Script File dialog box opens. The Run Script File dialog box lets you select the file containing the script.

## Save Screen

The Save Screen menu item saves an image of the terminal screen to a file. Selecting Save Screen presents the Terminal Screen Image dialog box. This dialog box lets you specify a file name, drive, and directory where you want to save the screen image. A default name is supplied. You can use the default file name instead of specifying your own.

**Note:** The screen image is stored in a format that makes it easy to load the image into a word processor or text file. If the screen image contains DEC Special Graphics characters, they are translated to their nearest ASCII equivalents before the image is saved to the specified file.



## **Exit**

The Exit menu item disconnects you from the host system to which you are currently connected and exits the Telnet application.

## **Edit Menu**

The Edit menu lets you copy data to and from the Windows clipboard. It contains the following menu items:

[Copy](#)

[Paste](#)

[Clear](#)

## Copy

The Copy menu item copies selected data from the terminal screen to the Windows clipboard. If the selected data contains DEC Special Graphics characters, they are translated to their nearest ASCII equivalents before being copied to the clipboard.

**Note:** If no data is selected, the Copy menu item is grayed-out and cannot be selected.

## Paste

The Paste menu item pastes data from the Windows clipboard to the cursor position in the terminal screen area.

**Note:** If no data is present in the Windows clipboard, the Paste menu item is grayed-out and cannot be selected.

## Clear

The Clear menu item clears data from the Windows clipboard.

**Note:** If no data is present in the Windows clipboard, the Clear menu item is grayed-out and cannot be selected.

## Connect Menu

The Connect menu lets you connect to and disconnect from host systems. It contains the menu items listed below. A list of session names appears in the Connect pulldown menu if you have previously defined sessions. A session identifies specific Telnet settings that can be associated with a host system. To define a session, select Telnet Setup from the options menu to open the [Telnet Session Setup \(1\) dialog box](#) dialog box.

The Connect menu contains the following menu items:

[Connect](#)

[Disconnect](#)

## Connect

The Connect menu item establishes a connection to a host system. When you select Connect, the [Telnet Connect](#) dialog box opens.

## Telnet Connect Dialog Box

The Telnet Connect dialog box lets you establish a connection to a host system. It contains the following fields and buttons:

- Session Name** This field lets you select a Telnet session that has been defined. If you have not yet defined any Telnet sessions, only the default settings will be available. To define a session, select [Telnet Setup](#) from the Options menu.
- Host Name** This field lets you enter the host name or IP address of the system to which you want to connect.  
  
If you have selected a session from the Session Name field, described above, the host name or IP address associated with the session is displayed in this field.
- OK** Clicking on this button exits the Telnet Connect dialog box and presents the login prompt from the host you specified.
- Cancel** Clicking on this button exits the Telnet Connect dialog box without establishing a connection to the host.



## **Disconnect**

The Disconnect menu item terminates your current connection.

## Options Menu

The Options menu contains the following menu items:

[Keyboard Setup](#)

[Log to file](#)

[Log File Setup](#)

[Telnet Setup](#)

## Keyboard Setup

The Keyboard Setup menu item lets you redefine the keys on your keyboard to better match the terminal you are emulating. You can also redefine the function keys by assigning repetitive commands to reduce typing time. The main alphanumeric keypad and the twelve top-row function keys, as well as the keys on numeric keypad can be redefined. The redefined keys must be saved to a file and then associated with a specific session.

Selecting this menu item presents the [Keyboard Map dialog box](#).

For information about redefining keys, refer to [Redefining a Key](#).

## Keyboard Map Dialog Box

The Keyboard Map dialog box contains a map of the main alphanumeric keyboard and the twelve top-row function keys of the 101-key keyboard. Clicking on the Numeric Pad button opens a map of the three small keypads on the right-hand side of the 101-key keyboard. The Keyboard Map dialog box also contains the following buttons:

- Open** Clicking on this button opens the Open Key Redefinition File dialog box, which lets you enter the name of an existing file containing key definitions so they can be edited. Once you have redefined keys, you must click on the Save button to save the definitions to the file.
- Save** Clicking on this button opens the Save Key Redefinition File dialog box that prompts you for the name of the file where you want to save the key definitions.
- Cancel** Clicking on this button exits the Keyboard Map dialog box without saving any definitions.
- Numeric Pad Map** Clicking on this button presents the Keypad Map dialog box which displays a map of the numeric keypads. This dialog box lets you redefine any of the keys represented.

For information about redefining a key on the keyboard, refer to [Redefining a Key](#).

## Redefining a Key

To redefine a key, click on the key in the Keypad Map dialog box. A small dialog opens allowing you to enter any character sequence for that key (between one (1) and eighty (80) characters in length). Typing normally will enter the ASCII characters associated with the default keyboard mapping or the current sessions keyboard mapping (if the keyboard has been previously redefined).

You can enter ASCII control characters by typing the caret character (^) followed by the printable equivalent of the control character you want to enter. For example, ^c redefines a key to Control C. You can also enter any character (including non-printing characters) by specifying its octal coding equivalent in the format \nnn, where n is an octal digit. For example \033 specifies the Escape character.

Each key on the keyboard is capable of sending one of four different character sequences, each one associated with one of the keys four states: the base (or unmodified) state, the Shift state, the Control state, and the Control-Shift state. The redefinition character sequences for all four states can be concatenated into the single redefinition field, with the character strings associated with each state separated by the vertical bar character (|). For example, the character sequence `abc|def|ghi|jkl` would cause a key to send `abc` when struck in its base state, `def` when struck with the Shift key depressed, `ghi` when struck with the Control key depressed, and `jkl` when struck with both the Shift and Control keys simultaneously pressed.

You can incorporate the special characters vertical bar (|), caret (^), and backslash (\) into redefinition character sequences by encoding their octal equivalents; \174,\136,\134 respectively.

**IMPORTANT:** The total length of a key-definition character sequence (including the special characters (\), (^), (|)) cannot exceed 80 characters. All four states of the redefinition string must fit into this space.

Once you have entered the keys new character sequence, click on the OK button in the small dialog box to save the definition in memory and return to the Keyboard Map dialog box. Then click on the Save button in the Keyboard Map dialog box to permanently save the key definitions to a file.

To associate the key definitions with a session, you must specify the file name containing the definitions in the File Name field of the [Telnet Session Setup \(2\) dialog box](#). To access the Telnet Session Setup (2) dialog box, select Telnet Setup from the Options menu.

## Log to file

The Log to File menu item saves to a file a record of all received characters during a connection. A check mark appears to the left of the Log to File menu item when it is selected.

**Note:** If you have not specified a file name, the Log to File menu item is grayed-out and cannot be selected. To specify a file name, select [Log File Setup](#) from the Options menu.

## Log File Setup

The Log File Setup menu item lets you specify a file name where you want to save all received characters during a connection. When you select Log File Setup, the [Log File Setup dialog box](#) opens.

## Log File Setup Dialog Box

The Log File Setup dialog box contains the following fields and buttons:

- Session Name** This field lets you select a session name from the drop-down list so that you can associate a log file with a specific session. A list of session names appears only if you have previously defined sessions. Logging will occur only for the selected session.
- File Name** This field lets you specify the name of the file where you want to save all received characters.
- Open Mode** **Append** adds new information to the end of the log file each time a new connection is established.  
**Truncate** deletes all old information from the log file each time a new connection is established.
- OK** Clicking on this button saves the file name and exits the Log File Setup dialog box.
- Cancel** Clicking on this button exits the Log File Setup dialog box without saving the file name.
- Files** Clicking on this button opens a dialog box that lets you select a file on your PC or on the network where you want to save all received characters during a connection.



## Telnet Setup

The Telnet Setup menu item lets you modify some of the characteristics of a connection to better match the host environment. You can select specific Telnet settings and save the settings under a session name. A session can be associated with a particular host system.

Selecting Telnet Setup presents the [Telnet Session Setup \(1\) dialog box](#).

## Telnet Session Setup (1) Dialog Box

The Telnet Session Setup (1) dialog box lets you modify some of the characteristics of a connection to better match the host environment. It contains the following fields and buttons:

- Session Name** This field lets you enter a descriptive name for the Telnet session you want to save.
- Host Name** This field lets you enter the host name or IP address of the host system with which you want to associate the session specified above.
- Host Port** If you do not use the standard Telnet port 23, enter the port in this field.
- Exit on Disconnect**  
If you select this box, the Telnet application will quit automatically when you disconnect from the host system.
- Login Script** If you want to use a login script to login to the host system, enter the name of the login script in the File Name field. For information about creating a login script, refer to [Creating a Login Script](#).
- Colors**  
**Foreground** lets you select the color of the text displayed in the Telnet window for the session specified.  
**Background** lets you select the background color of the Telnet window for the session specified.  
**Bold** lets you select the color of high-intensity text in the Telnet window for the session specified.
- Custom** Clicking on this button opens a dialog box that lets you define your own custom colors.
- Font**  
**Name** lets you select the font used for text in the Telnet window for the session specified.  
**Custom** lets you to define which font type and size you want to use for text. When you select Custom Font, the Font dialog box opens. This dialog box allows you to select a font type (for example, courier), style (for example, bold), and size from the lists provided.
- OK** Clicking on this button saves the information in the Telnet Session Setup (1) dialog box under the session name specified in the Session Name field. The Telnet Session Setup (1) dialog box then closes.
- Cancel** Clicking on this button cancels any modifications you made and closes the Telnet Session Setup (1) dialog box.
- Remove** Clicking on this button deletes the session name specified in the Session Name field from the configuration file. The session name no longer appears in the Session Name drop-down list.
- More Setup (2)** Clicking on this button presents the [Telnet Session Setup \(2\) dialog box](#).

## Creating a Login Script

To create a simple login script, you must create a file containing a script using the following statements:

```
wait secs "string"
```

Causes the incoming data stream to be scanned for an occurrence of the text string specified by *string*.

```
secs
```

Indicates the number of seconds that the application should wait for the specified *string* before giving up. If the *string* is not detected within the specified number of seconds, the script will abort. The quotation marks around the *string* parameter are required.

```
type "string"
```

Causes the specified string to be transmitted to the host system as though it had been typed by the user at the keyboard. The quotation marks around the string parameter are required.

```
if_err_goto label
```

```
if_noerr_goto label
```

Are provided so that the login script can react to the result of the **wait secs "string"** statement. The target of the **goto** statement is a label, which is included in the script file by using a syntax similar to that used by DOS batch files.

The following is a sample script file which automatically logs-in to a host system using the login name **Bob** and the password **Begonia**, and starts the mail application. In the following sample, `\015` signifies a hard return.

```
wait 15 "login:"  
if_err_goto :end  
type "Bob\015"  
wait 10 "password:"  
if_err_goto :end  
type "Begonia\015"  
if_err_goto :end  
type "mail\015"  
:end
```

## Telnet Session Setup (2)

The Telnet Session Setup (2) dialog box contains the following fields and buttons:

- Emulation** Lets you select between VT220, VT102, or VT52 emulation.
- Screen** Selecting the **Wrap** check box will wrap text to the next line when the end of the line is reached. If this check box is not selected, the last character will be repeatedly displayed at the end of the line, with each character overwriting the last.
- Selecting the **Echo** check box echoes all keystrokes immediately back to the screen as well as transmitting keystrokes to the host system. If this check box is not selected, keystrokes are transmitted to the host system but not echoed back to the screen.
- Selecting the **Bell** check box will sound an audible bell or will flash the menu bar when a BEL character is received.
- Backspace Key** Selecting **DEL** redefines the backspace key on your keyboard to be the delete key.
- Selecting **BS** does not redefine the backspace key.
- Numeric Keypad** Selecting **Application** places the numeric keypad on your keyboard in application mode.
- Selecting **Numeric** places the numeric keypad on your keyboard in numeric mode.
- Cursor Keys** Selecting **Application** places the cursor keypad on your keyboard in application mode.
- Selecting **Normal** places the cursor keypad on your keyboard in normal mode.
- Control Keys** Selecting **Interpret** interprets received control sequences as commands.
- Selecting **Display** displays received control sequences on the screen.
- Key Redefinition File** The **File Name** field lets you specify the name of the file containing the key definitions you want to use for the session specified. To redefine the keys on your keyboard, select **Keyboard Setup** from the Options menu.
- OK** Selecting this button closes the Telnet Session Setup (2) dialog box. You must click on the OK button in the Telnet Session Setup (1) dialog box for your changes to take effect.
- Cancel** Clicking on this button cancels the modifications you made and returns you to the Telnet Session Setup (1) dialog box.
- More Setup (3)** Clicking on this button presents the **Telnet Session Setup (3) dialog box**. This button is available only when the default session is being used. The settings apply to all connections.

## Telnet Session Setup (3)

The Telnet Session Setup (3) dialog box is only available when the default session is being used. The settings apply to all connections. The Telnet Session Setup (3) dialog box contains the following fields and buttons:

- |                      |   |
|----------------------|---|
| <b>Screen</b>        | <b>Scroll Buffer</b> lets you specify the number of lines in the scroll buffer of the Telnet window. In order for the changes you make to take effect, you must exit then restart the Telnet application.   |
| <b>Keyboard Type</b> | This field lets you select the keyboard that is attached to your PC. You can select the IBM Enhanced keyboard or the DEC LK250 keyboard.  |
| <b>NumLock</b>       | The field lets you select whether you want the NumLock on your keyboard set to ON or OFF.   |
| <b>Edit Keys</b>     | This field lets you specify the mapping applied to the six dedicated editing keys on the keyboard connected to your PC. Selecting <b>DEC</b> indicates that direct physical mapping to the DEC LK250 keyboard is used. Selecting <b>IBM</b> indicates that each key should be mapped to its closest logical equivalent. |
| <b>OK</b>            | Clicking on this button closes the Telnet Session Setup (3) dialog box. You must click on the OK button in the Telnet Session Setup (1) dialog box for your changes to take effect.   |
| <b>Cancel</b>        | Clicking on this button closes the Telnet Session Setup (3) dialog box without saving any changes.  |

## Keyboard Mapping

The Telnet application is a DEC VT220 emulator. Its use is tied to the layout of the DEC LK201 keyboard. The following table provides a guide to the default mapping used by the Telnet application to provide compatibility with the DEC keyboard.

<b>DEC Key</b>	<b>IBM Key</b>
PF1	Numlock
PF2	/ (on numeric pad)
PF3	* (on numeric pad)
PF4	- (on numeric pad)
, (comma)	Plus (on numeric pad)
- (minus)	CTRL Plus (on numeric pad)
Enter	Enter (on numeric pad)
HoldScreen	Pause
PrintScreen	Alt F2
F6 thru F10	F6 thru F10
F11 thru F20	Shift F1 thru Shift F10
Help	F11
Do	F12

The mapping of the editing keys will vary depending on the settings of the Edit Keys setting in the [Telnet Session Setup \(3\) dialog box](#). To access the Telnet Session Setup (3) dialog box, select Telnet Setup from the Options menu.

<b>VT Key</b>	<b>Edit Keys=DEC</b>	<b>EditKeys=IBM</b>
Find	Insert	Home
InsertHere	Home	Insert
Remove	PageUp	Delete
Select	Delete	End
PrevScreen	End	PageUp
NextScreen	PageDown	PageDown



