
Using the Model 3395/3395A Terminal Server



SynOptics Communications, Inc.
4401 Great America Parkway
Santa Clara, CA 95052-8185
(408) 988-2400

893-386-B

July 1994

© 1994 by SynOptics Communications, Inc. All rights reserved.

Trademarks

SynOptics, SynOptics Communications, and LattisNet are registered trademarks of SynOptics Communications, Inc. System 3000 and SynOptics Press are trademarks of SynOptics Communications, Inc.

Other brand and product names are registered trademarks or trademarks of their respective holders.

Statement of Conditions

In the interest of improving internal design, operational function, and/or reliability, SynOptics Communications, Inc. reserves the right to make changes to the products described in this document without notice.

SynOptics Communications, Inc. does not assume any liability that may occur due to the use or application of the product(s) or circuit layout(s) described herein.

Federal Communications Commission (FCC) Statement

Note: This equipment has been tested and found to comply with the limits for a Class A digital device, pursuant to Part 15 of the FCC rules. These limits are designed to provide reasonable protection against harmful interference when the equipment is operated in a commercial environment. This equipment generates, uses, and can radiate radio frequency energy. If it is not installed and used in accordance with the instruction manual, it may cause harmful interference to radio communications. Operation of this equipment in a residential area is likely to cause harmful interference, in which case users will be required to take whatever measures may be necessary to correct the interference at their own expense.

Electromagnetic Emissions

Meets requirements of

FCC Part 15, Subparts A and B, Class A

En 55 022 (CISPR 22:1985), Class A

General License VDE 0871, Class B (AmtsbIVfg No. 243/1991 and Vfg 46/1992)

VCCI Class 1 ITE

Table of Contents

Preface

Organization	xi
Conventions	xi
Related Documentation	xii
SynOptics Customer Support	xii

Chapter 1 - Getting Started

Expanding the Network with the Terminal Server	1-2
Using the Terminal Server	1-3
The Menu Interface	1-3
Dedicated Services	1-3
Logging On to a Terminal Server Port	1-4
Kerberos Passwords	1-4
Terminal Server Scripts	1-4
Managing Sessions	1-5
Establishing a Session	1-5
Suspending a Session	1-6
Using Session Numbers	1-6
Establishing Multiple Sessions	1-6
Disconnecting From a Session	1-7
Using Other Terminal Server Commands	1-7
Using UNIX Aliases for Terminal Server Commands	1-8
Logging Out of the Terminal Server Port	1-8
If You Make a Mistake	1-8
Privilege Levels	1-8
Summary	1-9

Chapter 2 - The User Interface

Entering Commands	2-1
Abbreviating Commands and Keywords	2-1
Editing the Command Line	2-1
Assigning Session Management Functions to Keyboard Characters	2-3
Assigning a Local Switch Character	2-4
Using the Break Key	2-4
Session Switching Characters	2-4
Telnet Session Management Characters	2-5
Using the Terminal Server Menu	2-6

Chapter 3 - Using Model 3395 Terminal Server Commands

Viewing and Changing Information in the Terminal Server Databases	3-2
Using the SHOW LIST Commands	3-2
Using UNIX Aliases for Terminal Server Commands	3-2
BACKWARDS	3-3
CONNECT	3-5
DISCONNECT	3-10
FORWARDS	3-11
HELP	3-13
LAT CONNECT	3-16
LOCK 3-19	
LOGOUT PORT	3-20
RESUME	3-21
RLOGIN	3-23
SCRIPT	3-25
SET PORT	3-27
SET SESSION	3-35
SHOW DESTINATIONS	3-37
SHOW LIST DOMAIN	3-39
SHOW NODES	3-41
SHOW NODES STATUS	3-42
SHOW NODES SUMMARY	3-43
SHOW NODES COUNTERS	3-44
SHOW LIST PORT	3-46
SHOW LIST PORT CHARACTERISTICS	3-47
SHOW LIST PORT ALTERNATE CHARACTERISTICS	3-53
SHOW LIST PORT TELNET CHARACTERISTICS	3-57
SHOW LIST PORT COUNTERS	3-60
SHOW LIST PORT STATUS	3-62
SHOW LIST PORT SUMMARY	3-64
SHOW PORT KEYMAP	3-65
SHOW LIST SERVICES	3-67
SHOW SESSIONS	3-71
TELNET CONNECT	3-74
XCONNECT	3-77
ZERO COUNTERS	3-79

Chapter 4 - TN3270 Sessions

Checking the TN3270 Characteristics at Your Port	4-1
Using the SHOW PORT KEYMAP Command	4-2
Establishing a TN3270 Session with an IBM Host	4-2
Using Hot Keys	4-3
The Scroll Lower key	4-3
The Status Key	4-3
Keyboard Maps	4-4

Chapter 5 - Using the Multisessions Feature

Managing Sessions Within Windows.....	5-1
Establishing the First Session	5-2
Establishing the Second Session	5-4
Establishing Three or More Sessions	5-5
Logging Out of the Terminal Server Port.....	5-5
Using Terminal Server Commands Within Windows.....	5-5
BACKWARDS.....	5-6
CONNECT.....	5-6
DISCONNECT.....	5-6
FORWARDS	5-6
RESUME.....	5-7
SHOW SESSIONS	5-7
SHOW LIST PORT CHARACTERISTICS.....	5-7
Using Session Management Characters Within Windows.....	5-7
Backward Switch.....	5-8
Forward Switch.....	5-8

Chapter 6 - Transferring Files with a Personal Computer

File Transfer Procedure.....	6-1
Transferring a File with the Kermit File Transfer Program	6-2

Index

Figures

Figure 1-1	Using the Model 3395 Terminal Server	1-1
Figure 1-2	A terminal server on an Ethernet LAN.....	1-2
Figure 2-1	A terminal server menu	2-6
Figure 4-1	A SHOW PORT TELNET CHARACTERISTICS display set for TN3270 connections.....	4-1
Figure 4-2	A sample IBM logon screen	4-2
Figure 5-1	An example of a split screen.....	5-2
Figure 5-2	A multisessions screen with one session established	5-3
Figure 5-3	A multisessions screen with two sessions established.....	5-4
Figure 5-4	A sample show sessions display with multisessions enabled.....	5-7
Figure 6-1	A file transfer from a host computer to a PC.	6-2

Tables

Table 2-1	Editing characters	2-2
Table 2-2	Session switching functions.....	2-4
Table 2-3	Telnet session functions	2-5
Table 3-1	UNIX aliases for Model 3395 commands	3-2
Table 4-1	VT100/102 and ANSI 3.64 keyboard map	4-3
Table 4-2	VT220/7-bit keyboard map.....	4-5
Table 4-3	VT220/8-bit keyboard map.....	4-7

Preface

This manual describes how to use the Model 3395 Terminal Server on an local area network (LAN). It explains how to use terminal server commands, and how to tailor some terminal server characteristics to suit your needs. This manual is for people who want to use the terminal server to gain access to resources on the network, rather than the individual who installs and manages the terminal server hardware and software.

The network manager at your site decides how the network is set up and how much access you have to network resources. Because of this, your system may respond differently from what this manual indicates. Follow the instructions in this manual and use the descriptions as an example of what can happen in response to the commands described here.

Organization

This manual contains the following chapters:

- | | |
|-----------|--|
| Chapter 1 | Describes the purpose of the Model 3395 Terminal Server in a local area network (LAN), and how to get started using terminal server commands. |
| Chapter 2 | Describes the terminal server command interface and menu interface. This chapter describes how to use command-line editing keys, and how to use control keys for session management. |
| Chapter 3 | Describes terminal server commands available at secure ports. |
| Chapter 4 | Explains how to use a terminal during a TN3270 session. |
| Chapter 5 | Explains the Multisessions (Dual Session Management) feature. |
| Chapter 6 | Describes how to transfer files between personal computers and hosts through the terminal server. |

Conventions

Throughout this manual, the word “Enter” means type something and then press the <New Line>, <Return>, or <Enter> key; for example, “Enter the CONNECT command” means type the word CONNECT and then press the <New Line>, <Return>, or <Enter> key.

Preface

This manual also uses the following conventions:

COMMAND REQUIRED [OPTIONAL] [*optional*]

Where	Means
COMMAND	You must enter the command, or its accepted abbreviation, as shown.
REQUIRED	You must enter a keyword, or its accepted abbreviation, as shown.
[OPTIONAL]	You have the option of entering this keyword or variable. Do not type the [<i>optional</i>] brackets; they only set off what is optional.

Additionally, this manual uses certain symbols in special ways:

Symbol	Means
TS3395>	This is the Model 3395 Terminal Server prompt at ports with the Secure and Nonprivileged privilege levels.
\$	This is the Digital Equipment Corporation (DEC) VAX/VMS prompt.
%	This is the UNIX C shell prompt.

In examples, this manual uses

This typeface to show your entry and responses and screens from the Model 3395 terminal server.

This typeface to show responses from remote hosts and devices on the network. This typeface also shows command keywords or arguments that are variable, such as "hostname."

Related Documentation

The following manuals provide information that you may find useful with this manual:

- *Software Management Guide for the Model 3395/3395A Terminal Server* (SynOptics part number 893-158-C)

This manual describes the configuration, setup, and management of a terminal server software communications package, supplied by SynOptics Communications, Inc. This manual is written for network managers, and terminal server, UNIX, and VAX system managers.

- *Commands Reference for the Model 3395/3395A Terminal Server* (SynOptics part number 893-159-C)

This manual describes how to use the Model 3395 Terminal Server software, including individual descriptions of each terminal server command. This manual is written for all terminal server users, although many commands can only be used by network managers or others with the appropriate privilege level.

To purchase additional copies of this document or other SynOptics product publications, order by part number from SynOptics Press™ at the following numbers. You may also request a free catalog of SynOptics Press product publications.

- Phone: 1-800-845-9523
- FAX: U.S./Canada: 1-800-582-8000, International: 1-916-939-1010

SynOptics Customer Support

For assistance with installing and configuring your SynOptics systems or for post-installation questions or problems, contact your local reseller. If you cannot contact your local reseller, call the SynOptics Technical Response Center (TRC) Contract Hotline.

To contact the TRC Contract Hotline, call:

- U.S. and Canada: 1-800-473-4911
- Europe: 011-31-3480-31616
- Rest of the world: 408-764-1000

Technical information is available from the SynOptics InfoFACTS fax-on-demand system by calling:

- U.S. and Canada: 1-800-786-3228
- International: 408-764-1002

You can also access technical information in the SynOptics forum on CompuServe.

For information about our education services, contact the SynOptics Training Coordinator at 1-800-473-4911 or 408-764-1018.

Chapter 1 Getting Started

The Model 3395/3395A Terminal Server is a combination of hardware and software that links users at serial devices, such as terminals, to resources on both local area networks (LANs) and wide area networks (WANs). These resources include a variety of hosts, workstations, and printers, as well as other SynOptics terminal servers. You can use a terminal server to gain access to any of these hosts on the network:

- UNIX hosts that support the TCP/IP protocol
- International Business Machines (IBM) hosts that have a Telnet server
- DEC VAX hosts running ULTRIX that support TCP/IP
- DEC VAX hosts that support the Local Area Transport (LAT) protocol

When a user such as the one shown in Figure 1-1 makes a connection to a LAN host through the terminal server, he can use all the resources on that host as if his terminal were directly attached to it.

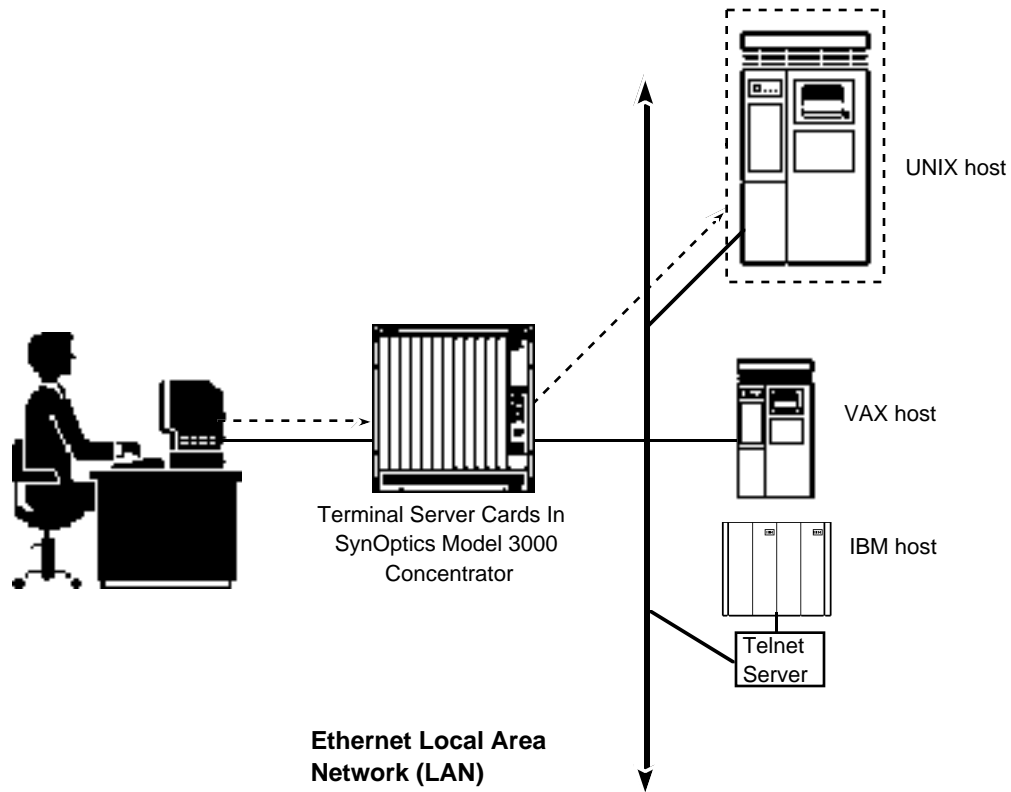


Figure 1-1. Using the Model 3395/3395A Terminal Server

The user in Figure 1-1 has made a connection to the UNIX host on the LAN through the terminal server. He can now read databases, send mail, and run applications on this host. He can also connect to the VAX host, the IBM host, or a serial device on the other terminal server.

Expanding the Network with the Terminal Server

The terminal server can support a variety of devices, other than terminals. These include printers, modems, data switches, personal computers, and other host computers. These devices allow terminal server users to access LAN resources in many different ways, and provide additional resources to LAN users. Figure 1-2 shows an example of a Model 3395 Terminal Server on the LAN, with several different devices connected to it.

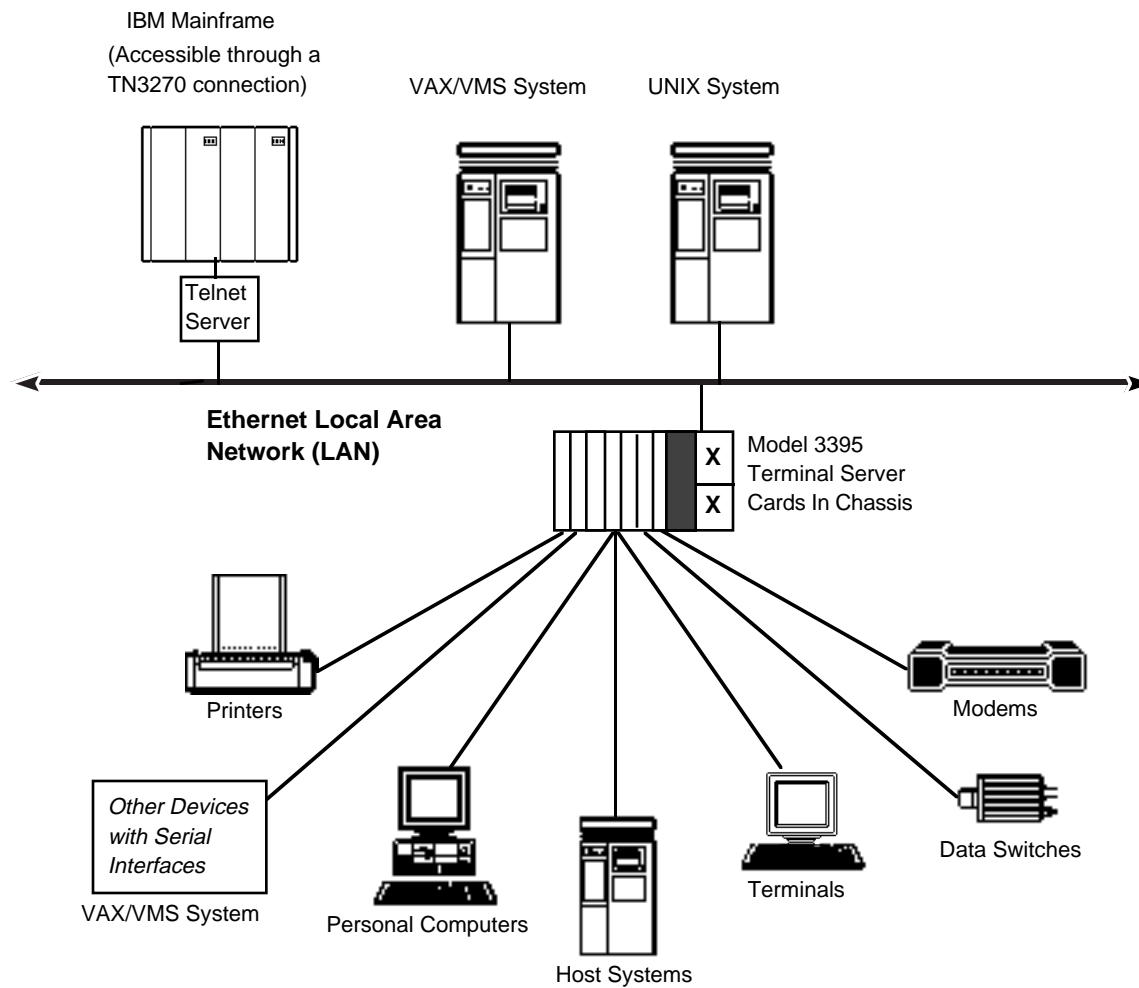


Figure 1-2. A terminal server on an Ethernet LAN

In a network like the one in Figure 1-2, terminal server users can gain access to the hosts connected directly to the LAN. Users on the LAN hosts can reach the devices connected to the terminal server, such as the printer, the host system, or the personal computer.

The remaining sections of this chapter explain how you can use the terminal server in a network such as this one. These sections include the following topics:

- Using the terminal server
- Logging on to a terminal server port
- Managing sessions
- If you make a mistake
- Privilege levels
- Summary

Using the Terminal Server

When you log on to the terminal server you make a connection with a terminal server *port*. A port is the interface between a terminal and the other devices on the network, including hosts, printers, and other terminal servers. Each port has a set of characteristics and privileges that determine how you can use it. The network manager defines these characteristics and privileges with terminal server commands.

From the terminal server port, you can enter commands such as those described in Chapter 3 of this manual. While the privilege level and the characteristics of your port determine which commands you can use, most users can enter commands that do the following:

- Establish connections to devices on the network
- Display information about network destinations, and the characteristics of the terminal server port
- Modify some characteristics of the terminal server port

The Menu Interface

On some terminal servers, the network manager may have created a menu that overrides the terminal server's command interface. The menu displays choices that you can select to establish connections on the network, or change the configuration of your port. Chapter 2 describes the menu interface in more detail, but the information described here about logging on and off the port and establishing sessions will still be useful to you, even if you are using a menu.

Dedicated Services

The network manager can define a dedicated service at a terminal server port. If so, the terminal server automatically connects the port to a host on the network when you log on to the port. While you might not be able to use the terminal server commands in this manual if your port has a dedicated service, you can read this chapter for general information about the terminal server.

Logging On to a Terminal Server Port

If your terminal is connected directly to a terminal server port, press the <Return> key until one of the following prompts appears on the screen. If your terminal is connected to a host on the terminal server network, log off of the host, or suspend your current session by pressing the <Break> key or the local switch character. Then, press the <Return> key until one of these prompts appears and use the appropriate procedure:

- # Enter your login password and press the <Return> key. The default password on many terminal servers is ACCESS, but the network manager may have defined a different password for your terminal server. When you enter the correct password, the Enter username> prompt appears.
- Enter username> Enter your username and press the <Return> key. Your terminal server implementation may require specific usernames. If not, you can enter any username between 1 and 16 characters, or enter <Ctrl><Z> to automatically assign the username PORT_*x* at this port, where *x* is your port number. When you enter your username correctly, the TS3395> prompt appears.
- TS3395> This is the default local command prompt, and it means that you are logged on to a terminal server port. When you see this prompt, you can enter terminal server commands.

Note: These are the default prompts that the Model 3395/3395A Terminal Server includes with the terminal server software. The network manager can change these prompts, however, so the prompts on your terminal server may be different.

Kerberos Passwords

Kerberos is an Internet network authentication service that may exist on your terminal server. It requires that you enter a Kerberos password to gain access to the terminal server. The Kerberos password prompt appears after the Username> prompt in the Model 3395 Terminal Server login sequence, and looks like this:

Enter user password>

If this or a similar prompt appears at your terminal, enter a Kerberos password.

Terminal Server Scripts

Some terminal server ports automatically execute a predefined set of terminal server commands called a script when you log on to the port. The script may prompt you for a password, change some characteristics of the port, or establish a connection with a host on the network. The information in this chapter will still be useful to you, however, even if your port automatically executes a script when you log on.

Managing Sessions

The connection between a terminal server port and a device on the network is called a *session*. You can establish a session with a LAT service, a Telnet host, an IBM host, or another terminal server after you log in to the terminal server port. The Model 3395/3395A Terminal Server allows you to open several sessions simultaneously, and move among them while you work. The next sections explain how to establish and manage sessions.

Establishing a Session

Several terminal server commands establish sessions with LAN destinations, but the one you will probably use most often is the CONNECT command. If you know the name or address of the device where you want to establish a session, simply enter it with the CONNECT command at the prompt and press the <Return> key:

```
TS3395> connect destination-name
```

If you are not sure of the names and addresses on your network, you can view a list of all the different destinations on the LAN with the SHOW DESTINATIONS command. (Some of the destinations in this list may be unavailable to you for security reasons. The network manager can tell you if this is the case.) When you enter the SHOW DESTINATIONS command, a list similar to the following appears on the terminal:

```
TS3395> show destinations

FINANCE.SUN.COM          UNIX Host at 140.179.20.1
ACCOUNTSVAX              VAX/VMS LAT SERVICE
PAYROLLHOST              IBM Host
LASER2                   Department Laser Printer
```

The first column on the list shows the names you can use in connect commands to reach a service or a host. The second column displays information about each destination name, such as a description of a service or the Internet address of a Telnet domain. The information in the second column may or may not appear; the destination names in the first column are all you need to make a connection.

To establish a session with the Telnet host FINANCE.SUN.COM, for example, you could enter the CONNECT command like this:

```
TS3395> connect finance.sun.com
TS3395  -010-  Session 1 to FINANCE.SUN.COM established
Welcome to Finance.SUN.COM
Enter username:
```

You can also use the Internet address of a Telnet domain with the CONNECT command. Internet addresses usually appear next to the domain names in the SHOW DESTINATIONS display or the SHOW DOMAINS display.

Suspending a Session

When you suspend a session, you recall the Model 3395/3395A command interface without terminating the connection to the remote resource. Later, you can reopen the session and continue with your work. To suspend a session, press the Break key or the local switch character during the session. (A local switch character is a control character sequence that you or the network manager can define. Chapter 2 explains how to do this.) The TS3395> prompt appears, and you can enter any terminal server command, including the CONNECT command:

```
$ <BREAK>
TS3395>
```

The next sections show how to use the RESUME command to reopen a previously suspended session.

Using Session Numbers

Each time you establish a session, the terminal server software assigns it a *session number*. The session number appears in a display line right above the logon banner of the remote host. In the previous example, the session number for the connection to FINANCE.SUN.COM was 1:

```
TS3395 -010- Session 1 to FINANCE.SUN.COM established
```

You can use session numbers with several terminal server commands when you switch among different sessions, view the status of sessions, and disconnect from sessions.

Establishing Multiple Sessions

The terminal server command interface allows you to establish two or more sessions simultaneously. You can then switch from one session to another without disconnecting from either of them. You can switch sessions with terminal server commands, or define session switching characters for this purpose. Most ports support up to four simultaneous sessions, and the network manager can enable a port to support up to sixteen simultaneous sessions.

To establish a second session, suspend the current session with the Break key or the local switch character and enter a connect command to establish the next session. You can then suspend that session and go back to the previous session. The SHOW SESSIONS command displays all of your active sessions and their session numbers. The display is similar to this one, for a user named Johnson, with three active sessions:

```
TS3395> show sessions

Port 12: Johnson          Service Mode      Current Session 2
- Session 1: Connected   Interactive       FINANCE.SUN.COM
- Session 2: Connected   Interactive       ACCOUNTSVAX
- Session 3: Connected   Interactive       PAYROLLHOST
```

To switch from session 2 at a LAT service to session 1 at FINANCE.SUN.COM, you could use a sequence like this with the RESUME command, beginning at the LAT service:

```
$  
$ <BREAK> FINANCE.SUN.COM session 1 resumed
```

Disconnecting From a Session

You can disconnect from a session in two ways. If you are currently logged on to a host or service, enter the normal logoff command of the host or service. In this example, the user Johnson logs off of a UNIX host:

```
% logoff  
  
JOHNSON logged out at 25-AUG-1993 16:00:21.12  
  
TS3395 -012- Session 1 disconnected from FINANCE.SUN.COM  
  
TS3395 -101- 2 other session(s) active  
  
TS3395>
```

When the host or service accepts your logoff request, the terminal server terminates the session. It also displays a message that indicates if you still have active sessions.

If you are running the terminal server software because you have suspended a session, use the terminal server DISCONNECT command from the TS3395> prompt. Enter the session number with the command, and the terminal server will terminate the session:

```
TS3395> disconnect session 1  
  
TS3395 -011- Session 1 disconnected from FINANCE.SUN.COM  
  
TS3395 -101- 2 other session(s) active  
  
TS3395>
```

Use the SHOW SESSIONS command to display active session numbers.

Using Other Terminal Server Commands

Many other terminal server commands are available to you, other than the session management commands described in this chapter. These include HELP, SET PORT, LOCK, and several others. HELP provides online information about all terminal server commands, SET PORT modifies the characteristics of your port, including the functions of control characters, and LOCK prevents other users from gaining access to your port while you are away. You enter all of these commands from the TS3395> prompt. Chapter 3 describes these and other commands in detail.

Using UNIX Aliases for Terminal Server Commands

The Model 3395 Terminal Server software provides several UNIX equivalents, or aliases, for Model 3395/3395A Terminal Server commands. If you work in a UNIX environment, you may want to use these aliases because they will be more familiar to you than the Model 3395/3395A commands. Instead of the terminal server HELP command, for example, you can enter the MAN command. Chapter 3 includes a description of the UNIX aliases for terminal server commands.

Logging Out of the Terminal Server Port

The terminal server LOGOUT command logs you out of the terminal server port. When you do this, the terminal server disconnects any sessions that are still active.

```
TS3395> logout
```

```
TS3395 -020- Logged out port 12 on server XFF4B15 at 22 September 1993  
16:12:00
```

The log out message includes your port number and the name of the terminal server, as well as the date and time you logged off.

If You Make a Mistake

Do not be concerned if you make a mistake, such as a typing error, when you enter a command. The terminal server displays an error message and often some information that helps you correct the command. In any case, you can reenter the command correctly, or recall and edit the command line with the editing characters described in Chapter 2.

Privilege Levels

Privilege levels determine which terminal server commands you can use. The network manager can set the privilege level at each port to one of three levels:

- Secure
- Nonprivileged
- Privileged

All the commands in this manual are available at Secure ports.

The two other higher privilege levels, Nonprivileged and Privileged, allow users to enter system management commands, gain access to other users' ports, and alter the parameters in the terminal server database. The *Software Management Guide for the Model 3395/3395A Terminal Server* describes the Nonprivileged and Privileged levels in more detail, and *Commands Reference for the Model 3395/3395A Terminal Server* describes all the commands available to users with these privilege levels.

Summary

The Model 3395/3395A Terminal Server provides you with access to many resources on the network that might be unavailable to you otherwise. To use the terminal server, you log on to a terminal server port and establish sessions with hosts or other terminal server ports. You can suspend sessions and establish new sessions, so that you have several simultaneous connections. Terminal server privilege levels determine which commands and command options you can use at a terminal server port.

The remaining chapters of this book include information that helps you use the terminal server. These chapters include more details about the user interface, complete descriptions of the Secure level commands, how to use the Multisessions feature if your terminal supports it, information about TN3270 connections, and how to transfer files between a personal computer and a host through the terminal server.

Chapter 2

The User Interface

This chapter describes how to use the terminal server command interface and the terminal server menu interface. It includes these topics:

- Entering commands
- Editing the command line
- Assigning session management functions to keyboard characters
- Session switching characters
- Telnet session management characters
- Using the terminal server menu

If your port has the Multisessions characteristic enabled, the user interface behaves somewhat differently than the way this chapter describes it. See Chapter 5, “Using Multisessions Feature,” in addition to this chapter for information about entering commands and using session management control characters in a Multisessions environment.

Entering Commands

You enter commands at the terminal server prompt:

```
TS3395> COMMAND KEYWORD variable [KEYWORD variable]. . .[[KEYWORD]
variable]
```

Most terminal server commands allow you to enter two or more keywords and variables on the command line. If you do this, separate each characteristic with a space, a comma, or a combination of both. You can enter a command line that exceeds the line length of the screen as long as you do not press the <Return> key until the command line is complete. The maximum length of a command line is 132 characters.

Abbreviating Commands and Keywords

You can abbreviate many terminal server commands and keywords to the shortest unambiguous string of characters that the terminal server can interpret. For example, the CONNECT command begins with C, and C is the only character you need to enter the CONNECT command. You could also enter CON or CONNE. Each command description indicates whether or not you can abbreviate it. If so, the command description lists the minimal number of characters that you can enter to execute the command.

Editing the Command Line

You can change, correct, or edit the command line before you press the <Return> key, or recall previous command lines, with special keys and control characters. To use control characters, press the Control key and the second character simultaneously. Table 2-1 lists these editing keys and the control characters that come predefined with the terminal server software.

Users at Nonprivileged and Privileged ports can change the defaults for the editing characters with the SET PORT command, so the characters on your port may not have the same functions as the ones shown in Table 2-1. At most terminals, you can use the SHOW|LIST PORTS ALTERNATE CHARACTERISTICS command to check the control character sequences for the editing functions at your port.

Table 2-1. Editing characters

Key Sequence	Function
<CTRL> <A>	Alternates between insert character mode and overstrike character. Overstrike mode is the default. This function does not apply to hardcopy terminals.
<CTRL> or up arrow key ↑	Recalls the previous command.
<CTRL> <D> or left-arrow key ←	Moves the cursor one position to the left. This function does not apply to hardcopy terminals.
<CTRL> <E>	Moves the cursor to the end of the current command line. This function does not apply to hardcopy terminals.
<CTRL> <F> or right-arrow key →	Moves the cursor one position to the right. This function does not apply to hardcopy terminals.
<CTRL> <H>	Moves the cursor to the beginning of the command line. This function does not apply to hardcopy terminals.
<CTRL> <N> or down-arrow key ↓	Recalls the next command in the command history.
<CTRL> <R>	Redisplays the current command line. This command is useful after you have deleted characters on a hardcopy terminal.
<CTRL> <U>	Deletes all characters from the cursor position to the beginning of the command line.
<CTRL> <V>	Quotes the next character, so that the terminal server interprets it as a variable. (This function is useful if you want to redefine control characters.)
<CTRL> <X>	Deletes the current command line.
<CTRL> <Z>	Cancels an interactive operation, such as changing a password, or deletes the current command line.
<DELETE> or <backspace>	Deletes the character to the left of the cursor. On hardcopy terminals, the terminal server adds a backslash (\) to previously printed characters to indicate that you have deleted them.

The following example shows how to use the command line recall and editing features. Suppose that you enter the following command, which contains a typographical error:

```
TS3395> shw port characteristics
```

The terminal server would not accept the command because you spelled SHOW incorrectly. Instead of retyping the whole command line, however, you could use the up-arrow key or <CTRL> to recall the incorrect command and then edit it:

```
TS3395> ↑
TS3395> shw port characteristics
```

The cursor appears at the end of the command line. Next, type <CTRL><H> to move the cursor to the beginning of the command line. Press the right-arrow key (or type <CTRL><F>) so that the cursor is under the letter W in SHW. Type <CTRL><A> to enter insert mode, and then add the letter O to spell SHOW. Press the <Return> key to enter the correct command.

Assigning Session Management Functions to Keyboard Characters

The terminal server supports several session management functions that you can assign to character sequences with the SET PORT command. Two types of session management functions are available: general session switching and Telnet session management. Session management characters are very useful because you can gain access to them from within sessions, rather than entering the equivalent commands from the TS3395> prompt.

The terminal server has no predefined characters for session management, as it has for command line editing characters. Unless the network manager has already defined them for your port, you must define them yourself. The SHOW PORT CHARACTERISTICS command displays the current session management characters.

You can assign session management functions to individual characters, or to control character sequences, such as several of the editing characters. To use a character this way, you press the control key and the character simultaneously. When you assign session management functions to control character sequences, you can still use the individual character without the control character, such as in a text string. When you do, the terminal server does not execute the session management function.

You can assign session management functions to the alphabet characters (except I, J, and M), with or without the <Control> key, that do not already have editing functions assigned to them. Table 2-1 shows the default settings for the editing characters, and the SHOW PORT ALTERNATE CHARACTERISTICS command displays the current settings for the editing characters. Some other keyboard characters may be available for use as control characters, including these: [\] ^ _ ` { | } ~

This example shows how to assign the local switch function, which suspends an active session, to the <CTRL><L> sequence. Note that when you press the <Control> key at the TS3395> prompt, and then press another character, the <Control> key appears as ^ .

```
TS3395> set port local switch ^l
TS3395>
```

The user at this port can now use <CTRL><L> to suspend an active session. Because this is a SET command, it takes effect immediately, but remains in effect only until you log off of the port.

Assigning a Local Switch Character

If your terminal or workstation does not have a Break key, you *must* define a local switch character to suspend a session. The Break key is the only predefined character that suspends a session. You can set the local switch character when you first log on to the port, before you establish any sessions. This way, you do not need to log off of a session to return to the terminal server local command prompt. See the previous section for an example of how to set the local switch character.

Using the Break Key

On most terminals, the Break key acts as a local switch character to suspend a session. Privileged and Nonprivileged users can change this setting of the Break key, however. The network manager can set the terminal server port to ignore the Break key during a session, or to send a break sequence to the local host during a session rather than the terminal server command interface. If you have questions about the behavior of the Break key on your terminal, see the network manager or ask a user at a Privileged port to change the port characteristic for this key.

Session Switching Characters

Session switching characters suspend the current session and resume other active sessions. You can use these keys in both Telnet and LAT sessions. Table 2-2 lists the keywords you use with the SET PORT commands to assign session switching functions to control characters.

Table 2-2. Session switching functions

Keyword	Session Switching Function
BACKWARD SWITCH	Suspends the current session and reopens the next lower-numbered session. The function of this switch is similar to that of the BACKWARDS command.
FORWARD SWITCH	Suspends the current session and reopens the next higher-numbered session. The function of this switch is similar to that of the FORWARDS command.
LOCAL SWITCH	Suspends the current session and returns the local TS3395> command prompt. You must define this character to suspend a session if your terminal does not have a <Break> key.

See Chapter 3 for more information about how to use these keywords with the SET PORT command.

Telnet Session Management Characters

Telnet session management characters provide command line editing and process management during a Telnet session. Table 2-3 lists the keywords you use with the SET PORT commands to assign Telnet session management functions to control characters

Table 2-3. Telnet session functions

Keyword	Telnet Session Function
TELNET ABORT	Stops a program from sending output to the terminal without terminating the program itself.
TELNET ATTENTION	Returns the session to the local operating system command prompt. If you press the Telnet Attention key during a Telnet session at a Model 3395/3395A Terminal Server, the remote terminal server port passes the break request to the host or device where it is connected. (This also happens in any session if you press the <Break> key when the PORT BREAK characteristic is set to REMOTE.)
TELNET ERASE CHARACTER	Deletes the character to the left of the cursor.
TELNET ERASE LINE	Deletes all data to the left of the cursor in the current line.
TELNET INTERRUPT	Suspends, interrupts, or aborts a user process.
TELNET QUERY	Requests that the Telnet host or port send a signal to the terminal that indicates it is still up and running.
TELNET SYNCHRONIZE	Regains control of a process that is no longer executing properly.

See Chapter 3 for more information about how to use these keywords with the SET PORT commands.

Using the Terminal Server Menu

The Model 3395/3395A Terminal Server software running on your terminal server may have a menu interface rather than a command interface. You will know this if a menu appears on your screen rather than the TS3395> prompt when you log on to the terminal server port. You see a menu similar to the one in Figure 2-1.

```
                Welcome to the Model 3395 Terminal Server

1. Connect to FINANCEVAX
2. Connect to UNIXSUN
3. Connect to LOCALVAX

7. Show Queue
8. Lock Terminal
9. Change Mode - Binary
10. Change Mode Interactive          20. Logout

Enter number of selection>
```

Figure 2-1. A terminal server menu

One or more options appear on the menu, preceded by a number. To select an option, enter the number corresponding to the option at the prompt and press the <Return> key. This method of selecting an option works whether your port's TYPE characteristic is set to HARDCOPY, SOFTCOPY, or ANSI. For example, you could select the Connect to FINANCEVAX option in Figure 2-1 like this:

```
Enter number of selection> 1
```

When you make the selection, the terminal server executes the appropriate command. When you suspend a session, or execute a terminal server command, the menu does not reappear on your screen until you press the <Return> key.

If the TYPE characteristic at your port is set to ANSI, you can also use the arrow keys to position the cursor on the option you want, and then press the <Return> key. The SHOW PORT CHARACTERISTIC display includes the port's TYPE characteristic.

Chapter 3

Using Model 3395/3395A Terminal Server Commands

This chapter describes the commands you can use at Secure ports. These commands establish sessions, display information about LAN destinations, sessions, and services, and allow you to specify some characteristics of your own port. Some commands have options that are available only at Nonprivileged or Privileged ports, and the command descriptions indicate this. For more information about commands available at Nonprivileged and Privileged ports, see *Commands Reference for the Model 3395/3395A Terminal Server*.

In addition to the command descriptions, this chapter includes information about these topics:

- Viewing and changing information in the terminal server databases
- Using UNIX aliases for terminal server commands

These are the commands in this chapter:

BACKWARDS
CONNECT
DISCONNECT
FORWARDS
HELP
LAT CONNECT
LOCK
LOGOUT PORT
RESUME
RLOGIN
SCRIPT
SET PORT
SET SESSION
SHOW DESTINATIONS
SHOW|LIST DOMAIN
SHOW NODES
SHOW|LIST PORT
SHOW|LIST SERVICES
SHOW SESSIONS
TELNET CONNECT
XCONNECT
ZERO COUNTERS

Viewing and Changing Information in the Terminal Server Databases

The terminal server maintains two files of data, or databases, that contain information about the terminal server and the devices you can reach on the network. One is the *operational* database and other is the *permanent* database. Information in the operational database is temporary, and remains current only until you log out of your terminal server port. While it is current, it overrides the information in the permanent database. You change information in the operation database with SET commands. Information in the permanent database is constant, and remains constant unless you or the network manager change it with a DEFINE command and you log out of your port, or the network manager initializes the terminal server.

Using the SHOW|LIST Commands

The SHOW commands display information in the terminal server's operational database. The LIST commands display information in the terminal server's permanent database. Information in the SHOW displays reflect the most current information about your port and the destinations you can reach on the LAN.

Using UNIX Aliases for Terminal Server Commands

If you are accustomed to the UNIX operating system, the Model 3395/3395A Terminal Server offers several UNIX equivalents of frequently used Model 3395/3395A commands. You can enter these equivalents, or aliases, at the TS3395> prompt just as you would enter the Model 3395/3395A commands to produce the same results. Table 3-1 shows the UNIX aliases for Model 3395/3395A commands.

Table 3-1. UNIX aliases for Model 3395/3395A commands

Model 3395/3395A Command	UNIX Alias
SHOW PORT STATUS [<i>port-list</i>]	STATUS [<i>port-list</i>]
RESUME session number	FG <i>session-number</i>
HELP	MAN
SHOW SESSIONS	JOBS
DISCONNECT [<i>session</i>]	CLOSE or KILL [<i>session</i>]
TELNET CONNECT [<i>domain-name</i>] [<i>internet-address</i>]	OPEN [<i>domain-name</i>] [<i>internet-address</i>]
LOGOUT [PORT <i>port-list</i>]	QUIT [<i>port-list</i>]

Each command description includes the UNIX alias, if one exists, in the Notes section.

BACKWARDS
Reopen the next available lower-numbered session

The BACKWARDS command reopens the next available, lower-numbered session already established at your port. Use the SHOW SESSIONS command to display information about active sessions, including their session numbers.

Notes

The terminal server assigns a number to each session you establish. The server records these session numbers in a rotating list for use by the FORWARDS and BACKWARDS commands. Therefore, when the lowest-numbered session is current, using the BACKWARDS command reopens the highest-numbered session. When only one session is active at a port, the BACKWARDS command reopens that session.

In a Multisessions environment, the BACKWARDS command reopens the next lower-numbered session that does not already appear in a window. See Chapter 5 for more information about how the MULTISESSIONS characteristic affects the BACKWARDS command.

If you have defined a backward switch character, you can reopen the next available lower-numbered session from within the current session, rather than from the terminal server command interface. See Chapter 2 and the SET PORT command in this chapter for more information about the backward switch character.

Syntax

BACKWARDS

Abbreviation

B

Example

A user whose current session is session 2, enters the BACKWARDS command to reopen session 1. First, the user enters the SHOW SESSIONS command to display all active sessions, and check the number of the current session.

```
TS3395> show sessions

Port 12: charlie          Service Mode      Current Session 2
- Session 1: Connected   Interactive        FINANCE.SUN.COM
- Session 2: Connected   Interactive        PAYROLLVAX
- Session 3: Connected   Interactive        UNIX.HOST.COM
```

The display shows that session 2 is current. Now the user reopens session 1.

BACKWARDS

```
TS3395> backwards
```

```
TS3395 -012- FINANCE.SUN.COM session 1 resumed
```

The user's current session is now session 1. If this user suspended session 1 and entered the BACKWARDS command again, the terminal server would reopen session 3 at UNIX.HOST.COM, because session 3 is next on the rotating list.

Related Commands

These commands provide functions that are useful with or similar to the BACKWARDS command:

Command	Function
SHOW SESSIONS	Displays a list of active sessions and their session numbers at your port.
FORWARDS	Reopens the next higher-numbered session.
RESUME	Reopens the session that you specify in the command line, or the previous session.

CONNECT**Establish a session with a resource on the network**

The CONNECT command establishes a session with a Telnet destination or a LAT service. Use the SHOW DESTINATIONS command to obtain a list of LAT service names and Telnet destination names on the network.

Notes

TELNET CONNECTIONS: The terminal server may take a few seconds to establish a Telnet connection to a domain name after it has been initialized. During this time, the server is attempting to locate the Domain Name Server, look up the Internet address for the domain name, and then make the connection. Subsequent attempts to connect to that Telnet host occur without delay, because the terminal server has a record of the Telnet address for that domain name.

TN3270 CONNECTIONS: You can use an Internet address or a domain name to reach an IBM host and establish a TN3270 session. Once you make the connection, your terminal emulates an IBM 3270 display station. See Chapter 4 for more information about TN3270 terminal emulation.

LAT CONNECTIONS: LAT services can exist at more than one LAT service node, or terminal server port. The *node-name* and *port-name* variables allow you to specify a service node or port when this is the case. If a LAT service exists at more than one service node or port and you do not specify one in the CONNECT command, the terminal server makes a connection based on which has the highest rating. This rating indicates the ability of the node or port to support additional connections.

Some LAT services may require that you supply a password before you can use them. If a LAT service requires a password, the terminal server prompts you for it after you enter the CONNECT command. Enter the password and press the <Return> key. Check with the network manager if you have questions about the password for a LAT service. See the Examples section of this command description for an example of a LAT service with password protection.

LAT services allow a limited number of connections from terminal server ports. When the number of connections to a service has reached the maximum amount, additional connection requests are placed in a queue if one is enabled. If you request a connection to a service, and the service does not respond, it may already have the maximum number of terminal server connections or it may be unavailable.

PREFERRED SERVICES: If you enter the CONNECT command without a destination, the terminal server searches for a predefined preferred LAT service or a preferred Telnet destination. Preferred services are defined by the network manager, but you can check to see if a preferred service has been defined for your port with the SHOW|LIST PORTS CHARACTERISTICS command.

CONNECT

Syntax

```
CONNECT    [domain-name[:telnet-port-number]]
           [internet-address[:telnet-port-number]]
           [[SERVICE] service-name] [NODE node-name]
           [DESTINATION port-name]
```

Abbreviation

```
C    [SERV] [NOD] [DEST]
```

Where

Means

<i>domain-name</i>	Establish a session with the Telnet host you specify in this variable. A domain name may contain up to four segments, separated by a period.
<i>internet-address</i>	Establish a session with the destination at the Internet address you specify in this variable. An Internet address consists of four numbers, separated by a period.
<i>:telnet-port-number</i>	Establish a session using the number of an Internet protocol or the port number you specify in this variable. Precede the port number with a colon (:) to separate it from the domain name or the Internet address. Valid port numbers are the whole numbers 1 through 32767.
<i>service-name</i>	Establish a session with the LAT service you specify in this variable. A service name can consist of 1 through 16 characters.
NODE	Establish a session with the LAT server at the node you specify in the <i>node-name</i> variable. Use this keyword when the LAT service you in the <i>service-name</i> variable is offered at more than one node, and you want to specify the node.
<i>node-name</i>	Establish a session with the LAT service at the node you specify in this variable. A node name can consist of 1 through 16 ASCII characters.
DESTINATION	Establish a session with the LAT service at the remote port you specify in the variable. Use this keyword when the LAT service you specified in the <i>service-name</i> variable is offered at a port on another terminal server, and you want to specify that port.
<i>port-name</i>	Establish a session with the LAT service at the port you specify in this variable. A port name can consist of 1 through 16 ASCII characters. The default name for a port on a Model 3395/3395A Terminal Server has the form PORT_ <i>x</i> , where <i>x</i> is the number of the physical terminal server port (1 through 16).

Examples of Telnet Connections

1. This command uses the Telnet domain name FINANCESUN.SYNOPTICS.COM.

```
TS3395> connect financesun.synoptics.com
TS3395 -010- Session 5 to FINANCESUN.SYNOPTICS.COM
established
    You have reached FINANCESUN.SYNOPTICS.COM
    Enter your username/password pair
    Username:
```

2. This command uses the Internet address 128.10.2.30 and the Telnet port number 23.

```
TS3395> connect 128.10.2.30:23
TS3395 -010- Session 6 to 128.10.2.30:23 established
    Welcome to DevelopmentSUN
    Please log on.
```

Example of a TN3270 Connection

This command uses a Telnet domain name to reach an IBM host. Once the connection is established, the user's terminal emulates an IBM 3270 display station, and the terminal's keyboard responds like an IBM keyboard.

```
TS3395> connect ibmhost.com
TS3395 -010- Session 3 to IBMHOST.COM established
    This is IBMhost.COM
    Username:
```

Examples of LAT connections

1. This command establishes a session with a LAT service named FINANCEVAX, which requires a password. The password does not echo on the screen when the user enters it.

```
TS3395> connect financevax
Password> xxxxxxxx
TS3395 -010- Session 1 to FINANCEVAX established
    Welcome To FINANCEVAX
    Please log on.
```


2. This command uses the LAT service name ACCOUNTSVAX and the LAT node name VAX1.

```
TS3395> connect accountsvax node vax1  
TS3395 -010- Session 2 to ACCOUNTSVAX established  
Welcome to ACCOUNTSVAX  
  
Please log on.
```

3. This command uses the LAT service name LASER, which is offered at terminal server port 2 on the node named TAX9000.

```
TS3395> connect laser node tax9000 destination port_2  
TS3395 -010- Session 3 to LASER established  
Username>
```

Example of a Preferred Service

This CONNECT command has no destination name or Internet address. The terminal server searches for a predefined LAT preferred service or preferred Telnet destination. In this example, the preferred service is a LAT host named ACCOUNTSHOST.

```
TS3395> connect  
TS3395 -010- Session 4 to ACCOUNTSHOST established  
  
This is ACCOUNTSHOST  
  
Please enter your username:
```

If the preferred service had not been defined, the message *Preferred service has not been defined* would have appeared at the user's terminal. If this happens to you, see the network manager, or enter a LAT service name or Telnet domain name with the CONNECT command.

Related Commands

These commands provide functions that are useful with or similar to the CONNECT command:

Command	Function
SHOW DESTINATIONS	Displays a list of LAT services and Telnet destinations.
SHOW DOMAIN	Displays a list of learned and static Telnet destinations on the network.
SHOW NODES	Displays a list of LAT service nodes.
SHOW SERVICES	Displays a list of LAT services.
TELNET CONNECT	Establishes a session with a Telnet destination.
LAT CONNECT	Establishes a session with a LAT service.
RLOGIN	Establishes a session with a host that has been configured for an RLOGIN implementation.
DISCONNECT	Terminates a session between the terminal server port and a device on the LAN.

DISCONNECT

DISCONNECT

Terminate one or all active sessions at your port

The DISCONNECT command terminates one or more active sessions. The SHOW SESSIONS display includes the numbers of active sessions at your port, which you can use with the DISCONNECT command.

Notes

Users at Secure ports can terminate sessions only at their own ports.

UNIX Alias: CLOSE/KILL [*session-number*]

Syntax

```
DISCONNECT [SESSION session-number] [ALL]
```

Abbreviation

DI [S]

Where

Means

SESSION Terminate the session in the *session-number* variable. You can also enter the DISCONNECT command without keywords or variables to terminate the current session.

session-number Terminate the session you specify in this variable.

ALL Terminate all active sessions at this port.

Example

This command terminates session 1.

```
TS3395> disconnect session 1
```

```
TS3395 - 011- Session 1 disconnected from FinanceSUN.COM
```

Related Commands

This command provides information that is useful with the DISCONNECT command:

Command	Function
SHOW SESSIONS	Displays the active sessions and their session numbers at your port.

FORWARDS

Reopen the next available higher-numbered session

The FORWARDS command reopens the next available higher-numbered session already established at your port. Use the SHOW SESSIONS command to display information about active sessions, including their session numbers.

Notes

The terminal server assigns a number to each session you establish. The server records these session numbers in a rotating list for use by the FORWARDS and BACKWARDS commands. Therefore, when the highest-numbered session is current, using the FORWARDS command reopens the lowest-numbered session. When only one session is active at a port, the FORWARDS command reopens that session.

In a Multisessions environment, the FORWARDS command reopens the next higher-numbered session that does not already appear in a window. See Chapter 5 for more information about how the MULTISESSIONS characteristic affects the FORWARDS command.

If you have defined a Forward Switch character, you can reopen the next available higher-numbered session from within the current session, rather than from the terminal server command interface. See Chapter 2 and the SET PORT command in this chapter for more information about the Forward Switch character.

Syntax

FORWARDS

Abbreviation

F

Example

A user whose current session is session 2 enters the FORWARDS command to reopen session 3. First, the user enters the SHOW SESSIONS command to display all active sessions, and check the number of the current session.

```
TS3395> show sessions

Port 11: lynne          Service Mode      Current Session 2
- Session 1: Connected  Interactive       FINANCE.SUN.COM
- Session 2: Connected  Interactive       PAYROLLVAX
- Session 3: Connected  Interactive       UNIX.HOST.COM
```

The display shows that session 2 is current. Now the user reopens session 3.

FORWARDS

```
TS3395> forwards
```

```
TS3395 -011- UNIX.HOST.COM session 3 resumed
```

The user's current session is now session 3. If this user suspended session 3 and entered the FORWARDS command again, the terminal server would reopen session 1 at FINANCE.SUN.COM, because session 1 is next on the rotating list.

Related Commands

These commands provide functions that are useful with or similar to the FORWARDS command:

Command	Function
SHOW SESSIONS	Displays a list of active sessions and their session numbers at your port.
BACKWARDS	Reopens the next lower-numbered session.
RESUME	Reopens the session that you specify in the command line, or the previous session.

HELP**Display online information about commands and keywords**

The **HELP** command displays online information about the commands and keywords you specify. This information includes a description of the command and a summary of command options.

Notes

The terminal server displays information about terminal server commands according to the privilege level of the port. If the port is Secure, for example, the terminal server displays only the commands that a Secure port accepts.

Terminal servers with limited memory display the command syntax only. All other terminal servers display the syntax and other information about the command.

For security reasons, the network manager may disable the **HELP** command on the terminal server, so it may not be available for use at your port.

UNIX alias: MAN

Syntax

HELP [INTRODUCTION] [*topic*] [*subtopic(s)*]

Abbreviation

H [INT]

Where**Means**

INTRO-
DUCTION

Display the help introduction. If you do not enter this keyword, the terminal server displays a list of topics.

topic and
in these variables.

Display information about the commands and keywords you specify SUB-TOPIC

Example

A user enters the **HELP** command, selects the **SHOW** command as the topic, and then selects the keyword **USERS** as the subtopic. This example shows the extended help screen for the command. A terminal server with limited memory would display only the command syntax.

TS3395> help

Display information on commands and their parameters.

HELP [command [keyword [keyword [keyword]]]]

"Keyword" is one or more of the command's parameter keywords.

New users type:

HELP INTRODUCTION

"Command" is one of:

BACKWARDS	BROADCAST	CLIENT SELECTION
CONNECT	CLOSE	DEFINE
DISCONNECT	FG	FORWARDS
JOBS	KILL	Introduction
LIST	LOCK	LOGOUT
OPEN	QUIT	RESUME
RLOGIN	SCRIPT	SET
SETUP	XPRINTER	SHOW
STATUS	TELNET	TEST
ULI	WHO	XCONNECT
ZERO COUNTERS		

Enter <CTRL/Z> to exit HELP or press <RETURN> to continue.

Topic? show

Display information from the operational data base.

More HELP available for:

PORTS SERVICES SESSIONS

SHOW Subtopic? services

Display service information from the operational database.

SHOW SERVICES [services] [info]

"Services" is ALL (the default), LOCAL, or a service name. The service name may contain a single wildcard "*" symbol. All services matching the given name will be displayed.

"Info" is the type of information: CHARACTERISTICS, STATUS, or SUMMARY (the default).

SHOW Subtopic? ^Z

TS3395>

Related Commands

Use the HELP command to obtain information about other terminal server commands.

LAT CONNECT

Establish a session with a LAT service

The LAT CONNECT command establishes a session with a LAT service. Use the SHOW SERVICES or SHOW NODES commands to obtain a list of LAT service names on the network.

Notes

Some networks may include a LAT service and a Telnet domain with the same name. The LAT CONNECT command selects the LAT service rather than the Telnet domain if you include only the name in the command line. If you enter the LAT CONNECT command without a service name, the terminal server searches for a predefined preferred LAT service. Preferred services are defined by the network manager, but you can check to see if a preferred service has been defined for your port with the SHOW|LIST PORTS CHARACTERISTICS command.

LAT services can exist at more than one LAT service node, or terminal server port. The *node-name* and *port-name* variables allow you to specify a service node and port when this is the case. If a LAT service exists at more than one service node or port and you do not specify one in the LAT CONNECT command, the terminal server makes a connection based on which node has the highest rating. This rating indicates the ability of the node or port to support additional connections.

Some LAT services may require that you supply a password before you can use them. If a LAT service requires a password, the terminal server prompts you for it after you enter the LAT CONNECT command. Check with the network manager if you have questions about the password for a LAT service. See the Examples section of this command description for an example of a LAT service with password protection.

LAT services allow a limited number of connections from terminal server ports. When the number of connections to a service has reached the maximum amount, additional connection requests are placed in a queue if one is enabled. If you request a connection to a service, and the service does not respond, it may already have the maximum number of connections or it may be unavailable.

Syntax

```
LAT CONNECT [[SERVICE] service-name] [NODE node-name]  
[DESTINATION port-name]
```

Abbreviation

```
LAT C [SERV] [NOD] [DEST]
```

Where	Means
SERVICE	Establish a session with the LAT service in the <i>service-name</i> variable. This keyword is optional.
<i>service-name</i>	Establish a session with the LAT service you specify in this variable. A service name can consist of 1 through 16 characters.
NODE	Establish a session with the device, or node, on the LAN that you specify in the <i>node-name</i> variable. Use this keyword when the LAT service you specified in the <i>service-name</i> variable is offered at more than one node, and you want to specify the node.
<i>node-name</i>	Establish a session with the LAT service at the node you specify in this variable. A node name can consist of 1 through 16 ASCII characters.
DESTINATION	Establish a session with a device connected to the port you specify in the <i>port-name</i> variable. Use this keyword when the LAT service you specified in the <i>service-name</i> variable is offered on a device connected to a port on another terminal server, and you want to specify that port.
<i>port-name</i>	Establish a session with the LAT service at the device connected to the port you specify in this variable. A port name can consist of 1 through 16 ASCII characters. The default name for a port on a Model 3395/3395A Terminal Server has the form PORT_ <i>x</i> , where <i>x</i> is the number of the physical terminal server port (1 through 16).

Examples

1. This command uses the LAT service named FINANCEVAX, which requires a password. The password does not appear on the screen when the user enters it.

```
TS3395> lat connect financevax
Password> xxxxxx
TS3395 -010- Session 1 to FINANCEVAX established
Welcome To FINANCEVAX
Please log on.
```
2. This command uses the LAT service name ACCOUNTSVAX, which exists on the LAT node named VAX1.

```
TS3395> lat connect accountsvax node vax1
TS3395 -010- Session 4 to ACCOUNTSVAX established
Welcome to ACCOUNTSVAX
Username:
```

3. This command uses the LAT service name LASER, which exists on terminal server port 2 on the node named VAX1.

```
TS3395> lat connect lasernode vax1 destination port_2
TS3395 -010- Session 5 to LASER established
You have reached LASER
Username:
```

4. This command does not use a service name. In the absence of this information, the command interface searches for a predefined LAT preferred service. In this example, the preferred service is a LAT host named ACCOUNTSHOST.

```
TS3395> lat connect
This is ACCOUNTSHOST
Please enter your username:
```

If the preferred service had not been defined, the message *Preferred service has not been defined* would have appeared on the screen. If this happens to you, see your network manager, or enter a LAT service name with the LAT CONNECT command.

Related Commands

These commands provide functions that are useful with or similar to the LAT CONNECT command:

Command	Function
SHOW DESTINATIONS	Displays a list of all LAT services and Telnet destinations on the network.
SHOW NODES	Displays a list of LAT service nodes on the network.
SHOW SERVICES	Displays a list of available LAT services on the network.
CONNECT	Establishes a session with a LAT service or a Telnet destination.
DISCONNECT	Terminates a session between your port and a LAT service or a Telnet destination.

LOCK

Temporarily disable access to a terminal server port

The LOCK command disables access to a terminal server port without terminating active sessions or logging out the port. The interface prompts you for a password before it locks the port. You use this password to “unlock” the port when you want to regain access to it.

Notes

Locking your port prevents other users from establishing sessions and gaining access to network resources through it if you are away. If you are at a privileged port, locking your port prevents other users from entering commands that are not available through Secure ports.

If you forget the unlock password, a user at a Privileged port must log out your port before you can use it again, although this terminates any active sessions.

The SERVER LOCK characteristic must be enabled to use the LOCK command. See the network manager if you cannot use this command.

Syntax

```
LOCK
```

Abbreviation

```
LOC
```

Example

```
TS3395> lock
```

```
Lock Password>xxxxxx
```

When you enter the LOCK command, the interface prompts you for a Lock Password. Choose a password that you can remember, because you will use it later to unlock the port. The password do not appear on the screen. After the you enter the Lock Password, the interface prompts you to enter it again, to verify its contents.

```
Verification>xxxxxx
```

After the interface verifies the password, it displays a message indicating that the port is locked, and the Unlock Password prompt:

```
TS3395 - 019 - Port 6 locked
```

```
Unlock Password>
```

Enter the Lock Password at the Unlock Password> prompt to regain access to the port.

Related Commands

When a port is locked, you cannot enter commands.

LOGOUT PORT

Log out of the terminal server port

The LOGOUT PORT command logs you out of the terminal server port, and terminates any active sessions.

Notes

Users at Secure ports can only log out of their own port.

UNIX alias: `QUIT [port-list]`

Syntax

```
LOGOUT [PORT] [port-list]
```

Abbreviation

```
LOG [PO]
```

Where

Means

port-list

Log out of the port in this variable. Users at Secure ports can only specify their own port number. This variable is optional. You can simply enter LOGOUT to log out of your port.

Example

```
TS3395> logout
```

```
TS3395 -20- Logged out port 12 on server X003E8C at 13 March 1991  
11:15:23
```

The logout message on your terminal server may be different. It usually includes the port number and the date as well as the name of the terminal server.

Related Commands

Use the LOGOUT command when you are finished using the terminal server.

RESUME
Reopen an active session

The RESUME command reopens a session that you specify in the command line, or the current session. Use the SHOW SESSIONS command to obtain a list of active sessions and their session numbers.

Notes

If you enter the RESUME command without specifying a session, the terminal server reopens the current session. If you enter the RESUME command within a Multisessions window, the terminal server reopens the current session established in that window. To reopen a session that you established in another window, you must enter a session number.

When you reopen a session, you need to press the return key once or twice to obtain the local operating system prompt.

```
UNIX alias:  FG session-number
              domain-name
              internet-address
```

Syntax

```
RESUME [[SESSION] session number|service-name|domain-
name|internet-address]
```

Abbreviation

```
R    [SES]
```

Where**Means**

<i>session- number</i>	Reopen the session you specify in this variable.
<i>service- name</i>	Reopen a session at the LAT service you specify in this variable.
<i>domain- name</i>	Reopen a session with the Telnet domain you specify in this name variable. A domain name may contain up to four segments, each separated by a period.
<i>internet- address</i>	Reopen a session with the Telnet host or terminal server at the Internet address you specify in this variable. Internet addresses consist of four numbers, separated by periods.

RESUME

Examples

1. This command reopens a session using a session number.
TS3395> resume session 3
2. This command reopens a session using a LAT service name.
TS3395> resume financevax
3. This command reopens a session using an Internet address.
TS3395> resume 140.178.65.119

Related Commands

These commands provide functions that are useful with or similar to the RESUME command:

Command	Function
SHOW SESSIONS	Displays a list of active sessions and their session numbers.
FORWARDS	Reopens the next higher-numbered session.
BACKWARDS	Reopens the next lower-numbered session.

RLOGIN**Log on to a host through the terminal server command interface**

The RLOGIN command allows you to log on to a host through the terminal server. To do this, the terminal server passes a username for the remote host or a username for a remote terminal server port from the RLOGIN command line.

Notes

A network manager can implement the RLOGIN function on a host in different ways. Some implementations allow you to specify a username with the RLOGIN command and bypass the login routine on the host. Other implementations may function differently. Check with the network manager if you have questions about which keywords and variables to enter with the RLOGIN command.

The terminal server may take a few seconds to establish a Telnet connection to a domain name after it has been initialized. During this time, the server is attempting to locate the Domain Name Server, look up the Internet address for the domain name, and then make the connection. Subsequent attempts to connect to that Telnet host occur without delay, because the terminal server has a record of the Telnet address for that domain name.

Syntax

```
RLOGIN    domain-name [[USERNAME] "username"]
          internet-address [[USERNAME] "username" ]
          NONE
```

Abbreviation

RL [U]

Where**Means**

<i>domain-name</i>	Establish a session with the Telnet host you specify in this variable. Domain names may contain up to four segments, separated by a period.
<i>internet address</i>	Establish a session with the Telnet host at the Internet address you specify in this variable. An Internet address consists of four numbers, separated by a period.
" <i>username</i> "	Pass the character string that you specify in this variable to the remote host as a logon name, or username. Enclose the username in quotes.
NONE	Establish a session with a predefined preferred Telnet destination. Preferred destinations are defined by the network manager.

Examples

1. This command has no host username for the host UNIXSUN. The terminal server uses the port username to log on to the host.

```
TS3395> rlogin unixsun
TS3395 -010- Session 1 to UNIXSUN established
$
```

The shell prompt on UNIXSUN indicates that the RLOGIN request was successful. The response you see may be different.

2. This command uses the host name UNIXSUN and the username Johnson.

```
TS3395> rlogin unixsun "johnson"
TS3395 -010- Session 2 to UNIXSUN established
$
```

The shell prompt on UNIXSUN indicates that the RLOGIN attempt was successful.

3. This command uses the NONE keyword to connect to a preferred service. The terminal server passes the username of the terminal server port to the remote host.

```
TS3395> rlogin none
TS3395 -010- Session 3 to UNIXSUN established
$
```

The shell prompt on the remote host indicates that the RLOGIN attempt was successful.

Related Commands

These commands provide functions that are useful with or similar to the RLOGIN command:

Command	Function
CONNECT	Establishes a session with a Telnet destination, including a UNIX host, or a LAT service.
TELNET CONNECT	Establishes a session with a Telnet destination, including a UNIX host.
SHOW DOMAIN	Displays a list of learned or static domain names.

SCRIPT
Execute a script file

The **SCRIPT** command locates a script file and executes the commands in the script file.

Notes

Script files reside on a host system and contain a collection of Model 3395/3395A Terminal Server commands. You or the network manager can create these scripts with the host's text editor if you have the appropriate privileges on the host. You can execute a script file with the **SCRIPT** command, or the network manager can specify that the terminal server execute a script automatically when you log on to a port.

Once you execute a script, you cannot stop it. The session switching characters and the <Break> key do not function while a script is executing.

Syntax

```
SCRIPT    "/pathname/script-name"
```

Abbreviation

None

Where**Means**

*"/pathname/
script-name"* Execute the script file you specify in the *script-name* portion of the variable at the location you specify in the *pathname* portion of the variable. Include the complete pathname to the file, and precede each directory name or filename with a backslash (/). The *pathname/script-name* combination must not exceed 64 characters. Enclose this variable in quotes.

Some host operating systems, including most UNIX implementations, are case sensitive. These operating systems interpret "SCRIPTNAME" and "scriptname" as different names because one is in upper-case letters and one is in lower-case letters. Be sure to enter the exact letters when you specify a directory name or a filename. Otherwise, the host operating system may not recognize it.

Example

This command executes a script called `loginsetup` in the directory `/Scripts/Chris`.

```
TS3395> script "/scripts/chris/loginsetup"
```

```
Searching for script file. Please wait. . .
```

SCRIPT

The terminal server's response to this command depends on the contents of the script file. At some ports, the commands in the script appear on the screen as the terminal server executes them. If the file contains a command such as `CONNECT` or `RLOGIN`, the user might see the logon banner of a remote host. The script could contain commands such as `SET PORT TELNET TN3270 DEVICE` to specify the type of terminal emulation to run during a TN3270 session, or `SET SESSION` to change the data transparency mode of a session. Unlike the `CONNECT` or `RLOGIN` commands, these commands would not necessarily cause any visible response from the terminal server.

If the terminal server cannot find the script file, or you do not have access to the script file, an error message appears at your terminal. A message such as "Temporary resource conflict - Please try again" may appear if many other users attempt to execute the script file at the same time as you do. If this message appears, wait a few minutes and then try again.

Related Commands

These commands provide information that is useful with the `SCRIPT` command:

Command	Function
<code>SHOW PORT ALTERNATE CHARACTERISTICS</code>	Displays the <code>PORT SCRIPT LOGIN</code> characteristic.
<code>SHOW PORT STATUS</code>	Displays the name of the host which contains the script file that was last executed a this port.

SET PORT**Change port characteristics**

The SET PORT command changes port characteristics in the terminal server's operational database. These changes take effect immediately, but remain in effect only until you log off the port or until the network manager initializes the terminal server.

Notes

Users at Secure ports can set some characteristics of their own ports, including all those listed here. Users at Privileged ports can define and set these and other characteristics, as well as the characteristics of other ports. See *Commands Reference for the Model 3395/3395A Terminal Server* for information about the characteristics of the DEFINE|SET PORT commands that are accessible at Privileged and Nonprivileged ports.

Many of the port characteristics you can set with these commands assign session management functions, such as local switch or forward switch, to the characters you specify. Chapter 2 explains more about these characters. Before you attempt to assign a function to a character, check the current settings, if any, for the characters at your port. Use the SHOW PORT CHARACTERISTICS command to display the settings of the session switching characters, the SHOW PORT ALTERNATE CHARACTERISTICS command to display the settings of the editing control characters, and the SHOW PORT TELNET CHARACTERISTICS command to display the settings of Telnet session management characters.

* An asterisk next to a setting indicates that it is the default setting for a port characteristic.

Syntax

```
SET PORT [port-list] [characteristic setting]
...[characteristic setting] [characteristic setting]
```

Where**Means**

port-list Set characteristics for the ports you specify in this variable. Because the default value is the issuing port, you can omit the port number.

Abbreviation

SE PO

The following is a summary of the available characteristics. A detailed description of each follows on the page after the summary.

SET PORT

Characteristics	Setting	Description
[AUTOPROMPT]	[ENABLED]* [DISABLED]	Initiate a logon sequence when you establish a session between your port PROMPT and a LAT service node. The LAT service node must also support this characteristic.
[BACKWARD SWITCH]	[<i>character</i>] [NONE]*	Reopen the next lower-numbered session during the current session, without returning to the Model 3395/3395A command interface when you enter this <i>character</i> or control character sequence. If NONE, do not enable a backward switch character at this port. Use this keyword to disable a previously defined backward switch character.
[FORWARD SWITCH]	[<i>character</i>] [NONE]*	Reopen the next higher-numbered session during the current session, without returning to the Model 3395/3395A command interface when you enter this character or control character sequence. If NONE, do not enable a forward switch character at this port. Use this keyword to disable a previously defined forward switch character.
[LOCAL SWITCH]	[<i>character</i>] [NONE]*	Suspend the current session and recall the terminal server local command mode when you enter this character or control character <i>character</i> sequence. You must set a local switch character to suspend active sessions if your terminal does not have a <Break> key. If NONE, do not enable a local switch character at this port. Use this keyword to disable a previously defined local switch character.
[PAUSE]	[ENABLED] [DISABLED]*	Pause the screen after displaying 24 lines of information from a SHOW LIST command. When enabled, the pause continues until you press the <Return> key, and then the display scrolls the next 24 lines. When disabled, the display continuously scrolls all information.
[RESOLVE SERVICE]	[ANY]* [LAT] [TELNET]	Determine how the terminal server should interpret a LAN destination name in these commands: CONNECT, TELNET CONNECT, LAT CONNECT. These are valid RESOLVE SERVICE keywords: LAT Interpret the name as a LAT service. TELNET Interpret the name as a Telnet domain name or an Internet address. ANY Interpret the name as a LAT service first, then as a Telnet destination if no LAT service exists with that name.

[TELNET ABORT OUTPUT]	[<i>character</i>] [NONE]*	Stop sending output to a terminal during a Telnet session when you use this character or control character sequence. Use of this character does not terminate the program that is producing the output; only the display of the output. If NONE, do not enable a Telnet abort output character at this port. Use this keyword to disable a previously defined Telnet abort output character.
[TELNET ATTENTION]	[<i>character</i>] [NONE]*	Suspend the current program and return to the operating system command prompt during a Telnet session, when you use this character or control character sequence. If you have established the Telnet session through another Model 3395/3395A Terminal Server port, the remote terminal server port passes a break sequence to the Telnet host when you use this character. The break sequence suspends the current program and returns the operating system prompt. If NONE, do not enable a Telnet attention character at this port. Use this keyword to disable a previously defined Telnet attention character.
[TELNET ERASE CHARACTER]	[<i>character</i>] [NONE]*	Delete the character to the left of the cursor during a Telnet session, when you use this character or control character sequence. If NONE, do not enable a Telnet erase character at this port. Use this keyword to disable a previously defined Telnet erase character character.
[TELNET ERASE LINE]	[<i>character</i>] [NONE]*	Delete all characters in the current line, backwards from the cursor position to a prompt or a carriage return/linefeed character, in a Telnet session, when you use this character or control character sequence. If NONE, do not enable a Telnet erase line character at this port. Use this keyword to disable a previously defined Telnet erase line character.
[TELNET INTERRUPT]	[<i>character</i>] [NONE]*	Suspend, interrupt, abort, or terminate a user process during a Telnet session when you use this character or control character sequence. If NONE, specifies no Telnet interrupt character at this port. Use this keyword to disable a previously defined Telnet erase line character.

SET PORT

[TELNET NEWLINE]	[<i>character</i>] [NONE]*	<p>Determine which characters the terminal server transmits to a Telnet host when you press the <Return> key on your terminal.</p> <p>NULL* Transmit a Carriage Return and a Null character to a Telnet host when you press the <Return> key.</p> <p>LINEFEED Transmit a Carriage Return character and a Linefeed character to a Telnet host when you press the <Return> key.</p> <p>NOTHING Transmit only a Carriage Return character to a Telnet host when you press the <Return> key.</p>
[TELNET NEWLINE FILTERING]	[NONE]* [CR] [NULL] [LINEFEED]	<p>Determine how the terminal server interprets Telnet New Line sequences that come from the network and are bound for your terminal. These are the possible types of Telnet newline filtering:</p> <p>NONE* Do not translate Telnet new line sequences.</p> <p>CR Translate Telnet new line sequences, such as CR/NULL or CR/LF, to a carriage return (CR).</p> <p>NULL Translate Telnet new line sequences, such as CR/NULL or CR/LF, to a carriage return and a null (CR/NULL).</p> <p>LINEFEED Translate Telnet new line sequences, such as CR/NULL or CR/LF, to a carriage return and a linefeed (CR/LF).</p>
[TELNET QUERY]	[<i>character</i>] [NONE]*	<p>Prompt a Telnet host to send a signal to the terminal that it is still up and running, during a Telnet session, when you use this character or control character sequence. (Use this character if you suspected that a Telnet process has “crashed” or “hung.”) If NONE, do not enable a Telnet query character at this port. Use this keyword to disable a previously defined Telnet query character.</p>

[TELNET SYNCHRONIZE]	[<i>character</i>] [NONE]*	Regain control of a Telnet process that you suspect is no longer functioning properly. When you use this character or control character sequence. Most Telnet hosts will return to the operating system command prompt, although this is not always the case. If NONE, do not enable a Telnet synchronize character at this port. Use this keyword to disable a previously defined Telnet synchronize character.
[TYPE]	[ANSI] [HARDCOPY] [SOFTCOPY]*	<p>Change the characteristic that affects how the terminal server sends data to the terminal and how the terminal displays that data. For terminals that emulate several terminal types, this characteristic should match the actual terminal setting. This characteristic only affects the terminal when it runs the Model 3395/3395A command processor.</p> <p>ANSI Produce output for a video-display terminal and support American Institute of Standards (ANSI) escape sequences. Generally, this characteristics applies to terminals that support the clear screen function and special cursor control functions, but not line drawing. Typical ANSI terminals are DEC VT100, VT200, and VT300 terminals, or terminals compatible with these types.</p> <p>HARDCOPY Produce output for a printing terminal or a nonvideo-display terminal, or emulate a printing terminal. Most hardcopy terminal types produce output on paper. When you delete characters on a hardcopy terminal, they appear on the paper between two backslash characters (\ \).</p> <p>SOFTCOPY* Produce output for a video-display terminal that does not support ANSI escape sequences. Softcopy terminal types echo character deletions when you use the <Delete> key, but do not support the clear screen function, special cursor control functions, or the line drawing function.</p>
[VERIFICATION]	[ENABLED]* [DISABLED]	Display status messages on the terminal screen when you establish a session, disconnect from a session, or switch a session.

Examples

None of these examples specify a port number since the commands apply to the issuing port.

1. This command to assigns a backward switch character.

In this example, a user sets the backward switch character to <Ctrl><K>. (When you press the <Ctrl> key at the TS3395> prompt, the terminal displays the ^ character.)

```
TS3395> set port backward switch ^p
```

```
TS3395>
```

2. This command enables the pause feature.

```
TS3395> set port pause enabled
```

```
TS3395>
```

3. This command changes the RESOLVE SERVICE characteristic. A user sets the RESOLVE SERVICE characteristic to LAT. This causes the terminal server to interpret LAN destinations in CONNECT commands from this port as LAT services.

```
TS3395> set port resolve service lat
```

```
TS3395>
```

Related Commands

These commands provide functions that are useful with the SET PORT command:

Command	Function
SHOW PORT CHARACTERISTICS	Displays the current values for general port characteristics, including the session management control characters
SHOW PORT ALTERNATE CHARACTERISTICS	Displays the current values for the Pause, Resolve Service, Idle Timeout, DTR wait, Typeahead size, Slip, and Line Editing control characters
SHOW PORT TELNET CHARACTERISTICS	Displays the current values for port characteristics related to Telnet sessions, including the TN3270 characteristic and Telnet session management control characters.

SET SESSION

Change the data transparency mode of the current session

The SET SESSION command changes the way a port interprets control characters during a session.

Notes

The terminal server supports four data transparency modes: interactive, passall, pasthru, and transparent. The SHOW SESSIONS display includes the data transparency mode of current sessions in the Service Mode field. Interactive mode is the typical mode for most sessions. If you want to transfer files between a PC and a host, however, you need to set the transparency mode at your port to PASSALL. See Chapter 6 for more information about PC file transfers.

Syntax

```
SET SESSION      [ INTERACTIVE ]
                  [ PASSALL ]
                  [ PASTHRU ]
                  [ TRANSPARENT ]
```

Abbreviation

```
SE SES          [ I ]
                  [ PASS ]
                  [ PAST ]
                  [ TRANS ]
```

Where

Means

INTERACTIVE	Enable all control characters. These include session switching characters, Telnet session management characters, terminal server messages, and XON OFF flow control characters. INTERACTIVE is the typical setting for most sessions.
PASSALL	Disable all control characters. When the data transparency of a session is set to PASSALL, control characters from the terminal server are sent to the host or other device as data, rather than control signals. This mode is useful for transferring data files that contain control characters, such as binary program files, without interference from the terminal server.
PASTHRU	Disable all control characters <i>except</i> the XON OFF flow control characters. This mode is useful for transferring ASCII files, such as a file that you want to print on a printer connected to another terminal server.
TRANSPARENT	Disable all session switching characters, Telnet session management characters, and XON OFF flow control characters. During a Telnet session, ignore Telnet option messages received from a remotely initiated session and do not transmit any Telnet option messages from a locally initiated session. During a LAT session, signal the LAT service that the terminal server is set to PASSALL, but behave locally as if the terminal server is set to PASTHRU.

Example

This command sets the data transparency mode of the port to PASSALL.

```
TS3395> set session passall
```

```
TS3395>
```

Related Commands

These commands provide information that is useful with the SET SESSION command:

Command	Function
SHOW SESSIONS	Displays the data transparency mode of the current session.
SHOW LIST PORT	Displays the default session mode for all sessions.

SHOW DESTINATIONS

Display a list of LAT services and Telnet destinations

The SHOW DESTINATIONS command displays a current list of LAT service names and Telnet destinations on the network.

Notes

The network manager can limit access to destinations on the network, so you might not be able to reach all destinations in the display. Also, some ports may not accept commands such as SHOW DESTINATIONS that display network resources. Check with the network manager if you have questions about your access to a network destination or the availability of display commands at your port.

Syntax

```
SHOW DESTINATIONS      [ name ]
```

Abbreviation

```
SH          DES
```

Where

Means

name

Display information about the destinations you specify in this variable. Use this variable to view a limited number of destinations, or one destination, rather than a complete list. LAT service names consist of 1 through 16 characters. Telnet destination names may contain up to four segments, each separated with period.

You can use the asterisk character (*) as a template to select a subset of names with this command. For example, if you entered SHOW DESTINATIONS AB*, the terminal server would display all available names that began with AB. If you entered SHOW DESTINATIONS A*BC, the system would display names that began with A and ended with BC.

To display information about all the destinations on the LAN, enter the SHOW DESTINATIONS command without variables.

Example

```
TS3395> show destinations
```

```
LattisNet V5.0 Rom 430001 HW 00.01.00 Lat Protocol V5.1 Uptime:  1 19:27:53
FINANCESUN.COM                UNIX Host at 140.179.20.1
ACCOUNTSVAX                   VAX/VMS LAT SERVICE
PAYROLLHOST                   IBM Host
LASER2                        Department Laser Printer
```

Field	Means
LattisNet Vx.y	The Model 3395/3395A product type and the version of the terminal server software, where x.y is the major and minor software release level.
Rom xxxxxx	The version of ROM software on the terminal server.
HW xx	The version of terminal server hardware, where xx is the version of cards.
Lat Protocol Vx.y	The version of LAT protocol running on the terminal server, where Vx.y indicates the major and minor protocol release level.
Uptime	The amount of time that the terminal server has been running since it was last initialized in this form: <i>days hours:minutes:seconds</i> .
Destination	The names of the LAT and Telnet destinations on the network.
Description	An optional text string describing the destination.

Related Commands

The SHOW DESTINATIONS command provides information that is useful with these commands:

Command	Function
CONNECT	Establishes a session with a LAT service or Telnet destination.
TELNET CONNECT	Establishes a session with a Telnet destination.
LAT CONNECT	Establishes a session with a LAT service.
SHOW NODES	Displays a list of LAT service nodes.
SHOW DOMAIN	Displays a list of learned or static Telnet domains.
SHOW SERVICES	Displays a list of available LAT services.
SET PORT PAUSE ENABLED	Pauses the display after 24 lines of information appear on the screen. The display continues to scroll information when you press the <Return> key.

SHOW|LIST DOMAIN
Display a list of Telnet domain names

The SHOW DOMAIN command displays a list of Telnet domains and their Internet addresses from the operational database of the terminal server. The LIST DOMAIN command displays information about Telnet domains in the permanent database of the terminal server.

Notes

The network manager can limit access to domains in the network, so you may not be able to reach all domains in the display. Also, some ports may not accept commands such as SHOW|LIST DOMAIN that display network resources. Check with the network manager if you have questions about your access to a domain.

Syntax

```
LIST DOMAIN      [ domain-name ] [ ALL ]
SHOW DOMAIN      [ domain-name ] [ ALL ]
                                     [ LEARNED ]
                                     [ LOCAL ]
```

Abbreviation

```
L   DO   ALL
SH  DO   ALL
      LEARNED
      LOCAL
```

Where**Means**

<i>domain-name</i>	Display information about the domain you specify in this variable. Domain names may contain up to four segments, each separated with period. You can use the asterisk character (*) as a template character to select a subset of names with this command. For example, if you entered SHOW DOMAIN AB*, the terminal server would display all available names that began with AB. If you entered SHOW DOMAIN A*BC, the system would display names that began with A and ended with BC.
ALL	Display information about all domains on the network. This is the default keyword for this command.
LEARNED	Display information about domains from the primary or secondary domain name server.
LOCAL	Display information about local domains.

Example

```
TS3395> show domain
```

Internet	Domain	10 May 1993	14:09:51
Entry Address		TTL	SRC Name
2	140.179.139.254	47	Pri FINANCE.SUN.COM
1	140.179.20.1	49	Pri MINX.SYNOPTICS.COM
3	140.179.20.1	49	Pri XEBRA.SYNOPTICS.COM

Field	Means
Entry	A number that the terminal server assigned to the domain name.
Internet Address	The Internet address of the node in the domain.
TTL	The number of hours that the terminal server retains information from the primary or secondary domain name server about the domain name in this entry line.
SRC Name	The source of the information about the domain name in this entry line. The possible sources are Local, Primary, and Secondary.
Domain Name	The names of the domains available on the network.

Related Commands

The SHOW|LIST DOMAIN commands provide information that is useful with these commands:

Command	Function
CONNECT	Establishes a session with a Telnet destination or LAT service.
TELNET CONNECT	Establishes a session with a Telnet destination.
RLOGIN	Establishes a session with a host if the host has been configured for an RLOGIN implementation.
SET PORT PAUSE ENABLED	Pauses the display after 24 lines of information appear on the screen. The display continues to scroll information when you press the <Return> key.

SHOW NODES

Display a list of LAT service nodes on the network

The SHOW NODES command displays a list of LAT service nodes on the network, and information about those nodes.

Notes

The network manager can limit access to nodes on the network, so you may not be able to reach every node in the display. Also, some ports may not accept commands such as SHOW NODES that display network resources. Check with the network manager if you have questions about your access to a network destination or the availability of display commands at your port.

Syntax

```
SHOW NODES [node-name] [COUNTERS]
           [STATUS]
           [SUMMARY]

           [ALL]      [COUNTERS]
                   [STATUS]
                   [SUMMARY]
```

Abbreviation

SH NOD

Where

Means

<i>node-name</i>	Display information about the node you specify in this variable.
ALL	Display information about all nodes on the network.
COUNTERS	Display statistics about activity on the node you specify in the <i>node-name</i> variable or all nodes.
STATUS	Display status information about the node you specify in the <i>node-name</i> variable or all nodes. This information includes the availability of the node, the Ethernet address, the group codes and the services available at the node.
SUMMARY	Display a one-line summary of information for the node you specify in the <i>node-name</i> variable or all nodes. This is the default display for this command.

Examples

SHOW NODES STATUS

1. TS3395> show nodes status

```

Node: FINANCEVAX                      Address: AA-00-04-00-D0-04
LAT Protocol:      V5.1                Data Link Frame Size: 1500

      Identification: FINANCEVAX - The Corporate MicroVAX II
                                      Node Groups:      0

      Service Name      Status  Rating  Identification
XANADU                 3 Connected  71  FinanceVAX - The Corporate MicroVAX II

```

Field	Means
Node: <i>node-name</i>	The name of the LAT service node.
LAT Protocol Vx.y	The version number (x) and the update level (y) of the LAT protocol running on the node.
Address	The Ethernet address of the node.
Data Link Frame Size	The maximum size of a Data Link Frame that the node can use to receive messages.
Identification	The text string that identifies the node.
Node Groups	The group codes enabled for this node.
Service Name	The entries in this column are the names of LAT services that this node offers to network users.
Status	The entries in this column indicate the availability of the LAT services that this node offers to network users. These entries can be the following: <ul style="list-style-type: none"> Available Users can establish sessions with this service. <i>n</i> Connected Users can establish sessions with the service, and <i>n</i> sessions are currently active at this service. Unknown Although users could reach the service in the past, they may no longer be able to reach it. Unavailable Users cannot reach the nodes that offer this service.
Rating	The value that the node assigns to the service, which indicates the relative capacity of the service to accept new connections. A high rating indicates that a service is more able to accept connections. The range of values for this rating is 0 through 255.
Identification	The text string that identifies this service.

SHOW NODES SUMMARY

2. TS3395> show nodes summary

Node Name	Status	Identification
FINANCEVAX	3 Connected	FinanceVAX - The Corporate MicroVAX II

Field	Means										
Node Name	The name of the LAT service node.										
Status	The entries in this column indicate the availability of the node to users on the network. The different states of availability include the following: <table><tbody><tr><td><i>n</i> Connected</td><td>Users can reach the node, and <i>n</i> sessions are currently active at the node.</td></tr><tr><td>Reachable</td><td>Users can reach the node, and no sessions are currently active at the node.</td></tr><tr><td>Requesting</td><td>Users cannot reach the node, but the node is attempting to make a remote connection to a service that the local terminal server offers.</td></tr><tr><td>Unknown</td><td>Although users could reach the node in the past, they may no longer be able to reach it.</td></tr><tr><td>Unavailable</td><td>Users cannot reach the node.</td></tr></tbody></table>	<i>n</i> Connected	Users can reach the node, and <i>n</i> sessions are currently active at the node.	Reachable	Users can reach the node, and no sessions are currently active at the node.	Requesting	Users cannot reach the node, but the node is attempting to make a remote connection to a service that the local terminal server offers.	Unknown	Although users could reach the node in the past, they may no longer be able to reach it.	Unavailable	Users cannot reach the node.
<i>n</i> Connected	Users can reach the node, and <i>n</i> sessions are currently active at the node.										
Reachable	Users can reach the node, and no sessions are currently active at the node.										
Requesting	Users cannot reach the node, but the node is attempting to make a remote connection to a service that the local terminal server offers.										
Unknown	Although users could reach the node in the past, they may no longer be able to reach it.										
Unavailable	Users cannot reach the node.										
Identification	The text string that identifies the node.										

SHOW NODES COUNTERS

3. TS3395> show nodes counters

Node: FINANCEVAX		21 May 1993 10:26:52	
Seconds Since Zeroed:	508882	Multiple Node Addresses:	0
Messages Received:	147913	Duplicates Received:	0
Messages Transmitted:	141373	Messages Re-transmitted:	7
Slots Received:	99696	Illegal Messages Received:	0
Slots Transmitted:	101103	Illegal Slots Received:	0
Bytes Received:	1981123	Solicitations Accepted:	0
Bytes Transmitted:	85032	Solicitations Rejected:	0

Field	Means
Node	The name of the LAT service node.
Seconds Since Zeroed	The number of seconds since the counters were reset to zero.
Messages Received	The number of LAT virtual circuit messages that the node has sent to the terminal server.
Messages Transmitted	The number of LAT virtual circuit messages that the server has sent to the node.
Slots Received	The number of slots, or message segments during a session, that the node sent to the terminal server.
Slots Transmitted	The number of slots, or message segments during a session, that the terminal server sent to the node.
Bytes Received	The number of bytes contained in datagrams that the node has sent to the terminal server, excluding Ethernet header and CRC data.
Bytes Transmitted	The number of bytes contained in datagrams that the terminal server has sent to the node, excluding Ethernet header and CRC data.
Multiple Node Addresses	The number of times that the node broadcast an announcement with a physical address that was different from the physical address given in a previous announcement.
Duplicates Received	The number of duplicate messages that the server received from the node.
Messages Retransmitted	The number of messages that the server retransmitted to the node.

SHOW NODES

Field	Means
Illegal Message Received	The number of illegally formatted messages that the server received from the node.
Illegal Slots Received	The number of illegally formatted slots or message segments for a particular session, that the terminal server has received from the node.
Solicitations Accepted	The number of connection requests that the terminal server has accepted from the node. This number includes both requests that the server placed in a queue and requests that the server accepted immediately.
Solicitations Rejected	The number of connection requests from the node that the terminal server rejected.

Related Commands

The SHOW NODES command provides information that is useful with these commands:

Command	Function
CONNECT	Establishes a session with a LAT service at a specific node. you specify on the command line.
LAT CONNECT	Establishes a session with a LAT service at a specific node you specify on the command line.
SHOW SERVICES	Displays a list of LAT services on the network.
SET PORT PAUSE ENABLED	Pause the display after 24 lines of information appear on the screen. The display continues to scroll information when you press the <Return> key.

SHOW|LIST PORT**Display information about the characteristics and counters of your port**

The SHOW PORTS command displays information about the operational database parameters of your terminal server port. The LIST PORTS command displays information about permanent database parameters of your terminal server port.

UNIX alias for SHOW PORT STATUS: STATUS

Notes

Users at Secure ports can only display information about their own ports.

UNIX alias: STATUS [*port-list*.]

Syntax

```
SHOW PORT [port-list]      [CHARACTERISTICS]
LIST                          [COUNTERS]
                              [STATUS]
                              [SUMMARY]
                              [ALTERNATE CHARACTERISTICS]
                              [TELNET CHARACTERISTICS]
SHOW PORT                    [KEYMAP]
```

Abbreviation

SH PO

Where**Means**

port-list Display information about the port you specify in this variable. Secure users can only specify their own port numbers.

CHARACT. Display the current values for general port characteristics, including the session management control characters. This is the default display.

ALTERNATE
CHARACT. Display the current settings for the PAUSE, RESOLVE SERVICE, IDLE
TIMEOUT, DTRWAIT, TYPEAHEAD SIZE, SLIP ADDRESS, and line
editing characters.

TELNET
CHARACT. Display the current values for port characteristics that are related to Telnet, including
TN3270 characteristics and Telnet session management characters.

COUNTERS Display the values of port counters.

STATUS Display information about the current session.

SUMMARY Display a one-line status message that summarizes the access method, connection
status, and services available at this port.

KEYMAP Display the keymap for the device this terminal emulates during a TN3270 session, if a
keymap has been allocated for this individual port.

Examples

While secure users cannot alter many of the characteristics in this display, the description includes information about all characteristics. Secure users can set the session switching characters shown in this display with the SET PORT command.

SHOW|LIST PORT CHARACTERISTICS

1. TS3395> show port characteristics

```

Port 12: Valerie                               10 June 1993 13:49:27

Character Size:           8                    Input Speed:           19200
Flow Control:            XON                  Output Speed:          19200
Parity:                  None                 Modem Control:        Disabled

Access:                  Local                Local Switch:          ^K
Backwards Switch:       None                  Name:                  PORT_12
Break:                  Local                 Session Limit:         4
Forwards Switch:        None                  Type:                  Soft

Preferred Service: None

Authorized Groups:      0
(Current) Groups:      0

Enabled Characteristics:

Autobaud, Autoprompt, Broadcast, Input Flow Control, Line Editor,
Loss Notification, Message Codes, Verification, Internet Connections
    
```

Field	Means
Port <i>n</i>	The number of the terminal server port.
<i>username</i>	The name you used to log on to this port
Character Size	The size of individual characters, in bits, that pass through the serial connection between the serial device, such as your terminal, and the terminal server port. The character size is either 7 or 8 bits.

Flow Control	<p>The method that the serial interface uses to regulate the flow of data between this port and the serial device that is connected to it, such as your terminal. The flow control method that appears in this field may be one of the following:</p> <table border="0"> <thead> <tr> <th style="text-align: left;">Method</th> <th style="text-align: left;">Means</th> </tr> </thead> <tbody> <tr> <td>CTS</td> <td>The port emulates RTS/CTS flow control with the DCD and DTR modem control signals. These signals control data transfer between the port and the serial device connected to it.</td> </tr> <tr> <td>DSR</td> <td>The port emulates DTR/DSR flow control with the DCD and DSR modem control signals. These signals control data transfer between the port and the serial device connected to it.</td> </tr> <tr> <td>XON</td> <td>The port uses XON OFF flow control to control data transfer between the port and the serial device connected to it.</td> </tr> <tr> <td>Disabled</td> <td>The port does not use any flow control method.</td> </tr> </tbody> </table>	Method	Means	CTS	The port emulates RTS/CTS flow control with the DCD and DTR modem control signals. These signals control data transfer between the port and the serial device connected to it.	DSR	The port emulates DTR/DSR flow control with the DCD and DSR modem control signals. These signals control data transfer between the port and the serial device connected to it.	XON	The port uses XON OFF flow control to control data transfer between the port and the serial device connected to it.	Disabled	The port does not use any flow control method.
Method	Means										
CTS	The port emulates RTS/CTS flow control with the DCD and DTR modem control signals. These signals control data transfer between the port and the serial device connected to it.										
DSR	The port emulates DTR/DSR flow control with the DCD and DSR modem control signals. These signals control data transfer between the port and the serial device connected to it.										
XON	The port uses XON OFF flow control to control data transfer between the port and the serial device connected to it.										
Disabled	The port does not use any flow control method.										
Parity	<p>The method that the terminal server and the terminal use to check for single-bit errors in characters that they send back and forth. This type of error checking is called parity checking because the terminal provides an extra bit, called a parity bit, to check the characters. This field displays the type of parity checking, if this checking exists:</p> <table border="0"> <thead> <tr> <th style="text-align: left;">Parity</th> <th style="text-align: left;">Means</th> </tr> </thead> <tbody> <tr> <td>Even</td> <td>The port and the terminal ensure that each character contains an even number of 1's, including the parity bit.</td> </tr> <tr> <td>Odd</td> <td>The port and the terminal ensure that each character contains an odd number of 1's, including the parity bit.</td> </tr> <tr> <td>None</td> <td>The port and the device do not check characters for parity.</td> </tr> </tbody> </table>	Parity	Means	Even	The port and the terminal ensure that each character contains an even number of 1's, including the parity bit.	Odd	The port and the terminal ensure that each character contains an odd number of 1's, including the parity bit.	None	The port and the device do not check characters for parity.		
Parity	Means										
Even	The port and the terminal ensure that each character contains an even number of 1's, including the parity bit.										
Odd	The port and the terminal ensure that each character contains an odd number of 1's, including the parity bit.										
None	The port and the device do not check characters for parity.										
Input Speed	The rate that the terminal transmits data and the terminal server port processes that data. This rate, in bits-per-second, can be any of these: 50, 75, 110, 134, 150, 300, 600, 1200, 1800, 2000, 2400, 4800, 9600, 19200, 38400.										
Output Speed	The rate that the terminal server port transmits data and the terminal processes the data. This rate, in bits-per-second, can be any of these: 50, 75, 110, 134, 150, 300, 600, 1200, 1800, 2000, 2400, 4800, 9600, 19200, 38400.										
Modem Control	Whether or not your terminal can use modem control signals during data communications. Modem control can be Enabled or Disabled.										
Access	The type of connections the terminal server allows at this port.										
Backward Switch	Shows the character that causes the terminal server to exit from the current session and connect to the next lower-numbered session, or None if this is undefined. Control characters are displayed as ^n (e.g., <Ctrl>/ is shown as ^B).										
Break	Shows which action the port will take when the user presses the <Break> key. The possible values which will be shown are:										
	<table border="0"> <thead> <tr> <th style="text-align: left;">Action</th> <th style="text-align: left;">Means</th> </tr> </thead> <tbody> <tr> <td>Disabled</td> <td>Indicates that the terminal server does nothing when the user presses the</td> </tr> </tbody> </table>	Action	Means	Disabled	Indicates that the terminal server does nothing when the user presses the						
Action	Means										
Disabled	Indicates that the terminal server does nothing when the user presses the										

<Break> key.

Local	Indicates that the terminal server will return to the local command mode when the user presses the <Break> key.								
Remote	Indicates that the terminal server sends the break to the connection partner when the user presses the <Break> key.								
Forward Switch	Shows the character that causes the terminal server to exit from the current session and connect to the next higher-numbered session, or None if this is undefined. Control characters are displayed as ^n (e.g., <Ctrl>/ is shown as ^B).								
Local Switch	Shows the character that causes the terminal server to exit from the current session and return to the local command mode, or None if this is undefined. Control characters are displayed as ^n (e.g., <Ctrl>/ is shown as ^B).								
Name	Shows the server manager-defined or default name of the port.								
Session Limit	The maximum number of simultaneous sessions you can establish at this port.								
Type	The type determines how your terminal produces output and how the terminal server sends data to the port when the port is in local command mode. The different terminal types that can appear in this field are these: <table><thead><tr><th>Type</th><th>Means</th></tr></thead><tbody><tr><td>ANSI</td><td>The terminal produces output on a video display and supports ANSI escape sequences.</td></tr><tr><td>Hard</td><td>The terminal produces output on paper, such as a printer. When you delete characters with this type of terminal, the deleted characters are echoed between backslash characters (//).</td></tr><tr><td>Soft</td><td>The terminal produces output on a video display, but does not support ANSI escape sequences.</td></tr></tbody></table>	Type	Means	ANSI	The terminal produces output on a video display and supports ANSI escape sequences.	Hard	The terminal produces output on paper, such as a printer. When you delete characters with this type of terminal, the deleted characters are echoed between backslash characters (//).	Soft	The terminal produces output on a video display, but does not support ANSI escape sequences.
Type	Means								
ANSI	The terminal produces output on a video display and supports ANSI escape sequences.								
Hard	The terminal produces output on paper, such as a printer. When you delete characters with this type of terminal, the deleted characters are echoed between backslash characters (//).								
Soft	The terminal produces output on a video display, but does not support ANSI escape sequences.								
Preferred Service	The name of a LAT service or Telnet destination where the terminal server automatically attempts to establish a session when you enter a connect command without a destination name.								
Dedicated Service <i>service name</i>	The name of a LAT service or Telnet destination where the terminal server automatically attempts to establish a session when you log on to the port.								
Node: <i>node name</i>	The name of the LAT service node which offers the preferred service.								
Destination: <i>port-name</i>	The name of the terminal server port which offers the preferred or dedicated service.								
Authorized Groups	The names of the LAT service groups where this port can make connections.								

Current Groups The names of the LAT service groups where you have chosen to have access. This list may be the same or a subset of the authorized group list.

Enabled Characteristics The characteristics either you or the network manager have enabled with the DEFINE|SET PORT commands. The characteristics that can appear in this field include the following:

Characteristic	Means
Autobaud	The port determines the input port speed, parity, and character size for the device connected to it, and automatically sets the appropriate port characteristics.
Autoconnect	The port automatically connects to a dedicated service or a preferred service when the user logs on to the port, or the port attempts to reconnect a session when a connection failure occurs.
Autodedicated	The terminal server automatically logs on the port and establishes a session between the port and a dedicated service when the terminal server is initialized or the port is logged out.
Autoprompt	The terminal server automatically prompts the LAT service node to run its logon routine when the port makes a connection to that node.
Broadcast	The port can receive messages that are broadcast from other ports on the terminal server.
Connectresume	The CONNECT command resumes an existing session rather than establishing a new session when you enter the command with a destination name where you already have a session established.
Dial back	The dial-back feature is enabled at this port. This feature limits remote to the terminal server to a specific list of users and phone numbers.
Dial up	The port is connected to a dial-up line.

Characteristic	Means
DSRlogout	The terminal server logs out the port when the serial interface DCD signal is deasserted.
DSRWait	The terminal server begins the login sequence at this port when the DSR signal is asserted.
Inactivity Logout	The terminal server logs out the port after the period of time if you have not entered any commands at the port. The network manager specifies the amount of time with the <code>SERVER INACTIVITY TIMER</code> value.
Input Flow Control	This port uses flow control to regulate the flow of data from the device connected to it.
Internet Connections	The port can accept Internet addresses as well as domain names in connect commands.
Interrupts	You can use the <Break> key or a local switch character to interrupt a session at a remote terminal server.
Kerberos	The Kerberos security system is enabled at this port.
Limited View	You cannot view destinations on the network with the <code>SHOW LIST DESTINATIONS</code> , <code>NODES</code> , or <code>SERVICES</code> commands.
Line Editor	You can use editing characters at this port.
Loss Notification	The terminal “beeps” if you enter a command line that exceeds 132 characters.
Message Codes	The port displays the number associated with status or error messages.
Menu	This port uses a menu-driven interface.
Multisessions	This port uses multisessions.
NoLoss	This port stores data in a buffer while waiting for a session to be established, then sends the data to the connections partner when the session is established.
Output Flow Control	This port uses flow control to regulate the flow of data to the device connected to it.
Password	You must enter a password to log on to this port.
Pause	This port pauses when it sends data from display commands to the terminal after it fills each screen.
PPP	The Point-to-Point Protocol is enabled at this port.
Privileged Menu	The port is privileged and uses the menu interface. (Not visible to Secure users.)

Characteristic	Means
Queuing	The port has a queue where it places LAT service connection requests if the LAT service is busy when you attempt to make a connection to it.
Remote Modification	Certain PORT characteristics (of this port) can be changed by a process running at a VMS host.
Security	The security level of the port is Secure.
Signal Check	The terminal server allows connections to this port when the DSR signal is deasserted or logs out this port when the DCD signal is deasserted.
SLIP	The Internet SLIP protocol is enabled for this port, and the port expects all data to be in SLIP packets.
Verification	The port displays information messages when you connect, disconnect, or switch a session.
Xremote	The Xremote protocol is enabled at this port.

SHOW|LIST PORT ALTERNATE CHARACTERISTICS

2. TS3395> show port alternate characteristics

```

Port 12:  Becca                               19 June 1993  09:18:47

Resolve Service:      Any      DTR wait:           Disabled
Idle Timeout:        0      Typeahead Size:    128
SLIP Address:        0.0.0.0  SLIP Mask:         0.0.0.0
Remote SLIP Addr:    0.0.0.0  Default Session Mode:  Interactive
TCP Window Size:     256    Prompt:            TS3395
DCD Timeout:         2000   Dialback Timeout   20
Stop Bits            1      Script Login       Disabled
                                   XDM Query          Broadcast
                                   XDM Host           TCP Keepalive Timer
                                   Line Editor Characters

Backspace Character:  ^D    Forwards Character: ^F
Delete Beg Character: ^U    Delete Line Character: ^X
End of Line Character: ^E    Begin Line Character: ^H
Previous Line Character: ^B    Next Line Character: ^N
Quoting Character:   ^V    Insert Toggle Character: ^A
Cancel Character:    ^Z    Redisplay Character: ^R

```

Field	Means								
Port <i>n</i>	The number of the terminal server port.								
<i>username</i>	The name you used to log on to this port, or the name the network manager assigned to the port.								
Resolve Service	The method that the terminal server uses to interpret variables in connect commands from this port. These are the possible values in this field:								
	<table border="0"> <thead> <tr> <th style="text-align: left;">Type</th> <th style="text-align: left;">Means</th> </tr> </thead> <tbody> <tr> <td>Any</td> <td>Interpret a variable as a LAT service name first, and if no LAT service with that name exists, then interpret the variable as a Telnet destination.</td> </tr> <tr> <td>LAT</td> <td>Interpret the variable as a LAT service name.</td> </tr> <tr> <td>Telnet</td> <td>Interpret the variable as a Telnet destination.</td> </tr> </tbody> </table>	Type	Means	Any	Interpret a variable as a LAT service name first, and if no LAT service with that name exists, then interpret the variable as a Telnet destination.	LAT	Interpret the variable as a LAT service name.	Telnet	Interpret the variable as a Telnet destination.
Type	Means								
Any	Interpret a variable as a LAT service name first, and if no LAT service with that name exists, then interpret the variable as a Telnet destination.								
LAT	Interpret the variable as a LAT service name.								
Telnet	Interpret the variable as a Telnet destination.								
Idle Timeout	The number of minutes the terminal server waits before it disconnects a session where there is no activity, and which was established in a queued connection request.								
SLIP Address	The Internet address assigned to the server port.								
Remote SLIP ADDR	The Internet address of the remote device.								

Field	Means										
TCP Window Size	The size, in bytes, of the TCP window that the port uses during a TCP/IP session.										
DCD Timeout	The period of time that the DCD signal can be deasserted before the terminal server disconnects the port. This period of time can be between 0 and 10,000 milliseconds, in increments of 100 milliseconds).										
Stop Bits	The number of bits attached to the end of each character that the port sends to the terminal. These bits signify the end of a character. The values that can appear in this field mean the following: <table border="1"> <thead> <tr> <th>Value</th> <th>Means</th> </tr> </thead> <tbody> <tr> <td>1</td> <td>One stop bit.</td> </tr> <tr> <td>2</td> <td>Two stop bits.</td> </tr> <tr> <td>3</td> <td>One and one half stop bits.</td> </tr> <tr> <td>4</td> <td>The terminal server assigns the number of stop bits based on the port speed. This is the default value.</td> </tr> </tbody> </table>	Value	Means	1	One stop bit.	2	Two stop bits.	3	One and one half stop bits.	4	The terminal server assigns the number of stop bits based on the port speed. This is the default value.
Value	Means										
1	One stop bit.										
2	Two stop bits.										
3	One and one half stop bits.										
4	The terminal server assigns the number of stop bits based on the port speed. This is the default value.										
XDM Query	Shows the method by which the server locates an XDM manager. <table border="1"> <tbody> <tr> <td>SPECIFIC</td> <td>Search for the host at the location in the <i>domain-name</i> or <i>internet-address</i> variable, which is the XDM manager.</td> </tr> <tr> <td>BROADCAST</td> <td>Search the network for an XDM manager using the Internet broadcast address.</td> </tr> <tr> <td>INDIRECT</td> <td>Search for the host at the location in the <i>domain-name</i> or <i>internet-address</i> variable. This host provides a list of XDM managers on the network.</td> </tr> </tbody> </table>	SPECIFIC	Search for the host at the location in the <i>domain-name</i> or <i>internet-address</i> variable, which is the XDM manager.	BROADCAST	Search the network for an XDM manager using the Internet broadcast address.	INDIRECT	Search for the host at the location in the <i>domain-name</i> or <i>internet-address</i> variable. This host provides a list of XDM managers on the network.				
SPECIFIC	Search for the host at the location in the <i>domain-name</i> or <i>internet-address</i> variable, which is the XDM manager.										
BROADCAST	Search the network for an XDM manager using the Internet broadcast address.										
INDIRECT	Search for the host at the location in the <i>domain-name</i> or <i>internet-address</i> variable. This host provides a list of XDM managers on the network.										
XDM Host	Shows the name of the XDM manager currently in use.										
TCP Keepalive Timer	Shows the number of minutes that the terminal server will wait for a response from the Telnet partner before terminating the session.										

DTR wait The conditions needed for the port to assert the DTR Modem control signal. These are the possible values of this field:

DTR Signal	Means
Disabled	The port continuously asserts the DTR signal.
Enabled	The port asserts the DTR signal when you make a connection to a device, or when the device connected to the port asserts an RNG signal.
FORCONNECTION	The port asserts the DTR signal when you make a connection.
FORRING	The port asserts the DTR signal when the device connected to the port asserts an RNG signal

Typeahead size The number of bytes, or characters, that the type-ahead buffer can hold before transmitting these characters to the network.

SLIP Mask The Internet subnet mask that the terminal server uses when it forwards a packet over a SLIP link.

Default Session Mode The initial setting for the data-transparency mode for all sessions. These are the possible values for this field:

Session Mode	Means
Interactive	The server initially enables all session switching characters, Telnet session management characters, and XON OFF flow control for all sessions. The server does not negotiate the Telnet Binary option.
Pasthru	The server initially interprets all session switching characters and Telnet session management characters as data, but does use XON OFF flow control. The server attempts to negotiate the Telnet binary option.
Passall	The server initially disables all session switching characters, Telnet session management characters, and XON OFF flow control for all sessions. The server attempts to negotiate the Telnet binary option.
Transparent	The server initially disables session switching characters, Telnet session management characters, and XON OFF flow control. The server sets Telnet sessions to ignore Telnet option messages it receives from a remotely initiated session and does not try to send any Telnet option messages it receives from the locally initiated session. For LAT sessions, the server tells its partner it is Passall but acts locally as if it were Pasthru.

Prompt The local command prompt that the port displays in command mode.

Dial-back Timeout	The number of seconds that the terminal server waits for a modem to respond to a dial-back signal.								
Script Login	The status of the Script Login characteristic at this port. The status can be one of the following: <table><thead><tr><th>Login Characteristic</th><th>Means</th></tr></thead><tbody><tr><td>Required</td><td>This port must find and execute a script file when a user logs in to this port. If a script file does not exist, the terminal server logs out the port.</td></tr><tr><td>Enabled</td><td>This port searches for a script file when a user logs in to this port.</td></tr><tr><td>Disabled</td><td>This port does not search for a script file when a user logs in to this port.</td></tr></tbody></table>	Login Characteristic	Means	Required	This port must find and execute a script file when a user logs in to this port. If a script file does not exist, the terminal server logs out the port.	Enabled	This port searches for a script file when a user logs in to this port.	Disabled	This port does not search for a script file when a user logs in to this port.
Login Characteristic	Means								
Required	This port must find and execute a script file when a user logs in to this port. If a script file does not exist, the terminal server logs out the port.								
Enabled	This port searches for a script file when a user logs in to this port.								
Disabled	This port does not search for a script file when a user logs in to this port.								
Line Editing Characters	If line editing is enabled at this port, the SHOW PORT ALTERNATE CHARACTERISTICS display includes the values for the line editing characters. If this characteristic is disabled at this port, the display does not include this information. Chapter 2 describes the functions of each line editing character.								

SHOW|LIST PORT TELNET CHARACTERISTICS

3. TS3395> show port telnet characteristics

```

Port 12: Sandy                               18 Sept 1991  14:35:55

Abort Output Character:      None      Newline:                CR/NULL
Attention Character:         ^W       Newline Filtering       None
Default Port:                23      Query Character:        None
Echo Mode:                   Remote   Remote Port:           3200
Erase Keystroke Character:   None     Synchronize Character: None
Erase Line Character:        ^K       Transmit:               Immediate
Interrupt Character:         None     Binary Session Mode:   PASTHRU
Terminal Type                None     Tn3270 Device          VT220-7
Tn3270 TranslationTable     USEENGLSH Tn3270 Printer port    Any

Enabled Characteristics:

Tn3270 EOR

```

Field	Means
Port <i>n</i>	The number of the terminal server port.
<i>username</i>	The name you used to log on to this port, or the name the network manager assigned to the port with the DEFINE or SET PORT USERNAME command.
Abort Output Character	The character that terminates the display of output from a Telnet process when typed during a Telnet session. "None" appears in this field if no character exists.
Attention Character	The character that invokes the operating system prompt on a remote host when typed during a Telnet session. "None" appears in this field if no character exists.
Default Port	The default Telnet port number.
Echo Mode	This field indicates which partner in a Telnet session echoes the characteristics you type.
	Mode Means
	Local The terminal server echoes the characters you type.
	Remote The Telnet host echoes the characters you type.
Erase Keystroke Character	The character that deletes the character immediately to the left of the cursor when typed during a Telnet session. "None" appears in this field Character if no character exists.

Field	Means										
Erase Line Character	The character that deletes all data in the current line, backwards from the cursor position when typed during a Telnet session. "None" appears in this field if no character exists.										
Interrupt Character	The character that interrupts, aborts, or terminates a user process when typed during a Telnet session. "None" appears in this field in no character exists.										
Terminal	The name of the terminal type that the terminal server sends to a Telnet type host while negotiating a Telnet session.										
TN3270 Translation Table	The language translation table used at this port during TN3270 sessions.										
Newline	The characters that the terminal server transmits to a host during a Telnet session when you press the <Return> key at this port. The possible values in this field are the following:										
	<table border="1"> <thead> <tr> <th>Setting</th> <th>Means</th> </tr> </thead> <tbody> <tr> <td>CR/NULL</td> <td>Transmit a Carriage Return and a Null character to the Telnet host when you press the <Return> key.</td> </tr> <tr> <td>CR/LF</td> <td>Transmit a Carriage Return and a Linefeed character to the Telnet host when you press the <Return> key.</td> </tr> <tr> <td>CR</td> <td>Transmit a Carriage Return character to the Telnet host when you press the <Return> key.</td> </tr> </tbody> </table>	Setting	Means	CR/NULL	Transmit a Carriage Return and a Null character to the Telnet host when you press the <Return> key.	CR/LF	Transmit a Carriage Return and a Linefeed character to the Telnet host when you press the <Return> key.	CR	Transmit a Carriage Return character to the Telnet host when you press the <Return> key.		
Setting	Means										
CR/NULL	Transmit a Carriage Return and a Null character to the Telnet host when you press the <Return> key.										
CR/LF	Transmit a Carriage Return and a Linefeed character to the Telnet host when you press the <Return> key.										
CR	Transmit a Carriage Return character to the Telnet host when you press the <Return> key.										
Newline Filtering	The method, if any, that the terminal server uses to translate Telnet Newline sequences coming from the network and bound for your port. The possible values in this field are the following:										
	<table border="1"> <thead> <tr> <th>Filter</th> <th>Means</th> </tr> </thead> <tbody> <tr> <td>None</td> <td>Does not translate Newline sequences.</td> </tr> <tr> <td>CR</td> <td>Translate a CR or a CR/LF in the data stream to a CR (a Carriage Return character).</td> </tr> <tr> <td>CR/NULL</td> <td>Translate a CR/NULL or a CR to a CR/NULL (a Carriage Return and a Null character).</td> </tr> <tr> <td>CR/LF</td> <td>Translate a CR/NULL or a CR/LF in to a CR/LF (a Carriage Return and a Linefeed character).</td> </tr> </tbody> </table>	Filter	Means	None	Does not translate Newline sequences.	CR	Translate a CR or a CR/LF in the data stream to a CR (a Carriage Return character).	CR/NULL	Translate a CR/NULL or a CR to a CR/NULL (a Carriage Return and a Null character).	CR/LF	Translate a CR/NULL or a CR/LF in to a CR/LF (a Carriage Return and a Linefeed character).
Filter	Means										
None	Does not translate Newline sequences.										
CR	Translate a CR or a CR/LF in the data stream to a CR (a Carriage Return character).										
CR/NULL	Translate a CR/NULL or a CR to a CR/NULL (a Carriage Return and a Null character).										
CR/LF	Translate a CR/NULL or a CR/LF in to a CR/LF (a Carriage Return and a Linefeed character).										
Query Character	The character that produces some visible indication that a host is still up and running when typed during a Telnet session. "None" appears in this field in no character exists.										
Remote Port	The terminal server accepts remote connections from the Telnet port number in this field.										

SHOW|LIST PORT

Field	Means								
Synchronize Character	The character that regains control of a Telnet process when typed during a Telnet session. "None" appears in this field in no character exits.								
Transmit	The method that the terminal server uses to transmit characters that you enter from the keyboard during a Telnet session.								
	<table><thead><tr><th>Method</th><th>Means</th></tr></thead><tbody><tr><td>Buffered</td><td>The server does not transmit characters until you enter a Control character.</td></tr><tr><td>Immediate</td><td>The server sends each character as soon as possible after you enter it.</td></tr><tr><td>Idle Time <i>value</i></td><td>The maximum amount of time, expressed as a number of characters, that the terminal server waits before it transmits the data in the type-ahead buffer to the Telnet host.</td></tr></tbody></table>	Method	Means	Buffered	The server does not transmit characters until you enter a Control character.	Immediate	The server sends each character as soon as possible after you enter it.	Idle Time <i>value</i>	The maximum amount of time, expressed as a number of characters, that the terminal server waits before it transmits the data in the type-ahead buffer to the Telnet host.
Method	Means								
Buffered	The server does not transmit characters until you enter a Control character.								
Immediate	The server sends each character as soon as possible after you enter it.								
Idle Time <i>value</i>	The maximum amount of time, expressed as a number of characters, that the terminal server waits before it transmits the data in the type-ahead buffer to the Telnet host.								
Binary Session Mode	Shows the session mode (Passall or Psthru) that will be used when the port negotiates the Telnet binary mode, or Interactive if the port should not negotiate the Telnet binary mode.								
TN3270 Device	Shows the device type used at this port during a TN3270 session.								
TN3270 Printer	Shows which port or any ports that are available for local TN3270 screen ports printing.								
Enabled Characteristics	The characteristics enabled at this port.								

SHOW|LIST PORT COUNTERS**4. TS3395> show port counters**

The fields in the SHOW PORT COUNTERS display reflect the values of the counters since they were last reset to zero. Counters are reset to zero when the network manager initializes the terminal server, or when you or the network manager use the ZERO COUNTERS command.

The lower half of the display shows information about Serial Line Internet Protocol (SLIP) packets. These are packets the terminal server sends over a SLIP link.

See the network manager if you have questions about port counters.

Port 10: Steve	26 Sept 1991 14:10:57		
Seconds Since Zeroed:	365155	Local Accesses:	4
Framing Errors:	0	Remote Accesses:	0
Parity Errors:	0	Idle Timeouts:	0
Overrun Errors:	0		
Input Count:	1742		
Output Count:	84377		
	SLIP Packets		
Serial Packets Received:	0	Network Packets Received:	0
Serial Packets Sent:	0	Network Packets Sent:	0
Serial Packets Discarded:	0	Network Packets Discarded:	0
Serial Packet Length Errors:	0		
Serial Packet Checksum Errors:	0		

Field	Means
Port <i>n</i>	The number of the terminal server port.
<i>username</i>	The name you or the network manager assigned to the port with the DEFINE or SET PORT USERNAME command.
Seconds Since Zeroed	The number of seconds since the counters were last reset to zero.
Framing Errors	The number of bytes the port has received with illegally formatted frames. Framing errors often produce garbled characters because of a missing stop bit.
Parity Errors	The number of bytes received at the port with parity errors. Parity errors can indicate a problem with the port or the terminal attached to it, or mismatched characteristics between the terminal and the port.
Overrun Errors	The number of times that the terminal server lost characters from this port because the terminal server input buffers overflowed. Overrun errors may indicate a flow control problem between the terminal and the port.

SHOW|LIST PORT

Field	Means
Input Count	The number of bytes (characters) that your terminal has transmitted to the port.
Output Count	The number of bytes (characters) that the port has transmitted to your terminal.
Local Accesses	The number of times you have logged on to the port.
Remote Accesses	The number of times that a user at another port or node on the LAN has established a connection at this port. For a terminal user viewing his or her own port, this counter is likely to be zero.
Idle Timeouts	The number of times the that terminal server has disconnected a session for being inactive, when the session was initiated by a remote connection queue. For a terminal user viewing his or her own port, this counter is likely to be zero.
Serial Packet Received	The number of SLIP packets this port has received from the remote device.
Serial Packets Sent	The number of SLIP packets this port has sent to the remote device.
Serial Packets Discarded	The number of SLIP packets from this port that the terminal server has discarded.
Serial Packet Errors	The number of SLIP packets that the port received that did not contain the Length correct number of bytes.
Network Packets Received	The number of Ethernet packets bound for this port that the terminal server has converted to SLIP packets.
Network Packets Sent	The number of SLIP packets from this port that the terminal server has converted to Ethernet packets.
Network Packets Discarded	The number of Ethernet packets that the terminal server has discarded.

SHOW|LIST PORT STATUS

5. TS3395> show port status

Port 12:	lynne	Server:	XFF4B15
	Access:	Local	Current Service:
	Status:	Executing Cmd	Current Node:
	Sessions:	0	Current Port:
Input XOFFed:	No	Output Signals:	N/A
Output XOFFed:	No	Input Signals:	N/A
Last Char Output:	6c	Last Char Input:	0d
		Script Host:	
		Script File:	

Field	Means
Port <i>n</i>	The number of the terminal server port.
<i>username</i>	The name you used to log on to this port, or the name the network manager assigned to the port with the DEFINE or SET PORT USERNAME command.
Server	The name of the terminal server unit where this port is connected.
Access	The type of connections allowed at this port. The type of connections that may appear in this field are these:

Access type	Means
Dynamic	Users can gain access to the port through the local terminal server or from a remote host or device on the network.
Local	Users can gain access to the port only through the local terminal server.
Remote	Users can gain access to the port only through remote connections with a LAT service name or port number.

Status The current activity at this port. Some of the possible status messages do not appear when you enter this command at your own port. These include Idle, Locked, Loading Script, Finding Script, and Running Script. Other status messages that you might see include these:

Status	Means
Connected	The port is currently connected to a LAT service or Telnet destination.
Connecting	The port is currently attempting to connect to a LAT service or Telnet destination.
Disconnected	The server disconnected the port from a session. (This may happen if a session is inactive for a long period of time.)
Disconnecting	The server is disconnecting a port from a session.
Executing Cmd	The port is executing a command from the terminal server local command mode.
Local Mode	The port is logged on to the server and is in local command mode.
Sessions	The number of active sessions at this port.

Current Service The session that you most recently interrupted when you entered local command mode.

Current Node The name of the LAT service node or the Internet address of the Telnet node where the current session is established.

Current Port The Telnet port number if the current session is a Telnet session.

Current Domain The domain name or Internet address of the Telnet destination if the current session is a Telnet session.

Input XOFFed Whether XON|OFF flow control is enabled for data input to the port from your terminal.

Output XOFFed Whether XON|OFF flow control is enabled for data output form the port to your terminal.

Output Signals The modem control signals that the port asserts to your terminal.

Input Signals The modem control signals that your terminal asserts to the port.

Last Char Output The hexadecimal value of the last character that the port sent to your terminal.

Last Char Input The hexadecimal value of the last character that the port received from your terminal.

SHOW|LIST PORT SUMMARY

6. TS3395> show port summary

Port	Access	Status	Services Offered	18 Apr 1991	12:50:32
12	Local	Executing Cmd			

Field**Means**

Port The number of your terminal server port.

Access The type of connections the terminal server allows at this port. The types that may appear in this field are these:

Access type**Means**

Dynamic Users can gain access to the port through the local terminal server or from a remote host or device on the network.

Local Users can gain only local access to the port through the terminal server.

Remote Users can gain only remote access to the port only by service name or port number.

Status One of the following status modes:

Status**Means**

Connected The port is currently connected to a device on the network.

Connecting The port is currently attempting to connect to a device on the network.

Disconnected A session was disconnected at this port. This may happen if a session is inactive too long.

Disconnecting The port is disconnecting from a session.

Executing Cmd The port is executing a terminal server command.

Idle The port is not in use. (This status does not appear for a port if you are logged on to that port.)

Local Mode A user is logged on to a port, and that port is in local command mode.

Services Offered The names of the local services that the terminal server offers at this port.

SHOW PORT KEYMAP

7. TS3395> show port keymap

Address:	00-00-81-FF-4B-15	Name:	XFF4B15	Number:	0
Device:	VT100	TerminalType:	VT100	Tn3278Type :	MODEL2
Keymap:	3270-Key	KeyCode		Description	
	NEWLINE	: "0A"		"LF "	
	TAB	: "09"		"TAB "	
	BACKTAB	: "1B 09"		"ESCTB"	
	CURSORUP	: "1B 5B 41"		"KEYUP"	
	CURSORLEFT	: "1B 5B 44"		"KEYBK"	
	CURSORRIGHT	: "1B 5B 43"		"KEYFW"	
	CURSORDOWN	: "1B 5B 42"		"KEYDN"	
	HOME	: "1B 68"		"ESCh "	
	DELETE	: "7F"		"DEL "	
	ERASEEOF	: "05"		"CTRLe"	
	ERASEINPUT	: "1B 69"		"ESCi "	
	INSERT	: "1B 7F"		"ESCDL"	
	FLUSHINPUT	: "1B 66"		"ESCf "	
	REFRESH	: "1B 72"		"ESCr "	
	CENTSIGN	: "1B 63"		"ESCc "	
	DUPLICATE	: "04"		"CTRLd"	
	FIELDMARK	: "06"		"CTRLf"	
	SCROLL	: "1B 6C"		"ESC1 "	
	STATUS ON/OFF	: "1B 3F"		"ESC? "	
	RESET	: "12"		"CTRLr"	
	FASTLEFT	: "16"		"CTRLv"	
	FASTRIGHT	: "15"		"CTRLu"	
	SHOWKEYS	: "18"		"CTRLx"	
	PRINT	: "10"		"CTRLp"	
	PF1	: "1B 4F 71"		"NUM 1"	
	PF2	: "1B 4F 72"		"NUM 2"	
	PF3	: "1B 4F 73"		"NUM 3"	
	PF4	: "1B 4F 74"		"NUM 4"	
	PF5	: "1B 4F 75"		"NUM 5"	
	PF6	: "1B 4F 76"		"NUM 6"	
	PF7	: "1B 4F 77"		"NUM 7"	
	PF8	: "1B 4F 78"		"NUM 8"	
	PF9	: "1B 4F 79"		"NUM 9"	
	PF10	: "1B 4F 50"		"PF1 "	
	PF11	: "1B 4F 51"		"PF2 "	
	PF12	: "1B 4F 52"		"PF3 "	
	PF13	: "1B 21"		"ESC! "	

(continues)

PF14	:	"1B 40"	"ESC@ "
PF15	:	"1B 23"	"ESC# "
PF16	:	"1B 24"	"ESC\$ "
PF17	:	"1B 25"	"ESC% "
PF18	:	"1B 5E"	"ESC^ "
PF19	:	"1B 26"	"ESC& "
PF20	:	"1B 2A"	"ESC* "
PF21	:	"1B 28"	"ESC("
PF22	:	"1B 29"	"ESC) "
PF23	:	"1B 5F"	"ESC_ "
PF24	:	"1B 2B"	"ESC+ "
PA1	:	"1B 2C"	"ESC, "
PA2	:	"1B 2E"	"ESC. "
PA3	:	"1B 2F"	"ESC/ "
SYSREQ	:	"1B 73"	"ESC\$ "
ENTER	:	"0D"	"ENTER "
CLEAR	:	"03"	"CTRLc "
CURSORSSEL	:	"1B 6B"	"ESCk "
TEST	:	"1B 74"	"ESCt "

Field	Means
Device	The name of the TN3270 device in the display.
TerminalType	The local terminal type.
Tn3270Type	The TN3270 device that the local terminal emulates in a TN3270 session.
Keymap	The table that follows contains the escape sequences that the terminal server uses to translate entries on the local ASCII keyboard into 3270 display station functions.
3270-Key	An IBM display station function.
KeyCode	The hexadecimal value for the keyboard escape sequence at the local terminal which corresponds to the IBM display station function.
Description	A text description of the keyboard function.

Related Commands

This command is useful with the SHOW|LIST PORTS commands:

Command	Function
SET PORT PAUSE ENABLED	Pauses the display after 24 lines of information appear on the screen. The display continues to scroll information when you press the <Return> key.

SHOW|LIST SERVICES
Display a list of LAT services on the network

The SHOW SERVICES command displays a list of available LAT services on the network, and information about each service. The LIST SERVICES command displays a list of services in the permanent database.

Notes

These commands display only those LAT services that are available to you on the network.

Some ports may not accept commands such as SHOW SERVICES that display network resources. Check with the network manager if you have questions about availability of display commands at your port.

Syntax

```

SHOW SERVICES    [ service-name ]    [ CHARACTERISTICS ]
                                     [ STATUS ]
                                     [ SUMMARY ]

                                     [ LOCAL ]    [ CHARACTERISTICS ]
                                               [ STATUS ]
                                               [ SUMMARY ]

                                     [ ALL ]    [ CHARACTERISTICS ]
                                               [ STATUS ]
                                               [ SUMMARY ]

LIST SERVICES    [ service-name ]    [ CHARACTERISTICS ]
                                     [ LOCAL ]    [ CHARACTERISTICS ]
    
```

Abbreviation

```

SH          SERV
LIS
    
```

Where Means

service-name Display information about one or more services that you specify in this variable. If you do not specify a service name, the terminal server displays all services available at this port.

You can use the asterisk character (*) as a template to select a subset of names with this command. For example, if you entered SHOW SERVICES AB*, the system would display all available names that began with AB. If you entered SHOW SERVICES A*BC, the system would display names that began with A and ended with BC.

ALL Display a list of all services available at this port. This is the default display for this command.

Where	Means
LOCAL	Display a list of local services offered by the terminal server.
CHARACT- ERISTICS	Display the current values for service characteristics, defined by the network manager
STATUS	Display information about the condition and availability of services.
SUMMARY	Display a one-line summary about the availability of services.

Examples

1. TS3395> show services characteristics

```

Service: XANADU                               20 May 1993  14:54:58
Identification: FINANCEVAX - The Corporate MicroVAX II
Service: PRINTER                               20 Aug 1991  14:54:58
Identification: Terminal Server Printer Queue
Ports: 2, 7
Rating: 127
Enabled Characteristics:
Connections, Queuing

```

Where	Means								
Service	The name of the LAT service on the network.								
Identification	A text string that identifies the service or describes how to use the service.								
Ports	The number of ports that can establish a session with this service.								
Rating	The relative capacity of this service to accept sessions. The rating is proportional to the number of ports that offer the service. If no ports offer the service, then the rating is 0.								
Enabled Characteristics	The characteristics that the network manager has enabled for the local service. These include the following: <table> <thead> <tr> <th>Characteristic</th> <th>Means</th> </tr> </thead> <tbody> <tr> <td>Connections</td> <td>The terminal server allows connections to the service.</td> </tr> <tr> <td>Password</td> <td>The terminal server requires that users provide a password to establish a session with this service.</td> </tr> <tr> <td>Queuing</td> <td>The terminal server places connection requests in a queue if it cannot fulfill a request immediately.</td> </tr> </tbody> </table>	Characteristic	Means	Connections	The terminal server allows connections to the service.	Password	The terminal server requires that users provide a password to establish a session with this service.	Queuing	The terminal server places connection requests in a queue if it cannot fulfill a request immediately.
Characteristic	Means								
Connections	The terminal server allows connections to the service.								
Password	The terminal server requires that users provide a password to establish a session with this service.								
Queuing	The terminal server places connection requests in a queue if it cannot fulfill a request immediately.								

SHOW|LIST SERVICES

2. TS3395> show services status

				Service XANADU - 2 Connected
	Node Name	Status	Rating	Identification
XANADU	2 Connected	77	Xanadu - The SynOptics Corporate MicroVAX	II

Field

Means

Service The name of the LAT service on the network.

Status The availability of the service. The status is one of the following:

Status

Means

n Connected

Users can reach the service, and other ports already have *n* currently active sessions with this service.

Reachable

Users can reach the service, and no other ports have currently active sessions with the service.

Unknown

Users could reach the service at one time, but may not be able to now.

Unreachable

Users cannot reach this service, or an attempt to reach this service has timed out.

Rating

The relative capacity of this service to accept additional sessions.

Identification

A text string that identifies the service or describes how to use the service.

3. TS3395> show services summary

Service Name	Status	Identification
FinanceVAX	Available	Finance File Server
DEVELOPMENTVAX	Available	Development VAX
PAYROLLHOST	Available	
Accounts_Host	Available	Accounts Receivable

Field	Means								
Service Name	The name of the LAT service on the network.								
Status	The entries in this column indicate the availability of the LAT services to users on the network. These entries are possible in this column: <table> <tbody> <tr> <td>Available</td> <td>Users can establish sessions with this service on at least one node that offers it.</td> </tr> <tr> <td><i>n</i> Connected</td> <td>Users can establish sessions with the service, and <i>n</i> sessions are currently active at this service.</td> </tr> <tr> <td>Unavailable</td> <td>Users cannot establish sessions with this service.</td> </tr> <tr> <td>Unknown</td> <td>None of the nodes that offers this service are reachable.</td> </tr> </tbody> </table>	Available	Users can establish sessions with this service on at least one node that offers it.	<i>n</i> Connected	Users can establish sessions with the service, and <i>n</i> sessions are currently active at this service.	Unavailable	Users cannot establish sessions with this service.	Unknown	None of the nodes that offers this service are reachable.
Available	Users can establish sessions with this service on at least one node that offers it.								
<i>n</i> Connected	Users can establish sessions with the service, and <i>n</i> sessions are currently active at this service.								
Unavailable	Users cannot establish sessions with this service.								
Unknown	None of the nodes that offers this service are reachable.								
Identification	A text string that identifies the LAT service, or describes how to use the service.								

Related Commands

The SHOW|LIST SERVICES commands provide information that is useful with these commands:

Command	Function
LAT CONNECT	Establishes a session with a LAT service.
CONNECT	Establishes a session with a LAT service or Telnet destination.
SET PORT PAUSE ENABLED	Pauses the display after 24 lines of information appear on the screen. The display continues to scroll information when you press the <Return> key.

SHOW SESSIONS

SHOW SESSIONS Display a list of active sessions

The SHOW SESSIONS command displays a list of all active sessions at your port. The list includes session numbers and other information.

Notes

Use this command when you have two or more active sessions, and you need to know the number of a session to disconnect it or reopen it. This command is also useful if you need to know the service mode of a session. If you enter this command in a Multisessions window, the display does not include session numbers for those sessions currently being displayed in another window.

UNIX alias: JOBS [PORT *port-list*]

Syntax

```
SHOW SESSIONS [PORT port-list]
```

Abbreviation

```
SH SES [PO]
```

Where

Means

port-list

Display the active sessions at the port you specify in this variable. Users at Secure ports can only enter their own port numbers.

Example

```
TS3395> show sessions
```

Port 12: lynne	Service Mode	Current Session 3
- Session 1: Connected	Interactive	FINANCE.SUN.COM
- Session 2: Connected	Interactive	PAYROLLVAX
- Session 3: Connected	Interactive	UNIX.HOST.COM

Field

Means

Port *n*

The number of the terminal server port.

username

The name you used to log on to this port, or the name the network manager assigned to the port with the DEFINE or SET PORT USERNAME command.

Service Mode

The port mode, which is either Service Mode or Local Mode.

Session *n*

The session number.

Field	Means												
<i>status</i>	<p>The connection status of the session. The types of status are the following:</p> <table border="0"> <thead> <tr> <th style="text-align: left;">Status</th> <th style="text-align: left;">Means</th> </tr> </thead> <tbody> <tr> <td>Connected</td> <td>The port has an active session with a LAT service or a Telnet destination.</td> </tr> <tr> <td>Connecting</td> <td>The port is attempting to connect to a LAT service or a Telnet destination.</td> </tr> <tr> <td>Disconnected</td> <td>The port has disconnected from a session. (A port may disconnect from a session after it has been inactive for a certain period of time.)</td> </tr> <tr> <td>Disconnecting</td> <td>The port is disconnecting from a session. (A port may disconnect from a session after it has been inactive for a certain period of time.)</td> </tr> <tr> <td>Queued at <i>n</i></td> <td>The position in the connection queue for a LAT service or Telnet destination.</td> </tr> </tbody> </table>	Status	Means	Connected	The port has an active session with a LAT service or a Telnet destination.	Connecting	The port is attempting to connect to a LAT service or a Telnet destination.	Disconnected	The port has disconnected from a session. (A port may disconnect from a session after it has been inactive for a certain period of time.)	Disconnecting	The port is disconnecting from a session. (A port may disconnect from a session after it has been inactive for a certain period of time.)	Queued at <i>n</i>	The position in the connection queue for a LAT service or Telnet destination.
Status	Means												
Connected	The port has an active session with a LAT service or a Telnet destination.												
Connecting	The port is attempting to connect to a LAT service or a Telnet destination.												
Disconnected	The port has disconnected from a session. (A port may disconnect from a session after it has been inactive for a certain period of time.)												
Disconnecting	The port is disconnecting from a session. (A port may disconnect from a session after it has been inactive for a certain period of time.)												
Queued at <i>n</i>	The position in the connection queue for a LAT service or Telnet destination.												
Service Mode	<p>The data transparency mode for the current session at this port. The service modes that can appear in this field are the following:</p> <table border="0"> <thead> <tr> <th style="text-align: left;">Service Mode</th> <th style="text-align: left;">Means</th> </tr> </thead> <tbody> <tr> <td>Interactive</td> <td>The terminal server recognizes all control characters.</td> </tr> <tr> <td>Passall</td> <td>The terminal server passes all characters as data.</td> </tr> <tr> <td>Passthru</td> <td>The terminal server recognizes the XON and XOFF characters, but passes all other characters as data.</td> </tr> <tr> <td>Transparent</td> <td>The terminal server ignores Telnet option messages received from a remotely initiated Telnet session and does not send any Telnet options messages from a locally initiated Telnet session. For LAT sessions, the terminal server operates in Passthru mode at the local port, but tells its connection partner it is operating in Passall mode.</td> </tr> </tbody> </table>	Service Mode	Means	Interactive	The terminal server recognizes all control characters.	Passall	The terminal server passes all characters as data.	Passthru	The terminal server recognizes the XON and XOFF characters, but passes all other characters as data.	Transparent	The terminal server ignores Telnet option messages received from a remotely initiated Telnet session and does not send any Telnet options messages from a locally initiated Telnet session. For LAT sessions, the terminal server operates in Passthru mode at the local port, but tells its connection partner it is operating in Passall mode.		
Service Mode	Means												
Interactive	The terminal server recognizes all control characters.												
Passall	The terminal server passes all characters as data.												
Passthru	The terminal server recognizes the XON and XOFF characters, but passes all other characters as data.												
Transparent	The terminal server ignores Telnet option messages received from a remotely initiated Telnet session and does not send any Telnet options messages from a locally initiated Telnet session. For LAT sessions, the terminal server operates in Passthru mode at the local port, but tells its connection partner it is operating in Passall mode.												
<i>destination</i> (node)	<p>The LAT service or Telnet destination associated with a session. If the name of the LAT service differs from the name of the node that offers the service, the display shows the name of the node within parentheses. If the destination is a domain name that is too long to fit in the display, the terminal server truncates the domain name and display an asterisk (*) to indicate that it truncated the name.</p> <p>If the destination name reflects a remote access connection to the port, the name is that of the LAT service requested by the remote port, and the node name is the requesting node.</p>												

SHOW SESSIONS

Field	Means
<i>Telnet options</i>	If a second line of session information appears, it indicates Telnet options. These are features that the terminal server negotiates for a Telnet session, and include Echo and Binary. When these option names are preceded by “Do” or “Don't,” they reflect whether or not the Telnet destination will perform these options. When these option names are preceded by “Will” and “Won't,” they reflect whether or not the terminal server will perform these options.

Related Commands

The SHOW SESSIONS command provides information that is useful with these commands:

Command	Function
RESUME	Reopens the session you specify with a session number or the previous session.
BACKWARDS	Reopens the next lower-numbered session.
FORWARDS	Reopens the next higher-numbered session.
DISCONNECT	Terminates the session you specify with a session number.

Examples

These examples show how you can use the TELNET CONNECT command with different keywords and variables to establish a session with a Telnet destination. Example 4 shows a TN3270 connection.

1. This command uses the domain name FINANCESUN.SYNOPTICS.COM.

```
TS3395> telnet connect financesun.synoptics.com
TS3395 -010- Session 4 to FINANCESUN.COM established
Welcome To FINANCESUN
Please log on.
```

2. This command has no domain name or Internet address. In the absence of this information, the terminal server searches for a predefined preferred destination. In this example, the preferred destination is a Telnet host named ACCOUNTSHOST.COM.

```
TS3395> telnet connect
TS3395 -010- Session 5 to ACCOUNTSHOST.COM established
This is ACCOUNTSHOST.COM
Please enter your username:
```

If the network manager has not defined a preferred destination, the message *Preferred service has not been defined* appears on the screen. If this happens, see your network manager, or enter a TELNET domain name with the TELNET CONNECT command.

3. This command uses the Internet address 128.10.2.30 and the Telnet port number 23.

```
TS3395> telnet connect 128.10.2.30:23
TS3395 -010- Session 6 to 128.10.2.30:23 established
Welcome to DevelopmentSUN.COM
Please log on.
```

4. This command uses a Telnet domain name to reach an IBM host. Once the connection is established, the terminal emulates an IBM 3278 style terminal, and the terminal's keyboard responds like the IBM keyboard.

```
TS3395> telnet connect ibmhost.com
TS3395 -010- Session 3 to IBMHOST.COM established
This is IBMhost.COM
Username:
```

Related Commands

These commands provide functions that are useful with or similar to the TELNET CONNECT command:

Command	Function
SHOW DESTINATIONS	Displays a list of LAT services and Telnet destinations on the network.
SHOW DOMAIN	Displays a list of learned and static Telnet domain names on the network.
CONNECT	Establishes a session with a LAT service or a Telnet destination.
RLOGIN	Establishes a session with a host if the host has been configured for an RLOGIN implementation. (This command may require a log on password as well as a host name.)
DISCONNECT	Terminates a session between the terminal server port and a device on the LAN.

XCONNECT Establish a session with an XDM host

The XCONNECT command attempts to establish a session with an XDM host for terminal servers with the Xremote protocol enabled.

Notes

Not all terminal servers have the Xremote protocol enabled. If it is enabled, you can either provide the domain name or Internet address of an XDM host in the command line, or simply enter the XCONNECT command. If you enter the command without specifying a host, the terminal server searches the permanent database for a host that was specified with the DEFINE PORT XDM host command, or uses the BROADCAST query type.

Syntax

```
XCONNECT [domain-name /internet-address]
```

Abbreviation

XCO

Where

Means

[*domain-name*]

The domain name of the XDM host.

[*internet-address*]

The Internet address of the XDM host.

Examples

1. This command has no domain name or Internet address, and the terminal server locates an XDM host.

```
TS3395> xconnect
```

```
Welcome to the Xwindow System
```

```
Login:
```

```
Password:
```

2. A user enters the XCONNECT command with an Internet address. The terminal server locates the XDM host at that Internet address.

```
TS3395> xconnect 143.129.80.200
```

```
Welcome to the Xwindow System

Login:

Password:
```

Related Commands

This command is useful with the XCONNECT command:

Command	Function
SHOW PORT CHARACTERISTICS	Indicates whether the Xremote protocol is enabled for this port in the Enabled Characteristics field.

ZERO COUNTERS

Reset port counters to zero

The ZERO COUNTERS command resets the port counters to zero. Use the SHOW PORT COUNTERS command to display the counters at your port.

Notes

Users at Secure and Nonprivileged ports can only reset the counters of their own ports. These ports require that you use the PORT keyword and the *port-list* variable to specify your port number.

The SHOW PORTS COUNTERS command displays the current values of all port numbers, and the number of seconds that have elapsed since the port counters were last reset to zero.

Syntax

```
ZERO COUNTERS    PORT port-list
```

Abbreviation

Z C PO

Where

Means

PORT

Reset the counters at the port in the *port-list* variable to zero.

port-list

Reset the counters of the port you specify in this variable to zero. Secure and Nonprivileged users must specify their own port number.

Example

This command resets the counters on port 3 to zero.

```
TS3395> zero counters port 3
```

```
TS3395>
```

Related Commands

This command is useful with the ZERO COUNTERS command:

Command	Function
SHOW PORT COUNTERS	Displays the current values for port counters.

Chapter 4

TN3270 Sessions

You can establish sessions over the LAN with an IBM host through the terminal server if the host has a Telnet server that supports the TN3270 protocol. When you log on to the IBM host, the terminal server software redefines the functions of the keys on your terminal's keyboard to emulate those of an IBM 3270 Model 5 or Model 2 display station. This chapter includes these topics:

- Checking the TN3270 characteristics at your port
- Establishing a TN3270 session with an IBM host
- Using hot keys
- Keyboard maps

Checking the TN3270 Characteristics at Your Port

Before you attempt to establish a connection with an IBM host, check the settings of the TN3270 characteristics at your port with the `SHOW PORT TELNET CHARACTERISTICS` command. This display shows the following information:

- The device your terminal emulates once you log on to the IBM host. The terminal server software includes the VT100, VT220-7, VT220-8, and ANSI device types, but the network manager at your site may have created other types.
- The translation table for the language your port uses during the TN3270 session.

Figure 4-1 shows a `SHOW PORT TELNET CHARACTERISTICS` display with typical settings for the TN3270 characteristics. The display at your port may be different.

```
Port 12: john                               18 June 1993  14:35:55

Abort Output Character:      None      Newline:                CR/NULL
Attention Character:         ^W      Newline Filtering       None
Default Port:                23      Query Character:        None
Echo Mode:                   Remote   Remote Port:            3200
Erase Keystroke Character:   None      Synchronize Character:  None
Erase Line Character:        ^K      Transmit:               Immediate
Interrupt Character:         None      Binary Session Mode:    PASTHRU
Terminal Type                None      Tn3270 Device           VT220-7
Tn3270 TranslationTable     USENGLSH Tn3270 printer port     Any

Enabled Characteristics:

Tn3270 EOR, Tn3270 XtdAttrs
```

Figure 4-1. *A `SHOW PORT TELNET CHARACTERISTICS` display set for TN3270 connections*

In Figure 4-1, the TN3270 translation table in column one is set to USENGLSH, which is the default setting for this characteristic. The TN3270 device in column two is set to VT220-7, but the setting at your

port could be VT100, VT220-8, ANSI, or a another type defined by the network manager. The list of Enabled Characteristics includes TN3270 EOR, TN3270 ErrorLock, and TN3270 XtdAttr.

Note: If the TN3270 characteristic is not enabled, you can still establish a session with an IBM host, but your keyboard will not function properly and the screen will be incorrectly formatted.

Using the SHOW PORT KEYMAP Command

The SHOW PORT KEYMAP command, described in Chapter 3, displays the translation table of 3270 keyboard functions and the corresponding keys for those functions on your terminal. The table also includes the hexadecimal value for those keys, although you do not need these values for regular keyboard use. Tables 4-1, 4-2, and 4-3, at the end of this chapter also show 3270 keyboard functions and the corresponding keys on terminal types that are included in the software.

Establishing a TN3270 Session with an IBM Host

Use the CONNECT or TELNET CONNECT commands to establish a session with an IBM host through a Telnet server. You can use a domain name or an Internet address as the destination name in the command. In the following example, a user enters the CONNECT command to establish a session with the IBM host FNC.BOSTON.COM. (Notice that the IBM host name is in Telnet domain name format). Figure 4-2 represents the type of screen that can appear:

```
TS3395> connect fnc.boston.com
```



Figure 4-2. A sample IBM logon screen

On this screen, the cursor appears at the USERID prompt.

Once the terminal server establishes a session with the IBM host, the terminal server software begins IBM 3270 terminal emulation. To check the functions of keys during a session, use the <CTRL><X> key sequence. This key sequence displays a table similar to the SHOW PORT KEYMAP display. Tables 4-1, 4-2, and 4-3 at the end of this chapter show 3270 keyboard functions and the corresponding keys on terminal types that are included in the software.

Note: If you are using a personal computer (PC) and running terminal emulation software, this software may not match every IBM display station key to the corresponding key on your keyboard.

Using Hot Keys

Most terminals have screens that display twenty-four lines, while IBM Model 5 stations display twenty-seven lines plus a status line, and IBM Model 2 stations display twenty-four lines plus a status line. To view the extra display lines and the status lines, you use *hot keys*. When you press a hot key, the terminal displays the hidden display lines or the status line. When you press it again, the hidden lines disappear.

The Scroll Lower key

To view the three extra display lines on an IBM Model 5 display station screen, use the Scroll Lower function key. The Scroll Lower key changes the display from the top twenty-four lines (1-24) to the bottom twenty-four lines (4-27). Using the Scroll Lower key again returns the display to lines 1-24. The Scroll Lower keys for the predefined keyboard maps are these:

VT100/102 and ANSI	ESC L
VT220/7-bit	<CTRL><O>
VT220/8-bit	<CTRL><O>

The network manager can change the predefined key sequence, so the Scroll Lower key sequence on your terminal may be different.

The Status Key

To view the status line on an IBM Model 2 or Model 5 display station, use the Status key. (On Model 5 this is the twenty-eighth line of the screen; on Model 2 this is the twenty-fifth line of the screen.) To view this line, use the Status key that applies to your terminal's keyboard map:

VT100/102 and ANSI	ESC ?
VT220/7-bit	<CTRL><W>
VT220/8-bit	<CTRL><W>

The network manager can change the predefined key sequence, so the Status key sequence on your terminal may be different.

Keyboard Maps

Tables 4-1, 4-2, and 4-3 show the IBM 3270 terminal functions and the corresponding VT100 and ANSI, VT200-7, and VT200-8 keys. Check with your network manager about other keymaps at your site.

Table 4-1. VT100/102 and ANSI 3.64 keyboard map

IBM 3270 Terminal Function	VT100/102 and ANSI Terminal Key Sequence
Back Tab	ESC TAB
CentSign	ESC C
Cursor Down	Down Arrow (↓)
Cursor Left	Left Arrow (←)
Cursor Right	Right Arrow (→)
Cursor Up	Up Arrow (↑)
Clear	CTRL-C
Cursor Sel	ESC K
Delete	Delete
Dup (Duplicate)	CTRL-D
Enter	Return
Erase EOF	CTRL-E
Erase Input	ESC I
Fast Left	CTRL-V
Fast Right	CTRL-U
Field Mark	CTRL-F
Flush Input	ESC F
Home	ESC H
Insert Mode	ESC Delete
New Line	Linefeed
PA1	ESC ,
PA2	ESC .
PA3	ESC /
PF1	Numeric 1
PF2	Numeric 2
PF3	Numeric 3
PF4	Numeric 4
PF5	Numeric 5
PF6	Numeric 6
PF7	Numeric 7
PF8	Numeric 8
PF9	Numeric 9
PF10	PF1
PF11	PF2
PF12	PF3
PF13	ESC !
PF14	ESC @
PF15	ESC #
PF16	ESC \$

IBM 3270 Terminal Function	VT100/102 and ANSI Terminal Key Sequence
PF17	ESC %
PF18	ESC ^
PF19	ESC &
PF20	ESC *
PF21	ESC (
PF22	ESC)
PF23	ESC _
PF24	ESC +
Print	CTRL-P
Refresh	ESC R
Reset	CTRL-R
Scroll Lower	ESC L
ShowKeys	CTRL-X
Status ON/OFF	ESC ?
Sys-Req	ESC S
Tab	Tab
Test	ESC T

Table 4-2. VT220/7-bit keyboard map

IBM 3270 Terminal Function	VT220-7 Terminal Key Sequence
Back Tab	FIND
CentSign	CTRL-N
Clear	CTRL-C
Cursor Down	Down Arrow (↓)
Cursor Left	Left Arrow (←)
Cursor Right	Right Arrow (→)
Cursor Up	Up Arrow (↑)
Cursor Sel	CTRL-K
Delete	Delete (Arrow in box)
Dup (Duplicate)	CTRL-D
Enter	Return
Erase EOF	CTRL-E
Erase Input	Remove
Fast Right	CTRL-U
Fast Left	CTRL-V
Field Mark	CTRL-F
Flush Input	ESC F
Home	CTRL-H
Insert Mode	Insert Here
New Line	Select
PA1	F18
PA2	F19
PA3	F20
PF1	Numeric 1
PF2	Numeric 2
PF3	Numeric 3
PF4	Numeric 4
PF5	Numeric 5
PF6	Numeric 6
PF7	Numeric 7
PF8	Numeric 8
PF9	Numeric 9
PF10	PF1
PF11	PF2
PF12	PF3
PF13	F6
PF14	F7
PF15	F8
PF16	F9
PF17	F10
PF18	F11
PF19	F12
PF20	F13
PF21	F14

IBM 3270 Terminal Function	VT220-7 Terminal Key Sequence
PF22	Help
PF23	Do
PF24	F17
Print	CTRL-P
Refresh	Previous Screen
Reset	CTRL-R
Scroll Lower	CTRL-O
ShowKeys	CTRL-X
Status ON/OFF	CTRL-W
Seq	Next Screen
Tab	Tab
Test	CTRL-T

Table 4-3. VT220/8-bit keyboard map

IBM 3270 Terminal Function	VT220-8 Terminal Key Sequence
Back Tab	FIND
CentSign	CTRL-N
Cursor Down	Down Arrow (↓)
Cursor Left	Left Arrow (←)
Cursor Right	Right Arrow (→)
Cursor Up	Up Arrow (↑)
Clear	CTRL-C
Cursor Sel	CTRL-K
Delete	Delete (Arrow in box)
Dup (Duplicate)	CTRL-D
Enter	Enter
Erase EOF	CTRL-E
Erase Input	Remove
Fast Right	CTRL-U
Fast Left	CTRL-V
Field Mark	CTRL-F
Flush Input	ESC F
Home	CTRL-H
Insert Mode	Insert
New Line	Select
PA1	F18
PA2	F19
PA3	F20
PF1	Numeric 1
PF2	Numeric 2
PF3	Numeric 3
PF4	Numeric 4
PF5	Numeric 5
PF6	Numeric 6
PF7	Numeric 7
PF8	Numeric 8
PF9	Numeric 9
PF10	PF1
PF11	PF2
PF12	PF3
PF13	F6
PF14	F7
PF15	F8
PF16	F9
PF17	F10
PF18	F11
PF19	F12
PF20	F13
PF21	F14
PF22	Help

IBM 3270 Terminal Function	VT220-8 Terminal Key Sequence
PF23	Do
PF24	F17
Print	CTRL-P
Refresh	Previous Screen
Reset	CTRL-R
Scroll Lower	CTRL-O
ShowKeys	CTRL-X
Status ON/OFF	CTRL-W
Sys Req	Next Screen
Tab	Tab
Test	CTRL-T

Chapter 5

Using the Multisessions Feature

Some DEC terminals, such as VT330 and VT420 terminals, support a feature called multisessions, or dual session management. This feature enables a terminal to process and display two sessions simultaneously, within separate windows. This chapter describes how to use a terminal that supports multisessions, and includes these topics:

- Managing sessions within windows
- Using terminal server commands within windows
- Using session management characters within windows

For general information about DEC terminals that support multisessions, see the DEC documentation for each terminal type. For information about how to use this feature with other products and applications, see the documentation for those products and applications.

Note: MULTISESSIONS is the DEC server characteristic that controls the port where the terminals are connected. This characteristic does not affect the multiple session support feature of the Model 3395/3395A Terminal Server, which is available to all terminal server users.

Managing Sessions Within Windows

When you log in to a multisessions port, the terminal creates two windows where you can establish and manage sessions. By default, each window occupies an entire screen, or page. In full page mode, you switch between pages with the F4 function key. You can split the screen to view both windows simultaneously, however, with the <CTRL><F4> key sequence. See the documentation for your VT330 or VT420 terminal for more information about how to set up windows and alter the characteristics of the display within each window.

Most terminal server commands behave the same way from within multisession windows as they do from a regular terminal screen. Some differences exist, however, and these are described in the section “Using Terminal Server Commands Within Windows,” later in this chapter.

You may be able to split the screen vertically, horizontally, or both. This chapter shows examples using a horizontally split screen. The information here is also applicable to terminals with a vertically split screen, or to terminals using an entire screen for each window. Figure 5-1 represents a terminal with a horizontally split screen.

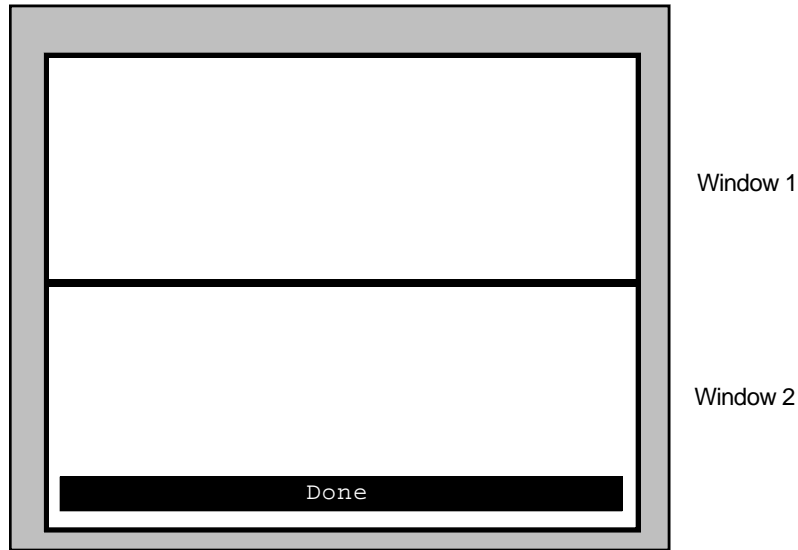


Figure 5-1. An example of a split screen

When a screen is split horizontally, as it is in Figure 5-1, the multisessions terminal always assumes the top window is window 1, and the bottom window is window 2. When a screen is split vertically, the left window is window 1 and the right window is window 2. If the screen is not split, the multisessions software considers the first page as window 1 and the second as window 2. Use the F4 key to move the cursor to a different window.

The multisessions terminal tracks the current session according to the window where it appears. If the session appears in window 2, the terminal considers the session number 2, even if the Model 3395/3395A Terminal Server session number is 1 or 3. The multisessions software always opens the first session in window 1.

Establishing the First Session

When the “Done” message appears at the bottom of the terminal screen, press the <Return> key. The “Service Name=” prompt appears at the bottom of the screen, whether it is split or not:

```
Service Name =
```

This prompt is part of the multisessions user interface, and you use it to establish the first session in each window.

At the “Service name=” prompt, enter a LAT service name, a Telnet domain name, or an Internet address. The terminal server interprets your entry as a LAN destination and use it in a CONNECT command. When the terminal server establishes a session, the multisessions software displays the session in window 1. If your terminal server has a preferred service already defined, you can simply press the <Return> key at the “Service name=” prompt.

Figure 5-2 shows an example of how a split screen might look after you entered the Telnet domain name Payroll.Host.Com at the “Service Name=” prompt:

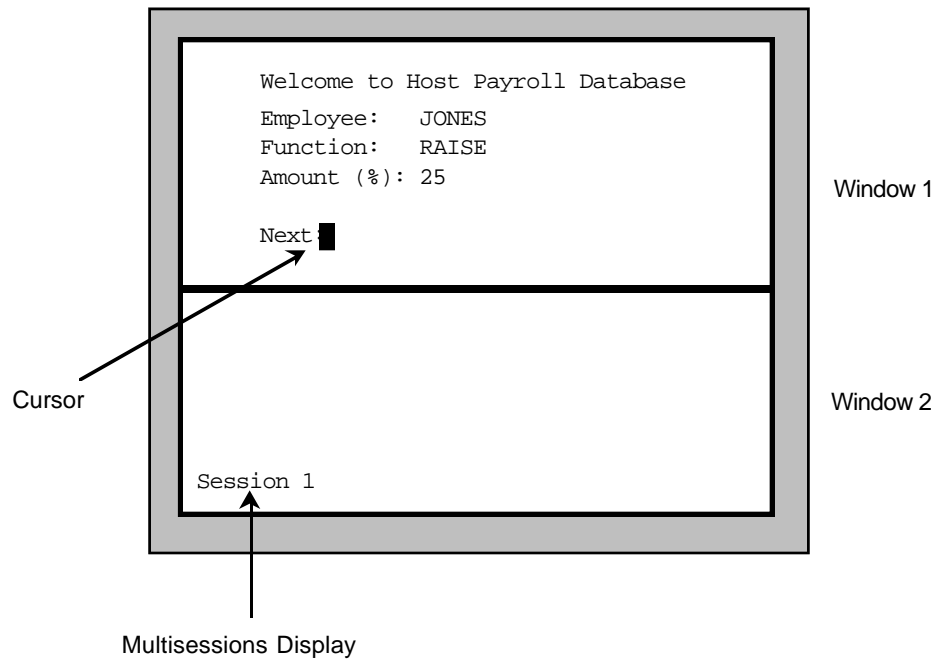


Figure 5-2. A multisessions screen with one session established

Once you establish a session in a window, you can work within it, just as you would on any other terminal. If you log off, however, the TS3395> prompt appears rather than the multisessions prompt. If you want to establish another session in that window, enter a terminal server connect command, such as CONNECT.

You can override the multisessions interface and bring up the Model 3395/3395A command interface in two ways. You can enter the name LOCAL at the multisessions prompt, and this calls up the TS3395> prompt. Or, if no preferred service exists, you can press the <Return> key several times at the multisessions prompt, which calls up the TS3395> prompt.

Establishing the Second Session

You can establish a second session in the first window, or in the second window. To establish a second session in the first window, suspend the current session and the TS3395> prompt appears on the screen. You can then enter a terminal server connect command, such as CONNECT, just as you would at a regular terminal. When you establish the second session this way, it appears in window 1.

To establish the second session in window 2, press the F4 key to move the cursor to window 2. The “Service Name prompt=” appears at the bottom of the screen. Enter the name of a LAT service, a Telnet domain, or an Internet address. Figure 5-3 shows an example of what a split screen would look like if you entered PersonnelVAX at the “Service Name=” prompt in window 2 with an active session in window 1.

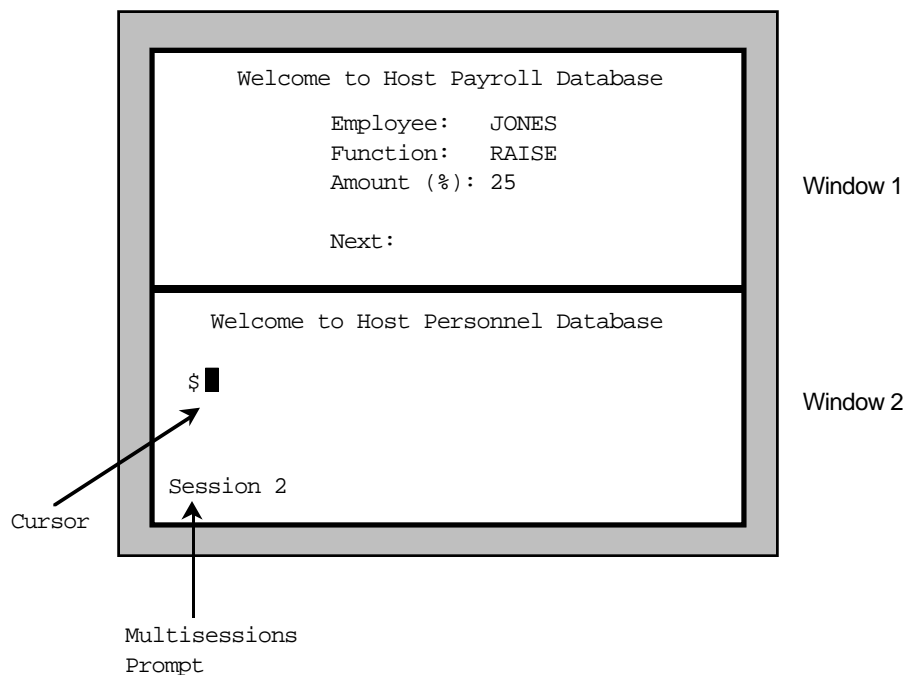


Figure 5-3. A multisessions screen with two sessions established

Both sessions are active in Figure 5-3, but the session in window 2 is the current session. Once you establish a session in a window, you can work within it just as you would on any other terminal. If you log off, however, the TS3395> prompt appears rather than the multisessions prompt. If you want to establish another session in that window, enter a terminal server connect command.

Establishing Three or More Sessions

To establish a session when you have active sessions in both windows, suspend the current session, or log off of it if you are finished working there. When you do the TS3395> prompt appears on the screen, and you can enter terminal server commands such as CONNECT. Use the F4 key to move the cursor between windows.

Remember that the session number in the lower-left corner of the screen is the multisessions window number, not the Model 3395/3395A Terminal Server session number. You could have four active sessions, and reopen session 3 in window 1 and session 4 in window 2. If the cursor appears in window 1, the session number on the screen will be 1 to reflect the multisessions window number, not the terminal server session number.

You need the terminal server session number to disconnect from sessions. You can reopen sessions that were not established in the current window with a session number or a destination name. Use the SHOW SESSIONS command to display the active session numbers for those sessions that do not currently appear in a window.

Logging Out of the Terminal Server Port

To log out of the terminal server port, enter the LOGOUT command from the TS3395> prompt. If you do not disconnect all sessions in all windows, the terminal server software terminates them when you log out of the port.

Using Terminal Server Commands Within Windows

The multisessions windows share the terminal server's command processor. You can enter terminal server commands at either window, but not both windows simultaneously. You could establish a session in one window with the CONNECT command, and then establish another session in the second window with another CONNECT command. You could then suspend the first session and use the SHOW SESSIONS command to view your active session numbers.

Some terminal server commands behave differently when you use them from within multisession windows than when you use them from terminals without windows. The basic functions, however, remain the same. This section describes how the following commands function when you enter them from within multisession windows:

BACKWARDS
CONNECT
DISCONNECT
FORWARDS
RESUME
SHOW SESSIONS
SHOW/LIST PORT CHARACTERISTICS

For more information on any of these commands, see the full command descriptions in Chapter 3.

BACKWARDS

The BACKWARDS command reopens the next lower-numbered session that does not already appear in a window. The session you reopen with the BACKWARDS command appears in the window where you entered the command. For example, a port could have four active sessions, numbered 1, 2, 3, and 4. Session 2 appears in the top window, and session 3 appears in the bottom window. If you suspend session 3 and enter the BACKWARDS command from the TS3395> prompt, the terminal server reopens session 1 in the bottom window. It does not reopen session 2 because this session already appears in the top window.

The terminal server records session numbers sequentially in a rotating list, just as it does at regular terminals. If you enter the BACKWARDS command from the lowest-numbered session, the terminal server reopens the next highest-numbered session that is not being displayed.

CONNECT

You can enter this command from the TS3395> prompt, from within a window, when no connection is active in the window. The TS3395> prompt appears in each window after you have established the first session for a window from the “Service name=” prompt.

DISCONNECT

When using multisessions, the DISCONNECT command can terminate sessions from within the active window, another window, or terminate all sessions, depending on the arguments you use with it. If you enter the command without arguments the terminal server terminates the current session within the window where you entered the command.

If you enter the command with a session number, the terminal server terminates that session, even if you opened it in another window:

```
DISCONNECT [session-number]
```

If you enter the command with the ALL keyword, the terminal server terminates all sessions at the port:

```
DISCONNECT ALL
```

FORWARDS

The FORWARDS command reopens the next higher-numbered session that does not already appear in a window. The session you reopen with the FORWARDS command appears in the window where you entered the command. For example, a port could have four active sessions, numbered 1, 2, 3, and 4. Session 3 appears in the top window, and session 2 appears in the bottom window. If you suspend session 2 and enter the FORWARDS command from the TS3395> prompt, the terminal server reopens session 4 in the bottom window. It does not reopen session 3 because this session already appears in the top window.

The terminal server records session numbers sequentially in a rotating list, just as it does at regular terminals. If you enter the FORWARDS command from the highest-numbered session, the terminal server reopens the next lowest-numbered session that is not being displayed.

RESUME

The RESUME command reopens the previous session from within the window when you enter it, if you enter it without arguments. When you enter the RESUME command with a session number, host name, or service name, it reopens the session you specify at the window where you entered the command, even if you did not establish the session from that window.

The RESUME command does not reopen a session that currently appears in a window. If you attempt to do this, an error message appears on the screen.

SHOW SESSIONS

When the MULTISESSIONS characteristic is enabled at a port, the SHOW SESSIONS command displays the window number where a session appears. Figure 5-4 shows a sample SHOW SESSIONS display with MULTISESSIONS enabled.

Port	Session	Service Mode	Current Session
12 john			1
1	Session 1: Connected	Interactive	FINANCEVAX
-	Session 2: Connected	Interactive	DEVELOPMENTVAX
2	Session 3: Connected	Interactive	DEVELOPMENTSUN
-	Session 4: Connected	Interactive	PAYROLLHOST

Figure 5-4. A sample show sessions display with multisessions enabled

The left-most column of the Show Sessions display indicates the window number where the session is active. If a session is active but does not appear in a window, it does not have a window number. In Figure 5-4, Session 1 appears at window 1, and Session 3 appears at window 2. In the upper right corner, the display shows that session 1 is the current session.

SHOW/LIST PORT CHARACTERISTICS

When the MULTISESSIONS characteristic is enabled at a port, the LIST/SHOW PORT CHARACTERISTICS display indicates this. The MULTISESSIONS characteristic appears in the list of enabled characteristics at the bottom of the display.

Using Session Management Characters Within Windows

You can use session switching and Telnet management control characters from within windows, just as you would at a terminal that did not support the MULTISESSIONS characteristic. The local switch character calls up the Model 3395/3395A command processor at the window where you hit the character. The forward switch and backward switch characters behave somewhat differently from within windows, and these differences are described below. Chapter 2 explains session management control characters in detail.

All VT330 and VT420 terminals have a <Break> key. If the <Break> key is set to LOCAL at your port, you can use it to suspend a session in a window, just as you would on a terminal without windows.

Backward Switch

The backward switch character reopens the next lower-numbered session that does not already appear in a window. The session you reopen with the backward switch character appears in the window where you entered it. For example, a port could have four active sessions, numbered 1, 2, 3, and 4. Session 2 appears in the top window, and session 3 appears in the bottom window. If you enter the backward switch character at session 3, the terminal server reopens session 1 in the bottom window. It does not reopen session 2 because this session already appears in the top window.

The terminal server records session numbers sequentially in a rotating list, just as it does at regular terminals. If you enter the backward switch character at the lowest-numbered session, the terminal server reopens the next highest-numbered session that is not being displayed.

Forward Switch

The forward switch character reopens the next higher-numbered session that does not already appear in a window. The session you reopen with the forward switch character will appear in the window where you entered the command. For example, a port could have four active sessions, numbered 1, 2, 3, and 4. Session 3 appears in the top window, and session 2 appears in the bottom window. If you enter the forward switch character at session 2, the terminal server reopens session 4 in the bottom window. It will not reopen session 3 because this session already appears in the top window.

The terminal server records session numbers sequentially in a rotating list, just as it does at regular terminals. If you enter the forward switch character from the highest-numbered session, the terminal server will reopen the lowest-numbered session that is not being displayed.

Chapter 6

Transferring Files With a Personal Computer

A personal computer, or PC, that runs terminal emulation software and has a serial port can run on the terminal server in the same way as a terminal. This chapter explains how to transfer files between a PC and a host or another PC on the LAN through the terminal server. The topics in this chapter include the following:

- File transfer procedure
- Transferring a file with the Kermit file transfer program

File Transfer Procedure

These are the basic steps you use to transfer files between a PC and a host. The way you apply these steps to your situation will vary, depending on the hardware and software you use and the types of files you transfer. No matter what your environment is, however, you will follow this general procedure:

1. Ensure that both the PC and the host have the same file transfer program, and that the PC is running a terminal emulation program. (Some file transfer programs, such as PC Kermit, combine both the file transfer and terminal emulation functions).
2. Establish a session with the host on the network. To do this, you need to log on to the terminal server port, use a terminal server connect command to reach the host, and log on to the host.
3. Set the data transparency of the session to `PASSALL` if the file transfer program requires it. To do this, suspend the session and return to Model 3395/3395A local command mode and use the `SET SESSION` command.

```
TS3395> set session passall
```

4. Start the file transfer program on the remote host, if it is not already running there.
5. Exit from the terminal emulation program and return to the PC operating system, if necessary. If you are using MS/DOS, for example, you will see the `C:` prompt. If your file transfer program combines terminal emulation and file transfer, you may not have to do this.
6. Run the file transfer program and send the file. The file transfer program will behave as if the PC is directly connected to the host.
7. Exit from the file transfer program on the host, and terminate the session with the host.
8. Exit from the file transfer program on the PC.

The next section of this manual shows an example of a file transfer using these steps with the Kermit file transfer program. Before you use the Kermit program or any other file transfer program, consult the documentation for that program.

Transferring a File With the Kermit File Transfer Program

This section describes a file transfer from a PC to a host with the Kermit file transfer program. In this example, the user Chris, at a PC running MS/DOS, sends a spreadsheet to a LAT service on the host FinanceVAX. Figure 6-1 represents a file transfer such as this:

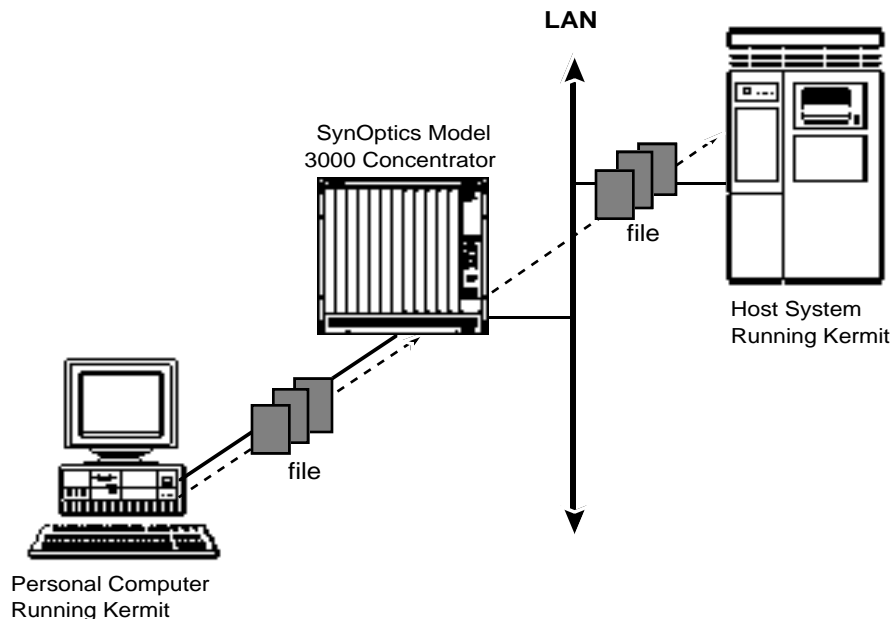


Figure 6-1. A file transfer from a host computer to a PC

In Figure 6-1, both the PC and the host are running the Kermit file transfer program, and the PC sends a file to the host through the terminal server. The following example shows how you can apply the steps in the basic procedure to this type of transfer.

1. Ensure that both the PC and the host are running the same file transfer program, and that the PC is running a terminal emulation program.

From the PC DOS prompt, Chris brings up the Kermit program. When the PC invokes the Kermit program, it displays the Kermit prompt.

```
C:\> kermit  
Kermit-MS>
```

2. Establish a session with the host on the network.

Chris selects the PC serial port that is connected to the terminal server port, sets the port speed, and enters a CONNECT command to establish a session with the terminal server:

```
Kermit-MS> set port 1
Kermit-MS> set speed 9600
Kermit-MS> connect
Enter Username> chris
TS3395>
```

Chris now establishes a session with FinanceVAX with a CONNECT command, and logs on:

```
TS3395> connect financevax
TS3395 -010- Session 1 to FINANCEVAX established
Welcome to Finance Department VAX
Username: Chris
Password: xxxxxxxx
```

(The password does not appear on the screen.)

3. Reset the data transparency of the session, if the file transfer program requires it.

Chris will transfer a spreadsheet, so he uses the <Break> key to suspend the session and the SET SESSION command to set the data transparency to PASSALL. He then resumes the session with FinanceVAX.

```
$ <Break>
TS3395>
TS3395> set session passall
TS3395>
TS3395> RESUME
$
```

Transferring Files

4. Start the file transfer program on the remote host, if it is not already running there.

Chris starts up Kermit on FinanceVAX:

```
$ RUN applications:KERMIT

VMS KERMIT - 32 version 3.2.076-a
Default terminal for transfers is: _VTA463:
```

(In this example, a directory called "applications" contains the Kermit program. The organization of directories and files varies on different hosts. Check with your network manager to determine the location of the file transfer program on a LAT service or other host.)

5. Exit from the terminal emulation program and return to the PC operating system.

In this example, the Kermit program displays a message telling the user how to do this. Chris enters the appropriate escape sequence and invokes the local PC operating system.

```
Kermit Server running on VAX/VMS host. Please type your escape
sequence to return to your local machine. Shut down the server
with the Kermit BYE command on your local machine.
```

```
Kermit-32> <CTRL>/<]> <C>
```

```
Kermit-MS>
```

6. Run the file transfer program and send the file.

From the PC, Chris enters the Kermit SEND command and the filename Finance_Report. The Kermit program responds with information and status about the file transfer:

```
Kermit-MS> SEND Finance_Report

File name:           Finance_Report
KBytes transferred:  113
Percent transferred: 100%
Sending:             Completed

Number of packets:   1706
Number of retries:   0
Last error:          None
Last warning:        None

Kermit-MS>
```

(To retrieve a file from the host, the command is GET *filename*.)

7. Exit from the file transfer program on the host and terminate the session with the host.

To end the file transfer session, Chris first enters the Kermit FINISH command at the PC to notify the host that he has no more files to transfer. Then he connects to the Kermit program on FinanceVAX , and shuts it down. He then logs off of FinanceVAX.

```
Kermit-MS> connect
Kermit-32>
Kermit-32> exit
$
$ LOGOFF
TS3395>
TS3395> logout
TS3395>
```

8. Exit from the file transfer program on the PC.

Chris logs out of the terminal server and the PC Kermit prompt appears on the screen. He then exits from PC Kermit.

```
TS3395> logout
Kermit-MS>
Kermit-MS> exit
C:\>
```

You can use this method to transfer a file between any personal computer or workstation and any host. If the target device is another PC, however, the PC must be defined as a LAT service and it must already be running Kermit in terminal server mode.

Index

A

AUTOPROMPT port characteristic, 3-29

B

BACKWARD, 3-29
backward switch character, 2-4, 3-3 3-48, 5-8
BACKWARDS, 3-3, 5-6
Break key, using, 2-4

C

CLOSE, UNIX alias, 3-2, 3-10
command line, editing, 2-1
commands, abbreviating, 2-1
commands, terminal server
 BACKWARDS, 3-3
 CONNECT, 1-5, 3-5, 5-6
 with MULTISESSIONS windows, 5-6
 DISCONNECT, 1-7, 3-10
 FORWARDS, 3-11, 5-6
 HELP, 3-13
 in MULTISESSIONS windows, 5-5
 LAT CONNECT, 3-16
 LOCK, 3-19
 LOGOUT PORT, 1-8, 3-20
 RESUME, 1-6, 3-21, 5-6
 RLOGIN, 3-23
 SCRIPT, 3-25
 SET PORT, 3-2, 3-27
 SET SESSION, 3-35
 SHOW DESTINATIONS, 1-5, 3-37
 SHOW/LIST DOMAIN, 3-39
 SHOW NODES, 3-41
 SHOW SESSIONS, 3-71, 5-6
 SHOW|LIST PORT, 3-46
 SHOW|LIST SERVICES, 3-67
 SHOW SESSIONS, 3-71
 TELNET CONNECT, 3-74
 XCONNECT, 3-77
 ZERO COUNTERS, 3-79
control characters, using, 2-1, 2-3

D

databases, viewing and changing, 3-1
dedicated services, 1-3
default prompts, 1-4
device types, TN3270, 4-1
DISCONNECT command, 1-7, 3-10
 with MULTISESSIONS windows, 5-6
domain name server, 3-5
dual session management,
 MULTISESSIONS, 5-1

E

editing characters, 1-8
 table of, 2-2
error messages, 1-8
expanding the network with the terminal server,
1-2

F

FG, UNIX alias, 3-2
file transfer procedure, 6-1
forward switch character, 2-4, 3-29
 within MULTISESSIONS windows, 5-8
FORWARDS command, 3-11
 within MULTISESSIONS windows, 5-6

H

HELP command, 3-13
hot keys, in TN3270 sessions, 4-3

I

INTERACTIVE port characteristic, 3-36

J

JOBS, UNIX alias, 3-2, 3-77

K

Kerberos passwords, 1-4
Kermit file transfer program, 6-2
keyboard maps, 4-4
 VT100/102 and ANSI 3.64, 4-4
 VT220/7-bit, 4-6
 VT220/8-bit, 4-8
 with SHOW PORT KEYMAP
 command, 3-65, 4-2
keywords, abbreviating, 2-1
KILL, UNIX alias, 3-2, 3-10

L

LAT network protocol, 1-1
LAT CONNECT command, 3-16
LAT service, 3-15
LAT service nodes, 3-44
local area networks (LANs), 1-1
local switch character, 1-6, 2-3, 2-4
 defining, 3-29
LOCK command, 3-19
lock password, 3-18
logging on to a terminal server port, 1-4
LOGOUT PORT command, 1-8, 3-20

M

MAN, UNIX alias, 3-2, 3-13
managing sessions, 1-5
MAXserver X.25 Gateway, 1-1
menu interface, 1-3, 2-6
Model 3395 terminal server
 commands, 3-1
 definition of 1-1
 transferring files with, 6-1
 user interface, 2-1
 using, 1-3
multiple sessions, establishing, 1-6
MULTISESSIONS, 5-1
 managing sessions with, 5-2
 port characteristic, 3-30
 user interface, 5-2, 5-4

using terminal server commands with, 5-5

N

node name, 3-6, 3-16
nonprivileged port, 1-8

O

operational database, 3-1

P

PASSALL port characteristic, 3-35, 3-55
PASTHRU port characteristic, 3-35, 3-55
passwords
 Kerberos, 1-4
 lock, 3-18
PAUSE, port characteristic, 3-28
permanent database, 3-1
personal computer, transferring files with, 6-1
port
 definition of, 1-3
 logging on to a 1-4
 setting characteristics with SET PORT
 command, 3-27
preferred services, 3-5, 3-15, 3-74
privilege levels, 1-8
privileged port, 1-8

Q

QUIT, UNIX alias, 3-2, 3-19

R

RESOLVE SERVICE port characteristic, 3-30
 RESUME command, 1-6, 3-21
 with MULTISESSIONS windows, 5-6
 RLOGIN command, 3-23

S

SCRIPT command, 3-25
 scripts, 1-4
 scroll lower key, in TN3270 sessions, 4-3
 secure port, 1-8
 services, preferred, 3-5, 3-15
 sessions
 definition of, 1-5
 disconnecting from a, 1-6
 establishing, 1-5
 numbers, using 1-6
 simultaneous, 1-6
 suspending, 1-5, 2-4
 session management characters, 2-3
 in MULTISESSIONS windows, 5-7
 session management functions, 2-3
 session switching characters, 2-4
 SET PORT command, 3-2, 3-27
 SET SESSION command, 3-35
 SHOW DESTINATIONS command, 1-5, 3-37
 SHOW/LIST DOMAIN command, 3-39
 SHOW/LIST commands, about, 3-2
 SHOW/LIST PORT command, 3-46
 SHOW/LIST SERVICES command, 3-67
 SHOW NODES, 3-41
 SHOW SESSIONS command, 1-6, 1-7, 3-71
 within MULTISESSIONS windows, 5-7
 STATUS, UNIX alias, 3-2, 3-3-49
 status key, in TN3270 sessions, 4-3
 status line, in TN3270 session, 4-3

T

TCP/IP network protocol, 1-1
 TELNET CONNECT command, 3-74
 Telnet connections, 3-74
 TELNET session management characters
 TELNET ABORT OUTPUT, 2-5, 3-29
 TELNET ATTENTION, 2-5, 3-29
 TELNET ERASE CHARACTER, 2-5, 3-29
 TELNET ERASE LINE, 2-5, 3-30
 TELNET INTERRUPT, 2-5, 3-30
 TELNET NEWLINE, 2-5, 3-30
 TELNET NEWLINE FILTERING, 2-5, 3-31

TELNET QUERY , 2-5, 3-31
 TELNET SYNCHRONIZE, 2-5, 3-31

terminal server

see also individual commands
 commands, 1-7, 3-1, 5-5
 databases, viewing and changing, 3-1
 definition of, 1-1
 port, logging out of a, 1-8

TN3270

characteristics, checking at your port, 4-1
 connections, 3-80, 4-1
 device types, 4-1
 scroll lower key, 4-3
 session, establishing, 4-2
 status key, 4-3
 status line, 4-3
 translation table, 4-1

TRANSPARENT mode, 3-37

TYPE port characteristic, 3-33

U

ULTRIX, 1-1
 UNIX aliases, 1-7, 3-2

V

VERIFICATION port characteristic, 3-34
 VT100/102 and ANSI 3.64 keyboard map, 4-4
 VT220/7-bit keyboard map, 4-6
 VT220/8-bit keyboard map, 4-8

W

wide area network (WAN), 1-1
 windows
 managing sessions within, 5-2
 using terminal server commands in, 5-5

X

XCONNECT, 3-77

XDM query, 3-53

Z

ZERO COUNTERS command, 3-79