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# Preface

This manual describes how to use the Xyplex® TCP/IP-LAT terminal server on an Ethernet™ local area network (LAN). It explains how to use terminal server commands, and how to tailor some operating characteristics of your terminal server port. 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 hardware and software. 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 you may receive in response to the commands described here.

## Organization

This manual contains the following chapters:

Chapter 1	Describes the purpose of the TCP/IP-LAT terminal server in a local area network (LAN),
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 Dual Session Management (Multisessions) 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 , Carriage Return key, or Enter key; for example, "Enter the CONNECT command" means type the word "CONNECT" and then press the New Line, Carriage Return, or Enter key.

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] [ <i>optional</i> ]	You have the option of entering this keyword or variable. Do not type the brackets; they only set off what is optional.
-----------------------------------	---

Additionally, this manual uses certain symbols in special ways:

Symbol	Means
<b>I</b>	Press the New Line, Carriage Return <CR>, or Enter key on your terminal's keyboard.
Xyplex>	This is the Xyplex 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.

This typeface to show responses and screens from the Xyplex 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:

*The Xyplex TCP/IP-LAT Software Management Guide*

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

*The Xyplex TCP/IP-LAT Commands Reference Guide*

This manual describes how to use the Xyplex 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.

End of Preface

# Chapter 1

## Getting Started

The Xyplex® TCP/IP-LAT terminal server is a combination of hardware and software that links users at devices with serial connections, such as terminals, to resources on both Ethernet™ Local Area Networks (LANs) and Wide Area Networks (WANs). These resources include a variety of hosts, workstations, and printers that support either the TCP/IP network protocol or the Digital Equipment Corporation (DEC) LAT® network protocol, as well as other Xyplex terminal servers. You can use a terminal server to gain access to any of these hosts on the LAN:

- UNIX® hosts that support TCP/IP
- International Business Machines (IBM) hosts that have a Telnet server
- DEC VAX™ hosts running ULTRIX™ that support TCP/IP
- DEC VAX hosts that support LAT

If the terminal server at your site is part of a Xyplex MAXserver X.25 Gateway, you may also be able to reach devices in an X.25 network.

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.

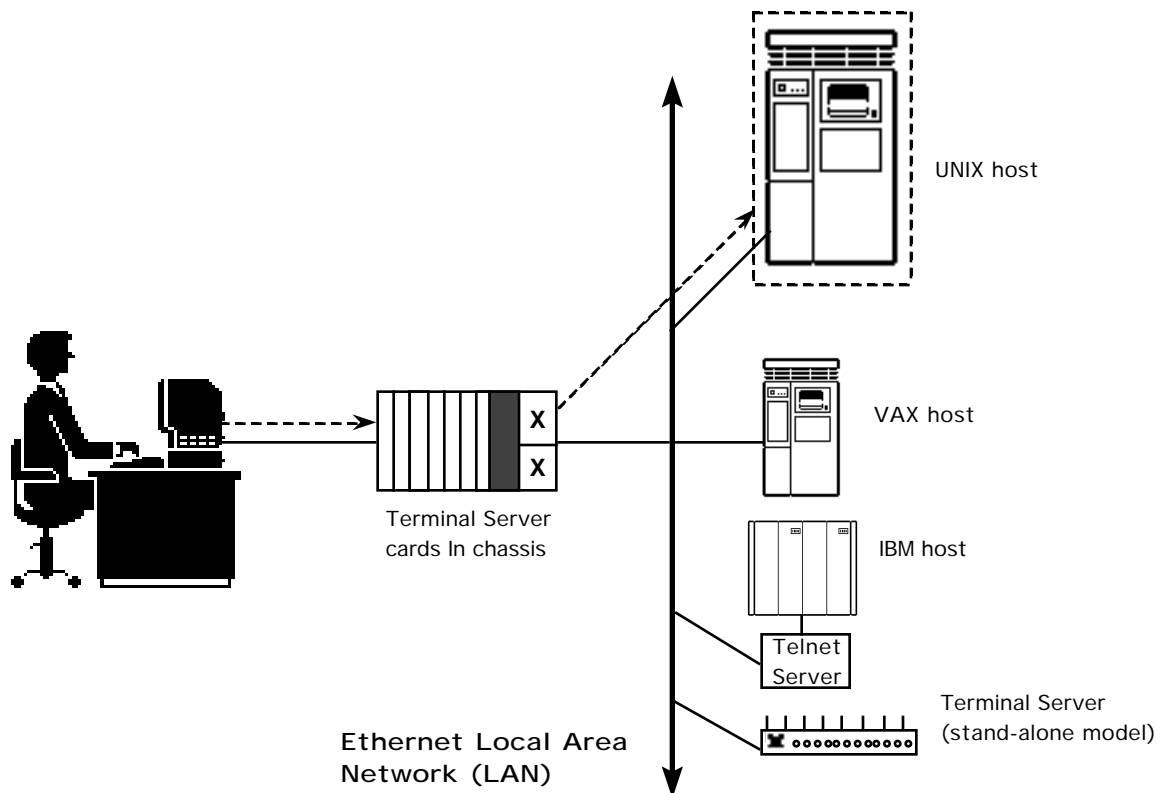


Figure 1-1. Using the Xyplex TCP/IP-LAT Terminal Server

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. Terminal servers can be standalone units that support up to sixteen serial connections or larger, chassis-based units. Figure 1-2 shows an example of a TCP/IP-LAT terminal server on the LAN, with several different devices connected to it.

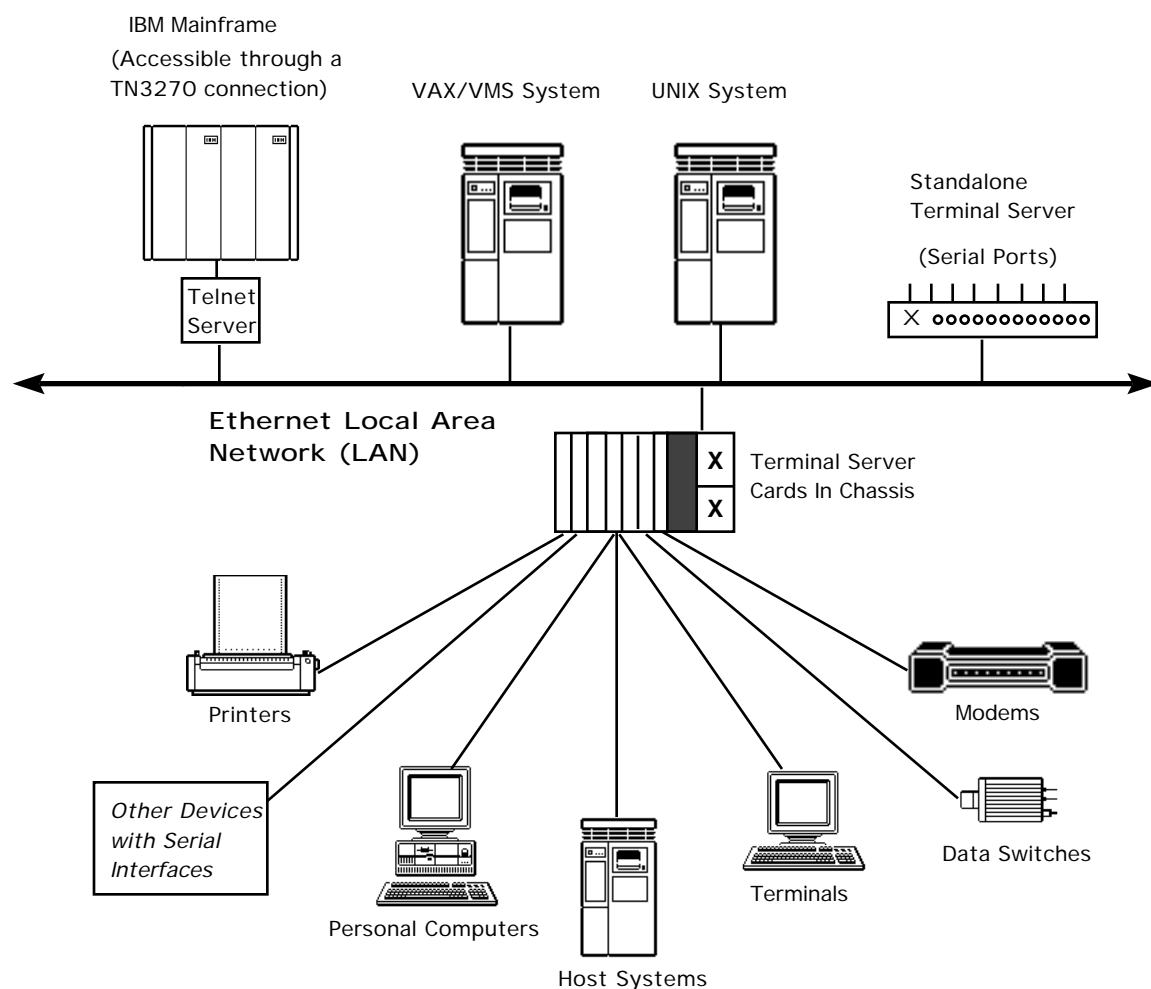


Figure 1-2. A Terminal Server on an Ethernet LAN

In a network like the one in Figure 1-2, terminal server users can gain access to the hosts connected directly to the LAN, or to devices such as workstations and printers connected to the standalone

terminal server. 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
- 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 your 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 special terminal server commands.

From the terminal server port, you can enter terminal server commands such as those described in Chapter 3. 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 a user's own terminal server port.
- Modify some characteristics of a user's own 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 presents you with 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 may have defined a dedicated service at your port. If so, the terminal server automatically connects your port to a host on the network when you log on to the port. While you may 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 Xyplex> prompt appears.
Xyplex>	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 Xyplex 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 Xyplex 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 your 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

## Getting Started

---

server after you log in to the terminal server port. The TCP/IP-LAT 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:

```
Xyplex> 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 SHOW DESTINATIONS, a list similar to the following appears on the terminal:

```
Xyplex> 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:

```
Xyplex> CONNECT FINANCE.SUN.COM
Xyplex  -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 Xyplex command processor without ending the session. 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. The Xyplex> prompt appears, and you can enter any terminal server command, including the CONNECT command:

```
$ <BREAK>
Xyplex>
```

Chapter 2 explains more about the Break key and how to define a local switch character. 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:

```
Xyplex  -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 TCP/IP-LAT terminal server allows you to establish two or more sessions simultaneously. You can then switch from one session to another without disconnecting from the current one. 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:

```
Xyplex> SHOW SESSIONS
```

Port	12: Johnson	Service Mode	Current Session
- 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
```

Other session switching commands are the FORWARDS command, which reopens the next higher-numbered session, and the BACKWARDS command, which reopens the next lower-numbered session.

### 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-1991 16:00:21.12
```

```
Xyplex -012- Session 1 disconnected from FINANCE.SUN.COM
```

```
Xyplex -101- 2 other session(s) active
```

```
Xyplex>
```

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 Xyplex> prompt. Enter the session number with the command, and the terminal server will terminate the session:

```
Xyplex> DISCONNECT SESSION 1 █
```

```
Xyplex - 011- Session 1 disconnected from FINANCE.SUN.COM
```

```
Xyplex -101- 2 other session(s) active
```

```
Xyplex>
```

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 the previous sections. 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 Xyplex> prompt. Chapter 3 describes these and other commands in detail.

### Using UNIX Aliases for Terminal Server Commands

The Xyplex TCP/IP-LAT terminal server software provides several UNIX equivalents, or aliases, for Xyplex 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 Xyplex 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.

```
Xyplex> LOGOUT
```

```
Xyplex -020- Logged out port 12 on server X3E8C at 22 September 1991 16:12:00
```

The log out message on your terminal includes your port number and the name of your 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* describes the Nonprivileged and Privileged levels in more detail, and the *TCP/IP-LAT Commands Reference* manual describes all the commands available to users with these privilege levels.

## Summary

The Xyplex TCP/IP-LAT 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.

End of Chapter

# 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
- 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 Dual Session Management (Multisessions), 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:

```
xyplex> 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 DEFINE/SET PORT commands, 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. Oversrike mode is the default. This function does not apply to hardcopy terminals.
<CTRL> <B> 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:

```
Xyplex> 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><B> to recall the incorrect command and then edit it:

```
Xyplex> ↑
```

```
Xyplex> 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 provides session management functions that you can assign to character sequences with the DEFINE/SET PORT commands. Two types of session management functions are available: general session switching and Telnet session management. Session management characters are very useful because you can use them from within sessions, rather than entering the equivalent commands from the Xyplex> 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 Xyplex> prompt, and then press another character, the Control key appears as ^ .

```
Xyplex> SET PORT LOCAL SWITCH ^L █
```

```
Xyplex>
```



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 DEFINE/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 Xyplex> 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 DEFINE/SET PORT commands.

### 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 DEFINE/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 Xyplex 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 DEFINE/SET PORT commands.

## Using the Terminal Server Menu

The TCP/IP-LAT 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 `Xyplex>` 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 Xyplex 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 your port's TYPE characteristic 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` command to check your port's TYPE characteristic.

End of Chapter

## Chapter 3

# Using TCP/IP-LAT 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 the *TCP/IP-LAT Commands Reference Guide*.

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

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 PORTS  
SHOW/LIST SERVICES  
SHOW SESSIONS  
TELNET CONNECT  
ZERO COUNTERS

## Viewing and Changing Information in the Terminal Server Databases

The terminal server maintains two types of databases that contain information about ports and the LAN devices you can reach through the ports. 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. 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 reinitializes the terminal server.

### Using the SET PORT Commands

The SET PORT command changes characteristics of the port in the terminal server's operational database. The changes you make to the operational database take effect immediately, but remain in effect only until you log out of the terminal server port or until the network manager reinitializes the terminal server. To change a characteristic you have specified with the SET command, either use another SET command, or log out of the terminal server port. When you log out of the port, the characteristics revert to the values they have in the permanent database.

### 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 Xyplex terminal server offers several UNIX equivalents of frequently used Xyplex commands. You can enter these equivalents, or aliases, at the `Xyplex>` prompt just as you would enter the Xyplex commands to produce the same results. Table 3-1 shows the UNIX aliases for Xyplex commands.

Table 3-1. UNIX Aliases for Xyplex Commands

Xyplex 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

---

### 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 at your port.

#### 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

In this 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.

```
Xyplex> 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.

```
Xyplex> BACKWARDS
```

```
Xyplex -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

---

### CONNECT

**Establish a session with a Telnet destination or a LAT service**

---

The CONNECT command establishes a session between your port and 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 On Telnet Connections

The terminal server software converts a domain name to an Internet address. Most of the time, the network manager has configured the terminal server so that the name resolves to the appropriate Internet address. The first time that the terminal server attempts to connect to any Telnet host after terminal server initialization may take a couple of seconds, however. 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.

#### Notes on TN3270 Connections

Use 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.

#### Notes on 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 software 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.

#### Notes on Preferred Services

If you enter the CONNECT command without a LAT service name, a Telnet domain name, or an Internet address, the software attempts to connect your port to 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.



**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, each separated by a period.
<i>internet-address</i>	Establish a session with the Telnet host or terminal server at the Internet address you specify in this variable. An Internet address consists of four numbers, separated by periods.
<i>:telnet-port-number</i>	Establish a session using the number of an Internet protocol or the port number you specify in this variable. You must 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.
SERVICE	Establish a session with the LAT service specified in the <i>service-name</i> variable. You may omit this keyword and simply enter the LAT service name.
<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 specified the <i>service-name</i> variable is offered at more than one node, and you want to specify the node.
in	
<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 server 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 Xyplex terminal has the form PORT_ <i>x</i> , where <i>x</i> is the number of the physical terminal server port (1 through 16).

## CONNECT

---

### Examples of Telnet Connections

These examples show different ways of connecting to a Telnet host.

1. This example uses the CONNECT command with a Telnet domain name. A user enters the CONNECT command with the Telnet domain name FINANCESUN.XYPLEX.COM. (The terminal server software converts the domain name to an Internet address.)

The name FINANCESUN.XYPLEX.COM is a typical Telnet domain name, containing several segments separated by periods. If a domain name does not contain a period, the software automatically appends a default domain suffix which does contain a period.

```
Xyplex> CONNECT FINANCESUN.XYPLEX.COM █
```

```
Xyplex  -010-  Session 5 to FINANCESUN.XYPLEX.COM established
```

*You have reached FINANCESUN.XYPLEX.COM*

*Enter your username/password pair*

*Username:*

2. This example uses the CONNECT command with an Internet address and a Telnet port number. A user enters the CONNECT command with the Internet address 128.10.2.30 and the Telnet port number 23.

```
Xyplex> CONNECT 128.10.2.30:23 █
```

```
Xyplex  -010-  Session 6 to 128.10.2.30:23 established
```

*Welcome to DevelopmentSUN*

*Please log on.*

### Example of a TN3270 Connection

In this example, a user enters the CONNECT command to reach an IBM host with a Telnet domain name. Once the connection is established, the user's terminal emulates an IBM 3270 display station, so the terminal's keyboard responds like an IBM keyboard.

```
Xyplex> CONNECT IBMhost.COM █
```

```
Xyplex  -010-  Session 3 to IBMHOST.COM established
```

*This is IBMhost.COM*

*Username:*

### Examples of LAT connections

These examples show different ways of connecting to a LAT service.

1. This example uses the CONNECT command with a password protected LAT service name. A user enters a CONNECT command to establish 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. If FINANCEVAX were not password protected, the user would enter the CONNECT command in the same way, but the terminal server would not prompt for a password.

Note that since FINANCEVAX is the only variable specified with this command, it could be either a LAT service or Telnet domain name. Fully qualified domain names must contain at least one period, however. If FINANCEVAX is a Telnet domain name, the software automatically appends a default domain suffix that contains a period. See the examples of Telnet connections for an example of the CONNECT command with a more typical, fully qualified, Telnet domain name.

```
Xyplex> CONNECT FINANCEVAX █
```

```
Password> █
```

```
Xyplex  -010-  Session 1 to FINANCEVAX established
```

*Welcome To FINANCEVAX*

*Please log on.*

2. This example uses the CONNECT command with a LAT service name and a LAT node name. A user enters the CONNECT command with the LAT service name ACCOUNTSVAX, which exists on the LAT node named VAX1.

```
Xyplex> CONNECT ACCOUNTSVAX NODE VAX1 █
```

```
Xyplex  -010-  Session 2 to ACCOUNTSVAX established
```

*Welcome to ACCOUNTSVAX*

*Please log on.*

3. This example uses the CONNECT command with a LAT service name and a destination port name. A user enters the CONNECT command with the LAT service name LASER, which is offered at terminal server port 2 on the node named MAX5000. When the local terminal server makes the connection to the remote terminal server, the Xyplex "Username>" prompt from the remote terminal server appears on the local terminal. The user can then follow normal Xyplex login procedures.

```
Xyplex> CONNECT LASER NODE MAX5000 DESTINATION PORT_2 █
```

```
Xyplex  -010-  Session 3 to LASER established
```

## CONNECT

---

### Example of a preferred service

In this example, a user enters the CONNECT command without variables. The software interprets this as a request to connect to a predefined LAT preferred service or preferred Telnet destination. In this example, the preferred service is a LAT host named ACCOUNTSHOST.

```
Xyplex> CONNECT █
```

```
Xyplex  -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 on the network.
SHOW DOMAIN	Displays a list of learned and static Telnet destinations on the network.
SHOW NODES	Displays a list of LAT service nodes on the network.
SHOW SERVICES	Displays a list of LAT services available on the network.
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. (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.

**DISCONNECT****Terminate one or all active sessions at your port**

---

The DISCONNECT command terminates one or more active sessions. Use the SHOW SESSIONS command to obtain the active session numbers at your port to use with the DISCONNECT command.

**Notes**

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

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

**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**

In this example, a user terminates session 1 with the DISCONNECT command.

```
Xyplex> DISCONNECT SESSION 1 █
```

```
Xyplex - 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

---

### 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 at your port.

#### 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

In this 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.

```
Xyplex> 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.

```
Xyplex> FORWARDS
```

```
Xyplex -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

---

### 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.

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
INTRODUCTION	Display the help introduction. If you do not enter this keyword, the terminal server displays a list of topics.
<i>topic</i> and <i>sub-topic</i>	Display information about the commands and keywords you specify in these variables.

#### Example

In this example a user enters the HELP command, selects the SHOW command as the topic, and then selects the keyword USERS as the subtopic.



Xyplex> 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	CONNECT	CLOSE
DEFINE	DISCONNECT	FG
FORWARDS	JOBS	KILL
Introduction	LIST	LOCK
LOGOUT	OPEN	QUIT
RESUME	RLOGIN	SET
SHOW	STATUS	TELNET

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

Xyplex>

## Related Commands

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

## LAT CONNECT

---

### LAT CONNECT

#### Establish a session with a LAT service

---

The LAT CONNECT command establishes a session between your port and 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 instructs the terminal server software to select 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 software attempts to connect your port to 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 software 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. 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 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 *service-name* variable. You may omit this keyword and simply enter the LAT service name.

*service-name*

Establish a session with the LAT service you specify in this variable. A service name can consist of 1 through 16 characters.

Where	Means
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 Xyplex 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

These examples show how you can use the LAT CONNECT command with different keywords and variables to establish a session with a LAT service.

1. This example uses the LAT CONNECT command with a password protected LAT service name. A user enters the command to establish 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. If FINANCEVAX were not password protected, the user would enter the LAT CONNECT command in the same way, but the terminal server would not prompt for a password.

```
Xyplex> CONNECT FINANCEVAX █
Password> █
Xyplex -010- Session 1 to FINANCEVAX established

Welcome To FINANCEVAX

Please log on.
```

2. This example uses the LAT CONNECT command with a LAT service name and a LAT node name. A user enters the command with the LAT service name ACCOUNTSVAX, which exists on the LAT node named VAX1.

```
Xyplex> LAT CONNECT ACCOUNTSVAX NODE VAX1 █
Xyplex -010- Session 4 to ACCOUNTSVAX established

Welcome to ACCOUNTSVAX

Username:
```

## LAT CONNECT

---

3. This example uses the LAT CONNECT command with a LAT service name, a node name, and a destination port name. A user enters the command with the LAT service name LASER, which exists on terminal server port 2 on the node named MAX5000.

```
Xyplex> LAT CONNECT LASER NODE MAX5000 DESTINATION PORT_2
```

```
Xyplex -010- Session 5 to LASER established
```

*You have reached LASER*

*Username:*

4. This example uses the CONNECT command without variables to establish a session with a preferred service. A user enters the command without a service name. The software interprets this as a request to connect to a predefined LAT preferred service. In this example, the preferred service is a LAT host named ACCOUNTSHOST.

```
Xyplex> 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 at the user's terminal. 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 terminal server 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

If you will be away from your terminal for some time and you do not want to log out of your port, consider using the LOCK command. Doing so prevents other users from establishing sessions and gaining access to remote resources through your port. If you are a user at a Nonprivileged or 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. Logging out the port terminates any active sessions.

The SERVER LOCK characteristic must be enabled to use the LOCK command. If you cannot use the LOCK command, see your network manager.

#### Syntax

LOCK

#### Abbreviation

LOC

#### Example

```
Xyplex> LOCK
```

```
Lock Password>
```

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

```
Verification>
```

Again, the characters do not appear on the screen when you enter the password. After the system verifies the password, it displays a message that indicates the port is locked, and the Unlock Password prompt:

```
XYPLEX - 019 - Port 6 locked
```

```
Unlock Password>
```

You enter the Lock Password at the "Unlock Password>" prompt to regain access to the port.

#### Related Commands

When a port is locked, you can not enter commands.

## LOGOUT PORT

---

### 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

Log out of the port you specify in the *port-list* variable. This keyword is optional. You can enter LOGOUT to log out of your port.

*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

In this example, a user enters the LOGOUT command to log out of the terminal server port.

```
Xyplex> LOGOUT █
```

```
Xyplex  -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 includes the port number and the date as well as the name of your 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
SESSION	Reopen the session in the <i>session number</i> variable. You can omit this keyword and specify only a session number, or simply enter RESUME to
reopen	the current session.
<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 variable. A domain name may contain up to four segments, each separated by a period.
<i>internet address</i> address four numbers,	Reopen a session with the Telnet host or terminal server at the Internet you specify in this variable. Internet addresses consist of separated by periods.

## RESUME

---

### Examples

1. This examples uses the RESUME command with a session number.

```
xyplex> RESUME SESSION 3 █
```

2. This example uses the RESUME command with with a LAT service name.

```
xyplex> RESUME FINANCEVAX █
```

3. This example uses the RESUME command with an Internet address.

```
xyplex> 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	Resumes the next higher-numbered session.
BACKWARDS	Resumes the next lower-numbered session.



## RLOGIN

### Log on to a host through the terminal server

---

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 your network manager if you have questions about which keywords and variables to enter with the RLOGIN command.

The terminal server software converts a domain name to an Internet address. Most of the time, the network manager has configured the terminal server so that the name resolves to the appropriate Internet address. The first time that the terminal server attempts to connect to any Telnet host after terminal server initialization may take a couple of seconds, however. 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

*domain-name*

Establish a session with the Telnet host you specify in this variable. A domain name does not specify an actual destination; the terminal server software converts the domain name to an Internet address. Domain names may contain up to four segments, each separated with period.

*internet-address*

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 periods.

USERNAME

Pass the character string in the "*username*" variable to the remote host as a log on name, or username. You may omit this keyword and simply enter a username.

"*username*"

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. The system manager at the remote site must configure the host to recognize this username.

## RLOGIN


---

Where	Means
NONE	Establish a session with a predefined preferred Telnet destination. Preferred destinations are defined by the network manager.

### Examples


These examples show how you can use the RLOGIN command with different keywords and variables to log on to a UNIX host.

**1.** This example uses the RLOGIN command to log on to a host with the username of the terminal server port. A user enters the RLOGIN command with the host name UNIXSUN. Because the command line does not include a host username, the terminal server software uses the username of the terminal server port to log on to the host.

```
Xyplex> RLOGIN UNIXSUN   
Xyplex -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 example uses the RLOGIN command to log on to a host with a username on the host. A user enters the RLOGIN command with the host name UNIXSUN and the username Johnson.

```
Xyplex> RLOGIN UNIXSUN "JOHNSON"   
Xyplex -010- Session 2 to UNIXSUN established  
$
```

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

**3.** This example uses the RLOGIN command with the NONE keyword. A user enters the RLOGIN command with the NONE keyword to connect to the preferred service at the user's terminal server port. The terminal server software passes the username of the terminal server port to the remote host.

```
Xyplex> RLOGIN NONE   
Xyplex -010- Session 3 to UNIXSUN established  
$
```

The shell prompt on the remote host indicates that the RLOGIN attempt was successful. The response you see may be different.

**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 on the network.

## SCRIPT

---

### 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 Xyplex 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. See the *Software Management Guide* for more information about script files and how to create them.

You cannot stop the terminal server from executing a script once it has started to do so. 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

In this example, a user enters the SCRIPT command to execute a script called "loginsetup" in the directory /Scripts/Chris.

```
Xyplex> SCRIPT "/Scripts/Chris/loginsetup" 
```

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

The terminal server's response to this command depends on the content of the script file. At some ports, the commands in the script may 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
SHOW PORT ALTERNATE CHARACTERISTICS	Displays the PORT SCRIPT LOGIN characteristic.
SHOW PORT STATUS	Displays the name of the host which contains the script file that was last executed a this port.

## SET 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 reinitializes 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 the *TCP/IP-LAT Commands Reference Guide* 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, you may want to 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*]

#### Abbreviation

SE      P

Characteristics	Settings
[AUTOPROMPT]	[ENABLED]* [DISABLED]
[BACKWARD SWITCH]	[ <i>character</i> ] [NONE]*
[FORWARD SWITCH]	[ <i>character</i> ] [NONE]*
[LOCAL SWITCH]	[ <i>character</i> ] [NONE]*

Characteristics	Setting
[PAUSE]	[ENABLED] [DISABLED]*
[RESOLVE SERVICE]	[ANY]* [LAT] [TELNET]
[TELNET ABORT OUTPUT]	[ <i>character</i> ] [NONE]*
[TELNET ATTENTION]	[ <i>character</i> ] [NONE]*
[TELNET ERASE CHARACTER]	[ <i>character</i> ] [NONE]*
[TELNET ERASE LINE]	[ <i>character</i> ] [NONE]*
[TELNET INTERRUPT]	[ <i>character</i> ] [NONE]*
[TELNET NEWLINE]	[ <i>character</i> ] [NONE]*
[TELNET NEWLINE FILTERING]	[NONE]* [CR] [NULL] [LINEFEED]
[TELNET QUERY]	[ <i>character</i> ] [NONE]*
[TELNET SYNCHRONIZE]	[ <i>character</i> ] [NONE]*
[TYPE]	[ANSI] [HARDCOPY] [SOFTCOPY]*
[VERIFICATION]	[ENABLED]* [DISABLED]

## SET PORT

---

Where	Means
<i>port-list</i>	Set characteristics for the ports you specify in this variable. Secure users can specify only their own port number. Because the default value for this variable is the issuing port, you can omit the port number and simply enter the characteristics you want to set.
AUTOPROMPT	Initiate a logon sequence when you establish a session between your port and a LAT service node. The LAT service node must also support this characteristic.
ENABLED*	Initiate a logon sequence at a LAT service node when you establish a session at that node. This is the default setting for this characteristic.
DISABLED	Disable the AUTOPROMPT characteristic.
BACKWARD SWITCH	Reopen the next lower-numbered session during the current session, without returning to local command mode.
<i>character</i>	Use the character, or Control character sequence, in this variable as the Backward Switch character. The characters you can use are keyboard characters that are not assigned to other session management functions or command-line editing functions. See the Chapter 2 for more information about defining session management characters.
NONE*	Do not enable a Backward Switch character at this port. Use this keyword to disable a previously defined Backward Switch character. This is the default setting for this characteristic.
FORWARD SWITCH	Reopen the next higher-numbered session during the current session, without returning to local command mode.
<i>character</i>	Use the character, or Control character sequence, in this variable as the Forward Switch character. The characters you can use are keyboard characters that are not assigned to other session management functions or command-line editing functions. See the Chapter 2 for more information about defining session management characters.
NONE*	Do not enable a Forward Switch character at this port. Use this keyword to disable a previously defined Forward Switch character. This is the default setting for this characteristic.
LOCAL SWITCH	Suspend the current session and recall the terminal server local command mode. You must set a local switch character to suspend active sessions if your terminal does not have a Break key.
<i>character</i>	Use the character, or Control character sequence, in this variable as the Local Switch character. The characters you can use are keyboard characters that are not assigned to other session management functions or command-line editing functions. See the Chapter 2 for more information about defining session management characters.
NONE*	Do not enable a Local Switch character at this port. Use this keyword to disable a previously defined Local Switch character. This is the default setting for this characteristic.



Where	Means
PAUSE	Display 24 lines of information from a SHOW/LIST command at a time.
ENABLED	Pause after displaying 24 lines of information from a SHOW/LIST command. The pause continues until you press the Return key. After you press the Return key, the terminal server displays the next 24 lines of information.
DISABLED*	Display information from SHOW/LIST commands from start to finish, without pausing. This is the default setting for this characteristic.
RESOLVE SERVICE	Determine how the terminal server should interpret a LAN destination name in these commands: CONNECT, SET PORT DEDICATED SERVICE, and SET PORT PREFERRED SERVICE. (Users at Secure ports can only use the CONNECT command.) The keywords you specify for this characteristic " determine whether the terminal server assumed that the LAN destination is a LAT service, a Telnet destination, or it assumes a LAT service first and then a Telnet destination.
LAT	Interpret the LAN destination name as a LAT service.
TELNET	Interpret the LAN destination name as a Telnet domain name or an Internet address.
ANY*	Interpret the LAN destination name as a LAT service first, then as a Telnet destination if no LAT service with that name exists. This is the default setting for this characteristic.
TELNET ABORT OUTPUT	Stop sending output to a terminal during a Telnet session when you use the specified character. Use of this character does not terminate the program that is producing the output; only the display of the output.
<i>character</i>	Use the character, or Control character sequence, in this variable as the Telnet Abort Output character. The characters you can use are keyboard characters that are not assigned to other session management or command-line editing functions. See the Chapter 2 for more information about defining session management characters.
NONE*	Do not enable a Telnet Abort Output character at this port. Use this keyword to disable a previously defined Telnet Abort Output character. This is the default setting for this characteristic.

## SET PORT

---

Where	Means
TELNET ATTENTION	Suspend the current program and return to the operating system command prompt during a Telnet session, when you use the specified character. If you have established the Telnet session through another Xyplex terminal server port on the LAN, the remote terminal server port passes a Break sequence to the Telnet host when you use this control character. The Break sequence suspends the current program and return the operating system prompt.
<i>character</i>	Use the character, or Control character sequence, in this variable as the Telnet Attention character. The characters you can use are keyboard characters that are not assigned to other session management or command-line editing functions. See the Chapter 2 for more information about defining session management characters.
NONE*	Do not enable a Telnet Attention character at this port. Use this keyword to disable a previously defined Telnet Attention character. This is the default setting for this characteristic.
TELNET ERASE CHARACTER	Delete the character to the left of the cursor during a Telnet session, when you use the specified character.
<i>character</i>	Use the character, or Control character sequence, in this variable, as the Telnet Erase Character. The characters you can use are keyboard characters that are not assigned to other session management or command-line editing functions. See Chapter 2 for more information about defining session management characters.
NONE*	Do not enable a Telnet Erase Character at this port. Use this keyword to disable a previously defined Telnet Erase Character character. This is the default setting for this characteristic.
TELNET ERASE LINE	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 the specified character.
<i>character</i>	Use the character, or Control character sequence, in this variable as the Telnet Erase Line character. The characters you can use are keyboard characters that are not assigned to other session management or command-line editing functions. See Chapter 2 for more information about defining control characters.
NONE*	Do not enable a Telnet Erase Line character at this port. Use this keyword to disable a previously defined Telnet Erase Line character. This is the default setting for this characteristic.

Where	Means
TELNET INTERRUPT	Suspend, interrupt, abort, or terminate a user process during a Telnet session when you use the specified character.
<i>character</i>	Use the character, or Control character sequence, in this variable as the Telnet Interrupt character. The characters you can use are keyboard characters that are not assigned to other session management or command-line editing functions. See the Chapter 2 for more information about defining session management characters.
NONE*	Specifies no a Telnet Interrupt character at this port. Use this keyword to disable a previously defined Telnet Erase Line character. This is the default setting for this characteristic.
TELNET NEWLINE	Determine which characters the terminal server transmits to a Telnet host when you press the Return key on your terminal.
NULL*	Transmit a Carriage Return character and a Null character to a Telnet host when you press the return key on your terminal. This is the default setting for this characteristic.
LINEFEED	Transmit a Carriage Return character and a Linefeed character to a Telnet host when you press the Return key on your terminal.
NOTHING	Transmit only a Carriage Return character to a Telnet host when you press the Return key on your terminal.
TELNET NEWLINE FILTERING	Determine how the terminal server should interpret Telnet New Line sequences that come from the network and are bound for your terminal. You can specify whether or not the terminal server should translate these sequences at your port, and if so, how it should translate them.
NONE*	Do not translate Telnet New Line sequences. This is the default setting for this characteristic.
CR	Translate Telnet New Line sequences, such as CR/NULL or CR/LF, to a carriage return (CR).
NULL	Translate Telnet New Line sequences, such as CR/NULL or CR/LF, to a carriage return and a null (CR/NULL).
LINEFEED	Translate Telnet New Line sequences, such as CR/NULL or CR/LF, to a carriage return and a linefeed (CR/LF).

## SET PORT

---

Where	Means
TELNET QUERY	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 the specified character. (You would use this character if you suspected that a Telnet process had "crashed" or had "hung.")
<i>character</i>	Use the character, or Control character sequence, in this variable as the Telnet Query character. The characters you can use are keyboard characters that are not assigned to other session management or command-line editing functions. See Chapter 2 for more information about defining session management characters.
NONE*	Do not enable a Telnet Query character at this port. Use this keyword to disable a previously defined Telnet Query character. This is the default setting for this characteristic.
TELNET SYNCHRONIZE	Regain control of a Telnet process that you suspect is no longer functioning properly when you use the specified character. Most Telnet hosts will return to the operating system command prompt, although this is not always the case.
<i>character</i>	Use the character, or Control character sequence, in this variable as the Telnet Synchronize character. The characters you can use are keyboard characters that are not assigned to other session management or command-line editing functions. See Chapter 2 for more information about defining session management characters.
NONE*	Do not enable a Telnet Synchronize character at this port. Use this keyword to disable a previously defined Telnet Synchronize character. This is the default setting for this character.
TYPE	Change the TYPE characteristic of your terminal. This characteristic 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 Xyplex command processor.
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.
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 (\ ).
SOFTCOPY*	Produce output for a video-display terminal that does not support American Institute of Standards (ANSI) escape sequences. Softcopy terminal types echo character deletions when you use the Delete key, but do not support clear screen function, special cursor control functions, or the line drawing function. This is the default setting for this characteristic.

Where	Means
VERIFICATION	Display status messages on the terminal screen when you establish a session, disconnect from a session, or switch a session.
ENABLED*	Display status message on the terminal screen. This is the default setting for this characteristic.
DISABLED	Do not display status messages on the terminal screen.

### Examples

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

1. This example uses the SET PORT command to assign a backward switch character.

In this example, a user sets the Backward Switch character to <CTRL><K>. (When you press the Control key at the Xyplex> prompt, the terminal displays the ^ character.)

```
Xyplex> SET PORT BACKWARD SWITCH ^P █
```

```
Xyplex>
```

2. This example uses the SET PORT command to enable the pause feature.

```
Xyplex> SET PORT PAUSE ENABLED █
```

```
Xyplex>
```

3. This example uses the SET PORT command to change 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.

```
Xyplex> SET PORT RESOLVE SERVICE LAT █
```

```
Xyplex>
```

## SET PORT

---

### 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, DTRwait, 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 your port interprets control characters during a session. Data transparency refers to the way a port interprets control characters.

#### Notes

Four data transparency modes are available: interactive, passall, pasthru, and transparent. You can check the data transparency mode of current sessions with the SHOW SESSIONS command from Xyplex local command mode. The display shows the data transparency mode under the heading "Service Mode." Interactive 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/XOFF flow control characters. INTERACTIVE is the typical setting for most sessions.
PASSALL	Disable all control characters. These include session switching characters, Telnet session management characters, terminal server messages, and XON/XOFF flow 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/XOFF 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.

## SET SESSION

---

Where	Means
TRANSPARENT	Disable all session switching characters, Telnet session management characters, and XON/XOFF 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

In this example, a user sets the data transparency mode of the port to PASSALL.

```
Xyplex> SET SESSIONS PASSALL █
```

```
Xyplex>
```

### Related Commands

These commands provide information that is useful with the SET SESSIONS 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 may 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

*name*

### Means

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.

## SHOW DESTINATIONS

---

### Example

The SHOW DESTINATIONS command, with no arguments, produces a display similar to the one in Figure 3-1.

```
MAXserver V3.1 Rom 4B0000 HW 00.00.00 Lat Protocol V5.1 Uptime:  1 05:16:10

FINANCESUN.COM          UNIX Host at 140.179.20.1
ACCOUNTESVAX            VAX/VMS LAT SERVICE
PAYROLLHOST             IBM Host
LASER2                  Department Laser Printer
```

Figure 3-1. A sample SHOW DESTINATIONS Display

The first line, or header line, of this display provides information about the terminal server where you are logged on. This information is described in detail below. Below the first line, the left column lists the LAT service names and Telnet domain names on the network in alphabetical order. The right column usually lists either the identification string for a LAT service name or the Internet address of a domain name. Not every field in the right column necessarily contains information.

The fields in the header line contain this information:

Field	Indicates
MAXserver V $x.y$	The Xyplex product type and the version of the terminal server software, where $x.y$ indicates the major and minor software release level.
Rom $xxxxx$	The version of Rom software on the terminal server.
HW $xx.yy.zz$	The version of terminal server hardware: $xx$ is the version of terminal server cards, $yy$ is the type of MAXserver chassis, and $zz$ is the version of the MAXserver chassis.
Lat Protocol V $x.y$	The version of LAT protocol running on the terminal server, where $x.y$ 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. The time is expressed in this form: <i>days hours:minutes:seconds</i> .

**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 on the network.
SHOW DOMAIN	Displays a list of learned or static Telnet domains on the network.
SHOW SERVICES	Displays a list of available LAT services on the network.
SET PORT PAUSE ENABLED	Causes the terminal to 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 DOMAIN

---

### 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 DOMAINS** 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 <b>SHOW DOMAIN AB*</b> , the terminal server would display all available names that began with AB. If you entered <b>SHOW DOMAIN A*BC</b> , the system would display names that began with A and ended with BC.
ALL	Display information about all available domains on the network. This is the default keyword for this command.
LEARNED name	Display information about domains from the primary or secondary Domain server.
LOCAL	Display information about local domains.

**Example**

The SHOW/LIST DOMAIN commands produce a display similar to the one in Figure 3-2.

Internet		Domain		10 Apr 1991	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.XYPLEX.COM		
3	140.179.20.1	49	Pri XEBRA.XYPLEX.COM		

Figure 3-2. A Sample SHOW/LIST DOMAIN Display

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 name of the domains available to you on the network.

## SHOW/LIST DOMAIN

---

### Related Commands

The SHOW/LIST DOMAINS 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	Causes the terminal to 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 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

*node-name*

Display information about the node you specify in this variable.

ALL

Display information about all nodes available to you on the network.

COUNTERS

Display statistics about activity on the node for the node you specify in the *node-name* variable or all nodes.

STATUS

Display status information about the node you specify in the *node-name* 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 *node-name* variable or all nodes. This is the default display for this command.

## SHOW NODES

---

### Examples

1. The SHOW NODES STATUS command produces a display similar to the one in Figure 3-3. This is the default display for the SHOW NODES command.

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

Figure 3-3. A Sample SHOW NODES STATUS Display

Field	Means								
Node: <i>node-name</i>	The name of the LAT service node.								
LAT Protocol <i>Vx.y</i>	The version number ( <i>x</i> ) and the update level ( <i>y</i> ) 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 a 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 are possible in this column: <table><tr><td>Available</td><td>Users can establish sessions with this service.</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>Unknown</td><td>Although users could reach the service in the past, they may no longer be able to reach it.</td></tr><tr><td>Unavailable</td><td>Users cannot reach the nodes that offer this service.</td></tr></table>	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.
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.								



Field	Means
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.

2. The SHOW NODES SUMMARY command produces a display similar to the one in Figure 3-4.

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

Figure 3-4. A Sample SHOW NODES SUMMARY Display

Field	Means										
Node Name	The name of the LAT service node.										
Status	<p>The entries in this column indicate the availability of the node to users on the network. The different states of availability include the following:</p> <table><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 can not 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></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 can not 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 can not 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

---

3. The **SHOW NODES COUNTERS** command produces a display similar to the one in Figure 3-5. The fields in the display reflect the values of the counters since they were last reset to zero.

Node: FINANCEVAX		21 May 1991 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

Figure 3-5. A Sample SHOW NODES COUNTERS Display

Field	Means
Node <i>node name</i>	The name of the LAT service node. In Figure 3-5, the node name is FINANCEVAX.
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.
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 on the network, 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.
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.

Field	Means
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	Causes the terminal to 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

---

### 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.

CHARACTERISTICS

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

ALTERNATE  
CHARACTERISTICS

Display the current settings for the PAUSE, RESOLVE SERVICE, IDLE TIMEOUT, DTRWAIT, TYPEAHEAD SIZE, SLIP ADDRESS, and Line Editing characters.

TELNET  
CHARACTERISTICS

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

COUNTERS

Display the values of port counters.

STATUS

Display information about the current session.

Where	Means
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

1. The SHOW/LIST PORTS CHARACTERISTICS commands produce a display similar similar to the one in Figure 3-6.

While secure users cannot define or set 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.

```
Port 12:  Chris                               10 Sept 1991  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
```

Figure 3-6. A Sample SHOW/LIST PORT CHARACTERISTICS Display

Field	Means
Port <i>n</i>	The number of the terminal server port. (In Figure 3-6, the port number is 12)
<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. (In Figure 3-6, the username is Chris.)

## SHOW/LIST PORT

---

Field	Means										
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><tr><th>Flow Control</th><th>Means</th></tr><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/XOFF 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></table>	Flow Control	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/XOFF 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.
Flow Control	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/XOFF 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 to and receive from each other. 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><tr><th>Parity type</th><th>Means</th></tr><tr><td>Even</td><td>The port and the terminal ensure that each character contains 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 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></table>	Parity type	Means	Even	The port and the terminal ensure that each character contains even number of 1's, including the parity bit.	Odd	The port and the terminal ensure that each character contains odd number of 1's, including the parity bit.	None	The port and the device do not check characters for parity.		
Parity type	Means										
Even	The port and the terminal ensure that each character contains even number of 1's, including the parity bit.										
Odd	The port and the terminal ensure that each character contains 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: 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: 75, 110, 134, 150, 300, 600, 1200, 1800, 2000, 2400, 4800, 9600, 19200, 38400.										

Field	Means								
Modem Control	Whether or not your terminal can manipulate modem control signals during data communications. This field may have either of these values:  Disabled      Your terminal does not use modem control signals.  Enabled      Your terminal does use modem control signals.								
Access	The type of connections the terminal server allows at this port.								
Session Limit	The maximum number of simultaneous sessions you can establish at this port.								
Type	The type of terminal that that your terminal emulates. The type determines how the 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><tr><th>Type</th><th>Means</th></tr><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></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: <i>:service-name</i>	The name of a LAT service or Telnet destination where the terminal server automatically connects this port when you enter a connect command without a destination name.								
Dedicated Service: <i>service-name</i>	The name of a LAT server or Telnet destination where the terminal server automatically connects this port 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 service 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.								

## SHOW/LIST PORT

---

### Enabled Characteristics

The characteristics either you or the network manager have enabled with the DEFINE/SET PORT commands. When these characteristics appear in this field, they indicate the following:

#### **Characteristic   Means**

Autobaud	The port determines the input port speed, parity, and character size for the 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 dialback 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.
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 through the SERVER INACTIVITY TIMER characteristic.
Input Flow Control	This port uses flow control to regulate the flow of data from the device connected to it.
Internet Characteristics	The port can accept Internet addresses as well as domain names in connect commands.



**Characteristic Means**

Interrupts	You can use the Break key or a local switch character to interrupt a session at a remote terminal server port.
Kerberos	The Kerberos security system is enabled at this port, and you must enter a Kerberos password when you log on to the port.
Limited View	You cannot view destinations on the network with the SHOW/LIST DESTINATIONS, SHOW/LIST NODES, or SHOW/LIST SERVICES commands.
Line Editor	You can use editing characters at this port.
Loss Notification	Your 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.
Privileged Menu	Indicates that the port is privileged and uses the menu interface. (Not visible to Secure users.)
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.
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.

## SHOW/LIST PORT

---

2. The SHOW/LIST PORTS ALTERNATE CHARACTERISTICS commands produce a display similar to the one in Figure 3-7.

While secure users cannot define or set many of the characteristics in this display, the description includes information about all characteristics.

Port 12:	Nancy	19 Sept 1991	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:	Xyplex
DCD Timeout:	2000	Dialback Timeout	20
Stop Bits	1	Script Login	Disabled
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

Figure 3-7. A Sample SHOW/LIST PORT ALTERNATE CHARACTERISTICS Display

Field	Means
Port <i>n</i>	The number of the terminal server port. (In Figure 3-7, the port number is 12)
<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. (In Figure 3-7, the username is Nancy.)
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:
<b>Resolve Service</b>	<b>Means</b>
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.

Field	Means										
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.										
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	<p>The number of bits attached to the end of each that the port send t the terminal that is attached to it. These bits signify the end of a character. The values that can appear in this field mean the following:</p> <table><tr><th>Value</th><th>Means</th></tr><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 for this port based on the port speed. This is the default value.</td></tr></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 for this port 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 for this port based on the port speed. This is the default value.										
DTR wait	<p>The conditions needed for the port to assert the DTR Modem control signal. These are the possible values of this field:</p> <table><tr><th>DTR Signal</th><th>Means</th></tr><tr><td>Disabled</td><td>The port continuously asserts the DTR signal.</td></tr><tr><td>Enabled</td><td>The port asserts the DTR signal when you make a connection to a device, or or when the device connected to the port asserts an RNG signal.</td></tr><tr><td>FORCONNECTION</td><td>The port asserts the DTR signal when you make a connection.</td></tr><tr><td>FORRING</td><td>The port asserts the DTR signal when the device connected to the port asserts an RNG signal</td></tr></table>	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 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
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 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.										

## SHOW/LIST PORT

---

Field	Means										
SLIP Mask	The Internet subnet mask that the terminal server uses when it forwards a packet over a SLIP link.										
Default Session Mode	<p>The initial setting for the data-transparency mode for all sessions. These are the possible values for this field:</p> <table><tr><th>Session Mode</th><th>Means</th></tr><tr><td>Interactive</td><td>The server initially enables all session switching characters, Telnet session management characters, and XON/XOFF flow control for all sessions. The server does not attempt to negotiate the Telnet Binary option.</td></tr><tr><td>Pasthru</td><td>The server initially interprets all session switching characters and Telnet session management characters as data, but does use XON/XOFF flow control. The server attempts to negotiate the Telnet binary option.</td></tr><tr><td>Passall and</td><td>The server initially disables all session switching characters, Telnet session management characters, XON/XOFF flow control for all sessions. The server does attempt to negotiate the Telnet binary option.</td></tr><tr><td>Transparent</td><td>The server initially disables session switching characters, Telnet session management characters, and XON/XOFF flow control, for all sessions. The server sets Telnet sessions to ignore Telnet option messages it receives from a remotely initiated session and does not 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 as if it were Pasthru.</td></tr></table>	Session Mode	Means	Interactive	The server initially enables all session switching characters, Telnet session management characters, and XON/XOFF flow control for all sessions. The server does not attempt to 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/XOFF flow control. The server attempts to negotiate the Telnet binary option.	Passall and	The server initially disables all session switching characters, Telnet session management characters, XON/XOFF flow control for all sessions. The server does attempt to negotiate the Telnet binary option.	Transparent	The server initially disables session switching characters, Telnet session management characters, and XON/XOFF flow control, for all sessions. The server sets Telnet sessions to ignore Telnet option messages it receives from a remotely initiated session and does not 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 as if it were Pasthru.
Session Mode	Means										
Interactive	The server initially enables all session switching characters, Telnet session management characters, and XON/XOFF flow control for all sessions. The server does not attempt to 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/XOFF flow control. The server attempts to negotiate the Telnet binary option.										
Passall and	The server initially disables all session switching characters, Telnet session management characters, XON/XOFF flow control for all sessions. The server does attempt to negotiate the Telnet binary option.										
Transparent	The server initially disables session switching characters, Telnet session management characters, and XON/XOFF flow control, for all sessions. The server sets Telnet sessions to ignore Telnet option messages it receives from a remotely initiated session and does not 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 as if it were Pasthru.										
Prompt	The local command prompt that the port displays in command mode.										
Dialback Timeout	The number of seconds that the terminal server waits for a modem to respond to a dialback signal.										

Field	Means								
Script Login	The status of the Script Login characteristic at this port. The status can be one of the following: <table> <tr> <th>Login Characteristic</th><th>Means</th></tr> <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. If a script file exists, execute it. If a script file does not exist, continue with the login procedure anyway.</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> </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. If a script file exists, execute it. If a script file does not exist, continue with the login procedure anyway.	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. If a script file exists, execute it. If a script file does not exist, continue with the login procedure anyway.								
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.								

**3** The SHOW PORTS TELNET CHARACTERISTICS command produces a display similar to the one in Figure 3-8.

While secure users cannot define or set many of the characteristics in this display, the description includes information about all characteristics. Secure users can set the Telnet Session Management Characters shown in this display with the SET PORT command.

Port 12:	LYNNE	18 Sept 1991	14:35:55
Abort Output Character:	None	Newline:	CR/NULL
Attention Character:	None	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:	None	Transmit:	Immediate
Interrupt Character:	None	Binary Session Mode:	PASTHRU
Terminal Type	None	Tn3270 Device	VT220-7
Tn3270 TranslationTable	USEENGLSH		
Enabled Characteristics:			
Tn3270 EOR			

Figure 3-8. A Sample SHOW/LIST PORT TELNET CHARACTERISTICS Display

## SHOW/LIST PORT

---

Field	Means						
Port <i>n</i>	The number of the terminal server port. (In Figure 3-8, the port number is 12)						
<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. (In Figure 3-8, the username is LYNNE)						
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 echos the characteristics you type.						
	<table><tr><th>Mode</th><th>Means</th></tr><tr><td>Local</td><td>The terminal server echos the characters you type.</td></tr><tr><td>Remote</td><td>The Telnet host echos the characters you type.</td></tr></table>	Mode	Means	Local	The terminal server echos the characters you type.	Remote	The Telnet host echos the characters you type.
Mode	Means						
Local	The terminal server echos the characters you type.						
Remote	The Telnet host echos 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 if no character exists.						
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 if no character exists.						
Terminal Type	The name of the terminal type that the terminal server sends to a Telnet host while negotiating a Telnet session.						
Tn3270 TranslationTable	The language translation table used at this port during Tn3270 session. The terminal server software includes USENGLSH (US English), but the network manager may have defined others.						

Field	Means										
Newline	<p>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:</p> <table><tr><th>Character Setting</th><th>Means</th></tr><tr><td>CR/NULL</td><td>The terminal server transmits a Carriage Return character and a Null character to the Telnet host when you press the Return key.</td></tr><tr><td>CR/LF</td><td>The terminal server transmits a Carriage Return character and a Linefeed character to the Telnet host when you press the Return key.</td></tr><tr><td>CR</td><td>The terminal server transmits a Carriage Return character to the Telnet host when you press the Return key.</td></tr></table>	Character Setting	Means	CR/NULL	The terminal server transmits a Carriage Return character and a Null character to the Telnet host when you press the Return key.	CR/LF	The terminal server transmits a Carriage Return character and a Linefeed character to the Telnet host when you press the Return key.	CR	The terminal server transmits a Carriage Return character to the Telnet host when you press the Return key.		
Character Setting	Means										
CR/NULL	The terminal server transmits a Carriage Return character and a Null character to the Telnet host when you press the Return key.										
CR/LF	The terminal server transmits a Carriage Return character and a Linefeed character to the Telnet host when you press the Return key.										
CR	The terminal server transmits a Carriage Return character to the Telnet host when you press the Return key.										
Newline Filtering	<p>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:</p> <table><tr><th>Filter</th><th>Means</th></tr><tr><td>None</td><td>The terminal server does not translate Newline sequences.</td></tr><tr><td>CR</td><td>The terminal server translates a CR/NULL or a CR/LF in the data stream to a CR (a Carriage Return character).</td></tr><tr><td>CR/NULL</td><td>The terminal server translates a CR/NULL or a CR/LF in the data stream to a CR/NULL (a Carriage Return character and a Null character).</td></tr><tr><td>CR/LF</td><td>The terminal server translates a CR/NULL or a CR/LF in the data stream to a CR/LF (a Carriage Return character and a Linefeed character).</td></tr></table>	Filter	Means	None	The terminal server does not translate Newline sequences.	CR	The terminal server translates a CR/NULL or a CR/LF in the data stream to a CR (a Carriage Return character).	CR/NULL	The terminal server translates a CR/NULL or a CR/LF in the data stream to a CR/NULL (a Carriage Return character and a Null character).	CR/LF	The terminal server translates a CR/NULL or a CR/LF in the data stream to a CR/LF (a Carriage Return character and a Linefeed character).
Filter	Means										
None	The terminal server does not translate Newline sequences.										
CR	The terminal server translates a CR/NULL or a CR/LF in the data stream to a CR (a Carriage Return character).										
CR/NULL	The terminal server translates a CR/NULL or a CR/LF in the data stream to a CR/NULL (a Carriage Return character and a Null character).										
CR/LF	The terminal server translates a CR/NULL or a CR/LF in the data stream to a CR/LF (a Carriage Return character 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 exits.										
Remote Port	The terminal server accepts remote connections from the Telnet port number in this field.										
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.										

## SHOW/LIST PORT

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Field	Means								
Transmit	They method that the terminal server uses to transmit characters that you enter from the keyboard during a Telnet session.								
	<table><tr><th>Transmit Method</th><th>Means</th></tr><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 wait before it transmits the data in the typeahead buffer to the Telnet host.</td></tr></table>	Transmit 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 wait before it transmits the data in the typeahead buffer to the Telnet host.
Transmit 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 wait before it transmits the data in the typeahead 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 at this port during a Tn3270 session.								
Enabled Characteristics									

#### 4. The SHOW/LIST PORTS COUNTERS commands produce a display similar to the one in Figure 3-9.

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

The lower half of the SHOW PORTS COUNTERS display shows information about Serial Line Internet Protocol (SLIP) packets. These are packets the terminal server sends over a SLIP link. See your network manager if you have questions about SLIP support.



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		

Figure 3-9. A Sample SHOW/LIST PORT COUNTERS Display

Field	Means
Port <i>n</i>	The number of the terminal server port. (In Figure 3-9, the port number is 10)
<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. (In Figure 3-9, the username is Steve.)
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. See the network manager if you suspect that your port has a high number of framing errors.
Parity Errors	The number of bytes received at the port with parity errors. Parity errors may indicate a problem with the port or the terminal attached to it, or mismatched characteristics between the terminal and the port. See the network manager if you suspect that your port has a high number of parity errors. (20 errors per day may be a high number if you have a terminal connected to a port; 200 errors per day may be a high number if you have a modem connected to a 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. See the network manager if you have overrun errors.
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.

## SHOW/LIST PORT

---

Field	Means
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 Packets 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 Length Errors	The number of SLIP packets that the port received that did not contain the correct number of bytes.
Network Packets Received	The number of Ethernet packets bound for this port that the terminal server has to SLIP packets.
Network Packets Sent	The number of SLIP packets from this port that the terminal server converted to Ethernet packets.
Network Packets Discarded	The number of Ethernet packets that the terminal server has discarded.

5. The SHOW/LIST PORTS STATUS commands produce a display similar to the one in Figure 3-10.

Port 12:	lynne	Server:	X003E8C
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:			

Figure 3-10. A Sample SHOW/LIST PORT STATUS Display

Field	Means										
Port <i>n</i>	The number of the terminal server port. (In Figure 3-10, the port number is 12)										
<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. (In Figure 3-10, the username is lynne.)										
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:										
	<table><tr><th>Access type</th><th>Means</th></tr><tr><td>Dynamic</td><td>Users can gain access to the port through the local terminal server or from a remote host or device on the network.</td></tr><tr><td>Local</td><td>Users can gain access to the port only through the local terminal server.</td></tr><tr><td>Remote</td><td>User can gain access to the port only through remote connections with a LAT service name or port number.</td></tr><tr><td>None</td><td>No users can gain access to the port. (This access type does not appear for a port if you are logged on to that port.)</td></tr></table>	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	User can gain access to the port only through remote connections with a LAT service name or port number.	None	No users can gain access to the port. (This access type does not appear for a port if you are logged on to that port.)
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	User can gain access to the port only through remote connections with a LAT service name or port number.										
None	No users can gain access to the port. (This access type does not appear for a port if you are logged on to that port.)										

## SHOW/LIST PORT

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Field	Means																										
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.																										
	<table><tr><th>Status</th><th>Means</th></tr><tr><td>Connected</td><td>The port is currently connected to a LAT service or Telnet destination.</td></tr><tr><td>Connecting LAT</td><td>The port is currently attempting to connect to a service or Telnet destination.</td></tr><tr><td>Disconnected</td><td>The server disconnected the port from a session. (This may happen if a session is inactive for a long period of time.)</td></tr><tr><td>Disconnecting</td><td>The server is disconnecting a port from a session.</td></tr><tr><td>Executing Cmd</td><td>The port is executing a command from the terminal server local command mode.</td></tr><tr><td>Finding Script</td><td>The port is searching for a script file.</td></tr><tr><td>Idle</td><td>The port is not in use.</td></tr><tr><td>Loading Script</td><td>The port has found the script file and is loading it.</td></tr><tr><td>Local Mode</td><td>The port is logged on to the server and is in local command mode.</td></tr><tr><td>Locked</td><td>The user has disabled access to this port with the LOCK command.</td></tr><tr><td>Running Script</td><td>The port is executing commands from the script file.</td></tr><tr><td>Sessions</td><td>The number of active sessions at this port.</td></tr></table>	Status	Means	Connected	The port is currently connected to a LAT service or Telnet destination.	Connecting LAT	The port is currently attempting to connect to a 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.	Finding Script	The port is searching for a script file.	Idle	The port is not in use.	Loading Script	The port has found the script file and is loading it.	Local Mode	The port is logged on to the server and is in local command mode.	Locked	The user has disabled access to this port with the LOCK command.	Running Script	The port is executing commands from the script file.	Sessions	The number of active sessions at this port.
Status	Means																										
Connected	The port is currently connected to a LAT service or Telnet destination.																										
Connecting LAT	The port is currently attempting to connect to a 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.																										
Finding Script	The port is searching for a script file.																										
Idle	The port is not in use.																										
Loading Script	The port has found the script file and is loading it.																										
Local Mode	The port is logged on to the server and is in local command mode.																										
Locked	The user has disabled access to this port with the LOCK command.																										
Running Script	The port is executing commands from the script file.																										
Sessions	The number of active sessions at this port.																										
Current Service	The session that you most recently interrupted when you entered local command mode. If the session was with a Telnet destination, the word TELNET appears in this field.																										

Field	Means
Current Node	The name of the LAT service node or the Internet address of the Telnet node where the current session is established. (For remote connections to local services, this field shows the name or Internet address of the node where the connection originated.
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 or not XON/XOFF flow control is enabled for data input to the port from your terminal.
Output XOFFed	Whether or not XON/XOFF flow control is enabled for data output from 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

---

6. The SHOW/LIST PORTS SUMMARY commands produce a display similar to the one in Figure 3-11.

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

Figure 3-11. A Sample SHOW/LIST PORT SUMMARY Display

Field	Means												
Port	The number of your terminal server port. (In Figure 3-11, the port number is 12.)												
Access	The type of connections the terminal server allows at this port. The types that may appear in this field are these: <table><tr><th>Access type</th><th>Means</th></tr><tr><td>Dynamic</td><td>Users can gain access to the port through the local terminal server or from a remote host or device on the network.</td></tr><tr><td>Local</td><td>Users can gain access to the port only through the local terminal server.</td></tr><tr><td>Remote remotely by</td><td>Users can gain access to the port only service name or port number.</td></tr><tr><td>None</td><td>No users can gain access to the port. (This access type does not appear for a port if you are logged on to that port.)</td></tr></table>	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 remotely by	Users can gain access to the port only service name or port number.	None	No users can gain access to the port. (This access type does not appear for a port if you are logged on to that port.)		
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 remotely by	Users can gain access to the port only service name or port number.												
None	No users can gain access to the port. (This access type does not appear for a port if you are logged on to that port.)												
Status	The current status mode of the port. The types of status modes that may appear in this field are these: <table><tr><th>Status</th><th>Means</th></tr><tr><td>Connected</td><td>The port is currently connected to a device on the network.</td></tr><tr><td>Connecting</td><td>The port is currently attempting to connect to a device on the network.</td></tr><tr><td>Disconnected</td><td>A session was disconnected at this port. This may happen if a session is inactive too long.</td></tr><tr><td>Disconnecting</td><td>The port is disconnecting from a session.</td></tr><tr><td>Executing Cmd</td><td>The port is executing a terminal server command.</td></tr></table>	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.
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.												

## SHOW/LIST PORT

---

	<b>Status</b>	<b>Means</b>
	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.
	Locked	The port has been locked with the LOCK command. (This status does not appear at your port because you can not enter commands if the port is locked.)
Services Offered	The names of the local services that the terminal server offers at this port.	

## SHOW/LIST PORT

---

7. The SHOW PORT KEYMAP command produces a display similar to the one in Figure 3-12.

Address:	08-00-87-00-4F-A4	Name:	X004FA4	Number:	0
Device:	VT100	TerminalType:	VT100	Tn3278Type :	MODEL2
Keymap:	3270-Key	KeyCode	Description		
	NEWLINE	: "0A"	"LF"	"	
	TAB	: "09"	"TAB"	"	
	BACKTAB	: "1B 09"	"ESCTB"		
	CURSОРUP	: "1B 5B 41"	"KEYUP"		
	CURSОРLEFT	: "1B 5B 44"	"KEYBK"		
	CURSОРRIGHT	: "1B 5B 43"	"KEYFW"		
	CURSОРDOWN	: "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"	"ESCl "		
	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 "		

(continues)



(Figure 3-12 continued)

PF12	:	"1B 4F 52"	"PF3 "
PF13	:	"1B 21 "	"ESC! "
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"
CURSOREL	:	"1B 6B"	"ESCk "
TEST	:	"1B 74"	"ESCt "

Figure 3-12. SHOW PORT KEYMAP DISPLAY

Field	Means
Device	The name of the Tn3270 device in the display.
TerminalType	The local terminal type.
Tn3278Type	The model of Tn3270 device that the local terminal terminal emulates during 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.

Chapter 4, Tn3270 Sessions, includes the keymaps for all the Xyplex supplied Tn3270 devices. These tables do not include the hexadecimal values for the keys, but you do not need them to run normal TN3270 terminal emulation. See chapter 4 for more information about keymaps.

## SHOW/LIST PORT

---

### Related Commands

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

Command	Function
SET PORT PAUSE ENABLED	Causes the terminal to 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 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	[ <i>service-name</i> ]	[CHARACTERISTICS] [STATUS] [SUMMARY]
	[LOCAL]	[CHARACTERISTICS] [STATUS] [SUMMARY]
	[ALL]	[CHARACTERISTICS] [STATUS] [SUMMARY]
LIST SERVICES	[ <i>service-name</i> ]	[CHARACTERISTICS]
	[LOCAL]	[CHARACTERISTICS]

**Abbreviation**

SH      SERV  
LIS

Where	Means
<i>service-name</i>	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.
LOCAL	Display a list of local services offered by the terminal server.

## SHOW/LIST SERVICES

---

Where	Means
CHARACTERISTICS	Display the current values for service characteristics. (The network manager specify these characteristics with DEFINE/SET SERVICE commands.)
STATUS	Display information about the condition and availability of services on the network.
SUMMARY	Display a one-line summary about the availability of services on the network.

### Examples

1. The SHOW/LIST SERVICES CHARACTERISTICS commands produce a display similar to the one in Figure 3-13.

```
Xyplex> SHOW SERVICES XANADU CHARACTERISTICS

Service: XANADU                                20 May 1991  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
```

Figure 3-13. A Sample SHOW/LIST SERVICES CHARACTERISTICS Display

Field	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 this	The number of ports on the terminal server that can establish a session with 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 using DEFINE/SET SERVICE commands. The characteristics that can appear in this field are these:

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.

2. The SHOW/LIST SERVICES STATUS commands produce a display similar to the one in Figure 3-14.

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

Figure 3-14. A Sample SHOW/LIST SERVICES STATUS Display

Field	Means										
Service	The name of the LAT service on the network.										
Status	The availability of the service. The status of the availability is one of the following: <table><tr><th>Status</th><th>Means</th></tr><tr><td><i>n</i> Connected</td><td>Users can reach the service, and other ports already have <i>n</i> currently active sessions with this service.</td></tr><tr><td>Reachable</td><td>Users can reach the service, and no other ports have currently active sessions with the service.</td></tr><tr><td>Unknown</td><td>Users could reach the service at one time, but may not be able to now.</td></tr><tr><td>Unreachable</td><td>Users cannot reach this service, or an attempt to reach this service has timed out.</td></tr></table>	Status	Means	<i>n</i> Connected	Users can reach the service, and other ports already have <i>n</i> 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.
Status	Means										
<i>n</i> Connected	Users can reach the service, and other ports already have <i>n</i> 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.										

## SHOW/LIST SERVICES

---

3. The SHOW/LIST SERVICES SUMMARY commands produce a display similar to the one in Figure 3-15.

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

Figure 3-15. A Sample SHOW/LIST SERVICES SUMMARY Display

Field	Means								
Service Name	The name of the LAT service on the network.								
Status	<p>The entries in this column indicate the availability of the LAT services to users on the network. These entries are possible in this column:</p> <table><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></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	Causes the terminal to 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 SESSIONS

---

### SHOW SESSIONS

Display a list 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.

Users at Secure and Nonprivileged ports can view sessions only at their own ports.

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

#### Syntax

SHOW SESSION [PORT *port-list*]

#### Abbreviation

SH [PO]

#### Where

#### Means

PORT

Display the active sessions at the port you specify in the *port-list* variable. You can omit this keyword and simply specify a port number. This keyword is optional. To display the sessions at your port, you can simply enter SHOW SESSIONS.

*port-list*

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

#### Example

The SHOW SESSIONS command produces a display similar to the one in Figure 3-16.

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

Figure 3-16. A Sample SHOW SESSIONS Display



Field	Means												
Port <i>n</i>	The number of the terminal server port. (In Figure 3-16, the port number is 12)												
<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. (In Figure 3-16, the username is lynne.)												
Service Mode	The port mode, which is either Service Mode or Local Mode. In Figure 3-16, the port is in Service Mode.												
Session <i>n</i>	The session number.												
<i>status</i>	The connection status of the session. The different types of status are the following: <table><tr><th>Status</th><th>Means</th></tr><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></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	The data transparency mode for the current session at this port. The service modes that may appear in this field are the following: <table><tr><th>Service Mode</th><th>Means</th></tr><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>For Telnet sessions, 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></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	For Telnet sessions, 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	For Telnet sessions, 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.												

## SHOW SESSIONS

---

### Field

### Means

#### *destination (node)*

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 software truncates the domain name and display an asterisk (\*) to indicate that it truncated the name.

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.

#### *Telnet options*

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.

## TELNET CONNECT

### Establish a session with a Telnet destination

---

The TELNET CONNECT command establishes a session with a Telnet destination. Use the SHOW DESTINATIONS or SHOW DOMAIN commands to obtain a list of Telnet destination names and Internet addresses on your network.

#### Notes On Telnet Connections

The terminal server software converts a domain name to an Internet address. Most of the time, the network manager has configured the terminal server so that the name resolves to the appropriate Internet address. The first time that the terminal server attempts to connect to any Telnet host after terminal server initialization may take a couple of seconds, however. 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.

If you enter the TELNET CONNECT command without a domain name or Internet address, the software attempts to connect your port to a predefined preferred Telnet 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.

#### Notes on 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.

UNIX alias:      OPEN    *[domain-name:telnet-port-number]*  
                              *[internet-address:telnet-port-number]*

#### Syntax

TELNET [CONNECT]    *[domain-name:telnet-port-number]*  
                              *[internet-address:telnet-port-number]*

#### Abbreviation

TEL [C]

## TELNET CONNECT

---

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, each separated by a period.
<i>internet-address</i>	Establish a session with the Telnet host or terminal server at the Internet address you specify in this variable. An Internet address consists of four numbers, separated by periods.
<i>:telnet-port-number</i>	Establish a session using the number of an Internet protocol or the port number on a Xyplex terminal server you specify in this variable. You must 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.

### 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 example uses the TELNET CONNECT command with the Telnet domain name FINANCESUN.XYPLEX.COM.

```
Xyplex> TELNET CONNECT FINANCESUN.XYPLEX.COM █
```

```
Xyplex  -010-  Session 4 to FINANCESUN.COM established
```

*Welcome To FINANCESUN*

*Please log on.*

2. This example uses the TELNET CONNECT command without variables to connect to a preferred destination. A user enters the command without a domain name or Internet address. The software interprets this as a request to connect to a predefined preferred destination. In this example, the preferred destination is a Telnet host named ACCOUNTSHOST.COM.

```
Xyplex> TELNET CONNECT █
```

```
Xyplex  -010-  Session 5 to ACCOUNTSHOST.COM established
```

*This is ACCOUNTSHOST.COM*

*Please enter your username:*

If the preferred destination 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 your network manager, or enter a TELNET domain name with the TELNET CONNECT command.

3. This example uses the TELNET CONNECT command with an Internet address and a Telnet port number. A user enters the command with the Internet address 128.10.2.30 and the Telnet port number 23.

```
Xyplex> TELNET CONNECT 128.10.2.30:23
```

```
Xyplex  -010-  Session 6 to 128.10.2.30:23 established
```

```
      Welcome to DevelopmentSUN.COM
```

```
      Please log on.
```

4. This example uses the TELNET CONNECT command to establish a TN3270 Connection. A user enters the command to reach an IBM host with a Telnet domain name. Once the connection is established, the user's terminal emulates an IBM 3278 style terminal, so the terminal's keyboard responds like the IBM keyboard.

```
Xyplex> TELNET CONNECT IBMhost.COM
```

```
Xyplex  -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.

## ZERO COUNTERS

---

### 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

In this example, a user on port 3 resets the counters on port 3 to zero.

```
Xyplex> ZERO COUNTERS PORT 3 █
```

```
Xyplex>
```

#### Related Commands

This command is useful with the ZERO COUNTERS command:

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

End of Chapter

## Chapter 4

### Tn3270 Sessions

You can establish sessions over the LAN with an IBM host 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 for your terminal server.
- 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 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:    PASTHRO
Terminal Type                None      Tn3270 Device           VT220-7
Tn3270 TranslationTable      USINGLSH

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 XtdAttrs.

*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 Xyplex includes 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:

```
Xyplex> 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 begin 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 Xyplex includes 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
PF22	Help

IBM 3270 Terminal Function	VT220-7 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
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
PF23	Do

IBM 3270 Terminal Function	VT220-8 Terminal Key Sequence
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

End of Chapter

## Chapter 5

# Using Multisessions (Dual Session Management)

Some DEC terminals, such as VT330 and VT420 terminals, support a feature called Dual Session Management, or Multisessions. This feature enables a terminal to display two sessions simultaneously, within separate windows. This chapter describes how to use the terminal server with 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:* The dual session management feature is also known as the Multisessions feature because MULTISESSIONS is the DECserver characteristic that controls the port where the terminals are connected. This characteristic does not affect the multiple session support feature of the Xyplex TCP/IP-LAT 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.

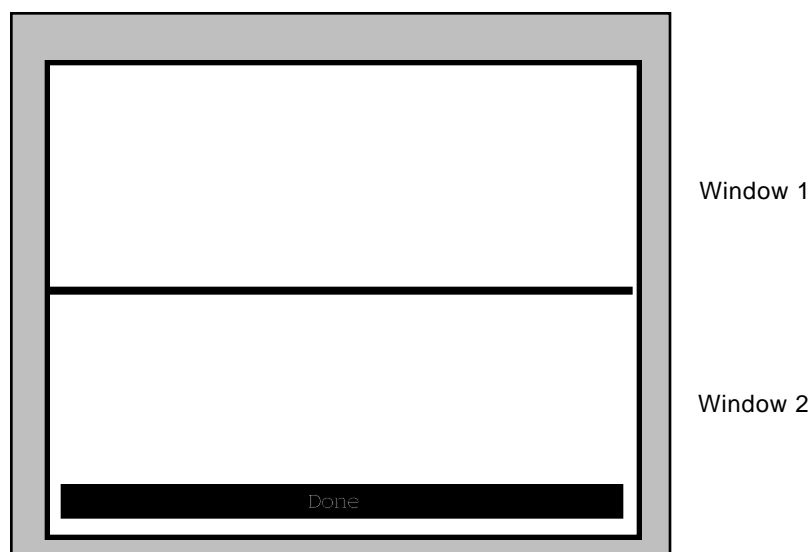


Figure 5-1. An Example Of a Split Screen

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 TCP/IP-LAT 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.

## Multisessions

---

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:

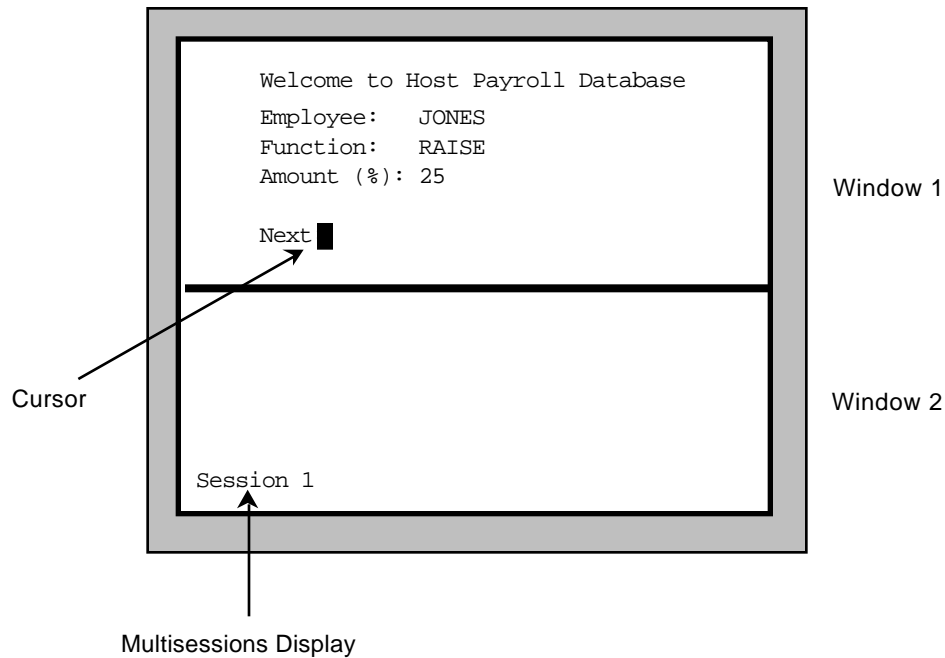


Figure 5-2. A Multisessions Screen With One Session Established

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 *Xyplex>* 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 Xyplex command interface in two ways. You can enter the name LOCAL at the Multisessions prompt, and this calls up the Xyplex> prompt. Or, if no preferred service exists, you can press the Return key several times at the Multisessions prompt and this calls up the Xyplex> 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 Xyplex> 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.

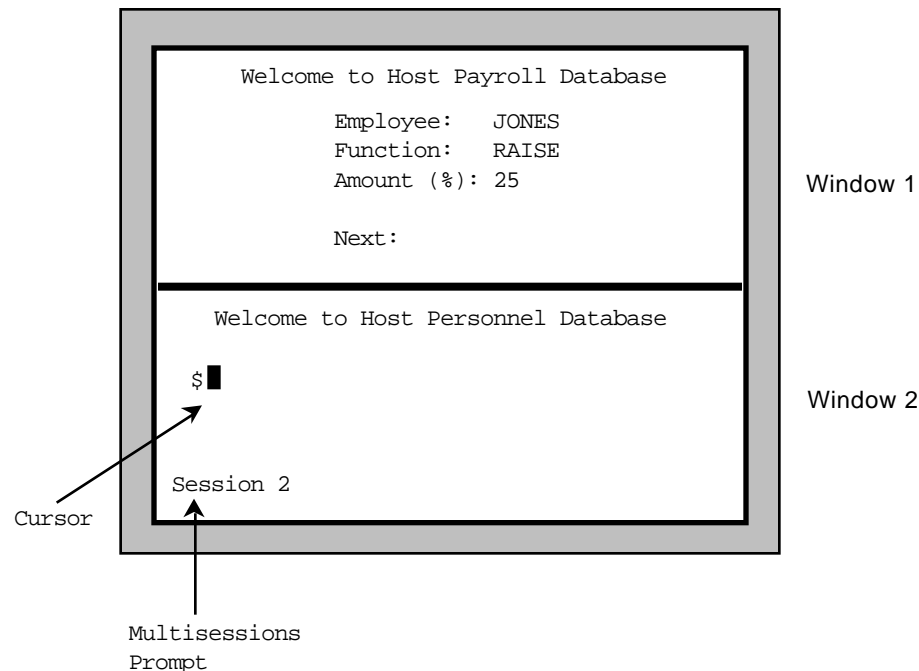


Figure 5-3. A Multisessions Screen with Two Sessions Established

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 Xyplex> 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 Xyplex> prompt appears on the

## Multisessions

---

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 TCP/IP-LAT 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 `Xyplex>` 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 `Xyplex>` 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 `Xyplex>` prompt, from within a window, when no connection is active in the window. The `Xyplex>` 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 `Xyplex>` 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 12 john	Service Mode	Current Session 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 leftmost 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 Xyplex 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.

End of Chapter

# 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:

- The File Transfer Procedure
- Transferring a File with the Kermit File Transfer Program

### The 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 are running 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 Xyplex local command mode and use the SET SESSION command.  
  

```
xyplex> 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 DOS, for example, you should 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:

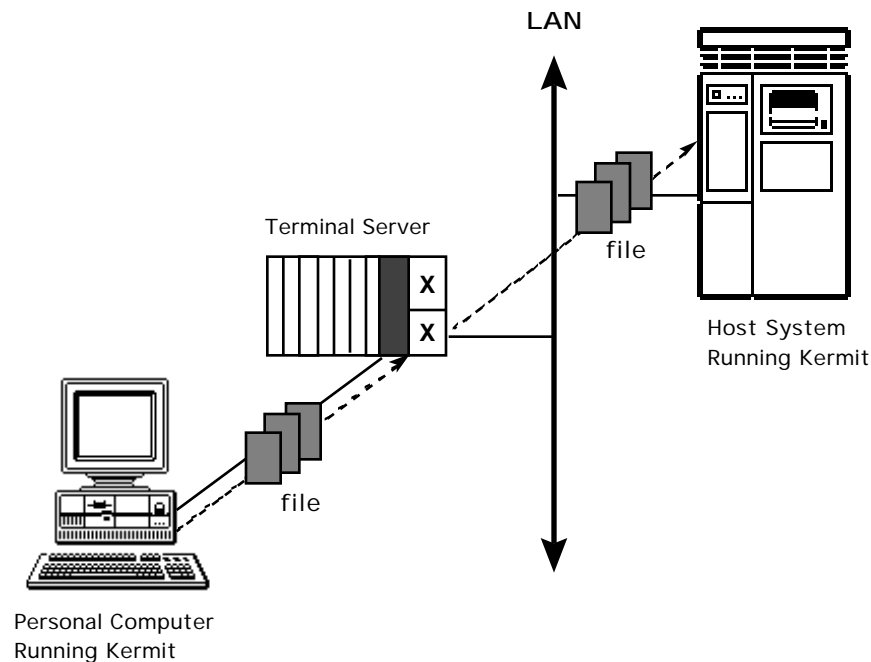


Figure 6-1. A File Transfer from a Host Computer to a PC

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>
```

## Transferring Files

---

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
Xyplex>
```

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

```
Xyplex> CONNECT FINANCEVAX
Xyplex -010- Session 1 to FINANCEVAX established
Welcome to Finance Department VAX
Username: Chris
Password:
```

(The password does not echo 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>
Xyplex>
Xyplex> SET SESSION PASSALL
Xyplex>
Xyplex> RESUME
$
```

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 would be GET *filename*.)

## Transferring Files

---

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
```

```
Xyplex>
```

```
Xyplex> LOGOUT
```

```
Xyplex>
```

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.

```
Xyplex> 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.

End of Chapter