Networks · Communications

DECserver 200

User's Guide

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DECserver 200

User's Guide

Order No. AA–HL77A–TK

July 1986

This guide describes all DECserver 200 commands available to the nonprivileged user. These commands are summarized on the *DECserver 200 User's Reference Card.* Privileged users should refer to the *Terminal Server Commands and Messages Guide* and to the *DECserver 200 Management Guide.*

NOTE: If your port is assigned to use just one service, you do not need a reference guide.

Supersession/Update Information:	This is a new manual.
Software Version:	DECserver 200 V1.0

digital

AA-HL77A-TK
First Printing, July 1986

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This manual was typeset by Networks and Communications Publications

STRUCTURE OF THIS GUIDE

The sections of this guide and their contents are summarized below:

INTRODUCTION — Describes server use in a network environment, defines terms used in this guide, provides guidelines for entering server commands, and describes server messages.

GETTING STARTED — Describes how to log in to and log out of the server, how to begin and end sessions with a service, and how to display on-line help documentation.

MULTIPLE SESSIONS — Explains how to create several sessions on one port and how to switch between them.

CONNECTING TO SPECIFIC NODES AND PORTS — Explains use of the CONNECT command to establish sessions with services on specific nodes and ports.

DISPLAYING INFORMATION — Explains use of SHOW and LIST commands to display information about the server, ports, service nodes, network services, sessions, users, and queue entries.

TESTING YOUR PORT — Explains use of the TEST command to test your terminal and port connection.

LOCKING YOUR TERMINAL — Explains use of the LOCK command to protect existing sessions from other users.

BROADCASTING A MESSAGE — Explains use of the BROADCAST command to send a message to another port.

FILE TRANSFER — Explains how to transfer files between your PC (personal computer) and a service.

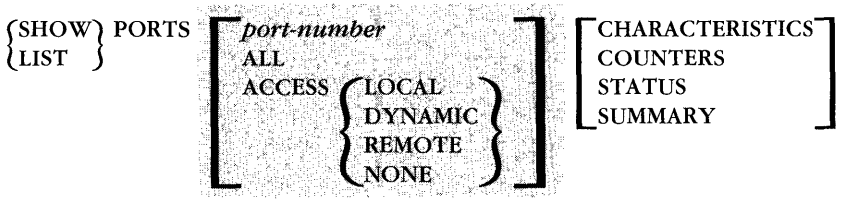
SPECIFYING PORT CHARACTERISTICS — Explains use of SET and DEFINE commands to modify both permanent and operational port characteristics. Includes information on setting switch characters, specifying automatic connection to a preferred service, controlling message reception, setting your port's physical characteristics to match those of the attached terminal, and modifying other characteristics.

COMMAND SUMMARY — Lists all DECserver 200 nonprivileged user commands and user-definable port characteristics. Includes page references to command descriptions within the *User's Guide*.

GRAPHICS CONVENTIONS USED IN THIS GUIDE

Convention	Meaning
`Monospaced type`	Indicates an example of system output or user input. System output is in black type; user input is in red.
UPPERCASE	In command lines, indicates keywords to be entered. You can type the characters in either uppercase or lowercase. Command keywords can be abbreviated to the smallest number of characters that distinguishes the keyword to the server.
italics	Indicates a variable.
{ }	Indicates that you must specify one of the enclosed values. (Do not type the braces.)
[ ]	Indicates that the enclosed value(s) are optional. You may enter one or none. If you enter nothing, default values are applied. (Do not type the brackets.)
BOLD	In port characteristic syntax, indicates Digital factory-set defaults.
Shaded text	Indicates commands and options that cannot be used on secure ports (see Section 1.3).
(*key*)	Indicates that you press the specified key.
(CTRL/*x*)	Indicates that you should hold the CONTROL key down and press the key specified by *x*. Pressing (CTRL) displays the ^ character.
/	Indicates related commands or options, for example, SET/DEFINE.

Sample syntax statement:



For this command, you must specify either SHOW or LIST and the keyword PORTS. The shading indicates that nonsecure users can further qualify PORTS with a port number or with the keyword ALL or ACCESS. If you specify ACCESS, you must also include either LOCAL, DYNAMIC, REMOTE, or NONE. All users can specify one or none of the four display formats shown in the last set of brackets. Defaults are applied for unspecified options. Read the command descriptions for any restrictions; for example, in this command, you cannot specify COUNTERS or STATUS with LIST PORTS.

1 INTRODUCTION

The DECserver 200 terminal server is a component of a local area network that is used to connect devices such as terminals, printers, modems, and computers to the network. Each device is attached to the server at a connection called a **port**; each server has eight ports. The server manager can define characteristics for each port to control the operation of the device attached to a port. The server manager can set up a port either to offer a device as a service on the server or to connect a terminal to such services.

A **service** provides terminal users with one or more resources (such as access to a computer system, to file storage, or to modems). On a local area network, there are a number of services that can be offered by systems that are attached directly to the network or to a server. As the user of a terminal attached to the DECserver 200, you can select from all the available services and establish simultaneous connections to one or more services.

1.1 Terminal Server Concepts

Some of the basic concepts of terminal server operation are described below:

Local mode is the environment in which you interact directly with the server. You enter local mode when you log in to the local server. You leave local mode whenever you connect to a service, but you can return to local mode at any time.

Service mode is the environment in which you interact with a service on the network to use its facilities. This is the most frequently used environment of the server.

A **service node** is a device on the local area network, usually a computer system or a terminal server, that offers services to terminal users on servers.

A **session** is a connection through the server between your terminal and a service. You can move between several concurrent sessions, although you can use only one session at a time — your **current session**. When you return to local mode, your last session is suspended; however, that session is considered your current session until you enter or create another session.

1.2 The Relationship of Service Nodes and Services

Each service is defined by a server manager. A single service can be offered by more than one service node, and a single service node can offer more than one service. You can use the basic CONNECT command to connect to any of these services.

To understand the relationship between a service node and the services it offers, consider a set of VAX/VMS computers that can operate separately or as part of an interconnected group of computers called a VAXcluster. You can connect to a specific VAX/VMS system in the cluster by specifying its name (for example, VMS1), or you can connect to the cluster in general, in which case the server automatically connects you to the least busy VAX/VMS system on the cluster.

A terminal server can maintain its ability to establish sessions for its terminals while also acting as a service node that offers one or more services. Each service includes at least one device that is attached to a server port, such as a multiuser computer, a printer, a personal computer (PC), or a dial-out modem. When the device is a PC or a keyboard printer, it can alternate on demand between being available as a named or unnamed service and acting as a terminal to establish sessions with services.

1.3 Guidelines for Entering Server Commands

This guide describes the full set of commands available to the nonprivileged user of a terminal on the DECserver 200.

All terminals on server ports have access to a basic group of commands that permit terminal users to establish and to manage connections to services. The server manager can set some ports to access a subset of the full nonprivileged command set. These ports are called secure ports. Commands that are not supported on secure ports are shaded in this guide to flag their restricted use.

Guidelines for entering server commands are summarized below:

- You can enter up to 132 characters in a command line.
- You can continue a command line onto a second terminal display line, provided you do not press RET at the end of the first display line.
- You can abbreviate command keywords to the smallest number of characters that distinguishes the keyword to the server.
- You cannot type ahead in local mode. If you type ahead while the server is sending local-mode output to the terminal, your input characters are ignored. You can interrupt local-mode output by pressing BREAK.
- You can use the following special keys when entering commands:

Key	Function
DEL	Deletes the last character entered in the current command line.
CTRL/U	Deletes the entire current command line.
CTRL/Z	Operates like CTRL/U except when entered in response to a password prompt or a password verification prompt. In these cases, it cancels the password processing and causes the server to return to local mode. Exception: CTRL/Z will not unlock a locked terminal (see Section 7).
CTRL/R	Retypes the current command line (useful after using DEL on a hard-copy terminal).
RET	Executes the current command line.

If you make an error in a command line, the server rejects the entire command line and issues an error message.

1.4 Server Messages

The server can issue three types of messages:

- **Informational messages** occur as a result of events within the server or on the network. They include port-to-port broadcasts, verification when starting or resuming a session, and disconnect messages.
- **Warning messages** are issued when you enter a valid command that is executed by the server, but that may not have the desired effect. For example, if you try to use the FORWARDS command to resume a second session when only one session exists, the server reconnects you with the current session and issues a warning message.
- **Error messages** report problems that prevent the server from executing the command. There can be a problem with the command itself (such as an invalid parameter) or there can be server or network problems (for example, failure to make a connection).

Server messages are self-explanatory and are not listed in this guide.

2 GETTING STARTED

2.1 Logging in to DECserver 200

Press RET several times until you get a response from the server. If your server manager has enabled log-in password protection on your port, DECserver 200 will prompt with a pound sign (#). You must then enter the log-in password assigned by your server manager and press RET. (For security, the password is not displayed.)

If you enter the password correctly, the server displays a log-in message and issues a prompt. If a user name has been permanently defined for your port, the local prompt (Local>) is issued, and you can begin to enter server commands. If no user name has been defined for the port, the server prompts for one (Enter username>). There are several valid responses to this prompt: you can enter a 1- to 16-character name that you wish to use to identify yourself to other users on the server, you can enter CTRL/Z to assign the port name as your user name, or you can enter HELP to display tutorial information on how to use the server and its facilities (see Section 2.2).

```
# password (RET)

DECserver 200 Terminal Server V1.0 (BL20) - LAT V5.1

Please type HELP if you need assistance

Enter username>  Les Davies (RET)

Local>
```

The local prompt indicates that you are logged in to the server in local mode.

If you are connected to the server through a dial-in modem, you have only 60 seconds to respond to a log-in password prompt. If you fail to enter the correct password during this period, the server disconnects the modem.

NOTE

> Command examples hereafter do not show RET at the ends of command lines. You must enter RET to execute a command.

2.2 Accessing On-line Help Documentation

There are two kinds of on-line documentation: command reference help and tutorial help.

To obtain tutorial information, enter HELP in response to the user name prompt (Enter username>) or enter HELP TUTORIAL in response to the local prompt (Local>).

```
Local> HELP TUTORIAL
```

The server responds with a series of screens of tutorial information. At the end of each screen, you can enter RET to pass to the next screen or you can enter ? to start again with the first screen. Press CTRL/Z at any time to exit from help. If you later reenter tutorial help, the server begins with the first screen.

To access on-line reference information for the DECserver 200 commands described in this guide, enter HELP in response to the local prompt.

```
Local> HELP
```

The server responds with a list of command keywords for which information is available and prompts again.

```
Topic?
```

When you enter a command keyword from the list (for example, SET), the server gives you a brief description of the function performed by the command keyword and lists any subtopics associated with it. The server then prompts you for a subtopic. For example,

```
SET Subtopic? PORT
```

In response to this entry, the server lists all SET PORT options and prompts again for a subtopic. If you already know which option you want help for, you can skip these intermediate steps by requesting specific help information at the local prompt. For example, to access information about specifying flow control, you can enter this command:

```
Local> HELP SET PORT FLOW CONTROL
```

To redisplay the options that you can enter in response to a prompt for a topic or subtopic, enter a question mark (?) at that prompt. To move to the previous help prompt, press RET at any prompt. To exit from help, enter CTRL/Z.

NOTE

Help information employs the graphics conventions [ ] and { } (described at the front of this guide) to indicate command usage. Do NOT enter these graphics characters in your command lines.

2.3 Establishing a Session with a Service

To find the names of all the services available to you, enter the SHOW SERVICES command (see Section 5). To initiate a session, enter the CONNECT command with the name of the service you want (for example, SALES).

```
Local> CONNECT SALES
```

Some services may prompt you for a password. You must enter the password established by the server manager before the session can be established. To preserve security, the password is not echoed on your terminal when you type it.

```
Password> password
```

If you fail to enter the correct password, the server may prompt you for it again. Reenter the password or enter CTRL/Z to return to the local prompt.

Once your connection is established, you remain in service mode until you log out from the service or until you switch to local mode while maintaining your service session. If the service terminates the session, a message is displayed and your terminal returns to local mode (see the exception described in Section 2.8).

2.4 Returning to Local Mode from Service Mode

To return to local mode without ending your session, press BREAK or use a local switch character (see Section 10.1).

ATTENTION: DIAL-IN MODEM USERS

Check with your server manager to see whether you are connected to the server by a dial-in modem that interprets BREAK as a command to end the dial-in connection to the server. If so, your server manager can suggest a local switch character to use in place of BREAK when you want to return to local mode. You can find the LOCAL SWITCH character in the characteristics display produced by the SHOW PORT command (see Section 5).

2.5 Resuming Your Current Session from Local Mode

To resume your current session, enter RESUME.

```
Local> RESUME
```

When you reenter a session, the server announces the service name and the session number (unless you have disabled VERIFICATION on your port — see Section 10.6).

2.6 Ending a Session

To end the current session while in local mode, enter DISCONNECT.

```
Local> DISCONNECT
```

Some services permit you to log out from the service node while in service mode. This also ends the current session and returns you to local mode.

2.7 Logging Out of the Terminal Server

To log out from the server, enter the LOGOUT command.

```
Local> LOGOUT
```

LOGOUT disconnects all your existing sessions. If the line between your terminal and the server port is controlled by a modem, the server forces the modem to disconnect the phone when you log out.

2.8 Automatic Failover

DECserver 200 provides a failure-recovery function, called automatic failover, that takes over if your current session is disrupted because the service node fails. Automatic failover responds if the service you are using is offered by two or more service nodes (as with a VAXcluster service). Automatic failover attempts to connect you to the same service on an alternative service node. When automatic failover is successful, you may receive the log-in prompt of another service node.

If failover is unsuccessful or if the service is offered on only one node, and if the AUTOCONNECT characteristic is ENABLED on your port (see Section 10.3), the server continues to attempt to reconnect your service.

You can interrupt failover recovery attempts or the autoconnect function by pressing BREAK to return to local mode.

3 MULTIPLE SESSIONS

You can have more than one session in progress at a time. You can have sessions with different services and multiple sessions with one service. However, you can use only one session at a time.

The number of sessions that your port can support at one time is determined by the server manager. If you try to exceed your session limit, the server displays an error message, and you must disconnect a session before you can create a new one.

3.1 Establishing Additional Sessions

To establish another session, return to local mode by pressing (BREAK) or by using a local switch character. Then enter another CONNECT command with the name of the service you want (for example, MICRO).

```
Local> CONNECT MICRO
```

3.2 Resuming Noncurrent Sessions from Local Mode

Each session on your port has a unique session number. To display your session list, enter SHOW SESSIONS.

```
Local> SHOW SESSIONS

Port 8:  Les Davies      Local Mode    Current Session 3
- Session 1: Connected   Interactive   SALES  (VMS2)
- Session 2: Connected   Interactive   VMS2
- Session 3: Connected   Passall       MICRO
- Session 4: Connected   Interactive   VMS2
```

Your current session (the last one used) is noted at the top. The name of the service node is shown in parentheses after the service name if the names are different.

In the sample list above, Passall means that the session was set to ignore switch and control characters (see Section 9.1). Interactive means that these special characters are interpreted normally.

You can return to any session from local mode. To return to your current session, enter RESUME. To return to a specific session, enter RESUME SESSION and specify the session number.

```
Local> RESUME SESSION 1
```

To return to the session following the current one in the list, enter FORWARDS. To return to the session preceding the current one, enter BACKWARDS.

```
Local> FORWARDS

Local> BACKWARDS
```

In the previous example, where 3 is the current session, FORWARDS would take you to session 4 and BACKWARDS would resume session 2. When the current session is last on the list, FORWARDS resumes the session at the top of the list. Likewise, when the current session is at the top of the list, BACKWARDS resumes the session at the bottom.

3.3 Switching Sessions While in Service Mode

You can switch sessions while in service mode (without returning to local mode) by using forward and backward switch characters, which move you through sessions in the same order as the FORWARDS and the BACKWARDS commands. (See Section 10.1 for information on setting switch characters.)

NOTE

Switch characters are ignored if your session is set to PASSALL or to PASTHRU mode (see Section 9.1).

3.4 Disconnecting Noncurrent Sessions

You can disconnect any session from local mode. To end your current session (the last one you used), enter DISCONNECT. To end another session, enter DISCONNECT SESSION and specify the session number.

```
Local> DISCONNECT SESSION 2
```

To end all your sessions, enter DISCONNECT ALL.

```
Local> DISCONNECT ALL
```

4 CONNECTING TO SPECIFIC NODES AND PORTS

Use the CONNECT command to connect to a service at a specified service node and/or port. For example, a service named MICRO might include a number of PCs on several servers. You can connect to a particular PC by specifying the service node and/or port of the PC in a CONNECT command.

The full command syntax is described below, followed by several examples.

CONNECT [*service-name* [NODE *node-name*] [DESTINATION *port-name*]]

service-name	Specifies the service to which you wish to connect. You must specify a service name unless you want to connect to your preferred service (see Section 10.3).
NODE *node-name*	Specifies a node offering the service to which you wish to connect. Use SHOW SERVICE *service-name* (see Section 5) to display the nodes offering the specified service or ask your server manager. If you omit NODE, but specify DESTINATION, the server connects you to a port on the local server. If you omit both, the server connects you with a port on the highest-rated node offering the service.
DESTINATION *port-name*	Specifies a particular port to which you wish to connect (see your server manager for port names). If you do not specify a node name, you are connected to the port offering this service on the local server. If you omit this parameter, you are connected to the first available port.

When you use a NODE or a DESTINATION option, the node or port must offer the specified service and be currently available.

Protected services, such as those that offer dial-out modems, may require you to enter a password before the connection is allowed.

When a connection is completed, you receive the log-in prompt of the service (if it issues one). If a connection is not completed, the server returns an explanatory message.

NOTE

When you specify NODE or DESTINATION, the resulting session cannot be automatically failed over. However, if AUTOCONNECT is ENABLED (see Section 10.3), the server will attempt to reconnect your session.

Examples:

```
Local> CONNECT
```

Connects you to your preferred service (see Section 10.3).

```
Local> CONNECT MICRO
```

Connects you to the service MICRO on a free port on the highest-rated node offering the service.

```
Local> CONNECT MICRO  NODE SERVER2
```

Requests a connection to service MICRO at any port on service node SERVER2.

```
Local> CONNECT MICRO  PORT MICRO_7
```

Requests a connection to service MICRO at port MICRO__7 on the local server.

```
Local> CONNECT MICRO  NODE SERVER3  OBJECT MICRO_1
```

Requests a connection to service MICRO on node SERVER3 at port MICRO__1.

5 DISPLAYING INFORMATION

DECserver 200 stores characteristics and status information that you can display by using SHOW and LIST commands.

- SHOW commands display information from the current, operational database, which reflects any changes that you've made using SET commands. These displays also include current status information.
- LIST commands display information from the permanent database, as defined by the server manager or modified by your DEFINE PORT commands (see Section 10).

Depending on the entity for which you wish to display information, you can select one of several different display types, each of which contains different information.

- CHARACTERISTICS — Displays all definable characteristics of the specified entity.
- COUNTERS — Displays current counter values for the specified entity. Counter information is useful for evaluating network and server performance. (Ask your server manager for details.)
- STATUS — Displays detailed information about the specified entity.
- SUMMARY — Provides a one-line summary for the specified entity, including name, status, and ID.

The following pages list all nonprivileged display commands alphabetically by the entity being displayed. Command descriptions employ the graphics conventions described on page 2.

SHOW NODES — Displays selected information about network service nodes.

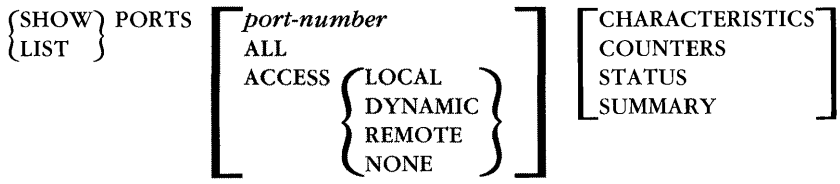
SHOW NODES [*node-name* | ALL] [COUNTERS | STATUS | SUMMARY]

SHOW NODES	Displays information about reachable nodes (whether or not they are connected) and about nodes whose availability is unknown to the server.
node-name	Displays information for the specified node only.
ALL	Displays information for both reachable and unreachable nodes and for nodes whose availability is unknown. Unreachable nodes are nodes with which communication has been lost or nodes that have notified the server that they cannot currently be reached.
COUNTERS	Displays current counter values for the specified node(s).

STATUS — Displays full information about the specified node(s), including name, address, ID, groups, services, and more. This is the default display when you specify a node name.

SUMMARY — Displays one-line summary information for the specified node(s), including node name, status, and ID. This is the default display when you do not specify a node name.

SHOW/LIST PORTS — Displays selected port information.



SHOW PORT — Displays operational information about the port(s).

LIST PORT — Displays permanent information about the port(s). You can LIST only CHARACTERISTICS and SUMMARY information.

port-number — Displays information about the specified port only. If omitted, information is displayed for your port.

ALL — Displays information about all ports on the server.

ACCESS — Displays information about all ports having the type of access you specify.

LOCAL	Normal local connection access.
DYNAMIC	Remote or local connection access.
REMOTE	Remote connection access only.
NONE	No access.

CHARACTERISTICS — Displays definable characteristics for the specified port(s) (default for single port display).

COUNTERS — Displays current counter values for the specified port(s) (valid for SHOW only).

STATUS — Displays full connection and session information for the specified port(s) (valid for SHOW only).

SUMMARY — Displays one-line summary information for the specified port(s), including port number, accessibility, status, and local services (default for ALL and ACCESS).

SHOW QUEUE — Displays information about entries in the server queue, including queue position, entry ID, service name, and port name.

SHOW QUEUE [ALL | NODE *node-name* | PORT *port-number* | SERVICE *service-name*]

ALL	Displays information for all queue entries on the server (default).
NODE *node-name*	Displays information for all queued connection requests from the specified node.
PORT *port-number*	Displays information for all queued connection requests that can be served by the specified local port.
SERVICE *service-name*	Displays information for all queue entries for the specified local service.

SHOW/LIST SERVER — Displays selected information about the server.

{SHOW | LIST} SERVER [CHARACTERISTICS | COUNTERS | STATUS]

CHARACTERISTICS is the default display type. COUNTERS and STATUS are valid with SHOW only.

SHOW/LIST SERVICES — Displays selected information about network services.

SHOW SERVICES [*service-name* | LOCAL | ALL] [CHARACTERISTICS | STATUS | SUMMARY]

LIST SERVICES [*service-name* | LOCAL] [CHARACTERISTICS]

SHOW SERVICES	Displays current information for network services currently available to your port.
LIST SERVICES	Displays permanent characteristics of local services available to your port.
service-name	Displays information for the specified service only.
LOCAL	Displays information for all services on the local server (available and unavailable).
ALL	Displays information for all services in the network that are authorized for your port (available and unavailable).

CHARACTERISTICS	Displays definable characteristics for the specified local service(s), including name, ID, ports, rating, and more. For remote services, only the name and the ID are displayed.
STATUS	Displays information about the specified service(s), including node names and their status, rating, and ID (default for SHOW with *service-name*). The service rating number shown for each node reflects that service node's capacity to accept new sessions for the specified service (a higher number indicates a higher capacity).
SUMMARY	Displays one-line summary information for the specified service(s), including name, status, and ID (default for SHOW without *service-name*).

SHOW SESSIONS — Identifies the specified port(s) by number and by user name and displays information about active sessions on the port, including session number, service, and data transparency mode (see Section 9.1).

SHOW SESSIONS [PORT *port-number* | ALL]

SHOW SESSIONS	Displays sessions for your port.
PORT *port-number*	Displays sessions for the specified port.
ALL	Displays sessions for all ports.

SHOW USERS — Displays port number, user name, port status, and service name of the current session for all ports logged in to the server.

SHOW USERS

6 TESTING YOUR PORT

You can test your port by using the TEST PORT command to request the server to send a stream of characters to your terminal. Look for irregularities in the repeating ASCII pattern to detect problems with your terminal or its connection to the server. Press any key to stop the display.

TEST [PORT] [COUNT *n*] [WIDTH *n*]

COUNT *n* Specifies the number of test lines to be sent (default: a continuous display).

WIDTH *n* Specifies the number of characters per line (range: 1 to 132; default: 72).

7 LOCKING YOUR TERMINAL

If you must leave your terminal temporarily unattended, you can protect existing sessions from other users by using the LOCK command.

```
Local> LOCK
```

If LOCK is not enabled on your server, you will get an error message.

If LOCK is enabled on your server, the server prompts you for a lock password. After you enter a 1-to 6-character password (which is not displayed on your terminal), the server asks you to enter it again for verification.

```
Lock Password> password   (not echoed)
Verification> password    (not echoed)
```

If your password entries do not match, the server issues an error message and returns to the local prompt. If your entries do match, the server displays a message followed by a prompt (Unlock Password>). Your terminal remains locked until you enter the same password again, returning you to local mode.

```
Local -019- Port n locked

Unlock Password> password   (not echoed)
Local>
```

If you forget your unlock password, ask your server manager to log out your port.

8 BROADCASTING A MESSAGE

If the server manager permits broadcasting and your port is not a secure port, you can use the BROADCAST command to send a message to another port on the server. Use the SHOW USERS command to display names and port numbers of server users.

You can set your port to not receive BROADCAST messages (see BROADCAST DISABLED in Section 10.6).

BROADCAST PORT *port-number "message-text"*

port-number	Specifies the number of the port to receive the message.
message-text	Specifies the text of the message (up to 115 characters). If you do not enclose your text within quotation marks, the message is transmitted in all uppercase.

9 FILE TRANSFER

You can transfer files from a PC on your server to another PC or host system on the network.

9.1 Setting Session Characteristics

During a session, the server normally intercepts your switch characters (see Section 10.1) and flow-control characters. You can use the SET SESSION command to prohibit the server from intercepting such characters during a file transfer.

Only your current session is affected by the SET SESSION command. (Be sure to switch into and out of the session involved in the file transfer just before you issue the command in local mode.) The mode setting remains in effect until you change it again or until you disconnect the session.

NOTE

If your interactive device is connected to a LAT service node that supports the LAT V5.1 protocol, session mode changes may be handled automatically by the file transfer utility from the service node.

SET SESSION { INTERACTIVE / PASSALL / PASTHRU }

INTERACTIVE	Causes the server to recognize all switch and flow control characters. Use INTERACTIVE as your normal session mode.
PASSALL	Causes the server to ignore all switch and flow control characters. Use PASSALL for all binary file transfers.
PASTHRU	Causes the server to ignore switch characters but to recognize flow control characters. Use PASTHRU for ASCII file transfers.

9.2 Tips for Successful File Transfers

When performing file transfers from one PC (personal computer) to another PC that is connected to a server, take the following steps to avoid possible problems.

Check Access to the Target PC

The following conditions must exist on the target PC in order for a connection to be made:

- The PC must be offered as a service.
- The server port of the PC must have access set to DYNAMIC or to REMOTE.
- If the PC has DYNAMIC access, it must be logged out of the server.

If any of these conditions are not met, ask your server manager for help.

Check Speed, Parity, and Character Size Settings

Your port transmission speed, parity, and character size settings must match those of the PC.

File transfer programs for some PCs may use defaults for parity and/or character size that differ from the values used when the PC is in terminal emulation mode. In such cases, you must either change the default values to match those of your port, or you must set your port characteristics to match the defaults (see Section 10.5).

Disable Interrupts

Ask your server manager to disable interrupts on the server port of a target PC to prevent interruptions that may occur if someone presses BREAK on the target PC's keyboard.

Monitor Overrun Errors

Before and after a file transfer involving a PC, use the SHOW PORT COUNTERS command from the PC to display the number of overrun errors. Overrun errors may occur when the SET SESSION command disables flow control. An increase in the number of overrun errors during a transfer indicates the loss of one or more bytes of data.

If you experience excessive overruns, you can reduce the speed of the server port and the terminal (see Section 10.5). For example, speeds of 4800 BPS and under are less likely to create overruns.

9.3 File Transfer Procedure

The file transfer procedure is outlined below.

1. Enter a CONNECT command to establish a session with the PC (see Section 4).
2. Use your local switch character (see Section 10.1) to switch to local mode. Enter the appropriate SET SESSION command to prepare for either a binary or an ASCII file transfer.
3. Initiate your PC's file transfer utility with the appropriate PC command.
4. Use the RESUME command to return to your session with the PC, then execute the file transfer.
5. When you complete the file transfer, enter local mode and type SET SESSION INTERACTIVE. Then continue the session with the PC or perform other tasks.

10 SPECIFYING PORT CHARACTERISTICS

You can change many of the operating characteristics for your port to modify the port's interaction with the server and the service nodes.

There are two sets of operating characteristics: *permanent* and *operational*. When you log in, the set of operational characteristics is a duplicate of the permanent characteristics. However, using the SET or the DEFINE PORT commands, you can change some of these characteristics.

- Use the SET PORT command to change *operational* characteristics for the current session(s). These changes remain in effect until you change them again or until you log out of your port.
- Use the DEFINE PORT command to change *permanent* characteristics. These are stored by the server and become effective the next time you log into your port. They remain in effect for all future sessions until you change them again with another DEFINE PORT command.

{SET / DEFINE} [PORT] *characteristic* [*characteristic(s)*]

You can specify multiple characteristics separated by spaces and/or commas, up to a maximum of 132 characters per command line.

Port characteristics that you can specify are described by function on the next few pages and are summarized with the commands at the end of this book. These sections employ the graphics conventions described on page 2.

NOTE

In this book, factory-set defaults for port characteristics are shown in **BOLD**; however, your databases may contain different settings if you or your server manager have changed values using SET/DEFINE PORT commands. Use SHOW/LIST PORT to display existing port characteristics (see Section 5).

10.1 Setting Switch Characters

You can specify switch characters to use when you want to move between sessions without returning to local mode. You define a switch by equating it with a keyboard character.

Since a switch character is intercepted by the server and is not passed on to the service node, it must not have any other function in either local or service mode. It is best to use an undefined control character as a switch character. You specify a control character by pressing CTRL and a keyboard character simultaneously. (CTRL is displayed as ^ on your terminal.)

To set your own switch characters, specify your chosen characters in the following commands. Specify NONE to cancel a previously set switch character.

LOCAL Switch — Specifies a switch to move you from a session to local mode. If you are using a modem that interprets BREAK as a command to end the dial-in connection to the server, you (or your server manager) must specify a local switch character to use in place of BREAK when you want to return to local mode (see also Section 10.2).

{SET / DEFINE} [PORT] LOCAL [SWITCH] {*character* / **NONE**}

BACKWARD Switch — Specifies a switch to move you to the session preceding your current one in the session list. Operates like the BACKWARDS command (see Section 3.2).

{SET / DEFINE} [PORT] BACKWARD [SWITCH] {*character* / **NONE**}

FORWARD Switch — Specifies a switch to move you to the session following your current one in the session list. Operates like the FORWARDS command (see Section 3.2).

{SET / DEFINE} [PORT] FORWARD [SWITCH] {*character* / **NONE**}

10.2 Setting the BREAK Key

You can specify that the BREAK signal be sent to your current service session instead of to the server, or you can have it be ignored while you are in service mode. However, if you set BREAK to REMOTE or to DISABLED, you should set a local switch character to perform the local BREAK function (see Section 10.1).

NOTE

You can always use BREAK in local mode to stop local output.

{SET / DEFINE} [PORT] BREAK {**LOCAL** / REMOTE / DISABLED}

LOCAL	Sends BREAK to the server and causes you to return to local mode.
REMOTE	Sends BREAK to the service node during a session.
DISABLED	Causes the BREAK key to be ignored.

10.3 Connecting with a Preferred Service

You can specify a service as the one to which you automatically connect when you enter a CONNECT command without a service name. To do this, identify the preferred service by its service name and include the node and/or port names if desired. Specifying NONE instead of a service name cancels a previously established service name in the applicable database.

{SET / DEFINE} [PORT] PREFERRED {*service-name* / **NONE**} *(Continued on next line)*

[NODE {*node-name* / **NONE**}] [DESTINATION {*port-name* / **NONE**}]

You can direct the server to bypass local mode and to attempt to connect to your preferred service when you log in. When you enable the autoconnect feature, the server attempts the connection until it is successful or until you switch to local mode using CTRL/BREAK or your local switch character (see Section 10.1).

{SET / DEFINE} [PORT] AUTOCONNECT {ENABLED / **DISABLED**}

Regardless of whether you have a preferred service, when autoconnect is enabled, your port automatically attempts to reconnect to a service that is disconnected abnormally (see Section 2.8).

IMPORTANT

You must use DEFINE if you want the preferred service and autoconnect features to be effective when you log in to the server again.

10.4 Specifying Port, Terminal, and User Identifiers

TYPE — Specifies the local mode display type for your port.

{SET / DEFINE} [PORT] TYPE {ANSI / HARDCOPY / **SOFTCOPY**}

ANSI	Specifies ANSI-standard video display with ANSI escape support (includes Digital personal computers and the VT100 and VT200 series of terminals).
HARDCOPY	Specifies format for paper-output terminals, such as the LA36 and LA120. Can be used on any video terminal, but displays deleted characters between backslashes (\) rather than erasing them.
SOFTCOPY	Specifies standard video display without ANSI escape support, such as for a VT52.

GROUPS — Specifies ALL or a subset of the port's authorized group codes to be included (or excluded) from displays of nodes and services. (See your server manager for the group codes authorized on your port.)

SET [PORT] GROUPS {*group-list* / **ALL**} [**ENABLED** / DISABLED]

Group list entries can consist of individual numbers separated by commas, ranges of numbers connected by hyphens, or a combination of both; ranges of numbers must be stated in ascending order. If you do not include ENABLED or DISABLED, the group list you specify replaces any existing group list; if you include ENABLED or DISABLED, the group code(s) you specify modify the existing group list accordingly. For example, the following command removes groups 2, 4, 5, 6, and 8 from the current group list.

```
Local> SET GROUPS 8, 2, 4-6 DISABLED
```

LOSS NOTIFICATION — Specifies whether or not a beep is sounded on your terminal when a character is typed in and lost due to an error or to an overrun.

{SET / DEFINE} [PORT] LOSS [NOTIFICATION] {**ENABLED** / DISABLED}

USERNAME — Specifies a temporary or a permanent user name for the port. Use SET to change your user name until you log out of the server (or until you change your name again). If you are the only user on your port, you can use DEFINE to specify a permanent user name to be associated with the port; this causes the server to no longer prompt for a user name during log in.

The user name can be 1 to 16 ASCII characters and must be enclosed in quotation marks.

{SET / DEFINE} [PORT] USERNAME "*user-name*"

To clear a previously defined user name and to cause the user name prompt to reappear, enter this command with a blank *user-name* field (that is, DEFINE PORT USERNAME " ").

10.5 Specifying Data Transmission Characteristics

For successful data transmission, the characteristics of your terminal and port that affect character size, speed, parity, and flow control must be identical. If you use SET PORT to change the CHARACTER SIZE, PARITY, and SPEED characteristics, you must also change the corresponding settings on your terminal in order to communicate with the server.

CHARACTER SIZE — Specifies the number of data bits in the characters exchanged between your port device and the server port.

{SET / DEFINE} [PORT] CHARACTER [SIZE] {7 / **8**}

PARITY — Specifies data parity type for your port.

{SET / DEFINE} [PORT] PARITY {EVEN / MARK / **NONE** / ODD}

NOTE

If the autobaud feature is enabled on your port (ask your server manager), it works only with a character size of 8 bits and no parity or 7 bits and even parity.

SPEED — Specifies port speed in bits per second. Possible values are: 75, 110, 134, 150, 300, 600, 1200, 1800, 2000, 2400, 4800, 9600 (default), and 19200. If your server manager has enabled the autobaud facility, your port will automatically match its speed to that of your terminal.

{SET / DEFINE} [PORT] [INPUT / OUTPUT] SPEED *speed*

You can change the speed in one direction by specifying INPUT (the speed from your terminal to the server) or by specifying OUTPUT (the speed from the server to your terminal).

FLOW CONTROL — If enabled, specifies the type of flow control used by DECserver 200 to control data transfer to and from your port. See your server manager for more details on flow control.

{SET / DEFINE} [PORT] FLOW [CONTROL] {CTS / DSR / **XON** / DISABLED}

CTS	Specifies RTS/CTS modem signal flow control.
DSR	Specifies DTR/DSR modem signal flow control.
XON	Specifies XON/XOFF in-band flow control (default).
DISABLED	Specifies no flow control.

You can enable or disable flow control in a single direction by specifying INPUT (when flow is from your port to the server) or by specifying OUTPUT (when flow is from the server to your port). If you specify no direction, the specified flow control applies in both directions.

{SET / DEFINE} [PORT] {**INPUT** / **OUTPUT**} FLOW [CONTROL] {**ENABLED** / DISABLED}

To revert from one-way flow control to full flow control, specify the ENABLED option for the direction of flow that was previously DISABLED. To disable all flow control, use the SET/DEFINE FLOW DISABLED command.

10.6 Specifying Message Reception

You can control the reception of some messages that your port receives from the server and its users.

AUTOPROMPT — Specifies whether or not a service node's log-in prompt appears when you start a session with a service.

{SET / DEFINE} [PORT] AUTOPROMPT {**ENABLED** / DISABLED}

BROADCAST — Specifies whether or not your port receives local BROADCAST messages from other ports.

{SET / DEFINE} [PORT] BROADCAST {**ENABLED** / DISABLED}

MESSAGE CODES — Specifies whether or not a 3-digit message code appears with server status messages and error messages.

{SET / DEFINE} [PORT] MESSAGE [CODES] {**ENABLED** / DISABLED}

VERIFICATION — Specifies whether or not DECserver 200 informational messages are displayed at your terminal when you connect, disconnect, or switch sessions.

{SET / DEFINE} [PORT] VERIFICATION {**ENABLED** / DISABLED}

11 COMMAND SUMMARY

Commands are listed alphabetically and are illustrated using the graphics conventions described on page 2. For more information, use the page references in the right margin. This summary is also available on the pocket-sized *DECserver 200 User's Reference Card.*

Page

BACKWARDS 10

BROADCAST PORT *port-number "message-text"* 19

CONNECT [*service-name* [NODE *node-name*] [DESTINATION *port-name*]] 12

DISCONNECT [SESSION *n* | ALL] 11

FORWARDS 10

HELP [TUTORIAL | *topic* [*subtopic* [*subtopic*]]] 6

LOCK 18

LOGOUT 8

RESUME [SESSION *n*] 10

{SET | DEFINE} [PORT] *characteristic* [*characteristic(s)*] 22

(Port characteristics are summarized in Section 11.1.)

SET SESSION {INTERACTIVE | PASSALL | PASTHRU} 20

SHOW NODES [*node-name* | ALL] [COUNTERS | STATUS | SUMMARY] 14

{SHOW | LIST} PORTS [*port-number* | ALL | ACCESS {LOCAL | DYNAMIC | REMOTE | NONE}] [CHARACTERISTICS | COUNTERS | STATUS | SUMMARY] 15

(COUNTERS and STATUS are valid for SHOW PORTS only.)

SHOW QUEUE [ALL | NODE *node-name* | PORT *port-number* | SERVICE *service-name*] 16

Page

{SHOW / LIST} SERVER [CHARACTERISTICS / COUNTERS / STATUS] 16

(COUNTERS and STATUS are valid for SHOW SERVER only.)

{SHOW / LIST} SERVICES [*service-name* / LOCAL / ALL] [CHARACTERISTICS / STATUS / SUMMARY] 16

(ALL, STATUS, and SUMMARY are valid for SHOW SERVICES only.)

SHOW SESSIONS [PORT *port-number* / ALL] 17

SHOW USERS 17

TEST [PORT] [COUNT *n*] [WIDTH *n*] 18

11.1 Summary of User-Definable Port Characteristics

SET/DEFINE PORT characteristic options are listed alphabetically below and are illustrated using the graphics conventions described on page 2. For details, use the page references in the right margin. This summary is also available on the pocket-sized *DECserver 200 User's Reference Card.*

Page

AUTOCONNECT { ENABLED / **DISABLED** } 24

AUTOPROMPT { **ENABLED** / DISABLED } 27

BACKWARD [SWITCH] { *character* / **NONE** } 23

BREAK { **LOCAL** / REMOTE / DISABLED } 23

BROADCAST { **ENABLED** / DISABLED } 27

CHARACTER [SIZE] { **7** / **8** } 25

FLOW [CONTROL] { CTS / DSR / **XON** / DISABLED } 26

{ **INPUT** / **OUTPUT** } FLOW [CONTROL] { **ENABLED** / DISABLED } 26

FORWARD [SWITCH] { *character* / **NONE** } 23

GROUPS { *group-list* / **ALL** } [**ENABLED** / DISABLED] (Valid for SET PORT only) 25

LOCAL [SWITCH] { *character* / **NONE** } 23

LOSS [NOTIFICATION] { **ENABLED** / DISABLED } 25

MESSAGE [CODES] { **ENABLED** / DISABLED } 27

PARITY { EVEN / MARK / ODD / **NONE** } 26

	Page
PREFERRED {*service-name* / **NONE**} [NODE {*node-name* / **NONE**}] [DEST {*port-name* / **NONE**}]	24
{INPUT / OUTPUT} SPEED *speed* (Default: 9600)	26
TYPE {ANSI / HARDCOPY / **SOFTCOPY**}	24
USERNAME "*user-name*"	25
VERIFICATION {**ENABLED** / DISABLED}	27

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