DECserver 90TL

Owner's Manual

CAUTION   The DECserver 90TL is not intended for use with telecommunications networks or with Integrated Services Digital Network (ISDN) devices.

ACHTUNG   Der DECserver 90TL darf nicht als Teil eines Fernmeldenetzwerks oder zusammen mit ISDN[1] -Geräten betrieben werden.
(^{1} Integrated Services Digital Network)

ATTENTION   Le DECserver 90TL n'a pas été conçu pour fonctionner avec des réseaux de télécommunication ou des modules ISDN (Integrated Services Digital Network).

A VISO IMPORTANTE   El DECserver 90TL no ha sido diseñado para su uso con redes de telecomunicaciones ni dispositivos de Red Digital Servicios Integrados (ISDN).

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About This Manual

This manual describes the procedures used to install, operate, manage and troubleshoot the DECserver™ 90TL Ethernet communications server.

Organization

This manual contains the following five chapters and two appendixes:

Chapter	Description
1	Provides an overview of the communications server features.
2	Describes selected methods of communications server installation.
3	Describes basic communications server management.
4	Describes basic communications server operation.
5	Describes troubleshooting techniques.
Appendix A	Describes communications server specifications.
Appendix B	Provides a list of reference documentation and ordering information.

For additional information on the communications server software, refer to the DECserver 90TL software installation documentation available for this product.

Conventions

The following are conventions used in this manual.

Convention	Meaning
Special type	This special type in examples indicates system output or user input.
UPPERCASE	Uppercase letters in command lines indicate keywords that must be entered. You can enter keywords in either uppercase or lowercase. You can abbreviate command keywords to the smallest number of characters that distinguish the keyword to the communications server.
lowercase italics	Lowercase italics in command syntax or examples indicate variables for which either the user or the system supplies a value.
BOLD	In summaries of characteristics, bold type indicates default values.
{ }	Braces in command syntax statements indicate that you must specify one of the enclosed values. Do not type the braces.
[ ]	Square brackets in command syntax statements indicate that the enclosed value(s) are optional. You can enter none or one. Default values apply for unspecified options. Do not type the brackets.
Vertical list of options	In command syntax statements, a vertical list of options not enclosed within braces or brackets or parentheses indicates that you may specify none or any number of the options. Unspecified options take a default value.
/	A slash between command verbs indicates related, alternative commands or options. For example, SET/DEFINE/CHANGE PORT refers to the SET PORT, DEFINE PORT, and CHANGE PORT commands.
Ctrl/*x*	Hold down the *Ctrl* key and press the key specified by *x*. The communications server displays this key combination as ^*x*.

1

Overview

This chapter describes hardware, software, and network features of the DECserver™ 90TL Ethernet communications server, referred to as "communications server" throughout this document.

Features

The communications server supports the following standard features:

- Rack mountable in the DEChub™ 90 Ethernet backplane

- Concurrent LAT and Telnet support

- Ready-in/ready-out or XON/XOFF flow control

- Manageable by remote console from VMS™, ULTRIX™, or UNIX™ based systems and Terminal Server Manager (TSM) software

- Command line recall and editing

- Domain Name System

- Supports Open DECconnect™

- Port Characteristics
  —1 ThinWire port
  —8 asynchronous ports
  —6-wire control signaling
  —Individual port status LEDs
  —8-wire modular jack - MJ8
    (also known as RJ45)

- Protocols supported
  —Local Area Terminal (LAT)
  —Telnet
  —Boot (BOOTP)
  —Serial Line Internet (SLIP)
  —Management Operations (MOP)
  —Multisession (TD/SMP)
  —Trivial File Transfer (TFTP)
  —Simple Network Management
    (SNMP)

Overview

Figure 1–1 shows the communications server and calls out its features.

Figure 1–1 DECserver 90TL Hardware
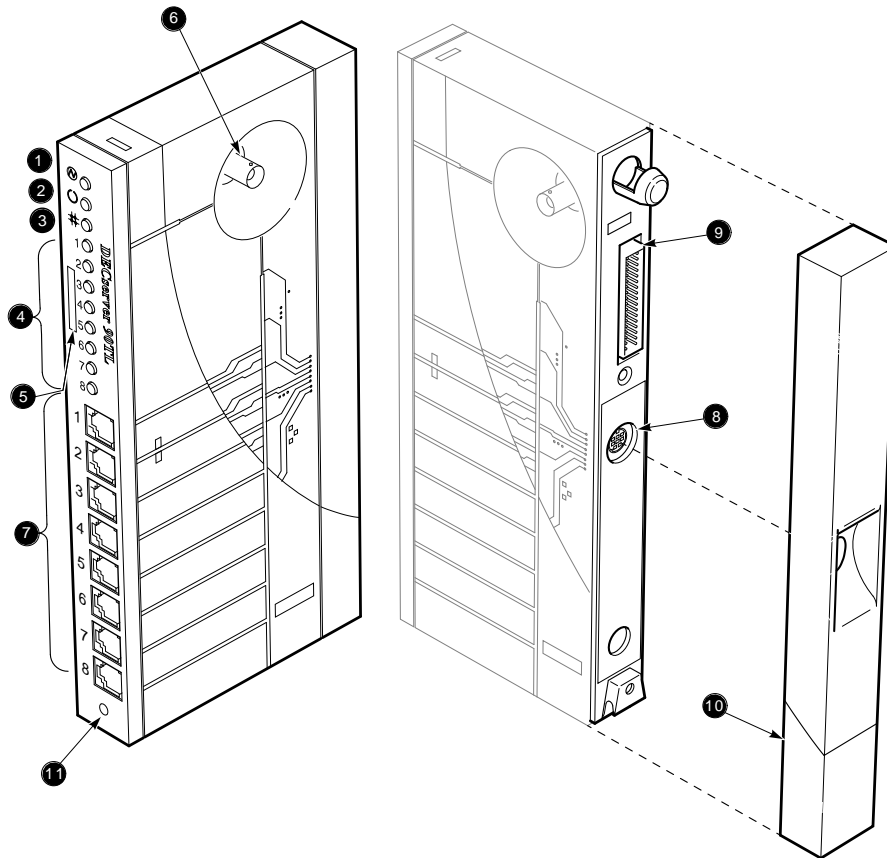
LJ-01567-TI0

❶ **Power Indicator** – Lights and remains lit when +5 volts is supplied to the communications server.

❷ **Self-Test OK Indicator** – Lights when the communications server has successfully completed the ROM-based self-tests.

❸ **Network OK Indicator** – Lights when the communications server is connected to an appropriately terminated network. Blinks while the communications server is loading or dumping software.

❹ **Port Activity Indicators** – Consists of eight LEDs, each corresponding to a device port on the communications server. Each port activity LED will light when the associated port is in use by the connected device. These LEDs blink when port activity is detected and continue blinking until port data transfer has ceased.

❺ **Ethernet Address Display** – Displays unique addresses of physical devices on the network in a small window on the communications server.

❻ **Network Connector (BNC)** – Connects the communications server to the ThinWire network. Not used in DEChub 90 configurations.

❼ **Port Connectors (MJ8)** – Connects the peripheral devices to the communications server.

❽ **Power Connector** – Connects the power source to the standalone communications server. Not used in DEChub 90 configurations.

❾ **Backplane Connector** – Connects the communications server power source and network interface to the backplane in DEChub 90 configurations.

❿ **Back Cover** – Shields the backplane connector and mounting assembly when not used in a DEChub 90 configuration.

⓫ **Reset Switch** – Resets the communications server to the factory default characteristics.

Description

The DECserver 90TL Ethernet communications server is a multisession communications server designed to operate in multivendor environments. The communications server can be configured as a standalone device or as a module in the DEChub 90 Ethernet backplane.

The DEChub™ 90 is a multifunction Ethernet backplane that provides mounting, power, and connections for up to eight Workgroup LAN products.

The communications server downline loads software using MOP or BOOTP protocols.

The communications server is attached to a ThinWire Ethernet network and up to eight asynchronous devices. The communications server allows any attached asynchronous device to establish sessions with services offered either on the network or on other attached devices. The communications server also enables network hosts to establish sessions with devices attached to the communications server. The communications server allows sessions to be established using either LAT or Telnet protocols.

Communications server management functions are enabled and monitored through a host system using a remote console facility, Simple Network Management Protocol (SNMP) or a terminal connected to the communications server.

Figure 1–2 shows communications server configuration in a ThinWire Ethernet Local Area Network (LAN).

Figure 1–2   DECserver 90TL Connection
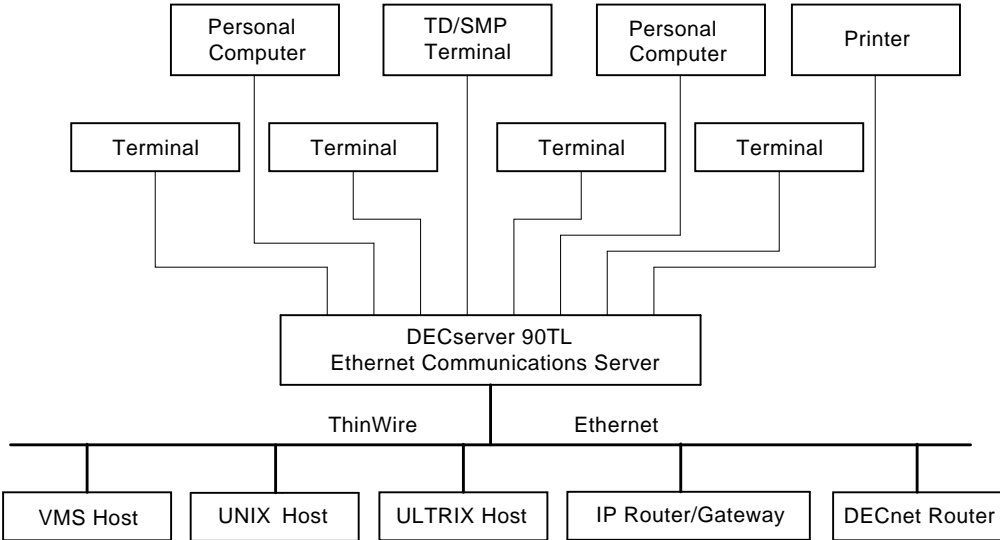
LJ-01615-TI0

2
Installation

The communications server can be installed as a standalone device - on a tabletop or mounted to a wall - or added to the DEChub 90 Ethernet backplane.

Before beginning the hardware installation ensure that the software has been properly installed on a load host. Refer to the appropriate DECserver 90TL software installation documentation.

Once the communications server software has been properly installed on a load host, complete the installation by performing the following tasks:

* Install the communications server hardware

* Run the communications server self-tests

* Load the communications server software

* Verify operation of the communication server ports

Tabletop Installation

To install the communications server (standalone) as a tabletop device, follow the steps below.

1. Connect a ThinWire cable, T-connector, and terminator to the BNC connector on the communications server as shown in Figure 2-1. Connect the other end of the ThinWire cable to an active ThinWire outlet such as a faceplate or other appropriate network device.

2. Optionally, attach a device configured to the settings listed in Table 2–2 to the console port (default is port 1) using a cable terminated with an MJ8-compatible (RJ45) plug.

3. Plug the DC power connector into the power inlet on the communications server.

4. Plug the communications server power supply cord into an AC wall outlet and verify that the power LED on the communications server lights.

5. Refer to "Running Self-Tests" in this chapter, and verify that the communications server has successfully run all of the self-tests.

_____ **Note** _____

An illustration of the communications server hardware and descriptions of the LED indicators are provided in the "Overview" section of this manual.

_____

Figure 2–1 shows the communications server installed as a standalone device.

Figure 2–1   Standalone Configuration
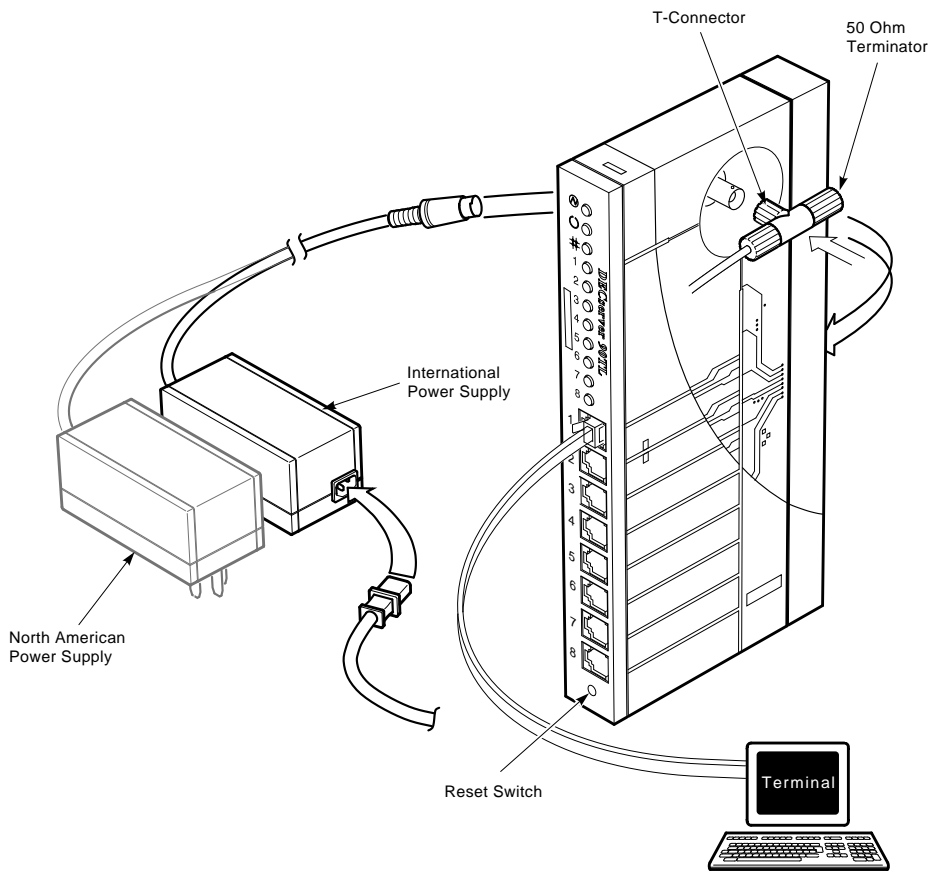
LJ-01568-TI0

Wallmount Installation

To mount the communications server on a wall, follow the steps below.

1. Remove the back cover (refer to Figure 2–2).

    a. Insert a small screwdriver into the top mounting hole of the cover.

    b. Lift up the latch on the unit's back cover.

    c. Pull the top of the cover away from the unit and down to remove it.

2. Use the back cover as a template and position each of the (#8 1-inch) mounting screws (not supplied).

3. Secure the mounting screws.

4. Replace the back cover on the unit.

5. Connect a ThinWire cable, T-connector, and terminator to the BNC connector on the communications server as shown in Figure 2-1. Connect the other end of the ThinWire cable to an active ThinWire outlet such as a faceplate or other appropriate network device.

6. Plug the DC power connector into the power inlet on the communications server.

7. Mount the unit to the wall.

8. Optionally, you can attach a device configured to the settings listed in Table 2–2 to the console port (default is port 1) using a cable terminated with an MJ8-compatible (RJ45) plug.

9. Plug the power supply into an AC wall outlet to apply power.

10. Verify that the power LED is lit and that the communications server is running the self-test.

11. Refer to the "Running Self-Tests" section of this chapter.

Figure 2–2 shows how to remove the back cover.

Figure 2–2 Removing the Back Cover
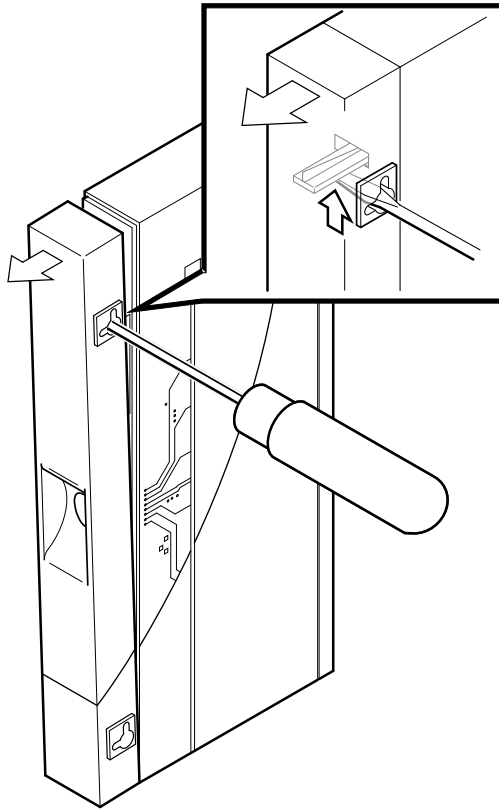
LJ-00320-TI0

Backplane Installation

To install the communications server in the DEChub 90 Ethernet backplane, follow the steps below.

1. Remove the back cover (refer to Figure 2–2).

2. Place the lower mounting tab, located on the back of the communications server, in the appropriate mounting slot on the backplane (refer to Figure 2–3).

3. Rock the unit into place. An audible click is heard when the device is securely latched in place.

4. Make sure the power unit is secured in the backplane.

5. Secure a ThinWire connection or terminator on the backplane BNC connector.

6. Verify that the power LED is lit and that the communications server is running the self-tests.

7. Optionally, you can add a terminal to the console port (default is port 1) by attaching a cable terminated with an MJ8-compatible (RJ45) plug and configuring the console terminal port settings as listed in Table 2–2.

8. Refer to the "Running Self-Tests" section of this chapter.

_____ **Note** _____

You can install or replace (hot-swap) the communications server while the backplane is powered-up and connected to the network.

_____

Figure 2–3 shows the communication server backplane installation.

Figure 2–3   Backplane Installation
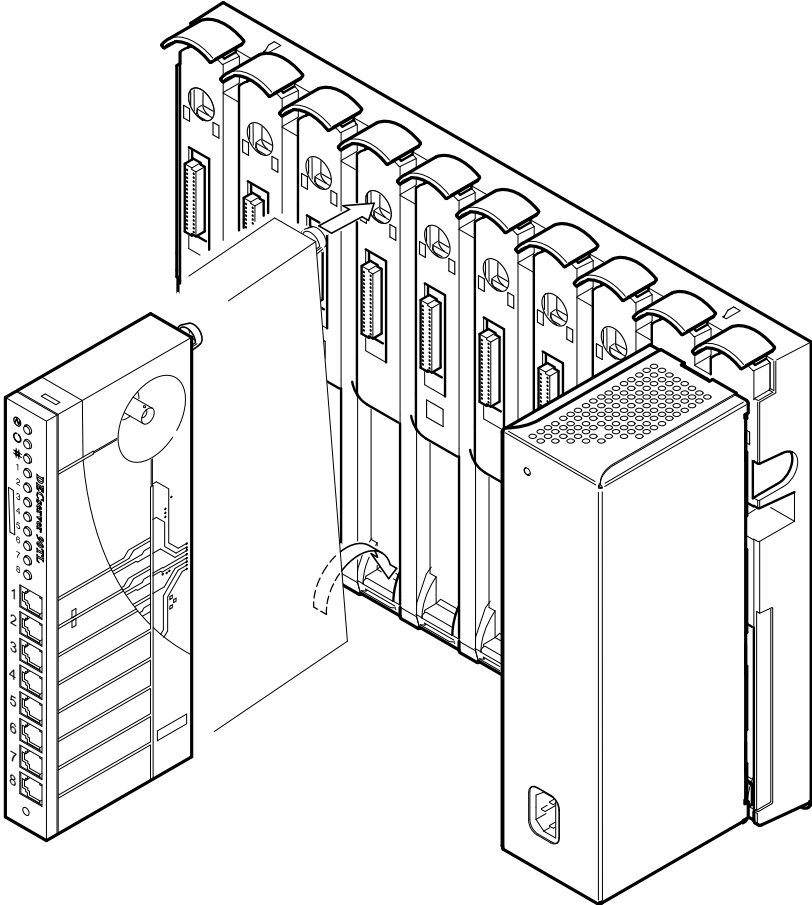
LJ-01519-TI0

Running Self-Tests

The communications server runs a series of self-tests on powerup and reports test status through the communications server LEDs. Refer to Figure 1-1.

Ensure that the ThinWire network connection to the BNC connector, or to the DEChub 90, is properly terminated, or connected to an active network. Failure to do this will cause the self-test to fail the network loopback test.

The following list describes the behavior of the LEDs during self-test.

- Initially, all LEDs light briefly, then extinguish, leaving only the power LED lit.

- The Port Activity LEDs light one by one and remain lit, as the communications server completes each segment of self-test. All eight LEDs are lit once the tests have run successfully.

- After successful completion of the self-tests, the Self-Test OK LED is lit, and the eight port LEDs are extinguished.

To reset the communications server to the factory-default settings, press the Reset switch after the Port 7 LED lights, but before the Port 4 LED lights during self-test. Keep the reset switch depressed until the Network OK and Self-Test OK LEDs flash rapidly. This indicates that the communications server has been reset to factory settings.

Note

If a self-test pattern halts, an error condition has been detected. Refer to the chapter on "Troubleshooting" in this manual.

Loading Server Software

Once the self-tests have completed, the communications server automatically begins the boot sequence to load the software. Software is downline loaded to the communications server from a VMS, ULTRIX, or MS–DOS™ load host using the MOP or BOOTP protocol.

If a device is attached to the console port, status messages can be displayed while the boot sequence is running. Status messages indicate the Ethernet address of the communications server, the name of the load image it is looking for, and the stage of the boot process it is in.

During the boot sequence the communications server searches for a load host. The communications server tries both MOP and BOOTP protocols in a factory-defined order. Once the communications server finds a load host, it records the protocol and load host in its permanent database. Once a load host is found, status messages indicate the address of the load host and the protocol used.

If a valid load host cannot be found, the communications server remains in the boot sequence indefinitely, while continually searching for a load host. If this occurs, it may be indicating that the communications server software has not been properly installed on a load host. The boot sequence includes a wait period after each pass through all the boot protocols.

Upon startup of the boot process, the Network OK LED blinks continuously and the System OK LED remains lit indicating that communications server is attempting to load the software. Port Activity LEDs six, seven, or eight light to indicate which protocol is being tried by the communications server to downline load the software. Port activity LED five lights to indicate that all attempts to find a load host have failed and that the communications server will remain in a wait state for a designated period of time before trying again (refer to Table 2–1).

Table 2–1   LOAD and DUMP Protocols

Port LED	Meaning
5	Waiting to retry
6	Ethernet BOOTP load or dump
7	ISO 8802/3 MOP load or dump
8	Ethernet MOP load or dump

For detailed information on installing communications server software, refer to the appropriate DECserver 90TL software installation documentation.

The following settings represent default characteristics of the console port.

Table 2–2   Default Console Port Terminal Characteristics

Characteristic	Setting
Transmit speed	9600 baud
Receive speed	Receive = Transmit
Flow control	XON/XOFF
Data and parity	8 Bits, No Parity
Stop bits	1

Verifying Ports

To verify operation of each port, follow the steps below.

1. Connect a terminal to the port to be tested.

2. Press the Return key two or three times to set the (autobaud) operating speed of the port.

3. Type a character on the terminal and observe each Port Activity LED for a reaction. The Port Activity LED should turn on, indicating that the corresponding port is in use. Additional characters should then cause the LED to blink.

3
Management

This chapter describes the following steps to help you configure and manage the DECserver 90TL Ethernet communications server:

- Planning for unit setup.

- Configuring the unit for use in your network.

- Setting port characteristics.

- Connecting interactive devices to the unit.

- Connecting noninteractive devices to the unit.

- Offering services to the network (LAT or TCP/IP).

- Configuring ports for SLIP access by IP hosts.

- Establishing security.

- Using management tools.

- Using the databases.

To perform these steps, full system privileges are required. Refer to "Configuring and Maintaining a Communications Server on a Network" in *Ethernet Communications Server Management* for details on system privileges.

For a complete list of all factory default settings, refer to "Tasks and Concepts" in *Ethernet Communications Server Management*.

Setup Planning

Before you begin configuring the communications server, you should determine the type of network in which you plan to use the communications server; the types of devices you plan to attach to the communications server such as printers, PCs, terminals, and computers; how you plan to use these devices (as private resources or public network-wide resources); and the ports you plan to assign to each device (one through eight).

Specifically, you should consider the following:

1. Determine if you are using your server to access LAT, TCP/IP, or both.

   The communications server is preconfigured for LAT access, and no configuration is required on your part. If you are also accessing TCP/IP, additional configuration is required as described later in this chapter.

2. Determine the printers, terminals, PCs, and computers you plan to attach to the communications server, and decide which devices you want to be used as network resources.

3. Determine if you want to include name servers, gateways, or both in your network. If you include them, they require configuration as described later in this chapter.

4. Determine the type of security features you want to implement. The communications server lets you restrict access to specific server features, dedicate ports to specific network services, set inactivity timeout features, and specify other security considerations. Setting specific security features is described later in this chapter.

A complete list of all configuration and management tasks are listed in "Tasks and Concepts" in *Ethernet Communications Server Management*.

Connecting the Communications Server to Your Network

You can use the communications server in a LAT network, in a TCP/IP network, or in a network that includes both protocols.

To issue commands to the communications server, connect a terminal into port one of the communications server; it is preconfigured to be the console port. Press Return two or three times and the communications server responds by displaying a prompt on the terminal. It is convenient to use this terminal to perform all subsequent configuration described in this chapter.

Management tasks described in this chapter require the user to be in privileged mode. To enter privileged mode type:

```
Local> SET PRIVILEGED
```

Respond with the privileged password. The factory default value for the privileged password is SYSTEM.

LAT Network

If you are using the communications server in a DECnet network using the LAT protocol, **no configuration is required**. The communications server is preconfigured to use the LAT protocol. You can, however, customize various communications ports characteristics such as the following:

- Change the authorized LAT group codes
- Change the communications server name
- Change the communications server number
- Change the identification string
- Set the circuit timer to optimize system performance
- Set the keepalive timer and retransmit limit to optimize system performance

For details, refer to "Configuring and Maintaining a Communications Server on a Network" in *Ethernet Communications Server Management*.

TCP/IP Network

If you are using the communications server in a TCP/IP network, perform the following steps:

1. The communications server provides a default subnet mask, based on the class of internet addresses used. The default for class A is 255.0.0.0, the default for class B is 255.255.0.0, and the default for class C is 255.255.255.0.

   If you do not want to use the default, change it using the following command:

   ```
   Local> CHANGE INTERNET SUBNET MASK nnn.nnn.nnn.nnn
   ```

2. Change the internet address of the communications server using the following command:

   ```
   Local> CHANGE INTERNET ADDRESS nnn.nnn.nnn.nnn
   ```

Optionally you can perform the following:

- Add a database with names of internet gateway addresses
- Set the default domain of the communications server
- Add a database with names of internet name servers
- Add a database of commonly used internet hosts

For details, refer to "Configuring and Maintaining a Communications Server on a Network" in *Ethernet Communications Server Management*.

Server Management Options

Optionally, you can perform the following:

*   Specify the MOP maintenance password

*   Identify the console port

*   Specify the software image file name

*   Enable software dumps

*   Set up event logging at a DECnet system

For a detailed description of these topics, refer to "Configuring and Maintaining a Communications Server on a Network" in *Ethernet Communications Server Management.*

Setting Port Characteristics

You can set up devices on the communications server for local access, remote access, or both local access and remote access depending on the port characteristics you set. Local access is used for interactive devices such as terminals; remote access is used for noninteractive devices such as printers and computers.

There are several port characteristics you might want to consider before you begin connecting devices to the communications server ports. These port characteristics include:

- Port access

- Matching port and device characteristics

- Flow control

- Automatic logout

- Inactivity timers

- Additional port customization settings

To display the particular characteristics of a port, issue the following command:

```
Local> SHOW PORT port_number
```

For complete details on setting port characteristics, refer to "Configuring Devices on a Port" in *Ethernet Communications Server Management.*

Setting Port Access

Set access to a port to one of the following:

- LOCAL (default) - for interactive devices, such as terminals.

- REMOTE - for noninteractive devices, such as computers and printers.

- DYNAMIC - for devices that can be used in interactive and noninteractive mode, such as personal computers (PCs) and printers with keyboards.

- NONE - to prohibit access to the port.

The following shows how to set ACCESS to REMOTE for port 5:

```
Local> DEFINE PORT 5 ACCESS REMOTE
Local> LOGOUT PORT 5
```

Matching Port and Device Characteristics

You must ensure that the physical characteristics of the communications server port match the physical characteristics of the device you intend to attach to the port. Refer to the device specific documentation for information on matching device port characteristics.

Some of the most common physical characteristics include the following:

- AUTOBAUD

  Normally, you enable AUTOBAUD when configuring interactive devices and disable AUTOBAUD when configuring network resources, such as printers, modems, and computers. When AUTOBAUD is disabled, you should specify the settings for CHARACTER SIZE, PARITY, and SPEED characteristics. The following shows how to disable AUTOBAUD on port 5:

  ```
  Local> CHANGE PORT 5 AUTOBAUD DISABLED
  ```

  The AUTOBAUD characteristic functions only if the input and output speeds of the port device are the same and the device characteristics are one of the following:

  - CHARACTER SIZE 8 and PARITY NONE

  - CHARACTER SIZE 7 and PARITY EVEN

- CHARACTER SIZE

  Specify the device character size: 7 or 8 bits. Use CHARACTER SIZE 7 if the device supports 7-bit operation only. (Use the operator's guide for the port device to determine character size.) If you have AUTOBAUD enabled, the communications server automatically adjusts the character size.

The following shows how to set CHARACTER SIZE to 7 for port 5:

```
Local> CHANGE PORT 5 CHARACTER SIZE 7
```

The communications server software automatically formats the characters for transmission from the communications server to an internet host or LAT service.

- PARITY

  Determine the device parity:

  - EVEN: The communications server checks for an even number of bits per character.

  - ODD: The communications server checks for an odd number of bits per character.

  - MARK: The communications server checks for a set parity bit per character.

  - SPACE: The communications server checks for a cleared parity bit per character.

  - NONE: The communications server does no checking. Use this if parity is not supported on the port device.

  If you enable AUTOBAUD, the communications server automatically adjusts the parity. The following example shows how to change the parity to ODD on port 5:

  ```
  Local> CHANGE PORT 5 PARITY ODD
  ```

- SPEED

  Determine the device speed: 75, 110, 150, 300, 600, 1200, 1800, 2000, 2400, 4800, 9600, 19200, 38400, or 57600 bits per second (bps). The communications server automatically adjusts the port speed if you enable AUTOBAUD. The following example shows how to change the port speed to 2400 on port 5:

  ```
  Local> CHANGE PORT 5 SPEED 2400
  ```

  You can also use the optional keywords INPUT and OUTPUT to set up split-speed operations. For more information on the SET/DEFINE/CHANGE PORT SPEED command, refer to *Ethernet Communications Server Commands*.

- STOP BITS

  Determine the number of stop bits used by the device type: 1 or 2. You can use STOP BITS DYNAMIC to have the communications server automatically use 2 stop bits for port speeds up to and including 110 bps, and 1 stop bit for port speeds above 110 bps.

The following example shows how to change the STOP BITS to DYNAMIC on port 5:

```
Local> CHANGE PORT 5 STOP BITS DYNAMIC
```

- TYPE

Determine the device type: HARDCOPY (for hardcopy devices), ANSI (for ANSI standard video terminals), or SOFTCOPY (for non-ANSI video terminals). The TYPE characteristic is not used when the port has the ACCESS characteristic set to REMOTE. ANSI is the default and is necessary for command line recall and edit.

The following example shows how to change the TYPE to HARDCOPY on port 5:

```
Local> CHANGE PORT 5 TYPE HARDCOPY
```

_____ **Note** _____

In order to make new port characteristics take effect, you must logout the port after changing the characteristics. The Privileged mode allows you to do this from another device port on the communications server.

_____

Setting Flow Control

The FLOW CONTROL characteristic allows the communications server to start and stop data transfer between the port and the attached device. Using flow control ensures that no data is lost due to lack of buffering space. It does not apply to data between the communications server and a network resource.

You can also set flow control direction. For a particular session, the network resource might manage flow control between the port and the host.

The communications server can use the transmission-on (XON) and transmission-off (XOFF) control characters, data-set-ready (DSR) and data-terminal-ready (DTR) control signals, or no flow control at all. The following describes each type:

- XON and XOFF—This is the factory-set default. It is a form of in-band flow control since the XON and XOFF characters are transmitted as TxD and RxD data. XON/XOFF flow control is the type of flow control used with Digital Equipment Corporation terminals, personal computers, printers, and

  XON/XOFF flow control should be used when DSRLOGOUT, SIGNAL CONTROL or SIGNAL CHECK is enabled. The following example shows how to set XON/XOFF flow control on port 5:

  ```
  Local> CHANGE PORT 5 FLOW CONTROL XON
  ```

- DSR and DTR—This is a form of out-of-band flow control used with communication devices and printers. With DSR flow control, the communications server transmits data only when it detects DSR. If the communications server is receiving data too quickly from the port device, it turns off the DTR signal until it is able to accept more data. Similarly, if the device is receiving data too quickly from the communications server, it turns off the DSR signal until it is able to accept more data.

  Do not enable DSR flow control if DSRLOGOUT, SIGNAL CONTROL or SIGNAL CHECK is ENABLED. The following example shows how to set up DSR flow control on port 5:

  ```
  Local> CHANGE PORT 5 FLOW CONTROL DSR
  ```

Setting Automatic Logout Characteristics

You can use various characteristics to automatically log out the port when
the device attached to the port is powered off or when there is no activity for
a specified period of time. The automatic logout characteristics include the
following:

- DSRLOGOUT
- LONGBREAK LOGOUT
- INACTIVITY LOGOUT
- INACTIVITY TIMER

The default is DISABLED for DSRLOGOUT, LONGBREAK LOGOUT, and
INACTIVITY LOGOUT. The default INACTIVITY TIMER is 30 minutes.

In the following example, INACTIVITY LOGOUT is enabled for port 5.

```
Local> CHANGE PORT 5 INACTIVITY LOGOUT ENABLED
```

Additional Port Customization Settings

You can use the following commands to customize ports:

- AUTOCONNECT—Issue this command when a communications server is unable to locate a particular LAT service. If a previous session has been interrupted, the communications server automatically attempts to reestablish it. The factory default for this feature is DISABLED.

- BREAK—Defines the use of the Break key. Normally Break is set to LOCAL, and is used to interrupt a network session and return to the Local prompt. However, some applications and PCs may require use of the Break key for other purposes. This function key can be set to NONE or REMOTE, as needed. In either case, you should define a local switch character.

- DEFAULT PROTOCOL—Defines the default protocol for the CONNECT command. The factory default is LAT, but you can change it to TELNET, SLIP, or ANY. When the connect command is issued, you can overide the default protocol by specifying the protocol to be used. For example, CONNECT LAT will always cause the communications server to establish a service connection using the LAT protocol.

- FORWARD SWITCH and BACKWARD SWITCH - Defines character sequences that can be used to automatically switch from one session to another without going through LOCAL mode.

- INACTIVITY LOGOUT—If enabled, allows the communications server to automatically log out of a port that has been inactive for more than the designated period of time. The timeout period is set with the CHANGE SERVER INACTIVITY TIMER command.

- LOCAL SWITCH—Defines a character which can be used in addition to or instead of the Break key to interrupt a session with a network service and return to the Local prompt.

- PREFERRED SERVICE—Defines a session which can be established by issuing the C[ONNECT] command with no additional parameters needed.

Connecting Interactive Devices

Interactive devices allow users to directly access the network. Interactive devices are typically terminals, but can be PCs and computers. The communications server is preconfigured to operate with most standard terminals, PCs, or computers. To use a terminal, PC, or computer as an interactive device to access the network, simply connect it into a port on the communications server.

You can configure interactive devices for both LAT and Telnet sessions.

Optionally, you can specify the following for the ports used for LAT and Telnet sessions:

- LAT group codes (LAT only)
- Autoconnect (LAT only)
- Autoprompt (LAT only)
- A default protocol
- Failover (LAT only)
- Port queuing (LAT only)
- A session management (TD/SMP) terminal
- On-demand loading for Asian terminals (LAT only)
- Telnet client session profile (Telnet only)
- Individual Telnet client session characteristics (Telnet only)
- Security features
- Management functions

For details, refer to "Configuring and Managing Interactive Devices" in *Ethernet Communications Server Management*.

Management

Using an Interactive Device as a Network Service

To offer the services of a PC or computer configured as an interactive device to the network, issue the following command:

```
Local> CHANGE PORT port_number ACCESS DYNAMIC
```

Setting port access to DYNAMIC, allows you to toggle the device between a local interactive service and a network service.

Once you have specified the port access as DYNAMIC, to offer the port service to the network, follow the instructions in "Offering Services to the Network" later in this chapter.

Connecting Noninteractive Devices

Noninteractive devices are usually network resources. They include printers, but they can also include PCs and computers if you want to use them as network-wide resources.

To configure a noninteractive device, specify the following communications server port characteristics for it:

1. Set the access feature of the communications server port to REMOTE to allow remote access to the device you are connecting as follows:

   ```
   Local> CHANGE PORT port_number ACCESS REMOTE
   ```

2. Disable the BREAK function of the communications server port as follows:

   ```
   Local> CHANGE PORT port_number BREAK DISABLED
   ```

3. Disable the AUTOBAUD feature as follows:

   ```
   Local> CHANGE PORT port_number AUTOBAUD DISABLED
   ```

4. Set the CHARACTER_SIZE, PARITY, BAUD RATE, and STOP BITS to match those of the device you are connecting. Refer to the device specific documentation to set these characteristics.

   ```
   Local> CHANGE PORT port_number CHARACTER SIZE {7|8}
   Local> CHANGE PORT port_number PARITY {EVEN|ODD|MARK|SPACE|NONE}
   Local> CHANGE PORT port_number BAUD RATE n
   Local> CHANGE PORT port_number STOP BITS {1|2)
   ```

5. For printers that provide a DTR signal, enable the SIGNAL CHECK feature on the communications server. This allows the communications server to verify that the attached printer is ready to receive data, before the user attaches to it. If SIGNAL CHECK is not enabled, all data sent to the printer before the printer is in the ready state, is lost (this is mutually exclusive with DSR flow control).

   To enable SIGNAL CHECK, perform the following:

   ```
   Local> CHANGE PORT port_number SIGNAL CHECK ENABLED
   ```

Management

6. For noninteractive communications devices, PCs and computers, enable the
   SIGNAL CONTROL and DTRWAIT features on the communications server.
   You can enable DTRWAIT only if you enable SIGNAL CONTROL. To enable
   SIGNAL CONTROL and DTRWAIT, perform the following:

   ```
   Local> DEFINE PORT port_number SIGNAL CONTROL ENABLED
   Local> CHANGE PORT port_number DTRWAIT ENABLED
   ```

You can also set the flow control for the port. You can set flow control to
XON/XOFF, DSR, or DISABLE. Flow control is XON/XOFF by default. This is
usually the appropriate setting for printers, although you can perform printer
flow control using DSR. Refer to *Ethernet Communications Server Management*
for details. Note that if you use DSR for flow control, you cannot use DSR for
other features such as automatic port logout.

For PCs and computers configured as noninteractive devices, DSR provides
additional desirable features such as automatic port logout, inactivity logout, etc.
These features, however, cannot be used if you use DSR for flow control instead of
XON/XOFF. It is recommended that you configure ports to which you connect PCs
or computers with XON/XOFF flow control. Refer to *Ethernet Communications
Server Management* for details on flow control.

To set XON/XOFF flow control for an interactive device, perform the following:

```
Local> CHANGE PORT port_number FLOW CONTROL XON
```

For additional information and examples on configuring interactive devices for
LAT sessions, refer to *Ethernet Communications Server Management*.

For additional information and examples on configuring interactive devices for
Telnet sessions, refer to "Configuring and Managing Telnet Services" in *Ethernet
Communications Server Management*.

Offering Services to the Network

Network services can include remote access to printers, PCs, or computers. You can offer the various devices connected to the communications server as network services to LAT hosts or to TCP/IP hosts. The configuration procedures differ for each type of network protocol.

Offering LAT Services to the Network

To offer a resource as a LAT service, perform the following:

1. Ensure that LAT service group codes are properly defined for the communications server using the following command:

   ```
   Local> CHANGE SERVER SERVICE GROUPS group_1,...,group_n ENABLED
   ```

2. Name the service and assign one or more ports to it using the following command:

   ```
   Local> CHANGE SERVICE service-name PORT port_number
   ```

3. To advertise the service on the network, give the service an identification string when defining the service using the following command:

   ```
   Local> CHANGE SERVICE service-name PORT port_number ID
   identification-name
   ```

4. For advertised services, enable announcements with the following command:

   ```
   Local> CHANGE SERVER ANNOUNCEMENTS ENABLED
   ```

You can set other values depending on the device, as follows:

- Port name instead of a LAT service name

- LAT service password

- Port control from a remote location

- Remote print queues

For a complete and detailed description of how to offer various types of LAT services to the network, refer to "Configuring and Managing LAT Services" in *Ethernet Communications Server Management.*

Offering Services to the Network Through the Telnet Listener

Establish a Telnet Listener using the CHANGE TELNET LISTENER command, as follows:

1. Specify the ports connected to the service, as follows:

   Local> CHANGE TELNET LISTENER 2010 PORTS *port-list* ENABLED

2. Identify the service, as follows:

   Local> CHANGE TELNET LISTENER 2010 IDENTIFICATION *id-name*

3. Enable the service, as follows:

   Local> CHANGE TELNET LISTENER 2010 CONNECTIONS ENABLED

You can also configure various Telnet server characteristics. A complete description of these features is located in "Configuring and Managing Telnet Services" in *Ethernet Communications Server Management*.

Setting Up a Port for SLIP Access by an IP Host

When you configure a PC or computer as a dedicated SLIP host, you can communicate directly with the network as an internet host making the communications server virtually transparent.

You can configure an interactive device or a noninteractive device as a dedicated SLIP host; the communications server, however, must be configured for use on a TCP/IP network.

To configure a device as a dedicated SLIP host, perform the following:

1. Disable flow control for the port, with the following command:

   ```
   Local> DEFINE PORT FLOW CONTROL DISABLED
   ```

2. Enable SLIP on the port with the following command:

   ```
   Local> DEFINE PORT port_number SLIP ENABLED
   ```

3. Set the internet address of the device, using the following command:

   ```
   Local> DEFINE PORT port_number SLIP HOST address
   ```

4. Set the packet size, if different from the default of 1006 bytes, using the following command:

   ```
   Local> DEFINE PORT port_number SLIP MTU n
   ```

To connect, issue the following command:

```
Local> CONNECT SLIP
```

You can also establish temporary SLIP sessions if you do not want to dedicate a port solely to SLIP sessions. Refer to Chapter 4 for details.

For a complete and detailed description of configuring SLIP hosts, refer to "Configuring and Managing SLIP Ports" in *Ethernet Communications Server Management*.

Security for Interactive and Noninteractive Devices

You can specify the following security features for interactive devices:

- User security levels, which can be privileged, nonprivileged, and secure.

- Limited view, which restricts user access to features on the communications server.

- Dedicated service for LAT or Telnet resources, which lets you dedicate a port to a particular network service, allowing users access only to those services in which the port has been dedicated.

- Password for both server login and port login.

- Password limit, which restricts the number of times a user can incorrectly enter a password.

For noninteractive devices, you can specify only a password for both server login and port login.

For details on setting security features, refer to "Configuring and Managing Interactive Devices" in *Ethernet Communications Server Management.*

Management Tools

Several management tools can be used to ease communications server management tasks. They include the following:

- Communications server commands

- Online help

- Remote console port (MOP or Telnet)

- DSVCONFIG

- Terminal Server Manager (TSM) software

- Simple Network Management Protocol (SNMP) access

The above tools are described in detail under "Management Tools" in *Ethernet Communications Server Management.*

Communications Server Commands

Many communications server commands are available to all communications server users, not only to the person who manages the communications server. General users issue communications server commands to connect to LAT services, connect to an internet host, display status information, set characteristics for their ports, and control certain port functions. You need to enable privileged status to access all communications server commands.

To specify or change values, use the SET, DEFINE, or CHANGE commands. These commands specify values in the operational and permanent databases. The SET command changes values in the operational database; the DEFINE command changes values in the permanent database; and the CHANGE command is a combined SET and DEFINE command.

Management

Online Help

The communications server provides online information about communications server commands. The communications server offers two types of online help: tutorial and reference.

Tutorial help provides an overview of end-user tasks. To access tutorial help, enter the following:

```
Local> HELP TUTORIAL
```

Reference help describes the commands available for the current privilege level of the port. To start reference help from the communications server local prompt, enter HELP:

```
Local> HELP
```

The first screen lists command keywords available for the current privilege level of the port. The following prompt also appears:

```
Topic?
```

When you enter a command keyword from the list, for example, SHOW or SET, the communications server provides a brief description of the function performed by that command and lists any associated subtopics.

Remote Console Port

The remote console port is a logical port used by the communications server software when communicating using the MOP or Telnet protocol. The remote console port has fixed port characteristics values that you cannot change. You can enter most of the communications server commands at the remote console port.

DSVCONFIG Configuration Procedure

DSVCONFIG is the configuration procedure used on a load host to configure the load host node database. This database includes the DECnet databases and the communications server configuration database. It contains an entry for your communications server. The entry provides the necessary information to downline load software to your communications server and up-line dump memory from the communications server.

Terminal Server Manager Software

Terminal Server Manager (TSM) is a software utility that runs on a VMS host. It is not included with the communications server software and must be purchased separately. TSM is a management tool that enables you to configure and manage all communications servers on the same extended LAN.

SNMP Access

You can configure the communications server to respond to SNMP GET and GET NEXT messages from an internet host. You can also configure the communications server to send TRAP messages.

To configure the communications server for SNMP access, you must configure the communications server and at least one internet host. The internet host must be able to generate SNMP GET and GETNEXT messages, and optionally receive TRAP messages.

Communications Server Databases

Two databases contain all the information the communications server requires to operate: the operational database and the permanent database. The communications server operational database is maintained in random-access memory (RAM). The permanent database is stored in nonvolatile RAM (NVRAM).

When the communications server is downline loaded for the first time, these databases contain identical factory-set default settings for all the characteristics, except for the Telnet remote console characteristics. These characteristics control the operation of the communications server. You can use the SHOW and MONITOR (operational database) or LIST (permanent database) commands to display the values stored in the databases.

To specify or change values, use the SET (operational database), DEFINE (permanent database), or CHANGE (both databases) commands. *Ethernet Communications Server Commands* describes the syntax information on communications server commands, keywords, valid ranges of values, and defaults.

For a complete description of the communications server databases, refer to "Tasks and Concepts" in *Ethernet Communications Server Management.*

4
Operation

This chapter describes communications server operation and how to establish interactive sessions using services on the network. Information covered in this chapter, can be referenced through the HELP TUTORIAL.

Basic operational tasks include:

- Getting started

- Using online help

- Establishing sessions (LAT, Telnet, and SLIP)

- Managing sessions

- Performing file transfers

Getting Started

Once the communications server has successfully loaded software, you can attach a conventional terminal or PC. Use the following procedure to establish terminal or PC communications with the server:

1. Press Return once or twice. The following prompt appears:

   ```
   Enter Username>
   ```

2. Enter a username and press Return, or simply press Ctrl/Z if the default name of the port is acceptable. The Local prompt appears, indicating that the communications server is accepting commands directly.

Using Online Help

The communications server provides users with an extensive online help facility. To view Help menu options, type HELP at the local> prompt. Some variations to the HELP command are as follows:

- HELP *command*—Provides information about a particular command.

- HELP TUTORIAL—Provides a list of topics for which more information is available.

- HELP *command_keyword*—Provides information about a specific command keyword.

Establishing Sessions

You can establish sessions for either LAT or Telnet.

Establishing LAT Sessions

Use the CONNECT command to establish LAT service sessions. Prior to creating a LAT session, ensure that the LAT group codes are properly set, as described in Chapter 3.

- C[ONNECT] *service_name* - Initiates a LAT service connection, unless the DEFAULT PROTOCOL feature has been customized. In this case, use the following command:

  ```
  Local> CONNECT LAT service
  ```

- If the communications server reports a LAT service as unknown during an attempt to connect to it, issue the command SET PORT AUTOCONNECT ENABLED and retry the CONNECT service command. Press the Break key to exit autoconnect mode.

Establishing Telnet Sessions

You can use the following commands to establish a session with an internet host once the internet parameters have been set.

- O[PEN] *name_or_address* - Initiates an internet host connection. You can supply the internet address or name.

- TEL[NET] *name_or_address* - Same as OPEN.

- C[ONNECT] *name_or_address* - Initiates a LAT service connection, unless the DEFAULT PROTOCOL feature has been customized. In this case, use the following command:

  ```
  Local> CONNECT LAT service
  ```

Establishing a Temporary SLIP Session

The communications server supports PCs running SLIP software. The PC sends IP messages to the communications server as Serial Line Internet Protocol (SLIP) packets. The communications server packages the messages as regular IP packets and transmits them over the Ethernet/802.3 network. The packets can also be forwarded to another SLIP device on the communications server.

When SLIP support is enabled, the device being supported must be assigned an internet address, as a logical part of a TCP/IP Network.

Before you establish a temporary SLIP session, enable the SLIP feature using the following privileged command:

```
Local> SET PORT SLIP ENABLED
```

Once SLIP is enabled, perform the following procedure:

1. Assign an internet address to the port.

2. Disable flow control to the port using the SET PORT FLOW CONTROL DISABLED command.

3. Set the SLIP packet size to be compatible with what is being supported by the SLIP application on the device (default—1006 bytes, range—64 to 1006 bytes). To change the packet size from its default setting, use the CHANGE PORT SLIP MTU command.

4. Issue the C[ONNECT] SLIP command.

You can interrupt a temporary SLIP session at any time by pressing Break when the BREAK PORT feature is set to LOCAL.

_____ **Note** _____

If an internet address on the communications server is the same as an existing address, you may experience network disruption.

_____

Managing Sessions

To interrupt a service session and return to the Local prompt, press the Break key. Another session can be established with the same host or with a different host. You can establish up to four sessions simultaneously.

Additional commands that can be issued at the Local prompt include:

* SHOW SESS[IONS]—Lists all active sessions.
* RES[UME] SESS[ION] n—Resumes a particular session.
* DIS[CONNECT] SESS[ION] n—Ends a particular session.

Using TD/SMP Support

The communications server supports the TD/SMP protocol. Devices that use this protocol can run several sessions concurrently on the same screen. To switch sessions, move the cursor from one window session to another. To enable TD/SMP protocol support for a port, use the following command:

```
Local> SET PORT MULTISESSIONS ENABLED
```

Asian Terminal Support

The communications server supports Asian terminals that use On-Demand Loading of characters and fonts. To use this feature, issue the command:

```
Local>SET PORT ODL ENABLED.
```

This feature is available on a LAT network only.

Performing File Transfers

The communications server supports file transfer using either LAT or Telnet protocols.

The following procedure enables you to perform file transfers using the LAT protocol:

1. Ensure that Break is set to LOCAL. Use the SHOW PORT command to determine this. Use the SET PORT BREAK LOCAL command to set Break to LOCAL, if needed. Note that the LOCAL setting is the factory default.

2. CONNECT to the file transfer partner.

3. Press Break.

4. For binary files, issue the command SET SESSION PASSALL.

5. For ASCII files, issue the command SET SESSION PASSTHRU to enable in-band flow control (XON/XOFF) during the file transfer.

6. Run the file transfer program.

7. Press Break when the file transfer is finished.

8. Use the command SET SESSION INTERACTIVE to enable terminal emulation.

_____ **Note** _____

In-band flow control (XON/XOFF) cannot be used with binary files.

_____

Operation

Use the following procedure for file transfers using the Telnet protocol:

1. Ensure that Break is set to LOCAL. Use the SHOW PORT command to determine this. Use the SET PORT BREAK LOCAL command to set Break to LOCAL, if needed. The LOCAL setting is the factory default.

2. CONNECT to the file transfer partner.

3. Press Break.

4. Issue the command SET SESSION Telnet CLIENT PROFILE BINARY. Note that in-band flow control (XON/XOFF) is disabled during file transfers using Telnet.

5. Run the file transfer program.

6. When the file transfer is finished, press Break.

7. Use the command SET SESSION Telnet CLIENT PROFILE CHARACTER to enable terminal emulation.

5
Troubleshooting

This chapter provides methods of troubleshooting the DECserver 90TL Ethernet communications server. Also provided in the chapter are symptom and solution information tables for use when isolating communications server hardware, software or network problems.

Before servicing the communications server you should:

1. Verify that the communications server is properly installed.

2. Note the fault condition.

3. Isolate the problem.

Use Table 5–1 to find the probable cause and suggested solution for a communications server hardware, software, or network problem.

When troubleshooting self-test or boot problems, you can connect a console terminal to any port on the communications server, (port one is the default) to view any error messages that may appear.

---------- **Note** ----------

Refer to *Ethernet Communications Server Problem Solving* for descriptions of error messages and tips on troubleshooting communications server problems.

Troubleshooting

Table 5–1 DECserver 90TL Troubleshooting

If...	Then...	Do this...
The self-test fails, and network LED does not light.	The ThinWire Ethernet port is not connected to a properly terminated network.	Terminate the network correctly.
	A fatal hardware error has ocurred.	Replace the communications server.
The port activity LEDs do not respond when characters are typed on the console keyboard.	Interface cable may be disconnected or faulty.	Secure or replace the cable.
The port does not respond to the console terminal.	The port may be faulty.	Verify the console on a known good port.
	Port and terminal parameters may be set incorrectly.	Correctly set the parameters from another port as follows:
		Set ACCESS to Local, AUTOBAUD to ENABLED, and SIGNAL CHECK, SIGNAL CONTROL, and DSRLOGOUT to DISABLED.
The communications server power LED does not light.	The power cord has disconnected from the outlet.	Connect the power cord.
	The communications server is not receiving +5VDC.	Check power supply connection.
	Reseat the power supply, backplane installation only.	Replace the power supply.
	The LED is bad.	Replace the communications server.
The network LED is not lit.	The network is down.	Determine the network status.
	Check network connectivity.	Run MOP loopback or MOP console carrier session tests.
	The Ethernet connection may be disconnected.	Reconnect the Ethernet cable.

Table 5–1 (Cont.)   DECserver 90TL Troubleshooting

If...	Then...	Do this...
	The communications port may not be terminated.	Terminate the T-connector on the communications port.
	The 50 ohm terminator(s) to the T-connector may have disconnected.	Reconnect the terminator(s).
There is no response at the Local prompt.	Terminal connection to the console port may be broken.	Secure the console terminal cable to the console port
The communications server cannot connect to a service on the network via LAT.	The service is not available.	Verify service availability.
	LAT software is not installed on the host system.	Install LAT Version 5.0 or higher on the host system.
	The hostname is not in the local database.	Set PORT AUTOCONNECT ENABLED.
	Group Codes not Enabled.	Enable group codes, SET PORT AUTHORIZED and SET PORT GROUPS.
	Host not on local area network.	Use Telnet or reconfigure network.
The communications server cannot connect to a host on the network via Telnet.	Internet and Telnet parameters not set or set incorrectly.	Correctly set the parameters using CHANGE INTERNET and CHANGE TELNET CLIENT commands.
Printer does not print or prints incorrectly.	Printer port and baud rate do not match.	Reset printer and port baud rates to match.
The printer port LED does not light.	The printer is disconnected.	Connect the printer.
The printer is not acknowledged by the printer port.	The port may be set incorrectly.	Match the port and printer settings from another port.
	Check printer port access.	Ensure ACCESS is REMOTE.

(continued on next page)

Troubleshooting

Table 5–1 (Cont.)   DECserver 90TL Troubleshooting

If...	Then...	Do this...
		Ensure, BREAK and AUTOBAUD are DISABLED.
		Ensure CHARACTER SIZE, PARITY SPEED, STOP BITS and TYPE match printer.
	Flow control is not set.	Set the flow control.
The power LED is lit, the self-test OK LED is lit, and the network LED is blinking.	The communications server cannot find the load image.	Ensure LOADING is enabled on the host. Reinstall the software to replace the load image.
The port activity LED does not blink when port traffic is present.	Port characteristics may be set incorrectly.	Verify settings using the SHOW PORT n command.

0

A
Specifications

Specifications for the DECserver 90TL Ethernet communications server are divided into the following categories:

- Physical specifications
- Environmental specifications
- Power specifications
- Communications server connector pin out
- Cable connector pin out
- LAT specifications

Physical Specifications

Table A–1   Physical Dimensions

Dimension	Value
Height	3.18 cm (1.25 in)
Width	27.31 cm (10.75 in)
Depth	12.70 cm (5.0 in)
Weight	.77 kg (1.7 lb)

Appendix A

Environmental Specifications

The communications server is designed to operate in an office environment or in equipment room environments such as telephone closets or satellite equipment rooms. The communications server operating and shipping environments are described in the following tables:

Table A–2   Operating Environment

Item	Value
Temperature	5° C to 50° C (41° F to 122° F)
Maximum rate of change	20° C/hr (36° F/hr)
Relative humidity	10 % to 95 % (non-condensing)
Wet-bulb temperature	32° C (90° F) maximum
Dew point	2° C (36° F) minimum
Altitude	Sea level to 2.4 km (8000 ft)
Air flow	Convectively cooled. A minimum of 10 cm (4 in) of space must be provided on both ends of the unit for adequate air flow.

Table A–3   Shipping Environment

Item	Value
Temperature	-40° C to 66° C (-40° F to 151°F)
Relative humidity	10 % to 95 % (non-condensing)
Altitude	Sea level to 4.9 km (16000 ft)

Appendix A

Power Specifications

The following describes the communications server power specifications.

Power Supply

Item	Value
Voltage (North American)	104 Vac to 128 Vac (nominal 120 Vac)
Voltage (International)	208 Vac to 256 Vac (nominal 240 Vac)
Current at 120 volts	.25 amps
Current at 240 volts	.125 amps
Frequency	50 Hz to 60 Hz
Power consumption	16 watts
Output voltage	5.1 Vdc
Output current	1.8 A

Communications Server

Item	Value
Input voltage	4.75 to 5.25 Vdc
Input current	1.2 A

Appendix A

Communications Server Connector Pin Out

Pin out for the communications server has been designed for compatibility with Open DECconnect™.

Figure A–1 shows the circuit connections for each port.

Figure A–1 Port Circuit
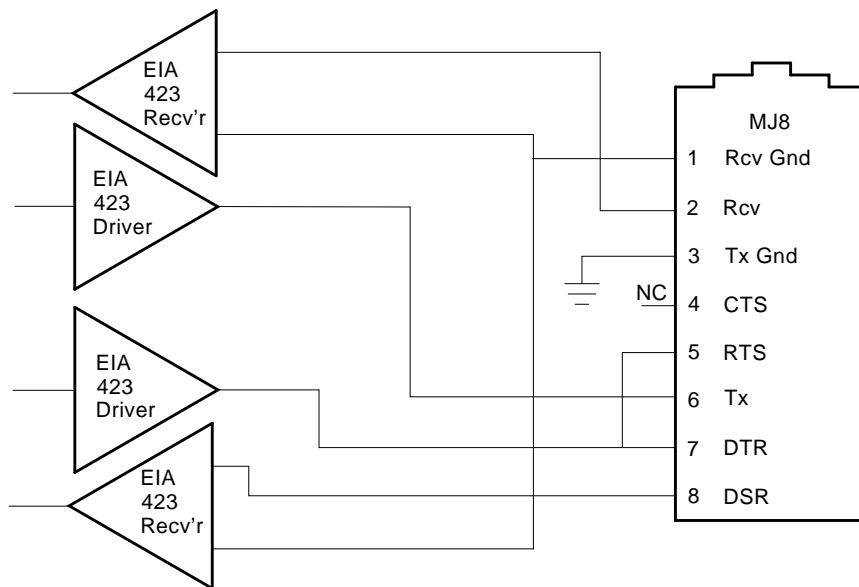
LJ-01618-TI0

Cable Connector Pin Out

This section provides wiring diagrams for the following serial communication cable connectors:

Item	Description
BN25G	8MP-to-8MP (modular plug) Equipment Cable
BN24H	8MP-to-6MMP (modified modular plug) Office Cable

The BN25G is a twisted-pair (four twisted pairs) cable with standard 8-pin modular plugs. Figure A–2 shows the wiring configuration for the BN25G cable. This is the standard cable used to connect an asynchronous port on the communications server to an open DECconnect wall plate.

Figure A–2 BN25G Equipment Cable Wiring Diagram

LJ-01565-TI0
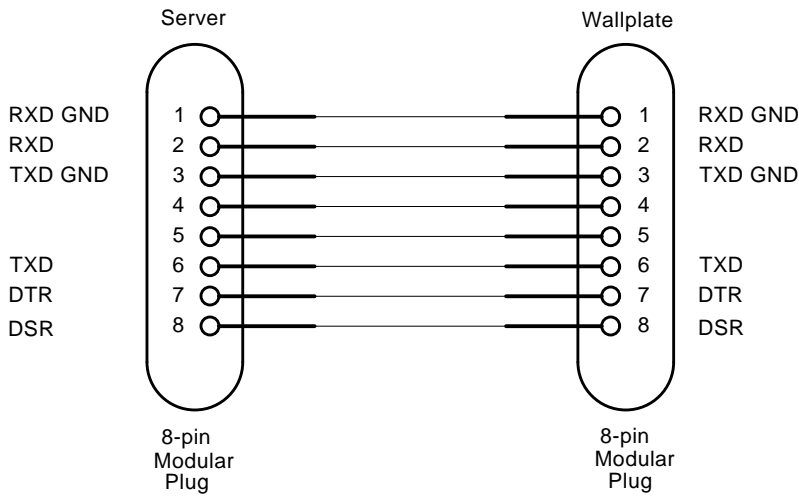
Appendix A

The BN24H is a twisted-pair (three twisted pairs) cable with a standard 8-pin modular plug on one end and a 6-pin modified modular plug on the other end. This cable is used to connect the communications server to an MMJ connector on an asynchronous device. The BN24H is also used when connecting an asynchronous device to a DECconnect wallplate.

An H8584-AA adapter is used when connecting the communications server to existing MMJ wiring. The adapter uses a standard 8-pin modular plug on one side and a 6-pin modified modified plug on the other end.

Figure A–3 shows the wiring configuration for the BN24H cable and H8584-AA adapter.

Figure A–3   BN24H Office Cable Wiring Diagram
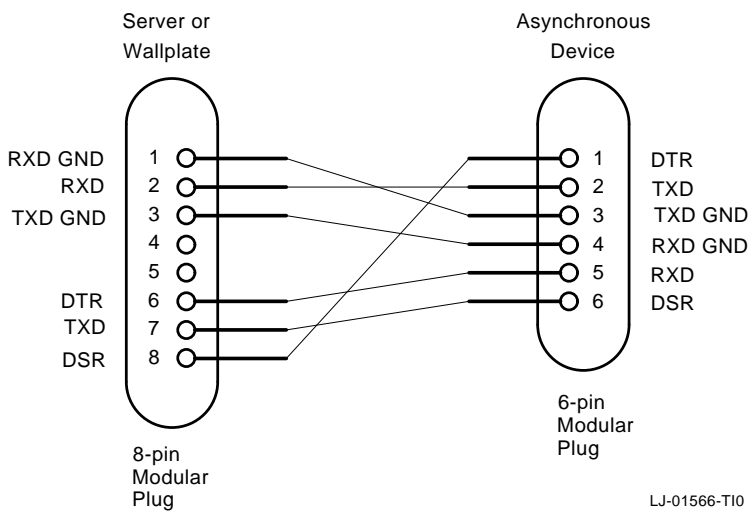
LAT Specifications

This section lists default LAT characteristics implemented by the communications server. Table A–4 lists the communications server default characteristics.

Table A–4   Default Server Characteristics

Characteristic	Setting
Product type code	34
Node type	Master
Keepalive timer	20s
Master circuit timer	80ms
Password	8 characters maximum
Prompt	Local>
Queue limit	100
Retransmit limit	8
Session limit	64 (8 per port)
Server name	LAT_<Ethernet Address>

Table A–5 lists the communications server port settings.

Table A–5   Default Port Characteristics

Characteristic	Setting
Character size	8
Flow control	XON
Parity	None
Speed (Input = Output)	9600
Name	Port_n
Break	Local
Session limit	4

B
Related Documentation

The following documents are supplied with the appropriate software, or documentation package.

Document Title	Order Number
Ethernet Communications Server Management	AA-PMF1A-TK
Ethernet Communications Server Problem Solving	AA-PMF2A-TK
Ethernet Communications Server Commands	AA-PMF3A-TK
DECserver 90TL Software Installation (VMS)	AA-PMF4A-TE
DECserver 90TL Software Installation (ULTRIX)	AA-PMF5A-TE
DECserver 90TL Software Installation (MS–DOS)	AA-PMF6A-TH
VMS LAT Control Program (LATCP) Manual	AA-LA32B-TE
Open DECconnect Building Wiring Components	
Applications Catalog	EB-M4506-78
DEChub 90 Owner's Manual	EK-DEHUB-OM

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[1]For internal orders, you must submit an Internal Software Order Form (EN-01740-07).

Reader's Comments

Please use this postage-paid form to comment on this manual. If you require a written reply to a software problem and are eligible to receive one under Software Performance Report (SPR) service, submit your comments on an SPR form.

Thank you for your assistance.

I rate this manual's:	Excellent	Good	Fair	Poor
Accuracy (software works as manual says)	☐	☐	☐	☐
Completeness (enough information)	☐	☐	☐	☐
Clarity (easy to understand)	☐	☐	☐	☐
Organization (structure of subject matter)	☐	☐	☐	☐
Figures (useful)	☐	☐	☐	☐
Examples (useful)	☐	☐	☐	☐
Index (ability to find topic)	☐	☐	☐	☐
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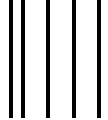I am using **Version** _____ of the software this manual describes.

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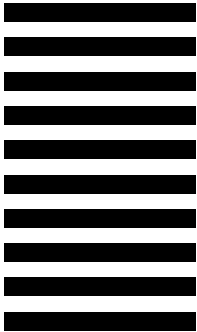
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