

Table of Contents

Preface

If you have comments about this Guide	vi
Figures	ix
About this Guide	xi
Organization	xi
Related Publications	xiii

Chapter 1 - Getting Started

About the MAXserver	15
Supported Communication Speeds	17
Software Requirements	17
Configuration Options	18
About FocalPoint	18
About ControlPoint	20

Chapter 2 - Installing The MAXserver

Overview	21
Unpack and Inspect the Unit	22
Place the Unit on Flat Surface or Mount on Rack	22
Rack Mount Installation (optional for 1640, 1620, 1608A only)	24
Insert the Memory Card (if Supplied)	26
Connecting the Ethernet Interface	26
Connect the Power Cable	28
Front Panel LEDs - MAXserver 1620/1640	29
Front Panel LEDs - MAXserver 1604/1608B	30
Connect Serial Device Cables	32
Additional Considerations for an Internet Environment	33
Initialize Connected Devices	33
Autobauding Feature	33
Reinitializing/Powering Off the Unit	34
Accessing the Terminal Server	35
Connecting Other Devices	36
Formatting/Updating a Memory Card	37

Chapter 3 - Cabling Considerations

Overview	39
Order Codes - Cables and Modular Adapters	39
Ethernet Transceiver Cable	43

Making Your Own RJ-45 Cables	45
Modular Adapters (RJ-45 to DB-25)	46
Flow Control and Modem Control	47
Using Existing MAXserver 1000-series Cabling	47
DEConnect RJ-45 Cables	50
Octopus Cables	52
Connecting to a Distribution Panel	54

Chapter 4 - Configuring The MAXserver

Overview	55
Factory Defaults Settings	56
Loading Software Image and Parameters	58
Loading Protocols	58
Accessing the Configuration Menu	59
About the Terminal Server Configuration Menu	60
Display Configuration	61
Displaying Initialization Records	62
Displaying Miscellaneous Unit Configurations	63
Loading and Dumping Protocols	64
Displaying the Software Load Host	65
Displaying the Parameters Server	65
Using the CARD, NVS, XMOP and MOP Protocols	66
Modify Unit Configuration	66
Creating a Customized Configuration	68
Defining the Image Loading Method	69
Defining Parameter Loading Methods	71
Defining Dumping Methods	73
Defining IP Addresses	77
Miscellaneous Unit Configuration	78
Enabling/Disabling Status Message Display	79
Configuring MAXserver Memory	79
Resetting the Unit to Factory Defaults	81
Initializing Server and Port Parameters	82
Revert to Stored Configuration	82
Exit Saving Configuration Changes	83
Exit Without Saving Configuration Changes	84

Chapter 5 - Using the Command Line Interface

Overview	85
Displaying an Initialization Record	85
Loading the Software Image File	87
Changing the Software Image Filename	87
Enabling/Disabling Image and Parameter Protocols	88
Enabling/Disabling Dump Protocols	88
Assigning IP Addresses	89

Internet Load Host	89
Internet Load Address	90
Internet Load File	90
Internet Load Gateway	91
Resetting Initialization Parameters To Default Values	91
Enabling/Disabling Dump Protocols	92
Enabling/Disabling Loading Protocols	92
Enabling/Disabling an Initialization Record	93
Resetting the Parameters to Default Settings	94
Displaying Initialization Parameters	95
Displaying the Software Load Host	95
Displaying the Parameters Server	96

Appendix A- Troubleshooting

Overview	97
Startup/Loading Problems	97
Startup Error Codes	98
Common Error Codes	100
Power Up and Re-initialization Problems	100
Network Loading Problems	101
Loading Problems	102
Load Server Errors	103
Resetting the MAXserver	110

Appendix B- Installing/Removing SIMMs

Overview	111
Recommended SIMMs Manufacturers	111
MAXserver Memory Requirements	112
Installation.....	112
Verifying Memory Installation Using Commands	117
Verifying Memory Installation Using the Configuration Menu	117
Removing SIMMs	120
Configuring the MAXserver for less Memory	120

Appendix C - MAXserver Technical Specifications

Index

Figures

Figure 1 - Sample FocalPoint Configuration	19
Figure 2 - Mounting a MAXserver in Rack	25
Figure 3 - MAXserver 1620/1640, Rear View	27
Figure 4 - MAXserver 1604 Rear View	27
Figure 5 - MAXserver 1608B Rear View	28
Figure 6 - MAXserver 1620/1640 Front Panel	30
Figure 7 - MAXserver 1604 Front Panel	31
Figure 8 - Serial Device Connector (RJ-45) Signal Assignments	32
Figure 9 - Monitor Parameter Server Display	35
Figure 10 - Ethernet 15-Pin AUI Connector Assignments	44
Figure 11 - 10Base-T Connector Assignments	44
Figure 12 - Crossover and Straight-through Wiring Schemes	46
Figure 13 - Adapter Wiring, MAXserver to DTE	48
Figure 14 - Adapter Wiring, MAXserver to DCE	49
Figure 15 - RJ-45, DB-25 Pins	50
Figure 16 - MAXserver DEConnect Cable	51
Figure 17 - Octopus Cable with 50-pin Telco Connector	52
Figure 18 - Octopus Cable With 36-pin Female DEConnect Connector	53
Figure 19 - Octopus Cable With 36-pin Male DEConnect connector	53
Figure 20 - Connecting a MAXserver to DB-25 Distribution Panel	54
Figure 21 - Terminal Server Configuration Menu	60
Figure 22 - The Display Unit Configuration Menu	61
Figure 23 - Sample Unit Configuration Display	63
Figure 24 - Sample Miscellaneous Configuration Display	64
Figure 25 - The Modify Unit Configuration Menu	67
Figure 26 - Sample Primary Initialization Record Display	86
Figure 27 - Primary Initialization Record Display	95
Figure 28 - Sample Error Code Display	99
Figure 29 - RESET Switch Location	110
Figure 30 - Typical SIMM	112
Figure 31 - Removing the Screws Securing the Cover	113
Figure 32 - Location of SIMM Sockets	114
Figure 33 - Inserting SIMM into Socket	116
Figure 34 - MAXserver Terminal Server Configuration Menu	119
Figure 35 - Sample Display Unit Configuration Display	119
Figure 36 - Sample Miscellaneous Configuration Display	120
Figure 37 - Removing SIMM	122

About this Guide

This guide explains how to place MAXserver Access Servers into operation. The guide covers hardware installation, cabling, software configuration, a description of basic server commands and troubleshooting advice.

Organization

This guide is organized as follows:

Chapter 1 (Getting Started) -- Describes the functions and capabilities of the MAXserver Access Servers. This chapter also describes software requirements, explains how the MAXserver stores its configuration data (parameters), and also explains how you can use the FocalPoint and ControlPoint configurators to configure a MAXserver.

Chapter 2 (Installing the MAXserver) -- Describes the hardware installation procedures and explains how to initialize connected devices. By following the instructions in this chapter, you should be able to place a MAXserver quickly into operation.

Chapter 3 (Cabling Considerations) -- Describes cabling considerations and options you should be aware of when installing MAXserver s.

Chapter 4 (Configuring the MAXserver) -- Explains how to access the Terminal Server Configuration menu and describes the menu options.

Chapter 5 - (Using the Command Line Interface) -- Describes how to use certain commands as an alternate way of changing parameters in initialization records if you do not do so through the Terminal Server Configuration menu .

Appendix A (Troubleshooting) -- Describes what to do if you encounter a problem during the MAXserver installation or while the server is in operation. This chapter explains how the MAXserver indicates errors and how to reset the unit.

Appendix B (Installing/Removing SIMMs) -- Describes how to install and remove SIMMs from the MAXserver units.

Appendix C (MAXserver Technical Specifications) - - Provides technical specifications for the MAXserver.

Related Publications

The following publications are useful to persons who install and manage Xyplex access servers. The following publications were included on the CD with your access server software. To obtain hard copies, contact your Xyplex sales representative or distributor.

MAXserver Documentation

Document Title	Document Number
Using the TCP/IP-LAT Terminal Server	420-0556B
Advanced Features Guide	420-0558F
TC/IP-LAT Commands Reference Guide	420-0559D
Error Messages Reference Guide	451-0049A
Using the Xyplex ULI	451-0062B
Using the Xyplex APGEN Utility	451-0065A
Configuring Printing Serving Features	451-0112A
Configuring Access Serving Features	451-0084B
Software Installation Guides	
UNIX	420-0390
VAX/VMS	420-0391
Xyplex Loader	420-0392

Chapter 1

Getting Started

About the MAXserver

The MAXserver s are standalone terminal servers that provide:

Serial Ports -- The MAXserver is available in the following configurations:

- The MAXserver 1620 provides 20 asynchronous serial communication ports with RJ-45 interface s.
- The MAXserver 1640 provides 40 asynchronous serial communication ports with RJ-45 interface s. (See Figure 4 for connector signal assignments.)
- The MAXserver 1608A and 1608B provide 8 asynchronous serial communication port s with RJ-45 interface s.
- The MAXserver 1604 provides 4 asynchronous serial communication ports with RJ-45 interface s.

Ethernet Interfaces -- A 15-pin standard Ethernet Attachment Unit Interface (AUI) connector and a 10Base-T Ethernet interface (RJ-45 connector). (See Figure 15 for AUI connector signal assignments.)

TCP/IP and LAT Protocol Support -- The MAXserver provide s concurrent support for the DEC Local Area Transport (LAT[®]) and TCP/IP protocols.

Memory Card -- An optional Memory card, from which the unit can load its operating software.

The MAXserver can also load software from the Memory card to other Xyplex terminal server units on the network for which it has a load image.

Network Software Loading -- If you order a MAXserver without a Memory card, the unit loads its operating software from a network host called a *load server*. The load server is typically a UNIX™ or VAX/VMS™ system. However, you can also use a Xyplex MAXserver Manager card (MAXman) or another MAXserver. The load server downloads a software image to the MAXserver over the network whenever the terminal server is powered on or re-initialized. The load server can support other devices as well.

Expandable Memory -- MAXserver 1604 and 1608B units are shipped with 4 MB of factory installed memory. The MAXserver 1620 and 1640 units are shipped with 2 MB of factory installed memory. The memory can be expanded in 2 MB increments, up to 8 MB, using SIMM memory modules. SIMMs should be installed by qualified personnel only. To upgrade your MAXserver, contact your Xyplex Network sales representative or distributor. The order code for a 2 MByte SIMM memory upgrade kit is MX-500-5744. Installation instructions are provided in Chapter 4 of this Guide.

Concurrent Flow Control and Modem Control Support -- The MAXserver provide s concurrent support for RTS/CTS flow control signals and modem control; signals on all ports. Adapters are available to support cabling to MAXserver ports when these signals are used. In most cases, the MAXserver can also use standard MAXserver 1000-series cabling, if support for the new signals is not required. (Refer to Appendix B for more information.)

Figure 3 and Figure 4 show rear and front views of the MAXserver 1620 and MAXserver 1640. Figure 6 and Figure 7 show rear and front views of the MAXserver 1608A and MAXserver 1604.

NOTE: The front and rear panels of the MAXserver 1608A are identical to the MAXserver 1620 and 1640 except for the number of ports available.

Supported Communication Speeds

The MAXserver supports the following communication speeds:

MAXserver	Communication Speed
MAXserver 1604	50 - 115.2 Kbps
MAXserver 1608A/B	50 - 115.2 Kbps
MAXserver 1620	50 - 115.2 Kbps
MAXserver 1640	50 bps to 57.6 Kbps

Software Requirements

MAXservers 1608B, 1620 and 1640 require Xyplex TCP/IP-LAT software Release 6.0.1 or higher (MAXserver 1604 and 1608B require Release 6.0.3 or higher).

NOTE: If you are unsure of the software version you are running, enter the SHOW UNIT command at the Xyplex prompt to display the unit's current software version.

The units are configured at the factory to load software from a Memory card, if one is inserted in the card slot. If a card is not present, the unit requests software from a network load server, which can be:

- A MAXserver that is equipped with a Memory card
- A MAXserver Manager (MAXMAN) card or Network 9000 processor module

- A VAX/VMS host system, from which the unit can load via DEC Maintenance Operations Protocol (MOP)
- A UNIX system running:
 - Bootstrap protocol (BOOTP) and Trivial File Transfer Protocol (TFTP), or:
 - Reverse Address Resolution Protocol (RARP) and TFTP

The load server downloads a software image to the MAXserver, over the network, whenever the unit is powered on or re-initialized. By default, the unit requests software from each type of load server, until a server responds with a software load offer. ([Page 57](#) describes the software loading process.)

If you need to install software on a network load server, refer to the *Software Installation Guide* for the type of load server you plan to use.

Configuration Options

Instead of using the Terminal Server Configuration Menu or the Command line interface to configure the MAXserver, there are two Graphical User Interface configuration utilities that you can use to simplify the task of configuring MAXserver Access Servers - FocalPoint and ControlPoint.

About FocalPoint

FocalPoint for Access Servers is a Windows-based configuration utility with a point-and-click graphical interface (GUI) designed to step you through the process of configuring Xyplex MAXserver Access Servers.

FocalPoint guides you through the logical progression of setup choices complete with default settings and context-sensitive online help. Using FocalPoint to configure the MAXserver eliminates the need to learn a complex command line interface.

FocalPoint automatically ships free of charge on the software and documentation CD with all Network 3000, Route Runners, MAXserver Access Servers, and 720 Series Access Server modules for the Network 9000. The latest versions of FocalPoint software are also available from the Xyplex Networks Web Site (www.xyplex.com/hot/whfoclp.html).

To use FocalPoint, simply load the software from the CD that was shipped with the MAXserver. You can select your MAXserver model from a FocalPoint ensures that you have provided all pertinent information before you can advance to the next step and eliminates options not available to your system.

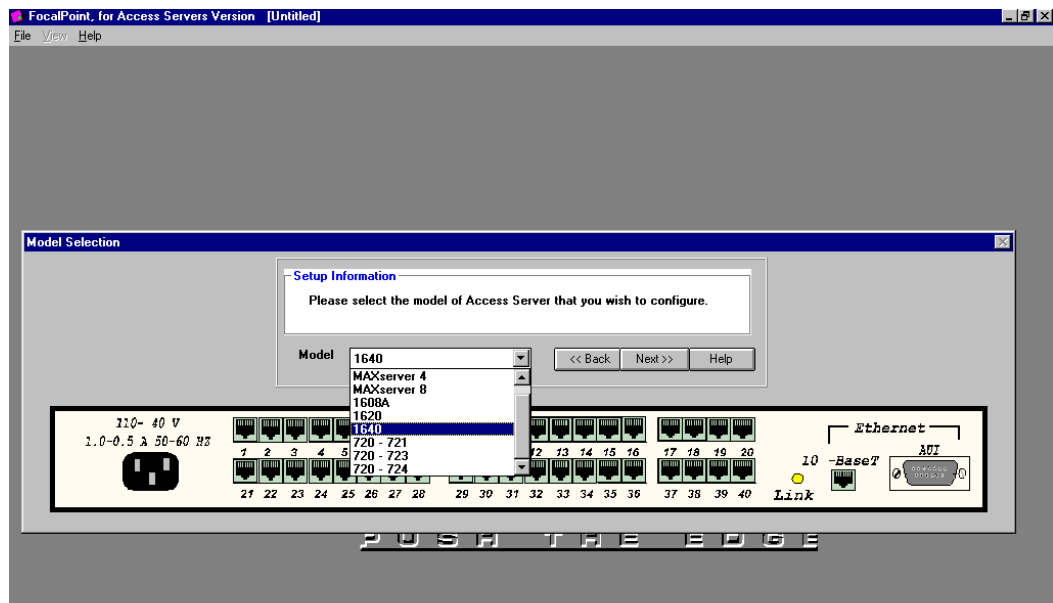


Figure 1 - Sample FocalPoint Configuration

About ControlPoint

The ControlPoint network management application is standards-based, portable and runs on industry-leading network management platforms such as Microsoft Windows 95 and NT, Sun Microsystems (SunNet Manager) and Hewlett Packard (HP OpenView).

ControlPoint is tailored for Xyplex Networks devices. It provides easy configuration through a simple point-and-click Graphical User Interface (GUI). ControlPoint's Policy Manager reduces the risk of error, simplifies repetitive tasks, and saves network administrators time. A trend analysis application provides monitoring and graphing of long-term internetworking trends. To order ControlPoint, contact your Xyplex Networks Sales Representative.

Chapter 2

Installing The MAXserver

Overview

This chapter explains how to install a MAXserver and place it into operation. The basic installation consists of the following procedures:

1. Unpack the unit, check the contents against the packing list, and inspect for possible damage during shipping .
2. Mount the unit in a standard 19" rack or place it on a suitable flat surface (19" x 15").
3. If the unit is equipped with a Memory card, insert the Memory card into the card slot on the front of the unit.

NOTE: Xyplex Networks recommends that you wear a grounded wrist strap when you insert the card. If none is available, ground yourself by placing one hand on the unit (or another grounded object), before you insert the Memory card, to prevent static from being discharged into the unit.

4. If the unit is not equipped with a Memory card, verify that Release 5.3 or greater of Xyplex TCP/IP-LAT software is installed in the network (Release 6.0.3 or higher if using the MAXserver 1604 or 1608B).
5. If you are installing a unit that is equipped with a Memory card, as well as units that are not, install the unit with the Memory card first. That unit can then serve as a load server for the other units.

6. Connect the Ethernet transceiver cable or 10Base-T network cable to the unit.
7. Connect the power cord to rear of the unit, then to an AC power outlet, and observe the front panel lights.
8. Connect the serial device cables to the unit and to the devices (terminals, PCs, etc.), and initialize the devices.

The following sections provide more detailed installation instructions.

Unpack and Inspect the Unit

Follow these steps:

1. Carefully unpack the unit shipping carton.
2. Inspect the contents and make sure that you received all parts listed on the shipping order.
3. Place all packing materials back into the shipping carton and save the carton. (If you need to return the unit to Xyplex or your distributor, you should return it in the original carton.)
4. If the unit has been damaged in shipping or any parts are missing, notify your Xyplex representative or distributor immediately.

Place the Unit on Flat Surface or Mount on Rack

Select a location for the unit that meets the following requirements:

Adequate Space -- A standard 19" rack or a 19" x 15" flat, stable surface such as a shelf or desktop must be available or use the instructions in Section 2.3.1 to mount it in a standard 19" rack.

You can locate the unit in a variety of environments, including an office or computer room, provided the environmental requirements are met.

To reduce the possibility of dust entering the unit and to allow easy inspection of the unit's front panel lights, make sure that the MAXserver is located at an optimum distance (preferably not less than 18 inches/45 centimeters) from the floor.

Environment -- Do not choose a location where the unit will be exposed to direct sunlight or subjected to vibration. Also, the unit must be installed in an environment with 20% to 80% humidity, noncondensing, 0° - 40° C (32° - 113° F).



Do not remove the MAXserver unit's "feet."

Do not place an object on the side(s) of the unit that might block airflow through the unit.

Rack Mount Installation (optional for 1640, 1620, 1608A only)

Rack mount installation is easier when performed by two persons -- one person holding the unit while another secures the mounting bolts with a Phillips-head screwdriver. (Threaded clips and bolts are supplied with the unit).

Complete these steps:

1. Locate a mounting position on the rack that allows at least one inch of space above and below the unit.
2. Secure the unit to the mounting rack using the supplied bolts, as shown in Figure 2. If the rack is not threaded, use the threaded clips supplied with the server.

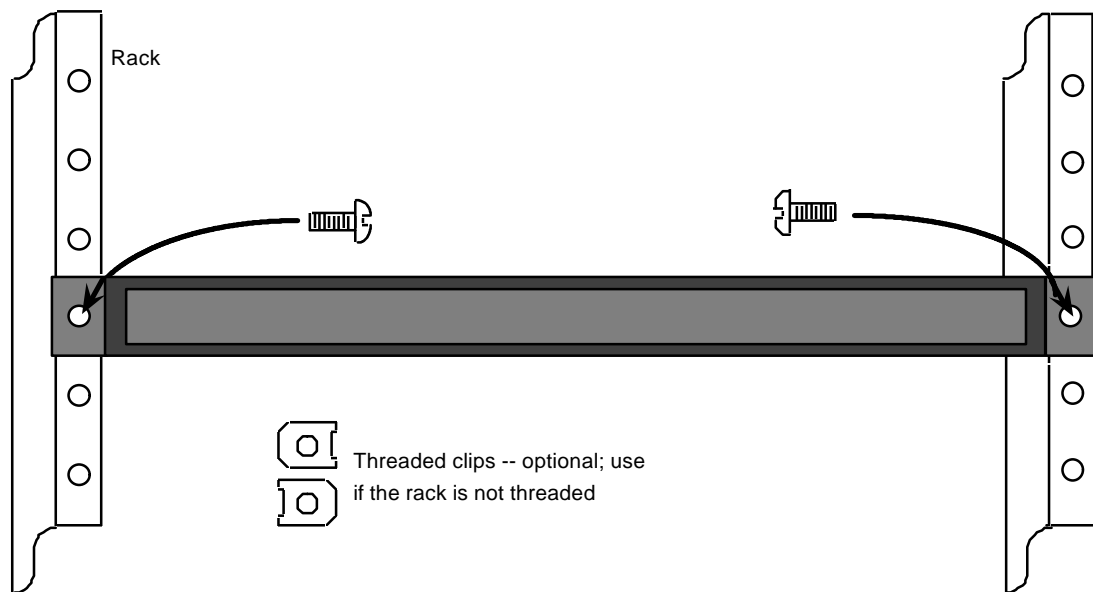


Figure 2 - Mounting a MAXserver in Rack

Insert the Memory Card (if Supplied)

If the unit is supplied with a Memory card , insert the card into the card slot on the front panel .



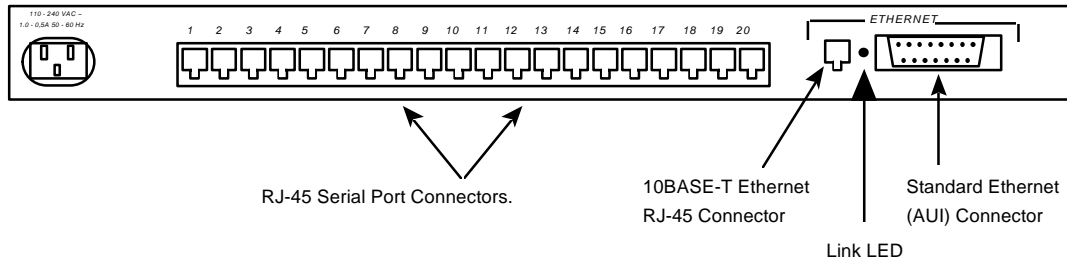
Xyplex recommends that you wear a grounded wrist strap when you insert the memory card. If none is available, ground yourself by placing one hand on the unit (or another grounded object), before you insert the memory card, to prevent static from being discharged into the unit.

Markings on the Memory card indicate which end you insert into the unit. (As another indication, the end you insert has two rows of small square holes.)

Connecting the Ethernet Interface

Connect either a 10Base-T or AUI Ethernet network cable to the appropriate connector on the rear of the MAXserver (See Figure 3 for 20-port and 40-port models; Figure 4 for 8-port and 4-port models.) Connect only one Ethernet cable to the unit. When powered up, the unit selects the interface on which it detects network activity.

MAXserver 1620 Terminal Server



MAXserver 1640 Terminal Server

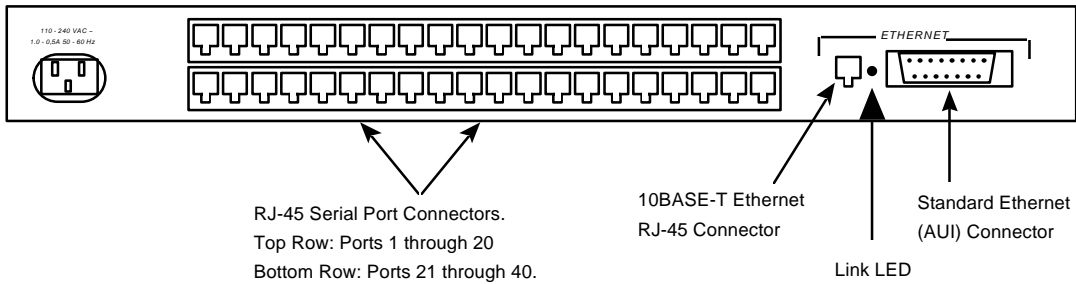


Figure 3 - MAXserver 1620/1640, Rear View

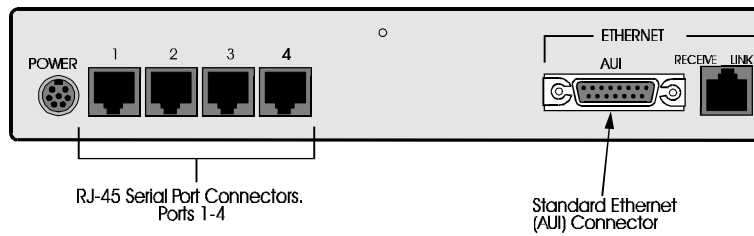


Figure 4 - MAXserver 1604 Rear View

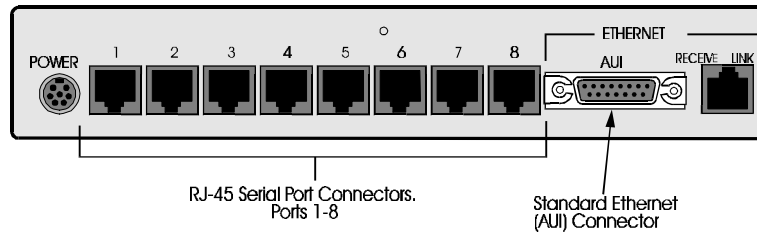


Figure 5 - MAXserver 1608B Rear View

Standard (AUI) Connection -- Plug the male cable connector into the 15-pin female AUI socket on the rear of the unit and fasten the slide latch. (The AUI connector signal assignments are shown in Figure 10.)

10Base-T Connection -- Install the Ethernet cable by plugging it into the 10Base-T connector on the rear of the unit. (The 10Base-T connector signal assignments are shown in Figure 11.) If you use the 10Base-T connector, the LINK LED will light when the unit detects that it is connected to a working Ethernet network.

Connect the Power Cable

You do not need to set the unit for 115V or 230V operation. The power supply automatically adapts to the input voltage .

A grounded AC power outlet should be located within six feet of the back of the unit. You can use a UL-approved, 3-prong extension cord if necessary, provided it has sufficient current and voltage capacity. (The cord must have sufficient capacity for the input power, and AC power must meet the criteria listed in).

To connect the power cable, complete these steps:

1. Plug the AC line cord (supplied) into the AC power receptacle on the rear of the unit. (See Figure 3 for the location of the power receptacle.)
2. Plug the other end of the cord into a grounded 3-prong AC power outlet (or a UL-approved extension cord with sufficient capacity that is plugged into a suitable outlet).
3. When you apply power, the unit performs a self test of its circuitry and then proceeds to load its software. When the unit has finished loading its software, the RUN light flashes slowly and the LAN light flashes as Ethernet packets are received. (Figure 6 shows the locations of the lights on the front panel.)

Front Panel LEDs - MAXserver 1620/1640

The front panels of the MAXserver 1640 and 1620 terminal servers are identical, except for the model designation. If, after several minutes, the front panel lights do not behave as indicated, refer to Appendix A, Troubleshooting.

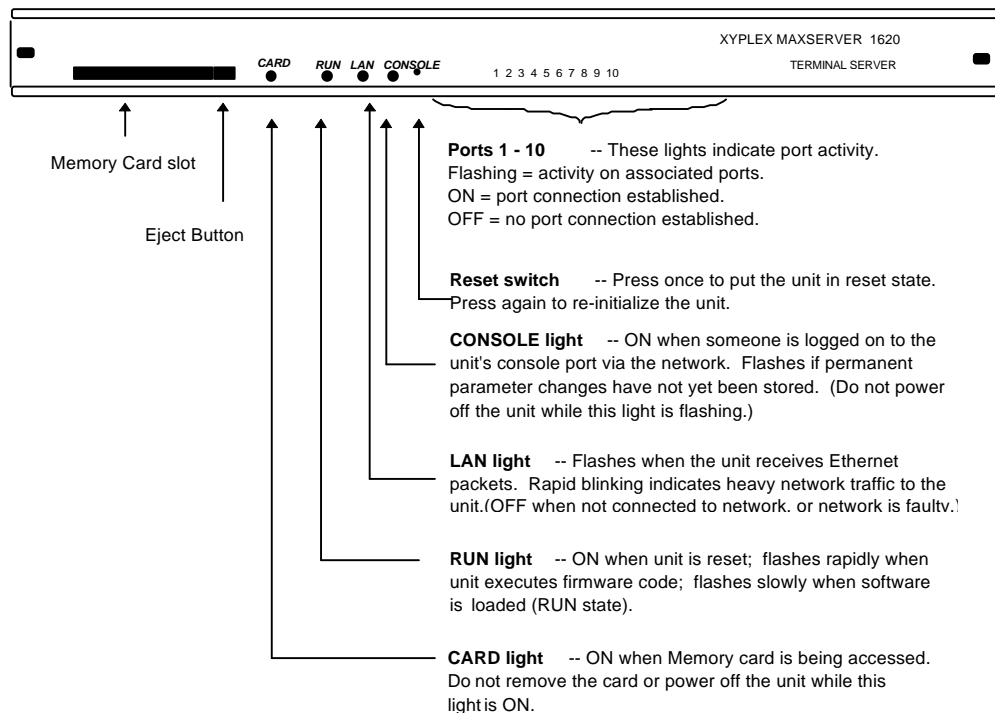


Figure 6 - MAXserver 1620/1640 Front Panel

Front Panel LEDs - MAXserver 1604/1608B

The front panels of the MAXserver 1604 and 1608B terminal servers are identical, except for the model designation (see Figure 7). If, after several minutes, the front panel lights do not behave as indicated, refer to Appendix A, Troubleshooting.

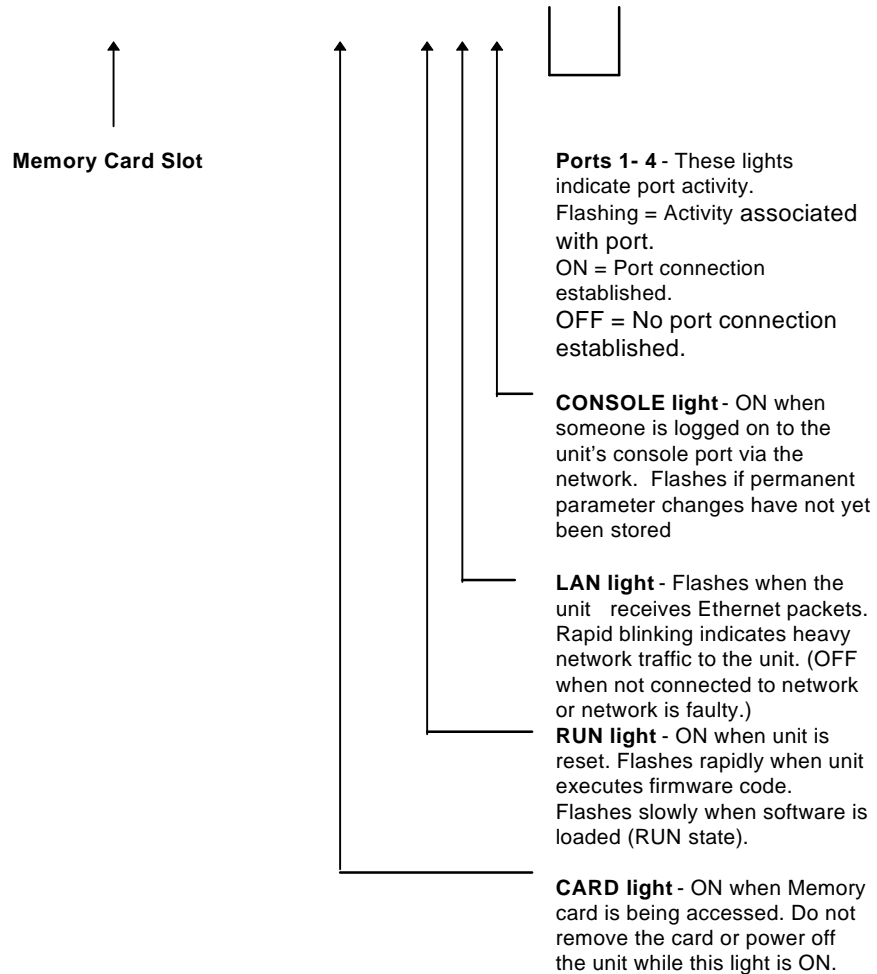


Figure 7 - MAXserver 1604 Front Panel

Serial Port Status Lights

The serial port status lights shown in Figure 4 and Figure 6 are used in several ways. During the initialization process, the lights indicate that self-tests are being performed, and if any self-test fails, they indicate an error code. After the unit has been received a load image and parameters, the lights indicate when a port is actively being used. In this case, each light can indicate activity for more than one port. For example, if LED 1 is lit, this can indicate that there is activity on ports 1, 11, 21, or 31. LED 2 indicates activity on ports 2, 12, 22, etc.

Connect Serial Device Cables

Connect the serial device cables to the 8-pin RJ-45 jacks on the rear of the unit. The signal assignments of the 8-pin jacks are shown in Figure 8:

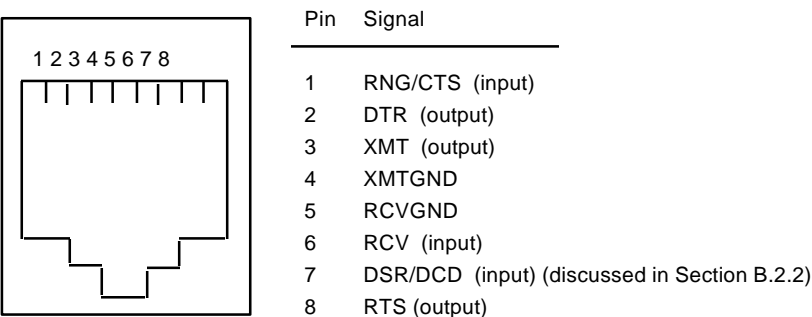


Figure 8 - Serial Device Connector (RJ-45) Signal Assignments

NOTE: MAXserver serial ports provide concurrent support for RTS/CTS flow control and modem control. Refer to the *Software Management Guide* for information about setting up flow and modem control.

Xyplex recommends that you label all cables with the name of the device to which it connects and the number of the port you have assigned to it. This way, if the cable is removed for any reason, you can reconnect it easily. If the device cables have not yet been prepared with the correct RJ-45 connectors, refer to Appendix B, "Cabling Considerations".

Additional Considerations for an Internet Environment

If you plan to use the unit in an Internet environment, you must define addressing and identification characteristics to enable Internet hosts to recognize the unit as a member of the network. See [Page 120](#) for information about configuring the unit for an Internet environment.

Initialize Connected Devices

The unit is shipped with a default configuration (parameter) file that sets all serial ports to operate with asynchronous ASCII terminal devices. If you are not connecting keyboard terminals or PCs running terminal emulation software, proceed to "Accessing the Terminal Server."

Autobauding Feature

MAXserver serial ports are configured to adjust automatically to the communication speed of a connected terminal that is set up as follows:

- 8 bits, No Parity

-- or --

- 7 bits, Even Parity

The Access Servers autobaud to 50, 75, 110, 134, 150, 300, 600, 1200, 1800, 2000, 4800, 9600, 19200, and 38400 Kbps.

To autobaud the serial port,

When your terminal is powered on, keep pressing RETURN until the unit recognizes the terminal. When you do this, the serial port adjusts to the communication speed of the terminal. (This process is called *autobauding*.)

Reinitializing/Powering Off the Unit

The MAXserver always stores permanent parameters (i.e., those parameters that you change using the DEFINE or PURGE command) in local storage.

Before you reinitialize , cycle power, or power off the unit, make sure that the parameter storage process has completed or the permanent parameters may be corrupted.

To reinitialize the unit, use the following command:

```
INITIALIZE DELAY 0
```

Issuing this command ensures that parameters have been stored before the unit reinitializes.

Before you power off the unit , use the following command to ensure that the unit has completed storing parameters:

```
MONITOR PARAMETER SERVER
```

The following screen displays:

```

Xyplex>> monitor parameter server
MX1604 V6.0.3B2 Rom 410000 HW 10.00.00 Lat Protocol V5.2 Uptime:
2:01:05:56
Address: 08-00-97-0E-3B-81      Name:X0E3B81      Number: 0

Check Timer:      30      Parameter Server Limit:      4
Retransmit Timer:  5      Parameter Servers:      2
Retransmit Limit:  3      Rejected Servers:      0
                        Bad Parameter Messages:      0

Path:

Last Update Version:      12      Storage State:      Idle
Last Update Date:      11 Aug 1997  Loaded From: 08-00-87-0E-3B-81
Last Update Time:      00:21:30      X0E3B81

Name      Address      Version Date      Status      Reason
Local MemCard  08-00-87-0E-3B-81  0      Failed      Write
Local NVS08-00-87-0E-3B-81  12 11 Aug 1997 00:21      Current

```

Figure 9 - Monitor Parameter Server Display

The storage process is completed when the “Status” column on this display says “Current” for all parameter servers, and the “Storage State” field says “Idle.” When these conditions are met, you can turn the unit off.

Accessing the Terminal Server

When your terminal is properly connected to the unit, turn its power ON, then press <RETURN> (or ENTER) a few times -- until the unit recognizes the terminal. When the unit responds, you see the following message on your screen:

```
Welcome to the Xyplex Terminal Server.
```

```
Enter username>
```

Type your name, your initials, or a nickname, then press <RETURN>. You can type up to 16 characters (numbers or letters). This name is your identifier during this session. If you choose, you can change this information each time you make a connection. It will be shown whenever you or any other person on the network requests information about who is connected to the unit.

After you enter your username, the unit returns the local command prompt:

```
Xyplex>
```

The unit is now ready to accept any of the commands described in the *TCP/IP-LAT Software User's Guide*. You can obtain on-screen information about the terminal server commands by typing HELP and pressing <RETURN>:

```
Xyplex> HELP
```

Connecting Other Devices

If you are connecting a modem, printer, plotter, host computer, or data switch, refer to the Xyplex TCP/IP-LAT System Documentation for instructions as follows:

Serial Printers, Plotters -- Refer to the section entitled "Shared Printer Services Setup" in the *Configuring Printer Serving Features* Guide.

Modems, Data Switches -- Refer to the section entitled "Setting up Basic Modem Applications" in the *Configuring Access Serving Features* Guide.

Host Ports -- Refer to the section entitled "Host Setup for Local Access Connections" in the *Configuring Access Serving Features* Guide.

Formatting/Updating a Memory Card

Flash Memory cards are readable/writeable and can be updated to a newer software version. Refer to the *Software Installation Guide for Xyplex Loaders* for instructions.



You must re-initialize the unit after updating the card, if you want to use the new software version immediately.

Chapter 3

Cabling Considerations

Overview

This chapter describes cabling considerations you should be aware of when installing MAXserver terminal servers.

Standard cabling items available from Xyplex allow you to connect to any serial device that uses a male or female DB-25 connector. All you need is the appropriate modular cable (crossover cable for connecting to a DTE device, straight-through cable for connecting to a DCE device), and the correct modular adapter (male or female DB-25 connector), which is essentially an RJ-45-to-DB25 adapter.

Xyplex also supplies DEConnect-compatible crossover cables and modular adapters for use with all MAXserver units.

Order Codes - Cables and Modular Adapters

The following tables list the order codes. Each cabling type is described later in this chapter.

Table 1 - RJ-45 Straight Through and Crossover Cables(see Figure 12)

Description	Order Code
Straight through cable, male RJ-45 to male RJ-45, 7.62 m (25 feet)	MX-151-3025
Crossover cable, male RJ-45 to male RJ-45, 7.62 m (25 ft.)	MX-151-3026
Straight through cable, male RJ-45 to male RJ-45, 3.05 m (10 feet)	MX-151-3027
Crossover cable , male RJ-45 to male RJ-45, 3.05 m (10 feet)	MX-151-3028
Straight through cable, male RJ-45 to male RJ-45, 0.305m (1 foot)	MX-151-3033

Table 2 - "Octopus" Cables(see Figure 17)

Description	Order Codes
Eight male RJ-45 connectors to one female 50-pin TELCO connector used to adapt MAXserver 1000 Series cabling to Xyplex TSERV-Style cabling.	MX-151-3034
Eight male RJ-45 to one male 50-pin Telco	MX-151-3035

(continues)

Table 2 - "Octopus" Cables(continued)

Description	Order Codes
Eight male RJ-45 connectors to one male 36-pin Telco DEConnect (see Figure 17)	MX-151-3036
Eight male RJ-45 (connectors) to one female 36-pin Telco DEConnect (see Figure 18)	MX-151-3037
Eight female DB-25 (connectors) to 50-pin male Telco, "null modem" wired (see Figure 18): .915 m (3 feet) 1.83 m (6 feet) 3.05 m (10 feet)	MX-151-3085 MX-151-3109 MX-151-3095
Eight male DB-25 connectors to 50-pin male Telco, wired "straight-through" (see Figure 19): .915 m (3 feet) 1.83 m (6 feet) 3.05 m (10 feet) 15.24 m (50 feet)	MX-151-3088 MX-151-3098 MX-151-3101 MX-151-3103
Modular adapter, female RJ-45 connector to male DB-25 connector, supporting RING signal, with red/gray casing (see Figure 15)	MX-350-0179
Modular adapter, female RJ-45 connector to male DB-25 connector, supporting CTS/RTS flow control, with red/gray casing (see Figure 15)	MX-350-0180

(continues)

Table 2 - "Octopus" Cables(continued)

Description	Order Codes
Modular adapter, female RJ-45 to female DB-25 (supports CTS/RTS flow control),with red/white casing (see Figure 18)	MX-350-0181
Modular adapter, female RJ-45 to female MMJ connector	MX-350-0190
Modular adapter, female RJ-45 connector to female RJ-45 connector	MX-350-0191
Coupling used to connect 2 RJ-45 and/or RJ-12 style modular cables Modular adapter, male RJ-45 to female RJ-12, used to adapt MAXserver 1000 Series cabling to TSERV-style cabling	MX-350-0197
Modular adapter, male RJ-45 to female MMJ	MX-350-0198

Table 3 - DEConnect Cables (See Figure 16)

Description	Order Code
Crossover cable, male RJ-45 to male MMJ, 7.62 m (25 ft)	MX-151-3032
Crossover cable, male RJ-45 to male MMJ, 3.05 m (10 ft)	MX-151-3031

Table 4 - Cable-Making Products

Description	Order Code
Cable, 8-wire, with silver casing (recommended for making crossover cables), 305 m (1000 feet)	MX-150-0110
Male RJ-45 connectors, quantity 100	MX-170-0399
Crimping tool for RJ-45 male connectors	MX-350-0186
Crimping tool for MMJ male connectors	MX-350-0194
Conversion kit - Converts crimping tool to accept RJ-45 plugs	MX-350-0195
Conversion kit - Converts crimping tool to accept MMJ plugs	MX-350-0196

Ethernet Transceiver Cable

Figure 10 shows the standard 15-pin AUI connector signal assignments. The standard 10Base-T (RJ-45 jack) connector signal assignments are shown in Figure 11.

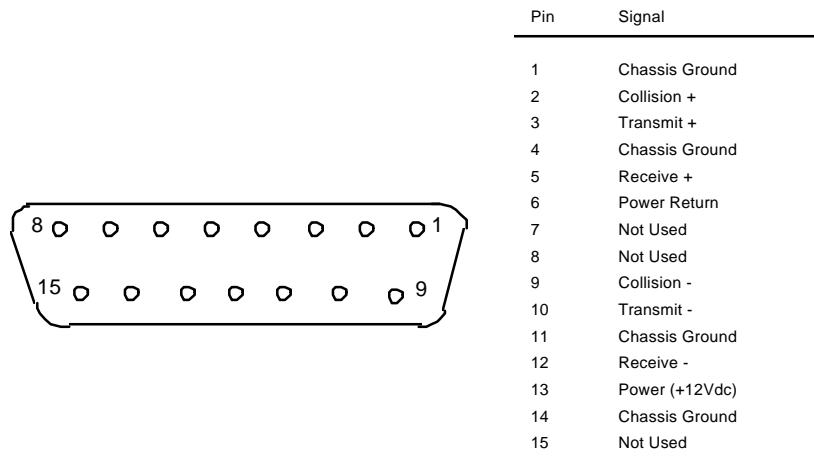


Figure 10 - Ethernet 15-Pin AUI Connector Assignments

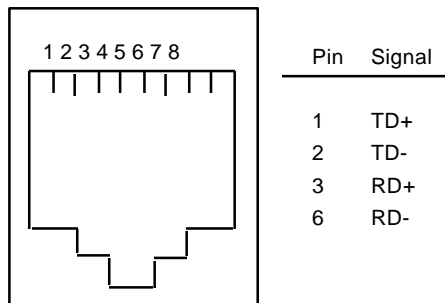


Figure 11 - 10Base-T Connector Assignments

Making Your Own RJ-45 Cables

If you make your own cables, you should be very careful when using the crimping tool. Make sure that the RJ-45 connector is fully inserted into the die set cavity of the crimping tool, and that the wire is fully inserted into the RJ-45 connector, before crimping. The die set might be fragile, and could break if the RJ-45 connector is not properly seated before you squeeze the handle.

Also, Xyplex recommends that you use different colored wires for straight-through and crossover cables, in order to keep track of the cable type. For example, Xyplex recommends silver wire for making crossover cables and black wire for making straight-through cables.

RJ-45 Wiring Considerations

You should give special consideration to the wiring scheme when connecting a device such as a terminal to a MAXserver serial port. The MAXserver is considered a DTE device. If you want to connect to another DTE device such as a terminal that is also DTE, you will need a crossover wiring scheme somewhere in the cabling. (Communication between DTE-to-DTE devices requires a crossover.) When a DCE device is connected to a MAXserver serial port, straight-through wiring is required.

To make a modular cable with a crossover, you need only crimp the RJ-45 connector in the same direction at both ends. This crosses all wires in the cable. To make a modular straight-through cable, you need only crimp the RJ-45 connector in opposite directions at both ends. Figure B-2 shows the crossover and straight-through wiring schemes.

The crossover connects the MAXserver transmit data (XMT) line to the receive data (RCV) line of the user DTE device. Similarly, the MAXserver receive data (RCV) line crosses over to the transmit data (XMT) line of the user DTE device. The other signals are crossed over in a similar manner (see Figure 12).

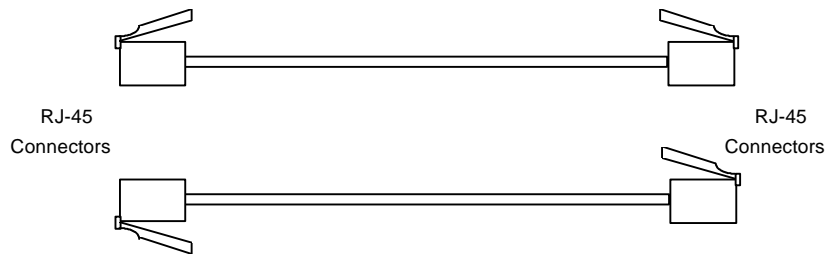


Figure 12 - Crossover and Straight-through Wiring Schemes

Modular Adapters (RJ-45 to DB-25)

You can obtain adapters with male and female DB-25 connectors from Xyplex. These adapters direct signals from the RJ-45 connector on the cable to the correct pin on the DB-25 connector. Figure 13 and Figure 14 show how devices are cabled when you use these adapters. Figure 15 shows RJ-45 and DB-25 pin assignments.

Flow Control and Modem Control

MAXserver serial ports can be set up to support RTS/CTS flow control. The *Software Management Guide* describes flow control options and explains how to set up flow control at a port. The adapters shown in Figure 13 and 14 support RTS/CTS flow control. MAXserver serial ports can also be set up to support modem control. The *Software Management Guide* describes modem control options and explains how to set up modem control at a port. The adapter shown in Figure 14 supports modem control, by supporting the RING signal.

Using Existing MAXserver 1000-series Cabling

The adapters shown in Figure 13 and are designed for use with all MAXserver units. If you have existing MAXserver 1000-series cabling at your site, the cabling can be used to connect MAXserver ports to DTE devices -- provided you do not need to turn on RTS/CTS flow control at the ports. If you plan to connect the unit to a DCE device, you should use one of the adapters shown in Figure 14.

Cabling Considerations

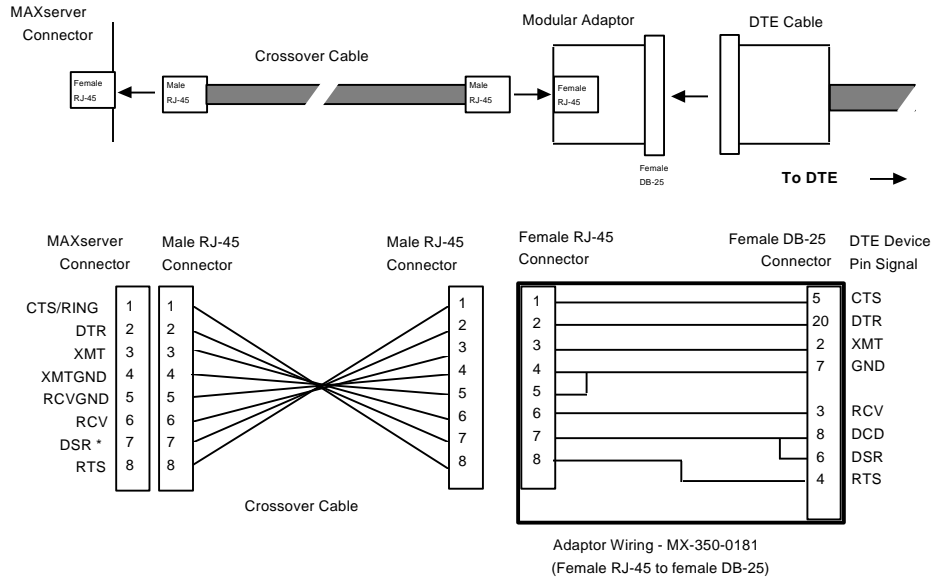
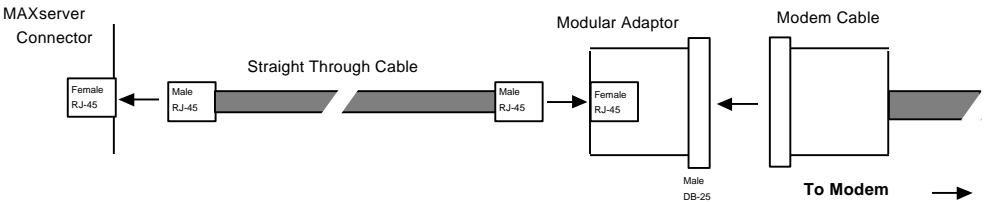
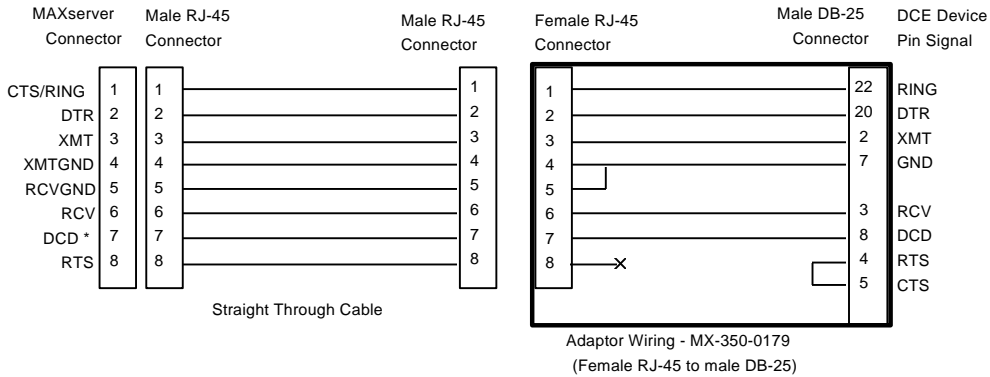


Figure 13 - Adapter Wiring, MAXserver to DTE



(a) Supports RING:



(b) Supports RTS/CTS:

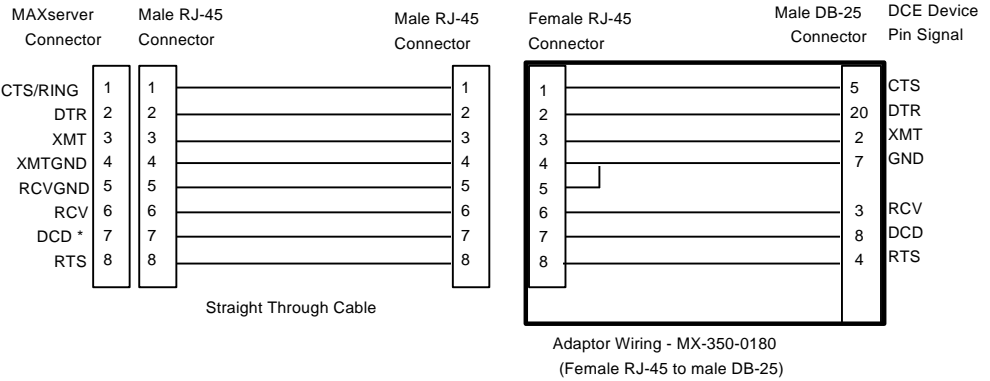


Figure 14 - Adapter Wiring, MAXserver to DCE

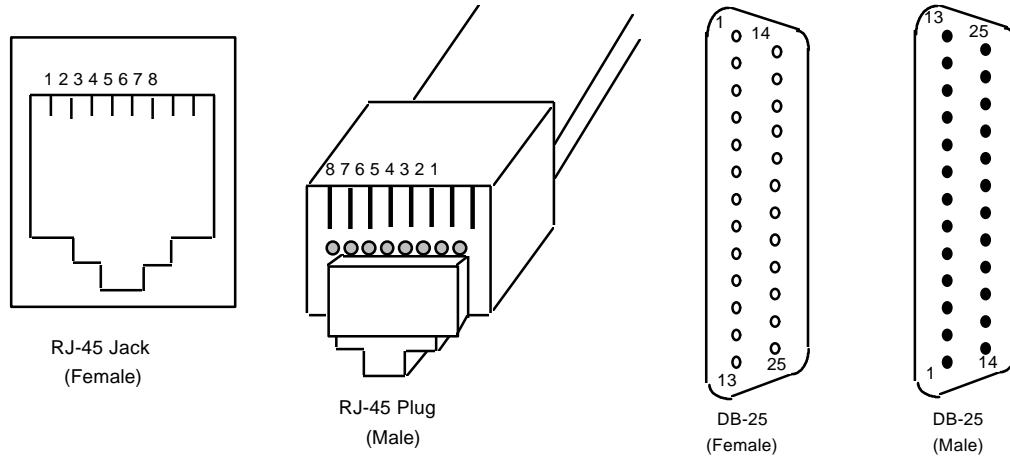


Figure 15 - RJ-45, DB-25 Pins

NOTES: In order to expand the functionality of the serial interface, the MAXserver modular cabling allows you to connect different signals to pin 7 of the MAXserver. (This pin is an input to the MAXserver.) When a DCE device is connected to a MAXserver serial port, the device's DCD output is connected to pin 7. In this case, the signal at pin 7 is referred to as DCD.

When a DTE device is connected to a MAXserver serial port, the device's DTR output is connected to pin 7 of the MAXserver. In this case, the signal at pin 7 is referred to as DSR. (This cabling scheme also provides DECconnect compatibility, since DECconnect does not support the DCD signal.)

DEConnect RJ-45 Cables

Figure 16 shows the DEConnect-compatible cables available from Xyplex and shows how the cables are wired. The Male RJ-45 connector is attached to the server. The MMJ connector attaches to the DEConnect-compatible device (DTE). The cable is a crossover cable that uses the six inner pins of the server port and makes the signals available at the MMJ connector. The cable is constructed using standard six-wire cable.

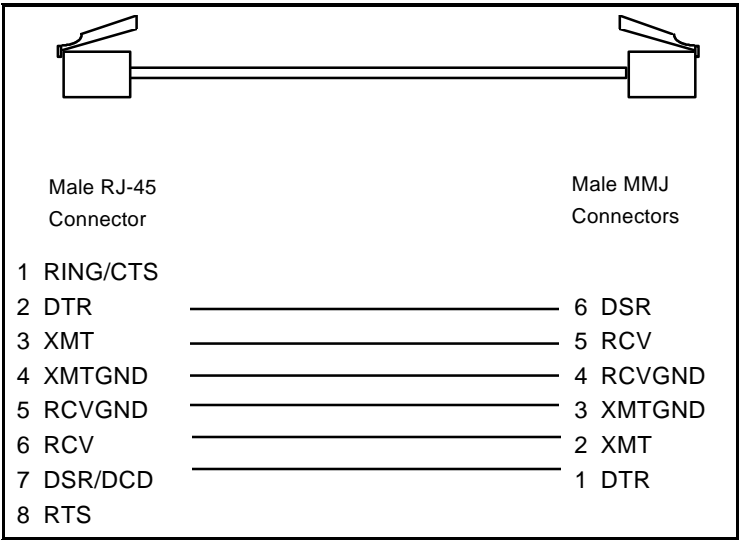


Figure 16 - MAXserverDEConnect Cable

NOTE: If you have existing DEConnect cables that you want to use with the MAXserver, the one-foot straight through cable and the RJ-45 to MMJ adapter or modular adapter allow you to use these cables without making any changes. You can also use the male RJ-45 to female MMJ adapter.

Octopus Cables

An octopus cable fans out a single 50-pin male or female Telco connector, or a 36-pin male or female Telco DEConnect connector, to eight male RJ-45 connectors. These cables enable you to connect a MAXserver's serial ports to existing wiring in your facility. For example, you can use octopus cables to connect the MAXserver's serial ports to a punch down block.

Figure 17 shows an octopus cable with a 50-pin Telco connector:

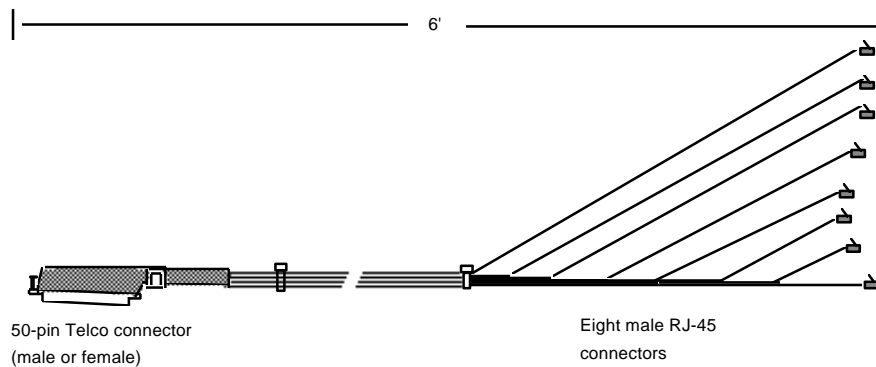


Figure 17 - Octopus Cable with 50-pin Telco Connector

Figure 18 shows an octopus cable with a 36-pin female Telco DEConnect connector. Figure 19 shows an octopus cable with a 36-pin male Telco DEConnect connector .

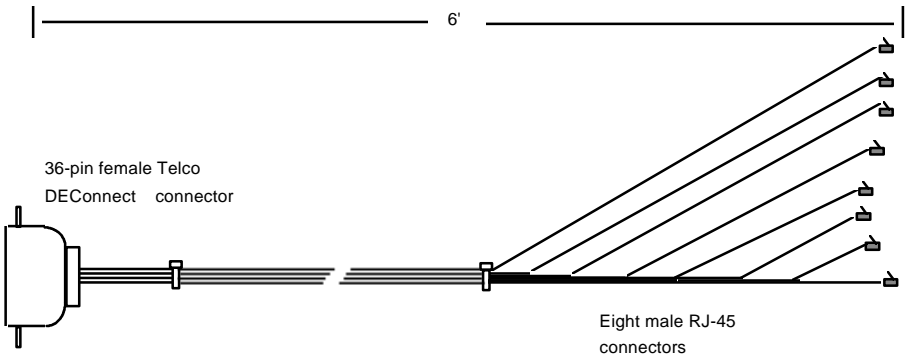


Figure 18 - Octopus Cable With 36-pin Female DEConnect Connector

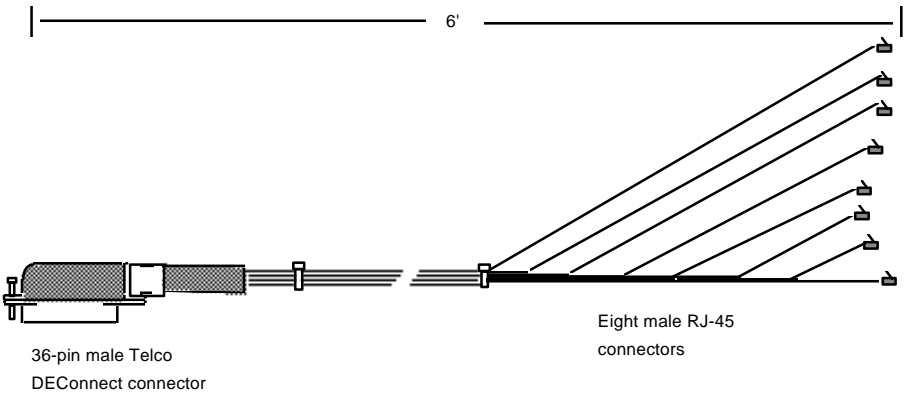


Figure 19 - Octopus Cable With 36-pin Male DEConnect connector

Connecting to a Distribution Panel

By using two types of octopus cable, you can connect MAXserver serial ports to a distribution panel that has DB-25 connectors. This enables you to adapt modular cabling to Xyplex TSERV-style cabling. Xyplex offers octopus cables that fan out a 50-pin Telco connector to eight male or female DB-25 connectors. These cables are available in 3', 6', 10', 25' and 50' lengths. You can connect the unit to the distribution panel via the two octopus cables as shown in Figure 20. (You might need an extension cable to connect the two cables.)

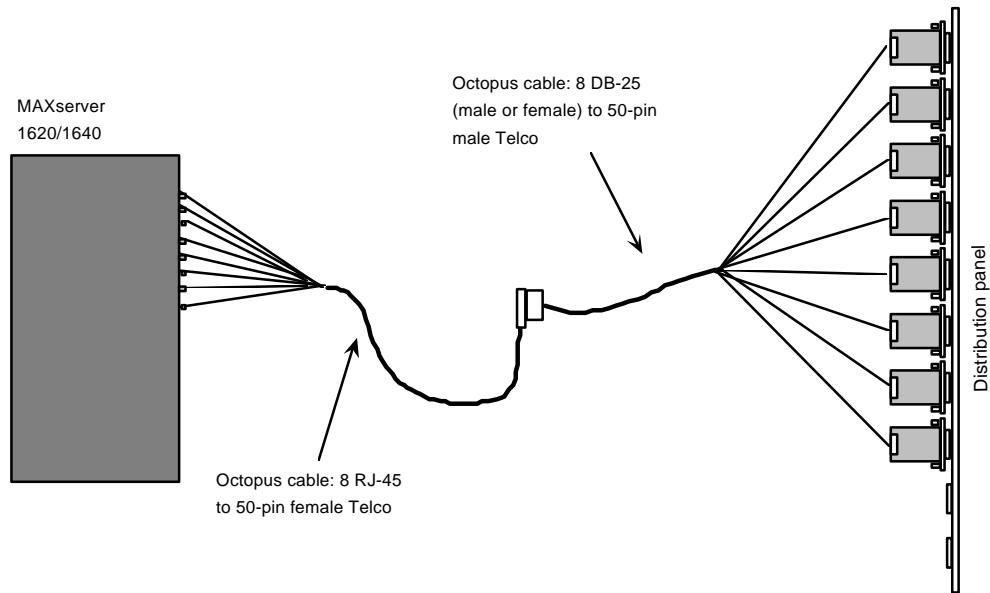


Figure 20 - Connecting a MAXserver to DB-25 Distribution Panel

Chapter 4

Configuring the MAXserver

Overview

This chapter explains each parameter in an initialization record and how to change the configuration parameters for the MAXserver using the Terminal Server Configuration Menu, or alternatively, you can enter the appropriate command at the Xyplex prompt instead of using the menus. Most of the time, the default values in initialization records load software automatically, so often you do not have to change them.

Each MAXserver terminal server provides Initialization Configuration software that you use to:

- View current settings of initialization parameters and change the settings when necessary.
- Change the protocol used to load parameters.
- Change the protocol used to receive a software load image, or change the name of the load image that it requests.
- Change the protocol used to transmit dump files.
- Instruct the operating software, once loaded, to initialize server and port parameters.
- Configure multiple initialization (load/dump) configurations.
- Change the unit's memory settings whenever you add or remove memory (SIMMs)
- Reset the parameter initialization records to default factory settings

- Rename the software image load file

Factory Defaults Settings

Each MAXserver unit is configured at the factory to use a default set of initialization parameters in order to obtain a software image. For most configurations, the default settings can load without any configuration changes.

The unit is also configured at the factory to store parameters locally in Non-volatile storage (NVS) or on a flash memory card, if one is installed, and remotely at any properly configured parameter servers. The following table lists the factory default settings.

The following table lists the MAXserver factory default settings.

NOTE: The default settings listed in this table are enabled at the factory for Initialization Record 1 only. Records 2 and 3 are not enabled at the factory. However, if you enable Records 2 and 3, their default settings are the same as Record 1.

Table 5 - Factory Default Settings

Configuration	Factory Default Setting
Initialization Configuration 1	Enabled
Initialization Configuration 2	Disabled
Initialization Configuration 3	Disabled
Parameter file load method	NVS, XMOP, MOP, BOOTP, RARP
Software Image load method*	CARD, XMOP, MOP, BOOTP, RARP, DTFTP*
Dump File Method	XMOP, MOP, BOOTP, RARP
Software filename for CARD/XMOP/MOP loading	XPCSRV20
Default unit IP address :	0.0.0.0
Installed memory	4 MB
Loading Status messages	Enabled
Directed TFTP values	0.0.0.0 or N/A

* DTFTP is not enabled at the factory.

Loading Software Image and Parameters

When you initialize a MAXserver Series terminal server, it obtains the software load image and parameter file using the information in an initialization record. The NVS for the terminal server maintains three initialization records. The terminal server first attempts to load software using the information in the primary initialization record, if it is enabled. If it cannot load successfully, it attempts to load using the information in the secondary initialization record, if it is enabled. Finally, if it cannot load successfully using the secondary initialization record, it attempts to use the information in the tertiary initialization record, if it is enabled. If all three attempts fail, the terminal server begins this sequence again with the primary initialization record.

You can load the initialization parameters from any of the following locations:

- A memory card installed in the unit's memory card slot that contains the appropriate load image.
- From a host system that has the Xyplex TCP/IP-LAT software installed, if a card is not present or the appropriate image is not on the card.
- A MAXserver unit or a Network 9000 module that has a Memory card that contains the appropriate load image.

Loading Protocols

The default protocols are tried in the following order: Memory Card, Directed TFTP, XMOP, BOOTP/TFTP, MOP, and RARP/TFTP. The protocols are:

- Use XMOP for loading from a Xyplex load server.

- Use MOP for loading from a VAX/VMS host.
- Use BOOTP, RARP, and DTFTP (Directed Trivial File Transfer Protocol) for loading from a UNIX host. Typically, you only need to use DTFTP when loading across a router or when the load host does not support BOOTP or RARP.

You can change the default value for many prompts. The first time you run the Configuration Menu, the default value shown is the factory default value. After you exit from the Configuration Menu, having saved changes, the default value shown for a prompt is the currently stored value, not the factory default value.

Accessing the Configuration Menu

To access the Configuration menu, follow these steps:

1. Using a straightened paper clip, press the RESET switch once to enter reset mode. (Figure 3 shows the location of the switch.) All lights on the front panel should illuminate.
2. Press the RESET switch again, and hold the switch in. With the switch held in, observe the port lights. The port lights should first go off then light in sequence from left to right. Then all lights will go off in sequence from left to right. Then port lights 9 and 10 will go on (for MAXserver 1620/1640; ports lights 7 and 8 for the MAXserver 1608A, 1608B, and 1604). When this sequence has completed, you can release the RESET switch. Next, the unit performs the standard self-test diagnostics, as shown by lights 8 through 1 being turned on in sequence. (The self test requires about 20 seconds to complete.)

3. When the RUN light flashes rapidly (indicating that the self test has completed), *autobaud* any serial port by pressing RETURN a few times at a terminal connected to the port. Once the serial port has selected a port speed, it generates a message that is similar to the following:

Configuration in progress. Please wait.

4. Type the password "ACCESS" (note that there is no prompt) and press RETURN. The unit displays the menu shown in Figure 21.

```
Welcome to the Configuration Menu.

Terminal Server Configuration Menu

  1. Display unit configuration
  2. Modify unit configuration
  3. Initialize server and port parameters
  4. Revert to stored configuration
  S. Exit saving configuration changes
  X. Exit without saving configuration changes

Enter menu selection [X]:
```

Figure 21 - Terminal Server Configuration Menu

About the Terminal Server Configuration Menu

At the "Enter menu selection" prompt of the Terminal Server Configuration Menu, type the number corresponding to the configuration action you want to perform, then press RETURN. (The default choice is X -- exit without saving configuration changes.) The sections that follow describe each option in detail.

After you exit from the Configuration Menu, the unit loads software and parameters.

For each prompt shown in the Configuration Menu, the default choice is shown in square brackets, []. For example, [A] indicates that "A" is the default choice for a prompt. Press RETURN to select the default choice.

Display Configuration

The Display Configuration option lets you view a list of the current configuration values and the new values that will be used after you exit from the menu and save the changes.

To Display the Unit Configuration Menu, complete the following steps:

1. Type **1** at the "Enter menu selection" prompt on the Terminal Server Configuration Menu and press Return. The unit displays the Display Unit Configuration Menu, as shown in Figure 22.

```
Display Unit Configuration Menu

  1. Initialization record #1 (Enabled)
  2. Initialization record #2 (Disabled)
  3. Initialization record #3 (Disabled)
  M. Miscellaneous unit configuration
  X. Exit to main menu

Enter menu selection [X]:
```

Figure 22 - The Display Unit Configuration Menu

Displaying Initialization Records

When you initialize a MAXserver Series terminal server, it obtains the software load image and parameter file using the information in an initialization record. The NVS for the terminal server maintains three initialization records. The terminal server first attempts to load software using the information in the primary initialization record, if it is enabled. If it cannot load successfully, it attempts to load using the information in the secondary initialization record, if it is enabled. If this fails, it attempts to use the information in the tertiary initialization record, if it is enabled. If all three attempts fail, the terminal server begins this sequence again with the primary initialization record.

You can create up to three unique "initialization configurations" (also called initialization records), numbered 1 (primary), 2 (secondary), and 3 (tertiary). (In this case, initialization refers to loading both image and parameters.)

If for any reason there are no service offers for loading and/or dumping made as a result of the first (primary) initialization configuration, the unit will try the secondary initialization configuration. If there are no service offers from that configuration, the unit will try the third (tertiary) initialization configuration. If there are still no service offers, the unit will wait and then try again, beginning with the primary configuration. Only the primary default initialization configuration is enabled at the factory.

To display the settings for an initialization record, complete the following steps:

1. Type 1, 2, or 3 at the Display Unit Configuration Menu. The menu displays a list of currently stored configuration values and the new configuration values for the specified initialization configuration as shown in Figure 23.

	Stored Configuration	New Configuration
Status:	Enabled	Enabled
Image load method:	CARD XMOP MOP BOOTP RARP	CARD XMOP MOP BOOTP RARP
Parameter load method:	NVS XMOP MOP BOOTP RARP	NVS XMOP MOP BOOTP RARP
Dump method:	XMOP MOP BOOTP RARP	XMOP MOP BOOTP RARP
CARD/XMOP/MOP filename:	XPCSRV20	XPCSRV20
Default unit IP addr:	0.0.0.0	0.0.0.0
DTFTP host IP addr:	N/A	N/A
DTFTP gateway IP addr:	N/A	N/A
DTFTP filename:	N/A	N/A
(Type any key to continue)		

Figure 23 - Sample Unit Configuration Display

Figure 23 shows how this display might appear for an enabled initialization configuration (the values shown here are those of the factory default initialization configuration).

The DTFTP (Directed Trivial File Transfer Protocol) information is present only when DTFTP is listed as an Image load method. (Typically, you only need to use this when loading across a router or when the load host does not support BOOTP or RARP.) Similarly, the CARD/XMOP/ MOP load filename is present when CARD, XMOP, or MOP is listed as an Image load method.

2. Press any key to return to the Display Unit Configuration Menu.

Displaying Miscellaneous Unit Configurations

The Miscellaneous Unit Configuration option lets you view the current and new configuration information for the following configuration values:

- Whether the unit is configured to load status messages
- The amount of memory configured

- The amount of memory found by the unit

To display miscellaneous configuration settings, complete the following steps:

1. Type **M** at the "Enter menu selection" prompt on the Display Unit Configuration Menu and press Return. The unit displays a screen containing information similar to Figure 24.

	Stored Configuration	New Configuration
Load status messages:	Enabled	Enabled
Memory installed:	2 Megabytes	2 Megabytes
(Found 2 Megabytes)		
(Type any key to continue)		

Figure 24 - Sample Miscellaneous Configuration Display

2. Press any key to return to the Display Unit Configuration Menu .

Loading and Dumping Protocols

Each initialization record has several loading and dumping protocols enabled by default if the terminal server attempts to obtain software and parameters from the network. The enabled protocols determine where the terminal server obtains the files. Table 6 lists the enabled protocols.

Table 6 - Enabled Protocols

Enabled Protocol	Files Obtained From Host/Loader
XMOP	Xyplex loader
MOP	VAX/VMS host
RARP, BOOTP, DTFTP	UNIX host

Displaying the Software Load Host

Use the `SHOW/MONITOR SERVER STATUS` command to display the name and location of the software load host if the terminal server obtained the software load image from the network.

Displaying the Parameters Server

Use the `SHOW/LIST/ MONITOR PARAMETER SERVER` command to display the name and location of the parameters server.

By default, all available dump protocols and parameter file protocols are enabled, and all available software load image protocols are enabled except DTFTP. Table 7 lists the available protocols for each process.

Table 7 - Default Protocols

Software Load Image	Parameter File	Dump file
CARD (default) XMOP MOP BOOTP RARP DTFTP*	NVS (default) XMOP MOP BOOTP RARP	XMOP MOP BOOTP RARP

*Not enabled by default.

The terminal server first attempts to load software from the flash memory card using the CARD protocol, because this is the default. If a card is not present, it searches for the load image using protocols in the order in which they appear on the screen: XMOP, MOP, BOOTP, RARP, and DTFTP, if it is enabled. When the terminal server attempts to send information to a dump server, it first attempts to use XMOP, then MOP, BOOTP, and RARP.

Using the CARD NVS, XMOP and MOP Protocols

The terminal server uses the CARD, NVS, XMOP, and MOP protocols to search for a software load image or parameter file on a particular location determined by the protocol. You can change the load image filename by using the command on [Page 86](#).

NOTE: The CARD and NVS protocols do not apply to dump files, because Xyplex memory cards do not function as dump servers due to size limitation. The NVS protocol is also not applicable to load image files.

The XMOP and MOP Protocols

The XMOP and MOP protocols look for a software load image file, a parameter file, or a dump server. The terminal server first attempts to use XMOP and then MOP. The XMOP and MOP protocols can send diagnostic information to a dump server.

The Xyplex Maintenance Operations Protocol (XMOP) looks for the files on a Xyplex loader on the network. See the *Software Installation Guide for Xyplex Loader Kits* for more information about how to use XMOP.

The Digital Equipment Corporation Maintenance Operations Protocol (MOP) looks for software load image and the parameter file on a Digital Equipment Corporation host running the MOP protocol. The terminal server can also use MOP to send information to a dump server. See the *Software Installation Guide for VMS Kits* for information about how to configure a MOP host.

Modify Unit Configuration

The Modify Unit Configuration option is where you can:

- Change how the unit loads its software
- Change the name of the load image that it requests, if any
- Change how the unit requests parameter service and dumps memory
- Specify the total configured memory
- Enable/disable load status messages

To modify the terminal server configuration, complete the following steps:

1. Type **2** at the "Enter menu selection" prompt of the Terminal Server Configuration Menu. The unit displays the Modify Unit Configuration Menu, as shown Figure 25.

```
Modify Unit Configuration Menu

1. Initialization record #1 (Enabled)
2. Initialization record #2 (Disabled)
3. Initialization record #3 (Disabled)
M. Miscellaneous unit configuration
D. Set unit configuration to defaults
X. Exit to main menu

Enter menu selection [X]:
```

Figure 25 - The Modify Unit Configuration Menu

2. If you select either 1, 2, or 3 the unit prompts you for a response. The record number displayed depends on which initialization configuration (1,2,or 3) you choose to modify):

```
Set Initialization record #1 to defaults (Y,N) [N]?
Set Initialization record #2 to defaults (Y,N) [N]?
Set Initialization record #3 to defaults (Y,N) [N]?
```

If you type 'Y' - The unit returns all configuration options to their factory default values. See Table 5 for the factory default settings.

If you type N- The unit displays one of the following prompts (depending on which initialization record you choose to modify):

```
Enable initialization record #1 (Y,N) [Y]?  
Enable initialization record #2 (Y,N) [Y]?  
Enable initialization record #3 (Y,N) [Y]?
```

3. Valid answers to this prompt are Y (Yes) and N (No).

If you type 'Y' - This selection enables the specified initialization configuration. Press any key to return to the Modify Unit Configuration Menu.

If you type N- This selection disables the specified initialization configuration and lets you create your own configuration. See “Creating a Customized Configuration” to continue.

Creating a Customized Configuration

This section explains how to create a custom configuration for the MAXserver terminal server. You can customize the following values for up to three initialization records:

- Enable all image loading types or only specific methods (e.g., CARD, DTFTP, RARP)
- Enable all parameter loading methods or only specific parameter loading methods (e.g., NVS, XMOP, MOP)
- Enable all dumping methods or only specific dumping methods (e.g., XMOP, TFTP, BOOTP)
- Define a load file name (if you selected Card, XMOP or MOP loading methods)

- Define IP addresses for the unit, host and gateway (if you selected TFTP as the loading method)

Defining the Image Loading Method

You can change the method the MAXserver uses to load its software. For example, you can configure the unit to load exclusively from a specific type of load server or from the Memory card only. Use the Terminal Server Configuration menu to change the software loading method. Alternatively, you can use DEFINE SERVER commands to change the software loading method. (See Chapter 5 for the commands you can use at the Xyplex> prompt to display, monitor and define the unit's configuration.

The following table lists the factory-default protocol settings:

Table 8 - Default Protocols

Software Load Image	Parameter File	Dump file
CARD XMOP MOP BOOTP RARP DTFTP*	NVS XMOP MOP BOOTP RARP	XMOP MOP BOOTP RARP

*Not enabled by default.

Software Load Images

The following load image protocols are enabled at the factory.

- CARD indicates the memory card
- XMOP indicates another Xyplex loader

- MOP indicates a VAX/VMS host
- RARP, BOOTP and DTFTP indicate UNIX hosts.

Each initialization record has several loading and dumping protocols enabled by default if the terminal server attempts to obtain software and parameters from the network.

Enabling/Disabling Image Loading Protocols

The unit displays the following prompt:

```
Enable ALL methods for image loading (Y,N) [N]?
```

The following table lists the six methods available for image loading.

Table 9 - Image Loading Methods

Image Load Method	Description
C	Enables the unit to load software from a Memory card.
D	Enables the unit to load via directed TFTP.
X	Enables the unit to load from a Xyplex MAXserver Manager or from another unit which has a memory card and the proper load image.
M	Enables the unit to load software via the DEC MOP loader protocol
B	Enables the unit to load software from a BOOTP host
R	Enables the unit to load software via RARP.

If you type Y - All software loading methods will be used. Proceed to the next section to continue the configuration

If you type N - You are selecting specific method(s). The configuration menu prompts:

Toggle (CARD,DTFTP,XMOP,MOP,BOOTP,RARP) image load methods
[C,D,X,M,B,R]:

NOTE: Host setup activity is required for MOP, BOOTP, and RARP protocols.

1. Select specific protocol(s) by removing letters from or adding letters to the brackets. To remove a letter, type the letter and press RETURN. The prompt reappears; however, the letter you typed does not appear within the brackets. To add a letter to those within the brackets, type the letter and press RETURN. The prompt reappears and the letter you typed is included within the brackets.
2. Press RETURN again, the unit prompts you to enable parameter loading methods. Proceed to the next section to continue.

Defining Parameter Loading Methods

This section describes how to specify the unit's parameter loading methods. All MAXserver units are configured at the factory to store configuration data (parameters) locally in Non-volatile storage (NVS) . Alternatively, you can use DEFINE SERVER commands to change the parameter loading method. See Chapter 5 for the commands you can use at the `Xyplex>` prompt to display, monitor and define the unit's configuration.

As an option, you can configure the unit to load parameters from a network host, called a parameter server, using the Terminal Server Configuration Menu.

Once you have selected the image loading methods and pressed Return, the unit displays the following prompt:

```
Enable ALL methods for parameter loading (Y,N) [Y]?
```

IF you Type Y - All methods are selected.

If you type N - You can select specific method(s). The configuration menu prompts:

```
Toggle (NVS,XMOP,MOP,BOOTP,RARP)parameter load methods
[N,X,M,B,R]:
```

The valid methods are listed in the following table. You can select up to four loading methods.

Table 10 - Parameter Loading Methods

Value	Description
N	Enables the unit to store and load parameters from Non-volatile storage (NVS) located within the unit.
X	Enables the unit to store and load parameters at a Xyplex MAXserver Manager or from another unit that has a memory card and the proper load image.
M	Enables the unit to store and load parameters via the MOP -DEC Maintenance Operations Protocol (DEC MOP) loader protocol.
B (Bootstrap Protocol)	Enables the unit to store and load parameters at a BOOTP/TFTP host.

R (RARP	Enables the unit to store and load parameters via - Reverse Address Resolution Protocol (RARP/TFTP).
---------	--

1. Select specific protocol(s) by removing letters from or adding letters to the brackets. To remove a letter, type the letter and press RETURN. The prompt reappears, however, the letter you typed does not appear within the brackets. To add a letter to those within the brackets, type the letter and press RETURN. The prompt reappears and the letter you typed is included within the brackets.
2. When the letters within the brackets represent all the protocols you want to use, press RETURN. The unit then redisplay the prompt showing the protocols you specified. Press RETURN again. The unit prompts you to define dumping methods. Proceed to the next section to continue the configuration.

Defining Dumping Methods

This section describes how to define the unit's dumping methods.. Once you have selected the parameter loading methods and pressed RETURN, the unit displays the following prompt:

```
Enable ALL methods for dumping (Y,N) [Y]?
```

1. Type Y to select all methods, or type N to select specific method(s). The valid methods are listed in Table 11. You can select up to four dumping methods.

Table 11 - Dumping Methods

Value	Description
X	Enables the unit to dump its memory contents to a Xyplex MAXserver Manager when a crash occurs (you cannot enable dumping to a flash memory card).
M	Enables the unit to dump memory via the DEC MOP loader protocol
B	Enables the unit to dump memory at a BOOTP host.
R	Enables the unit to dump memory via RARP.

2. If you choose to use a specific method(s), the configuration menu prompts:

Toggle (XMOP,MOP,BOOTP,RARP)dump load methods [X,M,B,R]:

3. Select specific methods(s) by removing letters from or adding letters to the brackets. To remove a letter, type the letter and press RETURN. The prompt reappears, however, the letter you typed does not appear within the brackets. To add a letter to those within the brackets, type the letter and press RETURN. The prompt reappears and the letter you typed is included within the brackets.
4. When the letters within the brackets represent all the protocols you want to use, press RETURN.

5. If you selected the CARD, XMOP, or MOP loading method(s), proceed to “Defining the CARD/XMOP/MOP Image Filename” to continue the configuration. If you selected BOOTP, TFTP or RARP as your loading method, proceed to “Defining IP Addresses” on Page 77 to continue the configuration.

Defining The CARD/XMOP/MOP Image Filename

This section describes how to define the image filename if you selected CARD, XMOP or MOP as the loading method.. Once you have selected the dumping methods and pressed RETURN, the unit displays the following prompt (if you selected CARD, XMOP or MOP as the unit's loading method).

```
CARD/XMOP/MOP image filename (16 characters max)
[XPCSRV20]:
```

1. Enter a file name or a numerical value. The valid responses are as follows:

Valid filenames

Valid filenames consist of up to 16 characters, which can be letters and numbers, the underscore character (_), the hyphen character (-), and the period (.) character. The default load file name is XPCSRV20. (The actual name of the load file is XPCSRV20.SYS.)

Numerical Values

In place of a filename, you can specify a numerical value. A numerical value specifies to a Xyplex loader (another unit which has a memory card and the proper load image, or a MAXserver Manager card) that it should determine the appropriate load file based on:

- The requesting unit's hardware type , or

- A node entry in the client database of a Xyplex loader.

You can also use numerical values to specify that a MOP (Maintenance Operations Protocol) loader is to determine the appropriate load file based on information contained in the NCP (Network Control Program) database.

Valid numerical values consist of the pound-sign character (#) and a number in the range of 0 through 128. Xyplex load servers respond to the numbers 1 through 5. The following table describes these values.

Table 12 - Image File Naming Conventions

Numerical Value	Description
1	Allows you to specify a load file name via the NCP commands at a VAX/VMS load server, or via client entries on a Xyplex loader . This is the default.
2 through 4	Reserved for use by Xyplex
5	Requires a Xyplex load server to ignore the load request -- unless the load server's client database contains a node entry for the requesting terminal server. (The numerical value 5 is useful when you want to require that a specific Xyplex load server be used to load the unit.)
6 through 128	Undefined.

2. Enter a valid filename and press RETURN. The unit returns you to the Terminal Server Configuration Menu. This completes the configuration of the terminal server.
3. If you enabled all image loading protocols or specified TFTP as the loading protocol, proceed to "Defining IP Addresses."

Defining IP Addresses

If you enabled all image loading protocols or specified TFTP as the loading protocol, you must supply a non-zero Internet address for the unit, load host and gateway (if the load host is not on the same network as the unit).

If Directed TFTP is enabled, the following prompts appear:

```
Enter unit IP address [0.0.0.0]:
```

1. Enter the Internet address of the MAXserver Terminal Server unit, or press RETURN to accept the default address, 0.0.0.0. You must supply a non-zero Internet address if you have specified all image loading protocols or Directed TFTP (DTFTP) as an image loading method.
2. Enter the Internet address of the load host, or press RETURN to accept the default address, 0.0.0.0. You must supply a non-zero Internet address if you have specified all image loading protocols or Directed TFTP (DTFTP) as an image loading method.

Enter host IP address [0.0.0.0]:

3. If the load host is not on the same network as the unit, enter the Internet address of a gateway.

Enter gateway IP address [0.0.0.0]:

4. Enter the name of the file to load (max. 64 characters).

Enter TFTP load filename []:

5. After you have specified a filename and pressed the RETURN key, the menu prompts:

(Type any key to continue)

6. Press any key to return to the Modify Unit Configuration Menu

Miscellaneous Unit Configuration

The Modify Unit Configuration Menu, is where you can change the following unit settings:

- Enable/Disable Status Message display.

- Configure the amount of memory installed in the unit.

Enabling/Disabling Status Message Display

To enable or disable loading status messages, complete the following steps:

1. Type M at the Enter Menu Selection prompt on the Terminal Server Configuration menu and press RETURN. The unit prompts:

```
Display Load status messages (Y,N) [Y]:
```

2. To disable load status messages, enter 'N'. Otherwise, leave the default (Y) intact.

NOTE: You might want to prevent the unit from generating status messages during the software loading process, if a device such as a bar code reader, which cannot interpret status messages, is connected to a serial port.

Configuring MAXserver Memory

To configure the amount of memory in the MAXserver, complete the following steps after enabling/disabling load status messages. The configuration menu prompts:

```
Total installed memory in megabytes (4,6,8) [ 4]:
```

The prompt indicates the amount of installed memory for which the unit has been configured. If you remove memory, you must change this value. (Preferably, you should change this value before you remove the memory.) Also, if you have enabled more software features than the unit can support with the reduced memory, you will not be able to re-initialize the unit after you remove the SIMMs. If this happens, you must re-install the SIMMs and configure the TCP/IP-LAT software image for fewer features.

SIMMs should only be installed or removed by qualified personnel. See [Page 112](#) for instructions on how to install and remove SIMM modules.

The unit automatically detects added memory. Therefore, you do not need to increase the "installed memory" value when you install additional memory. If you want to increase the value, install the additional memory first. If you do, the unit will generate the following warning message:

```
WARNING: After saving the new configuration, you must
turn the unit off and install the additional memory
specified (x MB).
```

```
(Type any key to continue)
```

NOTE: This message displays only while you are using the Configuration menu.

Also, the MAXserver front panel lights will flash an error code the next time the unit is initialized, if you have not yet installed the memory.

2. Press any key. The unit returns you to the Modify Unit Configuration Menu.

Resetting the Unit to Factory Defaults

The Set Unit Configuration to Defaults menu option lets you reinitialize all of the unit's configuration data to the factory default settings. See [Page 56](#) for the factory default settings.

To choose this option, complete the following steps:

1. Type D at the Enter menu selection prompt on the Modify Unit Configuration Menu and press RETURN. The unit displays the following prompt:

```
Initialize ALL configuration data for this unit to
defaults (Y,N) [N]?
```

If you type Y -- All initialization configurations and miscellaneous settings (including status messages enabled and installed memory of 4MB) will be returned to their factory default settings. If the factory default settings have not been changed, the following message displays:

```
Configuration is already set to defaults
```

If you type N -- The settings will not be returned to their factory default settings.

2. After you have answered Y or N, the unit prompts:

```
(Type any key to continue)
```

3. Press any key to return to the Modify Unit Configuration Menu.

Initializing Server and Port Parameters

The Initialize Server and Port Parameters option instructs the operating software, once loaded, to use factory default values for all server and port parameters. All current server and port parameters will be lost when you exit from the menu (using Option S "Exit saving configuration changes").

1. To select this option, type 3 at the "Enter menu selection" prompt of the Terminal Server Configuration Menu (Figure C-1). The server prompts:

```
When the software has been loaded, should  
default server and port parameters be used (Y,N) [N]?
```

2. Type Y to use the defaults or N to save the new configuration you created and press RETURN. The unit returns you to the Configuration menu.

The parameter initialization takes effect after you exit from the Configuration menu and the unit loads its image (assuming that you specify that the unit should save the changes -- Option S). Changes you have made through the Terminal Server Configuration menu take place after you exit from the menu.

Revert to Stored Configuration

The Revert to Stored Configuration option lets you cancel any changes you have made without exiting from the menu. The unit reverts to the configuration values that were last saved. Typically, you would select this option if you had changed some settings, and then decided to undo the changes and begin again.

1. To select this option, type 4 at the "Enter menu selection" prompt of the Terminal Server Configuration Menu (Figure 21). The configuration menu prompts:

Revert to the stored configuration (Y,N) [N]? y

2. Type N and press RETURN to return to the Configuration menu, or type Y and press RETURN. The unit displays the following message:

Configuration reset to stored values.
(Type any key to continue)

3. Press any key. The unit returns you to the Terminal Server Configuration menu (Figure 21). You can then exit from the Configuration menu using Option S or X.

Exit Saving Configuration Changes

The Exit Saving Configuration Changes option lets you exit from the Configuration menu and store the changes that you have made.

To select this option, complete the following steps:

1. Type S at the "Enter menu selection" prompt of the Terminal Server Configuration Menu (Figure 21). If you have made any changes, the configuration menu prompts:

Save changes and exit (Y,N) [Y]?

If the unit is configured to store parameters locally, you see this message:

Updating configuration data; please wait...

If you have not made any changes, the following message displays:

No changes made. Exit Configuration menu (Y,N) [Y]?

2. To exit from the Configuration menu, press RETURN. If you do not want to exit from the menu, type 'N' and press RETURN. The Configuration menu appears.

Exit Without Saving Configuration Changes

The Exit Without Saving Configuration Changes option on the Configuration menu lets you exit without saving the configuration changes that you have made (i.e., use the configuration that was last saved).

1. To select this option, type X at the "Enter menu selection" prompt. If you have made changes, the configuration menu prompts:

Exit without saving changes (Y/N) [N]?

2. To exit the Configuration menu, type Y and press RETURN. If you do not want to exit from the menu, type N and press RETURN to redisplay the Configuration menu.

If you have not made any changes, the configuration menu displays:

No changes made. Exit Configuration menu (Y,N) [Y]?

Chapter 5

Using the Command Line Interface

Overview

This Appendix lists the commands you can use to configure the MAXserver from the command line:

- Viewing Initialization Parameters
- Changing the name of the software image file
- Assigning IP addresses to the network host, access server, gateway, and the network host where the image file resides
- Changing the Status of an Initialization Record
- Enabling and Disabling Protocols
- Resetting Parameters in Initialization Records to Default Values

Displaying an Initialization Record

Use the following command to display an initialization record:

```
List server loaddump [primary] characteristics  
                    [secondary]  
                    [tertiary]
```

Figure 26 shows a sample display.

Primary Record:	Enabled
Internet Load Address	0.0.0.0
Internet Load Host	0.0.0.0
Internet Load Gateway	0.0.0.0
Internet Load File	None
Software:	XPCSRV20
Image Load Protocols Enabled:	Card, XMOP, MOP, BOOTP, RARP
Dump Protocols Enabled:	XMOP, MOP, BOOTP, RARP
Parameter Protocols Enabled:	NVS, XMOP, MOP, BOOTP, RARP

Figure 26 - Sample Primary Initialization Record Display

Field	Means
Primary Record	The status of the initialization record. This example shows the primary record enabled, but an initialization record can be enabled or disabled.
Internet Load Address	The Internet address of the host where the terminal server receives its software load image through DTFTP.
Internet Load Gateway	The Internet address of a gateway, if the terminal server requires a gateway to reach the Internet load host through DTFTP.
Internet Load File	The name and path of the software load image on the Internet host, that the terminal server loads through DTFTP.
Software	The CARD/XMOP/MOP software load image file name.
Image Load Protocols Enabled	The protocols that the initialization record can use to obtain the software load image.
Dump Protocols Enabled	The protocols that the initialization record can use to transmit a memory dump file.
Parameter Protocols Enabled	The protocols that the initialization record can use to obtain the parameter file.

Loading the Software Image File

The DEFINE SERVER LOAD SOFTWARE command specifies the CARD/XMOP/MOP filename that contains the software load image. You specify this filename if CARD, XMOP, or MOP is enabled as a load protocol for the software load image, and the load image name is different from the default. The default software load image name for a MAXserver is XPCSRV20. The CARD/XMOP/MOP load image filename appears in the Server Loaddump Characteristics display shown on page 95.

Use the following command to load the image file:

```
DEFINE SERVER LOAD [ record | ALL ] SOFTWARE filename
```

Example

This example specifies XPCSRV20 as the filename for the secondary initialization record.

```
Xyplex>> define server load secondary software XPCSRV20
```

Changing the Software Image Filename

The software load image filename appears in the Software field on the Loaddump characteristics display (see Figure 26). The default filename for all MAXservers is XPCSRV20. The filenames apply to primary, secondary, and tertiary initialization records.

Use the following command to specify a name for the software load image file:

```
DEFINE SERVER LOAD [ record | ALL ] SOFTWARE filename
```

The [*record*] variable specifies the primary, secondary, or tertiary initialization record. The *filename* variable specifies the software load image filename. The following command example specifies the software load image filename for the primary initialization record:

Example

```
Xyplex>> define server load primary software XPCSRV20
```

Enabling/Disabling Image and Parameter Protocols

Use the following command to enable or disable software load image protocols and operational parameter protocols :

```
DEFINE SERVER LOAD [ record|ALL] usage PROTOCOL protocol | ALL  
ENABLED | DISABLED
```

The [*record*] variable specifies the primary, secondary, or tertiary initialization record. The *usage* variable specifies either the software load image or the operational parameters with one of these sets of keywords: IMAGE [LOAD] or PARAMETERS [LOAD]. You cannot disable all protocols in an initialization record. The following command for example, disables XMOP as a software load image protocol in the primary initialization record:

```
Xyplex>> define server load primary image protocol xmop  
disabled
```

Enabling/Disabling Dump Protocols

Use the following command to enable or disable dump protocols:

```
DEFINE SERVER DUMP [ record] PROTOCOL protocol|ALL  
ENABLED|DISABLED
```

The [*record*] variable specifies the primary, secondary, or tertiary initialization record.

Example

The following sample command shows how to disable RARP as a dump protocol in the primary initialization record:

```
Xyplex>> define server dump primary protocol rarp disabled
```

Assigning IP Addresses

You need to configure the following IP addresses to establish Internet access for MAXservers.

- The IP address for the host on the network where the software load image file resides.
- The IP address for the terminal server .
- The IP address of a gateway on the network that the terminal server uses to gain access to the Internet load host (if your network configuration includes a gateway)
- The IP address of the host on the network where the image file resides

Internet Load Host

The Internet load host specifies the Internet address of the host on the network where the software load image file resides. The default is 0.0.0.0 .

Use the following command to define the Internet access server. This address is used by the Internet load host during DTFTP loading. The default is 0.0.0.0.

```
DEFINE SERVER LOAD [ record|ALL] INTERNET [LOAD]HOST internet-  
address
```

Example

The following example shows the command that specifies an Internet address for an Internet load host in the primary initialization record:

```
Xyplex>> define server load primary internet host 140.179.119.3
```

Internet Load Address

The Internet load address specifies the Internet address for the terminal server. The Internet load host on the network uses this address during DTFTP loading. The default is 0.0.0.0.

Use the following command to define the the terminal server Internet address:

```
DEFINE SERVER LOAD [ record|ALL] INTERNET [LOAD] GATEWAY  
internet-address
```

Example

The following command example specifies the Internet address for the primary initialization record:

```
Xyplex>> define server load primary internet address  
140.180.118.2
```

Internet Load File

The Internet Load File field specifies the pathname and filename of the software load image on the Internet Load Host. The terminal server searches for this filename when it uses the DTFTP protocol to obtain the software load image during initialization. Use the following command to specify the Internet Load File :

```
DEFINE SERVER LOAD [ record] INTERNET [LOAD] FILE  
"/pathname/filename"
```

Example

The following command example specifies the Internet Load File in the primary initialization record:

```
Xyplex>> define server load primary internet file  
"/usr/xyplex/images/xpcsrv20.sys"
```

Internet Load Gateway

The Internet load gateway specifies the Internet address of a gateway on the network which the terminal server uses to gain access to the Internet load host. The default is 0.0.0.0.

NOTE: Not all network configurations include a gateway, so you may not need to specify this address, even if the terminal server uses DTFTP to obtain the software load image.

Example

The following is an example of a command which specifies the address of an Internet load gateway in the primary initialization record:

```
Xyplex>> define server load primary internet gateway  
140.179.111.5
```

Resetting Initialization Parameters To Default Values

If you want to reset the values of parameters in an initialization record after you have changed them, you can do so with one command, rather than resetting each value individually. Use the following command to reset all initialization parameters to the defaults:

```
DEFINE SERVER LOADDUMP [ record|ALL] DEFAULT
```

The [*record*] variable specifies the primary, secondary, or tertiary initialization record. If the initialization record you specify is disabled by default, using this command also disabled the initialization record.

Example

The following command example resets the secondary initialization record:

```
Xyplex>> define SERVER loaddump secondary default
```

The secondary initialization record on a terminal server is disabled by default, so this command resets parameters to default values and disables the initialization record.

Enabling/Disabling Dump Protocols

The DEFINE SERVER DUMP PROTOCOL command enables or disables one or all dump protocols. The terminal server uses a dump protocol to send information to a dump server.

Use the following command to enable BOOTP as a dump protocol for the primary record.

```
Xyplex>> define server dump protocol bootp enabled
```

Use the following command to disable MOP as a dump protocol for the secondary record.

```
Xyplex>> define server dump secondary protocol mop disabled
```

Enabling/Disabling Loading Protocols

The DEFINE SERVER LOAD PROTOCOL command specifies one or all load protocols to use when the terminal server searches for a software load image file or a parameter file. You specify whether the protocol applies to the software load image or the parameter file in the command line.

By default, a MAXserver uses the CARD protocol to obtain the software load image and the NVS protocol to obtain the parameter file. If a memory card is not present, or the NVS protocol is disabled, the terminal server will try to obtain these files using other protocols in the following order: XMOP, MOP, BOOTP, RARP, DTFTP. All of these protocols except DTFTP are enabled by default. If you use the keyword ALL to enable all protocols, you also enable DTFTP.

You cannot use DTFTP to load the parameter file. If you do enable DTFTP, you must specify the Internet address of the load host, the Internet address of the terminal server, and the Internet address of the gateway to the load host, if

necessary. Use the DEFINE SERVER LOAD INTERNET commands specify this information.

Use the following command to load the parameter file:

```
DEFINE SERVER LOAD [ record|ALL] usage PROTOCOL protocol | ALL  
[ENABLED | DISABLED]
```

Examples

This example enables DTFTP as a protocol to use for the software load image in the primary initialization record. (Enabling this protocol requires that you specify DTFTP information with the DEFINE SERVER LOAD INTERNET commands.)

```
Xyplex>> define server load primary image protocol dtftp  
enabled
```

This example enables MOP as the protocol to use when loading the parameter file from the primary initialization record.

```
Xyplex>> define server load primary parameters protocol mop  
enabled
```

This example disables the RARP protocol for use when loading the parameter file from the secondary initialization record.

```
Xyplex>> define server load secondary parameters protocol rarp  
disabled
```

Enabling/Disabling an Initialization Record

Use the following command to enable/disable an initialization record:

```
DEFINE SERVER LOADDUMP [ record|ALL] DISABLED | ENABLED
```

Only the primary initialization record is enabled by default. You must enable the other initialization records if you want the terminal server to use them.

All initialization records have default values for the loading and dumping protocols, and the CARD/XMOP/MOP load image filename, whether they are enabled or disabled by default.

You cannot disable all three initialization records. If the primary and secondary initialization records are disabled, for example, you cannot disable the tertiary initialization record. If you attempt to do so, the command processor generates an error message.

Examples

This command disables the primary initialization record. With this record disabled, the terminal server first attempts to load or dump using information in the secondary initialization record.

```
Xyplex>> define server loaddump primary disabled
```

This command enables all initialization records.

```
Xyplex>> define server loaddump all enabled
```

Resetting the Parameters to Default Settings

The DEFINE SERVER LOADDUMP DEFAULT command resets the parameters in one or more initialization records to the default settings.

Initialization parameters include the status of the initialization record, protocols, the CARD/XMOP/MOP load image filename, and the Internet characteristics for DTFTP loading. You can change this information through the initialization configuration menu, with the commands in this chapter, and through SNMP .

Use the following command to reset the initialization parameters:

```
DEFINE SERVER LOADDUMP [ record|ALL] DEFAULT
```

Example

This following example command resets the secondary initialization record to its default settings. Because the secondary initialization record is disabled by default, this command also disables the initialization record.

```
Xyplex>> define server loaddump secondary default
```

Displaying Initialization Parameters

The LIST/MONITOR SERVER LOADDUMP CHARACTERISTICS command displays the initialization parameters in the initialization records you specify.

Use the following command to display the current parameters:

```
LIST|MONITOR SERVER LOADDUMP [ record|ALL] CHARACTERISTICS
```

Example

This sample display shows the primary initialization record.

```
Xyplex> list server loaddump primary characteristics
```

Primary Record:	Enabled
Internet Load Address	140.179.80.133
Internet Load Host	140.179.119.3
Internet Load Gateway	0.0.0.0
Internet Load File	/usr/xyplex/images/xpcsrv20.sys
Software:	XPCSRV20
Image Load Protocols Enabled:	Card, XMOP, MOP, BOOTP, RARP, DTFTP
Dump Protocols Enabled:	XMOP, MOP, BOOTP, RARP
Parameter Protocols Enabled:	NVS, XMOP, MOP, BOOTP, RARP

Figure 27 - Primary Initialization Record Display

Displaying the Software Load Host

Use the following command to display the name and location of the software load host, if the terminal server obtained the software load image from the network.

```
SHOW/MONITOR SERVER STATUS
```

Displaying the Parameters Server

Use the following command to display the name and location of the parameters server:

```
SHOW/LIST/MONITOR PARAMETER
```

By default, all available dump protocols and parameter file protocols are enabled, and all available software load image protocols are enabled except DTFTP.

The terminal server attempts to load software using the CARD protocol first, because this is the default. If a card is not present, it searches for the load image using protocols in the order they appear on the screen: XMOP, MOP, BOOTP, RARP, and DTFTP, if it is enabled. When the terminal server attempts to send information to a dump server, it first attempts to use XMOP, then MOP, BOOTP, and RARP.

Appendix A

Troubleshooting

Overview

Refer to this chapter if you experience a problem with your MAXserver. This chapter describes:

- How to troubleshoot startup and loading problems
- What to do if the LAN light on the front panel goes out
- How to reset the MAXserver

Startup/Loading Problems

Refer to this section if you have powered up the MAXserver or re-initialized the unit and the front panel lights do not behave as follows after several minutes:

- RUN light flashes slowly
- LAN light flashes as Ethernet packets are received


Normally, the light pattern appears as follows when you power up the MAXserver, or re-initialize the unit:

1. All lights ON for approximately one second. (The MAXserver is testing the lights.)
2. Each port light goes ON in order – left most to right most. (The MAXserver is running a self test.)
3. The RUN light flashes rapidly. (The self test has completed.)
4. The LAN light goes ON. (The MAXserver is starting the software loading process.)

5. The CARD light goes ON for approximately 15 seconds if the unit is loading from a Memory card. (The MAXserver is accessing the Memory card. Do not remove the card while the CARD light is ON.)
6. The RUN light flashes rapidly and the LAN light flashes as Ethernet packets are received. (The MAXserver is loading, or trying to load, software.)
7. When loading from a Memory card, or when using another MAXserver as a load server, Port lights 8 - 1 go ON, sequentially. Then, lights 8 - 1 go OFF. (The MAXserver has finished loading the software image, and is decompressing it.)
8. When the MAXserver has finished loading its software, the RUN light flashes slowly and the LAN light flashes as Ethernet packets are received.

Startup Error Codes

If front panel lights do not behave as described in the previous section when you power up or initialize the MAXserver, the unit might be displaying an error code. A special pattern of diagnostic codes indicates that a hardware or software error has occurred. Figure 28 shows how the diagnostic code; appears on the MAXserver front panel lights.

 Only Port LEDs 1 through 8 are used to display self-test error codes.

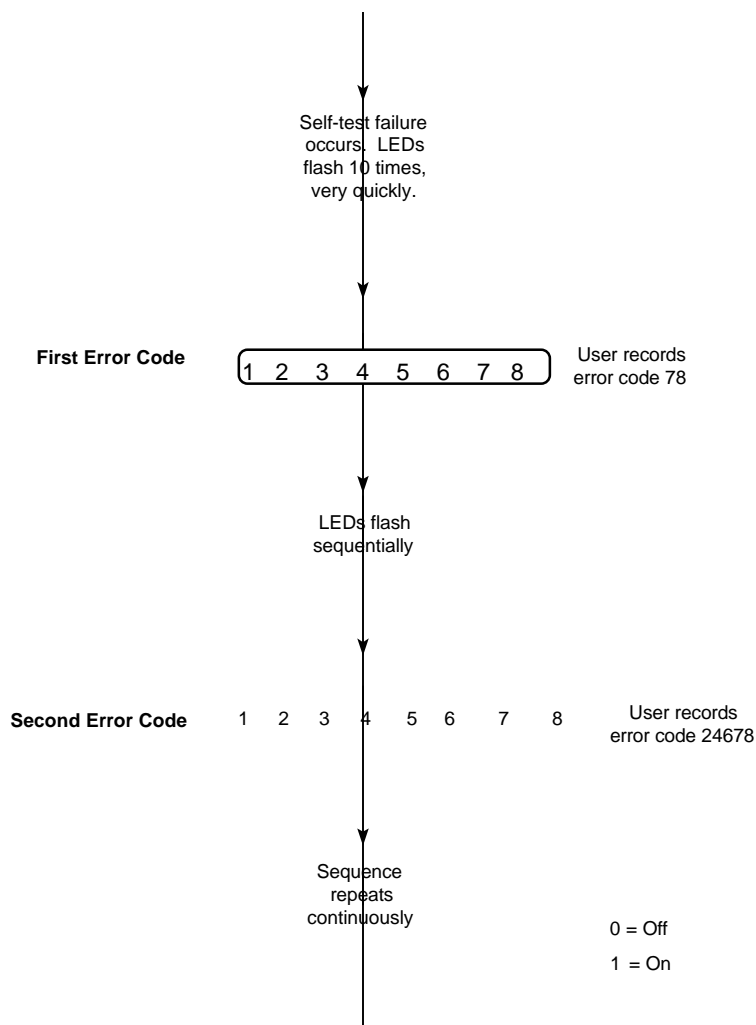


Figure 28 - Sample Error Code Display

Write down the numbers of the error code (the lights that are ON) and contact your Xyplex Customer Support representative. (In the U.S., call 1-800-435-7997. For International calls, the number is 978-952-4700). Your representative will provide further instructions on how to handle the condition.

Common Error Codes

First Error Code: 3, 4, 6, 7

Second Error Code: 3

Problem: The MAXserver has been configured for more memory than is actually installed.

Solution: Either configure the MAXserver for less installed memory, using the Terminal Server Configuration menu, or install additional SIMM memory. (The SIMM memory installation should only be performed by qualified personnel .) Use the Modify Unit Configuration option to specify the amount of installed memory. The Configuration menu is described in Chapter 4.

First Error Code: 3, 4, 8

Second Error Code: 2, 8

or

First Error Code: 3, 4, 6, 7

Second Error Code: 3, 6

Problem: Reinitialize the unit.

Solution: Select the **Modify Unit Configuration** option from the Terminal Server Configuration menu. Chapter 4 explains how to access and modify configuration parameters from the Terminal Server Configuration menu. Or you can reinitialize the unit from Command Line Interface with the following command:

```
Xyplex>>INITIALIZE DELAY 0
```

Power Up and Re-initializationProblems

The following list describes the problems you might encounter when you power up or re-initialize a MAXserver . The list includes descriptions of correct operations and possible solutions.

CARD light doesnot go ON

Problem: You are trying to load from a Memory card and the CARD light does not go ON.

Correct Operation: The CARD light should illuminate for approximately 15 seconds when the MAXserver loads software from a Memory card.

Possible solutions: If the CARD light does not go ON, make sure that the card is inserted properly. Also, make sure that the MAXserver is configured to load from the Memory card. Use the Teminal Server Configuration menu to verify. (Refer to Chapter ?.) By default, a MAXserver is configured to load from the memory card, however, someone might have changed this setting.

CARD light goes ON then OFF quickly

Problem: If the CARD light goes ON and then OFF quickly, make sure that the Memory card has been initialized.

Solution: You can initialize a Memory card while it is inserted in the unit by issuing the FORMAT CARD command. Alternatively, if you have a PC with a Memory card drive, you can check whether the SYSTEM directory is present on the card. The directory should contain the software image. The *filename* must be **xpcsrv20.sys**. Also, the loader file **mcffs1.sys** must reside in the same directory as xpcsrv20.sys, and must appear before xpcsrv20.sys.

Use the following command to display the contents of the SYSTEM directory:

```
SHOW SYSTEM PARAMETERS
```

Network Loading Problems

Problem: The MAXserver does not appear to load from the network, or is slow to load from the network.

Correct Operation: The load server downloads a software image and (optionally) parameters to the MAXserver, over the network, whenever the unit is powered on or re-initialized.

After the software and (optionally) parameters have been downloaded from the load server, the RUN light should blink once every second. Then, if you type several <RETURN>s at a terminal connected to any serial port, the following message should appear:

```
Welcome to the Xyplex Terminal Server.
```

```
Enter username>_
```

Possible Solutions: The MAXserver generates several messages during the load process, which can help you resolve loading problems. To see the messages, press <RETURN> several times at a terminal connected to a MAXserver serial port, when the unit begins the loading process. (When you do this, the serial port adjusts to the communication speed of the terminal. This process is called *autobauding*.) The port light should go ON when you press <RETURN>.

If you type <CTRL><T> now, the unit will display the load server offer table when it receives load offers. (Only one <CTRL><T> is required.)

Loading Problems

Refer to the following message descriptions for assistance in correcting loading problems. Note that each <RETURN> generates a single message. You must press <RETURN> every 5 - 10 seconds to receive updated messages. Also, if the load process takes place very quickly, you might miss some of the messages.

Problem: Not Connected to the Network

If the MAXserver is not connected to the network, you see one of the following messages when you press <RETURN>:

```
Automatic Network Selection: Searching for functional network.
```

```
Searching for functional Standard Ethernet network.
```


Searching for functional 10BASE-T Ethernet network.

Problem: No response to a load request

Normal Process: A message similar to the following one is displayed while the server is waiting for a response to the load request. If this message does not appear after you type several <RETURN>s, the MAXserver unit could be at fault. Call Xyplex Customer Support. (In the U.S., call 1-800-435-7997. For International calls, the number is 978-952-4700).

Requesting network load service

If this message displays for more than 20 seconds after you type several <RETURN>s, either the MAXserver is not configured on a load server, or it cannot communicate with a load server .

Solution: Check that the MAXserver is in the RUN state and that the Ethernet transceiver cable or 10BASE-T network cable is properly installed.

Load Server Errors

A message similar to the following one is displayed if the MAXserver has received a load offer from a load server:

Evaluating service offers

If you typed a <CTRL><T> after "autobauding" your terminal, messages similar to the following display when the unit has stopped accepting load offers:

Received load service offers:				
Host Address	protocol	merit	filename	
xx-xx-xx-xx-xx-xx	0809	9C000037	XPCSRV20	

Up to ten load server addresses are displayed (typically, just one). The MAXserver unit selects the load server with the highest merit value.

When the MAXserver chooses a load server, a message similar to this one appears:

```
Terminal S server, Type 86, Rev x.xx.x
Ethernet address 08-00-87-xx-xx-xx, port x
Currently using initialization record 1

Loading file xpcsrv20
from server xxx.xxx.xxx.xxx, message 1487
Memory Card; Not Installed
```

Error: Message count stays at zero while you type <RETURN>s continuously.

Problem: The load server was configured to load the MAXserver unit, but encountered a problem with the load file or directory.

Possible Solutions: Check the filename and directory at the load server.

Additionally, in some newer VAX/VMS installations, the logical name "MOM\$LOAD" might not be defined properly. (Refer to the *Software Installation Guide* for VMS load hosts for more information.)

File Loading Errors

Problem: Error: Server xx-xx-xx-xx-xx-xx; File error: not a load file.

This message type appears if the load server attempted to load a file image that is incompatible with the MAXserver. (The load file did not have a Xyplex ASCII identification string header.) This can happen if, for example, the file is a DECserver 200 load file.

Normal Process: After the MAXserver loads a file, it checks the contents of the file for proper identification and size.

Error: Server xx-xx-xx-xx-xx-xx; File error: corrupted data.

Problem: The load server attempted to load a file that is compatible with the MAXserver, but the file has been corrupted.

Solution: Correct this problem by installing a new file in the load server. Refer to the *Software Installation Guide* for instructions.

Error: Error Server xx-xx-xx-xx-xx-xx; File error: not executable.

Problem: No 680xx CPU identifier appears in the file header. This is a Xyplex file, but it cannot be executed by the server.

Solution: Resolve this problem by installing the proper file in the load server. See the *Software Installation Guide* for instructions.

Error: Server xx-xx-xx-xx-xx-xx; Timed out, will retry.

Problem: The MAXserver gave up waiting for the load server to send a load file image. When this happens, the server restarts the load request process. If the message count was not zero, and the "timed out" message was displayed, it is possible that your network experienced communication problems.

NOTE: If there is no progress of the message count number beyond zero, a load server problem exists. A network problem probably exists if the message count remains stuck at a number other than zero.

Dump Server Errors

If a failure occurs during the load process, the server will abort the load process and send a small dump file (approximately 60 bytes) to a server that is configured to accept a dump file. The dump file can be analyzed by Xyplex to assist you in resolving the fault. Call Xyplex Customer Support. (In the U.S., call 1-800-435-7997. For International calls, the number is 508-264-9903).

Error: Dump service requested, but no dump file can be created

Normal Process: The MAXserver uses the same algorithm for the dump server as for selecting the load server. Normally, messages similar to these appear:

```
Terminal Server, Type 86, Rev x.xx.x
Ethernet address 08-00-87-xx-xx-xx, port x
Requesting dump service
```


This type of message displays while the MAXserver waits for a response to its dump request. If this message displays for more than 30 seconds after you type several <RETURN>s, the MAXserver is not configured on a dump server, or the MAXserver cannot communicate to a dump server. Refer to the *Software Installation Guide* for instructions on specifying the proper dump configuration.

A message similar to the following one is displayed if the MAXserver received a dump offer from a server.

```
Terminal Server, Type 86, Rev x.xx.x
Ethernet address 08-00-87-xx-xx-xx, port x
Evaluating dump service offers
```

If you typed a <CTRL><T> after a port speed had been selected, messages similar to these will appear when the unit has stopped accepting dump service offers:

Received dump service offers			
Host Address	protocol	merit	filename
xx-xx-xx-xx-xx-xx	0809	9C000037	

The MAXserver selects the dump server with the highest merit value. If two or more dump servers have the same merit value, the MAXserver will select the first dump server listed.

```
Terminal Server, Type 86, Rev x.xx.x

Ethernet address 08-00-87-xx-xx-xx, port x
Currently using initialization record 1

Maintenance dump to server 08-00-2B-05-8B-78,message 1487
```

If a failure occurs during the dump process, the MAXserver will abort the dump and attempt to dump to the next dump server, until the dump server list is exhausted. After the dump process completes, the MAXserver selects the load server with the next highest merit value on the load offer list . If the load list is exhausted, the MAXserver will restart the loading process.

Parameter Loading Problems

If the MAXserver is configured to load parameters from the network (rather than local Non-volatile storage- NVS), the unit requests a parameter file from the parameter server¹. If a parameter file is not sent from the server, the MAXserver will wait indefinitely for the parameter file.

The following message types can be generated during the parameter file load sequence. The process is similar to the load process:

```
Requesting parameter load service
```

This message (or a similar message) displays while the MAXserver waits for a response to the parameter load request . If this message displays for more than 5 seconds after you type several <RETURN>s, the MAXserver is not configured on a load server for parameter load service. Refer to Chapter 4 to change the settings .

```
Terminal Server, Type 86, Rev x.xx.x
Ethernet address 08-00-87-xx-xx-xx, port x
Currently using initialization record 1
```

```
Loading parameters from server
xxx.xxx.xxx.xxx, message 1487
Memory Card; Not Installed
```

Link L1 refers to the Ethernet transceiver cable or 10BASE-T network cable; that is, the server is loading parameters via the LAN. If the message count remains at zero after you type several <RETURN>s, the load server is properly configured, but does not have a defined parameter file. See Chapter ? for instructions on how to define a parameter file.

¹ By default, the MAXserver loads its configuration data (parameters) from NVS. However, you can configure the unit to load parameters from a network parameter server, using the Terminal Server Configuration menu.

Loading from the Network

Problem: While loading from the network, no messages appear after you type several <RETURN>s. (Note that when the MAXserver is loading from a Memory card, you do not see any messages, and cannot access the terminal server.)

Correct Operation: The port normally autobauds to the correct baud rate when you press several <RETURN>s. Once a port speed has been selected, the port light illuminates. In the first 20 seconds after power up, the server runs the self test and does not respond to the <RETURN>s. Shortly after power up, however, the port displays a message in response to a <RETURN>.

Possible Solutions: Determine whether the port is receiving characters properly. Type several <RETURN>s and make sure the PORT light is ON steadily. This indicates that the MAXserver has received characters and selected a communication speed.

If the port is receiving characters, the MAXserver might have autobauded to the wrong speed. Press the <BREAK> key to re-initialize the autobaud sequence, then type several <RETURN>s.

If the port is not receiving characters, a cable or device problem exists. Try changing the type of cable used (e.g., change from straight-through to crossover). Note that a MAXserver-to-DTE device configuration requires a crossover cable connection. Refer to Appendix B for cable descriptions and order codes.

If the LAN Light Is Out

Correct Operation: When the LAN light on the MAXserver front panel is ON, the server is communicating with the network.

Solution: If you are unable to communicate with the network and the LAN light is not ON, check the following.

- Make sure that the Ethernet transceiver cable or 10BASE-T network cable is securely connected to the back of the MAXserver.

- There may be a problem with the network itself. Check whether any other devices connected to the network are experiencing communications problems.
- Check whether a diagnostic code is being displayed on the front panel lights (indicating a hardware or software error).

If none of these checks indicate a problem and the LAN light is still not ON, contact your Xyplex Customer Support representative for assistance. (In the U.S., call Xyplex Customer Support at 1-800-435-7997. For International calls, the number is 987-952-4700).

Resetting the MAXserver

You can reset the MAXserver to force it to run a self test or to re-initialize the unit. Before resetting the server, check the port lights to make sure that no connections are in progress. All connections are terminated when the server is reset.

To reset the MAXserver, follow these steps:

1. Make a simple "tool" from an ordinary paper clip by bending one end outward. You need this tool to press the RESET button located behind the MAXserver front panel.
2. Look for the small hole between the CONSOLE light and the light labeled '1' (see Figure 29).

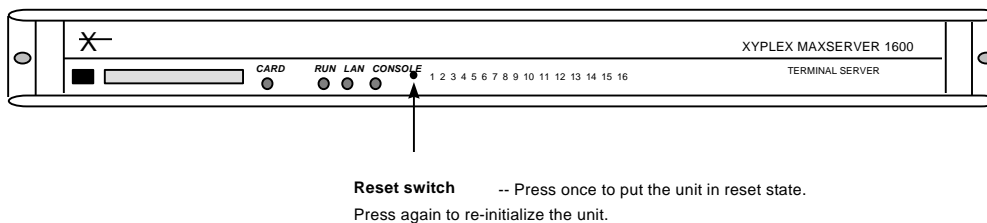


Figure 29 - RESET Switch Location

3. Use the paper clip tool to press the RESET button once. This halts all MAXserver operations -- the server will no longer send or receive network data or data from its connected devices. When the MAXserver enters RESET state, all front panel lights illuminate.
4. Press the RESET button again. The MAXserver begins its self test.
 - If the MAXserver detects an error, the front panel lights illuminate as described in Appendix A. This error sequence continually repeats until the error is corrected or you power off the MAXserver. During this time, no data is exchanged over the Ethernet cable or server ports.
 - If the MAXserver does not detect an error, it will begin loading software from the Memory card or begin requesting a network load (if no Memory card is present). Once loaded, the MAXserver resumes normal operations.

Appendix B

Installing/Removing SIMMs

Overview

This Appendix explain how to install and remove MAXserver Single Inline Memory Modules (SIMMs) .

ATTENTION

Only qualified personnel should install or remove MAXserver SIMMs.

Unplug the MAXserver before you begin the installation. There is danger of Electrical Shock if you fail to do so.

SIMMs are extremely sensitive to static electricity. Static from your clothes or work environment can destroy SIMMs, or diminish their reliability.

Handle SIMMs by their edges only, and use standard static-preventive procedures. Preferably, the installation should be done with an anti-static wrist band, on a grounded work surface.

Recommended SIMMs Manufacturers

The MAXserver accepts 30-pin 70 ns. (or faster) 1M x 8 SIMMs with tin contacts. (Do not use SIMMs with gold contacts.) Table 13 lists some SIMMs that meet this criteria. The order code for a 2MB SIMM memory upgrade kit is MX-500-5744. Contact your Xyplex Networks sales representative to order this kit.

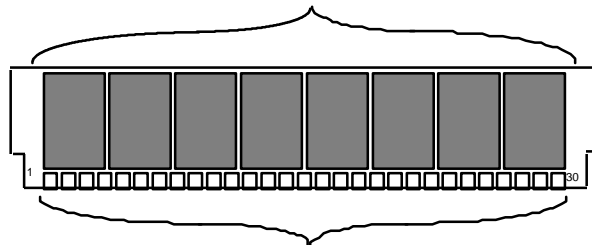
Table 13 - SIMM Manufacturers

Manufacturer	Manufacturer's Part No.
Toshiba	THM81070AS-70
Motorola	MCM81430S70
Micron	MT2D18M-7
PNY	8100070-2

MAXserver Memory Requirements

Each SIMM provides 1 Megabyte of memory. SIMMs must be installed or removed in pairs; you can install either two, four, or six SIMMs (i.e., 2, 4, or 6 Megabytes of memory). This means that the MAXserver can be configured with a total of 4, 6, or 8 Megabytes of memory. Figure 30 shows a typical SIMM. (The SIMMs you are installing might have a different number of memory chips.)

NOTE: All MAXserver Terminal Servers are delivered from the factory with a minimum of 4MB installed.

**Figure 30 - Typical SIMM**

Installation



Unplug the MAXserver before you begin the installation. There is danger of Electrical Shock if you fail to do so.

To install the SIMMs, follow these steps:

- Unplug the MAXserver if you have not already done so. It is not necessary to remove the serial cables and Ethernet cable. If the MAXserver is mounted in a rack, remove it from the rack.
- Set the MAXserver on a grounded workbench or other flat, stable surface.
- Attach an anti-static strap to your wrist, and connect the strap to a well grounded object. If a well grounded object is not available, connect the strap to the MAXserver chassis after you remove the cover.
- Remove the four screws that secure the cover on the MAXserver, using a Phillips-head screwdriver (see Figure 31). Put the screws in a safe place. Then, lift and remove the cover.

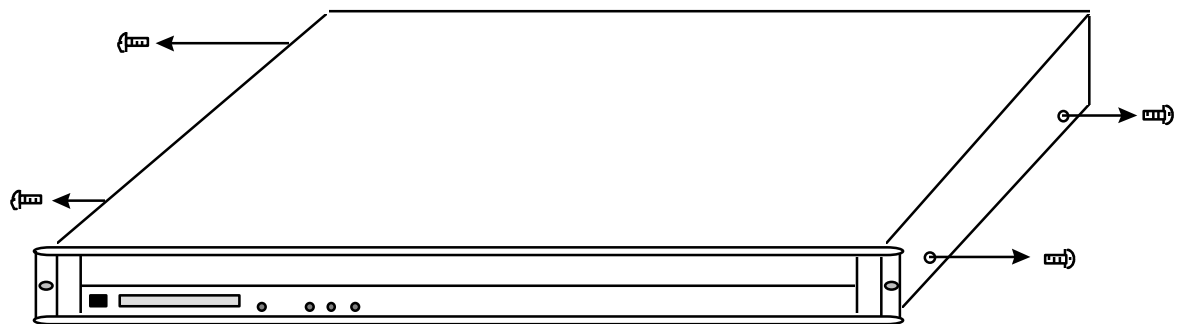


Figure 31 - Removing the Screws Securing the Cover



Do not touch the Power Supply. Components might still be charged to dangerous voltages

5. Locate the SIMM sockets inside the MAXserver (see Figure 32).

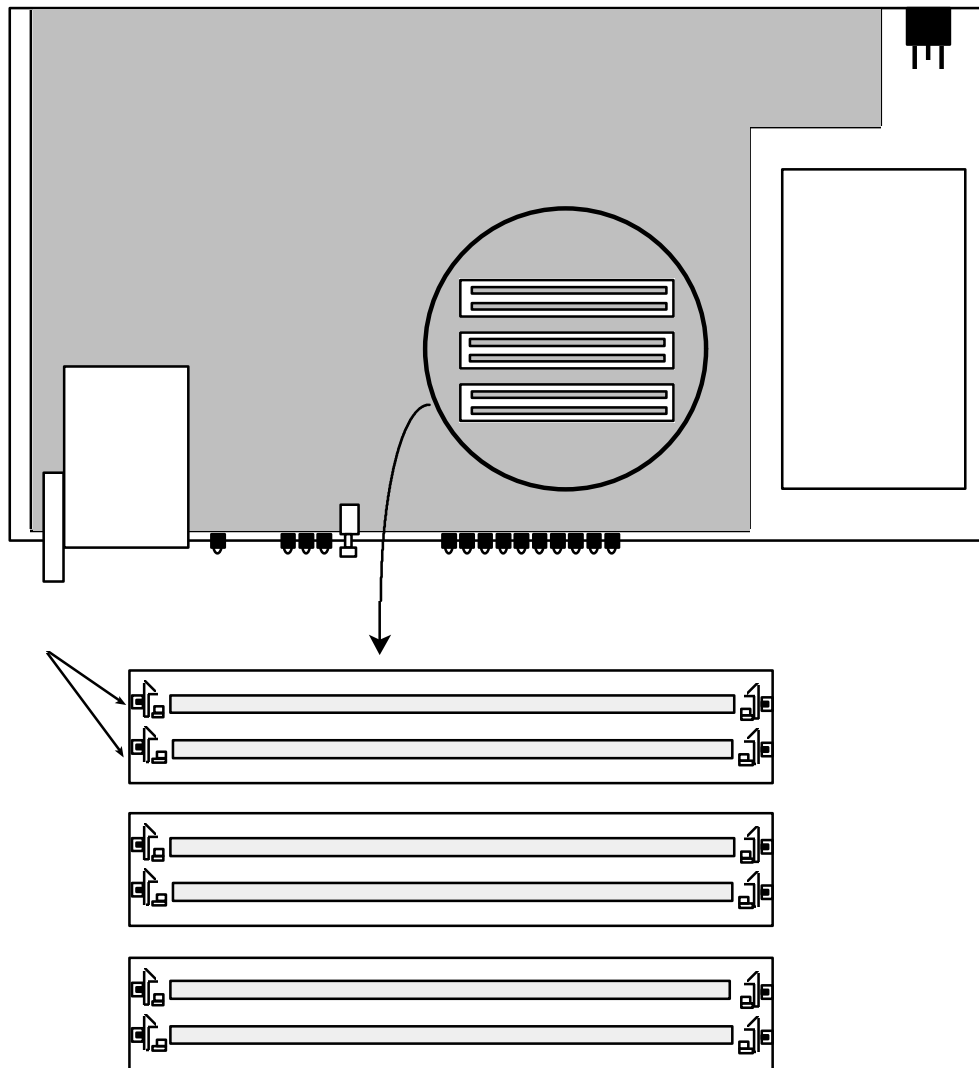


Figure 32 - Location of SIMM Sockets

6. Install two SIMMs at a time, and install them into the sockets in the following order: 1 and 2, then 3 and 4, then 5 and 6. (It is easier to install each pair of SIMMs by installing the SIMM in the odd-numbered socket s first.)
7. Hold the SIMM by its edges, with the memory chips facing the front of the MAXserver , then insert the SIMM into the slot. Angle the top of the SIMM (about 30°) toward the rear of the MAXserver (see Figure 33).
8. Place your thumbs on opposite corners of the SIMM and press down.
9. Press forward (toward the rear of the MAXserver) until you feel the SIMM snap into place.

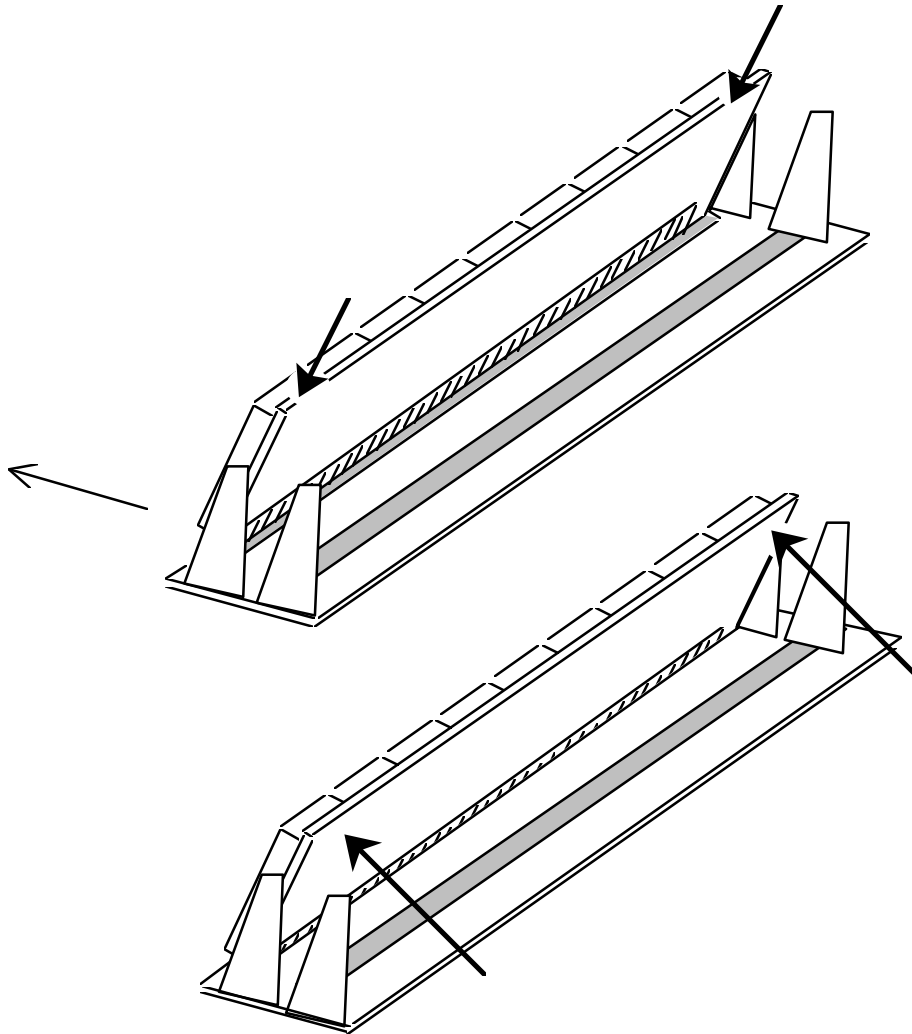


Figure 33 - Inserting SIMM into Socket

10. Make sure that the SIMMs are secure within the retainers.
11. Replace the MAXserver 's cover, and secure it with the four screws you had removed.
12. Return the unit to the rack or flat surface from which you removed it, and plug it back in.

13. When you apply power, the MAXserver performs a self test of its circuitry and then proceeds to load its software. When the unit has finished loading its software, the RUN light flashes slowly and the LAN light flashes as Ethernet packets are received.

If, after several minutes, the front panel lights do not behave as indicated, refer to Chapter 3, Troubleshooting .

No other actions are required. The MAXserver automatically detects, tests, and records the presence of the additional memory. However, if you want to verify that the MAXserver has detected the additional memory, proceed to the next section .

Verifying Memory Installation Using Commands

You can verify that the MAXserver has detected the additional memory. To do so, follow these steps:

1. Connect a terminal to any MAXserver serial port.
2. Press <RETURN> several times to "autobaud" the serial port to the terminal's speed.
3. Enter a username when prompted.
4. Use the following command to generate a display that indicates the amount of memory the MAXserver detects. (Look for the "Installed Memory" field in the upper left portion of the display.)

At the Xyplex prompt, type:

```
SHOW SERVER ALTERNATE STATUS
```

Verifying Memory Installation Using the Configuration Menu

You also can use the MAXserver Terminal Server Configuration menu to verify the memory installation by following these steps:

1. Using a straightened paper clip, press the MAXserver's RESET switch once to enter reset mode. All lights on the front panel should illuminate.
2. Press the RESET switch again, and hold the switch in. With the switch held in, observe the port lights. The lights for Ports 9 and 10 should illuminate on the MAXserver 1620 and 1640 (ports 7 and 8 on the MAXserver 1604 and 1608 A/B). The port lights should then flash in sequence from 1 to 10 (1 to 8 for MAXserver 1604 and 1608A/B) and then back to 1 again. Port lights 8, 9 and 10 then illuminate (port lights 7 and 8 on the MAXserver 1604 and 1608A/B). When this sequence has completed, release the RESET switch. The MAXserver performs the standard self-test diagnostics. (The self test requires about 20 seconds to complete.)
3. When the RUN light flashes rapidly (indicating that the self test has completed), *autobaud* any serial port by pressing RETURN a few times at a terminal connected to the port. Once the MAXserver has selected a port speed, it generates the following message:

```
Terminal Server, Type 90, Rev x
Ethernet address 00-DD-01-00-46-DD, port 1
Configuration in progress. Please wait.
```
4. Type the password "ACCESS" (note that there is no prompt) and press <RETURN>. The unit displays the menu shown in Figure 34:

```

Welcome to the Configuration Menu.

Terminal Server Configuration Menu

1. Display unit configuration
2. Modify unit configuration
3. Initialize server and port parameters
4. Revert to stored configuration
S. Exit saving configuration changes
X. Exit without saving configuration changes

Enter menu selection [X]:
```

Figure 34 - MAXserver Terminal ServeConfiguration Menu

5. Type '1' and press <RETURN>. The unit displays a menu similar to Figure 35:

```

Display Unit Configuration Menu

1. Initialization record #1 (Enabled)
2. Initialization record #2 (Disabled)
3. Initialization record #3 (Disabled)
M. Miscellaneous unit configuration
D. Set unit configuration to defaults.
X. Exit to main menu

Enter menu selection [X]:
```

Figure 35 - Sample Display Unit Configuration Display

6. Type 'M' and press <RETURN>. The unit displays a screen similar to Figure 36:

	Stored Configuration	New Configuration
Load status messages:	Enabled	Enabled
Memory installed:	2 Megabytes	2 Megabytes
(Found 2 Megabytes)		
(Type any key to continue)		

Figure 36 - Sample Miscellaneous Configuration Display

The display indicates the amount of installed memory detected by the MAXserver. If you have installed MORE memory than the display indicates, try re-installing the SIMMs.

To exit the Miscellaneous Configuration display, press any key. The Display Unit Configuration menu appears. Type 'X' at the "Enter menu selection" prompt. This returns you to the main menu. Enter 'X' at the "Enter menu selection" prompt. The MAXserver then proceeds to load its software.

Removing SIMMs



Before you remove SIMMs, you must configure the MAXserver for less memory, using the Terminal Server Configuration Menu. If you fail to do so, the front panel lights will display an error code the next time you try to initialize the unit.

Also, if you have enabled more software features than the MAXserver can support with reduced memory, you will not be able to reinitialize the unit after you remove the SIMMs. To prevent this, configure the software for fewer features prior to removing the SIMMs.

Configuring the MAXserver for less Memory

To remove memory from the MAXserver, complete the following steps:

1. Select Option 2 from the Configuration Menu and press <RETURN>. The unit displays the Modify Unit Configuration Menu.
2. Select option M and press <RETURN>. The MAXserver displays a series of prompts. Press <RETURN> at each prompt, until you see the following message:

Total installed memory in megabytes (2,4,6,8) [4]:

The number in the square brackets [] indicates the amount of installed memory for which the MAXserver has been configured.

3. When you see the prompt, enter the amount of memory the MAXserver will have after you remove the SIMMs, and press <RETURN>.
4. Type 'M' and exit to the main menu. The unit displays the Configuration menu. Enter 'S' at the "Enter menu selection" prompt to save changes and exit. The MAXserver prompts:

Save changes and exit (Y,N) [Y]?

5. Type 'Y' and press <RETURN>. When the MAXserver has saved the changes, you see this prompt:

Changes made. Exit Configuration menu (Y,N) [Y]?

6. Type 'Y' and press <RETURN>.
7. After you have configured the MAXserver for less memory, proceed to the following section to physically remove the SIMMs .

Removing SIMMs from the MAXserver

You must remove either two or four SIMMs. If you want to remove two SIMMs and four are installed, remove the SIMMs from sockets 3 and 4.

1. Follow steps 1 through 5 under "Installation" in this chapter.
2. To remove the SIMMs from the sockets, pull the retainers that hold the SIMM outward (see Figure 37).



Figure 37 - Removing SIMMs

3. Pull the SIMM toward you, then up. (Basically, you reverse the steps shown in Figure 31.)
4. Replace the MAXserver cover, and secure it with the four screws you removed previously.
5. Return the unit to the rack or flat surface from which you removed it, and plug it back in.

Appendix C

MAXserver Technical Specifications

Item	Description												
Terminal Signals	Transmit Data, Receive Data, Transmit Ground, Receive Ground, Data Set Ready/Data Carrier Detect (DSR/DCD), Data Terminal Ready (DTR), Ring/Clear-to-Send (RNG/CTS), and Ready-to-Send (RTS) . Supports concurrent modem control.												
Terminal Cabling	Modular RJ-45												
Cable Lengths - 1620	<table> <tr> <th>Serial Speed</th><th>Maximum Length</th></tr> <tr> <td>>9.6 kbps</td><td>900 meters(3000 feet)</td></tr> <tr> <td>19.2 kbps or less</td><td>305 meters (1000 feet)</td></tr> <tr> <td>38.4 kbps</td><td>152 meters (500 feet)</td></tr> <tr> <td>57.6 kbps</td><td>60 meters (200 feet)</td></tr> <tr> <td>115.2 kbps</td><td>30 meters (100 feet)</td></tr> </table>	Serial Speed	Maximum Length	>9.6 kbps	900 meters(3000 feet)	19.2 kbps or less	305 meters (1000 feet)	38.4 kbps	152 meters (500 feet)	57.6 kbps	60 meters (200 feet)	115.2 kbps	30 meters (100 feet)
Serial Speed	Maximum Length												
>9.6 kbps	900 meters(3000 feet)												
19.2 kbps or less	305 meters (1000 feet)												
38.4 kbps	152 meters (500 feet)												
57.6 kbps	60 meters (200 feet)												
115.2 kbps	30 meters (100 feet)												
Cable Lengths - 1640	<table> <tr> <th>Serial Speed</th><th>Maximum Length</th></tr> <tr> <td>>9.6 kbps</td><td>900m (3000 feet)</td></tr> <tr> <td>19.2 kbps or less</td><td>305 meters (1000 feet)</td></tr> <tr> <td>38.4 kbps</td><td>152 meters (500 feet)</td></tr> <tr> <td>57.6 kbps</td><td>60 meters (200 feet)</td></tr> </table>	Serial Speed	Maximum Length	>9.6 kbps	900m (3000 feet)	19.2 kbps or less	305 meters (1000 feet)	38.4 kbps	152 meters (500 feet)	57.6 kbps	60 meters (200 feet)		
Serial Speed	Maximum Length												
>9.6 kbps	900m (3000 feet)												
19.2 kbps or less	305 meters (1000 feet)												
38.4 kbps	152 meters (500 feet)												
57.6 kbps	60 meters (200 feet)												
Cable Lengths - 1604/1608B	<table> <tr> <th>Serial Speed</th><th>Maximum Length</th></tr> <tr> <td>>9.6 kbps</td><td>3000 ft/900m</td></tr> <tr> <td>19.2 kbps</td><td>1000ft/300m</td></tr> <tr> <td>38.4 kbps</td><td>500ft/150m</td></tr> <tr> <td>57.6 kbps</td><td>200ft/60 m</td></tr> <tr> <td>115.2 kbps</td><td>100ft/30m</td></tr> </table>	Serial Speed	Maximum Length	>9.6 kbps	3000 ft/900m	19.2 kbps	1000ft/300m	38.4 kbps	500ft/150m	57.6 kbps	200ft/60 m	115.2 kbps	100ft/30m
Serial Speed	Maximum Length												
>9.6 kbps	3000 ft/900m												
19.2 kbps	1000ft/300m												
38.4 kbps	500ft/150m												
57.6 kbps	200ft/60 m												
115.2 kbps	100ft/30m												
Memory Card Interface	Accepts industry standard JEIDA/PCMCIA Memory cards.												
Serial Line Speed	MAXserver 1620 - 50 to 115.2 Kbps MAXserver 1640 - 50 bps to 56.7 Kbps MAXserver 1608B - 50 bps to 115.2 kbps MAXserver 1604 - 50 bps to 115.2 Kbps												

Number of Serial Ports	MAXserver 1604 - 4 ports MAXserver 1608A/B - 8 ports MAXserver 1620 - 20 ports MAXserver 1640 - 40 ports
Display lights	RUN, LAN, Memory Card Status, Console, Port status and Diagnostic LEDs 1-10 (1620/1640) LEDs 1-8 (1608B/1604)
Controls	Run/Reset push button switch
Dimensions	1640 and 1620 4.45 cm. (1.75 in.) 30.48 cm. (12 in.) 48.26 cm. (19 in.)
Height	1608B and 1604 4.1 cm (1.62 in)
Depth	19.5 cm (7.7 in)
Width	23.3 cm (9.9 in)
Weight	1640 and 1620 3.64 kg. (8 lbs.) With ext. 1608B and 1604 1.7 kg (3.8 lbs. power supply)
Memory	4 MB DRAM, expandable to 8 MB with SIMM memory modules.
Environment	10% to 90% humidity, noncondensing Operating Temperature : 32° - 113° F (0 - 45°C) Storage Temperature: -4 to 140 ° F (-20 to 60°C)
Input Voltage (All MAXservers)	110 - 240 VAC 50 - 60 Hz
Power Requirements	
1640	42W, 145Btu/hr 0.35 A at 110V (typ), 0.19A at 220V (typ)
1620	32W, 110Btu/hr 0.27 A at 110V (typ), 0.15A at 220V (typ)
1608B/1604	25W, 110Btu/hr 0.7A at 120V (typ), 0.3A at 220V (typ)
Software	Xyplex TCP/IP-LAT Software, V5.3 or later for MAXserver 1608A, 1620 and 1640. V6.0.3 or later for MAXserver 1604 and 1608B.
Ethernet Interface	Ethernet/IEEE 802.3 Connection -- 10BASE-T or AUI Transceiver

Index

10Base-T connector, 28
10Base-T network cable, 21,
105, 110

-A-

AC line cord, 29
AC power outlet, 29
AC power receptacle, 29
adapters, 46
Attachment Unit Interface
(AUI), 15
AUI connector, 28
autobaud, 60, 109, 119

-B-

bootstrap protocol (BOOTP),
18

-C-

cable lengths, 125
cable-making products, 43
cabling considerations, 39
communication speed, 109
communications problem, 110
configuration
 customizing, 68
 displaying for unit, 61
configuration data, 71
configuration menu, 59
connecting to a distribution
panel, 54
conversion kit, 43
corrupted load file, 106
CPU identifier, 106
crimping tool, 43, 45
crossover cable, 40, 51, 110

-D-

damage during shipping, 21
data switches, 36
DB-25 connectors, 46, 54
DEConnect connector, 52, 53
DECserver 200 load file, 106
default protocols, 58, 65
default settings, 56
device cables, 22
diagnostic code, 110
Directed Trivial File Transfer
Protocol, 59, 63
display lights, 126
distribution panel, 54
DTFTP, 65, 97
dump protocols, 65, 90, 97
dump request, 107
dump server, 107
dumping memory, 107
dumping methods, 73, 74

-E-

environment, 126
environmental requirements,
23
error codes, 102
Ethernet interface, 15, 126
Ethernet transceiver cable,
21, 105, 110
extension cable, 54
extension cord, 29

-F-

factory default values, 82
filenames
 naming conventions, 75
front panel lights, 23, 100,
111

Index (continued)

-G-

gateway IP address, 78

-H-

HELP command, 36

host IP address, 78

-I-

image file

 naming conventions, 77

 defining, 75

image loading methods, 63,
69, 70

initialization records, xii

 creating, 62

 enabling/disabling, 68

 resetting, 67

INITIALIZE DELAY

command, 34

initialize server and port

parameters, 82

initializing connected devices,
33

input voltage, 28, 126

installation, 21

Internet addresses

 defining, 92

Internet environment

 configuring the unit, 33

Internet load address, 91

Internet load file, 92

Internet load host, 91

IP addresses

 configuring, 91

 default settings, 57

 defining, 77

-L-

LAT, 15

load file name, 75

load image, 55

load offer list, 108

load server, 16, 104 to 106,
107

loading protocols, 59

-M-

MAXserver Manager, 17

memory card, 21, 26

memory card Interface, 125

memory configuration, 79

memory settings

 configuring, 63

 configured, 67

message count, 106, 109

MMJ connector, 42, 51

modem, 36

modify unit configuration, 67

modular adaptor, 52

MOMSLOAD, 106

MONITOR PARAMETER

SERVER command, 34

MOP (Maintenance
Operations Protocol), 76

-N-

NCP (Network Control
Program), 76

NCP commands, 77

network load server, 17

Non-volatile storage (NVS),
71

-O-

octopus cable, 54

-P-

parameter load request, 109

Index (continued)

- parameter loading methods, 71, 72
- parameter server, 108
- parameter service, 67
- parameter storage, 34
- password
 - default for configuration, 60
- plotters, 36
- port lights, 110
 - self-test mode, 59
- ports, number of, 126
- power cord, 22
- power off the unit, 34
- primary initialization record, 58, 62
- protocol settings
 - defaults, 64, 69
- punch down block, 52

-R-

- rack mount installation, 24
- reinitialize the unit, 34
- RESET switch, 59, 110, 111, 119
- resetting the unit to factory defaults, 81
- Reverse Address Resolution Protocol (RARP), 18
- reverse octopus cable, 54
- RJ-45 connector, 15, 32, 42, 45, 52
- RJ-45 interface, 15
- RJ-45 pinout, 32

-S-

- secondary initialization record, 58, 62
- self test, 29, 59, 109, 110, 118
- serial communication port, 15

- serial device cables, 32
- serial line speed, 125
- serial printers, 36
- SIMM installation, 113
- Single Inline Memory Modules (SIMMs), 113
- small dump file, 107
- SNMP, 96
- software filename, changing, 89
- software load image, obtaining, 58, 62
- software loading, 103
- startup and loading problems, 99
- status messages
 - enabling/disabling, 63, 78

-T-

- TCP/IP, 15
- technical specifications, 125
- telco connector, 52
- terminal cabling, 125
- terminal emulation software, 33
- terminal server configuration menu, 60
- terminal signals, 125
- tertiary initialization record, 58, 62
- total installed memory, 79
- Trivial File Transfer Protocol (TFTP), 18

-U-

- UNIX system running, 17

-V-

Index (continued)

VAX /VMS system, 106
VAX/VMS host system, 17

-W-

wrist strap, 21

-X-

XMOP,, 63
XPCSRV20, 89