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Preface

About this Manual.

This manual describes the installation and configuration of communication software packages, supplied by Xyplex, Inc. It is intended that this manual will be read by network, terminal server, and VAX/VMS system managers.

This manual is organized as follows:

- Chapter 1 - Introduction
- Chapter 2 - Software Installation
- Chapter 3 - Adding Servers and Changing Server Options on VMS Load Servers
- Chapter 4 - VAX/VMS Parameter Server Management
- Appendix A - Sample Host Software Installation

Chapter 1 contains a description of the available software packages.

Chapter 2 describes the procedures that you use to install software on VAX/VMS systems.

Chapter 3 describes the procedures that you use to add a terminal server to the DECnet database, on a VAX/VMS system.

Chapter 4 describes the VAX/VMS Parameter Server Manager utility (XYP_MANAGER), which you use to start up or shut down a VAX/VMS parameter server, configure additional parameter servers, or display information about a parameter server.

Appendix A shows an example of the messages that are displayed when you install the Software on a VAX/VMS host using the VMSINSTAL procedure.

Conventions.

The following are conventions that will be used throughout this manual:

1. Keys that you press on the keyboard are represented using left and right angle bracket characters (< and >, respectively). For example, the notation <CTRL> means that you press the CTRL key on the keyboard, <A> means that you press the letter A key, and <RETURN> means that you press the RETURN key on the keyboard.
2. The <CTRL> key on the keyboard provides alternate functions when used with some keyboard keys. Notation such as <CTRL>/<A> indicates that you press both the <CTRL> key and the letter A key at same time. The terminal server will echo this control character as ^A.
3. Unless otherwise specified, commands are executed when you press the <RETURN> key on the keyboard.
4. The manual uses the following typographical conventions:

Monospace Typeface indicates text displayed at a terminal (i.e., displays, messages, system responses, etc).

italics indicates variables in commands and procedures.

5. Throughout this manual, user input in response to system prompts and questions will be shown as underlined text. For example:

Xyplex> CONNECT

means that the user has typed the command "CONNECT" in response to the "Xyplex>" user prompt.

6. Throughout this manual, the following default VMS user prompt will be shown:

\$

A different prompt may be in use at your site.

Related Manuals.

Refer to the *Release Notes* supplied with your Xyplex software for a description of the manuals supplied with the Xyplex software packages. These manuals usually contain information that is relevant to the operation of these software packages.

Chapter 1

Introduction

1.1 Overview

1.1.1 General

This manual describes the installation and configuration of communication software packages and network management software packages, supplied by Xyplex, Inc, on host systems running the DEC VMS operating system. The communication software packages include Xyplex TCP/IP-LAT software for terminal servers and printer servers, TCP/IP-LAT Gateway software for gateway units, and MAXserver Remote Bridge software for MAXserver 6510 Remote Bridge cards. These software packages operate on DEC VMS host computers (similar packages are available for UNIX and DEC Ultrix hosts) and Xyplex-supplied communication hardware modules, which are part of the MAXserver family of Ethernet based communication products. These units are described in sections 1.1.2 through 1.1.4.

The network management software package available is the Xyplex MAXview Scriptor™ VMS software package. This software package operates on DEC VAX/VMS host computers. (A similar package is available for UNIX and DEC Ultrix hosts.) This software is described in section 1.1.5.

1.1.2 Xyplex Terminal and Printer Server Products Supported

Xyplex TCP/IP-LAT Software supports the following Xyplex MAXserver products:

- the MX-2120, MX-TSERV-J8, and MX-TSRVM-J8 Eight Port Terminal Server cards. These cards are options for use in the MAXserver 5500, 5000, and 4500 model Communication Servers. These cards provide 8 ports, and are useful in applications which require modem control signals.
- the MX-TSRVL-J16 Sixteen Port LAT Terminal Server card and MX-TSERV-J16 Sixteen Port TCP/IP-LAT Terminal Server card. These cards are options for use in the MAXserver 5500, 5000, and 4500 model Communication Servers. These cards provide 16 ports, and are useful in applications which do not require modem control signals. The MX-TSRVL-J16 card supports Xyplex LAT software.
- The MX-NPC-P1 Network Printer Card. This card provides shared printer support for a parallel printer, and is available as an option for use in MAXserver 5500, 5000, and 4500 model Communication Servers. This card provides connection to either a Centronics or Dataproducts style parallel port, and one serial port. The card supports TCP/IP-LAT software.
- the MX-MAX1500-E Sixteen Port Terminal Server. This is a standalone terminal server, which provides 16 ports with modem control signals. The unit supports Xyplex LAT and TCP/IP-LAT software.
- the MX-MAX1100-E and MX-MAX1100T Sixteen Port Terminal Server. This is a standalone terminal server, which provides 16 ports with modem control signals. The MAXserver 1100 is a single protocol unit (i.e., supports Xyplex LAT or TCP/IP software), and can be upgraded to a dual protocol unit (i.e., support Xyplex TCP/IP-LAT software).

- the MX-MAX1800-E Sixteen Port Terminal Server. This is a standalone terminal server, which provides 16 ports with modem control signals. The unit supports Xyplex LAT and TCP/IP-LAT software. The unit also provides data storage via one floppy disk drive that uses high-density "microfloppy" diskettes (1.44 megabyte, 8.9 cm/3.5 inch). The MAXserver 1800 unit, and associated software, provides a means of down-loading Xyplex LAT or TCP/IP-LAT images to Xyplex MAXserver 1000 Series Products, storing dump files, and configuring and managing these units, without a VAX/VMS host in the network.
- the MAXserver 1400 Printer Server. This is a standalone unit, which provides shared printer support for four devices. This unit provides connections for up to two Centronics or Dataproducts style parallel printers, and up to two serial devices.
- the MX-MAN-F2 MAXserver Manager Card. This card is available as an option for use in MAXserver 5500, 5000, and 4500 model Communication Servers. This card, and associated software, provides a means of down-loading images to Xyplex units, storing their parameters and dump files, and configuring and managing these servers, without a VAX/VMS host in the network.

The MX-MAN-F2 card requires two adjacent MAXserver slots. The card provides data storage via two floppy disk drives that use high-density "microfloppy" diskettes (1.44 megabyte, 8.9 cm/3.5 inch). The MX-MAN-F2 card also provides two ports. One port is a parallel port to which you can connect a parallel printer or other device which supports a Centronics-style parallel interface. A printer connected to this port is used to log management events and messages. The Centronics-style I/O Connector Card supports connections to most Centronics and IBM PC compatible parallel printers. The second port is a serial port to which you can connect a terminal, serial printer, personal computer, or another serial device. The serial port is used to manage the software running at the MAXserver Manager Card, or to log events.

1.1.3 Xyplex Gateway Products Supported

Xyplex TCP/IP-LAT Gateway Software supports the following Xyplex MAXserver products:

- the MAXserver 2710 TCP/IP-LAT Gateway card. This card enables DEC Local Area Transport (LAT) users to connect to TCP/IP hosts on an Ethernet network. The Gateway software supports connections to TCP/IP hosts via Telnet or RLOGIN. Similarly, the Gateway enables Telnet users to connect to LAT services that are offered on the network. The Gateway supports up to 24 concurrent connections and up to 104 outbound sessions. Each connection is supported by a virtual port on the Gateway.
- the MAXserver 1710 TCP/IP-LAT Gateway unit. This is a standalone unit, which enables DEC Local Area Transport (LAT) users to connect to TCP/IP hosts on an Ethernet network. The Gateway software supports connections to TCP/IP hosts via Telnet or RLOGIN. Similarly, the unit enables Telnet users to connect to LAT services that are offered on the network. The unit supports up to 24 concurrent connections and up to 104 outbound sessions. Each connection is supported by a virtual port on the Gateway.

1.1.4 Xyplex Remote Bridge Products Supported

Xyplex Remote Bridge Software supports the Xyplex MAXserver 6510 Remote Bridge Card for Xyplex MAXserver 4500, 5000, and 5500 models. This card, and associated software, provides a means of connecting one Ethernet/IEEE 802.3 local area network to another over a wide area network (WAN) synchronous link. Multiple connections can be made to form an arbitrary wide area network configuration. To users all networks appear to be one large network, rather than two or more smaller networks.

Some of the key features of this card include:

- Choice of V.35, RS-423, or RS-422 synchronous link interfaces.
- Xyplex MAXserver "hot swap" technology, to reduce down-time.
- Two MIPS processor and two megabytes of memory for high throughput.
- Can load software either from the local area network or over the WAN link.

Some of the key features of the Xyplex Bridge software used with this card include:

- Compatibility with Vitalink bridges and network management tools
- Support for filtering and forwarding all Ethernet protocol types, including DEC protocols such as LAT, MOP, and DECnet protocols; Internet protocols (IP) such as TCP, Telnet, UDP, BOOTP, and TFTP; and Xyplex protocols.
- Support for Spanning Tree Protocol (STP).

The remote bridge card provides two ports. One port is a WAN port to which you can connect a device which supports a V.35, RS-422, or RS-423 electrical interface. The WAN interface type is specified by the I/O Interface Card inserted into the rear of the MAXserver chassis. The second port is a serial port for managing the card.

1.1.5 Network Management Products Supported

Xyplex, Inc., supplies a network management software package called MAXview Scriptor™ VMS software. The software allows a network manager to manage Xyplex units from a central location (a VMS host). Some of the management functions that you can perform include:

- Examine the current status of a Xyplex unit
- Read the current permanent parameters from a Xyplex unit
- Write parameters to a Xyplex unit
- Save/restore the permanent parameters of a Xyplex unit
- Copy the permanent parameters of one Xyplex unit to another unit
- Perform an operation on a user-specified group of manageable objects (for example, multiple units of the same type or ports)

1.2 Compatibility Issues

LAT Compatibility. TCP/IP-LAT Software is compatible with LAT Version 5.1, and it is not compatible with LAT Version 5.0, or earlier versions. LAT Version 5.1 is available with VMS Software Release 4.7, and later releases. For sites running VMS Software Releases 4.4 through 4.6, Digital Equipment Corporation provides support for LAT via a separate layered application product, LATplus.

TCP/IP Compatibility. Chapter 1 of the *User's Guide* for TCP/IP-LAT software lists the Internet Protocols supported in Xyplex TCP/IP-LAT software. One important compatibility issue is that the Xyplex TCP/IP implementation only supports the use of the Berkeley Internet Name Domain Protocol (BIND) for Domain name servers, which map user-specified domain-names to Internet addresses.

Parameter Files. When upgrading from TCP/IP-LAT Software from V1.X or V2.X to V3.0, the software automatically performs a parameter file conversion. Converted parameter files cannot be used with previous releases of TCP/IP-LAT software.

Xyplex requires that you backup the Version 1.X or V2.X-compatible parameter files before you install V3.0, so that you can revert to the previous release if necessary.

IP Router Compatibility. Xyplex software supports performing directed TFTP load requests via IP routers. The IP router must support the Internet Proxy Address Resolution Protocol (Proxy ARP).

Xyplex has been unable to test the forwarding of Boot protocol (BOOTP) messages over IP routers, which would allow loading of Xyplex units via BOOTP. Support for BOOTP in standalone routers is planned by several vendors, but is not yet available. Xyplex believes that, with a suitable IP router, Xyplex units will load via BOOTP. We would appreciate hearing about any experiences you may have with loading via IP routers that support BOOTP.

1.3 Load/Dump/Parameter Server Issues

1.3.1 Overview

Xyplex units obtain operating software and configuration data from one or more host computers on the network. There are three types of hosts involved with operation of Xyplex units that you will need to be familiar with:

- A load server is a unit which stores the executable image that the unit runs. This image is downloaded to the unit whenever the server is powered on or re-initialized. At least one load server is required in the network. Load servers can be VAX/VMS hosts which support the DEC MOP loader, UNIX hosts which support the BOOTP, RARP, and TFTP protocols, or Xyplex MAXserver Managers, which can be either a MAXserver Manager Card (MAXMAN) or a MAXserver 1800.
- A parameter server is a unit which stores unit parameter information (such as configuration information for ports, services available at the unit, etc). Whenever a user changes a "permanent" parameter, the unit stores this information at the parameter servers. The use of parameter servers permits remote and redundant parameter storage. MAXserver 1000 Series Terminal Servers can obtain their parameters either from local storage or from a network parameter server.

One parameter server is required in networks which contain Xyplex units (i.e., all MAXserver LANBUS cards such as the MX-TSRVM-J8, MX-TSERV-J16, MX-TSERV-J8, MX-TSRVL-J16, MX-NPC-P1, and MAXserver 6510 Remote Bridge cards), other than MAXserver 1000 Family Servers; additional parameter servers can be used for backup and load balancing purposes. Parameter servers can be VAX/VMS hosts which support the DEC MOP loader, UNIX hosts which support the BOOTP/TFTP protocols, or a MAXserver Manager Card (MAXMAN).

- A dump server is a unit which accepts a "memory dump" over the network from a server which has experienced a failure. A dump server is not required, however. Dump servers can be VAX/VMS hosts which support the DEC MOP loader, UNIX hosts which support the BOOTP/TFTP protocols, or a MAXserver Manager Card.

When loading an image or parameter file, the ROMs of a Xyplex unit perform the following steps until the file is successfully loaded.

1. The ROMs broadcast a Xyplex protocol load request. The ROMs wait 4 seconds for responses and then process all Xyplex responses that have merit values greater than the MOP merit value (a fixed value). If multiple responses have the same merit value, the one that was received first is used.
2. If Step 1 is not successful (e.g., no response is received within 4 seconds), the ROMs broadcast a BOOTP information request. The ROMs wait 4 seconds for responses and then determine which BOOTP server to use based on the merit value of each responding server. If multiple responses have the same merit value, the one that was received first is used.
3. If Step 2 is not successful (e.g., no response is received within 4 seconds), the ROMs broadcast a MOP load request. The ROMs wait 8 seconds for responses and then determine which MOP server to use based on the merit value of each responding server. If multiple responses have the same merit value, the one that was received first is used.
4. If Step 3 is not successful (e.g., no response is received within 8 seconds), the ROMs broadcast an RARP (Reverse Address Resolution Protocol) message to find the unit's Internet address. Upon learning the Internet address, the ROMs broadcast a TFTP message looking for the file name *xxxxxxx.img* (for a load file) or *xxxxxxx.prm* (for a parameter file), where "*xxxxxxx*" represents the lower three bytes of the unit's Ethernet address.

If the file is not found, another TFTP message is broadcast, this time looking for the file name *typenn.img* (where *nn* represents the hardware type) or *xnnnnnn.bck*. If this is not successful, the process is repeated beginning with Step 1.

NOTE

For Xyplex units which have ROMs version Q or earlier, these units made all TFTP file accesses using the relative path name *XYPLEX/filename* (where *filename* represents a load image or parameter file name in the form *xnnnnnn.img* or *xnnnnnn.prm*, etc).

Dumped memory contents and load files are transmitted in a similar manner. The same protocols are supported and the process for selecting a protocol is the same.

The following sections discuss issues pertaining to load, parameter, and dump service.

1.3.2 Configuring Protocols on Servers with NVR

On units with NVR, you can use the Configuration menu (described in the hardware documentation supplied with the unit) to select one or more of the following load protocols:

- Xyplex protocol
- MOP protocol
- BOOTP protocol
- RARP protocol

For example, you could select both BOOTP and RARP. In this case Steps 2 and 4 in Section 1.3.1 would be performed.

Parameters can be loaded from NVR or disk (on units that have a diskette drive), or from a network parameter server via the same protocol that is used to obtain the load image.

1.3.3 Filenames in NVR

Several forms of file names can be stored in NVR. A file name can be a name without an extension, in which case a default extension is appended. For a load image the default extension is ".img". If a file name does not include a path, a default directory, *XYPLEX/*, is used.

1.3.4 Saving Parameters in Permanent Database

The TFTP and XYPLEX protocols are supported for parameter saving. The unit always attempts to save parameters via the Xyplex protocol. If parameter server checking is enabled (the *SERVER PARAMETER SERVER CHECK* characteristic is set to *ENABLED* command), the unit will also attempt to save parameters via TFTP. When updating parameter servers, the unit only updates the parameter servers in the local list, if one is available. If a parameter server uses the TFTP protocol, the parameters are written into a .prm file. If this operation is successful, the parameters are also written to a .bck (backup) file.

Chapter 2

Software Installation

2.1 General

This chapter describes the procedures you use to install and configure the MAXserver System Software and Scriptor VMS software on VAX/VMS systems. You can also use these procedures when re-loading software, or when loading Scriptor control files for Xyplex software products that you install in the future.

Proper planning is the key to a smooth software installation. You should read and thoroughly understand the procedures you will perform before you begin the installation.

Appendix A shows examples of the messages and prompts that are generated during software installation.

2.2 Requirements

2.2.1 Software Prerequisites

A VAX/VMS host, onto which Xyplex software will be installed, must have the following software products which are supplied by Digital Equipment Corporation:

- VAX/VMS Operating System Software, Release 4.4 or later for MAXserver System Software and Release 5.0 or later for MAXview Scriptor Software.
- DECnet Communication Software.
- Support for DEC LAT Software, Release 5.1. Digital Equipment Corporation provides this support for VMS Release 4.7, and later releases. For sites running VMS Releases 4.4 through 4.6, support for LAT is provided by a separate layered application product, LATplus.
- For MAXview Scriptor software installations, Xyplex units must be running a load image that supports connection to the Telnet console port (for example, TCP/IP-LAT software Release 2.0 or greater, or MAXserver 6510 Remote Bridge Software, Release 1.0 or greater).

2.2.2 VMS Privileges

You must have the following VMS privileges in order to install the MAXserver System Software and MAXview Scriptor software: DETACH, SYSPRV, WORLD, OPER, NETMBX, TMPMBX, PRMCEB, SYSNAM, GRPNAM, GROUP.

2.2.3 Distribution Media

Xyplex supplies all VMS software on 9-track magnetic tape (1600 bits per inch) or TK50 cartridges.

2.2.4 Disk Space Requirements

During the installation of MAXserver System Software, at least 7000 blocks must be available (peak disk space utilization). After the installation, the software uses 1600 blocks for the parameter server and server image, plus 45 blocks for each unit.

Note

On VAX/VMS systems that have disk quotas enabled, you must make sure that there is a sufficient number of unused free blocks in the account from which the parameter server is run (i.e., blocks currently used by the account are below the account's disk quota), or the parameter server will not run properly.

During the installation of MAXview Scriptor Software, there should be a minimum of 500 blocks (250 kilobytes) of disk space available for the MAXview Scriptor files, plus 100 blocks per control file saveset.

2.2.5 Directory Requirements for MAXserver System Software

The VMSINSTAL procedure gives you the flexibility to decide where software will be copied, based on the VAX and network configuration or the software management policies at your site. VMSINSTAL requires that you specify the following directory types where software is located:

- Executables directory** -- Contains parameter server executable files.
- Configuration directory** -- Contains parameter server configuration files, log files, command procedures.
- Loader directory** -- Contains unit load images and parameter files.

Specify Directory Location

The VMSINSTAL procedure will ask you to specify a location for each of these directories. The procedure will also offer a default choice for each directory, which you are free to use or to change. Depending on whether the software is being installed on a VAX cluster with a shared system root, you are offered the following default choices:

Use	Default Choice for Cluster With Shared System Root	Default Choice for Other Configurations
Executables directory	SYSS\$COMMON:[SYSEXE]	SYSS\$SYSTEM:
Configuration directory	SYSS\$MANAGER:	SYSS\$MANAGER:
Loader directory	SYSS\$COMMON:[MOM\$SYSTEM]	MOM\$LOAD:

You can instruct VMSINSTAL to copy the software to the default locations or to different locations. (Note that parameter files and load images must be located in the same directory. If they are not located in the same directory, when the server reinitializes, it will use default parameters.) For example, in the case of a cluster configuration, the default operation is to store all files in the shared portion of the system root, but you can choose to store files in the system-specific root. Finally, you can choose to store all System Software in the same directory.

Make sure that the logical MOM\$LOAD is defined and made available whenever a load server or parameter server (i.e., VAX/VMS host) is rebooted.

Also, if you are using one or more nodes of a VAX cluster configuration for parameter servers, you should define the logical MOM\$LOAD for each node to be a search list, in which the first entry is a node-specific directory. For example:

```
DEFINE MOM$LOAD -
    SYSS$SPECIFIC:[MOM$SYSTEM],-
    SYSS$COMMON:[MOM$SYSTEM]
```

In this example, you should also make sure that the directory SYSS\$SPECIFIC:[MOM\$SYSTEM] exists.

Note

MAXserver System software does not support shared access to parameter files. If you plan to use multiple parameter servers in a VAX cluster environment, you must store the parameter files in a SYSS\$SPECIFIC directory (on each node functioning as a parameter server), rather than a SYSS\$COMMON directory. If you store parameter files in a SYSS\$COMMON directory, in a VAX cluster environment, the message "file locked by another user" will appear when the terminal server attempts to read parameters.

Shared System Root

If you are installing software on a VAX cluster that has a shared system root, the following considerations also apply:

- For the executables directory, you can select the common portion of the system root in order to avoid duplication of files.
- The configuration directory should be located in system-specific root for the following reasons:
 - The configuration file stored in this directory contains node-specific data.
 - To provide for an individual log file for each parameter server.
- The loader directory should be in the common portion of the system root so that the parameter server process can create parameter files with new names.

2.2.6 Directory Requirements for MAXview Scriptor VMS Software

VMSINSTAL requires that you specify an executables directory. The default directory choice for a VAX cluster with a shared system route is SYSS\$COMMON:[SCRIPTOR]. You can select the common portion of the system root in order to avoid duplication of files. The default directory choice for other configurations is SYSS\$SYSROOT:[SCRIPTOR].

2.2.7 VMS Save-Sets Available

Xyplex supplies the following types of VMS kits:

- MAXserver System Software kits contain the latest available load images for all product families (i.e., V3.0 terminal server, V1.0 remote bridge, V1.0 TCP-LAT gateway, etc), and the Scriptor control files which correspond to these load images. For ease of use and faster installation, all images for a given product family release are stored on the distribution media in individual VMS savesets. Similarly, all Scriptor control files for a given product family release are stored on the distribution media into individual

Software Installation

VMS savesets. For example, there is one saveset for terminal server load images and another for terminal server control files.

- Scriptor kits contain the latest version of all Scriptor executables (e.g., transform, rconsole, iterate) and DCL command procedures (e.g., save_unit, scriptor, etc). The kit also contains all control files for all releases of Scriptor-manageable products (e.g., V2.0, V2.1, V2.2, and V3.0 of TCP/IP-LAT terminal server software; V1.0 of remote bridge, etc).

Refer to the *Software Kit Information* sheet provided with your Xyplex Software Kit for a list of saveset contents.

2.3 Pre-Installation Activities

Complete the following steps before you begin the software installation on a VAX/VMS system:

1. Determine the VAX/VMS host system(s) on which you will install the software.

For MAXserver System Software, one load server is required; additional load servers can be used for backup and load-balancing. The DEC documentation for the MOP loader recommends that you limit the number of units to be loaded from any one VAX system to no more than 16 units.
2. Determine which savesets you wish to install (refer to Section 2.2.7 and the *Xyplex Software Kit Information* sheet supplied with your kit).
3. Verify that sufficient disk space is available on the target disk (refer to Section 2.2.4).
4. Make sure that you are satisfied with the backup of the target disk(s).
5. Read through the descriptions of all procedures. Be prepared to answer all questions that the VMSINSTAL procedure will ask.

For example, if you are installing MAXserver System Software, be prepared to supply the DECnet node names and node numbers, Ethernet addresses and controller names, etc., that are required by the procedures.

6. Make sure you are familiar with the DEC VMSINSTAL procedure, which is used to install the software. VMSINSTAL is described in the VMS documentation set.

The following additional steps only apply to users who are installing MAXserver System Software.

7. For MAXserver System Software, decide which directories to use (refer to Section 2.2.5 for directory requirements).
8. Add the unit(s) to the DECnet database, using the DSVCONFIG utility or DECnet NCP commands, as appropriate. Refer to Chapter 3 for instructions. Note that if you are reloading software, you might not need to perform this procedure.
9. Normally, the software installation procedure retains configuration information from any previous installation of System Software. However, you can decide to revert to the original default configuration information (i.e., perform the installation "from scratch"). If you decide to revert to the original default configuration information, type the following command before you perform the installation:

```
$ DELETE configuration_directory_name:XYP_MANAGER_CONFIG.DAT;*
```

(Substitute the name of the current configuration directory for *configuration_directory_name*.)

10. When upgrading from one release of System Software to a new release, the software automatically performs a parameter file conversion. Before upgrading, you should backup the parameter files stored in the Loader directory (either MOM\$LOAD: or SYS\$COMMON:[MOM\$SYSTEM]). This way, you can revert to the previous release if necessary.

2.4 Software Installation Procedure

2.4.1 Starting the VMSINSTAL Procedure

To install the Xyplex Software on a VAX/VMS system, complete these steps. Refer to Appendix B for sample VAX/VMS software installations.

- a. Load the distribution tape on a tape drive.
- b. Log on to an account with the privileges listed in Section 2.2.2. Type the following commands:

```
$ SET DEFAULT SYS$MANAGER
$ SET UIC [SYSTEM]
$ @SYS$UPDATE:VMSINSTAL
```

- c. The VMSINSTAL procedure might display messages that indicate whether or not DECnet is up, whether any users are logged on, etc. If you see any of these messages, VMSINSTAL will ask:

```
* Do you want to continue anyway [NO]?
```

Xyplex Software can be installed while DECnet is running or users are logged in. If you are ready to continue, type Yes and press the <RETURN> key (if you answer No, VMSINSTAL will exit, allowing you to correct any problems).

- d. VMSINSTAL asks:

```
* Are you satisfied with the backup of your system disk [YES]?
```

Type Yes and press the <RETURN> key.

- e. VMSINSTAL asks:

```
* Where will the distribution volumes be mounted:
```

Type the device name for the tape drive on which the distribution tape has been loaded (for example, MUA0:), and press the <RETURN> key.

- f. VMSINSTAL prompts:

```
Enter the products to be processed from the first distribution volume set.
```

```
* Products:
```

Type an asterisk (*) to install all products, or a saveset name to install a specific product, and press the <RETURN> key. If your VAX/VMS system is running VMS version 5.0 or later, VMSINSTAL will ask:

```
* Options:
```

Press the <RETURN> key. The procedure will continue with the questions listed in Section 2.4.2 or 2.4.3 depending on the type of saveset you are installing.

2.4.2 Questions for Load Image Savesets

The VMSINSTAL procedure will ask the following questions when you install a VMS saveset containing load images (for example, terminal server, TCP/IP-LAT gateway, or remote bridge images). The VMSINSTAL procedure will repeat these questions for each load image saveset. (Steps a through f are listed in section 2.4.1.)

g. VMSINSTAL asks:

* Are you ready?

If you have not already loaded the tape onto the tape drive, do so now. After the tape is loaded, answer Yes and press the <RETURN> key. A series of messages indicating that VMSINSTAL is mounting the tape volume, restoring product savesets, etc., is displayed.

h. VMSINSTAL asks a question similar to the following:

* Enter a directory to contain executable images [*executables_directory_name*]:

(VMSINSTAL supplies the name of the default Executables directory in place of *executables_directory_name*.) You can specify an Executables directory, or press the <RETURN> key to use the default choice being displayed.

i. VMSINSTAL asks a question similar to the following:

* Enter a directory to contain configuration data [*configuration_directory_name*]:

(VMSINSTAL supplies the name of the default Configuration directory in place of *configuration_directory_name*.) You can specify a Configuration directory, or press the <RETURN> key to use the default choice being displayed.

j. VMSINSTAL asks a question similar to the following:

* Directory to contain parameter sets [*loader_directory_name*]:

(VMSINSTAL supplies the name of the default Loader directory in place of *loader_directory_name*.) You can specify a Loader directory, or press the <RETURN> key to use the default choice being displayed.

VMSINSTAL displays messages indicating that it is moving files to target directories, etc.

k. VMSINSTAL asks a question similar to the following:

Ethernet controller(s) [*controller_name*]:

(VMSINSTAL supplies the name of an Ethernet controller that is installed in your VAX/VMS host, in place of *controller_name*.) You can specify that the parameter server software communicate over the network via any Ethernet controllers that are installed in the VAX/VMS computer. Valid answers for this question are valid Ethernet controller names, such as: ELA, ESA, ETA, XEA, XQA, etc. Specify the device name (e.g., ET, XE) and the controller letter (e.g., A, B). Do not specify a unit number.

If you want the parameter server to communicate over the network only via the controller shown in the question, press the <RETURN> key. If you want the parameter server to communicate via a different controller than the one shown in the question, specify the desired controller and press the <RETURN>

key. If you want the parameter server to communicate via multiple controllers, specify the names of each controller type, separating each name by a comma (,) and press the <RETURN> key.

l. VMSINSTAL prompts:

Destination of log information [OPCOM]:

Select one of the following answers to this question and press the <RETURN> key. Your answer specifies whether the parameter server should log its activity during operation, and where the activity will be logged.

OPCOM -- Messages will be logged via the VMS operator communications facility. If you select this answer, VMSINSTAL will prompt:

* OPCOM message class [NETWORK]:

You can specify any message class for routing Parameter Server log information. The default class is the one used by DECnet software.

NONE -- The parameter server will not generate log messages.

FILE -- Messages will be logged to a user-specified disk file. If you select this answer, VMSINSTAL will ask the following question:

* Log file [*configuration_directory_name*:XYP_SERVER.LOG]:

You can specify any file name for a log file, or press the <RETURN> key to choose the default file name (XYP_SERVER.LOG).

m. VMSINSTAL asks:

Do you want to restart the Parameter Server now [YES]:

Press the <RETURN> key to start or restart (when reloading software) the parameter server. VMSINSTAL displays a message indicating that the parameter server is shutting down, if it had been running, and a VMSINSTAL message indicating that the procedure is completed.

n. VMSINSTAL prompts:

Enter the products to be processed from the first distribution volume set.

* Products:

To exit from the procedure, type EXIT and press the <RETURN> key, or type <CTRL>/<Z>.

2.4.3 Questions for MAXview Scriptor Savesets

The VMSINSTAL procedure will ask the following questions when you install a VMS saveset containing MAXview Scriptor VMS executables. (Steps a through f are listed in section 2.4.1.)

- g. VMSINSTAL displays messages similar to the following:

The following products will be processed:

```
(MAXview Scriptor saveset; e.g., XYP_AASC_ V1.1)
(Control file savesets; e.g., XYP_TS_ V2.0)
```

```
Beginning installation of (saveset) at (time)
Restoring product saveset A ...
```

```
This is Xyplex kit version (version)
```

- h. VMSINSTAL prompts:

```
* Enter a directory for storing Xyplex files [SYS$COMMON:[SCRIPTOR]]:
```

You have three options:

- 1) Specify a directory in the system root and press <RETURN>.
- 2) Specify a full device and directory name to install outside of the system root.
- 3) Press <RETURN> without specifying a directory to use the default, SYS\$COMMON:[SCRIPTOR].

- i. VMSINSTAL prompts:

```
* Enter the UIC to own the Xyplex files and processes [SYSTEM]:
```

You can specify a UIC and press <RETURN>, or press <RETURN> without specifying a UIC to use the default, SYSTEM. The UIC you designate will own the files installed by this procedure as well as the background VMS processes that support MAXview Scriptor.

- j. VMSINSTAL proceeds to copy Scriptor files into the directory you specified in Step h. You see the following messages:

```
This product creates system disk directory (directory)
Copying files into (directory)
```

k. VMSINSTAL prompts:

Ok to install XYPLEX SCRIPTOR commands in SYS\$LIBRARY:DCLTABLES?[YES]:

If you answer Yes and press <RETURN>, a DCL command to execute various Xyplex utilities will be added to the system DCL tables.

If you answer No, you can add the RCONSOLE, TRANSFORM, and ITERATE commands to the DCL command tables. To do so, use the SET COMMAND utility, as follows, on the RCONSOLE.CLD, TRANSFORM.CLD, and ITERATE.CLD files in the Scriptor directory (which you designated in Step h):

```
$SET COMMAND/TABLE=SYS$LIBRARY:DCLTABLES/OUTPUT=SYS$LIBRARY:DCLTABLES -
RCONSOLE.CLD
$SET COMMAND/TABLE=SYS$LIBRARY:DCLTABLES/OUTPUT=SYS$LIBRARY:DCLTABLES -
TRANSFORM.CLD
$SET COMMAND/TABLE=SYS$LIBRARY:DCLTABLES/OUTPUT=SYS$LIBRARY:DCLTABLES -
ITERATE.CLD
$RUN SYS$SYSTEM:INSTALL
INSTALL>SYS$LIBRARY:DCLTABLES/REPLACE
INSTALL>^Z
$SET FILE/PROTECTION=(S:RE,W:RE) SYS$LIBRARY:DCLTABLES.EXE
```

l. VMSINSTAL prompts:

Ok to install XYPLEX SCRIPTOR help in SYS\$HELP:HELPLIB.HLB?

Answer Yes or No, as desired.

Note

If you answer this question No, and later decide to add HELP, you can do so with the command:

```
$ LIBRARY SYS$HELP:HELPLIB/HELP SYS$COMMON:[SCRIPTOR]SCRIPTOR.HLP
```

(if you did not specify SYS\$COMMON:[SCRIPTOR] as the directory in which Scriptor software is installed, specify the correct directory in the command above).

m. VMSINSTAL displays the following message --

```
Running XYPLEX INIT in (directory)
Files will now be moved to their target directories...
Installation of (Scriptor saveset) completed at (time)
```

where (directory) is the directory you designated in Step h.

Note

Steps n and o are repeated for each control file saveset

- n. VMSINSTAL generates the following messages:

```
Beginning installation of (control file saveset) at (time)
Restoring product saveset A ...
```

```
This is Xyplex kit version (version)
```

```
* Enter the UIC to own the Xyplex Scriptor control files
```

You can specify a UIC and press <RETURN>, or press <RETURN> without specifying a UIC to use the default, SYSTEM. The UIC you designate will own the control files installed by this procedure.

- o. VMSINSTAL proceeds to copy Scriptor control files into the directory you specified in Step n. You see the following messages:

```
This product creates system disk directory (directory)
Copying files into (directory)
Files will now be moved to their target directories...
Installation of (control file saveset) completed at (time)
```

- p. VMSINSTAL prompts:

```
Enter the products to be processed from the next distribution volume set.
*Products:
```

Exit from the procedure by typing EXIT and pressing <RETURN>, or typing <CTRL><Z>.

2.5 Post-Installation Activities

2.5.1 MAXserver System Software

Perform these steps after you have completed the MAXserver System software installation:

1. Check the console or console log file, if one is available, for any errors that occurred.
2. Restart the parameter server, if you did not do so during the installation. Use the command:

```
$ @configuration_directory_name:XYP_MANAGER RESTART
```

where *configuration_directory_name* is the name for the configuration directory specified during the software installation procedure (for example, SYS\$MANAGER:)

3. Store the distribution media in a safe place for future use.

2.5.2 MAXview Scriptor Software

Perform these steps after you have completed the MAXview Scriptor VMS software installation:

1. Check the console, or console log file if one is available, for any errors that have occurred.
2. Store the distribution media in a safe place for future use.
3. Add the following command to SYSTARTUP.COM. If you did not select SYS\$COMMON:[SCRIPTOR] as the directory to store the Scriptor files (in Step 8 of the Installation Procedure), enter the directory you specified instead of SYS\$COMMON:[SCRIPTOR].

```
$@SYS$COMMON:[SCRIPTOR]SCRIPTOR INIT
```

4. Add the following line to SYLOGIN.COM or to the LOGIN.COM files of the users who will be running VMS Scriptor:

```
$@XYP_SCRIPTOR_DIR:SCRIPTOR_SYMBOL_INIT
```

Chapter 3

Adding Xyplex Units and Changing Unit Options on VMS Load Servers

3.1 Introduction

This chapter covers procedures that you will use to add and configure a new Xyplex unit (terminal server, bridge, or gateway) to the DECnet database on a VAX/VMS load server, to change the load image of an existing unit, and to improve the performance of the MOP loader during unit loading.

Note

MAXserver 1000 Series Terminal Servers can be configured to load from a VAX/VMS system via the DEC MOP protocol, without requiring an entry for the unit in the DECnet database (this configuration is the factory default). Optionally, you can configure a MAXserver 1000 Series Terminal Server to require an entry in the DECnet database in order to be loaded via the DEC MOP protocol. Refer to the description of the Configuration Menu in the hardware documentation supplied with the MAXserver 1000 Series Terminal Server.

There are two methods by which you can add units to the DECnet database and specify the load image the new unit will use. First, you can use the DEC DSVCONFIG command procedure, if available. If you do not have this procedure available to you, you must use DECnet NCP commands. Note, if you have the DEC DSVCONFIG procedure available, and choose to use it, it is recommended that you familiarize yourself with the DEC documentation for this command procedure. You can use either of these methods before or after installing software.

The MAXserver System Software distribution kit contains both TCP/IP-LAT and LAT-only load images (refer to the *Release Notes* for a list of available load images). This allows you to designate a unit for either LAT-only or TCP/IP-LAT use. Section 3.4 covers the procedure that you use to change the load image for an existing unit.

3.2 Using the DSVCONFIG Utility to Add a Unit to the DECnet Database

The following procedure describes how to add a unit to the DECnet database, using the DSVCONFIG utility:

- a. Run the DSVCONFIG procedure to add a DS200 type terminal server. The DSVCONFIG procedure is described in DECserver documentation. In order to use the DSVCONFIG procedures, you will need to supply the following information for each unit:
 - the DECnet node name that you wish to assign to the unit.
 - DECnet node address that you wish to assign to the unit.
 - the Ethernet address of the unit. For a MAXserver 1000 Series Terminal Server, refer to the label on the rear of the unit to determine the Ethernet address. For a MAXserver 4500, 5000, or 5500, refer to the label on the rear of the MAXserver chassis to determine the base Ethernet address for the MAXserver.

Each server card has a unique Ethernet address that you calculate by adding the slot number to the base address.

- the DECnet Service Circuit-ID of the load server (e.g., UNA-0 or UNA-1 for a UNIBUS adaptor, BNT-0 or BNT-1 for a BI Bus adaptor, QNA-0 or QNA-1 for a Q-Bus adaptor, or SBA-0 for a MicroVAX 2000 adaptor).

- b. After you have completed the DSVCONFIG procedure, type the following command:

```
$ RUN SYS$SYSTEM:NCP
```

The system will respond with the NCP> prompt.

- c. At the NCP> prompt, type the following commands for each unit that you defined using the DSVCONFIG utility:

```
NCP>DEFINE NODE decnet-node-name LOAD FILE loader-directory-name:load-filespec  
NCP>SET NODE decnet-node-name LOAD FILE loader-directory-name:load-filespec
```

where *decnet-node-name* represents the DECnet node name you assigned using the DSVCONFIG procedure (step a, above), *loader-directory-name* represents the Loader directory you specified during the software installation procedure (refer to chapter 2), and *load-filespec* represents the name of the image that the unit will load (refer to the *Release Notes* for a list of available load image names that you can specify for the *load-filespec*).

Notes

1. If you specify an incorrect server load image file name, no OPCOM error is reported and the unit will not load. Also, if you do not perform step c, above, the NCP database will attempt to use the default DECserver load image (assigned by the DSVCONFIG procedure). This is the wrong image name.
 2. When upgrading from TCP/IP-LAT Software from V1.5 or V2.X to V3.0, the software automatically performs a parameter file conversion. Xyplex requires that you backup the Version 1.5 or 2.X-compatible parameter files, stored in the Loader directory (either MOM\$LOAD: or SYS\$COMMON:[MOM\$SYSTEM]), before upgrading to TCP/IP-LAT V3.0, so that you can revert to V1.5 or V2.X if necessary.
 3. The distribution tape for TCP/IP-LAT software contains both TCP/IP-LAT and LAT-only load images (refer to the *Release Notes* for a list of available load images). This allows you to designate a unit for LAT-only use.
- d. When you are finished, type:

```
NCP>EXIT
```

to return to the VMS prompt.

- e. If you add a unit after installing software, re-start the parameter server.

3.3 Using NCP Commands to Add a Unit to the DECnet Database

If you do not have the DSVCONFIG utility, you can use the following procedure to use DECnet NCP commands to add the unit to the DECnet database:

- a. Type the command:

```
$ RUN SYS$SYSTEM:NCP
```

- b. The system will respond with the NCP> prompt. At the NCP> prompt, type the following commands:

```
NCP>>SHOW CIRCUIT service-circuit CHARACTERISTICS
```

Examine the NCP display to determine the setting for the "State" and "Service" characteristics. (If the "Service" characteristic is shown as enabled, go to the next step.) If the circuit "Service" characteristic is shown as disabled you must bring down the circuit in order to enable the service. This will kill any activity over that circuit. Type the following commands:

```
NCP>>SET CIRCUIT service-circuit STATE OFF  
NCP>>DEFINE CIRCUIT service-circuit SERVICE ENABLED  
NCP>>SET CIRCUIT service-circuit SERVICE ENABLED  
NCP>>SET CIRCUIT service-circuit STATE ON
```

- c. At the NCP> prompt, type the following commands (for each unit):

```
NCP>>DEFINE NODE decnet-node-address NAME decnet-node-name  
NCP>>DEFINE NODE decnet-node-address SERVICE CIRCUIT service-circuit  
NCP>>DEFINE NODE decnet-node-address HARDWARE ADDRESS ethernet-address  
NCP>>DEFINE NODE decnet-node-address LOAD FILE loader-directory-name:load-filespec  
NCP>>DEFINE NODE decnet-node-address DUMP FILE dump-filespec  
NCP>>SET NODE decnet-node-address ALL
```

where:

<i>service-circuit</i>	represents the DECnet Service Circuit-ID of the load server (e.g., UNA-0 or UNA-1 for a UNIBUS adaptor, BNT-0 or BNT-1 for a BI Bus adaptor, QNA-0 or QNA-1 for a Q-Bus adaptor, or SBA-0 for a MicroVAX 2000 adaptor).
<i>decnet-node-name</i>	represents the 1 to 6 character DECnet node name for the unit.
<i>decnet-node-address</i>	represents the DECnet node address you assigned for the unit.
<i>ethernet-address</i>	represents the unique Ethernet address of the unit. For a MAXserver 1000 Series Server, refer to the label on the rear of the unit to determine the Ethernet address. For a MAXserver 4500, 5000, or 5500, refer to the label on the rear of the MAXserver chassis to determine the base Ethernet address for the MAXserver. Each MAXserver card has a unique Ethernet address that you calculate by adding the slot number to the base address.
<i>loader-directory-name</i>	represents the Loader directory you specified during the software installation procedure (refer to chapter 2)

load-filespec

represents the name of the image that the unit will load (refer to the *Release Notes* for a list of available load image names that you can specify for the *load-filespec*).

dump-filespec

represents the name of the that will be created by a unit crash dump, if the DUMP characteristic is set to ENABLED. You will usually specify a unique file name for each unit, so that you can identify at which unit the dump file originated. Note that defining the DUMP FILE characteristic is optional.

- d. **Loading Xyplex Bridges over a WAN link.** When you configure a MAXserver Bridge to load over a WAN link, you must specify a second Ethernet address; an Ethernet address corresponds to each link. Also, if the bridge is to load from a VAX/VMS load host, you must specify the Ethernet address(es) of the link(s) over which the bridge is to load, in the NCP and XYP_MANAGER databases.

The Ethernet address of the LAN link is the address of the card itself, which is determined by the slot in which the card resides. Determine the Ethernet address of the WAN link by logically OR-ing the value 80 to the fourth byte of the LAN link Ethernet address.

For example, if the Ethernet address of the LAN link is 08-00-87-00-D5-76, the Ethernet address of the WAN link is 08-00-87-80-D5-76.

- e. When you are finished, type:

NCP><u>EXIT

to return to the VMS prompt.

- f. If you add a unit after installing software, via the DSVCONFIG procedure or DECnet NCP commands, re-start the parameter server. This will create a default parameter file for the new unit.

3.4 Changing a Load Image

The following procedure allows you to change the load image for an existing unit.

- a. Type the following command:

```
$ RUN SYS$SYSTEM:NCP
```

The system will respond with the NCP> prompt.

- b. At the NCP> prompt, type the following commands (for each unit):

```
NCP>>DEFINE NODE decnet-node-name LOAD FILE loader-directory-name:load-filespec  
NCP>>SET NODE decnet-node-name LOAD FILE loader-directory-name:load-filespec
```

where *decnet-node-name* represents the DECnet node name you assigned using the DSVCONFIG procedure or with NCP commands (refer to sections 3.2 and 3.3), *loader-directory-name* represents the Loader directory you specified during the software installation procedure (refer to chapter 2), and *load-filespec* represents the name of the image that the unit will load (refer to the *Release Notes* for a list of available load image names that you can specify for the *load-filespec*).

Notes

1. If you specify an incorrect server load image file name, no OPCOM error is reported and the unit will not load.
 2. When upgrading from TCP/IP-LAT Software V1.X to V2.0, the software automatically performs a parameter file conversion. Xyplex requires that you backup the Version 1.X-compatible parameter files, stored in the Loader directory (either MOM\$LOAD: or SYS\$COMMON:[MOM\$SYSTEM]), before upgrading to TCP/IP-LAT V2.0, so that you can revert to V1.X if necessary.
- c. When you are finished, type:

```
NCP>>EXIT
```

to return to the VMS prompt.

- d. Re-initialize the unit(s) which will use the new load image.

3.5 Improving Unit Loading Performance

This section briefly covers some steps that you can take to improve the performance of the DEC Maintenance Operations Protocol (MOP) loader during unit loading.

- a. Type the following command:

```
$ RUN SYS$SYSTEM:NCP
```

The system will respond with the NCP> prompt.

- b. From the NCP> prompt, type the command:

```
NCP>SHOW LINE service-circuit CHARACTERISTICS
```

where *service-circuit* represents the DECnet Service Circuit-ID of the load server (e.g., UNA-0 or UNA-1 for a UNIBUS adaptor, BNT-0 or BNT-1 for a BI Bus adaptor, QNA-0 or QNA-1 for a Q-Bus adaptor, or SBA-0 for a MicroVAX 2000 adaptor).

Examine the NCP display to determine the setting for the "Device Buffer Size" and "Service Timer."

- c. The default value for the NCP SERVICE TIMER characteristic is 4000 milliseconds (4 seconds). Xyplex recommends that you change this value to 12000 milliseconds (12 seconds). This will prevent the MOP loader process from timing out while the unit gathers and evaluates service offers. To make this change, type the following commands:

```
NCP>DEFINE LINE service-circuit SERVICE TIMER 12000
```

```
NCP>SET LINE service-circuit SERVICE TIMER 12000
```

- d. If your load server is running VMS 5.X, the MOP loader will use the value set for the NCP device buffer size (BUFFER SIZE characteristic) to determine the size of packets used in downloading operations. The default for the BUFFER SIZE characteristic is 1498 bytes. Xyplex recommends that you use the default buffer size. If the value shown in the NCP display for the "Device Buffer Size" is less than 1498, type the following commands to increase this value:

```
NCP>DEFINE LINE service-circuit BUFFER SIZE 1498
```

```
NCP>SET LINE service-circuit BUFFER SIZE 1498
```

Note that in VMS Release 4.X, the MOP loader uses 256 byte packets in downloading operations, regardless of the setting of the NCP BUFFER SIZE characteristic.

- d. When you are finished, type:

```
NCP>EXIT
```

to return to the VMS prompt.

As you can see from the discussion above, the speed at which units can load is affected by the performance of the MOP loader. Due to the performance improvements (ability of the MOP loader to use larger packets) that DEC has made in VMS Release 5.X, Xyplex recommends that you use VAX systems running VMS Release 5.X as load servers, when you have a choice among VAX systems running VMS Release 4.X or 5.X. This results in a significant difference in the amount of time it takes to load a unit (using larger packets, a unit will load in 4-5 seconds).

Faster unit loading will also help you to avoid the OPCOM messages that occur while a unit is attempting to load, and the MOP loader times out.

Chapter 4

VAX/VMS Parameter Server Management

4.1 General

For all MAXserver LANBUS cards and any stand-alone MAXserver units which will not store parameters in local non-volatile storage, Xyplex requires that at least one parameter server be operational when these servers are loaded for the first time, and thereafter in order to save parameters. This parameter server can be a VAX/VMS system, UNIX host, or a MAXserver Manager Card.

This section describes how you manage parameter server operation for a VAX/VMS system. To do this, you will use a command procedure, XYP_MANAGER.COM, which is supplied with the MAXserver System Software. The XYP_MANAGER.COM procedure supports the following parameter server management functions:

- Start or restart parameter server operation
- Configure parameter servers
- Stop parameter server operation
- Display the current configuration of the parameter server or the contents of parameter files.

The following VMS privileges are required in order to use the XYP_MANAGER.COM procedure: DETACH, SYSPRV, and WORLD.

4.2 Starting the XYP_MANAGER.COM Procedure

The following procedure describes how to run the parameter server manager (XYP_MANAGER.COM):

- a. Log on to an account with the correct privileges (listed in Section 4.1). Type a command in the following format:

```
$ @configuration_directory_name:XYP_MANAGER option
```

where *configuration_directory_name* is the name for the Configuration directory specified during the software installation procedure (for example, SYSS\$MANAGER:, SYSS\$COMMON[SYSMGR]). If you omit specifying an option, the procedure will display a menu to prompt you for the desired function, see step b. You can specify one of the following keywords as an option in the command:

```
CONFIGURE  
STARTUP  
SHUTDOWN  
SHOW_CONFIGURATION  
DISPLAY  
RESTART
```


HELP
EXIT

If you specify an option for the command shown above, the procedure will perform the specified action immediately. When the action is finished, the procedure will return directly to the operating system prompt. Paragraphs 4.3 through 4.8 describe each of the parameter server management actions that you can perform.

- b. If you do not specify an option for the command shown in step a, the procedure will display the menu shown in Figure 4-1.

```

                                Xyplex Parameter Server Manager

Available functions:

CONFIGURE -- Define server configuration
STARTUP -- Start server operation
SHUTDOWN -- Stop server operation
SHOW_CONFIGURATION -- Display current server configuration
DISPLAY -- Display parameter files
RESTART -- Stop then start server operation
HELP -- List these functions
EXIT -- Leave this menu

Enter function [EXIT]:
```

Figure 4-1. Parameter Server Manager Menu.

Specify the desired function at the Enter function prompt (EXIT is the default choice). The procedure will perform the specified action. Paragraphs 4.3 through 4.8 describe each of the parameter server management actions that you can perform.

- c. When the procedure has completed the specified action, it will return to the menu shown in Figure 4-1. When you are finished using the parameter server manager, type EXIT and press the <RETURN> key, or use <CTRL>/<Z>.

4.3 Using the Parameter Server Manager CONFIGURE Option.

Use the parameter server manager CONFIGURE option to define or change the directory where the parameter server stores parameter sets, change the name of the Ethernet controller which the parameter server uses to communicate with the Ethernet network, or change the manner in which the parameter server logs messages or the location where these messages are logged. Configuration changes made using this procedure take effect when the parameter server is started or restarted, but do not affect a currently operating parameter server.

Use the following procedure when you select the CONFIGURE option (refer to section 4.2):

- a. The procedure will ask a question similar to the following:

* Directory to contain parameter sets [*directory_name*]:

(the procedure will substitute the name of the current directory where parameter server configuration files are stored for the phrase *directory_name* shown in the question). You can change the directory where parameter server files are stored, or press the <RETURN> key to use the directory shown in the question.

Note that parameter files and load images must be located in the same directory. If they are not located in the same directory, when the server reinitializes, it will use default parameters.

- b. The procedure will ask a question similar to the following:

```
Ethernet controller(s) [controller_name]:
```

(the procedure will substitute the name of an Ethernet controller that is installed in your VAX host, for the phrase *controller_name* shown in the question). You can specify that the parameter server software communicate over the network via any Ethernet controllers that are installed in the VAX computer. Valid answers for this question are valid Ethernet controller names, such as: ELA, ESA, ETA, XEA, XQA, etc. Do not specify a unit number.

If you want the parameter server to communicate over the network only via the controller type shown in the question, press the <RETURN> key. If you want the parameter server to communicate via a different controller than the one shown in the question, specify the desired controller type (must be one of the valid controller types listed above) and press the <RETURN> key. If you want the parameter server to communicate via multiple controllers, specify the names of each controller type, separating each name by a comma (,) and press the <RETURN> key.

- c. The procedure will ask:

```
Destination of log information [OPCOM]:
```

The answer to this question specifies whether or not the parameter server should log its activity during operation, and where the activity will be logged. Select one of the following answers to this question, and press the <RETURN> key.

OPCOM which means that messages will be logged via the VMS operator communications facility. If you select this answer, the procedure will ask the following question:

```
* OPCOM message class [current_message_class]:
```

(the procedure will substitute the currently defined class of OPCOM messages for *current_message_class*). You can specify any of the following valid OPCOM message classes: CENTRAL, PRINTER, TAPES, DISKS, DEVICES, CARDS, NETWORK, CLUSTER, SECURITY, and OPER1 through OPER12.

NONE which means that the parameter server will not generate log messages.

FILE which means that the messages will be logged to a user-specified disk file. If you select this answer, the procedure will ask the following question:

```
* Log file [configuration_directory_name:XYP_SERVER.LOG]:
```

You can specify any file name for a log file, or press the <RETURN> key to choose the default file name (XYP_SERVER.LOG). Refer to section 1.2.4 for information about the configuration directory.

- d. The procedure will ask:

```
Do you want to restart the Parameter Server now [YES]:
```

To start or restart the parameter server, press the <RETURN> key to choose the default, or answer Yes or No and press the <RETURN> key. The procedure will display a message that indicates that the parameter server is shutting down. When the parameter server manager has finished, it will return to either the operating system prompt, or to the menu shown in Figure 4-1.

4.4 Using the Parameter Server Manager STARTUP Option.

Use the parameter server manager STARTUP option to initiate parameter server operation. This function causes the parameter server to start running as a detached process, and clean up any temporary files that remain if the parameter server was previously aborted.

When the parameter server is first started, it verifies that it can log messages (either through OPCOM or in a system-manager defined log file), and then validates all parameter configuration files. If any errors occur, the parameter server writes an error message to SYS\$ERROR: and exits. If no errors occur, the parameter server starts normal service.

Also, when the parameter server process is started, the XYP_MANAGER command procedure first runs the SYLOGIN command procedure. The SYLOGIN command procedure should not be allowed to complete with an error, or execute commands while running in an inappropriate mode, or the parameter server process may not start properly. You can prevent SYLOGIN from doing this by causing SYLOGIN to determine what mode it is running in, and continue only under the appropriate conditions. For example, if, at the beginning of SYLOGIN.COM, you include a command line similar to:

```
$ IF F$MODE( ) .EQS. "OTHER" THEN GOTO EXIT
```

SYLOGIN will simply exit when the parameter server is started. (Note that the parameter server process is a detached process, which falls into the F\$MODE() category of "OTHER.")

Notes

1. Whenever a parameter server is started, it notifies all units that it is available to store parameter information. Subsequently, all units will attempt to store parameter information at that parameter server, including units that are not configured in the NCP database at that specific parameter server. These storage attempts will fail, and the each unit's displays will report that these attempts failed. However, the parameter server will remain listed in the unit's operational database, unless it is removed by a CLEAR PARAMETER SERVER command. Xyplex is investigating changes to the software which will automatically remove these parameter server listings from the operational database.
2. On VAX/VMS systems which have disk quotas enabled, you must make sure that there is a sufficient number of unused free blocks (i.e., blocks currently used by the account are below the account's disk quota) in the account from which the parameter server is run, or the parameter server will not run properly.

4.5 Using the Parameter Server Manager SHUTDOWN Option.

Use the parameter server manager SHUTDOWN option to terminate parameter server operation. This function causes the parameter server to complete all transactions which are in progress, but refuse to start any further transactions. After the last transaction has been completed the parameter server closes all open parameter server configuration files, releases VMS resources, and exits.

If the SHUTDOWN option cannot complete normally within about 20 seconds, it will terminate abruptly. This can result in the parameter server having failed to update a stored parameter configuration file (but leaving prior stored parameters intact).

4.6 Using the Parameter Server Manager SHOW_CONFIGURATION Option.

Use the parameter server manager SHOW_CONFIGURATION option to display the current settings of all parameter server installation and configuration options. Figure 4-2 shows an example of the display.

```

Enter function [EXIT]: SHOW_CONFIGURATION

                                Xyplex Parameter Server Configuration

Run Image:  XYP_SERVER, Version 3.0
Directory containing configuration data:  SYS$MANAGER:
Directory containing executables:  SYS$SYSTEM:
Directory to store parameter sets:  MOM$LOAD:
Ethernet controller(s):  XEA
Destination of log information:  OPCOM
OPCOM message class:  NETWORK

```

Figure 4-2. Parameter Server Configuration Display.

The parameter server manager then returns to the menu shown in Figure 4-1.

4.7 Using the Parameter Server Manager DISPLAY Option.

Use the parameter server manager DISPLAY option to display information in parameter configuration files. When you select the DISPLAY option, the procedure will ask:

```
* Enter a list of files to examine [filespec]:
```

(the procedure will substitute the files XYP*.SYS and the name of the currently defined parameter configuration directory for *filespec* shown in the question). Type the name of a valid VMS directory, where parameter configuration files are located, and/or the name(s) of the parameter file(s), or press the <RETURN> key to select the default shown in the question.

4.8 Using the Parameter Server Manager RESTART Option.

Use the parameter server manager RESTART option to terminate and then restart parameter server operation. This function operates the same way as the SHUTDOWN function followed by the START function (described above).

4.9 Using the Parameter Server Manager CONFIGURE_FULL Option.

Use the parameter server manager CONFIGURE_FULL option to define or change the directory where the parameter server stores parameter sets, change the name of the Ethernet controller which the parameter server uses to communicate with the Ethernet network, change the maximum number of parameter files that the parameter server can store simultaneously, change the VMS process priority at which the parameter server task runs, or change the manner in which the parameter server logs messages or the location where these messages are logged. Configuration changes made using this procedure take effect when the parameter server is started or restarted, but do not affect a currently operating parameter server.

Use the following procedure when you select the CONFIGURE_FULL option (refer to section 4.2):

- a. The procedure will ask a question similar to the following:

Directory to contain configuration data [*configuration_directory_name*]:

(the procedure will substitute the name of the default Configuration directory choice for the phrase *configuration_directory_name* shown in the question). You can specify a Configuration directory, or press the <RETURN> key to use the default choice shown in the question.

- b. The procedure will ask a question similar to the following:

Directory to contain executable images [*executables_directory_name*]:

(the procedure will substitute the name of the default Executables directory choice for the phrase *executables_directory_name* shown in the question). You can specify an Executables directory, or press the <RETURN> key to use the default choice shown in the question.

- c. The procedure will ask a question similar to the following:

Number of simultaneous STOREs to support [*n*]:

(the procedure will substitute a decimal number for *n* shown in the question). You can specify the maximum number of units whose updated parameter files can be stored simultaneously by the parameter server, or press the <RETURN> key to use the default choice shown in the question.

- d. The procedure will ask a question similar to the following:

VMS process priority for Parameter Server [*VMS_process_priority*]:

(the procedure will substitute a VMS process priority the phrase *VMS_process_priority* shown in the question). You can specify a different VMS process priority, or press the <RETURN> key to use the default value.

- e. The procedure will ask a question similar to the following:

* Directory to contain parameter sets [*directory_name*]:

(the procedure will substitute the name of the current directory where parameter server configuration files are stored for the phrase *directory_name* shown in the question). You can change the directory where parameter server files are stored, or press the <RETURN> key to use the directory shown in the question. Note that parameter files and load images must be located in the same directory. If they are not located in the same directory, when the server reinitializes, it will use default parameters.

- f. The procedure will ask a question similar to the following:

Ethernet controller(s) [*controller_name*]:

(the procedure will substitute the name of an Ethernet controller that is installed in your VAX host, for the phrase *controller_name* shown in the question). You can specify that the parameter server software communicate over the network via any Ethernet controllers that are installed in the VAX computer. Valid answers for this question are valid Ethernet controller names, such as: ELA, ESA, ETA, XEA, XQA, etc. Do not specify a unit number.

If you want the parameter server to communicate over the network only via the controller type shown in the question, press the <RETURN> key. If you want the parameter server to communicate via a different

controller that the one shown in the question, specify the desired controller type (must be one of the valid controller types listed above) and press the <RETURN> key. If you want the parameter server to communicate via multiple controllers, specify the names of each controller type, separating each name by a comma (,) and press the <RETURN> key.

- g. The procedure will ask:

Destination of log information [OPCOM]:

The answer to this question specifies whether or not the parameter server should log its activity during operation, and where the activity will be logged. Select one of the following answers to this question, and press the <RETURN> key.

OPCOM which means that messages will be logged via the VMS operator communications facility. If you select this answer, the procedure will ask the following question:

* OPCOM message class [*current_message_class*]:

(the procedure will substitute the currently defined class of OPCOM messages for *current_message_class*). You can specify any of the following valid OPCOM message classes: CENTRAL, PRINTER, TAPES, DISKS, DEVICES, CARDS, NETWORK, CLUSTER, SECURITY, and OPER1 through OPER12.

NONE which means that the parameter server will not generate log messages.

FILE which means that the messages will be logged to a user-specified disk file. If you select this answer, the procedure will ask the following question:

* Log file [*configuration_directory_name*:XYP_SERVER.LOG]:

You can specify any file name for a log file, or press the <RETURN> key to choose the default file name (XYP_SERVER.LOG). Refer to section 1.2.4 for information about the configuration directory.

- h. The procedure will ask:

Do you want to restart the Parameter Server now [YES]:

To start or restart the parameter server, press the <RETURN> key to choose the default, or answer Yes or No and press the <RETURN> key. The procedure will display a message that indicates that the parameter server is shutting down. When the parameter server manager has finished, it will return to either the operating system prompt, or to the menu shown in Figure 4-1.

Appendix A

Sample Host Software Installations

A.1 Example Installation of MAXserver System Software

This section shows an example of the messages that are displayed during installation of the MAXserver System software on a VAX/VMS host. Chapter 2 covers the software installation procedure in detail.

Note

Refer to chapter 2 for a list of privileges required to perform this procedure. To simplify the example which follows, the system manager is using all VMS privileges.

```
$ SET PROCESS/PRIVILEGE=ALL
$ SET DEFAULT SYS$MANAGER
$ SET UIC [SYSTEM]
$ @SYS$UPDATE:VMSINSTAL
```

VAX/VMS Software Product Installation Procedure V4.7

It is 31-OCT-1990 at 13:50.

Enter a question mark (?) at any time for help.

%VMSINSTAL-W-NOTSYSTEM, You are not logged in to the SYSTEM account.

%VMSINSTAL-W-LOWQUOTA, The following account quotas may be too low.

BYTLM

%VMSINSTAL-W-DECNET, Your DECnet network is up and running.

%VMSINSTAL-W-ACTIVE, The following processes are still active:

SMITH

* Do you want to continue anyway [NO]? y

* Are you satisfied with the backup of your system disk [YES]?

* Where will the distribution volumes be mounted: mua0:

Enter the products to be processed from the first distribution volume set.

* Products: *

Please mount the first volume of the set on MUA0:.

* Are you ready? y

%MOUNT-I-MOUNTED, XYPLTP mounted on _VAXHOST\$MUA0:

The following products will be processed:

```
XYP_BRIDGE_ V1.0
XYP_GATEWAY_ V1.0
XYP_LAT_TCP_ V3.0
```

Beginning installation of XYP_BRIDGE_ V1.0 at 13:53

%VMSINSTAL-I-RESTORE, Restoring product saveset A...

This is Xyplex kit version V1-0

* Enter a directory to contain executable images [SYS\$SYSTEM]:

* Enter a directory to contain configuration data [SYS\$MANAGER]:

* Enter a directory to contain parameter sets [MOM\$LOAD]:

%VMSINSTAL-I-MOVEFILES, Files will now be moved to their target directories...

Ethernet controller(s) [ETA]:

Destination of log information [OPCOM]:

OPCOM message class [NETWORK]:

Do you want to restart the Parameter Server now? [YES]: n

Installation of XYP_BRIDGE_ V1.0 completed at 13:58

Beginning installation of XYP_GATEWAY_ V1.0 at 13:58

%VMSINSTAL-I-RESTORE, Restoring product saveset A...

This is Xyplex kit version V1-0

* Enter a directory to contain executable images [SYS\$SYSTEM]:

* Enter a directory to contain configuration data [SYS\$MANAGER]:

* Enter a directory to contain parameter sets [MOM\$LOAD]:

%VMSINSTAL-I-MOVEFILES, Files will now be moved to their target directories...

Ethernet controller(s) [ETA]:

Destination of log information [OPCOM]:

OPCOM message class [NETWORK]:

Do you want to restart the Parameter Server now? [YES]: n

Installation of XYP_GATEWAY_ V1.0 completed at 14:01

Beginning installation of XYP_LAT_TCP_ V3.0 at 14:02

%VMSINSTAL-I-RESTORE, Restoring product saveset A...

%VMSINSTAL-I-REWIND, The tape will be rewound to try again.

This is Xyplex kit version V3-0

* Enter a directory to contain executable images [SYS\$SYSTEM]:

* Enter a directory to contain configuration data [SYS\$MANAGER]:

* Enter a directory to contain parameter sets [MOM\$LOAD]:

%VMSINSTAL-I-MOVEFILES, Files will now be moved to their target directories...

Ethernet controller(s) [ETA]:

Destination of log information [OPCOM]:

OPCOM message class [NETWORK]:

Do you want to restart the Parameter Server now? [YES]: n

Installation of XYP_LAT_TCP_ V3.0 completed at 14:09

Enter the products to be processed from the next distribution volume set.

* Products: exit

VMSINSTAL procedure done at 14:09

A.2 Example Installation of MAXview Scriptor VMS Software

This section shows an example of the messages that are displayed during installation of the MAXview Scriptor VMS software on a VAX/VMS host. Chapter 2 covers the software installation procedure in detail.

Note

Refer to chapter 2 for a list of privileges required to perform this procedure. To simplify the example which follows, the system manager is using all VMS privileges.

```
$ SET PROCESS/PRIVILEGE=ALL
$ SET DEFAULT SYS$MANAGER
$ SET UIC [SYSTEM]
$ @SYS$UPDATE:VMSINSTAL
```

VAX/VMS Software Product Installation Procedure V5.0

```
It is 3-OCT-1990 at 10:43.
Enter a question mark (?) at any time for help.
```

```
%VMSINSTAL-W-NOTSYSTEM, You are not logged in to the SYSTEM account.
* Do you want to continue anyway [NO]? y
* Are you satisfied with the backup of your system disk [YES]? y
* Where will the distribution volumes be mounted: mua0:
```

```
Enter the products to be processed from the first distribution volume
set.
```

```
* Products: *
* Options:
```

```
The following products will be processed:
```

```
  XYP_AASC_ V1.1
  XYP_TS_ V2.0
      Beginning installation of XYP_ V1.1 at 10:44
```

```
%VMSINSTAL-I-RESTORE, Restoring product saveset A ...
```

```
This is Xyplex kit version V7-0
```

```
* Enter a directory for storing Xyplex files [SYS$COMMON:[SCRIPTOR]]:
* Enter the UIC to own the Xyplex files and processes [SYSTEM]:
%VMSINSTAL-I-SYSDIR, This product creates system disk directory
USE:[SCRIPTOR].
%XYP_-I-COPYFILE, Copying files into USE:[SCRIPTOR]
* Ok to install XYPLEX SCRIPTOR commands in SYS$LIBRARY:DCLTABLES ?
[YES]: y
* Ok to install XYPLEX SCRIPTOR help in SYS$HELP:HELPLIB.HLB ? [YES]: n
```

```
Running XYPLEX INIT in USE:[SCRIPTOR]
```

```
%VMSINSTAL-I-MOVEFILES, Files will now be moved to their target
directories...
```

Installation of XYP_ V1.1 completed at 10:45
Beginning installation of XYP_TS_ V2.0 at 10:46
%VMSINSTAL-I-RESTORE, Restoring product saveset A ...

This is Xyplex kit version TSV2-0

* Enter the UIC to own the Xyplex files and processes [SYSTEM]:
%VMSINSTAL-I-SYSDIR, This product creates system disk directory
USE:[SCRIPTOR.TSV2-0].

%XYP_TS_-I-COPYFILE, Copying files into USE:[SCRIPTOR.TSV2-0]

%VMSINSTAL-I-MOVEFILES, Files will now be moved to their target
directories...

Installation of XYP_TS_ V2.0 completed at 10:47

Enter the products to be processed from the next distribution volume
set.

* Products: