MUXserver 300 Software Installation Guide (VMS)

Order Number AA-MJ87D-TE

Fourth Edition, April 1992

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Contents

Preface vi

Chapter 1 Introduction

1.1 The MUXserver 300 Network 1–1
1.2 Software Installation Activities 1–1
1.2.1 Overview 1–1
1.2.2 Coordination with Hardware Installation 1–2
1.2.3 Installing Distribution Software 1–2
1.2.4 Configuring the Load Host's Node Database 1–4
1.2.5 Verifying the Installation 1–5
1.2.5.1 Verifying the Load Host Installation 1–5
1.2.5.2 Verifying the Server System Installation 1–5

Chapter 2 Installing Distribution Software

2.1 Preparing to Run the Installation Procedure 2–1
2.2 Software Prerequisites 2–1
2.2.1 VMS Tailoring 2–2
2.3 VMSINSTAL Conventions 2–2
2.4 Running VMSINSTAL 2–2
2.5 Installing onto Alternate Load Hosts 2–5
2.5.1 Installing onto Single Systems 2–5
2.5.2 Installing onto VAXclusters 2–6
2.5.3 Installing onto Other Operating Systems 2–6
2.6 Installation Verification Procedure 2–6

Chapter 3 Configuring the Load Host's Node Databases

3.1 Preparing to Run the Configuration Procedure 3–2
3.2 DSVCONFIG Conventions and Requirements 3–3
3.3 Running DSVCONFIG 3–3
3.3.1 List Known Servers (Option 1) 3–4
3.3.2 Add a MUXserver 300 (Option 2) 3–5
3.3.3 Swap an Existing Server (Option 3) 3–7
3.3.4 Delete an Existing MUXserver 300 (Option 4) 3–8
3.3.5 Restore Existing MUXserver 300s (Option 5) 3–8
3.3.6 Restoring from a Command Procedure 3–9
3.4 Downline Loading the Server Image 3–9

Chapter 4 Verifying the Installation

4.1 Verifying the Load Host Installation 4–2
4.1.1 The NCP LOAD NODE Command 4–2
4.1.2 Loading a New MUXserver 300 4–2
4.1.3 Loading an Existing MUXserver 300 4–2
4.1.4 Preparing for the LOAD Command 4–3
4.1.5 Warning Users before Loading 4–3
4.1.6 Issuing the LOAD Command 4–4
4.1.7 Checking DECnet Event Logging 4–4
4.1.8 Loading After Hours 4–5
4.2 Verifying the MUXserver 300 System Installation 4–5

Appendix A MUXserver 300 Distribution Files

Appendix B Using the Remote Console Facility

Appendix C Installation, Configuration & Verification Examples

C.1 Installation Example C–1
C.2 Configuration Examples C–3
C.2.1 Starting DSVCONFIG.COM C–3
C.2.2 The DSVCONFIG.COM Menu C–3
C.2.3 Listing Known Servers (Option 1) C–3
C.2.4 Adding a Server (Option 2) C–4
C.2.5 Swapping a MUXserver 300 for a New Unit (Option 3) C–4

C.2.6 Deleting a Server from the Database (Option 4) C–4
C.2.7 Restoring Existing Servers to the Database (Option 5) C–5
C.3 Verification Examples C–5
C.3.1 Verifying a Load Host Installation C–5
C.3.1.1 Checking the Server name C–5
C.3.1.2 Using RCF and Warning Server Users C–6
C.3.1.3 Enabling DECnet Event Logging C–6
C.3.1.4 DECnet Event Logging Display While Issuing LOAD C–6
C.3.1.5 Conclusion of a Load Host Installation Verification C–6
C.3.2 Verifying the Server System Installation C–7

Glossary

Index

Figures

1–1 Flowchart of Software Installation Activities 1–3
1–2 Load Host Database Configuration 1–4

Tables

A–1 MUXserver 300 Distribution Kit Files A–1

Preface

Purpose of the Guide

This document describes:

- Installing MUXserver 300 Remote Terminal Server distribution software onto a VAX/VMS system running DECnet Phase IV so that this system can then perform as a load host.
- Configuring the load host's DECnet database.
- Verifying the installation by:
  * Downloading the server image to the MUXserver 300 Remote Terminal Server, and then
  * Testing a number of representative server commands.

This guide is applicable to Version 1.3 of the MUXserver 300 product and all subsequent maintenance releases up to the next major product release.

This Guide is intended for system or network managers who are responsible for installing MUXserver 300 software on VMS systems.

Readers should be familiar with both DECnet Phase IV Network Management Concepts and the VAX/VMS Operating System.

The Guide is organized as follows:

Chapter 1	Introduces the MUXserver 300 Remote Terminal Network and summarizes the MUXserver 300 installation, configuration, and verification procedures.
Chapter 2	Describes the preparation for installation and the actual installation of MUXserver 300 distribution software.
Chapter 3	Describes the configuration of the load host's DECnet databases to support the MUXserver 300 product.

Chapter 4	Describes the verification of the MUXserver 300 software installation by: • Downline loading the server image, and • Testing a number of representative commands via the MUXserver 300 product's supervisor port.
Appendix A	Lists the files provided in the MUXserver 300 Distribution Kit.
Appendix B	Describes remote system operation from the MUXserver 300 product using the VMS Remote Console Facility.
Appendix C	Contains an example of: • Installation and configuration, and • Verification by downline loading the server image.
Glossary	Defines abbreviations and special terms used in this guide.
Index	Provides a page reference to important topics used in this guide.

Other MUXserver 300 Publications

The following is a list of related MUXserver 300 publications:

- *MUXserver 300 Network Reference Manual* EK-DSRZC-RM
  Describes procedures for setting–up, managing, monitoring, and troubleshooting the MUXserver 300 network.
- *MUXserver 300 Network Installation Manual* EK-DSRZC-IM
  Describes installation and maintenance of the MUXserver 300 hardware.
- *MUXserver 300 Network Identification Card* EK-DSRZC-IC
  A means of recording MUXserver 300 identification information.
- *MUXserver 300 Software Product Description* AE-MG98D-TE
  Describes the MUXserver 300's software and its operation.
- *MUXserver 300 System Support Addendum* AE-MJ86F-TE
  An addendum to the *MUXserver 300 Software Product Description* which describes the various systems supported by the MUXserver 300.

Other Relevant Publications

Reference to the following Digital publications may be required during installation of the MUXserver 300 software:

- *VAX/VMS Networking Manual*
  Describes DECnet–VAX and VAX-PSI network software and network configuration, management and operation.
- *VAX/VMS Network Control Program Reference Manual*
  Describes DECnet event logging and NCP and DECnet commands.
- *VAX/VMS System Messages and Recovery Procedures Reference Manual*
  Describes NCP information and error messages.

- *DECnet–VAX Network Management Concepts and Procedures Manual*
  Describes the use and management of DECnet.

Conventions

The following conventions apply throughout this guide:

Product Name

- Unless stated otherwise, *MUXserver 300* refers to *MUXserver 300* **and** *MUXserver 310*.

Numbers

- All numbers are in decimal unless otherwise noted.
- All Ethernet addresses are in hexadecimal.

Graphics

Normal	Normal type indicates an example of system output.
Bold	Bold type indicates an example of user input.
Italics	Indicates a variable.
key	Indicates a specific key to be pressed.
CTRL/*x*	Indicates that the CTRL key should be held down while the key, specified by *x*, is also pressed.

Chapter 1
Introduction

1.1 The MUXserver 300 Network

The MUXserver 300 Remote Terminal Server Network connects remote terminals (or other asynchronous port devices) to an Ethernet Local Area Network (LAN).

The network includes one MUXserver 300 or 310 Remote Terminal Server which is connected to an Ethernet Local Area Network (LAN). The MUXserver 300 and MUXserver 310 are separate products which support different numbers of remote asynchronous terminals or printers via synchronous links and remote terminal multiplexers. The MUXserver 300 connects up to 64 active devices and the MUXserver 310 connects up to 16 active devices.

Up to two synchronous links may be connected, via modems, to the MUXserver 300 and the MUXserver 310. Up to three remote terminal multiplexers (DECmux 300s) may be connected, via modems, in a daisy-chain fashion to **each** synchronous link.

Depending on its particular model and configuration, each DECmux 300 may have 8, 16, 24 or 32 asynchronous ports. However, the total MUXserver 300 network is limited to 64 active terminals at any one time and the total MUXserver 310 network is limited to 16 active terminals at any one time. An active terminal is one that is using a LAT service or is currently at the **Local>** or **Enter Username>** prompt.

The network connects each remote terminal to the LAN with access to LAT services.

1.2 Software Installation Activities

1.2.1 Overview

The MUXserver 300 software includes the files in the MUXserver 300 Distribution Kit.

Software installation involves:

- Installing the MUXserver 300 distribution software,
- Configuring the load host's node database,
- Verifying the load host installation by downline loading the server image, and

- Verifying the server system installation by testing a selection of representative server commands.

Figure 1–1 is a flow chart of the software installation process. The steps in the flow chart serve as an overview of installing the distribution software and configuring the load host's node database.

Software installation establishes a VMS system as a load host for one or more MUXserver 300 networks. A **load host** is a system that contains the server image and whose node database has entries for specific servers and, as a result, can downline load the server image to servers on the local Ethernet. In addition, a load host performs maintenance activities such as receiving upline dumps from the server.

A load host can be a single VMS system or can be a member node of a VAXcluster. To act as a load host, a VMS system must be running DECnet Phase IV and must be located on the same Ethernet as the MUXserver 300(s).

Digital Equipment Corporation suggests that:

- At least two load hosts be assigned for each MUXserver 300 (or other server), and
- At least one load host be assigned for every ten servers.

Providing alternate load hosts reduces the MUXserver 300 network's dependence on one particular load host. If the primary load host is unavailable, another system can downline load the server and receive upline dumps from it. The MUXserver 300 should have these load-host functions available at all times. In addition, assigning more than one load host for every ten servers reduces the demand on any single load host's resources.

Any Digital system that has a MUXserver 300 Distribution Kit available can be MUXserver 300 Software Distribution Kits are available for the following systems:

- VAX/VMS (installation is described in this guide), and
- ULTRIX (refer to the *MUXserver 300 Software Installation Guide (ULTRIX)*).

1.2.2 Coordination with Hardware Installation

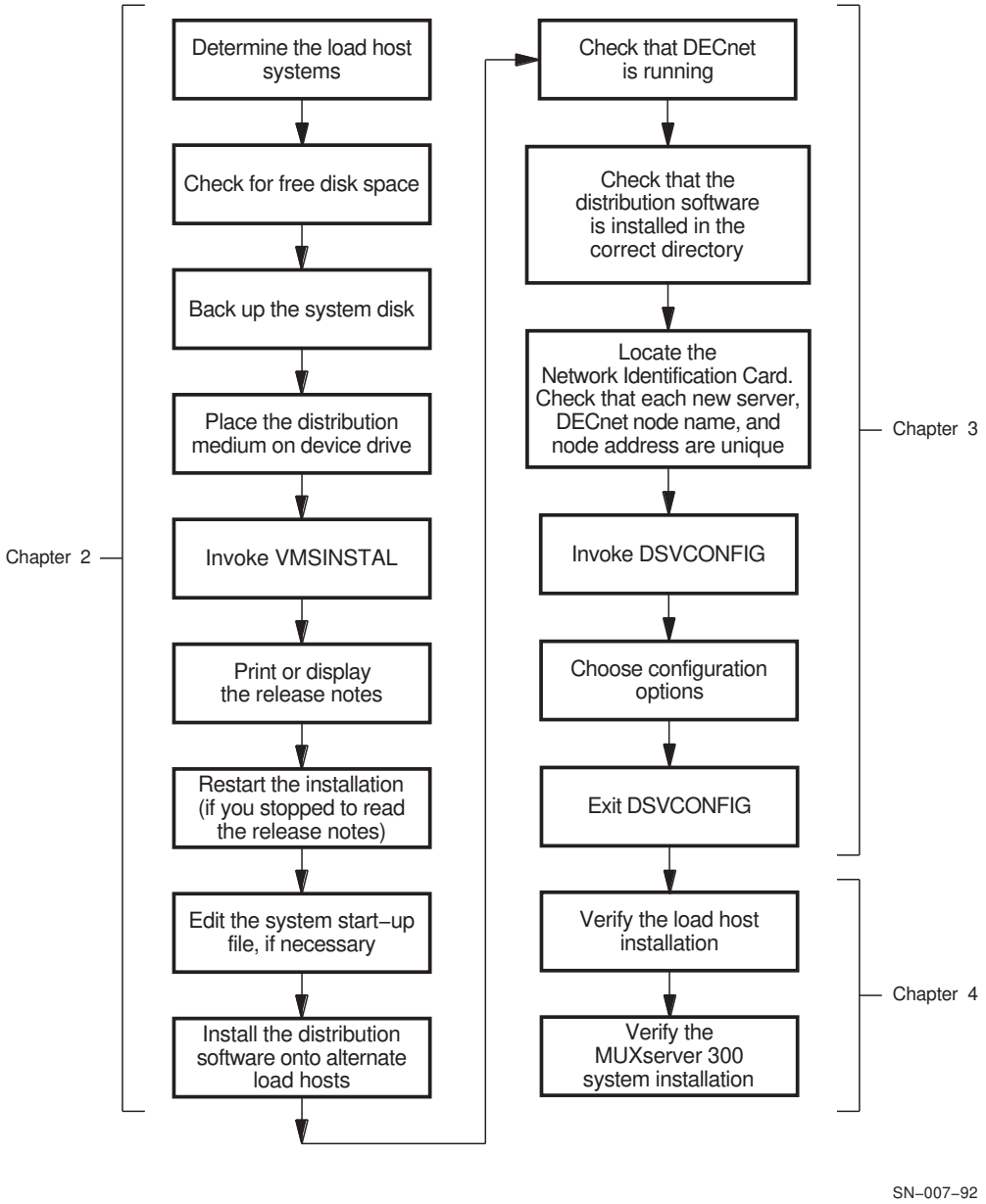
MUXserver 300 software installation should be coordinated with the installation of the local and remote hardware. Chapter 4 describes the coordination required between hardware and software installation.

1.2.3 Installing Distribution Software

MUXserver 300 distribution software is installed onto a VMS system using an automated procedure called VMSINSTAL. The MUXserver 300 Software Distribution Kit includes a procedure file which is used by VMSINSTAL to perform the installation. When run, VMSINSTAL:

- Creates an appropriate directory on the load host for the software files,
- Copies the files from the distribution media to the load host, and

Figure 1–1: Flowchart of Software Installation Activities



- Optionally prints the MUXserver 300 release notes.

Installation of distribution software is described in Chapter 2.

1.2.4 Configuring the Load Host's Node Database

When distribution software has been installed onto a VMS system (node), its database needs to be configured to support the new MUXserver 300 network.

The databases are configured with an automated procedure, DSVCONFIG, which is included in the MUXserver 300 Software Distribution Kit.

The host system's existing DSVCONFIG.COM file will be updated only if the version supplied with the software distribution kit is newer. If so, the old version of DSVCONFIG.COM file will be renamed to DSVCONFIG.COM_V*xx*, where *xx* is the version number of the old file.

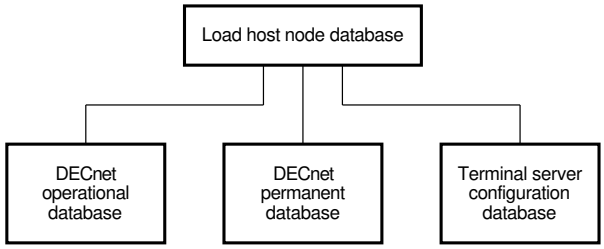
Configuration of a load host's node database involves defining an entry for each server in three places:

- A data file called DSVCONFIG.DAT.

  The DSVCONFIG.DAT file is the MUXserver 300 network's configuration database. The file is automatically created by DSVCONFIG and is part of a load host's node database (see Figure 1–2).

- The DECnet operational (volatile) database.
- The DECnet permanent database.

Figure 1–2: Load Host Database Configuration



Configuration of a new server involves adding an entry to the load host's node database. The entry identifies the server's:

- Type,
- DECnet node name and DECnet node address,
- DECnet Circuit-ID,
- Ethernet address,
- Load file (server software image), and
- Dump file.

Configuration may also involve modifying or deleting entries for existing servers. With DSVCONFIG the load host's node database can be configured to:

- Add a new unit,
- Swap an old unit with a new one,
- Remove a unit, or
- Restore the previous configuration from the local database.

Refer to Chapter 3 for instructions on configuring the load host's node database to support servers.

In addition to allowing you to configure a new server in the load host's node database, DSVCONFIG allows you to list all servers currently defined in the DSVCONFIG.DAT file and to restore to the host's DECnet databases all server configurations defined in DSVCONFIG.DAT.

To configure a server on a VAXcluster:

- The distribution software is installed onto one member node, and then
- The databases are configured on the other nodes intended as load hosts.

When configuration is completed, the VMS Operating System will have been established as a load host for each server that has an entry in the node database. Refer to Chapter 3 for information on configuring the load host's node database to support servers.

1.2.5 Verifying the Installation

1.2.5.1 Verifying the Load Host Installation

Verifying a load host installation involves downline loading the server image to a server (using the NCP LOAD NODE command) and reading the DECnet event logging messages. Verifying a load host installation ensures that the host:

- Has the appropriate files in the correct directory,
- Has a correct entry in its node database for the test server, and
- Can successfully downline load the server image.

1.2.5.2 Verifying the Server System Installation

Verifying a complete server system installation involves the testing of a number of server commands at an interactive terminal connected to a server port. This ensures that:

- The correct version of the software is in the server,
- The server hardware operates with the new software, and
- The new software is running correctly.

Chapter 2
Installing Distribution Software

This chapter describes the installation of the MUXserver 300 distribution software onto a VMS load host using the VMS operating system's VMSINSTAL command.

VMSINSTAL is an automated procedure that:

- Creates a directory called SYS$SYSROOT:[DECSERVER] on the load host,
- Copies the files from the distribution media into this directory, and
- Optionally prints a copy of the release notes.

Installation will take about five minutes.

2.1 Preparing to Run the Installation Procedure

Before running the installation procedure:

- Determine which systems are to be load hosts for the server. The distribution software must be installed onto all load hosts.
- Check that each load host has 750 blocks of free disk space for downline loading the server image
- Check that DECnet Phase IV or Phase V is running and is in the ON state. For information on DECnet, refer to the *DECnet–VAX Network Management Concepts and Procedures* manual.

2.2 Software Prerequisites

Installation of MUXserver 300 distribution software requires:

- DECnet VAX, and
- VMS Operating System V5.0 or later.

2.2.1 VMS Tailoring

The MUXserver 300 software can be run on a tailored VMS system.

Information on VMS Tailoring is contained in the *System Support Addendum* to the *MUXserver 300 Software Product Description*.

2.3 VMSINSTAL Conventions

VMSINSTAL is an interactive procedure. It displays a series of questions preceded by an asterisk (*). After a question the default response, if there is one, appears in brackets ([ ]). At the end of the display line either a colon (:) or a question mark (?) appears.

Type your response immediately after the colon or question mark and then press Return. To select the default response, press only Return.

If you need assistance with a question, enter a question mark (?) and then press Return as a response. VMSINSTAL will display explanatory text about the question and then repeat the question.

Refer to the VMS documentation for a complete description of VMSINSTAL.

2.4 Running VMSINSTAL

1. Load the MUXserver 300 software distribution medium into the appropriate device.
2. Log in to the system manager's account and enter the following commands:

   $**SET DEFAULT SYS$UPDATE** Return
   $**@VMSINSTAL MS3 *device-identifier* OPTIONS N** Return

   where *device-identifier* is the device in which the distribution medium is loaded.

   Note

   Running the procedure with this command line is the only way to get the release notes printed automatically. If you run VMSINSTAL without these keywords - *device-identifier* OPTIONS N - the release notes will not be mentioned and you will not be asked if you would like them printed.

3. VMSINSTAL then displays the procedure title, the data and time, and continues with the following (the warning message appears only if DECnet is running):

   ```
   %VMSINSTAL-W-DECNET, Your DECnet network is up and running.
   * Do you want to continue anyway [NO]?
   ```

   Press Y and then Return to answer YES and proceed with the installation.

4. VMSINSTAL will display:

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

   Press Return to answer YES, or take appropriate action.

5. If you are installing from the distribution media (not from copied savesets), you are prompted to mount the first volume by:

```
Please mount the first volume of the set on device-identifier.
*Are you ready?
```

Press Y and press Return. A message will confirm that the medium is mounted.

Installation continues with:

```
The following products will be processed:
   MS300 Vn.n
Beginning installation of MS300 Vn.n at hh:mm
%VMSINSTAL-I-RESTORE, Restoring product saveset A...
```

Note

The MUXserver 300 software version numbers are not specified in this Guide. For example, the release note file is shown as MS3$*nnn*.RELEASE_NOTES. Here, *nnn* represents the version number. If version 1.3 is being installed, the release notes file is MS3$013.RELEASE_NOTES.

6. The procedure now lists the following options for printing and displaying the release notes.

```
Release notes included with this kit are always copied to SYS$HELP.

Additional Release Notes Options:
  1.  Display release notes
  2.  Print release notes
  3.  Both 1 and 2
  4.  None of the above

* Select option [2]
```

Select one of these options. Digital recommends that you select Option 2 to print the release notes.

If you select Option 1, the following message is displayed:

```
VMI$ROOT:[SYSUPD.MS3013] MS3$013.RELEASE_NOTES;1
```

and the release notes will be immediately displayed on your terminal.

If you select Option 2, you are asked to queue the file for printing:

```
* Queue name [SYS$PRINT]:
```

To print the release notes on the default printer press Return or, otherwise, specify another print queue. A message will indicate that the file has been queued.

If you select Option 3, you are first asked to queue the file for printing:

```
* Queue name [SYS$PRINT]:
```

To print the release notes on the default printer press Return or, otherwise, specify another print queue. A message will indicate that the file has been queued. Next, the following message is displayed:

```
VMI$ROOT:[SYSUPD.MS3013] MS3$013.RELEASE_NOTES;1
```

The release notes will immediately start scrolling on your terminal.

7. After all release notes have been displayed (if appropriate), VMSINSTAL will continue with:

```
* Do you want to continue the installation [N]?
```

- Press Return to stop the procedure, and read the release notes. Check for any changes that will affect this installation. VMSINSTAL also places the release notes in the file MS300$*nnn*.RELEASE_NOTES in the SYS$HELP directory.

  If you stop VMSINSTAL to read the release notes, run the procedure again when you are ready to continue. Enter:

  $**@VMSINSTAL MS3** ***device-identifier*** Return

  where *device-identifier* is the device on which the distribution medium is mounted.

- To continue with the installation, press Y then Return .

8. VMSINSTAL will then continue with:

```
%VMSINSTAL_I_RELMOVED , The product's release notes have been moved To
SYS$HELP

Do you want to purge files replaced by this installation [Yes]?
```

Press Enter to purge previous versions of the files.

VMSINSTAL will then inquire:

```
Do you want to run the IVP after the installation [Yes]?
```

Enter Return to allow the IVP to execute after the installation is complete.

The following message will be displayed:

```
No more questions will be asked, the installation will take
one to two minutes.

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

Beginning installation verification procedure for MUXserver 300 Vn.n.

Successful creation of SYS$COMMON:[DECSERVER] directory

Successful installation of SYS$COMMON:[DECSERVER]MS4801ENG.SYS

Successful installation of SYS$COMMON:[DECSERVER]DSVCONFIG.COM

Successfully located SYS$COMMON:[DECSERVER]DSVCONFIG.DAT

Successful installation of SYS$COMMON:[DECSERVER]MS3_013_DEFAULTS.COM

Successful installation of SYS$COMMON:[DECSERVER]TSM$MS3_V13_GET_CHAR.COM

MUXserver 300 Vn.n Installation Verified
```

9. VMSINSTAL continues with the following message:

```
Your installation is now complete. After exiting from VMSINSTAL:

1. Edit your system start-up file so that it defines the logical
   MOM$LOAD as a search string with a value equal to the current search
   string, plus the added element SYS$SYSROOT:[DECSERVER]. For example:

   DEFINE/SYSTEM/EXEC/NAME_ATTRIBUTE=NO_ALIAS/NOLOG -
   MOM$LOAD 'current-search-string',SYS$SYSROOT:[DECSERVER]
```

```
   If the current search string associated with MOM$LOAD in your
   start-up file is SYS$SYSROOT:[DECSERVER] or if you have
   already made this change for a previous installation, there
   is no need to edit this file.

   This command ensures that the location of the server image
   is defined each time the system is rebooted, necessary for
   successful downline
    loading.

2. Configure the server into  your  host's database.
   Execute a command procedure  called  DSVCONFIG.COM. This
   command  procedure is in the SYS$SYSROOT:[DECSERVER] directory.
   If  you  have  already  executed  this  procedure from previous
   installations, you need to configure only any additional units.
   All previously defined units will still be configured.

 Installation of MS300 Vn.n completed at hh:mm

 VMSINSTAL procedure done at hh:mm

$
```

To find the current search string, enter:

```
$SHOW LOG MOM$LOAD
```
Return

10. After editing the system startup file, run the configuration procedure, DSVCONFIG.COM, to configure the load host's node database as described in Chapter 3.

2.5 Installing onto Alternate Load Hosts

Digital recommends that you establish alternate load hosts for each server.

As with the original load host an alternate load host must be a DECnet Phase IV or Phase V system. To serve as an alternate load host, a system must also have the distribution software installed, and it must have entries for one or more servers in its node database.

If the original load host is unavailable for downline loading the server image, any alternate load host can load the server instead. In addition, alternate load hosts can receive upline dumps from servers and can perform other maintenance functions.

2.5.1 Installing onto Single Systems

To install the server distribution software onto an alternate load host that is not a member of a VAXcluster, either:

- Load the distribution media into the appropriate device of the new load host and repeat the installation procedure detailed in Section 2.4, or
- Copy the distribution files from the original load host to a new load host.

2.5.2 Installing onto VAXclusters

To install the server distribution software onto an alternate load host that is a member of a VAXcluster, install the software onto one cluster member and:

- Log into a privileged (system) account on one of the other members of the cluster
- Enter the following command:

```
$ DEFINE/SYSTEM/EXEC/NAME_ATTRIBUTE=NO_ALIAS/NOLOG MOM$LOAD-
current-search-string, SYS$SYSROOT:[DECSERVER]  Return
```

- Include the above command in the node's system start-up procedure

2.5.3 Installing onto Other Operating Systems

To install the server distribution software onto another operating system follow the instructions in the *MUXserver 300 Software Installation Guide* for that operating system.

2.6 Installation Verification Procedure

The MUXserver 300 Installation Verification Procedure (IVP) can be executed at any time by entering the command:

```
@SYS$TEST:MS300$IVP
```

If the MUXserver 300 software has been installed the IVP output will be:

```
Beginning installation verification procedure for MUXserver 300 Vn.n
Successful creation of SYS$COMMON:[DECSERVER] directory
Successful installation of SYS$COMMON:[DECSERVER]MS4801ENG.SYS
Successful installation of SYS$COMMON:[DECSERVER]DSVCONFIG.COM
Successfully located SYS$COMMON:[DECSERVER]DSVCONFIG.DAT
Successful installation of SYS$COMMON:[DECSERVER]MS3_nnn_DEFAULTS.COM
Successful installation of SYS$COMMON:[DECSERVER]TSM$MS3_V13_GET_CHAR.COM
MUXserver 300 Vn.n Installation Verified
```

Chapter 3
Configuring the Load Host's Node Databases

This chapter describes the procedures for configuring a load host's node database to support a specific MUXserver 300 network.

DSVCONFIG.COM is an automated, menu-driven procedure which is used to define servers in the load host's node database. DSVCONFIG allows entries for any server in the DECserver or MUXserver family (including MUXserver 300) to be defined, deleted, and modified.

The installation procedure copies this procedure file to the SYS$SYSROOT:[DECSERVER] directory for both single systems and for VAXcluster member nodes (see Chapter 2).

Note

DSVCONFIG.COM, supplied with the MUXserver 300 distribution kit, accommodates various terminal servers, including:

- DECserver 100, 200, 250, 300 and 500,
- MUXserver 100, 300 and 310, and
- MUXserver 320 and 380.

DSVCONFIG allows:

- Listing servers that are currently defined in the load host's node database.
- Adding an entry for a new server in the load host's node database.

  Adding an entry supplies information that identifies the server on the Ethernet.
- Swapping an existing server for a new one or redefine an existing server's identification in the load host's node database.

  Swapping retains the DECnet node address of an existing server, replacing its Ethernet address with the Ethernet address of a new unit. This option also can replace other server identifiers either for a new server or for an existing one.
- Deleting an entry for an existing server from the load host's node database.

Deleting an entry prevents the load host from recognizing the server. Thus, it is no longer a load host for that server. A database entry can be deleted when the network is reconfigured or a server is assigned to another load host.

- Restoring existing servers to a DECnet load database

  Restoring copies server entries from the load host's node database to the DECnet load database. Restoring is useful when a local DECnet database is routinely copied from a central DECnet database that does not include servers.

Configuring a load host's node database involves adding, swapping and deleting entries in the DSVCONFIG.DAT file. Restoring reconfigures the DECnet load database.

DSVCONFIG operates on the following three distinct databases:

- The load host's node database:

  This database is also the server database. It contains the information displayed when you select Option 1, List, from the DSVCONFIG menu.

- The permanent DECnet database.
- The volatile DECnet database.

When DSVCONFIG is run, data is sometimes transferred from the load host's node database to the DECnet databases. The DSVCONFIG procedure automatically keeps these databases synchronized.

Note

DSVCONFIG includes several NCP commands. Do not directly execute these commands to configure the load host's node database because NCP affects only the DECnet database.

DSVCONFIG also prepares a node as a load host by enabling SERVICE on the service circuit. SERVICE must be enabled before a downline load can occur.

3.1 Preparing to Run the Configuration Procedure

Before starting the configuration procedure, check that:

- DECnet Phase IV or Phase V is running. For information on DECnet, refer to the *DECnet VAX Network Management Concepts and Procedures* Manual.
- There is a unique DECnet node name and node address for each server.

  To determine the node name and the node address and to determine that they are unique, ask your network manager or other person responsible for assigning node names and node addresses. Also, uniqueness can be determined with the NCP SHOW NODE command as follows:

```
$ NCP Return
NCP> SHOW NODE node_name CHARACTERISTICS Return
```

  or

```
NCP> SHOW NODE node_number CHARACTERISTICS Return
```

The first line of the display for each node shows its number and name, for example:

```
Remote node=1.203 (MS380C)
```

- You know the Ethernet address of each server.

  This is the unique hardware address of each server. The Ethernet address is recorded on the Control/Indicator Panel of the MUXserver 300 and on the *MUXserver 300 Network Identification Card* for that server that has been completed by the hardware installer.

- The directory SYS$COMMON:[DECSERVER] exists, for VAXcluster nodes.

  If the directory does not exist, create it now.

You will need the preceding information to answer prompts during DSVCONFIG.

3.2 DSVCONFIG Conventions and Requirements

DSVCONFIG is an interactive procedure which displays a menu of options. To select and activate an option, enter the corresponding number and then press Return.

If you need assistance with a question, enter a question mark (?) and then press Return as a response. DSVCONFIG will display explanatory text about the question and then return to the DSVCONFIG menu.

To exit DSVCONFIG at the menu level and return to the DCL prompt, enter Ctrl/Z. To exit an option and return to the DSVCONFIG menu, without making any changes, also enter Ctrl/Z.

On completion of the Add, Delete, or Swap options NCP messages might display information, confirmation or errors. If an error is reported, the operation may have been unsuccessful. For a description of NCP messages, refer to the *VAX/VMS System Messages and Recovery Procedures Reference Manual*.

To run DSVCONFIG on a single system, the MUXserver 300 distribution software must already have been installed on to that system. For a VAXcluster node, the distribution software can be installed on to any node of the cluster, not necessarily the node where DSVCONFIG is to be run.

Refer to the VMS documentation for a full description of VMSINSTAL.

3.3 Running DSVCONFIG

1. Log into the system account, or any account with OPER and SYSPRV privileges.
2. Enter the following commands:

```
$ SET DEFAULT SYS$SYSROOT:[DECSERVER] Return
$ @DSVCONFIG Return
```

   DSVCONFIG will:

   - Determine if the DECnet key is installed. If DECnet is missing, DSVCONFIG will print a message and then exit.

     DECnet is required because DSVCONFIG executes DECnet commands.

- Check the existence and format of a file called DSVCONFIG.DAT, and:
  - * If DSVCONFIG.DAT does not exist in SYS$SYSROOT:[DECSERVER], the procedure creates DSVCONFIG.DAT and displays a message advising that the file was not found and a new one was created.
  - * DSVCONFIG.DAT will exist in SYS$SYSROOT:[DECSERVER] if DSVCONFIG was previously used to add MUXserver 300 entries, and the procedure will continue with its next task.
  - * SYS$SYSROOT:[DECSERVER] or, for VAXclusters, SYS$SPECIFIC:[DECSERVER] will already have DSVCONFIG.DAT but in the incorrect format. The procedure will re-format the file.

    For VAXclusters, SYS$SPECIFIC:[DECSERVER] on each VAXcluster node might have an older version of DSVCONFIG.DAT. In this case, DSVCONFIG copies the MUXserver 300 entries from that data file into the DSVCONFIG.DAT file on SYS$COMMON:[DECSERVER], a directory shared by the VAXcluster nodes. The procedure renames the DSVCONFIG.DAT file in SYS$SPECIFIC so that the DSVCONFIG.DAT file in SYS$COMMON is used thereafter.
- Print a message advising that each DECserver terminal server must have a unique DECnet node name and DECnet node address.
- Ask if you wish to continue or exit with:

```
Press <RET> to start or <CTRL/Z> to exit..
```

3. Press Return to continue with the configuration. DSVCONFIG will display:

```
DECserver Configuration Procedure

Menu of Options
   1 - List known DECservers
   2 - Add a DECserver
   3 - Swap  an existing DECserver
   4 - Delete an existing DECserver
   5 - Restore existing DECservers
        CTRL/Z - Exit from this procedure

Your selection?
```

4. Enter the number corresponding to the required option and press Return .

3.3.1 List Known Servers (Option 1)

To list known servers in the load host's node database using Option 1:

1. Press 1 and then Return . The contents of file DSVCONFIG.DAT will be displayed in seven columns. A typical listing will appear as:

```
DECnet   DECnet Server Service
Address  Name   Type   Circuit  Ethernet  Address  Load File      Dump File
-------------------------------------------------------------------------
28.1001  TUNA   DS200  UNA-0    08-00-2B-02-24-2B  PRO801ENG.SYS  DS2TUNA.DMP
28.1002  SHRIMP MS300  UNA-0    08-00-2B-04-AA-2B  MS4801ENG.SYS  MS3SHRIMP.DMP
28.1003  CONCH  DS100  UNA-0    08-00-2B-02-24-F1  PS0801ENG.SYS  PSDMP24F1.SYS
28.1005  OYSTER MS300  UNA-1    08-00-2B-04-AA-55  MS4801ENG.SYS  MS3OYSTER.DMP
```

```
Total of 4 DECservers defined.
```

2. This information comprises the load host's node database which the load host uses for downline loading and for receiving upline dumps.

   When a server upline dumps its memory, which it does upon unexpected failure or upon request by the server manager, the data is dumped into the server dump file. This file can then be used for diagnostics.

   If a fatal bug check generates an upline dump, you should copy the dump file to magnetic tape and send it with a Software Performance Report (SPR) to Digital (the server manager may also ask you for a copy of the dump file).

   Each server has a unique dump file name. The name of a MUXserver 300 has the format:

   MS3*xxxxxx*.DMP

   where *xxxxxx* is the DECnet node name of the server. For example, a MUXserver 300 with the DECnet node name SHRIMP has the dump file name MS3SHRIMP.DMP.

3.3.2 Add a MUXserver 300 (Option 2)

To add a MUXserver 300 using Option 2:

1. Before adding a new MUXserver 300, ensure that you have the following information:
   - The server type
   - A unique DECnet node name for the MUXserver 300
   - A unique DECnet node address for the MUXserver 300
   - The Ethernet address of the MUXserver 300
   - The service circuit_ID
2. Press 2 and then Return to create a new entry in the load host's node database for a new server.
3. DSVCONFIG will prompt for the server type with:

   ```
   DECserver type?
   ```

   Specify the type of server you are adding:
   - MS300 to add a MUXserver 300 or MUXserver 310
4. DSVCONFIG will prompt for the server's DECnet node name with:

   ```
   DECnet node name for unit?
   ```

   Specify the DECnet node name for the server. The node name must begin with a letter and contain from 1 to 6 alphanumeric characters, and must be unique to the entire DECnet network.
5. DSVCONFIG will prompt for the server's DECnet address with:

   ```
   DECnet address for unit?
   ```

   Specify the DECnet node address for the server. This number must be a decimal number from 2 to 1023 which is unique within the network.

The DECnet network may be divided into areas. If this is the case, find out from your network manager your area number, because this number becomes part of each node address.

With defined areas each node address takes the form *aa.nnnn*, where *aa* is a decimal number from 1 to 63, the period distinguishes area from node address and *nnnn* is the node address (for example, 7.103). If you omit the area, the area of the current load host is used as a default.

6. DSVCONFIG will now prompt for the server's Ethernet address name with:

```
DECserver Ethernet address of this unit?
```

Specify the Ethernet address of the server. This address is listed on the Control /Indicator Panel of the unit and on the *MUXserver 300 Network Identification Card* which was completed by the hardware installer. Enter the Ethernet address as six pairs of hexadecimal digits with hyphens (-) separating the pairs (for example, 08-00-01-00-AB-CB is a valid format).

7. Finally, DSVCONFIG will prompt for the DECnet Service Circuit-ID with:

```
DECnet Service Circuit-ID [default-id]?
```

Specify the service circuit_ID of your Ethernet controller type.

Whenever you run this procedure, you may be asked to specify the service circuit_ID several times. The first time you are asked the default will be the service circuit_ID for the processor type of your VMS load host. If you respond by specifying a different service circuit_ID, that response becomes the new default.

After you specify the service circuit_ID and press Return, DSVCONFIG adds the entry for the new server to the database and sets SERVICE ENABLED on the circuit supporting the Ethernet controller, both of which are necessary in order for the load host to downline load the server image to the server.

Note

If you receive an error from DECnet while you are adding a server, the entry is added to the DSVCONFIG.DAT file (the load host's node database) even though it is not entered in the DECnet load database. You should immediately use Option 4 to delete the entry, fix the condition causing the DECnet error, then return to Option 2 to add the server again.

If you specify a node address that is already defined in the server database (the load host's node database), you get a DSVCONFIG error, nothing is added and the Add option is terminated.

3.3.3 Swap an Existing Server (Option 3)

Swapping retains the DECnet node address of the original unit. It is useful if an existing unit malfunctions and you need to replace it. It is also helpful for renaming servers.

DSVCONFIG allows the following characteristics for the new unit to be specified:

Characteristic	Default
DECserver type	The type of the old DECserver you are replacing.
DECnet node name	The name of the old DECserver you are replacing.
Ethernet address	There is no default. You must specify the Ethernet address of the new unit.
DECnet service circuit	The service circuit.

To Swap an existing MUXserver 300 using Option 3:

1. Press 3 and then Return
2. DSVCONFIG will prompt for the node name with:

   ```
   What is the DECnet node name you want to swap?
   ```

   Specify the node name of the existing MUXserver 300 to be replaced.
3. DSVCONFIG responds by displaying the Ethernet address of the old unit and displaying:

   ```
   DECserver at Ethernet Address nn-nn-nn-nn-nn-nn is being swapped.
   Enter the new Ethernet address and any other changed characteristics.

   DECserver type [default-type]?
   ```

   Press Return if you are replacing a MUXserver 300 with a MUXserver 300.

   If you are changing server types, specify the type of the new unit and press Return. A valid response is:

   - MS300 for a new MUXserver 300 or MUXserver 310
4. DSVCONFIG will then prompt for a DECnet node name with:

   ```
   DECnet node name for unit [default-name]?
   ```

   Press Return if you want the replacement MUXserver 300 to have the same DECnet node name as the old unit.

   If you are changing node names, specify the node name of the new unit and press Return. A MUXserver 300's DECnet node name must begin with a letter and contain from 1 to 6 alphanumeric characters; the name must be unique to your entire DECnet network.
5. DSVCONFIG will then prompt for an Ethernet address for the server with:

   ```
   DECserver Ethernet address of this unit?
   ```

   Specify the Ethernet address of the new MUXserver 300. This address is shown on the Control/Indicator Panel of the unit and on the *MUXserver 300 Network Identification Card* for that unit which has been completed by the hardware installer. Enter the Ethernet

address as six pairs of hexadecimal digits, with hyphens (-) separating the pairs (for example, 08-00-01-00-AB-CD is a valid format). Press Return.

6. Finally DSVCONFIG will prompt for a DECnet Service Circuit_ID with:

   ```
   DECnet Service Circuit_ID [default_id]?
   ```

   Press Return if the replacement MUXserver 300 has the same service circuit_ID as the old unit. If the service circuits are different, specify the service circuit_ID of the new unit and press Return.

   DSVCONFIG will then swap the new characteristics specified with the old ones for the server entry with the same DECnet node address (this address cannot be swapped).

3.3.4 Delete an Existing MUXserver 300 (Option 4)

Deleting is useful if you are reconfiguring the network or changing load hosts for a server.

To Delete an existing MUXserver 300 from the database using Option 4:

1. Press 4 and then Return
2. DSVCONFIG will prompt for the DECnet node name with:

   ```
   DECnet node name is to be deleted? (CTRL/Z to return to menu)
   ```

   Specify the DECnet node name of the DECserver to be removed and press Return.

3. DSVCONFIG will check that the name you specified is an entry in the load host's node database and, if so, deletes the entry and reports successful removal.

3.3.5 Restore Existing MUXserver 300s (Option 5)

If your DECnet network contains a large number of nodes you may store your DECnet database on a central, remote node and copy this database upon each system startup. However, if many servers exist on the network, Digital advises that you not define these servers in that central DECnet database.

If servers are not defined in the central database you must also reconfigure them whenever you copy your local DECnet database from this central DECnet database. Each time you copy the central DECnet database, use Option 5 to restore existing server configurations.

The Restore option restores a load host's DECnet database to include the servers in its node database. It affects both the volatile and permanent DECnet databases.

To restore an existing MUXserver 300 network using Option 5, press 5 and then Return.

DSVCONFIG will confirm the restoration with:

```
Restoring existing DECservers from local database...
Local database successfully restored.
```

3.3.6 Restoring from a Command Procedure

As an alternative to using menu Option 5, a local DECnet database may be restored using DSVCONFIG.COM's RESTORE parameter. Using the RESTORE parameter bypasses the menu and allows configuration procedure to be included in the system start-up procedures. To use the RESTORE parameter, use the command:

```
$@DSVCONFIG RESTORE Return
```

To cause a local DECnet database to be restored automatically during system startup, edit the system start-up file to include the following statement after the line containing @SYS$MANAGER:RTLOAD:

```
@SYS$SYSROOT:[DECSERVER]DSVCONFIG RESTORE
```

3.4 Downline Loading the Server Image

When configuration has been completed, verify the Load Host Installation by downline loading the new server image from the load host to the server using the procedure described in Chapter 4.

Chapter 4
Verifying the Installation

This chapter describes the verification of a MUXserver 300 software installation. Verification includes:

- Verifying the load host installation by downline loading the server image.
- Verifying the MUXserver 300 as a system after it is loaded, by testing a number of representative server commands at an interactive terminal, which must be connected to the MUXserver 300.

Verifying the load host installation involves downline loading the server image to a MUXserver 300 and then reading the DECnet event logging messages. This confirms that the new load host:

- Has the appropriate files in the correct directory,
- Has a correct entry in its node database for the server, and
- Can successfully downline load the server image to the MUXserver 300.

Verifying the total MUXserver 300 system installation (the hardware unit with the correct software loaded and running) involves the testing of a number of representative server commands at an interactive terminal connected to a supervisor port. This confirms that:

- The correct version of the software has been loaded,
- The MUXserver 300 hardware operates with the new software, and
- The new software is running successfully.

4.1 Verifying the Load Host Installation

4.1.1 The NCP LOAD NODE Command

The NCP LOAD NODE command is the preferred method of downline loading a server image for verification purposes as it is the only method that tests the software installation from a specific load host. Other methods of downline loading are described in the *MUXserver 300 Network Reference Manual*.

The LOAD NODE command allows:

- A load host to be specified

  This ensures that the load host which performs the downline load is your VMS system.

- DECnet event logging messages to be read.

  These messages confirm that the specified load host performed the downline load successfully.

Depending on network or system requirements, a new server image may be downline load to a new MUXserver 300 or to an existing unit that is currently operating on the network.

4.1.2 Loading a New MUXserver 300

When a MUXserver 300 is new it has no operating software in it until the initial downline load, which occurs automatically upon MUXserver 300 local unit startup.

When the hardware installer powers up a unit, the MUXserver 300 automatically requests a load of its image from any available load host. An established load host recognizes the request and downline loads the server image.

The hardware installer can then verify the hardware installation with the diagnostic light emitting diodes on the MUXserver 300 hardware unit(s). However, if the server image cannot be properly downline loaded as soon as the MUXserver 300 is powered up, the hardware installer sees server errors. Therefore, coordination between software and hardware installation is important.

Note that this automatic downline load verifies the hardware but does not verify the load host installation.

4.1.3 Loading an Existing MUXserver 300

When an operating MUXserver 300 is loaded, all sessions with service nodes are disconnected. If an existing is about to be loaded with a new image, coordination with the server manager is important. Depending on users' requirements, it may be best to delay installation verification and to perform downline load during off hours.

Ask the server manager of an existing MUXserver 300 to alert the interactive users on the server of the planned shutdown for reloading. The server manager should be given at least 30 minutes' notice to disable connections and queuing to local services of the server if necessary. The *MUXserver 300 Network Reference Manual* describes the issues involved in shutting down the server.

4.1.4 Preparing for the LOAD Command

To prepare for downline loading:

1. Check the DECnet node name or DECnet node address of the MUXserver 300. To execute the LOAD command you need to know one of these node identifiers.

   If you do not remember this information from running the DSVCONFIG procedure (refer to Chapter 2), run the procedure again, and select the LIST option from the menu. LIST displays the DECnet node name and DECnet node address of all the servers you defined in this load host's node database.

2. Determine the MUXserver 300's DECnet service password, if there is one, from the server manager (the manager may know it as the maintenance password). For a previously configured server you may need to specify this password on the LOAD NODE command line.

3. Enable DECnet event logging. Event logging messages are generated by the Network Control Program (NCP). Enter the following commands:

```
$ NCP Return
NCP> SET LOGGING CONSOLE EVENT 0.3,7 Return
NCP> SET LOGGING CONSOLE STATE ON Return
NCP> SET LOGGING MONITOR STATE ON Return
```

Note

All other commands needed for downline loading, such as those that set the Ethernet line and identify and enable the service circuit, are part of DSVCONFIG and are executed when you run that procedure (see Chapter 3).

4.1.5 Warning Users before Loading

To reload an installed and running MUXserver 300 during normal working hours, either you (if you know the password) or the server manager can use the server interface to issue the privileged BROADCAST ALL command to warn server users.

A warning can also be broadcast from a remote console port. Appendix B describes the use of the Remote Console Facility on a VMS System.

Issue the BROADCAST ALL command at the server prompt (Local>) to send a message to all ports on the MUXserver 300 network. A message can contain up to 115 characters.

Note that the reception of broadcasts can be disabled on ports and some users may not receive a message.

A typical BROADCAST ALL command is:

```
Local> SET PRIV Return
Password> system Return not echoed
Local> ATTACH ALL Return
Local> BROADCAST ALL "The server will be reloaded in 3 minutes." Return
```

4.1.6 Issuing the LOAD Command

After warning interactive users of an operating MUXserver 300 network and after enabling event logging, issue the LOAD NODE command at a terminal connected to your VMS load host. On the command line enter either the DECnet node name or the DECnet node number.

The following example command loads an existing MUXserver 300 named SHRIMP with a node address of 13.204.

```
$ NCP  Return
NCP> LOAD NODE SHRIMP  Return
```

or

```
NCP> LOAD NODE 13.204  Return
```

If the server manager previously set a server maintenance password, include the SERVICE PASSWORD keywords and specify this password as the DECnet service password on the command line. For example:

```
NCP> LOAD NODE SHRIMP SERVICE PASSWORD OF23  Return
```

To exit from NCP, type EXIT:

```
NCP> EXIT  Return
$
```

4.1.7 Checking DECnet Event Logging

After executing the LOAD command check the DECnet event logging messages that report the load to confirm that it was successful. Read the event logging messages at your system's operator's console. They identify your VMS system as the node that generated the event.

If no errors are reported you should assume that the downline load was successful and that verification of the new load host has been completed.

Appendix C contains an example of DECnet event logging after a successful downline load.

If the event logging messages report errors, contact the MUXserver 300 hardware installer and check that the hardware is working correctly. If it is, the problem is probably with the load host. Check:

- The node database, especially the Ethernet address you entered when you defined the test server,
- That the server image is in the appropriate directory, and
- That DECnet is running.

Try entering the LOAD command again.

Note

When event logging is set up on a DECnet node, you can specify the destination (called the sink) of the messages. You should set up one DECnet sink node to receive all the logging events associated with downline loading so that all load request status information is available at one node.

4.1.8 Loading After Hours

Downline load can be performed after hours to minimize disruption to the nodes affected by the MUXserver 300. To do this, include the LOAD command in a batch job to be run after hours.

4.2 Verifying the MUXserver 300 System Installation

Complete the verification of the MUXserver 300 system installation using a number of representative server commands at an interactive terminal attached to the MUXserver 300's console port, as follows:

1. Press Return a number of times

   The following message and prompt appear:

   ```
   MUXserver 300 Terminal Server V1.3 (BL34) - LAT V5.2
   Please type HELP if you need assistance
   Enter username>
   ```

2. Read the identification message and check that the correct version of the MUXserver 300 image was downline loaded. If the message is not displayed, the problem could be:
   - With the load host,
   - With the terminal, or
   - That the incorrect software was downline loaded.

3. Enter your user name (any string of 1 through 16 characters that identifies you) and press Return . The port should now enter local mode, and the (Local>) prompt should appear:

   ```
   Enter username> SWINSTALLER Return
   Local>
   ```

4. Use the TEST PORT command to check that the terminal is receiving valid character data. On the command line, specify the number of lines and the number of columns you would like displayed. For example, the following command will display five lines of 80 characters each:

   ```
   Local> TEST PORT COUNT 5 WIDTH 80 Return
   ```

   You can interrupt this test by pressing any key.

   Appendix C contains an example of a TEST PORT display.

5. Issue the SHOW PORT command to display the characteristics of your port and their values:

   ```
   Local>SHOW PORT Return
   ```

   A port characteristics display, similar to the example shown in Appendix C, should appear.

6. Use the SHOW SERVICES command to show what services are available to you. The following server command produces a list of services and service announcements:

   ```
   Local>SHOW SERVICES Return
   ```

Appendix C shows an example of a SHOW SERVICES display.

7. Select an available service that you are authorized to use and use the CONNECT command to verify that the MUXserver 300 can logically connect your terminal to that service.

   On the command line, specify the service name to which you wish to connect. The following example connects your terminal to a VMS system, named VSYSTEM:

   ```
   Local> CONNECT VSYSTEM Return
   ```

   When the MUXserver 300 successfully connects your terminal to the specified service, you should no longer see the local prompt; you should be communicating with the service, in this example, your own VMS system.

8. Enter several commands to verify the ability of the MUXserver 300 to exchange data with the service. For example, in this case, you could login then enter SHOW TIME and SHOW USERS.

9. Press Ctrl BREAK or log out from the service to return to local mode.

10. Log out from the MUXserver 300 then log out the terminal from the unit:

    ```
    Local> LOGOUT Return
    ```

Refer any difficulties with MUXserver 300 system verification to the relevant server manager.

If verification has been completed successfully, the test server is operating correctly and you should report the successful load host installation and MUXserver 300 system installation to the server manager.

If this installation was a software upgrade, either you or the server manager must now reload all existing servers.

Appendix A
MUXserver 300 Distribution Files

Table A–1 lists the files included in the MUXserver 300 distribution kit:

Table A–1: MUXserver 300 Distribution Kit Files

File Name	Description
KITINSTAL.COM	Command file used by VMSINSTAL during installation
DSVCONFIG.DAT	Empty configuration file
DSVCONFIG.COM	Configuration procedure
MS3$*nnn*.RELEASE_NOTES	MUXserver 300 release notes, *nnn*=version number
MS3_*nnn*_DEFAULTS.COM	TSM command file to set a MUXserver 300 to factory defaults
MS3801ENG.SYS	MUXserver 300 software image
MS300$IVP.COM	Installation verification procedure
TSM$MS3_V13_GET_CHAR.COM	File used by the TSM software

Appendix B
Using the Remote Console Facility

The MUXserver 300 network supports the VMS Remote Console Facility (RCF). This Appendix describes its use from a VMS host. RCF could be used to issue the BROADCAST command to warn users of a planned downline load.

To connect to the MUXserver 300 network with RCF, use the CONNECT NODE command.

1. On the command line, specify either the DECnet node name or DECnet node address of the MUXserver 300 as shown in the following two examples. The first example shows a connection to a MUXserver 300 named SHRIMP.

```
$NCP Return
NCP> CONNECT NODE SHRIMP Return
Console connected (press CTRL/D when finished)
```

   or

```
NCP>CONNECT NODE 28.1002 Return
Console connected (press CTRL/D when finished)
```

2. Press Return to start the login sequence for the remote console.

   Login password protection is enabled for the MUXserver 300 remote console port.

3. Enter the login password when the MUXserver 300 prompts with "#".

   An audible beep accompanies the prompt. The prompt indicates that a link to the MUXserver 300 has been established.

   After the correct login password has been entered, MUXserver 300 commands can be used.

The CONNECT command can be used with the MUXserver 300 network's Ethernet address. The following example shows a connection from a VMS system with the service circuit-ID UNA-0 to a MUXserver 300 with the Ethernet address 08-00-2B-04-AA-2B:

```
NCP>CONNECT VIA UNA-0 PHYSICAL ADD 08-00-2B-04-AA-2B Return
```

The service password might have to be specified with the CONNECT command if a maintenance password is specified on the MUXserver 300. To do so, include the SERVICE PASSWORD keywords on the command line and specify the password, for example:

```
$ NCP Return
NCP> CONNECT NODE SHRIMP SERVICE PASSWORD OF23 Return
Console Connected (press Ctrl/D when finished)
```

To exit from RCF, type Ctrl/D

```
Local> Ctrl/D
```

To exit from NCP, type EXIT:

```
NCP>EXIT Return
$
```

If you log out from a MUXserver 300 with a LOGOUT command, the port is logged out but the remote console session remains active. Type Ctrl/D to exit the remote console session. The service node prompt appears, and control returns to NCP on the VMS system.

For detailed information on RCF, refer to the *MUXserver 300 Network Reference Manual*.

Appendix C
Installation, Configuration & Verification Examples

This Appendix provides examples of MUXserver 300 software installation and configuration procedures. It also illustrates the verification of a load host installation by downline loading and reading DECnet event logging messages. Finally, it shows the verification of a MUXserver 300 installation by testing representative server commands.

C.1 Installation Example

The following example illustrates a successful installation onto a VMS V5.4 system. In this example, server software version numbers are not supplied. This example assumes a type of distribution media that requires only one medium, for example, a magnetic tape. For types such as TU58 cartridges, which require more than one volume, extra prompts during the procedure instruct you to mount additional volumes.

This example also shows the suggested procedure to cause the release notes to be moved automatically to SYS$HELP.

```
$ SET DEFAULT SYS$UPDATE [Return]
$ @VMSINSTAL MS3 $1$MUA0: OPTIONS N [Return]

        VAX/VMS Software Product Installation Procedure V5.4-2

It is 15-JAN-1992 at 14:19.

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

%VMSINSTAL-W-ACTIVE, The following processes are still active:
   RICHARDS
   BONNER
   GROHN
   BELL
* Do you want to continue anyway [NO]? y [Return]
* Are you satisfied with the backup of your system disk [YES]? [Return]

The following products will be processed:

  MS3 V1.3

 Beginning installation of MS3 V1.3 at 14:19
```

```
%VMSINSTAL-I-RESTORE, Restoring product save set A ...
%VMSINSTAL-I-RELMOVED, Product's release notes have been moved to SYS$HELP.
* Do you want to purge files replaced by this installation [YES]?
* Do you want to run the IVP after the installation [YES]?

No more questions will be asked, the installation will take
one to two minutes.

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

Beginning installation verification procedure for MUXserver 300 V1.3.

Successful creation of SYS$COMMON:[DECSERVER] directory

Successful installation of SYS$COMMON:[DECSERVER]MS4801ENG.SYS

Successful installation of SYS$COMMON:[DECSERVER]DSVCONFIG.COM

Successfully located SYS$COMMON:[DECSERVER]DSVCONFIG.DAT

Successful installation of SYS$COMMON:[DECSERVER]MS3_013_DEFAULTS.COM

Successful installation of SYS$COMMON:[DECSERVER]TSM$MS3_V13_GET_CHAR.COM

MUXserver 300 V1.3 Installation Verified

Your installation is now complete. After exiting from VMSINSTAL:

1. Edit your system start-up file so that it defines the logical
   MOM$LOAD as a search string with a value equal to the current search
   string, plus the added element SYS$SYSROOT:[DECSERVER]. For example:

   DEFINE/SYSTEM/EXEC/NAME_ATTRIBUTE=NO_ALIAS/NOLOG -
   MOM$LOAD 'current-search-string',SYS$SYSROOT:[DECSERVER]

   If the current search string associated with MOM$LOAD in your
   start-up file is SYS$SYSROOT:[DECSERVER] or if you have
   already made this change for a previous installation, there
   is no need to edit this file.

   This command ensures that the location of the server image
   is defined each time the system is rebooted, necessary for
   successful downline loading.

2. Configure the server into your host's database.
   Execute a command procedure called DSVCONFIG.COM.
   This command procedure is in the SYS$SYSROOT:[DECSERVER] directory.
   If you have already executed this procedure from previous
   installations, you need to configure only any additional units.
   All previously defined units will still be configured.

 Installation of MS3 V1.3 completed at 14:20

 VMSINSTAL procedure done at 14:21

$
```

C.2 Configuration Examples

Note

DSVCONFIG.COM is a command procedure used with all Digital terminal servers. All references to DECservers include the MUXserver 300 and the MUXserver 300.

C.2.1 Starting DSVCONFIG.COM

The following example shows the beginning of the configuration procedure. This example assumes that the latest version of DSVCONFIG has already been run so that the DSVCONFIG.DAT file exists in the correct format. (Refer to Chapter 3 for the prompts that are displayed if the procedure has either to create DSVCONFIG.DAT or be reformatted.)

```
$ SET DEFAULT SYS$SYSROOT:[DECSERVER] Return
$ @DSVCONFIG Return

You must assign a unique DECnet node name and DECnet node address for each
DECserver.

Press RETURN to start, or CTRL/Z to exit... Return

           DECserver Configuration Procedure

                  Menu of Options
```

C.2.2 The DSVCONFIG.COM Menu

The following example illustrates the DSVCONFIG Menu.

```
DECserver Configuration Procedure

Menu of Options

 1 - List known DECservers
 2 - Add a DECserver
 3 - Swap an existing DECserver
 4 - Delete an existing DECserver
 5 - Restore existing DECservers
 CTRL/Z - Exit from this procedure

Your selection?
```

The following sections show how the configuration procedure continues for each option. With the exception of LIST, each option ends by automatically returning to the menu.

C.2.3 Listing Known Servers (Option 1)

The following example lists servers which are in the load host's database.

```
   Your selection? 1 Return

DECnet   DECnet Server  Service
Address  Name   Type    Circuit Ethernet Address  Load File      Dump File
-------------------------------------------------------------------------------

28.1001  TUNA    DS200   UNA-0  08-00-2B-02-24-AA PRO801ENG.SYS  DS2TUNA.DMP
28.1003  CONCH   MS300   UNA-0  08-00-2B-02-24-F1 MS4801ENG.SYS  MS3CONCH.DMP
28.1005  OYSTER  MS300   UNA-1  08-00-2B-04-AA-2B MS4801ENG.SYS  MS3OYSTER.DMP

Total of 3 DECservers defined.
```

C.2.4 Adding a Server (Option 2)

The following example adds a new MUXserver 300 named SHRIMP.

```
Your selection? 2 Return

Type a ? at any time for help on a question.
Type CTRL/Z for any question to return to the menu without adding the unit.

DECserver type? MS300 Return
DECnet node name for unit? SHRIMP Return
DECnet address for unit? 28.1002 Return
DECserver Ethernet address of this unit? 08-00-2B-04-AA-2B Return
DECnet Service Circuit-ID? [UNA-0] Return

If you get an error message now, the new unit won't be added, and you
should delete it from the directory.
```

Use the List option to display a listing of servers and check that SHRIMP appears on the listing of entries.

C.2.5 Swapping a MUXserver 300 for a New Unit (Option 3)

In the following example an existing MUXserver 300 named CONCH is swapped for a new MUXserver 300, which is given the same DECnet node name. The DECnet node address always stays the same with Swap. The new server also has the same service circuit-ID as the old server. Note that if you use Swap a MUXserver 300, you will have to specify the new MUXserver 300's Ethernet address.

```
Your selection? 3 Return

Type a ? at any time for help on question.
Type  CTRL/Z for any question to return to the menu without changing the
unit.

What is the DECnet node name you want to swap? CONCH Return
DECserver at Ethernet address 08-00-2B-02-24-F1 is being swapped.
Enter the new Ethernet address, and any other changed characteristics.

DECserver type? [DS100] MS300 Return
DECnet node name for unit? [CONCH] Return
DECserver Ethernet address of this unit? 08-00-2B-03-AA-AB Return
DECnet Service Circuit-ID? [UNA-0] Return
```

C.2.6 Deleting a Server from the Database (Option 4)

The following example shows the deletion from the load host's node database of the existing server with the DECnet node name TUNA.

```
Your selection? 4 Return

Which DECnet node name is to be deleted? (CTRL/Z returns to menu)
TUNA Return
%NCP-I-NMLRSP, listener response - Success
Remote node = 28.1001 (TUNA)
%NML-I-RECDELET, Database entry deleted
```

Use the List option to display a listing of servers and check TUNA no longer appears.

C.2.7 Restoring Existing Servers to the Database (Option 5)

The following example shows the restoration of the local downline load database.

```
Your selection? 5 Return

Restoring existing DECservers from local database...
Local database successfully restored.
```

C.3 Verification Examples

C.3.1 Verifying a Load Host Installation

The following example shows the installation verification for a VMS load host. This procedure tests that your VMS system can perform successfully as a downline load host for a particular server.

In this example the VMS system is named VSYSTEM. The server that is loaded is a MUXserver 300 with DECnet node name SHRIMP. SHRIMP is an existing server, currently operating on the network. This example assumes that the downline load is performed during normal working hours and that server users are warned of the upcoming downline load by way of RCF.

C.3.1.1 Checking the Server name

```
$ SET DEFAULT SYS$SYSROOT:[DECSERVER] Return
$ @DSVCONFIG Return

You must assign a unique DECnet node name and DECnet node address for each
DECserver.

Press RETURN to start, or  CTRL/Z to exit... Return

DECserver Configuration Procedure

Menu of Options

   1 - List known DECservers
   2 - Add a DECserver
   3 - Swap an existing DECserver
   4 - Delete an existing DECserver
   5 - Restore existing DECservers
   CTRL/Z - Exit from this procedure

Your selection? 1 Return

DECnet   DECnet Server  Service
Address  Name   Type    Circuit Ethernet Address  Load File      Dump File
-------------------------------------------------------------------------------

28.1002  SHRIMP MS300   UNA-0   08-00-2B-04-AA-2B MS4801ENG.SYS  MS3SHRIMP.DMP

   Total of 1 DECserver defined.

   DECserver Configuration Procedure

   Menu of Options
```

```
   1 - List known DECservers
   2 - Add a DECserver
   3 - Swap an existing DECserver
   4 - Delete an existing DECserver
   5 - Restore existing DECservers
   CTRL/Z - Exit from this procedure

Your selection? Ctrl/Z
$
```

C.3.1.2 Using RCF and Warning Server Users

The following example uses the server's default login password, ACCESS.

```
$ NCP CONNECT NODE SHRIMP SERVICE PASSWORD OF23 Return
Console connected (press CTRL/D when finished) Return
# ACCESS Return (not echoed)
MUXserver 300 Terminal Server V1.3 (BL7) - LAT V5.2

Please type HELP if you need assistance

Enter username> SWINSTALLER Return
Local> SET PRIV Return
Password> system Return not echoed
Local> ATTACH ALL Return

Local> BROADCAST ALL "The server will be reloaded in 3 minutes." Return
Local> Ctrl/D
$
```

C.3.1.3 Enabling DECnet Event Logging

```
NCP> SET LOGGING CONSOLE EVENT  0.3,7 Return
NCP> SET LOGGING CONSOLE STATE ON Return
NCP> SET LOGGING MONITOR STATE ON Return
NCP> EXIT Return
```

C.3.1.4 DECnet Event Logging Display While Issuing LOAD

```
NCP> LOAD NODE SHRIMP SERVICE PASSWORD OF23 Return
DECnet event 0.3, automatic line service
From node 4.205 (VSYSTEM), 18-JUN-1988 01:35:20.47
Circuit UNA-0, Load, Requested, Node = 28.1002 (SHRIMP)
File = MOM$SYSTEM_SOFTID:MS4801ENG, Operating system
Ethernet address= 08-00-2B-04-AA-2B

DECnet event 0.3, automatic line service
From node 4.205 (VSYSTEM), 18-JUN-1988 01:43:21.14
Circuit UNA-0, Load, Successful, Node = 28.1002 (SHRIMP)
FILE = MOM$SYSTEM_SOFTID:MS4801ENG, Operating system
Ethernet address= 08-00-2B-04-AA-2B
```

C.3.1.5 Conclusion of a Load Host Installation Verification

```
NCP> CLEAR LOGGING CONSOLE EVENT 0.3,7 Return
NCP> EXIT Return
$
```

C.3.2 Verifying the Server System Installation

The following example illustrates the verification of a server system installation. This procedure tests the hardware, the correctness of the software version, and the ability of the new software to run successfully.

It assumes that you are at a terminal connected to the server's console port, that your username is SWINSTALLER, that your user password is SQUIDS, that you will test the server by connecting to your own VMS system, VSYSTEM, and that the new MUXserver 300 software is Version 1.3.

Return
Return

```
MUXserver 300 Terminal Server V1.3 (BL7) - LAT V5.2

Please type HELP if you need assistance

Enter username> SWINSTALLER Return

Local> TEST PORT COUNT 5 WIDTH 65 Return

 !"#$%&'()*+,-./0123456789:;<=>?@ABCDEFGHIJKLMNOPQRSTUVWXYZ[\]^__`
!"#S%&'()*+,-./0123456789:;<=>?@ABCDEFGHIJKLMNOPQRSTUVWXYZ[\]^__`a
"#$%&'()*+,-./0123456789:;<=>?@ABCDEFGHIJKLMNOPQRSTUVWXYZ[\]^__`ab
#$%&'()*+,-./0123456789:;<=>?@ABCDEFGHIJKLMNOPQRSTUVWXYZ[\]^__`abc
$%&'()*+,-./0123456789:;<=>?@ABCDEFGHIJKLMNOPQRSTUVWXYZ[\]^__`abcd

Local> SHOW PORT Return
```

The display at the port of a new MUXserver 300 should match the following example, which contains the factory-set values, except for the port number and user name:

```
Port 1:  SWINSTALLER

Character Size:         8        Input Speed:          9600
Flow control :        XON        Output Speed:         9600
Parity:              None        Modem Control:    Disabled

Access:             Local       Local Switch:          None
Backward Switch:     None       Name:                PORT_1
Break:              Local       Session Limit:            4
Forward Switch:      None       Type:                  Soft

Preferred Service:   None

Authorized Groups:      0
(Current)  Groups:      0

Enabled Characteristics:

Autobaud, Autoprompt, Broadcast, Input Flow Control, Loss Notification,
Message Codes, Output Flow Control, Verification

Local> SHOW SERVICES ALL SUMMARY RETURN

Service Name        Status          Identification

DEVELOP           2 Connected       Hardware Timesharing Service Ident
DOCUMENT            Available       Documentation Timesharing
TEST                Unavailable     As usual
TIMESHARING         Unknown         Server Software Development
VSYSTEM             Connected       VAX/VMS 8600
```

```
Local> CONNECT VSYSTEM RETURN
Local -010- Session 1 to VSYSTEM established

   VSYSTEM -- VAX 8600, the Best for down-line loading

Username: SWINSTALLER RETURN
Password: SQUIDS RETURN (not echoed)

        Welcome to VAX/VMS version 5.2 on node VSYSTEM
    Last interactive login on Monday, 15-JAN-1990 15:50
    Last non-interactive login on Friday, 15-DEC-1989 09:18

SYS$MANAGER:NOTICE.TXT - VSYSTEM System Notices

18-Jun-1988  All Users, please purge your files!

$ SHOW TIME RETURN
  16-JAN-1990 13:55:27
$ SHOW USERS RETURN
      VAX/VMS User Processes at 16-JAN-1990 13:55:36.33
    Total number of users = 4,  number of processes = 5

 Username        Interactive  Subprocess   Batch
 IVY                  1
 ROSE                 1
 SRV$SYSTEM           -        1           1
 SWINSTALLER          1
$ LO RETURN
  SWINSTALLER logged out at 16-JAN-1990 13:57:30.05
```

Glossary

This glossary defines terms used in this Software Installation Guide.

Asynchronous
Pertaining to a communication method in which each event occurs in with no relation to a timing signal. See also *synchronous*.

Ethernet
A Xerox trade mark for a type of local area network based on carrier-sense multiple access /collision detection (CSMA/CD).

LAT
Local Area Transport - Digital's name for the Ethernet protocol used by the MUXserver 300 for terminal connections.

Local Area Network
A network spanning a limited geographic area, such as a building or group of buildings, and using high speed data bus(es).

MODEM
The word is a contraction of MOdulator DEModulator. A modem interfaces a terminal to a transmission line. A modem is sometimes called a dataset.

Network Manager
The person responsible for all components of a network in a particular geographic area. Note that this does not include the MUXserver 300 network (see *Server Manager*).

Node
An intelligent device on a network.

Port
The actual physical connection between equipment and, for example, a serial communications line.

Service
A resource, such as a computer.

Server
A hardware and/or software device which provides many users with access to a system.

Supervisor Port
A DEC423 port used to connect a test terminal.

Synchronous
Pertaining to a communication method in which each event occurs in relation to a timing signal. See also *Asynchronous*.

System Manager
The person responsible for the policies, procedures and the daily operation of a computer system.

Terminal
An input/output computer peripheral device that has a keyboard and video screen or printer.

Terminal Server
An active device, such as a MUXserver 300 network, used to attach terminals to a host system through a network.

VMS
Digital's VAX computers' main operating system.

Index

A

Adding a MUXserver, 3–5, C–4
After-hours software initialization, 4–5
Alternate load host
  assignment, 1–2
  software installation, 2–5

B

BROADCAST command, 4–3

C

Configuration options
  option 1, 3–4
  option 2, 3–5
  option 3, 3–7
  option 4, 3–8
  option 5, 3–8
CONNECT NODE command, B–1
Conventions, viii

D

Database configuration
  load host, 3–1
DECnet
  database restoration, 3–9
  event logging, 4–4, C–6
  introduction, 1–3
  Phase IV, 2–1
Deleting a MUXserver, 3–8, C–4
Distribution kit, A–1
Downline loading
  server image, 3–9
DSVCONFIG
  conventions, 3–3
  introduction, 1–3, 3–1
  preparation, 3–2
  running, 3–3
DSVCONFIG (cont'd)
  starting, C–3
  versions, 1–4

E

Ethernet address, viii
Event logging, 4–4

G

Graphics conventions, viii

L

LED indications, 4–2
List MUXservers, 3–4, C–3
LOAD command, 4–4, 4–5
Load host
  alternate, 1–2
  assignment, 1–2
  database, 1–3
  database configuration, 3–1
  installation verification, 4–2
LOAD NODE command, 4–2

N

Numbering convention, viii

R

RCF, B–1, C–6
Related publications, vii
Release notes, 1–2
Remote console facility, B–1
Restoring a MUXserver, 3–8, C–5

S

Server image downline loading, 3–9
Service nodes
  allocation, 2–1
SERVICE PASSWORD keywords, B–1
SHOW PORT command, 4–5
SHOW SERVICES command, 4–5
Single system software installation, 2–5
Software initialization
  after-hours, 4–5
  warning to users, 4–3
Software installation
  alternate load hosts, 2–5
  examples, C–1
  other operating systems, 2–6
  preparation, 2–1
  single systems, 2–5
  system verification, 4–5
  VAXclusters, 2–6
  verification, 1–5, 4–1
Software verification
  existing server, 4–2
  new server, 4–2
Swapping MUXservers, 3–7, C–4
SYS$HELP directory, 2–4
SYS$SYSROOT:[DECSERVER] directory, 2–1
System installation, 4–1

T

TEST PORT command, 4–5

U

ULTRIX, 1–2

V

VAXclusters
  software installation, 2–6
VMSINSTAL command
  conventions, 2–2
  example, C–1
  introduction, 1–2, 2–1
  running, 2–2