DECserver 300

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Software Installation (VMS)

Order No. AA–NE45A–TE

DECserver 300

Software Installation (VMS)

June 1989

This manual explains how to install the DECserver 300 distribution software onto VMS systems, how to configure these systems as a down-line load hosts, and how to down-line load the DECserver 300 image. This manual is intended for the VMS system manager or the network manager.

Supersession/Update Information:	This is a new manual.
Operating System and Version:	VMS V5.0
Software Version:	DECserver 300 V1.0

This manual applies to Version 1.0 of the DECserver 300 software and Version 5.0 of the VMS operating system, and all subsequent maintenance releases up to the next major product release.

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This manual was produced by Networks and Communications Publications.

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Preface

This installation manual explains how to:

- Install the DECserver 300 distribution software onto a VMS system running DECnet Phase IV so that this system can perform as a load host. The load host can be a single system or a member node of a VAXcluster.
- Configure the load host's node database.
- Verify the installation by first down-line loading the server image to the DECserver 300 terminal server and then testing a few server commands.

Intended Audience

This manual is for system managers or network managers who are responsible for making server products available on their Ethernet LANs. A **system manager** is responsible for the VMS system that is about to be established as a load host. A **network manager** is the person responsible for the local area network (LAN).

To use this manual effectively, you should be familiar with both DECnet Phase IV network management concepts and the VMS operating system.

Structure of This Manual

This manual has four chapters and three appendixes:

Chapter 1	Provides an overview of the installation and preparation procedures.
Chapter 2	Explains how to install the distribution software.
Chapter 3	Explains how to configure the load host's node database.
Chapter 4	Explains how to verify the installation by first down-line loading the server image and then testing a few server commands.
Appendix A	Lists the names of the files in the DECserver 300 distribution kit.
Appendix B	Discusses briefly the remote console facility (RCF).
Appendix C	Contains examples of the installation and configuration procedures, and examples of verification by down-line loading.

Conventions Used in This Manual

Familiarizing yourself with the conventions discussed in this section helps you use this manual effectively.

The following conventions apply to numbers:

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

Graphic Conventions Used in This Manual

Convention	Meaning
`Special type`	This special type indicates system output or user input. System output is in black type; user input is in red type.
UPPERCASE	Uppercase letters in command lines indicate keywords that must be entered. You can enter keywords in either uppercase or lowercase. You can abbreviate command keywords to the smallest number of characters that distinguishes the keyword to the server.

Convention	Meaning
lowercase italics	Italics in command syntax or examples indicate variables for which either the user or the system supplies a value.
[ ]	Square brackets in command syntax statements indicate that the enclosed value(s) are optional. You can enter none or one. Default values apply for unspecified options. (Do not type the brackets.)
BOLD	In summaries of characteristics, bold type indicates default values.
bold	In text, words appearing in bold type introduce new terms or concepts and can also be found in the glossary.
key	Press the specified key. For example, RET means that you should press the RETURN key.
CTRL/*x*	Hold down the CONTROL key and then press the key specified by *x*. The server displays this key combination as ^*x*.

1
Installation Overview

The software that you are about to install consists of the files in the DECserver 300 distribution kit. First you install the distribution software onto your VMS system, then you configure your system node database for all new servers. Next, you verify the installation by down-line loading one test server. **Down-line loading** means sending the server image from the established load host to the server. Finally, you issue a few server commands to test the server system.

NOTE

If you have the Terminal Server Manager (TSM) software, an optional network management product available for VMS load hosts, read the documentation for TSM before you install the DECserver 300 software. TSM affects the way you install and manage servers.

1.1 Installation Flow Chart

This chapter provides a flow chart of the installation process (see Figure 1–1). Also, there is an overview of installing the distribution software, and an overview of configuring the load host's node database.

Figure 1–1: Terminal Server Software Installation Flow Chart

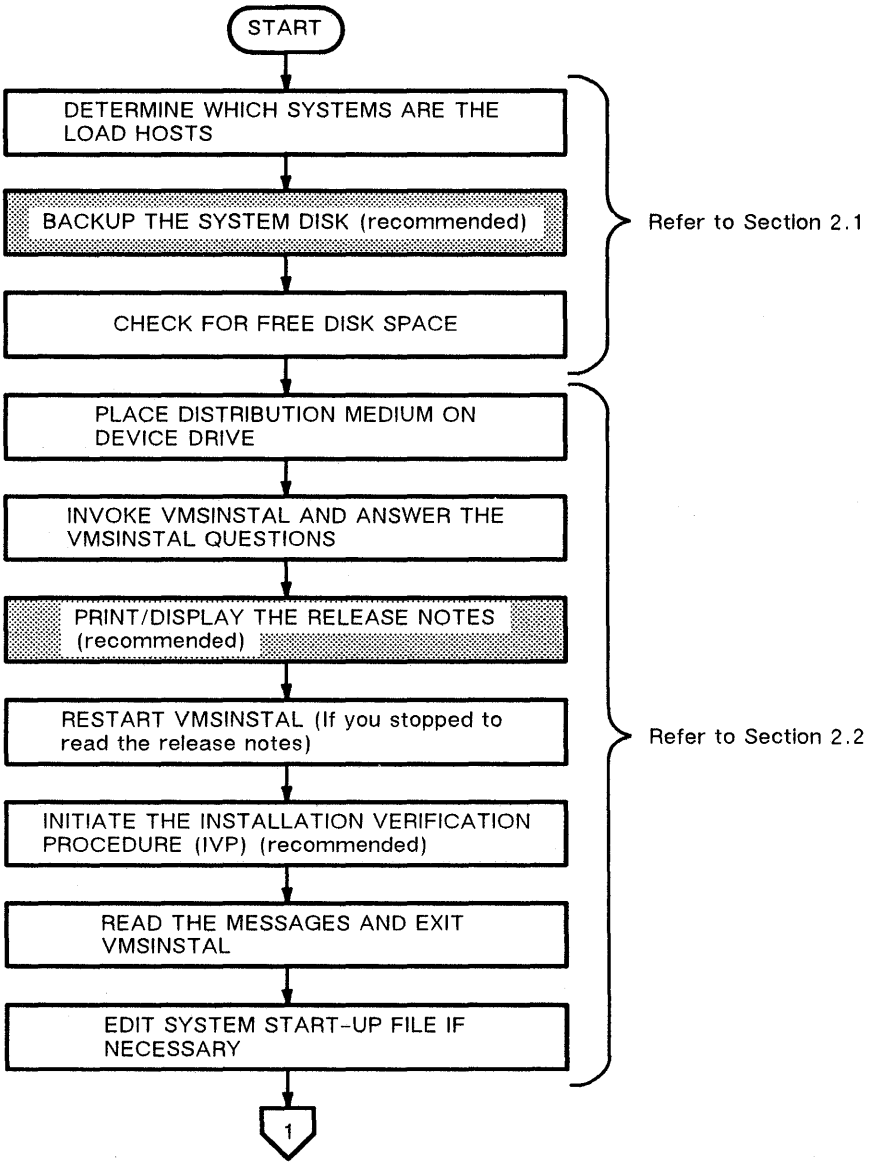
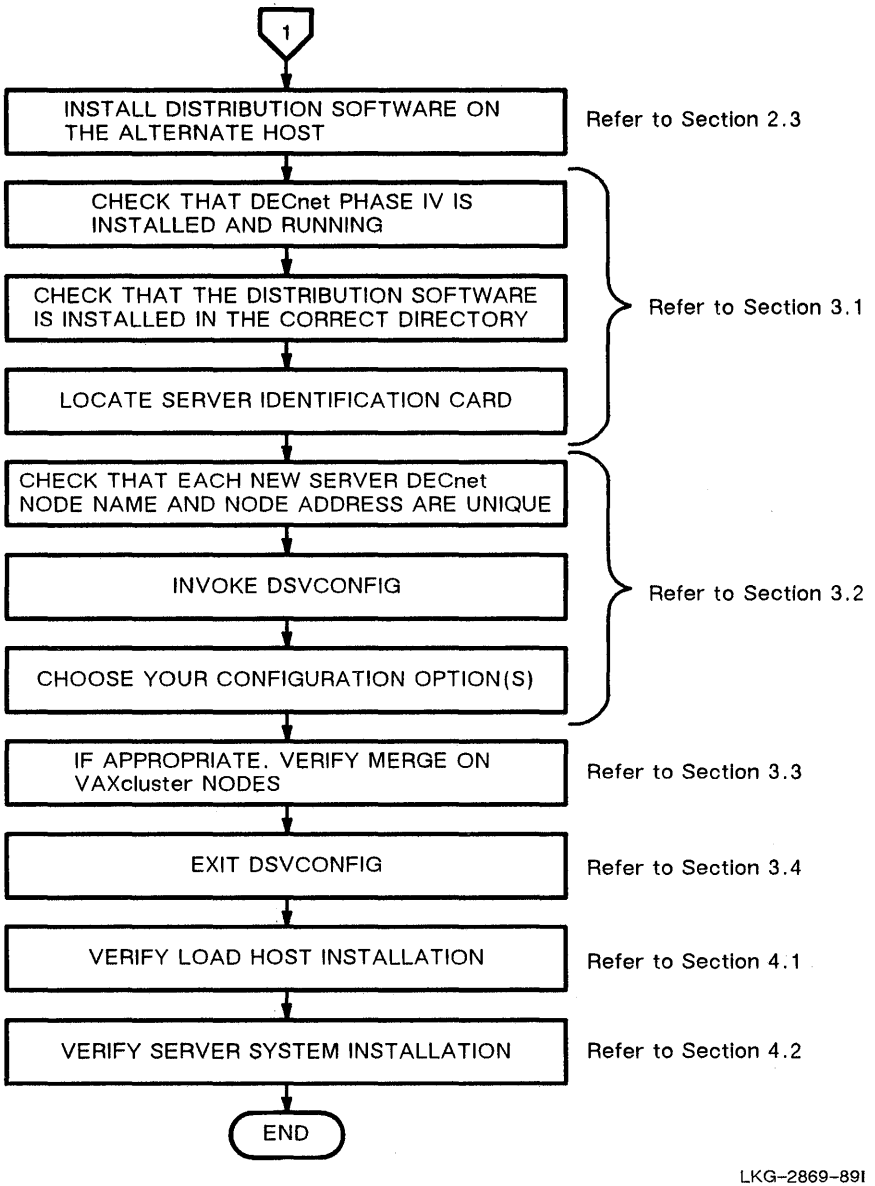


Figure 1–1

Figure 1–1 (Cont.): Terminal Server Software Installation Flow Chart



1.2 Installing the Distribution Software

You install the server distribution software onto a VMS system with an automated procedure called VMSINSTAL. VMSINSTAL is an interactive procedure that calls and controls the DECserver 300 installation procedure. The DECserver 300 software distribution kit includes a procedure file that VMSINSTAL uses to do the installation. The first page of Figure 1–1 shows the steps of this procedure.

When you run VMSINSTAL, the following tasks are performed:

- Creates a directory called SYS$SYSROOT:[DECSERVER] on the load host, if necessary
- Copies the files from the distribution media into this directory
- Optionally prints a copy of the *DECserver 300 Release Notes*

VMSINSTAL also provides an installation verification procedure (IVP) that can optionally be used to verify that the DECSERVER directory exists, that all the files from the distribution kit are in the directory, and that the release notes are in the SYS$HELP directory.

Chapter 2 contains the procedure to install the distribution software.

1.3 Configuring the Load Host's Node Database

Once you copy the distribution software to your VMS system, you should configure the system node database to support new servers. You configure this database with an automated procedure called DSVCONFIG. The second page of Figure 1–1 shows the steps of this procedure. DSVCONFIG also automatically enables the service circuit. The DSVCONFIG configuration procedure file is part of the DECserver 300 software distribution kit.

DSVCONFIG uses DECnet commands to carry out the configuration; therefore, DECnet must be running on your VMS system.

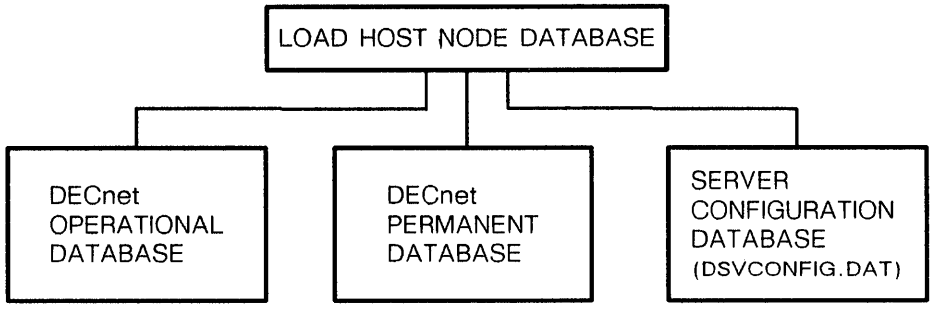
Configuration of the **load host's node database** means defining an entry for each server in three places:

1. Data file called DSVCONFIG.DAT

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

2. DECnet operational (also called "volatile") database
3. DECnet permanent database.

Figure 1-2: Load Host Node Database Configuration



When you complete the configuration procedure, your VMS system is established as a load host for each server that has an entry in the load host's node database.

When installing new versions of DECserver products, always check the product release notes for information on the latest DSVCONFIG.COM.

Chapter 3 contains the procedure to configure the load host's node database. For more information on DSVCONFIG, see the *DECserver 300 Management* manual.

1.4 Verifying the Installation

After you configure the load hosts' node databases, you perform two verifications. First, you verify the load host installation by down-line loading the server image. Then, after loading the server, you verify the server system installation. You verify the server system by testing a few server commands at an interactive terminal, which must be connected to the server.

Chapter 4 contains the procedures to verify the load host and server system installation.

1.5 Prerequisite and Optional Products

The *DECserver 300 Software Product Description* contains a list of prerequisite and optional products for the DECserver 300 terminal server.

2

Installing the Distribution Software

This chapter provides a step-by-step procedure for installing the DECserver 300 distribution software onto your VMS load host. Install the software using VMSINSTAL.COM, which is an automated procedure that is part of the VMS operating system. Figure 1-1 provides an overview of the installation process.

VMSINSTAL has the following conventions:

- At the end of each question, either a colon (:) or a question mark (?) appears. To answer a question, type your response immediately after the colon or question mark; then press the RETURN key.
- After each question, the default response, if there is one, displays in brackets ([ ]). To respond to a question with the default answer, press only the RETURN key.
- To get help after any question, type a question mark (?). After the help display, the question is repeated.

See the VMS documentation for a complete description of VMSINSTAL.

2.1 Preparing for Installation

Digital Equipment Corporation advises that you establish more than one system as a load host for each server. Alternate hosts free the server from dependence on one particular load host. For each server, Digital suggests a minimum of two load hosts. Digital also recommends one load host for every ten servers on a network.

This procedure requires the VMS operating system, which includes the VMS Required Saveset and Network Support tailoring classes, to be installed on the load host.

Perform the following procedure before you install the distribution software on a load host.

Step 1: Determine which systems are the load hosts.

You must install the distribution software onto all of the systems designated as load hosts. Ask your network manager or the person responsible for assigning load hosts to tell you which are the designated systems.

When selecting alternate load hosts, you can choose any Digital system for which a DECserver 300 distribution kit is available. DECserver 300 software distribution kits are available for the VMS and ULTRIX-32 systems.

Note that you do not need a separate software license for each load host, but you do need a separate license for each server.

Step 2: Back Up the system disk (recommended).

At this point, you might wish to back up your system disk.

Step 3: Check for free disk space.

The DECserver 300 software requires 800 free blocks of disk space on each load host for copying the distribution files; however, the software uses a peak of 1218 blocks during installation. An additional 2048 free blocks of disk space is required for each up-line dump.

2.2 Installing on the Primary Load Host

Perform the following procedure to install the distribution software on the primary or first load host. The software installation procedure takes approximately 10 to 15 minutes.

If you wish to abort the installation procedure at any time, press CTRL/Y. The installation procedure then deletes all files it has created up to that point and returns you to the DCL level. You must invoke VMSINSTAL again to retry the installation procedure.

Step 1: Place the distribution medium on the appropriate device drive.

Step 2: Invoke VMSINSTAL.

Invoking VMSINSTAL.COM requires the appropriate privileges. Refer to the *VMS System Manager's Manual* for a list of the necessary privileges.

Log in to the system manager account, and enter the following commands:

$ SET DEFAULT SYS$UPDATE RET

$ @VMSINSTAL DS3 *device-identifier* OPTIONS N RET

Here, DS3 is the VMS three-letter facility code for the DECserver 300 product, and *device-identifier* is the device on which the distribution medium is mounted.

OPTIONS N is an optional parameter that indicates you want to be prompted to display or print the *DECserver 300 Release Notes.* If you do not include the OPTIONS N parameter, VMSINSTAL does not prompt you to display or print the release notes. You are strongly recommended to read the release notes before proceeding with this installation. If you do not want to print the release notes or if you are interested in VMSINSTAL's other options, see the *VMS System Manager's Manual,* which is part of the VMS documentation set.

If you are installing onto alternate load hosts with copied savesets, the VMSINSTAL command line format differs slightly. See the VMS documentation on VMSINSTAL.

Step 3: Answer the VMSINSTAL questions.

VMSINSTAL displays the procedure title and the date and time. It 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]?
```

1. Type YES and press the RETURN key to proceed with the installation.

   VMSINSTAL asks:

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

2. If backup is satisfactory, press the RETURN key to answer YES.

   If you answer NO, the installation procedure terminates. Take appropriate action and start the procedure again.

If you are installing from the distribution media rather than from copied savesets, VMSINSTAL prompts you to mount the first volume, which you did at step 1:

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

3. Type YES and press the RETURN key. A confirmation message says that the medium is mounted.

   The procedure continues:

```
The following products will be processed:
    DS3 Vn.n

        Beginning installation of DS3 Vn.n at hh:mm

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

NOTE

DECserver 300 software version numbers are not specified in this manual. For example, the release notes file is shown as DS3*nnn*.RELEASE_NOTES. Here, *nnn* represents the version number; if you are installing Version 1.0, the release notes file is DS3010.RELEASE_NOTES.

Step 4: Print and/or display the release notes (recommended).

Next, the procedure lists your options for printing and displaying the release notes.

```
Release Notes Options:

        1.  Display Release Notes
        2.  Print Release Notes
        3.  Both 1 and 2
        4.  Copy release notes to SYS$HELP
        5.  Do not display, print, or copy release notes

* Select option [3]:
```

Select one of these options. Digital recommends that you select option 2.

- If you select option 1, you see:

```
VMI$ROOT:[SYSUPD.DS3nnn]DS3nnn.RELEASE_NOTES;1
```

  The release notes immediately start scrolling at your terminal. The release notes might contain up to 30 screens.

- If you select option 2, VMSINSTAL asks you which queue you want to send the file to for printing:

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

  Press the RETURN key to print the release notes on the default printer, or specify another print queue. A message indicates that the system has queued the file.

- If you select option 3, VMSINSTAL first asks you which queue you want to send the file to for printing:

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

  Press the RETURN key to print the release notes on the default printer, or specify another print queue. A message indicates that the system has queued the file for printing. Next, VMSINSTAL displays the following, then the release notes immediately start scrolling at your terminal.

  VMI$ROOT:[SYSUPD.DS3*nnn*]DS3*nnn*.RELEASE_NOTES;1

After the system queue message and the release notes are displayed (if you selected one of the display options), the procedure continues by asking:

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

If you haven't read the release notes, press the RETURN key to stop the procedure and review the release notes. Check for any changes that can affect this installation. (VMSINSTAL places the release notes file, DS3*nnn*.RELEASE_NOTES, in the SYS$HELP directory.)

Step 5: Restart VMSINSTAL if you stopped to read the release notes.

If you discontinued the installation procedure at the end of step 4, then enter this form of the VMSINSTAL command to restart the procedure:

$ @VMSINSTAL DS3 *device-identifier* RET

After typing this command, you must answer the VMSINSTAL questions (refer to step 3).

Step 6: Initiate the Installation Verification Procedure (IVP) (recommended).

After the release notes option menu, the procedure continues:

```
The following products will be processed:
    DS3 Vn.n

        Beginning installation of DS3 Vn.n at hh:mm

%VMSINSTAL-I-RESTORE, Restoring product saveset A...
%VMSINSTAL-I-RELMOVED, The product's release notes have been successfully
moved to SYS$HELP.
* Do you want to run the IVP after the installation [YES]?
```

The installation verification procedure (IVP) verifies that the DECSERVER directory exists, that all the files from the distribution kit are in the directory, and that the release notes are in the SYS$HELP directory. Digital recommends that you press the RETURN key to initiate the IVP.

Step 7: Read the messages and exit VMSINSTAL.

If you are on a VAXcluster node, the following message displays:

```
If you intend to execute this layered product on other nodes in your
VAXcluster, and you have the appropriate software license, you must
prepare the system-specific roots on the other nodes by issuing the
following command on each node (using a suitably privileged account):

$ CREATE/DIRECTORY SYS$SPECIFIC:[DECSERVER]/PROTECTION=(S:RWED,O:RWED)
```

VMSINSTAL continues, as follows, for both single and VAXcluster nodes:

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

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 down-line 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.

3. The Installation Verification Procedure (IVP) for the DECserver 300 can be found in SYS$TEST and may be run at any time by executing the command procedure DS3$IVP.COM.

You have finished the first part of the installation. The procedure continues as follows:

NOTE

If you are installing files onto a VAXcluster node, the messages indicate that the files are copied to the SYS$COMMON:[DECSERVER] directory, instead of SYS$SYSROOT:[DECSERVER].

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

Beginning installation verification procedure for DECserver 300 Vn.n.

Successfully located SYS$SYSROOT:[DECSERVER] directory
Successfully located SYS$SYSROOT:[SYSHLP]DS3010.RELEASE_NOTES
Successfully located SYS$SYSROOT:[DECSERVER]SH1601ENG.SYS
Successfully located SYS$SYSROOT:[DECSERVER]DSVCONFIG.COM
Successfully located SYS$SYSROOT:[DECSERVER]DSVCONFIG.DAT
Successfully located SYS$SYSROOT:[DECSERVER]DS3_010_DEFAULTS.COM
Successfully located SYS$SYSROOT:[DECSERVER]TSM$DS3_nnn_ADD_LOCAL_SERVICE.COM
Successfully located SYS$SYSROOT:[DECSERVER]TSM$DS3_nnn_DEDIC_SERV_PRINTER.COM
Successfully located SYS$SYSROOT:[DECSERVER]TSM$DS3_nnn_DEDIC_SERV_TERM.COM
Successfully located SYS$SYSROOT:[DECSERVER]TSM$DS3_nnn_DSR_DTR_TERM.COM
Successfully located SYS$SYSROOT:[DECSERVER]TSM$DS3_nnn_GET_CHAR.COM
Successfully located SYS$SYSROOT:[DECSERVER]TSM$DS3_nnn_HOST_INIT_PRINTER.COM
Successfully located SYS$SYSROOT:[DECSERVER]TSM$DS3_nnn_PC_TERM_OR_SERV.COM
Successfully located SYS$SYSROOT:[DECSERVER]TSM$DS3_nnn_PORT_DEFAULT.COM

Installation verification procedure for DECserver 300 Vn.n successful
        Installation of DS3 Vn.n completed at hh:mm
```

NOTE

The Terminal Server Manager (TSM) files are used only if you have the Terminal Server Manager software.

The procedure concludes:

```
VMSINSTAL procedure done at hh:mm
```

Proceed to step 8 if you need to edit your system start-up file. If you do not need to edit your system start-up file, you can either proceed to Section 2.3 to install the distribution software onto an alternate load host, or to Section 2.4 to finish the VMSINSTAL installation procedure.

Step 8: Edit your system start-up file, if necessary.

MOM$LOAD is a logical name that your load host uses to find the image file of any product that must be down-line loaded. For each product, MOM$LOAD has an associated equivalence string that specifies the location of the product's image file. Thus, the following command equates the logical name MOM$LOAD to the location of your DECserver 300 image file:

```
DEFINE/SYSTEM/EXEC/NAME_ATTRIBUTE=NO_ALIAS/NOLOG MOM$LOAD -
SYS$SYSROOT:[DECSERVER]
```

If your system is a load host for several products, then the location of each image file must be defined by a list of equivalent strings. For example, the following command defines the location of other Ethernet product image files as well as the DECserver 300 image file:

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

Two or more equivalence strings make up a search list. When your VMS system is requested to down-line load a product, it looks through the search list until it finds the location of the product's image file.

Your host cannot down-line load the DECserver 300 image file unless the search list defined for MOM$LOAD has the correct location of the image file. To see what the current search string is for MOM$LOAD, use the DCL SHOW LOGICAL command:

```
$ SHOW LOGICAL MOM$LOAD [RET]
```

If SYS$SYSROOT:[DECSERVER] is defined for MOM$LOAD, you do not have to define MOM$LOAD. Define MOM$LOAD only if:

- No equivalence string exists for MOM$LOAD (the SHOW LOGICAL command results with the message "No translation for logical name MOM$LOAD")

  or

- The equivalence strings defined for MOM$LOAD do not include SYS$SYSROOT:[DECSERVER].

If MOM$LOAD is already defined for other products but not for the DECserver 300 product, you must define MOM$LOAD by specifying SYS$SYSROOT:[DECSERVER] along with the current search string(s), as shown in the VMSINSTAL example. If you specify only SYS$SYSROOT:[DECSERVER] for MOM$LOAD excluding the current search string(s), then SYS$SYSROOT:[DECSERVER] will replace the current search string(s). Your VMS system will not be able to load the image files located by the current search string(s).

Proceed to Section 2.3 to install the distribution software onto an alternate load host, or proceed to Section 2.4 to finish the VMSINSTAL installation procedure.

2.3 Installing onto Alternate Load Hosts

Digital recommends that you establish alternate load hosts for each server. Alternates free the server from dependence on one load host because an alternate load host can perform a down-line load if the original load host is unavailable. In addition, alternate load hosts can receive up-line dumps from servers.

Regarding the assignment of load hosts, Digital suggests both the following:

- At least one other load host as a backup to the original for each server
- At least one load host for every ten servers

As with the original load host, an alternate VMS load host must:

- Be running DECnet Phase IV
- Have an Ethernet controller on the same Ethernet as the server
- Have the distribution software installed
- Have DECserver 300 entries in its server configuration database DSVCONFIG.DAT, the DECnet operational database, and the DECnet permanent database

2.3.1 Installing onto Single Systems

To install the server distribution software onto an alternate VMS load host that is not a member of a VAXcluster, use one of these two methods:

- Place your distribution media on the appropriate device of the new load host, and repeat the installation procedure detailed in Section 2.2.
- Follow this procedure:

  1. Type the following command on the original load host:

     ```
     $ @VMSINSTAL DS3 device-identifier OPTIONS G SYS$UPDATE: RET
     ```

     In this case, option G gets the savesets and stores them in the SYS$UPDATE directory.

  2. Copy the savesets from the original load host to the alternate load host's SYS$UPDATE directory. The savesets are DS3*nnn*.A and DS3*nnn*.B.

     Here, *nnn* equals the version number of the DECserver 300 software (e.g., *nnn* equals 010 for V1.0).

  3. Run VMSINSTAL on the alternate load host.

     ```
     $ @VMSINSTAL DS3 SYS$UPDATE: RET
     ```

2.3.2 Installing onto Other Operating Systems

To install the DECserver 300 distribution software onto an operating system other than VMS, follow the instructions in the *DECserver 300 Software Installation* manual for that system. The appropriate installation manual is included with the documentation kit that comes with the software distribution kit for that operating system.

2.4 After Exiting VMSINSTAL

After you exit VMSINSTAL, follow these steps:

1. Check the *DECserver 300 Release Notes* to see if you have to install any additional software from the distribution media. If so, install those distribution files.
2. Give the *DECserver 300 Release Notes* to the server manager.
3. Go to Chapter 3 to configure the load host's node database.

3

Configuring the Load Host's Node Database

This chapter provides a step-by-step procedure for configuring a VMS load host's node database for new servers with an automated procedure called DSVCONFIG. Configuring this database is part of the software installation. After this procedure, your VMS system is established as a valid load host for the new servers. Figure 1–1 provides an overview of the installation process.

If you ran the installation procedure described in Chapter 2, DSVCONFIG.COM is now in the SYS$SYSROOT:[DECSERVER] directory for single systems and in SYS$COMMON:[DECSERVER] for VAXcluster members. The load host creates and maintains all server-related files in this directory.

NOTE

DSVCONFIG.COM accommodates such products as the DECserver 100, DECserver 200, DECserver 300, and DECserver 500. However, some previous releases of DSVCONFIG.COM do not accommodate all the DECserver products. Therefore, use the command file on this kit for all configurations.

DSVCONFIG has the following conventions and requirements:

- To select an option, type a menu number and press the RETURN key.
- To answer a question, type your response immediately after the colon or question mark, and press the RETURN key.

- After each question, the default response, if there is one, displays in brackets ([ ]). To respond to a question with the default answer, press only the RETURN key.
- To get help after any question, type a question mark (?). After the help display, the question is repeated.
- To exit an option without making any changes, type CTRL/Z. You are returned to the DSVCONFIG Menu.
- To exit DSVCONFIG at the menu level, type CTRL/Z. You are returned to the DCL prompt.
- When you finish an option, DSVCONFIG automatically returns you to the DSVCONFIG Menu.

See the *DECserver 300 Management* manual for a complete description of DSVCONFIG.

3.1 Preparing for Configuration

Perform the following to prepare for configuring the load host's node database:

Step 1: Check that DECnet Phase IV is installed and running.

For information about DECnet Phase IV, see the *VMS DECnet-VAX System Manager's Guide.*

Step 2: Check that all distribution software was installed in these directories:

- SYS$SYSROOT:[DECSERVER] for single systems
- SYS$COMMON:[DECSERVER] for VAXclusters

See Appendix A for a list of the distribution files.

Step 3: Locate the server Identification Card.

Ask the hardware installer for the *DECserver 300 Identification Card* for each new DECserver 300 terminal server. The network manager and the hardware installer recorded the server's DECnet node name and node address as well as the Ethernet address on this card. You need to know this information to answer prompts during DSVCONFIG.

If your DECnet network is divided into areas, each DECnet node address takes the form *aa.nnnn*. Here, *aa* is a decimal area number from 2 to 63, *nnnn* is the node address, and the period distinguishes area from address. For example, 17.1003 is a valid node address.

Each DECnet node name must have from 1 to 6 alphanumeric characters with at least one character being an alphabetic character. For example, DSV5 and LION77 are valid DECnet node names.

Each DECserver 300 terminal server is delivered with a unique Ethernet hardware address. This address is six pairs of hexadecimal digits with a hyphen (-) separating each pair. For example, 08-00-01-00-AB-CD is an address with a valid format. The Ethernet address is on the control/indicator panel of the DECserver 300 terminal server.

3.2 Configuring on the Load Host

Perform the following procedure to configure the load host's node database. The load host can be a single system or a VAXcluster node.

CAUTION

Do not execute any DECnet commands that are a part of DSVCONFIG separate from the following DSVCONFIG procedure; otherwise, DECnet databases could be changed without changing DSVCONFIG.DAT, causing a synchronization problem.

Step 1: Check that each new server DECnet node name and node address are unique.

Check the uniqueness of the server's DECnet node address and node name by specifying the address or name with the NCP SHOW NODE command:

```
$ MCR NCP RET
NCP>SHOW NODE node-name CHARACTERISTICS RET
```

or

```
NCP>SHOW NODE node-number CHARACTERISTICS RET
```

If NCP shows a node already defined, see the network manager to resolve the conflict in names.

Step 2: Invoke DSVCONFIG.

To invoke DSVCONFIG.COM, you need OPER and SYSPRV privileges.

Log in to the system account or any account with OPER and SYSPRV privileges, and enter the following commands:

```
$ SET DEFAULT MOM$LOAD: RET
$ @DSVCONFIG RET
```

NOTE

The former command assumes you have defined MOM$LOAD to locate the DECserver 300 software image in SYS$SYSROOT:[DECSERVER] (see Section 2.2).

DSVCONFIG starts with these actions:

- It determines whether the DECnet key is installed. If DECnet is missing, DSVCONFIG prints a message and exits. You must have DECnet to run this procedure because DSVCONFIG executes DECnet commands.
- It checks the existence and format of a data file called DSVCONFIG.DAT. It finds one of three possible situations and continues accordingly:
  - The DSVCONFIG.DAT file does not exist in SYS$SYSROOT:[DECSERVER]. The procedure creates DSVCONFIG.DAT and displays a message telling you that the file was not found and a new one was created.
  - SYS$SYSROOT:[DECSERVER] already has this file formatted correctly. This is the case if DSVCONFIG was previously used to add DECserver 300 entries. The procedure continues with its next task.
  - SYS$SYSROOT:[DECSERVER] or for VAXclusters, SYS$SPECIFIC:[DECSERVER] already has this file, but not in the correct format. The procedure reformats the file.

    For VAXclusters, SYS$SPECIFIC:[DECSERVER] on each VAXcluster node might have an older version of the DSVCONFIG.DAT file. In this case, the DSVCONFIG procedure copies the server entries from that data file into the DSVCONFIG.DAT file on the SYS$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.

Refer to Section 3.3 for further information.

- It informs you that each DECserver terminal server must have a unique DECnet node name and DECnet node address.
- It asks you to either continue or to exit:

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

Press the RETURN key to see the DSVCONFIG options menu.

Step 3: Choose your configuration option(s).

DSVCONFIG displays:

```
                DECserver Configuration Procedure

                                        Version: Vn.n

                      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?
```

Type the number of the option you want. Then press the RETURN key. Section 3.2.1 contains the procedure for option 1, list known DECservers. Section 3.2.2 contains the procedure for option 2, add a DECserver. Appendix C contains examples of each option.

3.2.1 List Known DECservers (Option 1)

Select option 1 to list the DECserver terminal servers in the DSVCONFIG.DAT data file. Type the number one and press the RETURN key. The contents of the DSVCONFIG.DAT file are listed in seven columns. Option 1 displays a listing such as this:

```
DECnet  DECnet Server Service
Address Name   Type   Circuit Ethernet Address  Load File     Dump File
------- ------ ------ ------- ----------------- ------------- -------------
28.900  BUNNY  DS200  BNA-0   08-00-2B-02-F0-99 PR0801ENG.SYS DS2BUNNY.DMP
28.1001 BACH   DS300  UNA-0   08-00-2B-02-24-CC SH1601ENG.SYS DS3BACH.DMP
28.1002 BEETHO DS300  UNA-0   08-00-2B-03-AA-2B SH1601ENG.SYS DS3BEETHO.DMP
28.1003 MOZART DS100  UNA-0   08-00-2B-02-24-DD PS0801ENG.SYS PSDMP24DD.SYS
28.1005 HAYDN  DS300  UNA-1   08-00-2B-03-AA-F1 SH1601ENG.SYS DS3HAYDN.DMP
28.1019 OCELOT DS500  UNA-0   08-00-2B-03-EE-FF DS5OCELOT.SYS DS5OCELOT.SYS
28.1022 JAGUAR DS500  UNA-0   08-00-2B-03-E1-F1 DS5JAGUAR.SYS DS5JAGUAR.SYS
28.1023 BEATLE DS100  UNA-0   08-00-2B-02-24-2D PS0801ENG.SYS PSDMP242D.SYS

Total of 8 DECservers defined.

(Press RETURN for menu)
```

3.2.2 Add a DECserver (Option 2)

Select option 2 to add an entry for a new server in the server configuration database DSVCONFIG.DAT, the DECnet operational database, and the DECnet permanent database. You will need the *DECserver 300 Identification Card.*

To add a server, follow these steps:

1. Type 2 and press the RETURN key.

   DSVCONFIG asks:

   ```
   DECserver type?
   ```

2. Type DS300 and press the RETURN key.

   DSVCONFIG asks:

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

3. Specify the DECnet node name for the new server.

   DSVCONFIG asks:

   ```
   DECnet node address for unit?
   ```

4. Specify the DECnet node address for the new server. If you specify a node address that is already defined in DSVCONFIG.DAT, you get a DSVCONFIG error, nothing is added, and the Add option is terminated.

   DSVCONFIG asks:

   ```
   Ethernet address of unit?
   ```

5. Specify the Ethernet address of the new server.

   DSVCONFIG asks:

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

6. Press the RETURN key if the default ID is the load host's service circuit. If not, specify the service circuit-ID of the load host's Ethernet controller as follows:

UNA-*n*	for DEUNA or DELUA
QNA-*n*	for DELQA, DEQNA, or DESQA
BNA-*n*	for DEBNA
SVA-*n*	for DESVA

   Here, *n* is an integer (typically 0 or 1).

DSVCONFIG adds the entry for the new server to the databases and sets SERVICE ENABLED on the specified service circuit, both of which are necessary for down-line loading. If the service circuit becomes disabled, Appendix C contains the commands to enable the service circuit.

At the end of the Add option, you might get network control program (NCP) messages (information, confirmations, and errors). In the case of error messages, the operation might not have been successful. For the explanations of these messages, see the *VMS System Messages and Recovery Procedures Reference Manual.*

CAUTION

If you get an error from DECnet while you are adding a server, the entry is added to the DSVCONFIG.DAT file even though it is not entered in the DECnet databases. To correct this synchronization problem, follow these steps:

1. Use option 4 to delete the entry. (See the example in Appendix C, or refer to the *DECserver 300 Management* manual.)
2. Fix the condition causing the DECnet error.
3. Return to option 2 to add the server again with the correct information.

3.2.3 Options 3, 4, and 5

Options 3, 4, and 5 are not normally used during the installation procedure. Refer to the *DECserver 300 Management* manual for a description of these options.

3.3 Verifying a Merge on VAXcluster Nodes

The DSVCONFIG procedure looks at each entry in SYS$SPECIFIC and determines if that entry is already in SYS$COMMON. If the entry is in SYS$COMMON, it is not merged. If the entry is not in SYS$COMMON, it is merged.

In the case of a merge, DSVCONFIG renames the old DSVCONFIG.DAT file on the SYS$SPECIFIC directory to DSVCONFIG_SPECIFIC.DAT. As a result, you still have the original entries in case you need to repeat the merge. The following DSVCONFIG messages appear if a merge occurs:

```
Merging SYS$SPECIFIC:[DECSERVER]DSVCONFIG into SYS$COMMON:[DECSERVER]DSVCONFIG

8 servers were defined in SYS$SPECIFIC:[DECSERVER]DSVCONFIG.DAT
3 servers were already in SYS$COMMON:[DECSERVER]DSVCONFIG.DAT
5 servers merged into SYS$COMMON:[DECSERVER]DSVCONFIG.DAT

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

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

If a merge occurs, follow this procedure to ensure that DSVCONFIG updates the DSVCONFIG.DAT file correctly and places it in the SYS$COMMON directory:

1. Select the List option to verify that the merge was successful.

   The List option should display the correct service circuit-IDs at each node. Informational messages display the status of the merge as it progresses.

2. Verify that the service circuit-ID is correct.

   Since the individual nodes have the correct service circuit ID for each server entry, the correct IDs are merged into the new file. If the service circuit IDs are not correct for a particular node, you can correct them in one of two ways:

   - You can run DSVCONFIG SET_CIRCUIT at that node (for VAXclusters, this method is better). The following shows an example of the command you would use:

     ```
     $ @DSVCONFIG SET_CIRCUIT UNA-0
     ```

   - You can run DSVCONFIG at the node with the errors and use the Swap option to change the service circuit-IDs.

3.4 Exiting DSVCONFIG

When you exit DSVCONFIG:

1. Give the server manager the *DECserver 300 Identification Card* for each server that you defined.
2. Ask the server manager to store the card in the notebook with the documentation set for the DECserver 300 software.
3. Proceed to Chapter 4 to verify the load host and server system installation.

4
Verifying the Installation

To complete the software installation, you need to perform two verifications. First, you verify the load host installation by down-line loading the server image. Then, after loading the server, you verify the server system installation. Here, **system installation** means the installation of the complete server system—the hardware with the correct software loaded and running. You verify the server system by testing a few server commands at an interactive terminal, which must be connected to the server.

4.1 Verifying the Load Host Installation

To verify the installation of the load host, use it to down-line load the server image to one DECserver 300 terminal server; then read the DECnet event-logging messages. The messages confirm that the new load host:

- Has the appropriate files in the correct directory
- Has a correct entry in its node database for the server
- Can successfully down-line load the server image to the server

The DECserver 300 down-line loading procedure does not let you specify which load host loads a server. The server sends a DECnet message requesting a down-line load to all load hosts. The first load host to "volunteer" is the host that does the loading. Make sure that the verification server is configured only on load hosts that have the latest server software. If the verification server remains configured on any host with an older version of the server software, that load host might be the node that down-line loads the server.

To find out if a load host has the target server listed, execute the LIST option of the DSVCONFIG (see Section 3.2.1).

The server image is down-loaded to the server when you initialize the server. You initialize the server by powering up the hardware unit or with the server INITIALIZE command. The *DECserver 300 Management* manual has details about initializing the server.

4.2 Verifying the Server System Installation

To verify the total server system installation, test a few server commands at an interactive terminal connected to a server port. This step confirms that:

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

Follow this sequence:

1. Press the RETURN key two or more times.

   The following message and prompt should appear.

   ```
   RET
   RET
   DECserver 300 Terminal Server Vn.n (BLnn) - LAT V5.1

   Please type HELP if you need assistance

   Enter username>
   ```

2. Read the identification message to ensure that the correct version (V*n.n*) of the server image was down-line loaded. If you fail to receive this display, the problem could be:
   - With the load host
   - With the terminal
   - That the incorrect software was down-line loaded
3. Enter your user name (any string of 1 through 16 characters that identifies you) and press the RETURN key. The port should now enter local mode, where the local prompt (Local>) appears:

   ```
   Enter username> SWINSTALLER RET

   Local>
   ```

4. Use the following server command to see which load host down-line loaded the server software:

   ```
   Local> SHOW SERVER STATUS RET
   ```

   The Load Address field in the display tells you which host loaded the server. If that load host does not have the current server software, either install the current server software on the host, or delete the verification server from its load host node database. See Chapter 2 for installing the software, or Appendix C for deleting a server from the node database.

5. Use the TEST PORT command, which verifies whether 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, this command displays 5 lines of 80 characters each:

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

   Note that you can interrupt this test by pressing any key. Appendix C shows an example of a TEST PORT display.

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

   ```
   Local> SHOW PORT RET
   ```

   A port-characteristics display should appear. Appendix C shows an example of a port-characteristics display.

7. 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 RET
   ```

   Every terminal and service node in a LAT network is a member of one or more groups, which are specified by a list of numbers from 0 to 255. A terminal user is only aware of the services that are offered by the nodes in the same group as the user's terminal. The DECserver 300 defaults to Group 0. When you use the SHOW SERVICES command, it must be a service that recognizes Group 0. The server manger can change the group setting of the DECserver 300 terminal server.

   Appendix C shows an example of a SHOW SERVICES display.

8. Select an available service that you are authorized to use. Use the CONNECT command to verify that the server can logically connect your terminal to that service. On the command line, specify the service name to which you want to connect. The following example connects your terminal to a VMS system offering the LAT service named SYSTEM:

   ```
   Local> CONNECT SYSTEM RET
   ```

   When the server successfully connects your terminal to the service you specified, you no longer see the local prompt; rather, you are communicating with the service, in this example, your own VMS system.

9. Enter several commands to verify the ability of the server to exchange data with the service. For example, in this case, you could enter LOGIN, SHOW TIME, and SHOW USERS.

10. Press the BREAK key or log out from the service to return to local mode. Note that pressing the BREAK key does not end the service session you started.

11. Log out the terminal from the server:

    ```
    Local> LOGOUT RET
    ```

If the server system verification encounters any problem, see the server manager.

If you complete the above steps successfully, the test server is operating correctly, and you can report the successful load host installation and server system installation to the server manager. If this installation is a software upgrade, either you or the server manager must now reload all existing servers.

A

DECserver 300 Distribution Files

These are the DECserver 300 distribution files:

File name	Description
KITINSTAL.COM	Command file that VMSINSTAL uses to do part of the installation procedure. This file is temporary; it is not left on the system after the installation is done.
DS3$IVP.COM	Installation verification procedure.
DSVCONFIG.COM	Configuration procedure.
DSVCONFIG.DAT	Data file used by DSVCONFIG.COM.
DS3_*nnn*_DEFAULTS.COM	File used by the Terminal Server Manager (TSM) software.
DS3*nnn*.RELEASE_NOTES	Release notes. (*nnn*=version number)
SH1601ENG.SYS	DECserver 300 software image.
TSM$DS3_*nnn*_ADD_LOCAL_SERVICE.COM	File used by the TSM software.
TSM$DS3_*nnn*_DEDIC_SERV_PRINTER.COM	File used by the TSM software.
TSM$DS3_*nnn*_DEDIC_SERV_TERM.COM	File used by the TSM software.
TSM$DS3_*nnn*_DSR_DTR_TERM.COM	File used by the TSM software.

File name	Description
TSM$DS3_*nnn*_GET_CHAR.COM	File used by the TSM software.
TSM$DS3_*nnn*_HOST_INIT_PRINTER.COM	File used by the TSM software.
TSM$DS3_*nnn*_PC_TERM_OR_SERV.COM	File used by the TSM software.
TSM$DS3_*nnn*_PORT_DEFAULT.COM	File used by the TSM software.

B

Using the Remote Console Facility

The DECserver 300 terminal server supports the VMS Remote Console Facility (RCF). This appendix explains how to use RCF from a VMS host. If you issue the BROADCAST command yourself to warn users of an upcoming down-line load, you may want to use RCF.

To connect to the server with RCF, use the CONNECT NODE command. On the command line, specify either the DECnet node name or DECnet node address of the server. This example shows a connection to the server named BEETHO:

```
$ MCR NCP [RET]
NCP> CONNECT NODE BEETHO [RET]
Console connected (press CTRL/D when finished)
```

or

```
NCP> CONNECT NODE 28.1002 SERVICE PASSWORD 0F23 [RET]
Console connected (press CTRL/D when finished)
```

Press the RETURN key to start the log-in sequence for the remote console. Log-in password protection is enabled for the the DECserver 300 remote console port. Therefore, you must supply the log-in password when the server prompts you with a pound sign (#), as shown below (an audible beep signal accompanies the prompt). The default password is ACCESS.

```
#
```

The prompt indicates that the link to the server has been made. After you enter the correct password, you can begin using DECserver 300 commands.

You can also use the CONNECT command with the server's Ethernet address. The following example shows a connection from a VMS system with the service circuit-ID UNA-0 to a server with the Ethernet address 08-00-2B-04-AA-2B:

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

You may have to specify the service password with the CONNECT command if a maintenance password is specified on the server. To do so, include the SERVICE PASSWORD keywords on your command line and specify the password.

To exit from RCF, type CTRL/D:

```
Local> CTRL/D
```

To exit from NCP, type EXIT:

```
NCP> EXIT RET
$
```

NOTE

If you log out from the server 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 reappears, and control passes back to NCP on your VMS system. See the *DECserver 300 Management* manual for detailed information on RCF.

C

Examples: Installation, Configuration, Verification

This appendix shows examples of the installation and the configuration procedures. It also shows the verification of a load host installation by down-line loading and reading DECnet event-logging messages. Finally, Appendix C shows the verification of a server system installation by testing server commands.

C.1 Example of an Installation

The following example shows a successful installation procedure onto a VMS V5.0 system. This example also shows the procedure as Digital Equipment Corporation suggests you run it:

1. Use the option that prints the release notes.
2. Print the release notes.
3. Stop the procedure to read them.
4. Rerun the procedure.

```
$ SET DEFAULT SYS$UPDATE RET
$ @VMSINSTAL DS3 MTA2 OPTIONS N RET

        VAX/VMS Software Product Installation Procedure V5.0

It is 17-JUN-1989 at 14:08.
Enter a question mark (?) at any time for help.

%VMSINSTAL-W-DECNET, Your DECnet network is up and running.
* Do you want to continue anyway [NO]? Y RET
* Are you satisfied with the backup of your system disk [YES]? RET
Please mount the first volume of the set on MTA2:.
* Are you ready? Y RET
%MOUNT-I-MOUNTED, DS3          mounted on _MTA2:

The following products will be processed:
  DS3 V1.0

       Beginning installation of DS3 V1.0 at 14:08

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

Release Notes Options:

        1.  Display Release Notes
        2.  Print Release Notes
        3.  Both 1 and 2
        4.  Copy release notes to SYS$HELP
        5.  Do not display, print, or copy release notes

* Select option [3]: 2 RET
* Queue name [SYS$PRINT]: RET
Job DS3010.RELEASE_NOTES (queue SYS$PRINT, entry 314) started on SYS$PRINT
* Do you want to continue the installation [N]? RET

     VMSINSTAL procedure done at 14:09

$
```

Read the release notes. Run VMSINSTAL again:

```
$ @VMSINSTAL DS3 MTA2 RET

        VAX/VMS Software Product Installation Procedure V5.0

It is 17-JUN-1989 at 14:25.
Enter a question mark (?) at any time for help.

%VMSINSTAL-W-DECNET, Your DECnet network is up and running.
* Do you want to continue anyway [NO]? Y RET
* Are you satisfied with the backup of your system disk [YES]? RET
Please mount the first volume of the set on MTA2:.
* Are you ready? Y RET
%MOUNT-I-MOUNTED, DS3          mounted on  MTA2:

The following products will be processed:
  DS3 V1.0

       Beginning installation of DS3 V1.0 at 14:25

%VMSINSTAL-I-RESTORE, Restoring product saveset A...
%VMSINSTAL-I-RELMOVED, The product's release notes have been successfully
moved to SYS$HELP.
* Do you want to run the IVP after the installation [YES]? RET
%VMSINSTAL-I-RESTORE, Restoring product saveset B...

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 down-line 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.

3. The Installation Verification Procedure (IVP) for the DECserver 300 can be found in SYS$TEST and may be run at any time by executing the command procedure DS3$IVP.COM.

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

Beginning installation verification procedure for DECserver 300 V1.0

Successfully located SYS$SYSROOT:[DECSERVER] directory
Successfully located SYS$SYSROOT:[SYSHLP]DS3010.RELEASE_NOTES
Successfully located SYS$SYSROOT:[DECSERVER]SH1601ENG.SYS
Successfully located SYS$SYSROOT:[DECSERVER]DSVCONFIG.COM
Successfully located SYS$SYSROOT:[DECSERVER]DSVCONFIG.DAT
Successfully located SYS$SYSROOT:[DECSERVER]DS3_010_DEFAULTS.COM
Successfully located SYS$SYSROOT:[DECSERVER]TSM$DS3_v10_ADD_LOCAL_SERVICE.COM
Successfully located SYS$SYSROOT:[DECSERVER]TSM$DS3_v10_DEDIC_SERV_PRINTER.COM
Successfully located SYS$SYSROOT:[DECSERVER]TSM$DS3_v10_DEDIC_SERV_TERM.COM
Successfully located SYS$SYSROOT:[DECSERVER]TSM$DS3_v10_DSR_DTR_TERM.COM
Successfully located SYS$SYSROOT:[DECSERVER]TSM$DS3_v10_GET_CHAR.COM
Successfully located SYS$SYSROOT:[DECSERVER]TSM$DS3_v10_HOST_INIT_PRINTER.COM
Successfully located SYS$SYSROOT:[DECSERVER]TSM$DS3_v10_PC_TERM_OR_SERV.COM
Successfully located SYS$SYSROOT:[DECSERVER]TSM$DS3_v10_PORT_DEFAULT.COM

Installation verification procedure for DECserver 300 v1.0 successful
       Installation of DS3 V1.0 completed at 14:28

              VMSINSTAL procedure done at 14:28

$
```

NOTE

The Terminal Server Manager (TSM) files are used only if you have the Terminal Server Manager software.

C.2 Example of a Configuration

This section gives examples of the following:

- starting DSVCONFIG
- listing known terminal servers (option 1)
- adding a terminal server (option 2)
- swapping an old terminal server for a new terminal server (option 3)
- deleting a terminal server from the database (option 4)
- restoring existing terminal servers to the database (option 5)

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. (See Chapter 3 for the prompts that are displayed if the procedure has to either create DSVCONFIG.DAT or reformat it.)

```
$ SET DEFAULT MOM$LOAD [RET]
$ @DSVCONFIG [RET]

You must assign a unique DECnet node name and DECnet node address
for each DECserver you are going to configure.

Press <RET> to start, or <CTRL/Z> to exit... [RET]


                  DECserver Configuration Procedure

                                          Version: V1.8

                          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?
```

C.2.2 Listing Known DECservers (Option 1)

This section and the following ones show how the configuration procedure continues for each option. Each option ends by automatically returning you to the menu.

```
     Your selection? 1 [RET]

DECnet   DECnet Server Service
Address  Name   Type   Circuit Ethernet Address  Load File     Dump File
-------  ------ ------ ------- ----------------- ------------- -------------
28.1001  BACH   DS300  UNA-0   08-00-2B-02-24-CC SH1601ENG.SYS DS3BACH.DMP
28.1003  MOZART DS100  UNA-0   08-00-2B-02-24-DD PS0801ENG.SYS PSDMP24DD.SYS
28.1005  HAYDN  DS200  UNA-1   08-00-2B-03-AA-F1 PR0801ENG.SYS DS2HAYDN.DMP

Total of 3 DECservers defined.
```

C.2.3 Adding a DECserver (Option 2)

This example adds a new DECserver 300 terminal server named BEETHO.

```
        Your selection? 2 [RET]

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? DS300 [RET]
DECnet node name for unit? BEETHO [RET]
DECnet node address for unit? 28.1002 [RET]
Ethernet address of unit? 08-00-2B-03-AA-2B [RET]
DECnet Service Circuit-ID? [UNA-0] [RET]

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

If you use the List option to get a listing of servers, you see that BEETHO appears on the listing of entries.

C.2.4 Swapping an Old Terminal Server for a New Terminal Server (Option 3)

In this example, an existing DECserver 100 terminal server named MOZART is swapped for a new DECserver 300 terminal server, 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. (If you use Swap to change the characteristics of the same server, you have to specify the Ethernet address even though it will not change.)

```
        Your selection? 3 [RET]

Type a ? at any time for help on a 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? MOZART [RET]
DECserver at Ethernet address 08-00-2B-02-24-DD is being modified.

Enter the new Ethernet address, and any other DECnet
characteristics you want to modify.

DECserver type? [DS100] DS300 [RET]
DECnet node name for unit? [MOZART] [RET]
Ethernet address of unit? 08-00-2B-03-AA-AB [RET]
DECnet Service Circuit-ID? [UNA-0] [RET]
```

C.2.5 Deleting a DECserver from the Database (Option 4)

This example shows the deletion from the load host's node database of the existing server with the DECnet node name BACH.

```
        Your selection? 4 [RET]

(Press CTRL/Z to return to menu.)
Enter the DECnet node name of the server you want to delete? BACH [RET]
%NCP-I-NMLRSP, listener response - Success
Remote node = 28.1001 (BACH)
%NCP-I-RECDELET, Database entry deleted
```

If you use the List option to get a listing of servers, you see that BACH no longer appears.

C.2.6 Restoring Existing DECservers to the Database (Option 5)

This example shows the restoration of the local down-line load database.

```
        Your selection? 5 [RET]

Restoring existing DECservers to host DECnet database...
Host DECnet database successfully restored.
```

C.3 Example of Verification: Verifying a Load Host Installation

The following example, presented in six parts, shows the installation verification for a VMS load host. This procedure tests that your VMS system can perform successfully as a down-line load host for a particular server.

In this example, the VMS system is named SYSTEM. The server that is loaded is a DECserver 300 terminal server with DECnet node name BEETHO. BEETHO is an existing server currently operating on the network. This example assumes that the down-line load is performed during normal working hours and that server users are warned of the upcoming down-line load by way of RCF.

C.3.1 Using RCF and Warning Server Users

This example uses the server's default log-in password, ACCESS.

```
$ MCR NCP CONNECT NODE BEETHO SERVICE PASSWORD FF23 [RET]
Console connected (press CTRL/D when finished)
[RET]
# ACCESS [RET] (not echoed)
DECserver 300 Terminal Server V1.0 (BL7) - LAT V5.1

Please type HELP if you need assistance
```

```
Enter username>  SWINSTALLER [RET]

Local>SET PRIVILEGED [RET]
Password> password (not echoed) [RET]
Local> BROADCAST ALL "The server will be reloaded in 3 minutes." [RET]

Local> [CTRL/D]
$
```

C.3.2 Enabling DECnet Event Logging and Checking Server Names

```
NCP> SET LOGGING CONSOLE EVENT 0.3,7 [RET]
NCP> SET LOGGING CONSOLE STATE ON [RET]
NCP> SET LOGGING MONITOR STATE ON [RET]
NCP> EXIT [RET]

$ SET DEFAULT MOM$LOAD [RET]
$ @DSVCONFIG [RET]

You must assign a unique DECnet node name and DECnet node address
for each DECserver you are going to configure.

Press <RET> to start, or <CTRL/Z> to exit... [RET]

                DECserver Configuration Procedure

                                        Version: V1.8

                        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 [RET]

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

28.1002 BEETHO DS300  UNA-0   08-00-2B-03-AA-2B SH1601ENG.SYS DS3BEETHO.DMP

Total of 1 DECserver defined.
```

```
                    DECserver Configuration Procedure

                                                Version: V1.8

                                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.3.3 Down-Line Loading with the LOAD Command

```
$ MCR NCP LOAD NODE BEETHO PASSWORD FF23 RET
```

C.3.4 DECnet Event-Logging Display after Issuing LOAD

```
NCP> LOAD NODE BEETHO SERVICE PASSWORD FF23 RET
DECnet event 0.3, automatic line service
From node 4.205 (SYSTEM), 18-JUN-1989 01:35:20.47
Circuit UNA-0, Load, Requested, Node = 28.1002 (BEETHO)
File = MOM$LOAD:SH1601ENG, Operating system Ethernet address = 08-00-2B-
03-AA-2B

DECnet event 0.3, automatic line service
From node 4.205 (SYSTEM), 18-JUN-1989 01:43:21.14
Circuit UNA-0, Load, Successful, Node = 28.1002 (BEETHO)
File = MOM$LOAD:SH1601ENG, Operating system Ethernet address = 08-00-2B-
04-AA-2B
```

C.3.5 Checking the Service Circuit

This part is optional, and is presented in case the service circuit becomes disabled. Type the following command to verify that the service circuit, BNA-0, is enabled:

```
NCP>SHOW CIR BNA-0 CHARACTERISTICS [RET]

Circuit Volatile Characteristics as of 17-Jun-89 08:23:45

Circuit = BNA-0

State                       =on
Service                     =disabled
Designated router           = 4.378 (LKGRT3)
Cost                        =4
Router priority             =64
Hello timer                 =15
Type                        =Ethernet
Adjacent node               = 4.378 (LKGRT3)
Listen timer                =90

NCP>
```

If the state is disabled, first check that the system is not busy by typing the following command:

```
NCP>SHOW KNOWN LINKS [RET]

Known Link Volatile Summary as of 17-Jun-89 08:25:23

   Link     Node             PID     Process     Remote Link  Remote User

  33848  2.632 (JOEDEV)  24203120  MCGREGOR          34655  MAIL
  8615   3.118 (MERLE)   2420372C  POOR                309  CTERM
  34154  4.54  (SMAUG)   24203F2B  MAIL_34154        33388  DECNET_MAIL
NCP>
```

The example shows that there are three users. If you enable the circuit at this time, you will disable the current users. If the circuit is not busy, type the following commands to enable service circuit, BNA-0.

```
NCP>SET CIR BNA-0 STATE OFF [RET]
NCP>SET CIR BNA-0 SERVICE ENABLED STATE ON [RET]
```

C.3.6 Conclusion of a Load Host Installation Verification

```
NCP> CLEAR LOGGING CONSOLE EVENT 0.3,7 [RET]
NCP> EXIT [RET]
$
```

C.4 Example of Verification: Verifying the Server System Installation

This example shows 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 Port 1, that your username is SWINSTALLER, that your user password is SQUIDS, that you will test the server by connecting to your own VMS system, SYSTEM, and that the new DECserver 300 software is Version 1.0.

```
[RET]
[RET]
DECserver 300 Terminal Server V1.0 (BL7) - LAT V5.1

Please type HELP if you need assistance

Enter username>  SWINSTALLER [RET]

Local> TEST PORT COUNT 5 WIDTH 65 [RET]

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

Local> SHOW PORT [RET]
```

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

```
Port 1:  SWINSTALLER            Server: LAT_08002B03AA2B

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 [RET]

Service Name          Status        Identification

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


Local> CONNECT SYSTEM [RET]
Local -010- Session 1 to SYSTEM established

        SYSTEM -- VAX 8600, The Best for Down-line Loading

Username: SWINSTALLER [RET]
Password: SQUIDS [RET] (not echoed)

        Welcome to VAX/VMS version V5.0 on node SYSTEM
    Last interactive login on Wednesday, 17-JUN-1989 07:25
    Last non-interactive login on Thursday, 27-MAR-1989 17:18

SYS$MANAGER:NOTICE.TXT -- SYSTEM System Notices

18-Jun-1989  All users, please purge your files!

$ SHOW TIME [RET]
  18-JUN-1989 07:00:09
$ SHOW USERS [RET]

          VAX/VMS Interactive Users          18-JUN-1989 07:00:13.13
    Total number of interactive users =   4
 Username     Process Name      PID     Terminal
 DAISY        DAISY           20A0257A  VTA3341         LTA3341:
 HEATHER      HEATHER         20A02217  VTA3391         LTA3391:
 IVY          IVY             20A020D2  VTA3234         Disconnected
 ROSE         ROSE            20A02321  VTA3471         LTA3471:
 SWINSTALLER  SWINSTALLER     20A02001  VTA3471         LTA3511:

$ LOGOUT [RET]
  SWINSTALLER     logged out at 18-JUN-1989 07:00:20.98
Local -011- Session 1 disconnected from SYSTEM

Local> LOGOUT [RET]
Local -020- Logged out port 1 on server LAT_08002B03AA2B
```

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