

VAX-11/780
Software Installation Guide

Order No. AA-M545B-TE

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software

VAX-11/780

Software Installation Guide

Order No. AA-M545B-TE

December 1982

This document contains detailed instructions for installing, upgrading, and updating the VAX/VMS operating system on a VAX-11/780 processor.

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PREFACE

MANUAL OBJECTIVES

The VAX-11/780 Software Installation Guide presents step-by-step procedures for installing software on a VAX-11/780 processor. VAX-11/780 software installation falls into three general categories:

- Installing software on a newly purchased VAX/VMS system
- Applying system maintenance updates to a VAX/VMS system
- Upgrading an existing VAX/VMS system

INTENDED AUDIENCE

This manual is intended for those users who are responsible for managing and controlling the operating system.

STRUCTURE OF THIS DOCUMENT

This manual is divided into the following chapters and appendixes:

- Chapter 1, Overview of Software Installation, briefly describes the process of bootstrapping and installing a VAX/VMS operating system and describes the VAX-11/780 console subsystem.
- Chapter 2, Building a Bootable System Disk, describes the procedures for restoring the software distribution kit to a bootable format.
- Chapter 3, Site-Specific Modifications to VAX/VMS, describes how to make modifications to VAX/VMS so that it more closely fits your site's needs.
- Chapter 4, The VMSINSTAL Command Procedure, describes how to use VMSINSTAL.COM to install system maintenance updates, optional software products, and EDTCAI.
- Chapter 5, The System After Installation, describes different procedures that can be performed after installation. These include backing up the console floppy, booting the system after installation, building and copying a VAX/VMS system disk, and building a stand-alone BACKUP kit.
- Appendix A, Files of the VAX/VMS System, lists the DIGITAL-supplied directories on the system disk and their contents.

PREFACE

- Appendix B, *Building the VAX/VMS Source Kit*, describes the steps to be taken to copy the VAX/VMS source kit.
- Appendix C, *Installing Optional Software Products*, describes the VMSUPDATE.COM command procedure used to install some optional software.
- Appendix D, *Upgrading the System*, describes the steps required to upgrade a system from a Version 2.5 system to a Version 3.0 system.
- Appendix E, *VMSINSTAL Error Messages*, describes the error messages issued by the VMSINSTAL command procedure.

ASSOCIATED DOCUMENTS

There are no prerequisites to using this document, but it is strongly recommended that you read the VAX/VMS Release Notes supplied with Versions 3.0, 3.1, and 3.2 for the most current information about VAX/VMS before installing software.

In addition, an understanding of the information presented in the VAX/VMS Summary Description and Glossary and the VAX/VMS Command Language User's Guide may prove helpful.

The following documents, which are referred to in this manual, provide the information needed to manage the day-to-day operation of the VAX/VMS system once it is initialized.

- VAX/VMS System Management and Operations Guide
- VAX-11 Utilities Reference Manual

For a complete list and description of VAX-11 documents, including optional software product documents, see the VAX-11 Information Directory and Index.

Further documentation on installing optional software products is included with each optional software product.

CONVENTIONS USED IN THIS DOCUMENT

Convention	Meaning
(RET)	A symbol with a one- to three-character abbreviation indicates that you press a key on the terminal, for example, (RET).
CTRL/x	The phrase CTRL/x indicates that you must press the key labeled CTRL while you press another key, for example CTRL/C, CTRL/Y.
\$ SHOW TIME	Command examples show all output lines or prompting characters that the system prints or displays in black letters. All user-entered commands are shown in red letters.
file-spec,...	Horizontal ellipsis indicates that additional parameters, values, or information can be entered.

SUMMARY OF TECHNICAL CHANGES

The following technical changes have been made to the VAX-11/780 Software Installation Guide for Version 3.2:

- Chapter 4, The VMSINSTAL Command Procedure, has been rewritten to reflect significant changes and additions to the VMSINSTAL command procedure.
- The procedure for upgrading a Version 2.5 VAX/VMS system to a Version 3.0 VAX/VMS system has been moved to Appendix D.
- Appendix E, VMSINSTAL Error Messages, has been added to explain error messages issued by the VMSINSTAL command procedure.
- Installation information about RA60 disks has been added.
- Information about remastered distribution kits has been added.

CHAPTER 1
OVERVIEW OF SOFTWARE INSTALLATION

There are three general categories of VAX-11/780 software installation:

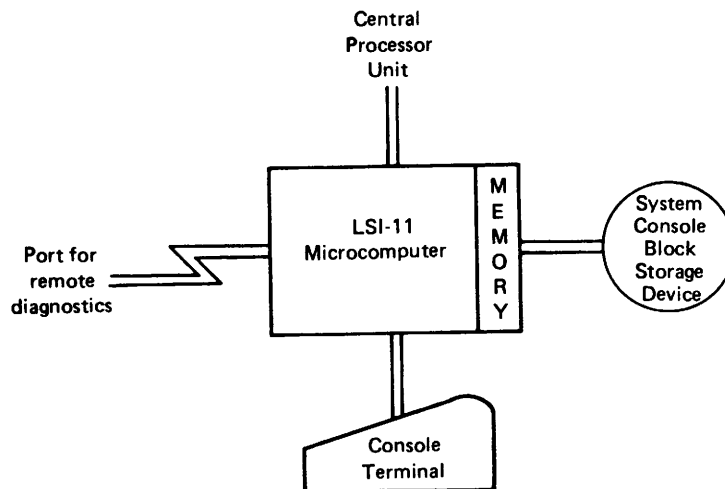
- Bootstrapping and installing a newly purchased VAX/VMS system
- Applying system maintenance updates to a VAX/VMS system
- Upgrading an existing VAX/VMS system

Installation refers to setting up a VAX/VMS operating system on a new VAX-11/780 processor. Updating refers to applying system maintenance updates, and consists primarily of a set of patches distributed on floppy diskettes. Upgrading refers to bringing a Version V2.5 system up to the next major version, V3.0, and is done substantially by file replacement.

All installation procedures are performed using the VAX-11/780 console subsystem.

1.1 VAX-11/780 CONSOLE SUBSYSTEM

The console subsystem consists of an LSI-11 microcomputer, a system console block storage device (the floppy diskette drive), a console terminal, and an optional remote diagnostic port. Figure 1-1 shows a diagram of the basic console subsystem.



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Figure 1-1: VAX-11/780 Console Subsystem

1.1.1 Using the Console Terminal

The VAX-11/780 console terminal runs in two modes: program mode or console mode. In program mode, the console terminal acts like other terminals on the 11/780 system. That is, the console microprocessor passes characters between the console terminal and the VAX-11 processor.

In console mode, the console program, running in the LSI-11 console microprocessor, interprets and acts on commands typed on the console terminal. The terminal is in program mode while the VAX-11/780 is running.

When the VAX/VMS operating system is bootstrapped, the console terminal exits console mode and enters program mode. To exit program mode and return to console mode, an operator types CTRL/P at the console terminal.

The console microprocessor also has the ability to communicate with the Remote Diagnostic Center.

1.1.2 Using the System Console Block Storage Device

The system console block storage device, the floppy diskette drive, is an integral part of the VAX/VMS operating system. During system installation, the hardware bootstrap reads a program from the console floppy diskette. The program, in turn, loads the operating system from the system disk into memory.

1.2 VAX-11/780 PROCESSOR CONTROL PANEL

The VAX-11/780 processor control panel consists of four indicator lights, an AUTO RESTART switch, a BOOT switch, and a keylock rotary switch. These switches and indicator lights reflect the current state of the system and dictate how the system will react to initial bootstrapping, shutdowns, and restarts. Figure 1-2 shows a diagram of a VAX-11/780 processor control panel.

1.2.1 Indicator Lights

There are four indicator lights on the processor panel. The first three indicate the state of the CPU, while the fourth indicates the state of remote diagnostic procedures.

ATTN	When lit, indicates that you have the attention of the console program.
RUN	When lit, indicates that the processor is running.
POWER	When lit, indicates that power is present in the processor and that the keyswitch is in the ON position.
REMOTE	When lit, indicates that remote diagnostic procedures are being performed on the system.

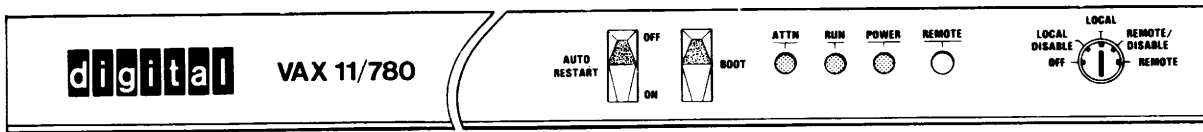


Figure 1-2: The VAX-11/780 Processor Control Panel

1.2.2 The AUTO RESTART Switch

The AUTO RESTART switch controls the processor's power-up sequence. This switch has two positions:

- | | |
|------------------|---|
| AUTO RESTART ON | Restarts the system automatically, even when unattended. |
| AUTO RESTART OFF | Halts the system and displays the console prompt (>>>) at the console terminal. |

1.2.3 The BOOT Switch

The BOOT switch bootstraps the system using the default bootstrap command procedure (DEFB00.COMD).

1.2.4 Keylock Rotary Switch

The keylock rotary switch has five positions that control the actions of the processor and the console subsystem. The positions are:

- | | |
|----------------|---|
| OFF | Power is off. |
| LOCAL DISABLE | Local console terminal cannot issue console commands. |
| LOCAL | Processor can respond to console commands and the remote line is disabled. |
| REMOTE DISABLE | Processor cannot respond to commands from remote line terminals. |
| REMOTE | Processor can respond to commands from a remote line terminal and console commands are ignored. |

1.3 OVERVIEW OF SYSTEM INSTALLATION

Installation can be performed by any system user who has access to the console terminal.

OVERVIEW OF SOFTWARE INSTALLATION

To bootstrap and install a VAX/VMS operating system, perform the following steps at the console terminal:

1. Restore the required save set (the files required for a bootable system) from the distribution kit to disk using the stand-alone version of the Backup Utility (BACKUP).
2. Bootstrap the system.

(When booting, additional files will be restored from the distribution kit. These files are referred to as the library and optional save sets.)
3. Set a default bootstrap command procedure.
4. Shut down the system and reboot.
5. Run the User Environment Test Package (UETP).

This installation process is restartable at any point. Steps one and two are described in Chapter 2, Building a Bootable System Disk. Steps three through five are described in Chapter 3, Site-Specific Modifications to VAX/VMS.

The updating procedure is described in Chapter 4. The upgrading procedure is described in Appendix D.

CHAPTER 2

BUILDING A BOOTABLE SYSTEM DISK

The VAX-11/780 software distribution kit for the VAX/VMS operating system contains the following:

- The distribution tape or disk
- Two floppy diskettes containing stand-alone BACKUP (only with magnetic tape distribution kits; RK07 distribution kits and RA60 distribution kits contain two blank floppy diskettes)
- One blank floppy diskette to be used in creating a new console floppy

The distribution tape or disk contains all the files needed to create a VAX/VMS operating system. However, as they exist in the distribution kit, the VAX/VMS files are split into three groups called BACKUP save sets. The save sets are in a compressed format, and do not comprise a usable system. The files in the save sets must be restored to another disk, using the stand-alone Backup Utility that is contained on the distribution disk (or on floppy diskettes for magnetic tape kits). The restoration process reformats the files into a usable VAX/VMS system.

The three save sets are composed of different types of files. One save set contains all the files required for a bootable system; the others consist of the VAX/VMS library and VAX/VMS optional files.

NOTE

Only new installation sites using the VAX/VMS Version 3.2 remastered distribution kit should install their system using the instructions in this chapter. If you are already operating on a VAX/VMS Version 3 operating system, you must perform updates to your system using the instructions in Chapter 4 of this manual. If you are operating on a VAX/VMS Version 2.5 or lower, see Appendix D.

2.1 OVERVIEW OF BUILDING A BOOTABLE SYSTEM DISK

There are four steps to building a bootable system disk:

1. Stand-alone BACKUP is booted, either from the RK07 disk for RK07 distribution kits, from the RA60 disk for RA60 distribution kits, or from the floppy diskettes for magnetic tape distribution kits.

BUILDING A BOOTABLE SYSTEM DISK

2. Stand-alone BACKUP restores the required save set from the distribution kit to the target disk, creating a kernel VAX/VMS system.
3. The kernel VAX/VMS system is booted.
4. Once booted, the kernel VAX/VMS system restores the library and optional save sets from the distribution kit to the target disk.

Before you can build a bootable system disk, you must verify that you have received all needed VAX/VMS V3.2 software. You must also know how to specify device names and power up the system. Sections 2.2 through 2.4 describe these procedures in detail.

2.2 VAX/VMS SOFTWARE DISTRIBUTION KITS

VAX/VMS software for the VAX-11/780 is distributed on either an RK07 disk, an RA60 disk, or on magnetic tape.

The bill of materials that comes with the kit lists the entire contents of that kit. Check to make sure you have received everything listed.

In addition to the materials contained in the software distribution kit, you will also need a console floppy diskette before you can proceed with an installation or upgrade. If you are a new customer, the console floppy diskette was shipped with the hardware. For other customers, your current console floppy diskette will be upgraded as part of the VAX/VMS upgrade procedure.

2.2.1 Magnetic Tape Kit

The VAX-11/780 magnetic tape software distribution kit contains the following:

- The VAX/VMS Version 3.2 distribution tape
 - Part number: BB-D782F-BE
 - Part description: VAX/VMS V3.2 BIN 16MT9
- Two floppy diskettes that contain stand-alone BACKUP
 - Part number: AS-M759A-BE
 - Part description: VAX/VMS V3.2 S/A BKUP RX1 1/2
 - Part number: AS-M760A-BE
 - Part description: VAX/VMS V3.2 S/A BKUP RX1 2/2
- One blank floppy diskette to be used in creating a new console floppy
 - Part number: AV-H889A-TK
 - Part description: RX1K BLANK FLOPPY DISKETTE

BUILDING A BOOTABLE SYSTEM DISK

2.2.2 RK07 Kit

The VAX-11/780 RK07 software distribution kit contains the following:

- The RK07 Version 3.2 distribution disk
Part number: AY-H020F-BE
Part description: VAX/VMS V3.2 BIN RK7
- Three blank floppy diskettes; two to be used in creating a stand-alone BACKUP kit, one to be used in creating a new console floppy
Part number: AV-H889A-TK
Part description: RX1K BLANK FLOPPY DISKETTE
Part number: AV-H889A-TK
Part description: RX1K BLANK FLOPPY DISKETTE
Part number: AV-H889A-TK
Part description: RX1K BLANK FLOPPY DISKETTE

2.2.3 RA60 Kit

The VAX-11/780 RA60 software distribution kit contains the following:

- The RA60 Version 3.2 distribution disk
Part number: BD-R379A-EE
Part description: VAX/VMS V3.2 BIN RA6
- Three blank floppy diskettes; two to be used in creating a stand-alone BACKUP kit, one to be used in creating a new console floppy
Part number: AV-H889A-TK
Part description: RX1K BLANK FLOPPY DISKETTE
Part number: AV-H889A-TK
Part description: RX1K BLANK FLOPPY DISKETTE
Part number: AV-H889A-TK
Part description: RX1K BLANK FLOPPY DISKETTE

2.3 SPECIFYING DEVICE NAMES

You will need to specify a device name twice in order to build a bootable system disk: once when specifying the location of the target disk for the required save set, and once when responding to the data prompt asking which device is holding the distribution kit.

All hardware devices supported on a VAX/VMS system have a device type code. Examples of these codes are listed in Table 2-1.

BUILDING A BOOTABLE SYSTEM DISK

Table 2-1: Device Type Codes

Code	Device Type
CS	Console Storage Device
DB	RP05, RP06 Disks
DD	TU58 Cartridge Tape
DL	RL02 Cartridge Disk
DM	RK06, RK07 Cartridge Disks
DR	RM03, RM05, RM80, RP07 Disks (See note below)
DU	RA80, RA81, RA60 Disks
DY	RX02 Floppy Diskette
LP	Line Printer on LP11
MF	TU78 Magnetic Tape
MS	TS11 Magnetic Tape
MT	TE16, TU45, TU77 Magnetic Tapes
OP	Operator's Console
RT	Remote Terminal
TT	Interactive Terminal on DZ11

Note: When booting any of these devices at the console program prompt (>>>) use the mnemonic DB.

The device name identifies the physical device on which a file is stored. The device name contains three fields, in the format ddcu:.

- The device type (dd). For example, an RK07 disk is DM; an RA60 disk, DU; a TE16 magnetic tape, MT; and a floppy diskette, CS, or DY.
- A controller designator (c). The controller designator identifies the hardware controller to which the device is attached. The first or only controller is always designated A.
- The unit number (u). The unit number button on the front panel of the disk drive uniquely identifies a particular device unit.

Some examples of device names are:

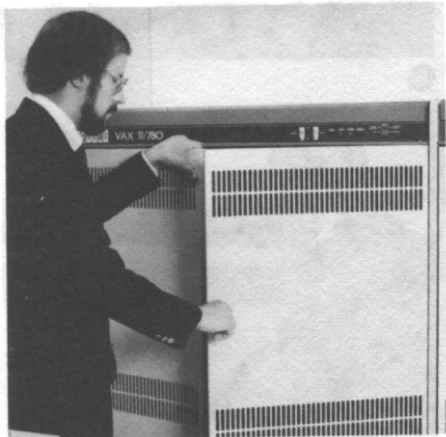
Name	Device
DMA2	RK07 disk on controller A, unit 2
MTA0	TE16 magnetic tape on controller A, unit 0
DUA10	RA60 on controller A, unit 10

2.4 POWERING UP THE SYSTEM

To power up the system, you must first insert the console floppy diskette into the console floppy diskette drive. Then, check the switches and panel indicators. Last, see that you have the attention of the console program.

2.4.1 Inserting the Console Floppy Diskette

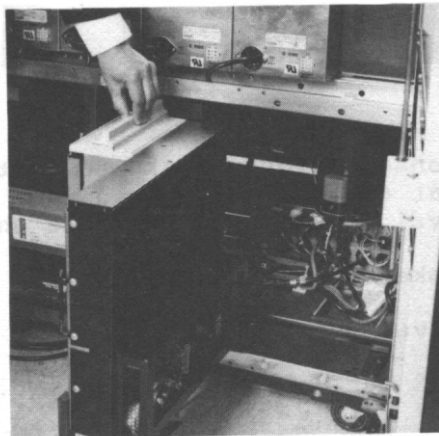
To insert the console floppy diskette into the console floppy diskette drive, proceed as follows:



①



②



③

- ① Unlock and open the cabinet doors of the central processor.
- ② Swing out the drive assembly until it is at a right angle to the cabinet.

The drive assembly is a rectangular, unpainted steel box in the lower right-hand corner of the central processor cabinet. There is a black handle on the right of the drive assembly.

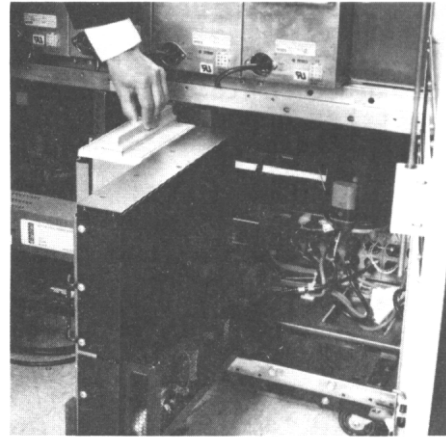
Pull the handle to swing out the drive assembly until it is perpendicular to the cabinet. If you do not swing it out far enough, or if you swing it out too far, you will not be able to insert the floppy diskette.

- ③ Press the black push button to unlock the slot cover. The cover will spring open.

BUILDING A BOOTABLE SYSTEM DISK



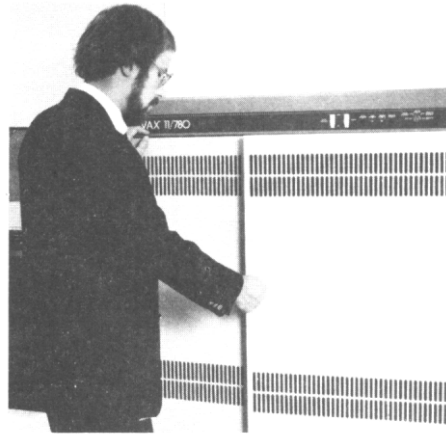
4



5



6



7

- 4 Insert the console floppy diskette in the drive. Its label should be at the top and should face the right-hand cabinet door. The oval slot on the diskette should be at the bottom.
- 5 Close the diskette slot cover.
- 6 Swing the drive assembly back into the cabinet.
- 7 Close and lock the door on the cabinet.

2.4.2 Checking the Switches and Panel Indicators

To power up the system, the following switches should be in the positions indicated:

- The ON-OFF rocker switch on the console terminal: ON
- The AUTO RESTART rocker switch on the processor control panel: OFF
- The rotary key switch on the processor control panel: LOCAL

Also, check that the ATTN and POWER control panel indicators are lit.

Powering up the system boots the console floppy diskette. It will take a few minutes for the floppy diskette to load the console program into memory. During this time, you will receive several messages, the last of which is the console prompt (>>>).

2.4.3 Checking for the Attention of the Console Program

After inserting the console floppy, see that you have the attention of the console program by checking for the three angle bracket (>>>) prompt. If this prompt does not appear, perform the following steps:

1. Check that the console floppy diskette is in the console drive.
2. Make sure the AUTO RESTART switch is in the OFF position.
3. Make sure the rotary key is in the LOCAL position.
4. If the power is already on, press CTRL/P to cause the console program to prompt with three angle brackets (>>>). Type REBOOT to cause the console to be rebooted.

2.5 RESTORING THE DISTRIBUTION KIT

The first step to restoring the distribution kit is loading stand-alone BACKUP. When stand-alone BACKUP is loaded, use it to restore the required save set to the target disk. Once booted, the kernel VAX/VMS system that is created automatically restores the library and optional save sets to the target disk.

2.5.1 Loading Stand-alone BACKUP

Stand-alone BACKUP is loaded from either the RK07 disk (RK07 distribution kits), from the RA60 disk (RA60 distribution kits), or from the floppy diskettes (magnetic tape distribution kits).

2.5.1.1 Loading Stand-alone BACKUP from RK07 Disk - The procedure for loading stand-alone BACKUP from an RK07 disk is as follows:

1. Place the distribution disk in an RK07 drive. Write protect the disk by pressing the WRITE PROTECT button, and spin it up by pressing the RUN button.

BUILDING A BOOTABLE SYSTEM DISK

2. At the console prompt, boot stand-alone BACKUP by typing:

```
>>> BOOT DMu
```

(The value of u is the unit number.)

Several boot commands will appear on the console terminal.

3. After about ten seconds, you will observe the following message and DIGITAL Command Language (DCL) prompt (\$) on the console terminal.

```
VAX/VMS Version V3.2 <date hh:mm>  
$
```

2.5.1.2 Loading Stand-alone BACKUP from RA60 Disk - The procedure for loading stand-alone BACKUP from an RA60 disk is as follows:

1. Place the distribution disk in an RA60 drive. Write protect the disk by pressing the WRITE PROTECT button, and spin it up by pressing the RUN button.
2. At the console prompt, boot stand-alone BACKUP by typing:

```
>>> BOOT DUu
```

(The value of u is the unit number.)

Several boot commands will appear on the console terminal.

3. After about ten seconds, you will observe the following message and DIGITAL Command Language (DCL) prompt (\$) on the console terminal.

```
VAX/VMS Version V3.2 <date hh:mm>  
$
```

2.5.1.3 Loading Stand-alone BACKUP from the Floppy Diskettes - If you have a magnetic tape distribution kit, you will be booting BACKUP from the floppy diskettes. The procedure for loading stand-alone BACKUP from floppy diskettes is as follows:

1. Place the distribution tape on a magnetic tape drive. Press the LOAD button. When the tape has loaded, press the ONLINE button.
2. At the console prompt, type:

```
>>> BOOT CS1
```

If you receive a "file not found" error message after typing this command, then type:

```
>>> BOOT DSC
```

3. After typing BOOT CS1 (or BOOT DSC), you will receive this message:

```
Please mount first stand-alone system diskette or  
cartridge and press RETURN.
```


BUILDING A BOOTABLE SYSTEM DISK

4. At this point, remove the console floppy diskette, insert the BACKUP floppy diskette marked VAX/VMS V3.0 S/A BKUP RX1 1/2, and press RETURN. When BACKUP has finished loading the first diskette (after approximately five minutes), you will receive this message:

Please mount second stand-alone system diskette or cartridge and press RETURN.

5. Remove the first stand-alone BACKUP floppy marked 1/2, replace it with the second stand-alone BACKUP floppy marked VAX/VMS V3.0 S/A BKUP RX1 2/2, and press RETURN.
6. When BACKUP completes loading (after approximately five minutes) the DCL prompt will appear, and you are ready to continue.
7. Leave the second stand-alone BACKUP floppy in the drive until you have restored the required save set.

2.5.2 Restoring the Required Save Set to the Target Device

After stand-alone BACKUP has been loaded, the procedure for restoring the required save set to the system disk is the same for both magnetic tape and RK07 distribution kits.

1. Place the target disk in a drive and spin it up by pressing the RUN button.
2. At the dollar sign prompt (\$), type the BACKUP command in the form in which it appears below:

```
BACKUP/VERIFY ddcu:REQUIRED/SAVE ddcu:
```

It is important to follow the exact syntax of the command, including all colons and spaces.

For example, when your distribution kit is on drive DMA1: and your system disk is on drive DMA0:, you would type:

```
$ BACKUP/VERIFY DMA1:REQUIRED/SAVE DMA0:
```

The /VERIFY qualifier specifies that the distribution medium and the target disk be read and compared. Optionally, the /LOG qualifier can be used in addition to the /VERIFY qualifier, if you want BACKUP to list each file on the console terminal as it is restored.

You will then receive the following message:

```
%BACKUP-I-STARTVERIFY, starting verification pass
```

In less than ten minutes, you will receive the DCL prompt (\$) at the console terminal.

3. Halt the processor and terminate stand-alone BACKUP by pressing CTRL/P and then typing HALT.
4. If you loaded stand-alone BACKUP from floppy diskettes (magnetic tape distribution kit), remove the second BACKUP floppy from the drive and replace it with the console floppy.

BUILDING A BOOTABLE SYSTEM DISK

NOTE

The BACKUP command creates a system disk with a DIGITAL-provided set of volume parameters, including a cluster factor of 1. Most of these parameters, except the cluster factor, can be modified after installation with the SET VOLUME command. To alter the cluster factor, however, you must back up the system disk, using the /NOINITIALIZE qualifier, to another volume that has been initialized with the desired values.

2.6 BOOTING THE TARGET DEVICE AND RESTORING THE REST OF VAX/VMS

To boot the partially built operating system and restore the rest of VAX/VMS, proceed as follows:

1. At the console terminal, boot the target disk by typing the following:

```
BOOT ddu
```

For example:

```
>>>BOOT DM0
```

The system will respond with the following message:

```
VAX/VMS Version V3.2 <date hh:mm>
%OPCOM, <date hh:mm:ss.s>, logfile initialized by
operator OPA0
    logfile is SYS$MANAGER:OPERATOR.LOG
Login quotas - Interactive limit=64, Current
interactive value=0
PLEASE ENTER DATE AND TIME (DD-MMM-YYYY HH:MM)
```

2. Enter the date and time in twenty-four hour clock format, and press RETURN.

For example: If it is June 1, 1983, at 2:05 P.M., enter 01-JUN-1983 14:05

3. The system will prompt you as follows:

```
Enter drive holding distribution kit: (DDCU)
```

Enter the name of the device holding the distribution kit.

For example:

```
MTA0
```

The installation procedure uses this information to restore the library and optional save sets. The following messages will appear over the course of approximately fifteen minutes, while the files are being restored.

```
%MOUNT-I-MOUNTED,VMS032  mounted on <device>
```

```
Restoring library save set.
```

```
%BACKUP-I-STARTVERIFY, starting verification pass
```

BUILDING A BOOTABLE SYSTEM DISK

Restoring optional save set.
%BACKUP-I-STARTVERIFY, starting verification pass

Running AUTOGEN - Please wait.

While AUTOGEN is running, you receive messages telling you which files have been created or extended. When it has completed running, you receive the following message:

```
%Opcom, <date hh:mm:ss.s>, message from user SYSTEM
%SYSGEN-I-WRITECUR, CURRENT system parameters modified by process
ID
00010045 into file SYS$SYSROOT:[SYSEXE]SYS.EXE;1
```

System shutting down to allow boot of complete V3.0 system.
You must manually reboot the system after it halts.

While the system is shutting down, the command procedure displays shutdown messages. When the shutdown is complete, you receive the following message:

```
SYSTEM SHUTDOWN COMPLETE - USE CONSOLE TO HALT SYSTEM
```

To halt the system, press CTRL/P, type H and then press RETURN.

Reboot the system by typing:

```
B ddu
```

Restoration of the distribution disk is complete; you have a running system. Refer to Chapter 3 for any site-specific modifications you might want to make to the system.

CHAPTER 3

SITE-SPECIFIC MODIFICATIONS TO VAX/VMS

The VAX/VMS operating system that exists at this point in the installation procedure is already set for your site's hardware configuration. During initial bootstrap, the AUTOGEN command procedure automatically set the system parameters, paging file, swapping file, system dump file, and installed images list to values considered appropriate for your system. On most systems, no further modification to these files should be required.

Your site-specific start-up command procedure is blank and the bootstrap command procedure is a default. The procedures are set to these defaults to allow the initial bootstrap of the system and may require site-specific modifications.

To create a system that more closely suits the requirements of your site, you may do any of the following:

- Select a default bootstrap command procedure
- Modify system parameters for special hardware configuration needs or special workload requirements
- Perform other site-specific modifications

3.1 LOGGING IN TO THE SYSTEM

Before you can perform any modifications to the system, you must log in as system manager. Once the system is initialized, it announces itself with the following message:

```
Login quotas - Interactive limit=64, Current interactive value=0
SYSTEM      Job terminated at <date hh:mm:ss.s>
```

At this point, you can log into the system as the system manager by performing the following steps at the console terminal:

1. Press RETURN.
2. In response to the system's request for your user name, type SYSTEM.
3. In response to the system's request for your password, type MANAGER.

The system displays the following message:

```
Welcome to VAX/VMS Version 3.2
```

SITE-SPECIFIC MODIFICATIONS TO VAX/VMS

The Digital Command Language (DCL) then issues its prompt (\$). When this prompt appears on the console terminal, you can begin modifying the system.

3.2 DEFAULT BOOTSTRAP COMMAND PROCEDURE

A bootstrap command procedure is a file on your console floppy that contains a sequence of bootstrap commands. The VAX/VMS system is installed with a default bootstrap command procedure, DEFBOO.CMD, that is used under the following circumstances during normal system operation:

- When a command procedure is not specified during bootstrapping
- When a power failure occurs, the system is in console mode, and the AUTO RESTART switch is in the ON position
- When the BOOT switch is depressed

3.2.1 Choosing a Default Bootstrap Command Procedure

VAX/VMS provides a number of command procedures that contain the necessary console commands to request a bootstrap from any disk device on the first MASSBUS controller (controller A) on the first MASSBUS adapter, or the first RK07 controller (controller A) on the first UNIBUS adapter.

The default bootstrap command procedure supplied on your console floppy can be used without modification if your system disk is a MASSBUS device on drive zero. If your site requires a different bootstrap command procedure, it is possible to change defaults to one of the several available. These are listed in Table 3-1.

It is recommended that you select a nonstop default bootstrap command procedure to provide for an unattended reboot after a fatal system error.

Table 3-1: VAX/VMS Bootstrap Command Procedures

Type of Command Procedure	Name of Command Procedure
Conversational bootstrap from RK07	DM0GEN
	DM1GEN
	DM2GEN
	DM3GEN
Conversational bootstrap from MASSBUS disk	DB0GEN
	DB1GEN
	DB2GEN
	DB3GEN
	DB4GEN
	DB5GEN
	DB6GEN
DB7GEN	

(continued on next page)

Table 3-1 (Cont.): VAX/VMS Bootstrap Command Procedures

Type of Command Procedure	Name of Command Procedure
Conversational bootstrap from UDA controlled disk	DU0GEN
Nonstop bootstrap from RK07	DM0B00.CMD DM1B00.CMD DM2B00.CMD DM3B00.CMD
Nonstop bootstrap from MASSBUS disk	DB0B00.CMD DB1B00.CMD DB2B00.CMD DB3B00.CMD DB4B00.CMD DB5B00.CMD DB6B00.CMD DB7B00.CMD
Nonstop bootstrap from UDA control- led disk	DU0B00.CMD

NOTE

The bootstrap command procedures for MASSBUS disks bootstrap the disks from only the first MASSBUS adapter. To bootstrap VAX/VMS from the second MASSBUS adapter, change the bootstrap command procedure to deposit the value 9 rather than the value 8 into register R1.

3.2.2 Changing a Default Bootstrap Command Procedure

Once you have selected the bootstrap command procedure to be used for your system, you should copy it to the console floppy diskette, giving it a file name of DEFBOO.CMD. This establishes it as the default bootstrap command procedure.

VAX/VMS provides a command procedure named SETDEFBOO.COM that simplifies the copying of the default bootstrap command procedure to the console floppy diskette. To use SETDEFBOO.COM, first log in to the system as the system manager (see Section 3.1) and type the following:

```
$ @SYS$UPDATE:SETDEFBOO
```

SETDEFBOO asks you to confirm that the floppy diskette is in the console drive and requests the name of the bootstrap command procedure that is to become the default:

```
Is the console medium ready to be mounted? (Y/N):
Enter name of default boot command file:
```

SITE-SPECIFIC MODIFICATIONS TO VAX/VMS

Once you enter the name of the appropriate bootstrap command procedure, for example, DMOBOO.COM, SETDEFB00 copies the specified bootstrap command procedure to DEFBOO.COM on the console floppy diskette. When it finishes the copying operation, SETDEFB00 issues the following message:

```
Default boot command file now replaced with <file-name>
```

```
Are you satisfied with this file as the default boot
command file? (Y/N)
```

If you reply NO, the procedure will ask you for the name of the default boot command file again. If you are satisfied with this file as the default boot command file, answer YES and proceed.

At this point, you should make a backup copy of your console floppy diskette. See Section 5.1 for instructions on copying the console floppy diskette.

3.2.3 Reading Command Procedures From Console Media

To read bootstrap command procedures from the console floppy, you must first copy the files from the console floppy, using the DXCOPY command procedure in the directory [SYSUPD]. To use DXCOPY.COM for this purpose, proceed as follows:

1. Invoke the command procedure by typing:

```
$@SYS$UPDATE:DXCOPY
```

2. The command procedure asks whether the console floppy is mounted:

```
Is the system console storage medium mounted (Y/N)?:
```

Place the console floppy in the CSA1 drive, type NO and press RETURN, as prompted.

3. The command procedure then asks whether the copy operation is from the console floppy:

```
Copy from console medium (Y/N)?:
```

Type YES to indicate a copy from the console floppy to the default directory.

4. Finally, the command procedure requests the name of the file to be copied from the console floppy. Type the name of the file and press RETURN.

You can now read the file from the default directory.

3.2.4 Booting with Interleaved Memory

To bootstrap the system with interleaved memory, the system must conform to certain requirements, as described in the VAX Hardware Handbook. If your system meets these requirements and you want the memory to be interleaved, edit the default bootstrap command procedure (DEFBOO.COM) and the powerfail restart command procedure (RESTAR.COM) to include commands that modify the memory controller registers.

SITE-SPECIFIC MODIFICATIONS TO VAX/VMS

DEFB00.COMD and RESTAR.COMD are on the console floppy. Copy the files from the console floppy, edit them, and return them to the console floppy using the DXCOPY command procedure in the directory [SYSUPD]. To use DXCOPY.COM for this purpose, proceed as follows:

1. Invoke the command procedure by typing:

```
$ @SYS$UPDATE:DXCOPY
```

2. The command procedure asks whether the console floppy is mounted:

```
Is the system console storage medium mounted (Y/N)?:
```

Place the console floppy in the CSA1 drive and type NO to continue.

3. The command procedure then asks whether the copy operation is from the console floppy:

```
Copy from console medium (Y/N)?:
```

Type YES to indicate a copy from the console floppy to the default directory.

Type NO to indicate a copy from the current default directory to the console floppy.

4. Finally, the command procedure requests the name of the file to be copied to or from the console floppy. Type the name of the file and press RETURN.

3.3 SITE-SPECIFIC MODIFICATIONS

There are several site-specific modifications that may be performed while you are logged in as system manager.

When the system is bootstrapped, it uses a default site-independent start-up command procedure, SYS\$SYSTEM:STARTUP.COM. This command procedure, in turn, requests the execution of a site-specific start-up command procedure, SYS\$MANAGER:SYSTARTUP.COM, which is initially blank and should be customized for your site. For example, SYSTARTUP.COM could contain commands that initialize and start up your site's batch and print queues.

You may also want to customize the user authorization file and create the necessary user file directories.

To perform these site-specific modifications, consult the VAX/VMS System Management and Operations Guide.

3.4 SYSTEM SHUTDOWN AND REBOOT

In order to ensure that all the modifications you perform are accepted by VAX/VMS, you must shut down and then reboot the system.

1. Shut down the system by executing the following command procedure:

```
$ @SYS$SYSTEM:SHUTDOWN
```

This command procedure prompts for the number of minutes until system shutdown, the reason for the shutdown, whether to spin down the disks, the expected time when the system will be restored, and whether automatic reboot should be enabled.

If you enabled automatic reboot, the AUTO RESTART switch is already in the ON position: DEFBOO.COMD has already been set to boot your system disk: the system will handle rebooting by itself. You can skip steps 2 and 3.

2. In response to the statement, "SYSTEM SHUTDOWN COMPLETE - USE CONSOLE TO HALT SYSTEM," halt the processor by pressing CTRL/P to obtain the console prompt (>>>), then type the HALT command.
3. To boot the system, either type BOOT or press the BOOT switch on the processor control panel.

The system will respond with the message:

```
VAX/VMS Version 3.2 <date hh:mm>
```

The system is now completely installed.

For more information on ways to boot the system, see Section 5.2.

3.5 MODIFYING SYSTEM PARAMETERS

The AUTOGEN command procedure is automatically run upon initial bootstrap of your system. This procedure generates your VAX/VMS system with system parameter values suitable for your hardware. However, in cases of unusual hardware configurations or special workload requirements, modifications of the system parameters may be necessary. The file SYS\$SYSTEM:PARAMS.DAT contains the system parameters and can be edited to suit your needs.

If you make changes or additions to the PARAMS.DAT file, when you are finished you must invoke the AUTOGEN command procedure with the command:

```
$ @SYS$UPDATE:AUTOGEN
```

Invoking AUTOGEN establishes your changes as the current values.

For detailed information about system parameters refer to the VAX/VMS System Management and Operations Guide.

3.6 VAX/VMS USER ENVIRONMENT TEST PACKAGE

The first thing you should do with your newly installed system is run the VAX/VMS User Environment Test Package (UETP). The UETP is a collection of tests designed to demonstrate that the hardware and software components of a VAX/VMS system are in working order. Details of running the UETP are described in the VAX/VMS UETP User's Guide. When the UETP runs to completion without encountering nonrecoverable errors, the system under test is ready for use.

3.7 BACKING UP YOUR SYSTEM DISK TO A SCRATCH DISK OR TAPE

To back up your system disk to a scratch disk or tape use stand-alone BACKUP floppies. The procedure is as follows:

1. Shut down your system.
2. Write protect your system disk by pressing the WRITE PROTECT button.
3. Boot stand-alone BACKUP from the floppy diskettes (see Section 2.5.1.2).
4. Place a scratch volume on an appropriate drive.
5. Issue one of the following stand-alone BACKUP commands:
 - for disk: BACKUP/VERIFY system-disk: scratch-disk:
 - for tape: BACKUP/VERIFY system-disk: tape device:save-set-name

For example, where the system disk is DMA0 and the scratch disk is DMA1:

```
$ BACKUP/VERIFY DMA0: DMA1:
```

For more details on using BACKUP, see the BACKUP chapter of the VAX-11 Utilities Reference Manual.

If you received an RK07, or RA60 distribution kit, see Section 5.4 to build stand-alone BACKUP on floppies.

3.8 THE SYSTEM AFTER INSTALLATION

Now that your system is installed, and any needed site-specific modifications have been made, there are several procedures you may want to perform on the system. You can back up the console medium, perform several methods of bootstrapping, build and copy a VAX/VMS system disk, or build a stand-alone BACKUP kit. See Chapter 5 for instructions on these procedures.

CHAPTER 4

THE VMSINSTAL COMMAND PROCEDURE

The command procedure VMSINSTAL is used to install system maintenance updates and optional software products.

Eventually, all optional software products will be installed using VMSINSTAL. However, at the present time, VMSINSTAL is used to install only some optional software products. DIGITAL is in the process of converting the remaining optional software product installations to the use of VMSINSTAL. Until they have been converted, these optional software products will continue to be installed using the VMSUPDATE command procedure (see Appendix C).

This chapter describes what to look for in the software product distribution kits, how to prepare for installation, how to invoke VMSINSTAL, how to choose among installation procedure options, and what to do in the event of a system failure during installation. This chapter does not describe the specific installation procedures for each update and product. The questions, prompts, and information that you receive during installation will differ from product to product. For specific installation details, consult the installation guide that comes with each update or product. This chapter also describes installation of EDTCAI, a software product that is included with some VAX/VMS distribution kits.

For information explaining the error messages received from the VMSINSTAL command procedure, see Appendix E.

4.1 EXAMINING THE DISTRIBUTION KITS

System updates and optional software products are distributed on floppy diskette or magnetic tape. EDTCAI is a save set on the VAX/VMS distribution kit, which can be either disk or magnetic tape.

Each floppy, disk, or tape is labeled with both a name and a serial number that differentiates it from others in the distribution kit. Check that your kit contains everything listed in the bill of materials.

Included in each distribution kit is the installation guide specific to that update or product.

THE VMSINSTAL COMMAND PROCEDURE

4.2 PREPARING TO USE VMSINSTAL

In order for VMSINSTAL to run properly, you must first do the following:

1. Back up your system disk (see Section 3.7). A system failure at a critical point of the installation could leave unusable files. In addition, optional software products may delete older product versions before installing new ones, so it is advisable to back up your system disk before attempting any software installation. The backup copy you create should be used for the installation to verify that the backup copy contains a working system and because, of the two, it has more contiguous free space, which you may need for the installation.
2. Log in at the console terminal under the system manager's account, SYSTEM.

(If the SYSGEN parameters MOUNTMSG or DISMOUMSG at your site have been set to 1, you will receive a message from OPCOM each time a disk or tape is mounted or dismounted. These messages are normally disabled, but if they have been activated and you are installing from an operator's terminal, they will appear from one to thirty seconds after each mount or dismount.)

3. Ensure that all users are logged out and that all batch jobs are completed.
4. Prevent users from gaining access to the system by entering at the DCL prompt (\$):

```
$ SET LOGINS/INTERACTIVE=0
```

5. Shut down DECnet-VAX (if your system includes it) by entering:

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

The system responds with the NCP prompt (NCP>). At the prompt, enter:

```
NCP> SET EXECUTOR STATE SHUT
```

DECnet-VAX will perform an orderly shutdown and the OPCOM facility will notify you when DECnet-VAX is off. Exit from the NCP by typing EXIT at the prompt.

6. Ensure that the limits in the SYSTEM account authorization record have values that are equal to or greater than the following designated default values:

```
Buffered I/O byte count limit (BYTLM) = 20480
Queue quota (ENQLM) = 20
Direct I/O limit (DIOLM) = 12
Buffered I/O limit (BIOLM) = 12
Open file limit (FILLM) = 20
AST limit (ASTLM) = 20
```

To check these values, enter the following command at the DCL prompt:

```
$ SHOW PROCESS/QUOTA
```

THE VMSINSTAL COMMAND PROCEDURE

The system will display the current values of the SYSTEM account's authorization record.

If necessary, you can change these values by entering the following commands at the DCL prompt:

```
$ SET DEFAULT SYSS$SYSTEM
$ RUN AUTHORIZE
```

The system responds with the UAF prompt (UAF>). At the prompt enter:

```
MODIFY SYSTEM/limit=new-value
```

For example:

```
UAF> MODIFY SYSTEM/DIOLM=12
```

To return to DCL command level, type EXIT at the UAF prompt. You must log out and log in again for any changes to take effect.

NOTE

Beyond this point in the installation procedures, installations vary according to update or product. The following section is a general description of how to invoke VMSINSTAL. Consult the specific update or product installation guide before invoking VMSINSTAL.

4.3 INVOKING VMSINSTAL

This section is a general description of how to invoke the VMSINSTAL command procedure. Section 4.4 describes options that may be used when invoking this procedure.

To initiate installation using VMSINSTAL, enter the following command at the DCL prompt:

```
@SYSS$UPDATE:VMSINSTAL product-list ddcu:
```

product-list

A list of the product(s) being installed from the distribution volume. Items in a product list are separated by commas with no spaces and are of the format:

```
facvvu
```

In this format,

fac is the facility name (1-6 alphanumeric characters).

vv is the major version number (2 digits).

u is the update number (1 digit).

THE VMSINSTAL COMMAND PROCEDURE

For example, the VAX/VMS operating system, version 3, update number 2 is:

VMS032

Items in this format allow you to install a specific version and update of a product from a distribution volume containing several versions and updates. If you specify only the facility name, with no version or update number, then all versions and updates present on the volume are installed in chronological order. You may specify a wildcard character (*) for the product list, in which case all versions and updates of all products present on the volume are installed in chronological order. At the present time, DIGITAL generally distributes only a single version of a product per distribution volume.

You will be prompted for a product list if you omit this parameter.

ddcu:

The device specification of the drive on which the distribution volume for the optional software product or maintenance update is to be mounted. You will be prompted for this parameter if you omit it.

At this point, if the conditions described in Section 4.2 are not met, you will receive a warning that explains the problem and a prompt asking if you wish to continue. It is strongly recommended that you correct the situation before reinvoking VMSINSTAL. If you continue, the resulting installation may not be supported by DIGITAL.

You will also be asked if you are satisfied with the backup of your system disk (see Section 4.2). Again, if you are not satisfied, it is strongly recommended that you correct the situation before continuing.

Once you invoke VMSINSTAL you will receive several prompts and messages that direct and explain the installation. These prompts and messages differ depending on the update or software product. Consult the installation documentation that comes with the update or software product for specific instructions. If you need assistance during an installation, typing a question mark (?) at a prompt will give you an explanation of the acceptable responses to that prompt.

At the end of an installation, VMSINSTAL will do one of two things, depending on the requirements of the update or product. It will either perform an automatic shutdown of the system and instruct you to manually reboot, or it will simply return you to the DCL command level.

Finally, after installing the update or optional software product(s), you should back up the updated system disk.

4.4 CHOOSING VMSINSTAL OPTIONS

The VMSINSTAL command procedure permits the use of three options: Auto-answer, File Log, and Alternate Root. These options perform the following functions:

Auto-answer

Allows you to record the answers you give to queries and prompts during installation. When you install an update or product, you receive several prompts and queries to which you respond. When you use the Auto-answer option VMSINSTAL creates a file with the specification SYS\$UPDATE:facvvu.ANS (if such a file does not already exist) and saves your responses in this file. If you reinstall a software product in the future (as you must when a major version of the VAX/VMS operating system is distributed) and you use the Auto-answer option, VMSINSTAL will check for the existence of facvvu.ANS and use the answers you have saved. If you reinstall without using the Auto-answer option, you will again receive prompts and queries during installation.

Note that if you wish to record new answers in a subsequent installation, you must first delete the existing answer file and then install the product again, specifying the Auto-answer option.

File Log

Logs all file activity to the terminal during installation. File activity is defined as any action that alters the disposition of a file, such as, creating a new file, updating a library, or deleting a file.

Alternate Root

Permits you to install to a system root other than that of the running system. The VAX/VMS system in the alternate root must be complete and at the same version/update level as the running system. All files and software products that are referenced by the product installation must be present in the alternate root.

Note that not all optional software products allow installation to a system root other than that of the running system. Consult the specific product's installation documentation to determine whether it is possible.

The format for invoking VMSINSTAL with these options is as follows:

```
@SYS$UPDATE:VMSINSTAL product-list ddcu: OPTIONS option-list [root]
```

OPTIONS

A keyword that must be entered along with one or more options in the option list to guarantee against accidentally invoking an option. If you enter an options-list and the OPTIONS parameter is not entered, you will receive an error message and the installation will be terminated.

option-list

A list of the options requested. This list consists of one letter option abbreviations separated by commas, with no spaces. The abbreviations are: A for Auto-answer, L for File Log, and R for Alternate Root. You may specify any option or all three. However, if you specify Alternate Root, you must also specify the root parameter (see below).

root

The alternate system root to which you wish to install the product(s). It must be of the format:

__ddcu:[SYSn.]

(Note that two leading underscores are required.)

In this format:

ddcu is the device on which the alternate root resides.

[SYSn.] is the top level directory of the alternate root.

You may specify a logical name that has been defined for an alternate root.

The following is an example of using VMSINSTAL with options:

```
$ @SYS$UPDATE:VMSINSTAL VMS032 DMA1: OPTIONS L,R __DMA1:[SYS0.]
```

In this example, update Version 3.2 of the VAX/VMS operating system is being installed to the alternate root, [SYS0.], on the device DMA1. The file activity during installation is being logged to the terminal, as well.

4.5 RECOVERING FROM SYSTEM FAILURE

If you experience a system failure, such as power loss, during installation of an update or optional software product, VMSINSTAL will attempt to automatically continue the installation upon rebooting. You will have to place the console floppy back in the console floppy drive in order to reboot. Depending on the point in the installation at which the system failed, one of three conditions will exist:

1. The system disk will not have undergone any changes before system failure. In this case, VMSINSTAL will instruct you to restart the installation.
2. The system disk or a library used by the installation will have been corrupted. In this case, VMSINSTAL instructs you to restore either the system disk, or the corrupted library from the backup copy (See Section 4.2), and restart the installation.

THE VMSINSTAL COMMAND PROCEDURE

3. VMSINSTAL will continue the installation. In this case, VMSINSTAL performs most of the installation and then may inform you that you must manually purge replaced files, even if you requested that they be purged automatically. If VMSINSTAL instructs you to do so, reboot the system, log in as system manager, and purge all system files by entering at the DCL prompt:

```
$ PURGE/LOG SYS$SYSROOT:[*...]*.*
```

When you have performed this task, installation is complete.

4.6 INSTALLING EDTCAI

The installation of EDTCAI uses neither VMSINSTAL as it is described above nor VMSUPDATE. It uses a version of VMSINSTAL without options that does not attempt to recover from a system failure. To install the EDTCAI course, perform all the steps described in Section 4.2, then proceed as follows:

1. Mount your distribution disk or tape.
2. Type the following command to initiate the installation of EDTCAI:

```
$ @SYS$UPDATE:VMSINSTAL EDTCAI
```

3. You will receive the following request:

```
Enter drive holding distribution kit:
```

You must type your response in the format ddcu: (dd is the device code; c, the controller letter; and u, the unit number).

You will then see the following message text at the terminal:

```
This procedure will install the EDTCAI course on your system.
This course will work on either the VT52 or a VT100 compatible
terminal. However, the display library for each terminal type
is over 500 blocks, and if you do not have a particular terminal
type on your system, you might wish to save disk space by not
installing that particular library.
```

You will receive the following query:

```
Do you wish to install the display library for VT52 terminals?:
```

Respond YES or NO.

You will then receive the next question:

```
Do you wish to install the display library for VT100 terminals?:
```

Answer YES or NO. You must install at least one of the two library files for the EDTCAI course to run on your system.

After answering YES to at least one of the two preceding questions, you receive this message:

```
Added course EDT, the EDTCAI Primer
```

THE VMSINSTAL COMMAND PROCEDURE

If you have upgraded from a previous version of EDTCAI, at this point you will be asked:

Do you wish to copy student records from EDTCAI V1 to this version?:

Answer YES or NO. If you answer YES, the names of the students will be displayed as they are copied. When all the names have been copied, the following will be displayed:

Now that the student records are copied, you may delete the old records to save disk space.

Do you wish to delete the old student records (Y or N):

Answer YES or NO. If you answer YES, the following will be displayed:

The old student records have been deleted.

If you answer NO, the following will be displayed:

The old student records have not been deleted.

When the installation of the EDTCAI course is completed, you will receive this message:

Kit installation complete.

CHAPTER 5

THE SYSTEM AFTER INSTALLATION

You will want to perform several operations after your system is installed:

- Backing up the console floppy diskette
- Performing several methods of bootstrapping
- Building and copying a system disk
- Building a stand-alone BACKUP kit

5.1 BACKING UP THE CONSOLE MEDIUM

It is important that you have a backup copy of the console floppy diskette. To back up the console medium, use the command procedure CONSCOPY contained in the SYS\$UPDATE directory. CONSCOPY copies files from the floppy diskette to an empty scratch directory on a disk. From the scratch directory, the files can be restored to another floppy diskette. (The blank floppy diskette included in your distribution kit may be used for this purpose if it was not used during the upgrade procedure.) To use CONSCOPY, proceed as follows:

1. Log in under the system manager's account, SYSTEM.
2. Create a scratch directory if one is not already available. If a directory already exists, make sure it contains no files. To create a directory, type:

```
CREATE/DIRECTORY ddcu:[directory name]
```

For example:

```
$ CREATE/DIRECTORY DMA1:[WRK.CNSL]
```

3. At the DCL prompt (\$), enter the following:

```
$ @SYS$UPDATE:CONSCOPY
```

4. You will receive the following question:

```
Which kit do you want to build (780!750!730):
```

Answer by typing 780.

THE SYSTEM AFTER INSTALLATION

5. A brief description of the SAVE and RESTORE operations will appear.

You will then be asked whether you want to SAVE or RESTORE your console medium.

Answer by typing SAVE.

6. The following will then appear:

Enter Files-11 device and directory (DDCU:[DIR]):

Type in the device code for the disk and specify the empty directory to contain the files.

For example:

DMA1:[WRK.CNSL]

7. At this point, you will receive the following prompt:

Enter the console device drive (DDCU:):

Answer by typing in CSA1:.

8. Put your console floppy diskette into drive CSA1 and press RETURN when ready.
9. When the files have been copied from the diskette to the disk, you will receive this message:

SAVE of your console floppy is complete.

5.1.1 Restoring Files to Floppy Diskette

To restore files to another floppy, proceed as follows:

1. Invoke CONSCOPY by typing:

\$ @SYS\$UPDATE:CONSCOPY

2. You will receive the following question:

Which kit do you want to build (780!750!730):

Answer by typing 780.

3. A brief description of the SAVE and RESTORE operations will appear.

You will then be asked whether you want to SAVE or RESTORE your console medium.

Answer by typing RESTORE.

4. The following will then appear:

Enter Files-11 device and directory (DDCU:[DIR]):

Type in the device code for the disk and specify the directory that contains the files.

THE SYSTEM AFTER INSTALLATION

5. At this point, you will receive the following prompt:

Enter the console device drive (DDCU):

Answer by typing CSA1:.

6. Put your scratch floppy diskette into drive CSA1 and press RETURN when ready.
7. When the files have been restored from the disk to the floppy, you will receive this message:

RESTORE of your console floppy is complete.

This newly created floppy will be your console floppy. Keep the original as a backup copy. Press RETURN to remount this new floppy.

5.2 BOOTING THE SYSTEM AFTER INSTALLATION

During installation, a default bootstrap is used for simplicity's sake. However, once the system has been installed, you can perform several types of bootstrapping operations:

- Conversational - Request that SYSBOOT stop and allow you to modify the system parameters that configure the system.
- Nonstop - Allow SYSBOOT to run to completion without your intervention.
- Reboot using the default bootstrap - Boot the system using the default bootstrap command procedure copied to the file DEFBOO.CMD.

5.2.1 Rebooting Stopping in SYSBOOT

The system bootstrap program, SYSBOOT.EXE, is the secondary bootstrap program that loads and configures the system. Because you can request that SYSBOOT prompt for commands during the bootstrap operation, this procedure is known as a conversational bootstrap operation. Using this procedure, you can do the following:

- Designate the name of the file that contains system parameter values
- Set and show individual parameter values
- Specify an alternate start-up procedure

To halt the processor and reboot stopping in SYSBOOT:

1. Shut down the system by executing the following command procedure:

```
$ @SYS$SYSTEM:SHUTDOWN
```

This command procedure prompts for the number of minutes until system shutdown, the reason for the shutdown, whether to spin down the disks, the expected time when the system will be restored, and whether automatic reboot should be enabled.

THE SYSTEM AFTER INSTALLATION

2. In response to the statement, "SYSTEM SHUTDOWN COMPLETE - USE CONSOLE TO HALT SYSTEM," halt the processor and obtain the console prompt (>>>) by pressing CTRL/P.
3. Bootstrap the system, using the following command procedure:
@ddnGEN

The letters dd denote the device type, and the letter n denotes the unit number of the drive containing the volume to be booted.
4. When SYSBOOT prompts, you may use any of the subset of SYSGEN commands listed in Table 5-1 to examine or modify the system.

Table 5-1: SYSBOOT Commands

Command	Description
CONTINUE	Resumes the bootstrap procedure
DISABLE CHECKS	Inhibits checking of parameter values specified with the SET command
ENABLE CHECKS	Permits checking of parameter values specified with the SET command
HELP	Displays a summary of the SYSBOOT commands at your terminal
SET parameter value	Establishes the value of a system generation parameter
SET/STARTUP procedure	Specifies the start-up command procedure to be executed after SYSBOOT
SHOW	Displays specific parameters
USE	Specifies the parameter file to be used as a source of values (if a parameter file is specified, you must specify the entire file specification)

The following is an example of the SYSBOOT program:

```
SYSBOOT> USE CURRENT
SYSBOOT> SET WSMAX 512
SYSBOOT> CONTINUE
```

In this example, the program is told to use the current system parameters as a source for values. The SYSGEN parameter WSMAX is set to 512, and the bootstrap operation is continued. When VAX/VMS announces itself, the new parameter value you have designated is in use. More information about these SYSGEN commands can be found in the VAX-11 Utilities Reference Manual.

5.2.2 Nonstop Bootstrap

To perform a nonstop bootstrap operation, proceed as follows:

1. Shut down the system by executing the following command procedure:

```
$ @SYS$SYSTEM:SHUTDOWN
```

2. In response to the statement, "SYSTEM SHUTDOWN COMPLETE - USE CONSOLE TO HALT SYSTEM," halt the processor by pressing CTRL/P to obtain the console prompt (>>>), and type the HALT command.
3. Type a command procedure name in the following format:

```
>>> @dduBOO.CMD
```

The letters dd denotes the device type, and the letter u denotes the unit number.

Note that you can also perform a nonstop bootstrap operation by typing:

```
>>> BOOT ddu
```

BOOT ddu is equivalent to @dduBOO.CMD.

5.2.3 Rebooting Using the Default Bootstrap

Under normal system operation, you do not need to interrupt the bootstrapping of the system to type commands to SYSBOOT. Rather, you can bootstrap the system using the default bootstrap command procedure that you copied to the file DEFBOO.CMD. To do so, proceed as follows:

1. Shut down the system by executing the following command procedure:

```
$ @SYS$SYSTEM:SHUTDOWN
```

2. In response to the statement, "SYSTEM SHUTDOWN COMPLETE - USE CONSOLE TO HALT SYSTEM," halt the processor by pressing CTRL/P to obtain the console prompt (>>>), and type the HALT command.
3. Either type BOOT or press the BOOT push button on the processor control panel.

The VAX-11/780 processor is designed for unattended, continuous operation. It is able to restart or reboot itself in the event of power failure and recovery or any processor halt condition. To enable the automatic restart feature, set the AUTO RESTART rocker switch on the processor control panel to ON. Automatic restarting should be disabled during the installation procedure, but should be enabled once the installation procedure is completed.

When automatic restart is enabled and a power failure and recovery or halt occurs, the processor deposits the contents of the program counter (PC) and the processor status longword (PSL) at the time of the halt into registers R10 and R11 and deposits a code giving the reason for the restart into the Argument Pointer (AP). The processor

THE SYSTEM AFTER INSTALLATION

then invokes the command procedure RESTAR.COM. After a power recovery, the restart ROM program checks to determine whether the contents of memory are still valid (battery backup required) and whether the VAX/VMS restart routine can be located. If both conditions are satisfied, the restart ROM program passes control to the restart routine; otherwise, the system is rebooted using DEFBOO.COM.

Any condition other than power recovery results in a VAX/VMS fatal bugcheck and an automatic rebooting of the system using DEFBOO.COM.

5.3 BUILDING AND COPYING A VAX/VMS SYSTEM DISK

Occasionally, you may want to build or make a copy of your system software. VAX/VMS provides a command procedure named VMSKITBLD.COM as part of the system software for the purposes of building and copying a VAX/VMS operating system.

NOTE

Do not press CTRL/C or CTRL/Y while running VMSKITBLD.COM. Doing so causes the command procedure to terminate.

5.3.1 Building a VAX/VMS System Disk

You can use VMSKITBLD.COM to build a VAX/VMS system binary disk. For example, if you have a mixed-disk system (with RK07 and either RP06, RP07, RM03, RM05, RA60, RA80, or RA81 disks, but no magnetic tape drives), you can use VMSKITBLD.COM to transfer your VAX/VMS system from an RK07 disk cartridge to a larger, faster RP06, RP07, RM03, RM05, RA60, RA80, or RA81 disk.

Before you can use VMSKITBLD.COM to build a VAX/VMS system (on an RP06, for example) you must boot your system, as described at the beginning of this chapter. With this RK07 system running, proceed as follows:

1. Log in under the system manager's account.
2. Establish the following default directory:
§ SET DEFAULT SYS\$UPDATE
3. Place either an RP06, RP07, RM03, RM05, RA60, RA80, or RA81 disk on an appropriate drive and place it online. This will be the target disk in the system building procedure.
4. Type the following command to initiate the building of the system:
§ @VMSKITBLD
5. Supply the needed information about the source and target disks as prompted.

You then receive the following query:

Is this a BUILD, ADD, or COPY operation?:

Answer by typing BUILD.

THE SYSTEM AFTER INSTALLATION

NOTE

The BUILD option destroys all previous information on the target disk before it builds the system.

Continuation of the system disk-building procedure is indicated by the display of messages at your terminal. These messages either (1) prompt you for information needed to complete the copy operation, or (2) inform you of the current status of the building procedure. Each response should be followed by pressing the RETURN key.

For example:

```
Enter mounted source disk name (DDCU:): SYSS$SYSDEVICE:
Enter SOURCE disk top level system directory [default = SYS0]:
Enter target disk name (DDCU:): DRA0:
Enter the target disk's label [default = VAXVMSRL3]:
Enter TARGET disk top level system directory [default = SYS0]:
  It will be necessary to initialize the target disks(s).
Is the target disk, DRA0:, ready to be initialized? (Y/N): Y
  DRA0: allocated
%MOUNT-I-MOUNTED, VAXVMSRL3 mounted on DRA0:
Create directory entries on the target disk.
Copy the system executive files.
Copy the system library files.
Copy the system message files.
Copy the system manager files.
Copy the system update command files.
Copy the system EXE files.
Copy the system help files.
Write a bootblock.
Copy BLISS require files.
Copy coding examples.
Copy the EDTCAI files.
Copy the UETP files.
```

VMSKITBLD.COM informs you when the system disk is built by sending the following message to your terminal:

```
Kit is complete.
```

At this point, the disk contains all the required VAX/VMS files for a complete system. The system can be properly configured by bootstrapping using the default parameters and then using the AUTOGEN procedure to configure the target system.

To boot the system with the default parameters invoke the GEN version of the boot command file by typing:

```
>>> @dduGEN
```

When you have the SYSBOOT prompt (SYSBOOT>) type the following:

```
SYSBOOT> USE DEFAULT
SYSBOOT> CONTINUE
```

The system will boot at this point. You can then log in as system manager and run the AUTOGEN procedure described in Chapter 12 of the VAX/VMS System Management and Operations Guide.

5.3.2 Copying a VAX/VMS System Disk

You can also use VMSKITBLD.COM to copy the files of the VAX/VMS system disk to a target disk that already contains a valid VAX/VMS system. The copy operation modifies only system files; it leaves all user files intact.

Before you can use VMSKITBLD.COM to copy one system disk to another, your VAX/VMS system must be running and the source disk that you intend to copy must be mounted. Often, this source disk is the system disk from which the system was booted. Proceed as follows to copy the source disk to a target disk:

1. Log in under the system manager's account (initially, the account with the user name SYSTEM and the password MANAGER).
2. Establish the following default directory:

```
$ SET DEFAULT SYS$UPDATE
```

3. Place the target disk on an appropriate drive.
4. Type the following command to initiate the copy operation:

```
$ @VMSKITBLD
```

5. Supply the information needed about the source and target disks as prompted.

You then receive the following query:

```
Is this a BUILD, ADD, or COPY operation?:
```

Answer by typing COPY.

Continuation of the copy operation is indicated by the display of messages at your terminal. These messages either (1) prompt you for information needed to complete the copy operation, or (2) inform you of the current status of the copy operation (see Section 5.3.1).

VMSKITBLD.COM informs you when the copy operation is complete by sending the following message to your terminal:

```
Kit is complete.
```

At this point, the disk is ready to be bootstrapped.

5.4 BUILDING A STAND-ALONE BACKUP KIT

If you received your distribution kit on an RK07 or RA60 disk, the stand-alone Backup Utility is contained on that disk. In order to have a kit for stand-alone operations, you must copy stand-alone BACKUP from the disk to two floppy diskettes. To create a stand-alone BACKUP kit, proceed as follows:

1. Log in under the system manager's account, SYSTEM.
2. At the DCL prompt (\$), enter the following:

```
@SYS$UPDATE:STABACKIT
```

THE SYSTEM AFTER INSTALLATION

3. You will receive this request:

Specify target device (DDCU:):

Respond by typing the device name of the console drive:

CSA1:

4. The following message will appear:

Please place the first floppy in drive CSA1:
Press return when ready to continue:

5. After you have placed the floppy in the drive and pressed RETURN, you will receive these messages:

```
%MOUNT-I-MOUNTED, STABACKUPA mounted on CSA1:  
%CREATE-I-CREATED, CSA1:[SYSEX] created
```

If you are working at a console terminal, or if your terminal is enabled as an operator's terminal, you will also receive the following messages:

```
%OPCOM, <DD-MMM-YYYY HH:MM:SS>, message from user SYSTEM  
%SYSGEN-I-WRITECUR, CURRENT system parameters  
modified by process ID <ID number> into  
file SYS$SYSROOT:[SYSUPD]SYS.EXE;1
```

These messages will be followed with a list of the files copied. When you have received the complete list of the files copied, the following message will appear:

Please place the second floppy in drive CSA1:
Press return when ready to continue:

6. After you have placed the second floppy in the drive and pressed RETURN, you will receive these messages:

```
%MOUNT-I-MOUNTED, STABACKUPB mounted on CSA1:  
%CREATE-I-CREATED, CSA1:[SYSEX] created
```

They will be followed with a list of the files copied. Then you will receive the following message:

```
Kit is complete.  
Please replace the console medium.  
Press return when ready to continue.
```

Replace the console floppy and press RETURN.

At this point, you have completed building a stand-alone BACKUP kit.

APPENDIX A
FILES OF THE VAX/VMS SYSTEM

This appendix contains the names and brief descriptions of the files provided by DIGITAL on the VAX/VMS system distribution medium. The files on this medium are cataloged in ten directories. The names of the directories and descriptions of their contents follow.

1. [SYSCBI]

This directory is reserved for EDTCAI files.

2. [SYSERR]

This directory is reserved for the error log file (ERRLOG.SYS).

3. [SYSEXE]

As shown in Table A-1, this directory contains commonly used executable images of the VAX/VMS operating system.

4. [SYSHLP]

As shown in Table A-2, this directory contains text libraries for the HELP utility and other components.

Table A-8 lists the contents of the subdirectory, [SYSHLP.EXAMPLES]. This subdirectory contains sample driver programs, user-written system service programs, and other source code examples of interest.

5. [SYSLIB]

As shown in Table A-3, this directory contains various macro and object libraries as well as other files used for general reference.

6. [SYSMAINT]

This directory is reserved for system hardware diagnostic programs.

7. [SYSMGR]

As shown in Table A-4, this directory contains files used in managing the operating system. This directory is the default directory for the system manager's account.

8. [SYSMSG]

As shown in Table A-5, this directory contains system message text files.

FILES OF THE VAX/VMS SYSTEM

9. [SYSTEST]

As shown in Table A-6, this directory contains files used to run the User Environment Test Package (UETP).

10. [SYSUPD]

As shown in Table A-7, this directory contains files used in applying system updates.

Table A-1: Files Contained in Directory [SYSEXE]

File Name	Description
ACC.EXE	Accounting Utility
ANALYZOBJ.EXE	ANALYZE/IMAGE and ANALYZE/OBJECT image
ANALYZRMS.EXE	ANALYZE/RMS FILE image
AUTHORIZE.EXE	User authorization program
AUTOGEN.PAR	Parameter file for the Autogen command procedure
BACKTRANS.EXE	Back translator of DCL into MCR commands
BACKUP.EXE	Backup Utility
BAD.EXE	Bad Block Locator Utility
BADBLOCK.EXE	Dynamic bad block Files-11 ACP subprocess
BCK.EXE	RMS-11 backup utility
BOOT58.EXE	Reserved for future use
BOOTBLOCK.EXE	Reserved for future use
CANCEL.EXE	CANCEL command
CHECKSUM.EXE	Used during installation of VAX/VMS updates
CHKSUM.CLD	Used during installation of VAX/VMS updates
CLEDITOR.EXE	Command Definition Utility
CNDRIVER.EXE	DECnet CI datalink driver
CNV.EXE	RMS-11 file conversion utility
CNVACC.EXE	Convert V3.0 account file to V2.0 format
CONFIG.DAT	Data file for configuration
CONINTERR.EXE	Connect-to-Interrupt driver
CONVERT.EXE	Convert Utility
COPY.EXE	File copy utility
CRDRIVER.EXE	Card reader driver
CREATE.EXE	File and directory creation utility
CREATEFDL.EXE	CREATE/FDL image
CRF.EXE	Compatibility mode cross-reference utility
DBDRIVER.EXE	RP05 and RP06 disk driver
DCL.EXE	Command interpreter
DCLDEF.STB	Global definitions for DCL structures
DDDRIIVER.EXE	TU58 driver
DEF.EXE	RMS-11 interactive file definition utility
DELETE.EXE	File deletion/purge utility
DFN.EXE	RMS-11 noninteractive file definition utility
DIFF.EXE	File compare utility
DIRECTORY.EXE	Directory utility
DISKQUOTA.EXE	Disk Quota Utility
DISMOUNT.EXE	Volume dismount utility
DLDRIVER.EXE	RL02 disk driver
DMDRIVER.EXE	RK07 disk driver
DMP.EXE	RSX-11 File dump utility
DQDRIVER.EXE	RB730 driver
DRDRIVER.EXE	RM03 disk driver
DSC1.EXE	Files-11 Structure Level 1 disk save and compress utility

(continued on next page)

FILES OF THE VAX/VMS SYSTEM

Table A-1 (Cont.): Files Contained in Directory [SYSEXE]

File Name	Description
DSC2.EXE	Files-11 Structure Level 2 disk save and compress utility
DSP.EXE	RMS-11 file attribute display utility
DTR.COM	DTRECV.EXE server initiating procedure
DTRECV.EXE	DTSEND server
DTSEND.EXE	DECnet logical links test program
DUDRIVER.EXE	UDA disk driver
DUMP.EXE	DUMP utility
DXDRIVER.EXE	RX01 console floppy diskette driver
DYDRIVER.EXE	RX02 floppy diskette driver
DZDRIVER.EXE	DZ11 port driver
EDF.EXE	File definition language editor
EDI.EXE	RSX-11M text editor
EDT.EXE	EDT text editor
ERRFMT.EXE	Error logging facility
EVL.EXE	DECnet event logging program
EVL.COM	Command file used by DECnet error logging
F11AACP.EXE	Files-11 Structure Level 1 ancillary control process
F11BACP.EXE	Files-11 Structure Level 2 ancillary control process
FAL.COM	FAL start-up procedure
FAL.EXE	DECnet file access listener
FLX.EXE	File Transfer Utility
HEXZAP.EXE ¹	Hexadecimal image patching utility
HLD.COM	Command procedure used by HLD.EXE
HLD.EXE	Down line task loading program
IFL.EXE	RMS-11 utility index load program
IMGDEF.STB	Global definitions for image activator structures
INILOA.EXE	System initialization program
INIT.EXE	Disk device initialization utility
INPSMB.EXE	Card reader input symbiont
INSTALL.EXE	Utility that installs known images
JBCSYSQUE.EXE	Queuing facility
JOBCTL.EXE	Job controller/symbiont manager
LADRIVER.EXE	LPA-11 driver
LALOAD.EXE	Accepts commands from or sends requests to LALOADER to load LPA-11 microcode
LALOADER.EXE	Loads LPA-11 microcode upon power recovery or upon request from LALOAD
LBR.EXE	RSX-11M librarian
LCDRIVER.EXE	DMF-32 lineprinter driver
LIBRARIAN.EXE	Librarian Utility
LINK.EXE	Linker
LOGINOUT.EXE	Login/logout utility
LPDRIVER.EXE	Line printer driver
MAC.EXE	MACRO-11 assembler
MACRO32.EXE	VAX-11 MACRO assembler
MAIL.EXE	Mail Utility
MAIL.COM	Command procedure used by DECnet mail
MAILEDIT.COM	Default MAIL editing command procedure
MBXDRIVER.EXE	Shared memory mailbox driver
MCR.EXE	MCR command interpreter

1. Not supported by DIGITAL.

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FILES OF THE VAX/VMS SYSTEM

Table A-1 (Cont.): Files Contained in Directory [SYSEXE]

File Name	Description
MERGE.EXE	Merge Utility
MESSAGE.EXE	Message compiler
MIRROR.COM	MIRROR start-up procedure
MIRROR.EXE	DECnet node loopback server
MONITOR.EXE	Monitor Utility
MP.EXE	VAX-11/782 multiprocessing code
MP.STB	Symbol table for MP.EXE
MTAAACP.EXE	Magnetic tape ancillary control process
NCP.EXE	Network control program
NETACP.EXE	DECnet ancillary control process
NETDEF.STB	Symbol table for network definition
NETDRIVER.EXE	DECnet logical link driver
NML.COM	NML server start-up procedure
NML.EXE	DECnet network management listener
NOTICE.TXT	Text file that can contain announcements to system users
OPCCRASH.EXE	System shutdown utility
OPCOM.EXE	Operator communications utility
PADRIVER.EXE	CI780 port driver
PAGEFILE.SYS	System paging file
PARAMS.DAT	Data file for parameter values
PAT.EXE	RSX-11M object module patch utility
PATCH.EXE	VAX-11 image file patch utility
PHONE.COM	PHONE start-up procedure
PHONE.EXE	Phone Utility
PIP.EXE	RSX-11M peripheral interchange utility
PRTSMB.EXE	Print symbiont
PUDRIVER.EXE	CI UDA port driver
QUEMAN.EXE	Queue managing utility
RECLAIM.EXE	CONVERT/RECLAIM image
REMACP.EXE	Remote device ACP
RENAME.EXE	File rename utility
REPLY.EXE	Message broadcasting facility
REQUEST.EXE	Operator request facility
RMS.EXE	Record Management Services
RMSDEF.STB	Global definitions for VAX-11 RMS structures
RMSSHARE.EXE	File sharing utility program
RST.EXE	RMS-11 file restoration utility
RSX.EXE	RSX-11M application migration executive main program
RTB.EXE	Utility that writes an RT-11 bootstrap on disk
RTPAD.EXE	Remote terminal command interface
RTTDRIVER.EXE	Remote terminal driver
RUNET.EXE	Facility that runs detached images
RUNOFF.EXE	Text formatting utility
SCSDEF.STB	Symbol table for loadable routines
SCSLOA.EXE	Loadable routines used by SCS
SDA.EXE	System Dump Analyzer Utility
SEARCH.EXE	File search utility
SECDMC.SYS	DECnet downline secondary loader for DMC11
SECDP.SYS	DECnet downline secondary loader for DP11
SECDQ.SYS	DECnet downline secondary loader for DP11
SECDU.SYS	DECnet downline secondary loader for DQ11
SECDUP.SYS	DECnet downline secondary loader for DUP11
SECDUV.SYS	DECnet downline secondary loader for DUV11
SET.EXE	SET command processor

(continued on next page)

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Table A-1 (Cont.): Files Contained in Directory [SYSEXE]

File Name	Description
SETP0.EXE	SET MESSAGE command processor
SHOW.EXE	SHOW command processor
SHUTDOWN.COM	System shutdown command procedure
SLP.EXE	RSX-11M source file editing utility
SORT32.EXE	SORT command processor
SOS.EXE	SOS text editor
SRT.EXE	SORT-11 utility
STABACKUP.EXE	Stand-alone Backup Utility
STARTUP.COM	System start-up command procedure
STARTUP.MIN	System minimum start-up command procedure
STASYSGEN.EXE	Stand-alone System Generation Utility
STOPREM.EXE	Stop REMACP utility
SUBMIT.EXE	Batch job submission utility
SUMSLP.EXE	Source file editor
SWAPFILE.SYS	System swap file
SYE.EXE	Utility that formats the error log file
SYS.EXE	Operating system image file
SYS.MAP	Map of the operating system
SYS.STB	Global symbol table of operating system
SYSBOOT.EXE	System bootstrap utility
SYSDEF.STB ¹	Global definitions for executive structures
SYSDUMP.DMP	System dump file
SYSGEN.EXE	System Generation and Configuration Utility
SYSINIT.EXE	Operating system initialization image
SYSLOA730.EXE	VAX-11/730 system image file
SYSLOA750.EXE	VAX-11/750 system image file
SYSLOA780.EXE	VAX-11/780 system image file
SYSUAF.DAT	User authorization data file
SYSUAF.RL2	Unmodified copy of SYSUAF.DAT
TCX.EXE	Runoff indexing utility
TECO.EXE ¹	TECO text editor
TERDMC.SYS	DECnet downline tertiary loader
TERDP.SYS	DECnet downline tertiary loader
TERDQ.SYS	DECnet downline tertiary loader
TERDU.SYS	DECnet downline tertiary loader
TERDUP.SYS	DECnet downline tertiary loader
TERDUV.SYS	DECnet downline tertiary loader
TFDRIVER.EXE	TU78 driver
TKB.EXE	RSX-11M task builder
TMDRIVER.EXE	Magnetic tape driver
TOC.EXE	Runoff table of contents utility
TSDRIVER.EXE	TS11 Magnetic tape driver
TTDRIVER.EXE	Terminal driver
TTRDVFY.EXE	Auxiliary terminal driver module
TYPE.EXE	Type utility
UFD.EXE	User file directory creation utility
UNLOCK.EXE	File unlock utility
VERIFY.EXE	ANALYZE/DISK_STRUCTURE image
VMB.EXE	VAX/VMS primary bootstrap
VMMOUNT.EXE	Volume mount utility
VMSHELP.EXE	Help Utility
WRITEBOOT.EXE	System volume bootblock writing utility
XADRIVER.EXE	Reserved for future use

1. Not supported by DIGITAL.

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FILES OF THE VAX/VMS SYSTEM

Table A-1 (Cont.): Files Contained in Directory [SYSEXE]

File Name	Description
XDDRIVER.EXE	DECnet DMP-11 datalink driver
XFDRIVER.EXE	DR32 system interconnect interface driver
XFLOADER.EXE	DR32 microcode loader utility
XGDRIVER.EXE	DECnet DMF datalink driver
XMDRIVER.EXE	DMC-11 Synchronous Communications Line Interface driver
XWDRIVER.EXE ¹	DUP-11 device driver
YCDRIVER.EXE	DMF32 asynchronous port driver
ZAP.EXE	RSX-11M task/file octal patch utility

1. Not supported by DIGITAL.

Table A-2: Files Contained in Directory [SYSHLP]

File Name	Description
ANLRMSHLP.HLB	Help library for ANALYZE/RMS_FILE command
DEBUG.HLB	Debugger help library
DISKQUOTA.HLB	Help library for Disk Quota Utility
EDFHLP.HLB	Help library for FDL
EDTHELP.HLB	EDT help library
EDTVT100.DOC	EDT keypad layout for VT100
EDTVT52.DOC	EDT keypad layout for VT52
EXAMPLES.DIR	Examples directory
HELPLIB.HLB	Default (DCL) help library
INSTALHLP.HLB	Help library for Install Utility
MAILHELP.HLB	Mail Utility help library
NCPHELP.HLB	Help library for NCP
PATCHHELP.HLB	Help library for PATCH
PHONEHELP.HLB	Help library for PHONE
SDA.HLB	System Dump Analyzer help library
SYSGEN.HLB	Help library for SYSGEN
TECO.HLB	TECO help library
UAFHELP.HLB	Help library for user authorization file
VMSTLRHLP.HLB	Help library for the tailoring facility

Table A-3: Files Contained in Directory [SYSLIB]

File Name	Description
CDDSHR.EXE	Dummy CDD image for layered products
CLIMAC.REQ	Structure definitions for BLISS programs interfacing with the command language interpreter
CONVSHR.EXE	CONVERT, CONVERT/RECLAIM shareable image
CRFSHR.EXE	Cross-reference shareable image
DCLTABLES.EXE	DCL command tables
DEBUG.EXE	VAX/VMS debugging facility
DELTA.EXE	DELTA multimode debugging tool image
DELTA.OBJ	Alternate VAX/VMS debugging tool

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FILES OF THE VAX/VMS SYSTEM

Table A-3 (Cont.): Files Contained in Directory [SYSLIB]

File Name	Description
DISMNTSHR.EXE	DISMOUNT shareable image
FDLSHR.EXE	FDL parsing shareable image
FORDEF.FOR	FORTRAN INCLUDE file: FOR\$ symbols
FORIOSDEF.FOR	FORTRAN INCLUDE file: IOSTAT error codes
IMAGELIB.OLB	System default shareable image library
LBRSHR.EXE	Librarian shareable image
LIB.MLB	Operating system macro library
LIB.REQ	Structure definitions of executive internals for use by BLISS programs
LIBDEF.FOR	FORTRAN program utility INCLUDE files
MCRTABLES.EXE	MCR command tables
MOUNTSHR.EXE	MOUNT shareable image
MTHDEF.FOR	FORTRAN INCLUDE files: MATH\$ symbols
NMLSHR.EXE	DECnet management listener shareable image
ODT.OBJ	RSX-11M debugging tool
RMS11.ODL	RMS-11 sample overlay description
RMS11S.ODL	RMS-11 overlay descriptor
RMS11X.ODL	RMS-11 overlay descriptor
RMS12X.ODL	RMS-11 overlay descriptor
RMSLIB.OLB	RMS-11 object library
RMSMAC.MLB	RMS-11 macro library
RSXMAC.SML	RSX-11M compatibility mode macro library
RSXSHR.EXE	Shareable image of RSX-11M application migration executive
RSXUSR.EXE	Shareable image of RSX-11M application migration executive
RTLVECTOR.OBJ	VMSRTL.EXE vector (reserved for DIGITAL use)
SCRSHR.EXE	RTL terminal screen procedures shareable image
SIGDEF.FOR	FORTRAN program utility INCLUDE files
STARLET.MLB	System macro library
STARLET.OLB	System object library and Run-Time Library
STARLET.REQ	User interface structures for use by BLISS programs
SUMSHR.EXE	Source update merge shareable image
SYSLIB.OLB	RSX-11M object library
TPAMAC.REQ	Structure definitions for BLISS programs using TPARSE
TRACE.EXE	VAX/VMS error traceback facility
VMSRTL.EXE	Run-Time Library shareable image
XFDEF.FOR	Definitions available for programs using DR780 support routines

Table A-4: Files Contained in Directory [SYSMGR]

File Name	Description
ACCOUNTING.DAT	Accounting data file
CHARTYPE.DAT	Line printer characteristics for print symbiont
FORMSTYPE.DAT	Line printer forms description for print symbiont
LPAll1STRT.COM	LPAll site-specific start-up command procedure

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Table A-4 (Cont.): Files Contained in Directory [SYSMGR]

File Name	Description
NETICP.COM ¹	DECnet checkout procedure
OPERATOR.LOG	Operator message log file
RTTLOAD.COM	Remote terminal loader
STARTNET.COM	DECnet start-up procedure
SYSHUTDOWN.COM	Site-specific system shutdown command procedure
SYSTARTUP.COM	Site-specific system start-up command procedure
VMSIMAGES.COM	Invoked at start-up to install known images
VMSIMAGES.DAT	Data file for VMSIMAGES.COM

1. Requires DECnet-VAX optional product for use.

Table A-5: Files Contained in Directory [SYSMSG]

File Name	Description
QIOSYM.MSG	RSX-11M compatibility mode QIO message file
SOS.HLP	Help file for SOS text editor
SYSMSG.EXE	System message file
SYSMSG.TLB	System message file text library

Table A-6: Files Contained in Directory [SYSTEST]

File Name	Description
APPEND.PIP	Tests PIP append function
DMPASRC.DMP	Master file to test ASCII mode in DMP
DMPBYOC.DMP	Master file to test byte octal format in DMP
DMPDATA.DMP	Good input file for DMP test
DMPDCWD.DMP	Master file to test decimal word format in DMP
MCLBR1.MAC	Macro to test LBR utility
MCLBR2.MAC	Macro to test LBR utility
MCLBR3.MAC	Macro to test LBR utility
OBJLBR1.OBJ	Object module to test LBR utility
OBJLBR2.OBJ	Object module to test LBR utility
OBJLBR3.OBJ	Object module to test LBR utility
PATCHED.PAT	Tests PAT utility
PATCHPAT.OBJ	Patch file to test PAT utility
PIPDATA.PIP	Good input file for PIP test
RANDOM.FLX	Tests FLX utility
SATSSF01.EXE	Tests for event flag services and \$SETEXV service
SATSSF02.EXE	Tests for event flag services
SATSSF03.EXE	Tests for logical name services
SATSSF04.EXE	Tests for time services
SATSSF05.EXE	Tests for process control services
SATSSF06.EXE	Tests for process control services
SATSSF07.EXE	Tests for process control services

(continued on next page)

FILES OF THE VAX/VMS SYSTEM

Table A-6 (Cont.): Files Contained in Directory [SYSTEST]

File Name	Description
SATSSF08.EXE	Tests for \$CMEXEC and \$GETMSG services
SATSSF09.EXE	Tests for I/O services
SATSSF10.EXE	Tests for send system services
SATSSF11.EXE	Tests for I/O services
SATSSF12.EXE	Tests for memory management services
SATSSF13.EXE	Tests for memory management services
SATSSF14.EXE	Tests for memory management services
SATSSF15.EXE	Tests for handler services and \$ADJ
SATSSF16.EXE	Tests for \$FAO services and \$\$NDERR
SATSSF17.EXE	Tests for \$INPUT, \$OUTPUT, \$QIO, and \$QIOW services
SATSSF18.EXE	Tests for \$CREPRC, \$SETPRV, and \$UNWIND services
SATSSS01.EXE	Tests for I/O services
SATSSS05.EXE	Tests for send message services
SATSSS07.EXE	Tests for \$CREMBX, \$DELMBX services
SATSSS08.EXE	Tests for \$BRDCST service
SATSSS09.EXE	Tests for \$FAO, \$FAOL SERVICES
SATSSS10.EXE	Tests for \$GETMSG and \$PUTMSG services
SATSSS22.EXE	Tests for condition handling services
SATSSS26.EXE	Tests for timer and AST services
SATSSS30.EXE	Tests for logical name services
SATSSS35.EXE	Tests for \$CREPRC service
SATSSS36.EXE	Tests for \$DELPRC service
SATSSS37.EXE	Tests for \$\$SUSPND service
SATSSS38.EXE	Tests for \$RESUME service
SATSSS39.EXE	Tests for \$HIBER service
SATSSS40.EXE	Tests for \$WAKE service
SATSSS41.EXE	Tests for \$EXIT service
SATSSS42.EXE	Tests for \$FORCEX service
SATSSS43.EXE	Tests for exit- and change mode-handling services
SATSSS44.EXE	Tests for \$SETPRN service
SATSSS45.EXE	Tests for \$SETPRI service
SATSSS46.EXE	Tests for \$SETRWM service
SATSSS47.EXE	Tests for \$SETPRV service
SATSSS50.EXE	Tests for \$ASCEFC, \$DACEFC services
SATSSS52.EXE	Tests for \$DLCEFC service
SATSSS53.EXE	Tests for \$SETEF service
SATSSS54.EXE	Tests for \$CLREF service
SATSSS55.EXE	Tests for \$READEF service
SATSSS56.EXE	Tests for wait services
SATSSS60.EXE	Tests for time conversion services
SATSSS61.EXE	Tests for \$\$SCHDWK, \$CANWAK services
SATSSS70.EXE	Tests for \$EXPREG service
SATSSS71.EXE	Tests for \$CNTREG service
SATSSS72.EXE	Tests for \$CRETVA service
SATSSS73.EXE	Tests for \$DELTVA service
SATSSS74.EXE	Tests for global section services (currently disabled)
SATSSS78.EXE	Tests for \$LKWSET, \$ULWSET services
SATSSS79.EXE	Tests for \$LCKPAG, \$ULKPAG services
SATSSS80.EXE	Tests for \$PURGWS service
SATSSS81.EXE	Tests for \$ADJWSL service
SATSSS82.EXE	Tests for \$SETPRT service
SATSSS83.EXE	Tests for \$SETSWM service

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FILES OF THE VAX/VMS SYSTEM

Table A-6 (Cont.): Files Contained in Directory [SYSTEST]

File Name	Description
SATSSS90.EXE	Tests for change mode services
SATSSS91.EXE	Tests for \$ADJSTK service
SATSUT01.EXE	Utility module for SATSSF05, SATSSF18, and SATSSS35
SATSUT04.EXE	Utility module for SATSSS50
SATSUT05.EXE	Utility module for SATSSS38
SATSUT06.EXE	Utility module for SATSSS40
SATSUT07.EXE	Utility module for SATSSS61
SATSUT08.EXE	Utility module for SATSSS37, SATSSS45
SATSUT09.EXE	Utility module for SATSSS41
SATSUT10.EXE	Utility module for SATSSS52
SATSUT11.EXE	Utility module for SATSSS56
SATSUT12.EXE	Utility module for abort feature
SATSUT13.EXE	Utility module for SATSSS42
SATSUT14.EXE	Utility module for SATSSS36
SLPDATA.SLP	Input data to test SLP utility
SLPLIST.SLP	Good output file for SLP test
SLPOUT.SLP	Good output file for SLP test
SMFILE1.DAT	Master data file for VAX-11 SORT test
SMFILE2.DAT	Master data file for VAX-11 SORT test
SMFILE3.DAT	Master data file for VAX-11 SORT test
SMFILE4.DAT	Master data file for VAX-11 SORT test
SORT.DAT	Input data file for VAX-11 SORT tests
SORTED.FLX	Tests FLX utility
TST01A.EXE	Test for QIO, QIOW (RSX-11M directive)
TST01B.EXE	Test for QIO, QIOW (RSX-11M directive)
TST02A.EXE	Test for event flags (RSX-11M directive)
TST03A.EXE	Test for GET TIME, MARK TIME, RUN (RSX-11M directive)
TST03B.EXE	Test for GET TIME, MARK TIME, RUN (RSX-11M directive)
TST06A.EXE	Test for MCR command line, specify SST vector table (RSX-11M directive)
TST07A.EXE	Test for AST services (RSX-11M directive)
TST11A.EXE	Test for SUSPEND, RESUME (RSX-11M directive)
TST11B.EXE	Test for SUSPEND, RESUME (RSX-11M directive)
TST12A.EXE	Test for ABORT, EXIT-IF (RSX-11M directive)
TST12B.EXE	Test for ABORT, EXIT-IF (RSX-11M directive)
TST15A.EXE	Test for ASSIGN LUN, GET LUN (RSX-11M directive)
TST16A.EXE	Test for CANCEL SCHEDULED requests (RSX-11M directive)
TST16B.EXE	Test for CANCEL SCHEDULED requests (RSX-11M directive)
TST16C.EXE	Test for CANCEL SCHEDULED requests (RSX-11M directive)
TST17A.EXE	Test for CANCEL MARK TIME request (RSX-11M directive)
TST17B.EXE	Test for CANCEL MARK TIME request (RSX-11M directive)
TST20A.EXE	Test for GET TASK PARAMS, REQUEST, RUN (RSX-11M directive)
TST20B.EXE	Test for GET TASK PARAMS, REQUEST, RUN (RSX-11M directive)
UETCOMP00.COM	Main script for compatibility mode utility tests

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Table A-6 (Cont.): Files Contained in Directory [SYSTEST]

File Name	Description
UETCOMP00.DAT	Data file for compatibility mode utility test
UETCOMP02.COM	Main script for RSX-11M executive directive test
UETCOMS00.EXE	DMC and DMR test file
UETCSOS01.DAT	Data file for SOS test
UETCSOS02.COM	Commands for SOS test
UETCSOS03.DAT	Known good data after SOS editing
UETDISK00.EXE	Disk device test
UETDMPF00.EXE	DMP and DMF32 test file
UETDNET00.COM	Command procedure for DECnet test
UETDNET00.DAT	Data file for DECnet test
UETDR1W00.EXE	DR11W device test
UETDR7800.EXE	DR780 device test
UETFORT01.DAT	FORTRAN data file used by UETFORT01
UETFORT97.EXE	Compiled version of UETFORT01 for load test
UETFORT98.EXE	Compiled version of UETFORT02 for load test
UETFORT99.EXE	Compiled program for load test
UETINIT00.EXE	Gets VAX/VMS configuration and builds UETINIDEV.DAT
UETINIT01.EXE	Quick checks all devices for testability
UETLOAD00.DAT	Controls load test with various numbers of users
UETLOAD02.COM	User script for load test
UETLOAD03.COM	User script for load test
UETLOAD04.COM	User script for load test
UETLOAD05.COM	User script for load test
UETLOAD06.COM	User script for load test
UETLOAD07.COM	User script for load test
UETLOAD08.COM	User script for load test
UETLOAD09.COM	User script for load test
UETLOAD10.COM	User script for load test
UETLOAD11.COM	User script for load test
UETLOCK00.EXE	Local lock manager test file
UETLPK00.EXE	LP11-K test file
UETMA7800.EXE	MA780 test file
UETMEMY01.EXE	Tests high page faulting rates in load test
UETNATV00.DAT	Script that runs VAX/VMS system service tests
UETNETS00.EXE	DECnet counter test file
UETNRMS00.COM	Main script for VAX-11 RMS tests
UETNRMS00.DAT	VAX-11/RMS test data file
UETNRMS01.EXE	Test program to exercise VAX-11 RMS functions
UETNUTL00.DAT	Native mode utility data file
UETNUTL00.COM	Native mode utilities command procedure
UETP.COM	Main command procedure for entire UETP
UETPHAS00.EXE	Phase controller test file
UETSSMM00.EXE	Memory management system service test file
UETSUPDEV.DAT	Supported device data file
UETTAPE00.EXE	Tests magnetic tapes on one controller
UETTTYS00.EXE	Tests terminals for one controller

FILES OF THE VAX/VMS SYSTEM

Table A-7: Files Contained in Directory [SYSUPD]

File Name	Description
AUTOGEN.COM	Command procedure to determine parameter values
BLISSREQ.TLR	List of files in the BLISS tailoring group
BOOTBLDR.COM	Multiprocessing console floppies command procedure
BOOTUPD.COM	Command procedure that updates VAX/VMS bootstrap file on console floppy diskette
CONSCOPY.COM	Command procedure that copies console floppy diskette
DECNET.TLR	List of files in the DECnet tailoring group
DEVELOP.TLR	List of files in the DEVELOP tailoring group
DXCOPY.COM	Command procedure that copies files from console floppy diskette and restores files to floppy diskette
EXAMPLES.TLR	List of files in the EXAMPLE tailoring group
FILETOOLS.TLR	List of files in the TOOLS tailoring group
HELP.TLR	List of files in the HELP tailoring group
LIBRARY.TLR	List of files in the LIBRARY tailoring group
LINEPAGE.COM	Command procedure to change number of lines per page
LINEPAGE.DAT	Datafile used by LINEPAGE.COM
MANAGER.TLR	List of files in the MANAGER tailoring group
MISCTOOLS.TLR	List of files in the MISCTOOLS tailoring group
OBSOLETE.TLR	List of files in the OBSOLETE tailoring group
QUEUES.TLR	List of files in the QUEUES tailoring group
REQUIRED.TLR	List of files in the REQUIRED tailoring group
RSX.TLR	List of files in the RSX tailoring group
SETDEFBOO.COM	Command procedure that sets default boot command file
STABACKIT.COM	Command procedure that builds stand-alone BACKUP to media
SWAPFILES.COM	Command procedure that creates swapping, paging, and system dump files of appropriate size for system being installed
TEXTTOOLS.TLR	List of files in the TEXTTOOLS tailoring group
UETP.TLR	List of files in the UETP tailoring group
VMSINSTAL.COM	Command procedure to install EDTCAI and maintenance updates
VMSKITBLD.COM	Command procedure that builds and copies VAX/VMS distribution disk
VMSKITBLD.DAT	List of files in VAX/VMS system that drives VMSKITBLD.COM
VMSTAILOR.COM	Tailoring facility command procedure (supported only on VAX-11/730)
VMSUPDATE.COM	System update command procedure

FILES OF THE VAX/VMS SYSTEM

Table A-8: Files Contained in Directory [SYSHLP.EXAMPLES]

File Name	Description
ADDRIVER.MAR	Example device driver for AD11-K
CONNECT.COM	Command procedure that connects device for LABIO system
DRCOPY.PRM	Parameter file for DRCOPY routines
DRCOPYBLD.COM	Command procedure to build DRCOPY.EXE
DRMASTER.MAR	VAX-11 RMS interface for DRMASTER.FOR
DRMASTER.FOR	Master subroutines for DRCOPY
DRSLAVE.FOR	Slave subroutines for DRCOPY
DRSLV.MAR	VAX-11 RMS interface for DRSLAVE.FOR
GBLSECUFO.MAR	Opens file that is to be used as a global section for LABIO system
LABCHNDEF.FOR	Defines information associated with each A/D for LABIO system
LABIO.OPT	Linker options file for linking modules to be used in LABIO system
LABIOACQ.FOR	Acquires data for LABIO system
LABIOCIN.MAR	Contains connect-to-interrupt call for LABIO system
LABIOCIN.OPT	Linker options file for linking LABIO DATA ACQ
LABIOCOM.FOR	Attaches a LABIO user program to the LABIO system modules of the LABIO system
LABIOCOMP.COM	Command procedure to compile and assemble the modules of the LABIO system
LABIOCON.FOR	Handles user requests and modifies the data base for LABIO system
LABIOLINK.COM	Command procedure to link LABIO system
LABIOPEAK.FOR	Samples channel for peak data in LABIO system
LABIOSAMP.FOR	Samples channel in intervals, reporting date, time, and average value on logical device for LABIO system
LABIOSEC.FOR	Places LABIO SECTION on page boundary
LABIOSTAT.FOR	Displays status of the A/D channels for LABIO system
LABIOSTRT.COM	Command procedure to start LABIO system
LABMBXDEF.FOR	Defines mailbox block for LABIO system
LBRDEMO.COM	Command procedure to create Librarian DEMO.EXE
LBRDEMO.FOR	Librarian demo (first part)
LBRMAC.MAR	Librarian demo (second part)
LPATEST.FOR	LP11-K test program
LPMULT.B32	Example program for line printer
PEAK.FOR	Peak selection routine in LABIO system
SCRFT.MAR	Optional screen package (SCR\$.in RTL) extension to handle foreign terminals
TDRIVER.MAR	Template for user-written driver
TESTLABIO.FOR	Tests LABIO system
USSDISP.MAR	Sample user system service dispatch and service examples
USSLINK.COM	Link command procedure for USSDISP
USSTEST.MAR	Sample program to invoke one of the example user services implemented in USSDISP
USSTSTLNK.COM	Link command procedure for USSTEST
XADRIVER.MAR	DR-11 driver
XALINK.MAR	Sample DR11W to DR11W link program
XAMESSAGE.MAR	DR-11 test program
XATEST.COM	Used to set up XALINK.MAR
XATEST.FOR	Companion program for XAMESSAGE
XIDRIVER.MAR	Example driver for parallel port on DMF32

APPENDIX B

BUILDING THE VAX/VMS SOURCE KIT

The VAX/VMS source kit is a set of three magnetic tapes that contains the source files, object files, command files, language processors, and utilities necessary to build any of the standard components of the VAX/VMS operating system. (The languages and utilities used in this building operation are not supported by DIGITAL.)

Before you begin building, you must make sure there is enough disk space available. A single component might require up to 40,000 free blocks. To build the entire system you will need at least one RP06 (or its equivalent) for the source kit and one RM05 (or its equivalent) to use as the target of the build (for object files, listings, and so on).

To use the VAX/VMS source kit, you must mount the first reel of the kit (the tape labeled VMSRC1) and restore the file [SYSBLDCOM]SRCINSTAL.COM. (This command procedure, when invoked, will ask you questions in order to properly define the system building environment.)

To mount the reel and restore the file, type the following DCL commands:

```
ALLOCATE MTcn:
MOUNT/FOREIGN MTcn: VMSRC1
BACKUP MTcn:SYSBLDCOM/SELECT=(SRCINSTAL.COM) DBcn:[*...]
```

When the file has been restored, dismount the tape. Then complete the source kit installation (for either a partial or the entire system build) by issuing the following DCL command:

```
@DBcn:[SYSBLDCOM]SRCINSTAL.COM
```

This invokes a command procedure to create a system build account containing the logical name definitions and private command definitions needed to set up the proper environment for a system build. To log in to this account, specify the username SYSTEMBUILD and the password CAVEAT_EMPTYOR.

Finally, to obtain a general description of the source kit you can print a copy of the file [SYSBLDCOM]SOURCEKIT.DOC.

APPENDIX C

INSTALLING OPTIONAL SOFTWARE PRODUCTS

The procedure for performing optional software installations is automated, and thus requires little involvement on your part beyond (1) setting up the proper conditions for the installation and (2) responding to queries and prompting messages displayed as the installation proceeds.

The VMSUPDATE.COM procedure drives optional software installations. Once invoked, it uses command procedures contained in the distribution media. These command procedures direct the installation procedure by means of queries and instructions sent to the terminal. Most queries require simple YES or NO answers. You respond with Y or N, as appropriate.

C.1 DISTRIBUTION KITS

Optional software installations for the VAX-11/780 are distributed on floppy diskettes (one or more depending on the installation).

Each floppy is labeled with both a name and a serial number that differentiates it from others in the distribution kit. Check that your kit contains all the floppies listed in the bill of materials.

C.2 PREPARATIONS FOR AN OPTIONAL SOFTWARE INSTALLATION

To prepare for the installation, do the following:

1. Back up your system disk (see Section 3.7). Optional software products may delete older product versions before installing new ones, so it is advisable to back up your system disk before attempting any software installation. It is also advisable because a system failure at a critical point of the installation could leave unusable files.
2. Log in at the console terminal under the system manager's account, SYSTEM.

(If the SYSGEN parameters MOUNTMSG or DISMOUMSG at your site have been set to 1, you will receive a message from OPCOM each time a disk, tape, or floppy is mounted or dismounted. These messages are normally disabled, but if they have been activated and you are installing from a console terminal, they will appear from one to thirty seconds after each mount or dismount.)

3. Prevent users from gaining access to the system by executing the SHUTDOWN.COM command procedure. Then reboot the system.

INSTALLING OPTIONAL SOFTWARE PRODUCTS

4. Set the login quota to 0 by typing:

```
$ SET LOGINS/INTERACTIVE = 0
```

5. Be sure that you have set your default to the disk that is to receive the update. This is typically the system disk with the logical name SYS\$SYSROOT.

If you are installing optional software on a system disk other than the disk from which you booted, you must define a logical name for the target disk. For example, if you are installing software on an RK07 disk on the first drive, issue the following commands:

```
$ DEFINE TARGET __DMA1:[SYS0.]
```

```
$ SET DEFAULT TARGET:[SYSUPD]
```

Note that not all optional software kits allow installation to a device other than the system disk. Consult the documentation that came with the optional software kit.

6. If you are installing to the current system disk, establish the following default:

```
$ SET DEFAULT SYS$UPDATE
```

C.3 INSTALLING OPTIONAL SOFTWARE PRODUCTS

Type the following command to initiate the installation:

```
$ @VMSUPDATE
```

You will receive the following message text at the terminal:

VMS Update Procedure

This command procedure performs VAX/VMS software updates and optional software installations for VAX/VMS Release 3. During this sequence, the standard console medium will not be present in the console drive. Therefore, the system may be vulnerable to a power failure or other fatal crash. If a system crash should occur during this period the update sequence can be restarted at the beginning of the first incomplete update.

Dismount the current console medium.

Please place the first floppy in the console drive

After placing the floppy in the CSA1 drive, you will receive the following query:

```
Are you ready to continue?:
```

If you type Y, the installation proceeds.

If you type N, the request to insert the floppy in the drive and the query "Are you ready to continue?" will be repeated.

INSTALLING OPTIONAL SOFTWARE PRODUCTS

Continuation of the update is indicated by the display of the messages:

```
%MOUNT-I-MOUNTED , <label> mounted on _CSA1:
```

These messages are followed by questions and prompts, the contents of which depend on the product.

C.4 INSTALLATION COMPLETION

When the installation is completed, control is returned to the command procedure VMSUPDATE.COM, which sends the following messages to the terminal:

```
Are there more kits to process?:
```

If you type Y, you will receive the following request, and the installation procedure begins again.

```
Please place the first floppy in the console drive.
```

If you have no further installations, type N. You then receive the following message and DCL prompt:

```
Requested update sequence complete.  
$
```

The procedure is now complete.

To transfer control of the system to the updated version of VAX/VMS, shut down the processor and reboot the system.

Finally, after installing an optional software product, you should back up the system disk.

APPENDIX D
UPGRADING THE SYSTEM

If for some reason you have not already upgraded your system from Version 2.5 to Version 3.0, this appendix describes the procedure you should follow.

CAUTION

Do not attempt to apply any Version 3 maintenance update without first upgrading the system to Version 3.0. The upgrade works only on a Version 2.5 system.

All that the user needs in order to perform the upgrade is the software distribution kit and a blank floppy diskette.

You should read this entire appendix before attempting to do an upgrade to make sure you are aware of all the requirements of the upgrade.

It is important to note that the upgrade procedure will work correctly only as long as your system directories are consistent with those set up by the VAX/VMS installation procedure. If you have changed the names of the directories, or deleted VAX/VMS files from them, the upgrade procedure may not work correctly.

NOTE

As part of the upgrade, the paging, swapping, dump, and authorization files are purged back to one version. Everything in the [SYSERR] directory is deleted. All operator and accounting logs are deleted. If you want to keep any logs, move them to a user directory before starting the upgrade. It is also suggested that you back up your system disk before upgrading because some V2.5 files have been made obsolete by V3.0 and will be deleted when you upgrade.

D.1 RESTARTABLE UPGRADE PROCEDURE

The upgrade procedure can be restarted. The system is booted three times as part of the upgrade. A restart will continue from the last

UPGRADING THE SYSTEM

time the system was booted. The system manager must boot in the manner requested by the upgrade procedure after the last planned system shutdown for the upgrade to automatically continue.

In order to make the upgrade procedure restartable at any time, the new Version 3.0 system files are placed in a different directory from the existing Version 2.5 system files. Therefore, at least one set of system files is bootable at all times. (More information on top-level system directories can be found in the VAX/VMS Release Notes.)

D.2 PREPARING TO UPGRADE THE SYSTEM

Log in on the console terminal under the system manager's account, SYSTEM.

Because available disk space is always at a premium, remove all unwanted or redundant files before upgrading the system. You can remove them with the DCL commands DELETE or PURGE. For instance, because all DIGITAL optional software must be reinstalled after an upgrade, you can delete the existing optional software files.

To upgrade the system, there must be a minimum of 7000 free blocks on the system disk. You can confirm the free block count with the following command:

```
SHOW DEVICES device-name
```

Note that during the upgrade, the system disk and the distribution kit cannot be moved from one device to another.

Before upgrading your system, you must also back up the system disk to a scratch disk. Users who received magnetic tape distribution kits can use the stand-alone BACKUP procedure described in Section 3.7. Users who received RK07 distribution kits should back up the system using the stand-alone Disk Save and Compress Utility documented in the VAX-11 Software Installation Guide, Version 2.0. When this is completed, boot the scratch disk, which will become the Version 3.0 system disk.

Make sure the AUTO REBOOT switch on the processor control panel is set to ON. The upgrade will continue automatically after shutdowns as long as this switch is in the ON position.

D.3 UPGRADING VAX/VMS

After bootstrapping your system with the new system disk, you are ready to begin the upgrade procedure. Proceed as follows at the console terminal:

1. Log in under the system manager's account, SYSTEM.
2. Prevent users from logging into the system by typing:

```
§ SET LOGINS/INTERACTIVE=0
```

UPGRADING THE SYSTEM

3. If you are running DECnet-VAX, shut down the network by typing:

```
$ RUN SYSSSYSTEM:NCP
```

When the NCP> prompt is displayed, type:

```
SET EXECUTOR STATE OFF
```

To exit from NCP, type either CTRL/Z or EXIT.

4. Issue a STOP/QUEUE/NEXT command for batch and print queues, if there are any jobs in the queues.

These queues will be initialized during the upgrade, and any jobs contained in the queues will be lost.

5. Place the distribution medium in the appropriate drive and place it online.

6. Execute the following DCL command:

```
$ SET DEFAULT [SYSUPD]
```

7. Type the following:

```
$ @VMSINSTAL
```

8. You will receive a request to enter the device name of the drive holding the distribution kit. You must type your response in the format ddcu: (dd is the device code; c, the controller letter; and u, the unit number). The upgrade procedure will abort if it believes the format is incorrect.

9. At this point, the upgrade procedure displays:

```
VAX/VMS V3.0 Upgrade Procedure
```

A brief description of the upgrade procedure is displayed, and a cautionary note about preserving files.

The upgrade procedure then asks:

```
Do you want to continue? (Y/N):
```

If you respond YES, the upgrade continues to Phase 1.

D.3.1 Upgrade Phase 1

The first phase of upgrade requires some user interaction. Follow the procedures below:

1. The upgrade begins by informing you that the default editor for VAX/VMS V3.0 is EDT. The procedure then asks:

```
Would you like SOS to be the default editor for the EDIT  
command, as it was in VAX/VMS V2.0? (Y/N)
```

Respond YES or NO to that question.

2. Next, the upgrade procedure turns off the disk quotas on the system disk and removes directory entries that point to nonexistent files.

UPGRADING THE SYSTEM

3. At this point, a new site-specific floppy must be created to allow reboot of a kernel VAX/VMS V3.0 system.

The upgrade procedure asks you the following question:

```
DEFB00.COMD must be set to boot from your current system
disk. You must set this up if it has not been done
previously. Do you want to do this now? (Y/N)
```

This means that the DEFB00.COMD command procedure on your old console floppy must be set to boot your current system disk. If you have already done this, enter NO and move to step 7 below. If you have not yet done this, enter YES and proceed with step 4.

4. Place the console floppy in the drive and answer YES when you receive this message:

```
Please place the system console medium in the console
drive. Is the console medium ready to be mounted? (Y/N)
```

5. After you type yes, you receive this message:

```
%MOUNT-I-MOUNTED, CONSOLE mounted on _CSA1:
Enter name of default boot command file:
```

Enter the appropriate name in the form dduB00.COMD Note that you must not do an interactive boot. The upgrade kit is set with parameters that will boot any system.

6. The following will then appear:

```
Default boot command file replaced with dduB00.COMD
```

```
Are you satisfied with this file as the default boot
command file? (Y/N)
```

If you are satisfied with this file as the default boot command file, proceed. If you are not satisfied, return to step 1.

7. Put your old console floppy into drive CS1. Answer YES when you receive the following message:

```
Is the old console floppy, CS1:, ready to
be mounted? (Y/N)
```

The system will respond:

```
%MOUNT-I-MOUNTED, mounted on _CSA1:
```

The floppy diskette is copied to the system disk for editing.

8. Now, put a scratch floppy into the console drive. (The blank floppy provided with your distribution kit may be used.) The upgrade procedure now checks the new console floppy for any defective blocks by running the Bad Block Locator Utility. The new console floppy will be written just before the system is rebooted in order to boot from the V3.0 kernel system. Do not put your normal console media back in the console drive during the remainder of the upgrade procedure.

UPGRADING THE SYSTEM

The upgrade procedure now asks:

Is a scratch console floppy, now in CS1:? (Y/N):

Answer YES.

The system responds:

%MOUNT-I-MOUNTED, mounted on _CSA1:

From this point, the upgrade procedure will execute without operator intervention.

9. The upgrade procedure now removes all VAX/VMS V2.5 files not needed to complete the upgrade, and causes the V3.0 required save set to be copied to the system disk. BACKUP then starts a verification pass to make sure all the files in the save set have been correctly copied.

When the verification pass is complete, the upgrade procedure purges the paging, swapping, dump, and authorization files back to one version. (Ignore any file not found messages.)

The upgrade procedure now initializes the new console floppy, copies unmodified files to the new console floppy, and sets the DEFBOO.COMD command procedure to boot V3.0 from the directory [SYSF.SYSEX]. (More information on top-level system directories can be found in the VAX/VMS Release Notes.)

When the upgrade reaches this point, you receive the following message:

System shutting down to boot a kernel V3 system.

Leave the newly created site-specific console floppy in the console drive for the remainder of the upgrade procedure. If for any reason you have to restart the upgrade from this point on, reboot the system by typing:

B ddcu

The distribution kit and the system disk must remain where they are in order to proceed to the next phase of the upgrade.

10. The SYSGEN parameters are set to boot any system. Do not change them during the reboot, or the upgrade may fail to execute properly.
11. The system will shut down as part of the upgrade procedure, then reboot automatically.

At this point, a kernel V3.0 system is booted and announces:

VAX/VMS Version V3.0 <date hh:mm>

\$ SET NOVER

Continuing with VAX/VMS V3.0 Upgrade Procedure

UPGRADING THE SYSTEM

D.3.2 Upgrade Phase 2

At the beginning of the second phase of upgrade, you receive this message:

```
%OPCOM, <date hh:mm>, logfile initialized by operator
OPA0 logfile is SYSSMANAGER:OPERATOR.LOG
%MOUNT-I-MOUNTED, VMS300 mounted on _ddcu:
```

The upgrade procedure then starts a directory cleanup. This takes a varying amount of time depending on the number of files on the disk.

When the directory cleanup is complete, the upgrade procedure begins removing the remainder of the VAX/VMS V2.5 files.

Next, the library save set is merged into the kernel V3.0 system. When this is done, BACKUP starts a verification pass.

The optional save set is then merged into the kernel V3.0 system. When this is done, BACKUP starts a verification pass.

When the verification pass is complete, the user authorization accounts are modified to handle V3.0 changes. This includes providing each account with an ENQLM quota of at least 20 and changing default directories of SYSSYSDISK and null default devices.

At this point, the distribution kit may be removed.

D.3.3 Upgrade Phase 3

The third phase of the upgrade merges the VAX/VMS-distributed files that are commonly edited by system managers with new VAX/VMS files. Ignore any undefined symbol and file not found messages that appear at this time.

Next, the upgrade procedure merges all the miscellaneous user files that exist in the old system directories into a new set of system directories, temporarily called [SYSF.SYSEX], [SYSF.SYSMGR], [SYSF.SYSLIB], and so on. This takes a varying amount of time, depending upon the number of user files.

D.3.4 Upgrade Phase 4

During the fourth phase of the upgrade, the new site-specific floppy is modified to allow reboot of the complete VAX/VMS V3.0 system. The new site-specific console floppy should already be in CS1:.

SOS will now be established as the default editor, if you previously requested it.

You then receive the following message:

```
System shutting down to boot the complete V3.0 system.
```

Leave the newly created site-specific console floppy in the console drive. The system disk must remain where it is in order to proceed to the next phase of the upgrade.

UPGRADING THE SYSTEM

The system will automatically reboot after the shutdown.

Then the following appears:

```
VAX/VMS Version V3.0 <date hh:mm>
```

D.3.5 Upgrade Phase 5

This part of the upgrade procedure creates a new site-specific SYSGEN parameter file, AUTOGEN.PAR.

After a directory cleanup, and the announcement that the upgrade to VAX/VMS Version 3.0 is complete, several messages will appear.

The upgrade has created a new parameter file called AUTOGEN.PAR that combines the default values for V3.0 and the site-specific values you were using under V2.0. When the system reboots, it will be using the values contained in the AUTOGEN.PAR file.

The upgrade procedure has also created a new site-specific console floppy. This floppy should be used instead of your old one.

The upgrade is complete after the reboot.

D.4 THE AUTOGEN.PAR PARAMETER FILE

AUTOGEN.PAR contains some SYSGEN parameter values identical to those used under V2.0. These are usually set by each site to values specific to that site. An example is REALTIME_SPTS.

Other SYSGEN parameter values have been set to the maximum of your V2.0 site-specific value and the V3.0 default value. An example is INSTKPAGES.

The remainder of the SYSGEN parameters have been handled individually or set to the default values for V3.0. To see which category a particular file falls in, refer to the SAVPARAMS section in SYSSUPDATE:AUTOGEN.COM.

See Section 3.5 for additional information on modifying system parameters.

D.5 SPECIAL FILE HANDLING DURING UPGRADE

After you have completed the upgrade, you may wish to remove files you no longer need. In order to do so, you need to know that certain VAX/VMS-distributed files are handled specially during the upgrade. These include files that may have been edited by users, and shareable images that may have been linked into user images.

For the following files, the V3.0 distribution kit copy of the file is made an older version, and any existing V2.0 copies become more recent versions of the file:

```
[SYSMGR]FORMSTYPE.DAT  
[SYSMGR]CHARTYPE.DAT
```

UPGRADING THE SYSTEM

For the following list of files, the V3.0 distribution kit copy of the file is made the latest version, and any existing V2.0 copies become older versions of the file:

```
[SYSLIB]LBRSHR.EXE
[SYSLIB]RSXUSR.EXE
[SYSLIB]SUMSHR.EXE
[SYSLIB]VMSRTL.EXE
[SYSMGR]STARTNET.COM
[SYSEXE]STARTUP.COM
[SYSEXE]SHUTDOWN.COM
[SYSEXE]STARTUP.MIN
[SYSHLP]HELPLIB.HLB
```

The system manager may wish to reconcile the new versions with any local modifications to these files before deleting the older versions.

The upgrade procedure does not copy these files to the system disk at all; you are left the older versions of these files:

```
[SYSMGR]SYSTARTUP.COM
[SYSMGR]SYSHUTDWN.COM
[SYSEXE]SYSUAF.DAT
[SYSEXE]NOTICE.TXT
```

The upgrade procedure may have changed the size of the following files to better fit a V3.0 system, so you may want to monitor their use to make sure they are satisfactory:

```
[SYSEXE]SYSDUMP.DMP
[SYSEXE]PAGEFILE.SYS
[SYSEXE]SWAPFILE.SYS
```

D.6 INSTALLED IMAGES

As part of the upgrade, the file SYSS\$MANAGER:VMSIMAGES.DAT is created for your site. This is a combined list of files that are installed for enhanced system performance. Some files in this list may already be in your site's SYSS\$MANAGER:SYSTARTUP.COM file and should be removed.

APPENDIX E

VMSINSTAL ERROR MESSAGES

This appendix lists the error messages issued by the VMSINSTAL command procedure. Each message consists of an abbreviation followed by a text message.

ACCOUNT, This installation creates an account named 'name'.

Explanation: The product being installed has created (or updated) an account with the specified name. The User Authorization File (UAF) has been updated accordingly.

User Action: None, this message is informational.

ACTIVE, The following processes are still active:

Explanation: VMSINSTAL checks to ensure that no user processes are active when an installation is begun. This check has failed, and VMSINSTAL lists those processes that are still active.

User Action: You will be asked if you want to continue the installation. It is recommended that you remedy this situation before continuing.

AUTOSYNC, Auto-answer file is out of sync with questions.

AUTOFILE, question\answer

QUESTION, question

Explanation: You have specified the Auto-answer option, and VMSINSTAL is using the answers from an existing answer file. The question being asked by the installation procedure does not coincide with the next question and answer in the answer file.

User Action: The installation procedure must have changed. Delete the existing answer file and begin the installation again.

BADCONDEV, Please specify an existing console device.

Explanation: You have specified a console device on which the distribution volumes are to be mounted, but the device specified is a console device.

User Action: Specify an existing console device.

BADDISDEV, Please specify a disk or tape device.

Explanation: You have specified a device on which the distribution volumes are to be mounted, but the device is neither a disk nor a tape.

User Action: Specify a disk or tape device.

VMSINSTAL ERROR MESSAGES

BADLIBDEV, Please specify an explicit disk drive.

Explanation: For Dual RL02 installations, you have specified a device on which the library disk is to be mounted, but the device is not a disk.

User Action: Specify a disk device.

CTRLY, Installation cancelled via CTRL/Y.

Explanation: You have cancelled the installation by entering a CTRL/Y.

User Action: None, this message is informational.

DECNET, Your DECnet network is up and running.

Explanation: VMSINSTAL checks to ensure that your DECnet network has been shut down when an installation is begun. This check has failed.

User Action: You will be asked if you want to continue the installation. It is recommended that you remedy this situation before continuing.

INTEGER, Please enter an integer value.

Explanation: VMSINSTAL asked a question which must be answered with an integer number.

User Action: Answer the question again, specifying an integer.

INVOPTIONS, To specify options, parameter 3 must be the word OPTIONS.

Explanation: If you are specifying VMSINSTAL options, the third parameter to VMSINSTAL must be the word OPTIONS.

User Action: Invoke VMSINSTAL again, specifying the options in the correct format.

IVPFAIL, The IVP for 'product' has failed.

Explanation: VMSINSTAL has invoked the Installation Verification Procedure (IVP) for the specified product, and the IVP has failed.

User Action: If you can determine the problem and resolve it, then simply install the product again. Otherwise, contact your local DIGITAL support representative.

LIBDIFF, The following system and library disk files do not match.

LIBDIFF2, You must resolve these differences before continuing.

Explanation: For Dual RL02 systems, VMSINSTAL temporarily removes all nonessential system files from the system disk. Before doing this, however, it checks to ensure that the copies of these files on the system disk match those on the library disk. This check has failed, and the offending files are listed.

User Action: You must resolve the differences before reinvoking VMSINSTAL.

VMSINSTAL ERROR MESSAGES

LOWQUOTA, One or more account quotas may be too low.

Explanation: VMSINSTAL checks to ensure that your process quotas are valid when an installation is begun. This check has failed.

User Action: You will be asked if you want to continue the installation. It is recommended that you remedy this situation before continuing. See Section 4.2 in this guide.

MOVEFILES, Files will now be moved to their target directories

Explanation: If sufficient disk space is available at the beginning of an installation, VMSINSTAL builds new files in a working directory for the optional product or update. After all the files are built, they are moved to their target directories.

User Action: None, this message is informational.

NEXTVOL, The next volume will be mounted to try again.

Explanation: VMSINSTAL is attempting to restore a product save set with the Backup utility. The required save set was not located on the currently mounted distribution volume, so VMSINSTAL will examine the next volume.

User Action: This message will be preceded by various serious BACKUP messages, which can be ignored. You will be asked to mount the next distribution volume.

NOCONSOLE, Unknown CPU type; console volume not remounted.

Explanation: While attempting to remount the console volume, VMSINSTAL could not determine what type of CPU you have.

User Action: Contact your local DIGITAL support representative.

NOFILE, [new] file 'file' does not exist.

Explanation: VMSINSTAL is attempting to locate an existing (or perhaps new) file with the given name, but the file does not exist. This message should be preceded by other messages that explain it in greater detail.

User Action: If you can determine the problem and resolve it, then simply install the product again. Otherwise, contact your local DIGITAL support representative.

NOLIBDISK, Library disk could not be mounted.

Explanation: You were asked to mount the library disk so that an installation could be performed on a Dual RL02 system. For some reason, the library disk could not be mounted.

User Action: Correct the situation that prevented mounting the library disk and begin the installation again.

VMSINSTAL ERROR MESSAGES

NOPRINT, File 'file' cannot be printed.

Explanation: The product installation required the printing of one or more files, but the files could not be queued for printing.

User Action: This error is most likely caused by the fact that a SYS\$PRINT queue is not defined at your site. If you do not care that the files could not be printed, then you can ignore this message. Otherwise, define a SYS\$PRINT queue and perform the installation again.

NOPROC, The kit's installation procedure is missing.

Explanation: The main installation procedure for the product could not be located on the distribution volumes.

User Action: Contact your local DIGITAL support representative.

NOPRODS, None of the specified products were found.

Explanation: You have specified one or more products to be installed from the distribution volumes, but none of the products exist on the volumes.

User Action: Specify products which exist on the volumes.

NOREINSTALL, Image 'image' could not be reinstalled.

Explanation: VMSINSTAL was attempting to use the INSTALL utility to make an image known to the system. The INSTALL utility failed.

User Action: This message should be preceded by a message from the INSTALL utility explaining the problem. Correct the problem and begin the installation again.

NOSAVESET, Required saveset 'letter' does not exist.

Explanation: The product save set with the specified letter, which is required for the installation, does not exist on the distribution volumes.

User Action: Contact your local DIGITAL support representative.

NOSETPRV, You are not running on an account with SETPRV privilege.

Explanation: VMSINSTAL checks to ensure that your account has SETPRV privilege when an installation is begun. This check has failed.

User Action: You will be asked if you want to continue the installation. It is recommended that you remedy this situation before continuing.

NOSPACE, There are not enough blocks to restore the system disk.

Explanation: After installation on a dual RL02 system, VMSINSTAL attempts to restore your system disk to its original tailoring configuration. However, there are not enough free blocks left on the system disk.

User Action: VMSINSTAL tells you how many additional free blocks are required. You must make more space on the system disk by purging and/or deleting files. Once this is accomplished, you can restore the original tailoring configuration.

VMSINSTAL ERROR MESSAGES

NOTSYSTEM, You are not logged in to the SYSTEM account.

Explanation: VMSINSTAL checks to ensure that you are logged in to the SYSTEM account when an installation is begun. This check has failed.

User Action: You will be asked if you want to continue the installation. It is recommended that you remedy this situation before continuing.

PEAKUTIL, This product requires 'number' blocks during installation.

Explanation: The installation procedure for the product has determined that there are not enough free blocks on the system disk to install the product.

User Action: Make more space on the system disk by purging and/or deleting files, and then install the product again.

PRODSKIP, Products that have not been installed will be skipped.

Explanation: You have requested that multiple products be installed, but one of these products requires that the system be rebooted after its installation. In order to accomplish this, the remaining uninstalled products must be skipped.

User Action: Reinstall the remaining products after the system is rebooted.

REBOOT, This product requires that the system be rebooted.

Explanation: The product that was just installed requires that the system be rebooted to complete the installation.

User Action: Reboot the system after shutdown completes.

RECORDANS, Auto-answer file will be recorded.

Explanation: The Auto-answer options was specified when VMSINSTAL was invoked. No answer file exists for the product about to be installed, so one will be recorded.

User Action: Answer the prompts and questions as usual. Your answers will be recorded.

RECOVER, 'product' was being installed when the system crashed.

Explanation: The specified product was being installed when the system crashed due to a power failure or other problem.

User Action: You will receive additional instructions on how to proceed.

RESTORE, Restoring product saveset 'letter'...

Explanation: The specified product save set is about to be restored from the distribution volumes by the Backup utility.

User Action: This message is purely informational.

VMSINSTAL ERROR MESSAGES

RETAILOR, Your original tailoring environment will now be restored.

Explanation: The tailoring files that were removed from your system disk for installation, will be copied back to the system disk.

User Action: None, this message is informational.

REWIND, The tape will be rewound to try again.

Explanation: VMSINSTAL is attempting to restore a product save set with the Backup utility. The required save set was not located on the currently mounted distribution tape, but VMSINSTAL will rewind the tape in case the savesets were not recorded in order.

User Action: This message will be preceded by various serious BACKUP messages, which can be ignored.

SMALLDISK, This is a small disk system.

Explanation: VMSINSTAL has determined that you are running a dual RL02 system. It will temporarily remove all nonessential files from the system disk in order to make room for the installation.

User Action: You will receive additional instructions as to how to proceed.

STEP8FAIL, The installation of 'product' has failed.

STEP9FAIL, The installation of 'product' has failed.

Explanation: The installation of the product has failed due to some unrecoverable error.

User Action: Additional messages should precede this one. These messages will explain the problem in greater detail. If you can remedy the situation, then simply install the product again. Otherwise, contact your local DIGITAL support representative.

SYSDIR, This product creates system directory 'directory'.

Explanation: The product being installed creates the specified system directory.

User Action: This message is purely informational.

SYSDISK, This product creates system disk directory 'directory'.

Explanation: The product being installed creates a directory on the system disk.

User Action: This message is purely informational.

TAMPER, File 'file' has been tampered with.

Explanation: VMSINSTAL is attempting to update a system text file, but the file has been modified locally. The update cannot be performed.

User Action: If you modify system text files, then they cannot be updated by DIGITAL software installations.

VMSINSTAL ERROR MESSAGES

UNEXPECTED, Installation terminated due to unexpected event.

Explanation: Some unexpected event has caused the immediate termination of VMSINSTAL. This message should be preceded by other messages that explain the problem in greater detail.

User Action: If you can determine the problem and resolve it, then simply install the product again. Otherwise, contact your local DIGITAL support representative.

UPDATED, File 'file' is already updated.

Explanation: VMSINSTAL is attempting to update a system text file, but the file has already been updated successfully.

User Action: This message is purely informational.

USEANS, Auto-answer file will be used.

Explanation: The Auto-answer options was specified when VMSINSTAL was invoked. An answer file exists for the product about to be installed, so the recorded answers will be used.

User Action: You will not have to answer prompts and questions displayed by the product. If you want to record new answers, then you must delete the answer file and install the product with the Auto-answer option.

VMIORIG, VMIORIG.TLR still exists; please see your documentation.

Explanation: When performing an installation on a Dual RL02 system, VMSINSTAL records the current tailoring configuration and then removes it from the system disk temporarily. The configuration is recorded in the file SYS\$UPDATE:VMIORIG.TLR. After installation, VMSINSTAL restores the configuration and deletes VMIORIG.TLR. If, however, the system crashes during the installation, then you must restore the configuration and delete the file, manually.

User Action: Because VMIORIG.TLR still exists, VMSINSTAL assumes that you have not restored your tailoring configuration. You must do so, and then delete VMIORIG.TLR.

YESNO, Please enter YES or NO.

Explanation: VMSINSTAL asked a question which must be answered with YES or NO.

User Action: Answer the question again, specifying YES or NO. You may abbreviate these as Y or N.

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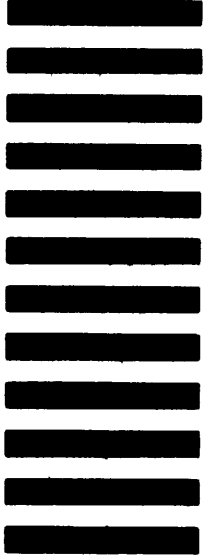


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