

VAX-11/750

Software Installation Guide

Order No. AA-K410C-TE

December 1982

This document contains detailed instructions for installing, upgrading, and updating the VAX/VMS operating system on a VAX-11/750 processor.

REVISION/UPDATE INFORMATION: This revised document supersedes the VAX-11/750 Software Installation Guide (Order No. AA-K410B-TE) and Update Notice No. 1 (Order No. AD-K410B-T1).

SOFTWARE VERSION: VAX/VMS Version 3.2

First Printing, September 1980
Revised, May 1982
Updated, August 1982
Revised, December 1982

The information in this document is subject to change without notice and should not be construed as a commitment by Digital Equipment Corporation. Digital Equipment Corporation assumes no responsibility for any errors that may appear in this document.

The software described in this document is furnished under a license and may be used or copied only in accordance with the terms of such license.

No responsibility is assumed for the use or reliability of software on equipment that is not supplied by Digital Equipment Corporation or its affiliated companies.

Copyright © 1980, 1982 Digital Equipment Corporation
All Rights Reserved.

Printed in U.S.A.

The postpaid READER'S COMMENTS form on the last page of this document requests the user's critical evaluation to assist in preparing future documentation.

The following are trademarks of Digital Equipment Corporation:

DEC	EduSystem	RSX
DECnet	IAS	UNIBUS
DECsystem-10	MASSBUS	VAX
DECSYSTEM-20	PDP	VMS
DECUS	PDT	VT
DECwriter	RSTS	digital
DIBOL		

ZK2354

HOW TO ORDER ADDITIONAL DOCUMENTATION

In Continental USA and Puerto Rico call 800-258-1710

In New Hampshire, Alaska, and Hawaii call 603-884-6660

In Canada call 613-234-7726 (Ottawa-Hull)
800-267-6146 (all other Canadian)

DIRECT MAIL ORDERS (USA & PUERTO RICO)*

Digital Equipment Corporation
P.O. Box CS2008
Nashua, New Hampshire 03061

*Any prepaid order from Puerto Rico must be placed
with the local Digital subsidiary (809-754-7575)

DIRECT MAIL ORDERS (CANADA)

Digital Equipment of Canada Ltd.
940 Belfast Road
Ottawa, Ontario K1G 4C2
Attn: A&SG Business Manager

DIRECT MAIL ORDERS (INTERNATIONAL)

Digital Equipment Corporation
A&SG Business Manager
c/o Digital's local subsidiary or
approved distributor

Internal orders should be placed through the Software Distribution Center (SDC), Digital Equipment Corporation, Northboro, Massachusetts 01532

CONTENTS

	Page
PREFACE	vii
SUMMARY OF TECHNICAL CHANGES	xi
CHAPTER 1	OVERVIEW OF SOFTWARE INSTALLATION
1.1	VAX-11/750 CONSOLE SUBSYSTEM 1-1
1.2	VAX-11/750 PROCESSOR CONTROL PANEL 1-2
1.2.1	Indicator Lights 1-2
1.2.2	POWER-ON-ACTION Switch 1-3
1.2.3	BOOT DEVICE Switch 1-4
1.2.4	INITIALIZE Button 1-4
1.2.5	Keylock Rotary Switch 1-4
1.3	OVERVIEW OF SYSTEM INSTALLATION 1-5
CHAPTER 2	BUILDING A BOOTABLE SYSTEM DISK
2.1	OVERVIEW OF BUILDING A BOOTABLE SYSTEM DISK 2-1
2.2	VAX/VMS SOFTWARE DISTRIBUTION KITS 2-2
2.2.1	Magnetic Tape Kit 2-2
2.2.2	RK07 Kit 2-3
2.2.3	RA60 Kit 2-3
2.2.4	RL02 Kit 2-3
2.2.4.1	The Primary Software Distribution Disk 2-4
2.2.4.2	The Optional Software Distribution Disk 2-4
2.3	SPECIFYING DEVICE NAMES 2-4
2.4	POWERING UP THE SYSTEM 2-5
2.4.1	Checking the Switches and Panel Indicators 2-5
2.4.2	Checking for the Attention of the Console Program 2-6
2.5	RESTORING THE DISTRIBUTION KIT 2-6
2.5.1	Loading Stand-alone BACKUP 2-6
2.5.1.1	Loading Stand-alone BACKUP from Disk 2-6
2.5.1.2	Loading Stand-alone BACKUP from TU58 Cartridge 2-7
2.5.2	Restoring the Required Save Set to the Target Device 2-7
2.6	BOOTING THE TARGET DEVICE AND RESTORING THE REST OF VMS 2-8
2.6.1	Restoring the Optional Kit on an RL02/RA80 Configuration 2-10
CHAPTER 3	SITE-SPECIFIC MODIFICATIONS TO VAX/VMS
3.1	LOGGING IN TO THE SYSTEM 3-1
3.2	SITE-SPECIFIC MODIFICATIONS 3-2
3.3	SYSTEM SHUTDOWN AND REBOOT 3-2
3.4	MODIFYING SYSTEM PARAMETERS 3-3
3.5	VAX/VMS USER ENVIRONMENT TEST PACKAGE 3-3

3.6	BACKING UP YOUR SYSTEM DISK TO A SCRATCH DISK OR TAPE	3-3
3.7	THE SYSTEM AFTER INSTALLATION	3-4
CHAPTER 4 THE VMSINSTAL COMMAND PROCEDURE		
4.1	EXAMINING THE DISTRIBUTION KITS	4-1
4.2	PREPARING TO USE VMSINSTAL	4-1
4.3	INVOKING VMSINSTAL	4-3
4.4	CHOOSING VMSINSTAL OPTIONS	4-4
4.5	RECOVERING FROM SYSTEM FAILURE	4-6
4.6	INSTALLING EDTCAI	4-6
CHAPTER 5 THE SYSTEM AFTER INSTALLATION		
5.1	BACKING UP THE CONSOLE MEDIUM	5-1
5.1.1	Restoring Files to TU58 Cartridge	5-2
5.1.2	Reading Command Procedures From Console Media	5-3
5.2	BOOTING THE SYSTEM AFTER INSTALLATION	5-3
5.2.1	Rebooting Stopping in SYSBOOT	5-4
5.2.2	Nonstop Bootstrap from the System Disk	5-5
5.2.3	Rebooting Using the Default Bootstrap	5-6
5.3	BUILDING AND COPYING A VAX/VMS SYSTEM DISK	5-6
5.3.1	Building a VAX/VMS System Disk	5-6
5.3.2	Copying a VAX/VMS System Disk	5-8
5.4	BUILDING A STAND-ALONE BACKUP KIT	5-9
APPENDIX A FILES OF THE VAX/VMS SYSTEM		
APPENDIX B USING THE TU58 TAPE CARTRIDGE		
B.1	WHEN TO BOOTSTRAP FROM THE TU58 TAPE CARTRIDGE	B-1
B.2	BOOTSTRAPPING THE SYSTEM USING STAND-ALONE BOOT58	B-1
B.2.1	Conversational Bootstrap Using Stand-Alone BOOT58	B-3
B.2.2	Nonstop Bootstrap Using Stand-Alone BOOT58	B-4
B.3	THE DEFAULT BOOTSTRAP COMMAND PROCEDURE	B-6
B.4	REBOOTING USING THE DEFAULT BOOTSTRAP COMMAND PROCEDURE	B-6
B.5	COPYING FILES TO OR FROM THE CONSOLE TU58 TAPE CARTRIDGE	B-6
B.6	WRITEBOOT UTILITY	B-7
APPENDIX C BOOT58 COMMANDS		
APPENDIX D MICRO VERIFY ERROR CHARACTERS		
APPENDIX E INSTALLING OPTIONAL SOFTWARE PRODUCTS		
E.1	DISTRIBUTION KITS	E-1
E.2	PREPARATIONS FOR AN OPTIONAL SOFTWARE INSTALLATION	E-1
E.3	INSTALLING OPTIONAL SOFTWARE PRODUCTS	E-2
E.4	INSTALLATION COMPLETION	E-3

CONTENTS

Page

APPENDIX F BUILDING THE VAX/VMS SOURCE KIT

APPENDIX G UPGRADING THE SYSTEM

G.1	RESTARTABLE UPGRADE PROCEDURE	G-1
G.2	PREPARING TO UPGRADE THE SYSTEM	G-2
G.3	UPGRADING VAX/VMS	G-2
G.3.1	Upgrade Phase 1	G-3
G.3.2	Upgrade Phase 2	G-6
G.3.3	Upgrade Phase 3	G-6
G.3.4	Upgrade Phase 4	G-7
G.3.5	Upgrade Phase 5	G-7
G.4	THE AUTOGEN.PAR PARAMETER FILE	G-7
G.5	SPECIAL FILE HANDLING DURING UPGRADE	G-8
G.6	INSTALLED IMAGES	G-8

APPENDIX H VMSINSTAL ERROR MESSAGES

INDEX

FIGURES

FIGURE 1-1	VAX-11/750 Console Subsystem	1-2
1-2	The VAX-11/750 Processor Control Panel	1-3

TABLES

TABLE 2-1	Device Type Codes	2-5
5-1	SYSBOOT Commands	5-5
A-1	Files Contained in Directory [SYSEXE]	A-2
A-2	Files Contained in Directory [SYSHLP]	A-6
A-3	Files Contained in Directory [SYSLIB]	A-6
A-4	Files Contained in Directory [SYSMGR]	A-7
A-5	Files Contained in Directory [SYSMSG]	A-8
A-6	Files Contained in Directory [SYSTEST]	A-8
A-7	Files Contained in Directory [SYSUPD]	A-12
A-8	Files Contained in Directory [SYSHLP.EXAMPLES]	A-13
B-1	VAX/VMS Boot Command Procedures	B-2
D-1	Micro Verify Error Characters	D-1

PREFACE

MANUAL OBJECTIVES

The VAX-11/750 Software Installation Guide presents step-by-step procedures for installing software on a VAX-11/750 processor. VAX-11/750 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-11/750 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 TU58 cartridge, 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, *Using the TU58 Tape Cartridge*, describes in detail the steps to be taken when bootstrapping the system using the TU58 tape cartridge as the primary bootstrap device.
- Appendix C, *BOOT58 Commands*, describes the commands that can be entered to the stand-alone BOOT58 program.
- Appendix D, *Micro Verify Error Characters*, describes micro verify routines that test the reliability of VAX-11/750 hardware.
- Appendix E, *Installing Optional Software Products*, describes the VMSUPDATE.COM command procedure used to install some optional software products.
- Appendix F, *Building the VAX/VMS Source Kit*, describes the steps to be taken to copy the VAX/VMS source kit.
- Appendix G, *Upgrading the System*, describes the steps required to upgrade a system from a Version 2.5 system to a 3.0 system.
- Appendix H, *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.

PREFACE

CONVENTIONS USED IN THIS DOCUMENT

Convention	Meaning
<code>RET</code>	A symbol with a one- to three-character abbreviation indicates that you press a key on the terminal, for example, <code>RET</code> .
<code>CTRL/x</code>	The phrase <code>CTRL/x</code> indicates that you must press the key labeled <code>CTRL</code> while you press another key, for example <code>CTRL/C</code> , <code>CTRL/Y</code> .
<code>\$ SHOW TIME</code>	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.
<code>file-spec,...</code>	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-11/750 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 G.
- Appendix H, 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-11/750 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-11/750 processor. Updating refers to applying system maintenance updates, and consists primarily of a set of patches distributed on TU58 cartridges. Upgrading refers to bringing a Version 2.5 system up to the next major version, Version 3.0, and is done substantially by file replacement.

All installation procedures are performed using the VAX-11/750 console subsystem.

1.1 VAX-11/750 CONSOLE SUBSYSTEM

The console subsystem consists of three hardware components (a console terminal, a TU58 cartridge drive, and an optional remote diagnostics port) and a microcode program. These hardware components and the microcode program perform the actual bootstrap operation based on: (1) the positions of the switches on the processor control panel, and (2) the interactive commands entered at the console terminal.

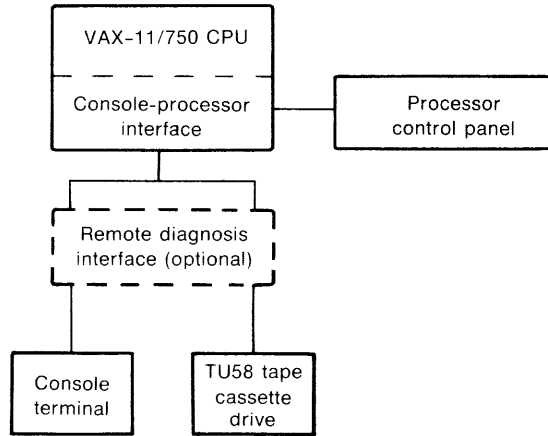
You can request that the system be bootstrapped in either of the following ways:

- Directly from the system disk
- Using the stand-alone BOOT58 program on the TU58 cartridge

Both methods require the assistance of the console subsystem. The recommended approach for daily operation is from the system disk with the TU58 cartridge as backup. Using the first method, you issue a BOOT command to the console subsystem to bootstrap the system from a particular device. Using the second method, you issue a BOOT command to the console subsystem to bootstrap the stand-alone BOOT58 program. With stand-alone BOOT58, you can then bootstrap the system by specifying either stand-alone BOOT58 commands or a command procedure stored on the console TU58 cartridge. (See Appendix B for more information on the BOOT58 program.)

Figure 1-1 shows a diagram of the basic console subsystem.

OVERVIEW OF SOFTWARE INSTALLATION



ZK-994-82

Figure 1-1: VAX-11/750 Console Subsystem

1.2 VAX-11/750 PROCESSOR CONTROL PANEL

The VAX-11/750 processor control panel consists of seven indicator lights, four switches, and the TU58 cartridge drive. 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-11/750 processor control panel.

1.2.1 Indicator Lights

There are seven indicator lights on the processor front panel: the first three indicate the state of the processor, and the remaining four indicate the state of the remote diagnostic procedures.

CPU State Indicators

POWER	When lit, this green light indicates that the power is present in the processor and that the keyswitch is in the ON position.
RUN	When lit, this green light indicates that the processor is running.
ERROR	When dimly lit, this red light indicates the processor is running normally. When brightly lit, this red light indicates that the processor has experienced an unrecoverable error. Push the white INITIALIZE button to reset the machine. (The ERROR light will remain dimly lit.) During normal operation, if the light is not on at all, the bulb has burned out.

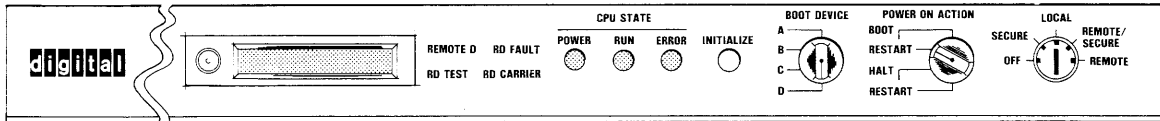


Figure 1-2: The VAX-11/750 Processor Control Panel

Remote Diagnostic Indicators

The remote diagnostic indicator lights are invisible until they are lit on a machine that has a remote diagnostic ROM installed.

- | | |
|------------|---|
| REMOTE D | When lit, this red light indicates that the keylock rotary switch is in the REMOTE position. |
| RD FAULT | When lit for more than ten seconds, this red light indicates that the remote diagnostic ROM has detected an error. When a machine that has a remote diagnostic ROM is powered up, this light will come on for about ten seconds, to indicate that a self test is in progress. |
| RD TEST | When lit, this green light indicates that the remote host connection has been made with successful protocol exchange. |
| RD CARRIER | When lit, this amber light indicates that a carrier signal is present on a dial-in line. |

1.2.2 POWER-ON-ACTION Switch

The POWER-ON-ACTION switch controls the processor's power-up sequence. The processor interprets and acts on the position of the POWER-ON-ACTION switch in the following situations:

- After an orderly shutdown
- After a brief power failure
- After the microcode detects a halt condition (for example, a HALT instruction executed in kernel mode)

The POWER-ON-ACTION switch has four positions that instruct the processor how to power up the system. The instructions are:

- | | |
|--------------|---|
| BOOT | Bootstraps the system from the device selected by the BOOT DEVICE switch. |
| RESTART/BOOT | Restarts the system. If the restart fails (if memory battery backup fails during a power failure, for example), bootstraps the system from the device selected by the BOOT DEVICE switch. |
| HALT | Halts the system and displays the console prompt (>>>) at the console terminal. |
| RESTART/HALT | Restarts the system. If the restart fails, halts the system. |

OVERVIEW OF SOFTWARE INSTALLATION

During normal system operation, the POWER-ON-ACTION switch should be set to the RESTART/BOOT position. This switch setting provides for the most comprehensive system recovery procedure.

1.2.3 BOOT DEVICE Switch

The BOOT DEVICE switch can be used to select the system's bootstrap device. The processor interprets and acts on the position of the BOOT DEVICE switch in the following situations:

- When you issue the console BOOT command without specifying a device name
- When the system attempts an automatic bootstrap

In both situations, the processor examines the BOOT DEVICE switch and assumes that the controller character is A and that the unit number of the drive is 0.

The BOOT DEVICE switch has four positions: A, B, C, and D. Position A always causes the system to bootstrap from the TU58 cartridge drive. Positions B, C, and D correspond to the remaining disk controllers. Consult your local field service representative to determine how the positions correspond to the available disk controllers. Typically, you should set the BOOT DEVICE switch to the position corresponding to your system disk.

1.2.4 INITIALIZE Button

When you press the white INITIALIZE button, the system performs an automatic shutdown followed by a power-up sequence without disturbing the contents of memory. The system determines the power-up action by examining the position of the POWER-ON-ACTION switch.

1.2.5 Keylock Rotary Switch

The keylock rotary switch controls the actions of the processor and the console subsystem.

OFF	Power is off.
SECURE	Processor can be run; however, the console commands, remote diagnostic line, and INITIALIZE button are disabled.
LOCAL	Processor can respond to console commands, and the remote diagnostic line is disabled.
REMOTE/SECURE	Console commands and the INITIALIZE button are disabled, and the optional remote diagnostic line replaces the console terminal.
REMOTE	Console commands are disabled; however, they can be activated by means of the optional remote diagnostic line.

OVERVIEW OF SOFTWARE INSTALLATION

1.3 OVERVIEW OF SYSTEM INSTALLATION

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

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. Shut down the system and reboot.
4. 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 and four 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 G.

CHAPTER 2

BUILDING A BOOTABLE SYSTEM DISK

The VAX-11/750 software distribution kit for the VAX/VMS operating system contains the following:

- The distribution tape, RK07 disk, RA60 disk, or RL02 disk(s)
- Two TU58 cartridges containing stand-alone BACKUP (only with magnetic tape distribution kits; RK07, RA60, and RL02 distribution kits contain two blank TU58 cartridges to be used in creating a stand-alone BACKUP kit)
- One blank TU58 cartridge to be used in creating a new console TU58

The distribution tape or disks 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 TU58 cartridge for magnetic tape distribution 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 operating system or lower, see Appendix G.

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

BUILDING A BOOTABLE SYSTEM DISK

distribution kits, from the primary distribution disk for the RL02 distribution kits, or from the TU58 cartridges for magnetic tape distribution kits.

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. On RL02/RA80 configurations the optional save set is distributed on a separate RL02 disk and may be restored at a later date, if desired.

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-11/750 is distributed on either an RK07 disk, an RA60 disk, two RL02 disks, 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 TU58 cartridge before you can proceed with an installation or upgrade. If you are a new customer, the console TU58 cartridge was shipped with the hardware. For other customers, your current console TU58 cartridge will be upgraded as part of the VAX/VMS upgrade procedure.

2.2.1 Magnetic Tape Kit

The VAX-11/750 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 TU58 cartridges that contain stand-alone BACKUP
 - Part number: BE-M757A-BE
 - Part description: V3.2 S/A BKUP T58 1/2
 - Part number: BE-M758A-BE
 - Part description: V3.2 S/A BKUP T58 2/2

BUILDING A BOOTABLE SYSTEM DISK

- One blank TU58 cartridge to be used in creating a new console TU58

Part number: 36-15809-00

Part description: BLANK TU58 CASSETTE

2.2.2 RK07 Kit

The VAX-11/750 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 TU58 cartridges: two to be used in creating a stand-alone BACKUP kit, one to be used in creating a new console TU58

2.2.3 RA60 Kit

The VAX-11/750 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 TU58 cartridges: two to be used in creating a stand-alone BACKUP kit, one to be used in creating a new console TU58

2.2.4 RL02 Kit

The VAX/VMS operating system on an RL02/RA80 configuration is distributed on two separate RL02 disks:

- A primary distribution disk
- An optional distribution disk

The primary distribution disk contains the files needed to create a VAX/VMS operating system.

It consists of two BACKUP save sets that are composed of different types of files. One save set contains all the files required for a bootable system, and the other consists of the VAX/VMS library files.

The optional distribution disk contains additional pieces of the VAX/VMS operating system, including compatibility mode files, VAX-11 BLISS files, programming examples, and miscellaneous other files. The optional disk also contains the EDTCAI course, which is not part of the operating system. The optional distribution disk may be restored either at installation time or at a later date.

BUILDING A BOOTABLE SYSTEM DISK

2.2.4.1 The Primary Software Distribution Disk - To restore both the files required for a bootable system and the VAX/VMS library files, you need the following:

- The VAX/VMS Version 3.2 primary distribution disk
Part number: BC-M761B-BE
Part description: VAX/VMS V3.2 REQUIRED RL2
- Three blank TU58 cartridges

The three blank TU58 cartridges are provided for building stand-alone BACKUP and copying the console media. Procedures for both of these operations are described in Chapter 4.

2.2.4.2 The Optional Software Distribution Disk - To restore the optional VAX/VMS files, you need the following:

- The VAX/VMS Version 3.2 optional distribution disk
Part number: BC-M762B-BE
Part description: VAX/VMS V3.2 OPTIONAL RL2

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.

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 and a TE16 magnetic tape is MT.
- 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
DLA1	RL02 disk on controller A, unit 1
MTA0	TE16 magnetic tape on controller A, unit 0
DUA10	RA81 disk on UDA controller A, unit 10

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	RA60, RA80, RA81 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.

2.4 POWERING UP THE SYSTEM

To power up the system, check the switches and panel indicators and see that you have the console prompt (>>>).

2.4.1 Checking the Switches and Panel Indicators

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

- The ON-OFF power switch on the console terminal: ON
- The POWER-ON-ACTION switch on the processor control panel: HALT
- The rotary key switch on the processor control panel: LOCAL

Also, be sure the POWER control panel indicator is lit.

2.4.2 Checking for the Attention of the Console Program

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. Make sure the POWER-ON-ACTION switch is in the HALT position.
2. Make sure the rotary key is in the LOCAL position.
3. If the power is already on, press CTRL/P to cause the console program to prompt with three angle brackets (>>>).

2.5 RESTORING THE DISTRIBUTION KIT

The first step in 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.

If you receive any error messages during installation, refer to the VAX/VMS System Messages and Recovery Procedures Manual.

2.5.1 Loading Stand-alone BACKUP

Stand-alone BACKUP can be loaded from either the RK07 disk (RK07 distribution kits), the RA60 disk (RA60 distribution kits), the primary RL02 disk (RL02 distribution kits), or from the TU58 cartridges (magnetic tape distribution kits).

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

1. Place the distribution disk in the appropriate drive. Sites using the RL02 distribution kit must use the primary distribution disk in this step. Write protect the disk by pressing the WRITE PROTECT button, and spin it up by pressing the RUN button or the LOAD button, depending on the drive you are using.
2. At the console prompt, boot stand-alone BACKUP by typing a "B" with the appropriate device type. For example, the following boots an RK07 disk:

```
>>> B DMcu
```

(where c is the controller letter and u is the unit number)

Two percent signs (%%) will appear on the console terminal.

3. After about 10 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>
$
```

BUILDING A BOOTABLE SYSTEM DISK

2.5.1.2 Loading Stand-alone BACKUP from TU58 Cartridge - If you have a magnetic tape distribution kit, you will be booting BACKUP from TU58 cartridge. The procedure for loading stand-alone BACKUP from TU58 cartridges 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. Insert the BACKUP TU58 marked VAX/VMS V3.0 S/A BKUP T58 1/2.
3. At the console prompt, type:

```
>>> B DDA0
```

4. When BACKUP has finished loading the first TU58, after approximately 15 minutes, you will receive this message:

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

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

5. Remove the first stand-alone BACKUP TU58, replace it with the second stand-alone BACKUP TU58 marked VAX/VMS V3.0 S/A BKUP T58 2/2, and press RETURN.
6. When BACKUP has completed loading, after approximately five minutes, the DCL prompt (\$) will appear, and you are ready to continue.

7. Leave the second BACKUP TU58 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 target disk is the same for both magnetic tape and disk distribution kits.

1. Place the target disk in the drive and spin up the disk by pressing the RUN button. In the case of the RL02/RA80 configuration the target device is a nonremovable disk and need only be spun up.
2. At the dollar sign prompt, type the BACKUP command in the following form:

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

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

For example, when your magnetic tape distribution kit is on drive MSA0: and your target disk is DMA1:, you would type:

```
$ BACKUP/VERIFY MSA0:REQUIRED/SAVE DMA1:
```

The /VERIFY qualifier specifies that the distribution medium and the target disk should 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.

BUILDING A BOOTABLE SYSTEM DISK

You will then receive the following message:

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

After a few 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 H.
4. If you loaded stand-alone BACKUP from TU58 (magnetic tape distribution kit), remove the second BACKUP TU58 from the drive and replace it with the console TU58.

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 for 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 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:

```
>>>B ddcu
```

For example:

```
>>> B DMA1
```

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 the 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):
```


BUILDING A BOOTABLE SYSTEM DISK

Enter the name of the device holding the distribution kit.

For example:

MSA0

The installation procedure uses this information to restore the library and optional save sets.

In the case of the RL02/RA80 configuration, the optional save set is distributed on a separate disk and may be installed either at installation time (described in Step 5), or at a later date (described in Section 2.6.1).

4. The following messages will appear over the course of approximately 15 minutes, while the files are being restored.

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

```
Restoring library save set.
```

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

5. This step applies only to the RL02/RA80 configurations. If you are installing any other configuration you should skip to Step 6.

You will receive the following prompt.

```
Do you wish to install the OPTIONAL distribution kit  
[No]?
```

Press RETURN if you do not wish to install the optional kit. If you do not install the optional kit, the next message you will receive is the "Running AUTOGEN" message in Step 6. Continue the installation from that point.

If you respond with the letter Y, you will receive the following prompt.

```
Dismount the Primary distribution kit from drive DLA0.  
Mount the OPTIONAL distribution kit in drive DLA0, press return when ready.
```

Spin down the primary disk and replace it with the optional disk. Spin up the optional disk and press RETURN. A confirmation of the disk mount will appear:

```
MOUNT-I-MOUNTED, VMSOPT mounted on _DLA0:
```

6. You will now receive the following messages:

```
Restoring optional save set.
```

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

```
Running AUTOGEN -- Please wait.
```

While AUTOGEN is running, you will receive messages telling you which files have been created or extended. When it has completed running, you will 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 SYSSYSROOT:[SYSEX]SYS.EXE;1
```

System shutting down to allow boot of complete V3.2 system. You must manually reboot the system after it halts.

BUILDING A BOOTABLE SYSTEM DISK

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
```

7. Halt the system, by pressing CTRL/P, typing an "H", and pressing RETURN.
8. Reboot the system by typing:

```
>>> B ddcu
```

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.

2.6.1 Restoring the Optional Kit on an RL02/RA80 Configuration

Restoration of the save sets on the optional disk to the RL02/RA80 configuration can be done at a later date by invoking a command procedure (VMSINSTAL.COM) that uses the Backup Utility. The two save sets contained on the disk are restored separately; you can restore one without the other by specifying different parameters for the command procedure.

To restore the optional kit to the system disk, perform the following procedure:

1. Remove any disk currently in the RL02 drive and replace it with the optional distribution disk. Write protect the disk by pressing the WRITE PROT button and spin up the disk. The unit number light will come on when the disk is ready.
2. Log in as the system manager by performing the following steps at the console terminal:
 - a. Press RETURN.
 - b. In response to the system's request for your user name, type SYSTEM.
 - c. In response to the system's request for your password, type the system manager password.

The system returns the following message and DCL prompt:

```
Welcome to VAX/VMS Version V3.2  
$
```

3. When the DCL prompt (\$) appears on the console terminal, set your default directory to SYS\$UPDATE by typing:

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

The system responds with another DCL prompt.

BUILDING A BOOTABLE SYSTEM DISK

4. Type:

```
$ @VMSINSTAL VMSOPT
```

This command invokes the VMSINSTAL command procedure, which prompts with:

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

5. Assuming that the RA80 drive is designated as unit 0 and the RL02 drive is designated as unit 1, enter DLA1. The system responds with:

```
%MOUNT-I-MOUNTED, VMSOPT mounted on DLA1
```

The command procedure then prompts:

```
Enter the device to which the optional save-set should  
be restored (DDCU):
```

6. When you enter DUA0, the system responds:

```
Restoring optional files.
```

After approximately 5 minutes, the following message appears on the terminal:

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

After approximately 5 minutes more, you will receive the completion messages:

```
OPTIONAL file set restoration complete.  
Kit installation complete.
```

The optional VAX/VMS files are now restored to your system disk. You install the EDTCAI course from the optional disk by using the parameter EDTCAI in place of VMSOPT (See Chapter 4).

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 modifications 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 either of the following:

- 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 the 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 V3.2
```

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

3.2 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 start-up command procedure, SYSS\$SYSTEM:STARTUP.COM. This command procedure, in turn, requests the execution of a site-specific start-up command procedure, SYSS\$MANAGER:SYSTARTUP.COM, which is initially blank and should be customized for your site. For example, SYSTARTUP.COM could contain the 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 user file directories.

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

3.3 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:

```
$ @SYSS$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 the system will be restored, and whether automatic reboot should be enabled.

If you enabled automatic reboot, the POWER-ON-ACTION switch is already set to RESTART/BOOT; the BOOT DEVICE switch is already set to your current system disk, and the system handles 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 (>>>).
3. To boot the system, make sure the BOOT DEVICE switch is set to boot from your newly built system disk, and type B.

The system will respond with the message:

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

The system is now completely installed.

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

SITE-SPECIFIC MODIFICATIONS TO VAX/VMS

3.4 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 configuration or special workload requirements, modifications of the system parameters may be necessary. The file SYSS\$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:

```
$ @SYSS$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.

3.5 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 is ready for use.

3.6 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 TU58 cartridges. 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 TU58 cartridges (see Section 2.5.1.2).
4. Place a scratch volume on an appropriate drive.
5. Issue one of the following 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 TU58 cartridges.

3.7 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 E).

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 H.

4.1 EXAMINING THE DISTRIBUTION KITS

System updates and optional software products are distributed on TU58 cartridges or magnetic tape. EDTCAI is a save set on the VAX/VMS distribution kit, which can be either disk or magnetic tape.

Each cartridge, 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.

4.2 PREPARING TO USE VMSINSTAL

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

THE VMSINSTAL COMMAND PROCEDURE

1. Back up your system disk (see Section 3.6). 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 free contiguous space, which you may need for 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 quota (BYTLM) = 20480
Enqueue quota (ENQLM) = 20
Buffered I/O limit (BIOLM) = 12
Direct I/O limit (DIOLM) = 12
Open file quota (FILLM) = 20
AST limit (ASTLM) = 20
```

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

```
$ SHOW PROCESS/QUOTA
```

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

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

THE VMSINSTAL COMMAND PROCEDURE

```
$ 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:

```
@SYS$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).

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

THE VMSINSTAL COMMAND PROCEDURE

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.

THE VMSINSTAL COMMAND PROCEDURE

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 option-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 VMSINSTAL COMMAND PROCEDURE

The following is an example, of using VMSINSTAL with options:

```
$ @SYS$UPDATE:VMSINSTAL VMS032 CSA1:  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. If you are booting from the console TU58, you will have to place the console TU58 back in the console TU58 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.
3. VMSINSTAL will continue the installation. In this case, VMSINSTAL performs most of the installation and then informs 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 these tasks, 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:
```

THE VMSINSTAL COMMAND PROCEDURE

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

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 TU58 cartridge
- 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 medium. To back up the console medium, use the command procedure CONSCOPY contained in the SYS\$UPDATE directory. CONSCOPY copies files from the TU58 cartridge to an empty scratch directory on a disk. From the scratch directory, the files can be restored to another TU58 cartridge. (The blank TU58 cartridge 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 750.

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 to be copied to 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 CSA1:.

8. Put your console TU58 into the drive on the processor control panel and press RETURN when ready.
9. When the files have been copied from the TU58 to the disk, you will receive this message:

SAVE of your console medium is complete.

5.1.1 Restoring Files to TU58 Cartridge

To restore files to another TU58 cartridge, 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 750.

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 the scratch TU58 into drive CSA1 and press RETURN when ready.
7. When the files have been restored from the disk to the TU58, you will receive this message:

RESTORE of your console medium is complete.

This newly created TU58 will be your console TU58. Keep the original as a backup copy. Press RETURN to mount this new TU58.

5.1.2 Reading Command Procedures From Console Media

To read bootstrap command procedures from the console TU58, you must first copy the files from the console TU58, 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 TU58 is mounted:

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

Place the console TU58 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 TU58:

Copy from console medium (Y/N)?:

Type YES to indicate a copy from the console TU58 to the default directory.

4. Finally, the command procedure requests the name of the file to be copied from the console TU58. Type the name of the file and press RETURN.

You can now read the file from the default directory.

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 bootstrap the system in either of the following ways:

- Conversational - Request that SYSBOOT stop and allow you to modify the system parameters that configure the system.

THE SYSTEM AFTER INSTALLATION

- Nonstop - Allow SYSBOOT to run to completion without your intervention.

Whether you perform a conversational bootstrap or a nonstop bootstrap, the following options are available to you:

- Bootstrap the system directly from the system disk
- Bootstrap the system using the stand-alone BOOT58 program on the console TU58 cartridge

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 site-independent 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.

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:

```
>>> B/l ddcu
```

(dd is the device type, c is the controller designator, and u is the unit number.)

4. When SYSBOOT is ready to accept commands, it prompts as follows:

```
%%  
SYSBOOT>
```

The two percent signs (%%) that precede the SYSBOOT prompt indicate a successful micro verify check. If the percent signs do not appear, discontinue the bootstrap operation and contact your field service representative.

When SYSBOOT prompts, you may use any of the subset of SYSGEN commands listed in Table 5-1 to examine or modify the system.

THE SYSTEM AFTER INSTALLATION

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 parameter file as a source for values, 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.

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)

5.2.2 Nonstop Bootstrap from the System Disk

To perform a bootstrap operation from the system disk, without stopping in SYSBOOT, 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.

THE SYSTEM AFTER INSTALLATION

3. Type the console BOOT command in the following command format:

```
>>> B ddcu
```

(dd is the device type, c is the controller designator, and u is the unit number.)

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; parameter values have already been established. To reboot using the default bootstrap, 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 processor will attempt to boot from the device selected by the Boot Device Switch on the front panel.

Appendix B contains a description of bootstrapping from the console TU58.

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 unless you want 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:

THE SYSTEM AFTER INSTALLATION

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.

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:): SYS$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 disk(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.
```

THE SYSTEM AFTER INSTALLATION

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:

```
>>> B/1 ddcu
```

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 the example in Section 5.3.1).

THE SYSTEM AFTER INSTALLATION

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 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 TU58 cartridges. 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
```

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 TU58 in drive CSA1:.  
Press return when ready to continue:
```

5. After you have placed the TU58 in the drive and pressed RETURN, you will receive these messages:

```
%MOUNT-I-MOUNTED, STABACKUPA mounted on CSA1:  
%CREATE-I-CREATED, CSA1:[SYSEXE] 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 TU58 in drive CSA1:.  
Press return when ready to continue:
```

6. After you have placed the second TU58 in the drive and pressed RETURN, you will receive these messages:

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

THE SYSTEM AFTER INSTALLATION

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 TU58 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 [SYSEXEXE]

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
F11ACP.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.

(continued on next page)

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
RUNDET.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 DQ11
SECDU.SYS	DECnet downline secondary loader for DU11
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)

FILES OF THE VAX/VMS SYSTEM

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*	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
TTRDFY.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
VMOUNT.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.

(continued on next page)

FILES OF THE VAX/VMS SYSTEM

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

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

(continued on next page)

FILES OF THE VAX/VMS SYSTEM

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

File Name	Description
DISMNTSHR.EXE	DISMOUNT shareable image
FDSLHR.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

(continued on next page)

FILES OF THE VAX/VMS SYSTEM

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 \$DELTV 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

(continued on next page)

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

(continued on next page)

FILES OF THE VAX/VMS SYSTEM

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	FORTTRAN 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
UETLPAK00.EXE	LPAll-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
UETTAP00.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
DRMAST.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	LPAll-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

USING THE TU58 TAPE CARTRIDGE

This appendix supplements the information on bootstrapping a VAX/VMS system by describing how to perform conversational and nonstop bootstrap operations using the stand-alone BOOT58 program on the TU58 tape cartridge. This appendix also describes the command procedures stored on the console TU58 tape cartridge and how you can manipulate them.

B.1 WHEN TO BOOTSTRAP FROM THE TU58 TAPE CARTRIDGE

In most cases it is quicker, easier, and recommended procedure, to bootstrap the system directly from the system disk. When you do, the microcode program must read and execute the boot block (block 0). If this block is corrupted, and the rest of the disk is intact, the only way to safely bootstrap the system is to use stand-alone BOOT58. Later, you can use the WRITEBOOT utility to replace the bad boot block (see Section B.6).

B.2 BOOTSTRAPPING THE SYSTEM USING STAND-ALONE BOOT58

The stand-alone BOOT58 program resides on the console TU58 tape cartridge and is used to supplement the console subsystem's bootstrapping functions. When you request a bootstrap from the console TU58 tape cartridge (device DDA0), the console subsystem microcode reads the TU58 boot block (block 0) into memory and executes it. The effect of executing the TU58 boot block is to load and transfer control to stand-alone BOOT58.

With stand-alone BOOT58, you can bootstrap the system in either of the following ways:

- 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.

Stand-alone BOOT58 commands are used to request the bootstrapping of the system. The console TU58 tape cartridge contains a number of command procedures that contain the necessary stand-alone BOOT58 commands to bootstrap the system from the console TU58 tape cartridge. Appendix C documents the BOOT58 commands.

USING THE TU58 TAPE CARTRIDGE

The console TU58 tape cartridge contains these files in two sets:

- A conversational set that bootstraps the system from the specified device and then stops in the SYSBOOT program to accept changes to the parameters used to configure the system. See Section B.2.1.
- A nonstop set that bootstraps the system from the specified device without stopping in SYSBOOT for changes to the parameter values. See Section B.2.2.

Table B-1 lists the names of the bootstrap command procedures on the console TU58 tape cartridge.

Table B-1: VAX/VMS Boot Command Procedures

Type of Command Procedure	Name of Command Procedure
Conversational bootstrap from RK07	DM0GEN
	DM1GEN
	DM2GEN
	DM3GEN
	DMAGEN
	DMBGEN
Conversational bootstrap from RM03, RM80, RP06, RP07, or RM05	DB0GEN
	DB1GEN
	DB2GEN
	DB3GEN
	DB4GEN
	DB4GEN
	DB5GEN
	DB6GEN
	DB7GEN
	DBAGEN
DBBGEN	
Conversational bootstrap from RA60, RA80, or RA81, controlled by a UDA	DU0GEN
Nonstop bootstrap from RK07	DM0B00.CMD
	DM1B00.CMD
	DM2B00.CMD
	DM3B00.CMD
	DMAB00.CMD
	DMBB00.CMD
Nonstop bootstrap from RM03, RM05, RM80, RP06 or RP07	DB0B00.CMD
	DB1B00.CMD
	DB2B00.CMD
	DB3B00.CMD
	DB4B00.CMD
	DB5B00.CMD
	DB6B00.CMD
	DB7B00.CMD
	DBAB00.CMD
	DBBB00.CMD
Nonstop bootstrap from RA60, RA80, RA81 Controlled by a UDA	DU0B00.CMD

USING THE TU58 TAPE CARTRIDGE

B.2.1 Conversational Bootstrap Using Stand-Alone BOOT58

To bootstrap the system using the stand-alone BOOT58 program and request that SYSBOOT stop to allow you to change parameter values, proceed as follows:

1. Insert the console TU58 tape cartridge (part description: TU58#1 VAX-11/750 Local Console) in to the console drive.
2. See that the rotary key switch on the processor control panel is set to LOCAL.
3. Set the POWER-ON-ACTION switch to HALT.
4. Press CTRL/P to obtain the console program prompt >>>.
5. Enter the following console BOOT command to boot the TU58 tape cartridge:

```
>>>B DDA0
```

6. In response to the BOOT58 prompt, enter the name of a command procedure in the following command format:

```
BOOT58>@DxyGEN
```

@

Indicates that the rest of the line contains the name of a command procedure located on the console TU58 tape cartridge.

x

Indicates the device type of the desired bootstrap volume:

```
B -- RM03, RM80, or RP06  
M -- RK07
```

y

Indicates the unit number of the desired bootstrap device volume. Specify a number in the range of 0 through 7.

When SYSBOOT is ready to accept commands, it prompts as follows:

```
SYSBOOT>
```

You can now issue any one of the SYSBOOT commands listed in Chapter 5.

If your system will not boot, you can use the following sequence of SYSBOOT commands to boot using default system parameter values:

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

The following example shows a console printout obtained by bootstrapping the system using the stand-alone BOOT58 program and altering the WSMAX system parameter:

USING THE TU58 TAPE CARTRIDGE

```
>>>B DDA0
%%

BOOT58>@DM0GEN

!

!   DM0 CONVERSATIONAL BOOT COMMAND FILE - DMOGEN

!   BOOT FROM DM0 AND STOP IN SYSBOOT TO ALTER PARAMETER VALUES

!

D/G 0 1           ! CARTRIDGE DISK
D/G 1 FFE000      ! BASE OF UNIBUS I/O PAGE
D/G 2 3FF20       ! CSR ADDRESS OFFSET
D/G 3 0           ! CONTROLLER UNIT = 0
D/G 4 0           ! BOOT BLOCK LBN   (UNUSED)
D/G 5 1           ! SOFTWARE BOOT FLAGS (CONVERSATIONAL)
D/G E 200        ! ADDRESS OF WORKING MEMORY + ^X200
LOAD VMB.EXE/START:200 ! LOAD PRIMARY BOOTSTRAP
START 200         ! START PRIMARY BOOTSTRAP
SYSBOOT> SET WSMAX 512
SYSBOOT> CONTINUE
```

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

Opcom, <date hh:mm:ss.ss>, logfile initialized, operator=_OPA0:

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

B.2.2 Nonstop Bootstrap Using Stand-Alone BOOT58

To bootstrap the system using the stand-alone BOOT58 program, without stopping in SYSBOOT, proceed as follows:

1. Insert the console TU58 (part description: TU58#1 VAX-11/750 Local Console) into the console drive.
2. See that the rotary key switch on the processor control panel is set to LOCAL.
3. Set the POWER-ON-ACTION switch to HALT.
4. Press CTRL/P to obtain the console program prompt >>>.
5. Issue the following console BOOT command to bootstrap the TU58:

```
>>>B DDA0
```

USING THE TU58 TAPE CARTRIDGE

6. In response to the BOOT58 prompt, type the name of a bootstrap command procedure in the following format:

```
BOOT58>@DxyBOO.CMD
```

@

Indicates that the rest of the line contains the name of a command procedure located on the console TU58.

x

Indicates the device type of the desired bootstrap volume:

```
B -- RM03, RM80, or RP06
M -- RK07
```

y

Indicates the unit number of the desired bootstrap volume. Specify a number in the range of 0 through 7.

Note that you can also type a command procedure in the following format to perform a nonstop bootstrap operation:

```
BOOT58> BOOT 0 ddcu
```

Typing BOOT DM0 is equivalent to typing @DM0BOO.CMD. If you use the long form (that is, @DxyBOO.CMD), the contents of the command procedure are displayed on the console terminal.

The following example shows a console printout obtained by bootstrapping the system using the command procedure DM0BOO.CMD:

```
>>>B DDA0
%%
```

```
BOOT58>@DM0BOO.CMD
```

```
!
```

```
!          DM0 BOOT COMMAND FILE - DM0BOO.CMD
!
```

```
D/G 0 1          ! CARTRIDGE DISK
D/G 1 FFE000     ! BASE OF UNIBUS I/O PAGE
D/G 2 3FF20      ! CSR ADDRESS OFFSET
D/G 3 0          ! CONTROLLER UNIT = 0
D/G 4 0          ! BOOT BLOCK LBN (UNUSED)
D/G 5 0          ! SOFTWARE BOOT FLAGS
D/G E 200        ! ADDRESS OF WORKING MEMORY + ^X200
LOAD VMB.EXE/START:200 ! LOAD PRIMARY BOOTSTRAP
START 200        ! START PRIMARY BOOTSTRAP
```

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

```
Opcom, <date hh:mm:ss.ss>, logfile initialized, operator=_OPA0:
```

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

USING THE TU58 TAPE CARTRIDGE

B.3 THE DEFAULT BOOTSTRAP COMMAND PROCEDURE

VAX/VMS provides a command procedure named SETDEFB00.COM that simplifies the copying of the default bootstrap command procedure to the console TU58. To use SETDEFB00, log in under the system manager's account, SYSTEM, then type the following:

```
$ @SYS$UPDATE:SETDEFB00
```

SETDEFB00 asks you to confirm that the TU58 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:
```

Once you enter the name of the appropriate bootstrap command procedure, SETDEFB00 copies the specified bootstrap command procedure to DEFB00.COM on the console TU58. When it finishes copying, 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.

B.4 REBOOTING USING THE DEFAULT BOOTSTRAP COMMAND PROCEDURE

Under normal BOOT58 operation, you do not need to interrupt the bootstrapping of the system to type commands to SYSBOOT; that is, parameter values have been established. Rather, you can bootstrap the system using the default bootstrap command procedure that you copied to the file DEFB00.COM. To do so, proceed as follows:

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, and whether to spin down the disks.

2. In response to the statement, "SYSTEM SHUTDOWN COMPLETE - USE CONSOLE TO HALT THE SYSTEM," halt the processor by pressing CTRL/P.
3. In response to the console prompt (>>>), type: B DDA0:.
4. In response to the BOOT58 prompt (BOOT58>), type: BOOT.

B.5 COPYING FILES TO OR FROM THE CONSOLE TU58 TAPE CARTRIDGE

Occasionally, you may want to copy files other than DEFB00.COM from the console TU58, edit them, and place them back on the cartridge. VAX/VMS provides a command procedure named DXCOPY.COM to simplify the copying of text files (that is, ASCII files such as bootstrap command procedures) to and from the console TU58.

USING THE TU58 TAPE CARTRIDGE

To request the execution of the command procedure DXCOPY.COM and to copy the files, proceed as follows:

1. Invoke the command procedure by typing:

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

2. The command procedure asks whether the console TU58 is mounted:

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

Mount the TU58 and type YES.

3. The command procedure then asks whether the copy operation is from the console TU58:

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

Type YES to indicate a copy from the console TU58 to the default directory.

Type NO to indicate a copy from the current default directory to the console TU58.

4. Finally, the command procedure requests the name of the file to be copied to or from the console TU58. Type the name of the file and press RETURN.

B.6 WRITEBOOT UTILITY

This section discusses the WRITEBOOT Utility, which writes a boot block on a bootable disk.

The normal bootstrap operation on the VAX-11/750 is done from the boot block (block 0) of the system disk. If this block is corrupted, the system can only be bootstrapped from the TU58. Once the system is running again, the bad boot block can be rewritten by using the WRITEBOOT Utility.

To invoke WRITEBOOT, type:

```
$ RUN SYS$SYSTEM:WRITEBOOT
```

WRITEBOOT will ask you three questions. The first is:

```
Target system device (and boot file if not VMB.EXE):?
```

Enter the name of the device on which you want to rewrite the boot block (DMA0 for example). The target system device should be specified as any VAX/VMS disk device (ddcu):

```
dd is the code name for the device type  
c is the controller designation  
u is the unit number
```

For example, DMA0 would be an RK07 on RK611 controller A, device number 0. The second question is:

```
Enter VBN of boot file code (default is one):
```

USING THE TU58 TAPE CARTRIDGE

If you are rewriting the boot block, press RETURN. The third question is:

Enter load address of primary bootstrap in HEX (default is 200):

Again, if you are rewriting the boot block, press RETURN.

WRITEBOOT will then write the boot file that you specified in the first line, to the address that you entered in the third line.

NOTE

To use WRITEBOOT you need the LOG_IO privilege.

The WRITEBOOT Utility may issue the following error messages.

You lack LOG_IO privilege

Explanation: You do not have the correct privilege to use WRITEBOOT. Consult with your system manager.

You lack READ and/or WRITE access to TARGET DEVICE. DISMOUNT and reMOUNT

Explanation: The access to the target device is limited. Check the write protect button.

VCN must be >= 1

Explanation: You cannot specify a zero as the Virtual Block Number (VCN).

APPENDIX C

BOOT58 COMMANDS

This appendix lists and describes the commands that can be entered to the stand-alone BOOT58 program. The commands are listed in alphabetical order.

BOOT [device-name]

Bootstraps the system from the specified device. If you omit the device name, the system is bootstrapped using the default bootstrap command procedure (DEFBOO.CMD). Note that you cannot enter the name of a command procedure to the BOOT command and you cannot specify this command within a command procedure.

DEPOSIT [loc-qual,size-qual] location value

Deposits a value in the specified location. The location is interpreted according to the location and size qualifiers. The location qualifier can be expressed as follows:

- /G general register
- /I internal process register
- /P physical memory

The size qualifier can be expressed as follows:

- /B byte
- /W word
- /L longword

If you do not specify the location and size qualifiers, the default values established by a previous command are used.

EXAMINE [loc-qual,size-qual] location

Displays the contents of the specified location. The location is interpreted according to the location and size qualifiers. The location qualifier can be expressed as follows:

- /G general register
- /I internal process register
- /P physical memory

BOOT58 COMMANDS

The size qualifier can be expressed as follows:

/B byte
/W word
/L longword

If you do not specify the location and size qualifiers, the default values established by a previous command are used.

HELP

Displays the BOOT58 help file at the console terminal. You cannot specify this command within a command procedure.

LOAD file-spec [/START:address]

Loads a file from the bootstrap device into memory, starting at the address specified with the /START qualifier. If you omit the /START qualifier, the file is loaded into memory beginning at the first free address.

START value

Transfers control to the value specified. You generally use this command with the LOAD command.

@file-spec

Executes the name of the command procedure specified. You cannot specify a command procedure file-spec of more than six characters, nor can you specify nested command procedures.

APPENDIX D

MICRO VERIFY ERROR CHARACTERS

Micro verify routines test the reliability of the VAX-11/750 hardware. At the start of the micro verify routines, a percent sign (%) is displayed at the console terminal. If the routines run successfully, a second percent sign is displayed after the first percent sign. If, however, an error is detected while the routines are running, a single error character is displayed in place of the second percent sign and the processor is halted in console mode.

Table D-1 lists the possible micro verify error characters and names the micro verify routines associated with those characters.

Table D-1: Micro Verify Error Characters

Error Character	Routine Name
@	R-BUS, W-BUS, D-REG TEST
^	CACHE TEST
[TB PARITY CHECKER
]	CONTROL STORE PARITY CHECKER
C	M-BUS, C-REG TEST
E	SCRATCH PAD TEST
F	SCRATCH PAD EXPLICIT ADDR MTEMPS
I	SCRATCH PAD EXPLICIT ADDR RTEMPS
J	SCRATCH PAD EXPLICIT ADDR IPRS
L	SCRATCH PAD EXPLICIT ADDR GPRS
L	SCRATCH PAD DUAL PORT ADDRESS
O	XB, IR, OSR TEST
Q	EX, PC PC+ISIZE TEST
R	DSIZE TEST
T	DSIZE TEST
X	CACHE PARITY CHECKER

APPENDIX E

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.

E.1 DISTRIBUTION KITS

Optional software installations for the VAX-11/750 are distributed on TU58 cartridges (one or more depending on the installation).

Each TU58 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 cartridges listed in the bill of materials.

E.2 PREPARATIONS FOR AN OPTIONAL SOFTWARE INSTALLATION

To prepare for the installation, do the following:

1. Back up your system disk (see Section 3.6). 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 TU58 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
```

E.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 cartridge in the console drive

After placing the TU58 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 cartridge in the drive and the query "Are you ready to continue?" will be repeated.

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

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

INSTALLING OPTIONAL SOFTWARE PRODUCTS

These messages are followed by questions and prompts, the content of which depends on the product.

E.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 cartridge 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, halt the processor and reboot the system.

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

APPENDIX F

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 G
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 updates 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 Version 3.0 software distribution kit and a blank TU58 cartridge.

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 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 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.

G.1 RESTARTABLE UPGRADE PROCEDURE

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

UPGRADING THE SYSTEM

last 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 V2.5 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.)

G.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 3.6. 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 POWER-ON-ACTION switch on the processor control panel is set to RESTART/BOOT. The upgrade will continue automatically after shutdowns as long as this switch is in the RESTART/BOOT position.

G.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. Set the boot device switch on the processor control panel to boot from the disk drive containing the new system disk.

If you do not have a position for this device, set the boot device switch to position A to bootstrap from the TU58 cartridge, and place your console TU58 in the drive in the processor control panel. If you are booting from the TU58, reply YES when the upgrade procedure asks if you want to boot from TU58.

2. Log in under the system manager's account, SYSTEM.

UPGRADING THE SYSTEM

3. Prevent users from logging into the system by typing:

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

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

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

When the NCP> prompt is displayed, type:

```
SET EXECUTOR STATE OFF
```

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

5. 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.

6. Place the distribution medium in the appropriate drive and place the drive online.

7. Execute the following DCL command:

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

8. Type the following:

```
$ @VMSINSTAL
```

9. You now 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.

10. At this point, the upgrade procedure displays:

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

A brief description of the upgrade procedure will be 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.

G.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 VMS V2.0? (Y/N)
```

Respond YES or NO to that question.

UPGRADING THE SYSTEM

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

The procedure then asks:

Do you want to boot from the TU58? (Y/N)

If you do not want to boot from TU58, answer NO and proceed to step 9 below.

If you set your boot device switch to boot from TU58 as described in Section G.3, you must answer YES. Make sure the switch position is set correctly for the upgrade to automatically continue.

3. At this point, a new, site-specific TU58 must be created to allow reboot of a kernel VAX/VMS V3.0 system.

The upgrade procedure asks you the following question:

DEFBOO.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 DEFBOO.COMD command procedure on your old console TU58 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 as follows:

4. 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 dduBOO.COMD. Note that you must not do an interactive boot. The upgrade kit is set with parameters that boot any system.

6. The following is then displayed:

Default boot command file replaced with dduBOO.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 TU58 into drive CS1. Answer YES when you receive the following message:

Is the old console TU58, CS1:, ready to be mounted? (Y/N)

UPGRADING THE SYSTEM

The system will respond:

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

The TU58 is copied to the system disk for editing.

8. Now, put a scratch console TU58 into the console drive. (The blank TU58 provided with your distribution kit may be used.) The upgrade procedure now checks the new console TU58 for any defective blocks by running the Bad Block Locator Utility. The new console TU58 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.

The upgrade procedure now asks:

```
Is a scratch console TU58 now in CS1:? (Y/N):
```

Answer YES.

The system responds:

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

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.)

If you are booting from the TU58, the upgrade procedure now initializes the new console TU58, copies unmodified files to the new console TU58, and sets the DEFBOO.COM 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 procedure reaches this point, you receive the following message:

```
System shutting down to boot a kernel V3 system.
```

If you are booting from the TU58, leave the newly created site-specific console TU58 in the console drive for the remainder of the upgrade procedure.

10. Leave the distribution kit and the system disk where they are for the remainder of the upgrade procedure.
11. The SYSGEN parameters are set to boot any system. Do not change them during the reboot, or the upgrade may fail to execute properly.
12. The system shuts down as part of the upgrade procedure. If you are booting from the TU58, you will have to type B after each reboot when the BOOT58> prompt is displayed.

UPGRADING THE SYSTEM

If rebooting from the disk, after the system shutdown completes, type:

```
CTRL/P
B/F0000000 ddcu:
```

From this point on, all reboots from the disk will execute without user intervention.

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.
```

G.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 SYS$MANAGER: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.

Then the optional save set is 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 SYS\$SYSDISK and null default devices.

At this point, the distribution kit may be removed.

G.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], and so on. This takes a varying amount of time, depending upon the number of user files.

UPGRADING THE SYSTEM

G.3.4 Upgrade Phase 4

If you are booting from TU58, you receive the following message:

```
Now the new site-specific TU58 must be modified
to allow reboot of the complete VAX/VMS V3 system.
The new site-specific console TU58 should already
be in CS1:.
```

The new site-specific TU58 created in Phase 1 should still be in the console TU58 drive.

SOS is now 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.
```

If you are booting from TU58, leave the newly created site-specific console TU58 in the console drive. The system disk must remain where it is in order to proceed to the next phase of the upgrade.

The system automatically reboots after the shutdown.

Then the following appears:

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

G.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 automatically 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.

If you asked to boot from TU58, the upgrade procedure has also created a new site-specific console TU58. This TU58 should be used instead of your old one.

The upgrade is complete after the reboot.

G.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 parameter falls in, refer to the SAVPARAMS section in SYS\$UPDATE:AUTOGEN.COM.

UPGRADING THE SYSTEM

See Section 3.4 for additional information on modifying system parameters.

G.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
```

For the next 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 with 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 their use should be monitored to make sure they are satisfactory:

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

G.6 INSTALLED IMAGES

As part of the upgrade, the file SYS\$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 SYS\$MANAGER:SYSTARTUP.COM file and should be removed.

APPENDIX H

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.

VMSINSTAL ERROR MESSAGES

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.

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.

INDEX

- AUTOGEN.PAR parameter file,
G-7
- Backup Utility (BACKUP),
save set, 2-1
- BOOT58 program, 1-1
- Bootstrap,
 - conversational, 5-3
 - initial, RL02/RA80, 2-9
 - nonstop, 5-3
- Building a bootable system
disk, 2-1
- Command procedures,
 - CONSCOPY.COM, 5-1
 - STABACKIT.COM, 5-9
 - VMSINSTAL.COM, 2-10
 - VMSKITBLD.COM, 5-6
- CONSCOPY.COM command
procedure, 5-1
- Console subsystem, 1-1
- Device name specification, 2-4
- Distribution kit,
 - See VAX-11/750 software
distribution kit
- EDTCAI, 2-3
- Log in,
 - system manager, 2-10
- Maintenance update,
 - See System update
- Optional kit restoration,
RL02/RA80, 2-10
- Overview,
 - of building a bootable
system disk, 2-1
 - of system installation, 1-5
- Software distribution kit,
 - See VAX-11/750 software
distribution kit
- STABACKIT.COM command
procedure, 5-9
- Stand-alone BACKUP,
 - building a kit, 5-9
 - loading, 2-6
- SYSBOOT program, 5-4
 - commands, 5-4
- System update, 4-1
 - distribution kit, 4-1
- System upgrade, G-1
 - preparation, G-2
 - restart, G-1
- VAX-11/750 console subsystem,
1-1
- VAX-11/750 software
 - distribution kit, 2-1
 - magnetic tape kit, 2-2
 - optional, 2-3 to 2-4
 - primary, 2-3
 - RA60 kit, 2-3
 - RK07 kit, 2-3
- VMSINSTAL command procedure,
4-1
- VMSINSTAL option, 4-4
- VMSINSTAL product list, 4-3
- VMSINSTAL.COM command
procedure, 2-10
- VMSKITBLD.COM command
procedure, 5-6

PCS 750 INSTALLATION PROCEDURE

ADDENDUM

to the

VAX-11/750 INSTALLATION AND ACCEPTANCE MANUAL
(EK-SI750-IN-003)

June 1983

Copyright © 1983 by Digital Equipment Corporation.
All rights reserved.

Prepared by Educational Services
of Digital Equipment Corporation

digital

PCS 750 INSTALLATION PROCEDURE

INSTALLATION PROCEDURE

To install the PCS (Patchable Control Store) board, follow the procedure below:

1. Remove the L0005 from slot 5.
2. Install the L0008 in slot 5.
 - a. If you are removing the L0005 without the WCS daughter board, install an L0008-YA.
 - b. If you are removing the L0005 with the WCS daughter board, install an L0008-YB.

DIAGNOSTICS

1. Power up the system.
2. Boot the Diagnostic Supervisor to automatically load the PCS for testing.

NOTE

The minimum revision level of the Diagnostic Supervisor (ECSAA) that will load the PCS with microcode is 6.10B.

UPDATING VMS (TO LOAD THE PCS)

1. Boot VMS.

NOTE

Booting VMS will not load the PCS unless SYSTARTUP.COM has been updated to do so.

2. Log in under the system manager account.
3. Set the default to [SYSUPD].
4. Insert the PCS750KIT TU58 cassette (BE-T538A-~~BE~~) in CSA1.
5. Type @VMSUPDATE. --DE 6

NOTE

You will be asked some questions, the first one being "Are you ready?" This is just to see if the TU58 is loaded. Answering "yes" will mount the TU58. From this point on, the command file on the TU58 will be run.

6. Answer the two questions asked by the update command file program.

- a. Question 1:

If you have battery backup, do you want powerfail recovery?

NOTE

Powerfail recovery does not work at this time with all VMS Version 2 systems.

The answer to this question determines how a power failure is to be handled. If you have a power failure and you have battery backup, the PCS will not be reloaded unless the PCS device driver is included along with the proper command file that defines that device driver.

Answering "yes" to this question means the device driver (PCS750DRV) will be included with the PCS loader utility (PCS750UTL). Also, the command file PCS750RES.COM will be added to the system manager account ([SYSMGR]) and SYSTARTUP.COM will be appended to call that command file. If a power failure occurs with battery backup, the driver will be awakened by the system to reload the PCS.

If you answer "no" to this question, the driver will not be included with the utility and the command file PCS750.COM will be added to [SYSMGR] with a call to that command file from SYSTARTUP.COM.

- b. Question 2:

Do you want SYSTARTUP.COM updated to load PCS?

This question is whether to append PCS750.COM or PCS750RES.COM to SYSTARTUP.COM (depending on your answer to Question 1).

Answer "yes" to this question if this is the first time you are running the update command to install PCS loaders.

Answer "no" to this question if you are just updating the binary file or software, if you already have a call to the command files in SYSTARTUP.COM, or if you plan to use a different command file to load the PCS.

VMS UPDATE CHECKS

After the above two questions have been answered, the update command file will put the files in the proper locations and modify SYSTARTUP.COM to load the PCS upon power-up or restart. When the update command file is complete, do the following checks:

1. All files named PCS*.* are deleted out of [SYSUPD].
2. The following are in [~~SYSUPD~~]: [?]
a. PCS750.BIN [SYSEXE] (SYS\$SYSTEM)
b. PCS750UTL.EXE
c. PCS750DRV.EXE
(only if you answered "yes" to Question 1). *NO*
3. If you answered "yes" to Question 1: *NO*
 - a. Check that PCS750RES.COM is in [SYSMGR].
 - b. Check that SYSTARTUP.COM has \$ @PCS750RES (as the last command).
4. If you answered "no" to Question 1:
 - a. Check that PCS750.COM is in [SYSMGR].
 - b. Check that SYSTARTUP.COM has \$ @PCS750 (as the last command).
5. Edit SYSTARTUP.COM so that either @PCS750 or @PCS750RES is near the beginning.
6. Check that there is only one call to load the PCS from SYSTARTUP.COM.
7. Reboot the system to load patches.

Username: SYSTEM

Password:

Welcome to VAX/VMS version V3.2

* @VMSUPDATE

%DCL-E-OPENIN, error opening SYS\$SYSROOT:[SYSMGR]VMSU.COM: as input

-RMS-E-FNF, file not found

* SET DEF [SYSUPD]

* @VMSUPDATE

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 volume in the console drive

Are you ready to continue? YES

%MOUNT-I-MOUNTED, PCS750KIT mounted on _CSA11

If you have battery backup, do you want powerfail recovery? NO

Do you want SYSTARTUP.COM updated to load PCS? YES

%COPY-S-COPIED, CSA1:[SYSUPD]PCS750.BIN#12 copied to SYS\$SYSROOT:[SYSUPD]PCS750.BIN#12 (22 blocks)

%COPY-S-COPIED, CSA1:[SYSUPD]PCS750.UTL.ORG#12 copied to SYS\$SYSROOT:[SYSUPD]PCS750.UTL.ORG#12 (6 blocks)

%COPY-S-COPIED, CSA1:[SYSUPD]PCS750.HSG.ORG#13 copied to SYS\$SYSROOT:[SYSUPD]PCS750.HSG.ORG#13 (3 blocks)

%COPY-S-COPIED, CSA1:[SYSUPD]PCS750.COM#1 copied to SYS\$SYSROOT:[SYSUPD]PCS750.COM#1 (1 block)

%COPY-S-COPIED, CSA1:[SYSUPD]PCSSYS.COM#1 copied to SYS\$SYSROOT:[SYSUPD]PCSSYS.COM#1 (1 block)

* LINK PCS750.UTL,PCS750.HSG/EXE=[SYSEXEC]PCS750.UTL/NOTRACEBACK

* SET VERIFY

%DELETE-I-DELETED, SYS\$SYSROOT:[SYSUPD]PCS750.UTL.ORG#12 deleted

%DELETE-I-DELETED, SYS\$SYSROOT:[SYSUPD]PCS750.HSG.ORG#13 deleted

%COPY-S-COPIED, SYS\$SYSROOT:[SYSUPD]PCS750.BIN#12 copied to SYS\$SYSROOT:[SYSEXEC]PCS750.BIN#12 (22 blocks)

%DELETE-I-DELETED, SYS\$SYSROOT:[SYSUPD]PCS750.BIN#12 deleted

%COPY-S-COPIED, SYS\$SYSROOT:[SYSUPD]PCS750.COM#1 copied to SYS\$SYSROOT:[SYSMGR]PCS750.COM#1 (1 block)

%APPEND-I-APPENDED, SYS\$SYSROOT:[SYSUPD]SYSTARTUP.COM#1 created

%APPEND-S-APPENDED, SYS\$SYSROOT:[SYSMGR]SYSTARTUP.COM#1 copied to SYS\$SYSROOT:[SYSUPD]SYSTARTUP.COM#1 (0 records)

%APPEND-S-APPENDED, SYS\$SYSROOT:[SYSUPD]PCSSYS.COM#1 appended to SYS\$SYSROOT:[SYSUPD]SYSTARTUP.COM#1 (3 records)

%COPY-S-COPIED, SYS\$SYSROOT:[SYSUPD]SYSTARTUP.COM#1 copied to SYS\$SYSROOT:[SYSMGR]SYSTARTUP.COM#2 (1 block)

%DELETE-I-DELETED, SYS\$SYSROOT:[SYSUPD]SYSTARTUP.COM#1 deleted

%DELETE-I-DELETED, SYS\$SYSROOT:[SYSUPD]PCS750.COM#1 deleted

%DELETE-I-DELETED, SYS\$SYSROOT:[SYSUPD]PCSSYS.COM#1 deleted

NOTE: SYS\$MANAGER:SYSTARTUP.COM has been modified to

load microcode patches without battery backup

powerfail recover

* SYS\$MANAGER:SYSTARTUP.COM should be edited so

that the call to the command file to load PCS

(PCS750 or MPC750RES) is near the beginning.

Check to be sure there is only one call to load PCS

* SYS\$MANAGER or SYS\$SYSTEM have not been pursued

REBOOT THE SYSTEM TO LOAD MICROCODE PATCHES

Are there more files to process? NO

Please place the system console medium in the console drive.

Are you ready to continue? YES

%MOUNT-I-MOUNTED, CONSOLE mounted on _CSA11

Requested update sequence is complete.

* DIR PC9*

No files found.

* SH DEF

SYS\$SYSROOT:[SYSUPD]

* SET DEF SYS\$LOGIN

READER'S COMMENTS

NOTE: This form is for document comments only. DIGITAL will use comments submitted on this form at the company's discretion. If you require a written reply and are eligible to receive one under Software Performance Report (SPR) service, submit your comments on an SPR form.

Did you find this manual understandable, usable, and well organized? Please make suggestions for improvement.

Did you find errors in this manual? If so, specify the error and the page number.

Please indicate the type of user/reader that you most nearly represent.

- Assembly language programmer
- Higher-level language programmer
- Occasional programmer (experienced)
- User with little programming experience
- Student programmer
- Other (please specify) _____

Name _____ Date _____

Organization _____

Street _____

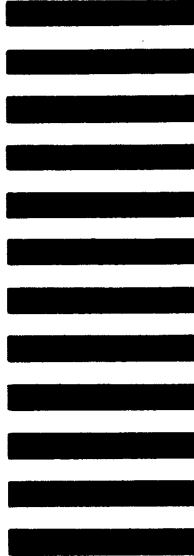
City _____ State _____ Zip Code _____
or Country

Do Not Tear - Fold Here and Tape

digital



No Postage
Necessary
if Mailed in the
United States



BUSINESS REPLY MAIL
FIRST CLASS PERMIT NO.33 MAYNARD MASS.

POSTAGE WILL BE PAID BY ADDRESSEE

BSSG PUBLICATIONS ZK1-3/J35
DIGITAL EQUIPMENT CORPORATION
110 SPIT BROOK ROAD
NASHUA, NEW HAMPSHIRE 03061

Do Not Tear - Fold Here

Cut Along Dotted Line