VAXELN

Installation Guide

Order Number: AA–EU37H–TE

This manual describes the VAXELN Toolkit installation procedure.

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Preface

The *VAXELN Installation Guide* tells you how to install the VAXELN Toolkit as a layered product on a VMS host operating system. The manual describes the installation requirements and preliminary steps for installing the VAXELN Toolkit, the installation procedure itself, and the installation verification procedure (IVP).

This product supports the License Management Facility (LMF) features provided by VMS Version 5.0 or higher and requires that you register a Product Authorization Key (PAK). To register your PAK, use the command procedure @SYS$UPDATE:VMSLICENSE. See the *VMS License Management Utility Reference Manual* for information about this command procedure and management features of LMF.

Read the chapters of this manual in order and perform the procedures documented in each one.

Note

The installation procedure in this manual is for installing the VAXELN software from a binary kit, which is the normal distribution medium. If you are installing the software from a source kit, restore the backup saveset SOURCEKIT.SAV from the distribution volume and read its file, SOURCEKIT.MEM, before proceeding. This file contains the instructions and prerequisites for source kit installations.

Intended Audience

This manual is intended for the system manager or other user who will install the VAXELN Toolkit. The text assumes familiarity with computing terminology.

Document Structure

This manual consists of three chapters and two appendixes, organized as follows:

- Chapter 1, Installation Requirements, describes the requirements for installing the VAXELN Toolkit on a VMS system.
- Chapter 2, Preliminary Steps, describes the steps you must complete before beginning the installation.
- Chapter 3, Installation Procedure, describes the VMSINSTAL command procedure used to install the VAXELN Toolkit.
- Appendix A, Installation Messages, describes messages that might appear during installation.
- Appendix B, VAXELN Files, describes the files that the installation procedure places on the output disks.

Conventions

The following conventions are used in this manual:

Convention	Meaning
UPPERCASE characters	VMS, VAXELN, and language-specific reserved words and identifiers are printed in uppercase characters.
italic characters	Elements for which you supply a value are printed in italic characters. For example, the format: `$ SHOW list`
bold characters	The first occurrence of a new term is printed in bold characters.
red characters	In interactive examples, elements for which you must supply input. For example: `UAF> MODIFY`
Ctrl/*x*	Ctrl/*x* indicates a control key sequence. Press the key labeled Ctrl while you simultaneously press another key. For example: Ctrl/C
n and *x*	When used in items such as names, the variables *n* and *x* represent numeric and nonnumeric characters, respectively. For example: VMS Version 4.*n*

Associated Documents

The following documents are associated with this guide:

- *VAXELN Release Notes*
- *Introduction to VAXELN*
- *VAXELN Development Utilities Guide*
- *VAXELN Runtime Facilities Guide*
- *VAXELN Application Design Guide*
- *VAXELN Pascal Language Reference Manual*
- *VAXELN Pascal Runtime Library Reference Manual*
- *VAXELN C Reference Manual*
- *VAXELN C Runtime Library Reference Manual*
- *VAXELN FORTRAN Runtime Library Reference Manual*
- *VAXELN Pocket Reference*
- *VAXELN Messages Manual*
- *VAXELN Guide to DECwindows*
- *VAXELN Master Index and Glossary*
- *VAXELN Internals and Data Structures*

1
Installation Requirements

This chapter describes the requirements for installing the VAXELN Toolkit on a VMS system. Before proceeding with the installation, read this material and be sure your system meets these requirements.

The chapter covers the requirements for the following:

- Prerequisite Software, Section 1.1
- Disk Storage, Section 1.2
- Account Privileges and Quotas, Section 1.3
- Installation Time, Section 1.4

1.1 Prerequisite Software

To install the VAXELN Toolkit you must have the following:

- A valid VMS operating system configuration running VMS Version 4.7 or higher
- VMS Version 5.1 or higher if DECwindows support is needed
- DECnet software installed to use the down-line loading boot method

You might also want to install VAX FORTRAN, VAX Ada, VAX C, and VAX LSE (Language-Sensitive Editor).

Note

The VAXELN installation procedure attempts to update the VAXELN Pascal Language-Sensitive Editor (LSE) templates to accommodate new capabilities. If VAX LSE is already installed on your system, the VAXELN installation procedure updates the templates. If you intend to use LSE to program VAXELN Pascal applications, you must install LSE before installing the VAXELN Toolkit.

1.2 Disk Storage

The installation procedure uses a target disk and a VAXELN disk. You can use a single disk on your VMS system to serve both purposes if the disk has sufficient space, or you can use two separate disks.

The **target disk** receives the distribution software copied from magnetic tape or other distribution media early in the installation. The installation procedure copies the distribution software to this disk.

The **VAXELN disk** holds the development software after the installation is complete. The installed VAXELN Toolkit uses the system logical name ELN$ to refer to the directory on this disk containing the VAXELN software. The installation procedure creates or redefines this logical if necessary.

Both disks must be mounted and write-enabled before you begin the installation.

If you are installing the VAXELN Toolkit on the system disk, the installation procedure uses 42,000 blocks of disk space during peak utilization; net utilization—the amount of disk space the VAXELN Toolkit occupies after the installation is complete—is 34,000 blocks. If DECwindows software is supported, the installation procedure uses 72,000 blocks during peak utilization; net utilization is 68,000 blocks.

If you use two disks for installation, the target disk must have at least 42,000 free blocks of disk space. If DECwindows software is supported, the target disk must have at least 72,000 free blocks. The VAXELN disk must have at least 34,000 free blocks of disk space. If DECwindows software is supported, the VAXELN disk must have at least 64,000 free blocks.

1.3 Account Privileges and Quotas

To install VAXELN you must be logged in to the system manager's account (SYSTEM) or an account with the following quotas and privileges:

- Open file limit: 100
- AST limit: 24
- Working set quota: 250 pages (minimum), 1000 pages (optimum)
- Paging file quota: 8000 pages
- SETPRV privilege
- Virtual memory: 4000 pages

One of the preliminary steps in Chapter 2 checks and, if necessary, corrects the account quotas.

1.4 Installation Time

In general, the VAXELN installation procedure, including running the installation verification procedure (IVP), takes between 30 and 90 minutes, depending on the VAX system processor and configuration, with faster processors and faster media requiring less time. If DECwindows software is supported, the time is closer to 90 minutes; otherwise, it is closer to 30 minutes.

2
Preliminary Steps

This chapter describes the preliminary steps you must complete before beginning the installation.

The steps to complete are:

- Backup system disk, Section 2.1
- Check user account limits, Section 2.2

Section 2.3 provides an example of how to check account privileges and quotas.

The interactive commands that you must issue appear in red type. The parameters you must supply appear in italics:

```
$ COMMAND parameter
```

You terminate all commands by pressing the Return key.

2.1 Backup System Disk

Make a backup copy of your system disk before you install VAXELN.

For more information on backing up your system disk, see the VMS system management documentation.

2.2 Check Account Privileges and Quotas

Be sure that the following limits in the user account authorization record are set equal to or greater than the listed values:

```
Open file limit (Fillm) = 100
AST limit (ASTlm) = 24
Working set quota (WSquo) = 250 (1000 optimum)
Paging file quota (Pgflquo) = 8000
```

Perform these procedures in the following order:

1. Run the Authorize Utility (AUTHORIZE) to check the user account limits by entering the following commands:

```
$  SET DEFAULT SYS$SYSTEM
$  RUN AUTHORIZE
```

2. When the system responds with the UAF> prompt, enter this command (*user* is the user name for the account from which the installation will be done):

   ```
   UAF>  SHOW user
   ```

   AUTHORIZE responds by displaying the current limits of the user account's authorization file.

3. If the current limits need to be modified, use the AUTHORIZE command MODIFY in the following form:

   ```
   UAF>  MODIFY user/limit=new_value
   ```

   For example, to increase the open file (Fillm) limit to 100 for the SYSTEM account, use the following command:

   ```
   UAF>  MODIFY SYSTEM/FILLM=100
   ```

4. When you have completed the modifications, return to DCL command level by entering the EXIT command at the UAF> prompt. You must then log out and log in again for the changes to take effect.

2.3 Sample Account Privileges and Quotas Check

```
$  SHOW DEVICE SYS$SYSDEVICE
Device              Device         Error    Volume        Free  Trans Mnt
 Name               Status         Count     Label       Blocks Count Cnt

XVAX$DRA0:          Mounted            0  XVAX$SYS        133814  145   1

$  SET DEFAULT SYS$SYSTEM

$  RUN AUTHORIZE
UAF>  SHOW SYSTEM

Username: SYSTEM                          Owner:  SYSTEM MANAGER
Account:  SYSTEM                          UIC:    [1,4] ([SYSTEM]
CLI:      DCL                             Tables:
Default:  SYS$SYSROOT:[SYSMGR]
LGICMD:   SYS$SYSROOT:[SYSMGR.LOG]LOGIN
Login Flags:
Primary days:   Mon Tue Wed Thu Fri
Secondary days:                     Sat Sun
No access restrictions
Expiration:            (none)    Pwdminimum:  6   Login Fails:     0
Pwdlifetime:         30 00:00    Pwdchange:  6-FEB-1990 07:22

Last Login: 20-FEB-1990 06:46 (interactive), 20-FEB-1990 06:00 (non-interactive)

Maxjobs:         0  Fillm:       100  Bytlm:        32000
Maxacctjobs:     0  Shrfillm:     20  Pbytlm:           0
Maxdetach:       0  BIOlm:       100  JTquota:       1024
Prclm:          10  DIOlm:        60  WSdef:          400
Prio:            4  ASTlm:       100  WSquo:          512
Queprio:         0  TQElm:       100  WSextent:      2048
CPU:        (none)  Enqlm:       300  Pgflquo:      10000

Authorized Privileges:
  CMKRNL CMEXEC SYSNAM GRPNAM ALLSPOOL DETACH DIAGNOSE LOG_IO
  GROUP ACNT PRMCEB PRMMBX PSWAPM ALTPRI SETPRV TMPMBX WORLD
  OPER EXQUOTA NETMBX VOLPRO PHY_IO BUGCHK PRMGBL SYSGBL MOUNT
  PFNMAP SHMEM SYSPRV BYPASS SYSLCK SHARE GRPPRV READALL
  SECURITY
Default Privileges:
  CMKRNL CMEXEC SYSNAM GRPNAM ALLSPOOL DETACH DIAGNOSE LOG_IO
  GROUP ACNT PRMCEB PRMMBX PSWAPM ALTPRI SETPRV TMPMBX WORLD
  OPER EXQUOTA NETMBX VOLPRO PHY_IO BUGCHK PRMGBL SYSGBL MOUNT
  PFNMAP SHMEM SYSPRV BYPASS SYSLCK SHARE GRPPRV READALL
  SECURITY
UAF>  EXIT

%UAF-I-NOMODS, no modifications made to system authorization file
```

3
Installation Procedure

This chapter explains how to use the VMSINSTAL command procedure to install the VAXELN Toolkit. The topics are as follows:

- Installing the Kit, Section 3.1
- Installation in a VAXcluster Environment, Section 3.2
- Verifying Installation, Section 3.3
- Sample Installation Procedures, Section 3.4

3.1 Installing the Kit

You use the VMSINSTAL command procedure to install the VAXELN Toolkit. You can obtain help at any time during the execution of VMSINSTAL by typing a question mark (?). To abort the installation procedure at any time, press Ctrl/Y. All files created by that procedure are then deleted, and you are returned to DCL level.

During the installation, the system (VMS Version 5.0 or higher) asks whether you have registered the VAXELN license and loaded the appropriate authorization key. You must register and load your license for VAXELN before you start the installation in order to run the installation verification procedure (IVP) and use the software.

To register a license under VMS, first log in to the system manager's account, SYSTEM. You then have a choice of two ways to perform the registration:

- Invoke the SYS$UPDATE:VMSLICENSE.COM procedure. When it prompts you for information, respond with data from your Product Authorization Key (PAK).
- At the DCL prompt, issue the LICENSE REGISTER command with the appropriate qualifiers that correspond to PAK information.

Installation Procedure
3.1 Installing the Kit

Perform the following procedures in the given order; sample installation dialogs are shown at the end of this chapter.

1. Load the distribution volume, for example tape, but do not mount it.
2. Verify that you have sufficient space on the system disk to carry out the procedure. You can do this by issuing the SHOW DEVICE command, as follows:

   ```
   $  SHOW DEVICE target
   ```

   If you are installing the VAXELN Toolkit on the system disk, the installation procedure uses 42,000 blocks of disk space during peak utilization; net utilization—the amount of disk space the VAXELN Toolkit occupies after the installation is complete is 34,000 blocks. If DECwindows software is supported, the installation procedure uses 72,000 blocks during peak utilization; net utilization is 68,000 blocks.

   If you use two disks for installation, the target disk must have at least 42,000 free blocks of disk space. If DECwindows software is supported, the target disk must have at least 72,000 free blocks. The VAXELN disk must have at least 34,000 free blocks of disk space. If DECwindows software is supported, the VAXELN disk must have at least 64,000 free blocks.

   If you specify the AWD option (alternate working device) with the VMSINSTAL command to a non-system disk, there must be at least 6,000 blocks of free space on the system disk and 40,000 blocks on the alternate working device. If DECwindows software is supported, 68,000 blocks are required on the alternate working device. See the VMS documentation on software installation in the VMS System Management Subkit for information on these options.
3. Invoke the VMSINSTAL installation procedure by issuing a command with the following syntax:

   ```
   $
@SYS$UPDATE:VMSINSTAL ELN042 source: [OPTIONS option-list] [destination]
   ```

   where:

ELN042	=	the product name for the Version 4.2 VAXELN Toolkit
source	=	the device drive containing the VAXELN distribution volume
OPTIONS	=	the list of VMSINSTAL options
destination	=	the target disk—used with OPTION R

By default, VMSINSTAL assumes that the target disk is the system disk. In the following command line, VMSINSTAL is invoked to install VAXELN from magnetic tape to the system disk:

```
$ @SYS$UPDATE:VMSINSTAL ELN042 MTA0:
```

4. The VAXELN Toolkit distribution volume includes Release Notes in the form of a file, which VMSINSTAL copies to SYS$HELP for other users to read. To print or display the Release Notes, use the OPTIONS N parameter of VMSINSTAL.

   If you omit the OPTIONS N parameter, VMSINSTAL does not ask you about the Release Notes. You should review the Release Notes before proceeding with the installation in case they contain new information about the installation.

   You can select several other options when you invoke VMSINSTAL. See the VMS documentation on software installation in the VMS System Management Subkit for information on these options. If you specify more than one option, separate the options with commas (OPTIONS A,N).

   A sample invocation follows:

   ```
   $ @SYS$UPDATE:VMSINSTAL ELN042 MTA0: OPTIONS N
   ```

5. If a previous version of VAXELN software is installed on your system, you can use the existing VAXELN directory by answering Yes to the prompt:

   ```
   Do you want to use the existing VAXELN Toolkit directory?
   ```

   Otherwise, you are asked to specify the VAXELN disk with the following prompt:

   ```
   Specify device for VAXELN Toolkit directory [SYS$SYSDEVICE:]:  $DBA1
   ```

   The VAXELN disk must be mounted. If you only press Return, the VAXELN device is the same as the target device.

   In all cases, the installation procedure then asks whether you want to purge files that the installation replaces. Press the Return key to answer Yes. If you do not want to purge the replaced files, answer No.

   The installation proceeds without further interaction unless additional media must be loaded.

6. Watch the console output carefully; look for error and warning messages that indicate tasks you must perform manually. See Appendix A if you need more information about a message.

7. The installation procedure defines the logical name ELN$ for the whole system. You must add the following line to the system start-up command procedure (SYS$MANAGER:SYSTARTUP.COM for VMS Version 4.*n* and SYS$MANAGER:SYSTARTUP_V5.COM for VMS Version 5.*n*) so that ELN$ is defined correctly every time the system reboots:

   ```
   $ ASSIGN/SYSTEM xxxx:[ELN] ELN$
   ```

   where *xxxx* is the VAXELN disk.

8. This installation procedure modifies the DCL command table so that the VAXELN DCL commands are recognized and processed. However, the previous DCL command table is still in effect for those users who are currently logged in. All logged-in users who want to use the VAXELN DCL commands must log out of the system and log in again.

3.2 Installation in a VAXcluster Environment

VAXELN software is fully supported when installed on any valid VAXcluster configuration or Local Area VAXcluster configuration, including those systems that use a common system disk. You must install the software on each node that has a different system disk. For VAXcluster nodes that access a common system disk, you must first install the Toolkit on one node, then execute the following commands on the other nodes on the cluster that share the system disk:

```
$ INSTALL
INSTALL> REPLACE SYS$LIBRARY:DCLTABLES
$ ASSIGN/SYSTEM xxxx:[ELN] ELN$
```

You must register a VAXELN license under VMS Version 5.0 or higher for each member of the cluster. First, log in to the system manager's account, SYSTEM. You then have a choice of two ways to perform the registration:

- Invoke the SYS$UPDATE:VMSLICENSE.COM procedure. When it prompts you for information, respond with data from your PAK.
- At the DCL prompt, issue the LICENSE REGISTER command with the appropriate qualifiers that correspond to PAK information.

3.3 Verifying Installation

After the VAXELN software is installed and the new VAXELN DCL commands are in effect, run the IVP to verify that the VAXELN software is available on your system. The following DCL command invokes the IVP:

```
$ @SYS$TEST:ELN$IVP
```

The IVP prompts for the targets for which to build VAXELN system images. The IVP builds a down-line loading image for each target you specify. If appropriate, a disk booting image is also built.

To verify that the installed software is functional, boot one or more of the VAXELN system images that the IVP places in your local directory. The following table identifies the system images that match each target processor type and loading method:

Target	Disk Booting	Down-Line Loading
MicroVAX I MicroVAX II (KA630) MicroVAX 3*nnn* rtVAX 1000 (KA620) VAX 4000–300	QBUS_ICP.SYS	QBUS_ICP_DOWNLINE.SYS
MicroVAX 2000 MicroVAX 3100	4*nn*_ICP.SYS	4*nn*_ICP_DOWNLINE.SYS
VAX–11/725 VAX–11/730 VAX–11/750	UBUS_ICP.SYS	UBUS_ICP_DOWNLINE.SYS
VAX 6000–2*nn* VAX 6000–3*nn*	VAX 6000_ 2NN_ICP.SYS	6000_2NN_ICP_DOWNLINE.SYS
VAX 6000–4*nn*	6000_4NN_ ICP.SYS	6000_4NN_ICP_DOWNLINE.SYS
VAX 82*nn*	8250_ICP.SYS	8250_ICP_DOWNLINE.SYS
VAX 85*nn* VAX 8700	8NN_ICP.SYS	8NN_ICP_DOWNLINE.SYS
VAX 8800	MPK_ICP.SYS	MPK_ICP_DOWNLINE.SYS
VAXstation II/GPX VAXstation 3200 VAXstation 3500		GAA_ICP_DOWNLINE.SYS
VAXstation 2000 VAXstation 3100		GAB_ICP_DOWNLINE.SYS

Target	Disk Booting	Down-Line Loading
Monochrome VAXstation 2000 Monochrome VAXstation 3100		GCB_ICP_DOWNLINE.SYS
SPX VAXstation 3100		GEB_ICP_DOWNLINE.SYS

For instructions on booting a disk or down-line loading, see the *VAXELN Development Utilities Guide*.

See Appendix B for a list of the files that the installation procedure has placed in ELN$ and in other output-disk directories.

3.4 Sample Installation Procedures

The VAXELN Toolkit is divided into several savesets. Saveset A contains the Release Notes and enough information for VMS to decide whether the device on which the kit is to be installed has enough free blocks. If there are not enough free blocks, VMSINSTAL displays the following warning message:

```
The VAXELN disk requires at least nnn free blocks for this
installation.
```

The size of each saveset follows:

Saveset	Blocks
A	1512
B	14220
C	13968
D	8928
E	11538
F	12924
G	6264

Note

Online users may wish to enlarge the display window in the DECwindows Bookreader to view the sample installation procedures more easily.

3.4.1 Sample Installation on VMS Version 4.7

The following installation procedure was carried out on a VMS operating system Version 4.7.

```
$  @SYS$UPDATE:VMSINSTAL

          VAX/VMS Software Product Installation Procedure V4.7

It is 10-SEP-1990 at 09:29.
Enter a question mark (?) at any time for help.
* Are you satisfied with the backup of your system disk [YES]?
* Where will the distribution volumes be mounted:  MUA0:

Enter the products to be processed from the first distribution volume set.
* Products:  ELN042
The following products will be processed:

  ELN V4.2

    Beginning installation of ELN V4.2 at 09:30

%VMSINSTAL-I-RESTORE, Restoring product saveset A...
%VMSINSTAL-I-RELMOVED, The product's release notes have been successfully
 moved to SYS$HELP.


VAXELN V4.2 Installation Procedure


This product requires that the following products already be installed:

    VMS V4.7 or later

The installation procedure will now verify that these products are present.


* Do you want to install the VAXELN Toolkit [YES]?  YES
* Specify device for VAXELN Toolkit directory [SYS$SYSDEVICE:]: $DISK1
%VMSINSTAL-I-SYSDISK, This product creates system disk directory $DISK1:[ELN].
* Do you want to purge files replaced by this installation [YES]?

   There are no more questions, unless additional media are needed.  The
   remainder of the installation procedure will take approximately 30-90
   minutes depending on options chosen.

%VMSINSTAL-I-RESTORE, Restoring product saveset B...
%VMSINSTAL-I-RESTORE, Restoring product saveset C...
%VMSINSTAL-I-RESTORE, Restoring product saveset D...
%ELN-W-NOLSE, This product is not being installed with VAX
Language-Sensitive Editor support because the editor isn't installed
on your system.

If you want the VAX Language-Sensitive Editor support you must do
the following:

 1. Install the VAX Language-Sensitive Editor
 2. Reinstall this product.
```

```
 This product contains an Installation Verification Program (IVP) to verify
 the correct installation of the VAXELN Toolkit.

 To run the IVP, type:

 $ @SYS$TEST:ELN$IVP

 This can be done anytime after installation. See the "VAXELN Installation
 Guide" for further information.

%VMSINSTAL-I-MOVEFILES, Files will now be moved to their target directories...
 Installation of ELN V4.2 completed at 10:09

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

 VMSINSTAL procedure done at 10:09
$
```

3.4.2 Sample Installation on VMS Version 5.3–1

The following installation procedure was carried out on a VMS operating system Version 5.3–1.

```
$  @SYS$UPDATE:VMSINSTAL

         VAX/VMS Software Product Installation Procedure V5.3-1


It is 10-SEP-1990 at 11:27.
Enter a question mark (?) at any time for help.
* Are you satisfied with the backup of your system disk [YES]?
* Where will the distribution volumes be mounted:  MKA500:

Enter the products to be processed from the first distribution volume set.
* Products:  ELN042
* Enter installation options you wish to use (none):  awd=dka700:[working]
Please mount the first volume of the set on  MKA500:.
* Are you ready?  YES
%MOUNT-I-MOUNTED, TK50 mounted on _MKA500:
The following products will be processed:
  ELN V4.2
Please mount the alternate working device on  DKA700:
* Are you ready?  YES
%MOUNT-I-MOUNTED, RZ22         mounted on _DKA700:

 Beginning installation of ELN V4.2 at 11:28

%VMSINSTAL-I-RESTORE, Restoring product save set A ...
%VMSINSTAL-I-RELMOVED, Product's release notes have been moved to SYS$HELP.

VAXELN V4.2 Installation Procedure

This product requires that the following products already be installed:

    VMS V4.7 or later

The installation procedure will now verify that these products are present.
```

```
* Do you want to install the VAXELN Toolkit [YES]?
* Do you want to include VAXELN DECwindows support [NO]?  YES

        Product:      VAXELN-TOOLKIT
        Producer:     DEC
        Version:      4.2
        Release Date: 1-JUL-1990

* Does this product have an authorization key registered and loaded?  YES
* Specify device for VAXELN Toolkit directory [SYS$SYSDEVICE:]:
%VMSINSTAL-I-SYSDIR, This product creates system disk directory SYS$SYSDEVICE:[ELN].
* Do you want to purge files replaced by this installation [YES]?

   There are no more questions, unless additional media are needed. The
   remainder of the installation procedure will take approximately 30-90
   minutes depending on options chosen.

%VMSINSTAL-I-SYSDIR, This product creates system disk directory
SYS$SYSDEVICE:[ELN.DWINCLUDE].
%VMSINSTAL-I-SYSDIR, This product creates system disk directory
SYS$SYSDEVICE:[ELN.FONTS].
%VMSINSTAL-I-SYSDIR, This product creates system disk directory
SYS$SYSDEVICE:[ELN.FONTS.75DPI].
%VMSINSTAL-I-SYSDIR, This product creates system disk directory
SYS$SYSDEVICE:[ELN.FONTS.100DPI].
%VMSINSTAL-I-SYSDIR, This product creates system disk directory
SYS$SYSDEVICE:[ELN.KEYMAP].
%VMSINSTAL-I-RESTORE, Restoring product save set B ...
%VMSINSTAL-I-RESTORE, Restoring product save set C ...
%VMSINSTAL-I-RESTORE, Restoring product save set D ...
%VMSINSTAL-I-RESTORE, Restoring product save set E ...
%VMSINSTAL-I-RESTORE, Restoring product save set F ...
%VMSINSTAL-I-RESTORE, Restoring product save set G ...
%VMSINSTAL-I-SYSDIR, This product creates system disk directory VMI$ROOT:[SYSTEST.ELN].
%CREATE-I-EXISTS, VMI$ROOT:[SYSTEST.ELN] already exists
%ELN-W-NOLSE, This product is not being installed with VAX
Language-Sensitive Editor support because the editor isn't installed
on your system.

If you want the VAX Language-Sensitive Editor support you must do
the following:

 1. Install the VAX Language-Sensitive Editor
 2. Reinstall this product.


 This product contains an Installation Verification Program (IVP) to verify the
 correct installation of the VAXELN Toolkit.

 To run the IVP, type:

 $ @SYS$TEST:ELN$IVP

 This can  be done  anytime  after installation.   See the "VAXELN Installation
 Guide" for further information.
```

```
%VMSINSTAL-I-MOVEFILES, Files will now be moved to their target directories...
 Installation of ELN V4.2 completed at 13:18

Enter the products to be processed from the next distribution volume set.
* Products:
 VMSINSTAL procedure done at 13:23
$
```

3.4.3 Sample Installation Verification Procedure on VMS

The following IVP was carried out on a VMS operating system Version 5.3–1.

```
$  @SYS$TEST:ELN$IVP
 VAXELN V4.2 Installation Verification Procedure

The Installation Verification Procedure (IVP)  will use the host components
of VAXELN to build an Installation Certification Program (ICP), which you
can load and run on your target computer.

The Installation Certification Program  (ICP)  can be built for each target
CPU type.  Answer  YES  if you want an  ICP built  for any of the following
targets.  Note that to build ICPs for the  VAXstation systems you must have
VAXELN DECwindows support installed.

The .SYS file(s) will be placed in your current directory.

Do you want to build an ICP for an rtVAX or MicroVAX I, II, 3200, 3300, 3400,
35NN, 36NN, 3800, 3900, 4000 [NO] ?  Yes
Do you want to build an ICP for 725, 730, 750 [NO] ?
Do you want to build an ICP for 85NN, 8700 [NO] ?
Do you want to build an ICP for 8800 [NO] ?
Do you want to build an ICP for MicroVAX 2000, MicroVAX 3100 [NO] ?  Yes
Do you want to build an ICP for 6000-2NN, 6000-3NN [NO] ?
Do you want to build an ICP for 6000-4NN [NO] ?
Do you want to build an ICP for 8250 [NO] ?
Do you want to build an ICP for VAXstation II/GPX, VAXstation 3200 [NO] ?
Do you want to build an ICP for GPX VAXstation 2000, VAXstation 3100 [NO] ?
Do you want to build an ICP for monochrome VAXstation 2000, VAXstation
3100 [NO] ?  Yes
Do you want to build an ICP for SPX VAXstation 3100, [NO] ?  Yes

The Installation Verification Procedure is compiling the programs...

The Installation Verification Procedure is linking the programs...

The Installation Verification Procedure is building the system...

Building the ICP for Q-bus ...
System image size is 507 pages (254 Kbytes); file size is 507 blocks
System image size is 507 pages (254 Kbytes); file size is 508 blocks

Building the ICP for MicroVAX 2000 and MicroVAX 3100 ...
System image size is 516 pages (258 Kbytes); file size is 516 blocks
System image size is 516 pages (258 Kbytes); file size is 517 blocks

Building the ICP for monochrome VAXstation 2000 and VAXstation 3100 ...
System image size is 2952 pages (1476 Kbytes); file size is 2953 blocks
```

```
Building the ICP for SPX VAXstation 3100 ...
System image size is 2585 pages (1293 Kbytes); file size is 2586 blocks

Verification of the VAXELN Toolkit is complete. Please follow the instructions
in the  "VAXELN Installation Guide" to boot the ICP system you have just built
on a standalone VAX system.

VAXELN V4.2 Installation Verification Procedure has succeeded.
$
```

A
Installation Messages

This appendix describes messages that may appear during installation.

Messages can be of the following types:

- **Informational messages**, identified by the prefix ELN–I–, Section A.1. Installation continues but may require you to rectify some situations. Most of these are related to problems that you can fix without stopping the installation, such as a write-locked disk.
- **Error (warning) messages**, identified by the prefix ELN–W–, Section A.2. Prerequisite conditions have not been met. If the installation subsequently fails, correct the conditions and retry the installation. If the installation succeeds, you can ignore these messages.
- **Error (fatal) messages**, identified by ELN–E–, Section A.3. Fatal errors have aborted the installation. Correct the condition and restart the installation.

A.1 Informational Messages

The following messages are displayed when a problem exists that you can fix without stopping the installation. For example, you would get a message if you responded to the prompt for the target disk with an incorrect device name or with the disk not mounted. The prompt is repeated so you can correct the problem.

ELN-I-DEVNOTMOUNT, Device *device* is not mounted.

The device you specified, *device*, is not mounted; mount it before you proceed.

ELN-I-IVP, It is recommended that you run the IVP after the license is installed.

Installation Messages
A.1 Informational Messages

VAXELN supports the License Management Facility (LMF) features provided by VMS and requires that you register a Product Authorization Key (PAK). After registering your PAK, run the Installation Verification Procedure (IVP) to verify that the VAXELN software is available on your system.

```
ELN-I-INVDEVNAM, Invalid device name device.
```

The device name you specified for a disk, *device*, is not a syntactically valid device name.

```
ELN-I-INVELNDIR, The logical name ELN$ is directory, which
is an invalid directory.
```

The translation of the existing logical ELN$ (the VAXELN directory), *directory*, is an invalid directory. Enter a valid directory.

```
ELN-I-NOSUCHDEV, No such device device.
```

The device name you specified for a disk, *device*, does not exist.

```
ELN-I-WRITELOCK, Volume on device is write locked.
```

Use the switch on the disk drive to remove write protection on *device*.

The following messages inform you that an operation within the installation has completed successfully:

```
%VMSINSTAL-I-RESTORE, Restoring product saveset A...
%VMSINSTAL-I-RELMOVED, The product's release notes have been successfully
moved to SYS$HELP.

%VMSINSTAL-I-SYSDIR, This product creates system disk directory
SYS$SYSDEVICE:[ELN.DWINCLUDE].
%VMSINSTAL-I-SYSDIR, This product creates system disk directory
SYS$SYSDEVICE:[ELN.FONTS].
%VMSINSTAL-I-SYSDIR, This product creates system disk directory
SYS$SYSDEVICE:[ELN.FONTS.75DPI].
%VMSINSTAL-I-SYSDIR, This product creates system disk directory
SYS$SYSDEVICE:[ELN.FONTS.100DPI].
%VMSINSTAL-I-SYSDIR, This product creates system disk directory
SYS$SYSDEVICE:[ELN.KEYMAP].

%VMSINSTAL-I-RESTORE, Restoring product saveset B...
%VMSINSTAL-I-RESTORE, Restoring product saveset C...
%VMSINSTAL-I-RESTORE, Restoring product saveset D...
%VMSINSTAL-I-RESTORE, Restoring product saveset E...
%VMSINSTAL-I-RESTORE, Restoring product saveset F...
%VMSINSTAL-I-RESTORE, Restoring product saveset G...

ELN-I-LSEINST, EPASCAL templates added to system LSE environment
%VMSINSTAL-I-MOVEFILES, Files will now be moved to their target directories...
```

A.2 Error (Warning) Messages

The following messages inform you that there may be a problem with the installation:

```
ELN-W-INSUFAST, Installation may fail because of the small AST quota.

ELN-W-INSUFFIL, Installation may fail because of the small open file

ELN-W-INSUFPGFL, Installation may fail because of the small paging
  file size.

ELN-W-INSUFWS, Installation may fail because of the small working
  set size.

ELN-W-NOIVP, IVP will not be run, license not installed.

ELN-W-NOLSE, This product is not being installed with VAX
  Language-Sensitive Editor support because the editor is
  not installed on your system.

  If you want the VAX Language-Sensitive Editor support you
  must do the following:

  1. Install the VAX Language-Sensitive Editor
  2. Reinstall this product

ELN-W-NORELNOTE, Unable to locate release notes.

ELN-W-NOSPACE, The VAXELN disk requires at least nnn free blocks.
```

A.3 Error (Fatal) Messages

The following messages inform you of a problem with the installation that cannot be fixed without restarting the procedure. Since these are fatal errors, the installation is aborted. You must correct the condition and restart the installation.

```
ELN-E-NOSPACE, This product requires at least nnn free blocks.
```

This message means that the target disk does not have enough free space to finish the installation. See Section 1.2 for storage requirements.

```
ELN-E-VMS_VERSION, Invalid VMS version, V4.7 or higher is required.
```

Install the new version of VMS before proceeding.

B
VAXELN Files

This appendix describes the files that the VAXELN installation procedure places on the output disks. Files are placed in the following directories:

- The VMS directory SYS$MESSAGE, Section B.1
- The VMS directory SYS$HELP, Section B.2
- The VMS directory SYS$TEST, Section B.3
- The VMS directory SYS$LIBRARY, Section B.4
- The VAXELN directory ELN$, Section B.5

B.1 SYS$MESSAGE Directory File

The following file is placed in the VMS directory SYS$MESSAGE:

ELNMSG.EXE	Message text image

B.2 SYS$HELP Directory File

The following file is placed in the VMS directory SYS$HELP:

ELN042.RELEASE_NOTES	Release notes for the current version of VAXELN

B.3 SYS$TEST Directory File

The following file is placed in the VMS directory SYS$TEST:

ELN$IVP.COM

If VAXELN DECwindows support is installed, the following files are placed in the VMS directory SYS$COMMON:[SYSTEST.ELN]

ELN$IVP.CURSOR

ELN$IVP.FIXED

B.4 SYS$LIBRARY Directory File

The following file is placed in the VMS directory SYS$LIBRARY:

LSE$SYSTEM_ENVIRONMENT.ENV	VAX Language-Sensitive Editor system environment library — if present, is updated with VAXELN Pascal templates

B.5 ELN$ Directory Files

Table B–1 describes the files that are placed in the current directory, that is, the working directory from which you invoked the ELN$IVP.COM command procedure.

Tables B–2 to B–15 describe the files that are placed in the VAXELN directory ELN$:

- Table B–2, Tools and Utilities Used Under VMS
- Table B–3, Kernel Files
- Table B–4, VAXELN Utility Programs
- Table B–5, VAXELN Utility Shareable Images
- Table B–6, VAXELN General Runtime Library
- Table B–7, VAXELN Pascal Runtime Library
- Table B–8, Pascal Source for VAXELN Runtime Library
- Table B–9, VAXELN C Runtime Library
- Table B–10, VAXELN FORTRAN Runtime Library
- Table B–11, VAXELN Drivers
- Table B–12, Source for VAXELN Drivers
- Table B–13, Source for Sample Applications
- Table B–14, DECwindows Files
- Table B–15, DECwindows Images

B.6 DWINCLUDE Subdirectory Files

Tables B–16 and B–17 describe the files that are placed in the DWINCLUDE subdirectory of ELN$:

- Table B–16, MIT C XLIB and Toolkit DECwindows Include Files
- Table B–17, Language-Specific DECwindows Include Files

Table B–1 Installation Verification Procedure Files

File	Description
4NN_ICP.SYS	ICP system image (MicroVAX 2000 or MicroVAX 3100, disk)
4NN_ICP_DOWNLINE.SYS	ICP system image (MicroVAX 2000 or MicroVAX 3100, down-line load)
6000_2NN_ICP.SYS	ICP system image (VAX 6000–2*nn*, disk)
6000_2NN_ICP_ DOWNLINE.SYS	ICP system image (VAX 6000–2*nn*, down-line load)
6000_4NN_ICP.SYS	ICP system image (VAX 6000–4*nn*, disk)
6000_4NN_ICP_ DOWNLINE.SYS	ICP system image (VAX 6000–4*nn*, down-line load)
8NN_ICP.SYS	ICP system image (VAX 85*nn* or VAX 8700, disk)
8NN_ICP_DOWNLINE.SYS	ICP system image (VAX 85*nn* or VAX 8700, down-line load)
CICP.OBJ	C ICP object file
GAA_ICP_DOWNLINE.SYS	ICP system image (VAXstation 2000, or VAXstation 3100, down-line load)
GAB_ICP_DOWNLINE.SYS	ICP system image (VAXstation II/GPX, VAXstation 3200, or VAXstation 3500, down-line load)
GCB_ICP_DOWNLINE.SYS	ICP system image (Monochrome VAXstation 2000 and VAXstation 3100, down-line load)
GEB_ICP_DOWNLINE.SYS	ICP system image (SPX VAXstation 3100, down-line load)
ICP.PAS	ICP source code
ICPPRIME.PAS	ICP secondary program source code
MPK_ICP.SYS	ICP system image (VAX 8800, disk)
MPK_ICP_DOWNLINE.SYS	ICP system image (VAX 8800, down-line load)
QBUS_ICP.SYS	ICP system image (MicroVAX I, MicroVAX II — KA630, rtVAX 1000 — KA620, MicroVAX 3*nnn*, VAX 4000–300, disk)

(continued on next page)

Table B–1 (Cont.) Installation Verification Procedure Files

File	Description
QBUS_ICP_DOWNLINE.SYS	ICP system image (MicroVAX I, MicroVAX II — KA630, rtVAX 1000 — KA620, MicroVAX 3*nnn*, VAX 4000–300, down-line load)
UBUS_ICP.SYS	ICP system image (VAX–11/725, VAX–11/730, or VAX–11/750, disk)
UBUS_ICP_DOWNLINE.SYS	ICP system image (VAX–11/725, VAX–11/730, or VAX–11/750, down-line load)

Table B–2 Tools and Utilities Used Under VMS

File	Description
BDABOO.COM	Console command procedure for BDA disk booting a VAX 85*nn* or VAX 8700
BDABOO8.COM	Console command procedure for BDA disk booting a VAX 8800
COPYSYS.COM	Command procedure to create a bootable VAXELN disk
COPYSYS_UTILITY.EXE	Utility image run by COPYSYS command procedure to change network information
DATATOBJ.CLD	Command definition file for the DATAOBJ utility
DATATOBJ.EXE	Utility image for creating VAX–11/750 microcode update programs
DEFBOO.COM	Sample console command procedure for booting a VAX 85*nn* or VAX 8700 target using the DEBNT
DEFBOO8.COM	Sample console command procedure for booting a VAX 8800 target using the DEBNT
DFLOATRTL.COM	Command procedure to convert the VAXELN runtime library routines to D_FLOAT
EBUILD.EXE	System Builder utility image
EBUILD.HLB	Help library used by System Builder
EDEBUG.EXE	Remote debugger image, host-side
EDEBUG.HLB	Help library used by VAXELN Debugger
ELN$ERFU1054.A	Saveset for the error format utility
ELN$TERTIARY_ LOADER.EXE	Tertiary network bootstrap loader image for VAX 6000–*nnn* and VAX 82*nn*
ELN$VMB.EXE	VAX primary bootstrap image

(continued on next page)

Table B–2 (Cont.) Tools and Utilities Used Under VMS

File	Description
ELNLDR.EXE	Bootstrap image for DEBNI down-line loading and BDA disk booting on VAX 85*nn* and VAX 8700, and tape booting on the VAX 6000 series
ELNLDR8.EXE	Bootstrap image for DEBNI down-line loading and BDA disk booting on the VAX 8800
ELSE$SHUTDOWN.COM	Command procedure to stop the error log server
ELSE$STARTUP.COM	Command procedure to start the error log server
ELSE.EXE	Error log server image
EPAAV_MAIN.EXE	VAXELN Performance Analyzer (EPA) analyzer image
EPACVMAIN.EXE	EPA collector image, host-side
EPASCAL.EXE	Pascal compiler image
EPA_HELP.HLB	Help library used by EPA
ETABOO.COM	Sample console command procedure for booting a VAX 85*nn* or VAX 8700 target using the DEBNT
ETABOO8.COM	Sample console command procedure for booting a VAX 8800 target using the DEBNT
ETBOOT.EXE	Bootstrap image for DEBNT down-line loading, VAX 85*nn* or VAX 8700 version
ETBOOT8.EXE	Bootstrap image for DEBNT down-line loading, VAX 8800 version
EWRITEBOOT.EXE	Utility image for setting up a bootable disk device on a VAXELN system that requires a loadable version of the VAX primary bootstrap program (VMB) and does not have VMS installed
GFLOATRTL.COM	Command procedure to convert the VAXELN runtime library routines to G_FLOAT
KA800_LOADER.EXE	Program to load a VAXELN system image onto KA800 processors
NEWBOOT.COM	Command procedure to add down-line loading to the VAX console media for the VAX–11/750 and VAX–11/730 or to build a console floppy for booting a system image on a VAX 85*nn*, VAX 8700, or VAX 8800
NMIRESET.COM	Sample console command procedure for trigger booting using the DEBNT, VAX 85*nn*, or VAX 8700 version
NMIRESET8.COM	Sample console command procedure for trigger booting using the DEBNT, VAX 8800 version
P750UCODE.OBJ	Object module used with the DATAOBJ utility
RESTAR.COM	Command procedure for restarting a VAX 85*nn* or VAX 8700 target

(continued on next page)

Table B–2 (Cont.) Tools and Utilities Used Under VMS

File	Description
RESTAR8.COM	Command procedure for restarting a VAX 8800 target
SECBOO8.COM	Sample console command procedure for booting the secondary CPU on the VAX 8800
XE0BOO.CMD	Console media boot command procedure for DEUNA down-line loading
XEABOO.COM	Sample console command procedure for booting a VAX 85*nn* or VAX 8700 target using the DEUNA
XEABOO8.COM	Sample console command procedure for booting a VAX 8800 target using the DEUNA
XEBOOT.EXE	Bootstrap image for DEUNA down-line loading, VAX 85*nn*, VAX 8700 version
XEBOOT8.EXE	Bootstrap image for DEUNA down-line loading, VAX 8800 version
XIABOO.COM	Sample console command procedure for booting a VAX 85*nn* or VAX 8700 target using the DEBNI (DEC LANcontroller 200).
XIABOO8.COM	Sample command procedure for booting a VAX 8800 target using the DEBNI.

Table B–3 Kernel Files

File	Description
300KER.EXE	Kernel for rtVAX 300 processors
300KER.MAP	Linker map for rtVAX 300 kernel
300KER.STB	Linker symbol table for the rtVAX 300
4NNKER.EXE	Kernel image for MicroVAX 2000 and MicroVAX 3100 processors
4NNKER.MAP	Linker map of the MicroVAX 2000 and MicroVAX 3100 kernel image
4NNKER.STB	Linker symbol table of the MicroVAX 2000 and MicroVAX 3100 kernel image
6CCKER.EXE	Kernel image for VAX 6000–2*nn* and VAX 6000–3*nn* processors
6CCKER.MAP	Linker map of the 6CC kernel image
6CCKER.STB	Linker symbol table of the 6CC kernel image
800KER.EXE	Kernel image for a KA800
800KER.MAP	Linker map of the KA800 kernel image

(continued on next page)

Table B–3 (Cont.) Kernel Files

File	Description
800KER.STB	Linker symbol table of the KA800 kernel image
8NNKER.EXE	Kernel image for a VAX 85*nn* or VAX 8700 system
8NNKER.MAP	Linker map of the VAX 85*nn* or VAX8700 kernel image
8NNKER.STB	Linker symbol table of the VAX 85*nn*/8700 kernel image
8SSKER.EXE	Kernel image for the VAX 8200 and VAX 8250
8SSKER.MAP	Linker map of the VAX 8200 and VAX 8250 kernel image
8SSKER.STB	Linker symbol table of the VAX 8200 and VAX 8250 kernel image
9RRKER.EXE	Kernel image for the VAX 6000–4*nn*
9RRKER.MAP	Linker map of the VAX 6000–4*nn* kernel image
9RRKER.STB	Linker symbol table of the VAX 6000–4*nn* kernel image
CIO300.EXE	Console I/O image for rtVAX 300
CIO4NN.EXE	Console I/O image for MicroVAX 2000
CIO6CC.EXE	Console I/O image for VAX 6000–2*nn* and VAX 6000–3*nn*
CIO800.EXE	Console I/O image for KA800
CIO8800.EXE	Console I/O image for VAX 8800
CIO9RR.EXE	Console I/O image for VAX 6000–4*nn*
CIOVAX.EXE	Console I/O image for MicroVAX II
CIOVCB02.EXE	Console I/O image for VAXstation II/GPX, 3200, and 3500
CIOVS40.EXE	Console I/O image for VAXstation 2000 and 3100 (color)
CIOWS01.EXE	Console I/O image for VAXstation 3100/SPX
CIOWS4NN.EXE	Console I/O image for VAXstation 2000 and 3100 (monochrome)
KERNELDEF.FOR	Kernel definitions (FORTRAN)
KERNELDEF.H	Kernel definitions (C)
KERNELDEF.MAR	Kernel definitions (MACRO)
KERNELDEF.PAS	Kernel definitions (Pascal)
MP8800KER.EXE	Kernel image for a VAX 8800 system
MP8800KER.MAP	Linker map of the VAX 8800 kernel image
MP8800KER.STB	Linker symbol table of the VAX 8800 kernel image

(continued on next page)

Table B–3 (Cont.) Kernel Files

File	Description
QBUSKER.EXE	Kernel image for MicroVAX I, MicroVAX II (KA630), rtVAX 1000 (KA620), MicroVAX 3*nnn*, or VAX 4000–300 system
QBUSKER.MAP	Linker map of the MicroVAX I, MicroVAX II, rtVAX 1000 (KA620), MicroVAX 3*nnn*, VAX 4000–300 kernel
QBUSKER.STB	Linker symbol table of the MicroVAX I, MicroVAX II, rtVAX 1000 (KA620), MicroVAX 3*nnn*, VAX 4000–300 kernel image
S6CCKER.EXE	Kernel image for single processor VAX 6000–210, VAX 6000–310, or VAX 6000–410 system
S6CCKER.MAP	Linker map for single processor VAX 6000–210, VAX 6000–310, or VAX 6000–410 kernel image
S6CCKER.STB	Linker symbol table for single processor VAX 6000–210, VAX 6000–310, or VAX 6000–410 kernel image
S9RRKER.EXE	Kernel image for single processor VAX 6000–4*nn* system
S9RRKER.MAP	Linker map for single processor VAX 6000–4*nn* kernel image
S9RRKER.STB	Linker symbol table for single processor VAX 6000–4*nn* kernel image
UBUSKER.EXE	Kernel image for a VAX–11/725/730/750 system
UBUSKER.MAP	Linker map of the VAX–11/725/730/750 kernel image
UBUSKER.STB	Linker symbol table of the VAX–11/725/730/750 kernel image

Table B–4 VAXELN Utility Programs

File	Description
AUTHORIZE.EXE	Authorization Service image
ECL.EXE	VAXELN Command Language (ECL) utility image
ECL.HLP	Help file used by ECL
EDEBUGLCL.EXE	Local debugger image
EDEBUGREM.EXE	Remote debugger image, target-side
EDISPLAY.EXE	VAXELN Display (EDISPLAY) utility image
ELNMOM.EXE	Down-line load image
EPACEMAIN.EXE	VAXELN Performance Analyzer (EPA) collector image, target-side

(continued on next page)

Table B–4 (Cont.) VAXELN Utility Programs

File	Description
ERRFORMAT.EXE	Error format job image
FALSERVER.EXE	File Access Listener image
JOBCNTRL.EXE	ECL job control program image
REMSERVER.EXE	ECL remote server program image
RTDRIVER.EXE	Inbound CTERM
SET_HOST.EXE	Outbound CTERM

Table B–5 VAXELN Utility Shareable Images

File	Description
BDA.EXE	KDB port driver image
BVPSSP.EXE	BVP port driver image
DLLSHR.EXE	Shareable image of the Down-Line Load service
DSSIP.EXE	DSSI port driver image for MicroVAX 3300 and MicroVAX 3400
DUMP6CC.EXE	Last fail dump image for VAX 6000–200 and VAX 6000–300
DUMP9RR.EXE	Last fail dump image for VAX 6000–400
DUMPBDA.EXE	Last fail dump image for VAX 82*nn*, VAX 85*nn*, VAX 87*nn*, and VAX 88*nn*
DUMPDRIVR.EXE	System dump facility driver
FILE.EXE	Disk file service image
FPEMUL.EXE	MicroVAX floating-point instruction emulation image
ICSSHR.EXE	Internet control services image
LATSHR.EXE	Shareable image for LAT driver
MSCPCLASS.EXE	MSCP class image
NETMANSHR.EXE	Shareable image for network management
NETWORK.EXE	Network service image
SHACPSHR.EXE	Shareable DSSI port driver image for VAX 4000–300

(continued on next page)

Table B–5 (Cont.) VAXELN Utility Shareable Images

File	Description
TAPE.EXE	Tape file service image
TMSCPCLASS.EXE	TMSCP class image
UQSSP.EXE	UNIBUS and Q-bus port driver image
VAXEMUL.EXE	MicroVAX string instruction emulation image

Table B–6 VAXELN General Runtime Library

File	Description
ADQ32_UTILITY.EXE	ADQ32 shareable routines
CMSG.MSG	Source of the C$_ prefixed status codes
DAP.EXE	Shareable image for the DAP routines
DDA.EXE	Shareable image for the DDA routines
DDCMP.EXE	Shareable image for the DDCMP protocol routines
DDCMP_V2.EXE	Shareable image for enhanced DDCMP protocol routines
DFLOATRTL.OBS	Object modules to convert the VAXELN runtime library routines to D_FLOAT
DISK.EXE	Shareable image for the disk utilities
DMATH.EXE	Shareable image for the math routines using no G_FLOAT instructions
ELNACCESS.EXE	Shareable image for ELNACCESS
ELNDECW_DWTMSG.MSG	Source of the XUI Toolkit (DWT$_prefixed) status codes
ELNDECW_XLIBMSG.MSG	Source of the XLIB (X$_prefixed) status codes
ELNMSG.MSG	Source of the ELN$_ prefixed status codes
FILE.OLB	Disk file service object library
FILEUTIL.EXE	Shareable image for the file utilities
FORMSG.MSG	Source of the FOR$_ prefixed status codes
GETMSGSHR.EXE	Shareable image for VAXELN system shareable status text
GFLOATRTL.OBS	Object modules to convert the VAXELN runtime library routines to G_FLOAT

(continued on next page)

Table B–6 (Cont.) VAXELN General Runtime Library

File	Description
GMATH.EXE	Shareable image for the math routines using no D_FLOAT instructions
IARP.EXE	Internet address resolution
INTERNET.EXE	IP/UDP/TCP shareable image—used by datalink drivers
INTERNETNULL.EXE	NULL IP/UDP/TCP shareable image—used by datalink drivers
KERNELMSG.MSG	Source of the KER$_ prefixed status codes
LANGMSC.EXE	Language-independent runtime library routines
LIBCOMMON.EXE	Shareable image of condition-handling routines and conversion routines
LIBMSC.EXE	Shareable image of date/time routines and access to machine
LIBMSG.MSG	Source of the LIB$_ prefixed status codes
LIBVM.EXE	Shareable image of the memory allocation routines
MTHMSG.MSG	Source of the MTH$_ prefixed status codes
NISHR.EXE	Shareable image for Ethernet/IEEE datagram service network interface routine
OTSMSG.MSG	Source of the OTS$_ prefixed status codes
PASCALMSC.EXE	Shareable image for the miscellaneous Pascal routines
PASCALMSG.MSG	Source of the PAS$_ prefixed status codes
PRGLOADER.EXE	Shareable image for the loader routines
RTL.OLB	Required object library
RTLOBJECT.OLB	Complete object library
RTLSHARE.OLB	Shareable image library
SCSI_UTILITY.EXE	SCSI shareable message class utility routines
SSMSG.MSG	Source of the SS$_ prefixed status codes
STRMSG.MSG	Source of the STR$_ prefixed status codes
SYSTEMLIB.MLB	VAX–11 MACRO definitions of the kernel services
TERMCLASS.EXE	Shareable image for enhanced terminal driver routines
TERMINAL.EXE	Shareable image for the terminal driver routines

Table B–7 VAXELN Pascal Runtime Library

File	Description
DPASCALIO.EXE	Shareable image for the Pascal I/O routines using no G_FLOAT instructions
GPASCALIO.EXE	Shareable image for the Pascal I/O routines using no D_FLOAT instructions
SHARED_STATUS_ TEXT.EXE	Shareable image for shared status text

Table B–8 Pascal Source for VAXELN Runtime Library

File	Description
DAP.PAS	Pascal source for the DAP definitions
DAPSTATUS.PAS	Pascal source for the DAP status definitions
DATALINK.PAS	Pascal source for the interface to the network datalink drivers
DDAUTIL.PAS	Pascal source for the DDA routines
DDCMP.PAS	Pascal source for the DDCMP routines
DDCMP_V2.PAS	Pascal source for enhanced DDCMP routines
DISKUTIL.PAS	Pascal source for the disk utilities
FILEUTIL.PAS	Pascal source for the file utilities
PASIODEF.PAS	Pascal source for the Pascal I/O routine definitions
TAPE.PAS	Pascal source for the tape definitions
TAPEUTIL.PAS	Pascal source for the tape utilities
TERMCLASS.PAS	Pascal source for enhanced terminal driver routines
TERMINAL.PAS	Pascal source for the terminal driver routines

Table B–9 VAXELN C Runtime Library

File	Description
AUXCSHR.EXE	C socket auxiliary communication routines
CMSC.EXE	Shareable image for the miscellaneous C routines
CRTLOBJECT.OLB	C object library

(continued on next page)

Table B–9 (Cont.) VAXELN C Runtime Library

File	Description
CRTLSHARE.OLB	C shareable image library
DCIO.EXE	Shareable image for the C I/O routines using D_FLOAT
DCMATH.EXE	Shareable image for the C math routines using D_FLOAT
DFLOATCRTL.OBS	C object modules to convert the VAXELN C runtime library routines to D_FLOAT
ELNCMSG.EXE	Message text image for the VAXELN C runtime library routines
GCIO.EXE	Shareable image for the C I/O routines using G_FLOAT
GCMATH.EXE	Shareable image for the C math routines using G_FLOAT
GFLOATCRTL.OBS	C object modules to convert the VAXELN C runtime library routines to G_FLOAT
IPCSHR.EXE	Interprocess communication (socket) routines
IPCSHRNULL.EXE	Null interprocess communication routines
VAXELNC.TLB	C macro library for VAXELN C programming

Table B–10 VAXELN FORTRAN Runtime Library

File	Description
FORTRAN_DEFS.FOR	VAXELN definitions for FORTRAN programming
FRTLOBJECT.OLB	The complete object library
DLL_UTILITY.FOR	Down-Line Load service source declarations for FORTRAN programming
MESSAGES.FOR	VAXELN message code definitions for FORTRAN programming
NET_DEFINITIONS.FOR	FORTRAN RTL module
NETMAN_UTILITY.FOR	FORTRAN source for network management routines
NI_UTILITY.FOR	Network interface utility definitions for FORTRAN programming
NIDEFS.FOR	Network interface definitions for FORTRAN programming

Table B–11 VAXELN Drivers

File	Description
BDDRIVER.EXE	KDB50 controller driver image
BUDRIVER.EXE	MSCP class driver image for BVP controller
CONSOLE.EXE	Console driver image
CONSOLE9RR.EXE	Console driver image for KA64A
CSDRIVER.EXE	RX50 driver image on VAX 8800 console
CXDRIVER.EXE	CXA16/CXB16 driver image
DDDRIVER.EXE	TU58 driver image
DHTDRIVER.EXE	DHT32 asynchronous multiplexer driver image
DHVDRIVER.EXE	DHV11 driver image
DIDRIVER.EXE	DSSI driver image for RF*nn* hard disks (MicroVAX 3300 and MicroVAX 3400)
DMBDRIVER.EXE	DMB32 asynchronous 8-line multiplexer driver image
DQDRIVER.EXE	VAX–11/730 IDC driver image
DSIDRIVER.EXE	DSSI driver image for RF*nn* hard disks (VAX 4000–300)
DUDRIVER.EXE	MSCP (KDA50, UDA50, RQDX, KFQSA) driver image
DVSDRIVER.EXE	ST506 disk driver for MicroVAX 2000 and MicroVAX 3100
DZSDRIVER.EXE	Serial line driver for MicroVAX 2000 and MicroVAX 3100
DZVDRIVER.EXE	DZV11 driver image
ESDRIVER.EXE	Ethernet driver for KA410, KA640, and KA42 NI controller
ETDRIVER.EXE	DEBNI and DEMNA driver
EZDRIVER.EXE	Ethernet driver for rtVAX 300 and VAX 4000-300 NI controller
GPDRIVER.EXE	IEQ11–A driver image
LCDRIVER.EXE	DMF–32 printer driver image
LIDRIVER.EXE	DMB32 driver image
LTDRIVER.EXE	LAT driver image
LPVDRIVER.EXE	LPV11 driver image
MUDRIVER.EXE	TMSCP driver image
SCDRIVER.EXE	SCSI driver
SCNDRIVER.EXE	Driver for Signetics DUART chip on the rtVAX 300

(continued on next page)

Table B–11 (Cont.) VAXELN Drivers

File	Description
VMDRIVER.EXE	Virtual disk driver image
XBDRIVER.EXE	VAXBI/Ethernet controller driver image
XEDRIVER.EXE	DEUNA driver image
XQDRIVER.EXE	DEQNA driver image
YCDRIVER.EXE	DMF–32 terminal driver image

Table B–12 Source for VAXELN Drivers

File	Description
$SCSI_BODY.C	SCSI message class utility routines source code (body)
AAV_DEC.PAS	AAV11 driver source declarations
AAV_DRIVER.PAS	AAV11 driver source code
ADQ32_BODY.C	ADQ32 source code
ADQ32.FOR	ADQ32 FORTRAN include file
ADQ32.PAS	ADQ32 Pascal include file
ADV11DBODY.PAS	ADV11D driver source code
ADV11DUTIL.PAS	ADV11D driver source declarations
ANALOG.PAS	AXV11C and KWV11C driver exerciser program
AXVKWVBODY.PAS	AXV11C and KWV11C driver source code
AXVUTIL.PAS	AXV11C driver source declarations
BDDRIVER.PAS	KDB50 controller driver source code
BUDRIVER.PAS	Source code to start the MSCP class driver on a BVP controller
CONSOLE.PAS	Console driver source code
CONSOLE9RR.PAS	Console driver source code for KA64A
COPY_NI.MAR	Ethernet driver MACRO routines
CSDRIVER.PAS	Console driver source for the RX50 device on the VAX 85*nn*/8700/8800
CXDRIVER.PAS	CXA16/CXB16 driver source code
DDDRIVER.PAS	TU58 driver source code

(continued on next page)

Table B–12 (Cont.) Source for VAXELN Drivers

File	Description
DHTDRIVER.PAS	DHT32 driver source code
DHVDRIVER.PAS	DHV11 driver source code
DIDRIVER.PAS	DSSI driver source code
DLVBODY.PAS	DLVJ1 driver source code
DLVUTIL.PAS	DLVJ1 driver source declarations
DMB_UTIL.PAS	DMBDRIVER and LIDRIVER source declarations
DMBDRIVER.PAS	DMB32 driver source code
DQDRIVER.PAS	VAX–11/730 IDC driver source code
DR11C.PAS	DR11C driver source code
DRBBODY.PAS	DRB32 driver source code
DRBUTIL.PAS	DRB32 driver source declarations
DRQ3BBODY.PAS	DRQ3B driver source code
DRQ3BUTIL.PAS	DRQ3B driver source declarations
DRQ3BXBODY_PLUS.PAS	DRQ3BX driver source code
DRQ3BXUTIL_PLUS.PAS	DRQ3BX driver source declarations
DRV11WABODY.PAS	DRV11–W driver source code
DRV11WAUTIL.PAS	DRV11–W driver source declarations
DRVBODY.PAS	DRV11–J driver source code
DRVUTIL.PAS	DRV11–J driver source declarations
DSIDRIVER.PAS	DSSI driver source code
DUDRIVER.PAS	MSCP (KDA50, UDA50, RQDX) driver source code
DVSDRIVER.C	DVS driver source code
DVSSTRING.MAR	DVS driver source declarations
DZSDRIVER.PAS	DZS driver source code
DZVDRIVER.PAS	DZV11 driver source code
ELNMSG.PAS	Message definitions for VAXELN error codes
ESDRIVER.PAS	Ethernet driver source code
ESPROCESS.PAS	KA410, KA640, and KA42 NI controller source code
ETDRIVER.PAS	DEBNI and DEMNA driver source code

(continued on next page)

Table B–12 (Cont.) Source for VAXELN Drivers

File	Description
ETPROCESS.PAS	DEBNI (BI/Ethernet) and DEMNA (XMI/Ethernet) controller process and initialization routine
EXITUTIL.PAS	Exit handler utilities source code
EZDRIVER.PAS	Source for Second Generation Ethernet Controller driver
EZPROCESS.PAS	VAX Second Generation Ethernet Controller process and initialization routine (SEGC)
GPDRIVER.PAS	IEQ11–A driver source code
GPIB_SUB.PAS	IEQ11–A driver interface source code
GPIB_UTIL.PAS	IEQ11–A driver source declarations
KWVUTIL.PAS	KWV11C driver source declarations
LATUTIL.PAS	LAT utility source code
LCDRIVER.PAS	DMF–32 printer driver source code
LIDRIVER.PAS	DMB32 driver source code
LPVDRIVER.PAS	LPV11 driver source code
MUDRIVER.PAS	TMSCP driver source code
SAMPLE_SCSI_ DRIVER.C	Sample SCSI driver written in C
SAMPLE_SCSI_ DRIVER.FOR	Sample SCSI driver written in FORTRAN
SAMPLE_SCSI_ DRIVER.PAS	Sample SCSI driver written in Pascal
SCDRIVER.C	SCSI startup source code
SCNDRIVER.PAS	Source code for driver for Signetics DUART chip on the rtVAX 300
SCSI5380.C	SCSI port driver source code
SCSIDISK.C	SCSI disk class driver source code
SCSIGNRC.C	SCSI generic class driver source code
SCSISNIF.C	SCSI bus sniffer source code
SCSIUTIL.PAS	SCSI Epascal definition file for message class
SCSIVECTOR.MAR	SCSI shareable message class vectors
VMDRIVER.PAS	Virtual disk driver source code

(continued on next page)

Table B–12 (Cont.) Source for VAXELN Drivers

File	Description
XBDRIVER.PAS	VAXBI/Ethernet controller driver source code
XBPROCESS.PAS	VAX BI AIA NI (BI/Ethernet) process and initialization routine source code
XEDRIVER.PAS	DEUNA driver source code
XEPROCESS.PAS	VAX DEUNA/DELUA (UNIBUS/Ethernet process and initialization routine source code)
XQDRIVER.PAS	DEQNA driver source code
XQPROCESS.PAS	VAX QNA (Q-bus/Ethernet) process and initialization routine source code
YCDRIVER.PAS	DMF–32 terminal driver source code

Table B–13 Source for Sample Applications

File	Description
APPLICATION1.PAS	Pascal source for Application 1
APPLICATION2A.PAS	Pascal source for Application 2
APPLICATION2B.PAS	Pascal source for Application 2
APPLICATION3.C	C source for Application 3
APPLICATION3.PAS	Pascal source for Application 3
APPLICATION4.PAS	Pascal source for Application 4
APPLICATION5.PAS	Pascal source for Application 5
APPLICATION6A.C	C source for Application 6
APPLICATION6B.C	C source for Application 6
APPLICATION6C.PAS	Pascal source for Application 6
APPLICATION6D.PAS	Pascal source for Application 6
APPLICATION7A.PAS	Pascal source for Application 7
APPLICATION7B.PAS	Pascal source for Application 7
APPLICATION8.PAS	Pascal source for Application 8
APPLICATION9.PAS	Pascal source for Application 9
APPLICATION10.PAS	Pascal source for Application 10

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Table B–13 (Cont.) Source for Sample Applications

File	Description
APPLICATION11.PAS	Pascal source for Application 11
APPLICATION12A.C	C source for Application 12
APPLICATION12B.PAS	Pascal source for Application 12
APPLICATION12C.FOR	FORTRAN source for Application 12
APPLICATION13.C	C source for Application 13
APPLICATION14.PAS	Pascal source for Application 14
APPLICATION15A.PAS	Pascal source for Application 15
APPLICATION15B.PAS	Pascal source for Application 15
APPLICATION15C.PAS	Pascal source for Application 15
SAMPLE_CCTIME.C	C support module for SAMPLE_SENDER.FOR
SAMPLE_DEBUG.LOG	SET HOST/LOG record of sample debugging session in *Introduction to VAXELN*
SAMPLE_GLOBALS.PAS	Pascal source module for sample application in *Introduction to VAXELN*
SAMPLE_RECEIVER.PAS	Pascal source for sample application in *Introduction to VAXELN*
SAMPLE_SENDER.C	C source for sample application in *Introduction to VAXELN*
SAMPLE_SENDER.FOR	FORTRAN source for sample application in *Introduction to VAXELN*
SAMPLE_SENDER.PAS	Pascal source for sample application in *Introduction to VAXELN*
SAMPLE_UTILITIES.PAS	Pascal source module for sample application in *Introduction to VAXELN*

Table B–14 DECwindows Files

File	Description
CONVERT_UID_FORMAT.COM	Converter from VMS UID files to ELN-compatible UID files
ELNDECW_DWTERRDB.DAT	XUI error data base
ELNDECW_DWTLIB.OLB	XUI object library
ELNDECW_DWTLIBSHR.OLB	XUI shareable image library
ELNDECW_WINMGR.DAT	Window manager resource data base

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Table B–14 (Cont.) DECwindows Files

File	Description
ELNDECW_WINMGR.UID	Window manager UID file
ELNDECW_XLIB.OLB	XLIB object library
ELNDECW_XLIBERRDB.DAT	XLIB error data base
ELNDECW_XLIBSHR.OLB	XLIB shareable image library

Table B–15 DECwindows Images

File	Description
ELNDECW_CONSOLE.EXE	Console
ELNDECW_DWTLIBSHR.EXE	XUI shareable image
ELNDECW_DWTMSG.EXE	XUI Toolkit message
ELNDECW_GAA_SERVER.EXE	Server for VAXstation II/GPX, 3200, and 3500
ELNDECW_GAB_SERVER.EXE	Server for VAXstation 2000 and 3100
ELNDECW_GEB_SERVER.EXE	Server for VAXstation 3100/SPX
ELNDECW_GCB_SERVER.EXE	Server for monochrome VAXstation 2000 and 3100
ELNDECW_TE.EXE	Terminal emulator
ELNDECW_WINMGR.EXE	Window manager
ELNDECW_XLIBMSG.EXE	XLIB messages
ELNDECW_XLIBSHR.EXE	XLIB shareable image

Table B–16 MIT C XLIB and Toolkit DECwindows Include Files

ABOUTFRAME.HLP
COMPOBJ.H
COMPOBJP.H
COMPOSITE.H
COMPOSITEP.H
CONSTRAINP.H
CONSTRAINT.H

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Table B–16 (Cont.) MIT C XLIB and Toolkit DECwindows Include Files

CONVERT.H
CORE.H
COREP.H
CSH.HLP
CURSORFONT.H
DECW$CURSOR.H
DECWDWTAPPLPROG.H
DECWDWTWIDGETPROG.H
DECWMHINTS.H
DWTAPPL.H
DWTWIDGET.H
EVENT.H
GLOSSARY.HLP
INTRINSIC.H
INTRINSICP.H
KEYSYM.H
KEYSYMDEF.H
NLIST.H
OBJECT.H
OBJECTP.H
OVERVIEW.HLP
RECTOBJ.H
RECTOBJP.H
SELECTION.H
SHELL.H
SHELLP.H
STRINGDEFS.H
TRANSLATE.H
VENDOR.H
VENDORP.H

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Table B–16 (Cont.) MIT C XLIB and Toolkit DECwindows Include Files

WINDOWOBJ.H
WINDOWOBJP.H
X.H
XATOM.H
XLIB.H
XMD.H
XOS.H
XPROTO.H
XPROTOSTR.H
XRESOURCE.H
XUTIL.H

Table B–17 Language-Specific DECwindows Include Files

File	Description
CDA$DEF.H	
CDA$MSG.H	
CSTEXTP.H	
DDIF$DEF.H	
DECW$DWT_.ADA	XUI Toolkit for Ada
DECW$DWTDEF.FOR	XUI Toolkit for FORTRAN
DECW$DWTDEF.H	XUI Toolkit for VAX C
DECW$DWTDEF.PAS	XUI Toolkit for Pascal
DECW$DWTENTRY.FOR	XUI Toolkit for FORTRAN
DECW$DWTENTRY.H	XUI Toolkit for VAX C
DECW$DWTENTRY.PAS	XUI Toolkit for Pascal
DECW$DWTMSG.FOR	XUI Toolkit message for FORTRAN
DECW$DWTMSG.H	XUI Toolkit message for VAX C
DECW$DWTMSG.PAS	XUI Toolkit message for Pascal
DECW$DWTSTRUCT.FOR	XUI Toolkit for FORTRAN

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Table B–17 (Cont.) Language-Specific DECwindows Include Files

File	Description
DECW$DWTSTRUCT.H	XUI Toolkit for VAX C
DECW$DWTSTRUCT.PAS	XUI Toolkit for Pascal
DECW$DWTWIDGETDEF.FOR	XUI Toolkit widget for FORTRAN
DECW$DWTWIDGETDEF.H	XUI Toolkit widget for VAX C
DECW$DWTWIDGETDEF.PAS	XUI Toolkit widget for Pascal
DECW$DWTWIDGETSTRUCT.FOR	XUI Toolkit for FORTRAN
DECW$DWTWIDGETSTRUCT.H	XUI Toolkit for VAX C
DECW$DWTWIDGETSTRUCT.PAS	XUI Toolkit for Pascal
DECW$X_.ADA	XLIB for Ada
DECW$XLIBDEF.FOR	XLIB for FORTRAN
DECW$XLIBDEF.H	XLIB for VAX C
DECW$XLIBDEF.PAS	XLIB for Pascal
DECW$XLIBMSG.FOR	XLIB message for FORTRAN
DECW$XLIBMSG.H	XLIB message for VAX C
DECW$XLIBMSG.PAS	XLIB message for Pascal
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DRMPUBLIC.H	
STOPWATCH.C	
STOPWATCH.UIL	

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