

VAX LISP/ULTRIX Installation Guide

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This document contains instructions for installing VAX LISP /ULTRIX on the ULTRIX-32 and the ULTRIX-32m operating systems.

Operating System and Version: ULTRIX-32 Version 1.2
ULTRIX-32m Version 1.2

Software Version: VAX LISP/ULTRIX Version 2.0

**digital equipment corporation
maynard, massachusetts**

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PREFACE

Manual Objectives

This manual explains how to install, verify, and manage VAX LISP/ULTRIX.

Intended Audience

If you are responsible for installing and maintaining the VAX LISP/ULTRIX software product, you should read this manual. To do the installation, you must have access to the superuser account and be familiar with ULTRIX-32 installation procedures for layered products.

Structure of This Manual

The manual is divided into three chapters and one appendix:

- Chapter 1, Preparing for the Installation, describes the prerequisites for installing and verifying VAX LISP/ULTRIX.
- Chapter 2, Installation and Verification, explains the procedure for installing and verifying VAX LISP/ULTRIX.
- Chapter 3, Completing the Installation, gives information needed to complete the installation.
- The Appendix, Problem Determination and Reporting, shows how to report a defect in the product.

Conventions

Convention	Meaning
#	In examples, the sharp sign (#) prompt indicates the root or superuser's account in multiuser mode. For example: # sh /etc/install_product
%	In examples, the percent sign (%) prompt indicates a C-shell user's account. For example:

PREFACE

Convention	Meaning
	<pre>% setenv VAXLISP /usr/lib/vaxlisp/V1.0</pre>
Carriage returns	Except where they are written for emphasis, carriage returns are implied at the end of a command line. For example: <pre>Are you satisfied with your answers (y/n) [y] ? y</pre>
Red print	In examples, indicates user input. For example: <pre>% setenv VAXLISP '/usr/lp/vaxlisp'</pre>
Black print	In examples, indicates system output lines or prompting characters. For example: <pre>% setenv VAXLISP '/usr/lp/vaxlisp'</pre>
<i>Italics</i>	In text, indicates user input. For example: <pre>Type y</pre>
Bold	In text, indicates ULTRIX commands. For example: <pre>use the vaxlisp command</pre>
command (n)	The number enclosed in parentheses after a command is the section number of the <i>ULTRIX-32 Programmer's Manual</i> where that command is described. For example: <pre>chpt(8)</pre>

CHAPTER 1

PREPARING FOR THE INSTALLATION

Before you install the VAX LISP/ULTRIX language, you should be familiar with:

- VAX LISP naming conventions
- Contents of the distribution kit
- VAX LISP/ULTRIX installation prerequisites

1.1 VAX LISP NAMING CONVENTIONS

VAX LISP is implemented on both the VMS and the ULTRIX-32 operating systems. VAX LISP as implemented on the VMS operating system is formally named VAX LISP/VMS. VAX LISP as implemented on the ULTRIX operating system is formally named VAX LISP/ULTRIX. Both VAX LISP/ULTRIX and VAX LISP/VMS are the same language but with some specific operating system differences. For the differences, see the VAX LISP/ULTRIX Release Notes. These notes are kept on line in the auxiliary directory (/usr/lib/vaxlisp by default) in the file vaxlispnnn.mem, where nnn is the VAX LISP version number.

This manual describes VAX LISP/ULTRIX but refers to VAX LISP/ULTRIX as VAX LISP where practicable.

The VAX LISP language runs on the ULTRIX-32 and the ULTRIX-32m operating systems. This manual refers to both operating systems as ULTRIX except where the operating systems differ.

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1.2 CONTENTS OF THE DISTRIBUTION KIT

The VAX LISP/ULTRIX distribution kit contains:

- o The distribution volume (either one 9-track tape or one TK50 cartridge tape)
- o A page for the *ULTRIX-32 Programmer's Manual*
- o Four manuals

1.2.1 Documentation

The page for the *ULTRIX-32 Programmer's Manual* describes the **vaxlisp** command and its options. The four manuals in the VAX LISP/ULTRIX distribution kit are:

- *COMMON LISP: The Language* by Guy Steele
- *VAX LISP/ULTRIX Installation Guide* (this manual)
- *VAX LISP/ULTRIX User's Guide*
- *VAX LISP/ULTRIX System Access Programming Guide*

For information on system installation, utilities, operation, and management not in the VAX LISP/ULTRIX distribution kit, see the *ULTRIX-32 Programmer's Manual -- Binder 3 -- System Managers*.

1.2.2 Components of the VAX LISP/ULTRIX Software

The distribution volume contains the files for the VAX LISP product. When you conclude the installation procedure, these files are installed in your system as follows:

- The product directory (/usr/bin by default) will contain the file **vaxlisp**, the LISP executable image.
- The auxiliary file directory (/usr/lib/vaxlisp by default) will contain:

lispsus.sus	Full development environment for VAX LISP
lispivp.lsp	Installation Verification Procedure
vaxlispnnn.mem	Release notes for VAX LISP, version nnn

PREPARING FOR THE INSTALLATION

xref-files Example LISP source files that cross-reference LISP source code; they begin with the prefix *xref*.

- On ULTRIX-32 (not on ULTRIX-32m), the directory `/usr/man/man1` will contain the LISP on-line documentation file `vaxlisp.1`.

1.3 VAX LISP/ULTRIX INSTALLATION PREREQUISITES

Before you begin the installation procedure, make sure you have the necessary software and documentation, and the following prerequisites:

- **Access to the superuser or root account**
- **A valid ULTRIX-32 or ULTRIX-32m operating system configuration with ULTRIX-32 V1.2 or later**

See the SPD for hardware requirements. VAX LISP is not supported on MicroVAX I systems.

- **Directories for the VAX LISP files**

The procedure asks you for names of directories for the product. If you select the default directories, the procedure then creates `/usr/lib/vaxlisp` (if it does not exist), copies the auxiliary files into it, and uses the directory `/usr/bin` for the executable file.

To put the VAX LISP product in other directories, enter the names of those directories at the appropriate point in the installation procedure. The procedure will then create the directories for you.

- **Adequate system disk blocks**

The installation of VAX LISP/ULTRIX requires approximately 5200 free 1024-byte blocks on the system disk. After the installation, approximately 5000 1024-byte blocks are occupied by the product and auxiliary directories.

- **Adequate virtual memory (*dmmin/dmmax*)**

Two configuration variables, *dmmin* and *dmmax*, control the amount of virtual memory a process can access. These variables can be defined by the system manager in the file `/sys/config/MACHINE` where *machine* is the name you give your computer; for example, *MYVAX*.

Using the default values, *dmmin*=32 and *dmmax*=1024, the maximum amount of virtual memory (data and stack space) a process can

PREPARING FOR THE INSTALLATION

access is approximately 22 megabytes. With the default values for `dmmin` and `dmmax`, you can use up to 35,000 pages (17,500 pages in each dynamic space) to start VAX LISP. VAX LISP by default uses 6000 pages of dynamic virtual memory.

To change the amount of virtual memory, you have to rebuild your ULTRIX-32 system image. For rebuilding the system image, see "Building ULTRIX-32 Systems with Config" in the *ULTRIX-32 Programmer's Manual -- Binder 4 -- Reference*.

- **Adequate paging/swapping space**

You must have an amount of swap space equivalent to the amount of virtual memory to be allocated.

Use the `limit` command in the C shell, `cs(1)`, to determine the system resource limit.

To get enough swapping space on your system, adjust the disk partitions. See the system maintenance command `chpt(8)` (added in ULTRIX-32, Version 1.1) for details.

NOTE

Be careful when changing partitions. Large amounts of data can be lost since increasing the size of one partition decreases the size of an abutting partition.

- **G/H floating-point emulator**

To use floating-point numbers in VAX LISP/ULTRIX, you must have g/h floating-point hardware or use the g/h floating-point emulator (the `EMULFLT` option, provided by ULTRIX-32, Version 1.2).

After the installation procedure installs the LISP files, it checks your system for g/h floating-point hardware. If your system does not have g/h floating-point hardware, the procedure prints a message indicating so.

To install the `EMULFLT` option, you have to rebuild your ULTRIX-32 system image. For rebuilding the system image, see "Building ULTRIX-32 Systems with Config" in the *ULTRIX-32 Programmer's Manual -- Binder 4 -- System Managers*, pages 8 through 16. See also Appendix B of the installation.

CHAPTER 2

INSTALLATION AND VERIFICATION

This chapter describes the procedure for installing and verifying the VAX LISP product on the ULTRIX operating systems. The procedure is automated, mostly self-explanatory, and takes approximately 10 minutes. You must mount the software distribution volume when prompted and respond to questions asked during the installation. Most of the questions can be answered with a YES or a NO. The default response is enclosed in square brackets ([]). Press the RETURN key if you want the default response. If you need help, type *h* or *help* and press the RETURN key.

2.1 STARTING THE INSTALLATION PROCEDURE

To install VAX LISP/ULTRIX:

1. Make sure the installation prerequisites in Section 1.3 have been met.
2. Log in as root or as superuser:

```
name: root
password: (not echoed)
#
```

or

```
% su
password: (not echoed)
#
```

3. Invoke the ULTRIX installation procedure:

```
# sh /etc/install_product
```

INSTALLATION AND VERIFICATION

The procedure responds with:

ULTRIX V1.2 Software Product Installation Procedure

Enter 'h' or 'help' at anytime for help.

2.2 INSTALLATION PROCEDURE QUESTIONS AND PROMPTS

The installation consists of 11 steps with the following questions and prompts:

1. Backing up the system disk

The procedure first prompts:

You should back up your system disk before installing any layered products. If you answer No to the next question, the procedure will exit. Would you like to continue (y/n) [y] ?

If you are satisfied with the backup of your system disk, type y (or press the RETURN key). If you are not satisfied, type n (NO) and provide for a backup at this time. If you type n, the procedure ends. When you are ready, start again.

2. Mounting the media

The procedure next prompts:

Name your type of distribution media (tape or disk)

Because VAX LISP is only available on tape, you must answer tape in response to this prompt.

The procedure continues with:

What is the device special file for the installation device [] ?

Since your distribution medium is a tape, you might specify /dev/rmt8 as the device special file (tape drive).

The next prompt is:

Mount volume 1 of the distribution media on the named device and press the RETURN key when ready.

Place Volume 1 of the distribution media in the device from which you are doing the installation. When the volume is ready for use, press the RETURN key.

INSTALLATION AND VERIFICATION

3. Entering the product name

Once the distribution medium is mounted, and you have pressed the RETURN key, the installation procedure reads the product name from the distribution volume. The name (vaxlisp) is then displayed on the output device.

Because some distribution volumes contain files for more than one product, the installation procedure prompts you for the product you want to install:

Enter the name of the product you would like to install:

Enter vaxlisp. The procedure responds by saying that it will install VAX LISP/ULTRIX at the current date and time.

4. Checking disk block numbers and status

The procedure then displays:

- Number of blocks VAX LISP/ULTRIX requires before and after installation
- Default directories in which VAX LISP/ULTRIX will be placed
- Current status of the system disk(s)

See the example installation procedures in Section 2.4 for a full example of this display. After the display, the procedure prompts:

Do you wish to continue with the installation(y/n) [y] ?

If you do not have enough blocks to install VAX LISP/ULTRIX, type n to abort the procedure. Type y to continue. To get help, type h.

5. Selecting directories for the product files and creating a library directory

After the preceding message, the procedure prompts for the names of the installation directories:

In which directory is vaxlisp to be installed
[/usr/bin] ?

In which directory are the auxiliary vaxlisp files to be
put [/usr/lib/vaxlisp] ?

INSTALLATION AND VERIFICATION

Press the RETURN key for the default responses or enter the names of your directories. The procedure then asks if you want to create the named auxiliary library directory:

```
/usr/lib/vaxlisp is not a directory. Do you want it
created? (y/n) [y] ?
```

If this is your first installation of VAX LISP, this directory will not yet exist. If this is an update installation of VAX LISP, this directory will exist.

6. Saving or deleting previous versions of VAX LISP

If you have a previous version of VAX LISP, you are prompted:

```
You currently have vaxlisp on your machine.
Installation of the new version will make user-created
suspended systems unuseable. The current version of
lisp is: XX.X.
```

The XX.X represents the version number of your current LISP. The next prompt asks:

```
Do you wish to keep the previous version after you
install the new version of vaxlisp (y/n) [n] ?
```

Users of VAX LISP can create suspended systems containing LISP programs and data. These suspended systems are sensitive to the version of VAX LISP used to create them. Consequently, suspended systems do not run with versions of VAX LISP other than the version with which they were created.

To avoid a suspended system that is incompatible with a new version of VAX LISP, you can save the previous version of VAX LISP. So, if you have a previous version of VAX LISP, you are asked during the installation procedure if you want to save the previous version of the VAX LISP system.

The files comprising a saved version of VAX LISP are placed in a directory separate from a new version. For example, suppose the current version of VAX LISP is V1.0, and the VAX LISP suspended system is stored in /usr/lib/vaxlisp. During the installation of V1.1 of VAX LISP, the saved V1.0 VAX LISP executable image and the corresponding saved VAX LISP suspended system are placed in a directory that defaults to a subdirectory of /usr/lib/vaxlisp; the name of this directory will be the name of the old version of VAX LISP. In the example above, the old version of VAX LISP is V1.0, and the directory name would be /usr/lib/vaxlisp/V1.0. However, you are also prompted during the installation if you would like to override the default directory name.

INSTALLATION AND VERIFICATION

To use a version of VAX LISP that is not stored in /usr/bin, you must:

- Define the environment variable VAXLISP to refer to the subdirectory containing the VAX LISP executable image and suspended system. In the preceding example, you would say:

```
% setenv VAXLISP /usr/lib/vaxlisp/V1.0
```

- Inform ULTRIX where the VAX LISP executable image is located. The simplest way to do this is to use a full directory specification when you invoke the saved version of VAX LISP. In the preceding example, you would say:

```
% /usr/lib/vaxlisp/V1.0/vaxlisp
```

An alternate way to do this is to redefine your path environment variable so that the old VAX LISP directory precedes /usr/bin in that variable. Again, in the previous example, if the environment variable path was:

```
path=./bin:/usr/bin:/usr/local
```

you could redefine that variable:

```
% setenv path \  
./bin:/usr/lib/vaxlisp/V1.0:/usr/bin:/usr/local
```

In either case, you use the **vaxlisp** command to invoke the old version of the VAX LISP system. Remember, if you change the path environment variable to run a previous version of VAX LISP, you will have to change it again to run the current version of VAX LISP.

7. Verifying the installation or postponing verification

The installation procedure next prompts:

```
Is your system configured as described in the  
Installation Guide (y/n) [y] ?
```

```
Would you like to run the IVP after the installation  
(y/n) [y] ?
```

If you have properly configured your system (according to the prerequisites in Section 1.3), type y (YES) to the configuration question to run the IVP (Installation Verification Procedure) at the conclusion of the installation procedure.

INSTALLATION AND VERIFICATION

If you type n (NO) to the preceding questions, the installation is concluded without running the IVP.

You can install VAX LISP without properly configuring your system, but VAX LISP will not run until you have properly configured your system. You may want only to install VAX LISP and to configure your system later. Then, when you have properly configured your system, you can run the IVP by entering the shell command **vaxlispivp.sh**. If you have put the product files in the default directory, that command with the pathname is:

```
# /usr/lib/vaxlisp/vaxlispivp.sh
```

8. Checking your responses

To verify your decisions, the procedure summarizes your responses. For example:

```
vaxlisp will reside in /usr/bin.  
Auxiliary vaxlisp files will reside in /usr/lib/vaxlisp.  
The IVP will be run after the installation.
```

The procedure then asks:

```
Are you satisfied with your answers (y/n) [y] ?
```

If you type n (NO), the procedure begins again at step 2 of this section. If you type y (YES), the procedure copies (using **install(8)**) the files (**vaxlisp** and **lispsus.sus**) from the distribution volume into the specified directories.

9. Checking for g/h floating-point hardware

Next, the procedure checks for g/h floating-point hardware. If your system has that hardware, no message is displayed. If your system does not have the hardware, the following message is displayed:

```
Your system does not have g and h float instructions.
```

See Section 1.3 on the use of floating-point numbers on ULTRIX-32.

10. Running the IVP

If you have typed y (YES) to the verification question (step 7), the IVP next creates, compiles, and executes a small LISP program. A message is printed when the program is completed. If you have typed n (NO) to the verification question, the installation proceeds without the IVP.

INSTALLATION AND VERIFICATION

11. Reviewing the instructions for completing the installation

When VAX LISP/ULTRIX has been installed (with or without the verification procedure), four reminders on how to complete the installation are displayed on the output device:

1. If you have installed this version of VAX LISP/ULTRIX in some location other than the default one, you must do two things:

- Inform ULTRIX where the VAX LISP/ULTRIX executable image is located. The simplest way to do this is to modify the variable path. For example:

```
% set path=(. $HOME/bin /usr/bin /bin /usr/ucb \  
            /usr/local /usr/lp/vaxlisp)
```

- Define the environment variable VAXLISP to refer to the directory containing the suspended system. For example:

```
% setenv VAXLISP '/usr/lp/vaxlisp'
```

2. Make sure you have enough virtual memory and an equivalent amount of swap/passing space. To do so:

- Check the values of `dmmin` and `dmmax` in the config file.
- Use the `limit csh(1)` command to check the amount of virtual memory.
- Use the `chpt(8)` command to check the swap/paging space.

3. If you do not have G/H floating-point hardware, make sure you have installed the ULTRIX-32 G/H software emulator.

4. If you would like the formatted version of the `vaxlisp` man file, run `catman(8)`.

See Section 1.3 and Chapter 3 for further information on completing the installation.

2.3 EXITING THE INSTALLATION PROCEDURE

At the conclusion of the installation procedure, you are prompted:

```
Do you want to install another product (y/n) [n] ?
```

Type `y` (YES) to start a new installation with the naming of the new product. Type `n` (NO) to exit the procedure.

INSTALLATION AND VERIFICATION

2.4 THREE SAMPLE INSTALLATION PROCEDURES

The following three sample installation procedures show a new installation and two update installations. The first two installations are on a VAX; the last installation is on a microVAX.

2.4.1 Sample New Installation for a VAX

The following sample is on a system that does not have g/h floating-point hardware. Therefore, a message is displayed saying the system does not have g/h float instructions.

ULTRIX V1.2 Software Product Installation Procedure

Enter 'h' or 'help' at anytime for help.

You should back up your system disk before installing any layered products. If you answer No to the next question, the procedure will exit. Would you like to continue (y/n) [y] ? y

Which type of distribution media do you have (tape, disk) [] ? tape

What is the device special file for the installation device [] ?
/dev/rmt8

Mount volume 1 of the installation kit on the device.
Press the RETURN key when ready.

The following products are on this tape:

vaxlisp

Enter the name of the product you would like to install: vaxlisp

Beginning installation of VAX LISP/ULTRIX V2.0 on
Wed May 28 15:37:55 EDT 1986

VAX LISP/ULTRIX requires approximately 5200 blocks during the installation and 5000 blocks after the installation has finished.

By default, this procedure will install VAX LISP/ULTRIX in the /usr/bin and /usr/lib/vaxlisp directories.

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Current status of the disks.

Filesystem	total	kbytes	kbytes	percent	
node	kbytes	used	free	used	Mounted on
/dev/hp0a	7421	4897	1781	73%	/
/dev/hp0g	136647	49506	73475	40%	/usr
/dev/hp1a	7653	3526	3361	51%	/installation
/dev/hp1g	309208	185478	92809	67%	/vu
/dev/hp1h	142440	23727	104469	19%	/users

If you do not have enough blocks to install VAX LISP/ULTRIX, please abort this procedure and restart it when there is space on the disk(s).

Do you wish to continue with the installation (y/n) [y] ? y

In which directory is vaxlisp to be installed [/usr/bin] ?

In which directory are the auxiliary vaxlisp files to be put [/usr/lib/vaxlisp] ?

/usr/lib/vaxlisp is not a directory. Do you want it created (y/n) [y] ? y

Is your system configured as described in the installation guide (y/n) [y] ? y

Would you like to run the IVP after the installation (y/n) [y] ? y

Summary of user responses to installation questions

vaxlisp will reside in /usr/bin.

auxiliary vaxlisp files will reside in /usr/lib/vaxlisp.

The IVP will be run after the installation.

Are you satisfied with your answers (y/n) [y] ? y

Copying the VAX LISP/ULTRIX tar file off the distribution media ...

'Breaking the VAX LISP/ULTRIX file into individual files ...

Moving vaxlisp to /usr/bin.

Moving the auxiliary files to /usr/lib/vaxlisp.

Moving the unformatted man file to /usr/man/man1.

INSTALLATION AND VERIFICATION

Welcome to VAX LISP, Version V2.0

Your system does not have g and h float instructions.

Running the IVP ...

VAX LISP/ULTRIX Installation Verification Procedure

Welcome to VAX LISP, Version V2.0

Lisp>

Starting compilation of file /usr/lib/vaxlisp/fibonacci.lsp

FIBONACCI compiled.

PRINT-FIBONACCI-TABLE compiled.

Finished compilation of file /usr/lib/vaxlisp/fibonacci.lsp

0 Errors, 0 Warnings

A table of the first 20 Fibonacci numbers:

n	Fibonacci(n)
--	-----
0	0
1	1
2	1
3	2
4	3
5	5
6	8
7	13
8	21
9	34
10	55
11	89
12	144
13	233
14	377
15	610
16	987
17	1,597
18	2,584
19	4,181

VAX LISP/ULTRIX IVP Completed Successfully

INSTALLATION AND VERIFICATION

If this procedure has generated errors, correct the problems and re-run the procedure. If no problems were encountered, then continue the installation by performing the following steps:

1. If you have installed this version of VAX LISP/ULTRIX in some location other than the default one, you must do two things:

- . Inform ULTRIX where the VAX LISP/ULTRIX executable image is located. The simplest way to do this is to modify the variable path. For example:

```
% set path=(. $HOME/bin /usr/bin /bin /usr/ucb \  
             /usr/local /usr/lp/vaxlisp)
```

- . Define the environment variable VAXLISP to refer to the directory containing the suspended system. For example:

```
% setenv VAXLISP '/usr/lp/vaxlisp'
```

2. Make sure you have enough virtual memory and an equivalent amount of swap/paging space. To do so:

- . Check the values of dmmn and dmmx in the config file.
- . Use the limit Csh(1) command to check the amount of virtual memory.
- . Use the chpt(8) command to check the swap/paging space.

3. If you do not have G/H floating-point hardware, make sure you have installed the ULTRIX-32 G/H software emulator.

4. If you would like the formatted version of the vaxlisp man file, run catman(8).

```
-----  
Finished installation of VAX LISP/ULTRIX V2.0 on  
Tue May 28 15:45:50 EDT 1986  
-----
```

Do you want to install another product (y/n) [n] ? n
#

INSTALLATION AND VERIFICATION

2.4.2 Sample Update Installation for a VAX

The following sample is on a system that has g/h floating-point hardware. Therefore, no message is displayed concerning g/h float instructions.

ULTRIX V1.2 Software Product Installation Procedure

Enter 'h' or 'help' at anytime for help.

You should back up your system disk before installing any layered products. If you answer No to the next question, the procedure will exit. Would you like to continue (y/n) [y] ? y

Which type of distribution media do you have (tape, disk) [] ? tape

What is the device special file for the installation device [] ?
/dev/rmt8

Mount volume 1 of the installation kit on the device.
Press the RETURN key when ready.

The following products are on this tape:

vaxlisp

Enter the name of the product you would like to install: vaxlisp

Beginning installation of VAX LISP/ULTRIX V2.0 on
Wed May 28 15:37:55 EDT 1986

VAX LISP/ULTRIX requires approximately 5200 blocks during the installation and 5000 blocks after the installation has finished.

By default, this procedure will install VAX LISP/ULTRIX in the /usr/bin and /usr/lib/vaxlisp directories.

Current status of the disks.

Filesystem	total	kbytes	kbytes	percent	
node	kbytes	used	free	used	Mounted on
/dev/hp0a	7421	4897	1781	73%	/
/dev/hp0g	136647	49506	73475	40%	/usr
/dev/hp1a	7653	3526	3361	51%	/installation
/dev/hp1g	309208	185478	92809	67%	/vu
/dev/hp1h	142440	23727	104469	19%	/users

INSTALLATION AND VERIFICATION

If you do not have enough blocks to install VAX LISP/ULTRIX, please abort this procedure and restart it when there is space on the disk(s).

Do you wish to continue with the installation (y/n) [y] ? y

In which directory is vaxlisp to be installed [/usr/bin] ?

In which directory are the auxiliary vaxlisp files to be put [/usr/lib/vaxlisp] ?

You currently have vaxlisp on your machine.
Installation of the new version will make user-created suspended systems unuseable.

The current version of lisp is: V1.0

Do you wish to keep the previous version after you install the new version of vaxlisp (y/n) [n] ? n

Is your system configured as described in the installation guide (y/n) [y] ? y

Would you like to run the IVP after the installation (y/n) [y] ? y

Summary of user responses to installation questions

The previous version of vaxlisp will be deleted.

vaxlisp will reside in /usr/bin

auxiliary vaxlisp files will reside in /usr/lib/vaxlisp

The IVP will be run after the installation.

Are you satisfied with your answers (y/n) [y] ? y

Copying the VAX LISP/ULTRIX tar file off the distribution media ...

Breaking the VAX LISP/ULTRIX file into individual files ...

Moving vaxlisp to /usr/bin.

Moving the auxiliary files to /usr/lib/vaxlisp.

Moving the unformatted man file to /usr/man/man1.

Welcome to VAX LISP, Version V2.0

INSTALLATION AND VERIFICATION

Running the IVP ...

VAX LISP/ULTRIX Installation Verification Procedure

Welcome to VAX LISP, Version V2.0

Lisp>

Starting compilation of file /usr/lib/vaxlisp/fibonacci.lsp

FIBONACCI compiled.

PRINT-FIBONACCI-TABLE compiled.

Finished compilation of file /usr/lib/vaxlisp/fibonacci.lsp

0 Errors, 0 Warnings

A table of the first 20 Fibonacci numbers:

n	Fibonacci(n)
---	-----
0	0
1	1
2	1
3	2
4	3
5	5
6	8
7	13
8	21
9	34
10	55
11	89
12	144
13	233
14	377
15	610
16	987
17	1,597
18	2,584
19	4,181

VAX LISP/ULTRIX IVP Completed Successfully

INSTALLATION AND VERIFICATION

If this procedure has generated errors, correct the problems and re-run the procedure. If no problems were encountered, then continue the installation by performing the following steps:

1. If you have installed this version of VAX LISP/ULTRIX in some location other than the default one, you must do two things:

- . Inform ULTRIX where the VAX LISP/ULTRIX executable image is located. The simplest way to do this is to modify the variable path. For example:

```
% set path=(. $HOME/bin /usr/bin /bin /usr/ucb \  
            /usr/local /usr/lp/vaxlisp)
```

- . Define the environment variable VAXLISP to refer to the directory containing the suspended system. For example:

```
% setenv VAXLISP '/usr/lp/vaxlisp'
```

2. Make sure you have enough virtual memory and an equivalent amount of swap/paging space. To do so:

- . Check the values of dmmmin and dmmmax in the config file.
- . Use the limit Csh(1) command to check the amount of virtual memory.
- . Use the chpt(8) shell command to check the swap/paging space.

3. If you do not have G/H floating-point hardware, make sure you have installed the ULTRIX-32 G/H software emulator.

4. If you would like the formatted version of the vaxlisp man file, run catman(8).

```
-----  
Finished installation of VAX LISP/ULTRIX V2.0 on  
Tue May 28 15:45:50 EDT 1986  
-----
```

```
Do you want to install another product (y/n) [n] ? n  
#
```

2.4.3 Sample Update Installation for a MicroVAX

The following sample is on a system that has g/h floating-point hardware. Therefore no message is displayed concerning g/h float instructions.

ULTRIX V1.2 Software Product Installation Procedure

INSTALLATION AND VERIFICATION

Enter 'n' or 'help' at anytime for help.

You should back up your system disk before installing any layered products. If you answer No to the next question, the procedure will exit. Would you like to continue (y/n) [y] ? y

Which type of distribution media do you have (tape, disk) [] ? tape

What is the device special file for the installation device [] ?
/dev/rmt8

Mount volume 1 of the installation kit on the device.
Press the RETURN key when ready.

The following products are on this tape:

vaxlisp

Enter the name of the product you would like to install: vaxlisp

Beginning installation of VAX LISP/ULTRIX V2.0 on
Wed May 28 15:37:55 EDT 1986

VAX LISP/ULTRIX requires approximately 5200 blocks during the installation and 5000 blocks after the installation has finished.

By default, this procedure will install VAX LISP/ULTRIX in the /usr/bin and /usr/lib/vaxlisp directories.

Current status of the disks.

Filesystem	total	kbytes	kbytes	percent	
node	kbytes	used	free	used	Mounted on
/dev/ra0a	7447	4476	2226	67%	/
/dev/ra0g	42003	22126	15676	59%	/usr
/dev/ra1a	7447	5997	705	89%	/va
/dev/ra1g	42003	9241	28561	24%	/vu

If you do not have enough blocks to install VAX LISP/ULTRIX, please abort this procedure and restart it when there is space on the disk(s).

Do you wish to continue with the installation (y/n) [y] ? y

In which directory is vaxlisp to be installed [/usr/bin] ?

In which directory are the auxiliary vaxlisp files to be put [/usr/lib/vaxlisp] ?

INSTALLATION AND VERIFICATION

You currently have vaxlisp on your machine.
Installation of the new version will make user-created
suspended systems unuseable.
The current version of lisp is: V1.0
Do you wish to keep the previous version after you
install the new version of vaxlisp (y/n) [n] ? n

Is your system configured as described in the installation guide
(y/n) [y] ? y

Would you like to run the IVP after the installation (y/n) [y] ? y

Summary of user responses to installation questions

The previous version of vaxlisp will be deleted.
vaxlisp will reside in /usr/bin
auxiliary vaxlisp files will reside in /usr/lib/vaxlisp
The IVP will be run after the installation.
Are you satisfied with your answers (y/n) [y] ? y

Copying the VAX LISP/ULTRIX tar file off the distribution media ...
Breaking the VAX LISP/ULTRIX file into individual files ...

Moving vaxlisp to /usr/bin.
Moving the auxiliary files to /usr/lib/vaxlisp.
 Welcome to VAX LISP, Version V2.0

Running the IVP ...

VAX LISP/ULTRIX Installation Verification Procedure

Welcome to VAX LISP, Version V2.0

Lisp>

Starting compilation of file /usr/lib/vaxlisp/fibonacci.lsp

FIBONACCI compiled.
PRINT-FIBONACCI-TABLE compiled.

INSTALLATION AND VERIFICATION

Finished compilation of file /usr/lib/vaxlisp/fibonacci.lsp
0 Errors, 0 Warnings
A table of the first 20 Fibonacci numbers:

n	Fibonacci(n)
0	0
1	1
2	1
3	2
4	3
5	5
6	8
7	13
8	21
9	34
10	55
11	89
12	144
13	233
14	377
15	610
16	987
17	1,597
18	2,584
19	4,181

VAX LISP/ULTRIX IVP Completed Successfully

If this procedure has generated errors, correct the problems and re-run the procedure. If no problems were encountered, then continue the installation by performing the following steps:

1. If you have installed this version of VAX LISP/ULTRIX in some location other than the default one, you must do two things:

- . Inform ULTRIX where the VAX LISP/ULTRIX executable image is located. The simplest way to do this is to modify the variable path. For example:

```
% set path=(. $HOME/bin /usr/bin /bin /usr/ucb \  
             /usr/local /usr/lp/vaxlisp)
```

- . Define the environment variable VAXLISP to refer to the directory containing the suspended system. For example:

```
% setenv VAXLISP '/usr/lp/vaxlisp'
```

2. Make sure you have enough virtual memory and an equivalent amount of swap/passing space. To do so:

INSTALLATION AND VERIFICATION

- . Check the values of dmmin and dmmmax in the config file.
 - . Use the limit Csh(1) command to check the amount of virtual memory.
 - . Use the chpt(8) shell command to check the swap/paging space.
3. If you do not have G/H floating-point hardware, make sure you have installed the ULTRIX-32 G/H software emulator.
 4. If you would like the formatted version of the vaxlisp man file, run catman(8).

Finished installation of VAX LISP/ULTRIX V2.0 on
Tue May 28 15:45:50 EDT 1986

Do you want to install another product (y/n) [n] ? n

#



CHAPTER 3

COMPLETING THE INSTALLATION

To complete the installation of VAX LISP/ULTRIX, create a site-specific text file and a formatted version of the vaxlisp man file.

3.1 CREATING THE FILE LISPSITE.TXT

The file lispsite.txt is a site-specific text file for VAX LISP/ULTRIX that you may create. The file should be a description of your computer site, and you should place the file in the directory /usr/lib/vaxlisp or the directory you specified during the installation. The first line of the file is used by the COMMON LISP function SHORT-SITE-NAME. The entire file is used by the COMMON LISP function LONG-SITE-NAME. The following example illustrates a site text file:

```
% cat /usr/lib/vaxlisp/lispsite.txt
Super Widget Development Group
Intelligent Widget Corporation
One First Street
Any Town, Massachusetts 01001
%
```

The next example illustrates how the LISP functions SHORT-SITE-NAME and LONG-SITE-NAME work on the preceding file:

```
Lisp> (SHORT-SITE-NAME)
"Super Widget Development Group"
Lisp>
```

```
Lisp> (LONG-SITE-NAME)
"Super Widget Development Group
Intelligent Widget Corporation
One First Street
Any Town, Massachusetts 01001
"
Lisp>
```

COMPLETING THE INSTALLATION

3.2 FORMATTING THE VAXLISP MAN FILE

To format the vaxlisp man file, run `catman(8)`. For example:

```
# /etc/catman /usr/man/man1/vaxlisp.1
```

NOTE

This formatting applies only to ULTRIX-32, not ULTRIX-32m.

APPENDIX A

PROBLEM DETERMINATION AND REPORTING

If an error occurs while you are using VAX LISP/ULTRIX and you believe that the error is a result of a defect in the product, you should report the error to DIGITAL, using a Software Performance Report (SPR) form. In particular, an error message preceded by "Internal error:" is caused by the failure of an internal consistency check and should be reported.

Along with the SPR form, you should include:

- The operating system name and version, which you can respectively obtain with the SOFTWARE-TYPE and SOFTWARE-VERSION functions.
- The version number of VAX LISP/ULTRIX, which is included in the greeting message when you start up VAX LISP.
- A complete description of the problem.
- A listing (reduced to the shortest form possible) of the LISP program that caused the error. Include initialization files or macro definitions that are pertinent.
- If possible, use the DRIBBLE function (see *COMMON LISP: The Language*) to place the error output in a file and include the file.

