DEC OSF/1, Version 1.0

Guide to Installing DEC OSF/1, Version 1.0

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This guide describes the basic and advanced installation procedures and the standalone environment for DEC OSF/1, Version 1.0 on all supported processors.

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About This Manual

This guide describes the installation procedures for DEC OSF/1 on all supported processors. It describes how to prepare your system for installation, boot the processor from the distribution media, and perform the installation procedure. It also discusses standalone system management procedures for standalone systems.

Audience

Anyone installing a DEC OSF/1 system should read this guide. This guide assumes that:

- You or a Digital Field Service representative has checked the hardware to ensure that it is working properly.
- You have read the documentation supplied with your hardware.
- You have read the current version of the *Release Notes*.
- You know the location and function of the controls and indicators on your hardware.
- You understand how to load and unload the installation media and know which disks are needed during the installation.
- You know the names and unit numbers of your tape and disk devices.
- You have a basic understanding of the file system and commands.

Organization

This guide has six chapters, three appendixes, and an index:

Chapter 1	Preparing for the Installation Describes each installation procedure and outlines the tasks you must complete before beginning an installation.
Chapter 2	Planning the Disk Space Describes the tasks you should complete before beginning an advanced installation. This chapter contains a set of worksheets to help you plan your system.

Chapter 3	Booting the System Describes how to boot each processor that the DEC OSF/1 software supports.
Chapter 4	Performing the Installation Describes how to complete the installation.
Chapter 5	Configuring the System This chapter describes how to complete your installation of the DEC OSF/1 operating system.
Chapter 6	Working in the Standalone Environment Describes a standalone environment that supports the initial phases of an installation. The standalone environment also supports system management activities.
Appendix A	Supported Software Subsets Provides a description of each supported software subset.
Appendix B	Basic Installation Log File Provides a complete example log file for the basic installation procedure.
Appendix C	Advanced Installation Log File Provides a complete example log file for the advanced installation procedure.

Related Documentation

The following list suggests the order in which you should read the related documentation:

1. Hardware documentation

   This documentation shows you how to set up the processor and its additional devices, and supplies valuable troubleshooting guidelines.

2. *Release Notes*

   Before beginning the installation, you should read the current version of the *Release Notes*.

3. *Guide to System and Network Setup and Configuration*

   You should refer to this guide after you install the software subsets for network setup information.

Conventions

`%`	The default user prompt is your system name followed by a right angle bracket. In this manual, a percent sign (`%`) is used to represent this prompt.
#	A number sign is the default superuser prompt.
`>>`	The console subsystem prompt is two right angle brackets.
UPPERCASE lowercase	The operating system differentiates between lowercase and uppercase characters. Literal strings that appear in text, examples, syntax descriptions, and function definitions must be typed exactly as shown.
`% cat`	A regular constant-width typeface is used for code examples, system prompts in interactive examples, and names of commands and other literal strings in text. A bold constant-width typeface is used for typed user input in interactive examples and for routines in function definitions.
`filename`	In examples, syntax descriptions, and function definitions, this typeface indicates variable values.
. . .	A vertical ellipsis indicates that a portion of an example that would normally be present is not shown.
`cat`(1)	A cross-reference to a reference page include the appropriate section number in parentheses. For example, a reference to `cat`(1) indicates that you can find the material on the `cat` command in Section 1 of the reference pages.
Ctrl/x	This symbol is used in examples to indicate that you must hold down the Ctrl key while pressing the key *x* that follows the slash. When you use this key combination, the system sometimes echoes the resulting character, using a circumflex (`^`) to represent the Ctrl key (for example, `^C` for Ctrl/C). Sometimes the sequence is not echoed.

Preparing for the Installation 1

This chapter describes the basic and advanced installation procedures and discusses the tasks you must complete before beginning the installation.

1.1 Overview

The DEC OSF/1 operating system installation allows you to allocate storage for data and binaries and to load software subsets. Depending upon your needs, you can perform either a basic or an advanced installation. In addition, the installation procedure provides a system management option.

The DEC OSF/1 software can be installed on your system from the following media:

- A tape cartridge kit containing the DEC OSF/1 software
- A CDROM optical disc containing the DEC OSF/1 software

Before you begin the installation, complete the following steps:

1. Read the *Release Notes*

   The *Release Notes* document any last-minute changes to the software. This information may be required for a successful installation. New *Release Notes* are distributed with the documentation for every release.

2. Decide which installation you want to perform

   Chapter 2 contains a set of worksheets designed to help you plan your system. Work through Chapter 2 before you begin the installation to help you determine if you have enough disk space on your system.

3. Check the hardware needed for installation
4. Check the software distribution kit
5. Back up the system if you need to retain any information from your previous system. See the *Guide to System Administration* for information on backing up your system.

1.2 Deciding on the Type of Installation

The DEC OSF/1 operating system was designed to meet various systems requirements. The type of system you have determines which installation procedure you should perform.

The installation procedure provides the following paths:

- Basic Installation
- Advanced Installation
- System Management

1.2.1 The Basic Installation

The basic installation provides a default file system layout. A total of 20 MB of disk space is allocated for the root file system for all disks, except the RZ23 and RZ23L which allocate 16 MB. The `b` partition contains the swap space. The remainder of the disk is used for the `/usr` file system.

The basic installation loads the following mandatory software subsets. For descriptions of these subsets, see Appendix A.

Base System (OSFBASE)
Header and Kernel Common Files (OSFBINCOM)
Standard Kernel Object Files (OSFBIN)
TCP/IP Client Networking Utilities (OSFCLINET)
Client NFS Utilities (OSFCLINFS)
TCP/IP Server Networking Utilities (OSFINET)
Server NFS Utilities (OSFNFS)

The following software subsets are mandatory only if you have a workstation; otherwise, they are optional:

X11/DECwindows Servers (OSFSER)
X11/DECwindows User Envirnoment (OSFX11)
X11/DECwindows 75dpi Fonts (OSFFONT)

Select the basic installation if:

- You do not need to preserve custom partition tables. Custom partition tables are partition tables that have been changed to sizes other than the default values.
- You do not need to allocate the `/usr` file system on a separate disk.
- You do not need optional software. Note that you can add optional software after the installation procedure completes.

If after completing the installation you decide that you want additional subsets, you can install these subsets using the `setld` utility. See the `setld`(8) reference page for further information.

Note

If you plan to use an RZ23, an RZ23L, or an RZ24 as a system disk, you will need a second disk. You must perform an advanced installation if you are using any of these disks. You can use an RZ24 as a system disk if you are performing a basic installation.

1.2.2 The Advanced Installation

If you choose the advanced installation, you can select the default disk partitions and the default file system layout, or you can decide on which disks you want the file systems to reside. With the advanced installation, the required subsets are automatically installed and you can choose to install some or all of the optional subsets. A total of 20 MB of disk space is allocated for the root file system for all disks except the RZ23 and RZ23L which allocate 16 MB.

The advanced installation loads the mandatory software subsets as well as any additional optional subsets you select. For descriptions of these subsets, see Appendix A.

Base System (OSFBASE)
Header and Kernel Common Files (OSFBINCOM)
Standard Kernel Object Files (OSFBIN)
TCP/IP Client Networking Utilities (OSFCLINET)
TCP/IP Server Networking Utilities (OSFINET)
Client NFS (OSFCLINFS)

The following software subsets are mandatory only if you have a workstation; otherwise, they are optional:

X11/DECwindows Servers (OSFSER)
X11/DECwindows User Environment (OSFX11)
X11/DECwindows 75 dpi Fonts (OSFFONT)

You should choose the advanced installation only if you are experienced with UNIX file systems and if you require the ability to perform tasks such as the following:

- Preserving custom partition tables. Custom partition tables are partition tables that have been changed to sizes other than the default values.
- Placing the root partition on an RZ23, an RZ23L, or an RZ24.
- Selecting file system layouts other than the default layouts.
- Allocating the `/usr` file system to any disk partition on your system.
- Allocating up to two swap areas to any disk partition on your system.

- Allocating the `var` area to the same disk partition as `/usr` or allocating it to a different disk partition.
- Adding optional supported software subsets.

Note

If there is a DEC OSF/1 disk label on a system disk, the disk label will not be used.

1.2.3 The System Management Option

The system management option creates a Bourne shell in the standalone environment. This environment supports the initial phases of an installation as well as system management activities such as changing the disk parittion layout prior to performing an advanced installation.

The standalone environment includes commands that you use to recover from root file system corruption. You can also perform general file system and disk maintenance tasks. You should perform system management tasks in the standalone environment only if you have extensive UNIX or OSF/1 operating system experience. See Chapter 6 for more information on the standalone environment.

1.3 Checking the Hardware Needed for Installation

To perform the installation you you must know how to operate your system. The documentation provided with your processor provides operating and troubleshooting instructions.

You may also need some or all of the following hardware:

- Software distribution device (required)

  You need a distribution device that corresponds with the software distribution media. For example, if you have a TK50 software kit, you need a TK50 tape drive. Load the media supplied with the software distribution kit on the appropriate drive. See your hardware documentation for instructions on how to load media.

- System disk (required)

  The system disk is the disk from which you will boot your system.

  You should also know how to get the disk ready for read/write operations. See your hardware documentation for information.

- Data disks (optional)

  A data disk is a device on which you can store data files. In most cases, you do not need any data disks to install the DEC OSF/1 system.

However, if you perform an advanced installation, you can allocate certain file systems to a disk other than the system disk. If you are going to perform an advanced installation and are going to use data disks, back up any data on the disks before you begin.

- Console terminal (required)

  You use the console terminal to communicate with your system during the installation.

  Depending on your system and its configuration, you can perform the installation at either a serial hardcopy terminal, a serial video terminal, or at the console display if the system is a graphics workstation.

1.4 Checking the Software Distribution Kit

Use the Bill of Materials to check your software distribution kit. The software distribution kit includes this installation guide and either of the following:

- Three TK50 tapes for systems with TK50 or TK30 tape cartridge drives
- A CDROM optical disc kit for systems with RRD40 or RRD42 optical disc drives

If you are performing a basic installation, continue the installation procedure with Chapter 3 of this manual. If you are performing an advanced installation, continue the installation procedure with Chapter 2 of this manual.

Planning the Disk Space 2

This chapter provides a summary of what you need to consider before determining which disk partition is suitable for the file systems, swap space, and crash dump space. It assumes that you know what the file systems will be used for and understand the concepts associated with allocating a file system to a disk partition. If you are unsure of these concepts, see the *Guide to System Administration* for more detailed conceptual information.

In several sections of this chapter, you will need to complete worksheets that pertain to the size of the file system being discussed. These worksheets will help you:

- Identify available disks.
- Plan the swap space.
- Plan the `var` area.
- Plan the `/usr` file system.
- Decide whether to use the default disk partition layout or the existing disk partition layout and change the partition layout if necessary.

Many of the DEC OSF/1 commands that you may use before and after the installation give disk space size in different units of measurement. For example, the `disklabel` command gives the size of partitions in blocks while subset sizes are given in kilobytes.

To aid you in determining disk space requirements, keep in mind the following equations:

- One block equals 1/2 KB (512 bytes).
- A sector is the same as a block.
- One kilobyte (KB) equals 1024 bytes.
- One megabyte (MB) equals 1024 KB (1,048,576 bytes), or 2048 blocks.

For example, to determine the size in MB of the default disk partitions for an RZ56 disk, divide the length in blocks (as given in the reference pages) or the size in blocks (as displayed by the `disklabel` command) by 2048:

Partition	Size in Blocks	Size in MB

Partition	Size in Blocks	Size in MB
a	40960	20
b	122880	60
c	547041	267
d	163840	80
e	471041	230
f	76001	37
g	383201	187

You can examine the default disk partitions by issuing the `disklabel` command or looking at the reference page for your disk. To account for the DEC OSF/1 file system when determining the size your disk partitions need to be, subtract 15 percent of the size of the partition to give you the total available space.

The information presented in Section 2.1 through Section 2.5 will enable you to complete the summary worksheet in Section 2.6. When complete, this worksheet will give you the complete layout of the file systems that you will be asked about during the advanced installation.

2.1 Identifying Supported System Disks

Your system disk must be a supported bootable device. The following table lists possible system disks and their associated DEC OSF/1 names.

Table 2-1: Supported System Disks

DEC OSF/1 Name	Device Name
rz	RZ23, RZ23L, RZ24, RZ25, RZ55, RZ56, RZ57, RZ58

Note

RZ23, RZ23L, and RZ24 disks are not supported in single disk systems. You will need a second disk to perform the installation.

The system disk contains the root file system. The unit number for the system disk must be in the range 0 to 31.

Complete the worksheet in Table 2-2 to identify what disks are in your system's configuration. Though the worksheet shows only four devices, you can configure a maximum of 28 devices into your system. Using the hardware documentation that came with your system and the `rz` reference page, write in the disk type, the name for that disk, and the size of each partition in MB. You will need to refer back to this worksheet when completing the worksheets in the following sections.

If you are installing a new system on a disk currently being used, use the `disklabel` command to look at the existing disk partition layout. For example, if you want to install the system disk on an RZ56, unit 0, type the following command:

```
# disklabel -r /dev/rrz0a
```

After typing the previous command, the system displays the existing disk partition layout. Before starting the installation, you must select the system management option and use the `chpt` command to create custom partition tables.

If you are upgrading from an existing ULTRIX system or installing a new system on a disk currently being used, use the `chpt` command with the `-q` option to display the existing disk partition layout on the disk or disks you intend to use. For example, if you want to install the system on an RZ56, unit 0, type the following command:

```
# chpt -q /dev/rrz0a
```

The system displays the existing disk partition layout.

Table 2-2: Disk Configuration Worksheet

Disk Number	Device Name	Software Name	Partition	Partition Size in MB
0	_____	_____	a	_____
			b	_____
			c	_____
			d	_____
			e	_____
			f	_____
			g	_____
			h	_____

Table 2-2: (continued)

Disk Number	Device Name	Software Name	Partition	Partition Size in MB
1	_____	_____	a	_____
			b	_____
			c	_____
			d	_____
			e	_____
			f	_____
			g	_____
			h	_____
2	_____	_____	a	_____
			b	_____
			c	_____
			d	_____
			e	_____
			f	_____
			g	_____
			h	_____
3	_____	_____	a	_____
			b	_____
			c	_____
			d	_____
			e	_____
			f	_____
			g	_____
			h	_____

2.2 Planning the Swap Space

The swap space is the area on a disk used by the kernel to transfer processes into and out of physical memory. The advanced installation lets you allocate two swap areas: swap1 and swap2. You can also allocate additional swap space during day-to-day system management. See the *Guide to System Administration* for instructions on how to do this.

Allocate the swap1 space either by accepting the default or by specifying another partition. If you choose the default, the installation software allocates the swap1 space to the `b` partition of the system disk. There is no default allocation for swap2 space.

The size of the swap space should be at least two to three times the size of the processor's physical memory. If your system is devoted to users who might be running numerous large programs, your swap space will need to be more than three times the size of physical memory.

If you plan to allocate a second swap space, you can divide the required size between the two. For example, if you need 100 MB of swap space, you could allocate 50 MB to the swap1 space and 50 MB to the swap2 space. Dividing the swap space will improve swapping performance.

To determine the size and record the location of the swap space areas, complete the following:

1. The memory in MB for your processor is _____.
2. Therefore, you need _____ MB (two or three times physical memory, depending on the number and size of processes running) to accommodate your swap space.
3. Refer to the worksheet in Table 2-2 to identify partitions that are large enough for your swap space.
4. Record the location of the swap space as follows:

Swap Space	Size in MB	Software Name	Disk Number	Partition
swap1	_____	_____	_____	_____
swap2	_____	_____	_____	_____

2.3 Planning the Crash Dump Space

The crash dump space is the area on the disk where the kernel writes the memory contents in the event of a system crash. By default the system allocates the crash dump space to the `b` partition of the system disk.

Crash dumps write the contents of memory to the crash dump space. The size of the crash dump space needed must be at least equal to the size of physical memory *plus* the size of the kernel, `vmunix`. The size of the kernel can be up to approximately 4.1 MB.

Note

The DEC OSF/1 system will always use the `b` partition of the system disk for crash dumps.

To determine the size and record the location of the crash dump space, fill in the following:

1. The memory in MB for your system is _____.
2. You need _____ MB to accommodate your crash dump space. This value must be at least equal to the amount of physical memory. Make sure that the `b` partition of your system disk is at least this size.

Software Name	Disk Number	Partition
_____	_____	b

2.4 Planning the var Area

The `var` area contains volatile, machine-specific directories and files such as `tmp` and `adm`.

You can allocate the `var` area either as a file system on its own partition, or as a directory in the `/usr` file system. If you choose the default allocation, the installation software allocates the `var` area as the directory `/usr/var`.

In determining the size of the `var` area, you need to consider the following:

- The crash dump space
- The error logger
- System accounting

The following sections briefly describe how these items affect the size of `var`. Section 2.4.4 contains a worksheet that you will complete by working through the sections.

2.4.1 Size of the /var/adm/crash Directory

The file system requires room to accommodate the crash dump space. When the system crashes, the `savecore` utility writes a complete copy of physical memory (`vmcore`) and the `vmunix` image located in the root file system

into the crash dump space. When the system comes back up, `savecore` writes these copies of `vmcore` and `vmunix` to files located in the `/var/adm/crash` directory.

The `/var/adm/crash` directory should have at least the amount of space you recorded in Section 2.3. This should give you enough space for one crash dump.

Fill in the first item on the worksheet in Table 2-3 with the size of the crash dump space.

2.4.2 Error Logger

The `var` area requires room to accommodate the error log. The error log is a record of system- and hardware-related errors in a binary file. If you are creating a new system and have never had an error log file, then estimate your requirements using the following guidelines:

- The error logger records about 1 MB per week on a processor that has 24 MB of memory and is connected to 2 tape drives, 10 disk drives, 1 serial port, and 1 Ethernet interface. If you back up or remove the error log file once a month, then you need to plan for an error log file that is about 4 MB.
- Increase this recommended number if you have a processor with more memory, a greater number of peripheral devices, or peripheral devices that experience numerous errors.
- Decrease this recommended number if you have a processor with less memory or a smaller number of peripheral devices.

The *Guide to System Administration* provides more information on the error logger.

Fill in the second item on the worksheet in Table 2-3 with the amount of space needed for the error logger.

2.4.3 System Accounting

The `adm` directory in the `var` area contains data files generated by administrative programs such as `acct`, `smlogs`, and `wtmp`. The data that these programs generate can vary widely from system to system and over time. For example, the file `adm/acct` in the `var` area can easily grow by 50 KB a day for a large system and by 5 KB for a workstation. As a general guideline for system accounting, you should allot 10 KB per day for workstations and 100 KB per day for larger systems. If you back up or remove the system accounting file once a month, then you need to plan for accounting files that occupy about 300 KB for workstations and 3 MB for large systems. See the *Guide to System Administration* for more information on the space requirements for system accounting.

Fill in the third item on the worksheet in Table 2-3 with the amount of space needed for system accounting.

2.4.4 Completing the var Worksheet

Complete the worksheet in Table 2-3 to determine the space requirements for the `var` area.

Table 2-3: var Worksheet

Item	Obtain number from ...	Total for var
Crash dump space	Section 2.4.1	_____
Error logger	Section 2.4.2	_____
System accounting	Section 2.4.3	_____
	TOTAL	_____

2.5 Planning the /usr File System

The `/usr` file system is the directory structure that contains such directories as `/usr/sys`, `/usr/adm`, and `/usr/bin`.

You must allocate the `/usr` file system, either by accepting the default or by specifying another partition. If you choose the default allocation, the installation software allocates the `g` partition of the system disk.

In determining the size of the `/usr` file system, you need to consider the following:

- The software subsets you plan to install on `/usr`
- The amount of user space needed
- The size of the `var` area if it is on the same partition as `/usr`

The following sections briefly describe how these items affect the size of `/usr`. Table 2-4 contains a worksheet that you will complete by working through the sections.

2.5.1 Software Subsets Within the /usr File System

The `/usr` file system requires room to accommodate the software subsets that will reside within it. A software subset is a collection of executable files and data files needed to perform a specific function or provide a particular class of services; for example, the System Accounting Utilities needed to perform system accounting.

Use the tables in the *Release Notes* that list the subset sizes to determine the amount of space to allocate for the subsets you plan to install. The mandatory subsets are always installed. The optional subsets are not needed for your system to function; you can choose none, some, or all of the optional subsets depending on your system requirements and available space. Select the subsets that you want to install and add their sizes together. Record the totals in the spaces provided.

See Table A-1 for descriptions of the software subsets and a list of other subsets and kernel configuration file options related to each subset.

Fill in the first item on the worksheet in Table 2-4 with the amount of space needed for subsets.

2.5.2 User Area

The advanced installation does not provide an area for user files. You need to set up this area after the installation. However, you should still take this amount of space into consideration when planning your system. As a guideline, you should reserve at least 10 MB of disk space for each user on your system. For example, if there are 10 users, you should reserve a minimum of 100 MB of disk space.

If you intend to set quotas on the user area, multiply the quota for each user by the number of users to determine the amount of user space. See the *Guide to System Administration* for information on disk quotas.

Fill in the second item on the worksheet in Table 2-4 with the amount of space needed for the users directory.

2.5.3 var Area

If you plan to place the `var` area on the same partition as `/usr`, you must add the size of the `var` area that you determined with the worksheet in Table 2-3 to the total of `/usr`.

If appropriate for your system, fill in the third item of the worksheet in Table 2-4 with the amount of space needed for `var`. Add the size of the `var` area that you determined with the worksheet in Table 2-3 to the total of `/usr`. Fill in the third item of the worksheet in Table 2-4 with the amount of space needed for `var`.

2.5.4 Completing the /usr Worksheet

Complete the worksheet in Table 2-4 to determine the space requirements for the `/usr` area.

Table 2-4: /usr Worksheet

Item	Obtain Number From ...	Total for /usr
Software subsets	The *Release Notes*	_____
Size of the user area	Section 2.5.2	_____
Size of the `var` area	Section 2.5.3 for the `var` total	_____
	TOTAL	_____

Refer to Table 2-2 to identify partitions that are large enough for the `/usr` file system.

Record the software name, disk number, and partition where you plan to allocate the `/usr` file system:

Software Name	Disk Number	Partition
_____	_____	_____

2.6 Determining the Disk Partition Layout

After you determine how much space your system requires for each file system, determine whether you can accept the default disk partition layouts. If you want to use a customized disk partition layout and not the defaults, choose the system management option once the system is up and running and modify the disks with the `chpt` command. Refer to the reference page for your system disk for information on the default disk partition layout.

If you modify the partition tables for the system disk, the partitions for root and swap must meet the following minimum space requirements:

- The root or `a` partition must be at least 32,768 blocks (16 MB).
- The swap or `b` partition must be at least 12,288 blocks (6 MB). This assumes that you plan to add a second swap device after the installation has completed.

If the modified partitions do not meet these requirements, then the advanced installation imposes the default partition table for the system disk. No other disks on the system are affected.

Complete the worksheet in Table 2-5 by entering the values that you determined in the previous sections. This table will provide you with the complete file system layout and space requirements for your system.

Table 2-5: File System Worksheet

Items	Approximate Size	Disk	Partition
Root (from Table 2-2)	_____	_____	_____
swap1 (from Section 2.2)	_____	_____	_____
swap2 (from Section 2.2)	_____	_____	_____
Crash dump space (from Section 2.3)	_____	_____	b
`var` (from Table 2-4; fill in disk and partition lines if applicable)	_____	(_____)	(_____)
`/usr` Total:	_____	_____	_____

After completing the worksheet, you need to ensure that the disk partitions are laid out the way you want them. If you are installing a system for the first time, refer to Table 2-2 and to the reference pages for the default partition layout for your disk or disks.

Compare the disk partition layout with the total values in Table 2-5. If the space required will consume more than 75 percent of the available disk space, not including the 15 percent of the partition that the file system consumes, you may want to expand the disk partition, if possible. Choose the system management option and use the `chpt` command to modify the default partition layout before beginning the installation. See Chapter 6 for information on the standalone environment.

Now you are ready to begin the installation. Continue with Chapter 3.

Booting the System 3

Before you can install the DEC OSF/1 software, you must prepare the hardware for the installation and then boot the system from the installation media. How you do this depends on which processor you have.

If you are using a tape kit to boot your system or are booting the standalone kernel for system management tasks, follow the media handling instructions included with the kit. If you are using a CDROM optical disc to boot your system, follow the instructions in the hardware manual included with the CDROM reader.

Look for your processor in Table 3-1 and find the section in this chapter that gives booting instructions for your processor. Follow the instructions in that section and then continue the installation procedure with Chapter 4.

Table 3-1: Location of Processor-Specific Boot Instructions

Processor	Section
DECstation 2100	Section 3.1
DECstation 3100	Section 3.1
DECstation 5000, Model 100 series	Section 3.2
DECstation 5000, Model 200 series	Section 3.2
DECsystem 3100	Section 3.1
DECsystem 5000, Model 200 series	Section 3.2
DECsystem 5100	Section 3.3

3.1 DECstation 2100/3100 or DECsystem 3100 Processor

To prepare the DECstation 2100/3100 or DECsystem 3100 hardware:

1. Turn on power to the console terminal and all additional peripheral devices.
2. Turn on power to the processor.

The console subsystem prints an initial display and ends with the console mode prompt:

```
>>
```

The boot command you type depends on the software distribution kit: TK50 or CDROM. The boot command for each distribution kit is described in this section.

3.1.1 Booting from the TK50 Tape Cartridge Kit

Follow the instructions included with your TK50 tape kit for inserting the tape into the tape drive.

Follow this procedure to boot the system:

1. Make sure that your tape cartridges are write-protected.
2. To insert the TK50 tape:

   Raise the handle on the tape drive and insert the tape cartridge labeled DEC OSF/1 V1.0 Installation Software and Mandatory Update into the tape drive. Lower the handle.

   When the green light comes on, press the red button. The tape will rewind automatically and the green light will flash off and on.

   When the solid green light comes on, the tape is online and ready to use.
3. Use the following command to determine the unit number of the drive for your device:

   ```
   >> test -c
   ```

   A display appears that shows what is assigned to each unit number on your system.
4. Use a command with the following syntax to boot your system. Do not leave spaces between the letters `tz` and the rest of the syntax.

   boot -f tz(0,*unit-number*)

   Replace *unit-number* with the unit number of your tape drive.

The following example shows the command to boot the system from tape drive number 5.

```
>> boot -f tz(0,5)
```

Next, the installation software displays some system information, followed by the memory and hardware configurations.

You have completed booting your system. Continue the installation procedure with Chapter 4.

3.1.2 Booting from the CDROM Optical Disc Kit

If your CDROM optical disc is not already in its caddy, follow the instructions in the hardware manual for inserting the optical disc into the caddy.

Follow this procedure to boot the system:

1. Load the CDROM optical disc labeled DEC OSF/1 V1.0 Operating System and Realtime Options into the drive. Wait for the drive to be on line and ready.
2. Use the following command to determine the unit number of the drive for your device:

   ```
   >> test -c
   ```

   A display appears that shows what is assigned to each unit number on your system.
3. Use a command with the following syntax to boot your system. Do not leave spaces between the letters `rz` and the rest of the syntax.

   boot -f rz(0,*unit-number*,0)vmunix

   Replace *unit-number* with the unit number of your optical disc drive.

   The following example shows the command to boot the system from optical disc drive number 4:

   ```
   >> boot -f rz(0,4,0)vmunix
   ```

Next, the installation software displays some system information, followed by the memory and hardware configurations.

You have completed booting your system. Continue the installation procedure with Chapter 4.

3.2 DECstation 5000, Model 100 and 200 Series or DECsystem 5000, Model 200 Series Processor

To prepare the DECstation 5000, Model 100 and Model 200 Series or the DECsystem 5000, Model 200 Series hardware:

1. Turn on power to the console terminal and all additional peripheral devices.
2. Turn on power to the processor.

The console subsystem prints an initial display and ends with the console mode prompt:

```
>>
```

The boot command you type depends on the software distribution kit: TK50 or CDROM.

3.2.1 Determining the Slot and Device Numbers of Your Boot Device

The instructions in this section assume that if you have multiple disk drives, CDROM drives, or tape drives, you know which drive is your boot device.

Check the cabling of your hardware to determine which Small Computer System Interconnect (SCSI) device controller you are booting from.

3.2.1.1 Determining the Slot Number (Default)

To determine which controllers and devices are configured on your system, type the following command at the console prompt:

```
>> cnfg
```

This command displays the options present on the system. Your system will display output similar to the following (the output will differ depending on your system configuration):

```
7:KN02-AA       DEC     V5.3a   TCF0    (16 MB)
6:PMAD-AA       DEC     V5.3a   TCF0    (enet:08-00-2b-16-85-7e)
5:PMAZ-AA       DEC     v5.3a   TCF0    (SCSI=7)
2:PMAZ-AA       DEC     v5.3a   TCF0    (SCSI=7)
1:PMAG-AA       DEC     T3.0a   TCF0    (PXG--D=24)
```

The first column displays the slot numbers of the device controllers. The last column displays the devices in each slot. If your system has more than one device in a particular slot, a display similar to the following appears:

```
3: KN02-BA  DEC      X5.4g    TCF0  (32 MB)
                                    (enet: 08-00-2b-16-58-d6)
                                    (SCSI = 7)
1: PMAG-CA  DEC      V5.3a    TCF0  (PX -- D=8)
```

3.2.1.2 Determining the Boot Device Number

To determine the device number of your boot device, type a command with the following syntax:

cnfg *slot_number*

For example, to determine the device number of a SCSI disk drive with a controller in slot 5, type the following command:

```
>> cnfg 5
```

The system displays a table similar to the following:

```
5:     PMAZ-AA   DEC     V5.3a     TCF0          (SCSI = 7)
-------------------------------------------------------------

          DEV    PID               VID      REV   SCSI DEV
-------------------------------------------------------------
-------------------------------------------------------------
          rz3    RZ56   (C)DEC     DEC      0200    DIR
          tz5                                        SEQ
```

In the previous example, the disk drive is identified by the letters "rz". The device number for the disk drive is 3 (rz3). The tape drive is identified by the letters "tz". The device number for the tape drive is 5 (tz5).

Now that you know the slot number and the device number, you can boot your system or set your system's environmental boot variable. Follow the directions given in the appropriate booting sections.

If the command shows that you have multiple devices configured on the same controller, you will have to know which device is the boot device. If you do not know which device is the boot device, consult your system administrator.

3.2.2 Booting from the TK50 Tape Cartridge Kit

Follow the instructions included with your TK50 tape kit for inserting the TK50 into the tape drive.

Follow this procedure to boot the system:

1. Make sure that your TK50 tape cartridges are write-protected.
2. To insert the TK50 tape:

   Raise the handle on the tape drive and insert the tape cartridge labeled DEC OSF/1 V1.0 Installation Software and Mandatory Update into the

tape drive. Lower the handle.

When the green light comes on, press the red button. The tape will rewind automatically and the green light will flash off and on.

When the solid green light comes on, the tape is online and ready to use.

3. To determine the device number of the SCSI tape, use the same slot number and device number that were determined by the `cnfg` command in Section 3.2.1.2.

   For example to boot a SCSI tape (tz) at slot 5, drive 5, type the following command:

   ```
   >> boot 5/tz5
   ```

You have completed booting your system. Continue the installation procedure with Chapter 4.

3.2.3 Booting from the CDROM Optical Disc Kit

If your CDROM optical disc is not already in its caddy, follow the instructions in the hardware manual for inserting the optical disc into the caddy.

Follow this procedure to boot the system:

1. Load the CDROM optical disc labeled DEC OSF/1 V1.0 Operating System and Realtime Options into the drive. Wait for the drive to be on line and ready.
2. Use a command with the following syntax to boot your system:

   boot *slot_number*/rz*device_number*/vmunix

   Replace *slot-number* with the slot number of the CDROM controller. Replace *device-number* with the device number of your optical disc drive.

   For example, to boot the system from optical disc drive number 4 on slot number 1, type the following command:

   ```
   >> boot 1/rz4/vmunix
   ```

You have completed booting your system. Continue the installation procedure with Chapter 4.

3.3 DECsystem 5100 Processor

To prepare the DECsystem 5100 hardware:

1. Turn on power to the console terminal and all additional peripheral devices.
2. Turn on power to the processor.

The console subsystem prints an initial display and ends with the console mode prompt:

```
>>
```

The boot command you type depends on the software distribution kit: TK50 or CDROM. The boot command for each distribution kit is described in this section.

3.3.1 Booting from the TK50 Tape Cartridge Kit

Follow the instructions included with your TK50 tape kit for inserting the tape into the tape drive.

Follow this procedure to boot the system:

1. Make sure that your TK50 tape cartridges are write-protected.
2. To insert the TK50 tape:

   Raise the handle on the tape drive and insert the tape cartridge labeled DEC OSF/1 V1.0 Installation Software and Mandatory Update into the tape drive. Lower the handle.

   When the green light comes on, press the red button. The tape will rewind automatically and the green light will flash off and on.

   When the solid green light comes on, the tape is online and ready to use.
3. Use the following command to determine the unit number of the drive for your device:

   ```
   >> conf
   ```

   A display appears that shows what is assigned to each unit number on your system.
4. Use a command with the following syntax to boot your system. Do not leave spaces between the letters `tz` and the rest of the syntax.

   boot -f tz(0,*unit-number*)

   Replace *unit-number* with the unit number of your tape drive.

   The following example shows the command to boot the system from tape drive number 5:

```
>> boot -f tz(0,5)
```

Next, the installation software displays some system information, followed by the memory and hardware configurations.

You have completed booting your system. Continue the installation procedure with Chapter 4.

3.3.2 Booting from the CDROM Optical Disc Kit

If your CDROM optical disc is not already in its caddy, follow the instructions in the hardware manual for inserting the optical disc into the caddy.

Follow this procedure to boot the system:

1. Load the CDROM optical disc labeled DEC OSF/1 V1.0 Operating System and Realtime Options into the drive. Wait for the drive to be on line and ready.
2. Use the following command to determine the unit number of the drive for your device:

   ```
   >> conf
   ```

   A display appears that shows what is assigned to each unit number on your system.
3. Use a command with the following syntax to boot your system. Do not leave spaces between the letters `rz` and the rest of the syntax.

   boot -f rz(0,*unit-number*,0)vmunix

   Replace *unit-number* with the unit number of your optical disc drive.

   The following example shows the command to boot the system from optical disc drive number 4:

   ```
   >> boot -f rz(0,4,0)vmunix
   ```

Next, the installation software displays some system information, followed by the memory and hardware configurations.

You have completed booting your system. Continue the installation procedure with Chapter 4.

Performing the Installation 4

This chapter describes how to perform basic and advanced installations. Whether you decide to do a basic or an advanced installation, you need to complete the tasks described in Section 4.1 through Section 4.3. Up to that point, the basic and advanced installation follow similar paths by requiring you to specify a system disk and reboot the system. After Section 4.3, the two installation procedures diverge. Before continuing, review Chapter 1 to understand what is being offered with each installation type.

If you plan to perform the advanced installation, you should review Chapter 2 to ensure that you have enough disk space and that the disks partitions are as you want them. Refer to Table 2-2 and Table 2-5 for this information. Appendix C contains an example of a basic installation log file and Appendix D contains an example of an advanced installation log file that you can use for a reference.

Throughout the procedure, you will be prompted for information about the installation. Some prompts have a default response which is shown by brackets surrounding a letter, for example [b]. Press Return to accept the default response or type the letter that corresponds to the option you want to choose. If there is no default response, type the option number or letter at the prompt and press Return.

4.1 Choosing the Type of Installation

The first step in installing the software is choosing the type of installation you want to perform. The system displays a message briefly describing the different types of installations and a menu like the following:

```
***  STANDALONE SYSTEM ENVIRONMENT ***

If you select the BASIC Installation option from the list that follows,
the installation software creates file systems on default partitions on
your system disk and loads the minimum subsets required for your
configuration.

If you require additional installation choices, select the ADVANCED
Installation option.

Select one of the following options:


     1) BASIC Installation
     2) ADVANCED Installation
```

```
     3) System Management

Enter your choice:
```

Select the type of installation you want by typing the option number at the prompt and pressing Return. If you want the system management option, select number 3, press Return, and continue with Chapter 6.

4.2 Selecting the Disk for the root Partition

The next step in installing the software is specifying your system disk. The system disk will contain the root file system.

The installation procedure displays a table listing the following information:

Selection Number	The selection number associated with each possible system disk.
Device Name	The device name for each disk.
ULTRIX Name	The software identifier for each disk.
Device Number	The device number of each disk.
Controller Name	The controller number associated with each disk. You need the controller number only if the table shows two disks of the same type with the same device number. The unit number for the system disk must be in the range 0 to 31. This disk will contain the root file system and the swap space.

The system displays a table similar to the one in the following example of a DECstation 3100 processor. This table lists the disks available for your processor. Select the disk you want to contain the root file system by typing the selection number.

```
*** SYSTEM DISK SELECTION ***

The Guide to Installing DEC OSF/1 explains the following table
of system disk drives.  Select one of the disks below to contain the
root file system:

SYSTEM DISK TABLE

Selection   Device     ULTRIX   Device       Controller   Controller
            Name       Name     Number       Name         Number
-------------------------------------------------------------------
    1       RZ56        rz0          0         SCSI           0
    2       RZ23        rz2          2         SCSI           0
    3       RZ24        rz3          3         SCSI           0
-------------------------------------------------------------------

Enter your choice: 2
```

After you type your selection number, a message appears indicating the device name and the software name. You are asked to make sure the disk drive is on line and write-enabled. Then you are asked to confirm your choice.

```
You selected RZ55, device number 3.  Make sure this disk drive
is on line and write-enabled (if applicable to your disk drive), then
confirm your choice.

Use RZ55, rz3, for your system disk? (y/n) []: y
```

If you decide not to use the device you selected, type `n` at the prompt. The system will display the table again and you can correct your choice.

If you selected the basic installation, continue the installation with Section 4.3

If you selected the advanced installation and you have nonstandard disk partitions on the system disk, a prompt appears asking if you want the default or existing partition table:

```
Select one of the following partition tables to be displayed for the
system disk rz13 RZ55:

     1 ) Default partition table
     2 ) Existing partition table


Enter your choice: 2
```

If you want to keep the partitions you have on the disk, select the existing partition table. Depending on your choice, the system displays either the default partition table or the existing partition table. Then, the system asks if these are the disk partitions you want. Type `y` at the prompt if you want to choose the partition table displayed. Type `n` at the prompt if you want to choose a different table. If you type `n`, the system will display the prompt again and you can correct your choice.

After entering and confirming your choice, the system displays a message telling you that it is allocating, making, and restoring the root file system on partition `a` of the system disk.

```
The installation procedure now allocates the root file system on
partition 'a' of the system disk, rz3 RZ55.

Making the root file system on rz3 RZ55.

The installation procedure is now restoring the root file system to
partition 'a' of the system disk, rz3 RZ55.
```

4.3 Rebooting the System

After restoring the root file system to the `a` partition, the installation procedure displays the boot command that reboots your system. For example, the boot command sequence provided by the installation procedure for the DECsystem 3100 with the root filesystem on an RZ23 disk is as follows:

```
*** BOOTSTRAP COMMAND SEQUENCE ***
Issue the following console commands to set your default bootpath variable
and to boot your system disk:
      >> setenv bootpath rz(0,3,0)vmunix
      >> auto
```

When the system displays the prompt (>>), type the boot command exactly as shown on your screen. The system displays informational messages followed by the memory and hardware configurations. Next, you will see a message saying the DEC OSF/1 installation is continuining.

```
*****   Continuing DEC OSF/1 Installation
```

At this point, the basic and advanced installation procedures diverge. If you selected the advanced installation, continue with Section 4.4. If you selected the basic installation, the installation continues as follows:

The system displays a message telling you that it is creating default file systems.

```
*****   CREATING DEFAULT FILE SYSTEMS
        The default location for the /usr filesystem is rz3g
        The default location for the swap space is rz3b
Making the new filesystem for /usr on rrz3g RZ24
```

Continue the installation with Section 4.5.

4.4 Allocating File Systems

If you selected the advanced installation, the procedure continues as follows:

The system disk you selected contains the root file system on partition `a`. The system displays a message telling you the default location for the `/usr` filesystem and `swap` space.

```
*****SELECT FILE SYSTEMS
     The default location for the /usr filesystem is rz0g
     The default location for the swap space is rz0b
```

A prompt appears asking if you want to use these defaults.

```
Would you like to use these defaults? (y/n): y
```

If you do not want to accept the defaults, type `n` at the prompt and continue with Section 4.4.1. If you want to accept the defaults, type `y` at the prompt. The system displays a message similar to the following:

```
Making the new filesystem for /usr on /dev/rrz0g RZ56
```

Continue with Section 4.5.

4.4.1 Allocating the /usr File System

If you chose not to use the default partition table, the system displays a table similar to the one shown in the following example of a DECstation 3100. This table lists the disks connected to your processor. Select the disk on which you want to allocate the `/usr` file system by typing the disk's selection number at the prompt. Refer to the file system worksheet in Table 2-5 for the disk name.

```
*****   ALLOCATE THE /usr FILE SYSTEM

You can allocate the /usr file system to one of the disks listed in the
table below.  See the Guide to Installing DEC OSF/1 for an explanation
of this table:

/usr file system ALLOCATION TABLE

Selection   Device    Software    Device       Controller   Controller
            Name       Name       Number       Name         Number
-------------------------------------------------------------------------
    1       RZ56        rz0          0         SCSI           0
    2       RZ23        rz2          2         SCSI           0
    3       RZ24        rz3          3         SCSI           0
-------------------------------------------------------------------------

Enter your choice: 1

You selected RZ56, device number 0.  Make sure this disk is
on line and write-enabled (if applicable to this drive) and then
confirm your choice.

Use RZ56, rz0 for /usr file system? (y/n) []: y
```

After you type your confirmation, you are asked to type the letter of the partition on which you want to allocate the `/usr` file system.

```
Select which partition on rz0 you wish to use to allocate /usr file system:

-----------------------------------
        a --- partition a
        b --- partition b
        c --- partition c
        d --- partition d
        e --- partition e
        f --- partition f
        g --- partition g
        h --- partition h
-----------------------------------
```

```
Type the letter of the partition on which you want to allocate
the /usr file system []: g

Use rz0 partition 'g' for the /usr file system (y/n) []? y
```

After you type your confirmation, the system displays a message similar to the following:

```
Making the new file system for /usr on /dev/rrz0g RZ56
```

4.4.2 Allocating the swap1 Space

Now that you have chosen which disk you want the /usr file system to be allocated to, you must select the disk on which you want to allocate the swap1 space. The installation procedure displays a table similar to the one shown in the following example. This table lists the disks connected to your processor. Select the disk on which you want to allocate the swap1 space.

```
*****   ALLOCATE THE SWAP1 SPACE

You can allocate the swap1 space to one of the disks listed in the
table below.  See the Guide to Installing DEC OSF/1 for an explanation
of this table:

swap1 space ALLOCATION TABLE

Selection   Device    Software    Device       Controller   Controller
            Name       Name       Number       Name         Number
-------------------------------------------------------------------
    1       RZ56        rz0          0         SCSI           0
    2       RZ23        rz2          2         SCSI           0
    3       RZ24        rz3          3         SCSI           0
-------------------------------------------------------------------

Enter your choice: 2

You selected RZ23, device number 2.  Make sure this disk is
on line and write-enabled (if applicable to this drive) and then
confirm your choice.

Use RZ23, rz2 for swap1 space? (y/n) []:  y
```

After you type your confirmation, you are asked to type the letter of the partition on which you want to allocate the swap1 space.

```
Select which partition on rz2 you wish to use to
allocate swap1 space:

-----------------------------------
        b --- partition b
        d --- partition d
        e --- partition e
        f --- partition f
        g --- partition g
        h --- partition h
-----------------------------------
Type the letter of the partition on which you want to allocate
the swap1 space []: b

Use rz2 partition 'b' for the swap1 space (y/n) []? y
```

After you type your confirmation, the system asks if you want to allocate a second swap space. If you do not want to allocate a second swap space, type n and continue with Section 4.4.3. If you want to allocate a second swap space, type y and continue as follows:

```
*****   ALLOCATE THE SWAP2 SPACE
Do you want to allocate a second swap space? (y/n) []: y
```

The system displays a table similar to the one shown in the following example. This table lists the disks connected to your processor. Select the disk on which you want to allocate the swap2 space.

```
You can allocate the swap2 space to one of the disks listed in the
table below.  See the Guide to Installing DEC OSF/1 for an explanation
of this table:

swap2 space ALLOCATION TABLE

Selection   Device    Software    Device       Controller   Controller
            Name       Name       Number       Name         Number
-------------------------------------------------------------------
    1       RZ56        rz0          0         SCSI           0
    2       RZ23        rz2          2         SCSI           0
    3       RZ24        rz3          3         SCSI           0
-------------------------------------------------------------------

Enter your choice: 1

You selected RZ56, device number 0.  Make sure this disk is
on line and write-enabled (if applicable to this drive) and then
confirm your choice.

Use RZ56, rz0 for swap2 space? (y/n) []: y
```

After you type your confirmation, you are asked to type the letter of the partition on which you want to alocate the swap2 space.

```
Select which partition on rz0 you wish to use to
allocate swap2 space:

-----------------------------------
        a --- partition a
        b --- partition b
        d --- partition d
        e --- partition e
        f --- partition f
        h --- partition h
-----------------------------------
Type the letter of the partition on which you want to allocate
the swap2 space []: b

Use rz0 partition 'b' for the swap2 space (y/n) []? y
```

4.4.3 Allocating the var Area

After allocating the swap space, the system tells you that the /var area of your system can either be placed in the /usr file system or on a separate file system.

```
*****   ALLOCATE THE /var FILE SYSTEM

The /var area of your system can either be placed in the /usr
file system or on a separate file system.
```

Then you are asked if you want to allocate a separate file system for /var. Type n at the prompt if you do not want to allocate a separate file system for /var. Continue with Section 4.5. If you want to allocate a separate file system for /var, type y at the prompt and continue as follows:

```
Do you want to allocate a separate filesystem for /var? (y/n): y
```

The system displays a var allocation table similar to the one shown in the following example. This table lists the disks connected to your processor. Select the disk on which you want to allocate the var area.

```
You can allocate the /var file system to one of the disks listed in the
table below.  See the Guide to Installing DEC OSF/1 for an explanation
of this table:

/var file system ALLOCATION TABLE

Selection   Device    Software    Device       Controller   Controller
            Name       Name       Number       Name         Number
-------------------------------------------------------------------------
    1       RZ56        rz0          0         SCSI           0
    2       RZ23        rz2          2         SCSI           0
    3       RZ24        rz3          3         SCSI           0
-------------------------------------------------------------------------

Enter your choice: 2

You selected RZ23, device number 2.  Make sure this disk is
on line and write-enabled (if applicable to this drive) and then
confirm your choice.

Use RZ23, rz2 for /var file system? (y/n) []: y
```

After you type your confirmation, you are asked to type the letter of the partition on which you want to allocate the /var file system. Then, you are asked to confirm your choice.

```
Select which partition on rz2 you wish to use to
allocate /var file system:

-----------------------------------
        d --- partition d
        e --- partition e
        f --- partition f
        g --- partition g
        h --- partition h
-----------------------------------

Type the letter of the partition on which you want to allocate
the /var file system []: g

Use rz2 partition 'g' for the /var file system (y/n) []? y

Making the new file system for /var on /dev/rrz2g RZ23
```

4.5 Installing System Software Subsets

At this point the installation installs the software subsets. The system displays a message telling you how long the software subsets will take to be installed.

```
*****   LOADING Operating System Software SUBSETS

The installation software will now load the software on your
disk partitions.  This will take anywhere between 20 minutes to
an hour depending on your distribution media and processor
type.

You will be presented with a menu of software options in a
few moments.
```

If you are installing from CDROM, the installation software will load the software from the disc you used to begin the installation. You do not have to change the CDROM media.

If you are installing from tape, you are required to change tape cartridges.

```
Please mount the tape labeled 'Operating System Software Volume 1'
```

To insert the TK50 tape cartridge labeled DEC OSF/1 V1.0 Operating System Software Volume 1:

- Raise the handle on the tape drive and insert the tape cartridge into the tape drive. Lower the handle.
- When the green light comes on, press the red button. In approximately 10 seconds, the tape will rewind automatically while the green light flashes off and on.
- When the solid green light comes on, the tape is on line and ready to use.

The system prompts you to confirm that the tape is ready.

```
Please make sure your installation tape is mounted and on-line.
Are you ready (y/n)? y

Positioning Tape
```

If you chose the basic installation, continue with Section 4.5.1. If you chose the advanced installation, continue with Section 4.5.2.

4.5.1 Software Subsets for the Basic Installation

When you choose the basic installation, the system begins loading the software subsets while displaying copying, working, and verifying messages.

```
Base System (OSFBASE100)
   Copying from /dev/nrmt0h (tape)
        Working....Mon Oct 25 00:11:42 GMT 1991
        Working....Mon Oct 25 00:13:44 GMT 1991
   .
   .
   .
   Verifying
        Working....Mon Oct 25 00:19:19 GMT 1991
   .
   .
   .
```

Continue with Section 4.5.3.

4.5.2 Software Subsets for the Advanced Installation

When you choose the advanced installation, the system displays a working message followed by a menu of required software subsets.

```
     Working....Mon Oct 25 21:30:41 GMT 1991

*** Enter Subset Selections ***

The following subsets are mandatory and will be installed automatically:
 * Base System                          * Header and Kernel Common Files
 * Standard Kernel Object Files         * TCP/IP Client Networking Utilities
 * Client NFS(tm) Utilities             * X11/DECwindows Servers
 * X11/DECwindows User Environment      * X11/DECwindows 75dpi Fonts
```

The system then displays a list of the optional subsets and asks you to enter your choice of subsets. Separate multiple selections with spaces.

```
The subsets listed below are optional:
 1) TCP/IP Server Networking Utilities   2) Server NFS(tm) Utilities
 3) System Accounting Utilities          4) System Exercisers
   .
   .
   .
Enter your choice(s): 1 2 3 4 5 6 7 8 9 10 11 12 13
```

The system will pause briefly while it determines if the selected subsets fit on the disk.

Next, the system displays the list of subsets you chose and asks you to confirm your choice.

```
You are installing the following subsets:
   Base System                       Header and Kernel Common Files            Standard Kernel Obje
   Client NFS(tm) Utilities          X11/DECwindows Servers
   X11/DECwindows User Environment   X11/DECwindows 75dpi Fonts
   .
   .
   .
Is this correct? (y/n): y
```

If the displayed subsets are not the ones you intended to choose, type `n`. The system displays the subset selection menu again and you can correct your

choice of optional subsets. If the displayed subsets are the ones you want to load, type y. The system begins loading the software subsets while displaying copying, working, and verifying messages.

```
Base System (OSFBASE100)
   Copying from /dev/nrmt0h (tape)
     Working....Mon Oct 25 21:38:04 GMT 1991
     Working....Mon Oct 25 21:40:06 GMT 1991
   .
   .
   .
   Verifying
     Working....Mon Oct 25 21:46:56 GMT 1991
   .
   .
   .
```

If you are doing a tape installation, some of the optional subsets are on a second tape volume. If you selected any of these optional subsets, the system displays the following message:

```
Volume change.  Rewinding tape...      Working....Mon Oct 25 22:13:18 GMT 1991
```

When the tape has finished rewinding, you will see the following:

```
Please remove tape volume 1 and replace it with volume 2.
```

- To unload the TK50 tape:

  Press the red button.

  When the red light goes off and the solid green light comes on, raise the handle and unload the tape.

- To insert the TK50 tape:

  Insert the tape cartridge labeled DEC OSF/1 Operating System Software Volume 2 into the tape drive. Lower the handle.

  When the red light goes off and the green light comes on, press the red button. The red light will stay on. In approximately 10 seconds, the tape will rewind automatically while the green light flashes off and on.

  When the solid green light comes on, the tape is on line and ready to use.

Type y at the prompt and wait 60 seconds before pressing Return to allow the tape to come on-line.

```
Are you ready (y/n)? y
```

The installation procedure will continue installing the software subsets. If there are mandatory update subsets continue with Section 4.5.3. If there are no mandatory update subsets, continue with Section 4.6.

4.5.3 Mandatory Update Subsets

Once the installation finishes installing the software subsets, a message appears telling you that the software has successfully been installed. At this time, the procedure installs the mandatory update subsets.

If you are installing from CDROM, continue with Section 4.5.3.1 if you chose the basic installation, or with Section 4.5.3.2 if you chose the advanced installation.

If you are installing from tape, you are asked to re-insert the media that you used to start the installation. The system displays the a message similar to the following:

```
Please re-insert the media that you used to start the installation
in TK50 device unit 5.
```

First, unload the tape that is currently in the tape drive.

- To unload the TK50 tape:

  Press the red button.

  When the red light goes off and the solid green light comes on, raise the handle and unload the tape.

Next, insert the tape cartridge labeled Installation Software and Mandatory Update.

- To insert the tape cartridge:

  Insert the tape and lower the handle.

  When the red light goes off and the green light comes on, press the red button. The red light will stay on. In approximately 10 seconds, the tape will rewind automatically while the green light flashes off and on.

  When the solid green light comes on, the tape is on line and ready to use.

Wait 60 seconds before pressing Return to allow the tape to come on line.

If you chose the basic installation, continue with Section 4.5.3.1. If you chose the advanced installation, continue with Section 4.5.3.2.

4.5.3.1 Mandatory Update Subsets for the Basic Installation

If you chose the basic installation, the subsets are installed automatically as shown in the following example:

```
Press the <RETURN> key to continue:

*****   LOADING MANDATORY UPDATE KIT SUBSETS

Please make sure your installation tape is mounted and on-line.
Are you ready (y/n)? y
Positioning Tape
        Working....Thu Jul 25 18:02:30 GMT 1991
   .
```

.
.

4.5.3.2 Mandatory Update Subsets for the Advanced Installation

If you chose the advanced installation, the system displays a message telling you the following subsets are mandatory and will be installed automatically. For example:

```
Press the <RETURN> key to continue:

*****   LOADING MANDATORY UPDATE KIT SUBSETS

*** Enter Subset Selections ***

The following subsets are mandatory and will be installed automatically:
 * Base System UPDATE                * Header and Kernel Common Files UPDATE
 * Standard Kernel Obj Files UPDATE  * TCP/IP Client Net Util UPDATE
 * Client NFS(tm) Utilities UPDATE   * X11/DECwindows Servers UPGRADE
 * X11/DECwindows User Env UPGRADE
```

Next, the system displays a list of optional subsets and asks you to enter your choice of subsets. Separate multiple selections with spaces.

```
The subsets listed below are optional:
 1) TCP/IP Server Net Util UPDATE        2) Server NFS(tm) Utilities UPDATE

 3) System Exercisers UPDATE             4) Printer Support Env. UPDATE
   .
   .
   .
Enter your choice(s): 19
```

The system will pause briefly while it determines if the selected subsets fit on the disk.

Next, the system displays the list of subsets you chose and asks you to verify your choice.

```
You are installing the following subsets:
   Base System UPDATE                  Header and Kernel Common Files UPDATE
   Standard Kernel Obj Files UPDATE    TCP/IP Client Net Util UPDATE
   .
   .
   .
Is this correct? (y/n): y
```

If the displayed subsets are not the ones you intended to choose, type `n`. The system displays the subset selection menu again and you can correct your choice of optional subsets. If the displayed subsets are the ones you want to load, type `y`. The system begins loading the software subsets while displaying copying, working, and verifying messages.

```
Base System UPDATE (OSFBASE101)
   Copying from /dev/nrmt0h (tape)
        Working....Fri Sep 13 12:10:50 GMT 1991
        Working....Fri Sep 13 12:12:52 GMT 1991
   Verifying
   .
   .
   .
```

After the system finishes installing the mandatory update kit subsets, it displays a message saying that the installation software has successfully installed the software subsets.

```
The installation software has successfully installed the software
subsets
```

4.6 Completing the Installation

At this point in the installation, the system prints a list of the log files created during the installation along with a brief description of each file.

```
There are logfiles which contain a record of your installation.
These are:

        /var/adm/smlogs/install.log     - general log file
        /var/adm/smlogs/install.FS.log  - file system creation logs
        /var/adm/smlogs/setld.log       - log for the setld(8) utility
        /var/adm/smlogs/fverify.log     - verification log file
```

Next the system asks if you want to configure the system for use at this time.

```
Would you like to configure the system for use at this time? (y/n): n
```

If you want to defer configuration, type `n` at the prompt; this halts the system. The next time you boot the system, you will be asked to supply site specific information. When you reboot the system, proceed to Chapter 5 to complete the installation.

If you choose to configure the system at this time, type `y` at the prompt. The system displays a message similar to the following:

```
*****   CONFIGURING THE SYSTEM

INIT: Checking local file systems
   .
   .
   .
```

Proceed to Chapter 5 to complete the installation.

Configuring the System 5

This chapter describes how to complete your installation of the DEC OSF/1 operating system using the Installation Tasks (IT) utility. The IT utility encompasses several utilities (such as `setld`, `doconfig`, and `MAKEDEV`) into one procedure. Using the IT utility, you perform the following tasks:

- Configure the installed subsets
- Identify devices
- Specify system information
- Build the kernel

5.1 Gathering Information

You need the following the information to configure your system:

Item	Selection
System Name	_____
Time Zone Area	_____
Daylight Savings Time	_____
Date and Time	_____

5.2 Configuring Your System

After you have completed the installation procedure for your system, you have the option of invoking the utility or halting the system. If you answer yes to the prompt, you will immediately begin configuring your system. If you answer no, your system will halt. The next time you boot your system,

your system will be configured.

```
You can now choose to configure the system for use or you can
defer configuration.  If you choose to defer configuration, the
system will halt. Configuration will happen next time it is
booted.  If you choose to configure, you will be asked a series
of questions and the system will begin full operation.

Would you like to configure the system for use at this time?
(y/n): y

*** SYSTEM CONFIGURATION ***
```

5.2.1 Configuring System Subsets

The IT utility invokes `setld` to configure the subsets you selected during the installation procedure. The system displays the name of the subset as it is being configured.

5.2.2 Specifying System Information

The IT utility displays a series of prompts asking you to enter system information in a specific format. If you type an inappropriate response, the prompt will reappear until you enter a valid response.

You are asked to provide the following information:

- The system name

  After you enter the system name, you are asked for confirmation.
- Your time zone
- Whether your area alternates between daylight savings and standard time
- Your daylight savings time area, if unknown by the system
- The date and time

5.2.3 Modifying the Configuration File

By default, your system's configuration file includes all options and all the devices attached to your system at power-up time. If the defaults are not adequate for your needs, for example, to remove some `options` entries or to add additional device entries, you can modify the configuration file when asked whether you want to edit the configuration file. See the *Guide to System Administration* for more information on the system's configuration file and its options.

5.2.4 Building the Kernel

When the subsets are configured and the configuration file completed, the `doconfig` utility (invoked by the IT utility) makes the special device files needed by the hardware and builds the kernel for your system. For example, if the name of your system's configuration file is DECOSF, you will see messages like the following:

```
*** DEVICE SPECIAL FILE CREATION ***
     Working....Fri Sep 27 13:21:42 EDT 1991


*** PERFORMING KERNEL BUILD ***
     Working....Fri Sep 27 13:23:23 EDT 1991
     Working....Fri Sep 27 13:25:26 EDT 1991
     Working....Fri Sep 27 13:27:30 EDT 1991
     Working....Fri Sep 27 13:29:34 EDT 1991
     Working....Fri Sep 27 13:31:40 EDT 1991
```

5.3 After System Configuration

If you did not configure some or all of the subsystems, you can do so after the kernel is configured. See the *Guide to System and Network Setup and Configuration* for information on invoking the setup scripts listed in Table 5-1. Also at this time, you may want to add users to the password file, further customize your system environment, and install layered products.

Table 5-1: DEC OSF/1 Setup Scripts

Setup Task	Script	Required Subset
Networking	`netsetup`	OSFCLINET100
Network Information Services (NIS) for client	`ypsetup`	OSFCLINET100
Network Information Services (NIS) for server	`ypsetup`	OSFINET100 OSFCOMM100
Berkeley Internet Name Domain (BIND) for client	`bindsetup`	OSFCLINET100
Berkeley Internet Name Domain (BIND) for server	`bindsetup`	OSFINET100 OSFCOMM100
`svc.conf` file	`svcsetup`	OSFCLINET100
Network File System (NFS) for client	`nfssetup`	OSFCLINFS100
Network File System (NFS) for server	`nfssetup`	OSFNFS100 OSFINET100

Table 5-1: (continued)

Setup Task	Script	Required Subset
UNIX-to-UNIX Copy Program	`uucpsetup`	OSFUUCP100 OSFCOMM100
Network Time Protocol (NTP) service	`ntpsetup`	OSFCLINET100
Simple Network Management Protocol (SNMP)	`snmpsetup`	OSFSNMP100
Add users	`adduser`	OSFBASE100
Printer	`lprsetup`	OSFPRINT100

See the *Guide to System Administration* for information on administering and maintaining your system. See the *Guide to Network and Communications Management and Problem Solving* for information on administering and maintaining the network facilities. See the layered product's installation guide for installation information.

5.4 System Configuration Example

The following example shows the initial system configuration of a DEC OSF/1 operating system on a DECstation 3100 whose hostname is NUGLUT.

Example 5-1: System Configuration Example

```
Clearing old preload files
installed library /usr/shlib/libDXm.so
installed library /usr/shlib/libMrm.so
installed library /usr/shlib/libX11.so
installed library /usr/shlib/libXTrap.so
installed library /usr/shlib/libXaw.so
installed library /usr/shlib/libXext.so
installed library /usr/shlib/libXm.so
installed library /usr/shlib/libXmu.so
installed library /usr/shlib/libXt.so
installed library /usr/shlib/libc.so
installed library /usr/shlib/libcda.so
installed library /usr/shlib/libdvr.so
installed library /usr/shlib/libdvs.so
installed library /usr/shlib/liblwkdxm.so
installed library /usr/shlib/libsys5.so
created global data file /var/adm/loader/ldr_global.dat
Global libraries installed (/etc/lib_admin.tmp)


*** SYSTEM CONFIGURATION ***
```

Example 5-1: (continued)

```
Configuring OSFBASE100
Configuring OSFBINCOM100
Configuring OSFBIN100
Configuring OSFCLINET100
Configuring OSFCLINFS100
Configuring OSFSER100
Configuring OSFX11100
Configuring OSFFONT100
Configuring OSFINET100
Configuring OSFNFS100
Configuring OSFACCT100
Configuring OSFEXER100
Configuring OSFFONT15100
Configuring OSFDECW100
Configuring OSFXCDA100
Configuring OSFCDABASE100
Configuring OSFMH100
Configuring OSFXMAIL100
Configuring OSFEMACS100
Configuring OSFPRINT100
Configuring OSFAFM100
Configuring OSFPGMR100
Configuring OSFXDEV100
Configuring OSFCDAPGMR100
Configuring OSFXCDADEV100
Configuring OSFSCCS100
Configuring OSFDCMT100
Configuring OSFDCMTEXT100
Configuring OSFSYSV100
Configuring OSFSNMP100
Configuring OSFCOMM100
Configuring OSFUUCP100
Configuring OSFLEARN100
Configuring OSFXMIT100
Configuring OSFMITBIT100
Configuring OSFMITFONT100
Configuring OSFEMACSSRC100
Configuring OSFMANOP100
Configuring OSFMANOS100
Configuring OSFMANWS100
Configuring OSFMANMIT100


*** SYSTEM NAME SPECIFICATION ***
```

Example 5-1: (continued)

```
Select the name of your system using alphanumeric characters.
The first character must be a letter.   For example, tinker.
Enter your system name:  nuglut

You selected 'nuglut' as the name of your system.
Is this correct? (y/n) [y]: y



*** TIME ZONE SPECIFICATION ***


***** MAIN TIMEZONE MENU *****

------------------------------------------------------------------------------

      1) Australia      2) Canada         3) Cuba           4) Egypt
      5) GB-Eire        6) GMT            7) WET            8) MET
      9) EET           10) Hongkong      11) Iceland       12) Israel
     13) Jamaica       14) Japan         15) Mexico        16) PRC
     17) Poland        18) ROC           19) ROK           20) Singapore
     21) Turkey        22) USA

      0) None of the above

------------------------------------------------------------------------------

Select the number above that best describes
your location: 22


***** USA TIMEZONE MENU *****

------------------------------------------------------------------------------

      1) Alaska         2) Aleutian       3) Eastern        4) Central
      5) Hawaii         6) Mountain       7) Pacific        8) Samoa

      0) None of the above

------------------------------------------------------------------------------

Select the number above that best describes
your location: 3
```

Example 5-1: (continued)

```
You selected 'USA Eastern' as your time zone area.
Is that correct? (y/n) [y]: y


*** DAYLIGHT SAVINGS TIME SPECIFICATION ***

Does your area alternate between Daylight Savings
and Standard time? (y/n) [y]:


*** DATE AND TIME SPECIFICATION ***

The current date and time should be specified using the following
format:

     yymmddhhmm

Use two digits for year (yy), month (mm), day (dd), hour (hh), and
minute (mm).  Enter the time in 24-hour format.  For example, 11:30
p.m. on July 25, 1991 would be entered as:

     9107252330

Enter the date and time: 9107121322

The date and time has been set to Fri Jul 12 13:22:21 EDT 1991
Is this correct? (y/n) [y]: y


*** CONFIGURATION FILE NAME SPECIFICATION ***

Enter a name for the kernel configuration file. [NUGLUT]:

You want to name the configuration file 'NUGLUT'
Is that correct? (y/n) [y]: y


*** PERFORMING SYSTEM CONFIGURATION ***

Configuration file complete.

Do you want to edit the configuration file? (y/n) [n]: n
```

Example 5-1: (continued)

```
*** DEVICE SPECIAL FILE CREATION ***
     Working....Fri Jul 12 13:22:47 EDT 1991


*** PERFORMING KERNEL BUILD ***
     Working....Fri Jul 12 13:23:23 EDT 1991
     Working....Fri Jul 12 13:25:26 EDT 1991
     Working....Fri Jul 12 13:27:30 EDT 1991
     Working....Fri Jul 12 13:29:34 EDT 1991
     Working....Fri Jul 12 13:31:40 EDT 1991
```

Working in the Standalone Environment 6

The standalone environment is a virtual disk environment that is used to initiate installations. The primary purpose of the standalone environment is to support the initial phases of an installation, which include selecting the distribution and system devices, as well as restoring the root file system image to the target system disk. Throughout the installation process, fully supported device drivers are used.

The standalone environment also supports system management activities. These activities include:

- Restoring a damaged root file system
- Restoring the boot block image
- Performing disk maintenance operations such as changing the disk partition layout prior to performing an advanced installation

The standalone environment provides commands that assist in recovering from root file system corruption and help perform general file system and disk maintenance tasks. It is a limited environment that does not perform like a full operating system environment. You should perform system management activities in the standalone environment only if you have extensive UNIX operating system experience.

This chapter explains how to invoke the standalone environment, identifies some of its commonly used capabilities, and describes how to extend the standalone environment so that additional commands can be used.

6.1 Invoking the Standalone Environment

The media and the commands that you use to invoke the standalone environment are dependent on the type of processor that you are using. These media and commands are identified and described in Chapter 3 of this manual.

After you boot your processor, the system displays a message briefly describing the different types of installations and a menu like the following. To invoke the standalone environment, type the number 3 at the prompt and press Return.

```
***  STANDALONE SYSTEM ENVIRONMENT ***

If you select a BASIC Installation option from the list that follows,
the installation software creates file systems on default partitions on
your system disk and loads the minimum subsets required for your
configuration.

If you require additional installation choices, select the ADVANCED
Installation option.

Select one of the following options:

        1) BASIC Installation
        2) ADVANCED Installation

        3) System Management

Enter your choice: 3
```

The system responds by placing the system in single-user mode and by displaying the superuser shell (#), prompt.

6.2 Standalone Environment Capabilities

The standalone environment enables you to perform several system management activities. In some cases, you have to use system primitives instead of the more advanced system commands. For example, to make a new file system, you would use the `mkfs` command instead of the `newfs` command. If you want access to special device files, you have to create them using the `MAKEDEV` command. You can use the standalone system to perform the following tasks:

- Edit a file using the `ed` editor
- Create new file systems with the `mkfs` command
- Restore the boot block with the `dd` command
- Restore file systems with the `restore` command
- Modify partition tables with the `chpt` command
- Mount other disks and file systems with the `mount` command

The *Guide to System Administration* gives an example of how to restore the root file system using the standalone environment after a catastrophic event has occurred.

Note

Do not use the `fsck` command on a standalone system to check filesystems. If the disks have been labeled with the `disklabel` command, do not use the `chpt` command.

To exit the standalone environment and halt the processor, type `/etc/halt`. To exit the standalone environment and return to the installation menu, press Ctrl/D.

Appendixes

System Software Subsets A

Table A-1 briefly describes each system software subset for supported processors and lists the names of any other subsets or kernel configuration file options related to its operation.

Table A-1: System Subset Descriptions and Dependencies

Subset Name	Contents	Dependencies
OSFACCT100 Optional	System Accounting Utilities Programs and data files needed to perform system accounting. This subset contains log files that grow automatically.	None
OSFAFM100 Optional	Adobe Font Metric Files Font metrics (character bounding box, width, name, ligature, kerning, and font properties) for PostScript outline fonts used by text formatting applications on PostScript output devices.	None
OSFBASE100 Required	Base System Fundamental utilities and data files for the DEC OSF/1 operating system. The Base System includes the C compiler and linker, the editors, and many of the general-purpose programs. This subset cannot be removed.	Required for all subsets
OSFBIN100 Required	Standard Kernel Object Files Kernel object, header, and data files.	Required to build DEC OSF/1 kernels

Subset Name	Contents	Dependencies
OSFBINCOM100 Required	Header and Kernel Common Files Software required to configure and build the kernel image /vmunix.	None
OSFCDABASE100 Optional	CDA Base Services Runtime components for Compound Document Architecture. Provides basic access to compound documents which are stored in DDIF (Digital Document Interchange Format) or DTIF (Digital Table Interchange Format). Also provides interchange capabilities between DDIF/DTIF and several other document formats via the CDA converter architecture. Includes document converter command `/usr/bin/cdoc`, character cell document viewer command /usr/bin/vdoc, converter modules for converting text to DDIF, DDIF to text, DDIF to CDA Analysis format, DDIF to PostScript, and DTIF to DDIF (CDA Domain converter).	Required for: OSFXMAIL100
OSFCDAPGMR100 Optional	CDA Software Development The CDA Software Development Environment provides programmer documentation and C header files that enable programmer access to the CDA Base Services runtime libraries in OSFCDABASE100.	None
OSFCLINET100 Required	TCP/IP Client Networking Utilities Software required to use the TCP/IP protocols to access services over the network. These services include remote login (rlogin), Network Time Protocol (xntp), and Network Information Service (NIS, formerly known as YP).	None

Subset Name	Contents	Dependencies
OSFCLINFS100 Required	Client NFS Utilities Software required to mount remote file systems using the Network File System.	None
OSFCOMM100 Optional	Communications Utilities Utilities for several types of serial communications with other systems, including `tip`, `ftp`, and `telnet`.	Requires: OSFINET100 Required for: OSFUUCP100
OSFDCMT100 Optional	Doc. Preparation for Ref. Pages Tools to format, manage, and display reference pages, including the `nroff` formatter and required macros.	Required for: OSFMAN100
OSFDCMTEXT100 Optional	Doc. Preparation Extensions Additional `nroff` macro packages, bibliography tools, and `roff` tools.	Requires: OSFDCMT100
OSFDECBIT100 Optional	DECwindows Bitmaps X11 bitmaps installed in the `/usr/include/dec/bitmaps` directory.	Requires: OSFBASE100
OSFDECW100 Optional	Additional DECwindows Applications Additional X11/DECwindows client applications such as Calendar and PostScript Previewer.	Requires: OSFBASE100

Subset Name	Contents	Dependencies
OSFEMACS100 Optional	GNUemacs The GNUemacs editor is an advanced, self-documenting, customizable, extensible real-time display text editor.	Requires: OSFBASE100
OSFEMACSSRC100 Optional	GNUemacs Source Files Description here...	Required for:????
OSFEXER100 Optional	System Exercisers Programs that help in diagnosing problems with hardware and peripheral devices.	None
OSFFONT100 Required	X11/DECwindows 75dpi Fonts Fonts for X11/DECwindows.	Requires: OSFBASE100
OSFFONT15100 Optional	X11/DECwindows 100dpi Fonts Workstation font files for systems using either the VR160 15-inch monitor or higher resolution graphics.	Requires: OSFBASE100
OSFINET100 Required	TCP/IP Server Networking Utilities Software required to provide services over the network using the TCP/IP protocols. These services include remote login (rlogin), Network Time Protocol (xntp), and Network Information Service (NIS, formerly known as YP).	Required for: OSFCOMM100 OSFNFS100 Kernel configuration: options INET
OSFLEARN100 Optional	Computer Aided System Tutor This tutor provides computer-aided instruction courses and practice in the use of the DEC OSF/1 operating system.	Requires OSFBASE100
OSFMANMIT100 Optional MIT Worksystem RefPages Description here	{T	

Subset Name	Contents	Dependencies
T}	Required for:?	
OSFMANWS100 Optional	Worksystem RefPages Online worksystem reference pages for Sections 1, 3, and 8.	Requires: OSFDCMT100

Subset Name	Contents	Dependencies
OSFMANOS100 Optional	RefPages for Admin/Users Online reference pages.	Requires: OSFDCMT100
OSFMANOP100 Optional	RefPages for Programmers Online reference pages.	Requires: OSFDCMT100
OSFMH100 Optional	RAND Corp Mail Handler (MH) Programs that constitute the RAND Corporation MH mail reader interface.	Required for: OSFXMAIL100
OSFMITBIT100 Optional	MIT X11 Bitmaps MIT X11 bitmaps installed in the `/usr/include/X11-mit/bitmaps` directory.	Requires: OSFBASE100
OSFMITFONT100 Optional	MIT X11 fonts X11 fonts from MIT compiled for the DEC X server.	Requires: OSFBASE100
OSFNFS100 Required for basic installation	Server NFS Utilities Software required to provide remote file system access to client systems using the Network File System.	Requires: OSFINET100 Kernel configuration: options NFS

Subset Name	Contents	Dependencies
OSFPGMR100	Software Development Utilities	None
Optional	Libraries and utilities useful for software development. These include the libraries for linking programs to be analyzed with the `dbx` debugger, the `lint` program verifier, and the `lex` and `yacc` parser packages.	
OSFPRINT100	Printer Support Environment	None
Optional	Printer commands such as `lpr`, `lpq`, and `lpd`, utilities, configuration files, filters, and PostScript printer support.	
OSFSCCS100	Source Code Control System	None
Optional	Programs that make up the UNIX Source Code Control System, which provides a regulation mechanism for large software projects.	
OSFSER100	X11/DECwindows Servers	Requires: OSFBASE100
Required for Worksystems	Provides X11/DECwindows server support. A DECwindows server is the software that runs a workstation.	
OSFSNMP100	Network Mgmt. Common Agent	Requires: OSFCLINET
Optional	This optional subset contains the software required to run the Simple Network Mgmt. Protocol common agent.	
OSFSVID2100	UNIX SVID2 Compatibility	Requires: OSFBASE100 OSFBIN100
Optional	Software which brings the DEC OSF/1 system into compliance with the Base System and Kernel Extensions of the System V Interface Definition Issue 2 (SVID-2). It also adds a higher degree of compatibility with the Basic Utilities Extensions of SVID-2.	

Subset Name	Contents	Dependencies
OSFUUCP100 Optional	UNIX to UNIX Copy Facility Programs and data files needed for a system to participate in a network of machines using the UNIX UUCP facility. This facility transmits files over serial communications lines.	Requires: OSFCOMM100
OSFX11100 Required	X11/DECwindows User Environment X Window System client programs.	Requires: OSFBASE100
OSFXCDA100 Optional	CDA Workstation Base Services DECwindows Motif-based compound document viewer `/usr/bin/dxvdoc`. Allows viewing of compound documents that contain text, graphics, and images in a window.	Requires: OSFBASE100
OSFXCDADEV100 Optional	CDA Workstation Software Development Developer's environment for Xwindows CDA.	Requires: OSFBASE100 OSFXDEV100
OSFXDEMOS100 Optional	OSF/Motif Programming Examples Description here...	Requires:?
OSFXDEV100 Optional	Worksystem Development Environment Library and data files needed to produce X Window System client applications. Includes example programs demonstrating how to get started.	Requires: OSFBASE100
OSFXMAIL100 Optional	DECwindows Mail DECwindows mail application for `dxmail`.	Requires: OSFMH100 OSFCDABASE100

Subset Name	Contents	Dependencies
OSFXMIT100 Optional	MIT X11 Applications Contains 56 MIT X11 applications compiled in OSF/1. Also contains MIT X11 software development files including header files and libraries.	Requires: OSFBASE100

Basic Installation Log File C

The following is an example of a basic installation performed on a DECstation 3100 processor. What the installation software displays depends on the type of system you have and the type of media you are using, but the installation procedure for all systems and media is similar.

```
*** STANDALONE SYSTEM ENVIRONMENT ***

If you select the BASIC Installation option from the list that follows,
the installation software creates file systems on default partitions on
your system disk and loads the minimum subsets required for your
configuration.

If you require additional installation choices, select the ADVANCED
Installation option.

Select one of the following options:


     1) BASIC Installation
     2) ADVANCED Installation

     3) System Management

Enter your choice: 1

*** SYSTEM DISK SELECTION ***

The 'Guide to Installing ULTRIX' explains the following table
of system disk drives.  Select one of the devices below to contain the
root file system:

SYSTEM DISK TABLE

Selection   Device     ULTRIX     Device       Controller   Controller
            Name       Name       Number       Name         Number
-------------------------------------------------------------------------
    1       RZ24        rz0          0         SCSI           0
    2       RZ55        rz1          1         SCSI           0
    3       RZ25        rz2          2         SCSI           0
    4       RZ55        rz3          3         SCSI           0
    5       RZ56        rz4          4         SCSI           0
-------------------------------------------------------------------------

Enter your choice: 1

You selected RZ24, device number 0.  Make sure this disk drive
is on line and write-enabled (if applicable to your disk drive), then
confirm your choice.
```

```
Use RZ24, rz0, for your system disk? (y/n) []: y

The installation procedure now allocates the root file system on
partition 'a' of the system disk, rz0 RZ24.

Making the root file system on rz0 RZ24.

The installation procedure is now restoring the root file system to
partition 'a' of the system disk, rz0 RZ24.

*** BOOTSTRAP COMMAND SEQUENCE ***

Issue the following console commands to set your default bootpath variable
and to boot your system disk:

      >> setenv bootpath rz(0,0,0)vmunix
      >> auto

***** Continuing HERCULES/1 Installation


      Writing Disk Label on  rz0a

ULTRIX compatible partition data found.
This data may be different than the standard
partition layout information in /etc/disktab.

ULTRIX partition table layout is:
partition     bottom        top       size    overlap
    a              0      40959      40960    c,h
    b          40960     163839     122880    c
    c              0     409791     409792    a,b,d,e,f,g,h
    d         163840     245823      81984    c,g
    e         245824     327807      81984    c,g
    f         327808     409791      81984    c,g
    g         163840     409791     245952    c,d,e,f
    h              0          0          0    a,c

Use the ULTRIX-style partition data? [y]:

***** CREATING DEFAULT FILE SYSTEMS

      The default location for the /usr filesystem is rz0g
      The default location for the paging partition is rz0b
```

```
      Creating new filesystem on  rrz0g
swapon: adding /dev/rz0b as swap device.

***** LOADING OPERATING SYSTEM SOFTWARE SUBSETS

The installation software will now load the software on your
disk partitions.  This will take anywhere between 20 minutes to
an hour depending on your distribution media and processor
type.  After the software has been loaded, there will be more
questions.

Please mount the tape labeled 'Supported Software'


Please make sure your installation tape is mounted and on-line.
Are you ready (y/n)? y
Positioning Tape


Base System (OSFBASE100)
   Copying from /dev/nrmt0h (tape)
      Working....Sat Sep 21 15:33:59 GMT 1991
      Working....Sat Sep 21 15:36:01 GMT 1991
      Working....Sat Sep 21 15:38:03 GMT 1991
      Working....Sat Sep 21 15:40:04 GMT 1991
      Working....Sat Sep 21 15:42:06 GMT 1991
      Working....Sat Sep 21 15:44:09 GMT 1991
   Verifying
      Working....Sat Sep 21 15:44:34 GMT 1991

Kernel Common Files (OSFBINCOM100)
   Copying from /dev/nrmt0h (tape)
      Working....Sat Sep 21 15:46:50 GMT 1991
   Verifying
      Working....Sat Sep 21 15:48:17 GMT 1991

Standard Kernel Object Files (OSFBIN100)
   Copying from /dev/nrmt0h (tape)
      Working....Sat Sep 21 15:48:43 GMT 1991
      Working....Sat Sep 21 15:50:44 GMT 1991
      Working....Sat Sep 21 15:52:46 GMT 1991
   Verifying
      Working....Sat Sep 21 15:53:41 GMT 1991

TCP/IP Client Networking Utilities (OSFCLINET100)
```

```
   Copying from /dev/nrmt0h (tape)
      Working....Sat Sep 21 15:54:55 GMT 1991
   Verifying

Client NFS(tm) Utilities (OSFCLINFS100)
   Copying from /dev/nrmt0h (tape)
   Verifying

TCP/IP Server Networking Utilities (OSFINET100)
   Copying from /dev/nrmt0h (tape)
      Working....Sat Sep 21 15:56:29 GMT 1991
      Working....Sat Sep 21 15:58:31 GMT 1991
      Working....Sat Sep 21 16:00:32 GMT 1991
      Working....Sat Sep 21 16:01:18 GMT 1991
   Verifying

Server NFS(tm) Utilities (OSFNFS100)
   Copying from /dev/nrmt0h (tape)
   Verifying

X11/DECwindows Servers (OSFSER100)
   Copying from /dev/nrmt0h (tape)
      Working....Sat Sep 21 16:02:52 GMT 1991
      Working....Sat Sep 21 16:04:27 GMT 1991
   Verifying
      Working....Sat Sep 21 16:06:46 GMT 1991

X11/DECwindows User Environment (OSFX11100)
   Copying from /dev/nrmt0h (tape)
      Working....Sat Sep 21 16:07:16 GMT 1991
      Working....Sat Sep 21 16:09:18 GMT 1991
   Verifying
      Working....Sat Sep 21 16:10:12 GMT 1991

X11/DECwindows 75dpi Fonts (OSFFONT100)
   Copying from /dev/nrmt0h (tape)
      Working....Sat Sep 21 16:10:50 GMT 1991
   Verifying
Rewinding Tape...

The installation software has successfully installed the software subsets

Please re-insert the media that you used to start the installation
in TZ30 device unit 5.
```

```
Press the <RETURN> key to continue:

***** LOADING MANDATORY PATCH KIT SUBSETS

Please make sure your installation tape is mounted and on-line.
Are you ready (y/n)? y
Positioning Tape
      Working....Sat Sep 21 16:18:20 GMT 1991
      Working....Sat Sep 21 16:20:21 GMT 1991
      Working....Sat Sep 21 16:22:23 GMT 1991


Base System PATCH (OSFBASE101)
   Copying from /dev/nrmt0h (tape)
      Working....Sat Sep 21 16:23:42 GMT 1991
      Working....Sat Sep 21 16:25:44 GMT 1991
   Verifying
      Working....Sat Sep 21 16:26:07 GMT 1991

Kernel Common Files PATCH (OSFBINCOM101)
   Copying from /dev/nrmt0h (tape)
   Verifying

Standard Kernel Obj Files PATCH (OSFBIN101)
   Copying from /dev/nrmt0h (tape)
      Working....Sat Sep 21 16:27:17 GMT 1991
   Verifying

TCP/IP Client Net Util PATCH (OSFCLINET101)
   Copying from /dev/nrmt0h (tape)
   Verifying

Client NFS(tm) Utilities PATCH (OSFCLINFS101)
   Copying from /dev/nrmt0h (tape)
   Verifying

TCP/IP Server Net Util PATCH (OSFINET101)
   Copying from /dev/nrmt0h (tape)
   Verifying

Server NFS(tm) Utilities PATCH (OSFNFS101)
   Copying from /dev/nrmt0h (tape)
   Verifying

X11/DECwindows Servers PATCH (OSFSER101)
```

```
   Copying from /dev/nrmt0h (tape)
      Working....Sat Sep 21 16:30:31 GMT 1991
      Working....Sat Sep 21 16:32:18 GMT 1991
   Verifying

X11/DECwindows User Env PATCH (OSFX11101)
   Copying from /dev/nrmt0h (tape)
      Working....Sat Sep 21 16:33:23 GMT 1991
   Verifying
      Working....Sat Sep 21 16:35:06 GMT 1991
Rewinding Tape...
      Working....Sat Sep 21 16:36:01 GMT 1991

The installation software has successfully installed the software subsets
```

Advanced Installation Log File D

The following is an example of an advanced installation performed on a DECstation 3100 processor. What the installation software displays depends on the type of system you have and the type of media you are using, but the installation procedure for all systems and media is similar.

```
*** STANDALONE SYSTEM ENVIRONMENT ***

If you select the BASIC Installation option from the list that follows,
the installation software creates file systems on default partitions on
your system disk and loads the minimum subsets required for your
configuration.

If you require additional installation choices, select the ADVANCED
Installation option.

Select one of the following options:


     1) BASIC Installation
     2) ADVANCED Installation

     3) System Management
Enter your choice: 2

*** SYSTEM DISK SELECTION ***

The 'Guide to Installing DEC OSF/1' explains the following table
of system disk drives.  Select one of the disks below to contain the
root file system:

SYSTEM DISK TABLE

Selection   Device     ULTRIX     Device       Controller   Controller
            Name       Name       Number       Name         Number
-------------------------------------------------------------------------
    1       RZ56        rz2          2         SCSI           0
    2       RZ56        rz3          3         SCSI           0
-------------------------------------------------------------------------

Enter your choice: 1

You selected RZ56, device number 2. Make sure this disk drive
is on line and write-enabled (if applicable to your disk drive), then
confirm your choice.


Use RZ56, rz2, for your system disk? (y/n) []: y

The installation procedure now allocates the root file system on
```

```
partition 'a' of the system disk, rz2 RZ56.

Making the root file system on rz2 RZ56.

The installation procedure is now restoring the root file system to
partition 'a' of the system disk, rz2 RZ56.

*** BOOTSTRAP COMMAND SEQUENCE ***

Issue the following console commands to set your default bootpath variable
and to boot your system disk:

      >> setenv boot "3/rz2/vmunix -a"
      >> boot

***** Continuing DEC OSF/1 Installation


***** SELECT FILE SYSTEMS

      The default location for the /usr file system is rz2g
      The default location for the swap space is rz2b
Would you like to use these defaults? (y/n): n

***** ALLOCATE THE /usr FILE SYSTEM

You can allocate the /usr file system to one of the disks listed in the
table below.  See the Guide to Installing DEC OSF/1 for an explanation of
this table:


/usr file system ALLOCATION TABLE

Selection   Device    Software    Device       Controller   Controller
            Name       Name       Number       Name         Number
-------------------------------------------------------------------------
    1       RZ56        rz2          2         SCSI           0
    2       RZ56        rz3          3         SCSI           0
-------------------------------------------------------------------------
Enter your choice: 2

You selected RZ56, device number 3.  Make sure this disk is
on line and write-enabled (if applicable to this drive) and then
confirm your choice.
```

```
Use RZ56, rz3 for /usr file system? (y/n) []: y

Select which partition on rz3 you wish to use to
allocate /usr file system:

----------------------------------
      a --- partition a
      b --- partition b
      c --- partition c
      d --- partition d
      e --- partition e
      f --- partition f
      g --- partition g
      h --- partition h
----------------------------------

Type the letter of the partition on which you want to allocate the /usr
file system []: g
Use rz3 partition 'g' for the /usr file system (y/n) []? y

Making the new file system for /usr on /dev/rrz3g RZ56

***** ALLOCATE THE SWAP1 SPACE

You can allocate the swap1 space to one of the disks listed in the
table below.  See the Guide to Installing DEC OSF/1 for an explanation of
this table:


swap1 space ALLOCATION TABLE

Selection   Device    Software    Device       Controller   Controller
            Name       Name       Number       Name         Number
-------------------------------------------------------------------------
    1       RZ56        rz2          2         SCSI           0
    2       RZ56        rz3          3         SCSI           0
-------------------------------------------------------------------------

Enter your choice: 1

You selected RZ56, device number 2.  Make sure this disk is
on line and write-enabled (if applicable to this drive) and then
confirm your choice.

Use RZ56, rz2 for swap1 space? (y/n) []: y
```

```
Select which partition on rz2 you wish to use to
allocate swap1 space:

-----------------------------------
     b --- partition b
     d --- partition d
     e --- partition e
     f --- partition f
     g --- partition g
     h --- partition h
-----------------------------------

Type the letter of the partition on which you want to allocate the swap1
space []: b
Use rz2 partition 'b' for the swap1 space (y/n) []? y

***** ALLOCATE THE SWAP2 SPACE

Do you want to allocate a second swap space? (y/n) []: y

You can allocate the swap2 space to one of the disks listed in the
table below.  See the Guide to Installing DEC OSF/1 for an explanation of
this table:


swap2 space ALLOCATION TABLE

Selection   Device    Software    Device       Controller   Controller
            Name       Name       Number       Name         Number
-------------------------------------------------------------------------
    1       RZ56        rz2          2         SCSI           0
    2       RZ56        rz3          3         SCSI           0
-------------------------------------------------------------------------

Enter your choice: 2

You selected RZ56, device number 3.  Make sure this disk is
on line and write-enabled (if applicable to this drive) and then
confirm your choice.


Use RZ56, rz3 for swap2 space? (y/n) []: y

Select which partition on rz3 you wish to use to
allocate swap2 space:
```

```
-----------------------------------
      a --- partition a
      b --- partition b
      d --- partition d
      e --- partition e
      f --- partition f
      h --- partition h
-----------------------------------

Type the letter of the partition on which you want to allocate the swap2
space []: b
Use rz3 partition 'b' for the swap2 space (y/n) []? y

***** ALLOCATE THE /var FILE SYSTEM

The /var area of your system can either be placed in the /usr
file system or on a separate file system.

Do you want to allocate a separate file system for /var? (y/n): y

You can allocate the /var file system to one of the disks listed in the
table below.  See the Guide to Installing DEC OSF/1 for an explanation of
this table:


/var file system ALLOCATION TABLE

Selection   Device    Software    Device       Controller   Controller
            Name       Name       Number       Name         Number
-------------------------------------------------------------------------
    1       RZ56        rz2          2         SCSI           0
    2       RZ56        rz3          3         SCSI           0
-------------------------------------------------------------------------

Enter your choice: 2:

You selected RZ56, device number 3.  Make sure this disk is
on line and write-enabled (if applicable to this drive) and then
confirm your choice.

Use RZ56, rz3 for /var file system? (y/n) []: y

Select which partition on rz3 you wish to use to
allocate /var file system:
```

```
----------------------------------
      a --- partition a
      d --- partition d
      e --- partition e
      f --- partition f
      h --- partition h
----------------------------------

Type the letter of the partition on which you want to allocate the /var
file system []: a
Use rz3 partition 'a' for the /var file system (y/n) []? y

Making the new file system for /var on /dev/rrz3a RZ56

***** LOADING Operating System Software SUBSETS

The installation software will now load the software on your
disk partitions. This will take anywhere between 20 minutes to
an hour depending on your distribution media and processor
type.

You will be presented with a menu of software options in a
few moments.

Please mount the tape labeled 'Operating System Software Volume 1'


Please make sure your installation tape is mounted and on-line.

Are you ready (y/n)? y

Positioning Tape


*** Enter Subset Selections ***

The following subsets are mandatory and will be installed automatically:
 * Base System                          * Header and Kernel Common Files
 * Standard Kernel Object Files         * TCP/IP Client Networking Utilities
 * TCP/IP Server Networking Utilities   * Client NFS(tm) Utilities
 * X11/DECwindows Servers               * X11/DECwindows User Environment
 * X11/DECwindows 75dpi Fonts           * Server NFS(tm) Utilities

The subsets listed below are optional:
 1) System Accounting Utilities         2) System Exercisers
```

```
 3) X11/DECwindows 100dpi Fonts          4) Additional DECwindows Applications
 5) CDA(tm) Workstation Base Services    6) CDA(tm) Base Services
 7) RAND Corp. Mail Handler (MH)         8) DECwindows Mail
 9) GNUemacs                            10) Printer Support Environment
11) Adobe Font Metric Files             12) Software Development Utilities
13) Worksystem Development Environment  14) CDA(tm) Software Development
15) CDA(tm) Workstation Software Devel  16) Source Code Control System
17) Doc. Preparation for Ref. Pages     18) Doc. Preparation Extensions
19) UNIX(tm) SVID2 Compatibility        20) Network Mgmt. Common Agent
21) Communications Utilities            22) UNIX(tm) to UNIX(tm) Copy Facility
23) Computer Aided System Tutor         24) MIT X11 Applications
25) MIT X11 Bitmaps                     26) MIT X11 Fonts
27) GNUemacs Source Files               28) OSF/Motif Programming Examples
29) RefPages for Programmers            30) RefPages for Admin/Users
31) Worksystem RefPages                 32) MIT Worksystem RefPages

33) All of the above
34) Mandatory subsets only
35) Exit without installing subsets

Enter one or more choices, for example, 1 2: 33

      Working....Thu Dec 19 16:02:06 GMT 1991

You are installing the following subsets:
   Base System                              Header and Kernel Common Files
   Standard Kernel Object Files             TCP/IP Client Networking Utilities
   TCP/IP Server Networking Utilities       Client NFS(tm) Utilities
   X11/DECwindows Servers                   X11/DECwindows User Environment
   X11/DECwindows 75dpi Fonts               Server NFS(tm) Utilities
   System Accounting Utilities              System Exercisers
   X11/DECwindows 100dpi Fonts              Additional DECwindows Applications
   CDA(tm) Workstation Base Services        CDA(tm) Base Services
   RAND Corp. Mail Handler (MH)             DECwindows Mail
   GNUemacs                                 Printer Support Environment
   Adobe Font Metric Files                  Software Development Utilities
   Worksystem Development Environment       CDA(tm) Software Development
   CDA(tm) Workstation Software Develo      Source Code Control System
   Doc. Preparation for Ref. Pages          Doc. Preparation Extensions
   UNIX(tm) SVID2 Compatibility             Network Mgmt. Common Agent
   Communications Utilities                 UNIX(tm) to UNIX(tm) Copy Facility
   Computer Aided System Tutor              MIT X11 Applications
   MIT X11 Bitmaps                          MIT X11 Fonts
   GNUemacs Source Files                    OSF/Motif Programming Examples
   RefPages for Programmers                 RefPages for Admin/Users
```

```
   Worksystem RefPages                      MIT Worksystem RefPages

Is this correct? (y/n): y

Base System (OSFBASE100)
   Copying from /dev/nrmt0h (tape)
      Working....Thu Dec 19 16:03:33 GMT 1991
      Working....Thu Dec 19 16:05:36 GMT 1991
      Working....Thu Dec 19 16:07:38 GMT 1991
      Working....Thu Dec 19 16:09:41 GMT 1991
      Working....Thu Dec 19 16:11:43 GMT 1991
   Verifying
      Working....Thu Dec 19 16:12:26 GMT 1991

Header and Kernel Common Files (OSFBINCOM100)
   Copying from /dev/nrmt0h (tape)
      Working....Thu Dec 19 16:13:46 GMT 1991
      Working....Thu Dec 19 16:15:49 GMT 1991
   Verifying
      Working....Thu Dec 19 16:16:41 GMT 1991

Standard Kernel Object Files (OSFBIN100)
   Copying from /dev/nrmt0h (tape)
      Working....Thu Dec 19 16:17:16 GMT 1991
      Working....Thu Dec 19 16:19:19 GMT 1991
      Working....Thu Dec 19 16:21:21 GMT 1991
   Verifying
      Working....Thu Dec 19 16:23:06 GMT 1991

TCP/IP Client Networking Utilities (OSFCLINET100)
   Copying from /dev/nrmt0h (tape)
      Working....Thu Dec 19 16:23:57 GMT 1991
   Verifying

TCP/IP Server Networking Utilities (OSFINET100)
   Copying from /dev/nrmt0h (tape)
      Working....Thu Dec 19 16:25:04 GMT 1991
   Verifying

Client NFS(tm) Utilities (OSFCLINFS100)
   Copying from /dev/nrmt0h (tape)
   Verifying

X11/DECwindows Servers (OSFSER100)
   Copying from /dev/nrmt0h (tape)
```

```
      Working....Thu Dec 19 16:26:34 GMT 1991
   Verifying

X11/DECwindows User Environment (OSFX11100)
   Copying from /dev/nrmt0h (tape)
      Working....Thu Dec 19 16:28:30 GMT 1991
      Working....Thu Dec 19 16:30:33 GMT 1991
   Verifying
      Working....Thu Dec 19 16:31:16 GMT 1991

X11/DECwindows 75dpi Fonts (OSFFONT100)
   Copying from /dev/nrmt0h (tape)
      Working....Thu Dec 19 16:31:43 GMT 1991
   Verifying

Server NFS(tm) Utilities (OSFNFS100)
   Copying from /dev/nrmt0h (tape)
   Verifying

System Accounting Utilities (OSFACCT100)
   Copying from /dev/nrmt0h (tape)
   Verifying

System Exercisers (OSFEXER100)
   Copying from /dev/nrmt0h (tape)
   Verifying

X11/DECwindows 100dpi Fonts (OSFFONT15100)
   Copying from /dev/nrmt0h (tape)
      Working....Thu Dec 19 16:35:23 GMT 1991
   Verifying

Additional DECwindows Applications (OSFDECW100)
   Copying from /dev/nrmt0h (tape)
      Working....Thu Dec 19 16:37:40 GMT 1991
   Verifying

CDA(tm) Workstation Base Services (OSFXCDA100)
   Copying from /dev/nrmt0h (tape)

Volume change. Rewinding tape...  Working....Thu Dec 19 16:39:36 GMT 1991

Please remove tape volume 1 and replace it with volume 2.
Are you ready (y/n)? y
      Working....Thu Dec 19 16:56:52 GMT 1991
```

```
   Verifying

CDA(tm) Base Services (OSFCDABASE100)
   Copying from /dev/nrmt0h (tape)
      Working....Thu Dec 19 16:57:34 GMT 1991
   Verifying

RAND Corp. Mail Handler (MH) (OSFMH100)
   Copying from /dev/nrmt0h (tape)
      Working....Thu Dec 19 16:58:29 GMT 1991
   Verifying

DECwindows Mail (OSFXMAIL100)
   Copying from /dev/nrmt0h (tape)
      Working....Thu Dec 19 17:00:07 GMT 1991
   Verifying

GNUemacs (OSFEMACS100)
   Copying from /dev/nrmt0h (tape)
      Working....Thu Dec 19 17:01:04 GMT 1991
   Verifying
      Working....Thu Dec 19 17:03:24 GMT 1991

Printer Support Environment (OSFPRINT100)
   Copying from /dev/nrmt0h (tape)
      Working....Thu Dec 19 17:03:50 GMT 1991
   Verifying

Adobe Font Metric Files (OSFAFM100)
   Copying from /dev/nrmt0h (tape)
      Working....Thu Dec 19 17:04:33 GMT 1991
   Verifying

Software Development Utilities (OSFPGMR100)
   Copying from /dev/nrmt0h (tape)
      Working....Thu Dec 19 17:05:17 GMT 1991
   Verifying

Worksystem Development Environment (OSFXDEV100)
   Copying from /dev/nrmt0h (tape)
      Working....Thu Dec 19 17:07:10 GMT 1991
      Working....Thu Dec 19 17:09:13 GMT 1991
      Working....Thu Dec 19 17:11:16 GMT 1991
   Verifying
      Working....Thu Dec 19 17:12:11 GMT 1991
```

```
CDA(tm) Software Development (OSFCDAPGMR100)
   Copying from /dev/nrmt0h (tape)
      Working....Thu Dec 19 17:13:01 GMT 1991
   Verifying

CDA(tm) Workstation Software Development (OSFXCDADEV100)
   Copying from /dev/nrmt0h (tape)
      Working....Thu Dec 19 17:13:49 GMT 1991
   Verifying

Source Code Control System (OSFSCCS100)
   Copying from /dev/nrmt0h (tape)
      Working....Thu Dec 19 17:14:31 GMT 1991
   Verifying

Doc. Preparation for Ref. Pages (OSFDCMT100)
   Copying from /dev/nrmt0h (tape)
   Verifying

Doc. Preparation Extensions (OSFDCMTEXT100)
   Copying from /dev/nrmt0h (tape)
      Working....Thu Dec 19 17:15:57 GMT 1991
   Verifying

UNIX(tm) SVID2 Compatibility (OSFSVID2100)
   Copying from /dev/nrmt0h (tape)
   Verifying

Network Mgmt. Common Agent (OSFSNMP100)
   Copying from /dev/nrmt0h (tape)
   Verifying

Communications Utilities (OSFCOMM100)
   Copying from /dev/nrmt0h (tape)
   Verifying

UNIX(tm) to UNIX(tm) Copy Facility (OSFUUCP100)
   Copying from /dev/nrmt0h (tape)
      Working....Thu Dec 19 17:18:39 GMT 1991
   Verifying

Computer Aided System Tutor (OSFLEARN100)
   Copying from /dev/nrmt0h (tape)
      Working....Thu Dec 19 17:19:44 GMT 1991
   Verifying
```

```
MIT X11 Applications (OSFXMIT100)
   Copying from /dev/nrmt0h (tape)
      Working....Thu Dec 19 17:21:06 GMT 1991
      Working....Thu Dec 19 17:23:09 GMT 1991
   Verifying
      Working....Thu Dec 19 17:25:29 GMT 1991

MIT X11 Bitmaps (OSFMITBIT100)
   Copying from /dev/nrmt0h (tape)
   Verifying

MIT X11 Fonts (OSFMITFONT100)
   Copying from /dev/nrmt0h (tape)
      Working....Thu Dec 19 17:26:38 GMT 1991
   Verifying

GNUemacs Source Files (OSFEMACSSRC100)
   Copying from /dev/nrmt0h (tape)
      Working....Thu Dec 19 17:27:22 GMT 1991
   Verifying
      Working....Thu Dec 19 17:29:30 GMT 1991

OSF/Motif Programming Examples (OSFXDEMOS100)
   Copying from /dev/nrmt0h (tape)
      Working....Thu Dec 19 17:29:56 GMT 1991
   Verifying

RefPages for Programmers (OSFMANOP100)
   Copying from /dev/nrmt0h (tape)
      Working....Thu Dec 19 17:31:37 GMT 1991
   Verifying
      Working....Thu Dec 19 17:34:00 GMT 1991

RefPages for Admin/Users (OSFMANOS100)
   Copying from /dev/nrmt0h (tape)
      Working....Thu Dec 19 17:34:30 GMT 1991
   Verifying
      Working....Thu Dec 19 17:36:46 GMT 1991

Worksystem RefPages (OSFMANWS100)
   Copying from /dev/nrmt0h (tape)
      Working....Thu Dec 19 17:37:28 GMT 1991
      Working....Thu Dec 19 17:39:31 GMT 1991
   Verifying
      Working....Thu Dec 19 17:40:16 GMT 1991
```

```
MIT Worksystem RefPages (OSFMANMIT100)
   Copying from /dev/nrmt0h (tape)
   Verifying
Rewinding Tape...

The installation software has successfully installed the software subsets
```

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Reader's Comments

DEC OSF/1, Version 1.0
Guide to Installing DEC OSF/1, Version 1.0
AA-PJTXA-TE

Please use this postage-paid form to comment on this manual. If you require a written reply to a software problem and are eligible to receive one under Software Performance Report (SPR) service, submit your comments on an SPR form.

Thank you for your assistance.

Please rate this manual:	Excellent	Good	Fair	Poor
Accuracy (software works as manual says)	☐	☐	☐	☐
Completeness (enough information)	☐	☐	☐	☐
Clarity (easy to understand)	☐	☐	☐	☐
Organization (structure of subject matter)	☐	☐	☐	☐
Figures (useful)	☐	☐	☐	☐
Examples (useful)	☐	☐	☐	☐
Index (ability to find topic)	☐	☐	☐	☐
Page layout (easy to find information)	☐	☐	☐	☐

What would you like to see more/less of? _____

_____

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Please list errors you have found in this manual:

Page Description

_____ _____

_____ _____

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_____ _____

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_____

_____

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Reader's Comments

DEC OSF/1, Version 1.0
Guide to Installing DEC OSF/1, Version 1.0
AA-PJTXA-TE

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