

DEC FMS™ for OpenVMS™ Systems

Installation Guide

Order Number: AA-Q254A-TE

October 1993

FMS (DEC Forms Management System) is a character-cell based forms management system for interactive applications that use video forms as the user interface. DEC FMS provides application programmers with a set of development tools to create and maintain forms-based user interfaces and a run-time system for displaying and managing the application's user interface at execution time.

All references to VMS™ systems and OpenVMS systems refer to OpenVMS Alpha AXP systems and OpenVMS VAX systems unless otherwise specified.

Software Version:	DEC FMS Version 2.4
Operating System:	OpenVMS VAX, Version 5.0 or later
Operating System:	OpenVMS AXP, Version 1.0 or later

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Maynard, Massachusetts**

October 1993

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ZK4798

This document is available on CD-ROM.

This document was prepared using VAX DOCUMENT Version 2.1.

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Preface

This manual describes how to install DEC Forms Management System (FMS) Version 2.4 and how to verify the installation.

Who Should Use This Guide

This manual is intended for those who install and maintain DEC FMS software. You should read this manual before installing DEC FMS software.

To install DEC FMS software, you must have access to a privileged account. To run the Installation Verification Procedure (IVP), you must use a VT100- or VT200-series terminal or one that is VT100-compatible.

Structure of This Guide

This manual contains four chapters and three appendixes:

Chapter 1 describes the preparations and requirements necessary for installing DEC FMS software.

Chapter 2 describes the DEC FMS installation procedure.

Chapter 3 describes the tasks to perform after installing DEC FMS software.

Chapter 4 describes the postinstallation IVP.

Appendix A reproduces typical installation and IVP sessions.

Appendix B describes the optional sample applications programs available with DEC FMS software.

Appendix C details the files that are installed or modified.

For More Information

For additional information on installing DEC FMS software, refer to the VMS system documentation for these topics:

- VMSINSTALL procedure
- INSTALL Utility
- System management and operations

See the following documents for more information about DEC FMS software:

- *DEC FMS for OpenVMS Systems Mini-Reference* — Provides quick reference information for FMS utilities, commands and qualifiers, attributes, key functions, and so on.
- *DEC FMS for OpenVMS Systems Language Interface Manual* — Describes language interface issues for FMS (Forms Management System) application programs. Languages discussed include BASIC, BLISS-32, C, COBOL, FORTRAN, PASCAL, and PL/I. Language-independent information is also provided for programmers writing in languages not documented in this manual.
- *DEC FMS for OpenVMS Systems Introduction* — Introduces the FMS (Forms Management System). Examples from the Sample Application Program show how to create and run an FMS program.
- *DEC FMS for OpenVMS Systems Utilities Reference Manual* — Describes the FMS (Forms Management System) utilities, invoked through DCL commands, used to create and manage forms and form libraries.
- *DEC FMS for OpenVMS Systems Form Driver Reference Manual* — Describes how the Form Driver component of the Forms Management System (FMS) works on the OpenVMS operating system. It provides language-independent information required to design forms and to develop programs that use FMS forms for gathering and displaying data.

Conventions

The following conventions are used in this guide:

- | | |
|--------|--|
| Ctrl/X | In procedures, a sequence such as Ctrl/X indicates that you must hold down the key labeled Ctrl while you press another key. |
|--------|--|

KPn	Key names that begin with KP indicate keys on the numeric keypad on the right side of the terminal keyboard. For example, KP4 and KP. are keys on the numeric keypad.
PF1-X	A sequence such as PF1-X indicates that you must first press and release the key labeled PF1, and then press and release another key.
...	In examples, a horizontal ellipsis indicates one of the following possibilities: <ul style="list-style-type: none"> • Additional optional arguments in a statement have been omitted. • The preceding item or items can be repeated one or more times. • Additional parameters, values, or other information can be entered.
.	A vertical ellipsis indicates the omission of items from a code example or command format; the items are omitted because they are not important to the topic being discussed.
()	In format descriptions, parentheses indicate that, if you choose more than one option, you must enclose the choices in parentheses.
[]	In format descriptions, brackets indicate that whatever is enclosed is optional; you can select none, one, or all of the choices.
{}	In format descriptions, braces surround a required choice of options; you must choose one of the options listed.
user input	For online versions, user input is shown in bold .
\$	The default user prompt is your system name followed by a right angle bracket (>).The dollar sign is used to indicate the DCL prompt on VMS systems. This prompt might be different on your system.
UPPERCASE	Literal strings that appear in text, examples, syntax descriptions, and function descriptions must be typed exactly as shown.

lowercase

In commands and examples, indicates variables for which the user is to substitute a word or value.

-

A hyphen is used to connect multiword names that describe a single item, as in input-file.

All references to VMS systems and OpenVMS systems refer to OpenVMS Alpha AXP systems and OpenVMS VAX systems unless otherwise specified.

Preparing to Install DEC FMS Software

This chapter discusses the preparations and requirements necessary to install DEC FMS software.

This manual applies to Version 2.4 of DEC FMS and all subsequent maintenance releases up to the next major product release.

Your bill of materials (BOM) and indented bills report (BIL) specify the number and contents of your media. Be sure to verify the contents of your kit with this information. If your kit is damaged or if you find that parts of it are missing, contact your Digital representative.

DEC FMS provides online release notes. You can read and print the release notes before the DEC FMS installation begins, when you first run the installation procedure. Digital Equipment Corporation strongly recommends that you read the release notes before proceeding with the installation.

1.1 Required Operating System Components

DEC FMS supports the following VMS Version 5.0 classes:

- VMS required saveset
- Programming support
- Utilities

1.2 Prerequisite and Optional Software

This section discusses the software you must have installed on your system before installing DEC FMS software. The section also includes information about software that you can use together with DEC FMS software. Refer to the System Software Addendum (SSA) for a complete list of compatible products and their required version numbers. The SSA is part of the Software Product Description (SPD).

Version 2.4 of DEC FMS requires Version 5.0 or higher of the VMS operating system.

Preparing to Install DEC FMS Software

1.2 Prerequisite and Optional Software

If the optional software uses CDD/Plus software, or if DBMS software is to be part of the system, you should install those products before you install DEC FMS. CDDSHR.EXE must always be installed using the Install Utility (see Section 1.5.5.2).

1.3 Prerequisite Hardware

To run the IVP, you must have a video terminal. See Chapter 4 for more information on the postinstallation IVP.

1.4 License Registration

The VMS License Management Facility (LMF) is available with Version 5.0 of the VMS operating system. If you are installing DEC FMS on a Version 5.0 or higher VMS system, you must register your software license.¹

The license registration information you need is contained in the Product Authorization Key (PAK) that is shipped with DEC FMS. The PAK is a paper certificate that contains information about the license you own to run a particular piece of software.

During the installation, you are asked if you have registered the DEC FMS license and loaded the appropriate authorization key. You must register and load your license for DEC FMS *before* you start the installation in order to run the IVP and use the software.

To register a license under Version 5.0 or higher of the VMS operating system, first log in to the system manager's account, SYSTEM. You then have a choice of two ways to perform the registration:

- Run the SYS\$UPDATE:VMSLICENSE.COM procedure. When the procedure prompts you for information, respond with data from your Product Authorization Key (PAK).
- Enter the DCL command LICENSE REGISTER with the qualifiers that correspond to information on the PAK.

For complete information on using LMF, see the manual on the License Management Utility in the VMS documentation set.

¹ DEC FMS software *can* be installed without registering the FMS license. However, the IVP is *not* executed without a license registration. In addition, the FMS utilities and applications using the Form Driver are not run until a license is properly registered.

1.5 Installation Procedure Requirements

The following sections discuss various requirements for installing DEC FMS software.

1.5.1 Restrictions

No users should be logged in to the system while you are installing DEC FMS software. You can use the REPLY command to send a message to users. For example:

```
$ REPLY/ALL "Please log off now. Installing FMS."
```

If VMSINSTAL detects any users on the system, it gives you an opportunity to stop the installation procedure by prompting you to continue. To stop the installation, press RETURN.

1.5.2 Time

The installation takes approximately 15 to 60 minutes, depending on the type of media and your system configuration.

Installing DEC FMS and running the IVP on a standalone VAXstation II system takes 17 minutes.

1.5.3 Privileges

To install DEC FMS, you must be logged in to an account that has SETPRV or at least the following privileges:

- CMKRNL
- WORLD
- SYSPRV

VMSINSTAL turns off BYPASS privilege at the start of the installation.

1.5.4 Disk Space

Installing DEC FMS requires a certain amount of free disk space during the installation. Once DEC FMS is installed, less storage space is required. Table 1-1 summarizes the storage requirements.

Preparing to Install DEC FMS Software

1.5 Installation Procedure Requirements

Table 1–1 Disk Space Requirements

Kit	Blocks During Installation	Blocks After Installation
DEC FMS Version 2.4	3000	2650
DEC FMS FDV Version 2.4	350	300

To determine the number of free disk blocks on the current system disk, enter the following command:

```
$ SHOW DEVICE SYS$SYSDEVICE
```

1.5.5 System Parameters

The following sections show you how to check system parameter values, calculate values for the GBLPAGES and GBLSECTIONS system parameters, and change parameter values with the VMS AUTOGEN command procedure.

Installing DEC FMS requires certain system parameter settings. Table 1–2 lists the minimum required system parameter values for the installation. Depending on the kinds of programs and applications running at your site, you might need higher values for some settings.

Table 1–2 Required System Parameter Values

System Parameter	Value
GBLPAGES ¹	n + 250
GBLSECTIONS ¹	n + 4

¹The n variable refers to the system parameter values currently in use. To install DEC FMS software, you must raise those values by the number indicated. (See Section 1.5.5.2.)

1.5.5.1 Checking System Parameter Values

To check the values of your system parameters, use the following procedure:

1. Enter the following command to invoke the System Generation Utility:

```
$ RUN SYS$SYSTEM:SYSGEN  
SYSGEN>
```

Preparing to Install DEC FMS Software 1.5 Installation Procedure Requirements

2. At the `SYSGEN>` prompt, enter the `SHOW` command to display the value of a system parameter. The values displayed should equal or exceed the value of each parameter listed in Table 1–2. The following command displays the value for the `GBLPAGES` system parameter:

```
SYSGEN> SHOW GBLPAGES
```

After you finish checking the parameters with the `SHOW` command, you can enter the `EXIT` command at the `SYSGEN>` prompt to return to DCL level.

1.5.5.2 Calculating the Values for `GBLPAGES` and `GBLSECTIONS`

To install and run DEC FMS software, you must set the correct values for the `GBLPAGES` and `GBLSECTIONS` system parameters.

The `n` variable shown in Table 1–2 represents the current number of unused global pagelets or global sections available on your system. For the installation to execute successfully, you must raise these values by the amount indicated.

To calculate the number of unused global pagelets and global sections on your system, use the following procedure:

1. Run the VMS Install Utility (`INSTALL`) using the following command:

```
$ INSTALL LIST /GLOBAL /SUMMARY
```

The Install Utility displays a summary of global pagelets and global sections used by your system, as well as the current number of unused global pagelets. For example:

```
Summary of Local Memory Global Sections
```

```
258 Global Sections Used, 22580/3420 Global Pagelets Used/Unused
```

2. Determine if the number of unused global pagelets (3420 in the example) is equal to or greater than 250. If the number of unused pagelets is less than 250, you need to increase the value for `GBLPAGES`.
3. Note the amount shown for Global Sections Used (258 in the example).
4. Run the System Generation Utility and use the `SHOW` command to determine how many global sections have been allocated. For example:

```
$ RUN SYS$SYSTEM:SYSGEN  
SYSGEN> SHOW GBLSECTIONS
```

Parameter Name	Current	Default	Minimum	Maximum	Unit	Dynamic
-----	-----	-----	-----	-----	-----	-----
GBLSECTIONS	512	250	20	4095	Sections	

Preparing to Install DEC FMS Software

1.5 Installation Procedure Requirements

5. Subtract the amount shown in the summary (258 in the example) from the amount allocated. If the difference is less than 4, you need to increase the value of the GBLSECTIONS parameter.

Section 1.5.5.3 describes the procedures for increasing these values as well as those of other system parameters. Refer to the VMS documentation on system management and operations for more information.

1.5.5.3 Changing System Parameter Values with AUTOGEN

You use the AUTOGEN command procedure to change system parameters. AUTOGEN automatically adjusts values for parameters that are associated with the ones you reset manually.

To change system parameters with AUTOGEN, use the following procedure:

1. Edit the the following file:

```
SYS$SYSTEM:MODPARAMS.DAT
```

Use an editor to access the file. If you need to change a parameter value in the SYS\$SYSTEM:MODPARAMS.DAT file, delete the current value associated with that parameter and enter the new value.

To add a new value, add a line to the MODPARAMS.DAT file. The line contains the name of the parameter and its value. For example:

```
GBLSECTIONS = 128
```

You also can modify incremental parameters in the MODPARAMS.DAT file. The following example increases the global page setting by 2000:

```
ADD_GBLPAGES = 2000
```

2. After you have made all your changes, run the AUTOGEN procedure to recalculate your system parameters. Enter the following command:

```
$ @SYS$UPDATE:AUTOGEN GETDATA REBOOT
```

AUTOGEN performs an automatic system shutdown and restarts when it has finished. Restarting your system activates the new parameter values.

When you restart a system under Version 5.0 of the VMS operating system, the Autogen Utility automatically adjusts some of the SYSGEN parameters based on the consumption of resources since the last reboot. If you do not want to take advantage of this automatic adjustment, include the /NOFEEDBACK qualifier on the AUTOGEN command line.

For more information about using AUTOGEN, see the instructions on modifying system parameters in the VMS documentation on system management and operations.

1.5.6 Process Account Quotas

The account you use to install DEC FMS software must have sufficient quotas to enable you to perform the installation. Table 1–3 summarizes the process quotas required for the installation account.

Table 1–3 Process Account Quotas for the Installing Account

Account Quota	Value
ASTLM	24
BIOLM	18
BYTLM	18,000
DIOLM	18
ENQLM	30
FILLM	20

User account quotas are stored in the file SYSUAF.DAT. You use the VMS Authorize Utility to verify and change user account quotas.

To verify and change user account quotas, use the following procedure:

1. Set your directory to SYS\$SYSTEM and run AUTHORIZE as follows:

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

2. At the Authorize Utility prompt (UAF>), use the SHOW command with an account name to check a particular account. For example:

```
UAF> SHOW SMITH
```

3. To change a quota, use the MODIFY command at the UAF> prompt. MODIFY has the following format:

```
MODIFY account-name /quota-name=nnnn
```

The following example changes the FILLM quota for the SMITH account and then exits from the Authorize Utility:

```
UAF> MODIFY SMITH /FILLM=50
UAF> EXIT
```

After you exit from the utility, the VMS system displays messages indicating whether or not changes were made. Once the changes have been made, you must log out and log in again for the new quotas to take effect.

Preparing to Install DEC FMS Software

1.5 Installation Procedure Requirements

For more information on modifying account quotas, see the description of the Authorize Utility in the VMS documentation set.

1.5.7 VMSINSTAL Requirements

When you invoke VMSINSTAL, it checks whether:

- You have set your default device and directory to SYS\$UPDATE
- You are logged in to a privileged account
- You have adequate process account quotas for installation
- DECnet software is up and running
- Any users are logged in to the system

VMSINSTAL requires that the installation account have a minimum of the following quotas:

```
ASTLM = 24
BIOLM = 18
BYTLM = 18,000
DIOLM = 18
ENQLM = 30
FILLM = 20
```

If VMSINSTAL detects any problems during the installation, it notifies you and asks if you want to continue the installation. In some instances, you can enter YES to continue. To stop the installation and correct the situation, enter NO or press RETURN. Correct the problem and restart the installation.

1.5.8 Backing Up Your System Disk

At the beginning of the installation, VMSINSTAL asks if you have backed up your system disk. Digital recommends that you backup your system disk before installing any software.

Use the backup procedures that have been established at your site. For details on backing up a system disk, see the section on the Backup Utility in the VMS documentation set.

Installing DEC FMS Software

This chapter describes how to install DEC FMS software. Section 2.2 contains a step-by-step description of the installation procedure.

2.1 General Information

This section includes information about accessing release notes, determining what files and logical names are added to your system, running the Installation Verification Procedure (IVP), and ending the installation abnormally.

2.1.1 Accessing the Online Release Notes

DEC FMS provides online release notes. You should review the release notes in case they contain any information about changes in the installation procedure.

If you want the installation procedure to give you an opportunity to display or print the online release notes, you must specify `OPTIONS N` when you invoke `VMSINSTAL`. This question comes near the beginning of the installation.

Once DEC FMS has been installed, the release notes are located in the following file:

```
SYS$HELP:DECFMS024.RELEASE_NOTES
```

Online help also directs you to the release notes file. After the installation, you can enter the following command to review the release notes through the Help Facility:

```
$ HELP FMS RELEASE_NOTES
```

2.1.2 Determining the Files and Logical Names Added to the System

Appendix C and Appendix A of the online release notes list the files added, replaced, or modified on your system when DEC FMS is installed.

DEC FMS adds only one logical name—`FMS$EXAMPLES`—to the system when it is installed. Appendix C as well as Appendix A of the online release notes list the files associated with `FMS$EXAMPLES`.

Installing DEC FMS Software

2.1 General Information

2.1.3 Running the Installation Verification Procedure

The IVP for DEC FMS verifies the installation. During the installation, you are asked if you want to run the IVP as part of the installation. If you respond YES, VMSINSTAL runs the IVP. It is recommended that you run the IVP to be sure that DEC FMS is installed correctly.

After DEC FMS is installed, you can run the IVP independently to verify that the software is available on your system. You might also want to run the IVP after a system failure to be sure that users can access DEC FMS.

Because of their interactive nature, the Form Editor and the Form Tester must be tested manually on a VT100- or VT200-compatible terminal. To verify the installation of the Form Editor and Form Tester, see the procedure explained in Chapter 4.

2.1.4 Ending the Installation Abnormally

To end the installation procedure abnormally at any time, press CTRL/Y. When you press CTRL/Y, the installation procedure deletes all files it has created and exits. You then can start the installation again.

2.2 Installation Procedure

The DEC FMS installation procedure consists of a series of questions, prompts, and informational messages. The following sections explain how to invoke VMSINSTAL and answer the installation questions. These sections also explain the informational messages displayed by the procedure.

2.2.1 Invoking VMSINSTAL

To start the installation, invoke the VMSINSTAL command procedure from a privileged account, such as the SYSTEM account. VMSINSTAL is in the SYS\$UPDATE directory. To invoke VMSINSTAL, enter a command with the following syntax:

```
@SYS$UPDATE:VMSINSTAL product-name device-name OPTIONS N
```

product-name

The installation name for the product. For DEC FMS software, use the following installation name:

```
DECFMS024
```

device-name

The name of the device on which you plan to mount the media. For example, MTA0: is the device name for a tape drive. It is not necessary to use the console drive for this installation. However, if you do use the console drive, you should replace any media you removed once the installation is complete.

OPTIONS N

An optional parameter that indicates you want to see the question on the release notes. If you do not include the OPTIONS N parameter, VMSINSTAL does not ask you about the release notes.

There are several other options you can select when you invoke VMSINSTAL. For information on these options, see the VMS documentation on software installation

The following example displays the command that invokes VMSINSTAL to install DEC FMS from tape drive MTA0: and shows the system response. This example uses the OPTIONS N parameter.

```
$ @SYS$UPDATE:VMSINSTAL VAXFMS024 DKA400: OPTIONS N
```

```
VAX/VMS Software Product Installation Procedure V5.0
```

```
It is 14-OCT-1993 at 10:15.
```

```
Enter a question mark (?) at any time for help.
```

If you omit either the product name or the device name, VMSINSTAL asks you for this information later.

2.2.2 Answering Installation Questions

This section discusses the questions that appear during the installation. Appendix A contains a sample installation procedure showing how the questions can be answered.

An asterisk (*) marks the beginning of each question. Some questions show the default response in brackets, for example [YES]. To use the default response, press RETURN.

1. Shutdown DECnet.

```
%VMSINSTAL-W-DECNET, Your DECnet network is up and running.
```

```
.  
. .  
. .
```

```
* Do you want to continue anyway [NO]?
```

You should install DEC FMS on a standalone system or cluster with DECnet shut down. VMSINSTAL notifies you if DECnet is running and

Installing DEC FMS Software

2.2 Installation Procedure

displays a list of all active processes. The procedure then asks if you want to continue the installation. NO is the default response to the question.

2. Confirm system backup.

```
* Are you satisfied with the backup of your system disk [YES]?
```

VMSINSTAL asks if you are satisfied with your system backup. You should always back up your system disk before performing an installation. If you are satisfied with the backup of your system disk, press RETURN. Otherwise, enter NO to stop the installation. After you back up your system disk, you can restart the installation.

3. Mount the media.

```
Please mount the first volume of the set on MTA0:.
```

```
* Are you ready? YES
```

```
%MOUNT-I-MOUNTED, DEC FMS MOUNTED ON _$MTA0:
```

```
The following products will be processed:
```

```
DEC FMS V2.4
```

```
Beginning installation of DEC FMS V2.4 at 10:30
```

```
%VMSINSTAL-I-RESTORE, Restoring product saveset A...
```

You should now mount the first distribution volume on the device you specified when you invoked VMSINSTAL. The device name appears in the line preceding the question "Are you ready?". VMSINSTAL then asks you if you are ready to continue with the installation.

If you respond YES to indicate that you are ready, VMSINSTAL displays a message that the media containing DEC FMS has been mounted on the specified device and that the installation has begun.

If you entered the wrong device name when you invoked VMSINSTAL and need to restart the installation, enter NO in response to the "Are you ready?" question. To end the installation abnormally for other reasons, press CTRL/Y.

4. Select a release notes option.

```
Release Notes Options:
```

1. Display release notes
2. Print release notes
3. Both 1 and 2
4. Copy release notes to SYS\$HELP
5. Do not display, print or copy release notes

```
* Select option [2]:
```

Installing DEC FMS Software 2.2 Installation Procedure

If you specified `OPTIONS N` when you invoked `VMSINSTAL`, you have five options for reviewing the release notes.

If you select option 1, `VMSINSTAL` displays the release notes immediately on your terminal. To terminate the display at any time, press `CTRL/C`.

If you select option 2, `VMSINSTAL` asks you for the name of the print queue that you want to use:

```
* Queue name [SYS$PRINT]:
```

You can press `RETURN` to print the release notes on the default output print device or you can enter another queue name. Option 2 is the default.

If you select option 3, `VMSINSTAL` displays the release notes immediately on the terminal and then asks you for a queue name for the printed version.

If you select option 4, the installation copies the release notes to the Help directory. Even if you do not select option 4, the release notes for DEC FMS are copied to the `SYS$HELP` directory.

Select option 5 if you have already reviewed the release notes.

5. Continue the installation.

```
* Do you want to continue the installation [N]?: YES
%VMSINSTAL-I-REMOVED, The product's release notes have been
successfully moved to SYS$HELP.
```

To continue, enter `YES`. Otherwise, press `RETURN`. In either case, the release notes are copied to the following file in the `SYS$HELP` directory.

The release notes are located in the following file:

```
SYS$HELP:DECFMS024.RELEASE_NOTES
```

Note

The name of the release notes file installed by `VMSINSTAL` consists of the current product name and version number. Do not delete release notes for previous versions of DEC FMS software.

6. Register your license.

Installing DEC FMS Software

2.2 Installation Procedure

Product: DEC FMS
Producer: DEC
Version: 2.4
Release Date: 14-NOV-1988

* Does this product have an authorization key registered and loaded?

The installation procedure displays license information about your product and then asks if you have registered and loaded your authorization key for DEC FMS.

If you have not registered and loaded your authorization key, you must answer NO to this question. You have to register and load your product authorization key to complete the installation. If you have not done so, you should stop the installation, register and load your product authorization key, and restart the installation.

7. Run the IVP.

* Do you want to run the IVP after the installation [YES]?

The installation procedure now asks if you want to run the Installation Verification Procedure (IVP). The IVP for DEC FMS software checks to be sure that the installation is successful. It is recommended that you run the IVP.

8. Purge files.

* Do you want to purge files replaced by this installation [YES]?

You have the option to purge files from previous versions of DEC FMS that this installation supercedes. Purging is recommended; however, to save files from the previous version, enter NO in response to the question.

9. Choose installation options.

* Do you wish to install Sample Application Programs and Modifiable Message File Procedures [YES]?

You are now asked to choose your installation options. If you answer YES to the prompt, the DEC FMS modifiable message files and sample applications are installed.

The sample application programs are used throughout the DEC FMS documentation as examples of DEC FMS programming techniques. The files relating to the sample applications are found in the FMS\$EXAMPLES: directory and are listed in Appendix C. The DEC FMS installation and start-up procedure (SYS\$STARTUP:FMSTARTUP.COM) defines a system logical for the FMS\$EXAMPLES: directory.

See Appendix A for more detailed information concerning the sample application programs.

The Modifiable Message File Procedures create a subdirectory containing the sources for the FMS Message Files and instructions on how to modify the text of the messages in the FMS Form Driver and FMS Utilities. The message files are found in the subdirectory `SYS$SYSROOT:[SYSHLP.EXAMPLES.FMS.MESSAGE]`. The instructions for modifying the message files are in the `FMS_MESSAGE.MEM` file in that subdirectory.

10. Insert additional media volumes.

```
%BACKUP-I-READYREAD, mount volume 2 on _MTA0: for reading
```

Enter "YES" when ready:

If your installation kit contains more than one volume, `VMSINSTAL` prompts you to insert the additional volumes and then asks you to indicate that you are ready for the installation to proceed.

2.2.3 Informational Messages

The installation procedure displays a number of informational messages that report on the progress of the installation. There are no further questions. If the installation has been successful, `VMSINSTAL` moves the new or modified files to their target directories, updates help files, and updates DCL tables, if necessary. If you asked for files to be purged, that is done now. The procedure displays the following message:

```
%VMSINSTAL-I-MOVEFILES, files will now be moved to their target directories...
```

If the installation procedure is successful, the following files are moved to their target directory:

- `SYS$SYSTEM:FMSFAA.EXE`
- `SYS$SYSTEM:FMSFCV.EXE`
- `SYS$SYSTEM:FMSFED.EXE`
- `SYS$SYSTEM:FMSFLG.EXE`
- `SYS$SYSTEM:FMSFLI.EXE`
- `SYS$SYSTEM:FMSFTE.EXE`
- `SYS$SYSTEM:FMSFUU.EXE`

Installing DEC FMS Software

2.2 Installation Procedure

In addition, the `SYS$HELP:HELPLIB.HLB` and `SYS$LIBRARY:DCLTABLES.EXE` files are updated to include the new version of the DEC FMS HELP text and the FMS command line definition, respectively. The DEC FMS release notes are copied to the `SYS$HELP:DECFMS024.RELEASE_NOTES` file.

For a complete list of files that have been created or modified by the installation procedure, see Appendix C.

2.2.4 Running the Installation Verification Procedure

If you chose to run the IVP, `VMSINSTAL` runs it now. The procedure displays the following message:

```
Beginning DEC FMS V2.4 Installation Procedure...
```

If DEC FMS has been installed, the IVP displays the following message:

```
DECFMS V2.4 Installation Verification Procedure was successful
Refer to the DEC FMS Installation Guide for further verification
procedures..
```

You can run the IVP separately any time after DEC FMS software has been installed. To run the IVP, enter the following command:

```
@SYS$SYSDEVICE:[SYS$TEST.FMS]DECFMS$IVP
```

2.2.5 Completing the Installation Procedure

The following messages indicate that the installation is complete:

```
Installation of DEC FMS V2.4 completed at 11:03
```

```
VMSINSTAL procedure done at 11:17
```

You can now log out of the privileged account as follows:

```
$ LOGOUT
```

The following message is displayed:

```
SYSTEM      logged out at 14-NOV-1988 11:24:32.40
```

`VMSINSTAL` deletes or changes entries in the process symbol tables during the installation. Therefore, to continue using the system manager's account and to restore these symbols, log out and log in again.

2.3 Error Recovery

If errors occur during the installation itself or when the IVP is running, VMSINSTAL displays failure messages. If the installation fails, the procedure displays the following message:

```
%VMSINSTAL-E-INSFAIL, The installation of DEC FMS V2.4 has failed.
```

If the IVP fails, the procedure displays the following messages:

```
The DEC FMS V2.4 Installation Verification Procedure failed.
```

```
%VMSINSTAL-E-IVPFAIL, The IVP for DEC FMS V2.4 has failed.
```

Errors can occur during the installation if any of the following conditions exists:

- The version of the operating system is incorrect.
- Quotas are insufficient.
- System parameter values are insufficient.
- The VMS Help library is being used.
- Your disk contains insufficient disk space
- The product license has not been registered and loaded.

For descriptions of the error messages generated by these conditions, see the VMS documentation on system messages, recovery procedures, and software installation. If you are notified that any of these conditions exists, you should take the appropriate action as described in the message. (You might need to change a system parameter or increase an authorized quota value.) For information on installation requirements, see Chapter 1.

After Installing DEC FMS Software

After installing DEC FMS software, you need to perform the following tasks:

- Edit the system startup files.
- Set user account quotas.

3.1 Editing the System Files

To provide for automatic startup of DEC FMS when your system is restarted, you must edit two system files. To edit these startup files, use the following procedure:

1. Add the command line that starts DEC FMS to the system startup file, `SYS$MANAGER:SYSTARTUP_VMS.COM`. DEC FMS software cannot start until the network has started. You must put this new command line *after* the network startup command line. The following example shows the network startup command line followed by the startup command line for DEC FMS:

```
$ @SYS$MANAGER:STARTNET.COM
.
.
.
$ @SYS$STARTUP:FMSTARTUP.COM
```

2. The FMS start-up command procedure contains several VMS commands. The first command assigns the logical name `FMS$EXAMPLES` to the directory that contains the sample application programs for Version 2.4 of DEC FMS.

The last commands in the command procedure install `FDVSHR` and `FDVMSG` as known shared images. To improve the performance of FMS application programs, you can remove the following line from `FMSTARTUP.COM`:

```
$ EXIT          ! Remove this line to install the images
```

After Installing DEC FMS Software

3.1 Editing the System Files

If you have made any changes to the FMSTARTUP.COM file, use the SHUTDOWN procedure to stop the current system, and restart the system.

3.2 User Account Requirements

To work with DEC FMS, user accounts on your system must have at least the TMPMBX privilege. The accounts must also have the quotas shown in Table 3-1.

Table 3-1 User Account Quotas for Using DEC FMS Software

Account Quota	Value
ASTLM	24
BIOLM	18
DIOLM	18
ENQLM	30
FILLM	20

User account privileges and quotas are stored in the file SYSUAF.DAT. To verify and change user account quotas, use the VMS Authorize Utility, as follows:

1. Set your directory to SYS\$SYSTEM and run the Authorize Utility:

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

2. At the Authorize Utility prompt (UAF>), enter the SHOW command with an account name to check that particular account. For example:

```
UAF> SHOW SMITH
```

3. To change a privilege or quota, enter the MODIFY command in the following format:

```
MODIFY account-name /quota-name=nnnn/privileges=privilege-name
```

The following example changes the ENQLM quota for the SMITH account and exits the utility:

```
UAF> MODIFY SMITH /ENQLM=50
UAF> EXIT
```

>>>>

After you exit the utility, the VMS operating system displays messages indicating whether changes were made. Once you have made the changes, users must log out and log in again for the new quotas to take effect.

For more information on modifying account privileges and quotas, see the description of the Authorize Utility in the VMS documentation set.

3.3 Running the IVP

When FMS is installed, the IVP is automatically placed in the following location: `SYS$SYSDEVICE:[SYS$TEST.FMS]DECFMS$IVP.COM`. The IVP is placed there even if you chose not to run it at installation time.

You can run the IVP at any time after FMS has been installed by entering the following command:

```
@SYS$SYSDEVICE:[SYS$TEST.FMS]DECFMS$IVP
```

3.4 Special Requirements

To prevent data loss, users should set their terminals to `HOSTSYNC` and `TYPAhead` before using DEC FMS software. For more information, see the online release notes.

3.5 Enhancing DEC FMS Performance

This section includes information on system tuning and explains how to install DEC FMS as a shared image.

The Form Driver for Version 2.4 of DEC FMS is built as a shared image. If several users who run DEC FMS applications at the same time are on your system, each user has a copy of the Form Driver in memory. If you install the Form Driver as a known shared image, the users share a single copy of the Form Driver in memory when DEC FMS applications are run.

A known shared image reduces memory requirements and can improve system performance.

To install DEC FMS as a known shared image on a system that is currently running, use the VMS Install Utility (`INSTALL`). It is recommended that you perform the install operation on a system that has just been started because the available space in the global page table is less likely to be fragmented.

To install DEC FMS as a shared image, use the following procedure:

1. Determine the number of available global pagelets and global sections on your system. See Section 1.5.5.2 for information on how to verify

After Installing DEC FMS Software

3.5 Enhancing DEC FMS Performance

and modify the number of global pagelets and global sections. Table 1–2 contains the required values for these parameters.

2. Once you have reset the system parameter values, invoke the VMS Install Utility from a privileged account and install DEC FMS as a shared image, as follows:

```
$ INSTALL
INSTALL> ADD SYS$SHARE:FDVSHR.EXE /OPEN /SHARED
INSTALL> ADD SYS$MESSAGE:FDVMSG.EXE /OPEN /SHARED
INSTALL> EXIT
```

3. Add the following lines to the appropriate system startup command file so that each time the system is started, DEC FMS software is available as a shared image. (If your site has modularized its startup procedures, be sure you add the lines to the correct file. The default startup command file for Version 5.0 of the VMS operating system is SYS\$MANAGER:SYSTARTUP_VMS.COM.)

```
$ INSTALL
INSTALL> ADD SYS$SHARE:FDVSHR.EXE /OPEN /SHARED
INSTALL> ADD SYS$MESSAGE:FDVMSG.EXE /OPEN /SHARED
INSTALL> EXIT
```

4. When you install DEC FMS as a shared image you need to increase the global pagelets (GBLPAGES) by 250 and global sections (GBLSECTIONS) by 4. Refer to Section 1.5.5 for information on changing these parameters.

3.6 Determining and Reporting Problems

If an error occurs while DEC FMS is being used and you believe that the error is caused by a problem with DEC FMS, take one of the following actions:

- If you have a BASIC or DECsupport Software Agreement, call your Customer Support Center.
- If you have a Self-Maintenance Software Agreement, submit a Software Performance Report (SPR).
- If you purchased DEC FMS within the past 90 days and you think a software error is causing the problem, submit an SPR.

If you find an error in the DEC FMS documentation, fill out and submit the Reader's Comments form at the back of the document in which you formed the error. Include the section and page number of the error.

Verifying the Form Editor and Form Tester

Because of their interactive nature, the Form Editor and the Form Tester must be tested manually on a VT100- or VT200-compatible terminal. The following procedure verifies the installation of the Form Editor and the Form Tester.

1. Log in using a VT100- or VT200-compatible terminal.
2. Create a form to test the Form Editor.

To create a form, specify the name of a file that does not exist in the current directory. (In this example, the file is called `testfile.frm`.) The default file type is `.FRM`. For example:

```
$ FMS/EDIT testfile.frm
```

3. Enter the `SET TERMINAL/INQUIRE` command to request a response sequence from your terminal, as follows:

```
$ SET TERMINAL/INQUIRE
```

4. Select a Form Editor Menu option.

After you have entered the Form Editor, select `LAYOUT` at the Phase Choice prompt. The screen is cleared and the Layout Phase status line appears at the bottom of your screen.

```
Phase Choice: LAYOUT
```

5. Enter text into your form. For example:

```
This is a test of FMS.
```

To enter field mode, press the PF1 key and then the keypad 8 key. Type the letter `x` six times to indicate a field. For example:

```
PF1 KP8  
XXXXXX
```

Verifying the Form Editor and Form Tester

6. Exit the Form Editor.

Press the PF1 key and the keypad 7 key to exit the Layout Phase of the Form Editor. The Form Editor Menu reappears; at the prompt, type EXIT and press RETURN.

```
PF1 KP7
Phase Choice: EXIT
```

7. Save the form.

After you have exited Layout Phase, the Editor prompts you to save the file. Press RETURN to save the form.

```
$ Do you want to save this form?
  %FMS-I-FORMSAVED, Form testfile.frm saved in testfile.frm
```

8. Test the form, as follows:

```
$ FMS/TEST testfile.frm
```

DEC FMS displays your form. Type any seven characters. The seventh character does not echo on the screen. The terminal bell rings and an error message indicating that the field is full is displayed at the bottom of your terminal screen. Press RETURN. The system prompt is displayed.

```
123456
RETURN
$
```

9. Delete the form file, as follows:

```
$ DELETE testfile.frm;*
```

The test is complete. If any errors occurred during the test, follow the instructions in Section 2.3.

Sample Installation

This appendix contains sample installations of DEC FMS software. These samples were run on a system that had no previous version of DEC FMS installed.

The sample installation assumes that DECnet has been shut down, that no users are logged in to your system, and that OPTIONS N is specified to print the release notes. The Installation Verification Procedure (IVP) runs at the end of the installation.

A.1 Full Development Kit

This section contains a sample installation for the DEC FMS full development kit.

```
$ SET DEF SYS$UPDATE
$ @VMSINSTAL
  VAX/VMS Software Product Installation Procedure V5.0

It is 29-OCT-1993 at 17:35.
Enter a question mark (?) at any time for help.
* Are you satisfied with the backup of your system disk [YES]? YES
* Where will the distribution volumes be mounted: DKA400:

Enter the products to be processed from the first distribution volume set.
* Products: DECFMS024
* Options: N
Please mount the first volume of the set on DKA400:.
* Are you ready? YES
%MOUNT-I-MOUNTED, DECFMS mounted on DKA400:
The following products will be processed:
  DECFMS V2.4
  Beginning installation of DECFMS V2.4 at 17:37
%VMSINSTAL-I-RESTORE, Restoring product saveset A ...

Release Notes Options:
```

Sample Installation

A.1 Full Development Kit

1. Display release notes
2. Print release notes
3. Both 1 and 2
4. Copy release notes to SYS\$HELP
5. Do not display, print or copy release notes

* Select option [2]: 4

* Do you want to continue the installation? YES

%VMSINSTAL-I-REMOVED , The product's release notes have been successfully moved to SYS\$HELP.

```
Product:      DEC FMS
Producer:    DEC
Version:     2.4
Release Date: 14-NOV-1993
```

* Does this product have an authorization key registered and loaded? YES

* Do you want to run the IVP after the installation [YES]? YES

* Do you want to purge files replaced by this installation [YES]? YES

If you wish to save space on your system disk you may choose not to install the Sample Application Programs and the Modifiable Message File Procedures. You may later install them by installing DECFMS V2.4 again.

* Do you wish to install Sample Application Programs and Modifiable Message File Procedures [YES]?

%VMSINSTAL-I-RESTORE, Restoring product saveset B ...

%VMSINSTAL-I-RESTORE, Restoring product saveset C ...

%VMSINSTAL-I-RESTORE, Restoring product saveset D ...

%VAXFMS-I-CONTINUE, All inquiries have been requested. If no errors occur,

-VAXFMS-I-CONTINUE, the installation will be completed in about 20 minutes.

%VMSINSTAL-I-SYSDIR, This product creates system directory [SYSHLP.EXAMPLES.FMS].

If you intend to execute this layered product on other nodes in your VAXcluster, and you have the appropriate software license, you must prepare the system-specific roots on the other nodes by issuing the following command on each node (using a suitably privileged account):

```
$ CREATE /DIRECTORY SYS$SPECIFIC:[SYSHLP.EXAMPLES.FMS]
```

System Manager:

Upon completion of this installation, please be sure to edit the system startup files as described in the DEC FMS Installation Guide.

%VAXFMS-S-FMSBUILT, DECFMS V2.4 has built successfully, continuing...

%VAXFMS-I-STARTSAMP, Starting the Sample Application Programs installation...

%VAXFMS-S-SAMPBUILT, Sample Application Programs have built successfully, continuing...

%VAXFMS-I-CONTINUE, Starting Modifiable Message File Procedures installation ...

%VMSINSTAL-I-SYSDIR, This product creates system directory [SYSHLP.EXAMPLES.FMS.MESSAGE].

Sample Installation A.1 Full Development Kit

If you intend to execute this layered product on other nodes in your VAXcluster, and you have the appropriate software license, you must prepare the system-specific roots on the other nodes by issuing the following command on each node (using a suitably privileged account):

```
$ CREATE /DIRECTORY SYS$SPECIFIC:[SYSHLP.EXAMPLES.FMS.MESSAGE]/PROT=(S:RWED,O,G,W)
%VMSINSTAL-I-MOVEFILES, Files will now be moved to their target directories...
```

Beginning the DECFMS V2.4 Installation Verification Procedure...

DECFMS V2.4 Installation Verification Procedure was successful
Refer to the DEC FMS Installation Guide for further verification procedures...

Installation of DECFMS V2.4 completed at 17:54

Enter the products to be processed from the next distribution volume set.

* Products: EXIT

VMSINSTAL procedure done at 17:55

\$

A.2 Run-Time Kit

This section contains a sample installation for the DEC FMS run-time only kit.

```
$ SET DEF SYS$UPDATE
```

```
$ @VMSINSTAL
```

```
VAX/VMS Software Product Installation Procedure V5.0-2
```

It is 29-NOV-1993 at 17:23.

Enter a question mark (?) at any time for help.

* Are you satisfied with the backup of your system disk [YES]? YES

* Where will the distribution volumes be mounted: DKA400:

Enter the products to be processed from the first distribution volume set.

* Products: FMSFDV024

* Options:

Please mount the first volume of the set on DKA400:.

* Are you ready? YES

%MOUNT-I-MOUNTED, FMSFDV mounted on DKA400:

The following products will be processed:

FMSFDV V2.4

Beginning installation of FMSFDV V2.4 at 17:25

%VMSINSTAL-I-RESTORE, Restoring product saveset A ...

```
Product:      DEC FMS
Producer:     DEC
Version:      2.4
Release Date: 14-NOV-1993
```

* Does this product have an authorization key registered and loaded? YES

* Do you want to run the IVP after the installation [YES]?

* Do you want to purge files replaced by this installation [YES]?

System Manager:

Sample Installation

A.2 Run-Time Kit

Upon completion of this installation, please be sure to edit the system startup files as described in the DEC FMS INSTALLATION GUIDE.

```
%FMSFDV-S-FDVBUILT, FMSFDV V2.4 has built successfully, continuing...
```

```
Beginning the FMSFDV V2.4 Installation Verification Procedure...
```

```
FMSFDV V2.4 Installation Verification Procedure was successful...
```

```
Installation of FMSFDV V2.4 completed at 17:28
```

```
VMSINSTAL procedure done at 17:29
```

```
$
```

Using the Sample Applications Programs

The installation and start-up procedure `SYS$STARTUP:FMSTARTUP.COM` defines a system logical name for the `FMS$EXAMPLES:` directory. This directory contains files relating to the sample application programs for Version 2.4 of DEC FMS software.

If you are planning to run the sample application programs on a bisynchronous terminal, refer to Section B.2.

Version 2.4 of DEC FMS provides the sample application programs listed in Table B-1.

Table B-1 FMS Sample Application Programs

Language	Program Name	Executable Image
BASIC	SAMP.BAS	SAMP.EXE
BLISS	SAMPBLI.BLI	SAMPBLI.EXE
C	SAMPCC.C	SAMPCC.EXE
COBOL	SAMPCOB.COB	SAMPCOB.EXE
FORTRAN	SAMPFOR.FOR	SAMPFOR.EXE
PASCAL	SAMPPAS.PAS	SAMPPAS.EXE
PL/I	SAMPPLI.PLI	SAMPPLI.EXE

To run the BASIC sample application program, enter the following command:

```
$ RUN FMS$EXAMPLES:SAMP
```

If, while you are running a sample application program, you press the PF4 key to choose to write checks, a data file called `SAMPCH.DAT` is created in your default directory.

Using the Sample Applications Programs

B.1 Files Associated with the Sample Application Programs

B.1 Files Associated with the Sample Application Programs

Files that help you generate the sample application programs are included in the FMS\$EXAMPLES: directory. These files are as follows:

- Files associated with SAMP forms

The Sample Application Program forms are stored in a form library, SAMP.FLB.

Two additional forms are provided to run a sample application on either a bisynchronous terminal or a MicroVAX workstation. The forms are contained in the files BISYNC_REGIST.FRM and LONG_REGIST.FRM, and are designed to replace the REGISTER form in the sample application form library, SAMP.FLB. The BISYNC_REGIST.FRM file enables you to run the sample applications on a bisynchronous terminal. The LONG_REGIST.FRM enables you to produce and display 55-line forms on MicroVAX workstations.

- Files produced by the FMS application aids

The memory-resident form file, SMPMEMRES.OBJ, and the UAR vector file, SMPVECTOR.OBJ, are included in a link command to produce an executable SAMP image.

- SAMP data base file

The SAMP.DAT file provides the account data for the sample application programs.

- Source files that contain FMS definitions (see Table B-2)

The FMS definition files provide definitions for Form Driver symbols used in the sample application programs. Many of these files are used directly by the appropriate language construct (INCLUDE, COPY, REQUIRE, ENVIRONMENT, and so forth) to define the symbols in the programs. You may want to use these files as examples that you can tailor to fit your own applications.

- Additional source files for languages (see Table B-3)

Some of the sample application programs have source files containing convenient definitions that relate only to a particular language.

- Command files that compile and link the sample application programs for a given language (see Table B-4)

Using the Sample Applications Programs

B.1 Files Associated with the Sample Application Programs

Table B–2 FMS Definition Files

Language	Definition File
BASIC	FDVDEF.BAS
BLISS	FDVDEF.REQ
C	FDVDEF.H
COBOL	FDVDEF.LIB
FORTRAN	FDVDEF.FOR
PASCAL	FDVDEF.PAS
PL/I	FDVDEFCAL.PLI (definition using calls)
PL/I	FDVDEFFNC.PLI (definition using functions)

Table B–3 FMS Source Files

Language	Files
COBOL	SAMPCOB.LIB SMPCOBUAR.LIB
FORTRAN	SMPACCOM.FOR SMPREGCOM.FOR SMPSTATUS.FOR SMPWORK.FOR

Table B–4 FMS Command Files

Language	Command File
BASIC	SAMPBAS.COM
BLISS	SAMPBLI.COM
C	SAMPCC.COM
COBOL	SAMPCOB.COM
FORTRAN	SAMPFOR.COM
PASCAL	SAMPPAS.COM

(continued on next page)

Using the Sample Applications Programs

B.1 Files Associated with the Sample Application Programs

Table B-4 (Cont.) FMS Command Files

Language	Command File
PL/I	SAMPPLI.COM

B.2 Running the Sample Application on Bisynchronous Terminals

If you do not plan to run the sample application programs on bisynchronous terminals, you can skip this section.

You can run the sample application programs on bisynchronous terminals with no modifications to the programs. Because of the bisynchronous terminal's width restrictions, a form modification is required. The form that is used on asynchronous terminals (VT52, VT100, VT2xx, and so forth) to display the check register, REGISTER, does not fit on a bisynchronous terminal screen.

The Version 2.4 kit of DEC FMS software provides a replacement form for REGISTER that fits on the bisynchronous terminal screen. This form works on asynchronous terminals as well. The form is contained in the form file named BISYNC_REGIST.FRM located in FMS\$EXAMPLES:.

Before running the sample application programs on bisynchronous terminals, use the following procedure to replace the REGISTER form in the sample application form library, SAMP.FLB:

1. Log in to the system manager's account.
2. Enter the following command to save the current REGISTER form in a form file named FMS\$EXAMPLES:REGISTER.FRM:

```
$ FMS/LIBRARY/EXTRACT-  
_ $ FMS$EXAMPLES:SAMP/FORM=REGISTER/OUTPUT=FMS$EXAMPLES:REGISTER.FRM
```

3. Enter the following command to insert the new REGISTER form:

```
$ FMS/LIBRARY/REPLACE FMS$EXAMPLES:SAMP FMS$EXAMPLES:BISYNC_REGIST
```

After executing this command, you can run the sample application programs as documented here on either asynchronous or bisynchronous terminals.

The REGISTER form now has a different appearance and different field attributes than those of the original REGISTER form documented in *Introduction to VAX-11 FMS*. These differences are required so that the form fits on the bisynchronous terminal screen. These differences have no effect on the form's function or interaction with the program.

B.3 Running the Sample Application on MicroVAX Workstations

If you do not plan to run the sample application programs on MicroVAX workstations, you can skip this section.

The sample application programs can be run on MicroVAX workstations with no modifications to the programs. However, to take advantage of the increased size of the VT100 and VT200 windows on the workstation, a modification has been made to one of the forms in the sample application. The REGISTER form, which contains a scrolled region to display the check register, has been modified to take advantage of a 55-line window. The Version 2.4 kit of DEC FMS provides this form in the file named LONG_REGIST.FRM, located in FMS\$EXAMPLES:.

To take advantage of the 55-line workstation window, use the following procedure to replace the REGISTER form in the sample application form library, SAMP.FLB:

1. Log in to the system manager's account.
2. Enter the following FMS DCL command to save the current REGISTER form in a form file named FMS\$EXAMPLES:REGISTER.FRM.

```
$ FMS/LIBRARY/EXTRACT-  
_ $ FMS$EXAMPLES:SAMP/FORM=REGISTER/OUTPUT=FMS$EXAMPLES:REGISTER.FRM
```

3. Enter the following command to insert the new REGISTER form.

```
$ FMS/LIBRARY/REPLACE FMS$EXAMPLES:SAMP FMS$EXAMPLES:LONG_REGIST
```

4. Enter the following command to set the workstation window size to 55 lines.

```
$ SET TERMINAL/PAGE=55
```

After executing this command, the sample application programs may be run as documented on a MicroVAX workstation.

The sample applications do not run on standard terminals (VT52, VT100, VT2xx, and so forth) with the form LONG_REGIST in the form library, SAMP.FLB.

Files Installed on Your System

The following is a list of files added, replaced, or modified on your system by the Version 2.4 installation of DEC FMS software.

File Name	Function
[SYSHLP] (SYS\$HELP)	
HELPLIB.HLB	Module FMS added or replaced in help library
DECFMS024.RELEASE_NOTES	Online release notes for DEC FMS Version 2.4
[SYSEXE] (SYS\$SYSTEM)	
FMSFAA.EXE	FMS Form Application Aids Utility
FMSFCV.EXE	FMS Form Converter Utility
FMSFED.EXE	FMS Form Editor Utility
FMSFLG.EXE	FMS Form Language Translator Utility
FMSFLI.EXE	FMS Form Librarian Utility
FMSFTE.EXE	FMS Form Tester Utility
FMSFUU.EXE	FMS Form Upgrade Utility
[SYSLIB] (SYS\$SHARE)	
FDVSHR.EXE	Form Driver shareable image

Files Installed on Your System

File Name	Function
[SYSLIB] (SYS\$LIBRARY)	
DCLTABLES.EXE	DCL command FMS added or replaced in DCL tables
HLL11.OBJ	PDP-11 compatibility high level language interface
IMAGELIB.OLB	Module FDVSHR added or replaced in library
STARLET.OLB	Module FDV\$PLITRM added or replaced in library
[SYSMGR] (SYS\$MANAGER)	
FMSTARTUP.COM	FMS startup procedure for full development kit
FDVSTRTUP.COM	FMS startup procedure for run-time kit
[SYSMGR] (SYS\$MESSAGE)	
FDVMSG.EXE	Form Driver message file
FMSMSG.EXE	FMS utilities message file
[SYSHLP.EXAMPLES.FMS] (FMS\$EXAMPLES)	
FDVDEF.BAS	Form Driver symbol definition file for BASIC
FDVDEF.FOR	Form Driver symbol definition file for FORTRAN
FDVDEF.H	Form Driver symbol definition file for C
FDVDEF.LIB	Form Driver symbol definition file for COBOL
FDVDEF.PAS	Form Driver symbol definition file for PASCAL
FDVDEF.REQ	Form Driver symbol definition file for BLISS
FDVDEFCAL.PLI	Form Driver symbol definition file for PL/I
FDVDEFFNC.PLI	Form Driver symbol definition file for PL/I
MESSAGE.DIR	Directory for modifiable message procedures

In addition, if the system manager requested the sample application programs to be installed, the following files also exist.

Files Installed on Your System

File Name	Function
[SYSHLP.EXAMPLES.FMS] (FMS\$EXAMPLES)	
BISYNC_REGIST.FRM	Sample application REGISTER form to be used with bisync terminals
LONG_REGIST.FRM	Sample application REGISTER form to be used with MicroVAX workstations
SAMP.BAS	BASIC sample application source
SAMP.DAT	Sample application data file
SAMP.EXE	BASIC sample application executable image
SAMP.FLB	Sample application form library
SAMPBAS.COM	BASIC sample application build procedure
SAMPBLI.BLI	BLISS sample application source
SAMPBLI.COM	BLISS sample application build procedure
SAMPBLI.EXE	BLISS sample application executable image ¹
SAMPCC.C	C sample application source
SAMPCC.COM	C sample application build procedure
SAMPCC.EXE	C sample application executable image ¹
SAMPCOB.COBS	COBOL sample application source
SAMPCOB.COM	COBOL sample application build procedure
SAMPCOB.EXE	COBOL sample application executable image ¹
SAMPCOB.LIB	COBOL sample application library
SAMPFOR.COM	FORTRAN sample application build procedure
SAMPFOR.FOR	FORTRAN sample application source
SAMPFOR.EXE	FORTRAN sample application executable image ¹
SAMPPAS.COM	PASCAL sample application build procedure
SAMPPAS.EXE	PASCAL sample application executable image ¹
SAMPPAS.PAS	PASCAL sample application source
SAMPPLI.COM	PL/I sample application build procedure
SAMPPLI.EXE	PL/I sample application executable image ¹
SAMPPLI.PLI	PL/I sample application source
SMPACCOM.FOR	FORTRAN sample application include file
SMPCOBUAR.LIB	COBOL sample application library

¹Present only if the language is available on the system.

Files Installed on Your System

File Name	Function
[SYSHLP.EXAMPLES.FMS] (FMS\$EXAMPLES)	
SMPMEMRES.OBJ	Memory resident form module for the sample applications
SMPREGCOM.FOR	FORTTRAN sample application include file
SMPSTATUS.FOR	FORTTRAN sample application include file
SMPVECTOR.OBJ	UAR vector module for the sample applications
SMPWORK.FOR	FORTTRAN sample application include file
[SYSHLP.EXAMPLES.FMS.MESSAGE]	
COMMSG.MSG	Message file common to all FMS utilities
FAAMSG.MSG	Form application aids message file
FCVMSG.MSG	Form converter message file
FDVMSG.MSG	Form driver message file
FEDMSG.MSG	Form editor message file
FIOMSG.MSG	File I/O message file
FLGMSG.MSG	Form language translator message file
FLIMSG.MSG	Form librarian message file
FMSLIT.MSG	DEC FMS message file literals
FMS_MESSAGE.MEM	Guide to modifying DEC FMS message files
FTEMSG.MSG	Form Tester message file
FUUMSG.MSG	Form Upgrade Utility message file
MSGBLD.COM	Message file build procedure