VAX FMS Installation Guide

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This manual describes the VAX FMS installation and verification procedures.

OPERATING SYSTEM:	VMS
SOFTWARE VERSION:	VAX FMS Version 2.4

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Preface

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

Intended Audience

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

To install VAX FMS, you must have access to a privileged account. To run the postinstallation Installation Verification Procedure, you must use a VT100– or VT200–series terminal or one that is VT100–compatible.

Operating System Information

VAX FMS Version 2.4 requires VMS Version 5.0 or higher.

Structure

This manual contains four chapters and three appendixes:

Chapter 1	Describes the preparations and requirements necessary for installing FMS.
Chapter 2	Describes the FMS installation procedure.
Chapter 3	Describes the tasks to perform after installing FMS.
Chapter 4	Describes the FMS postinstallation IVP.
Appendix A	Reproduces typical installation sessions and postinstallation IVP sessions.
Appendix B	Describes the optional sample applications programs available with FMS.
Appendix C	Details the files that are installed or modified.

Related Manuals

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

- VMSINSTAL procedure
- INSTALL Utility
- System management and operations

Conventions

This manual uses the following conventions:

RETURN	This symbol indicates the RETURN key. Unless otherwise stated, end all user input lines in examples by pressing the RETURN key.
Color	Color in examples shows user input.
$	The dollar sign represents the DIGITAL Command Language (DCL) prompt. (The DCL prompt on your system may be different.)

Chapter 1

Preparing to Install VAX FMS

This chapter discusses the preparations and requirements necessary for installing VAX FMS.

This manual applies to Version 2.4 of VAX 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.

VAX FMS provides online release notes. DIGITAL strongly recommends that you read the release notes before proceeding with the installation.

1.1 Required Operating System Components

VAX FMS supports the following list of VMS Version 5.0 classes:

- VMS Required Saveset
- Programming Supprt
- Utilities

1.2 Prerequisite and Optional Software

This section discusses the software you must have installed on your system before installing VAX FMS. The section also includes information about software that you can use together with VAX FMS. Please 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).

VAX FMS Version 2.4 requires VMS Version 5.0 or higher.

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

1.3 Prerequisite Hardware

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

1.4 VMS License Management Facility

The VMS License Management Facility is available with Version 5.0 of the VMS operating system. If you are installing VAX FMS on a VMS Version 5.0 or higher 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 VAX 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 VAX FMS license and loaded the appropriate authorization key. You must register and load your license for VAX FMS *before* you start the installation in order to run the IVP and use the software.

[1] VAX FMS *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.

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

- Invoke the SYS$UPDATE:VMSLICENSE.COM procedure. When it prompts you for information, respond with data from your Product Authorization Key (PAK).
- Issue 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.

1.5 Installation Procedure Requirements

The following sections discuss various requirements for installing VAX FMS.

1.5.1 Restrictions

No users should be logged into the system while you are installing FMS. 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. If you want to stop the installation, press the RETURN key.

1.5.2 Time

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

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

1.5.3 Privileges

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

- CMKRNL
- WORLD
- SYSPRV

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

1.5.4 Disk Space

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

Table 1–1: Disk Space Requirements

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

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

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

1.5.5 System Parameters

Installing VAX 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

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

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.

1.5.5.1 Checking System Parameter Values

To check the values of your system parameters, enter the following command at the DCL prompt to invoke the System Generation Utility:

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

At the SYSGEN> prompt, enter the SHOW command to display the value of a system parameter. The values displayed should equal or exceed the 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 VAX FMS, you must set the correct values for the GBLPAGES and GBLSECTIONS system parameters.

The n shown in the Table 1–2 represents the current number of unused global pages or global sections available on your system. For the installation to execute successfully, you must raise these values by the amount indicated. To calculate how many unused global pages and global sections your system has, perform the following steps:

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

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

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

   ```
                   Summary of Local Memory Global Sections

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

2. Determine if the number of unused global pages (3420 in the example) is equal to or greater than 250. If the number of unused pages 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
   ```

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, you must edit the the following file:

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

Use an editor to access the file. If you need to change a parameter value that is already in the SYS$SYSTEM:MODPARAMS.DAT file, simply 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 can also modify incremental parameters in the MODPARAMS.DAT file. The following example increases the global page setting by 2000:

```
ADD_GBLPAGES = 2000
```

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

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

AUTOGEN performs an automatic system shutdown and reboots when it has finished. Rebooting your system makes the new parameter values active.

When you reboot a system under VMS Version 5.0, 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 VAX FMS 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. First set your directory to SYS$SYSTEM and then run AUTHORIZE:

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

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

```
UAF> SHOW SMITH
```

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.

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 the following:

- Whether you have set your default device and directory to SYS$UPDATE
- Whether you are logged in to a privileged account
- Whether you have adequate quotas for installation
- Whether DECnet is up and running
- Whether 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 of the problem and asks if you want to continue the installation. In some instances, you can enter YES to continue. To stop the installation process and correct the situation, enter NO or press RETURN. Then 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 do a system disk backup before installing any software on top of the operating system.

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

Chapter 2

Installing VAX FMS

This chapter describes how to install VAX FMS. 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 files and logical names added to your system, running the IVP, and aborting the installation.

2.1.1 Accessing the Online Release Notes

VAX FMS provides online release notes. You must specify OPTIONS N when you invoke VMSINSTAL if you want the installation procedure to give you an opportunity to display or print the online release notes. This question comes near the beginning of the installation.

You should review the release notes in case they contain any information about changes in the installation procedure. If you have already reviewed the release notes, you do not need to specify OPTIONS N.

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

```
SYS$HELP:VAXFMS024.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

The files added, replaced, or modified on your system when VAX FMS is installed are listed in Appendix C. They can also be found in Appendix A of the online release notes.

VAX FMS adds only one logical name—FMS$EXAMPLES—to the system when it is installed. The files associated with FMS$EXAMPLES are listed in Appendix C as well as in Appendix A of the online release notes.

2.1.3 Running the Installation Verification Procedure

The IVP for VAX 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 VAX FMS is installed correctly.

After VAX 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 VAX 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 Aborting the Installation

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

2.2 The Installation Procedure

The VAX FMS installation procedure consists of a series of questions and informational messages. The following sections explain how to invoke VMSINSTAL and answer the installation procedure questions.

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. You use the following syntax to invoke VMSINSTAL:

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

product–name
The installation name for the component. For VAX FMS, use the following installation name:

```
VAXFMS024
```

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 be see the release notes question. If you do not include the OPTIONS N parameter, VMSINSTAL does not ask you about the release notes. You should review the release notes before proceeding with the installation in case they contain new information about the installation.

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

The following example displays the command to invoke VMSINSTAL to install VAX FMS from tape drive MTA0: and shows the system response. This example uses the OPTIONS N release note parameter.

```
$ @SYS$UPDATE:VMSINSTAL VAXFMS024 MTA0: OPTIONS N

      VAX/VMS Software Product Installation Procedure V5.0


It is 14-NOV-1988 at 10:15.
Enter a question mark (?) at any time for help.
```

If you do not supply either the product name or the device name, VMSINSTAL prompts you for this information later on in the installation procedure. VMSINSTAL does not prompt you for any options, so be sure to include OPTIONS N on the VMSINSTAL command line to access the release notes during the installation.

2.2.2 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.

Each question in the installation is marked with an asterisk (*) at the beginning of the line. Some questions show the default response in brackets, for example [YES]. If you want to use the default response, press the RETURN key.

1. DECnet status

   VMSINSTAL notifies you if DECnet is running and displays a list of all active processes. It then asks if you want to continue the installation. You should install VAX FMS on a standalone system or cluster with DECnet shut down. NO is the default response to the question.

```
%VMSINSTAL-W-DECNET, Your DECnet network is up and running.
   .
   .
   .
* Do you want to continue anyway [NO]?
```

2. System backup

   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 discontinue the installation. After you back up your system disk, you can restart the installation.

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

3. Mounting the media

   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 VAX FMS has been mounted on the specified device and that the installation has begun. For example:

```
Please mount the first volume of the set on MTA0:.
* Are you ready? YES
%MOUNT-I-MOUNTED, VAX FMS MOUNTED ON _$$MTA0:
The following products will be processed:
  VAX FMS V2.4

    Beginning installation of VAX FMS V2.4 at 10:30

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

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 abort the installation for other reasons, press CTRL/Y.

4. Release Notes

   If you specified OPTIONS N when you invoked VMSINSTAL, you are now asked to choose one of the five options for reviewing the release notes.

```
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]:
```

   If you select option 1, VMSINSTAL displays the release notes immediately on your terminal. You can terminate the display at any time by pressing CTRL/C.

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

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

   You can press RETURN to send the file to the default output print device or you can enter another queue name.

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

   Option 4 causes the installation to copy the release notes to the help directory. Even if you do not select option 4, the release notes for VAX FMS are copied to the SYS$HELP directory.

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

5. Continuing the installation

   The installation procedure now asks if you want to continue the installation. To continue, enter YES. Otherwise, press RETURN. In either case, the release notes are copied to a file in the SYS$HELP directory. For example:

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

   The release notes are located in the following file:

```
SYS$HELP:VAXFMS024.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 VAX FMS.

6. License Registration

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

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

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

   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 successfully complete the installation. If you have not done so, you should stop the installation, register and load your product authorization key, and then restart the installation.

7. Choosing to run the IVP

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

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

8. Choosing to purge files

   You have the option to purge files from previous versions of VAX FMS that are superseded by this installation. Purging is recommended; however, if you need to keep files from the previous version, enter NO in response to the question.

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

9. Installation Options

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

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

   The Sample Application Programs are used throughout the VAX FMS documentation as examples of VAX FMS programming techniques. The files relating to the sample applications are found in the FMS$EXAMPLES: directory and are listed in Appendix C. The VAX FMS installation and start–up procedure (SYS$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 Procedure creates 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. Additional media volumes

    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.

    ```
    %BACKUP-I-READYREAD, mount volume 2 on _MTA0: for reading
    Enter "YES" when ready:
    ```

2.2.3 Informational Messages

At this point, 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 procedure has been successful up to this point, 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 following messages are displayed:

```
%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

In addition, the SYS$HELP:HELPLIB.HLB and SYS$LIBRARY:DCLTABLES.EXE files are updated to include the new version of the VAX FMS HELP text and the FMS command line definition, respectively. The VAX FMS release notes are copied to the SYS$HELP:VAXFMS024.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. You see the following display:

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

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

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

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

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

2.2.5 Completing the Installation Procedure

The following messages indicate that the entire installation procedure is complete:

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

   VMSINSTAL procedure done at 11:17
```

You can now log out of the privileged account:

```
$ LOGOUT
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, if you are going to continue using the system manager's account and you want to restore these symbols, you should 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, you see the following message:

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

If the IVP fails, you see these messages:

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

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

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

- The operating system version is incorrect.
- Quotas necessary for successful installation are insufficient.
- System parameter values for successful installation are insufficient.
- The VMS help library is currently in use.
- 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 VMS software installation. If you are notified that any of these conditions exist, 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.

Chapter 3

After Installing VAX FMS

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

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

3.1 Editing the System Files

You must edit two system start–up files to provide for automatic startup of VAX FMS when your system is rebooted:

1. Add the command line that starts VAX FMS to the system startup file, SYS$MANAGER:SYSTARTUP_V5.COM. VAX FMS cannot start until the network has started. You must position this new command line *after* the line that invokes the network startup command procedure. The following example shows the network startup command line followed by the startup command line for VAX 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 VAX FMS Version 2.4 Sample Application Programs.

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

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

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

3.2 User Account Requirements

To work with VAX FMS, user accounts on your system must have certain privileges and quotas. The next two sections contain information on these requirements. The third section discusses special requirements.

3.2.1 Privileges

To use VAX FMS, each account must have at least the TMPMBX privilege. Use the VMS Authorize Utility to determine whether users have the privileges they require.

3.2.2 User Account Quotas

You must make sure that the appropriate user accounts have sufficient quotas to be able to use VAX FMS. Table 3–1 summarizes the required user account quotas.

Table 3–1: User Account Quotas for Using VAX FMS

Account Quota	Value
ASTLM	24
BIOLM	18
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. First set your directory to SYS$SYSTEM and then run AUTHORIZE:

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

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

```
UAF> SHOW SMITH
```

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

MODIFY account–name /quota–name=nnnn

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

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

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

For more information on modifying account 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]VAXFMS$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 issuing the following command:

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

3.4 Special Requirements

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

3.5 Enhancing VAX FMS Performance

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

The VAX FMS Version 2.4 Form Driver is built as a shared image. If several users who run 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 FMS applications are run.

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

To install VAX 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 bootstrapped because the available space in the global page table is less likely to be fragmented.

To install VAX FMS as a shared image, first, determine the number of avail–able global pages and global sections on your system. See Section 1.5.5.2 for information on how to verify and modify the number of global pages and global sections. Table 1–2 contains the required values for these parameters.

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

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

You must now add the following lines to the appropriate system startup command file so that each time the system is started, VAX FMS 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 VMS Version 5.0 is SYS$MANAGER:SYSTARTUP_V5.COM.)

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

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

3.6 Determining and Reporting Problems

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

- If you have a BASIC or DECsupport Software Agreement, you should call your Customer Support Center. With these services, you receive telephone support that provides high–level advisory and remedial assistance.
- If you have a Self–Maintenance Software Agreement, you can submit a Software Performance Report (SPR).
- If you purchased VAX FMS within the past 90 days and you think the problem is caused by a software error, you can submit a Software Performance Report (SPR).

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

Chapter 4

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.

   Issue the SET TERMINAL/INQUIRE command to request a response sequence from your terminal. 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.

   ```
   $  SET TERMINAL/INQUIRE
   $  FMS/EDIT testfile.frm
   ```

3. 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
   ```

4. Type some text. For example:

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

   You have just entered text into your form. If you want 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
   ```

5. Exit the Form Editor.

   Press the PF1 key and the keypad 7 key to exit from 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
```

6. 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
```

7. Test the form.

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

   FMS displays your form. Type any seven characters. Note that 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 appears.

```
123456
RETURN
$
```

8. Delete the form file.

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

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

Appendix A

Sample Installation

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

The sample installation assumes that DECnet has been shut down, that no users are logged on 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 VAX FMS full development kit.

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

It is 29-NOV-1988 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: MUA0:

Enter the products to be processed from the first distribution volume set.
* Products: VAXFMS024
* Options: N
Please mount the first volume of the set on  MUA0:.
* Are you ready? YES
%MOUNT-I-MOUNTED, VAXFMS mounted on _MUA0:
The following products will be processed:
  VAXFMS V2.4
 Beginning installation of VAXFMS V2.4 at 17:37

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

    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]: 4
* Do you want to continue the installation? YES
%VMSINSTAL-I-RELMOVED , The product's release notes have been
successfully moved to SYS$HELP.

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

* 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 VAXFMS 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 VAX FMS Installation Guide.

%VAXFMS-S-FMSBUILT, VAXFMS 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].

    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 VAXFMS V2.4 Installation Verification Procedure...
```

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

 Installation of VAXFMS 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 VAX FMS run–time only kit.

```
$ SET DEF SYS$UPDATE
$ @VMSINSTAL
 VAX/VMS Software Product Installation Procedure V5.0-2

It is 29-NOV-1988 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: MUA0:

Enter the products to be processed from the first distribution volume set.
* Products: FMSFDV024
* Options:
Please mount the first volume of the set on  MUA0:.
* Are you ready? YES
%MOUNT-I-MOUNTED, FMSFDV mounted on _MUA0:
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:       VAX FMS
              Producer:      DEC
              Version:       2.4
              Release Date:  14-NOV-1988

* 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:

     Upon completion of this installation, please be
     sure  to  edit  the  system  startup  files  as
     described in the  VAX  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
$
```

Appendix B

Using the Sample Applications Programs

The VAX FMS Version 2.4 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 VAX FMS Version 2.4 Sample Application Programs.

If you are planning to run the Sample Application Programs on a bisynchronous terminal, refer to Section B.2.

VAX FMS Version 2.4 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, type the following command:

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

If, while you are running the Sample Application Program, you choose to write checks, a data file called SAMPCH.DAT is created in your default directory when you press the PF4 key to write the check.

B.1 Files Associated with the Sample Application Programs

Files that help you generate the Sample Application Program 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 successfully run the 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 re− place the REGISTER form in the Sample Application form library, SAMP.FLB. The BISYNC_REGIST.FRM file enables you to run the Sample Application successfully 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.

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)

- 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.

Table B–3: FMS Source Files

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

- Command files that compile and link the Sample Application Programs for a given language (see Table B–4)

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
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.

The Sample Application Programs can be run 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, will not fit on a bisynchronous terminal screen.

The FMS Version 2.4 kit provides a replacement form for REGISTER that will fit on the bisynchronous terminal screen. This form will work on aysnchronous 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, follow these steps to replace the REGISTER form in the Sample Application form library, SAMP.FLB:

1. Log into the system manager's account.
2. Type 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. Type the following FMS DCL command to insert the new REGISTER form.

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

After successfully executing this command, the Sample Application Programs may be run 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 will fit on the bisynchronous terminal screen. These differences will 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 FMS Version 2.4 kit provides this form in the file named LONG_REGIST.FRM, located in FMS$EXAMPLES:.

To take advantage of the 55−line Workstation window, follow these steps to replace the REGISTER form in the Sample Application form library, SAMP.FLB:

1. Log in to the system manager's account.
2. Type 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. Type the following FMS DCL command to insert the new REGISTER form.

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

4. Type the following DCL command to set the Workstation window size to 55 lines.

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

After successfully executing this command, the Sample Application Programs may be run as documented on a MicroVAX Workstation.

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

Appendix C

Files Installed on Your System

The following is a list of files added, replaced, or modified on your system by VAX FMS Version 2.4 installation:

File Name	Function
[SYSHLP] (SYS$HELP)	
HELPLIB.HLB	Module FMS added/replaced in help library
VAXFMS024.RELEASE_ NOTES	Online release notes for FMS Version 2.4
[SYSEXE] (SYS$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

File Name	Function
[SYSLIB] (SYS$LIBRARY)	
DCLTABLES.EXE	DCL command FMS added/replaced in DCL tables
HLL11.OBJ	PDP–11 compatibility high level language interface
IMAGELIB.OLB	Module FDVSHR added/replaced in library
STARLET.OLB	Module FDV$PLITRM added/replaced in library
[SYSMGR] (SYS$MANAGER)	
FMSTARTUP.COM	FMS startup procedure
[SYSMGR] (SYS$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 will also exist:

File Name	Function
[SYSHLP.EXAMPLES.FMS] (FMS$EXAMPLES)	
BISYNC_REGIST.FRM	Sample Application REGISTER form to be used with bisync terminals

File Name	Function
[SYSHLP.EXAMPLES.FMS] (FMS$EXAMPLES)	
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.COB	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
SMPMEMRES.OBJ	Memory resident form module for the Sample Applications
SMPREGCOM.FOR	FORTRAN Sample Application include file

[1]Present only if the language is available on the sytem.

File Name	Function
[SYSHLP.EXAMPLES.FMS] (FMS$EXAMPLES)	
SMPSTATUS.FOR	FORTRAN Sample Application include file
SMPVECTOR.OBJ	UAR vector module for the Sample Applications
SMPWORK.FOR	FORTRAN 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	FMS message file literals
FMS_MESSAGE.MEM	Guide to modifying FMS message files
FTEMSG.MSG	Form Tester message file
FUUMSG.MSG	Form Upgrade Utility message file
MSGBLD.COM	Message file build procedure