VAXft System Services Installation Guide

Order Number: AA–PBJLA–TE

July 1990

This manual contains step-by-step procedures for installing VAXft System Services on your VAXft 3000 system.

Revision/Update Information:	This is a new manual.
Operating System and Version:	VMS Version 5.4
Software Version:	VAXft System Services Version 1.0
Hardware Version:	VAXft 3000

digital equipment corporation
maynard, massachusetts

First Printing, July 1990

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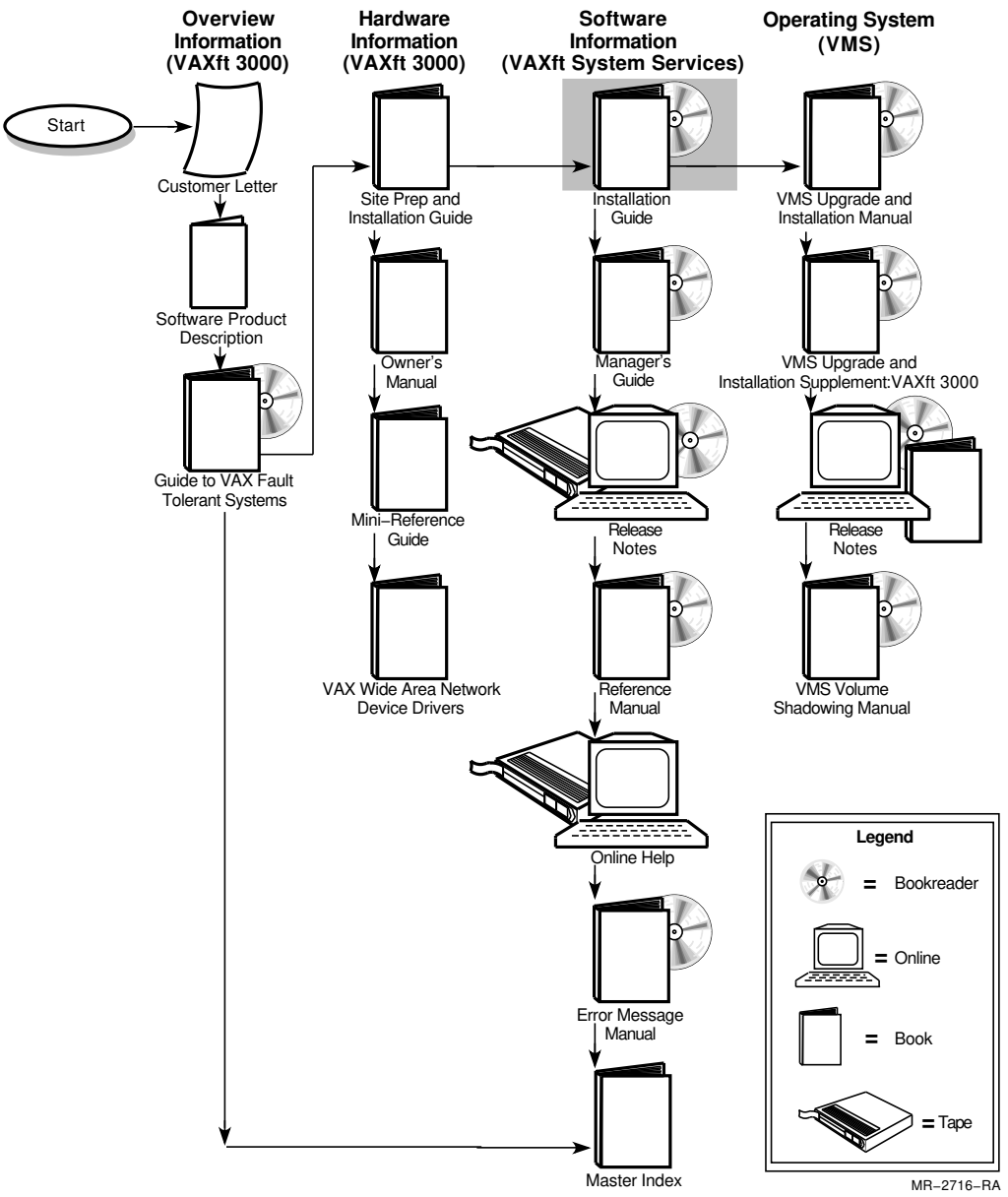
This document was prepared with VAX DOCUMENT, Version 1.2.

Navigational Map for the VAXft 3000 System Services Documentation and Related Documents



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Preface

Store the hardcopy version of this installation guide in the binder ''VAX Fault Tolerant System, System Management,'' after the *VAXft System Services Manager's Guide*.

Purpose of This Guide

This document contains information about installing the VAXft System Services software on the VAXft 3000 system. It guides you through:

- Preparing the system for the VAXft System Services software installation
- Installing the VAXft System Services software from the appropriate media
- Troubleshooting the installation if necessary

Intended Audience

This guide is intended for Digital Customer Service personnel and self-maintenance customers who are responsible for installing the VAXft System Services software.

The audience must have experience installing Digital software on VAX computer systems running the VMS operating system.

Document Structure

This guide contains five chapters and two appendixes:

- Chapter 1, Introduction, describes the VAXft System Services software.
- Chapter 2, Preinstallation Requirements, describes the VAXft System Services kit contents, and system prerequisites and requirements.
- Chapter 3, Installation Procedure, describes the VAXft System Services installation procedures and includes system/user dialogue.
- Chapter 4, Postinstallation Requirements, describes VAXft System Services procedures, requirements, and parameters.
- Chapter 5, Error Recovery, describes how to recover from errors encountered during installation.
- Appendix A, Sample Installation Procedure Dialogue, contains the VMSINSTAL dialogue.
- Appendix B, Created and Modified Files, contains a list of files created and modified by the VAXft System Services software installation.

Related Fault-Tolerant System Documents

- *VAXft System Services Manager's Guide*
- *VAXft System Services Release Notes*
- *VAXft System Services Reference Manual*
- *VAXft System Services Error Message Manual*
- *VAXft 3000 Guide to Fault Tolerant Systems*
- *VAXft System Services Master Index*

Related VMS Documents

- *VMSINSTAL Utility Manual*
- *VMS System Manager's Guide*
- *VMS License Management Utility Manual*

Conventions

The following conventions are used in this manual:

Conventions	Meaning
Ctrl/x	A sequence such as Ctrl/x indicates that you must hold down the key labeled Ctrl while you press another key simultaneously.
Return	Indicates when to press Return.
. . .	A vertical ellipsis indicates the omission of items from a code example or command format.
red text	Red text in hardcopy documentation indicates information that you must enter in response to a system prompt. In online versions, user input is shown in boldface type.
italics	Italics are used to emphasize document titles.

1 Introduction

VAXft System Services is a VMS layered software product that manages the fault-tolerant operation of the VAXft 3000 series computers. Available features include:

- Automatic failover
- Automatic failure isolation
- Extensive error analysis
- Automatic dial-out notification of failed hardware
- Configuration management

The VAXft System Services software is transparent to system users as well as to VMS layered products and applications. In addition to providing fault-tolerant system operation, the VAXft System Services software is used by system managers, and operations and customer service personnel to perform system management and maintenance operations.

For more information on VAXft concepts and procedures, refer to the *VAXft System Services Manager's Guide* and the *VAXft 3000 Guide to Fault Tolerant Systems*.

2 Preinstallation Requirements

There are several steps involved to prepare for the installation. Make sure that you have met all of the requirements described in this section before you begin the installation.

First, check the contents of the software kit. It should contain:

- One TK50 tape cartridge
- One Product Authorization Key for registering your software
- *VAXft System Services Installation Guide*
- *VAXft System Services Manager's Guide*
- *VAXft System Services Reference Manual*
- *VAXft System Services Error Message Manuals*
- *VAXft System Services Master Index*

2.1 Prerequisite Software

VMS Version 5.4 must be running on the VAXft 3000 before this software kit is installed.

2.2 Online Release Notes

The VAXft System Services software provides online release notes. To display or print the release notes during the installation, choose the OPTIONS N parameter when you invoke VMSINSTAL (see Appendix A for a sample user/system installation dialogue). To obtain the release notes after the installation, display or print the file SYS$HELP:FTSS010.RELEASE_NOTES. Online help also directs you to the release notes file. After the installation, enter the following command:

```
$ HELP FTSS RELEASE_NOTES Return
```

2.3 Disk Space Requirements

The VAXft System Services software requires 500 blocks during the installation procedure, and 400 blocks of permanent disk space thereafter.

These amounts refer to the disk space required on the system disk. The sizes are approximate; actual sizes may vary depending on your system environment, configuration, and software options.

2.4 Approximate Installation Time

Installation of the VAXft System Services software kit takes approximately 15 minutes. The distribution media is a TK50 tape cartridge.

2.5 VMS License Management Facility

The VMS License Management Facility (LMF) is available with Version 5.4 of the VMS operating system. The VAXft System Services software license must be registered with LMF. The license registration information is contained in the Product Authorization Key (PAK) that is shipped with the VAXft System Services software. The PAK is a paper certificate that contains license information which must be registered before you can run the VAXft System Services software.

During the installation, the installation procedure asks whether you have registered the VAXft System Services license and loaded the appropriate authorization key. In order to complete the installation and use the VAXft System Services software, you should register and load your license for the VAXft System Services software *before* you start the installation.

To register the license under VMS Version 5.4, log into the system manager's account, SYSTEM. There are two options to perform the registration:

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

For complete information on how to use LMF, see the *VMS License Management Utility Manual*.

3 Installation Procedure

You should be familiar with the VMSINSTAL Utility that you will use to install the VAXft System Services software. The VMS operating system has several requirements that you must meet when you use VMSINSTAL. If you are not familiar with these requirements, read the section on how to install software in the *VMS System Manager's Guide* to help ensure a successful installation.

3.1 Installation Checklist

Prior to installing the VAXft System Services software, make sure that you have the following hardware and software:

- A VAXft 3000 system.
- A valid, licensed version of VMS (Version 5.4) installed and running on the target system.
- 500 temporary disk blocks and 400 permanent disk blocks available on the system disk.

Also, make sure you have completed the following tasks:

- Read the section on how to install software in the *VMS System Manager's Guide*.
- Registered your license for the VAXft System Services software with the VMS License Management Facility (LMF). See Section 2.5 for more information.
- Made a backup of your system disk. For more information, see the guide entitled *VMS Upgrade and Installation Supplement: VAXft 3000*.

Note: For a more highly fault tolerant system, Digital recommends that you have VMS Volume Shadowing installed and licensed on the target system, and shadow the disks which are storing your more vital information.

3.2 VAXft System Services Installation

Note: To abort the installation procedure at any time, press Ctrl/Y. When you press Ctrl/Y, the installation procedure deletes all of the files it has created up to that point and then returns you to the DCL level. If you want to retry the installation procedure after you press Ctrl/Y, you must repeat the installation procedure from the beginning.

Note: For a complete sample installation dialogue, see Appendix A.

To install the VAXft System Services software:

1 Log into the SYSTEM account and set the default device and directory to SYS$UPDATE:

```
Username:  SYSTEM [Return]
Password:      [Return]
$  SET DEFAULT SYS$UPDATE [Return]
```

2 Invoke VMSINSTAL by entering the following command, utilizing the *options n* qualifier to enable you to see the release notes before the installation:

```
$  @VMSINSTAL FTSS ddcu: OPTIONS N [Return]
```

where *ddcu:* represents the device which holds the distribution medium (the TK50 cartridge tape) during installation. For the VAXft System Services software installation on the VAXft 3000, this will be MIA5: or MIA7: on an entry system, and MIA5: on an expanded system. On some systems this device name may be prefaced by *nodename*$.

If either of these items is omitted, VMSINSTAL prompts you for them.

Note: If VMSINSTAL detects errors in the system environment, it notifies you and asks if you want to continue the installation. Refer to the *VMSINSTAL Utility Manual* for additional information.

VMSINSTAL prints the following:

```
   VAX/VMS Software Product Installation Procedure V5.4

It is 31-AUG-1991 at 15:30
Enter a question mark (?) at any time for help.
```

3 VMSINSTAL asks if you are satisfied with the backup of your system disk. Backing up your system disk was a prerequisite to the installation procedure. Respond by entering YES.

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

4 VMSINSTAL then prompts you to mount the first volume of the set on the device specified at the beginning of the installation. When the load media is mounted, respond by entering YES:

```
Please mount the first volume of the set on ddcu:.
Are you ready?  YES [Return]
```

VMSINSTAL responds with:

```
%MOUNT-I-MOUNTED, FTSS            mounted in ddcu:

The following products will be processed:
FTSS V1.0

   Beginning installation of FTSS V1.0 at 15:35

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

5 Since you specified OPTIONS N, the installation procedure prompts you to select a release note option. Digital recommends that you read the release notes prior to completing installation of the software.

```
Release notes included with this kit are always copied to SYS$HELP

Additional Release Notes Options:

  1. Display release notes
  2. Print release notes
  3. Both 1 and 2
  4. None of the above

Select option [2]:  3 Return
```

Option	Result
1	VMSINSTAL immediately displays the release notes on line. To terminate the display, press Ctrl/C. After you view the release notes, VMSINSTAL copies them to SYS$HELP.
2	VMSINSTAL prompts you for a queue name. Enter a queue name, or press Return to send the file to the default print device. VMSINSTAL then copies the release notes to SYS$HELP.
3	VMSINSTAL immediately displays the release notes on line. To terminate the display, press Ctrl/C. VMSINSTAL then prompts you for a queue name. Enter a queue name, or press Return to send the file to the default print device. VMSINSTAL then copies the VAXft System Services release notes to SYS$HELP.
4	VMSINSTAL copies the release notes to SYS$HELP.

Note: This version of the release notes file installed by VMSINSTAL is labeled with the current product name and version number, such as FTSS010.RELEASE_NOTES. Be sure not to delete release notes for previous versions of the VAXft System Services software.

VMSINSTAL then displays the following request. If you have read the release notes and there is information there that may alter your installation needs, you can halt the installation at this point by entering No. To continue the installation, enter the following:

```
Do you want to continue the installation [N]?:  YES Return
```

The system responds with:

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

VAXft System Services V1.0 Installation Procedure

 Product:      FAULT-TOLERANT-SERVICES
 Producer:     DEC
 Version:      1.0
 Release Date: 01-JUN-1990
```

6 VAXft System Services supports the VMS License Management Facility (LMF). You must have your product authorization key (PAK) registered and loaded prior to invoking the installation verification program (IVP) or the VAXft System Services software. The installation procedure will ask if you have a product authorization key (PAK) registered and loaded.

If you do not, enter NO, and the installation will be completed, but a warning message will appear noting that the PAK was not registered, and that the IVP will not be run. After the installation is complete and you register the PAK, Digital recommends that you run the IVP to ensure the product was installed correctly prior to invoking the VAXft System Services software for the first time.

If you have registered the PAK, enter the following:

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

Note: The IVP and VAXft System Services software cannot be run until you load the Product Authorization Key.

7 The installation procedure will then ask whether or not you wish to run the IVP after the installation is complete. Enter the following:

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

8 If you have previous versions of the VAXft System Services software installed, purge the old files to recover disk space. To purge older files after the installation, enter the following:

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

The following text is then displayed:

```
The VAXft System Services V1.0 Installation Verification
Procedure (IVP) has been provided in SYS$COMMON:[SYSTEST].  The IVP
may be invoked at any time by using the following commands:

   $ SET DEFAULT SYS$COMMON:[SYSTEST]
   $ @FTSS$IVP
```

Your VMS system is now updated to include the new and modified files listed in Table B–1.

VMSINSTAL then moves the files to their target directories and responds with:

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

The installation procedure then completes the installation.

If your Product Authorization Key was installed, the installation verification procedure (IVP) is run at this point, resulting in the following display:

```
Beginning the VAXft System Services V1.0 Installation Verification Procedure

The FTSS V1.0 Installation Verification Procedure completed successfully
```

Note: If the IVP fails for any reason, see Chapter 5, or see the *VMSINSTAL Utility Manual*.

The installation is then complete.

```
Installation of FTSS V1.0 completed at 15:45

VMSINSTAL procedure done at 15:45
```

9 To finish the installation procedure, press Break to halt the system and then reboot it. This process will ensure that the software is fully and correctly loaded prior to its first use.

Note: If an error occurs during installation, see Chapter 5.

3.3 Installation Verification

The VAXft System Services kit contains a command procedure that verifies the correct operation of the software when it is invoked. The file is called FTSS$IVP.COM, and is located in the SYS$TEST directory.

If you registered the Product Authorization Key (PAK) prior to installing the VAXft System Services Software, and responded Yes when the installation procedure asked whether you would like the IVP run at the end of the installation, the IVP is run at that time.

If you did not register the PAK prior to software installation, do so immediately after the software installation and run the IVP manually by entering:

```
$  SET DEFAULT SYS$COMMON[SYSTEST] Return
$  @FTSS$IVP Return
```

Also, if at any point you wish to verify that the VAXft System Services software was correctly installed, run the IVP again.

4 Postinstallation Requirements

There are few postinstallation requirements necessary to enable your system to run the VAXft System Services software. The *VAXft System Services Manager's Guide* contains information about customizing the VAXft System Services software's operations to your site's needs once the software is up and running.

4.1 Startup Procedure

The VAXft System Services kit contains a startup procedure that allows your system to automatically invoke the VAXft System Services software when the VAXft 3000 is booted. The startup procedure is named FTSS$STARTUP.COM and is placed in the SYS$STARTUP directory. To cause the VAXft System Services software to be invoked at every system startup, edit the SYSTARTUP_V5.COM file to run SYS$STARTUP:FTSS$STARTUP.COM as early as possible in the procedure. Digital recommends that you locate this command in your SYSTARTUP_V5.COM file after commands which install any secondary paging or swapping files, and before commands starting DECnet or any queues.

After this edit has been performed, halt and reboot your system to fully load the VAXft System Services Software.

Note: Refer to the *VAXft System Services Manager's Guide* for more revisions that you may wish to make to your SYSTARTUP_V5.COM file.

4.2 Maintenance Updates

Maintenance updates of the VAXft System Services software may be issued periodically. Each update consists of an installation kit. Install this kit as described in this document, or in any documentation that accompanies the maintenance update (which would supersede this manual).

The maintenance update includes new release notes. The update release notes describe changes that have been made to the VAXft System Services software since the previous release. The update release notes are provided on line.

Read the release notes when you first install any version of VAXft System Services, as described in Section 2.2. To locate the release notes after you install the VAXft System Services software, display or print the file SYS$HELP:FTSS0nn.RELEASE_NOTES (where *nn* is the version number), or enter the following command:

```
$ HELP FTSS RELEASE_NOTES Return
```

5 Error Recovery

If the installation procedure fails for any reason, a message with the following format is displayed:

```
%VMSINSTAL_E_INSFAIL, The installation of VAX FTSS V1.0 has failed.
```

An error during the installation occurs if one or more of the conditions that are listed in Table 5–1 exist. These errors can often be identified and resolved as indicated in Table 5–1.

Table 5–1 Error Recovery

Error	Solution
%FTSS-E-DISKSPACE, VAXft System Services requires 500 disk blocks.	The system does not have enough free blocks on the system disk to install the VAXft System Services software. For installation and operation, the product requires 500 blocks temporarily, and 400 blocks permanently.
%LIB-F-OPEN, Error opening DDCU:[SYS0.SYSHELP] HELPLIB.HLB %RMS-E-FLK, file currently locked by another user.	Another user is using the VMS HELP utility. When the VAXft System Services software attempts to insert its help modules, it must have sole access to the VMS help library. Ensure that no one is using the HELP Utility.
%RMS-F-PRV, No privilege for attempted operation.	You are attempting to install the VAXft System Services software without the proper privileges. If you install from the SYSTEM account, adequate privileges will be available.
%FTSS-E-VERSION, VAXft System Services requires VMS V5.4.	The operating system version is incorrect and will not support the VAXft System Services software. Enter the SHOW SYSTEM command at the DCL prompt ($) to find your version number
%FTSS-W-LICENSE, A valid license for VAXft System Services V1.0 has not been registered. %FTSS-W-NOIVP The IVP will not be run.	The Product Authorization Key (PAK) for VAXft System Services was registered incorrectly, not registered, or unloaded. The installation will be complete, but the IVP will not be run because it requires the PAK be registered correctly. When the installation is complete, register the PAK, then manually run the IVP to verify the installation.

For more information about errors related to the installation or other errors that may be relevant to your VAXft 3000 or VAXcluster system, see the *VMS System Messages and Recovery Procedures Reference Volume*, the *VAXft System Services Error Message Manual*, and the VAXft 3000 processor-specific installation and operations guides.

If the installation fails, repeat the installation procedure from the beginning.

5.1 Problem Evaluation and Reporting

If you find an error in the VAXft System Services documentation, fill out and submit the Reader's Comments form at the back of the hardcopy document in which the error was found. Include the section and page number of the error, and clearly specify the error in your response.

If an error occurs while the VAXft System Services software is being executed and you have reason to believe that the error is due to a problem with the VAXft System Services software, submit a Software Performance Report (SPR).

When you prepare to submit an SPR, do the following:

- Provide as complete a description of the problem as possible. Include the software version number, which can be found on the distribution media.
- Include any pertinent output or error message that you have found just prior to the problem. Include as much detail as possible about the events that led to the problem.

A Sample Installation Procedure Dialogue

```
Welcome to the CLOUD Cluster

username:  SYSTEM [Return]
password:     [Return]
 Welcome to VAX/VMS Version V5.4 on node XXXXX
$  SET DEFAULT SYS$UPDATE: [Return]
$  @SYS$UPDATE:VMSINSTAL FTSS010 mia7: OPTIONS N [Return]
 VAX/VMS Software Product Installation Procedure V5.4

It is 31-AUG-1991 at 15:30

Enter a question mark (?) at any time for help.
* Are you satisfied with the backup of your system disk [YES]?  YES [Return]

Please mount the first volume of the set on ddcu:.
* Are you ready?  YES [Return]
%MOUNT-I-MOUNTED, FTSS010            mounted on MIA7:

The following products will be processed:
 FTSS V1.0

    Beginning installation of FTSS V1.0 at 15:33

%VMSINSTAL-I-RESTORE, Restoring product save set A...

Release notes included with this kit are always copied to SYS$HELP.

Additional Release Notes Options:

  1. Display release notes
  2. Print release notes
  3. Both 1 and 2
  4. Copy release notes to SYS$HELP

* Select option [2]:  4 [Return]
* Do you want to continue the installation [NO]? YES [Return]
%VMSINSTAL-I-RELMOVED, The product's release notes have been
successfully moved to SYS$HELP.

VAXft System Services V1.0 Installation Procedure

         Product:       FAULT-TOLERANT-SERVICES
         Producer:      DEC
         Version:       1.0
         Release Date:  01-JUN-1990

* Does this product have an authorization key registered and loaded?  YES [Return]
* Do you want to run the IVP after the installation [YES]?  YES [Return]
* Do you want to purge files replaced by this installation [YES]?  YES [Return]

The VAXft System Services V1.0 Installation Verification
Procedure (IVP) has been provided in SYS$COMMON:[SYSTEST].  The IVP
may be invoked at any time by using the following commands:

       $ SET DEFAULT SYS$COMMON:[SYSTEST]
       $ @FTSS$IVP

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

Beginning the VAXft System Services V1.0 Installation Verification Procedure

The VAXft System Services V1.0 Installation Verification Procedure completed successfully
```

Sample Installation Procedure Dialogue

```
Installation of FTSS V1.0 completed at 15:44

VMSINSTAL procedure done at 15:45
```

B Created and Modified Files

Table B–1 lists all of the files that are created and modified during the installation of VAXft System Services, and the directories where they reside.

Table B–1 VAXft System Services Files

File Name	File Status
[SYS$LDR]CMDRIVER.EXE	New
[SYS$LDR]FTSS$CORE.EXE	New
[SYSEXE]FTSS$INIT.EXE	New
[SYSEXE]FTSS$UTIL.EXE	New
[SYSEXE]FTSS$FSM.EXE	New
[SYSEXE]FTSS$CONTROL.EXE	New
[SYSEXE]FTSS$SERVER.EXE	New
[SYSMSG]FTSS$MESSAGE.EXE	New
[SYS$STARTUP]FTSS$STARTUP.COM	New
[SYSMGR]FTSS$AUTOCONFIG.COM	New
[SYSHLP]FTSS010.RELEASE_NOTES	New
[SYSHLP]FSM.HLB	New
[SYSHLP]CONTROL.HLB	New
[SYSHLP]FTSS$DCL.HLP	Modifies SYS$HELP:HELPLIB.HLB
[SYSTEST]FTSS$IVP.COM	New

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