



**Cover Letter for OpenVMS™ AXP™ Version T6.1-FT4 Loan of Products Customers
AV-Q1Z8B-TE**

March 1994

Dear OpenVMS AXP Customer,

Enclosed is your second external field test kit for OpenVMS AXP Version T6.1-FT4 (formerly called Version T2.0). The information contained within this software kit is proprietary to Digital and is offered in confidence, subject to the terms and conditions of your OpenVMS AXP Loan of Product agreement. This software has been made available to you for your **internal use only**.

The OpenVMS AXP Version T6.1-FT4 update release provides all of the features contained in OpenVMS AXP Version T2.0-FT3, plus some additional new features and hardware support.

The following features are new in OpenVMS AXP Version T6.1-FT4:

- TMSCP Tape Serving
- Media Management Extensions
- KFMSB support for DEC 7000 and DEC 10000 systems

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Please be reminded that no discussion of measurement or performance is allowed, as specified by your OpenVMS AXP Field Test Loan of Product agreement. Violation of these terms and conditions could result in the termination of your OpenVMS AXP Field Test Loan of Product agreement.

OpenVMS Version Numbers

The version number for this second external field test release of the OpenVMS AXP operating system is Version T6.1-FT4. This release had formerly been numbered Version 2.0. The numbering scheme for OpenVMS AXP releases has changed as of this release in recognition that the OpenVMS AXP operating system has achieved essential functional equivalence with OpenVMS VAX. The final product, which will be named OpenVMS AXP Version 6.1, will be available in the second quarter of 1994. At this time, it will be functionally equivalent to the OpenVMS VAX Version 6.1 release, which is scheduled for shipment in the same timeframe.

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Kit Contents

Your OpenVMS AXP Version T6.1-FT4 update kit contains the following:

- Compact Disc (CD) with OpenVMS AXP Version T6.1-FT4
- Product Authorization Keys (PAKs)
 - OpenVMS AXP Operating System
 - DECnet End Node for OpenVMS AXP
 - DECnet Extended Function for OpenVMS AXP
 - RMS Journaling for OpenVMS AXP
 - VMScluster Software for OpenVMS AXP
 - Volume Shadowing for OpenVMS AXP

NOTE

To order the *RMS Journaling for OpenVMS Manual* use the following order number: AA-JG41C-TE.

- OpenVMS AXP Version T6.1-FT4 Documentation (hard copy)
 - OpenVMS AXP Version T6.1-FT4 Compact Disc Booklet
 - OpenVMS AXP Version T6.1-FT4 Upgrade and Installation Manual
 - OpenVMS AXP Version T6.1-FT4 Release Notes
 - OpenVMS AXP Version T6.1-FT4 Cover Letter (with Release Notes Addendum)

Mandatory Update to OpenVMS AXP Version T6.1-FT4

There is a Mandatory Update (MUP) to OpenVMS AXP Version T6.1-FT4 located on Disc 1 of the Q2CY94 FT4 *Alpha AXP Layered Products Software Library for OpenVMS*. These fixes are required for field test for a number of layered products and should be installed on all OpenVMS AXP T6.1-FT4 systems. The saveset, AXP061FT4, can be found in the directory [AXP061FT4001] and must be installed with VMSINSTAL.COM. See Appendix A for an example of the installation dialogue.

Note: The MUP requires 25000 blocks of disk space on the system disk with a peak requirement of 45000 blocks during installation. This space can be recovered after installation by purging files.

DECnet OSI T2.1-FT3

If you have installed DECnet OSI T2.1-FT3 on OpenVMS AXP T2.0-FT3, you **MUST** remove it before upgrading to OpenVMS AXP T6.1-FT4. Refer to Section 3.22.1 of the *OpenVMS AXP Version T6.1-FT4 Release Notes* for further information. Section 3.22.1 of *OpenVMS AXP Version T6.1-FT4 Release Notes* erroneously states that the OpenVMS installation procedure will remind you to remove DECnet OSI T2.1-FT3; the installation procedure does not remind you to do this.

Registering PAKs

The PAK(s) included with this cover letter extend the use of this software to July 15, 1994. If you are a new Early Support Program customer, you must install these PAK(s) appended to this cover letter. If you are an existing Early Support Program customer, these PAK(s) are the same as those you received with your *Cover Letter for OpenVMS AXP Version T2.0-FT3 Loan of Products Customers* in January 1994, except for the VMScluster and Volume Shadowing PAK(s) which are new. Layered product PAKs are included with the layered product compact disc shipment.

Accessing the Documentation

The OpenVMS AXP Version T6.1-FT4 Compact Disc (CD) contains OpenVMS documentation in the following formats:

- Files with the extension .PS are PostScript files that can be printed on a PostScript printer.

NOTE

The OpenVMS documentation in PostScript format is provided on line for OpenVMS AXP Version T6.1-FT4 only. Some documents still reference the old version numbering scheme (V2.0), but they continue to be applicable to this release. All final documentation will reference the correct version numbers. OpenVMS documentation in PostScript format will not be provided on line for the final release.

- Files with the extension .DECW\$BOOK are in Bookreader format. If you have DECwindows Motif for OpenVMS software installed, you can read these books using Bookreader.

The Bookreader documentation for OpenVMS AXP Version T6.1-FT4 is stored in the directory [DOCUMENTATION.V061.DECW\$BOOK]. Nearly all of the manuals in the OpenVMS documentation set are available in this directory.

NOTE

To access the Bookreader versions of the *OpenVMS AXP Device Support: Developer's Guide* and *Creating an OpenVMS AXP Step 2 Device Driver from an OpenVMS VAX Device Driver*, you must use Bookreader's Open Book option. Use the following procedure to do this:

1. Choose Open Book... from Bookreader's File menu. Bookreader displays the Open Book dialog box.
2. To read the *OpenVMS AXP Device Support: Developer's Guide*, type *ft4_cd*: [DOCUMENTATION.V061.DECW\$BOOK]AXP_DEVICE_DRIVER_GUIDE.DECW\$BOOK in the Selection text-entry box.

Where *ft4_cd* is the name of the device containing the T6.1-FT4 CD-ROM.

To read *Creating an OpenVMS AXP Step 2 Device Driver from an OpenVMS VAX Device Driver*, type *ft4_cd*: [DOCUMENTATION.V061.DECW\$BOOK]STEP_2_DRIVER_FROM_VAX.DECW\$BOOK in the Selection text-entry box.

Where *ft4_cd* is the name of the device containing the T6.1-FT4 CD-ROM.

3. Click on OK.
- The *OpenVMS AXP Version T6.1 Upgrade and Installation Manual* and the *OpenVMS AXP Version T6.1 Release Notes* are available in ASCII text format on the compact disc, as well as in PostScript format. The ASCII formatted versions have the following file specifications on the CD:
 - [DOCUMENTATION.V061.TXT]OPENVMS_INSTALLATION.TXT
 - [DOCUMENTATION.V061.TXT]OPENVMS_RELEASE_NOTES.TXT

These files do not contain figures that might appear in other formats, and there may be some typographical problems with the .TXT output, especially in tables.

The .PS documentation files for OpenVMS AXP Version T6.1-FT4 are stored in the directory [DOCUMENTATION.V061.POST]. Table 1 lists the contents of this directory by document and file name.

Table 1: OpenVMS AXP Version T6.1-FT4 PostScript Documentation

[DOCUMENTATION.V061.POST]

Document Name	File Name
<i>A Comparison of System Management on OpenVMS AXP and OpenVMS VAX</i>	OPENVMS_SYS_MGMT_COMPARISON.PS
<i>Building Dependable Systems: The OpenVMS Approach</i>	OPENVMS_DEPENDABLE_SYS.PS
<i>Digital Portable Mathematics Library</i>	OPENVMS_DPML.PS
<i>Creating an OpenVMS AXP Step 2 Device Driver from a Step 1 Device Driver</i>	OPENVMS_STEP_2_FROM_STEP_1.PS
<i>Creating an OpenVMS AXP Step 2 Device Driver from an OpenVMS VAX Device Driver</i>	STEP_2_DRIVER_FROM_VAX.PS
<i>OpenVMS AXP Device Support: Developer's Guide</i>	AXP_DEVICE_DRIVER_GUIDE.PS
<i>OpenVMS AXP Device Support: Reference</i>	OPENVMS_DEVICE_SUPPORT_REF.PS
<i>OpenVMS AXP System Dump Analyzer Utility Manual</i>	OPENVMS_SDA.PS
<i>OpenVMS AXP Version 6.1 New Features Manual</i>	OPENVMS_NEW_FEATURES.PS
<i>OpenVMS AXP Version T6.1 Release Notes</i>	OPENVMS_RELEASE_NOTES.PS
<i>OpenVMS AXP Version T6.1 Upgrade and Installation Manual</i>	OPENVMS_INSTALLATION.PS
<i>OpenVMS Calling Standard</i>	OPENVMS_CALLING_STD.PS
<i>OpenVMS Debugger Manual</i>	OPENVMS_DEBUGGER.PS
<i>OpenVMS DCL Dictionary: A-M</i>	OPENVMS_DCL_DICT_1.PS
<i>OpenVMS DCL Dictionary: N-Z</i>	OPENVMS_DCL_DICT_2.PS
<i>OpenVMS Guide to System Security</i>	OPENVMS_SECURITY_GUIDE.PS
<i>OpenVMS License Management Utility Manual</i>	OPENVMS_LICENSE_MGMT.PS
<i>OpenVMS Programming Concepts Manual</i>	OPENVMS_PROG_CONCEPTS.PS
<i>OpenVMS Programming Environment Manual</i>	OPENVMS_PROG_ENV.PS
<i>OpenVMS Programming Interfaces: Calling a System Routine</i>	OPENVMS_PROG_INTERFACES.PS
<i>OpenVMS RTL Library (LIB\$) Manual</i>	OPENVMS_RTL.PS
<i>OpenVMS Software Overview</i>	OPENVMS_SOFTWARE_OVERVIEW.PS
<i>OpenVMS System Management Utilities Reference Manual: A-L</i>	OPENVMS_SYS_MGMT_UTILS_1.PS
<i>OpenVMS System Management Utilities Reference Manual: M-Z</i>	OPENVMS_SYS_MGMT_UTILS_2.PS
<i>OpenVMS System Manager's Manual: Essentials</i>	OPENVMS_SYS_MGR_1.PS
<i>OpenVMS System Manager's Manual: Tuning, Monitoring, and Complex Systems</i>	OPENVMS_SYS_MGR_2.PS
<i>OpenVMS System Services Reference Manual: A-GETMSG</i>	OPENVMS_SYS_SERVICES_1.PS

Table 1 (Cont.): OpenVMS AXP Version T6.1-FT4 PostScript Documentation

[DOCUMENTATION.V061.POST]

Document Name	File Name
<i>OpenVMS System Services Reference Manual: GETQUI-Z</i>	OPENVMS_SYS_SERVICES_2.PS
<i>POLYCENTER Software Installation Utility User's Guide</i>	OPENVMS_PCSI_USER_GUIDE.PS
<i>OpenVMS Utility Routines Manual</i>	OPENVMS_UTIL_ROUTINES.PS
<i>VMScluster Systems for OpenVMS</i>	OPENVMS_CLUSTERS.PS
<i>Volume Shadowing for OpenVMS</i>	OPENVMS_VOLUME_SHADOW.PS
<i>Volume Shadowing Installation Manual</i>	VOLUME_SHADOWING_INSTALLATION.PS
<i>Volume Shadowing Release Notes</i>	VOLUME_SHADOWING_INSTALL_RELNOTES.PS

New Installation Procedure

OpenVMS AXP Version T6.1-FT4 includes the same new menu-driven installation procedure as OpenVMS AXP T2.0-FT3. This procedure uses the POLYCENTER Software Installation utility, which is included as part of the operating system. **This method of installation is different from the method used to install any previous version of the OpenVMS operating system.** This new procedure, which starts as soon as you boot the OpenVMS AXP Version T6.1-FT4 kit, lets you choose menu options to perform the following tasks:

- Install or upgrade the operating system, using the POLYCENTER Software Installation utility
- Enter a DCL environment, from which you can perform backup and restore operations on the system disk
- Shut down the system

See the *OpenVMS AXP Version T6.1 Upgrade and Installation Manual* for more details.

Upgrade Notes

Before upgrading to OpenVMS AXP Version T6.1-FT4, note the following points:

- A problem in OpenVMS AXP Version T2.0-FT3 prevents the T6.1-FT4 CD-ROM from being mounted. The following error message will be displayed:

```
%MOUNT-F-FILESTRUCT, unsupported file structure level
```

This problem is corrected in OpenVMS AXP Version T6.1-FT4. If you are currently running OpenVMS AXP Version T2.0-FT3, you will need to upgrade to Version T6.1-FT4 before you can access the documentation on that CD-ROM.
- If the system being upgraded is in a VMScluster, dismount the target system disk from any nodes that are using it as a data disk, and shut down any nodes using it as a system disk.
- The OpenVMS AXP Version T6.1-FT4 operating system supports upgrades from OpenVMS AXP Version 1.5 and 1.5-1H1, with or without Volume Shadowing for OpenVMS installed, and from earlier field test versions of OpenVMS AXP Version T6.1-FT4.

When upgrading with Volume Shadowing for OpenVMS, note the following corrections to the *OpenVMS AXP Version 6.1 Upgrade and Installation Manual*:

- Do not remove the settings in MODPARAMS.DAT which enable Volume Shadowing and do not add the SYSGEN setting that you use during the preupgrade procedure to disable

Volume Shadowing. (That will ensure that Volume Shadowing is enabled automatically when AUTOGEN runs at the end of the upgrade procedure.)

- You do not need to mount the target system disk and erase the Volume Shadowing information, as suggested in Chapter 5 of the *OpenVMS AXP Version 6.1-FT4 Upgrade and Installation Manual*. (At that point in the procedure, the disk is already mounted and shadowing is disabled).
- Because you did not remove the settings in MODPARAMS.DAT which enable Volume Shadowing, you do not need to perform the tasks described in Chapter 8 of the *OpenVMS AXP Version 6.1-FT4 Upgrade and Installation Manual*.

Digital Layered Product and Application Compatibility

Table 2 lists the versions of Digital layered products that are supported for OpenVMS AXP Version T6.1-FT4. These software applications are all included on the Q2CY94 FT4 Alpha AXP Layered Products Software Library for OpenVMS compact disc.

Table 2: Digital Layered Products Compatible with OpenVMS AXP T6.1-FT4

Product Name	Version
CDD/Administrator for OpenVMS AXP	1.2
CDD/Repository for OpenVMS AXP Systems	5.3
DEC ACA Services for OpenVMS AXP (Development)	2.1A
DEC ACA Services for OpenVMS AXP (Run-Time)	2.1A
DEC ACMS for OpenVMS AXP (Development)	4.0
DEC ACMS for OpenVMS AXP (Remote)	4.0
DEC ACMS for OpenVMS AXP (Run-Time)	4.0
DEC Ada for OpenVMS AXP Systems	3.0A
DECadmire for OpenVMS AXP	2.0
DEC BASIC for OpenVMS AXP	1.0
DEC C for OpenVMS AXP Systems	1.4
DEC C++ for OpenVMS AXP Systems	1.3A
DEC COBOL for OpenVMS AXP Systems	2.0
DEC Code Management System (CMS) for OpenVMS AXP Systems	3.6
DEC Data Distributor for OpenVMS AXP	6.0
DEC DATATRIEVE for OpenVMS AXP Systems	6.1
DEC DATATRIEVE/Japanese for OpenVMS AXP	6.1
DEC DB Integrator for DBMS OpenVMS AXP	1.0
DEC DB Integrator Gateway for Custom Drivers for OpenVMS AXP	3.0
DEC DB Integrator Gateway for RMS for OpenVMS AXP	3.0
DEC DBMS for OpenVMS AXP (Development)	6.0
DEC DBMS for OpenVMS AXP (Run-Time)	6.0
DEC Distributed Computing Services for OpenVMS	1.0
DEC Distributed Queuing Service for OpenVMS AXP	1.2
DEC FMS for OpenVMS AXP (Development)	2.4
DEC FMS for OpenVMS AXP (Run-Time)	2.4
DEC FMS/Japanese for OpenVMS AXP (Development)	2.4

Table 2 (Cont.): Digital Layered Products Compatible with OpenVMS AXP T6.1-FT4

Product Name	Version
DEC FMS/Japanese for OpenVMS AXP (Run-Time)	2.4
DEC FMS/Hebrew for OpenVMS AXP (Development)	2.4
DEC FMS/Hebrew for OpenVMS AXP (Run-Time)	2.4
DEC FMS/Hangul for OpenVMS AXP (Development)	2.4
DEC FMS/Hangul for OpenVMS AXP (Run-Time)	2.4
DECforms Run-time Systems for OpenVMS AXP	1.4B
DECforms /Hanyu for OpenVMS AXP (Run-Time)	1.4A
DECforms /Hangul for OpenVMS AXP (Run-Time)	1.4A
DECforms /Thai for OpenVMS AXP (Run-Time)	1.4A
DEC Fortran for OpenVMS AXP Systems	6.2
DEC GKS for OpenVMS AXP Systems (Development)	5.3
DEC GKS for OpenVMS AXP Systems (Run-Time)	5.3
DEC GKS/Japanese for OpenVMS AXP (Development)	5.2
DEC GKS/Japanese for OpenVMS AXP (Run-Time)	5.2
DEC Language-Sensitive Editor/Source Code Analyzer for OpenVMS AXP Systems	4.2
DECmigrate for OpenVMS AXP Systems	1.1
DEC Module Management System (MMS) for OpenVMS AXP Systems	2.7
DECnet SNA 3270 Terminal Emulator for OpenVMS	1.5
DECnet SNA Application Programming Interface for OpenVMS	2.3
DECnet SNA 3270 Data Stream Programming Interface for OpenVMS	1.4
DECnet SNA Gateway for Channel Transport	2.1
DECnet SNA Gateway for Synchronous Transport	1.2
DECnet SNA APPC/LU6.2 Programming Interface for OpenVMS	2.2
DECnet SNA Data Transfer Facility for OpenVMS (Server)	3.1
DECnet SNA Data Transfer Facility for OpenVMS (Utility)	3.1
DECnet SNA Remote Job Entry for OpenVMS	1.4
DECnet SNA Printer Emulator for OpenVMS	1.2
DECnet/OSI for OpenVMS Alpha AXP	5.7
DEC Notes For OpenVMS AXP Systems	2.5
DEC Open3D for OpenVMS AXP	2.2
DEC OPS5 for OpenVMS	4.0A
DEC Pascal for OpenVMS AXP Systems	5.2
DEC Performance and Coverage Analyzer (PCA) for OpenVMS AXP	4.2
DEC PHIGS for OpenVMS AXP Systems (Development)	2.5
DEC PHIGS for OpenVMS AXP Systems (Run-Time)	2.5
DEC PHIGS/Japanese for OpenVMS AXP (Development)	2.4A
DEC PHIGS/Japanese for OpenVMS AXP (Run-Time)	2.4A
DEC PL/1 for OpenVMS AXP Systems	4.0
DECprint Supervisor/Japanese for OpenVMS	1.0
DECprint Supervisor (DCPS) for OpenVMS	1.0B
DEC RALLY for OpenVMS AXP Systems (Development)	4.0

Table 2 (Cont.): Digital Layered Products Compatible with OpenVMS AXP T6.1-FT4

Product Name	Version
DEC RALLY for OpenVMS AXP Systems (Run-Time)	4.0
DECram for OpenVMS	2.1
DEC Rdb for OpenVMS AXP (Standard)	6.0
DEC Rdb for OpenVMS AXP (Multiversion)	6.0
DEC Rdb/Hangul for OpenVMS/Hangul AXP	5.1
DEC Rdb/Hanyu for OpenVMS/Hanyu AXP	5.1
DEC Rdb/Japanese for OpenVMS AXP	5.1
DEC RdbExpert for OpenVMS AXP	2.1
DEC Reliable Transaction Router for OpenVMS AXP (Back End)	2.2
DEC Reliable Transaction Router for OpenVMS AXP (Front End)	2.2
DECserver Network Access Software	1.3
DECset for OpenVMS AXP Systems	11.2-1
DEC TCP/IP Services for OpenVMS AXP	3.1
DEC TCP/IP Services/Japanese for OpenVMS AXP	3.0
DEC Test Manager for OpenVMS AXP Systems	3.5
DECtp DESKtop for ACMS	2.0
DECtrace for OpenVMS	2.1
DEC X.25 Client for OpenVMS AXP Systems	1.1
DECwindows DECnet SNA 3270 Terminal Emulator for OpenVMS	2.0
DECwindows Motif for OpenVMS AXP	1.2
DECwindows Motif/Hangul for OpenVMS AXP	1.1
DECwindows Motif/Hanyu for OpenVMS AXP	1.1
DECwindows Motif/Hebrew for OpenVMS AXP	1.1
DECwindows Motif/Japanese for OpenVMS AXP	1.1
DECwindows Motif OpenVMS User Interface/Cesky	1.1A
DECwindows Motif OpenVMS User Interface/Francais	1.1
DECwindows Motif OpenVMS User Interface/Deutsch	1.1
DECwindows Motif OpenVMS User Interface/Japanese	1.1
DECwindows Motif OpenVMS User Interface/Magyar	1.1A
DECwindows Motif OpenVMS User Interface/Italiano	1.1
DECwindows Motif OpenVMS User Interface/Polski	1.1A
DECwindows Motif OpenVMS User Interface/Russkij	1.1A
DECwindows Motif OpenVMS User Interface/Slovensky	1.1A
DECwindows Motif OpenVMS User Interface/Espanol	1.1
DECwindows Motif OpenVMS User Interface/Svenska	1.1
DECwrite for OpenVMS AXP	3.0
Digital Extended Math Library for OpenVMS AXP (Development)	2.7
MACRO-64 Assembler for OpenVMS AXP Systems	1.1
MUXserver 320/380/90 Remote Terminal	2.0
PATHWORKS for OpenVMS	5.0A
POLYCENTER Capacity Planner for OpenVMS	2.1

Table 2 (Cont.): Digital Layered Products Compatible with OpenVMS AXP T6.1-FT4

Product Name	Version
POLYCENTER Software Distribution	3.0
POLYCENTER Accounting Chargeback for OpenVMS	2.1
POLYCENTER Performance Data Collector for OpenVMS	2.1
POLYCENTER Performance Advisor	2.1
POLYCENTER Scheduler for OpenVMS AXP	2.1A
X.25 for OpenVMS AXP Systems	1.0

VMScluster System Notes

The following guidelines for VMScluster configurations are for the external field test of OpenVMS AXP Version T6.1-FT4:

- OpenVMS AXP Version T6.1-FT4 will coexist in a VMScluster with OpenVMS AXP Version 1.5, and in a dual-architecture VMScluster with OpenVMS VAX Version 5.5-2, Version 6.0, or Version 6.1.
- The total number of processors (VAX and AXP combined) in a VMScluster may not exceed 96. Of this total, there may be no more than: 50 DEC 2000 or DEC 3000 systems, and 16 DEC 4000, DEC 7000, or DEC 10000 systems
- A maximum of 4 LAN adapters can be configured in an AXP processor.
- VMScluster support for FDDI interconnect is available for the complete range of AXP processors; however, booting from all FDDI controllers is not yet supported.
- A maximum of 16 VAX and AXP processors (combined total) may be configured on a star coupler. Any number storage controllers may be configured on a star coupler.
- Any number of star couplers may be configured in a VMScluster system.
- OpenVMS AXP systems can satellite boot OpenVMS VAX systems and vice versa. This feature is supported between the OpenVMS VAX Version 6.1 field test Sanity Kit and OpenVMS AXP Version T6.1-FT4. Please refer to the *VMScluster Systems for OpenVMS* manual for details.
- VAX and AXP systems cannot share a system disk. Architecture and version specific system disks are required.

DECamds

The DECamds Version 6.1 kit is now included with the base OpenVMS operating system kit as a separately installable POLYCENTER Software Installation utility kit. DECamds is a real-time monitoring, investigation, diagnostic, and software correction tool to assist system managers and system integrators in improving system availability on OpenVMS systems. The binaries and documentation are in the [AMDS061] directory. DECamds is enabled with the VMScluster license.

DECamds is comprised of two components: the DECamds console application and the DECamds data collecting driver. The console application requires a VAX-based DECwindows Motif system (for example, a VAX workstation, or VAX system with an X terminal). DECamds data collecting drivers are provided for OpenVMS Version 6.1 VAX and AXP systems. Further information about DECamds kits is provided in the *OpenVMS AXP Version 6.1 Release Notes*. For information on how to install and use DECamds, refer to the *DECamds User's Guide*.

VMScluster Security

Note that VMScluster systems require a single security domain. A single security domain enforces security by providing authorization information and object security profiles that are consistent across all nodes in the cluster.

The OpenVMS operating system cannot enforce a level of separation needed to support different security domains on separate cluster members. Therefore, the OpenVMS VAX and OpenVMS AXP operating systems do not support multiple security domains.

Device Support on OpenVMS AXP

OpenVMS AXP Version T6.1-FT4 supports user-written device drivers and a new device driver interface known as the Step 2 driver interface, which replaces the temporary Step 1 driver interface that was provided in OpenVMS AXP Versions 1.0 and 1.5. The Step 2 driver interface provides support for writing device drivers in the C programming language or another high-level language and that can conform to the OpenVMS AXP calling standard. An example device driver written in C is provided in the SYS\$EXAMPLES directory.

Starting with the OpenVMS AXP Version T6.1 release, Step 1 driver interfaces are no longer available and Step 1 drivers are not loadable. Source changes are required to convert a Step 1 driver to a Step 2 driver. For detailed information about how to convert a Step 1 driver to a Step 2 driver, see *Creating an OpenVMS AXP Step 2 Device Driver from a Step 1 Device Driver* and *OpenVMS AXP Device Support: Reference*.

Note that you must recompile and relink any Step 2 driver that was compiled and linked on OpenVMS AXP Version T2.0-FT3 to load it successfully on OpenVMS AXP Version T6.1-FT4. If you attempt to load a Step 2 driver that was compiled and linked on OpenVMS AXP Version T2.0-FT3, the System Management utility (SYSMAN) will issue a warning message, and the driver will not be loaded.

The following AXP device support manuals are available for FT4:

- *Creating an OpenVMS AXP Step 2 Device Driver from a Step 1 Device Driver*
- *Creating an OpenVMS AXP Step 2 Device Driver from an OpenVMS VAX Device Driver*

This is a new book for OpenVMS AXP Version T6.1-FT4. For information about accessing the Bookreader version of this book, refer to the "Accessing the Documentation" section of this cover letter.

- *OpenVMS AXP Device Support: Developer's Guide*

For information about accessing the Bookreader version of this book, refer to the "Accessing the Documentation" section of this cover letter.

- *OpenVMS AXP Device Support: Reference*

Volume Shadowing

Volume Shadowing for OpenVMS AXP Version 6.1 is included on the OpenVMS AXP Version T6.1-FT4 compact disc. Do not install Volume Shadowing for OpenVMS AXP Version 1.5, which was included on the Stage 5 Layered Product CD-ROM, on this field test release of the OpenVMS AXP operating system.

Performance Monitoring Software

The Monitoring Performance History software (MPH) is a tool that collects information (such as error logs, crash dump summaries, configuration, and performance data) from the system it is installed on. This data is transmitted back to Digital and used with other site's data to form reliability profiles. For example, meantime-between-crash (MTBCr) and meantime-between-system-interruption (MTBSi). For more information, please refer to the system management release notes. Digital asks you to install this software after you have installed or upgraded your system.

Firmware Tested

Table 3 lists the supported firmware versions for OpenVMS AXP Version T6.1-FT4. While it is possible to run OpenVMS AXP T6.1-FT4 on earlier versions of firmware, you should upgrade your firmware as quickly as possible to the supported versions to pick up critical bug fixes.

Table 3: Supported Firmware for OpenVMS AXP T6.1

System	Console	PALcode
DECpc AXP 150	V1.2	5.47
DEC 2000 Model 300	V1.2	5.47
DEC 3000 Model 300	V3.2	5.47
DEC 3000 Model 400	V3.2	5.47
DEC 3000 Model 500	V3.2	5.47
DEC 3000 Model 600	V3.2	5.47
DEC 3000 Model 800	V3.2	5.47
DEC 4000	V3.3	5.47
DEC 7000	V3.1	5.47
DEC 10000	V3.1	5.47

We recommend updating the firmware before performing the upgrade to OpenVMS AXP Version T6.1-FT4.

Field Test Kit Schedule

Field Test of OpenVMS AXP Version 6.1 is scheduled to end on April 15, 1994.

Support

For OpenVMS operating system issues or hardware issues, please call the Colorado Support Center (CSC) at 800-354-9000. For customers who are outside of the United States, please contact your local Digital account representative.

Appendix A

Example Installation of AXP061FT4 saveset

This is an example of the installation dialogue for the Mandatory Update to OpenVMS AXP Version T6.1-FT4. The Mandatory Update kit includes fixes that are required to field test a number of layered products and should be installed on all OpenVMS AXP Version T6.1-FT4 systems.

```
$ @sys$update:vmsinstal
```

```
OpenVMS AXP Software Product Installation Procedure T6.1-FT4
```

```
It is 18-FEB-1994 at 17:01.
```

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

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

```
* Where will the distribution volumes be mounted: DKA0:
```

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

```
* Products: AXP061FT4
```

```
* Enter installation options you wish to use (none):
```

```
Please mount the first volume of the set on DKA0:.
```

```
* Are you ready? Y
```

```
%MOUNT-I-MOUNTED, AXPVMSX61FT4 mounted on _DKA0:
```

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

```
AXP061FT4 V0.1
```

```
Beginning installation of AXP061FT4 T0.1 at 17:02
```

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

```
To complete the installation of this product, you must reboot the system. If it is not convenient to reboot at this time, then enter NO to the following question. The installation of this kit will continue and the files moved to their appropriate locations without forcing the system to reboot upon completion of the installation. The system can then be rebooted at some more convenient time to actually have this update take effect.
```

```
Entering YES will cause the system to automatically reboot upon the installation of this kit.
```

```
* Will you allow a system shutdown after this product is installed? [YES]:
```

```
* How many minutes for system shutdown [7]:
```

```
No more questions will be asked ...
```

```
Now applying AXP061FT4001 ...
```

- 0) CMA\$RTL (new image)
- 1) DEC\$COBRTL (new image)
- 2) DEC\$FORRTL (new image)
- 3) DECC\$SHR (new image)
- 4) DPML\$SHR (new image)
- 5) INIT\$SHR (new image)
- 6) IO_ROUTINES (new file)
- 7) IO_ROUTINES (new image)

- 8) IO_ROUTINES_MON (new file)
- 9) IO_ROUTINES_MON (new image)
- 10) LIBOTS2 (new image)
- 11) LIBRTL (new image)
- 12) SECURITY (new file)
- 13) SECURITY (new image)
- 14) STARLET (miscellaneous fix)
- 15) SYSSERDRIVER (new image)
- 16) SYMSG (new image)
- 17) VMS\$IEEE_HANDLER (new image)
- 18) VMS\$INSTALL_UPG_DATA (new file)

```
%VMSINSTAL-I-MOVEFILES, Files will now be moved to their target directories...
%INSTALL-E-NODELSHRADR, unable to delete image with shareable address data
-INSTALL-I-PLSREBOOT, please reboot to install a new version of this image
%INSTALL-E-NODELSHRADR, unable to delete image with shareable address data
-INSTALL-I-PLSREBOOT, please reboot to install a new version of this image
%INSTALL-E-NODELSHRADR, unable to delete image with shareable address data
-INSTALL-I-PLSREBOOT, please reboot to install a new version of this image
```

Installation of AXP061FT4 T0.1 completed at 17:06

Adding history entry in VMI\$ROOT:[SYSUPD]VMSINSTAL.HISTORY

Creating installation data file: VMI\$ROOT:[SYSUPD]AXP061FT4001.VMI_DATA

%VMSINSTAL-I-SHUTDOWN, This product requires that the system be rebooted.

This system will shutdown in 7 minutes WITHOUT an automatic reboot.

If you wish to do an immediate shutdown and reboot, type CTRL/Y and initiate the shutdown manually.

The installation will not be complete until a system reboot.

SHUTDOWN -- Perform an Orderly System Shutdown

%SHUTDOWN-I-BOOTCHECK, performing reboot consistency check...

%SHUTDOWN-I-CHECKOK, basic reboot consistency check completed

...

NOTE

The "%INSTALL-E-NODELSHRADR" errors are expected and can be ignored if the system is immediately rebooted.

OpenVMS AXP Version T6.1-FT4 Release Notes Addendum

Auditing—New Events

The system can now audit ill-formed internal calls (identified by `NSA$M_INTERNAL`) to the `$AUDIT_EVENT`, `$CHECK_PRIVILEGE`, `$CHKPRO`, or `$CHECK_ACCESS` system service. These events indicate that some privileged code (having at least `AUDIT` privilege) has failed to properly audit some event. This may be a serious problem for managing system security, but does not indicate a breach in system security.

This auditing can be controlled using the `AUDIT=ILLFORMED` keywords with `SET AUDIT /ENABLE` or `/DISABLE` commands. See the *OpenVMS DCL Dictionary* for information on `SET AUDIT`.

OpenVMS AXP System-Code Debugger

The following notes pertain to the OpenVMS AXP System-Code Debugger.

Multiprocessing Systems

The OpenVMS AXP System-Code Debugger does not operate reliably when the target system is a multiprocessor. In particular, if a breakpoint is executed on a processor other than the primary processor, the connection to the host often fails. To work around the problem, disable multiprocessing using the system parameter `MULTIPROCESSING`. This problem will be fixed for the final release of OpenVMS AXP Version 6.1.

New Network Protocol

Effective with FT4 of OpenVMS AXP, the network protocol for the OpenVMS AXP System-Code Debugger has changed from Ethernet format to IEEE format. This means that you will not be able to connect to an FT4 target from an FT3 host, or vice versa.

Audio Editor in DECwindows Mail

The Audio Editor in DECwindows Mail is not usable on systems running DECwindows Motif Version 1.1 and OpenVMS AXP T6.1-FT4. The following error message is displayed when you attempt to create a new mail message with the Audio Editor:

```
Application Interface library error 0
```

To eliminate this problem, install the DECwindows Motif Version 1.2 kit included with this OpenVMS AXP T6.1-FT4 release.

F\$GETDVI—New Return Item

The `F$GETDVI` lexical function has added the `DEVICE_TYPE_NAME` item to the list of items returned. This item returns a string indicating the name of the device type.

Serving Floppy Disks on DEC 2000 Systems

Effective with the final release of OpenVMS AXP Version 6.1, serving of floppy disks will not be supported for DEC 2000 systems.

System Parameter PIOPAGES—Default Value

The default value for the system parameter PIOPAGES has been increased to 336 pages. RMS buffers and data structures for process-permanent files (for example, SYS\$INPUT) and files opened by the DCL command OPEN are allocated from PIOPAGES. The value of the system parameter PIOPAGES thus can affect the number of such files that can be opened at any one time from a single process. The new default value of 336 PIOPAGES has been chosen to support approximately the same number of concurrently open process-permanent and DCL-opened files under OpenVMS AXP Version 6.1 as was supported under earlier versions of OpenVMS.

The exact number of such concurrently open files depends on the buffer size associated with the files, as well as other factors in your environment. The buffer size for indexed and relative files is determined by the maximum bucket size for each file, and for sequential files by the multiblock count. For example, with PIOPAGES set to 336 in OpenVMS AXP Version 6.1, you should be able to open, in addition to the process-permanent files (SYS\$INPUT, SYS\$OUTPUT, SYS\$COMMAND, SYS\$ERROR), the following maximum number of local indexed files:

Bucket Size	Maximum Files
63	1
32	2
16	4
8	8
4	13
2	18
1	22

For PIOPAGES of 336, the maximum number of concurrently open remote files is 15, regardless of buffer size.

You may get different results depending on the particular mix of file organizations and buffer sizes present in your DCL environment. The preceding figures are approximate, and are intended only as a guide.

New SYSMAN Commands: IO SET EXCLUDE and IO SHOW EXCLUDE

A new feature in SYSMAN allows you to permanently exclude certain devices from the autoconfiguration.

Some SCSI devices, especially optical devices, do not fully follow the SCSI standard. As a result, the system autoconfigures these devices as disks (for example, DKC500). This autoconfiguration prevents you from using an alternate class driver to manage the device. Excluding the device as a disk allows you to configure it later in startup. (You usually do this in SYCONFIG.COM.)

Note that autoconfiguration is not a problem on standalone systems on which Volume Shadowing is not running, because you can use the IO AUTOCONFIGURE/EXCLUDE command. In a cluster, or with Volume Shadowing turned on, you must configure all devices that might be disks much earlier in the boot process, well before SYCONFIG.COM is invoked. However, you can use the new permanent exclusion list created with IO SET EXCLUDE in both clustered and nonclustered systems, with or without Volume Shadowing.

FOR OPENVMS AXP T6.1-FT4 ONLY

If the Open3D layered product is installed for the first time on OpenVMS AXP T6.1-FT4, you must issue the SYSMAN command IO SET EXCLUDE="" if you have not previously entered a non-null permanent exclusion string.

IO SET EXCLUDE

Sets the permanent exclusion list to be used when configuring devices automatically.

Format

```
IO SET EXCLUDE = (device_name)
```

Parameter

device_name

Specifies the device type to be excluded from automatic configuration. Use valid device names or mnemonics that indicate the devices to be included in the permanent exclusion list. You can specify wildcards.

Description

Sets the permanent exclusion list to be used when configuring devices.

Example

```
SYSMAN> IO SET EXCLUDE=(DKC500,DKD*)
```

This example specifies that DKC500 and all DKD devices are not to be autoconfigured.

Refer to the /SELECT qualifier of the SYSMAN command IO AUTOCONFIGURE in the *OpenVMS System Management Utilities Reference Manual* for additional examples that show how to specify device names.

IO SHOW EXCLUDE

Displays the permanent exclusion list used in the autoconfiguration of devices.

Format

```
IO SHOW EXCLUDE
```

Description

The **IO SHOW EXCLUDE** command displays the permanent exclusion list on the console. This list is used in the autoconfiguration of devices.

Example

```
SYSMAN> IO SHOW EXCLUDE
%SYSMAN-I-IOEXCLUDE, the current permanent exclusion list is: DKC500,DKD*
```

This example shows the permanent exclusion list used in the autoconfiguration of devices; the current list contains DKC500 and all DKD devices.

SCSI Disk Problem Involving Shadowing Fixed in FT4

In the V1.5 release of Volume Shadowing on OpenVMS AXP, there was a problem with shadowing SCSI devices connected locally to the same AXP host. Local SCSI disks could not be included in the same shadow set without causing system crashes and other types of failures. This has been fixed in FT4 of OpenVMS AXP V6.1.

Before this fix was made, customers were requested to only include SCSI disks in a shadow set when the SCSI disks were connected to different AXP CPUs in the same cluster or when the SCSI disks were MSCP served from VAX and AXP CPUs in the same cluster.

----- TM
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 Product Name: OPENVMS-ALPHA
 Producer: DEC

NUMBER OF UNITS:

 Number of units: 0

KEY LEVEL:

 Version:
 Product Release Date:

KEY TERMINATION DATE:

 Key Termination Date: 15-JUL-1994

RATING:

 Availability Table Code:
 Activity Table Code: CONSTANT=100

MISCELLANEOUS:

 Key Options:
 Product Token:
 Hardware-Id:
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 Producer: DEC

NUMBER OF UNITS:

 Number of units: 0

KEY LEVEL:

 Version:
 Product Release Date:

KEY TERMINATION DATE:

 Key Termination Date: 15-JUL-1994

RATING:

 Availability Table Code:
 Activity Table Code: CONSTANT=100

MISCELLANEOUS:

 Key Options:
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PRODUCT ID:
 Product Name: DVNETEXT
 Producer: DEC

NUMBER OF UNITS:
 Number of units: 0

KEY LEVEL:
 Version:
 Product Release Date:

KEY TERMINATION DATE:
 Key Termination Date: 15-JUL-1994

RATING:
 Availability Table Code:
 Activity Table Code: CONSTANT=100

MISCELLANEOUS:
 Key Options:
 Product Token:
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PRODUCT ID:
 Product Name: RMSJNL
 Producer: DEC

NUMBER OF UNITS:
 Number of units: 0

KEY LEVEL:
 Version:
 Product Release Date:

KEY TERMINATION DATE:
 Key Termination Date: 15-JUL-1994

RATING:
 Availability Table Code:
 Activity Table Code: CONSTANT=100

MISCELLANEOUS:
 Key Options:
 Product Token:
 Hardware-Id:
 Checksum: 2-BCPC-CIAI-BHLC-COMI

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PAK ID:
 Issuer: DEC
 Authorization Number: CBPTMP014116

PRODUCT ID:
 Product Name: VOLSHAD
 Producer: DEC

NUMBER OF UNITS:
 Number of units: 0

KEY LEVEL:
 Version:
 Product Release Date:

KEY TERMINATION DATE:
 Key Termination Date: 30-JUN-1994

RATING:
 Availability Table Code:
 Activity Table Code: CONSTANT=100

MISCELLANEOUS:
 Key Options:
 Product Token:
 Hardware-Id:
 Checksum: 2-AKHJ-OGDC-PAFO-LHMJ
