

VSI OpenVMS

DECwindows Motif for OpenVMS Installation Guide

Document Number: DO-DDWINS-01A

Publication Date: December 2021

Revision Update Information: This is a new manual.

Operating System and Version: VSI OpenVMS Integrity Version 8.4-1H1
VSI OpenVMS Alpha Version 8.4-2L1

Software Version: VSI DECwindows Motif for OpenVMS Version 1.7F

DECwindows Motif for OpenVMS Installation Guide



VMS Software

Copyright © 2021 VMS Software, Inc. (VSI), Burlington, Massachusetts, USA

Legal Notice

Confidential computer software. Valid license from VSI required for possession, use or copying. Consistent with FAR 12.211 and 12.212, Commercial Computer Software, Computer Software Documentation, and Technical Data for Commercial Items are licensed to the U.S. Government under vendor's standard commercial license.

The information contained herein is subject to change without notice. The only warranties for VSI products and services are set forth in the express warranty statements accompanying such products and services. Nothing herein should be construed as constituting an additional warranty. VSI shall not be liable for technical or editorial errors or omissions contained herein.

HPE, HPE Integrity, HPE Alpha, and HPE Proliant are trademarks or registered trademarks of Hewlett Packard Enterprise.

Preface	v
1. About VSI	v
2. Intended Audience	v
3. Document Structure	v
4. Associated Manuals	v
5. VSI Encourages Your Comments	v
6. Open VMS Documentation	vi
7. Conventions	vi
Chapter 1. Preparing to Install the Software	1
1.1. Hardware and Memory Requirements	1
1.2. Required Operating System Software	1
1.3. License Requirements	3
1.3.1. For OpenVMS Alpha Systems	3
1.3.2. For OpenVMS I64 Systems	3
1.4. Saving OSF/Motif Release 1.1.3 and XUI Programming Files	3
1.5. Saving Customized Bookreader Files	4
1.6. Installation Procedure Requirements	5
1.6.1. Process Account Quotas	5
1.6.2. Disk Space	5
1.6.3. System Parameters	8
1.6.4. Backing Up Your System Disk	9
1.6.5. Notifying Other Users	9
Chapter 2. Using the POLYCENTER Software Installation Utility	11
2.1. Accessing Help Information	11
2.2. Extracting and Printing the Product Release Notes	12
2.3. Installing the VSI DECwindows Motif for OpenVMS Software	12
2.3.1. Starting the Installation	12
2.3.2. The Installation Dialog	13
2.3.2.1. Saving the Programming Environment (Alpha Only)	15
2.3.2.2. Default Installation	15
2.3.2.3. LBX Proxy Installation	15
2.3.2.4. Selecting Installation of Client Software	16
2.3.2.5. Asking About Selecting a Desktop	16
2.3.2.6. Programming Language Support Options	17
2.3.2.7. Translated Image Support (Alpha Only)	18
2.3.2.8. Language Variants Notice	18
2.3.2.9. Reviewing the Installation Options	18
2.3.2.10. Execution Dialog	19
2.3.2.11. Verifying VSI DECwindows Motif for OpenVMS Support Files	19
2.3.2.12. Reviewing Final Installation Notes	20
2.4. Recovering from Errors	21
2.5. Adjusting Parameters After Installation	21
Chapter 3. After Installing the Software	23
3.1. Starting the VSI DECwindows Motif for OpenVMS Software	23
3.2. Running the IVP	23
3.2.1. Starting the Procedure	23
3.2.2. Display-Oriented Tests	24
3.2.3. LBX Proxy Tests	25
3.2.4. Nondisplay-Oriented Tests	26
3.3. Choosing a Console	26

3.3.1. On OpenVMS Alpha Systems	26
3.3.2. On OpenVMS I64 Systems	26
3.4. Selecting the Desktop	27
3.5. System Maintenance Procedures	27
3.5.1. Checking a System Parameter Value with SYSGEN	27
3.5.2. Calculating the Number of Free Global Pages and Global Sections	28
3.5.3. Setting the Size of the Page File	28
3.5.4. Changing System Parameter Values Using the AUTOGEN Utility	29
Chapter 4. Managing VSI DECwindows Motif for OpenVMS Software	31
4.1. Customizing the DECwindows X Display Server Startup Procedure	31
4.2. Adding DECwindows Base-Support Files	31
4.3. Determining and Reporting Problems	32
Appendix A. POLYCENTER Software Installation Utility Sample Installation	33
A.1. Sample PCSI Installation on an OpenVMS I64 System	33
A.2. Sample PCSI Installation on an OpenVMS Alpha System	35
Appendix B. Software Components and Version Checking	39
B.1. Obtaining a List of Installed Components	39
B.2. Checking the Version of Installed Images	39

Preface

1. About VSI

VMS Software, Inc. (VSI) is an independent software company licensed by Hewlett Packard Enterprise to develop and support the OpenVMS operating system.

VSI seeks to continue the legendary development prowess and customer-first priorities that are so closely associated with the OpenVMS operating system and its original author, Digital Equipment Corporation.

2. Intended Audience

This manual is intended for anyone who plans to install the VSI DECwindows Motif for OpenVMS Version 1.7F (DECwindows Motif) software on the OpenVMS I64 or OpenVMS Alpha platform.

3. Document Structure

This guide contains the following chapters and appendixes:

- Chapter 1: *Preparing to Install the Software*
- Chapter 2: *Using the POLYCENTER Software Installation Utility*
- Chapter 3: *After Installing the Software*
- Chapter 4: *Managing VSI DECwindows Motif for OpenVMS Software*
- Appendix A: *POLYCENTER Software Installation Utility Sample Installation*
- Appendix B: *Software Components and Version Checking*

4. Associated Manuals

For more information on the system management utilities, see the following documents:

- *VSI DECwindows Motif for OpenVMS New Features*
- *VSI DECwindows Motif for OpenVMS Release Notes*
- *Getting Started With the New Desktop*
- *VSI DECwindows Motif for OpenVMS Management Guide*
- *VSI OpenVMS System Manager's Manual*
- *VSI OpenVMS System Management Utilities Reference Manual*

5. VSI Encourages Your Comments

You may send comments or suggestions regarding this manual or any VSI document by sending electronic mail to the following Internet address: <docinfo@vmssoftware.com>. Users who have

OpenVMS support contracts through VSI can contact <support@vmssoftware.com> for help with this product.

6. Open VMS Documentation

The full VSI OpenVMS documentation set can be found on the VMS Software Documentation webpage at <https://docs.vmssoftware.com/>.

7. Conventions

The following conventions are also used in this manual:

Convention	Meaning
Ctrl/ <i>x</i>	A sequence such as Ctrl/ <i>x</i> indicates that you must hold down the key labeled Ctrl while you press another key or a pointing device button.
PF1 <i>x</i>	A sequence such as PF1 <i>x</i> indicates that you must first press and release the key labeled PF1 and then press and release another key or a pointing device button.
Return	In examples, a key name enclosed in a box indicates that you press a key on the keyboard. (In text, a key name is not enclosed in a box.)
...	A horizontal ellipsis in examples indicates one of the following possibilities: <ul style="list-style-type: none"> • Additional optional arguments in a statement have been omitted. • The preceding item or items can be repeated one or more times. • Additional parameters, values, or other information can be entered.
. . .	A vertical ellipsis indicates the omission of items from a code example or command format; the items are omitted because they are not important to the topic being discussed.
()	In command format descriptions, parentheses indicate that you must enclose the options in parentheses if you choose more than one.
[]	In command format descriptions, brackets indicate optional choices. You can choose one or more items or no items. Do not type the brackets on the command line. However, you must include the brackets in the syntax for OpenVMS directory specifications and for a substring specification in an assignment statement.
[]	In command format descriptions, vertical bars separate choices within brackets or braces. Within brackets, the choices are options; within braces, at least one choice is required. Do not type the vertical bars on the command line.
{ }	In command format descriptions, braces indicate required choices; you must choose at least one of the items listed. Do not type the braces on the command line.
bold text	This typeface represents the introduction of a new term. It also represents the name of an argument, an attribute, or a reason.
<i>italic text</i>	Italic text indicates important information, complete titles of manuals, or variables. Variables include information that varies in system output (Internal error <i>number</i>), in command lines (<i>/PRODUCER= name</i>), and in command parameters in text (where <i>dd</i> represents the predefined code for the device type).

Convention	Meaning
UPPERCASE TEXT	Uppercase text indicates a command, the name of a routine, the name of a file, or the abbreviation for a system privilege.
Monospace type	Monospace type indicates code examples and interactive screen displays. In the C programming language, monospace type in text identifies the following elements: keywords, the names of independently compiled external functions and files, syntax summaries, and references to variables or identifiers introduced in an example.
-	A hyphen at the end of a command format description, command line, or code line indicates that the command or statement continues on the following line.
numbers	All numbers in text are assumed to be decimal unless otherwise noted. Nondecimal radices—binary, octal, or hexadecimal—are explicitly indicated.

Chapter 1. Preparing to Install the Software

This chapter describes the requirements for installing VSI DECwindows Motif for OpenVMS software using the POLYCENTER Software Installation (PCSI) utility.

Before you can install and configure VSI DECwindows Motif for OpenVMS software, you must have the required version of the OpenVMS operating system, sufficient memory, and a license. Also, if this is a system upgrade, you may need to take steps to preserve OSF/Motif Release 1.1.3 programming files or any customized Bookreader files.

This chapter includes the following topics:

- Section 1.1: Hardware and Memory Requirements
- Section 1.2: Required Operating System Software
- Section 1.3: License Requirements
- Section 1.4: Saving OSF/Motif Release 1.1.3 and XUI Programming Files
- Section 1.5: Saving Customized Bookreader Files
- Section 1.6: Installation Procedure Requirements

Note

VSI strongly recommends that you read the release notes before proceeding with the installation. See Section 2.2) for instructions on how to access this information.

1.1. Hardware and Memory Requirements

VSI DECwindows Motif for OpenVMS Version 1.7F software can be installed on any processor supported by OpenVMS Version 8.3. For a complete list of supported hardware, see the OpenVMS and VSI DECwindows Motif for OpenVMS Software Product Descriptions (SPDs).

On OpenVMS Alpha systems, a minimum of 64 MB of memory is required; at least 128 MB of memory is highly recommended.

On OpenVMS I64 systems, the minimum amount of memory is dependent upon the specific Integrity Server platform. In general for VSI DECwindows Motif for OpenVMS, 512 MB of memory is recommended. Refer to the supported platform list in the OpenVMS SPD for more specific requirements.

1.2. Required Operating System Software

The VSI DECwindows Motif for OpenVMS Version 1.7F software requires that the OpenVMS Version 1.6 operating system be installed.

If your system is not running a supported version of OpenVMS before you attempt to install VSI DECwindows Motif for OpenVMS, the installation fails.

The OpenVMS operating system provides two subsets of components to support VSI DECwindows Motif for OpenVMS. To use VSI DECwindows Motif for OpenVMS software, your system must be running a version of the OpenVMS system that includes the following components, as described in Table 1.1.

Table 1.1. VSI DECwindows Motif for OpenVMS Support Options for OpenVMS

Option	Description
VSI DECwindows Motif for OpenVMS network transport and base system support	<p>This component is required to install VSI DECwindows Motif for OpenVMS and to run VSI DECwindows Motif for OpenVMS applications. During the installation of OpenVMS, you are prompted to specify whether you want to install this option.</p> <p>To determine whether this option was installed during the installation of OpenVMS, check for the existence of the following file:</p> <pre>SYS\$LIBRARY:DECW \$TRANSPORT_COMMON.EXE</pre> <p>See Section 4.2 for information on adding DECwindows base support files after OpenVMS has been installed.</p>
DECwindows X11 Display Server, fonts, and device drivers	<p>This component is necessary to display VSI DECwindows Motif for OpenVMS applications or any other X Window applications on your system. During the installation of OpenVMS, you are prompted to specify whether you want to install this option.</p> <p>To determine whether this option was installed during the installation of OpenVMS, check for the existence of the following file:</p> <pre>SYS\$SYSTEM:DECW\$SERVER_MAIN.EXE</pre> <p>If the DECW\$SERVER_MAIN.EXE file is not on your system, you cannot display VSI DECwindows Motif for OpenVMS or other X Window applications on your local system¹. The VSI DECwindows Motif for OpenVMS installation procedure asks whether you want to continue the installation without workstation support.</p> <p>See Section 4.2 for information on adding DECwindows device support after OpenVMS has been installed.</p>

¹If this component is not installed locally, note that you can run VSI DECwindows Motif for OpenVMS applications and redirect their display to a remote system that does have the DECwindows X11 Display Server installed.

1.3. License Requirements

You must register and load your license for VSI DECwindows Motif for OpenVMS before you run the Installation Verification Procedure (IVP) and use the software.

To register a license using the License Management Facility (LMF), log into the system manager account (SYSTEM). Then choose one of the following options to register the license:

- Invoke the SYSS\$UPDATE:VMSLICENSE.COM procedure. When the procedure prompts you for information, respond with data from your License PAK.
- At the DCL prompt, enter the LICENSE REGISTER command with the appropriate qualifiers that correspond to License PAK information.

If you plan to use VSI DECwindows Motif for OpenVMS software on more than one node in a OpenVMS Cluster, load the license on the other nodes after you complete this installation.

If you are installing VSI DECwindows Motif for OpenVMS software as an update on a node or cluster already licensed for this software, you have already completed the License PAK registration requirements.

For complete information about using LMF, see the *VSI OpenVMS License Management Utility Guide*.

The following sections describe additional platform-specific license requirements.

1.3.1. For OpenVMS Alpha Systems

Before you install and run VSI DECwindows Motif for OpenVMS software on a newly licensed node or cluster, you must first register a DW-MOTIF License PAK or another License PAK that includes support for the VSI DECwindows Motif for OpenVMS product (such as, NET-APP-SUP-150). The License PAK is provided along with the kit if you ordered the license and media together; otherwise, it is provided separately to a location based on your license order.

1.3.2. For OpenVMS I64 Systems

Before you install the VSI DECwindows Motif for OpenVMS software, you must have first registered a license for an OpenVMS I64 Operating Environment (OE) that includes the VSI DECwindows Motif for OpenVMS layered product. See the VSI OpenVMS I64 and VSI DECwindows Motif for OpenVMS SPDs for a complete list of the OpenVMS I64 OEs that include the VSI DECwindows Motif for OpenVMS layered product.

1.4. Saving OSF/Motif Release 1.1.3 and XUI Programming Files

The X Window System and OSF/Motif libraries that are provided with VSI DECwindows Motif for OpenVMS software are incompatible with those libraries provided with versions of VSI DECwindows Motif for OpenVMS prior to Version 1.2. Run-time compatibility is preserved, but the earlier OSF/Motif Release 1.1.3 and XUI programming environments are not compatible with the later OSF/Motif Release 1.2 programming environment.

Programming support in the XUI and OSF/Motif Release 1.1.3 environments that was provided in previous versions of VSI DECwindows Motif for OpenVMS is no longer supported in the VSI DECwindows Motif for OpenVMS product. The VSI DECwindows Motif for OpenVMS Alpha

installation procedure gives you the option of saving the XUI and OSF/Motif Release 1.1.3 programming files if they exist on your system. If you choose to save these programming files, they are moved to subdirectories where you can access them for future use. Specifically, the installation procedure creates a subdirectory called [.DECW\$113] under each of the directories listed in Table 1.2. It then moves the Release 1.1.3 programming files into the newly created subdirectories.

Table 1.2. Directories for Previous XUI or OSF/Motif Programming Environments

Directory	Contents	New Location
DECW\$INCLUDE	C header files	SYS\$SYSROOT:[DECW\$INCLUDE.DECW\$113]
SYS\$SYSTEM	UIL compiler	SYS\$SYSROOT:[SYSEXEC.DECW\$113]
SYS\$LIBRARY	Non-C language bindings	SYS\$SYSROOT:[SYSLIB.DECW\$113]

Note

For additional information about accessing and using the saved programming files, see the *VSI DECwindows Motif for OpenVMS Release Notes*.

1.5. Saving Customized Bookreader Files

The installation procedure replaces the Bookreader bookshelf settings file, SYS\$SYSROOT:[DECW\$BOOK]LIBRARY.DECW\$BOOKSHELF, with the default version.

If you customized this file and want to save it, copy the file to another directory or rename the file prior to the installation of VSI DECwindows Motif for OpenVMS software so that it is not deleted.

To copy your customized file to another directory, create the directory and define a global symbol in the file DECW\$PRIVATE_APPS_SETUP.COM.

To create a Bookreader directory called SYS\$COMMON:[DECW\$BOOK_LOCAL], perform the following steps:

1. Create the directory and assign world read access as follows:

```
$ CREATE/DIRECTORY/PROTECTION=WORLD:R -
_ $ SYS$COMMON:[DECW$BOOK_LOCAL]
```

2. Copy the LIBRARY.DECW\$BOOKSHELF file to the new directory as follows:

```
$ COPY SYS$SYSROOT:[DECW$BOOK]LIBRARY.DECW$BOOKSHELF -
_ $ SYS$COMMON:[DECW$BOOK_LOCAL]*/LOG
```

3. If the SYS\$MANAGER directory does not contain the DECW\$PRIVATE_APPS_SETUP.COM command file, copy the template file to a command file as follows:

```
$ COPY SYS$MANAGER:DECW$PRIVATE_APPS_SETUP.TEMPLATE -
_ $ SYS$MANAGER:DECW$PRIVATE_APPS_SETUP.COM/LOG
```

4. Edit the DECW\$PRIVATE_APPS_SETUP.COM file and define the global symbol DECW\$BOOK to point to your Bookreader directory by adding the following line to the file:

```
$ DECW$BOOK == "SYS$COMMON:[DECW$BOOK_LOCAL]"
```

5. Restart VSI DECwindows Motif for OpenVMS using the following command if you performed step 4 after installing the product and after DECwindows had been started (for example, after a reboot):

```
$ @SYS$MANAGER:DECW$STARTUP RESTART
```

For more information about customizing your VSI DECwindows Motif for OpenVMS environment, see *VSI DECwindows Motif for OpenVMS Management Guide*.

1.6. Installation Procedure Requirements

This section discusses the requirements for installing the VSI DECwindows Motif for OpenVMS software using CSI.

1.6.1. Process Account Quotas

Use the following table to determine the minimum quotas required by the installation procedure.

Table 1.3. Process Quotas for the Installation Account on OpenVMS I64 and OpenVMS Alpha Systems

Quota Name	Value
ASTLM	250
BIOLM	150
BYTLM	64,000
DIOLM	150
ENQLM	2,000
FILLM	100

Use the OpenVMS AUTHORIZE utility to verify and change process quotas for the installation account in the user authorization file (UAF). (Some sites may restrict the use of the AUTHORIZE utility to certain accounts or users.) For example, to change the BYTLM quota for the *account-name* installation account, enter the following commands:

```
$ SET DEFAULT SYS$SYSTEM
$ RUN AUTHORIZE
UAF>gt; SHOW account-name
UAF>gt; MODIFY account-name /BYTLM = 64000
UAF>gt; SHOW account-name
UAF>gt; EXIT
$ LOGOUT
```

After you change the quotas for the installation account, log out of the installation account and log in again for the new quotas to take effect. You can then proceed with the installation.

User account quotas are stored in the file SYS\$SYSTEM:SYSUAF.DAT. For more information about modifying account quotas, see the description of the AUTHORIZE utility in the *VSI OpenVMS System Management Utilities Reference Manual*.

1.6.2. Disk Space

Use the table appropriate for your operating system to determine the amount of free disk space that is required on the system disk to install VSI DECwindows Motif for OpenVMS components. However, because you can choose not to install all the components, your actual disk space requirement may be less.

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

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

The installation procedure checks for free disk space on the system disk. If sufficient space is not available, the installation procedure provides the following options:

- Install fewer optional files.
- Terminate the installation, create more free disk space on the system disk, and restart the installation.
- Continue the installation and risk running out of disk space.

Note

If you run out of free disk space during the installation, the installation procedure fails.

Table 1.4. Required Disk Space by Component for OpenVMS I64 Systems (in Blocks)

Component/Subcomponent		Requirement	Subtotals	Totals
Installation overhead:		40,000 ¹	40,000	40,000
LBX support:		1,020	1,020	1,020
Client software:				
	Client base kit	114,970	114,970	
	Desktop support			
	New Desktop	63,510		
	DECwindows desktop	13,600		
	Manual pages for New Desktop	2,810		
	Desktop subtotal		79,920	
	Programming environment			
	C, C++	8,970		
	FORTRAN	2,080		
	Pascal	3,060		
	New Desktop	150		
	Programming subtotal		14,260	
	Example programs			
	Sound examples	1,670		
	Programming examples	12,290		
	New Desktop examples	1,250		

Component/Subcomponent		Requirement	Subtotals	Totals
	Examples subtotal		15,210	
	Client total			224,360
Total for all components:				265,380

¹Includes excess disk space allocation (dependent on disk cluster size), PCSI overhead, and log files. The value shown is for the combined installation of LBX and the client software.

Table 1.5. Required Disk Space by Component for OpenVMS Alpha Systems (in Blocks)

Component/Subcomponent		Requirement	Subtotals	Totals
Installation overhead:		40,000 ¹	40,000	40,000
LBX support:		450	450	450
Client software:				
	Client base kit	57,030	57,030	
	Desktop support			
	New Desktop	43,410		
	DECwindows desktop	7,870		
	Manual pages for New Desktop	2,810		
	Desktop subtotal		54,090	
	Programming environment			
	C, C++	7,910		
	FORTRAN	2,080		
	Pascal	3,060		
	New Desktop	150		
	Programming subtotal		13,200	
	Example programs			
	Sound examples	1,550		
	Programming examples	10,290		
	New Desktop examples	1,250		
	Examples subtotal		13,090	
	Translated image support	28,330	28,330	
	Client total			165,740
Total for all components:				206,190

¹Includes excess disk space allocation (dependent on disk cluster size), PCSI overhead, and log files. The value shown is for the combined installation of LBX and the client software.

1.6.3. System Parameters

Use the table appropriate to your operating system to determine the minimum recommended system parameter values for running DECwindows. The DECwindows installation supplies a NEWPARAMS.DAT file which AUTOGEN uses as input for its CLU\$PARAMS.DAT file. The CLU\$PARAMS.DAT file captures system parameter requirements from layered products that use the NEWPARAMS.DAT method of supplying their system parameter requirements to AUTOGEN. In most cases, this process eliminates the need to modify the MODPARAMS.DAT file.

Depending on the kinds of programs and applications running at your site, you might need higher values for some settings. If you need higher settings, you should modify the MODPARAMS.DAT file before running the AUTOGEN procedure. See the *VSI DECwindows Motif for OpenVMS Management Guide* for additional system tuning recommendations.

Table 1.6. Minimum Required System Parameter Values for OpenVMS I64 Systems

System Parameter	Value
GBLSECTIONS	1,000 ¹
GBLPAGES	150,000 ¹
GBLPAGFIL	4,096
SWPOUTPGCNT	512
MAXBUF	8,192
CHANNELCNT	255
PROCSECTCNT	64
PQL_MASTLM	100
PQL_MBIOLM	100
PQL_MBYTLM	100,000
PQL_MDIOLM	100
PQL_MENQLM	300
PQL_MFILLM	100
PQL_MPRCLM	10
PQL_MWSDEFAULT	4,096
PQL_MWSQUOTA	8,192
PQL_MWSEXTENT	16,384
CLISYMTBL	512
GH_RES_CODE	3,072
IMGREG_PAGES	10,000
WINDOW_SYSTEM	1
NPAGEDYN	4,194,304
PAGEDYN	4,194,304
WSMAX	131,072

¹If you have installed other software that uses global pages or global sections, you might need a higher minimum value. When you boot your system and VSI DECwindows Motif for OpenVMS starts, the values of free GBLPAGES and GBLSECTIONS are checked for your system. If you do not have sufficient values for GBLPAGES and GBLSECTIONS, the VSI DECwindows Motif for OpenVMS startup procedure prints a warning and provides a recommended value for these parameters.

Table 1.7. Minimum Required System Parameter Values for OpenVMS Alpha Systems

System Parameter	Value
GBLSECTIONS	600 ¹
GBLPAGES	150,000 ¹
GBLPAGFIL	4,096
SWPOUTPGCNT	512
MAXBUF	8,192
CHANNELCNT	255
PROCSECTCNT	128
PQL_MASTLM	100
PQL_MBIOLM	100
PQL_MBYTLM	100,000
PQL_MDIOLM	100
PQL_MENQLM	300
PQL_MFILLM	100
PQL_MPRCLM	10
PQL_MWSDEFAULT	1,024
PQL_MWSQUOTA	2,048
PQL_MWSEXTENT	8,192
CLISYMTBL	512
GH_RES_CODE	1,584
IMGREG_PAGES	10,000
WINDOW_SYSTEM	1
NPAGEDYN	1,348,576
PAGEDYN	704,288
WSMAX	12,000

¹If you have installed other software that uses global pages or global sections, you might need a higher minimum value. When you boot your system and VSI DECwindows Motif for OpenVMS starts, the values of free GBLPAGES and GBLSECTIONS are checked for your system. If you do not have sufficient values for GBLPAGES and GBLSECTIONS, the VSI DECwindows Motif for OpenVMS startup procedure prints a warning and provides a recommended value for these parameters.

1.6.4. Backing Up Your System Disk

VSI recommends that you back up your system disk before you install any software. At the beginning of the installation, the installation procedure asks whether your system disk is backed up. Use the backup procedures that are established at your site. For details about performing a system disk backup, see the section on the Backup utility in the *VSI OpenVMS System Management Utilities Reference Manual*.

1.6.5. Notifying Other Users

Inform users on the system that you plan to install a product and that they must log out during the installation. To make sure that you are the only user logged in to the system, follow these steps:

1. Notify current users to log out. Enter the following command at the DCL prompt:

```
$ REPLY/ALL/BELL/SHUTDOWN "Log out for the installation of -  
_ $ VSI DECwindows Motif for OpenVMS Version 1.7F please..."
```

2. Enter the following command at the DCL prompt to prevent nonprivileged users from logging in to the system:

```
$ SET LOGINS/INTERACTIVE=0
```

If possible, give users an estimated time when they can log in to the system again.

Chapter 2. Using the POLYCENTER Software Installation Utility

This chapter describes how to install and configure VSI DECwindows Motif for OpenVMS software using the POLYCENTER Software Installation (PCSI) utility. The VSI DECwindows Motif for OpenVMS product supports PCSI installations using the Digital Command Language (DCL) interface.

Note

Kits included on the OpenVMS Version 8.3 distribution media are signed using Secure Delivery.

This chapter presents information about the following topics:

- Section 2.1: Accessing Help Information
- Section 2.2: Extracting and Printing the Product Release Notes
- Section 2.3: Installing the VSI DECwindows Motif for OpenVMS Software
- Section 2.4: Recovering from Errors

Refer to the *VSI OpenVMS System Manager's Manual* for complete details about installing and managing software products on your system. In addition to getting started information, this manual provides information about such topics as:

- Removing installed products
- Reconfiguring installed products
- Copying software kits to new locations
- Retrieving product information

Refer to Section 1.2 for information about prerequisite software and licenses.

Caution

If you do not have a satisfactory backup copy of your system disk, do not attempt to install VSI DECwindows Motif for OpenVMS software. Back up the system disk (as described in the OpenVMS upgrade and installation supplement for your system) before you install VSI DECwindows Motif for OpenVMS software.

Before beginning the installation procedure, review Chapter 1 for information about installation preparations and requirements.

2.1. Accessing Help Information

Online help is available with the installation utility for all PRODUCT commands and qualifiers. For help on a specific command, enter the DCL command HELP followed by the command and product name.

Refer to the following documents for information about tasks and PRODUCT commands and qualifiers:

VSI OpenVMS System Manager's Manual

VSI OpenVMS System Management Utilities Reference Manual

VSI OpenVMS DCL Dictionary

Refer to the *VSI OpenVMS System Manager's Manual* for complete information about responding to questions that the PCSI utility asks during product installation. For example, when you respond to questions, you can do the following:

- Enter a value and press the Return key to select options.
- Press the Return key to accept default values.
- Confirm your responses.

After you respond to questions by selecting options or accepting default values, the installation utility displays a summary of your answers.

Then a question is displayed asking whether you are satisfied with your answers and whether you want to continue with the installation. If you decide to change your responses, type No and press the Return key. You can then either reenter your responses or answer No and exit from the installation utility.

- Stop the installation by pressing **Ctrl/Y**. (Note that this option is not recommended.)

2.2. Extracting and Printing the Product Release Notes

Before you begin the installation procedure, you should read the product release notes. To extract a copy of the release notes, define `PCSI$SOURCE` to point to the location (device name and directory) of the PCSI kit. Then, enter the `PRODUCT EXTRACT RELEASE_NOTES` command followed by the product name (`DWMOTIF`) at the DCL prompt.

For example:

```
$ DEFINE PCSI$SOURCE DKA400:[KITS]
$ PRODUCT EXTRACT RELEASE_NOTES DWMOTIF
```

In the above example, the directory in which the installation kit is located is referred to as `dka400:[kits]`. You should substitute this directory name with the actual location of the VSI DECwindows Motif for OpenVMS kit. To obtain the directory location of the VSI DECwindows Motif for OpenVMS kit, refer to the documentation that accompanies the product distribution media.

Once you extract the release notes to a file, you can print the file. Note that you do not need to install the product before you extract the release notes.

2.3. Installing the VSI DECwindows Motif for OpenVMS Software

The following sections describe how to install the VSI DECwindows Motif for OpenVMS software using the PCSI utility.

Refer to Chapter 1 for information about account quotas, disk space, and system parameters.

2.3.1. Starting the Installation

To start the PCSI utility, enter the following command at the DCL prompt:

```
$ DEFINE PCSI$SOURCE device:[KITS]
```

where `device` is the name of the device on which the distribution media is mounted or the installation kit is located. In the above example, the directory in which the installation kit is located is referred to as `[KITS]`. You should substitute this directory name with the actual directory location of the VSI DECwindows Motif for OpenVMS kit. To obtain the location of the kit, refer to the documentation that accompanies the product distribution media.

Next, invoke PCSI:

```
$ PRODUCT INSTALL DWMOTIF
```

Note

If you want to see the help text shown in this chapter, use the `/HELP` qualifier with the `PRODUCT INSTALL` command.

With the exception of a few message continuation lines, all of the dialog text shown in this chapter has been left-justified to allow longer lines to appear as displayed. Therefore, indentation present in the actual dialog is not shown in the example presented here.

2.3.2. The Installation Dialog

The installation dialog begins by displaying the name of the product which PCSI is installing. You are then asked to verify that you want to continue with the installation. The dialog continues with a display of product name, copyright, and licensing information.

```
Performing product kit validation ...
%PCSI-I-VALPASSED, validation of
DKB200:[SYS0.] [SYSMGR]DEC-AXPVMS-DWMOTIF-V0106-1.PCSI$COMPRESSED;1
succeeded

The following product has been selected:
    DEC AXPVMS DWMOTIF V1.6                Layered Product [Installed]

Do you want to continue? [YES]

Configuration phase starting ...

You will be asked to choose options, if any, for each selected product and
for
any products that may be installed to satisfy software dependency
requirements.
DEC AXPVMS DWMOTIF V1.6: DECwindows Motif
(c) Copyright 2006 Hewlett-Packard Development Company, L.P.
Hewlett-Packard Company.
This product uses the PAK:  DW-MOTIF
Do you want the defaults for all options? [YES] No
    DEC AXPVMS VMS V8.3 [Installed]
    * Configuration options for this referenced product cannot
    * be changed now because the product is already installed.
    * (You can use PRODUCT RECONFIGURE later to change options.)
    Install Low Bandwidth X (LBX) Support [YES]
    Install the DECwindows Motif Version 1.6 client software [YES]
    Do you want the defaults for all suboptions? [YES] NO
    Install New Desktop [YES]
    Install Manual (reference) pages for the New Desktop [YES]
```

```
    Make the New Desktop the default desktop [YES]
    Install traditional DECwindows Desktop [YES]
    Programming Support for the C Language [YES]
    Programming Support for the Pascal Language [YES]
    Programming Support for the FORTRAN Language [YES]
    Programming Support for the New Desktop [YES]
    Programming examples [YES]
    Do you want the defaults for all suboptions? [YES] NO
    Sound example files [YES]
    Programming examples for DECwindows [YES]
    Programming examples for the New Desktop [YES]
    Translated Image Support [YES]
    If a Language Variant is installed, refer to the Installation Guide.
    Do you want to continue? [YES]
Do you want to review the options? [NO] Y
ESDEC AXPVMS DWMOTIF V1.6: DECwindows Motif
DEC AXPVMS VMS V8.3 [Installed]
Install Low Bandwidth X (LBX) Support: YES
Install the DECwindows Motif Version 1.6 client software: YES
Install New Desktop: YES
    Install Manual (reference) pages for the New Desktop: YES
    Make the New Desktop the default desktop: YES
    Install traditional DECwindows Desktop: YES
    Programming Support for the C Language: YES
    Programming Support for the Pascal Language: YES
    Programming Support for the FORTRAN Language: YES
    Programming Support for the New Desktop: YES
    Programming examples: YES
    Sound example files: YES
    Programming examples for DECwindows: YES
    Programming examples for the New Desktop: YES
    Translated Image Support: YES
    Are you satisfied with these options? [YES]
Execution phase starting ...
The following product will be installed to destination:
    DEC AXPVMS DWMOTIF V1.6      DISK$ALPHAYSYS:[VMS$COMMON.]
    Portion done: 0%
...10%
...20%
...30%
...40%
...50%
...60%
...70%
...80%
...90%
**** DECwindows Motif application and run-time support files DETECTED ****
**** DECwindows device support files DETECTED ****
...100%
The following product has been installed:
    DEC AXPVMS DWMOTIF V1.6      Layered Product
DEC AXPVMS DWMOTIF V1.6: DECwindows Motif      System reboot is required.
    If using a language variant, reboot after upgrade of language variant.
    Installation Verification Procedure can be run after reboot.
```

2.3.2.1. Saving the Programming Environment (Alpha Only)

The VSI DECwindows Motif for OpenVMS Alpha installation procedure checks whether the OSF/Motif Release 1.1.3 programming environment exists on your system. If it is present, the installation procedure displays the following information and asks whether you want to save the OSF/Motif Release 1.1.3 programming environment:

```
The VSI DECwindows Motif for OpenVMS programming environment was installed
with a
previous version of this kit. This environment is incompatible with the
OSF/Motif Release 1.2 environment provided with VSI DECwindows Motif for
OpenVMS Version 1.6.
XUI programming environment is also not included in VSI DECwindows Motif
for OpenVMS Version 1.6.
```

```
If you intend to continue developing programs for XUI or OSF/Motif
Release 1.1.3, then save this environment. Please refer to the
installation guide for more details and information on accessing these
files in their new location.
```

```
If you do not choose to save the XUI and OSF/Motif Release 1.1.3
programming environment, those files will be removed from the system disk.
```

```
Save the OSF/Motif Release 1.1.3 and XUI programming environment?
```

If you answer Yes and press the Return key to save the OSF/Motif Release 1.1.3 and XUI programming environment, a subdirectory called [.DECW\$113] is created. The files that support that programming environment are moved to the [.DECW\$113] subdirectory.

If you answer No and press the Return key, the files are deleted.

Refer to *VSI DECwindows Motif for OpenVMS Release Notes* for information about accessing files related to the OSF/Motif Release 1.1.3 programming environment.

Note that this portion of the installation does not occur if you are installing or upgrading the OpenVMS operating system and the VSI DECwindows Motif for OpenVMS software simultaneously.

2.3.2.2. Default Installation

Next, the dialog asks if you want the default installation. If this is a new VSI DECwindows Motif for OpenVMS installation, the procedure installs all options that apply to your hardware platform.

If this is an upgrade, and a prior version of VSI DECwindows Motif for OpenVMS is present, the procedure installs all options selected previously. Any options that were not available in the prior version are installed according to their current default settings.

```
Do you want the defaults for all options? [YES]
```

The remainder of this chapter assumes that you answer No to this question.

2.3.2.3. LBX Proxy Installation

Next, the dialog asks if you want to install the Low-Bandwidth X (LBX) proxy option.

```
The LBX proxy reduces the overall network bandwidth required for
```

client-to-server communications. The LBX proxy can be installed as a standalone option or in conjunction with the DECwindows Motif client software.

Install Low Bandwidth X (LBX) Support [YES]

See the *VSI DECwindows Motif for OpenVMS Management Guide* for more information about the LBX feature.

2.3.2.4. Selecting Installation of Client Software

Next, the installation procedure asks if you want to install the client software:

Install the VSI DECwindows Motif for OpenVMS Version 1.6 client software?
[YES]

Answer Yes if you intend to run any programs requiring a DECwindows display, either on this system or on any remote system.

If you answer No, skip to Section 2.3.2.8.

If you answer Yes, the dialog asks if you want the default client installation:

Do you want the defaults for all suboptions? [YES]

Answer Yes if you want to take all the defaults for the client installation. If you answer Yes, skip to Section 2.3.2.8.

2.3.2.5. Asking About Selecting a Desktop

The installation procedure displays information about the New Desktop and Traditional Desktop. You can elect to install one or both desktops. If you elect to install the New Desktop, the dialog asks whether the New Desktop should be the default.

The New Desktop is a graphical user interface that is derived from the Common Desktop Environment (CDE). It offers the following features not available with the traditional DECwindows desktop:

- o Multiple workspaces for greater flexibility in managing windows on the screen.
- o An icon-based File Manager to make it easier to manipulate files from the graphical user interface.
- o Enhanced support for the drag-and-drop feature, which is fully supported in the new File Manager and Application Manager applications.
- o New Image Viewer and Icon Editor applications.

Both the New Desktop and the DECwindows desktop provide the same underlying X and Motif libraries and the same DECterm, Bookreader, Mail, and Calendar applications.

Install New Desktop [YES]

The manual pages provide online help text for New Desktop functions. If installed they can be viewed using the man page viewer from the Application Manager.

Install Manual (reference) pages for the New Desktop [YES]

If the New Desktop is the default, the new login box will be used and the user has the option at login to use either the New or the traditional desktop.

If the New Desktop is not the default, the traditional login box will be used and only the traditional desktop will be available.

You can change the default desktop by editing the file [SYSMGR]DECW\$PRIVATE_APPS_SETUP.COM and restarting DECwindows.

Make the New Desktop the default desktop [YES]

The traditional DECwindows Desktop is that provided since Version 1.2 of DECwindows. If both new and traditional desktops are installed, the user can select which to run when logging in.

Install traditional DECwindows Desktop [YES]

See Section 3.4 for instructions about how to change the choice of desktop after the installation is complete.

2.3.2.6. Programming Language Support Options

Next, the dialog asks you which programming languages you want to install and whether you want to install the programming examples.

The installation procedure uses the following dialog:

Headers and related files to support programs in C that will use the DECwindows libraries.

Programming Support for the C Language [YES]

Include files to support programs in Pascal that will use the DECwindows libraries.

Programming Support for the Pascal Language [YES]

Include files to support programs in FORTRAN that will use the DECwindows libraries.

Programming Support for the FORTRAN Language [YES]

Headers and related files to support programs in C that will use the New Desktop widgets.

Programming Support for the New Desktop [YES]

Examples of programming to use the various libraries.

Programming examples [YES]

Do you want all the defaults for the subitems? [YES] no

Sample sound files that can be used with DECsound.

Sound example files [YES]Examples, in various programming languages, of using the DECwindows and

standard widgets and libraries.

Programming examples for DECwindows [YES]

Examples, in C, of using the new widgets provided with the New Desktop.

Programming examples for the New Desktop [YES]

2.3.2.7. Translated Image Support (Alpha Only)

If you are installing VSI DECwindows Motif for OpenVMS on the OpenVMS Alpha operating system, the dialog now prompts you to install Translated Image Support (TIS). This option enables Motif Release 1.1.3 programs translated from the VAX environment to work in the Alpha environment.

Translated image support to allow programs translated from the VAX to work on the Alpha with the Motif Release 1.1.3 libraries.

Translated Image Support [YES]

2.3.2.8. Language Variants Notice

The dialog now displays text about the use of language variants. You should not install VSI DECwindows Motif for OpenVMS Version 1.6 unless you also plan to install the VSI DECwindows Motif for OpenVMS Version 1.6 language variants for all the languages that you want to use.

Refer to the Installation Guide that accompanies the variant kit for further information about options and restrictions specific to the languages you choose to install and use.

If a Language Variant is installed, refer to the Installation Guide.

If you have a language variant of VSI DECwindows Motif for OpenVMS installed, then you must upgrade to the version for VSI DECwindows Motif for OpenVMS Version 1.6 after completing this installation and before rebooting the system. A failure to do so could prevent DECwindows from starting.

If there is no local language variant upgrade available for VSI DECwindows Motif for OpenVMS Version 1.6, then you should remove the local language variant before installing VSI DECwindows Motif for OpenVMS Version 1.6.

Do you want to continue? [YES]

2.3.2.9. Reviewing the Installation Options

The dialog then gives you a chance to review the options you have selected.

Do you want to review the options? [NO] y

DEC AXPVMS DWMOTIF V1.6: VSI DECwindows Motif for OpenVMS
DEC AXPVMS VMS V8.3 [Installed]

Install Low Bandwidth X (LBX) Support: YES
Install the VSI DECwindows Motif for OpenVMS Version 1.6 client software:
YES

```
Install New Desktop: YES
Install Manual (reference) pages for the New Desktop: YES
Make the New Desktop the default desktop: YES
Install traditional DECwindows Desktop: YES
Programming Support for the C Language: YES
Programming Support for the Pascal Language: YES
Programming Support for the FORTRAN Language: YES
Programming Support for the New Desktop: YES
Programming examples: YES
Sound example files: YES
Programming examples for DECwindows: YES
Programming examples for the New Desktop: YES
Translated Image Support: YES Are you satisfied with these options? [YES]
```

2.3.2.10. Execution Dialog

During the execution phase, the installation utility begins by displaying the names of all products it will install or remove. This is followed by an indication of the procedure's progress.

Note

During this phase, a check is made for VSI DECwindows Motif for OpenVMS support files. If these files are not available, the dialog may ask if you want to continue. See Section 2.3.2.11 for more information.

Execution phase starting ...

```
The following product will be installed to destination:
    DEC AXPVMS DWMOTIF V1.6                DISK$ALPHASYS:[VMS$COMMON.]
```

```
Portion done: 0%
...10%
...20%
...30%
...40%
...50%
...60%
...70%
...80%
...90%
```

2.3.2.11. Verifying VSI DECwindows Motif for OpenVMS Support Files

The installation procedure verifies that VSI DECwindows Motif for OpenVMS applications and run-time support files are installed on the operating system (for example, transport and font files, which are required for running VSI DECwindows Motif for OpenVMS software).

```
**** VSI DECwindows Motif for OpenVMS application and run-time support
files DETECTED ****
```

These files are installed by default.

Next, the installation procedure checks for the presence of support files that are needed to use the system as a workstation or as a workstation boot server. If the support files are installed, the following message is displayed:

**** DECwindows device support files DETECTED ****

If the files are not installed, users are warned with the following message that their systems cannot be a workstation or a workstation boot server:

The DECwindows device support files for using this machine as a workstation or as a boot node for workstations have not been installed.

You can use the POLYCENTER Software Installation utility to change the options selected when the OpenVMS software was installed. See the POLYCENTER Software Installation Utility User's Guide for more information. To add the support files and the 75DPI and/or the 100DPI font files, use the PRODUCT RECONFIGURE command as follows:

```
$ PRODUCT RECONFIGURE VMS
```

You should add the "DECwindows server support" subclass in the Utilities class.

The installation procedure then asks the following question:

```
Do you wish to continue with this installation without the workstation support?
```

If you answer No (default) and press the **Return** key, the installation is stopped. See Section 4.2 for information on adding the necessary support files. Once you install the necessary support files, restart the installation procedure.

If you answer Yes and press the Return key, the installation continues.

Note that this portion of the installation does not occur if you install or upgrade the OpenVMS operating system and VSI DECwindows Motif for OpenVMS software simultaneously.

2.3.2.12. Reviewing Final Installation Notes

If the installation is successful, the dialog displays a list of all products installed and removed. Finally, the procedure displays additional installation notes for the VSI DECwindows Motif for OpenVMS product.

```
...100%The following product has been installed:
    DEC AXPVMS DWMOTIF V1.6                Layered Product
DEC AXPVMS DWMOTIF V1.6: VSI DECwindows Motif for OpenVMS
```

System reboot is required.

If using a language variant, reboot after upgrade of language variant.

A system reboot is required to install the new VSI DECwindows Motif for OpenVMS images. If this is a new installation, you should execute AUTOGEN using the following command:

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

This command adjusts your system parameters and reboots the system.

If you want to use DECwindows with any language other than English, install the appropriate VSI DECwindows Motif for OpenVMS Version 1.6 language

variant product before using AUTOGEN or rebooting the system.

Installation Verification Procedure can be run after reboot.

Run the Installation Verification Procedure (IVP) after the installation is completed and the system is rebooted. The IVP is located in the following directory: SYS\$TEST:DECW\$IVP.COM.

2.4. Recovering from Errors

An error during installation can occur if one or more of the following conditions exists:

- The operating system version is incorrect.
- The prerequisite software version is incorrect.
- Process quotas required by the installation utility are inadequate.
- The OpenVMS Help library is currently in use.

For descriptions of the error messages generated by these conditions, see the documents listed in the Section 4. These documents may help you diagnose errors and decide what corrective actions to take.

If the installation procedure fails for any reason, the PCSI utility displays a message similar to the following:

```
%PCSI-I-INSFAIL, The installation of VSI DECwindows Motif for OpenVMS
  Version 1.6 for
    OpenVMS has failed.
```

If the installation fails, fix the problem and restart the installation procedure.

2.5. Adjusting Parameters After Installation

If you are installing or upgrading the OpenVMS operating system and the VSI DECwindows Motif for OpenVMS software simultaneously, the installation procedure checks the system parameters at this point (see Section 1.6.3 and Section 3.5).

When VSI DECwindows Motif for OpenVMS attempts to start after a successful installation, it may display messages similar to the following:

```
%DECW-W-BADVALUE, SYSGEN parameter GBLPAGES is 120000, should be at least
  150000
%DECW-W-BADVALUE, Free GBLPAGES is 75040 should be at least 92000
%DECW-W-BADVALUE, SYSGEN parameter CLISYMTBL is 256, should be at least 512
Some SYSGEN parameters must be reset for DECwindows to start. If you type
YES, AUTOGEN will change these parameters and reboot your system. If you
  type
NO, AUTOGEN will not be run or cause a reboot but DECwindows will not
  start.
Do you want the system to run AUTOGEN for you [YES]
```

Note

You will not see these messages if this is a new installation of DECwindows.

At this point, press the Return key. The system will run AUTOGEN, adjust your system parameters, reboot the system and display the DECwindows login.

Chapter 3. After Installing the Software

This chapter discusses the tasks that you need to perform after the VSI DECwindows Motif for OpenVMS installation is complete:

- Section 3.1: Starting the VSI DECwindows Motif for OpenVMS Software
- Section 3.2: Running the IVP
- Section 3.3: Choosing a Console
- Section 3.4: Selecting the Desktop

3.1. Starting the VSI DECwindows Motif for OpenVMS Software

If the workstation support component of OpenVMS has been installed, the DECwindows startup procedure runs automatically when the system reboots. Either the New Desktop login dialog box or the DECwindows desktop Start Session dialog box is displayed, depending on the value of the DECW \$START_NEW_DESKTOP global symbol. (See Section 3.4 for more information.)

If the VSI DECwindows Motif for OpenVMS license that is installed on your system is not valid, warning messages may display on your console terminal and VSI DECwindows Motif for OpenVMS is not started automatically. If this situation occurs, log into the system, install the valid license, and start the VSI DECwindows Motif for OpenVMS software manually. For complete information on installing licenses on OpenVMS systems, see the *VSI OpenVMS License Management Utility Guide*. For information on starting DECwindows, see the *VSI DECwindows Motif for OpenVMS Management Guide*.

3.2. Running the IVP

Run the Installation Verification Procedure (IVP), SYS\$TEST:DECW\$IVP.COM, after you install and start the VSI DECwindows Motif for OpenVMS product. This procedure contains a series of tests that verify that the software installation is complete and accurate.

3.2.1. Starting the Procedure

To start the IVP procedure, invoke the SYS\$TEST:DECW\$IVP command procedure. The dialog begins with a brief introduction.

```
$ @SYS$TEST:DECW$IVP
```

```
(c) Copyright 2006 Hewlett-Packard Development Company, L.P.
```

```
VSI DECwindows Motif for OpenVMS Installation Verification Procedure (IVP)
This IVP is intended to test some of the functionality of DECwindows Motif
and to provide a quick method of verifying the installation.
```

Note

If you are invoking the IVP from an X terminal using LAT software, enter the following command first:

```
$ SET DISPLAY/CREATE/NODE=LAT_nnnnnnnnnnnn/TRANSPORT=LAT
```

Substitute your actual LAT terminal number for *nnnnnnnnnnnn*.

Enter the default at the `_Display:` prompt.

3.2.2. Display-Oriented Tests

Next, the IVP procedure attempts to run a set of display-oriented tests. Whether these tests are run and how they are run depends on your hardware and on the availability of the test images.

- If the test images exist and you are invoking the tests from a workstation, you are asked where the display-oriented tests should display. Your current workstation is usually the default display. The default display is usually taken from the value of the `DECW$DISPLAY` logical associated with the process running the IVP. The logical can point to either a local or remote display server.
- If the test images exist and you are not using a workstation, the procedure indicates that you need to enter a node name at the `_Display:` prompt. In this case, the `DECW$DISPLAY` logical is not defined, therefore there is no default display. For example, if you use the `SET HOST` command to access a system and do not define the `DECW$DISPLAY` logical, the IVP does not know if you are on a workstation. In this case, you enter the name of the node where you wish the display to occur. If only a node name is supplied, the default is to use the DECnet transport, server 0, and screen 0 on the specified node. If you wish to override these defaults, specify the full display name (for example, `ashfld:2.1` creates a connection to screen 1, server 2 on node `ashfld` using the TCP/IP transport).
- If the IVP does not find the images, a message displays to inform you that the tests will not be run.

Press **Ctrl/Z** at the prompt if you do not want to run the display-oriented tests.

The following example shows the display test dialog on a workstation system. The display device `_WSA150` could be either a local display or a remote display.

To skip the display-oriented tests, press **Ctrl/Z** at the following prompt.

```
_Display: [_WSA150:]
```

```
%DECW-I-IVP, The IVP will display on WSA150:
%DECW-I-IVP, Running DECW$EXAMPLES:ICO.EXE for up to a minute.
%DECW-I-IVP, Press Ctrl/Y to interrupt test.
%DCL-S-SPAWNED, process DECW$IVP_ICO spawned
%DECW-I-IVP, Running SYS$SYSTEM:DECW$CLOCK for up to a minute.
%DECW-I-IVP, Press Ctrl/Y to interrupt test.
%DCL-S-SPAWNED, process DECW$IVP_CLOCK spawned
```

The following partial example shows the test being run on a non-workstation system.

This machine is not a workstation. Please provide the node name of a workstation on which to display the IVP tests. You must be sure that this account and node have security access to the display node, or the IVP will fail.

To skip the display-oriented tests, press **Ctrl/Z** at the following prompt.

```
_Display []: NODE33
```

```
%DECW-I-IVP, The IVP will display on NODE33::0.0
```

The remainder of the dialog is identical to the workstation example.

3.2.3. LBX Proxy Tests

If the display-oriented tests were selected and the required images are available, the procedure attempts to run the LBX proxy tests. The dialog's display of the test results depends on whether a display name or node name was entered in the previous dialog section, if a display name was entered whether the display is local or remote, and, if a local display, whether the display has been properly configured to support the LBX test. The following list describes the IVP's actions in each of several possible cases.

- If the specified display is local, the display server has enabled support for the LBX and SECURITY extensions, and the IVP process has the required privileges, the IVP displays the following messages.

```
%DECW-I-IVP, LBX Proxy tests, tests will execute through a proxy
%DECW-I-IVP, Running DECW$EXAMPLES:ICO.EXE for up to a minute.
%DECW-I-IVP, Press Ctrl/Y to interrupt test.
%DCL-S-SPAWNED, process DECW$IVP_LBX spawned
Using port number '50'
%DCL-S-SPAWNED, process DECW$IVP_ICO spawned
%DECW-I-IVP, End of LBX Proxy tests
```

- If the specified display is remote, the procedure is unable to determine if the associated display server supports the LBX and SECURITY extensions. The dialog issues a message warning you that the tests will fail if the remote server is not properly configured. The following example shows the LBX portion of the IVP after a remote display has been selected and the process running the IVP has the required privileges. If the remote server is properly configured, the remainder of the LBX portion of the dialog is identical to the first case in this list. If the remote server is not properly configured, the LBX Proxy test (and the IVP) will fail.

```
The LBX tests can only be executed if the display server has been
configured to support the LBX and SECURITY extensions and this account
has permission to generate cookies. Normally, remote servers will not
give that permission and the LBX tests cannot be executed.
```

Answer "NO" at the following prompt to skip the LBX tests.

```
Execute LBX test? YES
```

- If the specified display is local, and the display server has enabled support for the LBX and SECURITY extensions, but the process running the IVP does not have the required privileges, the IVP displays the following message.

```
%DECW-I-IVP, No privilege to execute LBX part of test. Proxy test
skipped.
```

- If the specified display is local and the display server has not been configured to support the LBX extension, the IVP displays the following message.

```
%DECW-I-IVP, Server does not support LBX extension. Proxy test skipped.
```

- If the specified display is local, and the display server has not been configured to support the SECURITY extension, the IVP displays the following message.

```
%DECW-I-IVP, Server does not support SECURITY extension. Proxy test
skipped.
```

- If a node name is entered in the first part of IVP dialog instead of a display name, the IVP displays the following message.

```
%DECW-I-IVP, LBX Proxy tests need a display device. Proxy test skipped.
```

3.2.4. Nondisplay-Oriented Tests

Finally, the IVP runs a set of nondisplay-oriented tests.

- The first of these tests invokes the Motif UIL compiler. If you did not install programming support, the IVP informs you that this test will not be run because the Motif UIL image does not exist. If this test is run, you are notified of its completion status.
- The last test converts a text file to DDIF format and then converts it back to text, comparing the original text file with the result. If the files match, the test is successful. You are notified of its completion status.

The following example shows the IVP output for the final two tests.

```
%DECW-I-IVP, Invoking the UIL Motif compiler...
%DECW-S-IVP, The UIL Motif compiler test completed successfully.
%DECW-I-IVP, Beginning CONVERT/DOCUMENT IVP...
%DECW-S-IVP, CONVERT/DOCUMENT IVP passed.
%DECW-S-IVP, The IVP has completed.
$
```

3.3. Choosing a Console

You can boot the VSI DECwindows Motif for OpenVMS software manually from a console. However, the type of console varies according to operating system platform, as described in the following sections.

3.3.1. On OpenVMS Alpha Systems

You can boot the VSI DECwindows Motif for OpenVMS software from the main console. You can then toggle between displaying and not displaying the operator window by pressing **Ctrl/F2**. The main console is always a workstation screen.

If you are logged in to the main console (workstation screen), you must log out before DECwindows will start. Issue the following command from the main console:

```
$ @SYS$MANAGER:DECW$STARTUP
```

Once the command procedure completes, log out of the main console. Otherwise the server will not start and a login box will not appear.

For an alternate console, you can use a terminal connected to the workstation by means of a terminal port. If you boot from the main console, the alternate console is connected when you invoke the VSI DECwindows Motif for OpenVMS startup command procedure. Note that if you boot the system from an alternate console, you cannot start the Console Window application.

3.3.2. On OpenVMS I64 Systems

In the OpenVMS I64 environment, the only type of console that is supported is a non-graphics, serial console connected through a special management port. See the *VSI OpenVMS Upgrade and Installation Manual* for information on configuring and using the serial console.

3.4. Selecting the Desktop

VSI DECwindows Motif for OpenVMS provides a choice of two desktops: the New Desktop, which is derived from the Common Desktop Environment (CDE), and the Traditional (DECwindows) Desktop.

During the installation, if you choose to install both the New Desktop and the DECwindows desktop, you are asked which desktop you want to be the default desktop.

To select the other desktop as the default desktop, perform the following steps.

- If the file `SY$MANAGER:DECW$PRIVATE_APPS_SETUP.COM` does not exist, copy it from `DECW$PRIVATE_APPS_SETUP.TEMPLATE` (or create it if an earlier version of VSI DECwindows Motif for OpenVMS has not been installed on your system). For example:

```
$ COPY SY$MANAGER:DECW$PRIVATE_APPS_SETUP.TEMPLATE -  
_ $ SY$COMMON:[SYSMGR]DECW$PRIVATE_APPS_SETUP.COM
```

- Edit `SY$MANAGER:DECW$PRIVATE_APPS_SETUP.COM` and add a symbol definition for `DECW$START_NEW_DESKTOP`. If you want the New Desktop as the default enter the following global symbol definition:

```
$ DECW$START_NEW_DESKTOP == "TRUE"
```

If you want the DECwindows desktop as the default, enter the following global symbol definition:

```
$ DECW$START_NEW_DESKTOP == "FALSE"
```

- Restart DECwindows using the following command:

```
$ @SY$MANAGER:DECW$STARTUP RESTART
```

3.5. System Maintenance Procedures

This section explains how to use the System Generation utility (SYSGEN) and the AUTOGEN utility to adjust your system for VSI DECwindows Motif for OpenVMS. The AUTOGEN utility uses system configuration data to automatically set system parameters.

Note

The VSI DECwindows Motif for OpenVMS startup procedure automatically checks for required system parameter values and passes the appropriate values to AUTOGEN via `NEWPARAMS.DAT`. Therefore, in most cases you do not have to check and modify these values manually as described in the following sections. These sections provide procedures to use if you find it necessary to increase a system resource beyond the values normally specified by VSI DECwindows Motif for OpenVMS.

3.5.1. Checking a System Parameter Value with SYSGEN

To check the value of a system parameter, invoke the SYSGEN utility by entering the following command at the DCL prompt:

```
$ RUN SY$SYSTEM:SYSGEN  
SYSGEN> USE CURRENT
```

```
SYSGEN>
```

At the SYSGEN prompt, enter the SHOW command to display the value of a system parameter. The following command displays the value for the CLISYMTBL system parameter:

```
SYSGEN> SHOW CLISYMTBL
```

After checking parameters with the SHOW command, enter the EXIT command at the SYSGEN prompt to return to DCL level.

3.5.2. Calculating the Number of Free Global Pages and Global Sections

To install and run VSI DECwindows Motif for OpenVMS software, you must have sufficient free global pages and global sections for the VSI DECwindows Motif for OpenVMS software and the file SYS\$LIBRARY:DCLTABLES.EXE.

VSI DECwindows Motif for OpenVMS attempts to guarantee that sufficient resources are available by placing both MIN_ and ADD_ parameters for global pages and global sections in its NEWPARAMS.DAT file. In addition, the VSI DECwindows Motif for OpenVMS startup command procedure checks these values and automatically invokes AUTOGEN if the current resources are insufficient. However, under certain system loads you may find it necessary to increase these resources by placing your own ADD_ entries in MODPARAMS.DAT. Any ADD_ values you place in MODPARAMS.DAT are in addition to the values VSI DECwindows Motif for OpenVMS places in its NEWPARAMS.DAT file.

To determine the number of contiguous free global pages and the number of free global sections, enter the WRITE command with the F\$GETSYI lexical function. If possible, use this command at a time of peak load for these two resources. The following example shows how to obtain this information at your terminal, which is the default for SYS\$OUTPUT:

```
$ WRITE SYS$OUTPUT F$GETSYI("CONTIG_GBLPAGES") Return
15848
$ WRITE SYS$OUTPUT F$GETSYI("FREE_GBLSECTS") Return
24
```

3.5.3. Setting the Size of the Page File

In order for VSI DECwindows Motif for OpenVMS to run with acceptable performance, the page file must be large enough to handle the virtual memory requirements of your system. The optimal size of the page file depends on many factors, such as the amount of physical memory on the system and the application workload.

Normally, you should run AUTOGEN with feedback and let AUTOGEN calculate the size of the page file based on the usage pattern on your system. To run AUTOGEN with feedback, enter the following DCL command:

```
$ @SYS$UPDATE:AUTOGEN SAVPARAMS REBOOT FEEDBACK
```

You can also increase the size of the page file by running the SYSGEN utility or by invoking the command procedure SYS\$UPDATE:SWAPFILES.COM.

For more information about setting the size of the page file and running AUTOGEN, see the section about the AUTOGEN utility in the *VSI OpenVMS System Manager's Manual* and the AUTOGEN

section in *VSI OpenVMS System Management Utilities Reference Manual*. For more information about performance tuning in general, see the *OpenVMS Performance Management* manual.

3.5.4. Changing System Parameter Values Using the AUTOGEN Utility

If you find it necessary to adjust system parameters, use the AUTOGEN utility. AUTOGEN automatically adjusts values for parameters that are associated with the values you reset manually. To change system parameters with AUTOGEN, edit the file SYS\$SYSTEM:MODPARAMS.DAT.

To change a parameter value listed in this file, delete the current value associated with that parameter and enter the new value.

To make incremental adjustments to parameters, such as global pages and global sections, add a line to the file and include both the name of the parameter (with the prefix ADD_) and its value. The following example increases the global pages value by 30,000:

```
ADD_GBLPAGES = 30000
```

After you enter all your changes, exit from the file and execute the AUTOGEN utility to recalculate your system parameters. Enter the following command to recalculate your system parameters and reboot the system:

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

When you specify REBOOT, the AUTOGEN utility performs an automatic system shutdown and then reboots the system. Any users logged in to the system are immediately disconnected during the shutdown. The automatic reboot puts the new parameter values into effect.

For details about using AUTOGEN, see the section about the AUTOGEN utility in the *VSI OpenVMS System Manager's Manual* and the AUTOGEN section in *VSI OpenVMS System Management Utilities Reference Manual*.

Chapter 4. Managing VSI DECwindows Motif for OpenVMS Software

After you install the VSI DECwindows Motif for OpenVMS product, you can tune your system to enhance performance, decrease the use of some system resources, and specify certain server settings. This chapter contains information about setting up your VSI DECwindows Motif for OpenVMS environment. See *VSI DECwindows Motif for OpenVMS Management Guide* and *VSI DECwindows Motif for OpenVMS New Features* for additional system management information.

The following topics are discussed in this chapter:

- Section 4.1: Customizing the DECwindows X Display Server Startup Procedure
- Section 4.2: Adding DECwindows Base-Support Files
- Section 4.3: Determining and Reporting Problems

4.1. Customizing the DECwindows X Display Server Startup Procedure

The DECwindows X display server manages the graphics devices on your workstation, such as the screen, keyboard, and mouse. The initial startup command procedures determine most of the configuration parameters for the DECwindows X11 Display Server automatically. However, the command procedures cannot determine some items, such as the layout of the keyboard, appropriate network transport, or which X server extensions to enable (such as, XINERAMA, SECURITY, or XKB).

You can specify additional display server settings by modifying the server startup file as follows:

1. Make a copy of the file `SYSS$MANAGER:DECW$PRIVATE_SERVER_SETUP.TEMPLATE` and rename it to `SYSS$MANAGER:DECW$PRIVATE_SERVER_SETUP.COM`. This server startup file shows how to customize individual workstations by adding a section of DCL commands for each workstation.
2. Edit the file to add or change the desired setup options in either of two sections (Cluster Common or Standalone Workstation) in the server startup file. Details on these options are available from the *VSI DECwindows Motif for OpenVMS Management Guide* and within the file itself. If you add a workstation-specific option, you must also update the variable `node_list`.
3. Restart VSI DECwindows Motif for OpenVMS on the workstations for which you customized the server startup using the following command:

```
$ @SYSS$MANAGER:DECW$STARTUP RESTART
```

4.2. Adding DECwindows Base-Support Files

If you previously chose not to install or if you removed the DECwindows base-support software, use the `PRODUCT RECONFIGURE` command to reconfigure the operating system and specifying that you want VSI DECwindows Motif for OpenVMS support.

4.3. Determining and Reporting Problems

If you encounter a problem while using VSI DECwindows Motif for OpenVMS, report it to VSI. Review the related Software Product Description (SPD) for an explanation of warranty. If you encounter a problem during the warranty period, you can take one of the following actions:

- Call your VSI support if your software contract or warranty agreement.
- If you discover a problem with or have comments about the documentation, print or edit the online form `SYS$HELP:OPENVMSDOC_COMMENTS.TXT` and send us your comments by Internet, fax, or mail. (See the Section 5 for addresses.)

Appendix A. POLYCENTER Software Installation Utility Sample Installation

This appendix contains sample VSI DECwindows Motif for OpenVMS installation procedures for the OpenVMS I64 Version 8.3 and OpenVMS Alpha Version 8.3 operating system.

Refer to Chapter 2 for details about using the POLYCENTER Software Installation utility to install VSI DECwindows Motif for OpenVMS software.

These sample procedures assume that you have set the default directory to the device name and directory containing the VSI DECwindows Motif for OpenVMS PCSI kit as well as any necessary ECOs.

A.1. Sample PCSI Installation on an OpenVMS I64 System

Example A.1 contains a sample of the VSI DECwindows Motif for OpenVMS software installation on an OpenVMS I64 operating system.

Example A.1. Sample Installation of the DECwindows Motif Software on an OpenVMS I64 Version 8.3 System

```
$ PRODUCT INSTALL DWMOTIF Return
```

```
Performing product kit validation ...
%PCSI-I-VALPASSED, validation of
DKB200:[SYS0.] [SYSMGR]VSI-I64VMS-DWMOTIF-V0106- -1.PCSI$COMPRESSED;1
succeeded
```

```
The following product has been selected:
```

```
VSI I64VMS DWMOTIF V1.6 Layered Product
```

```
Do you want to continue? [YES] Return
```

```
Configuration phase starting ...
```

```
You will be asked to choose options, if any, for each selected product and
for
any products that may be installed to satisfy software dependency
requirements.
```

```
VSI I64VMS DWMOTIF V1.6: DECwindows Motif
```

```
(c) Copyright 2006 Hewlett-Packard Development Company, L.P.
```

```
Hewlett-Packard Company.
```

```
This software product is sold by Hewlett-Packard Company.
```

```
DECwindows Motif is license-managed using the License Management Facility.
```

Do you want the defaults for all options? [YES] **N Return**

VSI I64VMS VMS V8.3 [Installed]

* Configuration options for this referenced product cannot
* be changed now because the product is already installed
* (You can use PRODUCT RECONFIGURE later to change options)

Install Low Bandwidth X (LBX) Support [YES]

Install the DECwindows Motif Version 1.6 client software [YES]

Do you want the defaults for all suboptions? [YES] **NO Return**

Install New Desktop [YES]

Install Manual (reference) pages for the New Desktop [YES]

Make the New Desktop the default desktop [YES]

Install traditional DECwindows Desktop [YES]

Programming Support for the C Language [YES]

Programming Support for the Pascal Language [YES]

Programming Support for the FORTRAN Language [YES]

Programming Support for the New Desktop [YES]

Programming examples [YES]

Do you want the defaults for all suboptions? [YES] **N Return**

Sound example files [YES]

Programming examples for DECwindows [YES]

Programming examples for the New Desktop [YES]

Translated Image Support [YES]

If a Language Variant is installed, refer to the Installation Guide.

Do you want to continue? [YES] **Return**

Do you want to review the options? [NO] **Y Return**

VSI I64VMS DWMOTIF V1.6: DECwindows Motif

VSI I64VMS VMS V8.3 [Installed]

Install Low Bandwidth X (LBX) Support: YES

Install the VSI DECwindows Motif for OpenVMS Version 1.6 client
software: YES

Install New Desktop: YES

Install Manual (reference) pages for the New Desktop: YES

Make the New Desktop the default desktop: YES

Install traditional DECwindows Desktop: YES

Programming Support for the C Language: YES

Programming Support for the Pascal Language: YES

Programming Support for the FORTRAN Language: YES

Programming Support for the New Desktop: YES

Programming examples: YES

Sound example files: YES

Programming examples for DECwindows: YES

Programming examples for the New Desktop: YES

Are you satisfied with these options? [YES] **Return**

Execution phase starting ...

The following product will be installed to destination:

VSI I64VMS DWMOTIF V1.6

DISK\$IA64SYS:[VMS\$COMMON.]

Portion done: 0%

...10%
...20%
...30%
...40%
...50%
...60%
...70%
...80%
...90%

**** DECwindows Motif application and run-time support files DETECTED ****

**** DECwindows device support files DETECTED ****

...100%

The following product has been installed:

VSI I64VMS DWMOTIF V1.6 Layered Product

VSI I64VMS DWMOTIF V1.6: DECwindows Motif

System reboot is required.

Installation Verification Procedure can be run after reboot.

\$ **Logout Return**

A.2. Sample PCSI Installation on an OpenVMS Alpha System

Example A.2 contains a sample of the VSI DECwindows Motif for OpenVMS software installation on an OpenVMS Alpha operating system.

Example A.2. Sample Upgrade of the DECwindows Motif Software on an OpenVMS Alpha Version 8.3 System

\$ **PRODUCT INSTALL DWMOTIF Return**

Performing product kit validation ...
%PCSI-I-VALPASSED, validation of
DKB200:[SYS0.] [SYSMGR]DEC-AXPVMS-DWMOTIF-V0106- -1.PCSI\$COMPRESSED
succeeded

The following product has been selected:

DEC AXPVMS DWMOTIF V1.6 Layered Product

Do you want to continue? [YES] **Return**

Configuration phase starting ...

You will be asked to choose options, if any, for each selected product and for any products that may be installed to satisfy software dependency requirements.

DEC AXPVMS DWMOTIF V1.6: DECwindows Motif

(c) Copyright 2006 Hewlett-Packard Development Company, L.P.

Hewlett-Packard Company

This software product is sold by Hewlett-Packard Company.

DECwindows Motif is license-managed using the License Management Facility.

Do you want the defaults for all options? [YES] **N Return**

DEC AXPVMS VMS V8.3 [Installed]

* Configuration options for this referenced product cannot
* be changed now because the product is already installed
* (You can use PRODUCT RECONFIGURE later to change options)

Install Low Bandwidth X (LBX) Support [YES]

Install the DECwindows Motif Version 1.6 client software [YES]

Do you want the defaults for all suboptions? [YES] **N Return**

Install New Desktop [YES]

Install Manual (reference) pages for the New Desktop [YES]

Make the New Desktop the default desktop [YES]

Install traditional DECwindows Desktop [YES]

Programming Support for the C Language [YES]

Programming Support for the Pascal Language [YES]

Programming Support for the FORTRAN Language [YES]

Programming Support for the New Desktop [YES]

Programming examples [YES]

Do you want the defaults for all suboptions? [YES] **N Return**

Sound example files [YES]

Programming examples for DECwindows [YES]

Programming examples for the New Desktop [YES]

Translated Image Support [YES]

If a Language Variant is installed, refer to the Installation Guide.

Do you want to continue? [YES] **Return**

Do you want to review the options? [NO] **Y Return**

DEC AXPVMS DWMOTIF V1.6: DECwindows Motif

DEC AXPVMS VMS V8.3 [Installed]

Install Low Bandwidth X (LBX) Support: YES

Install the DECwindows Motif Version 1.6 client software: YES

Install New Desktop: YES

Install Manual (reference) pages for the New Desktop: YES

Make the New Desktop the default desktop: YES

Install traditional DECwindows Desktop: YES

Programming Support for the C Language: YES

Programming Support for the Pascal Language: YES

Programming Support for the FORTRAN Language: YES

Programming Support for the New Desktop: YES
Programming examples: YES
 Sound example files: YES
 Programming examples for DECwindows: YES
 Programming examples for the New Desktop: YES
Translated Image Support: YES

Are you satisfied with these options? [YES] **Return**

Execution phase starting ...

The following product will be installed to destination:
 DEC AXPVMS DWMOTIF V1.6 DISK\$ALPHAYSYS:[VMS\$COMMON.]

Portion done: 0%
...10%
...20%
...30%
...40%
...50%
...60%
...70%
...80%
...90%

**** DECwindows Motif application and run-time support files DETECTED

**** DECwindows device support files DETECTED ****

...100%

The following product has been installed:
 DEC AXPVMS DWMOTIF V1.6 Layered Product

DEC AXPVMS DWMOTIF V1.6: DECwindows Motif

 System reboot is required.

 Installation Verification Procedure can be run after reboot.
\$ **Logout Return**

Appendix B. Software Components and Version Checking

B.1. Obtaining a List of Installed Components

Once you have installed VSI DECwindows Motif for OpenVMS, you can obtain a list of all installed files and the directories and subdirectories into which the files were installed.

To obtain this list, enter the following POLYCENTER Software Installation utility command:

```
$ PRODUCT SHOW OBJECT/product=dwmotif
```

Following is sample output from this command.

OBJECT	OBJECT TYPE	STATUS
-----	-----	-----
[000000]	directory	OK
[000000]DEC-AXPVMS-DWMOTIF-V0102-6-1.PCSI\$DESCRIPTION	file	OK
[000000]DEC-AXPVMS-DWMOTIF-V0102-6-1.PCSI\$TLB	file	OK
[CDA\$LIBRARY]	directory	OK
[CDA\$LIBRARY]CL_DAY.DOC_STYLE	file	OK
[CDA\$LIBRARY]DEFSTYLE.DDIF	file	OK
[CDE\$DEFAULTS]	directory	OK
[CDE\$DEFAULTS]	directory	OK
[CDE\$DEFAULTS.SYSTEM]	directory	OK
[CDE\$DEFAULTS.SYSTEM]	directory	OK
[CDE\$DEFAULTS.SYSTEM.APP-DEFAULTS]	directory	OK
[CDE\$DEFAULTS.SYSTEM.APP-DEFAULTS.C]	directory	OK
[CDE\$DEFAULTS.SYSTEM.APP-DEFAULTS.C]DT.DAT	file	OK
[CDE\$DEFAULTS.SYSTEM.APP-DEFAULTS.C]DTCALC.DAT	file	OK
[CDE\$DEFAULTS.SYSTEM.APP-DEFAULTS.C]DTCREATE.DAT	file	OK
[CDE\$DEFAULTS.SYSTEM.APP-DEFAULTS.C]DTFILE.DAT	file	OK
[CDE\$DEFAULTS.SYSTEM.APP-DEFAULTS.C]DTHELLO.DAT	file	OK
.		
.		
.		

B.2. Checking the Version of Installed Images

At times you may need to verify the combination of software components and versions that are installed on a particular system. Use one or more of the following command procedures (available from the SYS\$UPDATE directory) to check the versions of layered product images currently installed on your system:

- DECW\$GET_IMAGE_VERSION.COM

Extracts the image identification string from an image and places it into a user-defined symbol.

- DECW\$COMPARE_VERSIONS.COM

Compares two image identification strings and assigns a value to a user-defined symbol with these possible results:

- Facility codes do not match.
- Identifiers are the same.
- Second identifier is older than the first.
- Second identifier is newer than the first.

- **DECW\$VERSIONS.COM**

Displays the versions of several components of the DECwindows Motif layered product and the X display server. The DECW\$VERSIONS.COM procedure uses the DECW\$GET_IMAGE_VERSION.COM command procedure to obtain the image IDs of each file.

To display the versions of DECwindows images currently installed, enter the following command:

```
$ @SYS$UPDATE:DECW$VERSIONS *
```

The output from the command shows the image ID (DW), the version number, and the date the image was created. For example, the following result:

```
DW V1.6-060108
```

shows the VSI DECwindows Motif for OpenVMS client (DW) image is at version 1.6 and was created on January 8, 2006.