DEC PHIGS

Installing DEC PHIGS for OpenVMS VAX Systems

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This document contains instructions for installing DEC PHIGS™ on an OpenVMS™ VAX™ operating system. It also explains how to read the online release notes before or after installing the product. This document applies to DEC PHIGS Version 3.1.

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Contents

Preface v

1 Preparing for DEC PHIGS Installation

1.1 Prerequisite Software 1–1
1.2 Online Release Notes 1–2
1.3 Media Distribution Kit 1–2
1.4 License Registration 1–2
1.5 Installation Procedure Requirements 1–3
1.5.1 Privileges 1–3
1.5.2 Disk Space 1–3
1.5.3 Global Pages and Global Sections System Parameters 1–4
1.5.3.1 Determining the Global Pages and Global Sections Available 1–4
1.5.3.2 Determining the Global Pages and Global Sections Used 1–5
1.5.3.3 Modifying the Global Pages Parameter 1–5
1.5.3.4 Modifying the Global Sections Parameter 1–6
1.5.3.5 Recalculating the Global Pages and Global Sections Parameters 1–6
1.5.4 Other System Parameters 1–6
1.5.5 User Account Quotas 1–6
1.6 Backing Up Your System Disk 1–7

2 Installing DEC PHIGS

2.1 Installation Procedure 2–1
2.2 Error Recovery 2–9

3 After Installing DEC PHIGS

3.1 Installing DEC PHIGS on an OpenVMS VAXcluster Configuration 3–1
3.2 Editing the Startup File 3–1
3.3 Running the Installation Verification Procedure 3–2
3.4 Installing Maintenance Updates 3–3
3.5 Determining and Reporting Problems 3–4

A Files Installed on Your System

A.1 DEC PHIGS Development Kit Files A–1
A.2 DEC PHIGS Run-Time-Only Kit Files A–8

B Sample Installations

B.1 DEC PHIGS Development Kit Installation B–1
B.2 DEC PHIGS Run-Time-Only Kit Installation B–3

Figures

3–1 Sample IVP Display 3–3

Tables

1–1 Disk Space Requirements 1–3
1–2 Minimum Required System Parameter Values 1–4
A–1 Installed Files for the DEC PHIGS Development Kit A–1
A–2 Installed Files for the DEC PHIGS Run-Time-Only Kit A–8

Preface

This guide describes how to install the DEC PHIGS Version 3.1 development kit and run-time-only kit on an OpenVMS VAX operating system. Because this installation guide is not usually revised for software maintenance updates, you should read the *Read Before Installing or Using DEC PHIGS for OpenVMS VAX Systems* letter for a summary of the significant changes to the installation procedure.

Keep this document with your distribution kit. You will need it to install maintenance updates or to reinstall DEC PHIGS for any other reason.

At the back of the printed version of this document are two Reader's Comments forms. If you have any comments about this document, fill out one form and mail it; your comments will be considered for the next revision of this document.

Intended Audience

This manual is for system managers installing DEC PHIGS for OpenVMS VAX.

Structure of this Document

This manual is organized as follows:

- Chapter 1 describes the preparations and requirements necessary for installing DEC PHIGS.
- Chapter 2 provides the step-by-step instructions for the installation.
- Chapter 3 describes the operations you perform after installation.
- Appendix A lists the files installed with DEC PHIGS.
- Appendix B contains sample development kit and run-time-only kit installations.

Manuals in the DEC PHIGS Documentation Set

In addition to this manual, the DEC PHIGS documentation set includes the following manuals:

- *DEC PHIGS Ada Binding Reference Manual*
- *DEC PHIGS C Binding Reference Manual*
- *DEC PHIGS ISO C Binding Reference Manual*
- *DEC PHIGS ISO Fortran Binding Reference Manual*
- *DEC PHIGS PHIGS$ Binding Reference Manual*

- *Device Specifics Reference Manual for DEC GKS and DEC PHIGS*
- *Getting Started with DEC PHIGS*
- *DEC PHIGS Developer's Guide*

If you use DEC PEXlib, you may require the *DEC Open3D PEXlib C Binding Reference Manual*, which is part of the DEC Open3D™ documentation set.

Related Manuals

For information on OpenVMS system management, see the following manuals:

- *OpenVMS System Manager's Manual*
- *Guide to Maintaining a VMS System*
- *OpenVMS License Management Utility Manual*
- *Guide to OpenVMS Performance Management*

Conventions Used in This Manual

The following conventions are used in this guide:

UPPERCASE TEXT	Uppercase letters indicate the name of a command, file, parameter, procedure, or utility.
bold	Boldface text is used in interactive examples to indicate typed user input.
$	The dollar sign is used to indicate the DCL prompt. This prompt may be different on your system.
`system output`	This typeface is used in interactive and code examples to indicate system output. In text, this typeface is used to indicate the exact name of a command, option, partition, path name, directory, or file.
[logical-name]	Square brackets indicate that the enclosed item is optional. (Square brackets are not, however, optional in the syntax of a directory name in a file specification or in the syntax of a substring specification in an assignment statement.)
Ctrl/x	In procedures, a sequence such as Ctrl/X indicates that you must hold down the key labeled Ctrl while you press another key or a pointing device button.
Return	In procedures, a key name is shown enclosed to indicate that you press a key on the keyboard.
VMS™ OpenVMS	The terms VMS and OpenVMS refer to the same operating system.
. . .	Vertical ellipsis in an example means that information has been omitted.

1

Preparing for DEC PHIGS Installation

This chapter describes the preparations and requirements necessary for installing DEC PHIGS Version 3.1.

This chapter will help you determine the following:

- Whether the system on which you will install DEC PHIGS has the prerequisite software installed
- How to read the online release notes
- If installing DEC PHIGS from media, whether your distribution kit includes all the components listed on the Bill of Materials (BOM)
- How to register a software license
- The privileges required to perform the installation
- How much disk space you will need
- Whether the global pages and sections parameters are defined properly
- Whether the process account quotas are defined correctly
- How to back up your system disk

1.1 Prerequisite Software

To install DEC PHIGS on a VAXstation workstation, you must have the following products installed:

- OpenVMS VAX Operating System Version 5.5-2 or higher
- DECwindows Motif for OpenVMS VAX Version 1.2 or higher
- DEC C™ Version 4.0 or higher

  This software must be installed if you are using OpenVMS VAX Version 5.5-2; however, no DEC C license is required to run DEC PHIGS.

You must also have the following OpenVMS VAX classes:

- OpenVMS VAX required save set
- Network support—where full DECwindows network functionality is necessary
- Programming support—required by the DEC PHIGS development kit

If you are using DEC PHIGS on a workstation, Digital recommends the OpenVMS VAX class for workstation support.

1.2 Online Release Notes

DEC PHIGS provides online release notes. You can access release notes during the installation procedure when you invoke VMSINSTAL with the OPTIONS N parameter. This option lets you read or print the release notes before installing DEC PHIGS.

To obtain the DEC PHIGS release notes for the development or run-time-only kit after installation, print the following files:

- SYS$HELP:DECPHIGS031.RELEASE_NOTES (ASCII format)
- SYS$HELP:DECPHIGS031_RELEASE_NOTES.PS (PostScript® format)
- SYS$HELP:DECPHIGSJ031.RELEASE_NOTES
- SYS$HELP:DECPHIGSJ031_RELEASE_NOTES.PS

1.3 Media Distribution Kit

Your bill of materials (BOM) and indented bills report (BIL) specify the number and contents of your media. Be sure to check the contents of your kit against this information. If your kit is damaged or if you find that parts of it are missing, call your Digital representative. For more information on how to mount distribution media, see your processor-specific installation/operations guide, which also details several options for the installation procedure.

1.4 License Registration

Before you install and run DEC PHIGS Version 3.1 on a newly licensed node or cluster, you must first register a License Product Authorization Key (License PAK) using the License Management Facility (LMF). The PAK is a paper certificate that contains information about the license that enables you to use the software. The License PAK is shipped with the kit if you ordered the license and media together; otherwise, the PAK is shipped separately to the location specified on your license order.

If you are installing DEC PHIGS as an update on a node or cluster already licensed for this software, you have already completed the License PAK registration requirements. If you are installing prerequisite or optional software along with DEC PHIGS, review the PAK status and install the PAKs for this prerequisite or optional software before you install DEC PHIGS.

To register a license under the OpenVMS operating system, first log in to the system manager's account, SYSTEM. You can then register the license in one of two ways:

- Invoke the SYS$UPDATE:VMSLICENSE.COM procedure. When it prompts you for information, respond with the data from your License PAK.
- Type the LICENSE REGISTER command with the qualifiers corresponding to the License PAK information.

If you plan to use DEC PHIGS on more than one node in a VAXcluster™ configuration, you will need to perform a license load on the other nodes after you complete this installation. See Section 3.1 for details.

For complete information on using LMF, see the *OpenVMS License Management Utility Manual*.

1.5 Installation Procedure Requirements

The following sections describe the various requirements for installing DEC PHIGS. The installation takes approximately 5 to 30 minutes, depending on your system configuration.

1.5.1 Privileges

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

- CMKRNL
- WORLD
- SYSPRV

When you invoke VMSINSTAL to begin the installation procedure, VMSINSTAL turns off the BYPASS privilege.

After installation, each user account must have at least the TMPMBX and NETMBX privileges to use DEC PHIGS. Use the OpenVMS Authorize Utility to determine whether users have the privileges they require.

1.5.2 Disk Space

The DEC PHIGS requirements for free disk storage space are different during installation and after installation. Table 1–1 summarizes these requirements.

Table 1–1 Disk Space Requirements

Kit	Blocks During Installation	Blocks After Installation
DEC PHIGS Development Kit Version 3.1	70,000	65,000
With Ada option	90,000	85,000
DEC PHIGS Run-Time-Only Kit Version 3.1	40,000	36,000

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

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

Caution

You must ensure that your system has the necessary global page and global section SYSGEN quotas for the installation. Otherwise, the DCL tables may become corrupted in certain situations.

1.5.3 Global Pages and Global Sections System Parameters

The installation of DEC PHIGS requires minimum values for the system parameters defining the global pages and global sections. These values are shown in Table 1–2. Depending on the kinds of programs and applications running at your site, you may need to define larger values.

Table 1–2 Minimum Required System Parameter Values

System Parameter	Minimum Value
GBLPAGES[1]	n + 6500
GBLSECTIONS[1]	n + 42

[1]The n variable refers to the system parameter values that are currently in use. To install DEC PHIGS, you must increase those values by the number indicated.
These dynamic system parameters must be set permanently to values equal to or greater than the values listed. Do not decrease these values after the installation.

The following sections describe how to:

- Determine the number of global pages and global sections available
- Determine the global pages and global sections used
- Modify the global pages parameter
- Modify the global sections parameter
- Recalculate the global pages and global sections parameters in order to take the new values into account

1.5.3.1 Determining the Global Pages and Global Sections Available

You can determine the available global pagelets and global sections using the WRITE command with the F$GETSYI lexical function. The following example shows how to display this information on your terminal (the default for SYS$OUTPUT):

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

If the values displayed by the system are greater than the values in Table 1–2, you do not need to increase the values for these parameters. If the values of free global pages or global sections are less than the values in Table 1–2, you must increase the parameter values, as described in the following sections.

You can also determine the number of global sections available using the following procedure:

1. Invoke the SYSGEN Utility:

```
$ RUN SYS$SYSTEM:SYSGEN Return
SYSGEN> USE CURRENT Return
```

2. Determine the number of global sections available:

```
SYSGEN> SHOW GBLSECTIONS Return

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

The first number displayed is the current number of global sections. Compare this number to the number of global sections in use displayed by the OpenVMS Install Utility (see Section 1.5.3.2).

3. Exit from the SYSGEN Utility:

```
SYSGEN> EXIT Return
```

1.5.3.2 Determining the Global Pages and Global Sections Used

To determine the global pages and global sections used:

1. Invoke the OpenVMS Install Utility:

```
$ INSTALL :== $INSTALL/COMMAND_MODE Return
$ INSTALL Return
```

2. Determine the number of global pages used:

```
INSTALL> LIST/GLOBAL/SUMMARY Return

        Summary of Local Memory Global Sections

nn Global Sections Used,  nnnn/nnnn Global Pages Used/Unused

INSTALL> EXIT Return
```

The system displays a summary of the number of global sections used, the number of global pages used, and the number of global pages available.

3. Exit from the OpenVMS Install Utility:

```
INSTALL> EXIT Return
```

1.5.3.3 Modifying the Global Pages Parameter

To modify the number of global pages:

1. If there are fewer than 6500 pages available, modify the GBLPAGES system parameter.

   You can modify the GBLPAGES parameter by editing the SYS$SYSTEM:MODPARAMS.DAT file. To change a parameter value in this file, delete the current value and enter the new value. (Another way of allocating space is to delete an existing known image with the OpenVMS Install Utility.)

   To modify GBLPAGES, use ADD_GBLPAGES as shown, where *n* is the number of global pages to add:

```
ADD_GBLPAGES = n
```

   Note that when you set the page file quota, you should not use a value that exceeds the amount of page file space available on the system.

2. Exit the editor.

3. Update the GBLPAGES parameter by invoking the AUTOGEN command procedure described in Section 1.5.3.5.

1.5.3.4 Modifying the Global Sections Parameter

To modify the number of global sections:

1. If the number of global sections in use plus 42 exceeds the current number of global sections, modify the GBLSECTIONS parameter.

   You can modify the GBLSECTIONS parameter by editing the SYS$SYSTEM:MODPARAMS.DAT file. To change a parameter value in this file, delete the current value and enter the new value.

   To modify GBLSECTIONS, use ADD_GBLSECTIONS as shown, where *n* is the number of global sections to add:

   ```
   ADD_GBLSECTIONS = n
   ```

   Note that when you set the page file quota, you should not use a value that exceeds the amount of page file space available on the system.

2. Exit the editor.
3. Update the GBLSECTIONS parameter by invoking the AUTOGEN command procedure described in Section 1.5.3.5.

1.5.3.5 Recalculating the Global Pages and Global Sections Parameters

To update the GBLPAGES and GBLSECTIONS parameters, invoke the AUTOGEN command procedure, SYS$UPDATE:AUTOGEN.COM:

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

AUTOGEN automatically recalculates the parameters with the values you defined manually. When you specify REBOOT, AUTOGEN performs an automatic system shutdown and then reboots the system. Any users logged on to the system are immediately disconnected during the shutdown.

AUTOGEN also automatically adjusts some of the SYSGEN parameters, based on the consumption of resources since the last reboot. If you do not want to take advantage of this automatic adjustment, include the NOFEEDBACK qualifier on the AUTOGEN command line.

For more information about using AUTOGEN, see the OpenVMS System Management Subkit.

1.5.4 Other System Parameters

The installation for DEC PHIGS requires that you increase the values of the CLISYMTBL and CTLPAGES system parameters. Once the installation is complete, you can decrease these values to ensure efficient system performance.

1.5.5 User Account Quotas

To use DEC PHIGS, you must have an account with an open file limit (FILLM) of at least 20. In addition, if you are using the Ada binding, the FILLM should be set to 2000, and the BYTLM should be set to 200,000.

Using the OpenVMS Authorize Utility (AUTHORIZE), you can compare the current values of these quotas with the requirements for DEC PHIGS. The account used in the following example is the SYSTEM account:

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

To change the values of these quotas, use the MODIFY command. For more information, see the *OpenVMS System Management Utilities Reference Manual*.

1.6 Backing Up Your System Disk

Digital recommends that you back up your system disk, before installing any software. Use the backup procedures that are established at your site. For details on performing a backup, see the section on the Backup Utility in the OpenVMS System Management Subkit.

2
Installing DEC PHIGS

This chapter describes the DEC PHIGS installation procedure and the operations you may need to perform after the installation. For a list of the files and directories created during the installation procedure, see Appendix A. For sample development kit and run-time-only installations, refer to Appendix B.

To abort the installation procedure at any time, press Ctrl/Y. When you press Ctrl/Y, the installation procedure deletes all files it has created up to that point and exits. You can then start the installation again. Attempting to link programs against the DEC PHIGS run-time library results in link errors.

2.1 Installation Procedure

Before you install DEC PHIGS, Digital recommends that you back up your system disk. Once you have done so, you can begin the installation. The installation takes approximately 5 to 30 minutes, depending on your system configuration.

You should not install DEC PHIGS run-time Version 3.1 if you have already installed the full development kit of DEC PHIGS Version 3.1. If you do, the installation procedure will overwrite the development kit with the run-time-only kit. To determine which version of DEC PHIGS is currently installed, type the following DCL command:

```
$ ANALYZE/IMAGE/INTERACTIVE/HEADER SYS$COMMON:[SYSLIB]PHIGS$RTL Return
```

The procedure for installing DEC PHIGS is:

1. **Log in to a privileged account and set your default device and directory to SYS$UPDATE.**

   Digital recommends that you use the system manager's account.

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

2. **Invoke VMSINSTAL.**

   When you invoke VMSINSTAL, it checks the following:

   - Whether you are logged in to a privileged account. You should install software from the system manager's account with your default device and directory set to SYS$UPDATE.
   - The installing account has adequate:

     Disk space
     Global pages
     Global sections
     Account quotas

- Whether you have adequate quotas for installation. VMSINSTAL requires the following minimum quota values:

  ASTLM = 24
  BIOLM = 18
  BYTLM = 18000
  DIOLM = 18
  ENQLM = 30
  FILLM = 20

- Whether the following conditions exist:
  - DECnet™ network is up and running.
  - Users are logged in to the system.

If VMSINSTAL detects problems, you will be asked whether you want to continue the installation. You should correct these problems before resuming the installation procedure. If you want to continue, type YES. If you want to stop the installation, press Return.

To invoke the VMSINSTAL command procedure, enter:

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

The VMSINSTAL parameters are:

saveset-name

The installation name for the component. For the DEC PHIGS development kit, use the name:

```
DECPHIGS031
```

For the DEC PHIGS run-time-only kit, use the name:

```
DECPHIGSRTO031
```

ddcu

The name of the device on which you plan to mount the distribution volumes for the DEC PHIGS installation media, where *dd* is the device code, *c* is the controller code, and *u* is the unit number. For example, DKA400 is the device name for a CD–ROM.

You do not have to use the console drive to install DEC PHIGS. If you do use the console drive after the installation, you should replace any media you removed from the drive prior to the installation.

For CD–ROM media, you must also supply the directory location of the DEC PHIGS save set on the CD–ROM. To obtain this location, see the *Software Product Library CD–ROM User's Guide* booklet that accompanies the CD–ROM distribution kit, or complete the following steps before starting the installation:

1. Determine whether the CD–ROM drive is already mounted by entering the command:

   ```
   $ SHOW DEVICE DKA400: Return
   ```

   If the device is mounted, skip to the next step. If it is not mounted, type the appropriate MOUNT command to mount the CD–ROM, omitting the /FOREIGN qualifier.

2. Obtain the directory name by entering the command:

   ```
   $ DIRECTORY DKA400:[000000]*decphigs*.dir Return
   ```

   The directory name will be displayed; for example:

   ```
   Directory DKA400:[000000]
   DECPHIGS031.DIR;1          (development kit)
   DECPHIGSRTO031.DIR;1       (run-time-only kit)
   ```

3. Obtain the save set name by using a DIRECTORY command specifying the directory file from the previous command. For example, for the development kit, enter:

   ```
   $ DIRECTORY DKA400:[DECPHIGS031.KIT]*.A Return
   ```

   For the run-time-only kit, enter:

   ```
   $ DIRECTORY DKA400:[DECPHIGSRTO031.KIT]*.A Return
   ```

OPTIONS N

An optional parameter that enables you to access the release notes. If you do not include the OPTIONS N parameter, VMSINSTAL does not ask you about the release notes. You should review the release notes before proceeding with the installation, because they contain additional information about the installation.

Note that there are several other options you can select when you invoke VMSINSTAL:

- Auto_answer option (**A**)

  This option initially creates a file that contains your answers to VMSINSTALL questions and prompts. You can then use the option (and the answer file) to save time during a reinstallation (typically after upgrading your system).

- Get save set option (**G**)

  This option lets you temporarily store product save sets on a magnetic tape or in a disk directory.

- File log option (**L**)

  This option logs all activity to the terminal during installation.

- Alternate root option (**R**)

  This option lets you install the product to a system root other than that of the current system.

If you do not supply the save set and device names, VMSINSTAL prompts you for them later in the installation. VMSINSTAL does not prompt you for any options, however, so be sure to include the desired options on the VMSINSTAL command line. If you specify more than one option, separate the options with commas (for instance, OPTIONS A,N). See the documentation on software installation in the OpenVMS System Management Subkit for detailed information on these options.

The following example invokes VMSINSTAL to install DEC PHIGS development kit from a CD–ROM and shows the system response:

```
$ @SYS$UPDATE:VMSINSTAL DECPHIGS031 DKA400 OPTIONS N Return

      OpenVMS VAX Software Product Installation Procedure V6.1


It is dd-mmm-yyyy at hh:mm.
Enter a question mark (?) at any time for help.
```

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

3. **Check the status of your processes.**

   VMSINSTAL displays a list of all active processes and asks if you want to continue the installation:

```
%VMSINSTAL-W-ACTIVE, The following processes are still active:
       DECW$SERVER_0
       _FTA8:
       _FTA11:
       _FTA12:
          .
          .
          .
* Do you want to continue anyway [NO]? Y Return
```

   You can install DEC PHIGS even if other processes are running. If you do not wish to continue the installation, press Return. If you wish to continue installing DEC PHIGS, enter YES and press Return.

4. **Confirm system backup.**

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

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

5. **Mount the media.**

   If you omitted the device name on the VMSINSTAL command line, the following prompt appears:

```
* Where will the distribution volume be mounted: DKA400: Return
```

   Enter the name of the distribution media device and directory that contains the DEC PHIGS save sets. For example, if the media is contained on a CD–ROM located on unit DKA400:, and the DEC PHIGS save sets are located in the directory DECPHIGS031.KIT (for the development kit), enter:

```
DKA400:[DECPHIGS031.KIT]
```

   Depending on the type of device and whether the device is already mounted, the following may or may not appear:

```
Please mount the first volume of the set on DKA400
* Are you ready? Y Return
```

If you entered the wrong device name when you invoked VMSINSTAL and need to restart the installation, enter NO in response to the ''Are you ready?'' question. If you respond YES to indicate that you are ready, VMSINSTAL indicates that the media containing DEC PHIGS has been mounted, and then prompts for the product name and any desired installation options:

DEC PHIGS DEVELOPMENT KIT

```
%MOUNT-I-MOUNTED, cd_name MOUNTED ON DKA400 (NODE 1)

 Enter the products to be processed from the first distribution volume set.
  * Products: DECPHIGS031 Return
  * Enter installation options you wish to use (none): Return

The following products will be processed:
  DECPHIGS V3.1

        Beginning installation of DECPHIGS V3.1 at hh:mm.

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

DEC PHIGS RUN-TIME-ONLY KIT

```
%MOUNT-I-MOUNTED, DEC PHIGS MOUNTED ON DKA400 (NODE 1)

 Enter the products to be processed from the first distribution volume set.
  * Products: DECPHIGSRTO031 Return
  * Enter installation options you wish to use (none): Return

The following products will be processed:
  DECPHIGSRTO V3.1

        Beginning installation of DECPHIGSRTO V3.1 at hh:mm.

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

6. **Select a release notes option.**

   This step applies only if you specified OPTIONS N when starting the installation.

```
Release Notes Options:

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

* Select option [2]: 1 Return
```

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

   If you select option 2, VMSINSTAL prompts you for a queue name. Either type a queue name or press Return to send the file to the default output print device:

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

   If you select option 3, VMSINSTAL displays the release notes on the terminal and then prompts you for a queue name for the printed version. After you type a queue name or press Return to send the file to the default output print device, the release notes are copied to:

   - SYS$HELP:DECPHIGS031.RELEASE_NOTES (ASCII format)
   - SYS$HELP:DECPHIGS031_RELEASE_NOTES.PS (PostScript format)

- SYS$HELP:DECPHIGSJ031.RELEASE_NOTES
- SYS$HELP:DECPHIGSJ031_RELEASE_NOTES.PS

If you select option 4, VMSINSTAL does not display, print, or copy the release notes. This option is typically used when you wish to terminate the installation.

Note

This version of the release notes file installed by VMSINSTAL is labeled with the current product name and version number. Be sure not to delete release notes for previous versions of DEC PHIGS.

VMSINSTAL then displays the following prompt:

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

To continue the installation, enter YES and press Return. Otherwise, press Return. In either case, the release notes are copied to files in the SYS$HELP directory.

After the installation, you can enter the following command to review the release notes through the Help facility, for example:

```
$ HELP PHIGS RELEASE_NOTES Return
```

7. **Purge the old DEC PHIGS files.**

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

The directories SYS$COMMON:[SYSLIB] and SYS$SYSTEM may contain previous versions of DEC PHIGS files. These files are replaced during the installation with new files, but the old files are not automatically purged. Purging is recommended. In response to the purging prompt, press Return to purge the files or type NO to keep them.

Appendix A lists the files on the system that are added or modified when you install the DEC PHIGS development kit and the run-time-only kit.

8. **Respond to license registration queries.**

DEC PHIGS supports the VMS License Management Facility (LMF). The installation procedure displays license information about your product and then asks if you have registered and loaded your authorization key for DEC PHIGS. The following is an example of this information:

```
DEC PHIGS DEVELOPMENT KIT

  Product:       PHIGS
  Producer:      DEC
  Version:       3.1
  Release Date:  27-JAN-1994

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

```
DEC PHIGS RUN-TIME-ONLY KIT

   Product:       PHIGS-RUNTIME
   Producer:      DEC
   Version:       3.1
   Release Date:  dd-mmm-yyyy

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

Your PAK must be registered and loaded for the installation to complete successfully. Therefore, if your PAK is not registered and loaded, you must answer NO to this question, stop the installation, register and load your PAK, and then restart the installation.

9. **Install the ACS library containing the PHIGS Ada binding (development kit only).**

```
The DEC PHIGS Ada binding requires 20000 blocks of disk space.
* Do you wish to install the ACS library containing the PHIGS Ada
binding [NO]? Return
```

Press Return if you do not want to install the ACS library. Type YES if you want to install the ACS library.

10. **Install the PHIGS help library (development kit only).**

```
* Do you wish to install the help library for PHIGS [YES]? Return
```

Press Return if you want to install the PHIGS help library. Type NO if you do not want to install the help library.

11. **Install examples from PHIGS documentation (development kit only).**

```
* Do you wish to install the examples from the PHIGS
documentation [YES]? Return
```

Press Return if you want to install the example programs from the *Getting Started with DEC PHIGS* manual and the *DEC PHIGS Developer's Guide*. Type NO if you do not want to install the programs. The DEC PHIGS example programs use approximately 2200 blocks and are installed in the PHIGS$EXAMPLES:[...] directories.

12. **Install PEXlib (development kit only).**

```
* Do you wish to have PEXlib installed [YES]? Return
```

Press Return if you want to install PEXlib. Type NO if you do not want to install PEXlib.

13. **Install the PEXlib documentation (development kit only).**

```
* Do you wish to have the PEXlib documentation installed [YES]? Return
```

Press Return if you want to install the PEXlib documentation. Type NO if you do not want to install the PEXlib documentation.

14. **Install the Japanese PHIGS-related files.**

```
      This kit contains Japanese-related files.
      They require Japanese OpenVMS.

* Do you wish to install Japanese related files [NO]? Return
```

If the Japanese version of OpenVMS is installed on your system, you will be asked if you want to install the Japanese components of DEC PHIGS. Press Return if you do not want to install the Japanese files. Type YES if you do want to install these files.

15. **Reboot the system after installing DEC PHIGS.**

```
    If you are installing DEC PHIGS on a workstation,
    you should reboot the system and then run SYS$TEST:PHIGS_IVP.COM to
    complete the installation.

* Do you wish to have the system reboot following the PHIGS
installation [YES]? Return
```

Press Return if you want the system to reboot. Type NO if you do not want to reboot the system.

16. **Read the informational messages.**

At this point, the installation procedure displays a number of informational messages that report on the progress of the installation; there are no further questions. If the installation procedure has been successful up to this point, VMSINSTAL moves the new or modified files to their target directories, updates help files, and updates DCL tables, if necessary. If you requested that files be purged, they are purged at this time.

The messages displayed are:

DEC PHIGS DEVELOPMENT KIT:

```
    STARTING to perform all the installation work. No additional user
    actions are necessary from this point.

    The remaining part of the installation will take 5 - 20 minutes
    depending on your CPU.

%VMSINSTAL-I-RESTORE, Restoring product save set B ...
%VMSINSTAL-I-RESTORE, Restoring product save set C ...
%VMSINSTAL-I-RESTORE, Restoring product save set D ...
%VMSINSTAL-I-RESTORE, Restoring product save set E ...
%VMSINSTAL-I-RESTORE, Restoring product save set F ...
%VMSINSTAL-I-RESTORE, Restoring product save set G ...
      .
      .
      .


%VMSINSTAL-I-MOVEFILES, Files will now be moved to their target directories...
   Installation of DECPHIGS V3.1 completed at hh:mm

   VMSINSTAL procedure done at hh:mm
```

DEC PHIGS RUN-TIME-ONLY KIT:

```
   STARTING to perform all the installation work. No additional user
   actions are necessary from this point.

   The remaining part of the installation will take 5 - 20 minutes
   depending on your CPU.

%VMSINSTAL-I-RESTORE, Restoring product save set B ...
%VMSINSTAL-I-RESTORE, Restoring product save set C ...
%VMSINSTAL-I-RESTORE, Restoring product save set D ...
      .
      .
      .
```

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

   Installation of DECPHIGSRTO V3.1 completed at hh:mm

   VMSINSTAL procedure done at hh:mm
```

The installation procedure is complete. If the procedure was successful, the DEC PHIGS files were moved to their target directories.

17. **Run the Installation Verification Procedure (IVP).**

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

18. **Log out of the privileged account.**

```
$ LOGOUT Return
SYSTEM     logged out at dd-mmm-yyyy hh:mm:ss.ss
```

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

2.2 Error Recovery

If errors occur during installation, VMSINSTAL displays failure messages. If the installation procedure fails, one or more of the following messages may also appear:

```
%VMSINSTAL-E-INSFAIL, The installation of DEC PHIGS V3.1 has failed.

This kit requires OpenVMS VAX V5.5-2

System disk does not contain enough free blocks to install DECPHIGS
```

If the Installation Verification Procedure fails for any reason, the following message is displayed:

```
DEC PHIGS V3.1 Installation Verification Procedure failed.
%VMSINSTAL-E-IVPFAIL, The IVP for DEC PHIGS V3.1 has failed.
```

If you receive this message, and all the previous conditions listed are correct, contact your Digital field service representative.

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

- The operating system version is incorrect.
- A prerequisite software version is incorrect.
- Quotas necessary for successful installation are insufficient.
- System parameter values for successful installation are insufficient.
- The OpenVMS help library is currently in use.
- The product license has not been registered and loaded.

If you are notified that any of these conditions exist, you should take the appropriate action, as described in the error message. For descriptions of the error messages, see the *OpenVMS System Messages and Recovery Procedures Reference Manual*, your processor-specific installation/operations guide, or the *OpenVMS License Management Utility Manual*.

3
After Installing DEC PHIGS

The following tasks may be performed after DEC PHIGS installation:

- Installing DEC PHIGS on a cluster
- Editing the system startup file
- Running the Installation Verification Procedure
- Installing maintenance updates
- Determining and reporting problems

3.1 Installing DEC PHIGS on an OpenVMS VAXcluster Configuration

If you want to run DEC PHIGS on multiple nodes of a VAXcluster configuration, first check to see that you have the appropriate software license. Then, follow these steps after installing DEC PHIGS:

1. Issue the LICENSE LOAD command to activate the license on each node in the cluster on which DEC PHIGS is to be executed. Issue the command as described in the *OpenVMS License Management Utility Manual*.
2. Run SYS$STARTUP:PHIGS$STARTUP.COM on each node of the cluster that has a software license.

Do not purge files during the installation. You can purge these files after you have run the DEC PHIGS startup command procedure on each node of the cluster.

3.2 Editing the Startup File

To enable the automatic startup of DEC PHIGS when your system is rebooted, you must include the startup procedure PHIGS$STARTUP.COM in the startup file—SYS$MANAGER:SYSTARTUP_V5.COM under OpenVMS Version 5.5-2, or SYS$MANAGER:SYSTARTUP_VMS.COM under OpenVMS Version 6.1. Because DEC PHIGS cannot be started before the network has been started, you must position this new command line *after* the line that invokes the network startup command procedure. The following example shows the network startup command line followed by the DEC PHIGS startup command line:

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

If you have a graphics peripheral set (dial box or button box) installed on your workstation, add the line:

```
$ @SYS$STARTUP:PCM$STARTUP.COM
```

When you install DEC PHIGS on a cluster, PHIGS$STARTUP.COM is automatically executed for the system node from which the installation was performed. You may need to execute this file for other nodes in the cluster, however, to have the newest DEC PHIGS images installed on those systems. This is particularly true if you purged older versions of DEC PHIGS during the installation.

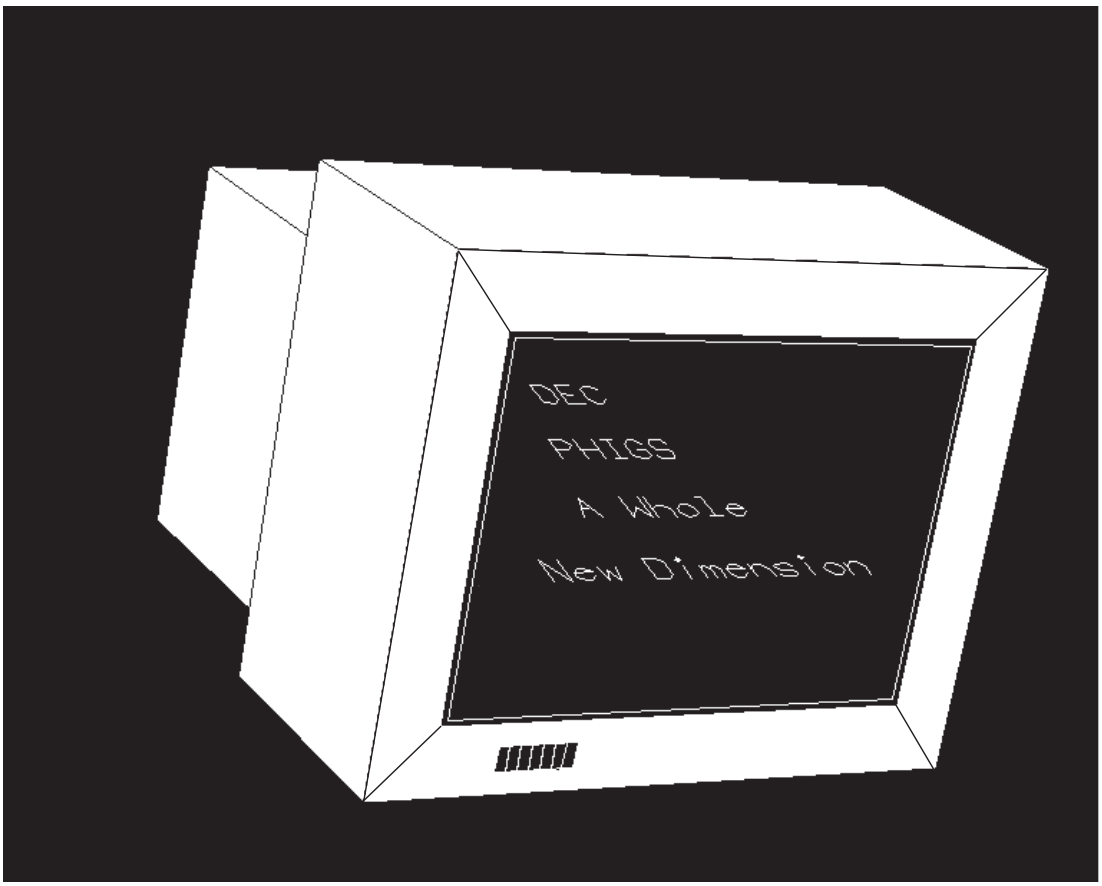
3.3 Running the Installation Verification Procedure

The installation copies the Installation Verification Procedure (IVP) to SYS$SYSTEST. You should run this program after you reboot the system to complete the installation of DEC PHIGS. The IVP verifies that the installation procedure was successfully completed, and ensures the integrity of installed files if system problems occur. To run the IVP separately, enter the following command:

```
$ @SYS$TEST:PHIGS_IVP.COM Return
```

If the IVP runs successfully, it generates the picture shown in Figure 3–1. If your device produces color output, the image will appear in color.

Figure 3–1 Sample IVP Display



ZK–6373–GE

3.4 Installing Maintenance Updates

Digital periodically issues maintenance updates of DEC PHIGS, each of which contains an installation kit. You should install this kit as described in the documentation that accompanies the maintenance update.

Each time a maintenance update is released, the version number changes. For example, if the current version is 3.1, the version number of the next maintenance update will be 3.2.

Furthermore, each maintenance update includes online release notes describing the changes made to DEC PHIGS since the previous release. You should read the release notes when you first install DEC PHIGS; however, they are accessible at any time after the product is installed. For information on reading the release notes during the DEC PHIGS installation, refer to the installation procedure. To read the release notes after DEC PHIGS is installed, display or print the files:

- SYS$HELP:DECPHIGS031.RELEASE_NOTES (ASCII format) or
- SYS$HELP:DECPHIGS031_RELEASE_NOTES.PS (PostScript format)
- SYS$HELP:DECPHIGSJ031.RELEASE_NOTES
- SYS$HELP:DECPHIGSJ031_RELEASE_NOTES.PS

3.5 Determining and Reporting Problems

If you encounter a problem while using DEC PHIGS, report it to Digital. Depending on the nature of the problem and the type of support you have, you can take one of the following actions:

- Call Digital if your software contract or warranty agreement entitles you to telephone support.
- Submit a Software Performance Report (SPR).
- Fill out and submit a Reader's Comments form if the problem has to do with the DEC PHIGS documentation. There are Reader's Comments forms at the back of each printed manual. Use the form from the manual in which you found the error. Be sure to include the section and page number of the error.

Review the Software Product Description (SPD) and Warranty Addendum for an explanation of warranty. If you encounter a problem during the warranty period, report the problem as described in this section, or follow alternate instructions provided by Digital for reporting SPD nonconformance problems.

A

Files Installed on Your System

During installation, DEC PHIGS installs a number of files on your system. These files are listed in Section A.1 and Section A.2.

A.1 DEC PHIGS Development Kit Files

Table A–1 lists the files on the system that are added or modified when you install the DEC PHIGS development kit.

Table A–1 Installed Files for the DEC PHIGS Development Kit

Directory	File Name	Description
PHIGS$EXAMPLES:[ADA]:		Ada binding examples
	ADEMO1.ADA	
	ADEMO2.ADA	
	ADEMO3.ADA	
	ADEMO4.ADA	
	ADEMO5.ADA	
	SHUTLE.DAT	
PHIGS$EXAMPLES:[BATTLEZONE]:		DEC PHIGS Battlezone game
	BATTLE.HELP	Help file
	BATTLE.MMS	
	BATTLE.OPT	
	BATTLE_CONFIG.H	
	BATTLE_DEFS.H	
	BATTLE_EXTERNS.H	
	BATTLE_GPR.C	
	BATTLE_GRAPHICS.C	
	BATTLE_MAIN.C	
	BATTLE_MOVE.C	
	BATTLE_PARSEOPTS.C	
	BATTLE_PHIGS.C	
	BATTLE_SCORES.C	
	BATTLE_STRUCTS.H	
	PHIGS_BATTLE.EXE	

(continued on next page)

Table A–1 (Cont.) Installed Files for the DEC PHIGS Development Kit

Directory	File Name	Description
	VMS_UTIL.C	
PHIGS$EXAMPLES:[DEMO]:		DEC PHIGS demo files
	PHIGS_DEMO_BUILD.COM	
	PHIGS_DEMO_CHANGE_OBJECT_SIZE.C	
	PHIGS_DEMO_CHANGE_VIEW_ANGLE.C	
	PHIGS_DEMO_CREATE_OBJECT.C	
	PHIGS_DEMO_CREATE_STRUCT.C	
	PHIGS_DEMO_MOVE_VIEW_PLANES.C	
	PHIGS_DEMO_PHIGS.C	
	PHIGS_DEMO_PHIGS.EXE	
	PHIGS_DEMO_PHIGS.H	
	PHIGS_DEMO_README.TXT	
	PHIGS_DEMO_README_JP.TXT	Japanese PHIGS demo information
	PHIGS_DEMO_ROTATE_OBJECT.C	
	PHIGS_DEMO_TRANSLATE_OBJECT.C	
	PHIGS$DEMO.ARC	
PHIGS$EXAMPLES:[DEVELOPERS_GUIDE]:		*DEC PHIGS Developer's Guide* programs
	DG_ANNO_TEXT.C	
	DG_BUNDLE.C	
	DG_CULL_DIAMOND.C	
	DG_DEPTH_CUE.C	
	DG_EDIT_WHEEL.C	
	DG_EXECUTE_STRUC.C	
	DG_FILL_AREA.C	
	DG_FILL_ATT.C	
	DG_FOUR_WHEELS.C	
	DG_GLOBAL_ROBOT.C	
	DG_HELLO_PHIGS.C	
	DG_HOUSE.C	
	DG_HSV.C	
	DG_INDEX_DATA.C	
	DG_INHERIT.C	
	DG_LINE_ATTS.C	
	DG_LOCAL_ROBOT.C	
	DG_MULT_VIEWS.C	
	DG_NURBS.C	

(continued on next page)

Table A–1 (Cont.) Installed Files for the DEC PHIGS Development Kit

Directory	File Name	Description
	DG_PERSPECTIVE.C	
	DG_PHIGS_DRAW.C	
	DG_PICKPATH.C	
	DG_QUAD_SPHERE.C	
	DG_REQ_LOC.C	
	DG_RGB.C	
	DG_ROLL_WHEEL.C	
	DG_SEE_VIEW.C	
	DG_SHADE_DIAMOND.C	
	DG_SPECULAR.C	
	DG_STRUCT_ROBOT.C	
	DG_TEXT3.C	
	DG_TEXT_ATT.C	
	DG_WHEEL.C	
PHIGS$EXAMPLES:[GETTING_STARTED]:		*Getting Started with DEC PHIGS* programs
	GS_ARCS.C	
	GS_FILL_AREA.C	
	GS_LIGHT.C	
	GS_LINE_COLOR.C	
	GS_LINE_TYPES.C	
	GS_LINE_WIDTHS.C	
	GS_NAME_SETS.C	
	GS_NURBS.C	
	GS_POLYLINES.C	
	GS_REQUEST.C	
	GS_SAMPLE.FOR	
	GS_SIMPLE.C	
	GS_TEAPOT.C	
	GS_TEXT.C	
PHIGS$EXAMPLES:[MISC]:		
	CREATE_PHIGS_WIDGET.C	
	CREATE_PHIGS_WIDGET.H	
	CREATE_PHIGS_WINDOW.C	
	CREATE_PHIGS_WINDOW.H	
	ESCAPE_CB.C	C binding program
	ESCAPE_DB.FOR	PHIGS$ binding program
	ESCAPE_FB.FOR	Fortran binding program

(continued on next page)

Table A–1 (Cont.) Installed Files for the DEC PHIGS Development Kit

Directory	File Name	Description
	FONTS_HEX.C	
	JPHIGS_CHOICE_CB.C	Japanese example files
	JPHIGS_CHOICE_DOL.C	
	JPHIGS_CHOICE_FB.FOR	
	JPHIGS_STRING_CB.C	
	JPHIGS_STRING_DOL.C	
	JPHIGS_STRING_FB.FOR	
	JPHIGS_TEXT_CB.C	
	JPHIGS_TEXT_DOL.C	
	JPHIGS_TEXT_FB.FOR	
	MOTIF_333_343.C	
	MOTIF_2X3.C	
	PHIGS_PREDEF.C	
	PHIGS_PREDEF.EXE	
	PHIGS_PREDEF_BUILD.COM	
	PHIGS_RINGS_3D.FOR	Sample programs
	PHIGS_XDEMO.C	
PHIGS$EXAMPLES:[UTILS]:		
	FORTRAN_CONVERTER.DAT	ISO Fortran binding converter file
	PHIGS$CONVERTER.EXE	
SYS$COMMON:[DECW$DEFAULTS.SYSTEM]:		
	GFX_MOTIF.UID	
	GFX_MOTIF_EN.UID	
	GFX_MOTIF_JP.UID	
SYS$COMMON:[SYSFONT]:		
	PHIGS$MARKERS.VWS$FONT	
	PHIGS$MARKERS.VWS$VAFONT	
SYS$COMMON:[SYSHLP.JA_JP]:		
	HELPLIB.HLB	
SYS$COMMON:[SYSLIB]		
	C_IDL.H	
	DECW$SVEXT_MULTI_BUFFERING.EXE	
	DECW$SVEXT_X3D_PEX.EXE	
	DECW$SVEXT_X3D_PEX_GB.EXE	
	DECW$SVEXT_X3D_PEX_GB_UCODE.EXE	
	DECW$SVEXT_X3D_PEX_GE.EXE	
	DECW$SVEXT_X3D_PEX_STP.EXE	

(continued on next page)

Table A–1 (Cont.) Installed Files for the DEC PHIGS Development Kit

Directory	File Name	Description
	DECW$SVEXT_X3D_PEX_STP_UCODE.EXE	
	DECW$SVEXT_X3D_PEX_VCFB.EXE	
	PCM$LIB.EXE	
	FLOATDEF.H	PEXlib files
	MPEX.H	
	MPEXLIB.H	
	MPEXOC.H	
	MPEXPROTO.H	
	MPEXPROTOSTR.H	
	PEX.H	
	PEXLIB.H	
	PEXLIB.OLB	
	PEXLIBPROTOS.H	
	PEXOC.H	
	PEXOCBUF.H	
	PEXPROTO.H	
	PEXPROTOST.H	
	PHIGS.H	DEC PHIGS include files
	PHIGS_DEC.H	C binding include file
	PHIGS_DEFS.ADA	
	PHIGS_DEFS.BAS	
	PHIGS_DEFS.FOR	
	PHIGS_DEFS.H	
	PHIGS_DEFS.PAS	
	PHIGS_DEFS.PL2	
	PHIGS_DEFS.PLI	
	PHIGS_FOR_BND_CONSTS.FOR	
	PHIGS_ISO.H	ISO C binding include file
	PHIGS_MSGS.ADA	
	PHIGS_MSGS.BAS	
	PHIGS_MSGS.FOR	
	PHIGS_MSGS.H	
	PHIGS_MSGS.PAS	
	PHIGS_MSGS.PL2	
	PHIGS_MSGS.PLI	
	PHIGS$ARCHIVE_CONVERTER.EXE	Archive converter
	PHIGS$CGMO_DEV_HANDLER.EXE	Device handlers
	PHIGS$COLSIX_DEV_HANDLER.EXE	

(continued on next page)

Table A–1 (Cont.) Installed Files for the DEC PHIGS Development Kit

Directory	File Name	Description
	PHIGS$CRTL.EXE	DEC PHIGS executables
	PHIGS$DBM.EXE	
	PHIGS$DEFS.BAS	
	PHIGS$DEFS.FOR	
	PHIGS$DEFS.H	
	PHIGS$DEFS.PAS	
	PHIGS$DEFS.PL2	
	PHIGS$DEFS.PLI	
	PHIGS$DDIF_DEV_HANDLER.EXE	DDIF™ device handler
	PHIGS$FOR_BND.OLB	
	PHIGS$FOR_BND_CONSTS.FOR	
	PHIGS$GFXRTL.EXE	
	PHIGS$HPGL_DEV_HANDLER.EXE	
	PHIGS$HPPCL_DEV_HANDLER.EXE	
	PHIGS$I3D.EXE	
	PHIGS$ISO_CRTL.EXE	
	PHIGS$MOTIF_DEV_HANDLER.EXE	
	PHIGS$MSGS.BAS	Message files
	PHIGS$MSGS.FOR	
	PHIGS$MSGS.H	
	PHIGS$MSGS.PAS	
	PHIGS$MSGS.PL2	
	PHIGS$MSGS.PLI	
	PHIGS$PS_DEV_HANDLER.EXE	
	PHIGS$REGIS_DEV_HANDLER.EXE	
	PHIGS$RTL.EXE	
	PHIGS$SIXEL_DEV_HANDLER.EXE	
	PHIGS$TEK_DEV_HANDLER.EXE	
	PHIGS$TEK41_DEV_HANDLER.EXE	
	PHIGS$TRACE.EXE	DEC PHIGS tracer
	PHIGS$UIS_DEV_HANDLER.EXE	
	PHIGS$WSIM.EXE	
	PHIGS$WSM.EXE	
	VAXGFX$DDIF_COLOR_TABLE.DAT	DDIF device handler color table
	VAXGFX$FONT_J0102.FNT	
	VAXGFX$FONT_JISX0201.FNT	
	VAXGFX$FONT_JISX0208.FNT	

(continued on next page)

Table A–1 (Cont.) Installed Files for the DEC PHIGS Development Kit

Directory	File Name	Description
	VAXGFX$FONT_NEG01.FNT	Stroke fonts
	VAXGFX$FONT_NEG02.FNT	
	VAXGFX$FONT_NEG03.FNT	
	VAXGFX$FONT_NEG04.FNT	
	VAXGFX$FONT_NEG05.FNT	
	VAXGFX$FONT_NEG06.FNT	
	VAXGFX$FONT_NEG07.FNT	
	VAXGFX$FONT_NEG08.FNT	
	VAXGFX$FONT_NEG09.FNT	
	VAXGFX$FONT_NEG10.FNT	
	VAXGFX$FONT_NEG11.FNT	
	VAXGFX$FONT_NEG12.FNT	
	VAXGFX$FONT_NEG13.FNT	
	VAXGFX$FONT_NEG14.FNT	
	VAXGFX$FONT_NEG15.FNT	
	VAXGFX$FONT_NEG16.FNT	
	VAXGFX$FONT_NEG17.FNT	
	VAXGFX$FONT_NEG18.FNT	
	VAXGFX$FONT_NEG19.FNT	
	VAXGFX$FONT_NEG20.FNT	
	VAXGFX$FONT_NEG21.FNT	
	VAXGFX$FONT_NEG22.FNT	
	VAXGFX$FONT_NEG23.FNT	
	VAXGFX$FONT_NEG24.FNT	
SYS$HELP:		
	DECPHIGS031.RELEASE_NOTES	
	DECPHIGS031_RELEASE_NOTES.PS	
	DECPHIGSJ031.RELEASE_NOTES	
	DECPHIGSJ031_RELEASE_NOTES.PS	
	HELPLIB.HLB (modified)	
SYS$MESSAGE:		
	PHIGS$MSGS.EXE	
	VAXGFX$MSGS.EXE	
SYS$MANAGER:		
	PCM$CUSTOM_SS.DAT	
	PCM$STANDARD_SS.DAT	
SYS$STARTUP:		
	PHIGS$STARTUP.COM	

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Table A–1 (Cont.) Installed Files for the DEC PHIGS Development Kit

Directory	File Name	Description
	PCM$STARTUP.COM	
SYS$SYSTEM:		
	PCM$SERVER.EXE	
SYS$TEST:		
	PHIGS_IVP.COM	
	PHIGS_IVP.EXE	

A.2 DEC PHIGS Run-Time-Only Kit Files

Table A–2 lists the files on the system that are added or modified when you install the DEC PHIGS run-time-only kit.

Table A–2 Installed Files for the DEC PHIGS Run-Time-Only Kit

Directory	File Name	Description
SYS$COMMON:[DECW$DEFAULTS.SYSTEM]:		
	GFX_MOTIF.UID	
	GFX_MOTIF_EN.UID	
	GFX_MOTIF_JP.UID	
SYS$HELP:		
	DECPHIGS031.RELEASE_NOTES	
	DECPHIGS031_RELEASE_NOTES.PS	
	DECPHIGSJ031.RELEASE_NOTES	
	DECPHIGSJ031_RELEASE_NOTES.PS	
SYS$COMMON:[SYSHLP.JA_JP]:		
	HELPLIB.HLB	
SYS$COMMON:[SYSLIB]:		
	DECW$SVEXT_MULTI_BUFFERING.EXE	
	DECW$SVEXT_X3D_PEX.EXE	
	DECW$SVEXT_X3D_PEX_GB.EXE	
	DECW$SVEXT_X3D_PEX_GB_UCODE.EXE	
	DECW$SVEXT_X3D_PEX_GE.EXE	
	DECW$SVEXT_X3D_PEX_STP.EXE	
	DECW$SVEXT_X3D_PEX_STP_UCODE.EXE	
	DECW$SVEXT_X3D_PEX_VCFB.EXE	
	PCM$LIB.EXE	
	PHIGS$ARCHIVE_CONVERTER.EXE	Archive converter
	PHIGS$CGMO_DEV_HANDLER.EXE	Device handlers
	PHIGS$COLSIX_DEV_HANDLER.EXE	

(continued on next page)

Table A–2 (Cont.) Installed Files for the DEC PHIGS Run-Time-Only Kit

Directory	File Name	Description
	PHIGS$CRTL.EXE	DEC PHIGS executables
	PHIGS$DBM.EXE	
	PHIGS$DDIF_DEV_HANDLER.EXE	DDIF device handler
	PHIGS$FOR_BND.OLB	
	PHIGS$GFXRTL.EXE	
	PHIGS$HPGL_DEV_HANDLER.EXE	
	PHIGS$HPPCL_DEV_HANDLER.EXE	
	PHIGS$I3D.EXE	
	PHIGS$ISO_CRTL.EXE	
	PHIGS$MOTIF_DEV_HANDLER.EXE	
	PHIGS$PS_DEV_HANDLER.EXE	
	PHIGS$REGIS_DEV_HANDLER.EXE	
	PHIGS$RTL.EXE	
	PHIGS$SIXEL_DEV_HANDLER.EXE	
	PHIGS$TEK_DEV_HANDLER.EXE	
	PHIGS$TEK41_DEV_HANDLER.EXE	
	PHIGS$TRACE.EXE	DEC PHIGS tracer
	PHIGS$UIS_DEV_HANDLER.EXE	
	PHIGS$WSIM.EXE	
	PHIGS$WSM.EXE	
	VAXGFX$DDIF_COLOR_TABLE.DAT	DDIF device handler color table
	VAXGFX$FONT_J0102.FNT	
	VAXGFX$FONT_JISX0201.FNT	
	VAXGFX$FONT_JISX0208.FNT	
	VAXGFX$FONT_NEG01.FNT	Stroke fonts
	VAXGFX$FONT_NEG02.FNT	
	VAXGFX$FONT_NEG03.FNT	
	VAXGFX$FONT_NEG04.FNT	
	VAXGFX$FONT_NEG05.FNT	
	VAXGFX$FONT_NEG06.FNT	
	VAXGFX$FONT_NEG07.FNT	
	VAXGFX$FONT_NEG08.FNT	
	VAXGFX$FONT_NEG09.FNT	
	VAXGFX$FONT_NEG10.FNT	
	VAXGFX$FONT_NEG11.FNT	
	VAXGFX$FONT_NEG12.FNT	
	VAXGFX$FONT_NEG13.FNT	

(continued on next page)

Table A–2 (Cont.) Installed Files for the DEC PHIGS Run-Time-Only Kit

Directory	File Name	Description
	VAXGFX$FONT_NEG14.FNT	
	VAXGFX$FONT_NEG15.FNT	
	VAXGFX$FONT_NEG16.FNT	
	VAXGFX$FONT_NEG17.FNT	
	VAXGFX$FONT_NEG18.FNT	
	VAXGFX$FONT_NEG19.FNT	
	VAXGFX$FONT_NEG20.FNT	
	VAXGFX$FONT_NEG21.FNT	
	VAXGFX$FONT_NEG22.FNT	
	VAXGFX$FONT_NEG23.FNT	
	VAXGFX$FONT_NEG24.FNT	
SYS$FONT:		
	PHIGS$MARKERS.VWS$FONT	
	PHIGS$MARKER.VWS$VAFONT	
SYS$MANAGER:		
	PCM$CUSTOM_SS.DAT	
	PCM$STANDARD_SS.DAT	
SYS$MESSAGE:		
	PHIGS$MSGS.EXE	
	VAXGFX$MSGS.EXE	
SYS$STARTUP:		
	PHIGS$STARTUP.COM	
	PCM$STARTUP.COM	
SYS$SYSTEM:		
	PCM$SERVER.EXE	
SYS$TEST:		
	PHIGS_IVP.COM	
	PHIGS_IVP.EXE	

B
Sample Installations

This appendix provides sample installations of the development and run-time-only kits.

B.1 DEC PHIGS Development Kit Installation

This section contains a sample installation of the DEC PHIGS development kit.

```
$ @VMSINSTAL DECPHIGS031 DKA400 options N Return

        OpenVMS VAX Software Product Installation Procedure V6.1

It is 12-APR-1995 at 13:56.

Enter a question mark (?) at any time for help.
VMSINSTAL-W-ACTIVE, The following processes are still active:
       DECW$SERVER_0
       _FTA8:
       _FTA11:
       _FTA12:
       _FTA13:
       _FTA14:
* Do you want to continue anyway [NO]? Y Return
* Are you satisfied with the backup of your system disk [YES]? Return

The following products will be processed:

  DECPHIGS V3.1

       Beginning installation of DECPHIGS V3.1 at 13:56

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

  Release Notes Options:

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

* Select option [2]: Return

* Queue name [sys$print]: Return
* Do you want to continue the installation [NO]? Y Return

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

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

        Product:      PHIGS
        Producer:     DEC
        Version:      3.1
        Release Date: 27-JAN-1994

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

The DEC PHIGS Ada binding requires 20000 blocks of disk space.

* Do you wish to install the ACS library containing the PHIGS Ada binding [NO]?  Y Return

* Do you wish to install the help library for PHIGS [YES]? Return

* Do you wish to install the examples from the PHIGS documentation [YES]? Return

* Do you wish to have PEXlib installed [YES]? Return

* Do you wish to have the PEXlib documentation installed [YES]? Return

        This kit contains Japanese-related files.
        They require Japanese OpenVMS.

* Do you wish to install Japanese related files [NO]? Return

        If you are installing DEC PHIGS on a workstation, you should reboot
        the system and then run SYS$TEST:PHIGS_IVP.COM to complete the
        installation.

* Do you wish to have the system reboot following the PHIGS installation [YES]? Return

        STARTING to perform all the installation work.  No additional user
        actions are necessary from this point.

        The remaining part of the installation will take 5 - 20 minutes
        depending on your CPU.

%VMSINSTAL-I-RESTORE, Restoring product save set B ...
%VMSINSTAL-I-RESTORE, Restoring product save set C ...
%VMSINSTAL-I-RESTORE, Restoring product save set D ...
%VMSINSTAL-I-RESTORE, Restoring product save set E ...
%VMSINSTAL-I-RESTORE, Restoring product save set F ...
%VMSINSTAL-I-RESTORE, Restoring product save set G ...

        WARNING:  In order to update the DEC PHIGS Ada binding, all the
        files from the DEC PHIGS Ada ACS library in the system directory
        [SYSLIB.PHIGS_ADA] will be deleted and replaced with files from
        this kit.

The server extensions on your system are newer than the ones in this
kit.  The server extensions will not be installed.

The PEX server microcode has been updated.

        PEXLIB_V5.PS has been installed in SYS$HELP:

  System Manager:

        Upon completion of this installation, please be sure to
        edit the system startup file and add the following line:

           $ @SYS$STARTUP:PHIGS$STARTUP.COM

        If you have a button or dial box connected to your workstation,
        edit the system file SYS$STARTUP:VMS$LPBEGIN-050_STARTUP.COM
        (refer to the release notes for details) and add the following line:

           $ @SYS$STARTUP:PCM$STARTUP.COM

        A copy of the Installation Verification Procedure has been put in
        SYS$TEST:PHIGS_IVP.COM.
```

```
        If you are installing DEC PHIGS on a 3D workstation and use a
        PEX workstation type, you need to restart the DECwindows server
        after the installation with the following line:

           $ @SYS$STARTUP:DECW$STARTUP.COM RESTART

        PHIGS demo programs, along with their sources have been put in:

        PHIGS$EXAMPLES:[DEMO] - PHIGS_DEMO_PHIGS example

        PHIGS$EXAMPLES:[DEVELOPERS_GUIDE] - Examples from the DEC PHIGS
                                Developer's Guide

        PHIGS$EXAMPLES:[GETTING_STARTED] - Examples from the "Getting Started
                                with DEC PHIGS" manual

        PHIGS$EXAMPLES:[MISC] - Assorted other PHIGS examples

        PHIGS$EXAMPLES:[ADA] - Assorted PHIGS Ada examples

        PHIGS$EXAMPLES:[UTILS] - Assorted utilities.

        To complete the installation of the DEC PHIGS Ada binding, please
        issue the following commands:

        $ ACS SET LIBRARY SYS$COMMON:[SYSLIB.PHIGS_ADA]
        $ ACS ENTER FOREIGN/REPLACE -
             SYS$COMMON:[SYSLIB.PHIGS_ADA]PHIGS$ADA.OLB/LIBRARY -
             PHIGS_INTERNALS_C
%VMSINSTAL-I-MOVEFILES, Files will now be moved to their target directories...
        Installation of DECPHIGS V3.1 completed at 14:30

        VMSINSTAL procedure done at 14:30
```

B.2 DEC PHIGS Run-Time-Only Kit Installation

This section contains a sample installation of the DEC PHIGS development kit.

```
$ @vmsinstal DECPHIGSRTO031 DKA400 Return

        OpenVMS VAX Software Product Installation Procedure V6.1

It is 12-APR-1995 at 13:51.

Enter a question mark (?) at any time for help.
VMSINSTAL-W-ACTIVE, The following processes are still active:
       DECW$SERVER_0
       _FTA8:
       _FTA11:
       _FTA12:
       _FTA13:
       _FTA14:
* Do you want to continue anyway [NO]? Y Return
* Are you satisfied with the backup of your system disk [YES]? Return

The following products will be processed:

  DECPHIGSRTO V3.1

       Beginning installation of DECPHIGSRTO V3.1 at 13:52

%VMSINSTAL-I-RESTORE, Restoring product save set A ...
%VMSINSTAL-I-RELMOVED, Product's release notes have been moved to SYS$HELP.
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```

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

        Product:      PHIGS-RUNTIME
        Producer:     DEC
        Version:      3.1
        Release Date: 27-JAN-1994

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

        This kit contains Japanese-related files.
        They require Japanese OpenVMS.

* Do you wish to install Japanese related files [NO]? Return

        If you are installing DEC PHIGS on a workstation, you should reboot
        the system and then run SYS$TEST:PHIGS_IVP.COM to complete the
        installation.

* Do you wish to have the system reboot following the PHIGS installation [YES]? Return

        STARTING to perform all the installation work.  No additional user
        actions are necessary from this point.

        The remaining part of the installation will take 5 - 20 minutes
        depending on your CPU.

%VMSINSTAL-I-RESTORE, Restoring product save set B ...
%VMSINSTAL-I-RESTORE, Restoring product save set C ...
%VMSINSTAL-I-RESTORE, Restoring product save set D ...

The server extensions on your system are newer than the ones in this
kit.  The server extensions will not be installed.

The PEX server microcode has been updated.

  System Manager:

        Upon completion of this installation, please be sure to
        edit the system startup file and add the following line:

           $ @SYS$STARTUP:PHIGS$STARTUP.COM

        If you have a button or dial box connected to your workstation,
        edit the system file SYS$STARTUP:VMS$LPBEGIN-050_STARTUP.COM
        (refer to the release notes for details) and add the following line:

           $ @SYS$STARTUP:PCM$STARTUP.COM

        A copy of the Installation Verification Procedure will be put in
        SYS$TEST:PHIGS_IVP.EXE along with SYS$TEST:PHIGS_IVP.COM.

        If you are installing DEC PHIGS on a 3D workstation and use a
        PEX workstation type, you need to restart the DECwindows server
        after the installation with the following line:

           $ @SYS$STARTUP:DECW$STARTUP.COM RESTART
```

```
%VMSINSTAL-I-MOVEFILES, Files will now be moved to their target directories...
        Installation of DECPHIGSRTO V3.1 completed at 13:56

        VMSINSTAL procedure done at 13:56
```