DIGITAL GKS

Installing DIGITAL GKS for OpenVMS Alpha Systems

Order Number: AA–PVT9J–TE

April 1997

This document contains instructions for installing DIGITAL GKS™ (formerly DEC GKS™) software on Alpha architecture running the OpenVMS™ Alpha operating system. It also explains how to read the online release notes before or after installing this product. This document applies to DIGITAL GKS Version 6.5.

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Operating System and Version:	OpenVMS Alpha Version 6.1 or higher DECwindows™ Motif® Version 1.2 for OpenVMS Alpha
Software Version:	DIGITAL GKS Version 6.5

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Preface

This document describes how to install DIGITAL GKS Version 6.5 on Alpha processors running the OpenVMS Alpha operating system. Because this installation guide is not usually revised for software maintenance updates, you should read the *Read Before Installing or Using DIGITAL GKS for OpenVMS Alpha 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 DIGITAL GKS for any other reason.

If you have any comments about this document, please send electronic mail to the "requests@bgsdev.enet.dec.com" account. Your comments will be considered for the next revision of the installation guide.

Intended Audience

This manual is for system managers installing DIGITAL GKS on OpenVMS Alpha systems.

Structure of this Document

This manual is organized as follows:

- Chapter 1 describes the operating system requirements for DIGITAL GKS installation, and the procedures that you should complete before installing DIGITAL GKS.
- 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 DIGITAL GKS.
- Appendix B provides sample logs from development kit and run-time-only kit installations.

Manuals in the DIGITAL GKS Documentation Set

In addition to this manual, the DIGITAL GKS documentation set includes the following manuals:

- *DEC GKS User's Guide*
- *DEC GKS GKS$ Binding Reference Manual*
- *DEC GKS GKS3D$ Binding Reference Manual*
- *DEC GKS C Binding Reference Manual*

- *DEC GKS FORTRAN Binding Reference Manual*
- *Device Specifics Reference Manual for DEC GKS and DEC PHIGS*

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 conventions used in this guide are listed in Table 1.

Table 1 Conventions 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.
. . .	Vertical ellipsis in an example means that information not directly related to the example has been omitted.
VMS™ OpenVMS™	The terms VMS and OpenVMS refer to the same operating system.
DIGITAL GKS	References to DIGITAL GKS refers to the DIGITAL GKS (formerly DEC GKS) product.

1
Preparing for DIGITAL GKS Installation

This chapter describes the preparations and requirements necessary for installing DIGITAL GKS Version 6.5.

This chapter will help you determine the following:

- Whether the system on which you will install DIGITAL GKS has the prerequisite software installed
- How to read the online release notes
- If installing DIGITAL GKS 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 pagelets 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 DIGITAL GKS on an Alpha workstation, you must have the following products installed:

- OpenVMS Alpha operating system Version 6.1 or higher
- DECwindows Motif Version 1.2 or higher for OpenVMS Alpha (if you are installing DIGITAL GKS on a workstation)

DIGITAL GKS also requires the following OpenVMS Alpha classes for full functionality:

- OpenVMS Alpha required save set
- Network support—where full DECwindows network functionality is necessary
- Programming support—required by the DIGITAL GKS development kit
- OpenVMS Alpha class for workstation support—if you are using DIGITAL GKS on a workstation

1.2 Online Release Notes

DIGITAL GKS provides online release notes. DIGITAL strongly recommends that you read the release notes before using DIGITAL GKS, because they may contain information about product changes.

During installation, you can access release notes in the installation procedure when you invoke VMSINSTAL with the OPTIONS N parameter. This option lets you read or print the release notes before installing DIGITAL GKS.

After installation, you can obtain the DIGITAL GKS release notes by printing the following files:

- SYS$HELP:DECAXPGKS065.RELEASE_NOTES (ASCII format)
- SYS$HELP:DECAXPGKS065_RELEASE_NOTES.PS (PostScript® format)

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, contact 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 DIGITAL GKS Version 6.5 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 a location specified on your license order.

If you are installing DIGITAL GKS 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 DIGITAL GKS, review the PAK status and install the PAKs for this prerequisite or optional software before you install DIGITAL GKS.

To register a license under the OpenVMS Alpha 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.
- Enter the LICENSE REGISTER command with the qualifiers corresponding to the License PAK information.

If you plan to use DIGITAL GKS on more than one node in an OpenVMS Alpha cluster 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 DIGITAL GKS. The installation takes approximately 5 to 30 minutes, depending on your system configuration.

1.5.1 Privileges

To install DIGITAL GKS, 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 DIGITAL GKS. Use the OpenVMS Authorize Utility to determine whether users have the privileges they require.

1.5.2 Disk Space

The DIGITAL GKS requirements for free disk 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
DIGITAL GKS Development Kit	46,000	45,000
DIGITAL GKS Development Kit with Japanese save set	51,000	50,000
DIGITAL GKS Run-Time-Only Kit	25,000	24,000
DIGITAL GKS Run-Time-Only Kit with Japanese save set	29,000	28,000

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 pagelet (512-byte subpage unit) and global section SYSGEN quotas for the installation. Otherwise, the DCL tables may become corrupted in certain situations.

1.5.3 Global Pagelets and Global Sections System Parameters

The installation of DIGITAL GKS requires minimum values for the system parameters defining the global pagelets 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 + 4000
GBLSECTIONS[1]	n + 30

[1]The n variable refers to the system parameter values that are currently in use. To install DIGITAL GKS, you must increase those values by the number indicated. (See Section 1.5.3.1.)
These dynamic system parameters must be set permanently to values equal to or greater than the values listed. Do not reduce these values after the installation.

The following sections describe how to:

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

1.5.3.1 Determining the Global Pagelets 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 value of free global pagelets or global sections is less than the value 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                   400       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 Pagelets and Global Sections Used

To determine the global pagelets and global sections used:

1. Invoke the OpenVMS Install Utility:

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

2. Determine the number of global pagelets and global sections used:

```
INSTALL> LIST/GLOBAL/SUMMARY Return

        Summary of Local Memory Global Sections

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

INSTALL> EXIT Return
```

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

3. Exit from the OpenVMS Install Utility:

```
INSTALL> EXIT Return
```

1.5.3.3 Modifying the Global Pagelets Parameter

To modify the number of global pagelets:

1. If there are fewer than 4000 global pagelets 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 type in a 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 pagelets to add:

```
ADD_GBLPAGES = n
```

Note

When you set the pagelet file quota, you should not use a value that exceeds the amount of pagelet 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 30 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 type in a new value.

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

   ```
   ADD_GBLSECTIONS = n
   ```

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 Pagelets 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 DIGITAL GKS 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

The account you use to install DIGITAL GKS requires certain minimum quota values. These values, which are defined in the SYSUAF.DAT file, are listed in Table 1–3.

Table 1–3 Process Quotas for the Installing Account

Account Quota	Value
ASTLM	24
BIOLM	18
BYTLM	18,000
DIOLM	18
ENQLM	30
FILLM	20

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

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

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 DIGITAL GKS

This chapter describes the DIGITAL GKS 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.

2.1 The Installation Procedure

Before you install DIGITAL GKS, 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 DIGITAL GKS run-time-only Version 6.5 if you have already installed the full development kit of DIGITAL GKS Version 6.5. If you do, the installation procedure will overwrite the development kit with the run-time-only kit. To determine which version of DIGITAL GKS is currently installed, type the following DCL command:

```
$ ANALYZE/IMAGE/INTERACTIVE SYS$COMMON:[SYSLIB]GKS3D$RTLIB Return
```

Look for lines similar to the following in the resulting display:

```
                .
                .
                .
 Image Identification Information

  image name: "GKS3D$RTLIB"
  image file identification: "DECGKS V6.5"
  image file build identification: ""
  link date/time: 30-APR-1997 04:20:10.40
  linker identification: "A11-14"
                .
                .
                .
```

The procedure for installing DIGITAL GKS 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. **Define the destination for the output of the Installation Verification Procedure (IVP) with the following command, replacing *node* with your node name:**

   $ **DEFINE DECW$DISPLAY *node*::0.0** Return

3. **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 pagelets
     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

     See Chapter 1 for details on defining this information.

   - 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 DIGITAL GKS development kit, use the name:

   ```
   AXPGKS065
   ```

   For the DIGITAL GKS run-time-only kit, use the name:

   ```
   AXPGKSRT065
   ```

   device-name
   The name of the device on which you plan to mount the distribution volumes for the DIGITAL GKS installation media. The format of the device name is *ddcu*, 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 DIGITAL GKS. 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 DIGITAL GKS save set on the CD–ROM. To obtain this location, see the *Software Product Library Master Index* that accompanies the CD–ROM distribution kit, or complete the following steps before starting the installation:

a. 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.

b. Obtain the directory name by entering the command:

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

   The directory name will be displayed; for example:

   ```
   Directory DKA400:[000000]

   AXPGKS065.DIR;1             (development kit)

   AXPGKSRT065.DIR;1           (run-time-only kit)
   ```

c. 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:[AXPGKS065.KIT]*.A Return
   ```

   For the run-time-only kit, enter:

   ```
   $ DIRECTORY DKA400:[AXPGKSRT065.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 VMSINSTAL 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 DIGITAL GKS development kit from a CD–ROM, and shows the system response:

```
$ @SYS$UPDATE:VMSINSTAL AXPGKS DKA400:[AXPGKS065.KIT] OPTIONS N Return

      OpenVMS AXP Software Product Installation Procedure V6.1

It is 30-APR-1997 at 12:26.
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.

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

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

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

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

5. **Confirm system backup.**

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

   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.

   In most cases, the distribution media is a CD–ROM that has been mounted before the installation. If this is not the case, refer to your media documentation.

6. **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 DIGITAL GKS save sets. For example, if the media is contained on a CD–ROM located on unit DKA400:, and the DIGITAL GKS save sets are located in the directory AXPGKS065.KIT (for the development kit), enter:

```
DKA400:[AXPGKS065.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 DIGITAL GKS has been mounted, and then prompts for the product name and any desired installation options:

DIGITAL GKS DEVELOPMENT KIT

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

 Enter the products to be processed from the first distribution volume set.
  * Products: AXPGKS065 Return
  * Enter installation options you wish to use (none): Return

The following products will be processed:

  AXPGKS V6.5

    Beginning installation of AXPGKS V6.5 at hh:mm.

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

DIGITAL GKS RUN-TIME-ONLY KIT

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

 Enter the products to be processed from the first distribution volume set.
  * Products: AXPGKSRT065 Return
  * Enter installation options you wish to use (none): Return

The following products will be processed:
  AXPGKSRT V6.5

    Beginning installation of AXPGKSRT V6.5 at hh:mm.

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

7. **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 enter a queue name or press Return to send the file to the default output print device:

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

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 enter a queue name or press Return to send the file to the default output print device, the release notes are copied to:

- SYS$HELP:DECAXPGKS065.RELEASE_NOTES (ASCII format)
- SYS$HELP:DECAXPGKS065_RELEASE_NOTES.PS (PostScript format)

If you select option 4, VMSINSTAL does not display, print, or copy the release notes.

Note

The 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 DIGITAL GKS.

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.
```

If you selected release notes option 4 and now press Return to stop the installation, the release notes are copied to the SYS$HELP directory. If you selected release notes option 4 and now enter YES to continue the installation, the release notes are not copied to this directory.

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

```
$ HELP GKS RELEASE_NOTES Return
```

8. **Purge the old DIGITAL GKS 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 DIGITAL GKS 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 enter NO to keep them.

   Appendix A lists the files on the system that are added or modified when you install the DIGITAL GKS development kit.

9. **Respond to license registration queries.**

   DIGITAL GKS supports the OpenVMS 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 DIGITAL GKS. The following is an example of this information:

```
DIGITAL GKS DEVELOPMENT KIT

Product:      GKS
Producer:     DEC
Version:      6.5
Release Date: 30-APR-1997

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

DIGITAL GKS RUN-TIME-ONLY KIT

Product:      GKS-RT
Producer:     DEC
Version:      6.5
Release Date: 30-APR-1997

   * 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.

10. **If installing the development kit, install the example programs.**

```
* Do you wish to install the example programs [YES]? Return
```

The example programs are source code files written in various programming languages that illustrate how to call various DIGITAL GKS functions. Press Return if you wish to install the example programs; enter NO if you do not wish to install these programs.

11. **Install the Japanese GKS-related files.**

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

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

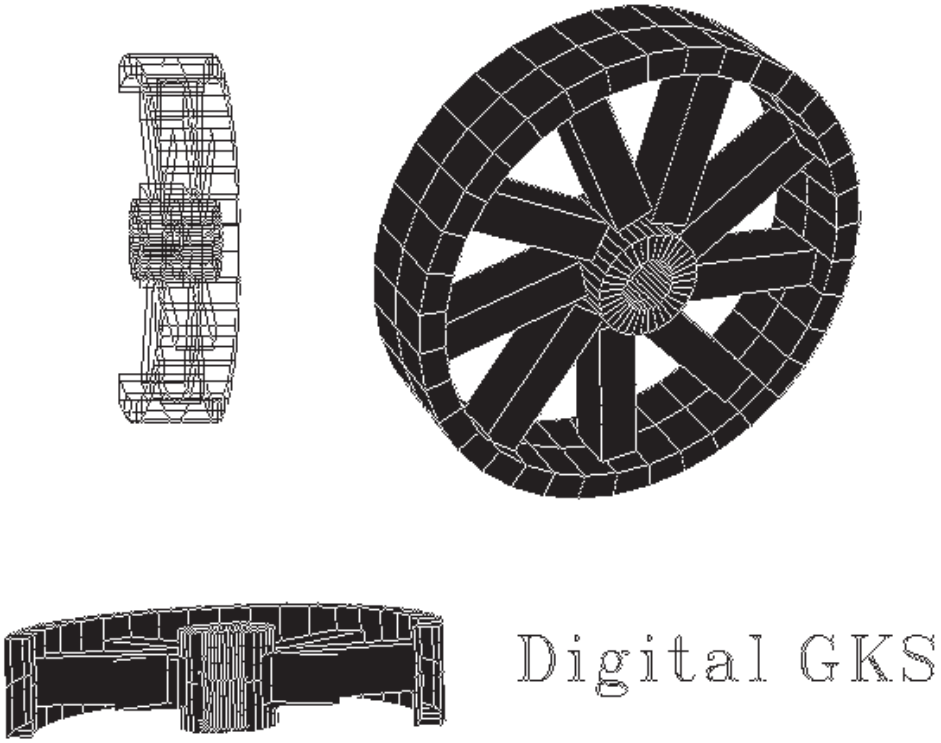
12. **Run the Installation Verification Procedure.**

```
* Do you wish to perform the Installation Verification Procedure [YES]? Return
```

The Installation Verification Procedure (IVP) verifies that the installation is successful. The DIGITAL GKS IVP reads a three-dimensional image from a metafile workstation (GKS$TEST:GKS$IVP.DAT). The metafile is large, and executing the IVP tests the DIGITAL GKS installation thoroughly.

If the installation is successful, the IVP generates a picture like the one in Figure 2–1. If your device produces color output, the image will appear in color.

Figure 2–1 Sample IVP Display



The default workstation is defined by the workstation identifier and connection identifier, represented by the logical names GKS$WSTYPE and GKS$CONID respectively. The default workstation types are:

- Nonworkstation: PostScript workstation
- Workstation running Motif software: Motif workstation

You can redirect the IVP output to another workstation by modifying the values associated to the logical names.

Press Return if you wish to run the IVP during the installation; enter NO if you do not wish to run this procedure. If you do not run the IVP at this time, DIGITAL recommends that you run this procedure after the installation to verify that the software is available on your system. You may also need to run the IVP after a system failure to ensure that users can access DIGITAL GKS. Refer to Section 3.3 for details.

13. **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:

DIGITAL GKS 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 - 30 minutes ) depending on your CPU.
%VMSINSTAL-I-RESTORE, Restoring product save set B ...
%VMSINSTAL-I-RESTORE, Restoring product save set C ...
         .
         .
         .
       Installation of AXPGKS V6.5 completed at hh:mm

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

Creating installation data file: VMI$ROOT:[SYSUPD]AXPGKS065.VMI_DATA

       VMSINSTAL procedure done at hh:mm
```

DIGITAL GKS 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 - 30 minutes ) depending on your CPU.
%VMSINSTAL-I-RESTORE, Restoring product save set B ...
         .
         .
         .
       Installation of AXPGKSRT V6.5 completed at hh:mm

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

Creating installation data file: VMI$ROOT:[SYSUPD]AXPGKSRT065.VMI_DATA

       VMSINSTAL procedure done at hh:mm
```

The installation procedure is complete. You can now install more products or log out. If you removed any media from the console drive before beginning the installation, you should replace it now.

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

```
$ LOGOUT Return
SYSTEM     logged out at 30-APR-1997 12:31:47.15
```

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 AXPGKS V6.5 has failed.

DIGITAL GKS requires OpenVMS V6.1 or a subsequent version of OpenVMS

System disk does not contain enough free blocks to install AXPGKS

Insufficient CLISYMTBL pagelets - the installation of AXPGKS
requires at least 150 pagelets. Use SYSGEN to change this
parameter and restart the installation.
```

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.
- The metafile input handler is not installed.
- The default output handler, defined by the logical names GKS$WSTYPE and GKS$CONID, is not installed.

If the IVP fails for any reason, the following messages are displayed:

```
The AXPGKS V6.5 Installation Verification Procedure failed.

%VMSINSTAL-E-IVPFAIL, The IVP for AXPGKS V6.5 has failed.
```

Other errors can also occur during IVP execution in the following situations:

- The workstation handler is not installed.

  ```
  %GKS-E-ERROR_23, specified workstation type does not exist in
   routine OPEN WORKSTATION
  ```

  First, verify that the metafile input handler is installed. Then, ensure that the definition of GKS$WSTYPE is a valid workstation type including bit masks, and that GKS$CONID corresponds to a physical device that is supported and functioning.

- The connection identifier and workstation type are not compatible.

  ```
  %GKS-E-ERROR_26, specified workstation cannot be opened
   in routine OPEN WORKSTATION
  ```

  Ensure that the definitions of GKS$CONID and GKS$WSTYPE are compatible, and that GKS$CONID corresponds to a physical device that is supported and functioning.

- There are not enough unused color entries available for DIGITAL GKS in DECwindows.

  ```
  %GKS-E-ERROR_NEG_2, requested color map could not be created
   in routine OPEN WORKSTATION
  ```

  Set *n* (the color table size) in the workstation bit mask %x0nmm00xx to a value, such as 16. For example, for workstation type 231, specify %x010000E7. in the workstation bit mask %x0nmm00xx. For example, for workstation type 231, specify %x010000E7.

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 *OpenVMS System Messages and Recovery Procedures Reference Manual*, your processor-specific installation/operations guide, or the *OpenVMS License Management Utility Manual*.

3
After Installing DIGITAL GKS

The following tasks may be performed after DIGITAL GKS installation:

- Installing DIGITAL GKS on a cluster
- Editing the system startup file
- Running the Installation Verification Procedure
- Determining and reporting problems

3.1 Installing DIGITAL GKS on an OpenVMS Alpha Cluster

If you want to run DIGITAL GKS on multiple nodes of an OpenVMS Alpha cluster, first check to see that you have the appropriate software license. Then, follow these steps after installing DIGITAL GKS:

1. Issue the LICENSE LOAD command to activate the license on each node in the cluster on which DIGITAL GKS is to be executed.

   For the development kit, enter the command:

   ```
   $ LICENSE LOAD GKS Return
   ```

   For the run-time-only kit, enter the command:

   ```
   $ LICENSE LOAD GKS-RT Return
   ```

2. Run the following command procedure on each node of the cluster that has the software license:

   ```
   $ @SYS$STARTUP:GKSTARTUP.COM Return
   ```

3. Prepare the system-specific roots on other nodes by issuing the following commands on each node:

   ```
   $ CREATE/DIRECTORY SYS$SPECIFIC:[SYSHLP.EXAMPLES.GKS] Return
   $ CREATE/DIRECTORY SYS$SPECIFIC:[SYSTEST.GKS] Return
   ```

4. Verify the installation by running the IVP on each node:

   ```
   $ RUN GKS$TEST:GKS$IVP Return
   ```

   Information about running the IVP is provided in Section 3.3.

5. Determine if the INSTALL utility was used to install GKS3D$RTLIB.EXE:

   a. Log in to a node on the cluster.

   b. Run INSTALL and enter the following command at the INSTALL> prompt:

      ```
      INSTALL> LIST SYS$LIBRARY:GKS3D$RTLIB.EXE Return
      ```

The INSTALL utility displays how the GKS3D$RTLIB was installed. For example:

```
DISK$SYSTEM01:<SYS0.SYSCOMMON.SYSLIB>.EXE
    GKS3D$RTLIB;1    Open     Share         Lnkbl
```

If an error occurs with this command, DIGITAL GKS was not properly installed.

c. Repeat steps a and b for each node of the cluster.

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

3.2 Editing the Startup File

To enable the automatic startup of DIGITAL GKS when your system is rebooted, you must include the startup procedure GKSTARTUP.COM in the startup file SYS$MANAGER:SYSTARTUP_VMS.COM. Because DIGITAL GKS cannot start before the network has started, you must position this new command line *after* the line that invokes the network startup command procedure. The following example shows the network startup command line followed by the DIGITAL GKS startup command line:

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

When you install DIGITAL GKS on a cluster, GKSTARTUP.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 DIGITAL GKS images installed on those systems. This is particularly true if you purged older versions of DIGITAL GKS during the installation.

3.3 Running the Installation Verification Procedure

To run the Installation Verification Procedure (IVP) after installation, enter the command:

```
$ RUN GKS$TEST:GKS$IVP Return
```

For example, if you wish to run the DECwindows Motif IVP on a remote node, ensure that you have the access rights on the server for remote use and that the DIGITAL GKS DECwindows Motif handler is installed. Then, enter the following commands, substituting your node name for node REMOTE:

```
$ DEFINE GKS$WSTYPE 231 Return
$ DEFINE GKS$CONID  REMOTE::0.0 Return
$ RUN GKS$TEST:GKS$IVP Return
```

In this example, the image is output to the remote server.

3.4 Determining and Reporting Problems

If you encounter a problem while using DIGITAL GKS, 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).
- Send electronic mail to the "requests@bgsdev.enet.dec.com" account if the problem has to do with the DIGITAL GKS documentation. 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, DIGITAL GKS installs a number of files on your system. These files are listed in Section A.1 and Section A.2.

A.1 DIGITAL GKS Development Kit Files

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

Table A–1 Installed Files for the DIGITAL GKS Development Kit

Directory	File Name	Description
SYS$COMMON:[SYS$STARTUP]		
	GKSTARTUP.COM	
SYS$COMMON:[SYSHLP]		
	DECAXPGKS065.RELEASE_NOTES	Release notes in ASCII format
	DECAXPGKS065_RELEASE_NOTES.PS	Release notes in PostScript format
	DECGKS_CBIND_OP_SPEC.PS	
	DECGKS_CBIND_OP_SPEC.TXT	
	DECGKS_FBIND_OP_SPEC.PS	
	DECGKS_FBIND_OP_SPEC.TXT	
	DECGKS_G3DBIND_OP_SPEC.PS	
	DECGKS_G3DBIND_OP_SPEC.TXT	
	DECGKS_GBIND_OP_SPEC.PS	
	DECGKS_GBIND_OP_SPEC.TXT	
	HELPLIB.HLB	
SYS$COMMON:[SYSHLP.EXAMPLES.GKS]		
	ACCUM_XFORM_MATRIX_ADD.C	Optional files
	ACCUM_XFORM_MATRIX_ADD_3D.C	
	ACCUM_XFORM_MATRIX_ADD_CBND.C	
	ACCUM_XFORM_MATRIX_ADD_FORBND.FOR	
	ASS_SEG_WS.C	

(continued on next page)

Table A–1 (Cont.) Installed Files for the DIGITAL GKS Development Kit

Directory	File Name	Description
SYS$COMMON:[SYSHLP.EXAMPLES.GKS]		
	ASS_SEG_WS_3D.C	
	ASS_SEG_WS_CBND.C	
	ASS_SEG_WS_FORBND.FOR	
	BACKGAMMON.C	
	BUILD_PROG.COM	
	BUILD_PROG.MAKE	
	CELL_ARRAY.C	
	CELL_ARRAY_3D.C	
	CELL_ARRAY_CBND.C	
	CELL_ARRAY_FORBND.FOR	
	CLEAR_WS.C	
	CLEAR_WS_3D.C	
	CLEAR_WS_CBND.C	
	CLEAR_WS_FORBND.FOR	
	DEVICE_BUILD.COM	
	DEVICE_DFT.C	
	DEVICE_DFT.MAR	
	DEVICE_SAMPLE.C	
	DEVICE_SAMPLE.MMS	
	DEVICE_SAMPLE_DFT.C	
	ERR_HAND.C	
	ERR_HAND_3D.C	
	ERR_HAND_CBND.C	
	ERR_HAND_FORBND.FOR	
	ESCAPE.C	
	ESCAPE_3D.C	
	ESCAPE_CBND.C	
	ESCAPE_FORBND.FOR	
	ESC_CONID_STRING_FORBND.FOR	
	EVAL_XFORM_MATRIX.C	
	EVAL_XFORM_MATRIX_3D.C	
	EVAL_XFORM_MATRIX_CBND.C	
	EVAL_XFORM_MATRIX_FORBND.FOR	
	EVENT_MODE.C	
	EVENT_MODE_3D.C	
	EVENT_MODE_CBND.C	
	EVENT_MODE_FORBND.FOR	

(continued on next page)

Table A–1 (Cont.) Installed Files for the DIGITAL GKS Development Kit

Directory	File Name	Description
SYS$COMMON:[SYSHLP.EXAMPLES.GKS]		
	EX_CHOICE_INPUT_CB.C	
	EX_CHOICE_INPUT_FB.FOR	
	EX_CHOICE_INPUT_G3B.C	
	EX_CHOICE_INPUT_GB.C	
	EX_STRING_INPUT_CB.C	
	EX_STRING_INPUT_FB.FOR	
	EX_STRING_INPUT_G3B.C	
	EX_STRING_INPUT_GB.C	
	EX_TEXT_OUTPUT_CB.C	
	EX_TEXT_OUTPUT_FB.FOR	
	EX_TEXT_OUTPUT_G3B.C	
	EX_TEXT_OUTPUT_GB.C	
	FONTS_HEX.C	
	GDP.C	
	GDP_3D.C	
	GDP_CBND.C	
	GDP_FORBND.FOR	
	GERHND_FORBND.FOR	
	GFX_DFT.C	
	GKS_PICK233.C	
	GKS_PICK333.C	
	GKS_PREDEF.C	
	GKS_SAMPLE.C	
	INIT_INQ_ST_2D.C	
	INIT_INQ_ST_2D.FOR	
	INIT_INQ_ST_2D.PAS	
	INIT_INQ_ST_3D.ADA	
	INIT_INQ_ST_3D.C	
	INIT_INQ_ST_3D.FOR	
	INIT_INQ_ST_3D.PAS	
	INIT_INQ_ST_3D_SIZEOF.ADA	
	INIT_STRING.C	
	INIT_STRING_3D.C	
	INIT_STRING_CBND.C	
	INIT_STRING_FORBND.FOR	
	INQUIRY_CBND.C	
	INQ_DEF_DATA_2D.ADA	

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Table A–1 (Cont.) Installed Files for the DIGITAL GKS Development Kit

Directory	File Name	Description
SYS$COMMON:[SYSHLP.EXAMPLES.GKS]		
	INQ_DEF_DATA_2D.C	
	INQ_DEF_DATA_2D.FOR	
	INQ_DEF_DATA_2D.PAS	
	INQ_DEF_DATA_3D.ADA	
	INQ_DEF_DATA_3D.C	
	INQ_DEF_DATA_3D.FOR	
	INQ_DEF_DATA_3D.PAS	
	INSERT_SEG.C	
	INSERT_SEG_3D.C	
	INSERT_SEG_CBND.C	
	INSERT_SEG_FORBND.FOR	
	MANDELBROT_CBND.C	
	OUTPUT_INPUT_3D.ADA	
	OUTPUT_INPUT_3D.C	
	OUTPUT_INPUT_3DF.FOR	
	OUTPUT_INPUT_3DP.PAS	
	OUTPUT_INPUT_CBND.C	
	OUTPUT_INPUT_FORBND.FOR	
	README.FIRST	
	REQUEST_MODE.C	
	REQUEST_MODE_3D.C	
	REQUEST_MODE_CBND.C	
	REQUEST_MODE_FORBND.FOR	
	SAMPLE.OPT	
	SAMPLE_ALPHA.OPT	
	SAMPLE_DEVICE_DFT.C	
	SAMPLE_MODE.C	
	SAMPLE_MODE_3D.C	
	SAMPLE_MODE_CBND.C	
	SAMPLE_MODE_FORBND.FOR	
	SAMPLE_PICK.C	
	SAMPLE_PICK_3D.C	
	SAMPLE_PICK_CBND.C	
	SAMPLE_PICK_FORBND.FOR	
	SAMPLE_VALUATOR.C	
	SAMPLE_VALUATOR_3D.C	
	SAMPLE_VALUATOR_CBND.C	

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Table A–1 (Cont.) Installed Files for the DIGITAL GKS Development Kit

Directory	File Name	Description
SYS$COMMON:[SYSHLP.EXAMPLES.GKS]		
	SAMPLE_VALUATOR_FORBND.FOR	
	SET_CLIP.C	
	SET_CLIP_3D.C	
	SET_CLIP_CBND.C	
	SET_CLIP_FORBND.FOR	
	SET_COLOUR_REP.C	
	SET_COLOUR_REP_3D.C	
	SET_COLOUR_REP_CBND.C	
	SET_COLOUR_REP_FORBND.FOR	
	SET_FILL_AREA_REP.C	
	SET_FILL_AREA_REP_3D.C	
	SET_FILL_AREA_REP_CBND.C	
	SET_FILL_AREA_REP_FORBND.FOR	
	SET_HILIGHT.C	
	SET_HILIGHT_3D.C	
	SET_HILIGHT_CBND.C	
	SET_HILIGHT_FORBND.FOR	
	SET_LINETYPE.C	
	SET_LINETYPE_3D.C	
	SET_LINETYPE_CBND.C	
	SET_LINETYPE_FORBND.FOR	
	SET_TEXT_ALIGN.C	
	SET_TEXT_ALIGN_3D.C	
	SET_TEXT_ALIGN_CBND.C	
	SET_TEXT_ALIGN_FORBND.FOR	
	SET_WS_VP.C	
	SET_WS_VP_3D.C	
	SET_WS_VP_CBND.C	
	SET_WS_VP_FORBND.FOR	
	USER_MANUAL_1_3.C	
	USER_MANUAL_3_1.C	
	USER_MANUAL_4_1.C	
	USER_MANUAL_5_1.C	
	USER_MANUAL_6_1.C	
	USER_MANUAL_7_1.C	

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Table A–1 (Cont.) Installed Files for the DIGITAL GKS Development Kit

Directory	File Name	Description
SYS$COMMON:[SYSHLP.JA_JP]		
	HELPLIB.HLB	
SYS$COMMON:[SYSLIB]		
	GKS$I3D.EXE	High-level files
	GKS$I3D_IEEE.EXE	
	GKS$MI_WS_HANDLER.EXE	
	GKS$MI_WS_HANDLER_IEEE.EXE	
	GKS$MO_WS_HANDLER.EXE	
	GKS$MO_WS_HANDLER_IEEE.EXE	
	GKS$WISS_WS_HANDLER.EXE	
	GKS$WISS_WS_HANDLER_IEEE.EXE	
	GKS$WS_MANAGER.EXE	
	GKS$WS_MANAGER_IEEE.EXE	
	GKS.F	
	GKS.H	
	GKS$BND.OPT	
	GKS3D$BND.OPT	
	GKS3D$CBND.H	
	GKS3D$DEFS.ADA	
	GKS3D$DEFS.BAS	
	GKS3D$DEFS.FOR	
	GKS3D$DEFS.H	
	GKS3D$DEFS.PAS	
	GKS3D$DEFS.PEN	
	GKS3D$DEFS.PLI	
	GKS3D$DEFS.R32	
	GKS3D$ERRORS.ADA	
	GKS3D$ERRORS.BAS	
	GKS3D$ERRORS.FOR	
	GKS3D$ERRORS.H	
	GKS3D$ERRORS.PAS	
	GKS3D$ERRORS.PEN	
	GKS3D$ERRORS.PLI	
	GKS3D$ERRORS.R32	
	GKS3D$FORBND.FOR	
	GKS3D$GKSRTLIB.EXE	
	GKS3D$GKSRTLIB_IEEE.EXE	

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Table A–1 (Cont.) Installed Files for the DIGITAL GKS Development Kit

Directory	File Name	Description
SYS$COMMON:[SYSLIB]		
	GKS3D$RTLIB.EXE	
	GKS3D$RTLIB_IEEE.EXE	
	GKS3D_DEFS.ADA	
	GKS3D_DEFS.BAS	
	GKS3D_DEFS.FOR	
	GKS3D_DEFS.H	
	GKS3D_DEFS.PAS	
	GKS3D_DEFS.PEN	
	GKS3D_DEFS.PLI	
	GKS3D_DEFS.R32	
	GKS3D_ERRORS.ADA	
	GKS3D_ERRORS.BAS	
	GKS3D_ERRORS.FOR	
	GKS3D_ERRORS.H	
	GKS3D_ERRORS.PAS	
	GKS3D_ERRORS.PEN	
	GKS3D_ERRORS.PLI	
	GKS3D_ERRORS.R32	
	GKSCBND.OLB	
	GKSCBND.OPT	
	GKSCBND_IEEE.OLB	
	GKSDEFS.ADA	
	GKSDEFS.BAS	
	GKSDEFS.BND	
	GKSDEFS.FOR	
	GKSDEFS.H	
	GKSDEFS.LIB	
	GKSDEFS.PAS	
	GKSDEFS.PEN	
	GKSDEFS.PL2	
	GKSDEFS.PLI	
	GKSDEFS.R32	
	GKSDESCRIP.H	
	GKSFORBND.OLB	
	GKSFORBND.OPT	
	GKSFORBND_IEEE.OLB	
	GKSMSGS.ADA	

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Table A–1 (Cont.) Installed Files for the DIGITAL GKS Development Kit

Directory	File Name	Description
SYS$COMMON:[SYSLIB]		
	GKSMSGS.BAS	
	GKSMSGS.FOR	
	GKSMSGS.H	
	GKSMSGS.LIB	
	GKSMSGS.PAS	
	GKSMSGS.PEN	
	GKSMSGS.PLI	
	GKSMSGS.R32	
	GKSRTLIB.EXE	
	GKSRTLIB_IEEE.EXE	
	GKSGFX$CGMO_DEV_HANDLER.EXE	Device handler files
	GKSGFX$CGMO_DEV_HANDLER_IEEE.EXE	
	GKSGFX$COLSIX_DEV_HANDLER.EXE	
	GKSGFX$COLSIX_DEV_HANDLER_IEEE.EXE	
	GKSGFX$DDIF_DEV_HANDLER.EXE	
	GKSGFX$DDIF_DEV_HANDLER_IEEE.EXE	
	GKSGFX$HPGL_DEV_HANDLER.EXE	
	GKSGFX$HPGL_DEV_HANDLER_IEEE.EXE	
	GKSGFX$HPPCL_DEV_HANDLER.EXE	
	GKSGFX$HPPCL_DEV_HANDLER_IEEE.EXE	
	GKSGFX$IM_JP.EXE	
	GKSGFX$IM_JP_IEEE.EXE	
	GKSGFX$KEY_MAP_TABLE.EXE	
	GKSGFX$KEY_MAP_TABLE_IEEE.EXE	
	GKSGFX$MOTIF_DEV_HANDLER.EXE	
	GKSGFX$MOTIF_DEV_HANDLER_IEEE.EXE	
	GKSGFX$PS_DEV_HANDLER.EXE	
	GKSGFX$PS_DEV_HANDLER_IEEE.EXE	
	GKSGFX$REGIS_DEV_HANDLER.EXE	
	GKSGFX$REGIS_DEV_HANDLER_IEEE.EXE	
	GKSGFX$RTL.EXE	
	GKSGFX$RTL_IEEE.EXE	
	GKSGFX$SIXEL_DEV_HANDLER.EXE	
	GKSGFX$SIXEL_DEV_HANDLER_IEEE.EXE	
	GKSGFX$TEK41_DEV_HANDLER.EXE	
	GKSGFX$TEK41_DEV_HANDLER_IEEE.EXE	
	GKSGFX$TEK_DEV_HANDLER.EXE	

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Table A–1 (Cont.) Installed Files for the DIGITAL GKS Development Kit

Directory	File Name	Description
SYS$COMMON:[SYSLIB]		
	GKSGFX$TEK_DEV_HANDLER_IEEE.EXE	
	VAXGFX$DDIF_COLOR_TABLE.DAT	
	VAXGFX$FONT_J0102.FNT	
	VAXGFX$FONT_JISX0201.FNT	
	VAXGFX$FONT_JISX0208.FNT	
	VAXGFX$FONT_NEG01.FNT	
	VAXGFX$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	
	VAXGFX$RTL.EXE	
SYS$COMMON:[SYSMSG]		
	GKS$MSGS.EXE	
SYS$COMMON:[SYSTEST]		
	GKS.DIR	

(continued on next page)

Table A–1 (Cont.) Installed Files for the DIGITAL GKS Development Kit

Directory	File Name	Description
SYS$COMMON:[SYSTEST.GKS]		
	GKS$IVP.DAT	
	GKS$IVP.EXE	
SYS$COMMON:[DECW$DEFAULTS.SYSTEM]		
	GKS_MOTIF.UID	
	GKS_MOTIF_EN.UID	
	GKS_MOTIF_JP.UID	

A.2 DIGITAL GKS Run-Time-Only Kit Files

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

Table A–2 Installed Files for the DIGITAL GKS Run-Time-Only Kit

Directory	File Name	Description
SYS$COMMON:[DECW$DEFAULTS.SYSTEM]		
	GKS_MOTIF.UID	
	GKS_MOTIF_EN.UID	
	GKS_MOTIF_JP.UID	
SYS$COMMON:[SYS$STARTUP]		
	GKSTARTUP.COM	
SYS$COMMON:[SYSHLP]		
	DECAXPGKS065.RELEASE_NOTES	Release notes in ASCII format
	DECAXPGKS065_RELEASE_NOTES.PS	Release notes in PostScript format
	HELPLIB.HLB	
SYS$COMMON:[SYSHLP.JA_JP]		
	HELPLIB.HLB	
SYS$COMMON:[SYSLIB]		
	GKS$I3D.EXE	High-level files
	GKS$I3D_IEEE.EXE	
	GKS$MI_WS_HANDLER.EXE	

(continued on next page)

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

Directory	File Name	Description
SYS$COMMON:[SYSLIB]		
	GKS$MI_WS_HANDLER_IEEE.EXE	
	GKS$MO_WS_HANDLER.EXE	
	GKS$MO_WS_HANDLER_IEEE.EXE	
	GKS$WISS_WS_HANDLER.EXE	
	GKS$WISS_WS_HANDLER_IEEE.EXE	
	GKS$WS_MANAGER.EXE	
	GKS$WS_MANAGER_IEEE.EXE	
	GKS3D$GKSRTLIB.EXE	
	GKS3D$GKSRTLIB_IEEE.EXE	
	GKS3D$RTLIB.EXE	
	GKS3D$RTLIB_IEEE.EXE	
	GKSRTLIB.EXE	
	GKSRTLIB_IEEE.EXE	
	GKSGFX$COLSIX_DEV_HANDLER.EXE	Device handler files
	GKSGFX$COLSIX_DEV_HANDLER_IEEE.EXE	
	GKSGFX$DDIF_DEV_HANDLER.EXE	
	GKSGFX$DDIF_DEV_HANDLER_IEEE.EXE	
	GKSGFX$HPGL_DEV_HANDLER.EXE	
	GKSGFX$HPGL_DEV_HANDLER_IEEE.EXE	
	GKSGFX$HPPCL_DEV_HANDLER.EXE	
	GKSGFX$HPPCL_DEV_HANDLER_IEEE.EXE	
	GKSGFX$IM_JP.EXE	
	GKSGFX$IM_JP_IEEE.EXE	
	GKSGFX$KEY_MAP_TABLE.EXE	
	GKSGFX$KEY_MAP_TABLE_IEEE.EXE	
	GKSGFX$MOTIF_DEV_HANDLER.EXE	
	GKSGFX$MOTIF_DEV_HANDLER_IEEE.EXE	
	GKSGFX$PS_DEV_HANDLER.EXE	
	GKSGFX$PS_DEV_HANDLER_IEEE.EXE	
	GKSGFX$REGIS_DEV_HANDLER.EXE	
	GKSGFX$REGIS_DEV_HANDLER_IEEE.EXE	
	GKSGFX$RTL.EXE	
	GKSGFX$RTL_IEEE.EXE	
	GKSGFX$SIXEL_DEV_HANDLER.EXE	
	GKSGFX$SIXEL_DEV_HANDLER_IEEE.EXE	
	GKSGFX$TEK41_DEV_HANDLER.EXE	
	GKSGFX$TEK41_DEV_HANDLER_IEEE.EXE	

(continued on next page)

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

Directory	File Name	Description
SYS$COMMON:[SYSLIB]		
	GKSGFX$TEK_DEV_HANDLER.EXE	
	GKSGFX$TEK_DEV_HANDLER_IEEE.EXE	
	VAXGFX$DDIF_COLOR_TABLE.DAT	
	VAXGFX$FONT_J0102.FNT	
	VAXGFX$FONT_JISX0201.FNT	
	VAXGFX$FONT_JISX0208.FNT	
	VAXGFX$FONT_NEG01.FNT	
	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$FONT_NEG24.FNT	
	VAXGFX$RTL.EXE	
SYS$COMMON:[SYSTEST.GKS]		
	GKS$IVP.DAT	
	GKS$IVP.EXE	

B

Sample Installations

This appendix provides sample installations of the development and run-time-only kits. These installations were run in the following conditions:

- No previous version of DIGITAL GKS was installed on the system.
- DECnet was shut down.
- No users were logged onto the system.

B.1 DIGITAL GKS Development Kit Installation

This section contains a sample installation of the DIGITAL GKS development kit.

```
$ @SYS$UPDATE:VMSINSTAL AXPGKS065 DKA400:[AXPGKS065.KIT] OPTIONS N Return

       OpenVMS AXP Software Product Installation Procedure V6.1

It is 30-APR-1997 at 11:06.

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

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


The following products will be processed:
  AXPGKS V6.5

       Beginning installation of AXPGKS V6.5 at 11:06

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

Additional Release Notes Options:

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

* Select option [2]: 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
```

B.1 DIGITAL GKS Development Kit Installation

```
        Product:      GKS
        Producer:     DEC
        Version:      6.5
        Release Date: 30-APR-1997

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

   This kit contains a set of example programs (4000 blocks).  They can be
   installed by answering "YES" to the EXAMPLE prompt.

* Do you wish to install the example programs [YES]? Return

   This kit contains Japanese-related images and file.
   They require Japanese OpenVMS.

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

   This kit contains an Installation Verification Procedure (IVP) to
   verify the correct installation of the DIGITAL GKS product.  It can be run
   prior to the conclusion of the procedure by answering "YES" to the IVP
   prompt or invoked after the installation as follows:

     RUN SYS$SYSROOT:[SYSTEST.GKS]GKS$IVP
or
     RUN GKS$TEST:GKS$IVP

* Do you wish to perform the Installation Verification Procedure [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 - 30 minutes ) depending on your CPU.
%VMSINSTAL-I-RESTORE, Restoring product save set B ...
%VMSINSTAL-I-RESTORE, Restoring product save set C ...

    The DIGITAL GKS base kit files have been processed successfully.
    The installation procedure is continuing...

    The DIGITAL GKS Development Environment has been processed successfully.
    The installation procedure is continuing...

    The DIGITAL GKS Example Programs have been processed successfully.
    The installation procedure is continuing...

    DIGITAL GKS has built successfully. Continuing installation...

    System Manager:

    Upon completion of this installation, please be sure to edit the
    system startup files as described in the DIGITAL GKS Installation Guide.

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

    Beginning the DIGITAL GKS Installation Verification Procedure (IVP).
    The IVP will take 1 to 5 minutes depending on your CPU.

    Since you are running on a workstation the Installation Verification
    Procedure will be run with DIGITAL GKS device type 231 (MOTIF).  Output
    will be done to the node indicated by the logical name DECW$DISPLAY.

    If the results of the Installation Verification Procedure (IVP) look
    like the illustration provided with the DIGITAL GKS Installation Guide,
    then installation has been successful.

    The DIGITAL GKS V6.5 Installation Verification Procedure (IVP)
    completed successfully.

        Installation of AXPGKS V6.5 completed at 11:10
```

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

    Creating installation data file: VMI$ROOT:[SYSUPD]AXPGKS065.VMI_DATA

        VMSINSTAL procedure done at 11:10
```

B.2 DIGITAL GKS Run-Time-Only Kit Installation

This section contains a sample DIGITAL GKS run-time-only kit installation.

```
$ @SYS$UPDATE:VMSINSTAL AXPGKSRT065 DKA400:[AXPGKSRT065.KIT] Return

       OpenVMS AXP Software Product Installation Procedure V6.1

It is 30-APR-1997 at 23:57.

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

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

The following products will be processed:

  AXPGKSRT V6.5

       Beginning installation of AXPGKSRT V6.5 at 23:57

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

         Product:      GKS-RT
         Producer:     DEC
         Version:      6.5
         Release Date: 30-APR-1997

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

   This kit contains Japanese-related images and file.
   They require Japanese OpenVMS.

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

   This kit contains an Installation Verification Procedure (IVP) to
   verify the correct installation of the DIGITAL GKS product.  It can be run
   prior to the conclusion of the procedure by answering "YES" to the IVP
   prompt or invoked after the installation as follows:

       RUN SYS$SYSROOT:[SYSTEST.GKS]GKS$IVP
   or
       RUN GKS$TEST:GKS$IVP

* Do you wish to perform the Installation Verification Procedure [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 - 30 minutes ) depending on your CPU.
%VMSINSTAL-I-RESTORE, Restoring product save set B ...

    The DIGITAL GKS base kit files have been processed successfully. The
    installation procedure is continuing...

    DIGITAL GKS has built successfully. Continuing installation...

    System Manager:

    Upon completion of this installation, please be sure to edit the
    system startup files as described in the DIGITAL GKS Installation Guide.

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

    Beginning the DIGITAL GKS Installation Verification Procedure (IVP).
    The IVP will take 1 to 5 minutes depending on your CPU.


    Since you are running on a workstation the Installation Verification
    Procedure will be run with DIGITAL GKS device type 231 (MOTIF).  Output
    will be done to the node indicated by the logical name DECW$DISPLAY.

    If the results of the Installation Verification Procedure (IVP) look
    like the illustration provided with the DIGITAL GKS Installation Guide,
    then installation has been successful.


    The DIGITAL GKSRT V6.5 Installation Verification Procedure (IVP)
    completed successfully.

        Installation of AXPGKSRT V6.5 completed at 23:58

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

    Creating installation data file: VMI$ROOT:[SYSUPD]AXPGKSRT065.VMI_DATA

        VMSINSTAL procedure done at 23:58
```