Installation Guide for VMS Workstation Software and Migration Tools

Order Number: AA-HX11J-TE

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This document contains instructions for installing V4.3 of the VMS Workstation Software, the Migration Tools, and V1.0 of VAXuisx on a VAX workstation or a Local Area VAXcluster. It also provides information on tuning workstation parameters.

	Operating System Version	
VMS Workstation Software and Migration Tools Version	**V5.0 or above**	**V5.1 or above**
VMS Workstation Software, V4.3	X	
Hardcopy UIS, V4.3	X	
SIGHT Graphics Editor, V4.3	X	
VAXuisx Run-Time Library for VMS, V1.0[1]		
UIS Source Code Annotator, V2.0		X
UIS to DDIF Converter, V2.0		X
Example Migration Applications, V2.0		X
DECwindows/X11 Server for VWS, V1.0[2,3]		

[1]VAXuisx Run-Time Library for VMS is only supported by VMS V5.3.

[2]DECwindows/X11 Server for VWS is only supported by VMS V5.1 and V5.2.

[3]You must have DECwindows installed in order to run the Migration Tools.

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DEC	MicroVAX	VAXstation
DECwindows	PDP	VMS
DECUS	UNIBUS	
DDIF	VAX	digital™

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Contents

Preface

This manual describes how to install the VMS Workstation Software and related products, which includes the following components:

- VWS - VMS Workstation Software
- HCUIS - Hardcopy UIS
- SIGHT - SIGHT Graphics Editor
- VAXuisx - VAXuisx Run-Time Library for VMS
- UISANN - UIS Source Code Annotator
- UISCNV - UIS to DDIF Converter
- Example Migration Applications
- DECwindows/X11 Server for VWS
- VWSDEMO

VMS Workstation Software V4.3 and related products rely on features in VMS V5.0 or above.

Intended Audience

This manual is intended for those who are responsible for:

- Planning the installation of VMS Workstation Software or related products.
- Installing VMS Workstation Software or related products.
- Changing your system by adjusting parameters, startup files, and privileges for running VMS Workstation Software or related products.

To install the software, you must:

- Be familiar with VMSINSTAL, the command procedure used to install software products on the VMS environment. To locate the description of VMSINSTAL, refer to the master index of the VMS documentation set.
- Have access to the system account on your machine or to an account with the user privilege SETPRV.

If you are responsible for installing VMS Workstation Software or related products on your system, read this entire manual before you begin the installation. This manual helps you make the required decisions and guides you through the correct sequence of actions.

Note: All software installers should read the release notes before installing any software.

Licensing

To run VMS Workstation Software or related products on a particular node, you must have a valid VAX-VWS license loaded. All other products check for a valid VMS license. If the license is not properly loaded before you invoke the startup procedure, an error message appears on the console and the installation terminates. If this occurs, load the appropriate license and restart the VWS startup procedure.

Digital recommends you install the license before you install the software. VMS Workstation Software V4.3 and related products use the VMS License Management Facility (LMF). Refer to the VMS LMF documentation for more information on the License Management Facility.

Installing DECwindows

When installing VMS V5.2 or above, VMSINSTAL asks if you want DECwindows installed. If you answer YES, VMSINSTAL installs DECwindows. When you install VMS V5.1, you must specifically request that DECwindows be installed. Regardless of what version of VMS you are running, you must have DECwindows installed in order to use the VAXuisx Run-Time Library for VMS and the DECwindows/X11 Server for VWS.

Structure of This Manual

This manual describes how to install the VMS Workstation Software and related products. It provides:

- Information you will need to get started.
- Installation instructions.
- Information about installing on a Local Area VAXcluster.
- Information about managing and tuning your VAXstation.

This manual includes 12 chapters and three appendixes.

Chapter 1	Describes the VMS Workstation Software package, and describes how to plan and prepare your system for the installation.
Chapter 2	Describes how to install the VMS Workstation Software.
Chapter 3	Describes how to install Hardcopy UIS.
Chapter 4	Describes how to install SIGHT Graphics Editor.
Chapter 5	Describes how to install VAXuisx Run-Time Library for VMS.
Chapter 6	Describes how to install UIS Source Code Annotator.
Chapter 7	Describes how to install UIS to DDIF Converter.
Chapter 8	Describes the remainder of the installation.
Chapter 9	Describes what to do after the software has been installed, details information about installing on a Local Area VAXcluster and provides information about VAXstation management and tuning.

Chapter 10	Describes how to install the VWSDEMO kit.
Chapter 11	Describes how to install the example programs included in A Guide to Migrating VWS Applications to DECwindows.
Chapter 12	Describes how to install the DECwindows/X11 Server for VWS.
Appendix A	Lists the VMS Workstation Software files and fonts installed with the VWS software.
Appendix B	Presents a sample installation for a standalone VAXstation II/GPX.
Appendix C	Presents sample installation for a VWSDEMO installation.

If you are installing software on a VAXstation II, II/GPX, 2000, 3100, 3200, or 3500, you must install the VMS V5.0 or above base system software and any VMS options before installing VWS.

If you are installing the UIS Source Code Annotator, UIS to DDIF Converter, the example migration applications or DECwindows/X11 Server for VWS, you must install VMS V5.1 or above.

If you are installing the VAXuisx Run-Time Library for VMS you must install VMS V5.3 or above.

Related Documents

Refer to the following documents for more information:

- *VMS V5.0 Release Notes* - Provides information critical to the VMS base kit installation. **Read these release notes before installing the VMS base kit.**
- *VMS documentation* - Provides instructions on installing or upgrading a VMS base system.
- *VMS VAXcluster Manual* - Provides information if you are installing on a Local Area VAXcluster.
- *Installing or Upgrading VMS From a Tape Cartridge* - Provides instructions about installing the distribution media if you are installing a on VAXstation II.
- *Read Me First* - These pages provide section references to guide you through each portion of the installation procedure.

If you are working with VWS, you may want to consult the following documents:

- *VMS Workstation Software User's Guide* - Provides information about how to use the workstation software.
- *VMS Workstation Software Graphics Programming Guide* - Provides information about working with application programs and using VMS Workstation Software graphics.
- *VMS Workstation Software Guide to Printing Graphics* - Provides detailed information about how to print hard copies from the VAXstation.

- *VMS Workstation Software SIGHT User's Guide* - Provides detailed information about using SIGHT.

If you want to migrate your VWS applications to DECwindows, consult the following documents:

- *UIS Source Code Annotator User's Guide* - Provides information about using the UIS Source Code Annotator.
- *Using the UIS to DDIF Converter* - Provides information about using the UIS to DDIF Converter.
- *A Guide to Migrating VWS Applications to DECwindows* - Provides information about migrating applications to DECwindows and an example application.
- *Using the DECwindows/X11 Server for VWS* - Provides information about using the DECwindows/X11 Server for VWS.

If you want to run your VWS applications on DECwindows, consult the following documents:

- *VAXuisx User's Guide* - Provides for information about using the VAXuisx Run-Time Library for VMS.
- *VMS Workstation Software Guide to Printing Graphics* - Provides detailed information about how to print hard copies from the VAXstation.
- *VMS Workstation Software SIGHT User's Guide* - Provides detailed information about using SIGHT.

Conventions

This manual uses the following conventions in user input examples:

Conventions and Meanings

RETURN

The RETURN key is not always shown in formats and examples. Assume that you must press the RETURN key after typing a command or other input to the system, unless you are instructed otherwise.

CTRL/X

CTRL followed by a slash and a letter means that you must type the letter while holding down the CTRL key. For example, CTRL/B means hold down the CTRL key and type the letter B.

Lists

When a format item is followed by a comma and an ellipsis (, . . .), you can enter a single item or a number of items separated by commas. When a format item is followed by a plus sign and an ellipsis (+ . . .), you can enter a single item or a number of those items connected by plus signs. If you enter a list (more than one item), you must enclose the list in parentheses. A single item need not be enclosed in parentheses.

Optional Items

An item enclosed in square brackets ([ ]) is optional.

Boxes

In examples, boxes enclose user input, such as a key [2], a key sequence [CTRL/Z], or a parameter [PASSWORD].

Ellipsis

.
.
.

A vertical ellipsis indicates that some of the format or example is not shown.

<X]

The key on the LK201 terminal keyboard that performs the DELETE function is labeled <X].

1 Overview

This chapter describes the VMS Workstation Software and related products, how to plan their installation and how to prepare your system for that installation.

1.1 Product Overview

The following sections summarize the components available on the VWS043 kit and the options available for each component.

1.1.1 VMS Workstation Software (VWS)

VMS Workstation Software (VWS) is a layered product for VMS that provides graphic support for the VAXstation II, VAXstation II/GPX. VAXstation 2000, VAXstation 3200, VAXstation 3500 and the VAXstation 3100.

Note: VWS does not support the SPX Graphics Accelerator.

VWS installation loads the executable files needed to run the VMS Workstation Software on your system.

1.1.1.1 VWS Language Description Files

VWS Language Description Files allow you to program using the UIS functions described in the *VWS Graphics Programming Guide*. The installation procedure displays a list of supported languages. You can choose from the list the languages for which you want description files provided.

1.1.1.2 VWS Graphics Programming Guide Examples

These are the FORTRAN examples in the *VWS Graphics Programming Guide*. If you are installing VWS for the first time, you may want to install these to help you in your initial UIS programming.

1.1.1.3 VWS Fonts

VWS Fonts are the files VWS uses to display text. The fonts come in two types of densities: 77 Dots Per Inch (DPI) and 100 DPI. The 77-DPI fonts are for 19-inch 1024 x 864 pixel monitors. The 100-DPI fonts are for 15 inch and 16 inch monitors with the same resolution.

1.1.2 Hardcopy UIS (HCUIS)

HCUIS is a package that enables users and applications to translate UIS pictures into formats that allow you to print them on a variety of hard-copy devices. HCUIS also makes it easy for applications to create UIS files.

Beginning with this version, HCUIS no longer requires a VAXstation in order to run. It may be run from any VMS system which has HCUIS and the VWS fonts installed.

1.1.3 SIGHT Graphics Editor

SIGHT is a simple graphics editor that allows you to create drawings containing text and detailed graphics using the mouse or a tablet and save and read basic graphic objects on a VAXstation. (However, SIGHT only reads files that it has created). You need no programming experience to use SIGHT. Using SIGHT Graphics Editor you can store drawings in files. You can then print these files, make them into slides, or transfer them to other VAXstations.

With SIGHT, you can:

- Draw geometric or freehand shapes.
- Vary line width to add dimension or boldness.
- Mix colors to create your own color selections.
- Use patterns to fill shapes or to create special effects.
- Outline shapes to create different designs.
- Incorporate shapes from files into a drawing.
- Insert text of different font types in a drawing.
- Modify colors and attributes.
- Move, enlarge, reduce, stretch, rotate, or copy object.

1.1.3.1 SIGHT Fonts

SIGHT Fonts are the fonts the SIGHT editor uses. If you are installing SIGHT for the first time you must install SIGHT fonts.

1.1.4 VAXuisx Run-Time Library for VMS (VAXuisx)

VAXuisx is the VAXuisx Run-Time Library for VMS, which allows most UIS applications to run in a DECwindows environment. Using VAXuisx you can run UIS applications remotely. You can also run SIGHT on non-workstations or DECwindows workstations.

1.1.4.1 VAXuisx Fonts

VAXuisx Fonts are the same fonts provided with VWS, but they are provided by VAXuisx in DECwindows format.

1.1.5 UIS Source Code Annotator (UISANN)

UIS Source Code Annotator aides in converting UIS applications to DECwindows. The annotator will search UIS application source files for all UIS$, UISDC$, or HCUIS$ routines called and attempt to find a functionally matching X11 routine call.

1.1.6 UIS to DDIF Converter (UISCNV)

The UIS to DDIF Converter provides a translator to convert files written in .UIS format into .DDIF format.

1.1.7 DECwindows/X11 Server for VWS

DECwindows/X11 Server for VWS provides a standard DECwindows device driver and server. This enables you to use a single UIS window as a virtual workstation. This UIS window provides a monochrome workstation environment that simulates the VAXstation 2000. It can be run on any workstation with both DECwindows and VWS installed that is running VMS V5.1 or V5.2.

1.1.8 A Guide to Migrating VWS Applications to DECwindows

A Guide to Migrating VWS Applications to DECwindows provides information to aid software developers and architects in migrating existing UIS applications to DECwindows. The intended audience of this document is the application developer who has written UIS applications and who is preparing to move this application to the DECwindows platform.

A Guide to Migrating VWS Applications to DECwindows also provides some general advice on how to evaluate the application port. It provides pointers to the DECwindows documentation you need to perform migration.

1.2 DECwindows vs. VWS

Table 1–1 illustrates which products can be used with DECwindows and/or VWS.

Table 1–1 DECwindows vs. VWS

Product	Used on DECwindows	Used on VWS
VWS		X
HCUIS	X	X
SIGHT	X	X
VAXuisx	X	
UISANN	X	X
UISCNV	X	X
VWSDECW		X
VWSDEMO	*	X
MIG Application	**	**

* Some applications may not run because of restrictions in VAXuisx. Refer to the *VAXuisx User Guide* for more details on restrictions.

** Separate versions supplied for each individual system.

1.3 Getting Started

This section describes how to prepare for the installation of VMS Workstation Software and related products, and discusses minimum process quotas and disk space requirements.

If you are installing on a Local Area VAXcluster, this installation guide assumes the VAXcluster software is already installed. Refer to Section 9.2 for specific information about the following:

- Installing VMS Workstation Software on a new cluster.
- Installing VMS Workstation Software on an existing cluster.
- Adding a workstation to a cluster that has running workstations.
- Installing new versions of VMS Workstation Software on clusters currently running VMS Workstation Software.

For details on installing and configuring clusters, refer to the *VMS VAXcluster Manual*.

When you install VWS while using DECwindows, the installation procedure behaves as if it is running on a cluster.

Note: Remember to backup your system *before* you install any software. For backup instructions, refer to the operations guide for your base system.

1.3.1 Preparing to Install the VMS Workstation Software

For systems running VMS V5.0 or above, the following VMS classes are required for full functionality of this layered product:

- VMS Required Saveset
- Programming Support
- VMS Workstation Support

To prepare for the VMS Workstation Software installation, follow these steps:

1. Locate the VMS Workstation Software media (tape cartridge or magnetic tape) labeled *VMS Workstation Software V4.3*.
2. Turn on the console terminal.
3. If VMS is not running, turn on the processor. (Refer to the operator's guide for your system for booting instructions.)
4. When the system displays the *job terminated* message, press RETURN. The **Username:** prompt will appear.
5. Log in to the system manager account as follows:

   ```
   Username:  SYSTEM
   ```

   If a password has been set for the SYSTEM account, you are prompted for it. Enter the appropriate password.
6. If the System Manager menu appears, exit to DCL by entering **1**. The DCL prompt: **$** will appear.

   ```
   Main Menu

     1 - Exit to DCL
     2 - Log out of the system account
     3 - Invoke the MAIL utility
     4 - Invoke the PHONE utility
     5 - Add a user account to the system
     6 - Install optional software
     7 - Add or Delete a VMS component
     8 - Create or Modify an Autologin Terminal
     9 - Backup or Restore the user files on a disk
    10 - Build a Standalone BACKUP kit
    11 - Set the maximum number of interactive logins
    12 - Configure the network
    13 - Start up or shut down the network
    14 - SHUT DOWN the system

   Enter a number (? or ?# for HELP):
   ```
7. Make sure your SYSTEM account meets the minimum process quota requirements needed to perform a successful installation. Also be sure that you have ample disk space in order to complete the installation. (Refer to Section 1.3.2 and Section 1.3.3 for process quotas and disk space requirements.)

1.3.2 Process Quotas

Your account must meet the minimum process quota requirements for the installation to perform successfully. If the process quotas are too low, the installation will fail. Table 1–2 shows the minimum process quotas your SYSTEM account needs in order to perform a successful installation.

Table 1–2 Minimum Process Quotas

Process Name	Minimum Blocks
Open File (FILLM)	20
Paging File (PGFLQUO)	1500
Subprocess (PRCLM)	2
Working Set (WSQUO)	250 (400-500 optimum)

To check the quotas for your system account, enter the following at the DCL prompt:

```
$ SHOW PROCESS/QUOTA

29-MAR-1990 15:07:08.36   RTA1:              User: SYSTEM

Process Quotas:
 Account name: SYSTEM
 CPU limit:                     Infinite  Direct I/O limit:    128
 Buffered I/O byte count quota:   160000  Buffered I/O limit:   40
 Timer queue entry quota:             20  Open file quota:     110
 Paging file quota:                66591  Subprocess quota:     10
 Default page fault cluster:          64  AST quota:           598
 Enqueue quota:                      199  Shared file limit:     0
 Max detached processes:               0  Max active jobs:       0
```

To determine the authorized working set, enter the following DCL command:

```
$ SHOW WORKING_SET
Working Set    /Limit= 264  /Quota= 528   /Extent= 2048
Adjustment enabled  Authorized Quota= 528  Authorized Extent= 2048
```

To change any of the above values, run the VMS Authorize utility. Enter the following commands at the DCL prompt:

```
$ SET DEFAULT SYS$SYSTEM
$ RUN AUTHORIZE
```

The system responds with the **UAF>** prompt. Change a value by entering the following command:

```
UAF> MODIFY SYSTEM/limit=new value
```

For Example:

```
UAF> MODIFY SYSTEM/PGFLQUO=1500
```

Exit from Authorize as follows:

```
UAF> EXIT
```

Log out and log back into your system again for the new values to take effect.

1.3.3 Disk Space Requirements

You must have enough disk space available on your system disk to install whatever parts of the kit you desire. The installation allows you to choose what you want to install at any one time. This way, if you have a small disk system, you can install the VWS software one piece at a time.

You must decide which portions of the kit you want to install and then add together the values from Table 1–3 to make sure you have enough free blocks on your system disk to perform the installation.

To find out the number of free blocks you have on your system disk, enter the following DCL command:

```
$ SHOW DEVICE SYS$SYSDEVICE:

Device    Device      Error     Volume    Free  Trans Mnt
 Name     Status      Count      Label  Blocks Count Cnt
DUA0:     Mounted         0   SYSDISK    26058   131   1
```

If the number under the Free Blocks heading is smaller than the number of blocks you need to install, do not install all of the kit now or try to free up some blocks on your system disk.

To determine the number of blocks you will need in order to install each product, start with the number of blocks needed to get the initial saveset onto the system. Then add to that the numbers from Table 1–3, Table 1–4 and Table 1–5 to determine the total number of blocks. If you are installing all products from the VWS installation, block usage for all products must be totalled.

Table 1–3 lists peak block usage for each type of VWS installation:

Table 1–3 Peak Block Usage for Each Type of VWS Installation

Installation Choice	Free Blocks Needed to Complete Installation Successfully
Installation Saveset	324
VWS Images	4770
VWS Language Description Files	6174 + Language Requirements[1]
VWS Programming Guide Examples	540
VWS Fonts	Refer to Table 1–5
HCUIS Installation saveset	108
HCUIS Images	2412
SIGHT Installation saveset	108
SIGHT Images	558
SIGHT Fonts	Refer to Table 1–5
VAXuisx Installation saveset	180
VAXuisx Images	810
VAXuisx Fonts	Refer to Table 1–5
UISANN Installation saveset	108
UISANN Images	684
UISCNV Installation saveset	108
UISCNV Images	234
VWSDECW Installation saveset	162
For VMS V5.1	450
For VMS V5.2	468
Guide to Migrating	5112

[1] Refer to Table 1–4

Table 1–4 lists UIS description files block usage.

Table 1–4 UIS Description Files Block Usage

Language	Number of Blocks [1]
Ada	1806
BLISS	243
C	645
FORTRAN	264
MACRO	189
PASCAL	720
PL/I	717

[1] These numbers may vary slightly according to the system. In general, the numbers closely approximate the actual number of blocks required.

Table 1–5 lists peak block usage required for installing VWS fonts.

Table 1–5 Peak Block Usage Required for Font Installation

	Font Type		
Type of System	77 DPI	100 DPI	SIGHT
VWS Monochrome	1566	846	1440
VWS Color or Intensity	2646	1548	2232
VAXuisx	990	612	846

If VWS is installed on a clustered or DECwindows system, both monochrome and color fonts will be installed.

2 VMS Workstation Software (VWS)

This chapter describes how to install the VMS Workstation Software.

VMS Workstation Software (VWS) is a layered product for VMS that provides graphic support for the VAXstation II, VAXstation II/GPX, VAXstation 2000, VAXstation 3200, VAXstation 3500, and the VAXstation 3100.

Note: VWS does not support the SPX graphics accelerator.

VWS installs the executable files needed to run the VMS Workstation Software on your system.

If you are installing on a local area VAXcluster, this installation guide assumes the VAXcluster software is already installed. Refer to Section 9.2 for specific information about the following:

- Installing VMS Workstation Software on a new cluster
- Installing VMS Workstation Software on an existing cluster
- Adding VMS Workstation Software to an existing cluster
- Installing new versions of VMS Workstation Software on clusters currently running VMS Workstation Software

When you install while running DECwindows, the installation procedure behaves as if it is running on a cluster.

2.1 Installing VWS

This section describes how to use the VMSINSTAL command procedure to install the VWS043 kit. Make sure you have prepared the system for installation, as described in Section 1.3.

Note: Appendix B contains a sample VWS installation on a standalone VAXstation II/GPX.

To install from a tape cartridge, enter the following command to invoke the VMSINSTAL command procedure:

```
$  @SYS$UPDATE:VMSINSTAL VWS043 ddcu:
```

where:

dd = Device mnemonic (MU, DU, and so on)
c = Controller number (letter A, B, C, and so on)
u = Unit number (0, 1, and so on)

You may receive the following messages, depending on what is running on your system at the time. If the information in the messages is correct, answer YES to the two questions that follow the messages.

```
%VMSINSTAL-W-DECNET, Your DECnet network is up and running.
%VMSINSTAL-W-ACTIVE, The following processes are still active:
   _WTA1:
     SYSTEM
* Do you want to continue anyway [NO]? Y
* Are you satisfied with the backup of your system disk [YES]?
```

Load the installation media labeled *VWS043* into the drive. Type **Y** after the prompt and press RETURN.

Note:

- **If the installtion media is a tape, the installation will proceed without your having to load a second tape cartridge.**
- **If the installtion media is an RX33 floppy disk, the installation will pronpt you for every floppy disk volume in the installation kit.[text]**

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

After you load the tape, VMSINSTAL begins the installation and displays a series of messages about the products being installed. For example:

```
%MOUNT-I-MOUNTED, VWS043 mounted on _MUA0:

The following products will be processed:

     VWS V4.3

Beginning installation of VWS V4.3 at 11:18

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

If you would like to read the release notes before continuing this installation, you may do one of two things. You can either log into your system through another terminal and type out the file SYS$HELP:VWS043.RELEASE_NOTES, or you can answer "NO" to all of the following questions, which will not install anything on your system, then type out the file SYS$HELP:VWS043.RELEASE_NOTES.

The installation continues with a description of the kit and its components:

```
            VMS Workstation Software

                   Version 4.3

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      All Rights Reserved.

VWS        V4.3 - VWS - VMS Workstation Software
HCUIS      V4.3 - HCUIS - Hardcopy UIS
SIGHT      V4.3 - SIGHT - Graphics Editor
UISX       V1.0 - VAXuisx Run-Time Library for VMS
UISANN     V2.0 - UIS Source Code Annotator
UISCNV     V2.0 - UIS to DDIF Converter
```

The first series of questions is asked to find out which components you want to install on your system. Keeping in mind the number of blocks needed for each component, answer the questions appropriately. If you have enough blocks to do a complete installation, you should do so. If you do not have enough blocks at one time to complete the installation, you should do the installation in sections. Installing in sections takes more time than doing a complete installation.

```
  * Do you wish to install any of these components [Y]? Y
```

If you answer NO to this question, the installation procedure will exit. If you answer YES, then the installation will continue and ask a set of questions for each component.

The next message and question is used to determine whether or not you want to let the installation answer the remainder of the questions automatically with the default answers:

```
  This installation allows the option of disabling all questions
  and using default answers. If you choose this option, this
  question will be the last one asked and all questions normally
  asked during the installation will be answered with the default
  answers.

  * Would you like to use all default answers during the installation [N]?
```

The first component on the kit is VWS, the VMS Workstation Software. The VWS component includes:

- VWS images
- VWS fonts
- Language description files
- Some demonstration programs that are in the *VWS Graphics Programming Guide*

```
  VWS - VMS Workstation Software V4.3

  * Do you wish to install VWS043 [Y]?
```

If you answer NO to this question, proceed to Chapter 3 for the next component. If you answer YES, the installation will proceed as follows:

```
VWS requires that the following license be installed:

    Product:      VWS
    Producer:     DEC
    Version:      V4.3
    Release Date: 9-JUL-1990

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

If you have a VWS license loaded on your system, answer YES. If you do not have a VMS Workstation Software license installed for your system, you will receive the following message:

```
You currently do not have a VWS license installed.  You
can choose to continue with the VWS installation now;
however, without a VWS license installed, you will not
be able to bring up the VWS software.

Would you like to exit to install a VWS license [Y] ?
```

If you answer NO to the above query, the installation continues but the VWS software will not be started until you reboot the system and install the VWS license.

If you answer YES to the above query, you will receive the following message:

```
You have chosen to exit this installation. To install the VWS
license, invoke the procedure SYS$UPDATE:VMSLICENSE.COM.
```

NOTE: After you invoke the SYS$UPDATE:VMSLICENSE.COM command procedure, you must restart the VWS installation from the beginning.

Next, the installation procedure checks to see if the system is currently running a windowing system, in either the VWS or DECwindows environment. If you are running DECwindows, the following information is displayed:

```
      You are currently running under DECwindows.  You may now choose to
      exit from this VWS installation, or you may continue.  However, if
      you choose to continue the installation will continue as it would
      for a cluster installation of VWS, hence you will get both Black &
      White and Color fonts and it will be up to you to reboot your
      system.
* Do you want to continue  [N]?
```

If you answer NO to the question, the installation will exit. If you answer YES, the installation continues as if it is running on a cluster.

On a clustered (or DECwindows) system, all fonts will be provided, and AUTOGEN will not be run. You will have to invoke AUTOGEN manually for each satellite on the cluster that will be running VWS.

If you are installing on a standalone system running VWS, the installation procedure will provide only the color or monochrome fonts, depending on what type of hardware you are running on. Standalone installations will also invoke AUTOGEN as part of the installation procedure. The installation procedure gives you the choice of running AUTOGEN with or without FEEDBACK. The following message is displayed:

```
    AUTOGEN will be run at the end of this installation. You are
    being given the choice to run AUTOGEN with or without FEEDBACK. If
    you would  like to run AUTOGEN with FEEDBACK answer "YES" to the
    following question; otherwise, press RETURN. Please refer to 'The
    Guide to Setting up VMS' for more information on FEEDBACK. The
    default is to run without FEEDBACK.

*      Would you like AUTOGEN to use FEEDBACK            [N]?
```

If you want to run AUTOGEN with FEEDBACK, answer YES to the preceding question. If you do not want to run AUTOGEN with FEEDBACK, press RETURN. (Refer to *The Guide to Setting up VMS* for more information on FEEDBACK.) The default is to run AUTOGEN without FEEDBACK.

The next question deals with the Programming Description files. These files allow programs to call UIS routines as described in the *VWS Graphics Programming Guide*.

```
*  Install the VWS Programming Description files [Y]?
```

If you do not want to install any of these files, answer NO. If you answered YES, the installation procedure will ask if you want to provide the programming description files for each of the programming languages.

```
  This installation provides description files you
  need when you use the UIS programming interface.

  * Would you like all of the description files   [Y]?
```

If you answer YES to the question, the installation procedure asks the following:

```
  You have chosen the following languages:
  (ADA,BLISS,CC,FORTRAN,MACRO,PASCAL,PLI)

  * Is this OK [Y]?
```

If this is okay, answer YES.

If you answer NO, you will go through the following sequence of questions. You can choose the languages for which you want description files.

```
  Please enter Yes (Y) or No (N) if you want files provided
  for the following languages:

*   ADA [N]?
*   BLISS [N]? Y
*   CC [N]? Y
*   FORTRAN [N]? Y
*   MACRO [N]? Y
*   PASCAL [N]? Y
*   PLI [N]?

 You have chosen the following languages:
 (BLISS,CC,FORTRAN,MACRO,PASCAL)

* Is this OK [Y]?
```

The installation procedure asks you again if this is okay. If you answer NO, the installation procedure restarts the language questions, lists the languages, and allows you to choose the ones you want. This sequence is repeated until you answer yes to the last question.

The next question deals with the FORTRAN programming examples found in the *VWS Graphics Programming Guide*.

```
* Install example programs from VWS Graphics Programming Guide  [Y]?
```

If you do not want these files, answer NO. If you want to include the files on your system, answer YES.

NOTE: The installation procedure now places the VWS example files in the SYS$COMMON:[SYSHLP.EXAMPLES.VWS] directory instead of in the SYS$EXAMPLES: directory. It also deletes all old versions of the examples from SYS$EXAMPLES. A new logical name, VWS$EXAMPLES, points to the new directory.

Next, the installation procedure asks if you want to install the VWS fonts. If this is a first time VWS installation, the fonts must be installed. If the fonts are already resident on your system from a previous installation, it is not mandatory. But keep in mind that this installation may provide new fonts which were not provided in previous installations. Generally, it is recommended that the fonts be installed for all installations.

NOTE: To improve performance for graphic text operations while running the VAXuisx Run-Time Library for VMS, you should install the VWS fonts provided in this section.

```
* Would you like to install the VWS fonts              [Y]?
```

If you answer YES, it asks which density fonts you want. The 77-DPI (Dot Per Inch) fonts are generally used for 19-inch monitors (VR260, VR290, VR299). The 100-DPI fonts are for 15- and 16-inch monitors (VR19, VR150, VR160, VR297).

```
* Would you like to install the 77 DPI fonts        [Y]?
* Would you like to install the 100 DPI fonts        [Y]?
```

No more questions will be asked for the VWS component. The installation proceeds with the next component on the kit.

3 Hardcopy UIS (HCUIS)

This chapter describes how to install Hardcopy UIS (HCUIS).

HCUIS allows you to output files written in UIS image format to supported hardcopy devices. The HCUIS component includes HCUIS images.

To render UIS files produced by running your application with VAXuisx, you should install HCUIS and the fonts supplied with the VWS component of this kit. To get these fonts, install the VWS component and answer YES to the question about installing fonts.

Beginning with this version, HCUIS does not require a VAXstation to run. It may be run on any VMS system which has HCUIS and the VWS fonts installed.

3.1 Installing HCUIS

You can choose to install HCUIS. Once the VWS component installation is completed, the HCUIS installation begins.

```
HCUIS - Hardcopy UIS V4.3

* Do you wish to install HCUIS043 [Y]? y
```

If you answer NO to this question, proceed to Chapter 4 for the next component. If you answer YES, the installation will proceed to check for the VAX-VMS license. The following information is displayed:

```
HCUIS requires the VAX-VMS license.

  Product:      VAX-VMS
  Producer:     DEC
  Version:      V5.0
  Release Date: 01-JAN-1988

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

The VAX-VMS license must be loaded in order to run HCUIS. If you answer YES to this question, the installation will proceed as follows:

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

No more questions will be asked for the HCUIS component. The installation proceeds with the next component on the kit.

3.2 Customizing Command Files for HCUIS

The HCUIS installation provides a new version of the file HCUISDEVICES.COM. This file is named SYS$MANAGER:HCUISDEVICES_NEW.COM. It can be used to setup hardcopy devices on your system. Please refer to the *Guide to Printing Graphics* for an explanation of how to customize this file.

HCUIS includes a startup command procedure which should be invoked during system startup. Please edit the file SYS$STARTUP:SYSTARTUP_V5.COM and add the following command:

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

If your SYSMAN database includes an entry for HCUIS$STARTUP.COM, please remove it. The startup procedure cannot be invoked from both SYSTARTUP_V5 and SYSMAN.

4 SIGHT Graphics Editor (SIGHT)

This chapter describes how to install SIGHT.

SIGHT is a simple graphics editor that allows you to create, save, and read basic graphics objects. However, SIGHT only reads in files that SIGHT has created.

The SIGHT component includes SIGHT images.

4.1 Installing SIGHT

```
SIGHT - SIGHT Graphics Editor V4.3

* Do you wish to install SIGHT043 [Y]?
```

If you answer NO to this question, proceed to Chapter 5 for the next component. If you answer YES, the installation will proceed to check for the VAX-VMS license. The following message is displayed:

```
SIGHT also requires the VMS license.

  Product:            VAX-VMS
  Producer:           DEC
  Version:            V5.0
  Release Date:       01-JAN-1988

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

The VAX-VMS license must be loaded in order to run SIGHT. If you answer YES to the question, the installation will proceed as follows:

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

Next, the installation procedure asks if you want to install the SIGHT fonts. The SIGHT fonts are necessary to run the SIGHT Graphics Editor. If you are installing SIGHT for the first time, the SIGHT fonts *must* be installed.

```
* Would you like to install the SIGHT fonts              [Y]?
```

No more questions will be asked for the SIGHT component. The installation proceeds with the next component on the kit.

4.2 Startup procedure for SIGHT

SIGHT includes a startup command procedure which should be invoked during system startup. Please edit the file SYS$STARTUP:SYSTARTUP_V5.COM and add the following command:

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

If your SYSMAN database includes an entry for SIGHT$STARTUP.COM, please remove it. The startup procedure cannot be invoked from both SYSTARTUP_V5 and SYSMAN.

5 VAXuisx Run-Time Library for VMS (VAXuisx)

This chapter describes how to install VAXuisx.

VAXuisx is the VAXuisx Run-Time Library for VMS, which allows most UIS applications to run in a DECwindows environment. Using VAXuisx you can run UIS applications remotely. You can also run SIGHT on non-workstations or DECwindows workstations.

The VAXuisx component includes:

- VAXuisx images
- VAXuisx fonts

NOTE: To improve performance for graphic text operations while running the VAXuisx Run-Time Library for VMS, you should install the VWS fonts provided with the VWS component of this installation kit.

5.1 Beginning VAXuisx Installation

If you are installing from the VWS Common Installation proceed to Section 5.2. Otherwise, refer to Section 1.3 for information on preparing for the installation and disk requirements.

To install VAXuisx from a tape cartridge, enter the following command to invoke the VMSINSTAL command procedure:

```
$  @SYS$UPDATE:VMSINSTAL UISX010 ddcu:
```

where:

dd = Device mnemonic (MU, DU, and so on)
c = Controller number (letter A, B, C, and so on)
u = Unit number (0, 1, and so on)

You may receive the following messages, depending on what is running on your system at the time. If the information in the messages is correct, answer YES to the two questions that follow the messages.

```
%VMSINSTAL-W-DECNET, Your DECnet network is up and running.
%VMSINSTAL-W-ACTIVE, The following processes are still active:
 _WTA1:
 SYSTEM
* Do you want to continue anyway [NO]? Y
* Are you satisfied with the backup of your system disk [YES]?
```

Load the tape cartridge labeled *VWS043* into the tape drive. Type **Y** after the prompt and press RETURN. The installation proceeds without your having to load a second tape cartridge.

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

After you load the tape, VMSINSTAL begins the installation and displays a series of messages about the products being installed. For example:

```
%MOUNT-I-MOUNTED, UISX010 mounted on _MUA0:

The following products will be processed:

  VAXuisx V1.0

 Beginning installation of VAXuisx V1.0 at 11:18

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

If you would like to read the release notes before continuing this installation, you may do one of two things. You can either log into your system through another terminal and type out the file SYS$HELP:VWS043.RELEASE_NOTES, or you can answer "NO" to all of the following questions, which will not install anything on your system, then type out the file SYS$HELP:VWS043.RELEASE_NOTES.

5.2 Installing VAXuisx

```
  UISX - UISX VAXuisx Run-Time Library for VMS V1.0

* Do you wish to install UISX010 [Y]?
```

If you answer NO to this question, proceed to Chapter 6 for the next component. If you answer YES, the installation will proceed to check for the VAX-VMS license. The following information is displayed.

```
          UISX requires the VAX-VMS license.

   Product:      VAX-VMS
   Producer:     DEC
   Version:      V5.0
          Release Date: 01-JAN-1988

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

The VAX-VMS license must be loaded in order to run UISX. If you answer YES to this question, the installation will proceed as follows:

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

Next, the installation procedure checks to see if the system is currently running a windowing system either in the VWS or DECwindows environment. If you are running VWS, the following information is displayed:

```
 The system parameters currently indicate that you are running
 the VMS Workstation Software (VWS) Windowing System.  Please
 note that VAXuisx is not intended to be run from a VWS
 Workstation, care should be used when attempting to mix native
 mode VWS and VAXuisx.
```

The installation then checks to determine whether or not DECwindows is installed on the system. If it is not, the following message is displayed:

```
 A check of the system indicates that DECwindows may not be
 installed on this system.  The DECwindows client software
 must be installed for VAXuisx to operate from this system.
```

If this message is displayed, the installation will continue to install VAXuisx, but you will not be able to run VAXuisx on the system.

Next, the installation procedure asks if you want to install any of the VAXuisx fonts. These fonts are the same fonts provided with VWS, but they are provided by VAXuisx in DECwindows format. If this is a first time VAXuisx installation, the fonts *should* be installed.

VAXuisx gives you the option of installing any of 77-DPI (dot per inch) fonts, 100-DPI fonts, or SIGHT fonts. The 77-DPI fonts are generally used for 19-inch monitors (VR290 or VR299). The 100-DPI fonts are for 15- and 16-inch monitors (VR150, VR160, VR297, and VRT19).

If you will be running SIGHT in the VAXuisx environment, you should install the SIGHT fonts provided by the VAXuisx component.

```
* Do you wish to install the 77 dpi fonts [Y]?
* Do you wish to install the 100 dpi fonts [Y]?
* Do you wish to install the SIGHT fonts [Y]?
```

No more questions will be asked for the VAXuisx component. The installation proceeds with the next component on the kit.

5.3 Startup procedure for VAXuisx

VAXuisx includes a startup command procedure which should be invoked during system startup. Please edit the file SYS$STARTUP:SYSTARTUP_V5.COM and add the following command:

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

If your SYSMAN database includes an entry for UISX$STARTUP.COM, please remove it. The startup procedure cannot be invoked from both SYSTARTUP_V5 and SYSMAN.

6 UIS Source Code Annotator (UISANN)

This chapter describes how to install UISANN.

UIS Source Code Annotator aides in converting UIS applications to DECwindows. The annotator will search UIS applications source files for all UIS$, UISDC$, or HCUIS$ routines called and attempt to find a fuctionally matching X11 routine call.

The UISANN component includes UISANN images.

6.1 Beginning UISANN Installation

If you are installing from the VWS Common Installation proceed to Section 6.2. Otherwise, refer to Section 1.3 for information on preparing for the installation and disk requirements.

To install UISANN from a tape cartridge, enter the following command to invoke the VMSINSTAL command procedure:

```
$  @SYS$UPDATE:VMSINSTAL UISANN020 ddcu:
```

where:

dd = Device mnemonic (MU, DU, and so on)
c = Controller number (letter A, B, C, and so on)
u = Unit number (0, 1, and so on)

You may receive the following messages, depending on what is running on your system at the time. If the information in the messages is correct, answer YES to the two questions that follow the messages.

```
%VMSINSTAL-W-DECNET, Your DECnet network is up and running.
%VMSINSTAL-W-ACTIVE, The following processes are still active:
 _WTA1:
 SYSTEM
* Do you want to continue anyway [NO]? Y
* Are you satisfied with the backup of your system disk [YES]?
```

Load the tape cartridge labeled *VWS043* into the tape drive. Type **Y** after the prompt and press RETURN. The installation proceeds without your having to load a second tape cartridge.

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

After you load the tape, VMSINSTAL begins the installation and displays a series of messages about the products being installed. For example:

```
%MOUNT-I-MOUNTED, UISANN020 mounted on _MUA0:

The following products will be processed:

  UISANN V2.0

 Beginning installation of UISANN V2.0 at 11:18

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

If you would like to read the release notes before continuing this installation, you may do one of two things. You can either log into your system through another terminal and type out the file SYS$HELP:VWS043.RELEASE_NOTES, or you can answer NO to all of the following questions, which will not install anything on your system, then type out the file SYS$HELP:VWS043.RELEASE_NOTES.

6.2 Installing UISANN

```
  UISANN Source Code Annotator V2.0

* Do you wish to install UISANN020 [Y]?
```

If you answer NO to this question, proceed to Chapter 7 for the next component. If you answer YES, the installation will proceed to check for the VAX-VMS license. The following information is displayed:

```
         UISANN requires the VAX-VMS license.

         Product:       VAX-VMS
         Producer:      DEC
         Version:       V5.0
         Release Date:  01-JAN-1988

* Does the product have an authorization key registered an loaded?
```

The VAX-VMS license must be loaded in order to run UISANN. If you answer YES to this question, the installation will proceed as follows:

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

No more questions will be asked for the UISANN component. The installation proceeds with the next component on the kit.

7 UIS to DDIF Converter (UISCNV)

This chapter describes how to install the UIS to DDIF Converter (UISCNV).

The UIS to DDIF Converter provides a translator to convert files written in .UIS format into .DDIF format.

The UISCNV component includes UISCNV images.

7.1 Beginning UISCNV Installation

If you are installing from the VWS Common Installation, proceed to Section 7.2. Otherwise, refer to Section 1.3 for information on preparing for the installation and disk requirements.

To install UISCNV from a tape cartridge, enter the following command to invoke the VMSINSTAL command procedure:

```
$  @SYS$UPDATE:VMSINSTAL UISCNV020 ddcu:
```

where:

dd = Device mnemonic (MU, DU, and so on)
c = Controller number (letter A, B, C, and so on)
u = Unit number (0, 1, and so on)

You may receive the following messages, depending on what is running on your system at the time. If the information in the messages is correct, answer YES to the two questions that follow the messages.

```
%VMSINSTAL-W-DECNET, Your DECnet network is up and running.
%VMSINSTAL-W-ACTIVE, The following processes are still active:
 _WTA1:
 SYSTEM
* Do you want to continue anyway [NO]? Y
* Are you satisfied with the backup of your system disk [YES]?
```

Load the tape cartridge labeled *VWS043* into the tape drive. Type **Y** after the prompt and press RETURN. The installation proceeds without your having to load a second tape cartridge.

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

After you load the tape, VMSINSTAL begins the installation and displays a series of messages about the products being installed. For example:

```
%MOUNT-I-MOUNTED, UISCNV020 mounted on _MUA0:

The following products will be processed:

  UISCNV V2.0

 Beginning installation of UISCNV V2.0 at 11:18

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

If you would like to read the release notes before continuing this installation, you may do one of two things. You can either log into your system through another terminal and type out the file SYS$HELP:VWS043.RELEASE_NOTES, or you can answer "NO" to all of the following questions, which will not install anything on your system, then type out the file SYS$HELP:VWS043.RELEASE_NOTES.

7.2 Installing UISCNV

```
  UISCNV - UISCNV UIS to DDIF Converter V2.0

* Do you wish to install UISCNV020 [Y]?
```

If you answer NO to the question, proceed to Chapter 8 for the remainder of the installation. If you answer YES, the installation will proceed to check for the VAX-VMS license. The following information is displayed.

```
        UISCNV requires the VAX-VMS license.

 Product:       VAX-VMS
 Producer:      DEC
 Version:       V5.0
 Release Date:  01-JAN-1988

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

The VAX-VMS license must be loaded in order to run UISCNV. If you answer YES to this question, the installation will proceed as follows:

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

8 Completing the Installation

This chapter describes the questions and actions remaining for this installation. This procedure will be the same regardless of the components which you have chosen to install.

All questions related to this installation have been asked. The installation procedure will proceed to install all components chosen.

```
* Do you want to purge files replaced by this installation [YES]?
* Do you want to run the IVP after the installation [YES]?
* Are you satisfied with the answers and wish to complete the installation [Y]?
```

If you answer YES to the final question, the installation proceeds to perform all specified component installations with the options chosen.

```
 All product installation questions have now been answered.  The
 installation will now complete without further questions.
```

At this point, the installation procedure does the following:

- Completes restoring the workstation savesets for the requested type(s) of installation.
- If you are a STANDALONE workstation not running DECwindows, and selected to install the VWS images, then the procedure will run AUTOGEN and perform a system SHUTDOWN.
- It tells you what to do to bring up the latest VWS for each system, if you are in a clustered environment, or are currently running DECwindows.

For an example of messages you may receive during your installation, please refer to Appendix B which includes a sample installation.

At some point during the installation, the following message will be displayed indicating that files will be moved to the appropriate system directories:

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

CAUTION: If during this phase of the installation you receive the following warning message:

```
%SYSTEM-W-NOSUCHFILE, No such file
\VMI$ROOT:[SYSLIB]UISSHR.EXE\
```

and it causes your installation to fail, please reinstall VWS after executing the following commands:

$ INSTALL REMOVE UISSHR
$ INSTALL CREATE UISSHR /OPEN /SHARE /PROTECTED

The original installation failed because VMSINSTAL could no longer locate the file associated with the installed file header information. The above commands will ensure that VMSINSTAL can find the current copy of the file.

After moving all files to their appropriate system directories, the component Installation Verification Procedures (IVPs) will be run. If your system is currently running VWS, the VAXuisx IVP will not complete because it must be run in a DECwindows environment.

For a standalone system, the installation will finish by running AUTOGEN and rebooting the system. For a clustered system or one currently running DECwindows, AUTOGEN will not be run. Instead, the installation will display the following messages:

```
You must now run the VMS AUTOGEN procedure for each satellite in
your cluster.  To run this procedure type the following from the
system account of each satellite:

$ @sys$update:autogen savparams setparams nofeedback

This procedure will shut down the satellite.  When the shutdown
has been completed, press the HALT button and then reboot the system.
```

9 Post Installation Tasks

This chapter describes what to do after the software has been installed, information about installing on a Local Area VAXcluster and information about VAXstation management and tuning.

When the installation finishes, do the following:

1. Remove the last tape cartridge and store the distribution media.
2. If you are installing on a Local Area VAXcluster, configure the cluster using the CLUSTER_CONFIG.COM command procedure. (Refer to *VMS VAXcluster Manual* for details.)
3. If you want to run the VMS Workstation Software, reboot or restart the system or boot the workstation satellite. (Refer to Section 9.1 and Section 9.2.4.
4. If you installed VAXuisx while running in the DECwindows environment, you may need to restart your DECwindows server to pick up the new fonts. The fonts should be reloaded by logging out from the session and logging back in, but it has been found that this is not always the case.

   To restart the server type:

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

   from a suitably privileged account.

Each process is described in the following subsections.

The SYSMAN utility is used to include startup files in the VMS layered product startup database.

The startup files run after STARTUP_V5.COM is processed, instead of while it is being processed.

To ensure that VWS will start correctly, make sure that any previous references to STARTVWS have been removed from SYSTARTUP_V5.COM. You should also make sure your SYSTARTUP_V5.COM does not exit by executing a $LOGOUT command.

9.1 Rebooting the System

If you want to run the VMS Workstation Software, you must reboot the system if you installed on any of the following systems:

- VAXstation 2000
- VAXstation 3100
- VAXstation 3200
- VAXstation 3500
- VAXstation II
- VAXstation II/GPX

To reboot the system, press Halt. When the console-mode prompt (>>>) appears, type B.

```
>>> B
```

Wait several minutes while the system starts up. Several messages appear on the screen, beginning with the following:

```
The VMS system is now executing the site-specific startup commands.
```

After startup is completed, the system issues a *job terminated* message. The screen display goes dark for a few moments then changes to a shaded area with a black pointer.

Note: If you are starting up a color or intensity system and the system is inactive following the *job terminated* message, you may need to press F2 (operator window) to change the screen display. Section 9.3.1 provides a detailed description of the operator window.

9.2 Information about Installing on a Local Area VAXcluster

This section contains information specific to installing on a Local Area VAXcluster. Read the *VMS VAXcluster Manual* before continuing with this section.

You can install software on a cluster in any of the following ways:

- Installing VMS Workstation Software on a new cluster
- Installing VMS Workstation Software on an existing cluster
- Adding a workstation to a cluster that already has VMS Workstation Software
- Installing new versions of VMS Workstation Software on clusters currently running VMS Workstation Software

The details of installing and configuring clusters is contained in the *VMS VAXcluster Manual*. The following procedures briefly list steps that are described in detail in that book.

Note: When you install VWS while running DECwindows, the installation procedure behaves as if it is running on a cluster.

9.2.1 Installing VMS Workstation Software on a New Cluster

To install VMS Workstation Software on a new cluster, follow these steps:

1. Install the VMS system on the cluster boot node. Refer to the *VMS VAXcluster Manual*.
2. Install the VMS Workstation Software on the cluster boot node. Refer to Section 2.1.
3. Invoke the CLUSTER_CONFIG.COM command procedure to configure the cluster satellite members. Refer to the *VMS VAXcluster Manual*.
4. Boot the satellites, as follows:
   - To boot a VAXstation II, VAXstation II/GPX, VAXstation 3200, or VAXstation 3500 enter the following:

     ```
     >>> B XQ
     ```

   - To boot a VAXstation 2000 or VAXstation 3100, enter the following:

     ```
     >>> B ES
     ```

   Satellites that are workstations automatically boot using VWS.

Note: If you have installed both VWS and DECwindows on your cluster and you want to run DECwindows on a satellite, refer to the *VMS V5.1 Installation Guide*, Chapter 2, *"Installing DECwindows"*.

9.2.2 Installing VMS Workstation Software on an Existing Cluster

When a cluster does not have workstations, it does not need VMS Workstation Software. However, when you decide to add workstations to the cluster, and want to run VWS you must install it. To install VWS on an existing cluster, follow these steps:

1. Install the VMS Workstation Software on the cluster boot node. Refer to Section 2.1.
2. Invoke the CLUSTER_CONFIG.COM command procedure to configure the new cluster satellite members. Refer to the *VMS VAXcluster Manual*.

9.2.3 Adding a Workstation to a Cluster that has Running Workstations

To add a workstation to a cluster that already has running workstations, invoke the CLUSTER_CONFIG.COM command procedure to configure the new workstation. Refer to the *VMS VAXcluster Manual*.

9.2.4 Booting a Workstation Satellite into a Cluster

If you want to run the VMS Workstation Software, and you install it on a Local Area VAXcluster, you must boot the workstation satellite. When you boot a workstation satellite on a cluster that has been configured and has the VWS installed on the boot node, the satellite automatically boots running VWS.

Note: If you have installed both VWS and DECwindows on your cluster and you want to run DECwindows on a satellite, refer to the *VMS V5.1 Installation Guide, Chapter 2, "Installing DECwindows..*

To boot a satellite for a VAXstation II, VAXstation II/GPX, VAXstation 3200, or VAXstation 3500, enter the following command:

```
>>> B XQ
```

To boot a satellite for a VAXstation 2000 or VAXstation 3100, enter the following command:

```
>>> B ES
```

When you boot the satellite, it does the following:

1 Displays a series of startup messages, ending with a *job terminated* message.

2 Clears the screen display while the VMS Workstation Software is loading.

   You should not attempt to log in at this point; wait a few minutes for the next step to occur.

3 Changes the screen display to a shaded area with a black pointer.

Note: If you are starting up a color or intensity system and the system is inactive following the *job terminated* message, you may need to press F2 (operator window) to change the screen display. Section 9.3.1 provides a detailed description of the operator window.

9.2.5 Installing New Versions of VMS Workstation Software

To install new versions of VMS Workstation Software on clusters currently running VWS, follow these steps:

1 Install the new version of the VWS on the cluster boot node. Refer to Section 2.1.

2 Reboot the satellites, as follows:

- To boot a VAXstation II, VAXstation II/GPX, VAXstation 3200, or VAXstation 3500, enter the following:

```
>>> B XQ
```

- To boot a VAXstation 2000 or VAXstation 3100, enter the following:

```
>>> B ES
```

Any satellites that are workstations RUNNING VWS automatically boot using the new version of the VMS Workstation Software. If the current SYSGEN parameters are wrong for the new version, the startup procedure displays the incorrect parameters and asks if you want to automatically run AUTOGEN.

9.3 VAXstation Management and Tuning

This section describes how to tune a system running VWS. Refer to this section, for example, when you want to modify parameters of the VMS System Generation Utility (SYSGEN).

You can use logical names to control certain VWS parameters and resource usage. The logical names must be invoked before the VWS startup file STARTVWS.COM is invoked. STARTVWS.COM is invoked from SYSMAN, which is run after the SYSTARTUP_V5.COM procedure.

In addition, Section 9.3.1, Section 9.3.1.1, and Section 9.3.1.1.1 describe the function of the operator window on the VAXstation. If you are the system manager of your VAXstation or if you intend to perform tasks that involve rebooting the system (such as modifications to some SYSGEN parameters), you need to be familiar with the operator window.

9.3.1 The Operator Window

The operator window on the VAXstation, OPA0, is a viewport to both the console and the operator terminal. When the VMS operating system is halted, you can use the operator window to enter commands at the console-mode prompt (>>>). When VMS is running but the VMS Workstation Software is not, you can use the window to log in to OPA0. The operator window is dependent only on the VMS base system and is different from the workstation software terminal emulator windows. OPA0 is not a full-function terminal. It is an LA34 emulator.

The operator window appears at the top of the VAXstation screen, regardless of whether the VMS Workstation Software is running. If you were to install VMS without the VMS Workstation Software, the entire screen would be dark and OPA0 would be your only means of logging in to the system.

9.3.1.1 Using the Operator Window

Once the VMS Workstation Software is started, the operator window appears on your VAXstation screen in the following two instances:

- **When you press the F2 function key**

  Pressing this key displays messages sent to the operator device (OPA0). For example, if you try to print on a remote device that is not accessible, the software sends a message to OPA0.

  To erase the operator display, press the F2 function key.

- **When a message is sent to OPA0**

  When a message is sent to OPA0 (for example, a message that says a device is off-line), the operator window automatically appears; however, the keyboard does not automatically connect to the window. The keyboard connects to the operator window only if the display manager process has not yet been started.

Once you log in to OPA0, keyboard input is directed to the window until you log out of that process.

To erase the operator window display, press the F2 function key.

NOTE: In a Local Area VAXcluster, messages to OPA0 are disabled on all workstations.

9.3.1.1.1 Operator Window Functions on Color and Intensity Systems

The operation of the operator window is not the same on color and intensity systems as it is on monochrome systems. The following characteristics are unique to color and intensity systems:

- Writing or drawing to the screen does not continue while the operator window is present.
- The operator window is automatically removed 30 seconds after it becomes active.
- When the system boots or fails, the entire screen is used as the operator window. The windowing system does not appear until the startup procedure has completed.

  Because the operator window covers the monitor screen, the system may appear to be hung at startup or shutdown time. If a message is written to the operator window, the window remains on the screen for 30 seconds (or until you press the F2 function key).
- The screen color changes when the operator window appears. To return the screen to its original colors, remove the operator window from the screen, using the F2 function key.
- The data in the operator window is lost when the operator window is erased from the screen.

9.3.2 Changing Window Memory Size

If your system fails frequently or if your processes are being deleted when you have a large number of windows on your screen, a problem may exist with the amount of memory allocated for use by windows.

You can change the window memory size to support more or fewer windows, as described in the following sections.

9.3.2.1 Monochrome Systems

On monochrome systems, the initial default values of the logicals and system parameters support about 14 concurrent normal size (24-line) VT220 windows, or about 5 full-screen windows. (The number of possible windows varies according to window size.) Windows partially off the screen require twice as much window memory as those completely on the screen. Table 9–1 lists the monochrome system logicals and their default values. Table 9–2 lists the corresponding SYSGEN parameters.

Table 9–1 Monochrome System Logical Defaults

System Logical	Default Value
UIS$SYSTEM_POOL_SIZE	1024
UIS$P1_POOL_SIZE	256000
UIS$QVSS_POOL_SIZE	900972

Table 9–2 Monochrome SYSGEN Parameter Defaults

SYSGEN Parameter	Default Value
CHANNELCNT	400
CTLPAGES	1500
GBLPAGES	10
GBLPAGFIL	10
GBLSECTIONS	216
MAXBUF	2048
NPAGEDYN	219648
NPAGEVIR	659968
PAGEDYN	1703936
PROCSECTCNT	64
PQL_MASTLM	600
PQL_MBIOLM	0
PQL_MBYTLM	10000
PQL_MDIOLM	100
PQL_DPGFLQUOTA	8192
SPTREQ	2500

To enable the system to support more windows than the default, follow these steps:

1 Modify the default window memory size by redefining the logical name UIS$QVSS_POOL_SIZE. Table 9–3 lists values to support various numbers of windows.

2 Modify the file MODPARAMS.DAT to increase the value of the SYSGEN parameter PAGEDYN. This file is located in the SYS$SYSTEM directory. Table 9–3 lists the values to be added to PAGEDYN to support various numbers of windows.

3 Run AUTOGEN to enable the new PAGEDYN parameter value. Do not run SYSGEN to modify the parameter directly.

Table 9–3 Windows

Number of Windows	New UIS$QVSS_POOL_SIZE Value	New ADD_PAGEDYN Value
14	900972	0
20	1351532	711532
25	1854172	1214172
30	2476812	1836812

Table 9–3 assumes the average window size of a 24-line VT220 terminal emulator window. Full-screen windows require an extra 60,000 bytes for each window. Smaller windows require about 25,000 bytes fewer for each window.

The following sections describe the steps for modifying UIS$QVSS_POOL_SIZE and MODPARAMS.DAT and for running AUTOGEN.

9.3.2.1.1 Modifying the Default Window Memory Size

To modify the default window memory size, follow these steps:

1 Create a terminal emulator window and log in to the SYSTEM account or a privileged user account.

2 Invoke the editor as follows:

```
$ EDIT SYS$MANAGER:SYLOGICALS.COM
```

3 Define the logical name UIS$QVSS_POOL_SIZE to be equal to the appropriate value from Table 9–3.

```
$ DEFINE/SYSTEM/EXEC UIS$QVSS_POOL_SIZE new_value
```

For example, to support 20 windows on your system, define the logical name UIS$QVSS_POOL_SIZE to be 1351532 by entering the following:

```
$ DEFINE/SYSTEM/EXEC UIS$QVSS_POOL_SIZE 1351532
```

4 Exit from the editor.

9.3.2.1.2 Modifying MODPARAMS.DAT

To modify MODPARAMS.DAT, follow these steps:

1. Invoke the editor as follows:

```
$ EDIT SYS$SYSTEM:MODPARAMS.DAT
```

2. Move the cursor to the end of the file.
3. Add the appropriate value from Table 9–3 to the current value of PAGEDYN, using the following syntax:

```
ADD_PAGEDYN= n
```

   For example, to support 20 windows on your system, add 711532 to the current value of PAGEDYN by entering the following:

```
ADD_PAGEDYN= 711532
```

4. Exit from the editor.

9.3.2.1.3 Running AUTOGEN

To enable the new parameter value, run AUTOGEN by entering the following command:

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

AUTOGEN alters the parameters, then automatically shuts down and reboots the system.

9.3.2.2 Intensity and Color Systems

On intensity and color systems, window memory is stored in permanent system global page file sections. Normal size windows (24 lines) require 12 global sections at 55 pages/global section. A full-screen window requires 32 global sections at 55 pages/global section.

The initial default value supports about 13 concurrent 24-line VT220 windows, or about five full-screen windows. (The number of windows varies, according to their size.) Table 9–4 lists intensity and color system logicals and default values provided by VMS Workstation Software. Table 9–5 list the corresponding SYSGEN parameters and their default values provided by VWS.

Table 9–4 Intensity and Color System Defaults

System Logical	Default Value
UIS$SYSTEM_POOL_SIZE	1024
UIS$P1_POOL_SIZE	512000
UIS$QVSS_POOL_SIZE	256000

Table 9–5 Intensity and Color SYSGEN Parameter Defaults

SYSGEN Parameters	Default Value
CHANNELCNT	400
CTLPAGES	1500
GBLPAGES	17600
GBLPAGFIL	17600
GBLSECTIONS	512
MAXBUF	2048
NPAGEDYN	419840
NPAGEVIR	1259520
PAGEDYN	3072000
PROCSECTCNT	64
PQL_MASTLM	600
PQL_MBIOLM	40
PQL_MBYTLM	10000
PQL_MDIOLM	100
PQL_DPGFLQUOTA	8192
SPTREQ	2500

To enable the system to support more windows than the default, follow these steps:

1. Modify the default window memory size by redefining the logical name UIS$QVSS_POOL_SIZE. Table 9–6 lists values to support various numbers of windows.
2. Modify the file MODPARAMS.DAT to increase the value of the SYSGEN parameter PAGEDYN. This file is found in the SYS$SYSTEM directory. Table 9–6 lists correct values to be added to PAGEDYN to support various numbers of windows.
3. Modify the file MODPARAMS.DAT to increase the SYSGEN parameters GBLPAGES and GBLPAGFIL, as follows:
   - Increase each parameter by 660 for each additional 24-line window.
   - Increase each parameter by 1760 for each additional full-screen window.
4. Modify the file MODPARAMS.DAT to increase the SYSGEN parameter GBLSECTIONS, as follows:
   - Increase the parameter by 12 for each additional 24-line window.
   - Increase the parameter by 32 for each additional full-screen window.
5. Modify the file MODPARAMS.DAT to increase the SYSGEN parameter NPAGEDYN by 25,000 for each additional window, regardless of window size.

6 Run AUTOGEN to enable the new parameter values. Do not run SYSGEN to modify these parameters directly.

Table 9–6 Windows

Number of Windows	New UIS$QVSS_POOL_SIZE Value	New ADD_PAGEDYN Value
13	256000	0
15	373380	197380
20	807840	831840
25	1522300	1746300
30	2586760	3010760

The following sections describe the steps for modifying the parameters in MODPARAMS.DAT and for running AUTOGEN.

9.3.2.2.1 Modifying MODPARAMS.DAT

To modify MODPARAMS.DAT, follow these steps:

1 Create a terminal emulator window and log in to the SYSTEM account or a privileged user account.

2 Invoke the editor as follows:

```
$ EDIT SYS$SYSTEM:MODPARAMS.DAT
```

3 Move the cursor to the end of the file.

4 Add 660 (for each additional 24-line window) to the current values of GBLPAGES and GBLPAGFIL, using the following syntax:

```
ADD_GBLPAGES= n
ADD_GBLPAGFIL= n
```

For example, to support two additional 24-line windows, you would enter the following:

```
ADD_GBLPAGES= 1320
ADD_GBLPAGFIL= 1320
```

5 Add 12 (for each additional 24-line window) to the current value of GBLSECTIONS, using the same syntax as above. For example, to support two additional 24-line windows, you would enter the following:

```
ADD_GBLSECTIONS= 24
```

6 Add 25,000 to the current value of NPAGEDYN for each additional window. For example, to support two additional normal-sized windows, you would enter the following:

```
ADD_NPAGEDYN= 50000
```

7 Add the appropriate value from Table 9–6 to the current value of PAGEDYN, using the following syntax:

```
ADD_PAGEDYN= n
```

For example, to support 15 windows on your system, add 197380 to the current value of PAGEDYN by entering the following:

```
ADD_PAGEDYN=197380
```

8 Exit from the editor.

9.3.2.2.2 Running AUTOGEN

To enable the new parameter value, run AUTOGEN by entering the following command:

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

AUTOGEN alters the parameters, then automatically shuts down and reboots the system.

9.3.3 Modifying SYSGEN Parameters

The VMS Workstation Software installation modifies the following System Generation Utility (SYSGEN) parameters:

CHANNELCNT—Channel count
PQL_MDIOLM—Direct I/O limit
PQL_MBIOLM—Buffered I/O limit
PQL_MASTLM—AST limit

Each of the following sections describes various logicals used by VWS and each of these parameters, how the installation modifies them, and how and why you may choose to modify them further.

The recommended procedure for modifying a SYSGEN parameter is as follows:

1 Modify the parameter value in the MODPARAMS.DAT file (found in SYS$SYSTEM)

2 Run AUTOGEN to enable the new value.

9.3.3.1 Modifying UIS$P1_POOL_SIZE and UIS$SYSTEM_POOL_SIZE

If you are using ReGIS windows and the window is deleted, you are probably running out of P1 space. You must increase UIS$P1_POOL_SIZE by increments of 512 bytes. For each 512-byte increase to P1 pool, you must increase the SYSGEN parameter CTLPAGES and the SYSGEN parameter PQL_DPGFLQUOTA by 1. To increase UIS$P1_POOL_SIZE, edit SYS$MANAGER:SYLOGICALS.COM in SYS$MANAGER by adding the following line:

```
DEFINE/EXEC/SYS UIS$P1_POOL_SIZE xxx
```

where:

xxxx = the desired new value.

If none of the above conditions fit your situation, you are running out of UIS$SYSTEM_POOL_SIZE. You must increase it by increments of 512 bytes. To increase UIS$SYSTEM_POOL_SIZE, edit SYS$MANAGER:SYLOGICALS.COM in SYS$MANAGER by adding the following line:

```
DEFINE/EXEC/SYS UIS$SYSTEM_POOL_SIZE xxx
```

where:

xxxx = the desired new value.

Note: Update all SYSGEN parameters in SYS$SYSTEM:MODPARAMS.DAT before you run AUTOGEN.

9.3.3.2 P1 Pool Expansion

In certain instances, VWS crashed if it ran out of memory. This is now corrected so that only the affected process is deleted. If the VWS process crashes, type **SHOW MEMORY** to determine how much paged pool is currently being used.

If less than 70 percent of page pool is in use, you are running out of UIS$QVSS_POOL_SIZE. You must increase UIS$QVSS_POOL_SIZE by increments of 512 bytes. To increase it, edit SYS$MANAGER:SYLOGICALS.COM in by adding the following line:

```
DEFINE/SYSTEM/EXEC UIS$QVSS_POOL_SIZE xxx
```

where:

xxx = default for VWS + amount by which you increase it.

NOTE: Increase the SYSGEN parameter PAGEDYN by the same amount you increase UIS$QVSS_POOL_SIZE.

If more than 70 percent of paged pool is in use, change only the SYSGEN parameter PAGEDYN.

9.3.3.3 Modifying the CHANNELCNT Parameter

The CHANNELCNT parameter determines the maximum number of open channels permitted on your system. A channel is assigned to the VWS workstation driver when a pointer region, button region, or cursor region is created by the windowing system or a user application. In addition, a channel is assigned for every window created on a color or intensity system.

When AUTOGEN is run during the installation of the VWS, it adds 175 to the CHANNELCNT parameter.

If your application programs create large numbers of regions or large numbers of windows, appropriately raise the CHANNELCNT parameter and run AUTOGEN.

9.3.3.4 Modifying the PQL_MASTLM Parameter

The PQL_MASTLM parameter determines the minimum value for the process quota ASTLM. (ASTLM determines the maximum number of ASTs that can be outstanding on a process.) Typically, an AST is associated with each pointer region, button region, or cursor region. If the AST limit (ASTLM) process quota is incorrectly set, the process could BUGCHECK or the system could hang or fail.

When AUTOGEN is run during the installation of VMS Workstation Software, the SYSGEN parameter PQL_MASTLM is set to 600.

You may also want to modify the process quota that corresponds to the parameter ASTLM for every process on the system. (This is done for clarity; the actual value used is the greater of the two.) The easiest way to do this is to invoke the Authorize Utility and modify all records, using a wildcard character as follows:

```
UAF> MODIFY * /ASTLM=600
```

If you have processes that use more than the minimum, ensure that they are properly incremented.

If your application programs create large numbers of regions or windows, raise the PQL_MASTLM parameter appropriately and run AUTOGEN.

9.3.3.5 Modifying the PQL_MBIOLM and PQL_MDIOLM Parameters - (for Intensity and Color Systems Only)

- **PQL_MBIOLM** parameter determines the minimum value for the process quota BIOLM.

  BIOLM determines the maximum number of buffered I/O that can be outstanding for a process. By default, the VMS Workstation Software sets BIOLM to 40.

- **PQL_MDIOLM** parameter determines the minimum value for the process quota DIOLM. By default, the VMS Workstation Software sets DIOLM to 100.

  DIOLM determines the maximum number of direct I/O that can be outstanding for a process.

If these parameters are incorrectly set, the process could BUGCHECK or the system could hang or fail.

You may also want to modify the process quota limits that correspond to the parameters BIOLM and DIOLM for every process on the system. (This is done for clarity; the actual value used is the greater of the two.) Invoke the Authorize Utility and modify all records, using a wildcard character as follows:

```
UAF> MODIFY * /BIOLM=40
UAF> MODIFY * /DIOLM=100
```

If you have processes that use more than the minimum, ensure that they are properly incremented.

The recommended value of 40 allows a process to create approximately 12 windows. Use the following algorithm to determine how much BIOLM is needed for the process:

16 + (2 * maximum number of windows created by the process)

This section describes according to the type of font installation you choose.

The default workstation parameters allow for the installation of up to eight additional (user-defined) font files (files in which fonts are stored). You can add more than eight fonts to the workstation, but you may need to adjust certain system parameters in order to provide sufficient system resources.

The VMS Workstation Software allows you to add your own font files in any of the following ways:

- **As a process-based font** - You can place the font in the SYS$FONT directory.

  If more than eight user-defined fonts are in use on the system, you need to increase the section count for the process (SYSGEN parameter PROCSECTCNT) and the open-file limit (process quota FILLM).

- **As a shareable process-based font** - You can use the VMS Install Utility (INSTALL) to enable the font as a shareable image. This improves performance when the font is called from a program and does not count against PROCSECTCNT or FILLM. However, you will need to increase the SYSGEN parameters GBLPAGES and GBLSECTIONS.

- **As a system font** - You can use the workstation Font Utility (FONT) to load the font into the *system font list* (list of fonts that use system paged pool). You may want to do this if you use the font on a regular basis, as it improves performance. The system font does not count against PROCSECTCNT or FILLM. However, you will need to increase the value of PAGEDYN to allow for sufficient memory in paged pool.

Once you have added a font to the system list, the only way to remove it is to reboot the system.

If a font is to be used from kernel mode, it must be loaded as a system font.

To determine which method of installing user-defined fonts is best for you, consider the advantages and disadvantages of each. Tables 9–7, 9–8, and 9–9 summarize each method in terms of ease of use and system resource requirements.

Table 9–7 Process-based Fonts

Advantages	Disadvantages
Easy to use as it does not require extensive setup	Counts as an open file
Eight font files supported without modification to system parameters	

Table 9–8 Shareable Process-based Fonts

Advantages	Disadvantages
Faster loading time when called from an application	Requires more setup procedures
Does not count as an open file	Uses global sections and global pages

Table 9–9 System Fonts

Advantages	Disadvantages
Fastest loading time when called from an application	Most complicated setup
Font is loaded once and remains loaded	Uses paged pool
Does not count as an open file	
Font is shared (because it is in the system)	

Regardless of how you decide to use the font file, you must first compile it with the Font Utility. You must have the MACRO assembler installed on your system, as the Font Utility uses MACRO to perform the compile operation. In addition, the Font Utility requires CMKRNL privilege.

The following sections describe the procedures for compiling the font file and for tuning the system parameters to allow for additional fonts.

9.3.3.6 Compiling a Font File

To compile a font file, follow these steps:

1. Copy the font file into the directory SYS$SYSTEM.
2. Invoke the Font Utility and enter the COMPILE command, as in the following example:

```
$ RUN SYS$SYSTEM:UISFONTS)
Font Utility> COMPILE filename
```

The Font Utility assumes a default file type of FNT. If your file is named X.FNT, you only need to specify X.

The Font Utility automatically exits after compiling the specified file. The resulting (compiled) file is an executable image with one of the following file types, depending on workstation type:

- **VWS$FONT** - for monochrome systems.

  If the source file is named X.FNT, the image is named X.VWS$FONT.

- **VWS$VAFONT** - for color and intensity systems.

  If the source file is named X.FNT, the image is named X.VWS$VAFONT.

9.3.3.7 Using a Font from Within Your Process

Using a process-based font requires no installation steps other than copying the compiled font file into SYS$FONT directory. After you copy it, you can call the font from an application. However, if the number of user-defined fonts on the system is greater than eight, you may need to increase the values of the SYSGEN parameter PROCSECTCNT and the process quota FILLM.

For example, if you are adding two user-defined fonts beyond the eight allowed by the VMS Workstation Software, follow these steps:

1. Edit the file SYS$SYSTEM:MODPARAMS.DAT to modify PROCSECTCNT. For example:

```
$ EDIT SYS$SYSTEM:MODPARAMS.DAT
```

2. Move the cursor to the end of the file.
3. Add or modify the following line to increase the value of PROCSECTCNT by four for each font you are adding to the system:

```
ADD_PROCSECTCNT= 8
```

4. Exit from the editor.
5. Enter the following DCL command to determine the open file quota for your account:

```
$  SHOW PROCESS/QUOTA

28-MAR-1990 11:04:12.85   WTA1:              User: WORKERBEE

Process Quotas:
 Account name:
 CPU limit:                        Infinite   Direct I/O limit:     18
 Buffered I/O byte count quota:       20480   Buffered I/O limit:   18
 Timer queue entry quota:                20   Open file quota:      20
 Paging file quota:                    8843   Subprocess quota:     10
 Default page fault cluster:             16   AST limit:            22
 Enqueue quota:                          30   Shared file limit:     0
 Max. detached processes:                 0   Max. active jobs:      0
```

6. Increase the open file quota by one for each additional font, using the VMS Authorize Utility.

   For example, if your username is WORKERBEE, your open file quota is 20 and you have two additional fonts, you would enter the following commands:

```
$ SET DEFAULT SYS$SYSTEM:
$ RUN AUTHORIZE
UAF> MODIFY WORKERBEE/FILLM=22
%UAF-I-MDFYMSG, user record(s) updated
UAF> EXIT
%UAF-I-DONEMSG, system authorization file modified
%UAF-I-NAFNOMODS, no modifications made to network authorization file
%UAF-I-RDBNOMODS, no modifications made to rights database
```

7. Enable the new parameter values by running AUTOGEN, as follows:

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

AUTOGEN alters the parameters, then automatically shuts down and reboots the system.

9.3.3.8 Using a Shareable Process-Based Font

After you copy the font file into SYS$FONT and compile it, you have the option of installing the font as an image to be shared by programs. You invoke the font as you would invoke a font that is not shared, but the file is read into memory more quickly.

The following sections describe how to install the shareable font and how to tune the system accordingly.

9.3.3.8.1 Installing a Shareable Process-Based Font

To install a font as a shareable image, follow these steps:

1 Invoke the VMS Install Utility (INSTALL), using the following command:

```
$ INSTALL
INSTALL>
```

2 At the **INSTALL>** prompt, enter the file name, as in the following examples:

- For monochrome systems:

```
INSTALL> CREATE SYS$FONT:X.VWS$FONT/OPEN/HEADER_RESIDENT/SHARE
```

- For intensity and color systems:

```
INSTALL> CREATE SYS$FONT:X.VWS$VAFONT/OPEN/HEADER_RESIDENT/SHARE
```

3 Press CTRL/Z to exit from the Install Utility.

9.3.3.8.2 Tuning the System for Shareable Fonts

If the number of user-defined fonts on the system is greater than eight, you need to increase the values of the SYSGEN parameters GBLPAGES and GBLSECTIONS.

To modify GBLPAGES and GBLSECTIONS, follow these steps:

1 To determine the block size of the font files, enter the following command:

```
$ DIRECTORY/SIZE SYS$FONT:X,Y
X.VWS$FONT;1                  11
Y.VWS$FONT;1                  15
```

In this example, the total number of blocks is 26.

2 Edit the file SYS$SYSTEM:MODPARAMS.DAT to modify GBLPAGES and GBLSECTIONS.

```
$ EDIT SYS$SYSTEM:MODPARAMS.DAT
```

3 Move the cursor to the end of the file.

4 Add or modify the appropriate lines to increase GBLPAGES by the total number of additional font blocks and GBLSECTIONS by four for each additional font. For example:

```
ADD_GBLPAGES= 26
ADD_GBLSECTIONS= 8
```

5 Exit from the editor.

6 Enable the new parameter values by running AUTOGEN, as follows:

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

AUTOGEN alters the parameters, then automatically shuts down and reboots the system.

9.3.3.9 Using a System-List Font

After you compile the font, you can include it in the system list by using the workstation Font Utility.

Each font you add to the system list requires 512 bytes of paged pool for every block. (For example, if the size of the font file is 10 blocks, the font requires 5120 bytes of paged pool.) If you need to access a user-defined font from only one process at a time, the amount of available paged pool should be sufficient.

The following sections describe how to place the font into the system list and how to increase the amount of system paged pool.

9.3.3.9.1 Loading a System Font

To load a font into the system list, follow these steps:

1 Invoke the Font Utility, as follows:

```
$ RUN SYS$SYSTEM:UISFONTS
Font Utility>
```

2 Enter the load command, as follows:

```
Font Utility> LOAD X
Font Utility>
```

You do not need to specify a directory or file type. The Font Utility assumes the default directory SYS$FONT and looks for the default type VWS$FONT (for monochrome systems) or VWS$VAFONT (for color and intensity systems).

The **Font Utility>** prompt appears when the load operation is completed.

3 Press CTRL/Z to exit from the Font Utility.

9.3.3.9.2 Tuning the System for System-List Fonts

To add the appropriate amount of paged pool to your system, you need to modify the value of the SYSGEN parameter PAGEDYN. Use the following procedure:

1. To determine the size of the font files, enter the following command:

```
$ DIRECTORY/SIZE SYS$FONT:X,Y
X.VWS$FONT;1                  11
Y.VWS$FONT;1                  15
```

2. To determine the byte value by which you need to increase paged pool, multiply the size (number of blocks) of each additional font file by 512 and add the results.

   For example, if X.VWS$FONT is 11 blocks and Y.VWS$FONT is 15 blocks, add 5632 and 7680. You need a total of 13,312 bytes of additional paged pool.

3. Edit the file SYS$SYSTEM:MODPARAMS.DAT to modify PAGEDYN.

```
$ EDIT SYS$SYSTEM:MODPARAMS.DAT
```

4. Move the cursor to the end of the file.
5. Add or modify the following line to specify the value you need to add to paged pool. For example:

```
ADD_PAGEDYN= 13312
```

6. Exit from the editor.
7. Enable the new parameter values by running AUTOGEN, as follows:

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

   AUTOGEN alters the parameters, then automatically shuts down and reboots the system.

9.3.4 Tuning for VAXuisx

This section describes gives some helpful pointers to assist you in tuning your workstation for VAXuisx. However, depending on your application you may need to increase or decrease the suggested values. The default DECwindows SYSGEN parameters will allow VAXuisx to run in some cases. There are no fixed rules, only suggestions. The values given in this section will apply to both color and monochrome systems.

Since VAXuisx is a process based application, the tuning parameters given should be able to take effect without requiring a reboot of the system. However, there are a few parameters for which we will make suggestions that will require a reboot.

Note: The DECwindows values given here are taken from the DECwindows V2.0 release. These values may change in any future release of DECwindows, whether there is a new release of VAXuisx or not.

9.3.4.1 SYSGEN Parameters

9.3.4.1.1 PQL_MASTLM

As with UIS, the AST limit of a process will be very important. UIS requires a default of 600, whereas, DECwindows has been requires only 100. This parameter should be increased to at least 400. Depending on your application you may want to increase this even more. If your application does a lot with pointer, button or keyboard ASTs, you are likely to need a larger increase. The increments should be in the magnitude of use of ASTs in your application.

9.3.4.1.2 PQL_DPGFLQUOTA

VAXuisx itself has quite a few large data structures that the default DECwindows value of 5,000 bytes may at some point overflow. It is suggested to increment this value to at least 8,192 bytes. Again, the more data your application wants from VAXuisx in the way of memory used for points, lines, images, and text the greater you should set this value. Also note that if your application does a lot with images, you should set this even higher, since VAXuisx uses lots of this quota for image manipulation.

9.3.4.1.3 VIRTUALPAGECNT

Because VAXuisx is taking all of its memory from P0 pool, you will need to increase this parameter. This parameter is not dynamic, so a system reboot will be necessary in order for this parameter to take effect. Currently, DECwindows sets this parameter to 20,000 pages. For VAXuisx you should use at least 30,000.

If your application extensively uses plots, lines, images, or text you should increment this parameter even more.

In order to allow for the backing store feature to continue working properly when you have an unusually large number of windows or an unusually large size to all your windows, you should increase this parameter as well.

9.3.4.1.4 GBLPAGFIL

This parameter establishes the maximum number of global pages for pagefile backing store to be created. DECwindows current setting of this parameter is 6,024, as opposed to the VWS required value of 17,600.

When backing store is enabled in VAXuisx, it allows for whatever you have visible on the screen to also be saved in an offscreen pixmap. It is used to help repaint a window that was occluded for a period of time, and has now become visible. If your application requires the use of many windows, this parameter should be increased. The increment should be in relation to the actual workload of your application. One way to help determine whether this parameter needs incrementing is if, while running your application under VAXuisx, you begin to get warning messages from VAXuisx that your window is to be created without any backing store.

This parameter is not dynamic, thus changing it requires a system reboot.

9.3.4.2 Process Parameters (Authorize)

You may also find it necessary to use AUTHORIZE to increment quotas for particular accounts for better process performance depending on their use of the VAXuisx library. The following quotas could be increased:

9.3.4.2.1 PGFLQUO

Again, VAXuisx is process based, so depending on the workload this parameter may need to be increased. This parameter can be increased by large values if necessary. It is better to have more than necessary than to run out somewhere in the middle of your application.

9.3.4.2.2 WSDEF, WSQUO, WSEXTENT

These are the parameters used by VMS for working set adjustment for the process.

- WSDEF is the initial working set for the user's process. This value need not be too great, in fact the value specified by the default VMS system will be sufficant.
- WSQUO is the maximum to which a user's process may raise the working set limit when memory is drained. If you are on a small memory system this parameter may help your user continue working, even though there is very little memory left to work from.
- WSEXTENT is the maximum to which a user's process may raise its working set when there is free memory available. Do not set it equal to or below the WSQUO parameter.

10 VWSDEMO Installation

This chaper describes the steps required to install the VWSDEMO kit. Refer to Appendix C for a sample installation for VWSDEMO.

10.1 Disk Space Requirements

Table 10–1 shows the number of blocks you need to install the VWSDEMO kit:

Table 10–1 Space Needed to Install the VWSDEMO Kit

Installation Choice	Disk Space Reuirements
Only sources	3636
Only images	3240
Both sources and images	6876 [1]

[1] If you install only the sources or only the images, the release notes are installed with each one. If you install both sources and images, only one set of release notes is installed. Therefore, adding the blocks used for installing only the sources with the blocks used for installing only the images does **not** equal the total number of blocks used for installing both.

10.2 Installing VWSDEMO

To install VWSDEMO, type the following command:

```
$ @SYS$UPDATE:VMSINSTAL VWSDEMO043 ddcu:
```

where:

ddcu: = Device controller unit; for example DUA1:

VWSDEMO only installs on V5.0 or above of VMS.

You can find information on most of the demonstrations in the file: SYS$HELP:VWSDEMO043.RELEASE_NOTES

11 Migration Example Savesets

This chapter describes how to install the example programs which are included in *A Guide to Migrating VWS Applications to DECwindows*. These examples are also provided on the kit for your use.

11.1 Installing Migration Example Savesets

To install the example programs from a TK50 tape cartridge, enter the following command to invoke the VMSINSTAL command procedure:

```
$ @SYS$UPDATE:VMSINSTAL GUIDETOM010 ddcu:
```

where:

ddcu: = tape unit name

You can find the example programs in SYS$EXAMPLES. The program images provided are called FREDIT.EXE and FREDIT_X11.EXE.

See *A Guide to Migrating VWS Applications to DECwindows* for more information on the example programs.

12 DECwindows/X11 Server for VWS

This chapter describes how to install DECwindows/X11 Server for VWS.

Before you install this software, make sure you have installed DECwindows on your workstation. DECwindows is provided with the VMS V5.1 or above software. For VMS V5.1, you must install DECwindows separately from VMS. (Refer to the *VMS V5.1 Installation Guide*, Section 2.2, for DECwindows installation instructions.) You can install DECwindows on a workstation already running VWS without changing the window system.

On VMS V5.2 or above, DECwindows can be installed automatically during VMS installation and is always available unless it is explicitly removed by the system manager.

Note: DECwindows workstation device support must be installed. The programming environment is optional.

12.1 Installing DECwindows/X11 Server

To install the VWS DECwindows/X11 Server, perform the following steps:

1. Invoke VMSINSTAL by entering the following command to invoke the VMSINSTAL command procedure:

   ```
   $ @SYS$UPDATE:VMSINSTAL VWSDECW010 ddcu:
   ```

   where:

   ddcu: = tape unit name

2. Answer the questions asked by the procedure.

CAUTION: This kit will not install if you are running anything other than VMS V5.1 or V5.2.

The installation procedure asks to verify that DECwindows has already been installed on your system. The installation adjusts some of the minimum requirements for SYSGEN parameters to enable DECwindows to operate. The installation performs AUTOGEN and optionally reboots the workstation.

12.2 Cluster Installation

Install the server on cluster boot nodes just as you would on a standalone system. Then perform an AUTOGEN on each workstation that will be using the server. This sets the SYSGEN minimum parameters required to run the server.

A VMS Workstation Software Files and Fonts

This appendix lists the VMS Workstation Software files and fonts installed with the workstation software.

A.1 Files Installed with the Workstation Software

```
SYS$COMMON:[SYSHLP]VWS043.RELEASE_NOTES
SYS$COMMON:[SYSHLP]UISHELP.HLB
SYS$COMMON:[SYSHLP.EXAMPLES.VWS]BOOK_*.FOR
SYS$COMMON:[SYSHLP.EXAMPLES.VWS]DEFFONT.COM
SYS$COMMON:[SYSHLP.EXAMPLES.VWS]DVORAK$DC01.MAR
SYS$COMMON:[SYSHLP.EXAMPLES.VWS]DVORAK$DS01.MAR
SYS$COMMON:[SYSHLP.EXAMPLES.VWS]DVORAK$TC01.MAR
SYS$COMMON:[SYSHLP.EXAMPLES.VWS]DVORAK$TS01.MAR
SYS$COMMON:[SYSHLP.EXAMPLES.VWS]DVORAK.COM
SYS$COMMON:[SYSHLP.EXAMPLES.VWS]KEYBOARD_MACROS.MAR
SYS$COMMON:[SYSHLP.EXAMPLES.VWS]VWS$IVP.COM

SYS$COMMON:[SYSMSG]UISBGMSG.EXE
SYS$COMMON:[SYSMSG]UISMSGLOA.EXE
SYS$COMMON:[SYSMSG]UISVTMSG.EXE
SYS$COMMON:[SYSMSG]UISMSGSLV.EXE

SYS$COMMON:[SYSEXE]PME_LOADER.EXE
SYS$COMMON:[SYSEXE]TKDRIVER.EXE
SYS$COMMON:[SYSEXE]UIS$MSGBOX_PME.EXE
SYS$COMMON:[SYSEXE]UIS$REGIS_PME.EXE
SYS$COMMON:[SYSEXE]UIS$TEK_PME.EXE
SYS$COMMON:[SYSEXE]UIS$VT200_PME.EXE
SYS$COMMON:[SYSEXE]UISBG.EXE
SYS$COMMON:[SYSEXE]UISFONTS.EXE
SYS$COMMON:[SYSEXE]UISHELP.EXE
SYS$COMMON:[SYSEXE]UISLOA.EXE
SYS$COMMON:[SYSEXE]UISMEMFONTS.COM
SYS$COMMON:[SYSEXE]UISSHRXFR.EXE
SYS$COMMON:[SYSEXE]UISVTSETUP.EXE
SYS$COMMON:[SYSEXE]VWS$EMULATORS.EXE
SYS$COMMON:[SYSEXE]VWS$TEK4125.EXE
SYS$COMMON:[SYSEXE]VWS$VT200_PRINT.EXE
SYS$COMMON:[SYSEXE]VWS$VT200_PRINT_MESSAGE.EXE
SYS$COMMON:[SYSEXE]TKDRIVER.STB
SYS$COMMON:[SYSEXE]UIS$VT200_PME.STB
SYS$COMMON:[SYSEXE]UIS$REGIS_PME.STB
SYS$COMMON:[SYSEXE]UIS$MSGBOX_PME.STB
SYS$COMMON:[SYSEXE]UIS$TEK_PME.STB
SYS$COMMON:[SYSEXE]UISBG.STB
SYS$COMMON:[SYSEXE]UISHELP.STB
SYS$COMMON:[SYSEXE]UISLOASYM.STB
SYS$COMMON:[SYSEXE]UISLOAVEC.STB
SYS$COMMON:[SYSEXE]UISSTRUCT.STB
SYS$COMMON:[SYSEXE]UISVTSETUP.STB
SYS$COMMON:[SYSEXE]V_DRIVERDEF.STB
SYS$COMMON:[SYSEXE]VADRIVER.STB
SYS$COMMON:[SYSEXE]VCDRIVER.STB
SYS$COMMON:[SYSEXE]VEDRIVER.STB
SYS$COMMON:[SYSEXE]VFDRIVER.STB
SYS$COMMON:[SYSEXE]VWS$TEK4125.STB
SYS$COMMON:[SYSEXE]WTDRIVER.STB
```

```
SYS$COMMON:[SYSFONT]UIS$LOAD_FONT_DVWSVT0_19X07.TEMPLATE
SYS$COMMON:[SYSFONT]UIS$LOAD_FONT_DVWSVT0_19X10.TEMPLATE
SYS$COMMON:[SYSFONT]UIS$LOAD_FONT_DVWSVT0_19X11.TEMPLATE
SYS$COMMON:[SYSFONT]UIS$LOAD_FONT_DVWSVT0_19X14.TEMPLATE
SYS$COMMON:[SYSFONT]UIS$LOAD_FONT_DVWSVT0_19X22.TEMPLATE
SYS$COMMON:[SYSFONT]UIS$LOAD_FONT_DVWSVT0_38X14.TEMPLATE
SYS$COMMON:[SYSFONT]UIS$LOAD_FONT_DVWSVT0_38X22.TEMPLATE
SYS$COMMON:[SYSFONT]UIS$LOAD_FONT_RCOURIR_14X07_B.TEMPLATE
SYS$COMMON:[SYSFONT]UIS$LOAD_FONT_RCOURIR_14X09_B.TEMPLATE
SYS$COMMON:[SYSFONT]UIS$LOAD_FONT_RCOURIR_14X14_B.TEMPLATE
SYS$COMMON:[SYSFONT]UIS$LOAD_FONT_RCOURIR_14X18_B.TEMPLATE
SYS$COMMON:[SYSFONT]UIS$LOAD_FONT_RCOURIR_28X14_B.TEMPLATE
SYS$COMMON:[SYSFONT]UIS$LOAD_FONT_RCOURIR_28X18_B.TEMPLATE
SYS$COMMON:[SYSFONT]UIS$LOAD_FONT_TCS_80.COM
SYS$COMMON:[SYSFONT]UIS$LOAD_FONT_TCS_132.COM

SYS$COMMON:[SYSMGR]UIS$SETUP_VT240.COM
SYS$COMMON:[SYSMGR]STARTVWS.COM
SYS$COMMON:[SYSMGR]UISBG.DAT
SYS$COMMON:[SYSMGR]VWS$TRANSCRIPT.COM
SYS$COMMON:[SYSMGR]VWS$TEK4125.COM

SYS$COMMON:[SYSLIB]ADA$ADD_PREDEFINED_UNIT.COM
SYS$COMMON:[SYSLIB]ADAUISENTRY.ADA
SYS$COMMON:[SYSLIB]UISENTRY.*
SYS$COMMON:[SYSLIB]UISUSRDEF.*
SYS$COMMON:[SYSLIB]UISMSG.*
SYS$COMMON:[SYSLIB]UISKEYBOARD.TLB
SYS$COMMON:[SYSLIB]UISSHR.EXE

SYS$COMMON:[SYS$LDR]VADRIVER.EXE
SYS$COMMON:[SYS$LDR]VCDRIVER.EXE
SYS$COMMON:[SYS$LDR]VEDRIVER.EXE
SYS$COMMON:[SYS$LDR]VFDRIVER.EXE
SYS$COMMON:[SYS$LDR]VKDRIVER.EXE
SYS$COMMON:[SYS$LDR]WTDRIVER.EXE
SYS$COMMON:[SYS$LDR]PZDRIVER.EXE
SYS$COMMON:[SYS$LDR]TJDRIVER.EXE
```

The file SYS$COMMON:[SYSEXE]UISSETUP.DAT is recreated each time the system is installed. This causes the workstation setup options to be set to their original default values. If an earlier version exists, it is renamed to UISOLDSETUP.DAT. Therefore, you may need to reset site-specific setup attributes.

The file UISBG.DAT is installed with the workstation software. If an earlier version exists, it is renamed with a lower version number. To restore a customized UISBG.DAT file, rename it with a higher version number.

A.2 Files Provided for HCUIS Installation

```
SYS$COMMON:[SYSLIB]HCUISDEF.*
SYS$COMMON:[SYSLIB]HCUISMSG.*
SYS$COMMON:[SYSHLP.EXAMPLES.HCUIS]HCUIS$IVP.COM
SYS$COMMON:[SYSHLP.EXAMPLES.HCUIS]IVP.UIS
SYS$COMMON:[SYSMGR]HCUISSETUP.COM
SYS$COMMON:[SYSMGR]HCUISDEVICES.COM
SYS$COMMON:[SYSLIB]TRN$UIS_HPGL.EXE
SYS$COMMON:[SYSLIB]TRN$UIS_PS.EXE
SYS$COMMON:[SYSLIB]TRN$UIS_REGIS.EXE
SYS$COMMON:[SYSLIB]TRN$UIS_SIXEL.EXE
SYS$COMMON:[SYSEXE]RENDER.EXE
SYS$COMMON:[SYSMSG]HCUISMSG.EXE
SYS$COMMON:[SYSLIB]HCUISSHR.EXE
```

A.3 Files Provided for SIGHT Installation

```
SYS$COMMON:[SYSHLP.EXAMPLES.SIGHT]SIGHT$IVP.COM
SYS$COMMON:[SYSEXE]SIGHT.EXE
SYS$COMMON:[SYSMGR]SIGHT$STARTUP.COM
SYS$COMMON:[SIGHT]SIGHT$COLOR16_MENU.UIS
SYS$COMMON:[SIGHT]SIGHT$COLOR2_MENU.UIS
SYS$COMMON:[SIGHT]SIGHT$FONT_MENU.UIS
SYS$COMMON:[SIGHT]SIGHT$PALETTE_MENU.UIS
SYS$COMMON:[SIGHT]SIGHT$PATTERN_MENU.UIS
SYS$COMMON:[SIGHT]SIGHT$PEN_MENU.UIS
SYS$COMMON:[SIGHT]SIGHT$TRANSPARENCY_MENU.UIS
SYS$COMMON:[SIGHT]SIGHT$RULE_MENU.UIS
```

A.4 Fonts Installed with the Workstation Software

The following sections list fonts necessary for startup for all font sizes, 77 DPI fonts necessary for startup, 77 DPI fonts unnecessary for startup, and 100 DPI fonts necessary for startup.

If you decide to select only the 100 DPI fonts, VMS Workstation Software does not guarantee backward compatibility for applications that assume a character size of 77 DPI.

A.4.1 Fonts Necessary for Startup for All Font Sizes

```
! This file is necessary for ALL font sizes
!
$! Some symbols
$!  SGLH - Single High
$!  SGLW - Single Wide
$!  DBLH - Double High
$!  DBLW - Double Wide
$!  TCS - Technical Character Set
$!  DCM - Display Control Mode
$!
$! This font is necessary for BOTH 77 & 100 DPI
$!
DEUISPATAAAAAAF000000000DA              !UIS fill patterns
$!
```

A.4.2 77 DPI Fonts Necessary for General Use

```
$!
$!------------------------------------------------------------------
$! These are necessary for 77 DPI startup - The files are provided
$! from the kit's .E or .F saveset.
$!------------------------------------------------------------------
$!
DTABER0003WK00PG0001UZZZZ02A000         !Banner Title and menu Choice font
DTABER0003WK00GG0001UZZZZ02A000         !Menu instruction font

DTABER0G03CK00GG0001UZZZZ02A000         !VT100 SGLH (132 Col) Normal
DTERMING03CK00PG0001UZZZZ02A000         !                     Bold
DVWSVT0G03CK00GG0001QZZZZ02A000         !VT100 SGLH (132 Col) Normal TCS
DVWSVT0G03CK00PG0001QZZZZ02A000         !VT100                Bold TCS
```

```
DTABER0I03WK00GG0001UZZZZ02A000         !VT100 SGLH (80 Col) Normal
DTABER0I03WK00PG0001UZZZZ02A000         !VT100               Bold
DVWSVT0I03WK00GG0001QZZZZ02A000         !VT100 SGLH (80 Col) Normal TCS
DVWSVT0I03WK00PG0001QZZZZ02A000         !VT100               Bold TCS

DTABER0M06OK00GG0001UZZZZ02A000         !VT100 DBLH (132 Col) Normal
DTERMINM06OK00PG0001UZZZZ02A000         !VT100                Bold
DVWSVT0N06OK00GG0001QZZZZ02A000         !VT100 DBLH (132 Col) Normal TCS
DVWSVT0N06OK00PG0001QZZZZ02A000         !VT100                Bold TCS

DTABER0R07SK00GG0001UZZZZ02A000         !VT100 DBLH (80 Col) Normal
DTABER0R07SK00PG0001UZZZZ02A000         !VT100               Bold
DVWSVT0R07SK00GG0001QZZZZ02A000         !VT100 DBLH (80 Col) Normal TCS
DVWSVT0R07SK00PG0001QZZZZ02A000         !VT100               Bold TCS

DTABER0M03CK00GG0001UZZZZ02A000         !VT100 DBLW (132 Col) Normal
DTERMINM03CK00PG0001UZZZZ02A000         !VT100                Bold
DVWSVT0N03CK00GG0001QZZZZ02A000         !VT100 DBLW (132 Col) Normal TCS
DVWSVT0N03CK00PG0001QZZZZ02A000         !VT100                Bold TCS

DTABER0R03WK00GG0001UZZZZ02A000         !VT100 DBLW (80 Col) Normal
DTABER0R03WK00PG0001UZZZZ02A000         !VT100               Bold
DVWSVT0R03WK00GG0001QZZZZ02A000         !VT100 DBLW (80 Col) Normal TCS
DVWSVT0R03WK00PG0001QZZZZ02A000         !VT100               Bold TCS

DVWSVT1G03CK00GG0001UZZZZ02A000         !VT200 (132 Col) DCM
DVWSVT1I03WK00GG0001UZZZZ02A000         !VT200 (80 Col) DCM

DVWSVT0J05AK00GG0001UZZZZ02A000         !Special ReGIS font
DVWSVT0J05AK00PG0001UZZZZ02A000         !Special ReGIS font
DVWSVT1J05AK00GG0001UZZZZ02A000         !Special ReGIS font
DVWSVT1J05AK00PG0001UZZZZ02A000         !Special ReGIS font
```

A.4.3 77 DPI Fonts Not Necessary for Startup

```
$!
$!-----------------------------------------------------------------
$! These are not as necessary to have. They are in the same savesets.
$!-----------------------------------------------------------------
$!

DVWSVT0A00KK00GG0001UZZZZ02A000         !VT200 2x1 pixel font

DVWSVT0G05AK00GG0001UZZZZ02A000         !VT200 (132 Col) Normal (19x7)
DVWSVT0G05AK00PG0001UZZZZ02A000         !VT200 (132 Col) Bold  (19x7)
DVWSVT0G05AK00GG0001QZZZZ02A000         !VT200 (132 Col) Normal TCS (19x7)
DVWSVT0G05AK00PG0001QZZZZ02A000         !VT200 (132 Col) Bold TCS (19x7)
DVWSVT1G05AK00GG0001UZZZZ02A000         !VT200 (132 Col) Normal DCM (19x7)
DVWSVT1K05AK00GG0001UZZZZ02A000         !VT200 (132 Col) Normal DCM (19x7)

DVWSVT0K05AK00GG0001UZZZZ02A000         !VT200 (80 Col) Normal (19x11)
DVWSVT0K05AK00PG0001UZZZZ02A000         !VT200 (80 Col) Bold (19x11)
DVWSVT0K05AK00GG0001QZZZZ02A000         !VT200 (80 Col) Normal TCS (19x11)
DVWSVT0K05AK00PG0001QZZZZ02A000         !VT200 (80 Col) Bold TCS (19x11)

DVWSVT0N05AK00GG0001UZZZZ02A000         !VT200 DBLW (132 Col) Normal (19x14)
DVWSVT0N05AK00PG0001UZZZZ02A000         !VT200 DBLW (132 Col) Bold (19x14)
DVWSVT0N0AKK00GG0001UZZZZ02A000         !VT200 DBLH (132 Col) Normal (38x14)
DVWSVT0N0AKK00PG0001UZZZZ02A000         !VT200 DBLH (132 Col) Bold (38x14)

DVWSVT0V05AK00GG0001UZZZZ02A000         !VT200 DBLW (80 Col) Normal (19x22)
DVWSVT0V05AK00PG0001UZZZZ02A000         !VT200 DBLW (80 Col) Bold (19x22)
DVWSVT0V0AKK00GG0001UZZZZ02A000         !VT200 DBLH (80 Col) Normal (38x22)
DVWSVT0V0AKK00PG0001UZZZZ02A000         !VT200 DBLH (80 Col) Bold (38x22)
```

A.4.4 100 DPI Fonts Necessary for Startup

```
$!
$!-------------------------------------------------------------------
$! These are necessary for 100 DPI startup - The files are provided
$! from the kit's .G or .H saveset.
$!-------------------------------------------------------------------
$!

DWSMENU003WK00GG0001UZZZZ02B000         !Menu font
DWSMENU003WK00PG0001UZZZZ02B000         !Menu font
DWSMENU003WK01GG0001UZZZZ02B000         !Menu font

RCOURIRG03WK00GG0001UZZZZ02B000         !SGLH (132 Col) Normal
RCOURIRG03WK00PG0001UZZZZ02B000         !               Bold
RCOURIRG03WK00GG0001QZZZZ02B000         !SGLH (132 Col) Normal TCS
RCOURIRG03WK00PG0001QZZZZ02B000         !               Bold TCS

RCOURIRI03WK00GG0001UZZZZ02B000         !SGLH (80 Col) Normal
RCOURIRI03WK00PG0001UZZZZ02B000         !              Bold
RCOURIRI03WK00GG0001QZZZZ02B000         !SGLH (80 Col) Normal TCS
RCOURIRI03WK00PG0001QZZZZ02B000         !         Bold TCS

RCOURIRN03WK00GG0001UZZZZ02B000         !DBLW (132 Col) Normal
RCOURIRN03WK00PG0001UZZZZ02B000         !               Bold
RCOURIRN03WK00GG0001QZZZZ02B000         !DBLW (132 Col) Normal TCS
RCOURIRN03WK00PG0001QZZZZ02B000         !               Bold TCS

RCOURIRR03WK00GG0001UZZZZ02B000         !DBLW (80 Col) Normal
RCOURIRR03WK00PG0001UZZZZ02B000         !              Bold
RCOURIRR03WK00GG0001QZZZZ02B000         !DBLW (80 Col) Normal TCS
RCOURIRR03WK00PG0001QZZZZ02B000         !              Bold TCS

RCOURIRN07SK00GG0001UZZZZ02B000         !DBLH (132 Col) Normal
RCOURIRN07SK00PG0001UZZZZ02B000         !               Bold
RCOURIRN07SK00GG0001QZZZZ02B000         !DBLH (132 Col) Normal TCS
RCOURIRN07SK00PG0001QZZZZ02B000         !               Bold TCS

RCOURIRR07SK00GG0001UZZZZ02B000         !DBLH (80 Col) Normal
RCOURIRR07SK00PG0001UZZZZ02B000         !              Bold
RCOURIRR07SK00GG0001QZZZZ02B000         !DBLH (80 Col) Normal TCS
RCOURIRR07SK00PG0001QZZZZ02B000         !              Bold TCS
```

A.5 SIGHT Black and White Fonts

```
$!
$!-----------------------------------------------------------------
$! These are necessary to run SIGHT on a monochrome system.  The
$! files are provided from the SIGHT kit’s .C saveset
$!-----------------------------------------------------------------
$!

SYS$COMMON:[SYSFONT]DWYSIFPJ03CK00GG0001UZZZZ02A000.VWS$FONT
SYS$COMMON:[SYSFONT]DWYSIFPJ03CK00PG0001UZZZZ02A000.VWS$FONT
SYS$COMMON:[SYSFONT]DWYSIFPJ03CK02GG0001UZZZZ02A000.VWS$FONT
SYS$COMMON:[SYSFONT]DWYSIFPL02SK00GG0001UZZZZ02A000.VWS$FONT
SYS$COMMON:[SYSFONT]DWYSINS001OK00GG0001UZZZZ02A000.VWS$FONT
SYS$COMMON:[SYSFONT]DWYSINS001OK00PG0001UZZZZ02A000.VWS$FONT
SYS$COMMON:[SYSFONT]DWYSINS001OK01GG0001UZZZZ02A000.VWS$FONT
SYS$COMMON:[SYSFONT]DWYSINS0028K00GG0001UZZZZ02A000.VWS$FONT
SYS$COMMON:[SYSFONT]DWYSINS0028K00PG0001UZZZZ02A000.VWS$FONT
SYS$COMMON:[SYSFONT]DWYSINS0028K01GG0001UZZZZ02A000.VWS$FONT
SYS$COMMON:[SYSFONT]DWYSINS002SK00GG0001UZZZZ02A000.VWS$FONT
SYS$COMMON:[SYSFONT]DWYSINS002SK00PG0001UZZZZ02A000.VWS$FONT
SYS$COMMON:[SYSFONT]DWYSINS002SK01GG0001UZZZZ02A000.VWS$FONT
SYS$COMMON:[SYSFONT]DWYSINS003CK00GG0001UZZZZ02A000.VWS$FONT
SYS$COMMON:[SYSFONT]DWYSINS003CK00PG0001UZZZZ02A000.VWS$FONT
SYS$COMMON:[SYSFONT]DWYSINS003CK01GG0001UZZZZ02A000.VWS$FONT
SYS$COMMON:[SYSFONT]DWYSINS003WK00GG0001UZZZZ02A000.VWS$FONT
SYS$COMMON:[SYSFONT]DWYSINS003WK00PG0001UZZZZ02A000.VWS$FONT
SYS$COMMON:[SYSFONT]DWYSINS003WK01GG0001UZZZZ02A000.VWS$FONT
SYS$COMMON:[SYSFONT]DWYSINS0050K00GG0001UZZZZ02A000.VWS$FONT
SYS$COMMON:[SYSFONT]DWYSINS0050K00PG0001UZZZZ02A000.VWS$FONT
SYS$COMMON:[SYSFONT]DWYSINS0050K01GG0001UZZZZ02A000.VWS$FONT
SYS$COMMON:[SYSFONT]DWYSINS006OK00GG0001UZZZZ02A000.VWS$FONT
SYS$COMMON:[SYSFONT]DWYSINS006OK00PG0001UZZZZ02A000.VWS$FONT
SYS$COMMON:[SYSFONT]DWYSINS006OK01GG0001UZZZZ02A000.VWS$FONT
SYS$COMMON:[SYSFONT]DWYSINS00A0K00GG0001UZZZZ02A000.VWS$FONT
SYS$COMMON:[SYSFONT]DWYSINS00A0K00PG0001UZZZZ02A000.VWS$FONT
SYS$COMMON:[SYSFONT]DWYSINS00A0K01GG0001UZZZZ02A000.VWS$FONT
SYS$COMMON:[SYSFONT]DWYSISS001OK00GG0001UZZZZ02A000.VWS$FONT
SYS$COMMON:[SYSFONT]DWYSISS001OK00PG0001UZZZZ02A000.VWS$FONT
SYS$COMMON:[SYSFONT]DWYSISS001OK02GG0001UZZZZ02A000.VWS$FONT
SYS$COMMON:[SYSFONT]DWYSISS0028K00GG0001UZZZZ02A000.VWS$FONT
SYS$COMMON:[SYSFONT]DWYSISS0028K00PG0001UZZZZ02A000.VWS$FONT
SYS$COMMON:[SYSFONT]DWYSISS0028K02GG0001UZZZZ02A000.VWS$FONT
SYS$COMMON:[SYSFONT]DWYSISS002SK00GG0001UZZZZ02A000.VWS$FONT
SYS$COMMON:[SYSFONT]DWYSISS002SK00PG0001UZZZZ02A000.VWS$FONT
SYS$COMMON:[SYSFONT]DWYSISS002SK02GG0001UZZZZ02A000.VWS$FONT
SYS$COMMON:[SYSFONT]DWYSISS003CK00GG0001UZZZZ02A000.VWS$FONT
SYS$COMMON:[SYSFONT]DWYSISS003CK00PG0001UZZZZ02A000.VWS$FONT
SYS$COMMON:[SYSFONT]DWYSISS003CK02GG0001UZZZZ02A000.VWS$FONT
SYS$COMMON:[SYSFONT]DWYSISS003WK00GG0001UZZZZ02A000.VWS$FONT
SYS$COMMON:[SYSFONT]DWYSISS003WK00PG0001UZZZZ02A000.VWS$FONT
SYS$COMMON:[SYSFONT]DWYSISS003WK02GG0001UZZZZ02A000.VWS$FONT
SYS$COMMON:[SYSFONT]DWYSISS0050K00GG0001UZZZZ02A000.VWS$FONT
SYS$COMMON:[SYSFONT]DWYSISS0050K00PG0001UZZZZ02A000.VWS$FONT
SYS$COMMON:[SYSFONT]DWYSISS0050K02GG0001UZZZZ02A000.VWS$FONT
SYS$COMMON:[SYSFONT]DWYSISS006OK00GG0001UZZZZ02A000.VWS$FONT
SYS$COMMON:[SYSFONT]DWYSISS006OK00PG0001UZZZZ02A000.VWS$FONT
SYS$COMMON:[SYSFONT]DWYSISS006OK02GG0001UZZZZ02A000.VWS$FONT
SYS$COMMON:[SYSFONT]DWYSISS00A0K00GG0001UZZZZ02A000.VWS$FONT
SYS$COMMON:[SYSFONT]DWYSISS00A0K00PG0001UZZZZ02A000.VWS$FONT
SYS$COMMON:[SYSFONT]DWYSISS00A0K02GG0001UZZZZ02A000.VWS$FONT
```

A.5.1 SIGHT Color Fonts

```
$!
$!-------------------------------------------------------------------
$! These are necessary to run SIGHT on a color system.  The
$! files are provided from the SIGHT kit's .D saveset
$!-------------------------------------------------------------------
$!

SYS$COMMON:[SYSFONT]DWYSIFPJ03CK00GG0001UZZZZ02A000.VWS$VAFONT
SYS$COMMON:[SYSFONT]DWYSIFPJ03CK00PG0001UZZZZ02A000.VWS$VAFONT
SYS$COMMON:[SYSFONT]DWYSIFPJ03CK02GG0001UZZZZ02A000.VWS$VAFONT
SYS$COMMON:[SYSFONT]DWYSIFPL02SK00GG0001UZZZZ02A000.VWS$VAFONT
SYS$COMMON:[SYSFONT]DWYSINS001OK00GG0001UZZZZ02A000.VWS$VAFONT
SYS$COMMON:[SYSFONT]DWYSINS001OK00PG0001UZZZZ02A000.VWS$VAFONT
SYS$COMMON:[SYSFONT]DWYSINS001OK01GG0001UZZZZ02A000.VWS$VAFONT
SYS$COMMON:[SYSFONT]DWYSINS0028K00GG0001UZZZZ02A000.VWS$VAFONT
SYS$COMMON:[SYSFONT]DWYSINS0028K00PG0001UZZZZ02A000.VWS$VAFONT
SYS$COMMON:[SYSFONT]DWYSINS0028K01GG0001UZZZZ02A000.VWS$VAFONT
SYS$COMMON:[SYSFONT]DWYSINS002SK00GG0001UZZZZ02A000.VWS$VAFONT
SYS$COMMON:[SYSFONT]DWYSINS002SK00PG0001UZZZZ02A000.VWS$VAFONT
SYS$COMMON:[SYSFONT]DWYSINS002SK01GG0001UZZZZ02A000.VWS$VAFONT
SYS$COMMON:[SYSFONT]DWYSINS003CK00GG0001UZZZZ02A000.VWS$VAFONT
SYS$COMMON:[SYSFONT]DWYSINS003CK00PG0001UZZZZ02A000.VWS$VAFONT
SYS$COMMON:[SYSFONT]DWYSINS003CK01GG0001UZZZZ02A000.VWS$VAFONT
SYS$COMMON:[SYSFONT]DWYSINS003WK00GG0001UZZZZ02A000.VWS$VAFONT
SYS$COMMON:[SYSFONT]DWYSINS003WK00PG0001UZZZZ02A000.VWS$VAFONT
SYS$COMMON:[SYSFONT]DWYSINS003WK01GG0001UZZZZ02A000.VWS$VAFONT
SYS$COMMON:[SYSFONT]DWYSINS0050K00GG0001UZZZZ02A000.VWS$VAFONT
SYS$COMMON:[SYSFONT]DWYSINS0050K00PG0001UZZZZ02A000.VWS$VAFONT
SYS$COMMON:[SYSFONT]DWYSINS0050K01GG0001UZZZZ02A000.VWS$VAFONT
SYS$COMMON:[SYSFONT]DWYSINS006OK00GG0001UZZZZ02A000.VWS$VAFONT
SYS$COMMON:[SYSFONT]DWYSINS006OK00PG0001UZZZZ02A000.VWS$VAFONT
SYS$COMMON:[SYSFONT]DWYSINS006OK01GG0001UZZZZ02A000.VWS$VAFONT
SYS$COMMON:[SYSFONT]DWYSINS00A0K00GG0001UZZZZ02A000.VWS$VAFONT
SYS$COMMON:[SYSFONT]DWYSINS00A0K00PG0001UZZZZ02A000.VWS$VAFONT
SYS$COMMON:[SYSFONT]DWYSINS00A0K01GG0001UZZZZ02A000.VWS$VAFONT
SYS$COMMON:[SYSFONT]DWYSISS001OK00GG0001UZZZZ02A000.VWS$VAFONT
SYS$COMMON:[SYSFONT]DWYSISS001OK00PG0001UZZZZ02A000.VWS$VAFONT
SYS$COMMON:[SYSFONT]DWYSISS001OK02GG0001UZZZZ02A000.VWS$VAFONT
SYS$COMMON:[SYSFONT]DWYSISS0028K00GG0001UZZZZ02A000.VWS$VAFONT
SYS$COMMON:[SYSFONT]DWYSISS0028K00PG0001UZZZZ02A000.VWS$VAFONT
SYS$COMMON:[SYSFONT]DWYSISS0028K02GG0001UZZZZ02A000.VWS$VAFONT
SYS$COMMON:[SYSFONT]DWYSISS002SK00GG0001UZZZZ02A000.VWS$VAFONT
SYS$COMMON:[SYSFONT]DWYSISS002SK00PG0001UZZZZ02A000.VWS$VAFONT
SYS$COMMON:[SYSFONT]DWYSISS002SK02GG0001UZZZZ02A000.VWS$VAFONT
SYS$COMMON:[SYSFONT]DWYSISS003CK00GG0001UZZZZ02A000.VWS$VAFONT
SYS$COMMON:[SYSFONT]DWYSISS003CK00PG0001UZZZZ02A000.VWS$VAFONT
SYS$COMMON:[SYSFONT]DWYSISS003CK02GG0001UZZZZ02A000.VWS$VAFONT
SYS$COMMON:[SYSFONT]DWYSISS003WK00GG0001UZZZZ02A000.VWS$VAFONT
SYS$COMMON:[SYSFONT]DWYSISS003WK00PG0001UZZZZ02A000.VWS$VAFONT
SYS$COMMON:[SYSFONT]DWYSISS003WK02GG0001UZZZZ02A000.VWS$VAFONT
SYS$COMMON:[SYSFONT]DWYSISS0050K00GG0001UZZZZ02A000.VWS$VAFONT
SYS$COMMON:[SYSFONT]DWYSISS0050K00PG0001UZZZZ02A000.VWS$VAFONT
SYS$COMMON:[SYSFONT]DWYSISS0050K02GG0001UZZZZ02A000.VWS$VAFONT
SYS$COMMON:[SYSFONT]DWYSISS006OK00GG0001UZZZZ02A000.VWS$VAFONT
SYS$COMMON:[SYSFONT]DWYSISS006OK00PG0001UZZZZ02A000.VWS$VAFONT
SYS$COMMON:[SYSFONT]DWYSISS006OK02GG0001UZZZZ02A000.VWS$VAFONT
SYS$COMMON:[SYSFONT]DWYSISS00A0K00GG0001UZZZZ02A000.VWS$VAFONT
SYS$COMMON:[SYSFONT]DWYSISS00A0K00PG0001UZZZZ02A000.VWS$VAFONT
SYS$COMMON:[SYSFONT]DWYSISS00A0K02GG0001UZZZZ02A000.VWS$VAFONT
```

B Standalone VAXstation II/GPX Sample Installation

This appendix provides a sample installation for a standalone VAXstation II/GPX.

B.1 Sample Installation

```
Username: SYSTEM
Password:

$ set def sys$update
$ @vmsinstal vws043 mua0:

 VAX/VMS Software Product Installation Procedure V5.3


It is 9-JUL-1990 at 14:04.

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

%VMSINSTAL-W-ACTIVE, The following processes are still active:
 SYSTEM
 _WTA2:
* Do you want to continue anyway [NO]? YES
* Are you satisfied with the backup of your system disk [YES]? YES

Please mount the first volume of the set on  MUA0:.
* Are you ready? YES
%MOUNT-I-MOUNTED, VWS043 mounted on _VWSTST$MUA0:
The following products will be processed:

  VWS V4.3

 Beginning installation of VWS V4.3 at 14:16

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

                         VMS Workstation Software

                                Version 4.3

      ©1990 Digital Equipment Corporation, USA
       All Rights Reserved.

 VWS        V4.3 - VWS - VMS Workstation Software
 HCUIS      V4.3 - HCUIS - Hardcopy UIS
 SIGHT      V4.3 - SIGHT - Graphics Editor
 UISX       V1.0 - VAXuisx Run-Time Library for VMS
 UISANN     V2.0 - UIS Source Code Annotator
 UISCNV     V2.0 - UIS to DDIF Converter

* Do you wish to install any of these components [Y]? YES

 This installation allows the option of disabling all questions
 and using default answers.  If you choose this option, this
 question will be the last one asked and all questions normally
 asked during the installation will be answered with the default
 answers.


* Would you like to use all default answers during the installation [N]? YES
%VWS-I-DEFLTANS, Default answers will be used during installation.

 The installation will now complete without further questions.


  VWS - VMS Workstation Software Version 4.3
```

```
%VWS-I-DEFLTANS, VWS043 will be installed.

 VWS requires the VWS license.
%VWS-I-DEFLTANS, Default is to assume VWS license is installed.

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

 An  AUTOGEN  will be run at the end of this installation.  You are
 being given the choice to run AUTOGEN with or without FEEDBACK. If
 you  would  like  to run AUTOGEN with FEEDBACK answer "YES" to the
 following question; otherwise, press RETURN.  Please refer to 'The
 Guide  to  Setting  up VMS' for more information on FEEDBACK.  The
 default is to run without FEEDBACK.

%VWS-I-DEFLTANS, Default is AUTOGEN with NO FEEDBACK

  This installation provides description files you
  need when you use the UIS programming interface.

%VWS-I-DEFLTANS, Default is to provide files for all languages

    You have chosen the following languages:
    (ADA,BLISS,CC,FORTRAN,MACRO,PASCAL,PLI)


%VWS-I-DEFLTANS, Default is to install programs from VWS Graphics Programming Guide
%VWS-I-DEFLTANS, Default is to install 77 DPI fonts
%VWS-I-DEFLTANS, Default is to install 100 DPI fonts

  HCUIS - Hardcopy UIS Version 4.3

%VWS-I-DEFLTANS, HCUIS043 will be installed.

 HCUIS requires the VAX-VMS license.
%VWS-I-DEFLTANS, Default is to assume VAX-VMS license is installed.

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

  SIGHT - Graphics Editor Version 4.3

%VWS-I-DEFLTANS, SIGHT043 will be installed.

 SIGHT requires the VAX-VMS license.
%VWS-I-LICCONF, VAX-VMS license has already been confirmed.
%VMSINSTAL-I-RESTORE, Restoring product save set B ...
%VWS-I-DEFLTANS, Default is to install SIGHT fonts

  VAXuisx Run-Time Library for VMS Version 1.0

%VWS-I-DEFLTANS, UISX010 will be installed.

 UISX requires the VAX-VMS license.
%VWS-I-LICCONF, VAX-VMS license has already been confirmed.
%VMSINSTAL-I-RESTORE, Restoring product save set B ...

 The system parameters currently indicate that you are running
 the VMS Workstation Software (VWS) Windowing System.  Please
 note that VAXuisx is not intended to be run from a VWS
 Workstation.  Care should be used when attempting to mix native
 mode VWS and VAXuisx.

%VWS-I-DEFLTANS, Default is to install 77 DPI fonts
%VWS-I-DEFLTANS, Default is to install 100 DPI fonts
%VWS-I-DEFLTANS, Default is to install SIGHT fonts

  UIS Source Code Annotator Version 2.0

%VWS-I-DEFLTANS, UISANN020 will be installed.

 UISANN requires the VAX-VMS license.
%VWS-I-LICCONF, VAX-VMS license has already been confirmed.
%VMSINSTAL-I-RESTORE, Restoring product save set B ...

  UIS to DDIF Converter Version 2.0

%VWS-I-DEFLTANS, UISCNV020 will be installed.
```

```
 UISCNV requires the VAX-VMS license.
%VWS-I-LICCONF, VAX-VMS license has already been confirmed.
%VMSINSTAL-I-RESTORE, Restoring product save set B ...

%VWS-I-DEFLTANS, Default is to PURGE files provided during installation.
%VWS-I-DEFLTANS, Default is to run IVP procedures after installation.

 All product installation questions have now been answered.  The
 installation will now complete without further questions.


 Installing product VWS

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

     Installing the keyboard macro examples on your system.  These files
     are placed in the VWS$EXAMPLES: directory.

     Putting the GRAPHIC PROGRAMMING GUIDE book examples onto your system,
     they will be the in the VWS$EXAMPLES: directory. These files are all
     named BOOK_*.FOR.


 Installing the fonts for your system.

%VMSINSTAL-I-RESTORE, Restoring product save set E ...
%VMSINSTAL-I-RESTORE, Restoring product save set G ...

     NOTE: VWS includes a startup command procedure which should be
     invoked during system startup.  Please edit the file
     SYS$STARTUP:SYSTARTUP_V5.COM and add the following command:

     $ @SYS$STARTUP:STARTVWS.COM


 The VMS AUTOGEN procedure will now be automatically run so that
 your SYSGEN parameters will be set and your system will be properly
 configured.  After that, your system will be automatically shut down.

 When the shutdown is complete, press the HALT button and then reboot
 the system.

 After your system has been rebooted and initialized, the brief
 appearance of a "Getting Started" window on the screen will
 indicate successful installation of the workstation software.

 If necessary, you can recall the window by pressing any key on
 the keyboard when there are no windows on the workstation screen.

 If you are reinstalling the VWS software, the UISBG.DAT (menu
 customization) and UISSETUP.DAT (workstation setup) files you
 used previously have been renamed to UISBG.DAT;-1 and UISOLDSETUP.DAT
 respectively.  The ReGIS setup file UIS$SETUP_VT240.COM has also
 been renamed to UIS$SETUP_VT240.COM;-1

%AUTOGEN-I-BEGIN, GETDATA phase is beginning.
%AUTOGEN-I-NEWFILE, A new version of SYS$SYSTEM:PARAMS.DAT has been created.
        You may wish to purge this file.
%AUTOGEN-I-END, GETDATA phase has successfully completed.
%AUTOGEN-I-BEGIN, GENPARAMS phase is beginning.
******************


 calculations. This information (from SYS$SYSTEM:AGEN$FEEDBACK.DAT)
 is based on 163 hours of up time.
%AUTOGEN-I-NEWFILE, A new version of SYS$MANAGER:VMSIMAGES.DAT has been created.
        You may wish to purge this file.
%AUTOGEN-I-NEWFILE, A new version of SYS$SYSTEM:SETPARAMS.DAT has been created.
        You may wish to purge this file.
%AUTOGEN-I-END, GENPARAMS phase has successfully completed.
%AUTOGEN-I-BEGIN, GENFILES phase is beginning.
%AUTOGEN-I-NOCHANGE, No page file modifications will be made.
%AUTOGEN-I-NOCHANGE, No swap file modifications  will be made.
```

```
%AUTOGEN-I-NOCHANGE, No dump file modifications will be made.
%AUTOGEN-I-REPORT, A report which shows the results of using feedback
 information on the relevant parameters and system files has been placed
 in the file SYS$SYSTEM:AGEN$FEEDBACK.REPORT. You may use this report to
 help determine if the resultant settings are appropriate for your system

%AUTOGEN-I-END, GENFILES phase has successfully completed.
%AUTOGEN-I-BEGIN, SETPARAMS phase is beginning.
%AUTOGEN-I-END, SETPARAMS phase has successfully completed.

 Installing product HCUIS


     The file HCUISDEVICES.COM has been copied to your SYS$MANAGER  direc-
     tory with the  name HCUISDEVICES_NEW.COM.  Please  edit this file as
     described in  the Guide   to  Printing  Graphics  and  rename it  to
     HCUISDEVICES.COM.  You may wish to consult  the existing  version of
     HCUISDEVICES.COM when editing HCUISDEVICES_NEW.COM.


     NOTE: HCUIS includes a startup command procedure which should be
     invoked during system startup.  Please edit the file
     SYS$STARTUP:SYSTARTUP_V5.COM and add the following command:

     $ @SYS$STARTUP:HCUIS$STARTUP.COM


 Installing product SIGHT

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

     NOTE: SIGHT includes a startup command procedure which should be
     invoked during system startup.  Please edit the file
     SYS$STARTUP:SYSTARTUP_V5.COM and add the following command:

     $ @SYS$STARTUP:SIGHT$STARTUP.COM


 Installing product UISX


 Installing the 77 dpi fonts

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

 Installing the 100 dpi fonts

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

 Installing the SIGHT fonts

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

     NOTE: VAXuisx includes a startup command procedure which should be
     invoked during system startup.  Please edit the file
     SYS$STARTUP:SYSTARTUP_V5.COM and add the following command:

     $ @SYS$STARTUP:UISX$STARTUP.COM


 Installing product UISANN


 Installing the UIS Source Code Annotator V02.0

  ************************************************

                      VAX UISANN V02.0

                   UIS Source Code Annotator

                  Installation  Procedure

  Copyright © 1990, Digital Equipment Corporation

  ************************************************

        The UIS Source Code Annotator consists of an
        executable image, a message file,  and a
        file containing a table of all possible UIS
        routines. The entire kit will  be  installed.
```

```
 In order to use the Annotator, the system manager must
 define the following logical:

     DEFINE/SYSTEM  UISANN$TABLE -
  SYS$SYSROOT:[SYSHLP.EXAMPLES.UISANN]UISANN$ROUTINES.TABLE


 Installing product UISCNV


 Installing the UIS to DDIF Converter Software Y2.0
  ************************************************
                      VAX UISCNV Y2.0
                   UIS to DDIF Converter
                 Installation  Procedure
  Copyright © 1990, Digital Equipment Corporation
  ************************************************
     The UIS to DDIF Converter consists of an
     executable image, two message files,  an
     IVP, and several .UIS files.  The entire
     kit will  be  installed.  The .UIS files
     converted  using  the  IVP will serve as
     example files.

%VMSINSTAL-I-MOVEFILES, Files will now be moved to their target directories...
          *************************************************
                           VWS V4.3
                  VMS Workstation Software
               Installation Verification Procedure
          Copyright © 1990, Digital Equipment Corporation
          *************************************************

%VWS-S-IVPPASS, the VWS installation has passed the IVP

         HCUIS Installation Verification Procedure

%HCUIS-S-IVPPASS, the HCUIS installation has passed the IVP

         SIGHT Installation Verification Procedure

%SIGHT-S-IVPPASS, the SIGHT installation has passed the IVP

   ***********************************************
                        VAXuisx T1.0
              VAXuisx Run-Time Library for VMS
       Installation Verification Procedure
 Copyright © 1990, Digital Equipment Corporation
   ***********************************************
 VAXuisx is a Run-Time Library that provides the
 VWS/UIS interface on X11.  This library will
 allow a VWS application to run on DECwindows
 with minimal or no changes.

 The IVP for VAXuisx will run several small
 applications to ensure that the product has
 installed correctly.
```

```
   If  the  IVP   fails,  a  message  displays  to
   indicate  the reason  for the failure.  See the
   "Installation Error Messages"  section  for  an
   explanation of this error message.

%UISXIVP-E-NODECW, No DECwindows device is available or defined.

%UISX-E-IVPFAIL, the VAXuisx installation has failed its IVP

          *************************************************

                         VAX UISANN T2.0

                   The UIS Source Code Annotator

                Installation Verification Procedure

          Copyright © 1990, Digital Equipment Corporation

          *************************************************

          The UIS Source Code Annotator IVP will annotate
          programs  from several languages.  Its output
          will be an additional version of the source code
          and a summary file with a .LOG extension which
          will appear in the same directory as the input
          files. You will be notified when the IVP has
          successfully completed.

          If the IVP fails, an error message will display
          indicating the reason for the failure.  See the
          "Installation Error Messages" section for an
          explanation of the error message.


=============================<< UISANN V 2.0 >>=============================

%UISANN-I-INITAB, Initializing the tables
         202 entries in search tables

 Select file type to examine or enter ? for help:

    BASIC     = 1
    BLISS     = 2
    C         = 3
    COBOL     = 4
    FORTRAN   = 5
    LISP      = 6
    PASCAL    = 7
    PLI       = 8
    VAX/MACRO = 9

   or enter 0 or <Ctrl/Z> to exit.


 File Type to be Examined :
%UISANN-I-ALLSOUPAS, All source code is assumed to be PASCAL

 Please enter a file name, or file name with Wild Cards (*). For Help, Enter ?.


 File Name(s) to be Examined :


 >>> Examining : SYS$COMMON:[SYSHLP.EXAMPLES.UISANN]UISDC_HOUSE.PAS
%UISANN-I-
CREATING, Creating the next version of'SYS$COMMON:[SYSHLP.EXAMPLES.UISANN]UISDC_HOUSE.PAS'


  Found:           1 - UIS$CREATE_COLOR_MAP
  Color maps may be created by using the X$ALLOC_COLOR_CELLS.

  Found:           1 - UIS$CREATE_DISPLAY
  No equivalent routine exists.

  Found:           1 - UIS$CREATE_WINDOW
  Please see information on virtual displays.
```

```
  Found:           1 - UIS$GET_DISPLAY_SIZE
  This may be emulated using X$DISPLAY_WIDTH, X$DISPLAY_WIDTHMM, X$DISPLAY_HEIGH

  Found:           1 - UIS$SET_COLOR
  UIS$SET_COLOR is equivalent to X$STORE_COLOR.

  Found:           1 - UIS$SET_COLORS
  UIS$SET_COLORS is equivalent to X$STORE_COLORS.

  Found:           4 - UIS$SET_FILL_PATTERN
  UIS fill patterns are equivalent to STIPPLE patterns in X11; use X$SET_STIPPLE

  Found:           4 - UIS$SET_FONT
  UIS$SET_FONT is similar to X$SET_FONT. The font ID is obtained from X$LOAD_FON

  Found:           4 - UIS$SET_WRITING_INDEX
  UIS$SET_WRITING_INDEX is similar to X$SET_FOREGROUND or X$CHANGE_GC.

  Found:           1 - UISDC$CIRCLE
  UISDC$CIRCLE is similar to X$DRAW_ARC.

  Found:           1 - UISDC$LINE
  UISDC$LINE is similar to X$DRAW_SEGMENT or X$DRAW_POINT.

  Found:           1 - UISDC$LINE_ARRAY
  UISDC$LINE_ARRAY is similar to X$DRAW_SEGMENTS or X$DRAW_POINTS.

  Found:           4 - UISDC$PLOT
  UISDC$PLOT is similar to X$DRAW_LINE, X$SRAW_LINES, or X$DRAW_POINT.

  Found:           1 - UISDC$PLOT_ARRAY
  UISDC$PLOT_ARRAY is similar to X$DRAW_LINE, X$DRAW_LINES, or X$DRAW_POINT.

  Found:           1 - UISDC$SET_CHAR_SIZE
  X11 does not provide text scaling.

  Found:           1 - UISDC$TEXT
  UISDC$TEXT is similar to X$DRAW_TEXT.

 * Total lines read in :         142

 * Total UIS calls (of any type) detected :          25


 *** Summary Information ----------------------------------------------

 * Total UIS calls (of any type) - all files :          25
================================================================================
For summary report see file:
        UISDC_HOUSE.LOG
-----<< Answer Further Questions, or <Ctrl/Z> to exit >>-----

 Select file type to examine or enter ? for help:

    BASIC     = 1
    BLISS     = 2
    C         = 3
    COBOL     = 4
    FORTRAN   = 5
    LISP      = 6
    PASCAL    = 7
    PLI       = 8
    VAX/MACRO = 9

   or enter 0 or <Ctrl/Z> to exit.


 File Type to be Examined :
%UISANN-I-ALLSOUFOR, All source code is assumed to be FORTRAN

 Please enter a file name, or file name with Wild Cards (*). For Help, Enter ?.


 File Name(s) to be Examined :


 >>> Examining : SYS$COMMON:[SYSHLP.EXAMPLES.UISANN]QIX.FOR
%UISANN-I-CREATING, Creating the next version of'SYS$COMMON:[SYSHLP.EXAMPLES.UISANN]QIX.FOR'
```

```
  Found:           1 - UIS$CREATE_COLOR_MAP
  Color maps may be created by using the X$ALLOC_COLOR_CELLS.

  Found:           1 - UIS$CREATE_DISPLAY
  No equivalent routine exists.

  Found:           1 - UIS$CREATE_WINDOW
  Please see information on virtual displays.

  Found:           1 - UIS$DISABLE_DISPLAY_LIST
  X11 provides no equivalents to the UIS$ display list routines.

  Found:           1 - UIS$GET_HW_COLOR_INFO
  Information is available through a number of individual calls - Please see "Di

  Found:           2 - UIS$PLOT
  UIS$PLOT is similar to X$DRAW_LINE, X$DRAW_LINES or X$DRAW_POINT.

  Found:           1 - UIS$RESIZE_WINDOW
  UIS$RESIZE_WINDOW is similar to X$CHANGE_WINDOW_ATTRIBUTES.

  Found:           1 - UIS$SET_RESIZE_AST
  There are equivalent X events.

  Found:           1 - UIS$SET_WRITING_INDEX
  UIS$SET_WRITING_INDEX is similar to X$SET_FOREGROUND or X$CHANGE_GC.

  Found:           1 - UIS$SET_WRITING_MODE
  UIS$SET_WRITING_MODE is similar to X$SET_FUNCTION or X$CHANGE_GC.

 * Total lines read in :         245

 * Total UIS calls (of any type) detected :          11


 *** Summary Information ----------------------------------------------

 * Total UIS calls (of any type) - all files :          36
================================================================================
For summary report see file:
        QIX.LOG
-----<< Answer Further Questions, or <Ctrl/Z> to exit >>-----

 Select file type to examine or enter ? for help:

    BASIC     = 1
    BLISS     = 2
    C         = 3
    COBOL     = 4
    FORTRAN   = 5
    LISP      = 6
    PASCAL    = 7
    PLI       = 8
    VAX/MACRO = 9

   or enter 0 or <Ctrl/Z> to exit.


 File Type to be Examined :
%UISANN-I-NOMODFIL, No modified file will be produced
===========================<< UISANN Finished >>============================


%UISANN-S-IVPPASS, the UISANN installation has passed the IVP


   ***********************************************

                  VAX UISCNV Y2.0

               UIS to DDIF Converter

         Installation Verification Procedure

   Copyright © 1990, Digital Equipment Corporation

   ***********************************************
```

```
   The  UIS to DDIF Converter IVP converts several
   .UIS files  into .ANL and .PS files.   For more
 information on  this conversion and the  output
   produced,  refer  to  the  DCL CONVERT/DOCUMENT
   command.  You  will  be  notified  as each .UIS
   file has been successfully converted.

   If  the  IVP   fails,  a  message  displays  to
   indicate  the reason  for the failure.  See the
   "Installation Error Messages"  section  for  an
   explanation of this error message.


 BOOK_GRAPH.UIS has been successfully converted

 BOOK_LINE_WIDTH.UIS has been successfully converted

 PATTERN.UIS has been successfully converted

 SIGHT1.UIS has been successfully converted

 SIGHT2.UIS has been successfully converted

 THREECIRCLES.UIS has been successfully converted

 ELLIPSES.UIS has been successfully converted

 MORE_ELLIPSES.UIS has been successfully converted

%UISCNV-S-IVPPASS, the UISCNV installation has passed the IVP

 Installation of VWS V4.3 completed at 15:55

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

    ***********************************************************************

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

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

        The installation will not be complete until a system reboot.

    ***********************************************************************

 SHUTDOWN -- Perform an Orderly System Shutdown
             on node VWSTST

Do you really want to shutdown node VWSTST [NO]? NO
 VMSINSTAL procedure done at 16:00
```

C VWSDEMO Sample Installation

This appendix provides a sample installation for VWSDEMO. The programs in VWSDEMO are intended **only as demonstrations** to help you to program in UIS.

C.1 Sample Installation

```
Username: SYSTEM
Password:


$ set def sys$update
$ @vmsinstal vwsdemo043 mua0:

 VAX/VMS Software Product Installation Procedure V5.0-2

It is 5-DEC-1989 at 09:24.
Enter a question mark (?) at any time for help.

%VMSINSTAL-W-DECNET, Your DECnet network is up and running.
%VMSINSTAL-W-ACTIVE, The following processes are still active:
 SERVER_0004
* Do you want to continue anyway [NO]? yes
* Are you satisfied with the backup of your system disk [YES]?

The following products will be processed:

  VWSDEMO V4.3

 Beginning installation of VWSDEMO V4.3 at 09:26

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

           Installation of VWS Demos for V4.3

 This procedure will install some demos for programming in VWS.  The
 sources contained within are for demonstration purposes only.  They
 have been created to aid you in programming in VWS.

 The installation will create a directory off of SYS$SYSDEVICE called
 VWSDEMO.   Underneath this directory there will be subdirectories
 which will contain the demos from various languages supported by VWS.

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

 This installation will allow you to choose to install either the
 sources or just the images or both whichever you prefer.
```

The installation procedure next asks if you want to install both sources and images. If you answer NO, the installation procedure asks two additional questions that let you select which you want to install. If you answer YES, the installation procedure does not ask those two questions, but procedes with the installation.

```
* Would you like to install both sources and images [Y]? n
*  Install only the sources [N]? y
*  Install only the images [N]? y

 No more questions will be asked

%VMSINSTAL-I-RESTORE, Restoring product saveset B ...
%VMSINSTAL-I-RESTORE, Restoring product saveset C ...
%VMSINSTAL-I-SYSDIR, This product creates system disk directory
  SYS$SYSDEVICE:[VWSDEMO].
%VMSINSTAL-I-SYSDIR, This product creates system disk directory
  SYS$SYSDEVICE:[VWSDEMO.COM].
%VMSINSTAL-I-SYSDIR, This product creates system disk directory
  SYS$SYSDEVICE:[VWSDEMO.B32].
%VMSINSTAL-I-SYSDIR, This product creates system disk directory
  SYS$SYSDEVICE:[VWSDEMO.CC].
%VMSINSTAL-I-SYSDIR, This product creates system disk directory
  SYS$SYSDEVICE:[VWSDEMO.EPAS].
%VMSINSTAL-I-SYSDIR, This product creates system disk directory
  SYS$SYSDEVICE:[VWSDEMO.FOR].
%VMSINSTAL-I-SYSDIR, This product creates system disk directory
  SYS$SYSDEVICE:[VWSDEMO.PAS].
%VMSINSTAL-I-SYSDIR, This product creates system disk directory
  SYS$SYSDEVICE:[VWSDEMO.PLI].

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

 Installation of VWSDEMO V4.3 completed at 10:07

 VMSINSTAL procedure done at 10:09
```

C.2 VWSDEMO Source Kit and Images Kit Files

The following files are on the VWSDEMO source kit:

```
SYS$SYSDEVICE:[VWSDEMO.FOR]ALL_COLORS.FOR
SYS$SYSDEVICE:[VWSDEMO.MAR]ALPHA.MAR
SYS$SYSDEVICE:[VWSDEMO.MAR]ARCH_DATA.MAR
SYS$SYSDEVICE:[VWSDEMO.FOR]AST.FOR
SYS$SYSDEVICE:[VWSDEMO.MAR]ASTRO_DATA.MAR
SYS$SYSDEVICE:[VWSDEMO.B32]BOUNCE.B32
SYS$SYSDEVICE:[VWSDEMO.MAR]BOUNCE_ICON.MAR
SYS$SYSDEVICE:[VWSDEMO.FOR]BOUNCE_SUBS.FOR
SYS$SYSDEVICE:[VWSDEMO.PLI]BOXES.PLI
SYS$SYSDEVICE:[VWSDEMO.MAR]BRUSH.MAR
SYS$SYSDEVICE:[VWSDEMO.FOR]BUTTONAST.FOR
SYS$SYSDEVICE:[VWSDEMO.EPAS]CALC.EPAS
SYS$SYSDEVICE:[VWSDEMO.MAR]CALCI.MAR
SYS$SYSDEVICE:[VWSDEMO.EPAS]CALENDAR.EPAS
SYS$SYSDEVICE:[VWSDEMO.MAR]CALENDARI.MAR
SYS$SYSDEVICE:[VWSDEMO.EPAS]CDOODLE.EPAS
SYS$SYSDEVICE:[VWSDEMO.CC]CHROMA_TRIANGLE.C
SYS$SYSDEVICE:[VWSDEMO.MAR]CIRCLE.MAR
SYS$SYSDEVICE:[VWSDEMO.PLI]CLOCK.PLI
SYS$SYSDEVICE:[VWSDEMO.MAR]CLOCKI.MAR
SYS$SYSDEVICE:[VWSDEMO.CC]CPETAL.C
SYS$SYSDEVICE:[VWSDEMO.EPAS]CPUZZLE.EPAS
SYS$SYSDEVICE:[VWSDEMO.CC]CREATE_MENU.C
SYS$SYSDEVICE:[VWSDEMO.FOR]CUBE.FOR
SYS$SYSDEVICE:[VWSDEMO.B32]DATETIME.B32
SYS$SYSDEVICE:[VWSDEMO.PAS]DECLANDER.PAS
SYS$SYSDEVICE:[VWSDEMO.CC]DELAUNAY.C
SYS$SYSDEVICE:[VWSDEMO.B32]DEMOMENU.B32
SYS$SYSDEVICE:[VWSDEMO.PLI]DESIGNS.PLI
SYS$SYSDEVICE:[VWSDEMO.EPAS]DESK.EPAS
SYS$SYSDEVICE:[VWSDEMO.PLI]DIGICLOCK.PLI
SYS$SYSDEVICE:[VWSDEMO.EPAS]DIGITALCLOCK.EPAS
SYS$SYSDEVICE:[VWSDEMO.PLI]DISPFONT.PLI
SYS$SYSDEVICE:[VWSDEMO.CC]DISPLAY_LIST.C
SYS$SYSDEVICE:[VWSDEMO.FOR]DISTORT.FOR
SYS$SYSDEVICE:[VWSDEMO.PAS]DLCREATE.INC
SYS$SYSDEVICE:[VWSDEMO.PAS]DLDRAW.INC
SYS$SYSDEVICE:[VWSDEMO.PAS]DLFUNC.INC
SYS$SYSDEVICE:[VWSDEMO.PAS]DLGLOBALS.INC
SYS$SYSDEVICE:[VWSDEMO.PAS]DLINIT.INC
SYS$SYSDEVICE:[VWSDEMO.PAS]DLMOVE.INC
SYS$SYSDEVICE:[VWSDEMO.PAS]DLUPDATE.INC
SYS$SYSDEVICE:[VWSDEMO.FOR]DOILOOP.FOR
SYS$SYSDEVICE:[VWSDEMO.FOR]DOILYDC.FOR
SYS$SYSDEVICE:[VWSDEMO.EPAS]DOODLE.EPAS
SYS$SYSDEVICE:[VWSDEMO.CC]DOPEXAMPLE.C
SYS$SYSDEVICE:[VWSDEMO.CC]DOP_FILLED_CIRCLES_C.C
SYS$SYSDEVICE:[VWSDEMO.FOR]DOP_FILLED_CIRCLES_FOR.FOR
SYS$SYSDEVICE:[VWSDEMO.PAS]DOP_FILLED_CIRCLES_PAS.PAS
SYS$SYSDEVICE:[VWSDEMO.MAR]DUST_DATA.MAR
SYS$SYSDEVICE:[VWSDEMO.MAR]ELLIPSE.MAR
SYS$SYSDEVICE:[VWSDEMO.MAR]ERASER.MAR
SYS$SYSDEVICE:[VWSDEMO.EPAS]EUIS.EPAS
SYS$SYSDEVICE:[VWSDEMO.MAR]FCIRCLE.MAR
SYS$SYSDEVICE:[VWSDEMO.MAR]FELLIPSE.MAR
SYS$SYSDEVICE:[VWSDEMO.PLI]FILLPAT.PLI
SYS$SYSDEVICE:[VWSDEMO.CC]FLAGS.C
SYS$SYSDEVICE:[VWSDEMO.CC]FLAG_COLORS.C
SYS$SYSDEVICE:[VWSDEMO.MAR]FLAG_DATA.MAR
SYS$SYSDEVICE:[VWSDEMO.CC]FLAG_DEMO.C
SYS$SYSDEVICE:[VWSDEMO.PAS]FONTS.PAS
SYS$SYSDEVICE:[VWSDEMO.FOR]FONTS2.FOR
SYS$SYSDEVICE:[VWSDEMO.MAR]FPOLY.MAR
SYS$SYSDEVICE:[VWSDEMO.MAR]FRECTANGLE.MAR
```

```
SYS$SYSDEVICE:[VWSDEMO.PLI]GRAY.PLI
SYS$SYSDEVICE:[VWSDEMO.MAR]IPARSE.MAR
SYS$SYSDEVICE:[VWSDEMO.CC]JTRACE.C
SYS$SYSDEVICE:[VWSDEMO.CC]KEYBOARD.C
SYS$SYSDEVICE:[VWSDEMO.CC]KILLPID.C
SYS$SYSDEVICE:[VWSDEMO.CC]LOADMENU.C
SYS$SYSDEVICE:[VWSDEMO.FOR]MASK-DEMO.FOR
SYS$SYSDEVICE:[VWSDEMO.CC]MENU.C
SYS$SYSDEVICE:[VWSDEMO.EPAS]MENU.EPAS
SYS$SYSDEVICE:[VWSDEMO.CC]MENUDEF.H
SYS$SYSDEVICE:[VWSDEMO.CC]MENUFILE.TXT
SYS$SYSDEVICE:[VWSDEMO.CC]MENU_C.C
SYS$SYSDEVICE:[VWSDEMO.FOR]MODE.FOR
SYS$SYSDEVICE:[VWSDEMO.CC]MOUSEAST.C
SYS$SYSDEVICE:[VWSDEMO.CC]MOUSEOVERHEAD.C
SYS$SYSDEVICE:[VWSDEMO.MAR]MOVEC.MAR
SYS$SYSDEVICE:[VWSDEMO.MAR]MOVER.MAR
SYS$SYSDEVICE:[VWSDEMO.CC]NOBANN_NOBORD.C
SYS$SYSDEVICE:[VWSDEMO.FOR]OR_MODE.FOR
SYS$SYSDEVICE:[VWSDEMO.FOR]PAN.FOR
SYS$SYSDEVICE:[VWSDEMO.CC]PATTERN.C
SYS$SYSDEVICE:[VWSDEMO.MAR]PENCIL.MAR
SYS$SYSDEVICE:[VWSDEMO.MAR]POLY.MAR
SYS$SYSDEVICE:[VWSDEMO.FOR]PSYCHO.FOR
SYS$SYSDEVICE:[VWSDEMO.FOR]QIX.FOR
SYS$SYSDEVICE:[VWSDEMO.FOR]QIXLOOP.FOR
SYS$SYSDEVICE:[VWSDEMO.CC]QUAD_DEMO.C
SYS$SYSDEVICE:[VWSDEMO.MAR]RAND.MAR
SYS$SYSDEVICE:[VWSDEMO.FOR]READCHAR.FOR
SYS$SYSDEVICE:[VWSDEMO.MAR]RECTANGLE.MAR
SYS$SYSDEVICE:[VWSDEMO.MAR]RLINE.MAR
SYS$SYSDEVICE:[VWSDEMO.FOR]ROSE.FOR
SYS$SYSDEVICE:[VWSDEMO.CC]RUBBER.H
SYS$SYSDEVICE:[VWSDEMO.CC]RUBBERBAND.C
SYS$SYSDEVICE:[VWSDEMO.CC]RUBBERBOX.C
SYS$SYSDEVICE:[VWSDEMO.CC]SCROLLFILE.C
SYS$SYSDEVICE:[VWSDEMO.CC]SCROLLINE.C
SYS$SYSDEVICE:[VWSDEMO.CC]SDYN.C
SYS$SYSDEVICE:[VWSDEMO.PAS]SETUP_COLORS.PAS
SYS$SYSDEVICE:[VWSDEMO.CC]SHAPES.C
SYS$SYSDEVICE:[VWSDEMO.MAR]SHIP_DATA.MAR
SYS$SYSDEVICE:[VWSDEMO.PLI]SHOWFONT.PLI
SYS$SYSDEVICE:[VWSDEMO.B32]SIMPLE_BANNER.B32
SYS$SYSDEVICE:[VWSDEMO.PLI]SPEED.PLI
SYS$SYSDEVICE:[VWSDEMO.FOR]SPIRO.FOR
SYS$SYSDEVICE:[VWSDEMO.MAR]SPRAY.MAR
SYS$SYSDEVICE:[VWSDEMO.FOR]STRPCHRT.FOR
SYS$SYSDEVICE:[VWSDEMO.PAS]TEXTPOS.PAS
SYS$SYSDEVICE:[VWSDEMO.EPAS]UISENTRY.EPAS
SYS$SYSDEVICE:[VWSDEMO.EPAS]UISUSRDEF.EPAS
SYS$SYSDEVICE:[VWSDEMO.CC]VWS_MENU.C
SYS$SYSDEVICE:[VWSDEMO.CC]VWS_SCROLL_BAR.C
SYS$SYSDEVICE:[VWSDEMO.FOR]WHEEL.FOR
SYS$SYSDEVICE:[VWSDEMO.FOR]WHEEL_UISDC.FOR
SYS$SYSDEVICE:[VWSDEMO.MAR]YCOOR.MAR
SYS$SYSDEVICE:[VWSDEMO.FOR]ZOOM.FOR
```

The following files are on the VWSDEMO Images kit:

```
SYS$SYSDEVICE:[VWSDEMO.FOR]ALL_COLORS.EXE
SYS$SYSDEVICE:[VWSDEMO.FOR]AST.EXE
SYS$SYSDEVICE:[VWSDEMO.B32]BANNER.EXE
SYS$SYSDEVICE:[VWSDEMO.B32]BOUNCE.EXE
SYS$SYSDEVICE:[VWSDEMO.PLI]BOXES.EXE
SYS$SYSDEVICE:[VWSDEMO.FOR]BUTTONAST.EXE
SYS$SYSDEVICE:[VWSDEMO.EPAS]CDOODLE.EXE
SYS$SYSDEVICE:[VWSDEMO.CC]CHROMA_TRIANGLE.EXE
SYS$SYSDEVICE:[VWSDEMO.PLI]CLOCK.EXE
SYS$SYSDEVICE:[VWSDEMO.CC]CPETAL.EXE
SYS$SYSDEVICE:[VWSDEMO.EPAS]CPUZZLE.EXE
SYS$SYSDEVICE:[VWSDEMO.FOR]CUBE.EXE
SYS$SYSDEVICE:[VWSDEMO.B32]DATETIME.EXE
SYS$SYSDEVICE:[VWSDEMO.PAS]DECLANDER.EXE
SYS$SYSDEVICE:[VWSDEMO.CC]DELAUNAY.EXE
SYS$SYSDEVICE:[VWSDEMO.B32]DEMOMENU.EXE
SYS$SYSDEVICE:[VWSDEMO.PLI]DESIGNS.EXE
SYS$SYSDEVICE:[VWSDEMO.EPAS]DESK.EXE
SYS$SYSDEVICE:[VWSDEMO.PLI]DIGICLOCK.EXE
SYS$SYSDEVICE:[VWSDEMO.PLI]DISPFONT.EXE
SYS$SYSDEVICE:[VWSDEMO.CC]DISPLAY_LIST.EXE
SYS$SYSDEVICE:[VWSDEMO.FOR]DISTORT.EXE
SYS$SYSDEVICE:[VWSDEMO.FOR]DOILOOP.EXE
SYS$SYSDEVICE:[VWSDEMO.FOR]DOILYDC.EXE
SYS$SYSDEVICE:[VWSDEMO.EPAS]DOODLE.EXE
SYS$SYSDEVICE:[VWSDEMO.CC]DOPEXAMPLE.EXE
SYS$SYSDEVICE:[VWSDEMO.CC]DOP_FILLED_CIRCLES_C.EXE
SYS$SYSDEVICE:[VWSDEMO.FOR]DOP_FILLED_CIRCLES_FOR.EXE
SYS$SYSDEVICE:[VWSDEMO.PAS]DOP_FILLED_CIRCLES_PAS.EXE
SYS$SYSDEVICE:[VWSDEMO.PLI]FILLPAT.EXE
SYS$SYSDEVICE:[VWSDEMO.CC]FLAG.EXE
SYS$SYSDEVICE:[VWSDEMO.PAS]FONTS.EXE
SYS$SYSDEVICE:[VWSDEMO.PAS]FONTS2.EXE
SYS$SYSDEVICE:[VWSDEMO.PLI]GRAY.EXE
SYS$SYSDEVICE:[VWSDEMO.CC]JTRACE.EXE
SYS$SYSDEVICE:[VWSDEMO.CC]KEYBOARD.EXE
SYS$SYSDEVICE:[VWSDEMO.FOR]MASK-DEMO.EXE
SYS$SYSDEVICE:[VWSDEMO.EPAS]MENU.EXE
SYS$SYSDEVICE:[VWSDEMO.CC]MENU_C.EXE
SYS$SYSDEVICE:[VWSDEMO.FOR]MODE.EXE
SYS$SYSDEVICE:[VWSDEMO.CC]MOUSEAST.EXE
SYS$SYSDEVICE:[VWSDEMO.CC]MOUSEOVERHEAD.EXE
SYS$SYSDEVICE:[VWSDEMO.CC]NOBANN_NOBORD.EXE
SYS$SYSDEVICE:[VWSDEMO.FOR]OR_MODE.EXE
SYS$SYSDEVICE:[VWSDEMO.FOR]PAN.EXE
SYS$SYSDEVICE:[VWSDEMO.CC]PATTERN.EXE
SYS$SYSDEVICE:[VWSDEMO.FOR]PSYCHO.EXE
SYS$SYSDEVICE:[VWSDEMO.FOR]QIX.EXE
SYS$SYSDEVICE:[VWSDEMO.FOR]QIXLOOP.EXE
SYS$SYSDEVICE:[VWSDEMO.CC]QUAD_DEMO.EXE
SYS$SYSDEVICE:[VWSDEMO.FOR]READCHAR.EXE
SYS$SYSDEVICE:[VWSDEMO.FOR]ROSE.EXE
SYS$SYSDEVICE:[VWSDEMO.CC]RUBBERBOX.EXE
SYS$SYSDEVICE:[VWSDEMO.CC]SCROLLFILE.EXE
SYS$SYSDEVICE:[VWSDEMO.CC]SCROLLINE.EXE
SYS$SYSDEVICE:[VWSDEMO.CC]SDYN.EXE
SYS$SYSDEVICE:[VWSDEMO.CC]SHAPES.EXE
SYS$SYSDEVICE:[VWSDEMO.PLI]SHOWFONT.EXE
SYS$SYSDEVICE:[VWSDEMO.B32]SIMPLE_BANNER.EXE
SYS$SYSDEVICE:[VWSDEMO.PLI]SPEED.EXE
SYS$SYSDEVICE:[VWSDEMO.FOR]SPIRO.EXE
SYS$SYSDEVICE:[VWSDEMO.FOR]STRPCHRT.EXE
SYS$SYSDEVICE:[VWSDEMO.PAS]TEXTPOS.EXE
SYS$SYSDEVICE:[VWSDEMO.CC]VWS_MENU.EXE
SYS$SYSDEVICE:[VWSDEMO.CC]VWS_SCROLL_BAR.EXE
SYS$SYSDEVICE:[VWSDEMO.FOR]WHEEL.EXE
SYS$SYSDEVICE:[VWSDEMO.FOR]WHEEL_UISDC.EXE
```

```
SYS$SYSDEVICE:[VWSDEMO.FOR]ZOOM.EXE
SYS$SYSDEVICE:[VWSDEMO.COM]BANNER.COM
SYS$SYSDEVICE:[VWSDEMO.COM]BOUNCE.COM
SYS$SYSDEVICE:[VWSDEMO.COM]BOXES.COM
SYS$SYSDEVICE:[VWSDEMO.COM]CLOCK.COM
SYS$SYSDEVICE:[VWSDEMO.COM]CPUZZLE.COM
SYS$SYSDEVICE:[VWSDEMO.COM]CUBE.COM
SYS$SYSDEVICE:[VWSDEMO.COM]DATETIME.COM
SYS$SYSDEVICE:[VWSDEMO.COM]DECLANDER.COM
SYS$SYSDEVICE:[VWSDEMO.COM]DEFINE_FONTS.COM
SYS$SYSDEVICE:[VWSDEMO.COM]DEMOLOOP.COM
SYS$SYSDEVICE:[VWSDEMO.COM]DEMOMENU.COM
SYS$SYSDEVICE:[VWSDEMO.COM]DEMOMENU.DAT
SYS$SYSDEVICE:[VWSDEMO.COM]DEMOMENU2.COM
SYS$SYSDEVICE:[VWSDEMO.COM]DIGICLOCK.COM
SYS$SYSDEVICE:[VWSDEMO.COM]DISPFONT.COM
SYS$SYSDEVICE:[VWSDEMO.COM]DOILYDC.COM
SYS$SYSDEVICE:[VWSDEMO.COM]FILLPAT.COM
SYS$SYSDEVICE:[VWSDEMO.COM]GRAY.COM
SYS$SYSDEVICE:[VWSDEMO.COM]JTRACE.COM
SYS$SYSDEVICE:[VWSDEMO.COM]PATTERN.COM
SYS$SYSDEVICE:[VWSDEMO.COM]QIX.COM
SYS$SYSDEVICE:[VWSDEMO.COM]QIXLOOP.COM
SYS$SYSDEVICE:[VWSDEMO.COM]ROSE.COM
SYS$SYSDEVICE:[VWSDEMO.COM]RUN_DOODLE.COM
SYS$SYSDEVICE:[VWSDEMO.COM]SHOWFONT.COM
SYS$SYSDEVICE:[VWSDEMO.COM]SIMPLE_BANNER.COM
SYS$SYSDEVICE:[VWSDEMO.COM]SPIRO.COM
SYS$SYSDEVICE:[VWSDEMO.COM]STRIP.COM
```

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