VAXELN Window Server

Installation Guide for VMS Systems

Order Number: AA–PE1UB–TE

This guide explains how to install the VAXELN Window Server software on the VMS operating system.

Revision/Update Information: This manual supersedes the *VAXELN Window Server Installation Guide for VMS Systems*, AA-PE1UA-TE.

Operating System and Version: VMS Version 5.3 or higher

Software Version: VAXELN Window Server Version 1.1

Digital Equipment Corporation

Revised, October 1991

The information in this document is subject to change without notice and should not be construed as a commitment by Digital Equipment Corporation.

Digital Equipment Corporation assumes no responsibility for any errors that may appear in this document.

Any software described in this document is furnished under a license and may be used or copied only in accordance with the terms of such license. No responsibility is assumed for the use or reliability of software or equipment that is not supplied by Digital Equipment Corporation or its affiliated companies.

Restricted Rights: Use, duplication, or disclosure by the U.S. Government is subject to restrictions as set forth in subparagraph (c)(1)(ii) of the Rights in Technical Data and Computer Software clause at DFARS 252.227–7013.

© Digital Equipment Corporation 1991.
All rights reserved. Printed in U.S.A.

The Reader's Comments form at the end of this document requests your critical evaluation to assist in preparing future documentation.

The following are trademarks of Digital Equipment Corporation:

DEC, DECnet, DECwindows, Local Area VAXcluster, ULTRIX, VAX, VAXcluster, VAX DOCUMENT, VAXELN, VAXstation, VMS, VT, and the DIGITAL Logo.

UNIX is a registered trademark of American Telephone & Telegraph Company.

X Window System, Version 11 and its derivations (X, X11, X Version 11, X Window System) are trademarks of the Massachusetts Institute of Technology.

ML–S1738

This document was prepared with VAX DOCUMENT, Version 1.2.

Contents

Preface vii

1 Introduction to the VAXELN Window Server

1.1 VAXELN Window Server Components 1–2
1.2 How the VAXELN Window Server Software Operates 1–3

2 Preparing for the Installation

2.1 Taking Inventory of the Software Distribution Kit 2–1
2.2 Checking for Prerequisite Hardware 2–2
2.3 Logging In to a Privileged Account 2–2
2.4 Checking Installer Account Limits and Quotas 2–3
2.5 Checking for Prerequisite Software 2–4
2.6 Determining Which Savesets to Load 2–4
2.7 Addressing VAXcluster Considerations 2–5
2.8 Checking System Quotas 2–5
2.8.1 Disk Space Requirements 2–5
2.8.2 System Parameter Requirements 2–7
2.9 Backing Up the System Disk 2–7
2.10 Reading the Release Notes 2–7
2.11 Checking for a Previously Installed Version of the Software 2–8

3 Running the VMSINSTAL Command Procedure

3.1 VMSINSTAL Requirements 3–1
3.2 VMSINSTAL Procedure 3–2

4 Setting Up the VAXELN Window Server Software

4.1	Modifying the System Startup File	4–1
4.2	Noting Considerations for VAXcluster Configurations	4–2
4.3	Getting Window Server Hardware Information from Window Server Users	4–3
4.4	Enabling the DECnet Service Circuit	4–4
4.5	Updating the DECnet Remote Node Database	4–5
4.6	Setting Up System Parameter Requirements	4–7
4.7	Setting Up User Account Limits and Quotas	4–8
4.8	Modifying the Window Server Data File	4–9
4.8.1	Selecting a Host from the Node List	4–10
4.8.2	Security	4–13
4.8.3	Using a Monochrome Monitor	4–14
4.8.4	Setting Up the Keyboard	4–14
4.8.5	Modifying the Server Reset Text	4–17
4.8.6	Modifying the Server Pause Text	4–18
4.8.7	Adding Font Support	4–19
4.8.8	Internet Data	4–20
4.9	Setting Up a Local Printer	4–23
4.10	Running the IVP	4–23
4.10.1	What to Do If the IVP Fails	4–23

A Sample VAXELN Window Server Installation

B VAXELN Window Server Files

C Rebuilding VAXELN Window Server System Images

Index

Examples

4–1	ORANGE.DAT Data File for Window Server ORANGE	4–10
4–2	WHITE.DAT Sample Data File for Window Server WHITE	4–10
4–3	Sample EWS$GENERIC.DAT File	4–11
4–4	Sample EWS$GENERIC.DAT File with Notations	4–12
A–1	Sample VAXELN Window Server Installation	A–1

Figures

1–1	Sample VAXELN Window Server Configuration	1–2
1–2	Boot Server and Window Server Communications	1–4
4–1	Node List Box	4–11
4–2	Node List Box with Comments	4–13

Tables

2–1	Supported Window Server Hardware	2–2
2–2	Installer Account Limits and Quotas	2–3
2–3	VAXELN Window Server Savesets	2–6
2–4	Preinstallation System Parameter Requirements	2–7
4–1	Postinstallation System Parameter Requirements	4–7
4–2	User Account Limits and Quotas	4–8
4–3	Keyboard Map Files	4–15
B–1	VAXELN Window Server Logicals	B–1
B–2	VAXELN Window Server Files	B–2

Preface

VAXELN Window Server (EWS) software is a collection of system images and VMS command files for setting up an environment in which a host VMS system provides DECwindows client services for Digital's workstations and VT1300 terminals.

Purpose of This Guide

This guide explains how to install the VAXELN Window Server software on the VMS operating system. You should review the entire guide before you start the installation.

Who Should Use This Guide

This guide is for VMS system managers or others responsible for installing system software. To install the VAXELN Window Server software, you must have access to a privileged account, such as the SYSTEM account, and you must be familiar with the VMS installation procedure (VMSINSTAL).

Structure of This Guide

This guide contains four chapters and three appendixes.

- Chapter 1 describes the VAXELN Window Server software.
- Chapter 2 explains how to prepare for a VAXELN Window Server software installation.
- Chapter 3 explains how to use the VMSINSTAL command procedure to install the VAXELN Window Server software.
- Chapter 4 explains what the installer must do after running the VMSINSTAL procedure. The procedures in this chapter set up the VAXELN Window Server software for use on your system.
- Appendix A shows a sample VAXELN Window Server installation procedure.

- Appendix B lists the files that the installation procedure installs or modifies on your system.
- Appendix C explains how to rebuild VAXELN Window Server system images.

For More Information

For more information about the VMSINSTAL command procedure, see the *VMS System Manager's Manual*. Other VMS manuals that might be helpful during the installation include the following:

- *Guide to Setting Up a VMS System*, AA–LA25A–TE
- *VMS Authorize Utility Manual*, AA–LA42A–TE
- *VMS Backup Utility Manual*, AA–LA35A–TE
- *VMS SYSMAN Utility Manual*, AA–LA26A–TE
- *VMS System Manager's Manual*, AA–LA00B–TE

For information about using the VAXELN Window Server software on workstations and terminals, see the *VAXELN Window Server User's Manual*.

For information about using DECwindows client software, see the following guides:

- *VMS DECwindows User's Guide*, AA–MG18A–TE
- *VMS DECwindows Desktop Applications Guide*, AA–MG19A–TE
- *ULTRIX Worksystem Software DECwindows User's Guide*, AA–MA87A–TE
- *ULTRIX Worksystem Software DECwindows Desktop Applications Guide*, AA–MA88A–TE

For information about Internet and TCP/IP, see the *VMS/ULTRIX Connection System Manager's Manual*, AA–LU50A–TE.

For information about the VAXELN Toolkit and Digital's other realtime products, see the following:

- *Introduction to VAXELN*, AA–JL11D–TE
- *Realtime Products Technical Summary*, EK–RPTSS–TM–001

Conventions Used in This Guide

The following conventions are used in this guide:

Ctrl/*x*	Ctrl/*x* indicates that you must hold down the key labeled Ctrl while you press another key or a pointing device button.
key	In procedures and tables, a key name appears in a box to indicate that you press a key on the keyboard. For example, the Return key appears as Return. Key names in text appear without a box.
n and *x*	When used in items such as names, the variables *n* and *x* represent numeric and nonnumeric characters, respectively.
red ink	Red ink indicates information that you must enter from the keyboard or a screen object that you must choose or click on.
. . .	A horizontal ellipsis indicates that you can repeat the preceding item one or more times.
[ ]	Brackets enclose default values in the installation procedure and optional parameters in command formats.
UPPERCASE	Uppercase letters indicate the name of a routine, the name of a file, the name of a file protection code, or the abbreviation for a system privilege.

1

Introduction to the VAXELN Window Server

VAXELN Window Server (EWS) software consists of VAXELN system images and VMS Digital Command Language (DCL) command files for setting up an environment in which a host VMS system provides DECwindows client services for Digital's workstations and VT1300 terminals. The VMS system operates as a **boot server**, down-line loading the appropriate VAXELN Window Server system images to the workstations and VT1300 terminals. The VMS system and a workstation or terminal then appear to operate as a single VMS DECwindows workstation.

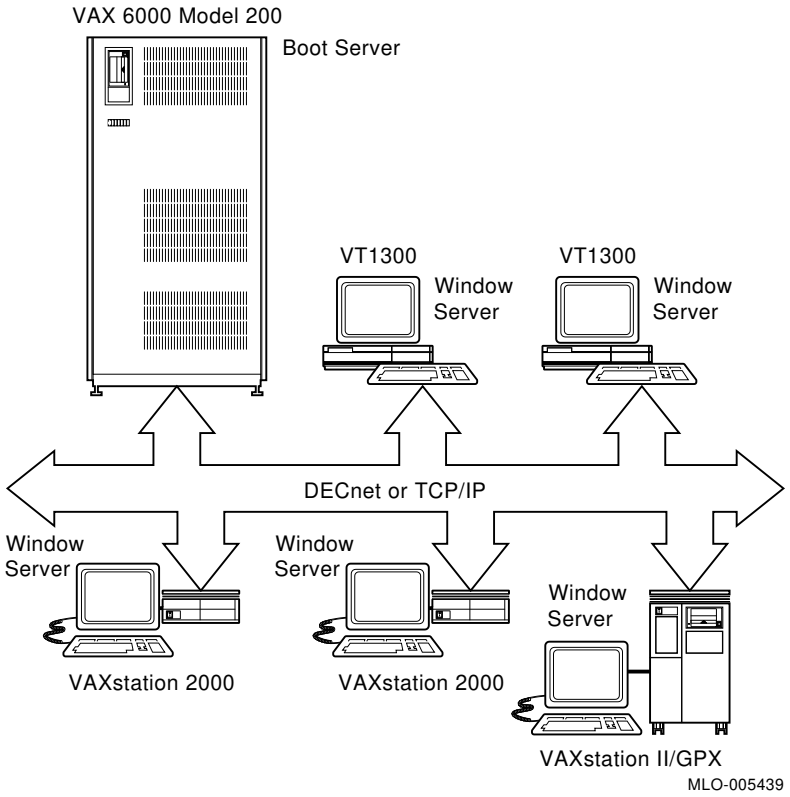
The VAXELN Window Server software provides a DECwindows solution for diskless workstations and, depending on your configuration, can offer improved windowing performance.

Figure 1–1 shows a sample VAXELN Window Server configuration consisting of a VAX 6000 Model 200 boot server, two VAXstation 2000 workstations, a VAXstation II/GPX, and two VT1300 terminals. Upon request, the boot server down-line loads the appropriate VAXELN Window Server system images to the workstations and terminals. Once a VAXELN Window Server image is loaded onto a workstation or terminal, that device becomes a **window server**—a system that displays DECwindows application interfaces while taking advantage of the resources and power of the VAX 6000 processor.

This chapter introduces the VAXELN Window Server software by describing the following:

- VAXELN Window Server components, Section 1.1
- How the VAXELN Window Server software operates, Section 1.2

Figure 1–1 Sample VAXELN Window Server Configuration



1.1 VAXELN Window Server Components

The VAXELN Window Server software consists of the following components:

- Eight system images

  The VAXELN Window Server software includes two system images for each of the following groupings of supported workstations and terminals:

  – Color VAXstation 2000 and 3100 workstations

  – VAXstation II/GPX, 3200, and 3500 workstations

  - Monochrome VAXstation 2000 and 3100 workstations
  - VT1300 terminals and VAXstation 3100/SPX workstations

  One of the system images for a particular grouping provides support for a monitor density of 75 dots per inch (DPI). The second image supports a monitor density of 100 DPI.

- Three VMS DCL command files

EWS$STARTUP.COM	Defines the location of the VAXELN Window Server system images and installs the program images used to display the VMS DECwindows login window on the window server screens.
EWS$SERVER.COM	Sends data to and starts a remote Session Manager session on each window server.
EWS$ADD_NODE.COM	Defines the node characteristics of window servers.

- Three VMS executable files

EWS$WSA.EXE	Creates the window server display pseudodevice and assigns the DECW$DISPLAY logical for the login process to use.
EWS$XKEYMAP.EXE	Sets up the keymap for any workstation not using the default keymap US/LK201.
DECW$MKFONTDIR.EXE	Creates font directory lists when supplemental font directories are required.

- Keymap files

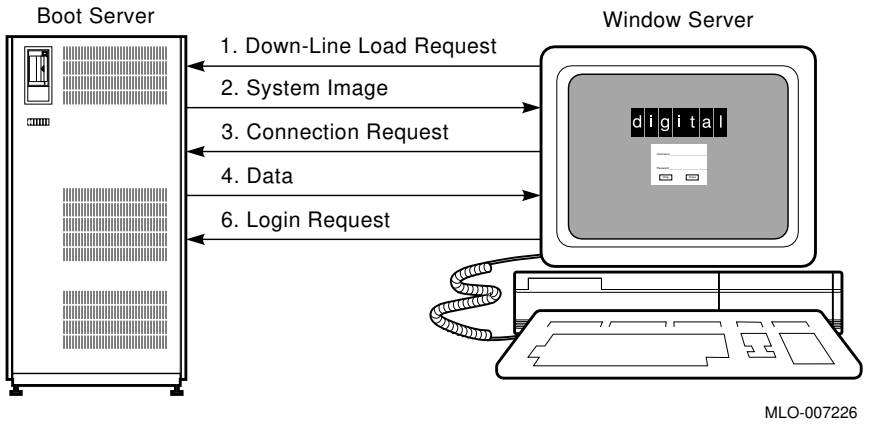
  The VAXELN Window Server software includes files that direct the server in translating keyboard events from different LK201 and LK401 keyboard variants. These keymap files are read by EWS$XKEYMAP.EXE.

1.2 How the VAXELN Window Server Software Operates

The VAXELN Window Server software sets up a window server environment for workstation and VT1300 terminal users. The process is transparent to users.

The following steps explain how the software operates. Figure 1–2 shows steps 1 through 4, and 6.

Figure 1–2 Boot Server and Window Server Communications



1. When the workstation or VT1300 terminal boots, it broadcasts a down-line load request on the Ethernet.
2. The boot server responds by down-line loading the appropriate VAXELN Window Server system image onto the workstation or terminal.
3. The VAXELN Window Server system image initiates a DECnet task-to-task connection with the server command file (EWS$SERVER.COM) on the boot server.
4. The server command file responds to the connection request by sending data to the VAXELN Window Server system image. The data includes the current system time. The data can also include the following information, which you can specify in a window server data file:
   - A list of users who should be able to log in to the window server
   - Font paths for fonts that are not provided by the VAXELN Window Server software
   - Internet address, network mask, broadcast mask, and routing addresses (if the window server will be using TCP/IP)

   For information about window server data files, see Section 4.8.

5. The VAXELN Window Server system image uses the data supplied in the data file to set up the system time, access list, font paths, and Internet information for the workstation or terminal, as appropriate. At this point, the workstation or terminal is a window server.
6. The node list is built and displays on the window server. At this point, input is required from the user. However, if no list is available, it connects back to the boot server and issues a command to start the login session.
7. The server command file on the boot server then does the following:
   - Directs the display for VMS DECwindows client software to the window server. If a display does not exist for the window server, the command file creates one.
   - Displays the VMS DECwindows login window on the window server screen.
8. The user can log in to the window server, use the DECwindows applications that are available on the boot server, and use DECwindows and X applications that are running on remote nodes that are set up to display on the window server. Applications running on remote nodes can use the DECnet and TCP/IP communications protocols.
9. When the user logs out of the window server (clicks on QUIT in the Session Manager's Session pull-down menu), the window server system image goes to step 6.

2
Preparing for the Installation

This chapter explains how to prepare for a VAXELN Window Server software installation. Before you install the VAXELN Window Server software, you should do the following:

- Take an inventory of the software distribution kit, Section 2.1.
- Check for prerequisite hardware, Section 2.2.
- Log in to a privileged account, Section 2.3.
- Check account limits and quotas, Section 2.4.
- Check for prerequisite software, Section 2.5.
- Address VAXcluster considerations, Section 2.7.
- Check quotas and limits, Section 2.8.
- Back up the system disk, Section 2.9.
- Read the online release notes, Section 2.10.

The total time required to install the EWS is approximately 15 to 45 minutes.

2.1 Taking Inventory of the Software Distribution Kit

Each VAXELN Window Server distribution kit contains the following:

- A bill of materials (BOM) and indented bills report (BIL).
- The distribution medium for the VAXELN Window Server software.
- The following documentation:
  - Cover letter
  - This installation guide
  - *VAXELN Window Server User's Manual*†

† The information contained in the *VAXELN Window Server User's Manual* is also provided in the *VT1300 Owner's Manual* for VT1300 terminal users.

To ensure that you have a complete kit, check the kit contents against the BOM and BIL.

Check also that you received the correct distribution medium, labeled as VAXELN/EWS VMS V1.1.

If your kit is damaged or if parts are missing, contact your Digital representative.

2.2 Checking for Prerequisite Hardware

You can install the VAXELN Window Server software on any hardware configuration supported by VMS Version 5.3 or higher.

Table 2–1 lists supported window server systems and their minimum memory requirements.

Table 2–1 Supported Window Server Hardware

Target System	Minimum Memory Requirement
VAXstation 2000	6 Mbytes
VAXstation II/GPX	6 Mbytes
VAXstation 3100	8 Mbytes
VAXstation 3100/SPX	8 Mbytes
VAXstation 3200	6 Mbytes
VAXstation 3500	6 Mbytes
VT1300[1]	Not applicable

[1]The VT1300 is configured with 8 Mbytes of memory.

2.3 Logging In to a Privileged Account

To install the VAXELN Window Server software, you must be logged in to the system manager's SYSTEM account, an account that has the SETPRV privilege, or an account with at least the following privileges:

- CMKRNL
- WORLD

- SYSPRV
- OPER

Note

The VMSINSTAL procedure turns off the BYPASS privilege at the start of the installation.

2.4 Checking Installer Account Limits and Quotas

The account that you log in to to perform the installation must have a number of limits and quotas set to appropriate values. Table 2–2 lists the minimum requirements.

Table 2–2 Installer Account Limits and Quotas

Limit or Quota	Symbol	Minimum Value
AST queue limit	ASTLM	24
Buffered I/O byte limit	BYTLM	18000
Buffered I/O count limit	BIOLM	18
Direct I/O count limit	DIOLM	18
Enqueue quota limit	ENQLM	30
Open file limit	FILLM	100

You can check the account limits by running the VMS Authorize Utility. To run this utility, issue the following commands:

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

The system responds with the UAF> prompt. To check the values for the limits and quotas, enter the following command:

```
UAF>  SHOW user
```

Replace *user* with the user name for the account from which the installation is being done.

If you need to modify any limits or quotas, use the MODIFY command as follows:

```
UAF>  MODIFY user/limit-or-quota=new_value
```

For example, to set the open file limit for the SYSTEM account to 100, use the following command:

```
UAF>  MODIFY SYSTEM/FILLM=100
```

To exit the Authorize Utility, use the EXIT command. If you make any changes, you must log out and log in again for the changes to take effect.

For more information on the limits and quotas, see the *VMS SYSMAN Utility Manual* or the *Guide to Setting Up a VMS System*. For more information on using the Authorize Utility, see the *VMS Authorize Utility Manual*.

2.5 Checking for Prerequisite Software

To install the VAXELN Window Server software, you must have the following prerequisite software:

- A valid VMS operating system configuration running VMS Version 5.3 or higher
- VMS DECwindows installed
- DECnet–VAX installed and active

If you have not previously executed the DECwindows startup command procedure, you can do so by executing the following command line:

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

Additionally, any system which will provide supplemental fonts to EWS systems and terminals must have either FAL access enabled or proxy access to the font files from the EWS system. See Section 4.8.7 for more information.

2.6 Determining Which Savesets to Load

A VAX VMS system can function as a login host or as a boot server. A login host is a system that allows VAXELN Window Server systems to log in, but does not provide any boot services. A boot server is a system that provides down-line services to a VAXELN Window Server.

When installing the VAXELN Window Server software, you select which type of workstations your system will be able to boot. If you do not select any workstations to boot, your system will function as a login host only.

2.7 Addressing VAXcluster Considerations

You can install the VAXELN Window Server software on a VAXcluster configuration. The number of cluster members on which you must install the software depends on whether the members share a common system disk.

- If the cluster members share a common system disk, you can install the VAXELN Window Server software on one member of the cluster. After the installation is complete, each member of the VAXcluster can share the same VAXELN Window Server software.
- If cluster members use different system disks, you must install the VAXELN Window Server software on each member that has a system disk.

Additionally, all VAXcluster members that have the VAXELN Window Server software installed and share a common User Authorization File (UAF), must be running the same version of the software.

If you are installing the VAXELN Window Server software on a VAXcluster, see Section 4.2 for postinstallation VAXcluster considerations.

2.8 Checking System Quotas

You use the VMSINSTAL command procedure to install the VAXELN Window Server software. For VMSINSTAL to run properly, sufficient disk storage space must be available and system parameters must be set properly. Sections 2.8.1 and 2.8.2 identify these requirements.

2.8.1 Disk Space Requirements

The VAXELN Window Server software is divided into component savesets: a general purpose saveset (Saveset A) and a saveset for each grouping of VAXELN Window Server system images. The installation procedure installs Saveset A on the system disk. During the installation procedure, you specify the target disk on which the system image savesets are to be installed. The target disk can be the system disk or another disk that is available on the system.

To install the VAXELN Window Server software, your system and target disks must have enough free blocks. The amount of free disk space required to install the software depends on the following:

- Whether the target disk is the system disk
- The type of component savesets that you need to install

If the target disk is the system disk, the system disk must have at least 48,870 free blocks for you to install all of the VAXELN Window Server components.

If the target disk is a disk other than the system disk, the following disk space requirements are necessary to install all of the VAXELN Window Server components:

Disk	During Installation	After Installation
System disk	48,870	500
Target disk	48,870	48,870

Table 2–3 lists the VAXELN Window Server savesets with brief descriptions of their contents and the blocks required. If you are not installing all of the savesets, use the saveset sizes listed in the table to calculate the disk space requirements for your installation.

Table 2–3 VAXELN Window Server Savesets

Saveset	Contents	Blocks
A	The release notes and general information used by the installation procedure	770
B	Support for monochrome VAXstation 2000 and 3100 workstations	12600
C	Support for color VAXstation 2000 and 3100 workstations	11900
D	Support for VAXstation II/GPX, 3200, and 3500 workstations	11700
E	Support for VAXstation 3100/SPX workstations and VT1300 terminals	11900

Use the DCL command SHOW DEVICE to determine whether enough free blocks are available on the system disk. For example:

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

The VMSINSTAL procedure lets you identify the disk that is to store the EWS system images. If you choose to store them on a disk other than the system disk, you should also check whether enough free blocks are available on that disk.

2.8.2 System Parameter Requirements

To install the VAXELN Window Server software, the values for the global pages (GBLPAGES) and global sections (GBLSECTIONS) system parameters must be set appropriately. Table 2–4 lists the minimum requirements for these parameters.

Table 2–4 Preinstallation System Parameter Requirements

System Parameter	Minimum Value
GBLPAGES	4
GBLSECTIONS	1

To check the values of the parameters, enter the following command:

```
$ RUN SYS$SYSTEM:SYSGEN
SYSGEN>
```

At the SYSGEN> prompt, use the SHOW command to display the parameter values.

After you check the parameter values, use the EXIT command to return to DCL.

For information about calculating and setting the number of free global pages and global sections, see the *VMS SYSMAN Utility Manual* or the *Guide to Setting Up a VMS System*.

2.9 Backing Up the System Disk

Make a backup copy of the system disk before you install the VAXELN Window Server software. For information about backing up a system disk, see the *VMS Backup Utility Manual*.

2.10 Reading the Release Notes

The VAXELN Window Server product provides online release notes. You can display or print the online release notes before or after the installation. You should review the release notes before proceeding with the installation in case they contain information that pertains to the installation. To display or print them before you start the installation, use the OPTIONS N parameter when you invoke the VMSINSTAL procedure.

2.11 Checking for a Previously Installed Version of the Software

If a previous version of VAXELN Window Server is installed on your system, the installation procedure uses the current value of the EWS$LIBRARY logical as the default location for the new files. The installation procedure will also use the current EWS$SERVER account and DECnet object if possible.

The VAXELN Window Server system images for previous versions may not function correctly with the EWS$SERVER.COM that this installation places on the system. All VAXELN Window Server workstations and terminals should be shut down during the installation and rebooted after the post-installation procedures are completed. Any VAXELN Window Server workstations or terminals that have not logged out before the installation has started will continue to operate properly. However, once these systems have logged out they must be rebooted to ensure that the new system images are loaded.

Note

In the case of VT1300 terminals, the DECnet database must be updated with EWS$ADD_NODE.COM before they are rebooted.

3

Running the VMSINSTAL Command Procedure

This chapter explains how to run the VMSINSTAL command procedure for the VAXELN Window Server software. You should allow approximately 15 to 45 minutes to complete the VMSINSTAL procedure, depending on the software distribution medium you received in your kit. Before you start the procedure, make sure that you have completed the preparation discussed in Chapter 2.

To install the VAXELN Window Server software on VMS systems, you must:

- Meet VMSINSTAL requirements, Section 3.1.
- Run the VMSINSTAL command procedure, Section 3.2.

After you run the VMSINSTAL procedure, you must set up the VAXELN Window Server software for use on your systems, as explained in Chapter 4.

Appendix A shows a typical installation procedure for your reference. Appendix B contains a list of the files a VAXELN Window Server installation installs or modifies.

3.1 VMSINSTAL Requirements

When you invoke the VMSINSTAL command procedure, it checks the following:

- Whether you are logged into a privileged account
- Whether you have adequate quotas for the installation
- Whether DECnet software is up and running
- Whether users are logged into the system

If the VMSINSTAL procedure detects a problem during the installation procedure, it notifies you and asks if you want to continue. To stop the procedure and correct the problem, enter NO or press the Return key. After you have made the correction, you can restart the procedure.

To abort the installation procedure at any time, press Ctrl/Y. The installation procedure deletes all files it has created up to that point and exits. You can then restart the procedure.

For details about the VMSINSTAL installation procedure, see the *VMS System Manager's Manual*.

3.2 VMSINSTAL Procedure

You must use the VMSINSTAL command procedure to install the VAXELN Window Server software. The following steps walk you through the installation procedure:

1. Log into a privileged account such as the VMS system manager's SYSTEM account. See Section 2.3 for information about logging into a privileged account.
2. Make sure the DECwindows and DECnet software is installed and running. If you have not previously executed the DECwindows startup command procedure (@SYS$STARTUP:DECW$STARTUP.COM), do so at this time. See Section 2.5 for more information about checking software prerequisites.
3. Load the distribution volume (for example, the magnetic tape), but do not mount it.
4. Invoke the VMSINSTAL procedure by entering the following command:

   $ @SYS$UPDATE:VMSINSTAL [*product-name*] [*source*:] [OPTIONS *option*, . . .]

   The parameters *product-name*, *source*, and *options* are optional. The following table indicates what you should specify if you use them:

Parameter	What You Should Specify
product-name	The name EWS011.
source	The device on which the VAXELN Window Server distribution volume will be mounted.
option, . . .	The VMSINSTAL options that you want to use. See the *VMS System Manager's Manual* for information about the options.

   The following command invokes the VMSINSTAL procedure to install the VAXELN Window Server software from the magnetic tape in drive MUA0 to the system disk:

```
$ @SYS$UPDATE:VMSINSTAL EWS011 MUA0:
```

If you omit the parameters, the VMSINSTAL procedure prompts you for the appropriate information.

5. A message similar to the following appears on your screen:

```
 VAX/VMS Software Product Installation Procedure V5.3

It is 17-SEP-1991 at 16:28.

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

%VMSINSTAL-W-ACTIVE, The following processes are still active:
 A
 B
 C
 D
 E
 F
* Do you want to continue anyway [NO]?
```

   Enter YES to continue the installation.

6. You are asked whether you need to back up your system disk:

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

   Generally, you should back up your system disk before any major software installation, as you were instructed in Section 2.9. YES is the default answer. If you have backed up the system disk recently, press the Return key to continue.

7. If you did not specify a source when you invoked the VMSINSTAL procedure, the procedure asks where the distribution volumes will be mounted:

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

   Enter the appropriate device specification. For example, if you will be mounting the VAXELN Window Server distribution volume on unit 0 of your system's magnetic tape drive, you might specify MUA0:.

8. If you did not specify the product name when you invoked the VMSINSTAL procedure, the procedure asks you to enter the products to be installed:

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

   Enter the product name EWS011.

9. If you did not specify the *product-name* and *source* parameters when you invoked the VMSINSTAL procedure, the procedure asks you to enter the installation options that you want to use:

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

   Several VMSINSTAL options are available. One such option is OPTIONS N. This option is for displaying or printing the release notes.

   If you want to use options, specify them as follows:

   OPTIONS *option*, . . .

   For example, to select the automatic answer and release notes options, you specify the following:

   ```
   OPTIONS A,N
   ```

   See the *VMS System Manager's Manual* for more information on the VMSINSTAL options.

10. The installation procedure asks you to mount the distribution volume and then asks if you are ready:

    ```
    Please mount the first volume of the set on MUA0:
    * Are you ready?
    ```

    Mount the distribution volume and press the Return key when you are ready to continue. The procedure displays the following message, confirming that the distribution volume was mounted:

    ```
    %MOUNT-I-MOUNTED, EWS011 mounted on MUA0:
    ```

11. The following messages appear on your screen:

    ```
    The following products will be processed:

        EWS V1.1

     Beginning installation of EWS V1.1 at 16:28

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

    The release notes are copied to a file in the SYS$HELP directory, and you receive the following message:

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

    The release notes reside in SYS$HELP:EWS011.RELEASE_NOTES. Note that the name of the release notes file includes the product name and version number.

12. You are asked whether you want to purge (delete) old versions of files replaced by this installation:

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

    Purging is recommended. Press the Return key to purge old versions of the files. To save old files, or if you are installing the VAXELN Window Server software for the first time, enter NO.

13. The procedure asks whether you want to run the VAXELN Window Server Installation Verification Procedure (IVP) after the installation:

```
* Do you want to run the IVP after the installation [YES]?
```

    If you want to run the IVP as part of the installation procedure, enter YES. If you prefer, you can invoke the IVP after the installation procedure completes (see Section 4.10).

14. The following text is then displayed:

```
You may include support for any combination of the following:

  o  Monochrome VAXstation 2000 and 3100 workstations
  o  Color VAXstation 2000 and 3100 workstations
  o  VAXstation II/GPX, 3200, and 3500 workstations
  o  VT1300's and VAXstation 3100/SPX workstations
```

    You will now be asked if you want to include support for each of these systems. Answer as appropriate for your hardware configuration.

```
* Include support for monochrome VAXstation 2000 and 3100 workstations [YES]?
* Include support for color VAXstation 2000 and 3100 workstations [YES]?
* Include support for VAXstation II/GPX, 3200, and 3500 workstations [YES]?
* Include support for VT1300's and VAXstation 3100/SPX workstations [YES]?
```

15. The installation procedure creates the directory [EWS$LIBRARY] for storing the VAXELN Window Server system images. You must specify the device on which that directory is to be created.

```
The EWS files are stored in a directory named [EWS$LIBRARY].
You must designate the device on which this directory is to
be created.
```

    The procedure displays a message that indicates the number of free blocks you need to install support for your selections. Based on the selections made in this example, the procedure will display the following:

```
This device must have at least 48260 free blocks.
```

16. You are asked to specify the device on which the [EWS$LIBRARY] directory is to be located:

```
* Device to be used for storing EWS files [SYS$SYSDEVICE]:
```

The device defaults to SYS$SYSDEVICE if EWS was not previously installed. If EWS is currently on the system, the displayed device is that on which the EWS$LIBRARY directory is located.

Enter the specification for a valid device that has the free blocks required for your configuration.

17. The procedure displays the support that you have selected and a message that indicates where the system images will be stored. If you select all of the system images, the procedure will display the following output:

```
You have selected to include support for the following:

   o  Base EWS host software
   o  Monochrome VAXstation 2000 and 3100 workstations
   o  Color VAXstation 2000 and 3100 workstations
   o  VAXstation II/GPX, 3200, and 3500 workstations
   o  VT1300's and VAXstation 3100/SPX workstations

The device that will contain the [EWS$LIBRARY] directory is device-name.
```

The *device-name* is the name you specified in step 16.

You are asked to confirm your selections:

```
* Is this correct [YES]?
```

If the information is correct, press the Return key. If you want to modify your selections, enter NO. The installation procedure will return to step 14.

18. When you continue, the procedure displays information about the account it creates for the boot server:

```
To ensure that EWS runs with the proper quotas, this installation
procedure creates an account for the server named EWS$SERVER.
This account has no special privileges, and is set up for network
operations only.

By default, the installation procedure selects a unique default UIC
for the EWS$SERVER account. If you want to use a different UIC for
that account, specify a unique UIC.

If you should change the password for the EWS$SERVER account,
you must also change the password with one of the following commands:

  NCP SET OBJECT EWS$SERVER PASSWORD new_password

  NCP DEFINE OBJECT EWS$SERVER PASSWORD new_password
```

You are asked to enter a user identification code (UIC) for the EWS$SERVER account.

```
* Enter UIC for EWS$SERVER account (include brackets) [[375,201]]:
```

By default, the installation procedure selects a unique UIC. If the default is acceptable, press the Return key. If you want to use a different UIC, enter a unique UIC.

The installation procedure then displays the following messages while it creates the server account:

```
%EWS-I-CREACC, Creating account EWS$SERVER for the EWS server
%VMSINSTAL-I-ACCOUNT, This installation creates an ACCOUNT named
EWS$SERVER.
%UAF-I-ADDMSG, user record successfully added
%UAF-I-RDBADDMSGU, identifier EWS$SERVER value: [000375,000201] added to
rights data base
%VMSINSTAL-I-ACCOUNT, This installation updates an ACCOUNT named EWS$SERVER.
%UAF-I-MDFYMSG, user record(s) updated
%VMSINSTAL-I-ACCOUNT, This installation updates an ACCOUNT named EWS$SERVER.
%UAF-I-MDFYMSG, user record(s) updated
%VMSINSTAL-I-SYSDIR, This product creates system disk directory
SYS$SYSDEVICE:[EWS$SERVER].
```

Note

If VAXELN Window Server is already installed, these messages will be different.

19. The installation procedure displays the following messages:

```
No further questions will be asked during this installation.

The network object EWS$SERVER has been defined.  If you wish
to view this, run SYS$SYSTEM:NCP and issue the following command:

NCP> LIST OBJECT EWS$SERVER CHAR
```

```
  This installation will add the following files:

     EWS$LIBRARY:EWS$GAA_075.SYS
     EWS$LIBRARY:EWS$GAA_100.SYS
     EWS$LIBRARY:EWS$GAB_075.SYS
     EWS$LIBRARY:EWS$GAB_100.SYS
     EWS$LIBRARY:EWS$GCB_075.SYS
     EWS$LIBRARY:EWS$GCB_100.SYS
     EWS$LIBRARY:EWS$GEB_075.SYS
     EWS$LIBRARY:EWS$GEB_100.SYS
     EWS$KEYMAPS:*.DECW$KEYMAP
     EWS$LIBRARY:EWS$SERVER.COM
     EWS$LIBRARY:EWS$XKEYMAP.EXE
     EWS$LIBRARY:DECW$MKFONTDIR.EXE
     SYS$SYSTEM:EWS$WSA.EXE
     SYS$UPDATE:EWS$ADD_NODE.COM
     SYS$STARTUP:EWS$STARTUP.COM
     SYS$HELP:EWS011.RELEASE_NOTES
     EWS$LIBRARY:EWS$IVP.COM

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

     To ensure proper operation of EWS, you must edit your system
     startup procedure to invoke SYS$STARTUP:EWS$STARTUP.COM.

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

The preceding messages indicate that you chose to install the system images for all supported target systems. If you choose to install a subset of the supplied system images, the installation procedure identifies only the files that are installed.

20. If you did not specify the product name when you invoked the VMSINSTAL command procedure, you are asked to enter additional products to be installed.

```
Enter the products to be processed from the next distribution volume set.
* Products:
```

Press Ctrl/Z to exit. The procedure will indicate that it is done.

21. If you elected to run the IVP as part of the installation procedure, the following messages will display:

```
          Beginning verification of VAXELN Window Server...

          Beginning the EWS V1.1 Installation Verification Procedure

The EWS V1.1 Installation Verification Procedure completed successfully

          Installation of EWS V1.1 completed at 14:31
```

```
VMSINSTAL procedure done at 14:31
```

The VMSINSTAL procedure is complete. You must now complete the procedures explained in Chapter 4. These procedures set up the EWS software for use on your systems.

4

Setting Up the VAXELN Window Server Software

This chapter explains how to set up the VAXELN Window Server software for use on your systems. Following installation with VMSINSTAL, you must do the following to set up the software for successful operation:

- Modify the system startup file, Section 4.1.
- Note considerations for VAXcluster configurations (if appropriate), Section 4.2.
- Get window server hardware information from window server users, Section 4.3.
- Enable the DECnet service circuit, Section 4.4.
- Update the DECnet remote node database, Section 4.5.
- Set up system parameters, Section 4.6.
- Set up limits and quotas for user accounts, Section 4.7.
- Modify the window server data file, Section 4.8.

If the installation procedure did not run the Installation Verification Procedure (IVP), you can run it after the installation. Section 4.10 explains how to invoke the IVP.

4.1 Modifying the System Startup File

After running VMSINSTAL, you must add the EWS$STARTUP.COM file to the system startup file. To do this, use one of the following procedures:

- The SYSMAN Utility STARTUP command to add the file to the list of files to be executed at system startup:

```
$ MCR SYSMAN STARTUP ADD FILE EWS$STARTUP.COM
```

If the system is part of a VAXcluster and not all cluster members will be boot servers, use the /NODE qualifier to limit which nodes execute the startup file. For example, if nodes MEMBER1 and MEMBER4 will be boot servers, you can execute the following command:

```
$  MCR SYSMAN ADD FILE EWS$STARTUP.COM/NODE=(MEMBER1,MEMBER4)
```

- A text editor, such as the VAX Language-Sensitive Editor (LSE), to add the following line to the file SYS$MANAGER:SYSTARTUP_V5.COM:

  ```
  $ @SYS$STARTUP:EWS$STARTUP
  ```

When EWS$STARTUP.COM is run, it installs the following images with the associated privileges:

- SYS$SYSTEM:DECW$STARTLOGIN/PRIV=(CMKRNL)

  This initiates the login sequence which displays the login box.

- SYS$SYSTEM:EWS$WSA/PRIV=(CMKRNL,SYSNAM)

  This creates the WSA display device for DECwindows access.

4.2 Noting Considerations for VAXcluster Configurations

If you installed the VAXELN Window Server software on a node that is part of a VAXcluster configuration, you should note the considerations discussed in this section.

If you installed the software on a VAXcluster node and other nodes on the cluster will be boot servers, you must do the following on each boot server node:

- Execute the EWS$STARTUP.COM command file (see Section 4.1).
- Define the network object EWS$SERVER by using the following command:

  ```
  $  MCR NCP SET OBJECT EWS$SERVER ALL
  ```

- Ensure that window server node characteristics are defined correctly (see Section 4.5).

If you installed the VAXELN Window Server software on a VAXcluster configuration that will have multiple boot servers, you should note the following:

- If the boot servers do not share a common system disk, but all can access the target disk where the system images will be installed, you should include support for workstation and terminal types only when installing the VAXELN Window Server software on the first boot server. When you

install the VAXELN Window Server software on the other boot servers, you should do the following:

1. Enter NO when the installation procedure asks if you want to include support for the workstation and terminal types. The system images are already on the target disk.
2. When asked to enter the device on which the [EWS$LIBRARY] directory is to be located, specify the same device that you specified when you installed the VAXELN Window Server software on the first boot server. This is the target device where the VAXELN Window Server system image files reside.

- The system authorization file (SYS$SYSTEM:SYSUAF.DAT) and the network object database (SYS$SYSTEM:NETOBJECT.DAT) should both be shared by the boot servers or should both be unique. If one file is shared and the other is unique for each boot server, the installation will appear to be complete on both nodes, but only one system will be able to boot the window servers.
- If the boot servers share the DECnet remote node database (SYS$SYSTEM:NETNODE_REMOTE.DAT), both systems respond to window server down-line load requests. The first boot server to respond down-line loads the system image to the window server. The second system reports an error on the console.

4.3 Getting Window Server Hardware Information from Window Server Users

To set up window servers on your system, you must get information about the workstations and terminals that will be running VAXELN Window Server software from the individuals who will be using them. Use this information to add the servers to the VMS system's DECnet remote node database.

You should get the following information:

- The type of workstation or terminal the user has.

  The VAXELN Window Server software supports the following systems:

  VAXstation II/GPX workstations
  VAXstation 2000 workstations (monochrome or color)
  VAXstation 3100 workstations (monochrome or color)
  VAXstation 3100/SPX workstations and VT1300 terminals
  VAXstation 3200 workstations
  VAXstation 3500 workstations

- The node name, DECnet address, and if appropriate, the following Internet information:
  - Internet address
  - Network mask
  - Broadcast mask
  - Routing addresses

  The user gets this information from the network administrator.
- The Ethernet hardware address.

  The user should see the appropriate hardware documentation for information about determining the system's Ethernet hardware address.
- The monitor density.

  The monitor density can be 75 or 100 dots per inch (DPI).
- The host system users who will be allowed to log in to the window server.

  If you do not identify valid users for a window server, any user who has an account on the boot server can do the following:
  - Log in to the window server.
  - Display DECwindows applications on the window server.
- The font paths for fonts that the user needs that are not provided by the VAXELN Window Server software.

4.4 Enabling the DECnet Service Circuit

Before the boot server can down-line load a VAXELN Window Server system image to a workstation or terminal, you must enable the boot server's service circuit. You can determine if the service circuit is enabled by issuing the following command:

```
$  MCR NCP SHOW KNOWN CIRCUIT CHARACTERISTICS
```

If the boot server is the boot node for a mixed interconnect VAXcluster (MIVC) or local area VAXcluster (LAVC), the service circuit is already enabled.

If the service circuit is not enabled, you should create a command file that contains the following commands and submit it to the batch queue:

```
$ MCR NCP DEFINE CIRCUIT ddd-u SERVICE ENABLE
$ MCR NCP SET CIRCUIT ddd-u STATE OFF
$ MCR NCP SET CIRCUIT ddd-u ALL
```

Replace *ddd* and *u* with the circuit and unit, respectively. For example, you would specify BNA-0 for unit 0 on circuit BNA.

4.5 Updating the DECnet Remote Node Database

After running the VMSINSTAL procedure to install the VAXELN Window Server software, you must add window server node characteristics to each boot server's DECnet remote node database. If you installed the VAXELN Window Server software on a node that is part of a VAXcluster, be sure *not* to add window server node characteristics to the DECnet remote node databases of cluster members that are *not* boot servers. If you do, a cluster member that is not a boot server might down-line load a VAXELN Window Server system image to a window server and the server will not be functional.

For example, consider the following scenario:

1. You install the VAXELN Window Server software on the node that is part of a two-node VAXcluster configuration.
2. You set up a cluster member to function as a boot server (on that node you execute the EWS$STARTUP.COM command file and define the network object EWS$SERVER).
3. You enable the service circuit on both cluster members.
4. You add window server node characteristics to the DECnet remote node databases of both cluster members.

Since the service circuit is enabled on both cluster members and the window server nodes are defined in the database for each cluster member, either node can down-line load a VAXELN Window Server system image to a window server. If the node that is not a boot server down-line loads a system image, the window server will not be functional because the network object EWS$SERVER is not defined.

You define the server as a network object by executing the command file EWS$ADD_NODE.COM. You must execute this command file once for each workstation and terminal that is to run VAXELN Window Server software.

You can specify the following parameters when you execute the command file:

- DECnet node name
- DECnet address
- Ethernet hardware address
- DECnet service circuit

This parameter is optional. You should not specify a service circuit if the boot server is part of a VAXcluster configuration, the network node database is shared, and not all members of the cluster have the same type of network interface.

- VAXELN Window Server system image type (GAA, GAB, GCB, or GEB)
- Monitor density (75 or 100 DPI)

Note

If you make a mistake while entering the node characteristics, you can rerun the command file and enter the correct information.

If you do not specify the parameters when you execute the command file, it prompts you for the information as follows:

```
$  @SYS$UPDATE:EWS$ADD_NODE
Node name:  WORKS2
DECnet address:  1.2
Ethernet hardware address:  00-00-00-00-00-01
Service circuit:  BNA-1

GAA = VSII/GPX, VS3200, and VS3500
GAB = VS2000 and VS3100 with video option boards
GCB = VS2000 and VS3100 monochrome
GEB = VS3100/SPX and VT1300

System type (GAA, GAB, GCB, GEB) [GAB]:  GAB
Monitor density (75, 100) [75]:  75
```

The following command shows how you might update the database for a workstation with the node name WORKS1:

```
$  @SYS$UPDATE:EWS$ADD_NODE WORKS1 1.1 00-00-00-00-00-00 BNA-1 GAA 75
```

After you supply the required information, the command file modifies the DECnet remote node database. You can verify the changes by issuing the following command:

```
$  MCR NCP SHOW NODE WORKS1 CHARACTERISTICS

Node Volatile Characteristics as of 18-SEP-1991 13:11:28

Remote node =   1.1 (WORKS1)

Service circuit          = BNA-1
Hardware address         = 00-00-00-00-00-00
Load file                = EWS$LIBRARY:EWS$GAB_075.SYS
```

If you installed the VAXELN Window Server software on a node that is part of a VAXcluster configuration and other nodes on the cluster will be boot servers, you must execute the following command on each boot server for each workstation or terminal that is to run VAXELN Window Server software:

```
$ MCR NCP SET NODE node-name ALL
```

Replace *node-name* with the name of a workstation or terminal that is to run a VAXELN Window Server system image.

4.6 Setting Up System Parameter Requirements

After installing the VAXELN Window Server software, you must set some system parameters to appropriate values. Table 4–1 lists the parameters that must be set, and the minimum values required.

Table 4–1 Postinstallation System Parameter Requirements

Limit or Quota	Symbol	Minimum Value
AST queue limit	PQL_MASTLM	100
Buffered I/O byte limit	PQL_MBYTLM	32768
Buffered I/O count limit	PQL_MBIOLM	40
Direct I/O count limit	PQL_MDIOLM	40
Open file limit	PQL_MFILLM	100
Subprocess creation limit	PQL_MPRCLM	8

To check the values of the system parameters, enter the following command:

```
$ RUN SYS$SYSTEM:SYSGEN
SYSGEN>
```

At the SYSGEN> prompt, use the SHOW command to display the parameter values.

After you check the system parameter values, use the EXIT command to return to DCL.

For information about setting system parameters, see the *VMS SYSMAN Utility Manual* or the *Guide to Setting Up a VMS System.*

4.7 Setting Up User Account Limits and Quotas

Window server user accounts should have sufficient limits and quotas. Table 4–2 lists the minimum requirements for limits and quotas.

Table 4–2 User Account Limits and Quotas

Limit or Quota	Symbol	Minimum Value
AST queue limit	ASTLM	100
Buffered I/O count limit	BIOLM	40
Buffered I/O byte limit	BYTLM	32768
Direct I/O count limit	DIOLM	40
Open file limit	FILLM	100
Paging file quota	PGFLQUOTA	25600
Subprocess creation limit	PRCLM	8
Working set size default	WSDEFAULT	1024
Working set extent	WSEXTENT	20480
Working set quota	WSQUOTA	10240

User account quotas are stored in the file SYSUAF.DAT. Use the Authorize Utility to verify and change user account quotas. To run this utility, issue the following commands:

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

The system responds with the UAF> prompt. To check the values for the limits and quotas, enter the following command:

```
UAF>  SHOW user
```

Replace *user* with the user name for the account from which the installation is being done.

If you need to modify any limits or quotas, use the MODIFY command as follows:

```
UAF>  MODIFY user/limit-or-quota=new_value
```

For example, to set the open file limit for the SYSTEM account to 100, use the following command:

```
UAF>  MODIFY SYSTEM/FILLM=100
```

To exit the Authorize Utility, use the EXIT command. If you make any changes, you must log out and log in again for the changes to take effect.

For more information on account limits and quotas, see the *VMS SYSMAN Utility Manual* or the *Guide to Setting Up a VMS System*. For information on using the Authorize Utility, see the *VMS Authorize Utility Manual*.

4.8 Modifying the Window Server Data File

The VAXELN Window Server command file EWS$SERVER.COM responds to a window server's connection request by sending data to the window server. This data can include security, font path, and Internet information that you provide in a data file.

The data file for a particular window server can identify the following:

- Users who will be allowed to log in to the window server
- Font paths for fonts that are not provided by the VAXELN Window Server software
- The Internet address, network mask, broadcast mask, and routing addresses (for applications that use TCP/IP)

To set up a data file for a particular window server, create an ASCII text file in the directory [EWS$LIBRARY] that has a name of the form:

server-node.DAT

The variable *server-node* represents the window server's node name.

Because the command file EWS$SERVER.COM reads the data file, the protection for that file must be set to WORLD READ (W:R).

Example 4–1 is a sample data file named ORANGE.DAT for a window server node named ORANGE.

Example 4–2 is a sample data file named WHITE.DAT for a window server node named WHITE.

The $NOMENU keyword in Example 4–2 causes all $LOGIN_HOST lines to be ignored, and results in a DECwindows login box from the boot node to display at boot time.

Example 4–1 ORANGE.DAT Data File for Window Server ORANGE

```
*
$KEYBOARD           US_LK401AA
$INET_ADDRESS       127.1.2.5
$INET_NETWORK_MASK  255.255.255.0
$INET_ROUTER        127.1.2.3
$LOGIN_HOST         PINK,127.1.2.6,TCPIP
$MB1_RESET          Do you really want to reset the server?,Yes,No
$PAUSE              Pause password?,Verify,Resume password?,OK,Clear,Cancel
$FONT               13.1::[EWSFONTS]
$FONT               tftp@127.1.2.3:/fonts
$GRAYSCALE
```

Example 4–2 WHITE.DAT Sample Data File for Window Server WHITE

```
*
$INET_ADDRESS       127.1.2.7
$INET_NETWORK_MASK  255.255.255.0
$INET_ROUTER        127.1.2.3
$NOMENU
```

Note

If you do not create a data file, any valid user on the boot server can log in to the window server.

Sections 4.8.1, 4.8.2, 4.8.3, 4.8.4, 4.8.7, and 4.8.8 explain how to add host, security, monitor, keyboard, font path, and Internet information to a window server's data file.

4.8.1 Selecting a Host from the Node List

You specify a node that may be a login host for a window server as follows:

```
$LOGIN_HOST node_name, node_address, [DECNET or TCPIP]
```

You must specify $LOGIN_HOST in the first character position of a line in the file. Only the first 99 $LOGIN_HOST entries of the file are used. The node names contained in the first 99 $LOGIN_HOST entries display on the window server in the node names list box. The names appear in as many as three columns, up to the capacity of the screen.

In Example 4–1, the $LOGIN_HOST keyword was defined as follows:

```
$LOGIN_HOST         PINK,127.1.2.6,TCPIP
```

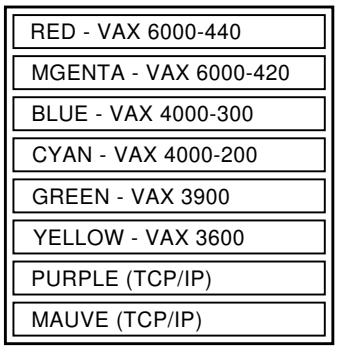
In this case, the ORANGE window server is authorized to use PINK as its login host, as well as all other nodes defined in the EWS$GENERIC.DAT file.

The nodes defined in the EWS$GENERIC.DAT file are displayed in the node list box at boot time. Example 4–3 is a sample EWS$GENERIC.DAT file that results in the display of the node list box in Figure 4–1.

Example 4–3 Sample EWS$GENERIC.DAT File

```
$LOGIN_HOST  RED - VAX 6000-440
$LOGIN_HOST  MGENTA - VAX 6000-420
$LOGIN_HOST  BLUE - VAX 4000-300
$LOGIN_HOST  CYAN - VAX 4000-200
$LOGIN_HOST  GREEN - VAX 3900
$LOGIN_HOST  YELLOW - VAX 3600
$LOGIN_HOST  PURPLE (TCP/IP)
$LOGIN_HOST  MAUVE (TCP/IP)
```

Figure 4–1 Node List Box



MLO-007225

Note

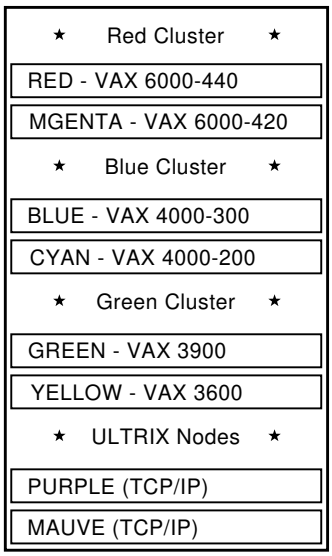
Spaces and tabs are not allowed in the node name definition.

You can insert a non-selectable borderless window into the node list box. This window may contain text or white space depending on what follows the $LOGIN_HOST keyword in the EWS$GENERIC.DAT data file. Example 4–4 defines the appearance of the node list box shown in Figure 4–2.

Example 4–4 Sample EWS$GENERIC.DAT File with Notations

```
$LOGIN_HOST  RED - VAX 6000-440
$LOGIN_HOST  MGENTA - VAX 6000-420
$LOGIN_HOST  *    Blue Cluster   *
$LOGIN_HOST  BLUE - VAX 4000-300
$LOGIN_HOST  CYAN - VAX 4000-200
$LOGIN_HOST  *   Green Cluster   *
$LOGIN_HOST  GREEN - VAX 3900
$LOGIN_HOST  YELLOW - VAX 3600
$LOGIN_HOST  *    ULTRIX Nodes   *
$LOGIN_HOST  PURPLE (TCP/IP)
$LOGIN_HOST  MAUVE (TCP/IP)
```

Figure 4–2 Node List Box with Comments



MLO-007224

To generate a borderless white window without text, enter only the keyword,

```
$LOGIN_HOST
```

Use the $LOGIN_HOST keyword to add useful information to the node list box, such as cluster names or specific user instructions.

4.8.2 Security

You must ensure that the window server user accounts have at least the following account privileges:

TMPMBX
NETMBX

Identify each valid user for a particular window server with the appropriate VMS user name. The following example shows the contents of the data file WORKS1.DAT:

```
D_SMITH
WONG
LECLAIRE
```

This data file indicates that VMS users D_SMITH, WONG, and LECLAIRE are the only users who can log in and gain access to the window server WORKS1.

If you want to list only font paths or Internet information in a window server data file, you must include the asterisk (*) as the user specification.

Note

If you include the * user specification in the data file or do not create a data file, any valid user on the login host can log in to the window server.

The account SYSTEM can always log in to a window server.

4.8.3 Using a Monochrome Monitor

If you have a monochrome monitor on a multiplane system, you need to use $GRAYSCALE in the window server data file. This tells the server that you are using a monochrome monitor.

You specify a monochrome monitor in the window server data file as follows:

```
$GRAYSCALE
```

4.8.4 Setting Up the Keyboard

The VAXELN Window Server software recognizes only the LK201 and LK401 keyboards, and their country variants. If you have a keyboard other than the US LK201, then you identify the keymap used by a particular system in the window server data file with the $KEYBOARD keyword.

Specify your keymap file in the data file as follows:

```
$KEYBOARD keyboard_name
```

Table 4–3 contains a complete list of values for the $KEYBOARD keyword. To use the table, identify your keyboard model and its associated keymap file name. The keymap file name is what you place in the data file next to the $KEYBOARD keyword.

For example, the data file entry for an LK201 Belgian/French keyboard is:

```
$KEYBOARD BELGIAN_FRENCH_LK201LP_DP
```

Table 4–3 Keyboard Map Files

Dialect	Keyboard Model	Keymap Files
Austrian/German	LK201–(AG,LG,BG,MG)	AUSTRIAN_GERMAN_LK201LG_DP AUSTRIAN_GERMAN_LK201LG_TW
	LK201–(NG,PG)	AUSTRIAN_GERMAN_LK201NG_DP AUSTRIAN_GERMAN_LK201NG_TW
Belgian/French	LK201–(AP,LP,BP,MP)	BELGIAN_FRENCH_LK201LP_DP BELGIAN_FRENCH_LK201LP_TW
Belgian/French	LK401–(AP)	BELGIAN_FRENCH_LK401AP_DP BELGIAN_FRENCH_LK401AP_TW
British	LK201–(AE,LE,BE,ME)	BRITISH_LK201LE_DP BRITISH_LK201LE_TW
British	LK401–(AA,PA)	BRITISH_LK401AA_DP BRITISH_LK401AA_TW
Canadian/French	LK201–(AC,LC,BC,MC)	CANADIAN_FRENCH_LK201LC_DP CANADIAN_FRENCH_LK201LC_TW
Canadian/French	LK401–(AC,LC,BC,MC)	CANADIAN_FRENCH_LK401AC_DP CANADIAN_FRENCH_LK401AC_TW
Danish	LK201–(AD,LD,BD,MD)	DANISH_LK201LD_DP DANISH_LK201LD_TW
	LK201–(ED,RD,FD)	DANISH_LK201RD_DP DANISH_LK201RD_TW
Danish	LK401–(AD,LD,BD,MD)	DANISH_LK401AD_DP DANISH_LK401AD_TW
Dutch	LK201–(AH,LH,BH,MH)	DUTCH_LK201LH_DP DUTCH_LK201LH_TW
	LK201–(NH,PH)	DUTCH_LK201NH
Dutch	LK401–(NH,PH)	DUTCH_LK401LH_AH
Finnish	LK201–(AF,LF,BF,MF)	FINNISH_LK201LF_DP FINNISH_LK201LF_TW
	LK201–(NX,PX)	FINNISH_LK201NX_DP FINNISH_LK201NX_TW
Finnish	LK401–(AF,LF,BF,MF)	FINNISH_LK401AF_DP FINNISH_LK401AF_TW
Flemish	LK201–(AB,LB,BB,MB)	FLEMISH_LK201LB_DP FLEMISH_LK201LB_TW

(continued on next page)

Table 4–3 (Cont.) Keyboard Map Files

Dialect	Keyboard Model	Keymap Files
Flemish	LK401–(AB,LB,BB,MB)	FLEMISH_LK401AB_DP FLEMISH_LK401AB_TW
Icelandic	LK201–(AU,LU,BU,MU)	ICELANDIC_LK201LU_DP ICELANDIC_LK201LU_TW
Italian	LK201–(AI,LI,BI,MI)	ITALIAN_LK201LI_DP ITALIAN_LK201LI_TW
Italian	LK401–(AI,LI,BI,MI)	ITALIAN_LK401AI_DP ITALIAN_LK401AI_TW
North American	LK201–(AA,LA,BA,MA)	NORTH_AMERICAN_LK201LA
North American	LK401–(AA,LA,BA,MA)	NORTH_AMERICAN_LK401AA
Norwegian	LK201–(AN,LN,BN,MN)	NORWEGIAN_LK201LN_DP NORWEGIAN_LK201LN_TW
	LK201–(EN,RN,FN)	NORWEGIAN_LK201RN_DP NORWEGIAN_LK201RN_TW
Norwegian	LK401–(AN,LN,BN,MN)	NORWEGIAN_LK401AN_DP NORWEGIAN_LK401AN_TW
Portuguese	LK201–(AV,LV,BV,MV)	PORTUGUESE_LK201LV
Portuguese	LK401–(AV,LV,BV,MV)	PORTUGUESE_LK401AV
Spanish	LK201–(AS,LS,BS,MS)	SPANISH_LK201LS_DP SPANISH_LK201LS_TW
Spanish	LK401–(AS,LS,BS,MS)	SPANISH_LK401AS_DP SPANISH_LK401AS_TW
Swedish	LK201–(AM,LM,BM,MM)	SWEDISH_LK201LM_DP SWEDISH_LK201LM_TW
	LK201–(NM,PM)	SWEDISH_LK201NM_DP SWEDISH_LK201NM_TW
Swedish	LK401–(AM,LM,BM,MM)	SWEDISH_LK401AM_DP SWEDISH_LK401AM_TW
Swiss/French	LK201–(AK,LK,BK,MK)	SWISS_FRENCH_LK201LK_DP SWISS_FRENCH_LK201LK_TW
Swiss/French	LK401–(AK,LK,BK,MK)	SWISS_FRENCH_LK401AK_DP SWISS_FRENCH_LK401AK_TW
Swiss/German	LK201–(AL,LL,BL,ML)	SWISS_GERMAN_LK201LL_DP SWISS_GERMAN_LK201LL_TW

(continued on next page)

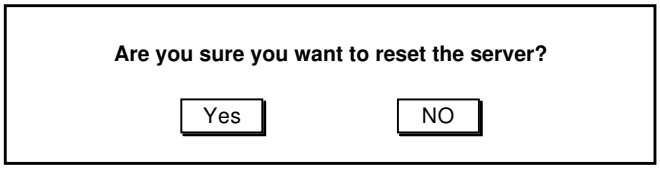
Table 4–3 (Cont.) Keyboard Map Files

Dialect	Keyboard Model	Keymap Files
Swiss/German	LK401–(AL,LL,BL,ML)	SWISS_GERMAN_LK401AL_DP SWISS_GERMAN_LK401AL_TW
US/UK	LK201–(EE,RE,PE)	UK_LK201RE US_LK201RE
US/UK	LK401–(EE,RE,PE)	UK_LK401AA US_LK401AA

4.8.5 Modifying the Server Reset Text

You can modify the text in the server reset dialog box using the $MB1_RESET keyword.

For example, if you want the dialog box to look like this,

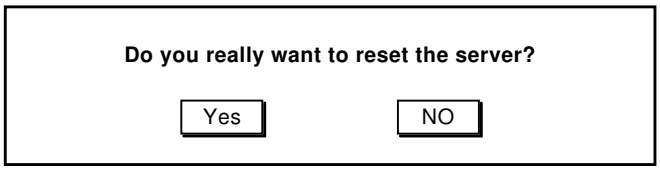


MLO-007229

add the following line to your data file:

```
$MB1_RESET Are you sure you want to reset the server?,Yes,NO
```

If you remove the $MB1_RESET keyword from the data file, you'll get the following default English text:



MLO-007223

If you enter the $MB1_RESET keyword in the data file without any strings,

```
$MB1_RESET
```

the window server will reset without asking for confirmation.

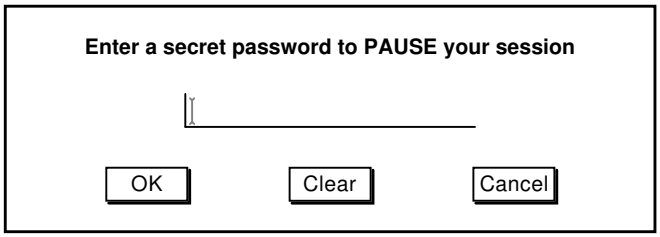
Note

If you fail to provide the appropriate number of strings for $MB1_RESET, the default English text will be substituted for the missing strings.

4.8.6 Modifying the Server Pause Text

You can modify the text in the server pause dialog box using the $PAUSE keyword.

For example, if you want the dialog box to look like this,

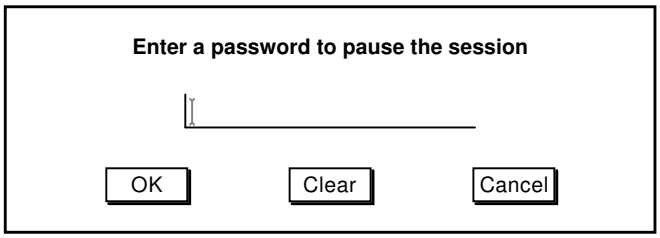


MLO-007230

add the following line to your data file:

```
$PAUSE Enter a secret password to PAUSE your session:,
Verify,Enter your password to resume the session,OK,Clear,Cancel
```

You must enter this on one line in your data file. If you remove the $PAUSE keyword from the data file, you'll get the following default English text:



MLO-007221

Note

If you fail to provide the appropriate number of strings for $PAUSE, the default English text will be substituted for the missing strings.

4.8.7 Adding Font Support

The VAXELN Window Server system images include all the fonts that the DECwindows desktop applications use. If users will be running other DECwindows or X applications that require fonts not included in the system images, you can place the special fonts in a directory and specify that directory as a supplemental font path in the window server's data file.

If the fonts are located on an ULTRIX system, you must use the Trivial File Transfer Protocol (TFTP) to gain access to the fonts. In this case, specify one or more font paths in the data file as follows:

```
$FONT tftp@node_address:directory_path
```

If the fonts are on a VMS system, specify one or more DECnet font paths as follows:

```
$FONT node_address::directory_path
```

You must specify the keyword $FONT in the first character position of a line in the file. The *node_address* and *directory_path* parameters identify the DECnet or Internet address of the VMS node on which the fonts reside and the directory path to the fonts. The path to the font directory must be below the root tftp directory.

After you have identified your font directory path and any other supplemental font paths in the data file, you need to ensure that your font files are in a binary format (.DECW$FONT) that the server can interpret. You must also ensure that the font files are located in the appropriate directory. If a font in a specified font path is in Bitmap Distribution Format (.BDF), you must first compile the font file using the VMS DECwindows font compiler. Then proceed as follows:

- Set your directory to your fonts directory.
- Copy all the .DECW$FONT files into your fonts directory.
- Run the DECW$MKFONTDIR utility as follows:

```
$  RUN EWS$LIBRARY:DECW$MKFONTDIR
```

This procedure produces a file DECW$FONT_DIRECTORY.DAT which contains a list of your supplemental fonts.

The protection for your fonts directory must be set to WORLD READ /EXECUTE (W:RE); the protection for the .DECW$FONT files in the directory must be set to WORLD READ (W:R); the protection for the DECW$FONT_ DIRECTORY.DAT file must be set to WORLD READ (W:R).

The following example shows the contents of the data file that specifies two font paths:

```
D_SMITH
WONG
LECLAIRE
$FONT 1.2::DUA0:[NEWFONTS]
$FONT 2.1::DUA1:[FONTS.APPLICATION_A]
```

This data file specifies the font paths 1.2::DUA0:[NEWFONTS] and 2.1::DUA1:[FONTS.APPLICATION_A]. User names are also included in this data file. To list only font paths in the data file, you must include the user specification *. For example:

```
*
$FONT 1.2::DUA0:[NEWFONTS]
$FONT 2.1::DUA1:[FONTS.APPLICATION_A]
```

That completes the installation of fonts.

After the window server boots, the DECW$FONT_DIRECTORY.DAT file identifies which fonts are available to the system as supplemental fonts. The supplemental fonts are not loaded until your application requests them.

4.8.8 Internet Data

You specify Internet data for a window server if the server is to display client applications that use TCP/IP. You can specify the Internet address, network mask, broadcast mask, and routing addresses. You must specify at least an Internet address if the following conditions apply:

- The window server is to use TCP/IP.
- The Boot Protocol (BOOTP) is not available on the server's local area network (LAN).

Note

If a window server user does not supply you with values for the Internet data (see Section 4.3), you should get the values from the network administrator before you modify the data file. For details about Internet and TCP/IP, see the *VMS/ULTRIX Connection System Manager's Manual*.

To list only Internet data in a data file, you must include the user specification *.

Internet Addresses

Specify an Internet address as follows:

$INET_ADDRESS *internet-address*

You must specify $INET_ADDRESS in the first character position of a line in the file, and the Internet address must be a value of the form:

d.d.d.d

The *d* represents decimal integer fields that identify the network and host addresses. The value in each field can range from 0 to 255.

The following line shows how to specify the Internet address 5.0.2.10 in a window server data file:

```
$INET_ADDRESS 5.0.2.10
```

Network Masks

Specify an Internet network mask as follows:

$INET_NETWORK_MASK *network-mask*

You must specify $INET_NETWORK_MASK in the first character position of a line in the file, and the network mask must be a value of the form:

d.d.d.d

The *d* represents decimal integer fields that identify the bits of an Internet address to interpret as the network, subnetwork, and host addresses. The value in each field can be either 0 or 255. If you specify 255 (all ones), that field of the Internet address is interpreted as part of the network and subnetwork address. If you specify 0 (all zeros), the field is interpreted as part of the host address.

The following line shows how to specify the network mask 255.255.0.0 in a window server data file:

```
$INET_NETWORK_MASK 255.255.0.0
```

This mask indicates that the first two fields of the Internet address are to be interpreted as the network and subnetwork addresses and that the third and fourth fields are to be interpreted as host addresses.

Broadcast Masks

Specify an Internet broadcast mask as follows:

$INET_BROADCAST_MASK *broadcast-mask*

You must specify $INET_BROADCAST_MASK in the first character position of a line in the file, and the broadcast mask must be a value of the form:

d.d.d.d

The *d* represents decimal integer fields that identify the bits of an Internet address to interpret as the broadcast address. The value in each field can range from 0 to 255, with the mask consisting of the network number followed by all ones (1) –255 in each of the remaining fields. UNIX BSD 4.2 and ULTRIX prior to Version 1.2 require that the broadcast address be the network number followed by all zeros (0) –0 in each of the remaining fields.

The following line shows how to specify the broadcast mask 128.50.255.255:

```
$INET_BROADCAST_MASK 128.50.255.255
```

Routes

You can set up an Internet routing table for a window server by specifying Internet routes in the data file. Specify a route as follows:

$INET_ROUTE *router-address network-address*

You must specify $INET_ROUTE in the first character position of a line in the file. The router and network Internet addresses must be of the form:

d.d.d.d

The *d* represents decimal integer fields that identify the network and host addresses. The value in each field can range from 0 to 255.

The router address specifies a route, which can be either a host or a gateway on the local network. A gateway is an intermediate destination for data being sent to the specified network address. The network address identifies the destination network.

A window server data file can identify multiple Internet routes. The following example specifies two routes:

```
$INET_ROUTE 2.2.2.2 3.3.3.3
$INET_ROUTE 2.23.2.23 5.2.5.3
```

If you prefer not to set up a routing table or if you do not have the information you need to set up a route to a particular destination, you can specify a default router. Specify a default router as follows:

$INET_ROUTER *router-address*

The following example specifies the default router 2.23.2.23:

```
$INET_ROUTER 2.23.2.23
```

4.9 Setting Up a Local Printer

Files can be printed on a local printer attached to a VT1300 terminal, VAXstation 2000, or VAXstation 3100 so long as the baud rate of the printer is set to 4800. Consult your printer's owner's manual for more information on how to set the baud rate for your printer.

Once the baud rate has been set, files can be copied to the local printer using the VMS COPY command:

```
$ COPY file_name.typ server_name::TTA3:
```

4.10 Running the IVP

The VAXELN Window Server IVP is run automatically at the end of the VAXELN Window Server installation procedure if you enter YES for that option during the installation.

If the installation procedure does not run the IVP, you can run it after the installation completes by executing the command procedure EWS$IVP.COM as follows:

```
$ @SYS$TEST:EWS$IVP
```

You should receive a message indicating whether the IVP has succeeded or failed.

4.10.1 What to Do If the IVP Fails

If your IVP failed, review the following checklist before attempting to reinstall the software.

1. Verify the EWS$SERVER network object and make sure that it has the same password as the EWS$SERVER account.

   From a privileged account, enter the following:

   ```
   $  MCR NCP SHOW OBJECT EWS$SERVER CHAR
   ```

The system displays something similar to the following:

```
Object Volatile Characteristics as of  8-SEP-1991 22:54:30

Object = EWS$SERVER

Number                  = 0
File id                 = EWS$LIBRARY:EWS$SERVER.COM
User id                 = EWS$SERVER
Password                = 0656123323120656
Proxy access            = none
```

Now, set the password of the EWS$SERVER account to have the same password:

```
$  SET DEF SYS$SYSTEM
$  MCR AUTHORIZE
   MODIFY EWS$SERVER/PASS=0656123323120656/NOPWDEXP
   Crtl/Z
```

2. Verify the rest of the EWS$SERVER account as follows:

```
$  SET DEF SYS$SYSTEM
$  MCR AUTHORIZE
   SHOW EWS$SERVER
```

The result should look similar to this:

```
Username: EWS$SERVER                      Owner:  EWS SERVER
Account:  DECNET                          UIC:    [375,202] ([EWS$SERVER])
CLI:      DCL                             Tables: DCLTABLES
Default:  SYS$SYSDEVICE:[EWS$SERVER]
LGICMD:   NL:
Flags:  Restricted DisMail
Primary days:   Mon Tue Wed Thu Fri
Secondary days:                     Sat Sun
Primary   000000000011111111112222  Secondary 000000000011111111112222
Day Hours 012345678901234567890123  Day Hours 012345678901234567890123
Network:  ##### Full access ######            ##### Full access ######
Batch:    -----  No access  ------            -----  No access  ------
Local:    -----  No access  ------            -----  No access  ------
Dialup:   -----  No access  ------            -----  No access  ------
Remote:   -----  No access  ------            -----  No access  ------
Expiration:            (none)    Pwdminimum:  8   Login Fails:    0
Pwdlifetime:           (none)    Pwdchange:  1-JAN-1991 00:00
Last Login:            (none) (interactive),  1-JAN-1991 00:00 (non-interactive)
Maxjobs:         0  Fillm:       100  Bytlm:        40960
Maxacctjobs:     0  Shrfillm:      0  Pbytlm:           0
Maxdetach:       0  BIOlm:        50  JTquota:       1024
Prclm:           0  DIOlm:       120  WSdef:          512
Prio:            4  ASTlm:        80  WSquo:         2048
Queprio:         0  TQElm:        10  WSextent:      4096
CPU:        (none)  Enqlm:       200  Pgflquo:      40000
Authorized Privileges:
  TMPMBX NETMBX
Default Privileges:
  TMPMBX NETMBX
```

3. Make sure the password has not expired or is not pre-expired.
4. Check the file protection of EWS$LIBRARY:EWS$SERVER.COM. It must be world readable.

```
$  dir/prot 0"":ews$library:ews$server.com
  Directory 0"":SYS$SYSDEVICE:[EWS$LIBRARY]
  EWS$SERVER.COM    (RWED,RWED,RWED,RE)
```

5. Check for an incorrect configuration of the FAL network object.
6. Check the SYS$SYSDEVICE:[EWS$SERVER]NETSERVER.LOG files for error messages. You can define the following logical for an annotated NETSERVER.LOG listing:

```
$  DEFINE/SYS EWS$DEBUG_VERIFY 1
```

Remember to deassign this logical after you're done.

7. If disk quotas are enabled on the disk with the [EWS$SERVER] directory, make sure that the EWS$SERVER account has a quota set and that it has not been exceeded.

To run the Installation Verification Procedure again, type the following command:

```
$ @SYS$TEST:EWS$IVP S
```

A

Sample VAXELN Window Server Installation

This appendix shows a sample VMSINSTAL session for installing the VAXELN Window Server software.

To install VAXELN Window Server, you must do the following:

1. Prepare for the installation as explained in Chapter 2.
2. Run the VMSINSTAL command procedure as explained in Chapter 3.
3. Perform the postinstallation procedures explained in Chapter 4.

Example A–1 shows the sample VMSINSTAL session.

Example A–1 Sample VAXELN Window Server Installation

```
$  @SYS$UPDATE:VMSINSTAL

 VAX/VMS Software Product Installation Procedure V5.3


It is 17-SEP-1991 at 16:28.

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

%VMSINSTAL-W-ACTIVE, The following processes are still active:
 A
 B
 C
 D
 E
* Do you want to continue anyway [NO]?  YES
* Are you satisfied with the backup of your system disk [YES]?  Return
* Where will the distribution volumes be mounted:  MUA0:

Enter the products to be processed from the first distribution volume set.
* Products:  EWS011
Enter installation options you wish to use (none):  Return
```

(continued on next page)

Example A–1 (Cont.) Sample VAXELN Window Server Installation

```
Please mount the first volume of the set on MUA0:
* Are you ready?  YES
%MOUNT-I-MOUNTED, EWS011 mounted on MUA0:
The following products will be processed:

  EWS V1.1

      Beginning installation of EWS V1.1 at 16:28

%VMSINSTAL-I-RESTORE, Restoring product saveset A ...
%VMSINSTAL-I-RELMOVED, Product's release notes have been moved to SYS$HELP.
* Do you want to purge files replaced by this installation [YES]?  Return
* Do you want to run the IVP after the installation [YES]?  NO

  You may include support for any combination of the following:

    o  Monochrome VAXstation 2000 and 3100 workstations
    o  Color VAXstation 2000 and 3100 workstations
    o  VAXstation II/GPX, 3200, and 3500 workstations
    o  VT1300's and VAXstation 3100/SPX workstations

* Include support for monochrome VAXstation 2000 and 3100 workstations [YES]?  Return
* Include support for color VAXstation 2000 and 3100 workstations [YES]?  Return
* Include support for VAXstation II/GPX, 3200, and 3500 workstations [YES]?  Return
* Include support for VT1300's and VAXstation 3100/SPX workstations [YES]?  Return

  The EWS files are stored in a directory named [EWS$LIBRARY].
  You must designate the device on which this directory is to
  be created.
  This device must have at least 48260 free blocks.

* Device to be used for storing EWS files [SYS$SYSDEVICE]:  DUA1:

You have selected to include support for the following:

   o  Monochrome VAXstation 2000 and 3100 workstations
   o  Color VAXstation 2000 and 3100 workstations
   o  VAXstation II/GPX, 3200, and 3500 workstations
   o  VT1300's and VAXstation 3100/SPX workstations

  The device that will contain the [EWS$LIBRARY] directory is DUA1:.

* Is this correct [YES]?  Return

  To ensure that EWS runs with the proper quotas, this installation
  procedure creates an account for the server named EWS$SERVER.
  This account has no special privileges, and is set up for network
  operations only.

  By default, the installation procedure selects a unique default UIC
  for the EWS$SERVER account. If you want to use a different UIC for
  that account, specify a unique UIC.
```

(continued on next page)

Example A–1 (Cont.) Sample VAXELN Window Server Installation

```
  If you should change the password for the EWS$SERVER account,
  you must also change the password with one of the following commands:

    NCP SET OBJECT EWS$SERVER PASSWORD new_password

    NCP DEFINE OBJECT EWS$SERVER PASSWORD new_password

* Enter UIC for EWS$SERVER account (include brackets) [[375,201]]:  Return
%EWS-I-CREACC, Creating account EWS$SERVER for the EWS server
%VMSINSTAL-I-ACCOUNT, This installation creates an ACCOUNT named EWS$SERVER.
%UAF-I-ADDMSG, user record successfully added
%UAF-I-RDBADDMSGU, identifier EWS$SERVER value: [000375,000201] added to rights
data base
%VMSINSTAL-I-ACCOUNT, This installation updates an ACCOUNT named EWS$SERVER.
%UAF-I-MDFYMSG, user record(s) updated
%VMSINSTAL-I-ACCOUNT, This installation updates an ACCOUNT named EWS$SERVER.
%UAF-I-MDFYMSG, user record(s) updated
%VMSINSTAL-I-SYSDIR, This product creates system disk directory SYS$SYSDEVICE:[
EWS$SERVER].

  No further questions will be asked during this installation.


  The network object EWS$SERVER has been defined.  If you wish
  to view this, run SYS$SYSTEM:NCP and issue the following command:

 NCP> LIST OBJECT EWS$SERVER CHAR
```

(continued on next page)

Example A–1 (Cont.) Sample VAXELN Window Server Installation

```
  This installation will add the following files:

     EWS$LIBRARY:EWS$GAA_075.SYS
     EWS$LIBRARY:EWS$GAA_100.SYS
     EWS$LIBRARY:EWS$GAB_075.SYS
     EWS$LIBRARY:EWS$GAB_100.SYS
     EWS$LIBRARY:EWS$GCB_075.SYS
     EWS$LIBRARY:EWS$GCB_100.SYS
     EWS$LIBRARY:EWS$GEB_075.SYS
     EWS$LIBRARY:EWS$GEB_100.SYS
        EWS$KEYMAPS:*.DECW$KEYMAP
     EWS$LIBRARY:EWS$SERVER.COM
     EWS$LIBRARY:EWS$XKEYMAP.EXE
     EWS$LIBRARY:DECW$MKFONTDIR.EXE
        SYS$SYSTEM:EWS$WSA.EXE
     SYS$UPDATE:EWS$ADD_NODE.COM
     SYS$STARTUP:EWS$STARTUP.COM
     SYS$HELP:EWS011.RELEASE_NOTES
     EWS$LIBRARY:EWS$IVP.COM

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

   To ensure proper operation of the EWS, you must edit your system
   startup procedure to invoke SYS$STARTUP:EWS$STARTUP.COM.

%VMSINSTAL-I-MOVEFILES, Files will now be moved to their target directories...
 Installation of EWS 1.1 completed at 14:31

Enter the products to be processed from the next distribution volume set.
* Products:  Ctrl/Z

 VMSINSTAL procedure done at 14:31
$
```

B

VAXELN Window Server Files

The VAXELN Window Server installation procedure adds and may modify logical name assignments to your system. These logicals are listed in Table B–1.

Table B–1 VAXELN Window Server Logicals

Logical	Description
EWS$KEYMAPS	This points to the EWS$KEYMAPS: directory.
EWS$LIBRARY	This points to the EWS$LIBRARY: directory.

The VAXELN Window Server installation procedure also transfers the files listed in Table B–2 onto your system. The files are placed in the following directories:

- VMS directory SYS$STARTUP
- VMS directory SYS$HELP
- VMS directory SYS$UPDATE
- VMS directory SYS$TEST
- VAXELN Window Server directory EWS$LIBRARY

VAXELN Window Server Files

Table B–2 VAXELN Window Server Files

File	Description
SYS$STARTUP:	
EWS$STARTUP.COM	The startup command file that defines the location of and installs the appropriate VAXELN Window Server system images.
SYS$HELP:	
EWS011.RELEASE_NOTES	The ASCII text file that contains the online *VAXELN Window Server Release Notes*.
SYS$UPDATE:	
EWS$ADD_NODE.COM	The command file that defines the node characteristics of the window servers.
SYS$TEST:	
EWS$IVP.COM	The VAXELN Window Server Installation Verification Procedure (IVP).
EWS$LIBRARY:	
EWS$GAA_075.SYS	The system image for VAXstation II/GPX, 3200, and 3500 workstations running with a monitor density of 75 DPI.
EWS$GAA_100.SYS	The system image for VAXstation II/GPX, 3200, and 3500 workstations running with a monitor density of 100 DPI.
EWS$GAB_075.SYS	The system image for color VAXstation 2000 and 3100 workstations running with a monitor density of 75 DPI.
EWS$GAB_100.SYS	The system image for color VAXstation 2000 and 3100 workstations running with a monitor density of 100 DPI.
EWS$GCB_075.SYS	The system image for monochrome VAXstation 2000 and 3100 workstations running with a monitor density of 75 DPI.

(continued on next page)

Table B–2 (Cont.) VAXELN Window Server Files

File	Description
EWS$LIBRARY:	
EWS$GCB_100.SYS	The system image for monochrome VAXstation 2000 and 3100 workstations running with a monitor density of 100 DPI.
EWS$GEB_075.SYS	The system image for VAXstation 3100/SPX workstations running with a monitor density of 75 DPI.
EWS$GEB_100.SYS	The system image for VAXstation 3100/SPX workstations running with a monitor density of 100 DPI.
EWS$SERVER.COM	The server command file that sends data to and starts a remote Session Manager session on the window servers. The data includes the current system time and a list of users who should be able to gain access to the workstation or terminal.
EWS$KEYMAPS:	
*.DECW$KEYMAP	The VAXELN Window Server keymap files that define variants of the LK201 and LK401 keyboards.

C

Rebuilding VAXELN Window Server System Images

This appendix explains how to rebuild VAXELN Window Server system images. You might need to rebuild the system images to incorporate new fonts or to take advantage of hardware available on your workstation.

Note

This appendix assumes that you are familiar with and have used the VAXELN Toolkit to build VAXELN system images. See your *VAXELN Development Utilities Guide* for details.

To rebuild the VAXELN Window Server system images, follow these steps:

1. Make sure that the VAXELN Toolkit Version 4.2 or higher is installed on the system.
2. Assign the logical names EWS_OBJ, EWS_FONT_075, and EWS_FONT_100 as follows:

```
$  ASSIGN EWS$LIBRARY EWS_OBJ
$  ASSIGN 75dpi-font-directory EWS_FONT_075
$  ASSIGN 100dpi-font-directory EWS_FONT_100
```

   Replace *75dpi-font-directory* and *100dpi-font-directory* with specifications for the directories that contain the 75 and 100 DPI fonts to be included in your system images. The font directories must contain files for all the fonts that need to be available to the window server. The directories must contain only font files and must include files for at least the fixed font and the cursor font.

   The 75 DPI and 100 DPI system images that are supplied in the VAXELN Window Server distribution kit were built to include the fonts in the VAXELN product directories [ELN.FONTS.75DPI] and

[ELN.FONTS.100DPI], respectively. The 100 DPI system images also include files for the following fonts:

TIMES_ROMAN10.DECW$FONT
TIMES_ROMAN24.DECW$FONT
HELVETICA10.DECW$FONT
HELVETICA_BOLD12.DECW$FONT

3. Use the VAXELN System Builder to rebuild the selected system images. Invoke the System Builder with the following command line:

```
$ EBUILD/NOEDIT EWS$LIBRARY:data-file
```

Replace *data-file* with one of the following data (DAT) file names:

File Name	Supported Systems
EWS$GAA_075	VAXstation II/GPX, 3200, 3500, and 3800 workstations running with a monitor density of 75 DPI
EWS$GAA_100	VAXstation II/GPX, 3200, 3500, and 3800 workstations running with a monitor density of 100 DPI
EWS$GAB_075	Color VAXstation 2000 and 3100 workstations running with a monitor density of 75 DPI
EWS$GAB_100	Color VAXstation 2000 and 3100 workstations running with a monitor density of 100 DPI
EWS$GCB_075	Monochrome VAXstation 2000 and 3100 workstations running with a monitor density of 75 DPI
EWS$GCB_100	Monochrome VAXstation 2000 and 3100 workstations running with a monitor density of 100 DPI
EWS$GEB_075	VAXstation 3100/SPX workstations running with a monitor density of 75 DPI
EWS$GEB_100	VAXstation 3100/SPX workstations running with a monitor density of 100 DPI
EWS$DXT_100	VT1300 terminals

4. Copy the new system images to the VAXELN Window Server library directory EWS$LIBRARY.

Index

A

Account
  EWS$SERVER, 3–6
    UIC for, 3–6
  for installing product, 2–2
  privileged, 3–2
Addresses
  DECnet, 4–4, 4–5
  Ethernet hardware, 4–4, 4–5
  Internet, 1–4, 4–21
  routing, 1–4, 4–22
Applications, 1–5
AST queue limit
  for installer's account, 2–3
  for user account, 4–8
  system parameter, 4–7
Authorized users, 1–4, 4–4
  identifying, 4–13
Authorize Utility
  See VMS Authorize Utility

B

Bill of materials (BOM), 2–1
Boot server, 1–1
  communications, 1–4
Broadcast masks, 1–4, 4–22
Buffered I/O byte limit
  for installer's account, 2–3
  for user account, 4–8
  system parameter, 4–7
Buffered I/O count limit
  for installer's account, 2–3
Buffered I/O count limit (Cont.)
  for user account, 4–8
  system parameter, 4–7
BYPASS privilege, 2–3

C

Checking existing system, 2–8
CMKRNL privilege, 2–2
Command files, 1–3
  DECW$MKFONTDIR.EXE, 1–3
  DECW$STARTUP.COM, 2–4
  EWS$ADD_NODE.COM, 1–3, B–2
  EWS$IVP.COM, B–2, B–3
  EWS$SERVER.COM, 1–3, 1–4, 1–5, 4–9, B–3
  EWS$STARTUP.COM, 1–3, 4–1, B–2
  EWS$WSA.EXE, 1–3
  EWS$XKEYMAP.EXE, 1–3
Commands
  EXIT, 2–4, 2–7, 4–7, 4–9
  MODIFY, 2–3, 4–8
  SHOW, 2–7, 4–7, 4–8
  SHOW DEVICE, 2–6
  STARTUP, 4–1
Ctrl/Y, 3–2
Ctrl/Z, 3–8

D

Database, remote node, 4–3
Data files, 1–4, 4–9, C–2
  $FONT keyword in, 4–19
  modifying, 4–9
DCL commands

DCL commands (Cont.)
SHOW DEVICE, 2–6
DECnet, 3–2
address, 4–4, 4–5
node name, 4–5
remote node database, 4–3, 4–5
service circuit, 4–4, 4–5
setting up, 4–4
DECW$MKFONTDIR.EXE, 1–3
DECW$STARTUP.COM, 2–4
DECwindows, 3–2
applications, 1–5
startup command procedure, 2–4
Direct I/O count limit
for installer's account, 2–3
for user account, 4–8
system parameter, 4–7
Directories, product, B–1
Directory, system image, 3–5
Disk space, 2–5
Distribution kit, 2–1
Distribution medium, 2–1
Distribution volume
loading, 3–2
mounting, 3–4
specifying, 3–3
Documentation, 2–1

E

Enqueue quota limit, 2–3
Ethernet hardware addresses, 4–4, 4–5
EWS$ADD_NODE.COM, 1–3, B–2
executing, 4–5
EWS$IVP.COM, B–2
EWS$KEYMAP, B–3
EWS$KEYMAPS, B–1
EWS$LIBRARY, B–1
EWS$LIBRARY directory, 3–5, 4–9, B–1
copying system images to, C–2
EWS$SERVER.COM, 1–3, 1–4, 1–5, 4–9, B–3
EWS$SERVER account, 3–6
EWS$STARTUP.COM, 1–3, 4–1, B–2
EWS$WSA.EXE, 1–3
EWS$XKEYMAP.EXE, 1–3
EWS (VAXELN Window Server)
command files
See Command files
executable files
See Executable files
Executable files, 1–3
EXIT command, 2–4, 2–7, 4–7, 4–9

F

$FONT keyword, 4–19
Fonts, 1–4, 4–4
adding support for, 4–19
setting up, 4–9

G

Global pages, 2–7
Global sections, 2–7

H

Hardware
configuration, 3–5
memory requirements, 2–2
prerequisite, 2–2
supported, 2–2
Hardware address, Ethernet, 4–4
Host
selecting, 4–10

I

Indented bills report (BIL), 2–1
Installation
performing, 3–1
preparing for, 2–1
Internet, 4–4, 4–20
addresses, 1–4, 4–21
broadcast masks, 4–22
default router, 4–22
network masks, 4–21
routes, 4–22
IVP (Installation Verification Procedure), 3–5
running, 4–23

K

Keyboard
  setting up, 4–14
Keymap files, 1–3

L

Limits
  installer, 2–3
    user account, 4–8
Logicals
    EWS$KEYMAPS, B–1
    EWS$LIBRARY, B–1
Login window, 1–5

M

MODIFY command, 2–3, 4–8
Monitor
    monochrome, 4–14
Monitor density, 1–3, 4–4, 4–6

N

Network masks, 1–4, 4–21
Network object, 3–6, 4–2
Node
  database, 4–3, 4–5
    name, 4–4, 4–5

O

Object
  See Network object
Open file limit
    for installer's account, 2–3
    for user account, 4–8
    system parameter, 4–7
OPER privilege, 2–3
OPTIONS N parameter, 2–7

P

Paging file quota, 4–8
Privileges, for installing product, 2–2

Q

Quotas
  installer, 2–3
    system, 2–5
    user account, 4–8

R

Release notes, 2–7, 3–4, B–2
Remote node database, 4–3, 4–5
Routes, 4–22
    default, 4–22
Routing addresses, 1–4
Routing table, 4–22

S

Savesets, 2–4, 2–5
Security, 1–4, 4–4, 4–13
    setting up, 4–9
Select host, 4–10
Server
  boot, 1–1
    command file
        See EWS$SERVER.COM
    communications, 1–4
    window, 1–1
Service circuit, 4–4, 4–5
SETPRV privilege, 2–2
SHOW command, 2–7, 4–7, 4–8
SHOW DEVICE command, 2–6
Software
    distribution kit, 2–1
    prerequisites, 2–4
STARTUP command, 4–1
Subprocess creation limit
    for user account, 4–8
    system parameter, 4–7
SYS$HELP directory, B–1

SYS$STARTUP directory, B–1
SYS$TEST directory, B–1
SYS$UPDATE directory, B–1
SYSGEN commands
  EXIT, 2–7, 4–7
  SHOW, 2–7, 4–7
SYSMAN Utility, 4–1
SYSPRV privilege, 2–3
SYSTEM account, 2–2, 3–2
System disk, 2–5
  backing up, 2–7, 3–3
  common, 2–5, 4–2
System image directory, 3–5
System images, 1–1, 1–2, 4–6, B–2
  rebuilding, C–1
System parameters, 2–7, 4–7
System startup command file, 4–1

T

Target disk, 2–5, 4–2
  specifying, 3–5
Terminals
  supported, 2–2, 4–3
TFTP (Trivial File Transfer Protocol), 4–19

U

UIC (user identification code),
    EWS$SERVER account, 3–6
User account, limits and quotas, 4–8
Users, authorized, 1–4, 4–4

V

VAXclusters, 2–5, 4–2, 4–4, 4–7
VAXELN Window Server
  See also Window servers
  components, 1–2
  configuration, 1–1
  features, 1–1
  files, B–1
  introduction to, 1–1
  operation, 1–3
  system images
      See System Images
VMS Authorize Utility, 2–3, 4–8
  commands
      EXIT, 2–4, 4–9
      MODIFY, 2–3, 4–8
      SHOW, 4–8
VMSINSTAL command procedure, 3–2 to
    3–9
  aborting, 3–2
  correcting errors during, 3–1
  exiting, 3–8
  invoking, 3–2
  options, 3–4
  parameters, 3–2
  requirements, 3–1
  running, 3–1
  sample, A–1
  stopping, 3–1
VT1300 terminals, 1–1

W

Window servers, 1–1
  communications for, 1–4
  data file
      See Data files, 1–4
  data files for
      $FONT keyword in, 4–19
  logging out of, 1–5
  memory requirements for, 2–2
Working set extent, 4–8
Working set quota, 4–8
Working set size default, 4–8
Workstations, 1–1
  supported, 1–2, 2–2, 4–3
WORLD privilege, 2–2

X

X applications, 1–5