VAX OPS5 Installation Guide

Order Number: AA–EZ20D–TE

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This document contains instructions for installing VAX OPS5 on the VMS operating system. It also explains how to read the online release notes before or after installing the product. This document applies to VAX OPS5 Version 3.0 and all maintenance updates throughout that version.

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Operating System and Version:	VMS Version 5.1 or higher and DECwindows for the VAX OPS5 Development Environment. VMS Version 5.0 or higher for the VAX OPS5 compiler and run-time system. Future maintenance releases may require higher versions.
Software Version:	VAX OPS5 Version 3.0

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Contents

Preface v

Chapter 1 Preparing to Install VAX OPS5

1.1 Prerequisite Software 1–1

1.2 Accessing the Online Release Notes 1–1

1.3 Installation Procedure Requirements 1–2
1.3.1 Calculating the Values for GBLPAGES and GBLSECTIONS 1–2
1.3.2 Changing System Parameter Values with AUTOGEN 1–3

1.4 VMS License Management Facility 1–3

1.5 Using VMSINSTAL 1–4

Chapter 2 Installing VAX OPS5

Chapter 3 After the Installation

3.1 Installing VAX OPS5 on a VAXcluster 3–1

3.2 User Account Requirements 3–2
3.2.1 Privileges 3–2
3.2.2 User Account Quotas 3–2

Chapter 4 Running the Installation Verification Procedure Separately

Chapter 5 Error Conditions

Chapter 6 Installing VAX OPS5 as a Shared Image

Chapter 7 Maintenance Updates

Chapter 8 Determining and Reporting Problems

Chapter 9 Sample Installation

Appendix A Files, Images, and Logical Names Added to the System

A.1 Files A–1

A.2 Images A–2

A.3 Logical Names A–2

Tables

3–1 User Account Quotas 3–2

Preface

This document describes how to install VAX OPS5 on the VMS operating system. It is intended for system managers. This document applies to VAX OPS5 Version 3.0 and all maintenance updates in that version. A major version number is represented by the digits to the left of the decimal point, and the maintenance update version number is indicated by the digits to the right of the decimal point.

Keep this document with your distribution kit. You will need it to install maintenance updates or to reinstall VAX OPS5 for any other reason.

There is a Reader's Comments form at the back of this document. If you have any comments about this document, fill it out and mail it; your comments will be considered for the next revision of the installation guide.

For more information about installing VAX OPS5 on VMS systems, see your processor-specific installation/operations guide.

The installation procedure is described step-by-step and is, for the most part, self-explanatory. The system prompts you to answer questions and waits for you to tell it to continue.

Defaults appear in brackets ([ ]) throughout the installation procedure. Text you type is printed in blue-green ink.

Chapter 1

Preparing to Install VAX OPS5

Your bill of materials (BOM) and indented bills report (BIL) specify the number and contents of your media. Be sure to check the contents of your kit against this information. If your kit is damaged or if you find that parts of it are missing, call your Digital representative.

1.1 Prerequisite Software

The VAX OPS5 compiler and run-time system require VMS Version 5.0 or higher.

The VAX OPS5 Development Environment requires VMS Version 5.1 or higher and DECwindows.

If the VAX OPS5 Development Environment is to be part of the system, you must install DECwindows before you install VAX OPS5. There are three components of the VMS DECwindows kit; you will need one or two components, but not all three.

- To install VAX OPS5 on a workstation, you need:
  1. VMS DECwindows Base Kit (also called the Compute Server component)
  2. VMS DECwindows Device Support component
- To install VAX OPS5 on a machine other than a workstation (with the VAX OPS5 Development Environment running as a client), you need the VMS DECwindows Base Kit (also called the Compute Server component).

See the *VMS Version 5.1 Installation Guide* for more information on these components and their sizes.

If DECwindows is present on your system, the VAX OPS5 Development Environment is installed automatically.

If DECwindows is not present, you can still proceed with the installation, but the Development Environment will not be installed. You can install DECwindows later, but you will have to reinstall VAX OPS5 to use the Development Environment.

1.2 Accessing the Online Release Notes

VAX OPS5 provides online release notes. The prompt to display or print the release notes during the installation appears if you invoke VMSINSTAL with the OPTIONS N parameter.

To obtain the release notes after the installation, type or print the file SYS$HELP:OPS$030.RELEASE_NOTES.

Online help also directs you to the release notes file. After the installation, type the following command:

```
$ HELP OPS5 RELEASE_NOTES Return
```

1.3 Installation Procedure Requirements

The installation takes approximately 2 to 16 minutes, depending on the type of media and your system configuration. Before installing VAX OPS5, you must have the following privileges and resources:

- SETPRV privileges, or CMKRNL, WORLD, and SYSPRV privileges
- A minimum of 4550 blocks of free disk space during installation; 2450 blocks are used after installation
- A minimum of 500 free global pages plus the size (in number of disk blocks) of the file SYS$LIBRARY:DCLTABLES.EXE after the installation, or in order to run the Installation Verification Procedure (IVP).
- A minimum of 5 free global sections after the installation, or in order to run the IVP.

NOTE

You must ensure that your system has the necessary global page and global section system parameters for the installation. Failure to do so could cause the DCL tables to be corrupted in some situations.

1.3.1 Calculating the Values for GBLPAGES and GBLSECTIONS

To install and run VAX OPS5, you must set the correct values for the GBLPAGES and GBLSECTIONS system parameters.

To calculate how many unused global pages and global sections your system has, perform the following steps:

1. Run the VMS Install Utility (INSTALL) using the following DCL command:

   ```
   $ INSTALL LIST /GLOBAL /SUMMARY
   ```

   The INSTALL utility displays a summary of global pages and global sections used by your system, as well as the current number of unused global pages. For example:

   ```
                        Summary of Local Memory Global Sections

   258 Global Sections Used,  22580/3420 Global Pages Used/Unused
   ```

2. Determine if the number of unused pages (3420 in the example) is equal to or greater than the number you need. If the number of unused pages is less than the number you need, you must increase the value for GBLPAGES.
3. Note the amount shown for ‘‘Global Sections Used’’ (258 in the example).
4. Run the SYSGEN utility and use the SHOW command to determine the number of global sections allocated:

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

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

5. Subtract the amount shown in the summary (258 in the example) from the amount allocated. If the difference is less than the number you need, you must increase the value of the GBLSECTIONS parameter.

Section 1.3.2 describes the procedures for increasing these values as well as those of other system parameters. Refer to the VMS documentation on system management and operations for more information.

1.3.2 Changing System Parameter Values with AUTOGEN

You use the AUTOGEN command procedure to change system parameters. AUTOGEN automatically adjusts values for parameters that are associated with the ones you reset manually. To change system parameters with AUTOGEN, you must edit the following file:

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

For example, to change the setting for the WSMAX system parameter, add this line to the file:

```
WSMAX = 8000
```

Or for incremental system parameters:

```
ADD_GBLPAGES = 2000
```

(Digital recommends using the ADD_x form of system parameter modifier. Avoid entering absolute values.)

Now, run the AUTOGEN procedure to recalculate your system parameters. Enter the following command at the DCL prompt:

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

AUTOGEN performs an automatic system shutdown and reboots when it has finished. Rebooting your system makes the new parameter values active. The /[NO]FEEDBACK qualifier on the AUTOGEN command line could be appropriate for your system. See the *Guide to Setting Up a VMS System* manual for more information.

1.4 VMS License Management Facility

The VMS License Management Facility (LMF) became available with Version 5.0 of the VMS operating system. Normally, you register your VAX OPS5 software license *before* beginning the installation. This permits you to run the Installation Verification Procedure (IVP) during the installation, and to use the software immediately afterwards.

The license registration information you need is contained in the Product Authorization Key (PAK). The PAK is a paper certificate that contains information about the license you have to run a particular piece of software.

It is possible, but not recommended, to install VAX OPS5 without registering a license. During the installation, you are asked if you have registered the OPS5 (compiler) license and loaded the appropriate authorization key. If you respond with NO, the installation continues, but you will not be able to run the IVP.

To register a license, first log in to the system manager's account, SYSTEM. Choose *only one* of the following two ways to perform the registration:

1. Set default to SYS$UPDATE and invoke the VMSLICENSE.COM procedure.

   ```
   $ SET DEFAULT SYS$UPDATE Return
   $ @VMSLICENSE Return
   ```

   When the procedure prompts you for information, respond with data from your Product Authorization Key (PAK). When it asks you if you want to load the license, respond Yes. When the procedure completes successfully, you see the following message:

   ```
   DEC OPS5 has been registered.
   ```

2. Issue the LICENSE REGISTER command at DCL level with the appropriate qualifiers that correspond to information on the PAK. (See the *VMS License Management Utility Manual* for instructions.) Then activate the license with the LICENSE LOAD command.

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

1.5 Using VMSINSTAL

After you log in to a privileged account to install VAX OPS5 and set default to SYS$UPDATE, you invoke VMSINSTAL, the command procedure that installs this product. An example of this procedure is shown in Chapter 2.

The VMSINSTAL command procedure has the following syntax:

```
$ @VMSINSTAL OPS030 ddcu: [OPTIONS N]
```

ddcu:
Represents a device name where the distribution volume will be mounted for the VAX OPS5 installation medium, where *dd* is the device code, *c* is the controller code, and *n* is the unit number. MUA0: is the device name used in examples in this document.

OPTIONS N
Is an optional parameter you should provide if you want to be prompted to display or print the release notes. If you do not include the OPTIONS N parameter, VMSINSTAL does not prompt you to display or print the release notes. VMSINSTAL permits the use of several other options. For more information on the other options, see your processor-specific installation/operations guide.

If you do not supply the first two parameters, VMSINSTAL prompts you for the product and device names. If you wish to be prompted for the product and device names and to display or print the release notes, type the following:

```
$ @VMSINSTAL Return
```

When you invoke VMSINSTAL, it checks the following:

- Whether you logged in to a privileged account. Digital recommends that you install software from the system manager's account with your default device and directory set to SYS$UPDATE.
- Whether you have adequate quotas for installation. VMSINSTAL checks for the following quota values:
  - ASTLM = 24

- BIOLM = 18
- BYTLM = 18000
- DIOLM = 18
- ENQLM = 30
- FILLM = 20

- VMSINSTAL checks whether the following conditions exist. If so, discontinue the conditions before resuming the installation procedure.
  - Whether DECnet is up and running
  - Whether any users are logged in to the system

  If VMSINSTAL detects either of these conditions, you will be asked whether you want to continue the installation. If you want to continue, type YES. If you want to stop the installation, press Return.

Chapter 2

Installing VAX OPS5

This chapter contains excerpts from the installation procedure and explains each step. Defaults appear in square brackets throughout the installation procedure.

To abort the installation procedure at any time, press Ctrl/Y. When you press Ctrl/Y, the installation procedure deletes all files it has created up to that point and then returns to DCL level. If you want to retry the installation procedure after pressing Ctrl/Y, you must proceed from step 2.

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

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

Step 2: Invoke VMSINSTAL.

REMINDER

If you have not yet registered and loaded a license for OPS5 (the compiler), be sure to read Section 1.4 before you start the installation.

```
$ @VMSINSTAL OPS030 MUA0: OPTIONS N  Return

      VAX/VMS Software Product Installation Procedure V5.1


It is 2-MAR-1989 at 10:34.
Enter a question mark (?) at any time for help.

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

This example uses the device name MUA0. You should use the device name that is appropriate for your system and medium.

If you are satisfied with the backup of your system disk, press Return. Otherwise, type NO and press Return to discontinue the installation.

Step 3: Insert the installation kit volume.

```
Please mount the first volume of the set on MUA0:.
* Are you ready? YES  Return
%MOUNT-I-MOUNTED, OPS mounted on _NODE1$MUA0:
The following products will be processed:

  OPS V3.0

    Beginning installation of OPS V3.0 at 10:34

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

To indicate that you want to continue the installation, mount the volume, type YES, and press Return.

Step 4: Select a release notes option.

This question appears only if you specified OPTIONS N in step 2.

```
Release Notes Options:

    1. Display release notes
    2. Print release notes
    3. Both 1 and 2
    4. Copy release notes to SYS$HELP
    5. Do not display, print or copy release notes

* Select option [2]: Return
```

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

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

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

If you select option 3, VMSINSTAL displays the release notes on line immediately. You can terminate the display at any time by pressing Ctrl/C. VMSINSTAL then prompts you for a queue name. Either type a queue name or press Return to send the file to the default output print device. The VAX OPS5 release notes are then copied to SYS$HELP:OPS$030.RELEASE_NOTES.

If you select option 4, VMSINSTAL copies the release notes to SYS$HELP immediately.

If you select option 5, VMSINSTAL does not display, print or copy the release notes.

NOTE

This version of the release notes file installed by VMSINSTAL is labeled with the current product name and version number. Take care not to delete release notes for previous versions of VAX OPS5.

Next, VMSINSTAL displays the following prompt:

```
* Do you want to continue the installation? YES Return
```

If you want to continue the installation, type YES and press Return. If you type NO or press Return, VMSINSTAL discontinues the installation. Unless you selected option 5, VMSINSTAL moves the release notes to SYS$HELP, regardless of your response to this question.

```
%VMSINSTAL-I-RELMOVED, The product release notes have been successfully
 moved to SYS$HELP.
```

Step 5: Respond to DECwindows check.

If DECwindows is present on your system, the VAX OPS5 Development Environment is installed automatically. Skip to Step 6.

If DECwindows is not present, you can still proceed with the installation, as the following example shows, but the Development Environment will not be installed. You can install DECwindows later, but you will have to reinstall VAX OPS5 to use the Development Environment.

```
%OPS-I-NODECW, DECwindows is not installed on this system.

        It will not be possible to build or use the OPS5 windowing
        development environment without the DECwindows software
        being present during the OPS5 installation and execution.
        Command-line access to OPS5 will be the only mode supported.

*Do you wish to install OPS5 without the Development Environment [YES]?
 YES Return

%OPS-I-RELNOTES, The release notes for this version are in
 SYS$HELP:OPS$030.RELEASE_NOTES.
```

Step 6: Respond to license registration queries.

VAX OPS5 supports the VMS License Management Facility (LMF). The installation procedure displays license information about the compiler (OPS5) and then asks if you have registered and loaded your authorization key for it. Following is an example:

```
Product:       OPS5
Producer:      DEC
Version:       3.0
Release Date:  5-JUN-1989
* Does this product have an authorization key registered and loaded?
  YES Return
```

Answer YES if you have registered and loaded the license for the compiler (OPS5). The installation procedure confirms the license but does not print an additional message. You will be able to run the Installation Verification Procedure during the installation. Skip to Step 7.

If you have not registered and loaded your authorization key, you must answer NO to this question:

```
* Does this product have an authorization key registered and loaded?
  NO Return
%OPS-I-NOLICENSE, No license for OPS5 found in the license database

      It will not be possible to run the IVP without the OPS5 compiler
      license.
```

See Section 1.4 for instructions on registering and loading a license.

Although it is not recommended, you can continue the installation. If you do, you must register and load the license after the installation completes, and you can run the IVP after the installation completes (see Chapter 4).

Step 7: Select installation options.

```
* In which directory is VAX OPS5 to be installed
  [SYS$SYSDEVICE:[VAXOPS]]:  Return

* Is directory SYS$SYSDEVICE:[VAXOPS] correct [YES]? Return
%VMSINSTAL-I-SYSDIR, This product creates system disk directory
  SYS$SYSDEVICE:[VAXOPS].

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

The directories SYS$STARTUP, SYS$MESSAGE, and the OPS5 product directory may contain previous versions of VAX OPS5 files. These files are replaced during the installation with new files, but the old files are not automatically purged. Purging is recommended. In response to the purging prompt, press Return to purge the files or type NO to keep them.

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

The Installation Verification Procedure (IVP) runs tests that check whether the installation procedure was successful. Press Return to run the IVP after the installation. If you do not want to run the IVP, type NO in response to the prompt. This prompt appears only when the product authorization key for the compiler (OPS5) has already been registered and loaded.

See Chapter 4 for information on running the IVP after the installation. The IVP requires the OPS5 license.

Step 8: Read informational messages.

The VAX OPS5 installation procedure produces a number of informational messages that report on the progress of the installation.

```
%OPS-I-ASKED_ALL, No more questions will be asked.

        Depending on your processor type and system load,
        installation will take between 2 and 16 minutes.

%OPS-I-INSTLCOMP, Installing the OPS5 compiler...

%OPS-I-INSTLRTS, Installing the OPS5 run-time system...
%OPS-I-ODELINK, Linking the development environment...

%OPS-I-REMINDER, Include @SYS$STARTUP:OPS$STARTUP.COM in your
 system startup procedure.
```

The success of the installation is indicated by the following message:

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

If the installation procedure is successful, the new or modified files are moved to their target directories.

The SYS$HELP:HELPLIB.HLB and SYS$LIBRARY:DCLTABLES.EXE files are updated to include the new versions of the VAX OPS5 HELP text and the OPS5 command line definition.

See Appendix A for a complete list of files, executable images, and logical names added to the system.

If you typed YES in response to the prompt that requests a file purge at step 7, previous versions of the VAX OPS5 files are now purged.

Step 9: Observe the installation verification procedure.

If you chose to run the IVP in step 7, VMSINSTAL now calls the IVP to verify that VAX OPS5 was installed successfully. See Chapter 4 for information on running the IVP after the installation. The IVP requires the OPS5 license.

```
Executing VAX OPS5 startup procedure...
%OPSCOMP-I-ENDCOMPILE, End of compilation  2-MAR-1989 10:46:20.31
%OPSCOMP-I-LINESREAD, Compiled 0 lines
%OPSCOMP-I-NOERRORS, No errors detected
%OPSCOMP-I-TIMEUSED, Time used was 0.23 seconds
Beginning of VAX OPS5 V3.0-4 Installation Verification Procedure

COMPILING THE OPS5 VALIDATION TEST
    .
    .
    .
```

```
%OPS5IVP-S-PASSED,

Test passed

Successfully completed VAX OPS5 V3.0-4 Installation Verification
 Procedure
```

Step 10: End the installation procedure.

```
   Installation of OPS V3.0 completed at 10:50

   VMSINSTAL procedure done at 10:50

$ LOGOUT [Return]
SYSTEM     logged out at 2-MAR-1989 10:57:19.44
```

When the product installation procedure is complete, you can choose to install more products or to log out (as shown here).

After the installation, you must edit SYS$MANAGER:SYSTARTUP_V5.COM to include the following command line:

```
$ @SYS$STARTUP:OPS$STARTUP
```

If you did *not* run the IVP, you must enter the following command line at DCL level to be able to use VAX OPS5:

```
$ @SYS$STARTUP:OPS$STARTUP
```

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

Chapter 3

After the Installation

VAX OPS5 is now installed and can be invoked by all users with the OPS5 command at DCL level. (Appendix A lists all the files and logical names added to the system or modified by the installation process.)

The installation procedure modifies the DCL command table so that the OPS5 command is recognized and processed. However, the previous command table is still in effect for those users who are currently logged in. All logged-in users who want to use the OPS5 command must log out of the system and log in again.

3.1 Installing VAX OPS5 on a VAXcluster

If you want to run VAX OPS5 on multiple nodes of a VAXcluster, first check to see that you have the appropriate software license. Then, follow these steps after installing VAX OPS5:

1. Issue the LICENSE LOAD command to activate the license on each node in the cluster on which VAX OPS5 is to be executed, as described in the *VMS License Management Utility Manual*.
2. If you chose to create the default OPS product directory or another directory in SYS$SYSDEVICE:, you must prepare the system-specific roots on the other nodes by issuing the following command on each node that has a software license (using a suitably privileged account):

   ```
   $ CREATE /DIRECTORY SYS$SPECIFIC:[VAXOPS]
   ```

3. Run SYS$STARTUP:OPS$STARTUP.COM on each node that has a software license, and edit each system's SYS$MANAGER:SYSTARTUP_V5.COM to include the following command line:

   ```
   $ @SYS$STARTUP:OPS$STARTUP
   ```

4. Replace the version of the DCL tables that is installed on each node that has a software license. To do this, perform the following steps:
   a. Log in to a node on the cluster.
   b. Run INSTALL and enter the following command at the INSTALL> prompt:

      ```
      INSTALL> REPLACE SYS$LIBRARY:DCLTABLES.EXE Return
      ```

   c. Repeat steps a and b for each node that has a software license.

3.2 User Account Requirements

To use VAX OPS5, user accounts on your system must have certain privileges and quotas. The next two sections contain information on these requirements.

3.2.1 Privileges

To use VAX OPS5 each account must have at least the TMPMBX and NETMBX privileges. Use the VMS Authorize Utility to determine whether users have the privileges they require.

To display the VAX OPS5 Development Environment on a remote node, the DECwindows display workstation must list the client as an authorized user. To do this on the workstation:

1. Pull down the Customize menu in the Session Manager window.
2. Choose the Security... item.
3. When the Customize Security dialog box appears, add the node name of the client and the appropriate username. An example is BIGVAX::SMITH.
4. Click on Add, then click on OK.

3.2.2 User Account Quotas

You must make sure that the appropriate user accounts have sufficient quotas to be able to use VAX OPS5. When you invoke the Development Environment, it checks the values of your user account quotas and prints a message for each quota that does not meet the minimum requirement. In some cases, the minimum requirement it checks for is less than the initial value you should set.

Table 3–1 summarizes the required user account quotas and the values that are checked.

Table 3–1: User Account Quotas

Quota Name	Set This Value	System Checks for This Value
ASTLM	150	150
BIOLM	100	100
BYTLM	64,000	30,000 remaining in pool after other processes have used some
DIOLM	50	50
ENQLM	1000	1000
FILLM	100	100
JTQUOTA	8192	No check for this value
PGFLQUO	At most, 80% of the value of the VIRTUALPAGECNT system parameter. As the value increases, performance of very large programs improves.	30,000 minimum. Use the maximum value for a single user on a workstation; set a lower value for multiple users on a bigger processor.

(continued on next page)

Table 3–1 (Cont.): User Account Quotas

Quota Name	Set This Value	System Checks for This Value
PRCLM	10	10
TQELM	100	30 remaining in pool after other processes have used some
WSDEF	1024	No check for this value. The values for WSEXTENT and WSQUO must be equal to or greater than this value.
WSQUO	8000	1024. As the value increases, performance improves.
WSEXTENT	At most, 80% of the value of the WSMAX system parameter. As the value increases, performance of very large programs improves.	No check for this value. Use the maximum value for a single user on a workstation; set a lower value for multiple users on a bigger processor.

To check the value of the VIRTUALPAGECNT and WSMAX system parameters:

```
$ RUN SYS$SYSTEM:SYSGEN
SYSGEN> SHOW VIRTUALPAGECNT
SYSGEN> SHOW WSMAX
```

User account quotas are stored in the file SYSUAF.DAT. You use the Authorize Utility to verify and change user account quotas. First set your directory to SYS$SYSTEM and then run AUTHORIZE:

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

At the AUTHORIZE prompt (UAF>), use the SHOW command with an account name to check a particular account. For example:

```
UAF> SHOW SMITH
```

To change a quota, use the MODIFY command at the UAF> prompt. MODIFY has the following format:

MODIFY account-name /quota-name=nnnn

This example changes the FILLM quota for the SMITH account and then exits from the utility:

```
UAF> MODIFY SMITH /FILLM=100
UAF> EXIT
```

After you exit from the utility, the VMS system displays messages indicating whether or not changes were made. Once you have finished making the changes, the users must log out and log in again for the new quotas to take effect.

For more information on modifying account quotas, see the description of the Authorize Utility in the *VMS Authorize Utility Manual*.

Chapter 4

Running the Installation Verification Procedure Separately

Although the Installation Verification Procedure (IVP) is usually run at installation, you can run it later if you choose. If you have not already done so, you must register and load the OPS5 license before you invoke the IVP (see Section 1.4 for instructions).

To invoke the IVP, enter the following command line:

```
$ @SYS$TEST:OPS$IVP.COM Return
```

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

```
The VAX OPS5 V3.0-4 Installation Verification Procedure failed.
%VMSINSTAL-E-IVPFAIL, The IVP for VAX OPS5 V3.0-4 has failed.
```

Chapter 5

Error Conditions

If the installation procedure fails for any reason, a message like the one following is displayed:

```
%VMSINSTAL-E-INSFAIL, The installation of VAX OPS5 V3.0-4 has failed.
```

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

- Operating system version is incorrect.
- Prerequisite software version is incorrect.
- Quotas necessary for successful installation are insufficient (see the Installation Procedure Requirements section).
- Process quotas required by VMSINSTAL are incorrect (see the Using VMSINSTAL section).
- The VMS HELP library is currently in use.
- The product was registered incorrectly or not registered.

For descriptions of the error messages generated by these conditions, see the *VMS System Messages and Recovery Procedures Reference Volume*, your processor-specific installation/operations guide, or the *VMS License Management Utility Manual*.

If you are notified that any of these conditions exist, you should take the appropriate action as described in the message. You may need to change a system parameter or increase an authorized quota value.

If the installation fails, you must restart the installation procedure from step 2. If the installation fails due to an IVP failure, contact a Digital field service representative.

Chapter 6

Installing VAX OPS5 as a Shared Image

To reduce system overhead and memory requirements, the following images are automatically installed as shared images:

- OPSINTERP.EXE
- OPS5.EXE
- OPS$ENV.EXE

The compiled message file, OPS$MSG.EXE, is *not* installed as a shared image.

Chapter 7

Maintenance Updates

Digital may periodically issue maintenance updates of VAX OPS5. Each update consists of an installation kit. You should install this kit as described in this document or in any documentation that may accompany the maintenance update.

Each time a maintenance update is released, the version number changes. For example, if the current version is 1.0, the version number of the first maintenance update will be 1.1. In addition, each maintenance update includes new release notes. The release notes describe the changes that have been made to VAX OPS5 since the previous release.

The update release notes are provided on line. You should read the release notes when you first install VAX OPS5; they are also accessible at any time after the product is installed. For information on reading the release notes at the time that you install VAX OPS5, follow the installation procedure through step 5. To locate the release notes after VAX OPS5 is installed, display or print the file SYS$HELP:OPS$030.RELEASE_NOTES, or type the following command:

```
$ HELP OPS5 RELEASE_NOTES Return
```

Chapter 8

Determining and Reporting Problems

If an error occurs while you are using VAX OPS5 and you believe that the error is caused by a problem with VAX OPS5, take one of the following actions:

- If you purchased VAX OPS5 within the past 90 days and you think the problem is caused by a software error, you can submit a Software Performance Report (SPR).
- If you have a Basic or DECsupport Software Agreement, you should call your Customer Support Center. With these services, you receive telephone support that provides high-level advisory and remedial assistance. For more information, contact your local Digital representative.
- If you have a Self-Maintenance Software Agreement, you can submit a Software Performance Report (SPR).

If you find an error in the VAX OPS5 documentation, you should fill out and submit a Reader's Comments form from the back of the document in which the error was found. Include the section and page number where the error was found.

Chapter 9

Sample Installation

This chapter contains a sample installation of VAX OPS5.

Note that this is only a sample. Sometimes the installation procedure is modified in maintenance updates of this product. Because this installation guide is not usually revised for maintenance updates, be sure to read the cover letter in the kit before you install this product. This letter notes any significant changes in the installation that vary from this sample.

```
Username: SYSTEM
Password:
 Welcome to VAX/VMS version V5.1 on node NODE1
    Last interactive login on Thursday,  2-MAR-1989 10:13
    Last non-interactive login on Friday, 17-FEB-1989 16:40

$ SET DEFAULT SYS$UPDATE
$ @VMSINSTAL OPS030 NODE2::KIT$DISK:[OPS5_V030] OPTIONS N
 VAX/VMS Software Product Installation Procedure V5.1
It is 2-MAR-1989 at 10:34.
Enter a question mark (?) at any time for help.
* Are you satisfied with the backup of your system disk [YES]?

The following products will be processed:
  OPS V3.0
 Beginning installation of OPS V3.0 at 10:34

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

    Release Notes Options:

 1.  Display release notes
 2.  Print release notes
 3.  Both 1 and 2
 4.  Copy release notes to SYS$HELP
 5.  Do not display, print or copy release notes

* Select option [2]:
* Queue name [SYS$PRINT]: LN03_2F3
Job OPS$030 (queue LN03_2F3, entry 68) started on LN03_2F3
* Do you want to continue the installation? YES
%VMSINSTAL-I-RELMOVED , The product's release notes have been successfully moved
 to SYS$HELP.

%OPS-I-RELNOTES, The release notes for this version are in
 SYS$HELP:OPS$030.RELEASE_NOTES.

        Product:      OPS5
        Producer:     DEC
        Version:      3.0
        Release Date: 5-JUN-1989

* Does this product have an authorization key registered and loaded? YES
* In which directory is VAX OPS5 to be installed [SYS$SYSDEVICE:[VAXOPS]]:
```

```
* Is directory SYS$SYSDEVICE:[VAXOPS] correct [YES]?
%VMSINSTAL-I-SYSDIR, This product creates system disk directory
 SYS$SYSDEVICE:[VAXOPS].

* Do you want to purge files replaced by this installation [YES]?
* Do you want to run the IVP after the installation [YES]?
%OPS-I-ASKED_ALL, No more questions will be asked.

 Depending on your processor type and system load, installation
 will take between 2 and 16 minutes.

%OPS-I-INSTLCOMP, Installing the OPS5 compiler...

%OPS-I-INSTLRTS, Installing the OPS5 run-time system...
%OPS-I-ODELINK, Linking the development environment...

%OPS-I-REMINDER, Include @SYS$STARTUP:OPS$STARTUP.COM in your system
 startup procedure.
%VMSINSTAL-I-MOVEFILES, Files will now be moved to their target directories...
Executing VAX OPS5 startup procedure...
%OPSCOMP-I-ENDCOMPILE, End of compilation  2-Mar-1989 10:46:20.31
%OPSCOMP-I-LINESREAD, Compiled 0 lines
%OPSCOMP-I-NOERRORS, No errors detected
%OPSCOMP-I-TIMEUSED, Time used was 0.23 seconds
Beginning of VAX OPS5 V3.0-4 Installation Verification Procedure

COMPILING THE OPS5 VALIDATION TEST
%OPSCOMP-I-ENDCOMPILE, End of compilation  2-Mar-1989 10:47:30.14
%OPSCOMP-I-LINESREAD, Compiled 1121 lines
%OPSCOMP-I-NOERRORS, No errors detected
%OPSCOMP-I-TIMEUSED, Time used was 56.96 seconds

TEST REFRACTION

%OPS5IVP-S-PASSED,

Test passed

TEST THAT THINGS CAN BE REMOVED FROM THE CONFLICT SET CORRECTLY

%OPS5IVP-S-PASSED,

Test passed

TEST RULES WITH NO VARIABLES AND MORE THAN ONE CE

%OPS5IVP-S-PASSED,

Test passed

TEST SPECIAL CASE

%OPS5IVP-S-PASSED,

Test passed

TEST SORTING OF TIME TAGS

%OPS5IVP-S-PASSED,

Test passed

TEST RECENCY

%OPS5IVP-S-PASSED,

Test passed

TEST MEA STRATEGY

%OPS5IVP-S-PASSED,

Test passed

TEST MATCHING SYMBOLIC ATOMS FOR EQUALITY
```

```
%OPS5IVP-S-PASSED,
Test passed

TEST '^' IN LHS
%OPS5IVP-S-PASSED,
Test passed

TEST MATCHING SYMBOLIC ATOMS FOR INEQUALITY
%OPS5IVP-S-PASSED,
Test passed

TEST MATCHING SYMBOLIC ATOMS FOR TYPE EQUALITY
%OPS5IVP-S-PASSED,
Test passed

TEST MATCHING NUMERIC ATOMS FOR EQUALITY
%OPS5IVP-S-PASSED,
Test passed

TEST MATCHING NUMERIC ATOMS FOR INEQUALITY
%OPS5IVP-S-PASSED,
Test passed

TEST MATCHING NUMERIC ATOMS FOR TYPE EQUALITY
%OPS5IVP-S-PASSED,
Test passed

TEST MATCHING NUMERIC ATOMS USING LESS-THAN PREDICATE
%OPS5IVP-S-PASSED,
Test passed

TEST MATCHING NUMERIC ATOMS USING LESS-OR-EQUAL PREDICATE
%OPS5IVP-S-PASSED,
Test passed

TEST MATCHING NUMERIC ATOMS USING GREATER-OR-EQUAL PREDICATE
%OPS5IVP-S-PASSED,
Test passed

TEST MATCHING NUMERIC ATOMS USING GREATER-THAN PREDICATE
%OPS5IVP-S-PASSED,
Test passed

TEST THAT NO NUMERIC TESTS ALLOW SYMBOLIC ARGUMENTS
%OPS5IVP-S-PASSED,
Test passed

TEST CONJUNCTIONS { }
%OPS5IVP-S-PASSED,
Test passed
```

```
TEST DISJUNCTIONS << >>
%OPS5IVP-S-PASSED,
Test passed

TEST EQUALITY FOR VARIABLES THAT OCCUR IN ONLY ONE CE
%OPS5IVP-S-PASSED,
Test passed

TEST INEQUALITY FOR VARIABLES THAT OCCUR IN ONLY ONE CE
%OPS5IVP-S-PASSED,
Test passed

TEST TYPE EQUALITY FOR VARIABLES THAT OCCUR IN ONLY ONE CE
%OPS5IVP-S-PASSED,
Test passed

TEST LESS-THAN PREDICATE FOR VARIABLES THAT OCCUR IN ONLY ONE CE
%OPS5IVP-S-PASSED,
Test passed

TEST LESS-OR-EQUAL PREDICATE FOR VARIABLES THAT OCCUR IN ONLY ONE CE
%OPS5IVP-S-PASSED,
Test passed

TEST GREATER-OR-EQUAL PREDICATE FOR VARIABLES THAT OCCUR IN ONLY ONE CE
%OPS5IVP-S-PASSED,
Test passed

TEST GREATER-THAN PREDICATE FOR VARIABLES THAT OCCUR IN ONLY ONE CE
%OPS5IVP-S-PASSED,
Test passed

TEST EQUALITY OF VARIABLES OCCURRING IN MORE THAN ONE CE
%OPS5IVP-S-PASSED,
Test passed

TEST INEQUALITY OF VARIABLES OCCURRING IN MORE THAN ONE CE
%OPS5IVP-S-PASSED,
Test passed

TEST TYPE EQUALITY OF VARIABLES OCCURRING IN MORE THAN ONE CE
%OPS5IVP-S-PASSED,
Test passed

TEST LESS-THAN PREDICATE FOR VARIABLES OCCURRING IN MORE THAN ONE CE
%OPS5IVP-S-PASSED,
Test passed

TEST LESS-OR-EQUAL PREDICATE FOR VARIABLES OCCURRING IN MORE THAN ONE CE
%OPS5IVP-S-PASSED,
```

```
Test passed

TEST GREATER-OR-EQUAL PREDICATE FOR VARIABLES OCCURRING IN MORE THAN ONE CE
%OPS5IVP-S-PASSED,
Test passed

TEST GREATER-THAN PREDICATE FOR VARIABLES OCCURRING IN MORE THAN ONE CE
%OPS5IVP-S-PASSED,
Test passed

TEST MEMORIES -- CAN INSTANTIATIONS BE DELETED PROPERLY
%OPS5IVP-S-PASSED,
Test passed

TEST MAKE AND ALL ITS POSSIBLE ARGUMENTS
%OPS5IVP-S-PASSED,
Test passed

TEST 2-INPUT NODES FOR NEGATED CES
%OPS5IVP-S-PASSED,
Test passed

TEST REMOVE
%OPS5IVP-S-PASSED,
Test passed

TEST MODIFY
%OPS5IVP-S-PASSED,
Test passed

TEST BIND
%OPS5IVP-S-PASSED,
Test passed

TEST HALT
%OPS5IVP-S-PASSED,
Test passed

TEST CBIND
%OPS5IVP-S-PASSED,
Test passed

TEST DEFAULT FILES FOR I/O
%OPS5IVP-S-PASSED,
Test passed

TEST EXPLICIT FILES FOR I/O
%OPS5IVP-S-PASSED,
Test passed

ROUGH TEST OF TABTO AND RJUST
```

```
%OPS5IVP-S-PASSED,

Test passed

Successfully completed VAX OPS5 V3.0-4 Installation Verification Procedure
 Installation of OPS V3.0 completed at 10:50

 VMSINSTAL procedure done at 10:50

$ LO
  SYSTEM       logged out at  2-MAR-1989 10:57:19.44
```

Appendix A

Files, Images, and Logical Names Added to the System

As a result of the installation procedure, the following files, images, and logical names are added to your system.

A.1 Files

- OPS$LIBRARY:BLI32OPS5.REQ
- OPS$LIBRARY:OPS$RUN_IMAGE.COM
- OPS$LIBRARY:OPS$EDITOR.TPU
- OPS$LIBRARY:OPS$EDITOR_CALLUSER.EXE
- OPS$LIBRARY:OPS$EDIT_FILE.COM
- OPS$LIBRARY:OPS$ENV.EXE
- OPS$LIBRARY:OPS$ENV.HLB
- OPS$LIBRARY:OPS$ENV.UID
- OPS$LIBRARY:OPS$IVP_EXTERNAL.BLI
- OPS$LIBRARY:OPS$IVP_EXTERNAL.OBJ
- OPS$LIBRARY:OPS$IVP_MAIN.OPS
- OPS$LIBRARY:OPS5.EXE
- OPS$LIBRARY:OPSDEF.ADA
- OPS$LIBRARY:OPSDEF.BAS
- OPS$LIBRARY:OPSDEF.FOR
- OPS$LIBRARY:OPSDEF.H
- OPS$LIBRARY:OPSDEF.PAS
- OPS$LIBRARY:OPSINTERP.EXE
- OPS$LIBRARY:OPSINTERP.OLB
- OPS$LIBRARY:OPSINTERP.OPT

- SYS$HELP:OPS$030.RELEASE_NOTES
- SYS$STARTUP:OPS$STARTUP.COM
- SYS$MESSAGE:OPS$MSG.EXE
- SYS$TEST:OPS$IVP.COM

A.2 Images

- OPS5.EXE
- OPSINTERP.EXE
- OPS$ENV.EXE
- OPS$MSG.EXE

A.3 Logical Names

- OPS$LIBRARY