

VSI ACMS for OpenVMS Installation Guide

Operating System and Version: VSI OpenVMS Alpha Version 8.4-2L1 or higher
VSI OpenVMS IA-64 Version 8.4-1H1 or higher

Software Version: ACMS for OpenVMS Version 5.3-3

VSI ACMS for OpenVMS Installation Guide



VMS Software

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Preface

1. About VSI

VMS Software, Inc. (VSI) is an independent software company licensed by Hewlett Packard Enterprise to develop and support the OpenVMS operating system.

2. Intended Audience

Read this manual if you are responsible for installing and maintaining software for ACMS. To perform the installation procedures described in this manual, you must have access to a privileged OpenVMS system manager's account and be familiar with the OpenVMS installation procedure, VMSINSTAL.

This installation guide describes how to install kits for the following VSI ACMS for OpenVMS (ACMS) product packages:

- ACMS Development System
- ACMS Run-Time Option
- ACMS Remote Access Option

3. Document Structure

This manual contains the following chapters and appendixes:

<i>Chapter 1, "Planning the ACMS installation"</i>	Describes ACMS kits and licenses, the recommended order for updating layered products used with ACMS, and special dependencies and considerations.
<i>Chapter 2, "Preparing to Install ACMS"</i>	Explains how to prepare your system for installing ACMS.
<i>Chapter 3, "Installing ACMS"</i>	Describes how to install the ACMS software and sample applications and run the Installation Verification Procedure (IVP). It also tells you how to recover from system and installation failures.
<i>Chapter 4, "After Installing ACMS"</i>	Describes postinstallation steps that prepare your OpenVMS system for running ACMS.
<i>Chapter 5, "Running the ACMS IVP"</i>	Describes how to run the ACMS IVP separately from the installation procedure.
<i>Chapter 6, "Deinstalling ACMS"</i>	Describes how to deinstall ACMS.
<i>Appendix A, "Sample Installations"</i>	Contains a sample installation for each ACMS development kit.
<i>Appendix B, "Registering and Loading Your ACMS License"</i>	Contains information on registering and loading your ACMS license.

Appendix C, "Creating Transaction Logs for DECdtm Services"

Describes considerations for creating VSI DECdtm log files.

4. ACMS Help

ACMS and its components provide extensive online help.

- DCL level help

Enter **HELP ACMS** at the DCL prompt for complete help about the **ACMS** command and qualifiers, and for other elements of ACMS for which independent help systems do not exist. DCL level help also provides brief help messages for elements of ACMS that contain independent help systems (such as the ACMS utilities) and for related products used by ACMS (such as DECforms or Oracle CDD/Repository).

- ACMS utilities help

Each of the following ACMS utilities has an online help system:

- ACMS Debugger ACMSGEN Utility
- ACMS Queue Manager (ACMSQUEMGR)
- Application Definition Utility (ADU)
- Application Authorization Utility (AAU)
- Device Definition Utility (DDU)
- User Definition Utility (UDU)
- Audit Trail Report Utility (ATR)
- Software Event Log Utility Program (SWLUP)

The two ways to get utility-specific help are:

- Run the utility and type **HELP** at the utility prompt.
- Use the DCL **HELP** command. At the "Topic?" prompt, type @ followed by the name of the utility. Use the ACMS prefix, even if the utility does not have an ACMS prefix (except for SWLUP). For example:

```
Topic? @ACMSQUEMGR
Topic? @ACMSADU
```

However, do not use the ACMS prefix with SWLUP:

```
Topic? @SWLUP
```

Note

Note that if you run the ACMS Debugger Utility and then type **HELP**, you must specify a file. If you ask for help from the DCL level with @, you do not need to specify a file.

- ACMSPARAM.COM and ACMEXCPAR.COM help

Help for the command procedures that set parameters and quotas is a subset of the DCL level help. You have access to this help from the DCL prompt, or from within the command procedures.

- LSE help

ACMS provides ACMS-specific help within the LSE templates that assist in the creation of applications, tasks, task groups, and menus. The ACMS-specific LSE help is a subset of the ADU help system. Within the LSE templates, this help is context-sensitive. Type **HELP/IND (PF1–PF2)** at any placeholder for which you want help.

- Error help

ACMS and each of its utilities provide error message help. Use **HELP ACMS ERRORS** from the DCL prompt for ACMS error message help. Use **HELP ERRORS** from the individual utility prompts for error message help for that utility.

- Terminal user help

At each menu within an ACMS application, ACMS provides help about terminal user commands, special key mappings, and general information about menus and how to select tasks from menus.

- Forms help

For complete help for DECforms or TDMS, use the help systems for these products.

5. Related Documents

Consult the *VSI OpenVMS System Manager's Manual* [<https://docs.vmssoftware.com/vsi-openvms-system-manager-s-manual-volume-1-essentials/>] for information about installing or upgrading layered product software on the OpenVMS operating system.

The following table lists the books in the VSI ACMS for OpenVMS documentation set.

ACMS Information	Description
<i>VSI ACMS Version 5.0 for OpenVMS Installation Guide</i> [https://docs.vmssoftware.com/vsi-acms-installation-guide/]	Description of installation requirements, the installation procedure, and postinstallation tasks.
<i>VSI ACMS for OpenVMS Getting Started</i> [https://docs.vmssoftware.com/vsi-acms-get-started-guide/]	Overview of ACMS software and documentation. Tutorial for developing a simple ACMS application. Description of the AVERTZ sample application.
<i>VSI ACMS for OpenVMS Concepts and Design Guidelines</i> [https://docs.vmssoftware.com/vsi-acms-concepts-and-design-guide/]	Description of how to design an ACMS application.
<i>VSI ACMS for OpenVMS Writing Applications</i> [https://docs.vmssoftware.com/vsi-acms-writing-apps/]	Description of how to write task, task group, application, and menu definitions using the Application Definition Utility. Description of how to write and migrate ACMS applications on an OpenVMS system.

ACMS Information	Description
VSI ACMS for OpenVMS Writing Server Procedures [https://docs.vmssoftware.com/vsi-acms-writing-server-proc/]	Description of how to write programs to use with tasks and how to debug tasks and programs.
VSI ACMS for OpenVMS Systems Interface Programming [https://docs.vmssoftware.com/vsi-acms-sys-interface-prog/]	Description of using Systems Interface (SI) Services to submit tasks to an ACMS system.
VSI ACMS for OpenVMS ADU Reference Manual [https://docs.vmssoftware.com/vsi-acms-adu-ref-manual/]	Reference information about the ADU commands, phrases, and clauses.
VSI ACMS for OpenVMS Quick Reference [https://docs.vmssoftware.com/vsi-acms-quick-ref/]	List of ACMS syntax with brief descriptions.
VSI ACMS for OpenVMS Managing Applications [https://docs.vmssoftware.com/vsi-acms-managing-applications/]	Description of authorizing, running, and managing ACMS applications, and controlling the ACMS system.
VSI ACMS for OpenVMS Remote Systems Management Guide [https://docs.vmssoftware.com/vsi-acms-remote-systems-management-guide/]	Description of the features of the Remote Manager for managing ACMS systems, how to use the features, and how to manage the Remote Manager.
Online help	Online help about ACMS and its utilities.

[VSI ACMS for OpenVMS Systems Interface Programming](https://docs.vmssoftware.com/vsi-acms-sys-interface-prog/) [https://docs.vmssoftware.com/vsi-acms-sys-interface-prog/] gives directions for building the BLISS library file and an environment file for Pascal agents.

6. OpenVMS Documentation

The full VSI OpenVMS documentation set can be found on the VMS Software Documentation webpage at <https://docs.vmssoftware.com>.

7. VSI Encourages Your Comments

You may send comments or suggestions regarding this manual or any VSI document by sending electronic mail to the following Internet address: <docinfo@vmssoftware.com>. Users who have VSI OpenVMS support contracts through VSI can contact <support@vmssoftware.com> for help with this product.

8. Conventions

The following conventions may be used in this manual:

Ctrl/x	A sequence such as Ctrl/x indicates that you must press and hold the key labeled Ctrl while you press another key or a pointing device button.
PF1 x	A sequence such as PF1 x indicates that you must first press and release the key labeled PF1 and then press and release another key or a pointing device button.

Return	In the HTML version of this document, this convention appears as brackets rather than a box.
...	A horizontal ellipsis in examples indicates one of the following possibilities: • Additional optional arguments in a statement have been omitted. • The preceding item or items can be repeated one or more times. • Additional parameters, values, or other information can be entered.
⋮	A vertical ellipsis indicates the omission of items from a code example or command format; the items are omitted because they are not important to the topic being discussed.
Monospace text	Monospace type indicates code examples and interactive screen displays. In the C programming language, monospace type in text identifies the following elements: keywords, the names of independently compiled external functions and files, syntax summaries, and references to variables or identifiers introduced in an example. In the HMTL version of this document, this text style may appear as italics.
-	A hyphen at the end of a command format description, command line, or code line indicates that the command or statement continues on the following line.
numbers	All numbers in text are assumed to be decimal unless otherwise noted. Nondecimal radixes—binary, octal, or hexadecimal—are explicitly indicated.
bold text	Bold text represents the introduction of a new term or the name of an argument, an attribute, or a reason. In the HMTL version of this document, this text style may appear as italics.
<i>italic text</i>	Italic text indicates important information, complete titles of manuals, or variables. Variables include information that arises in system output (Internal error <i>number</i>), in command lines (/PRODUCER=NAME), and in command parameters in text (where <i>dd</i> represents the predefined code for the device type).
UPPERCASE	Uppercase text indicates the name of a routine, the name of a file, the name of a file protection code, or the abbreviation for a system privilege. In command format descriptions, uppercase text is an optional keyword.
<u>UPPERCASE</u>	In command format descriptions, uppercase text that is underlined is required. You must include it in the statement if the clause is used.
lowercase	In command format descriptions, a lowercase word indicates a required element.
<lowercase>	In command format descriptions, lowercase text in angle brackets indicates a required clause or phrase.
()	In command format descriptions, parentheses indicate that you must enclose the options in parentheses if you choose more than one.

[]	In command format descriptions, vertical bars within square brackets indicate that you can choose any combination of the enclosed options, but you can choose each option only once.
{ }	In command format descriptions, vertical bars within braces indicate that you must choose one of the options listed, but you can use each option only once.

9. References to Oracle Products

VSI ACMS documentation set, to which this document belongs, refers to the following Oracle products by their full and abbreviated names:

Full product name	Shortened product name
Oracle Common Data Dictionary	CDD
Oracle Rdb	Rdb
Oracle Database/DBMS	DBMS
Oracle Trace	Trace

Chapter 1. Planning the ACMS installation

This chapter describes the available ACMS kits. It also discusses the dependencies among ACMS Version 4.4, the OpenVMS operating system, and other layered products, and considerations for upgrading and using these products in a distributed environment.

The Part List, found in the transparent plastic envelope in your kit, specifies the number and contents of your media. Be sure to verify the contents of your kit with this information. If your kit is damaged or if you find that parts of it are missing, contact VSI support.

1.1. Types of ACMS Kits

ACMS is available in three different kits:

- **ACMS Development Kit**

This kit provides all the features of ACMS. You can define, build, and debug multiple-step tasks, task groups, menus and applications, as well as use the ACMS task queuing facilities. You can use DECforms or TDMS as standard presentation services, or use the Request Interface (RI) and Systems Interface (SI) to access other presentation services. You are provided with samples of ACMS applications using standard presentation services and the Request Interface.

The development kit also includes the features provided by the run-time and remote-access kits.

- **ACMS Run-Time Kit**

This kit allows you to use existing applications or programs under the control of ACMS. It also allows you to define and debug menus, applications, task groups, and single-step tasks that use DCL servers, if CDD is present when this kit is installed. It allows ACMS users to sign in and select tasks that are implemented on the local node as well as remote nodes. The run-time kit allows you to use the ACMS Queued Task Initiator (QTI) to submit tasks to run on the local node as well as remote nodes.

The run-time kit also includes the features provided by the remote-access kit.

- **ACMS Remote-Access Kit**

This kit is suitable for installation on a network node that does not have any ACMS applications running on it, but requires access to ACMS applications running on another network node. The remote-access kit allows users to sign in to ACMS and select tasks on remote nodes, and handles the terminal I/O associated with those tasks. The remote access kit allows you to use the ACMS QTI to submit tasks to run on remote nodes.

1.2. ACMS Licenses

Each ACMS kit has an unlimited-use ACMS license associated with it. ACMS Version 3.3 introduced support for concurrent-use licenses for the run-time and remote-access kits. *Table 1.1, "ACMS Licenses"* shows the licenses that are applicable to each ACMS kit.

Table 1.1. ACMS Licenses

ACMS Kit	Unlimited Use	Concurrent Use
Development System	ACMS	Not available
Run-Time Option	ACMS-RT	ACMS-RT-USER
Remote-Access Option	ACMS-REM	ACMS-REM-USER

For more information about these ACMS licenses, refer to [VSI ACMS for OpenVMS Managing Applications](https://docs.vmssoftware.com/vsi-acms-managing-applications/) [https://docs.vmssoftware.com/vsi-acms-managing-applications/].

To install an ACMS Version 4.4 kit, you must register and load an ACMS software license, using the OpenVMS License Management Facility (LMF). You must register and load your ACMS license *before* you perform the installation.

For more information on registering and loading your ACMS license, refer to *Appendix B, "Registering and Loading Your ACMS License"*.

1.3. Required Operating System Components

VSI ACMS Version 5.3-2 for OpenVMS Alpha requires VSI OpenVMS Alpha Version 8.4-2L1 or higher.

VSI ACMS Version 5.3-5 for OpenVMS IA-64 requires VSI OpenVMS IA-64 Version 8.4-1H1 or higher.

For distributed processing with ACMS, you must have DECnet software installed.

Note

If you install ACMS Version 4.4 on an Alpha system running a version of OpenVMS Alpha lower than OpenVMS Alpha Version 7. x, you must reinstall ACMS Version 4.4 after you upgrade to OpenVMS Alpha Version 7. x.

1.4. Layered Product Requirements

The ACMS Version 4.4 installation procedure and IVP interact with a number of OpenVMS layered products. Some of these products are required, while others are optional.

Each of these layered products has a minimum version (based on the OpenVMS version) that is supported with ACMS Version 4.4.

If a product is required, you must make the minimum version available before you can install ACMS. If a product is not required, you do not need to make it available before installing ACMS, however, you must upgrade it to the minimum required version before using it with ACMS.

1.4.1. Determining Software Version Numbers

Before installing ACMS Version 4.4, identify the other products that you need to upgrade. To check the current version of the products, execute the DCL commands **ANALYZE/IMAGE** and **SEARCH** in the following formats:

```
ANALYZE/IMAGE file-name /OUTPUT=ACMS_VERSION.TMP
SEARCH ACMS_VERSION.TMP "image file id"
```

In the ANALYZE/ IMAGE command above, substitute for ***file-name*** the file name listed in *Table 1.2, "Compatible Products Image Files for OpenVMS Alpha"* for each product.

Table 1.2. Compatible Products Image Files for OpenVMS Alpha

Product	File Name
LSE (DECset)	SYS\$SYSTEM:LSEDIT.EXE
Oracle CDD	SYS\$LIBRARY:CDDSHR.EXE
Oracle CODASYL DBMS	SYS\$LIBRARY:DBMSHR.EXE
Oracle Rdb	SYS\$LIBRARY:RDBSHR.EXE
Oracle Trace	SYS\$LIBRARY:EPC\$FUNC\$HRP.EXE

The line that OpenVMS displays in response to the **SEARCH** command shows the current version of the product. The following example shows that the system has LSE Version 3.0 installed:

```
$ ANALYZE/IMAGE SYS$SYSTEM:LSEDIT.EXE /OUTPUT=ACMS_VERSION.TMP
$ SEARCH ACMS_VERSION.TMP "image file id"
      image file identification: "LSEDIT V3.0-23"
```

1.4.2. Requirements for Oracle CDD

Oracle CDD/Repository Version 6.1A is supported by ACMS Version 4. x. Oracle CDD/Repository Version 6.1 is not supported by ACMS Version 4. x. An access violation occurs if ACMS attempts to access the dictionary.

The following paragraphs discuss the requirements for Oracle CDD when installing the different ACMS kit types.

If you are installing the ACMS development kit, at least the minimum version of CDD must be installed on your system. If CDD is not installed or if a lower version of CDD is installed, VMSINSTAL terminates the installation procedure.

If you are installing the ACMS run-time kit, CDD is optional; however, the minimum version of CDD is required for the run-time kit to be fully functional. Specifically, if you install the ACMS run-time kit with CDD available, you can create new applications and menus and modify existing applications and menus, on your ACMS run-time system. If you install the ACMS run-time kit without CDD available, you can use only existing applications and menus; you cannot create new ones on your run-time system. If you subsequently install CDD, you can make the ACMS run-time CDD-related features available by reinstalling the ACMS Version 4.4 run-time kit and choosing the CDD-related files option at the beginning of the installation.

If you are installing the ACMS remote-access kit, CDD is not required.

1.4.3. Requirements for LSE

LSE is an optional layered product for all ACMS kits. If the minimum version (or a higher, allowed version) of LSE is not available when you install ACMS, LSE templates for ACMS Version 4.4 are not provided on your system. If you subsequently install LSE, you can make the ACMS Version 4.4 LSE

templates available by reinstalling the ACMS Version 4.4 kit and choosing the LSE update option at the beginning of the installation.

1.4.4. Recommended Order for Installing Software

To ensure problem-free installation of software on your system, install the OpenVMS operating system and layered products in the following order:

1. OpenVMS
2. LSE
3. Oracle Rdb
4. Oracle Trace
5. Oracle CDD
6. Oracle CODASYL DBMS
7. DECforms
8. ACMS

1.5. Upgrading Software in a Distributed System

Upgrading software in a distributed transaction processing system is complex because of the dependencies among the software products. The process becomes even more complex when you take into account the dependencies that are created from multiple versions that exist for each of the individual software products.

Because you cannot upgrade all nodes in a distributed environment simultaneously, and because the upgrade process might last several days, a clear methodology is required to ensure smooth and timely introduction of new software versions.

1.5.1. Configuration Issues

A simple, distributed configuration in a TP system consists of an ACMS front-end node and an ACMS back-end node. You can configure ACMS on each node for the processing of specific tasks. Likewise, the roles of the layered products on each node are distinct. For simple configurations, the upgrade process is straightforward:

1. Upgrade the software on the front-end nodes.
2. Upgrade the software on the back-end nodes.

Upgrading in this order ensures that the system delivers the same version of software to the front-end node and the back-end node.

However, this simple rule cannot be applied to a configuration in which a node is both a front end and a back end. To successfully upgrade a more complex configuration, apply these two key points:

- A component built by a previous software version is compatible with the upgraded version of the software.

For example, DECforms Version 1.4 can execute a form created by DECforms Version 1.3, without any modification. You can also copy this component from a node on which DECforms Version 1.3 is installed to a node with DECforms Version 1.4. The DECforms Version 1.3 form executes correctly, as long as you do not rebuild the form using Version 1.4.

- Do not rebuild a component under the new software version until you upgrade all nodes to which it may possibly be shipped.

To upgrade software in a distributed system, follow these steps:

1. Upgrade all software on the front-end-only nodes.
2. Upgrade all software on nodes that are both front-end and back-end nodes.
3. Upgrade all software on back-end-only nodes.

Note

Do not modify by recompilation any application components (unless required by the installation procedure) until you upgrade all the nodes that compose the distributed application.

1.6. Product Dependencies

Keep in mind the following dependencies when upgrading software, especially in a distributed environment:

- ACMS

ACMS copies DECforms forms (.FORM) and shareable images (.EXE), TDMS request library files (.RLB), and ACMS application database files (.ADB) from back-end to front-end nodes, if the versions or dates of the files on the back end are more recent.

- Oracle CDD

CDD versions are interoperable in a distributed environment as long as features of the new version are not requested when using the previous version. CDD is not referenced in the run-time system by the layered products (except possibly by Rdb and DBMS, although this is not advised) except in the case of module recompilation. However, do not recompile or add features until the upgrade is complete.

- DECforms
- OpenVMS Alpha operating system

When upgrading major versions of the OpenVMS Alpha operating system, you must reinstall ACMS. This applies when upgrading the OpenVMS Alpha operating system from Version 6. *x* to Version 7. *x*.

- Oracle CODASYL DBMS

Remote access between different versions of Oracle CODASYL DBMS is possible as long as features unique to the newer version are not requested of a previous version.

- Oracle Rdb

Rdb modules are upwardly compatible; for example, modules compiled under Rdb Version 5.1 execute correctly if Rdb is upgraded to Version 6.0 on the system. Remote access between different versions of Rdb is possible as long as features unique to the newer version are not requested of the previous version.

Because Rdb is the base data repository for many products, particularly CDD and Oracle Trace in a transaction processing system, you must convert all databases (RMU/CONVERT) used by these products after you upgrade Rdb. Refer to the product-specific information for more details.

- Oracle Trace

There are no dependencies regarding Oracle Trace on distributed systems.

Chapter 2. Preparing to Install ACMS

This chapter discusses the preparations and requirements necessary for installing ACMS Version 4.4.

ACMS provides online release notes and gives you the option of printing or displaying the release notes during the installation procedure. VSI strongly recommends that you read the release notes before proceeding with the installation in case they contain some important information regarding the installation procedure.

The sections in this chapter describe requirements that are checked by the ACMS installation procedure. With the exception of optional layered products, your system must meet these requirements before you can install ACMS successfully.

2.1. Backing Up Your System Disk

At the beginning of the installation, VMSINSTAL asks whether you have backed up your system disk. VSI recommends that you back up your system disk before installing any software.

Use the backup procedures that have been established at your site to do this backup. For details about performing a system disk backup, see the section on the Backup Utility in the OpenVMS documentation set.

2.2. Software Versions

As discussed in *Section 1.4, "Layered Product Requirements"*, ACMS Version 4.4 requires minimum versions of a number of layered products. The installation procedure lists all layered products that do not meet or exceed the required minimum version. If any required products are below minimum version, the installation fails.

2.2.1. Installed Images

In order to use other layered products during the installation of ACMS, certain executable images related to those products must be installed using the DCL command **INSTALL**. These images are normally installed by executing the startup procedure for the product. These startup procedures should be executed automatically when the system is started. Startup procedures are found in SYS\$STARTUP.

To determine whether an image is installed, execute the following DCL command:

```
$ INSTALL LIST file-specification
```

If an image is not installed, you must execute the related product startup procedure; also ensure that this startup procedure is executed automatically during system startup.

If you are installing the ACMS development kit, the CDD image SYS\$LIBRARY:CDDSHR.EXE must be installed. If you are installing the ACMS run-time kit, this is optional; however, if the image is not installed, CDD-related files will not be made available. The CDD startup procedure is CDDSTRUP.COM.

To use CDD, Rdb must also be available. Therefore, if you are installing the ACMS development kit, or if you plan to use the CDD-related function of the ACMS run-time kit, the Rdb image SYS\$LIBRARY:RDBSHR.EXE must be installed. The Rdb startup procedure is RMONSTART.COM.

If you have Oracle Trace installed on your system and you want the ACMS facility definition updated during the installation, the Oracle Trace image SYS\$LIBRARY:EPC\$FUNCSHRP.EXE must be installed. The Oracle Trace startup procedure is EPC\$STARTUP.COM.

2.3. Privileges

To install ACMS, you must be logged in to the SYSTEM account, or any account with similar privileges. The SYSTEM account has all the privileges required for the installation.

Table 2.1, "Privilege Requirements" lists the privileges required to execute various steps of the installation.

Table 2.1. Privilege Requirements

Step	Required Privileges
Installation procedure	BYPASS
Postinstallation procedure	BYPASS, SYSPRV, SYSNAM, CMEXEC, OPER
Installation Verification Procedure	OPER, SYSPRV, SYSNAM, CMKRN

2.4. Disk Space

The following sections describe the approximate disk space requirements for a normal installation, and an option for installing ACMS on a system disk with limited space available.

2.4.1. Disk Space for a Normal Installation

Installing ACMS requires a certain amount of free storage space during the installation. Once ACMS is installed, less storage space is required. Table 2.2, "Disk Space Requirements for OpenVMS Alpha by Kit" summarizes the approximate storage requirements for ACMS during and after installation. These tables reflect the installation of full kits, with all options selected.

Table 2.2. Disk Space Requirements for OpenVMS Alpha by Kit¹

Kit	Blocks During Installation	Blocks After Installation
Development	45,000	28,000
Run-time	32,000	22,000
Remote-access	22,000	14,000

¹For OpenVMS IA-64, double all values in this table.

If you are installing only some parts of the ACMS kits, you need less disk space for the installation. Table 2.3, "Disk Space Requirements for OpenVMS Alpha by Component¹" lists the approximate amount of space required for each optional component of the ACMS kits.

Table 2.3. Disk Space Requirements for OpenVMS Alpha by Component¹

Component	Blocks During Installation	Blocks After Installation
Development software ¹	35,000	23,000
Run-time software	27,000	16,000

Component	Blocks During Installation	Blocks After Installation
Remote-access software	22,000	14,000
ACMS samples	3,300	1,500
ACMS Request Interface samples	6,000	3,900
CDD-related files	6,000	5,500
LSE-related files	6,200	600

¹Includes CDD-related files

To determine the number of free disk blocks on your system disk, enter the following command:

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

2.4.2. Installing on a Disk with Limited Space

If your system disk has less space than indicated in *Section 2.4.1, "Disk Space for a Normal Installation"*, and if you have previously installed ACMS on your system disk, you may be able to install ACMS Version 4.4 by using the VMSINSTAL Alternate Working Device (AWD) option.

The AWD option allows you to specify another disk device on which VMSINSTAL creates its temporary working directory.

For a normal *VSI ACMS Version 4.3 for OpenVMS Alpha* development kit installation, VMSINSTAL creates the following temporary working directory:

```
SYS$SPECIFIC:[SYSUPD.ACMSDEVA_043]
```

For an AWD installation of the same kit, the VMSINSTAL temporary working directory is:

```
alternate-working-device:[000000.ACMSDEVA_043]
```

The space required during installation indicated in *Section 2.4.1, "Disk Space for a Normal Installation"* must be available on the alternate working device; this space will be available again after the installation is complete. You must still have at least 5000 blocks available on the system disk to use the AWD option.

Note

The AWD installation assumes that the ACMS Version 4.4 is no more than 5000 blocks larger than the ACMS kit currently installed on your system.

If the AWD installation does not work, you must make the required disk space available for a normal installation before installing ACMS.

To determine the number of free disk blocks on your system disk and alternate working device, execute the following commands:

```
$ SHOW DEVICE SYS$SYSDEVICE
$ SHOW DEVICE alternate-working-device
```

2.5. Disk Quotas

If disk quotas are enabled on the system disk, the ACMS Installation Verification Procedure (IVP) fails. The ACMS installation procedure normally schedules the IVP to execute automatically after the

installation is completed. However, if disk quotas are enabled, the installation procedure cancels the IVP and notifies you. You can choose to stop the installation and address the issue, or continue the installation and execute the IVP manually at a later time.

To determine whether disk quotas are enabled, execute the following DCL command:

```
$ SHOW QUOTA/DISK=SYS$SYSDEVICE
```

2.6. System Parameters

Table 2.4, "Required System Parameter Values for OpenVMS Alpha" and Table 2.5, "Required System Parameter Values for OpenVMS VAX" list the minimum required system parameter values for the installation. Depending on the kinds of programs and applications running at your site, you might need higher values for some settings.

Table 2.4. Required System Parameter Values for OpenVMS Alpha

System Parameter	Value
CLISYMTBL ¹	500
GBLPAGES ²	$n + 6,000$
GBLPAGFIL	2,048
GBLSECTIONS ²	$n + 55$
PQL_DASTLM ³	20
PQL_DBIOLM ³	12
PQL_DDIOLM ³	20
PQL_MDIOLM ³	20
VIRTUALPAGECNT	19,000

¹The CLISYMTBL dynamic system parameter must be set to a minimum value of 500 during the installation. If the CLISYMTBL setting is set to a value less than 500, you must reset the value to 500 or more before installing ACMS. You can lower the setting to its original value once the installation is finished.

²The n variable refers to the system parameter values that are currently in use. To install ACMS, the allocated system parameter value must be less than the sum of n plus the number indicated. The numbers indicated represent the unused portion of these parameters. See Section 2.6.2, "Calculating the Values for GBLPAGES and GBLSECTIONS".

³These dynamic system parameters must be set permanently to values equal to or greater than the values listed. Do not lower these values after the installation.

Table 2.5. Required System Parameter Values for OpenVMS VAX

System Parameter	Value
CLISYMTBL ¹	500
GBLPAGES ²	$n + 3,500$
GBLPAGFIL	2,048
GBLSECTIONS ²	$n + 55$
PQL_DASTLM ³	20
PQL_DBIOLM ³	12
PQL_DDIOLM ³	20

System Parameter	Value
PQL_MDIOLM ³	20
VIRTUALPAGECNT	19,000

¹The CLISYMTBL dynamic system parameter must be set to a minimum value of 500 during the installation. If the CLISYMTBL setting is set to a value less than 500, you must reset the value to 500 or more before installing ACMS. You can lower the setting to its original value once the installation is finished.

²The *n* variable refers to the system parameter values that are currently in use. To install ACMS, the allocated system parameter value must be less than the sum of *n* plus the number indicated. The numbers indicated represent the unused portion of these parameters. See *Section 2.6.2, "Calculating the Values for GBLPAGES and GBLSECTIONS"*.

³These dynamic system parameters must be set permanently to values equal to or greater than the values listed. Do not lower these values after the installation.

The following sections describe how to check system parameter values, calculate values for the GBLPAGES and GBLSECTIONS system parameters, change parameter values with the OpenVMS AUTOGEN command procedure, and set the CLISYMTBL dynamic system parameter with the OpenVMS System Generation Utility (SYSGEN).

2.6.1. Checking System Parameter Values

To check the values of your system parameters, enter the following command at the DCL prompt to invoke SYSGEN:

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

At the SYSGEN> prompt, enter the **SHOW** command to display the value of each system parameter. Make sure that the values displayed equal or exceed the value of each parameter listed in *Table 2.4, "Required System Parameter Values for OpenVMS Alpha"* or *Table 2.5, "Required System Parameter Values for OpenVMS VAX"*. The following command displays the value for the VIRTUALPAGECNT system parameter:

```
SYSGEN> SHOW VIRTUALPAGECNT
```

Parameter Name	Current	Default	Min.	Max.	Unit	Dynamic
-----	-----	-----	-----	-----	-----	-----
VIRTUALPAGECNT	270144	9216	512	1200000	Pages	

This example shows that the current value for VIRTUALPAGECNT is 270144.

After you finish checking the parameters with the **SHOW** command, enter the **EXIT** command at the SYSGEN> prompt to return to DCL level.

2.6.2. Calculating the Values for GBLPAGES and GBLSECTIONS

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

The values for GBLPAGES and GBLSECTIONS in *Table 2.4, "Required System Parameter Values for OpenVMS Alpha"* and *Table 2.5, "Required System Parameter Values for OpenVMS VAX"* (excluding the value of *n*) indicate the number of unused pages or sections you must have available on your system for the installation to process successfully. To calculate whether your system has a sufficient number of unused global pages and global sections, perform the following steps:

1. Show the current free global pages and global sections using the following DCL commands:

```
$ WRITE SYS$OUTPUT F$GETSYI("FREE_GBLPAGES")
```

```
3420
$ WRITE SYS$OUTPUT F$GETSYI("FREE_GBLSECTS")
72
```

2. Determine if the number of unused pages (3420 in the example) is equal to or greater than the number specified in *Table 2.4, "Required System Parameter Values for OpenVMS Alpha"* or *Table 2.5, "Required System Parameter Values for OpenVMS VAX"*. If the number of unused pages is less than the number listed in the table, increase the allocation value for GBLPAGES.
3. Determine if the number of unused global sections (72 in the example) is equal to or greater than the number specified in *Table 2.4, "Required System Parameter Values for OpenVMS Alpha"* or *Table 2.5, "Required System Parameter Values for OpenVMS VAX"*. If the value is less than the number required, increase the allocation value of the GBLSECTIONS parameter.

Section 2.6.3, "Changing System Parameter Values with AUTOGEN" describes the procedures for increasing these values as well as those of other system parameters. Refer to the OpenVMS documentation on system management and operations for more information.

2.6.3. Changing System Parameter Values with AUTOGEN

Use the AUTOGEN command procedure to change system parameters. To change system parameters with AUTOGEN, you must edit the following file:

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

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

```
GBLPAGES = 100000
```

Note

Dynamic system parameters such as the CLISYMTBL parameter are not modified using this procedure. See *Section 2.6.4, "Setting the CLISYMTBL Dynamic System Parameter"*.

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. For more information about using AUTOGEN, see the instructions on modifying system parameters in the OpenVMS documentation on system management and operations.

2.6.4. Setting the CLISYMTBL Dynamic System Parameter

If the CLISYMTBL system parameter value for your system is less than 500, change the setting by entering the following series of commands:

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

```
SYSGEN> SET CLISYMTBL 500
SYSGEN> WRITE ACTIVE
SYSGEN> EXIT
```

CLISYMTBL is a dynamic parameter, which means that you do not have to reboot the system to make the change take effect. The new value for CLISYMTBL becomes effective when you enter the SYSGEN command **WRITE ACTIVE**.

If you do nothing further, the new value for CLISYMTBL remains in effect until the next time you reboot the system, at which time the old value for CLISYMTBL is restored.

If you want to make the new CLISYMTBL value permanent, enter the following SYSGEN command:

```
SYSGEN> WRITE CURRENT
```

The **WRITE CURRENT** command writes the new value for CLISYMTBL into the SYSGEN database on disk, so that it is available when the system is rebooted.

To exit from SYSGEN, enter the following command:

```
SYSGEN> EXIT
```

Note

If you changed the value of CLISYMTBL, log out and log back in so that the new value can take effect.

2.7. Process Account Quotas

The account you use to install ACMS must have sufficient quotas to enable you to perform the installation. *Table 2.6, "Process Account Quotas"* summarizes the process quotas required to perform the installation.

Table 2.6. Process Account Quotas

Account Quota	Required Value
ASTLM	24
BIOLM	18
BYTLM	32,768
DIOLM	18
ENQLM	2,000
FILLM	200
PRCLM	10
PGFLQUO	12,800

User account quotas are stored in the file SYSUAF.DAT. Use the OpenVMS Authorize Utility (AUTHORIZE) 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>), enter the **SHOW** command with an account name to check a particular account. For example:

UAF> **SHOW SYSTEM**

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

MODIFY *account-name/quota-name=nnnn*

The following example changes the FILLM quota for the SYSTEM account and then exits from the Authorize Utility:

UAF> **MODIFY SYSTEM/FILLM=200**

UAF> **EXIT**

After you exit from the utility, the OpenVMS system displays messages indicating whether or not changes were made. Once the changes have been made, you 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 OpenVMS documentation on system management and operations.

2.8. Time Required for Installation

Table 2.7, "Timetable for Installing ACMS" lists the approximate time required for installing each ACMS kit.

Note

Installation time depends heavily on installation options, system load, hardware, and kit media. The times listed in Table 2.7, "Timetable for Installing ACMS" were measured for full installations on a standalone server with disk-resident kits. Your time may vary.

Table 2.7. Timetable for Installing ACMS

Kit	Installation Time ¹	IVP Time
Development	7 minutes	2 minutes
Run-time	4 minutes	2 minutes
Remote-access	2 minutes	1 minute

¹If you are using the VMSINSTAL option AWD, multiply these times by 3.

2.9. ACMS\$IVP User Authorization

The ACMS installation checks for the presence of the OpenVMS user account ACMS\$IVP. If this account does not exist, you are asked for information needed to create it. The ACMS\$IVP account is used to run the ACMS Installation Verification Procedure.

Among the information requested for this account is a unique user identification code (UIC) in the form [*ggggg,nnnnnn*], where *ggggg* is an octal user group number in the range 1–37776, and *nnnnnn* is an

octal user number in the range 1–177776. Additionally, the group number cannot be a system group number.

Enter the following commands to list the UICs currently in use on your system:

```
$ MCR AUTHORIZE
UAF> LIST * /BRIEF
```

The result of these commands is that all UICs in use on your system are listed in the file SYSUAF.LIS, in your default directory. You can then examine this listing to determine a unique UIC for the ACMS\$IVP account.

On your system, a certain range of group numbers has been reserved for system users. To determine this range, execute the following commands:

```
$ MAXSYS = F$GETSYI("MAXSYSGROUP")
$ SHOW SYMBOL MAXSYS
```

The value you supply for the octal group number in the ACMS\$IVP UIC must be greater than the octal value of the symbol MAXSYS. The following example shows that the maximum system group number is octal 10; therefore, you must specify a group number for the ACMS\$IVP UIC that is in the range 11–37776:

```
$ MAXSYS = F$GETSYI("MAXSYSGROUP")
$ SHOW SYMBOL MAXSYS
MAXSYS = 8      Hex = 00000008      Octal = 00000000010
```


Chapter 3. Installing ACMS

This chapter describes how to install the ACMS software. *Section 3.2, "Installation Procedure"* contains a step-by-step description of the installation procedure.

3.1. Installation Log

A log of your installation is kept in the following file:

```
SYS$COMMON:[SYSUPD]ACMS043_INSTALLATION.LOG
```

In particular, if the ACMS installation fails because prerequisites were not met, this log contains a list of those prerequisites. You can use it as a check list of items to address before you reinstall ACMS.

In addition, after the installation is completed, a list of the files created by the installation is stored in the following file:

```
SYS$COMMON:[SYSEXEC]ACMS043_FILES.DAT
```

3.2. Installation Procedure

ACMS provides online release notes. The prompt to display or print the release notes before the installation appears in the installation procedure, if you invoke VMSINSTAL with the `OPTIONS N` parameter. For information on accessing the release notes after the installation, refer to *Section 3.4, "Accessing the Online Release Notes"*.

The ACMS installation process is divided into five phases:

- The first phase consists of invoking VMSINSTAL and supplying information such as which kit to install, where the kit resides, and other installation options. *Section 3.2.1, "Invoking VMSINSTAL (First Phase)"* explains the first phase.
- The second phase consists of a series of questions, checks, and informational messages related to ACMS. This phase ensures that the installation environment is sufficient to support the actual installation work that occurs in the third phase. The second phase ends when you are shown a summary of what happens in the third phase and are asked whether you want to continue. *Chapter 2, "Preparing to Install ACMS"* has information to help you answer the questions asked in the second phase; if you have not read *Chapter 2, "Preparing to Install ACMS"* in preparation for this installation, do so now. *Section 3.2.2, "Product-Specific Questions (Second Phase)"* takes you step by step through the second phase of the installation.
- The third phase is the actual installation work. This usually includes restoring kit savesets, providing files to system directories, creating the ACMS\$IVP user account, updating the LSE and Oracle Trace environments, updating DCL tables and help libraries, and other steps as enumerated at the end of the second phase. No user interaction is required during this phase. *Section 3.2.3, "Informational Messages (Third Phase)"* explains the messages that you might see during this phase.
- The fourth phase is the ACMS postinstallation procedure. This procedure, which executes automatically after the ACMS software is installed, performs the minimum system management operations that are necessary to allow ACMS to be used on the system. *Section 3.2.4, "Running the postinstallation Procedure (Fourth Phase)"* guides you through the postinstallation phase.

- The fifth phase is the ACMS Installation Verification Procedure (IVP). This procedure performs a series of exercises to ensure that ACMS is properly installed and usable on your system. *Section 3.2.5, "Running the Installation Verification Procedure (Fifth Phase)"* discusses the execution of the IVP.

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

3.2.1. Invoking VMSINSTAL (First Phase)

To start the installation, log in to the SYSTEM account, and set default to the SYS\$UPDATE directory:

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

Next, invoke VMSINSTAL. Use the following syntax to invoke VMSINSTAL:

```
@VMSINSTAL product-name device-name [OPTIONS option-1[, ...]]
```

product-name

The installation name for the component. Enter one of the following:

- ACMSDEVA_xxx – if you are installing the development kit.
- ACMSRTOA_xxx – if you are installing the run-time kit.
- ACMSREMA_xxx – if you are installing the remote-access kit.

device-name

The name of the device on which you plan to mount the media. For example, MTA0: is the device name for a tape drive.

OPTIONS

An optional parameter indicating that one or more VMSINSTAL options are being supplied. This parameter is followed by a space, and then the requested options. If multiple options are requested, separate them with commas (,); do not include spaces in the options list.

The following are VMSINSTAL options that you can use for the ACMS installation:

- N–The release notes option causes VMSINSTAL to prompt you to display or print the ACMS release notes during the installation. Release notes are always copied to SYS\$HELP during an installation, whether or not this option is specified.
- AWD–The alternate working device option allows you specify an alternate disk device on which to create the temporary working directory used by VMSINSTAL during a product installation. This option allows you to perform an installation with fewer free blocks on the system disk than are otherwise required.

Specify the AWD option using the following format:

```
AWD=device
```

Note

Use the AWD option only if you have previously installed ACMS and you do not have sufficient space on your system disk to perform a normal installation. If you have not previously installed ACMS, you must have the disk space listed in *Table 2.2, "Disk Space Requirements for OpenVMS Alpha by Kit"* available to accommodate the ACMS software.

See *Section 2.4.2, "Installing on a Disk with Limited Space"* for more information on using the AWD option.

VMSINSTAL has several other options; for information, see the OpenVMS documentation on software installation.

Note

ACMS does not support option R, the alternate root option.

The following command invokes VMSINSTAL and installs ACMS from the MTA0: drive. This example uses the N option for printing or displaying release notes, and the AWD option to use disk DISK1 as an alternate working device:

```
$@SYS$UPDATE:VMSINSTAL ACMSDEVA_043 MTA0: OPTIONS N,AWD=DISK1
```

```
OpenVMS AXP Software Product Installation Procedure V6.2
```

```
It is 16-JUN-2006 at 11:00.
```

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

If you do not supply either the product name or the device name, VMSINSTAL prompts you for this information later on in the installation procedure.

1. **System backup** VMSINSTAL asks the following question to ensure that your system disk is properly backed up:

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

Always back up your system disk before performing an installation. If you are satisfied with the backup of your system disk, press **Return**. Otherwise, answer NO to stop the installation. After you back up your system disk, you can restart the installation.

2. **Mounting the media** VMSINSTAL instructs you to mount the ACMS Version 4.4 distribution media on the device you specified when you invoked VMSINSTAL. When you have mounted the media, answer YES to the question, "Are you ready?":

```
Please mount the first volume of the set on MTA0:.
```

```
* Are you ready? Y
```

If you entered the wrong device name when you invoked VMSINSTAL and need to restart the installation, answer NO in response to the question. To abort the installation for any other reason, press **Ctrl/Y**.

VMSINSTAL then reads the media and begins the installation of ACMS. A message similar to the following appears:

```
%MOUNT-I-MOUNTED, ACMSDEVA_043 MOUNTED ON _$200$MTA0:
```

The following products will be processed:

```
ACMSDEVA_ V4.3
```

```
Beginning installation of ACMSDEVA_ V4.3 at 11:01
```

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

3. **Release notes** If you specified **OPTIONS N** when you invoked **VMSINSTAL**, you are now given several options for reviewing the release notes.

Release notes included with this kit are always copied to **SYS\$HELP**.

Additional Release Notes Options:

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

* Select option [2]:

If you select option 1, **VMSINSTAL** displays the release notes immediately. You can terminate the display at any time by pressing **Ctrl/C**. Because the release notes are lengthy, it is recommended that you choose option 2 to print the release notes rather than reviewing them on line.

If you select option 2, **VMSINSTAL** prompts you for the name of the print queue that you want to use:

* Queue name [SYS\$PRINT]:

You can enter a queue name or just press **Return** to send the file to the default output print queue **SYS\$PRINT**.

If you select option 3, **VMSINSTAL** displays the release notes immediately and then prompts you for a queue name for the printed version.

If you select option 4, **VMSINSTAL** does not display or print the release notes. Use the **DCL** command **TYPE** or **PRINT** to view the release notes in the following file:

```
SYS$HELP:ACMS043.RELEASE_NOTES
```

The release notes are copied to the **SYS\$HELP** directory under all circumstances, regardless of your choice from the menu.

Note

The release notes for each version of **ACMS** are uniquely named so that release notes from multiple versions can be maintained. To facilitate comparison of various versions of **ACMS**, **VSI** recommends not deleting release notes for previous versions of **ACMS**.

4. **Continuing the installation** The installation procedure now asks if you want to continue the installation. To continue, answer YES. Otherwise, press **Return** to stop the installation:

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

After you read the release notes, you can restart the installation without being questioned about the release notes by removing OPTIONS N from the VMSINSTAL command. For example:

```
$ @SYS$UPDATE:VMSINSTAL ACMSDEVA_043 MTA0:
```

3.2.2. Product-Specific Questions (Second Phase)

This section discusses the questions and messages that apply specifically to the installation of ACMS. Depending on the kit and options that you choose, some of the steps listed here might not apply to your installation. See *Appendix A, "Sample Installations"* for a sample installation of the ACMS development kit.

Each question in the installation is marked with an asterisk (*) at the beginning of the line. Some questions show the default response in brackets, for example, [YES]. To choose the default response, press **Return**.

1. Selecting installation options

The product-specific installation procedure begins execution. The following message is displayed:

```
The results of this installation are being logged in
SYS$COMMON:[SYSUPD]ACMS043_INSTALLATION.LOG
```

```
Installing ACMS V4.3-0, development kit
```

The procedure then asks what portions of the installation you want to perform. It lists the optional parts of the installation, and asks if you want to do the full installation. If you answer YES, the full installation is done; if you answer NO, you are asked individually whether you want to perform each optional part of the installation.

In this example, the full installation is selected:

There are four optional parts to the ACMS development kit installation:

- o ACMS component software
- o ACMS LSE update
- o ACMS samples
- o ACMS Request Interface samples

The full installation includes all these parts.

To install the ACMS samples or the ACMS Request Interface samples, you must install, or have previously installed, the ACMS component software.

```
* Do you want the full ACMS installation [NO]?: Y
```

2. Checking installation prerequisites

The installation now checks that all ACMS installation prerequisites are met. These prerequisites are discussed in *Chapter 2, "Preparing to Install ACMS"*. The following message is displayed:

CHECKING INSTALLATION PREREQUISITES

A message is also displayed for any prerequisites that are not met. For example, the following message indicates that the optional DECtrace software is not installed:

The following software products are not available, or are below the minimum required version:

Product	Required	Minimum version	Current version
-----	-----	-----	-----
DECtrace	No	V2.2	(not available)

If products marked as nonrequired are to be used with ACMS, they should be upgraded to at least the minimum version displayed before use.

(required and optional software checked)

These messages are also logged in the following file:

SYS\$UPDATE:ACMS043_INSTALLATION.LOG

If any of the prerequisites are not met (with the exception of those related to optional software), the installation is aborted and a message similar to the following is displayed:

```
////////////////////////////////////  
Installation of ACMS is aborting because prerequisites are not met  
  at 12:00 on 7-OCT-1999  
////////////////////////////////////
```

At this point, address all the prerequisites that were not met, and then restart the installation of ACMS.

3. Checking for previous ACMS installations

The installation procedure checks to see if you have previously installed ACMS. If you have, some cleanup from the previous installation might be necessary; this is the case, for example, if you previously installed a development kit, and you are now installing a run-time kit.

The following message shows that no cleanup is necessary:

ACMS PREVIOUS INSTALLATION

(previous installation of ACMS is compatible with current
installation)

If cleanup is necessary, you are given the option to see a list of files that will be removed from the system disk during the installation.

4. Reviewing the LSE informational message

If you chose the LSE update option at the beginning of the installation, or if you chose the full installation, the installation advises you whether or not it can perform the LSE update. LSE cannot be updated if the optional LSE software is not present or if it is below the minimum version.

The following message advises you that the LSE update will take place as requested:

```
ACMS LSE CHECK
-----
```

```
(LSE available - LSE will be updated for ACMS)
```

Later on you are asked if you want to continue the installation. If you were informed that LSE would not be updated, you can continue the installation, then install LSE and reinstall ACMS at your convenience, using the LSE update option; or you can stop the installation, install LSE, and then restart the complete ACMS installation.

5. Reviewing the Oracle Trace informational message

The installation advises you whether or not it can perform the Oracle Trace update. Oracle Trace cannot be updated if the optional Oracle Trace software is not present or if it is below the minimum version.

The following message advises you that the Oracle Trace update will take place:

```
ACMS Oracle Trace CHECK
-----
```

```
(Oracle Trace available - Oracle Trace will be updated for ACMS)
```

Later on you are asked if you want to continue the installation. If you were informed that Oracle Trace would not be updated, you can continue the installation. If Oracle Trace is not available, the ACMS facility definition is stored in a text library specific to Oracle Trace, which is used to update the Oracle Trace facility database when Oracle Trace is installed. You do not have to reinstall ACMS after installing Oracle Trace.

6. Reviewing the CDD informational message

If you are installing a run-time kit, the installation advises you whether CDD is available. The availability of CDD affects the features provided by the run-time kit. See *Section 1.4.2, "Requirements for Oracle CDD"* for an explanation of these features.

The following message advises you that CDD is available:

```
ACMS CDD CHECK
-----
```

```
(CDD available - CDD-related files will be installed)
```

Later on you are asked if you want to continue the installation. If you were informed that ACMS files related to CDD would not be installed, you can continue the installation, then install CDD and reinstall ACMS at your convenience, using the CDD related files option; or you can stop the installation, install CDD, and then restart the complete ACMS installation.

7. Reviewing the old sample files informational message

If you chose the ACMS samples option at the beginning of the installation, or if you chose the full installation, the installation checks for old samples from a previous installation. These samples are stored in `SY$COMMON:[SY$HLP.EXAMPLES.ACMS]`, and they are superseded by examples supplied with this kit. They are deleted automatically during the installation.

The following message advises you that no old samples were found:

```
ACMS OLD SAMPLE FILES
-----
```

```
(no old sample files found)
```

Later on you are asked if you want to continue the installation. If you want to preserve these old samples, stop the installation, rename the sample files to a different directory, and then reinstall ACMS.

8. Reviewing the ACMS shutdown informational message

If you chose the ACMS component software option at the beginning of the installation, or if you chose the full installation, the installation checks for the ACMS shutdown procedure:

```
SYS$STARTUP:ACMSTOP.COM
```

If this procedure is found, the ACMS installation procedure executes it to ensure that previously installed ACMS software is not running during the installation. This shutdown occurs after you choose to continue the installation in a subsequent step.

The following message advises you that ACMSTOP.COM was found:

```
ACMS SHUTDOWN CHECK
-----
```

```
(ACMSTOP.COM found - ACMS will be shut down during installation)
```

Note

If you have previously installed ACMS on this system, and if ACMSTOP.COM is not found, ensure that the ACMS system is shut down before continuing with the installation.

9. Reviewing the postinstallation procedure informational message

If you chose the ACMS component software at the beginning of the installation, or if you chose the full installation, the installation procedure advises you whether or not it can execute the postinstallation procedure automatically. The postinstallation procedure cannot be executed if you do not have the required privileges enabled.

The following message advises you that the ACMS postinstallation procedure will be executed automatically:

```
ACMS postinstallation PROCEDURE
-----
```

```
(postinstallation procedure will be run automatically after
installation)
```

Note

Refer to *Chapter 4, "After Installing ACMS"* for important information on other steps to take before using ACMS on your system.

10. Reviewing the system roots check informational message

The installation checks for ACMS files in system-specific roots. If you previously installed ACMS, certain files might exist in system-specific roots. With a few exceptions (for example, ACMSPAR.ACM) ACMS files should reside in cluster-common directories such as SYS\$COMMON:[SYSLIB]. Some ACMS files might have migrated to system-specific roots as a result of maintenance or other activities performed on the previous version of ACMS. If ACMS files have migrated in this manner, and you then upgrade to a higher version of ACMS, you might subsequently encounter problems running ACMS across a cluster, such as problems related to a version mismatch or the inability to access new functionality on some nodes.

The installation checks for ACMS files that might have migrated inadvertently to system-specific roots, and lists any files it finds. VSI recommends that you check any files listed to ensure that they do not interfere with the proper operation of ACMS in the cluster. *Table 3.1, "ACMS-Related Files Checked For in System Roots"* lists the files that are checked.

Table 3.1. ACMS-Related Files Checked For in System Roots

Directory	Files
SYS\$SYSTEM	ACM*.EXE, ACM*.DAT, SYSUAF.DAT
SYS\$LIBRARY	ACM*.EXE, ACM*.COM
SYS\$MANAGER	ACM*.COM
SYS\$STARTUP	ACM*.COM

This example shows that no ACMS files were found in system-specific roots:

```
ACMS SYSTEM ROOTS CHECK
```

```
-----
```

```
(no ACMS-related files found in system-specific roots)
```

11. Choosing to execute the IVP

You are now asked whether you want to execute the ACMS Installation Verification Procedure (IVP). This question is asked if you are installing ACMS software (as opposed to installing samples or updating the LSE environment, for example).

VSI recommends that you run the IVP automatically after the installation, to ensure that the installation was successful. *Chapter 5, "Running the ACMS IVP"* contains more information on the IVP, including how to execute it manually at a later time.

The following question is asked to determine whether you want to run the IVP automatically; press **Return** to accept the default answer, YES:

```
ACMS IVP
```

```
-----
```

```
* Do you want to execute the Installation Verification Procedure [YES]?
```

If you choose to execute the IVP, the installation now checks for the IVP user account ACMS\$IVP. If the account ACMS\$IVP does not exist, you are asked to supply a user identification code (UIC) and password for this account. The information you supply is used to create the account in the third phase of the installation.

This example shows how to supply a UIC and password for the ACMS\$IVP account:

The ACMS\$IVP account used to execute the IVP is not available.

You must supply a UIC and password for this account so that it can be created; this must be done before the IVP can be executed.

Please enter the UIC for the ACMS\$IVP account, in the form
[ggggg,nnnnnn]

* UIC:

[400,200]

Please enter a password of at least 8 characters, using only
the following characters: ABCDEFGHIJKLMNOPQRSTUVWXYZ0123456789\$_

* Password:

* Verification:

Note

The password and verification are not echoed when you type them.

Refer to *Section 2.9, "ACMS\$IVP User Authorization"* for more information on selecting a valid UIC for the ACMS\$IVP account.

12. Choosing to continue the installation

At this time, the installation procedure lists the steps to complete the installation, and an approximate time for the rest of the installation. It then asks if you want to continue. If issues remain that you must address before the installation continues, answer NO to stop the installation.

The following example shows the work list for a typical development installation; the lists for run-time and remote-access installations are different.

SUMMARY OF THIS ACMS INSTALLATION

The following steps will be taken to complete this installation:

- o The ACMS system will be shut down (via SYS\$STARTUP:ACMSTOP.COM)
- o ACMS component software will be installed
- o LSE environment will be updated for ACMS
- o Oracle Trace facility database will be updated for ACMS
- o CDD-related ACMS files will be installed
- o ACMS samples will be installed
- o ACMS Request Interface samples will be installed
- o The ACMS postinstallation procedure will be executed
- o The ACMS IVP will be executed

The rest of this installation will take approximately 7 minutes.
Execution of the IVP will take approximately 2 minutes.

Note that this time is heavily dependent your system load, hardware and kit media. The time mentioned was measured on a stand-alone DEC 3000 (Alpha) system with a disk-resident kit. Your time may vary.

* Do you want to continue the installation [YES]?

Press **Return** to continue the installation.

3.2.3. Informational Messages (Third Phase)

In the third installation phase, the actual work of the installation takes place; restoring savesets, moving files, updating databases, and so on. This phase has no user interaction. At the beginning of the phase, a message similar to the following is displayed:

```
Installation of ACMS started
at 11:02 on 7-OCT-1999
```

Following this message, the installation procedure displays a number of informational messages that report on the progress of the installation.

If any errors are encountered in this phase, the installation aborts and a message similar to the following is displayed:

```
////////////////////////////////////
Installation of ACMS is aborting because errors were encountered
at 13:25 on 7-OCT-1999
////////////////////////////////////
```

If you receive this message, use information in previous error messages and the installation log to fix the problem, and then reinstall ACMS.

When the third phase is successfully completed, a message similar to the following is displayed:

```
Installation of ACMS completed successfully
at 11:07 on 7-OCT-1999
```

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

During the ACMS installation, VMSINSTAL operates in safety mode, which means that it defers file operations until the third phase has successfully completed. The VMSINSTAL-I-MOVEFILES message indicates that these deferred file operations are now being performed.

3.2.4. Running the postinstallation Procedure (Fourth Phase)

If you were informed during the second phase of the installation that the ACMS postinstallation procedure would be executed, it is done at this time. A message similar to the following is displayed:

```
ACMS postinstallation procedure started
at 11:09 on 7-OCT-1999
```

The postinstallation procedure performs the following steps:

1. **Checking the ACMS\$DIRECTORY logical name**

The procedure checks for the presence of the logical name ACMS\$DIRECTORY. If this logical name is defined, it must be in **/SYSTEM /SUPERVISOR** mode, and it must point to an existing directory. If ACMS\$DIRECTORY is not defined or is improperly defined, the procedure asks you for information so that it can define the logical name.

The following message shows that ACMS\$DIRECTORY is properly defined:

```
ACMS$DIRECTORY is defined as MGR$:[ACMS.DIRECTORY]
ACMS$DIRECTORY logical is acceptable
```

2. Converting ACMSGEN parameter files

The procedure asks if you want to convert existing ACMSGEN parameter files. If you answer **YES**, or press **Return** to accept the default answer, the procedure searches for all ACMSGEN parameter files located in SYS\$SYSDEVICE:[SYS*.SYSEXE] and SYS\$COMMON:[SYSEXE], and converts them to be compatible with ACMS Version 4.4.

The following message shows the ACMSGEN convert question, and typical output from the conversion process:

```
Do you want to convert existing ACMSGEN parameter files [Y]?

Converting SYS$SYSDEVICE:[SYSEXE]ACMSPAR.ACM
```

3. Converting ACMS UDF and DDF files

The procedure asks if you want to convert existing ACMS UDF and DDF parameter files. If you answer **YES**, or press **Return** to accept the default answer, the procedure searches for the files pointed to by the logical names ACMSUDF and ACMSDDF, if these logicals are defined, and then for ACMSUDF.DAT and ACMSDDF.DAT in SYS\$SYSROOT:[SYS*], and converts them to be compatible with ACMS Version 4.4.

The following message shows the ACMS UDF and DDF convert question, and typical output from the conversion process:

```
Do you want to convert existing ACMS UDF and DDF files [Y]?

Converting UDF file SYS$COMMON:[SYSEXE]ACMSUDF.DAT
Converting DDF file SYS$COMMON:[SYSEXE]ACMSDDF.DAT
```

4. Checking for ACMS UDF and DDF files

The procedure checks for the presence of ACMS DDF and UDF files. It first tries to locate these files through the **/SYSTEM /EXECUTIVE** logical names ACMSUDF and ACMSDDF, if they exist. The procedure then checks for ACMSUDF.DAT and ACMSDDF.DAT in SYS\$COMMON:[SYSEXE]. If the files are not found in either manner, the procedure creates them.

The following message shows that the logical names do not exist, but that the files were found in SYS\$COMMON:[SYSEXE]:

```
No /SYSTEM /EXECUTIVE logical ACMSUDF found
SYS$COMMON:[SYSEXE]ACMSUDF exists

No /SYSTEM /EXECUTIVE logical ACMSDDF found
SYS$COMMON:[SYSEXE]ACMSDDF exists
```

5. Checking for ACMS_SETUP.COM

The procedure checks for the presence of ACMS_SETUP.COM in SYS\$STARTUP. If the file does not exist, it is created. This is a template for site-specific commands related to the startup of ACMS. ACMS_SETUP.COM is executed by ACMSTART.COM, which is normally executed during system startup to start the ACMS software. *Chapter 4, "After Installing ACMS"* explains how to modify this template to address your specific needs regarding ACMS startup.

If ACMS_SETUP.COM already exists, the ACMS_SETUP_NEW.COM template file is created. After the installation, review this template file to see if you need to add any new commands to your existing ACMS_SETUP.COM.

The following message shows that the ACMS_SETUP.COM already exists, and that the template file ACMS_SETUP_NEW.COM is being created:

```
SYS$COMMON:[SYS$STARTUP]ACMS_SETUP.COM already exists  
  
Creating SYS$COMMON:[SYS$STARTUP]ACMS_SETUP_NEW.COM
```

6. Checking for ACMS menu files

The procedure checks in ACMS\$DIRECTORY for the ACMS command menu ACMSCMD.MDB, and the default user menu ACMS.MDB, and copies them into that directory if they do not exist. The following message shows that the menu files already exist in ACMS\$DIRECTORY:

```
ACMS$DIRECTORY:ACMSCMD.MDB already exists - not copied  
ACMS$DIRECTORY:ACMS.MDB already exists - not copied
```

7. Checking for ACMS\$MGMT_SETUP files

The procedure checks for ACMS\$MGMT_SETUP and Remote Manager configuration files and asks if you want to set up and configure the Remote Manager.

```
Do you want to SETUP and CONFIGURE the ACMS Remote System Manager [Y]?  
Creating SYS$STARTUP:ACMS$MGMT_SETUP.COM
```

If you respond yes, the procedure asks you a series of questions concerning Remote Manager configuration. Refer to the [VSI ACMS for OpenVMS Remote Systems Management Guide \[https://docs.vmssoftware.com/vsi-acms-remote-systems-management-guide/\]](https://docs.vmssoftware.com/vsi-acms-remote-systems-management-guide/) for more information about Remote Manager setup.

When the postinstallation procedure is completed, a message similar to the following is displayed:

```
ACMS postinstallation procedure completed successfully  
at 11:10 on 7-OCT-1999
```

Note

See *Chapter 4, "After Installing ACMS"* for information on tasks that you perform manually after ACMS is installed on your system.

3.2.5. Running the Installation Verification Procedure (Fifth Phase)

If you were informed during the second phase of the installation that the ACMS Installation Verification Procedure (IVP) would be executed, it is done at this time. A message similar to the following is displayed:

```
ACMS Installation Verification Procedure started
at 11:10 on 7-OCT-1999
```

The IVP is then invoked. It displays several informational messages to inform you of its progress. Refer to *Chapter 5, "Running the ACMS IVP"* for more information on the ACMS IVP.

Note

If the ACMS IVP is not invoked automatically during the installation, invoke it manually at your earliest convenience after the installation.

When the ACMS IVP is completed, a message similar to the following is displayed:

```
ACMS Installation Verification Procedure completed successfully
at 11:12 on 7-OCT-1999
```

3.2.6. Completing the Installation

The following message indicates that the entire ACMS installation is complete:

```
Installation of ACMSDEVA_ V4.3 completed at 11:12
```

You can now log out of the privileged SYSTEM account:

```
$ LOGOUT
SYSTEM      logged out at 7-OCT-1999 11:13:01.55
```

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

3.3. Recovering from System and Installation Failures

An unsuccessful installation can result from a system failure or errors encountered during the installation procedure. In some cases, you must correct the problem and reinstall ACMS. In other cases, you can continue where you left off. The following sections describe various failure scenarios and the recommended procedure to follow to recover from them.

3.3.1. System Failures

If you experience a system failure, such as a power loss during installation, VMSINSTAL automatically attempts to continue the installation when you reboot the system. Depending on the point in the installation at which the system failed, one of three conditions exists:

- The system disk did not undergo any changes before the system failure. VMSINSTAL instructs you to restart the installation.
- The system disk used by the installation was corrupted. VMSINSTAL instructs you to restore the system disk from the backup copy and restart the installation.
- VMSINSTAL continues the installation and then might tell you to manually purge replaced files, even if you requested that they be purged automatically. You can purge files, but remember that purging deletes all but the latest version of all files on your system disk. If you have multiple versions of system files that you want to save, you can delete just the ACMS files you want to remove from system directories. If you want to purge files, reboot the system, log in to the SYSTEM account, and purge all system files using the following command:

```
$ PURGE/LOG SYS$SYSROOT:[*...]*.*
```

When you have performed this task, the installation is complete.

If the system fails after you see the message that indicates the beginning of the ACMS IVP, VMSINSTAL has already completed the installation of the component software. In this case, when you reboot your system, VMSINSTAL displays the following message:

```
%VMSINSTAL-I-RECOVER, ACMSDEVA_ V4.3 was being installed when the system
crashed.
The installation completed satisfactorily.
```

This message indicates that VMSINSTAL has finished successfully, not that the installation of ACMS was successful.

VMSINSTAL does not automatically restart the IVP. You can run the IVP independently by following the steps described in *Chapter 5, "Running the ACMS IVP"*.

3.3.2. ACMS Installation Failures

If the installation of the ACMS software fails for some reason other than a system failure, the installation procedure displays a message telling you the cause of the failure. To continue with the installation, you must correct the condition causing the error and restart the installation procedure from the beginning.

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

- Operating system version is incorrect.
- Prerequisite software version is incorrect.
- Quotas necessary for successful installation are insufficient.
- System parameter values for successful installation are insufficient.
- OpenVMS help library is currently in use.

For descriptions of the error messages generated by these conditions, see the OpenVMS documentation on system messages, recovery procedures, and OpenVMS software installations. If you are notified that any of these conditions exist, take the appropriate action as described in the message. For example, you might need to change a system parameter or increase a quota value. For information on installation requirements, see *Chapter 2, "Preparing to Install ACMS"*.

If the installation of the component software completes satisfactorily, but a test or operation fails during the IVP, the IVP displays a message describing the failure and suggests a course of action. In most

cases, the suggested course of action is to reinstall ACMS. The failure could be due to low settings for the SYSGEN parameters GBLPAGES, GBLSECTIONS, GBLPAGFIL, or to an insufficient number of process slots. Check the ACMS Software Event Log for a message that indicates the source of the problem. If the IVP fails after you reinstall ACMS, contact VSI customer support.

3.3.3. Recovering from Errors

You can run the ACMS IVP separately after you install ACMS by following the instructions in *Chapter 5, "Running the ACMS IVP"*. As the IVP executes, it checks the success of each test and operation it performs. If any test or operation fails, the IVP displays a message describing the failure and suggests a course of action. Follow the suggested course of action and then restart the IVP as described in *Chapter 5, "Running the ACMS IVP"*. If the action you take is to reinstall ACMS, the IVP runs automatically if you answer YES to the IVP question. If you still cannot successfully run the IVP, contact your local VSI customer support.

3.4. Accessing the Online Release Notes

After ACMS has been installed, the release notes are located in the following file:

```
SYS$HELP:ACMS043.RELEASE_NOTES
```

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

```
$ HELP ACMS RELEASE_NOTES
```

Hardcopy release notes are not included with the documentation set for ACMS.

3.5. Files Installed on Your System

The files added to your system by the ACMS installation are listed in:

```
SYS$SYSTEM:ACMS043_FILES.DAT
```

You can display or print this file after you install ACMS.

ACMS Version Identification File (ACMS_ECO_LEVEL.DAT)

Starting with the ACMS Version 4.0 ECO Kit 1 release, a file named ACMS_ECO_LEVEL.DAT is distributed with the kit. This file is placed in the SYS\$SYSTEM directory during installation.

ACMS_ECO_LEVEL.DAT contains the version identifier for the ACMS release that is currently installed on the system. This file is distributed for all releases, including full releases, that have an ECO level of 0. If you report any problems with ACMS, refer to this file to determine the current ACMS version number. The version in this file may be more current than the version numbers that appear throughout the ACMS system, especially when running with an ECO release.

Chapter 4. After Installing ACMS

This chapter describes system management tasks that you perform manually after installing ACMS Version 4.4. These tasks might include:

- Executing the ACMS postinstallation procedure manually (if it was not executed automatically during installation)
- Editing system startup and shutdown procedures to include ACMS
- Editing the ACMS site-specific startup procedure ACMS_SETUP.COM
- Modifying ACMS parameters
- Authorizing applications, devices, users, and processes
- Creating and modifying ACMS user accounts
- Setting up ACMS on an OpenVMS Cluster system
- Enabling distributed ACMS processing
- Rebuilding the LSE environment
- Preparing language-specific ACMS development environments

The following sections describe these tasks.

4.1. Executing the ACMS postinstallation Procedure

If you were notified during the ACMS installation that the postinstallation procedure would not be run automatically, execute it now.

To execute the postinstallation procedure manually, use the following commands:

```
$ SET DEFAULT SYS$MANAGER
$ @ACMS_POST_INSTALL.COM
```

See *Section 3.2.4, "Running the postinstallation Procedure (Fourth Phase)"* for more information on the steps performed by the postinstallation procedure.

4.2. Editing System Startup and Shutdown Procedures

You must edit the OpenVMS system startup and shutdown procedures to provide for automatic startup and shutdown of ACMS when your system is rebooted. This step is usually not necessary for system upgrades.

4.2.1. Editing the System Startup Procedure

Add the following DCL command to the system startup procedure:

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

For sites that have modularized startup procedures, be sure to add the command to the correct procedure. The default startup command procedure is SYS\$MANAGER:SYSTARTUP_VMS.COM.

Position the ACMS startup command *after* the commands that start software on which ACMS relies. In particular, start ACMS after the network, DECdtm, and DECforms are started. For example:

```
$ @SYS$STARTUP:STARTNET.COM
$ @SYS$STARTUP:DECDTM$STARTUP.COM
$ @SYS$STARTUP:FORMS$STARTUP.COM
$ @SYS$STARTUP:ACMSTART.COM
$ @SYS$STARTUP:ACMSDI$STARTUP.COM
```

Note

The network must be running before ACMS is started, if you are going to use distributed ACMS processing.

4.2.2. Installing ACMS Images as Resident on OpenVMS Alpha

On OpenVMS Alpha systems, your application performance may improve by installing certain ACMS images as resident with the OpenVMS Install utility. Installing images as resident allows them to take advantage of the OpenVMS Alpha image-slicing feature.

The code sections of an image installed as resident reside in huge pages called granularity hint regions (GHRs) in memory. The Alpha hardware can consider a set of pages as a single GHR. This GHR can be mapped by a single page table entry (PTE) in the translation buffer (TB). The result is a reduction in TB miss rates. For more information on improving the performance of shareable images, see the [VSI OpenVMS Linker Utility Manual](https://docs.vmssoftware.com/vsi-openvms-linker-utility-manual/) [<https://docs.vmssoftware.com/vsi-openvms-linker-utility-manual/>].

The following ACMS images have been linked to allow them to be installed as resident:

For all kits:

- SYS\$LIBRARY:ACMSHR.EXE
- SYS\$LIBRARY:ACMTWPSHR.EXE
- SYS\$LIBRARY:ACMRRSHR.EXE
- SYS\$LIBRARY:ACMVFSHR.EXE

For development and run-time kits only (in addition to the preceding):

- SYS\$LIBRARY:ACMIWPSHR.EXE
- SYS\$SYSTEM:ACMSIWP.EXE

To install images as resident, execute the ACMS startup command procedure with the RESIDENT parameter as follows:

```
@SYS$STARTUP:ACMSTART.COM RESIDENT
```

Installing images as resident may require that you increase the GBLPAGES, GBLSECTIONS, and NPAGEDYN system parameters. Refer to *Section 2.6.3, "Changing System Parameter Values with AUTOGEN"* for more information on using AUTOGEN to change system parameters.

4.2.3. ACMSTART.COM Installs DECC\$SHR and ACMS\$TRACE_SHR.EXE

ACMSHR.EXE now links with ACMS\$TRACE_SHR.EXE, which links with DECC\$SHR.EXE. ACMSTART.COM has been modified to install both DECC\$SHR.EXE and ACMS\$TRACE_SHR.EXE. It is necessary to leave both of these images installed.

If DECC\$SHR is not installed on the system, you get the following error when starting ACMS:

```
$ ACMS/START SYS
%DCL-W-ACTIMAGE, error activating image DECC$SHR
  -CLI-E-IMGNAME, image file
    $100$DUA253:[SYS4.SYSCOMMON.][SYSLIB]DECC$SHR.EXE;1
  -SYSTEM-F-PRIVINSTALL, shareable images must be installed
    to run privileged image
```

If ACMS\$TRACE_SHR.EXE is not installed on the system, you get the following error when starting ACMS:

```
$ ACMS/START SYS
%DCL-W-ACTIMAGE, error activating image ACMS$TRACE_SHR.EXE
  -CLI-E-IMGNAME, image file
    $100$DUA253:[SYS4.SYSCOMMON.][SYSLIB]ACMS$TRACE_SHR.EXE
  -SYSTEM-F-PRIVINSTALL, shareable images must be installed
    to run privileged image
```

4.2.4. Editing the System Shutdown Procedure

Add the following DCL commands to the system shutdown file, SY\$MANAGER:SYSHUTDWN.COM:

```
$ ACMS/STOP SYSTEM /CANCEL
$ @SYS$STARTUP:ACMSTOP.COM
```

The first command cancels all active tasks and shuts down the ACMS system. It ensures that the ACMS system processes are run down properly and immediately.

The second command invokes the ACMS shutdown command procedure, ACMSTOP.COM. This procedure deinstalls ACMS images (using the Install Utility of OpenVMS).

4.3. Editing ACMS_SETUP.COM

During the installation of ACMS, ACMS_SETUP.COM, a template for site-specific ACMS startup operations, is placed in SYS\$STARTUP. If ACMS_SETUP.COM already existed from a previous installation, the template is named ACMS_SETUP_NEW.COM.

The next sections describe modifications you can make to ACMS_SETUP.COM, based on your use of ACMS.

4.3.1. Optional ACMS Logical Names

Table 4.1, "Optional ACMS Logical Names" lists optional ACMS logical names that you can define in ACMS_SETUP.COM, and their defaults.

Table 4.1. Optional ACMS Logical Names

Logical Name	Default
ACMS\$AUDIT_LOG ¹	SYS\$ERRORLOG:ACMSAUDIT.LOG
ACMS\$SWL_LOG ¹	SYS\$ERRORLOG:SWL.LOG
ACMS\$NOTICE ²	(none)
ACMS\$EDIT ³	SYS\$COMMON:[SYSEXEC]TDMSEEDIT.COM
ADU\$EDIT ⁴	ACMS\$EDIT
SWLUP\$EDIT ⁵	ACMS\$EDIT

¹See *VSI ACMS for OpenVMS Managing Applications* [<https://docs.vmssoftware.com/vsi-acms-managing-applications/>] for more information on this logical name.

²Used to display the text in the file pointed to by the logical name whenever an ACMS user signs in through the terminal subsystem. If defined, it must point to an existing, nonempty text file.

³If TDMS is not installed, the default is SYS\$COMMON:[SYSEXEC]ACMSEEDIT.COM.

⁴Defines the editor to be used for the **EDIT** command to ACMSADU.

⁵Defines the editor to be used for the **EDIT** command to SWLUP.

For each of these logical names, a DCL command exists in ACMS_SETUP.COM. For example:

```
$! DFN_SUPER ACMS$AUDIT_LOG SYS$ERRORLOG:ACMSAUDIT.LOG
```

DFN_SUPER is also defined in ACMS_SETUP.COM, to create the logical name in the mode required by ACMS. To equate an optional ACMS logical to a nondefault value, edit the appropriate command line by removing the exclamation point (!) and providing a new equivalence string for the logical name. For example:

```
$ DFN_SUPER ACMS$AUDIT_LOG AUDIT_DISK:ACMSAUDIT.LOG
```

4.3.2. Installing Application Development Shareable Images

If you have installed the development kit, or the run-time kit with CDD installed, the shareable images listed in Table 4.2, "Global Sections and Pages Required for Shared Utility Images (Alpha)" and Table 4.3, "Global Sections and Pages Required for Shared Utility Images (VAX)" are in SYS\$SHARE. If you installed the remote-access kit, or the run-time kit without CDD installed, these images are not supplied.

If you do a lot of ACMS application development work, consider installing these shareable images. Installing these images increases the number of global sections and global pages required by ACMS, but decreases memory requirements if many users are running ADU, and also decreases image activation time. Table 4.2, "Global Sections and Pages Required for Shared Utility Images (Alpha)" and Table 4.3, "Global Sections and Pages Required for Shared Utility Images (VAX)" show the number of global sections and global pages required for installing each image.

Table 4.2. Global Sections and Pages Required for Shared Utility Images (Alpha)

Utility Image	GBLSECTIONS Used	GBLPAGES Used
ACMADUSHR	3	@63

Utility Image	GBLSECTIONS Used	GBLPAGES Used
ACMCDUSHR	3	383
ACMCMUSHR	1	331
ACMTDUSHR	3	650

Table 4.3. Global Sections and Pages Required for Shared Utility Images (VAX)

Utility Image	GBLSECTIONS Used	GBLPAGES Used
ACMADUSHR	3	@22
ACMCDUSHR	1	169
ACMCMUSHR	1	145
ACMTDUSHR	1	299

For each of these images, the following DCL commands exist in ACMS_SETUP.COM:

```
$! IMAGE_NAME = "image"
$! GOSUB INSTALL_IMAGE
```

To install these images during the next ACMS startup, edit the command lines by removing the exclamation point (!) in each line.

4.3.3. ACMS System Management Commands

ACMS_SETUP.COM can also be used to execute ACMS system management commands that prepare the ACMS system for work. These commands might include starting applications, enabling ACMS operator terminals, starting the Queued Task Initiator (QTI), and so forth.

Examples of these commands are included at the end of ACMS_SETUP.COM:

```
$!** Start the ACMS system ()delay terminal startup until applications are
$!** started
$! ACMS/START SYSTEM /NOTERMINALS
$!
$!** Set ACMS operator terminals; if more than one, place them within the
$!** parentheses and separate with commas, eg (OPA0,TTA2)
$! ACMS/SET SYSTEM /OPERATOR/TERMINAL=(OPA0)
$!
$!** Start the Queued Task Initiator
$! ACMS/START QTI
$!
$!** Start task queues; if more than one, separate with commas,
$!** eg QUEUE_1,QUEUE_2
$! ACMS/START QUEUE QUEUE1
$!
$!** Start ACMS applications; if more than one, separate with commas,
$!** eg APPLICATION_1,APPLICATION_2
$! ACMS/START APPLICATION APPLICATION_1
$!
$!** Start ACMS terminals
$! ACMS/START TERMINALS
```

Edit this section of ACMS_SETUP.COM by inserting the commands necessary to complete the startup of your ACMS system.

4.4. Modifying ACMS Parameters

After installing ACMS, run the ACMSPARAM.COM and ACMEXCPAR.COM command procedures to determine ACMS quotas, parameters, and privileges. There is no need to run ACMEXCPAR.COM after a new installation until applications have been installed.

Note

It is strongly recommended that you use ACMSPARAM.COM and ACMEXCPAR.COM. Otherwise, you might not be able to start ACMS.

These command procedures perform the following tasks:

- Calculate the minimum settings for the OpenVMS SYSGEN parameters that ACMS affects.
- Assign privileges and quotas required for user names under which the ACMS run-time processes run.
- Assign privileges and quotas required for user names under which applications run.

ACMSPARAM.COM and ACMEXCPAR.COM do not support logical name search lists specifications.

Refer to *VSI ACMS for OpenVMS Managing Applications* [<https://docs.vmssoftware.com/vsi-acms-managing-applications/>] for information on how to use the ACMSPARAM and ACMEXCPAR command procedures.

Certain conditions require attention to adjust ACMS parameter values:

- ACMSPARAM.COM might generate an excessive PGFLQUOTA value for the CP account.

The current formula for calculating the PGFLQUOTA value of the CP account is liberal. The formula assumes that each exchange step involves the sending or receiving of the largest message. See the description of the LARGEST_MESSAGE variable in *VSI ACMS for OpenVMS Managing Applications* [<https://docs.vmssoftware.com/vsi-acms-managing-applications/>].

After executing ACMSPARAM.COM, review the value of CP_PGFLQUOTA. If its value appears to be excessively large, then replace the LARGEST_MESSAGE variable with the average size of workspaces used in exchange steps, or with the size of the workspace most often used in exchange steps.

The formula for calculating the CP_PGFLQUOTA provides only a rough approximation of the quota. To fine-tune your system, calculate the quota for your particular system.

- ACMS operator commands may fail with the INVACMPAR error.

During a new installation of ACMS, the installation procedure resets the ACMSGEN parameters to their default values. If the value of the SYSGEN parameter MAXPROCESSNT is too large, the default size of MSS_POOLSIZE can be too low to allow ACMS to start. The following error is reported when any ACMS operator command is entered:

```
-ACMSMSS-E-INVACMPAR, The system MSS parameters are invalid
```

Enter the following commands to reset MSS_POOLSIZE – you might need to set MSS_POOLSIZE to be larger, depending on the value of MAXPROCESSCNT:

```
$ MCR ACMSGEN
```

```
USE CURRENT
SET MSS_POOLSIZE 1024
WRITE CURRENT
```

4.5. Authorizing Applications, Devices, Users, and Processes

ACMS provides utilities to specify which applications, terminals, users, and agent programs can access the ACMS system. The following sections describe these utilities.

4.5.1. Authorizing New Applications

Run the ACMS Application Authorization Utility (AAU) to authorize any new ACMS applications that you plan to install. AAU allows you to authorize applications, specify application user name restrictions, and define who can install those applications. You must restart ACMS after installing any new applications.

Users who have been authorized by AAU can use the **ACMS/INSTALL** operator command to install applications in ACMS\$DIRECTORY. By default, no users are authorized to use the **ACMS/INSTALL** operator command.

Use of AAU is optional; however, it can simplify and ease the application management process during the development and maintenance of applications.

For information on using AAU, see *VSI ACMS for OpenVMS Managing Applications* [<https://docs.vmssoftware.com/vsi-acms-managing-applications/>].

4.5.2. Authorizing New Terminals

If you have new terminals to authorize or modify, run the Device Definition Utility (DDU) to authorize either all terminals (with \$ALL) or individual terminals (by device name) for access to ACMS:

```
$ SET DEFAULT SYS$SYSTEM
$ RUN ACMSDDU
DDU> ADD $ALL
DDU> EXIT
```

For information on using DDU, see *VSI ACMS for OpenVMS Managing Applications* [<https://docs.vmssoftware.com/vsi-acms-managing-applications/>].

Note

Users on your system cannot sign in to ACMS until you authorize \$ALL or specific terminals.

4.5.3. Authorizing New Users

If you have new users to authorize, run the ACMS User Definition Utility (UDU) to authorize ACMS users. You can either authorize all users (with \$ALL) or individual users (by name):

```
$ SET DEFAULT SYS$SYSTEM
$ RUN ACMSUDU
UDU> ADD $ALL
```

UDU> **EXIT**

For information on using UDU, see [VSI ACMS for OpenVMS Managing Applications](https://docs.vmssoftware.com/vsi-acms-managing-applications/) [https://docs.vmssoftware.com/vsi-acms-managing-applications/].

Note

Users on your system cannot sign in to ACMS until you authorize \$ALL or specific user names.

4.5.4. Authorizing ACMS Processes

You must authorize the user name of any task-submitting agent program that submits a task for processing with a user name other than the user name of that agent. Use the **/AGENT** qualifier with the UDU **ADD** command to authorize this type of agent. For example, use the following command to authorize an agent with the user name SYSTEM:

```
$ RUN ACMSUDU
UDU> ADD SYSTEM /AGENT
User SYSTEM has been added to the database
```

Both the ACMS Command Process (CP) and the Queued Task Initiator (QTI) must be authorized as agents. By default, ACMS assigns the user name SYSTEM to the CP and QTI. If you change the user name of the CP or QTI with ACMSGEN, you must run the UDU again, using the **RENAME** command to change the user name in the UDU authorization file.

For information on UDU, see [VSI ACMS for OpenVMS Managing Applications](https://docs.vmssoftware.com/vsi-acms-managing-applications/) [https://docs.vmssoftware.com/vsi-acms-managing-applications/].

Note

The ACMSPARAM.COM procedure automatically authorizes the user names of the CP and QTI as agents (using the **/AGENT** qualifier) in the ACMS user authorization file ACMSUDF.DAT. The ACMSPARAM command procedure takes either the user name you supply or supplies a default user name. The default user name supplied for the CP is ACMS\$CP. The default user name supplied for the QTI is ACMS\$QTI.

4.6. Creating and Modifying ACMS User Accounts

Each person who uses ACMS on your system must be an authorized OpenVMS user, with certain privileges and quotas. The following sections describe these requirements. See [VSI ACMS for OpenVMS Managing Applications](https://docs.vmssoftware.com/vsi-acms-managing-applications/) [https://docs.vmssoftware.com/vsi-acms-managing-applications/] for quotas required for users running the ACMS Task Debugger.

4.6.1. Privileges

To use ACMS, each user account must have at least TMPMBX and NETMBX privileges. Those persons who are responsible for starting the ACMS system, starting applications, and using other ACMS operator commands must have OpenVMS OPER privilege. Use the OpenVMS Authorize Utility to determine whether users have the privileges they require.

4.6.2. Quotas

Make sure that the appropriate user accounts have sufficient quotas to be able to use ACMS. *Table 4.4, "User Account Quotas"* summarizes the required user account quotas.

Table 4.4. User Account Quotas

Account Quota	Value (>=)
ASTLM	24
BIOLM	18
BYTLM	10,240
DIOLM	22
ENQLM	100
FILLM	50
PRCLM	2
WSDEF	256
WSEXT	1,024
WSQUO	512
PGFLQUO	12,800

User account quotas are stored in the file SYSUAF.DAT. 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>), enter the **SHOW** command with an account name to check a particular account. For example:

```
UAF> SHOW SMITH
```

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

MODIFY *account-name/quota-name=nnnn*

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

```
UAF> MODIFY SMITH/FILLM=50
UAF> EXIT
```

After you exit from the utility, the OpenVMS 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 OpenVMS documentation on system management and operations.

4.7. Setting up ACMS on an OpenVMS Cluster System

Because ACMS treats an OpenVMS Cluster system as if it were a local area network, you must perform the following operations on each node of the cluster:

- Define proxy accounts for users on other nodes of the cluster.

ACMS does not recognize the common security domain of a homogeneous OpenVMS Cluster system. As a consequence, you must define proxy accounts on each node for users on other nodes of the cluster. You can use ACMSGEN to assign a default proxy user name (with the USERNAME_DEFAULT parameter of ACMSGEN), or use the ACMSUDU utility to define individual ACMS proxy user names for submitters. Refer to [VSI ACMS for OpenVMS Managing Applications](https://docs.vmssoftware.com/vsi-acms-managing-applications/) [https://docs.vmssoftware.com/vsi-acms-managing-applications/] for more information on using ACMSUDU to create submitter proxies.

- Issue a **LICENSE LOAD** command on each node that will run ACMS.

If you are installing ACMS in a cluster, you must load the ACMS license on each node that will use the product. For example:

```
$ LICENSE LOAD ACMS
```

- Replace the DCL tables on each node. For example:

```
$ INSTALL REPLACE SYS$SHARE:DCLTABLES
```

- Execute ACMS startup procedure on each node that will run ACMS. For example:

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

- Set up node-specific ACMSPAR.ACM files.

If you are installing ACMS in a cluster, you must make sure that the ACMSPAR.ACM parameter file is in the directory SYS\$SPECIFIC:[SYSEXE], rather than SYS\$COMMON:[SYSEXE] before setting the NODE_NAME parameter. Do this on each node of the cluster, because each node has a different DECnet node name and, therefore, each must have its own node-specific ACMSPAR.ACM file. See *Section 4.8, "Enabling Distributed ACMS Processing"* for more information on setting the NODE_NAME parameter.

4.8. Enabling Distributed ACMS Processing

By default, ACMS does not enable distributed processing. If submitters on your node need to select tasks in a remote application, or if remote submitters need to select tasks in an application on your node, you must set the NODE_NAME parameter in ACMSGEN to your node name. This step is usually necessary only for new installations, not system upgrades. For example:

```
$ RUN SYS$SYSTEM:ACMSGEN
ACMSGEN> SET NODE_NAME DOVE
ACMSGEN> WRITE SYS$SPECIFIC:[SYSEXE]ACMSPAR.ACM
```

For more information about using ACMSGEN and ACMS distributed processing, see [VSI ACMS for OpenVMS Managing Applications](https://docs.vmssoftware.com/vsi-acms-managing-applications/) [https://docs.vmssoftware.com/vsi-acms-managing-applications/].

4.9. Rebuilding the LSE Environment

If the DECtp Implementation Toolkit for OpenVMS is installed on your system, you must rebuild the toolkit's LSE environment and section files after installing ACMS Version 4.4. See the toolkit documentation for instructions on how to rebuild the LSE environment.

4.10. Installing ACMS Menu Form Files

If you have customized the ACMS menu form definition file, you must rebuild the form image file. Use the following DCL command file to rebuild and install the new form image file on the system:

```
$ @SYS$MANAGER:ACMS_BUILD_MENU_FORM.COM
```

4.11. Preparing Language-Specific ACMS Development Environments

The following sections describe how to set up an environment for developing ACMS agents in BLISS or Pascal.

4.11.1. BLISS Agents

ACMS Version 4.4 supplies the ACMSBLI.R32 file. If you plan to use BLISS agents, see the BLISS-32 documentation for directions on building the BLISS library file (ACMSBLI.L32) from the ACMSBLI.R32 file, and for general information on creating library files, and using library files and require files.

ACMSBLI.R32 contains the following:

- Keyword macros for all the services. The macro name is the service name prefixed with a dollar sign (\$). The keyword macro for ACMS\$SIGN_IN, for example, is \$ACMS\$SIGN_IN.
- Structure definitions for all IDs. The name of the structure is the same as the name given in the structure layouts listed in *VSI ACMS for OpenVMS Systems Interface Programming* [<https://docs.vmssoftware.com/vsi-acms-sys-interface-prog/>]. Use these IDs in declaration definitions.
- Miscellaneous symbolic constants used in service call arguments.

4.11.2. Pascal Agents

ACMS supplies the ACMSPAS.PAS file. If you plan to use Pascal agents, you must compile this file into an environment file. See the VSI Pascal documentation for directions on building the environment file (.PEN) from the ACMSPAS.PAS file, and on using environment definitions.

ACMSPAS.PAS contains the following:

- Routine definitions for all the services.
- Record definitions for all IDs. The name of the record is the same as the name given in the structure list in the *VSI ACMS for OpenVMS Systems Interface Programming* [<https://docs.vmssoftware.com/vsi-acms-sys-interface-prog/>]. Use these IDs in declarations.
- Miscellaneous symbolic constants used in service call arguments.

Note

If you use the non-positional syntax form of parameter association, you must use `PROCEDURE_` rather than `PROCEDURE` as the formal parameter name for `ACMS$GET_PROCEDURE_INFO`, because `PROCEDURE` is a reserved word in Pascal. See *VSI Pascal Reference Manual* [<https://docs.vmssoftware.com/vsi-pascal-for-openvms-reference-manual/>] for more information.

4.12. Determining and Reporting Problems

Installing ACMS changes the state of your system. Record any changes to the system in your system management log. If an error occurs while ACMS is being used and you believe that the error is caused by a problem with ACMS, contact a VSI customer support to report the problem.

Chapter 5. Running the ACMS IVP

This chapter describes how to run the ACMS software Installation Verification Procedure (IVP) separately from the installation procedure. The IVP checks that the installation procedure has successfully installed the ACMS software, and that the software can create and run ACMS applications.

The IVP can be run as a part of the normal installation. However, if the automatic IVP fails for any reason, correct the error and then run the IVP again.

You can also execute the IVP to verify that ACMS is functioning properly after your system environment has changed; for example, after you have installed or upgraded another layered product that ACMS uses, such as DECforms or Rdb.

5.1. Functions of the IVP

Table 5.1, "ACMS IVP Tests" lists the tests performed by the ACMS IVP. The full set of tests is performed if you installed the development kit; subsets are performed for the run-time kit with CDD, the run-time kit without CDD, and the remote-access kit.

Note

If disk quotas are enabled, the IVP fails. The installation procedure checks to see if disk quotas are enabled. If disk quotas are enabled, the installation procedure displays an informational message to that effect and continues. See Section 2.5, "Disk Quotas" for more information on disk quotas.

Table 5.1. ACMS IVP Tests

Test Description	Development Kit ¹	Run-Time Kit with CDD ¹	Run-Time Kit Without CDD	Remote- Access Kit
Check ACMS files	+	+	+	+
Define tasks and task groups	+			
Define application	+	+		
Link procedure server image	+	+	+	
Update DDF and UDF files	+	+	+	+
Create ACMSPAR file	+	+	+	+
Start ACMS system	+	+	+	+
Start application	+	+	+	
Select tasks	+	+	+	
Test ACMS debugger	+			
Test Queued Task Initiator	+	+	+	+
Test queue manager	+	+	+	+
Stop ACMS system	+	+	+	+

¹The IVP may fail if a DECdtm log file is not present on the system. CDD uses DECdtm, and, therefore, that portion of the IVP that builds the IVP task group and application is subject to the requirements of CDD and DECdtm. If you are installing the ACMS Remote-Access kit or

the ACMS Run-Time kit without CDD, this error cannot occur. If the IVP fails, refer to *Appendix C, "Creating Transaction Logs for DECdm Services"* for directions on how to create a transaction log.

5.2. Running the IVP

To run the IVP independently of the installation procedure, follow these steps:

1. Log in to the system manager's account, SYSTEM:

```
Username:  SYSTEM
Password:
```

2. Shut down ACMS.

You cannot run the IVP if ACMS is active on your system. To shut down ACMS, enter the following command at the DCL prompt:

```
$ ACMS/STOP SYSTEM/CANCEL
```

3. Set your default to SYS\$SYSROOT:[SYSTEST.ACMS]:

```
$ SET DEFAULT SYS$SYSROOT: [SYSTEST.ACMS]
```

4. Run the ACMS Installation Verification Procedure, ACMSIVP.COM.

To start the IVP, enter the following command:

```
$ @ACMSIVP
```

The IVP checks for the presence of the user account ACMS\$IVP. If the account does not exist, the IVP asks you for a user identification code (UIC) and password so that it can create the account. Refer to *Section 2.9, "ACMS\$IVP User Authorization"* and *Section 3.2.2, "Product-Specific Questions (Second Phase)"* for more information on creating the ACMS\$IVP account.

Section 2.8, "Time Required for Installation" contains information on the time necessary to execute the IVP.

5.3. Errors Running the IVP

When the IVP is run automatically during the installation of ACMS, all output from the IVP is logged in SYS\$UPDATE:ACMSIVP.LOG. When the IVP is run manually, all output is displayed on the terminal.

If the IVP detects an error, it provides an appropriate error message. This message includes a suggested action, such as stopping the ACMS system and reinvoking the IVP. If the suggested action does not fix the problem, reinstall ACMS.

IVP Can Fail with INVACMPAR Error When MSS_POOLSIZE Is Too Low

When you run the IVP, it resets all the ACMSGEN parameters to their default values. If the value of the SYSGEN parameter MAXPROCESSNT is too large, the default size of MSS_POOLSIZE can be too low to allow ACMS to start. The following error is reported when any ACMS operator command is entered:

```
-ACMSMSS-E-INVACMPAR, The system MSS parameters are invalid
```

To run the IVP, include the following in the ACMSIVP.COM file, which is located in the subdirectory [.ACMS] under SYS\$TEST – you might need to set the value of MSS_POOLSIZE to be larger, depending on the value of MAXPROCESSCNT:

```
$ MCR ACMSGEN USE DEFAULT SET MSS_POOLSIZE 1024 SET ACC_USERNAME ACMS$IVP
.
.
.
```

5.4. Sample IVP Execution

This section contains a sample manual execution of the ACMS IVP for the ACMS Alpha development kit.

```
Starting the ACMS V4.3-0 Installation Verification Procedure
  at 11:13 on 7-OCT-2025
The IVP is testing a development installation
(Checking privileges)
(Checking for existing ACMS processes)
(Checking for execution of ACMSTART.COM)
(Checking ACMS logicals)
(Checking ACMS system files)
(Checking CDD directory CDD$TOP.ACMS$DIR.ACMS$IVP)
(Defining IVP's tasks and task group)
%ACMSTDU-I-WRITETDB, Writing TDB
-ACMSTDU-I-BYTESWRIT, 3584 bytes (7 blocks)
%ACMSTDU-I-OBJMODCRE, Procedure server 'GROUP1_SERVER1' object module
  created
in file 'SYS$COMMON:[SYSTEST.ACMS]GROUP1_SERVER1.OBJ;3'
  (Defining IVP's application)
%ACMSCDU-I-WRITEADB, Writing ADB
-ACMSCDU-I-BYTESWRIT, 1824 bytes (4 blocks)
  (Linking server image)
  (Updating IVP's DDF file)
  (Updating IVP's UDF file)
  (Creating IVP's ACMSPAR file)
  (Starting ACMS system)
  (Starting ACMS application ACMSIVP)
  (Checking ACMS processes)
  (Selecting IVP's tasks)
ACMS V4.3-0 Current System State: STARTED    Time: 7-OCT-2025 11:15:19.65
Terminal Subsystem State:    STARTED
Queued Task Initiator State: STOPPED
System Auditing State:      ENABLED
```

Active ACMS Users

User Name	Submitter ID	Agent PID	Device
SYSTEM	00010014	28A00CBB	RTA5:

Active Execution Controllers

Application Name PID	Process Name	User Name	Exc
ACMSIVP 28A00CD9	ACMS01EXC001000	ACMS\$IVP	

(Testing the ACMS Debugger)
(Testing the ACMS Queued Task Initiator)
(Testing the ACMS Queue Manager)
(Stopping the ACMS system)

ACMS V4.3-0 Installation Verification Procedure completed successfully
at 11:15 on 7-OCT-2025
(Cleaning up)

\$ LOGOUT
SYSTEM logged out at 7-OCT-2025 11:16:07.07

Chapter 6. Deinstalling ACMS

This chapter describes the process of deinstalling ACMS.

Caution

The deinstallation of ACMS removes all ACMS files from your system, including customer-written applications in ACMS\$DIRECTORY.

Deinstallation is necessary only if you no longer need ACMS on your system and you want to release the disk space for other use.

Deinstallation is not necessary if you are upgrading to a new version of ACMS. When you upgrade, obsolete ACMS files are deleted and superseded files are purged automatically by the installation procedure.

6.1. Starting the Deinstallation Procedure

To invoke the ACMS deinstallation procedure, execute the following command:

```
$ @SYS$UPDATE:ACMS_DEINSTALL.COM
```

The deinstallation procedure asks if you want to continue. The default answer is NO; you must answer YES **Return** to continue.

The deinstallation procedure then does the following:

1. Stops the ACMS system.
2. Deinstalls all ACMS installed images.
3. Deletes all files and directories known to be created by the ACMS installation.
4. Checks the system disk for any other files that might be related to ACMS.

If files are found that might be related to ACMS, the deinstallation procedure lists them on your terminal. You can review any files listed in this manner and delete them manually, or you can reinvoke the deinstallation procedure to delete them automatically. Execute the following command to delete these files automatically:

```
$ @SYS$UPDATE:ACMS_DEINSTALL.COM DELETE_SUSPECTED_ACMS_FILES
```

6.2. Completing the Deinstallation

The ACMS deinstallation procedure removes all files related to ACMS from the system. However, to complete the deinstallation of ACMS, you might also want to perform some or all of the following cleanup steps:

- Deassign all ACMS logical names (on each node if in an OpenVMS Cluster environment).
- Delete the ACMS\$IVP account from the SYSUAF database.

- Remove any OpenVMS proxies granted to former users of ACMS who no longer need access to the system.
- Delete the ACMS deinstallation command procedure by executing the following command:

```
$ DELETE SYS$UPDATE:ACMS_DEINSTALL.COM; *
```

Appendix A. Sample Installations

This appendix contains sample installations of the ACMS development kits.

These samples represent typical installations. Many variations are possible, based on the OpenVMS version and the presence of other layered products on your system.

A.1. OpenVMS Alpha Development Kit Sample Installation

This section contains a sample installation of the ACMS Version 4.4 for OpenVMS Alpha development kit. The details of your actual installation may be somewhat different.

```
$ @sys$update:vmsinstal
```

```
OpenVMS Software Product Installation Procedure V8.4-2L1
```

```
It is 5-OCT-2025 at 16:39.
```

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

```
%VMSINSTAL-W-ACTIVE, The following processes are still active:
```

```
TCPIP$PORTM_1
TCPIP$FTP_1
_TNA4:
TCPIP$SS_BG2401
TCPIP$SSH_22947
TCPIP$SS_BG2412
TCPIP$SSH_33766
TCPIP$SS_BG2425
TCPIP$SSH_32067
```

```
* Do you want to continue anyway [NO]? yes
```

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

```
* Where will the distribution volumes be mounted: WORK2:[BIGGLES]
```

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

```
* Products: ACMSDEVI_053
```

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

```
The following products will be processed:
```

```
ACMSDEVI_ V5.3
```

```
Beginning installation of ACMSDEVI_ V5.3 at 16:40
```

```
*****
%VMSINSTAL-I-VALSIGN, Performing product kit validation of signed kits ...
Success
```

```
%VMSINSTAL-I-VALPASSED, validation of WORK2:[BIGGLES]ACMSDEVI_053.A_VNC
succeeded
Success
```

%VMSINSTAL-I-VALPASSED, validation of WORK2:[BIGGLES]ACMSDEVI_053.B_VNC
succeeded
Success

%VMSINSTAL-I-VALPASSED, validation of WORK2:[BIGGLES]ACMSDEVI_053.C_VNC
succeeded
Success

%VMSINSTAL-I-VALPASSED, validation of WORK2:[BIGGLES]ACMSDEVI_053.D_VNC
succeeded
Success

%VMSINSTAL-I-VALPASSED, validation of WORK2:[BIGGLES]ACMSDEVI_053.E_VNC
succeeded
Success

%VMSINSTAL-I-VALPASSED, validation of WORK2:[BIGGLES]ACMSDEVI_053.F_VNC
succeeded
Success

%VMSINSTAL-I-VALPASSED, validation of WORK2:[BIGGLES]ACMSDEVI_053.G_VNC
succeeded
Success

%VMSINSTAL-I-VALPASSED, validation of WORK2:[BIGGLES]ACMSDEVI_053.H_VNC
succeeded
Success

%VMSINSTAL-I-VALPASSED, validation of WORK2:[BIGGLES]ACMSDEVI_053.I_VNC
succeeded
Success

%VMSINSTAL-I-VALPASSED, validation of WORK2:[BIGGLES]ACMSDEVI_053.J_VNC
succeeded

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

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

ACMS V5.3-5 is being installed.

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The results of this installation are being logged in:
SYS\$COMMON:[SYSUPD]ACMS053_INSTALLATION.LOG

ACMS V5.3-5 is supported on VSI OpenVMS IA64 V8.4-1H1, V8.4-2, V8.4-2L1, V8.4-2L3

Do you want to continue [Yes]

Installing ACMS V5.3-5 on OpenVMS V8.4-2L1

Installing ACMS V5.3-5, development kit

There are five optional parts to the ACMS development kit installation:

- o ACMS component software
- o ACMS LSE update
- o ACMS samples
- o ACMS Request Interface samples
- o ACMS WBEM related files

The full installation includes all these parts.

If ACMS component software is selected, the ACMS WBEM related files will

also be copied.

To install the ACMS samples or the ACMS Request Interface samples, you must

install, or have previously installed, the ACMS component software.

* Do you want the full ACMS installation [NO]? yes

CHECKING INSTALLATION PREREQUISITES

The following software products are not available, or are below the minimum required version:

Product	Required	Minimum version	Current Version
DECtrace	No	V2.2	(not available)
ACMS Desktop	No	V2.0	(not available)
DECforms	No	V4.0	(not available)

If products marked as nonrequired are to be used with ACMS, they should be

upgraded to at least the minimum version displayed before use.

(required and optional software checked)

(product licenses checked)

The following images are not installed:

Product	Image	Required	Startup Procedure
DECtrace	VMI\$ROOT:[SYSLIB]EPC\$FUNC	No	EPC\$STARTUP.COM

The images marked as required must be installed before this installation can be successfully completed. These images are usually installed by executing the product's startup procedure. For more information, refer to product specific documentation and the VMS INSTALL Utility Manual.

(installed images checked)

(privileges checked)

(disk space checked)

(disk quotas checked)

(system parameters checked)

(process account quotas checked)

ACMS PREVIOUS INSTALLATION

(no previous installation of ACMS found)

ACMS LSE CHECK

(LSE available -- LSE will be updated for ACMS)

ACMS WBEM CHECK

ACMS Oracle Trace CHECK

Oracle Trace is not being updated for ACMS because it is not available, not started, or Rdb is not started.

ACMS OLD SAMPLE FILES

(no old sample files found)

ACMS SHUTDOWN CHECK

ACMSTOP.COM was not found. If ACMS was previously installed on this system, make sure it is shut down before proceeding with this installation.

ACMS POSTINSTALLATION PROCEDURE

(postinstallation procedure will be run automatically after installation)

Please read the chapter After Installing ACMS, in the ACMS Installation Guide, for manual tasks that you should consider after installing ACMS.

ACMS SYSTEM ROOTS CHECK

(no ACMS-related files found in system-specific roots)

ACMS IVP

* Do you want to execute the Installation Verification Procedure [YES]?

Checking IVP user account ACMS\$IVP

Account ACMS\$IVP exists

SUMMARY OF THIS ACMS INSTALLATION

The following steps will be taken to complete this installation:

- o ACMS component software will be installed
- o WBEM environment will be updated for ACMS
- o LSE environment will be updated for ACMS
- o Oracle Trace facility text library will be updated for ACMS
- o CDD-related ACMS files will be installed
- o ACMS samples will be installed
- o The ACMS postinstallation procedure will be executed
- o The ACMS IVP will be executed

* Do you want to continue the installation [YES]?

The interactive portion of this installation is complete; no further questions will be asked until the post installation.

Installation of ACMS started
at 16:40 on 5-OCT-2025

Restoring savesets

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

Checking/creating ACMS directories

%VMSINSTAL-I-SYSDIR, This product creates system disk directory VMI\$ROOT:
[SYSHLP.EXAMPLES.ACMSMGMT].
%VMSINSTAL-I-SYSDIR, This product creates system disk directory VMI\$ROOT:
[SYSTEST.ACMS].
%VMSINSTAL-I-SYSDIR, This product creates system disk directory VMI\$ROOT:
[SYSHLP.EXAMPLES.ACMSSI].

```
%VMSINSTAL-I-SYSDIR, This product creates system disk directory VMI$ROOT:
[SYSHLP.EXAMPLES.ACMS].
%VMSINSTAL-I-SYSDIR, This product creates system disk directory VMI$ROOT:
[SYSHLP.EXAMPLES.ACMS.RI].
```

```
    Updating LSE
    Creating CDD$TOP.ACMS$DIR
    Creating CDD$TOP.ACMS$DIR.ACMS$WORKSPACES
```

```
    Updating account ACMS$IVP to current parameters
```

```
%VMSINSTAL-I-ACCOUNT, This installation updates an ACCOUNT named ACMS$IVP.
%UAF-I-MDFYMSG, user record(s) updated
%VMSINSTAL-I-ACCOUNT, This installation updates an ACCOUNT named ACMS$IVP.
%UAF-I-MDFYMSG, user record(s) updated
%VMSINSTAL-I-ACCOUNT, This installation updates an ACCOUNT named ACMS$IVP.
%UAF-I-MDFYMSG, user record(s) updated
%VMSINSTAL-I-ACCOUNT, This installation updates an ACCOUNT named ACMS$IVP.
%UAF-I-MDFYMSG, user record(s) updated
```

```
    Account ACMS$IVP updated
    ACMS$IVP account created/updated -- IVP selected to run
    Providing files
    Provided DCL command file ACMS.CLD
    Provided DCL help file ACMSHELP.HLP
```

```
%COPY-S-COPIED, BALIN$DKA0:[SYS0.SYSUPD.ACMSDEVI_053]ACMUTILSHR.EXE;1
    copied to VMI$ROOT:[SYSLIB]ACMUTILSHR.EXE;1 (17 blocks)
%INSTALL-W-NOPREV, no previous entry exists - new entry created for BALIN
$DKA0:[SYS0.SYSCOMMON.][SYSLIB]ACMUTILSHR.EXE;1
    All other files provided - list is in
        BALIN$DKA0:[SYS0.syscommon.][SYSEXEC]ACMS053_FILES.DAT
```

```
    Installation of ACMS completed successfully
        at 16:41 on 5-OCT-2025
```

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

ACMS V5.3-5 is being installed.

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```
    ACMS postinstallation procedure started
        at 16:42 on 5-OCT-2025
```

```
*****
*
*  NOTE: Refer to Chapter 4 in the ACMS Installation Guide  *
*          for other important postinstallation work.      *
*
*****
```

Checking/creating logical ACMS\$DIRECTORY

The procedure checks for the logical ACMS\$DIRECTORY, which must be defined

/SYSTEM /SUPERVISOR and must point to an existing disk directory.

ACMS\$DIRECTORY is not defined as a /SYSTEM /SUPERVISOR logical

Please supply an equivalence string for the ACMS\$DIRECTORY logical.
Equivalence string [SYS\$SYSDEVICE:[ACMS.ADB]]:

ACMS\$DIRECTORY is defined as SYS\$SYSDEVICE:[ACMS.ADB]
SYS\$SYSDEVICE:[ACMS.ADB] does not exist

Do you want to create it [Y]?

Created directory SYS\$SYSDEVICE:[ACMS.ADB]

ACMS\$DIRECTORY is defined as SYS\$SYSDEVICE:[ACMS.ADB]
ACMS\$DIRECTORY logical is acceptable

Converting ACMSGEN parameter files

This procedure searches for all ACMSGEN parameter files located in SYS\$SYSDEVICE:[SYS*.SYSEXE] and SYS\$COMMON:[SYSEXE], and converts them to be compatible with the current version of ACMS. If you are upgrading from a version of ACMS prior to V4.0, you must perform this conversion.

Do you want to convert existing ACMSGEN parameter files [Y]?

Converting SYS\$COMMON:[SYSEXE]ACMSPAR.ACM

The ACMSGEN parameter files listed above have been converted; if other parameter files exist on your system, they must be updated as follows:

```
$ RUN SYS$SYSTEM:ACMSGEN
ACMSGEN> USE file-specification
ACMSGEN> WRITE file-specification
ACMSGEN> EXIT
```

(press <RETURN> to continue)

Converting ACMS UDF and DDF files

The procedure searches for the files pointed to by the ACMSUDF and ACMSDDF

logicals, if they exist, and then for ACMSUDF.DAT or ACMSDDF.DAT in SYS\$SYSROOT:[SYS*], and converts them to be compatible with the current version of ACMS. If you are upgrading from a version of ACMS prior to V3.1, you must perform this conversion.

Do you want to convert existing ACMS UDF and DDF files [Y]?

No files found to convert

(press <RETURN> to continue)

Checking/creating ACMS UDF and DDF files

The procedure checks for ACMSUDF.DAT and ACMSDDF.DAT, first through the logicals ACMSUDF and ACMSDDF, and then in SYS\$COMMON:[SYSEXE], and creates them if they're not already present from a previous installation.

No /SYSTEM /EXECUTIVE logical ACMSUDF found
SYS\$COMMON:[SYSEXE]ACMSUDF.DAT not found
Creating SYS\$COMMON:[SYSEXE]ACMSUDF.DAT

No /SYSTEM /EXECUTIVE logical ACMSDDF found
SYS\$COMMON:[SYSEXE]ACMSDDF.DAT not found
Creating SYS\$COMMON:[SYSEXE]ACMSDDF.DAT

(press <RETURN> to continue)

Checking/creating ACMS_SETUP.COM

The procedure checks for site-specific startup procedure ACMS_SETUP.COM in SYS\$COMMON:[SYS\$STARTUP], and creates a template if the file doesn't already exist.

Creating SYS\$COMMON:[SYS\$STARTUP]ACMS_SETUP.COM

ACMS_SETUP.COM will be executed the next time you invoke SYS\$STARTUP:ACMSTART.COM. Please review ACMS_SETUP.COM and adjust it to reflect the needs of your ACMS environment. It can be used to perform these site-specific startup steps:

- define the ACMS logical ACMS\$DIRECTORY
- install ACMS utilities as shareable images
- define ACMS logicals such as ACMS\$AUDIT_LOG, ACMS\$SWL_LOG, ACMS\$NOTICE, ACMS\$EDIT, ADU\$EDIT and SWLUP\$EDIT
- start the ACMS system and applications

(press <RETURN> to continue)

Checking/copying ACMS menu files

The procedure checks for the ACMS command menu and default user menu in ACMS\$DIRECTORY, and copies them from SYS\$COMMON:[SYSEXE] if they're not already in ACMS\$DIRECTORY from a previous installation.

Copying new ACMSCMD.MDB to ACMS\$DIRECTORY
Copying new ACMS.MDB to ACMS\$DIRECTORY

```
*****
*
*  NOTE: Refer to Chapter 4 in the ACMS Installation Guide  *
*          for other important postinstallation work.      *
*
*****
```

Checking/creating ACMS\$MGMT_SETUP.COM

```
*****
*
*  NOTE: Refer to the Managing the Remote Manager chapter  *
*          in the ACMS Remote Systems Management Guide for more  *
*          information.                                         *
*
*****
```

Do you want to SETUP and CONFIGURE the ACMS Remote System Manager [Y]? n

You can Setup and Configure the ACMS Remote System Manager at a later
time
by running SYS\$STARTUP:ACMS_POST_INSTALL.COM

ACMS postinstallation procedure completed successfully
at 16:42 on 5-OCT-2025

%RUN-S-PROC_ID, identification of created process is 324004B5

ACMS V5.3-5 is being installed.

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ACMS Installation Verification Procedure started

at 16:42 on 5-OCT-2025

%ACMSMGMT-I-CFGNOTOPEN, Unable to open management config file, using defaults

ACMS V5.3-5 Current System State: STARTED Time: 5-OCT-2025
16:43:13.21

Terminal Subsystem State: STARTED
Queued Task Initiator State: STOPPED
System Auditing State: ENABLED

Active ACMS Users

User Name	Submitter ID	Agent PID	Device
CAMERON	00010014	3240049C	RTA1:

Active Execution Controllers

Application Name PID	Process Name	User Name	Exc
ACMSIVP 324004BB	ACMS01EXC001000	ACMS\$IVP	

ACMS Installation Verification Procedure completed successfully
at 16:43 on 5-OCT-2025

Results of IVP are in SYS\$COMMON:[SYSUPD]ACMSIVP.LOG

Installation of ACMSDEVI_ V5.3 completed at 16:43

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

Creating installation data file: VMI\$ROOT:[SYSUPD]ACMSDEVI_053.VMI_DATA

Enter the products to be processed from the next distribution volume set.

* Products:

VMSINSTAL procedure done at 16:43

Appendix B. Registering and Loading Your ACMS License

You must register and load your ACMS license before you can install or use ACMS. This appendix explains how to register and load your license.

Section B.1, "Sample ACMS License PAK" describes an ACMS License Product Authorization Key (PAK).

Section B.2, "Using VMSLICENSE.COM" describes how to load and register your ACMS license using the command procedure VMSLICENSE.COM.

Section B.3, "Using LICENSE DCL Commands" describes how to load and register your ACMS license using the **LICENSE** DCL commands.

For more information on OpenVMS licensing, see [VSI OpenVMS License Management Utility Guide](https://docs.vmssoftware.com/vsi-openvms-license-management-utility-guide/) [https://docs.vmssoftware.com/vsi-openvms-license-management-utility-guide/], and the DCL command **HELP LICENSE**.

B.1. Sample ACMS License PAK

The ACMS License PAK is a paper document that contains information about your ACMS license. When you register your ACMS license on your system, information from this document is loaded into the license database.

Each PAK has fourteen fields of information. Depending on your license agreement, some fields might contain data, while others might be blank.

Table B.1, "Product Authorization Key Fields" lists all the fields on a PAK, along with typical data for an ACMS PAK.

Table B.1. Product Authorization Key Fields

Field Name	Typical ACMS Information
ISSUER	DEC
AUTHORIZATION NUMBER	US-10-THM-0
PRODUCT NAME	ACMS ¹
PRODUCER	DEC
NUMBER OF UNITS	1200
VERSION	4.4
PRODUCT RELEASE DATE	(none)
KEY TERMINATION DATE	(none)
AVAILABILITY CODE	F
ACTIVITY TABLE CODE	(none)
KEY OPTIONS	MOD_UNITS

Field Name	Typical ACMS Information
PRODUCT TOKEN	(none)
HARDWARE I.D.	(none)
CHECKSUM	1-NTIN-DCIN-TCTA-NYMR

¹This is the license name; one of the following: ACMS, ACMS-RT, ACMS-RT-USER, ACMS-REM, ACMS-REM-USER.

B.2. Using VMSLICENSE.COM

You can register and load your ACMS license using the OpenVMS command procedure VMSLICENSE.COM. To invoke this procedure, first log in to the system manager's account, SYSTEM, and then execute the following command:

```
$ @SYS$UPDATE:VMSLICENSE
```

The procedure displays a menu; press **Return** to choose the default menu item, registering a PAK. The procedure then asks if you have your PAK; press **Return** to choose the default answer, YES.

The procedure now asks you to supply the data for each field on your PAK. For each field, type in the data exactly as it appears on the PAK.

Note

A PAK cannot have both a version and a product release date. If you provide version information, the procedure does not ask for a product release date.

When you have supplied all the PAK information, the procedure displays the information you provided, in the same form as it appears on the PAK, and asks if it is correct. If all the information is correct, press **Return** to choose the default answer, YES.

The procedure then registers the PAK in the license database, and asks if you want to load the license. Press **Return** to choose the default answer, YES.

Note

The license must be registered *and* loaded on your system before you can install and use ACMS.

When you are finished, select menu item 99 to exit from the procedure.

B.3. Using LICENSE DCL Commands

You can register and load your ACMS license using the DCL commands **LICENSE REGISTER** and **LICENSE LOAD**. Log in to the system manager's account, SYSTEM, before executing these commands.

The **LICENSE REGISTER** command accepts parameters and qualifiers that correspond to the fields on your PAK. The general syntax for this command is:

```
LICENSE REGISTER product-name [/qualifiers]
```

Table B.2, "LICENSE LOAD Parameters and Qualifiers" lists all the fields on a PAK, along with their **LICENSE LOAD** parameters and qualifiers.

Table B.2. LICENSE LOAD Parameters and Qualifiers

Field Name	LICENSE REGISTER Qualifier
ISSUER	/ISSUER= <i>string</i>
AUTHORIZATION NUMBER	/AUTHORIZATION= <i>string</i>
PRODUCT NAME	(<i>product-name parameter</i>)
PRODUCER	/PRODUCER= <i>string</i>
NUMBER OF UNITS	/UNITS= <i>number</i>
VERSION	/VERSION= <i>nn.m</i>
PRODUCT RELEASE DATE	/RELEASE_DATE= <i>date</i>
KEY TERMINATION DATE	/TERMINATION_DATE= <i>date</i>
AVAILABILITY CODE	/AVAILABILITY= <i>code</i> or /AVAILABILITY=CONSTANT= <i>number</i>
ACTIVITY TABLE CODE	/ACTIVITY= <i>code</i> or /ACTIVITY=CONSTANT= <i>number</i>
KEY OPTIONS	/OPTION= <i>keyword</i>
PRODUCT TOKEN	/TOKEN= <i>string</i>
HARDWARE I.D.	/HARDWARE_ID= <i>string</i>
CHECKSUM	/CHECKSUM= <i>string</i>

For example, the following DCL commands register and load the PAK information supplied in *Table B.1*, "Product Authorization Key Fields":

```

$ LICENSE REGISTER ACMS -
_$ /ISSUER="DEC" -
_$ /AUTHORIZATION=US-10-THM-0 -
_$ /PRODUCER="DEC" -
_$ /UNITS=1200 -
_$ /VERSION=4.4 -
_$ /AVAILABILITY=F -
_$ /OPTION=MOD_UNITS -
_$ /CHECKSUM=1-NTIN-DCIN-TCTA-NYMR
$ LICENSE LOAD ACMS

```


Appendix C. Creating Transaction Logs for DECdtm Services

If you want to use DECdtm services on a node, you must create a transaction log for that node. In an OpenVMS Cluster system, you must create a transaction log for each node in the cluster. This appendix describes the following:

- Prerequisites for creating a transaction log
- Planning the size and location of transaction logs
- Setting up and creating transaction logs
- Example of creating transaction logs for a cluster

For more information about DECdtm services and the commands described in this appendix, see the OpenVMS documentation set.

C.1. Prerequisites for Creating a Transaction Log

Before you create a transaction log for a node, make sure that the relevant user has the SYSPRV privilege.

C.2. Planning the Size and Location of Transaction Logs

The size and location of transaction logs can affect the performance of your system. Before you create transaction logs, plan how big to make the logs, and where you are going to put them. Although you can later move a transaction log and change the size to improve performance, careful planning reduces the need for changes.

If the performance of your system is adversely affected by either the location or size of the logs, refer to the OpenVMS documentation for the following information:

- Checking whether or not the transaction logs are the correct size
- Changing the size of transaction logs
- Moving transaction logs

C.2.1. Determining the Size of Transaction Logs

Note

These guidelines for determining the size of a transaction log are approximate. When planning transaction logs, overestimate, rather than underestimate, the size of the transaction log.

When you create transaction logs, you specify the size of the log in blocks. By default, the size of each transaction log is 4000 blocks. This default size gives acceptable performance on most systems.

If you know the rate of transactions and their duration, use the following algorithm to calculate the transaction log size:

$$size = 40 * rate * duration$$

In this algorithm:

- *size* is the size (in blocks) of the transaction log.
- *rate* is the average number of transactions executed per second.
- *duration* is the average duration (in seconds) of each transaction.

For example, if the rate is 10 transactions per second and the duration is 12 seconds, the calculation is as follows:

$$size = 40 * 10 * 12 = 4800 \text{ blocks}$$

In this example, the recommended size for the transaction log is 4800 blocks.

If you do not know the rate and duration of transactions, accept the default value of 4000 blocks.

C.2.2. Determining the Location for Transaction Logs

When deciding where to put the transaction log for a node, consider the following factors:

- **Speed**
Select a high performance disk, such as a solid state disk, that is not heavily used.
- **Availability**
High availability is achieved when you have multiple access paths to the data. Use a disk that can be accessed by the other nodes in the cluster when the node is down. This reduces the time that other transactions in the cluster are blocked while waiting for recovery from the node failure.
- **Reliability**
Reliability is achieved when you have multiple copies of the data. A shadowed disk is more reliable than a nonshadowed disk, but may be slower than a nonshadowed disk because transaction logs are almost exclusively write-only.

You may have to choose which of these factors are most important. For example, if the node is a workstation, you may choose to give up speed for availability and reliability, by putting the transaction log on a shadowed HSC-based disk, instead of on a faster disk attached to the workstation.

If you have an OpenVMS Cluster, each node must have its own transaction log. To improve the performance of the transactions, distribute the logs among different disks on the system.

Note

Ensure that the disk has sufficient contiguous space to hold the transaction log. A discontinuous transaction log results in poor transaction performance.

C.3. Setting Up and Creating Transaction Logs

This section describes how to set up and create transaction logs. Before creating a transaction log, consider the recommendations for sizing and locating the log, as described in *Section C.2, "Planning the Size and Location of Transaction Logs"*. For an example of how to set up and create transaction logs for a three-node OpenVMS Cluster, refer to *Section C.4, "Example of Setting Up and Creating Transaction Logs"*.

To set up and create a transaction log:

1. Identify the directories where you want to put the transaction logs.
2. Create the log file in the directories.

C.3.1. Setting Up the Transaction Logs

DECdtm services uses the logical SYS\$JOURNAL to locate transaction logs. For a single node, you must define SYS\$JOURNAL to point to the directory that will contain the transaction log. In an OpenVMS Cluster, you define SYS\$JOURNAL on each node as a search list that points to all the directories that will contain the transaction logs for the cluster. If you put transaction logs for all nodes in one directory, SYS\$JOURNAL on each node points to that directory.

You must define SYS\$JOURNAL in the system logical name table, in executive mode.

Note

Remember to define SYS\$JOURNAL in both the common and node-specific versions of the SYS\$STARTUP:SYLOGICALS.COM command procedure.

C.3.2. Creating the Transaction Logs

To create a transaction log file, use the **CREATE LOGFILE** command of the Log Manager Control Program (LMCP) Utility:

```
$ RUN SYS$SYSTEM:LMCP
LMCP> CREATE LOGFILE file-spec /SIZE=size
LMCP> EXIT
```

In this example:

- *file-spec* is the full file specification of the transaction log. The name of the file must be `SYSTEM$node-name`, where *node-name* is the name of the node. The file extension must be `.LM$JOURNAL`. If you omit the file extension in the command line, the file specification has the extension `.LM$JOURNAL` by default.
- *size* is the size of the transaction log in blocks. If you omit the **/SIZE** qualifier, the transaction log is created with the default size of 4000 blocks.

C.4. Example of Setting Up and Creating Transaction Logs

This section shows you how to set up and create transaction logs for a three-node OpenVMS Cluster system. In this example, cluster members and transaction log details are listed in *Table C.1, "Transaction Log Requirements"*.

Table C.1. Transaction Log Requirements

Node Name	Transaction Log Location	Transaction Log Size (In Blocks)
ORANGE	DISK\$USER1:[LOGFILES]	5000
RED	DISK\$USER3:[LOGFILES]	4000
GREEN	DISK\$LOG:[LOGFILES]	6000

To set up and create the transaction logs for the three-node OpenVMS Cluster, follow these steps. Before starting, ensure that all three disks are mounted on all three nodes.

1. For each node, define the logical SYS\$JOURNAL to be a search list of all the directories in *Table C.1, "Transaction Log Requirements"*, with the following command:

```
$ DEFINE /SYSTEM /EXECUTIVE SYS$JOURNAL -
_ $ DISK$USER1:[LOGFILES], -
_ $ DISK$USER3:[LOGFILES], -
_ $ DISK$LOG:[LOGFILES]
```

Note

You can enter all of the commands to set up the cluster from one node, using the SYSMAN Utility.

2. Edit the common and node-specific versions of SYS\$STARTUP:SYLOGICALS.COM files to include the definition of SYS\$JOURNAL.
3. Enter the following commands to create the transaction log files:

```
$ RUN SYS$SYSTEM:LMCP
LMCP> CREATE LOGFILE DISK$USER1:[LOGFILES] SYSTEM$ORANGE/SIZE=5000
LMCP> CREATE LOGFILE DISK$USER3:[LOGFILES] SYSTEM$RED
LMCP> CREATE LOGFILE DISK$LOG:[LOGFILES] SYSTEM$GREEN/SIZE=6000
LMCP> EXIT
```

If you omit the **/SIZE** qualifier (for example, when creating the log for node RED), the transaction log is created with the default size of 4000 blocks.