DEC Ada

Installation Guide for OpenVMS Alpha Systems

May 1999

This guide contains instructions for installing DEC Ada Version 3.5 on OpenVMS Alpha systems. It also explains how to read the online release notes before or after installing the product. This guide applies to DEC Ada Version 3.5 and all maintenance updates throughout that version.

Revision/Update Information:	This is a new guide.
Operating System & Version:	OpenVMS Alpha Version 6.2 through 7.2
Software Version:	DEC Ada Version 3.5

Compaq Computer Corporation
Houston, Texas

Contents

3 After Installing DEC Ada

A Sample Installation

B Files and Logical Names Installed

Tables

Preface

This guide explains how to install DEC Ada Version 3.5 on OpenVMS Alpha systems.

Keep this guide with your distribution kit. You need it to install maintenance updates or to reinstall DEC Ada for any other reason.

―――――――――――――――――――― **Note** ――――――――――――――――――――

Digital Equipment Corporation is now owned by Compaq Computer Corporation.

The name DEC Ada has been changed to Compaq Ada. References to DEC Ada in product components are the same as references to Compaq Ada.

―――

Intended Audience

This guide is intended for the system manager who installs DEC Ada software.

Document Structure

This guide contains the following chapters and appendixes:

- Chapter 1 describes the operating system and hardware requirements for DEC Ada installation and related procedures that you complete before installing DEC Ada.

- Chapter 2 describes the step-by-step instructions for the installation.

- Chapter 3 describes postinstallation actions and considerations.

- Appendix A contains the output from a sample DEC Ada installation.

- Appendix B contains a list of files installed and logicals defined as a result of the installation procedure.

Conventions

Table 1 shows the conventions used in this guide.

Table 1   Conventions Used in This Guide

Convention	Description
$	A dollar sign ($) represents the VMS DCL system prompt.
Return	In interactive examples, a label enclosed in a box indicates that you press a key on the terminal, for example, Return .
Ctrl/*x*	The key combination Ctrl/*x* indicates that you must press the key labeled Ctrl while you simultaneously press another key, for example, Ctrl/Y or Ctrl/Z.
`boldface monospace text`	In interactive examples, boldface monospace text represents user input.
file-spec . . .	A horizontal ellipsis following a parameter, option, or value in syntax descriptions indicates that additional parameters, options, or values can be entered.
n	A lowercase italic *n* indicates the generic use of a number.
. . .	A horizontal ellipsis in a code example or figure indicates that not all of the statements are shown.
. . .	A vertical ellipsis in an interactive figure or example indicates that not all of the commands and responses are shown.

Table 1 (Cont.)   Conventions Used in This Guide

Convention	Description
italic text	Italic text emphasizes important information, indicates variables, and indicates complete titles of manuals. Italic text also represents information that can vary in system messages (for example, Internal error *number*.)
UPPERCASE TEXT	Uppercase indicates the name of a command, routine, parameter, procedure, utility, file, file protection code, or the abbreviation for a system privilege.

1

Preparing for DEC Ada Installation

This chapter discusses the preparations and requirements necessary for installing DEC Ada on OpenVMS Alpha systems.

The information in the installation guide pertains to the DEC Ada Version 3.5 for OpenVMS Alpha release only. It is required that you review carefully the release notes for each version because they capture important release–oriented information and advise you of changes between versions.

Your bill of materials (BOM) and indented bills report (BIL) specify 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 your DIGITAL representative.

Note

DEC Ada provides online release notes. They are contained in the kit with the compiler and its associated components. DIGITAL strongly recommends that you read the release notes before proceeding with the installation. For information on accessing the online release notes, see Section 2.1.

1.1 Required Operating System and Prerequisite Hardware and Software

DEC Ada Version 3.5 supports OpenVMS Version 6.2 through 7.2.

For a complete list of the required operating system components, current hardware requirements, and prerequisite and optional software and their required version numbers, see the Software Product Description (SPD), that is on the DEC Ada kit in SYS$HELP:ADA03$n$_SPD.*.

1.2 License Registration

If you are installing DEC Ada Version 3.5 on a newly licensed node or cluster, you must first register a License Product Authorization Key (License PAK) using the License Management Facility (LMF). The License PAK can be shipped with the kit if you ordered the license and media together. Otherwise, the PAK is shipped separately to a location based on your license order.

If you are installing DEC Ada Version 3.5 as an update on a node or cluster already licensed for this software, you must register the Service Update PAK (SUP) that is included in your Service Update Kit. If you already registered a License PAK or a SUP for this product on this node or cluster, you do not need to register the SUP.

If you are installing an update of DEC Ada but lack a service contract, call your DIGITAL representative for instructions on how to get a License PAK.

If you are installing prerequisite or optional software with DEC Ada, review the PAK status and install the PAKs for any prerequisite or optional software before you install DEC Ada.

You must register and load your license for DEC Ada *before* you start the installation. To register a license under OpenVMS, first log in to the system manager's account, SYSTEM. You then have a choice of two ways to perform the registration:

- Invoke the SYS$UPDATE:VMSLICENSE.COM procedure. When it prompts you for information, respond with data from your License PAK.

- At the DCL prompt ($), enter the LICENSE REGISTER command with the appropriate qualifiers that correspond to License PAK information.

If you plan to use DEC Ada on more than one node in a VMScluster, you need to perform a license load on the other nodes after you complete this installation.

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

1.3 VMScluster Considerations

If you are running DEC Ada on a VMScluster, VMSINSTAL automatically installs new versions as known or shared images only on the machine on which the installation is actually performed. You must manually install new versions as known or shared images on other machines using the OpenVMS Install Utility or invoke SYS$STARTUP:ADA$STARTUP.COM on each of the other cluster members.

1.4 Installation Procedure Requirements

This section and those that follow discuss various requirements for installing DEC Ada on OpenVMS Alpha systems.

1.4.1 Privileges and Disk Space

To install DEC Ada, you must be logged in to an account that has SETPRV or at least the following privileges:

- CMKRNL
- WORLD
- SYSPRV

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

The installation checks the system disk for the space it requires to install DEC Ada. For a summary of the storage requirements, refer to the SPD.

To determine the number of free disk blocks on the current system disk, enter the following command at the DCL prompt ($):

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

Table 1–1 identifies the various installation scenarios and the corresponding disk space requirements.

Table 1–1 Disk Space Requirements at Installation

Scenario	During Installation	After Installation
DEC Ada never previously installed	140,000 blocks	80,000 blocks
DEC Ada previously installed, *not* saving previous product	100,000 blocks	15,000 blocks

1.4.2 System Parameters

Installing DEC Ada requires certain system parameter settings. Table 1–2 lists the minimum required system parameter values for the installation. Depending on the type of programs and applications running at your site, you might need higher values for some settings.

Preparing for DEC Ada Installation

Table 1–2   Minimum Required System Parameter Values

System Parameter	Minimum Value
GBLPAGES[1]	11500 + DCLTABLES
GBLSECTIONS[1]	41

[1]The values listed for these system parameters represent the number of free global pages and global sections required for the installation, not the total number you need to run your system and other software.

To use DEC Ada, each account or batch queue that invokes the DEC Ada compiler must have TMPMBX and NETMBX privileges.

The following sections show you how to:

- Check UAF parameters

- Calculate values for the GBLPAGES and GBLSECTIONS system parameters

- Change parameter values with the AUTOGEN command procedure

1.4.2.1 Checking UAF Parameters

Before you install DEC Ada, you should check whether your account has sufficient quotas to perform the installation. You can check the quotas by entering the following command at the DCL prompt to invoke the AUTHORIZE Utility:

```
$ RUN SYS$SYSTEM:AUTHORIZE
UAF> SHOW SYSTEM
```

After checking your quotas, enter the EXIT command at the UAF> prompt to return to DCL level.

1.4.2.2 Calculating the Values for GBLPAGES and GBLSECTIONS

To install and run DEC Ada, you must have sufficient free global pages and global sections. You must first find out how many free global pages and sections you have on your system. Then use AUTOGEN if you need to increase the GLBPAGES and GBLSECTIONS system parameters.

For example, you can use the WRITE command with the F$GETSYI lexical function to find the number of free global pages and global sections. The following example shows how to get this information at your terminal (the default for SYS$OUTPUT):

```
$ WRITE SYS$OUTPUT F$GETSYI("FREE_GBLPAGES")
15848
$ WRITE SYS$OUTPUT F$GETSYI("FREE_GBLSECTS")
24
```

If the returned values are greater than the values in Table 1–2, you do not
need to increase the values for these parameters. If the value of either free
global pages or global sections is less than the value in Table 1–2, you must
increase that system parameter setting.

Section 1.4.2.3 describes the procedures for increasing these values using
AUTOGEN.

1.4.2.3 Changing System Parameter Values with AUTOGEN

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

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

To change a parameter value listed in this file, delete the current value
associated with that parameter and enter the new value.

To add a new parameter, add a line to the file that includes both the name of
the parameter and its value. For example:

```
WSMAX = 1024
```

To modify incremental parameters such as GBLPAGES and GBLSECTS, use
ADD_. The following example increases the global page setting by 2000:

```
ADD_GBLPAGES = 2000
```

When you set the page file quota, be careful not to use a value that exceeds the
amount of page file space available on the system.

After you make all your changes, exit from the editor and execute the
AUTOGEN procedure to recalculate your system parameters. Enter the
following command at the DCL prompt:

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

When you specify REBOOT, AUTOGEN performs an automatic system
shutdown and then reboots the system. Any users logged in to the system
are immediately disconnected during the shutdown. The automatic reboot puts
the new parameter values into effect.

The AUTOGEN command procedure automatically adjusts some of the SYSGEN parameters based on the consumption of resources since the last reboot. If you do not want to take advantage of this automatic adjustment, include the NOFEEDBACK qualifier on the AUTOGEN command line.

For more information about using AUTOGEN, see the system management documentation for the OpenVMS operating system.

1.4.3 Process Account Quotas

The account you use to install DEC Ada must have sufficient quotas to enable you to perform the installation. Table 1–3 summarizes the minimum process quotas required for the installation account. Larger quotas may be required for other work done by this account.

Table 1–3   Process Account Quotas for the Installing Account

Account Quota	Value
ASTLM	24
BIOLM	18
BYTLM	18000
DIOLM	18
ENQLM	300
FILLM	100

User account quotas are stored in the file SYSUAF.DAT. Use the 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 UAF> prompt, 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. 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 system displays messages indicating whether 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 system management documentation for the OpenVMS operating system.

1.4.4 VMSINSTAL Requirements

When you invoke VMSINSTAL, it checks whether:

- You are logged in to a privileged account

- Any users are logged in to the system

- You have adequate quotas for installation

If problems are detected during installation, in some instances you can enter Yes to continue. If you do not want to continue, enter No or press Return to stop the installation process. Then correct the problem and restart the installation.

1.4.5 Checking for RTL Locked Open

Installing the DEC Ada RTL when an Ada program is running can result in more than one version of the RTL image residing on the system as a shared image. If this is a concern, enter the following command, look for old versions of ADARTL files locked open, and identify which process has them locked.

```
$ SHOW DEVICE /FILE /SYSTEM <DISKNAME>
```

If possible, stop the identified process and then restart it. For example, the OpenVMS Security Server uses the DEC Ada RTL. Enter the following command to restart it:

```
$ SET SERVER SECURITY /RESTART
```

1.4.6 Backing Up Your System Disk

At the beginning of the installation, VMSINSTAL asks if you have backed up your system disk. DIGITAL recommends that you do a system disk backup before installing any software.

Use the backup procedures established at your site. For details on performing a system disk backup, see the section on the OpenVMS Backup Utility in the system management documentation for the OpenVMS operating system.

2
Installing DEC Ada

This chapter explains how to install DEC Ada on OpenVMS Alpha systems. Section 2.1 contains a step-by-step description of the installation procedure.

2.1 The Installation Procedure

DEC Ada Version 3.5 (ADA035) contains four save sets (A, B, C and D). The DEC Ada installation procedure consists of a series of questions and informational messages. See Appendix A for the output from a sample installation.

The procedure takes approximately 15 minutes to complete.

If it is not already inserted, place the compact disk (CD) media into the CD drive.

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

When the system prompts you with a question during the installation procedure, the default answer is often listed in brackets ([ ]).

2.1.1 Invoke VMSINSTAL

To start the installation, invoke the VMSINSTAL command procedure from a privileged account, such as the SYSTEM account. The command format is as follows:

SYS$UPDATE:VMSINSTAL saveset-name device:[pathname] OPTIONS N

VMSINSTAL is in the SYS$UPDATE directory. To install DEC Ada, enter the following command:

```
$ @SYS$UPDATE:VMSINSTAL ADA03n
DKA100: OPTIONS N
```

The elements of the VMSINSTAL command procedure are defined as follows:

saveset-name
The installation name for the component. For DEC Ada, use the installation name ADA03*n*.

n
The letter *n* represents the maintenance update of DEC Ada. See the label on the DEC Ada distribution kit or the bill of materials for the maintenance update number of your kit. For DEC Ada Version 3.5, the maintenance update is 5.

device:[pathname]
The name of the device on which you plan to mount the media.

OPTIONS N
An optional parameter that indicates that you want to be asked to choose one of the four options for reviewing the release notes. (See Section 2.1.4). If you do not include the OPTIONS N parameter, VMSINSTAL does not ask you about the release notes.

You should review the release notes before proceeding with the installation in case they contain additional information about the installation. If you are restarting the installation and have already reviewed the release notes, you do not need to specify OPTIONS N.

You can select several other options when you invoke the VMSINSTAL command procedure:

- Option (A): Auto_answer

  Initially, creates a file that contains your answers to VMSINSTAL questions and prompts. You can then use the option (and the answer file) to save time during a reinstallation (typically after upgrading your system).

- Option (G): Get save set

  Lets you store product save sets temporarily on a magnetic tape or in a disk directory.

- Option (L): File log

  Logs all activity to the terminal during installation.

See the software installation in the system management documentation for the OpenVMS operating system for detailed information on these options. If you specify more than one option, separate each option name with a comma (for example, OPTIONS A,N).

The following example invokes VMSINSTAL to install DEC Ada from disk drive DKA100: and shows the system response. This example uses the OPTIONS N release note parameter.

```
$ @SYS$UPDATE:VMSINSTAL ADA03n DKA100: OPTIONS N

        OpenVMS AXP Software Product Installation Procedure Vm.n


It is dd-mmm-yyyy at hh:mm.
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 options.

2.1.2 Confirm System Backup

VMSINSTAL asks if you are satisfied with your system backup.

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

You should always back up your system disk before performing an installation. If you are satisfied with the backup of your system disk, press Return. Otherwise, enter No to discontinue the installation. After you back up your system disk, you can restart the installation.

2.1.3 Mount the Media

If you omitted the device name on the VMSINSTAL command line, the following prompt appears:

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

If this prompt appears, enter the name of the distribution (media) device and directory that contains the DEC Ada kit (save set). For example, if the media is contained on a CD located on unit DKA100:, enter DKA100:[ADA03n] in reply to this question (where n is the minor version number).

2.1.4 Select a Release Notes Option

If you specified OPTIONS N when you invoked VMSINSTAL, you are now asked to choose one of the four options for reviewing the release notes.

Installing DEC Ada

```
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 on the console terminal. You can terminate the display at any time by pressing Ctrl/C.

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

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

You can press Return to send the file to the default output print device or you can enter another queue name.

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

Select option 4 if you have already reviewed the release notes and are continuing the installation.

Next VMSINSTAL displays the following question:

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

To continue the installation, enter Yes. Otherwise, press Return if you want to stop the installation to read the release notes. In either case, the release notes are copied to a file in the SYS$HELP directory:

```
SYS$HELP:ADA03n.RELEASE_NOTES
```

The release notes are also available in POSTSCRIPT format. The file name is SYS$HELP:ADA03n.RELEASE_NOTES_PS.

2.1.5 Choose the Installation Verification Procedure Option

The installation procedure now asks if you want to run the Installation Verification Procedure (IVP).

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

The IVP for DEC Ada checks that the installation was successful. It is recommended that you run the IVP.

After installing DEC Ada, you can run the IVP independently to verify that the software is available on your system. You might need to run the IVP after a system failure to make sure that users can access DEC Ada.

For more information on IVP, see Section 3.1.

2.1.6 Select Installation Options

DEC Ada provides support for the DEC Source Code Analyzer (SCA). SCA is an optional, interactive, multilanguage, source code cross-reference and static analysis tool. The information in the SCA library for the predefined units allows you to query SCA about symbols, declarations, and subprograms contained in the predefined units.

If you have SCA installed on your system and intend to use it to analyze DEC Ada programs, type Yes in response to the prompt. If you are not going to use SCA or you are concerned about saving disk space, type No in response to the prompt.

```
* Do you want to include SCA analysis data file for the predefined
  units [YES]? Return
```

If you need to know how much disk space this library will take before you can answer the prompt, type a question mark (?) to obtain specific information on disk space requirements before typing Yes or No.

If you typed Yes or pressed Return, an SCA analysis data file for the DEC Ada predefined units (ADA$SCA_PREDEFINED.ANA) is copied to the SYS$LIBRARY directory during installation. To make this information available, you must create an SCA library and load the data from the file into the library.

If the current version of DEC Ada on your system is different from the version you are installing, the installation procedure allows you to save the currently existing version. If you want to save the currently existing compiler, answer Yes. If not, answer No to the prompt.

```
* Do you want to save the currently existing compiler [NO]?
```

If you need to know exactly which files are saved, then type a question mark (?) to obtain specific information before typing Yes or No. For more information see Section 2.3.

The installation procedure will ask if you want to install an IEEE floating-point predefined library. The default is "no", but if you wish to install an IEEE floating-point library, simply type "y" at this point.

```
* Do you want to install an IEEE floating point Predefined Library [NO]?
```

2.1.7 Read Informational Messages

At this point, the installation procedure displays a number of informational messages that report on the progress of the installation. There are no further questions.

If the installation procedure has been successful up to this point, VMSINSTAL moves the new or modified files to their target directories, updates help files, and updates DCL tables if necessary.

The following messages are displayed:

```
    There will be no further questions.
%VMSINSTAL-I-RESTORE, Restoring product save set B ...

    After the installation is complete, you need to add the following
    command to the site-specific system startup command file,
    SYS$MANAGER:SYSTARTUP_VMS.COM:

 $ @SYS$STARTUP:ADA$STARTUP

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

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

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

If the installation procedure is successful, the procedure moves the files created to their target directories.

At this point, an informational message notifies you when the new files are moved to their target directories. If you are installing DEC Ada on a system that has close to the minimum amount of free disk space, the created files are moved to their target directories as they are processed and no message is issued when the files are moved.

For information on the files that the installation procedure creates or modifies, see Appendix B.

2.1.8 Observe the Installation Verification Procedure

If you chose to run the IVP, VMSINSTAL runs it at this point. When the IVP runs successfully, you see the following display:

```
Beginning the (DEC Ada) installation verification procedure.

%ACS-I-CL_LIBCRE, Library CDD$DJA0:[SYS0.SYSUPD.ADA035.ADALIB] created
%ACS-I-CL_LIBIS, Current program library is
          CDD$DJA0:[SYS0.SYSUPD.ADA035.ADALIB]
DEC Ada 3.n installation verification test
Testing, testing,            1,           2,          3,          4
Testing, testing
DEC Ada 3.n installation verification PASSED
```

After the IVP has completed successfully, the temporary program library and any files generated during the IVP are deleted.

2.1.9 End the Installation Procedure

The following messages indicate that the entire installation procedure is complete.

```
    Installation of DEC Ada 3.5 completed at hh:mm

    VMSINSTAL procedure done at hh:mm
```

You can now log out of the privileged account:

```
$ LOGOUT  Return
SYSTEM     logged out at dd-mmm-yyyy hh:mm:ss.ss
```

When the product installation procedure is complete, you can choose to install more products or to log out (as shown here.) If you removed any media from the console drive before beginning the installation, you should replace it now.

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

2.2 Error Recovery

If errors occur during the installation itself or when the Installation Verification Procedure (IVP) is running, VMSINSTAL displays failure messages. If the installation fails, you see the following message:

```
%VMSINSTAL-E-INSFAIL, The installation of DEC Ada 3.n has failed.
```

If the IVP fails, you see the following messages:

```
The DEC Ada 3.n Installation Verification Procedure failed.
%VMSINSTAL-E-IVPFAIL, The IVP for DEC Ada 3.n has failed.
```

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

- The operating system version is incorrect.

- A prerequisite software version is incorrect.

- Quotas necessary for successful installation are insufficient.

- System parameter values for successful installation are insufficient.

- The OpenVMS Help library is currently in use.

- The product license has not been registered and loaded.

For descriptions of the error messages generated by these conditions, see the OpenVMS documentation on system messages, recovery procedures, and OpenVMS software installation. If you are notified that any of these conditions exist, you should take the appropriate action as described in the message. For information on installation requirements, see Chapter 1.

2.3 Keeping the Currently Existing Compiler Available

The installation procedure installs the compiler and program library manager on the kit as the default compiler and program library manager. When you enter an ADA or ACS command, the newly installed compiler and program library manager are invoked. The DEC Ada kit is designed to let you have continued access to your previously existing compiler while you are using the newly installed compiler.

During the installation, you are asked if you want to save the currently existing compiler. If you answer Yes and the version of the currently existing compiler is not the same as the version of the compiler that you are installing, the installation procedure creates a subdirectory of SYS$SYSTEM. The subdirectory is named ADA$*ident_string*.DIR, where *ident_string* is the identifying string of the currently existing compiler. The installation procedure then copies the currently existing versions of the following files to that subdirectory:

- Compiler (ADA.EXE)

- Program library manager (ACS.EXE)

- Command definition file (ADACLD.CLD)

- Run-time library (ADARTL.EXE)

- Message file (ADAMSG.EXE)

- Library of predefined units (ADALIB.DIR)

In addition, the installation procedure places the following command procedures in SYS$SYSTEM:

- ADA$USE_*ident_string*.COM

- ADA$USE_INSTALLED.COM

When invoked, ADA$USE_*ident_string*.COM defines the appropriate logical names needed to access the previously existing compiler. ADA$USE_ INSTALLED.COM defines the appropriate logical names to access the installed compiler.

For example, if you install Version 3.5 as the default compiler and you want to access the Version 3.4 compiler, you enter the following command:

$ `@SYS$SYSTEM:ADA$USE_V3_4.COM`

Subsequently, when you enter an ADA or ACS command, the Version 3.4 compiler or program library manager is invoked.

If you want the old version of the DEC Ada compiler to be the default, modify SYS$STARTUP:ADA$STARTUP.COM by replacing the current logical definitions with the ones from SYS$SYSTEM:ADA$USE_*ident_string*.COM, where the *ident_string* represents the old version of the compiler. Use the /SYSTEM and /EXECUTIVE qualifiers in the logical name definitions.

When you are using a version of the program library manager (ACS.EXE) that is not the default version and an ACS command creates a command procedure to perform an operation, unexpected results from using a different version of DEC Ada may occur in the following cases:

- If the command procedure is submitted to a batch queue by a /SUBMIT qualifier on the ACS command

- If you later submit the command procedure to a batch queue using the DCL SUBMIT command

Because the program library manager does not transmit knowledge about the current version of the compiler when the command procedure is created, the submitted command procedure (by default) uses the default version of the compiler. For example, if you invoke @SYS$SYSTEM:ADA$USE_ INSTALLED.COM and then use an ACS command that creates a command procedure for batch submission, the Version 3.4 compiler will be used during the execution of the command procedure.

To override this default, modify your LOGIN.COM file so that it invokes the command procedure that redefines the desired compiler and environment.

If you expect to switch frequently between compilers, you may want to modify SYS$STARTUP:ADA$STARTUP.COM or SYS$STARTUP:SYLOGIN.COM to define global OpenVMS symbols to represent the invocations of the command procedure. For example:

```
$ V34 == "@SYS$SYSTEM:ADA$USE_V3_4.COM"
$ V35 == "@SYS$SYSTEM:ADA$USE_INSTALLED.COM"
```

Program libraries generated or modified by a Version 3.5 compiler are not accepted by older compilers.

During the installation, the system command table (SYS$LIBRARY:DCLTABLES.EXE) is updated to include the new command files associated with the version being installed. Because the changes in the command files are upward compatible, Version 3.*n* commands are accepted by previous versions of the compiler and program library manager. If you use a new Version 3.*n* qualifier or option with a previous version of the compiler, the qualifier or option is ignored.

If this is not acceptable, remember that the command definition file (ADACLD.CLD) associated with the saved compiler is also in the subdirectory that holds the saved compiler. You can use the DCL SET COMMAND command to modify your process's command tables so that the saved compiler's command file is used. For example, if the system command table contains the command definition associated with Version 3.4 but you have redefined your environment so that the Version 3.5 compiler is being used, you can enter the following command to use the Version 3.5 compiler command definition:

```
$ SET COMMAND SYS$COMMON:[SYSEXE.ADA$V3_4]ADACLD.CLD
```

This technique works only as long as you remain in the current process context. When a spawned subprocess is created, the process's current command tables are not copied from the parent process. Instead, the system command table that contains the installed version's command files is used. A spawned subprocess is created when you enter, for example, one of the following commands:

- DCL SPAWN
- LSEDIT COMPILE
- ACS COMPILE
- ACS COMPILE/WAIT
- ACS RECOMPILE

- ACS RECOMPILE/WAIT

- ACS LOAD

- ACS LOAD/WAIT command

To reinstall an older version of the compiler, you should perform the installation using the original kit and VMSINSTAL, even if the older version of the compiler has been saved in a subdirectory. Unexpected problems may occur if the files saved in the subdirectory are copied or renamed to the appropriate places.

2.3.1 Saving the Currently Existing Help File

If you chose to keep the currently existing compiler available (in Section 2.1.6), you may also want to save the currently existing Help file. The DEC Ada installation procedure does not automatically save the currently existing Help file. To save the currently existing Help file, you need to extract the file from the system Help library (SYS$LIBRARY:HELPLIB.HLB) and insert it into a newly created user Help library *before* installing the new Help file. For example:

```
$ LIBRARY/EXTRACT/ADA/OUTPUT=USER:[SMITH]V3_nADAHELP.HLP -
_$ SYS$HELP:HELPLIB.HLB
$ LIBRARY/CREATE/HELP USER:[SMITH]V3_nADAHELP.HLB -
_$ USER:[SMITH]V3_nADAHELP.HLP
```

Once you have saved the existing Help file, you can access it by using the /LIBRARY qualifier with the Help command and specifying the user Help library instead of the default system library. For example:

```
$ HELP/LIBRARY=USER:[SMITH]V3_nADAHELP.HLB
```

2.3.2 Saving the Currently Existing Examples Directory

If you chose to keep the currently existing compiler available (in Section 2.1.6), you may also want to save the currently existing examples directory. To save an existing examples directory, you must copy it to another location before installing the new version of DEC Ada.

2.4 Installing DEC Ada on a VMScluster

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

1. Enter the LICENSE LOAD command to activate the license on each node in the VMScluster on which DEC Ada is to be run as described in the *OpenVMS License Management Utility Manual*.

2. If the other nodes share a common system disk with the installation node, install DEC Ada on the other nodes by running the command procedure SYS$STARTUP:ADA$STARTUP.COM on each node of the cluster that has a software license. You must also update the SYS$LIBRARY:DCLTABLES.EXE file on each of the other nodes by entering the following commands on each node:

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

These commands modify the DCL command tables on the other nodes so that the ADA and ACS commands are recognized and processed.

3. If the other nodes do not share a common system disk with the installation node, you must run a separate installation on each node.

2.5 Postinstallation Notes

DEC Ada is now installed, and the DEC Ada compiler can be invoked by all users with the ADA command. The DEC Ada program library manager can be invoked with ACS commands.

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

Be sure to add the following command to the SYS$MANAGER:SYSTARTUP_ VMS.COM file, as requested in Section 2.1.7:

```
@SYS$STARTUP:ADA$STARTUP
```

To ensure device independence when backing up and restoring DEC Ada program libraries, verify that concealed-device logical names have been assigned to all public devices on your system. For information on concealed device logical names, see the *OpenVMS DCL Dictionary* and the *Guide to OpenVMS File Applications*.

For information on using concealed device logical names with DEC Ada program libraries, see *Developing Ada Programs on OpenVMS Systems*.

3

After Installing DEC Ada

This chapter discusses the following tasks, which can take place after installing DEC Ada:

- Running the Installation Verification Procedure separately

- Diagnosing error conditions

- Installing maintenance updates

- Determining and reporting problems

3.1 Running the Installation Verification Procedure Separately

The Installation Verification Procedure (IVP) is usually run at installation. If you want to run the IVP separately to ensure the integrity of installed files should system problems occur, enter the following command procedure:

```
$ @SYS$TEST:ADA$IVP.COM
```

3.2 Error Conditions

If the DEC Ada installation procedure or DEC Ada IVP fails for any reason when you are running VMSINSTAL, the following message is displayed:

```
%VMSINSTAL-E-INSFAIL, The installation of DEC Ada V3.5 has failed.
```

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

- Operating system version is incorrect.

- Prerequisite software version is incorrect.

- Quotas necessary for successful installation are insufficient (see Section 1.4.2).

- Process quotas required by VMSINSTAL are incorrect (see Section 1.4.3).

- The OpenVMS Help library is currently in use.

- The product was registered incorrectly or not registered.

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

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

If the installation fails, you must restart the installation procedure from the beginning. If the installation fails due to an IVP failure and the product's License PAK has been registered and loaded, contact your DIGITAL representative.

3.3 Installing Updates

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

Each time an update is released, the version number changes. For example, if the current version is 3.4, the version number of the next update may be 3.5. Each update also includes new release notes. The release notes describe the changes that have been made to DEC Ada since the previous release.

The release notes for the updates are provided on line. You should read the release notes when you first install DEC Ada. They are also accessible at any time after the product is installed.

For information on reading the release notes at the time that you install DEC Ada, follow the installation procedure through step 6.

To locate the release notes after DEC Ada is installed, display or print the file SYS$HELP:ADA03$n$.RELEASE_NOTES (where n is the number of the current update).

3.4 Determining and Reporting Problems

If you encounter a problem while using DEC Ada, report it to DIGITAL.

You may call DIGITAL if your software contract or warranty agreement entitles you to telephone support.

Review the Software Product Description (SPD) and Warranty Addendum for an explanation of the warranty. If you encounter a problem during the warranty period, report the problem as indicated previously or follow alternate instructions provided by DIGITAL for reporting SPD nonconformance problems.

When you prepare to report a problem, please take the following steps:

1. Describe as accurately as possible the circumstances and state of the system when the problem occurred. Include in the description the version number of DEC Ada being used. Demonstrate the problem with specific examples.

2. Reduce the problem to as small a size as possible.

3. Remember to include listings of any command files, relevant data files, and so on.

4. Provide a listing of the program.

5. If the program is longer than 50 lines, submit a copy of the program on machine-readable media (for example, magnetic tape). If necessary, also submit a copy of the program library used to build the application. Use the OpenVMS Backup Utility to copy the program library to the machine-readable media.

6. Report only one problem per report. This facilitates a more rapid response.

7. Mail the problem report to DIGITAL.

Experience shows that many problem reports do not contain enough information to duplicate or identify the problem. Complete and concise information helps DIGITAL give accurate and timely service to software problems.

A

Sample Installation

This appendix contains a sample installation of DEC Ada on an OpenVMS Alpha system. This sample was run on a system that had no previous version of DEC Ada installed. Depending on which layered products you have on your system, you might see additional messages and questions when you perform your installation.

The sample installation assumes that DECnet has been shut down, that no users are logged in to your system, and that OPTIONS N is specified to print the release notes. The Installation Verification Procedure (IVP) runs at the end of the installation.

This is only a sample. Sometimes the installation procedure is modified in maintenance updates of this product. Because this installation guide is not usually revised for maintenance updates, be sure to read the *Read Before Installing or Using DEC Ada Version 3.5 on OpenVMS Alpha Systems* letter before you install this product. This letter notes any significant changes in the installation that vary from this sample.

```
        @sys$update:vmsinstal ada035 BYRON$DKA500:[ADA_RELEASE.AVMS_V35.kit]

         OpenVMS AXP Software Product Installation Procedure V7.1

It is 19-MAR-1999 at 13:08.

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

%VMSINSTAL-W-NOTSYSTEM, You are not logged in to the SYSTEM account.
%VMSINSTAL-W-ACTIVE, The following processes are still active:
      SERVER_0011
      WILLETT
* Do you want to continue anyway [NO]? y
* Are you satisfied with the backup of your system disk [YES]?

The following products will be processed:

  ADA V3.5
```

Sample Installation

```
        Beginning installation of ADA V3.5 at 13:08

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

  © Digital Equipment Corporation 1992, 1999. All rights reserved.

  Restricted Rights: Use, duplication, or disclosure by the U.S.
  Government is subject to restrictions as set forth in subparagraph
  (c) (1) (ii) of DFARS 252.227-7013, or in FAR 52.227-19, or in FAR
  52.227-14 Alt. III, as applicable.

  This software is proprietary to and embodies the confidential
  technology of Digital Equipment Corporation. Possession, use, or
  copying of this software and media is authorized only pursuant to a
  valid written license from Digital or an authorized sublicensor.

* Do you want to run the IVP after the installation [YES]?
* Do you want to include SCA analysis data for the predefined units [YES]?
* Do you want to save the currently existing compiler [NO]?
* Do you want to install an IEEE floating point Predefined Library [NO]?

  There will not be any further questions.

  Installation will take 15 minutes or less, depending on your system
  configuration.

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

  After the installation is complete, you need to add the following
  command to the site-specific system startup command file,
  SYS$MANAGER:SYSTARTUP_VMS.COM;

      $ @SYS$STARTUP:ADA$STARTUP

%VMSINSTAL-I-RESTORE, Restoring product save set C ...
%VMSINSTAL-I-MOVEFILES, Files will now be moved to their target directories...

  Beginning the DEC Ada installation verification procedure.

  © Digital Equipment Corporation 1992, 1999. All rights reserved.

  Restricted Rights: Use, duplication, or disclosure by the U.S.
  Government is subject to restrictions as set forth in subparagraph
  (c) (1) (ii) of DFARS 252.227-7013, or in FAR 52.227-19, or in FAR
  52.227-14 Alt. III, as applicable.

  This software is proprietary to and embodies the confidential
  technology of Digital Equipment Corporation. Possession, use, or
  copying of this software and media is authorized only pursuant to a
  valid written license from Digital or an authorized sublicensor.

  Please note that this installation verification procedure requires
  that a valid license for DEC Ada has been installed on your system.
```

```
%ACS-I-CL_LIBCRE, Library BYRON$DKA300:[SYS0.SYSUPD.ADA035.ADALIB] created
%ACS-I-CL_LIBIS, Current program library is
        BYRON$DKA300:[SYS0.SYSUPD.ADA035.ADALIB]
DEC Ada installation verification test
Testing, testing,           1,           2,           3,           4
Testing, testing
DEC Ada installation verification PASSED
%ACS-I-CL_LIBDEL, Library BYRON$DKA300:[SYS0.SYSUPD.ADA035.ADALIB] deleted

        Installation of ADA V3.5 completed at 13:16

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

    Creating installation data file: VMI$ROOT:[SYSUPD]ADA035.VMI_DATA


        VMSINSTAL procedure done at 13:17
```

B

Files and Logical Names Installed

The installation procedure installs a number of files on your system and defines some logical names. Section B.1 lists the files installed. Section B.2 lists the logical names that are added to the system logical name table.

B.1 File Names

The installation procedure creates or modifies the following files. However, they do not appear in the installation messages.

SYS$SYSTEM:ADA.EXE	(new)
SYS$SYSTEM:ACS.EXE	(new)
SYS$STARTUP:ADA$STARTUP.COM	(new)
SYS$LIBRARY:DCLTABLES.EXE	(modified)
SYS$SHARE:ADACLD.CLD	(new)
SYS$COMMON:[SYSLIB.ADALIB] and contents	(new)
SYS$COMMON:[SYSLIB]ADA$SCA_PREDEFINED.ANA[1]	(new)
SYS$COMMON:[SYSHLP.EXAMPLES.ADA] and contents	(new)
SYS$HELP:ADA03$n$_SPD	(new)
SYS$HELP:ADA03$n$.RELEASE_NOTES_PS	(new)
SYS$HELP:ADA03$n$.RELEASE_NOTES	(new)
SYS$TEST:ADA$IVP.COM	(new)
SYS$LIBRARY:ADARTL.EXE[2]	(new)
SYS$LIBRARY:ADAMSG.EXE[2]	(new)

---

[1]Optional.

[2]Not installed if the system already has a copy with a higher version number than provided by this kit.

If you saved the currently existing compiler in Section 2.1.6, the installation procedure also creates the following files:

SYS$COMMON:[SYSEXE.ADA$*ident_string*[1]] and contents   (new)

SYS$SYSTEM:ADA$USE_*ident_string*[1].COM   (new)

SYS$SYSTEM:ADA$USE_INSTALLED.COM   (new)

---

[1] *ident_string* represents the version number of the currently installed DEC Ada compiler.

B.2 Logical Names

Table B–1 lists the logical names that are entered into the system logical name table when you install DEC Ada. These names are stored in the product's startup file. They are automatically entered into the system logical name table whenever the system reboots or whenever the software is invoked.

Table B–1 DEC Ada Logical Names and Locations

Logical Name	Location
ADA$EXAMPLES	SYS$COMMON:[SYSHLP.EXAMPLES.ADA]
ADA$PREDEFINED	ADA$PREDEFINED_ROOT:[ADALIB]
ADA$PREDEFINED_ROOT	Defined as a concealed device logical name that is equivalent to SYS$COMMON:[SYSLIB].