

HP COBOL

Installation Guide

August 2007

This guide describes how to install HP COBOL on an OpenVMS Alpha or OpenVMS I64 system.

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Operating System & Version:	OpenVMS Alpha Version 7.3-2 or higher OpenVMS I64 Version 8.2-1 or higher
Software Version:	HP COBOL for OpenVMS Alpha Version 2.9 HP COBOL for OpenVMS I64 Version 2.9

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Preface

This guide describes how to install HP COBOL on Alpha and I64 processors that are running the OpenVMS operating system.

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

Associated Documentation

In addition to this guide, the HP COBOL documentation set includes the following:

- *HP COBOL Reference Manual*
- *HP COBOL User Manual*
- *HP COBOL DBMS Database Programming Manual*
- HP COBOL Release Notes (see Section 1.1)
- HP COBOL Help
- *Read Before Installing or Using HP COBOL Version 2.9 for OpenVMS Alpha or OpenVMS I64 Systems* cover letter

You may also find the following documentation useful:

- *HP OpenVMS License Management Utility Manual*
- *HP OpenVMS System Manager's Manual*

Related Documents

For additional information about HP OpenVMS products and services, visit the following World Wide Web address:

<http://www.hp.com/go/openvms>

How to Order Additional Documentation

For information about how to order additional documentation, visit the following World Wide Web address:

<http://www.hp.com/go/openvms/doc/order>

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Conventions

The following product names may appear in this manual:

- HP OpenVMS for Integrity servers
- OpenVMS I64
- I64

All three names—the longer form and the two abbreviated forms—refer to the version of the OpenVMS operating system that runs on the Intel® Itanium® architecture.

The following typographic conventions may be used in this manual:

Convention	Meaning
[YES] [NO]	Default answers to system questions are framed in square brackets. Simply press Enter to accept the default response.
UPPERCASE TYPE	Uppercase type indicates a command, the name of a routine, the name of a file, or the abbreviation for a system privilege.

Convention	Meaning
\$ SET DEFAULT SYS\$UPDATE	In interactive examples, prompts or displayed text appear in a monospace font. User input appears in bold monospace. Lowercase indicates a name that you supply. Uppercase is to be typed as shown.
\$	The dollar sign is used to indicate the DCL prompt. This prompt may be different on your system.
Ctrl/ <i>x</i>	A sequence such as Ctrl/ <i>x</i> indicates that you must hold down the key labeled Ctrl while you press another key or a pointing device button.
<i>n</i>	The minor (point) release of HP COBOL in examples is shown by <i>n</i> , as in COBOL02 <i>n</i> . For Version 2.9, you type COBOL029.

References

In this manual, every use of Oracle CDD/Repository means the Oracle CDD/Repository product of Oracle Corporation, every use of Oracle DBMS means the Oracle CODASYL DBMS product of Oracle Corporation, and every use of Oracle Rdb means the Oracle Rdb product of Oracle Corporation.

Field Test Sites

The HP COBOL team would like to acknowledge the contributions of our field test sites in improving our products. The people at these sites provided us with invaluable information, which ultimately resulted in a higher quality, more useful COBOL product.

1

Preparing for HP COBOL Installation

Your quarterly media distribution kit includes multiple pieces of media. In the OpenVMS Alpha kit, a *CD-ROM User's Guide* lists all products with the number of the CD and the directory name for the COBOL kit. In the OpenVMS I64 distribution, you'll find the COBOL kit on the Layered Products Library DVD.

On both distributions, in the COBOL directory you'll find a letter titled *Read Before Installing or Using HP COBOL Version 2.9 for OpenVMS Alpha or OpenVMS I64 Systems*. The letter discusses important information that might not be included in this guide. You should read this letter before beginning the installation.

1.1 Reading the Online Release Notes

HP COBOL provides online Release Notes. Hewlett-Packard strongly recommends that you read the Release Notes before installing the product. The Release Notes may contain information about changes to the application.

For information about accessing these Release Notes before installing HP COBOL, see Chapter 2, step 4.

The installed Release Notes for HP COBOL will be in the following file:

```
SYS$HELP:COBOL029.RELEASE_NOTES
```

1.2 Registering Your Software License

Before you install and run HP COBOL Version 2.9 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 may be shipped along with the kit if you ordered the license and media together; otherwise, it is shipped separately to a location based on your license order.

If you are installing HP COBOL as an update on a node or cluster already licensed for this software, you have already completed the License PAK registration requirements.

Preparing for HP COBOL Installation

1.2 Registering Your Software License

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

If you are planning to use the Oracle DBMS programming capability on OpenVMS Alpha, you must purchase the HP COBOL Oracle DBMS programming license option, which includes a license PAK for use of this option. See the HP COBOL Software Product Description (SPD) for more information on the Oracle DBMS programming license option.

You must register and load your license for HP COBOL *before* you start the installation in order to run the Installation Verification Procedure (IVP) and to use the software.

To register a license on OpenVMS, first log in to your SYSTEM account. 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 HP COBOL on more than one node in a VMScluster, you will need to perform a license load on the other nodes after you complete this installation. See Section 3.3.

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

1.3 Optional Software

You can use the following optional software together with HP COBOL:

- Oracle CDD/Repository
- Oracle DBMS
- HP Language Sensitive Editor/Source Code Analyzer

1.4 Checks and Requirements for Installing HP COBOL

If you are installing Oracle Rdb or Oracle CDD/Repository, you should make certain that they have been successfully installed before you begin to install HP COBOL. To eliminate possible installation errors, execute the following command procedure to start up Oracle CDD/Repository on OpenVMS Alpha:

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

Preparing for HP COBOL Installation

1.4 Checks and Requirements for Installing HP COBOL

Consult the Oracle CDD/Repository documentation on how to start up Oracle CDD/Repository on OpenVMS I64.

1.5 Installation Procedure Requirements

This section describes the requirements for installing HP COBOL, which include process account quotas, system parameters, disk space, and so on.

Standard procedures for checking and setting various parameters are described in Section 1.6.

1.5.1 Privileges

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

- BYPASS
- CMKRNL
- SYSLCK
- SYSPRV

Privileges required for product use are defined in Section 3.4.

1.5.2 System Parameters

Table 1–1 lists 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 1–1 Minimum Required System Parameter Values

System Parameter	Minimum Value
Contiguous free global pagelets ¹	7000
Global sections ¹	3

¹These values represent the number of free global pagelets and global sections required for the installation, not the total number you need to run your system and other software.

Note

If you do not ensure that your system has the necessary global pagelets and global section SYSGEN parameters for the installation, the DCL

Preparing for HP COBOL Installation

1.5 Installation Procedure Requirements

tables can become corrupted in some situations.

1.5.3 Disk Space

The HP COBOL requirements for free disk storage space are different during installation and after installation. Table 1–2 summarizes the storage requirements.

Table 1–2 Disk Space Requirements

Kit	Blocks During Installation	Blocks After Installation
HP COBOL (Alpha)	26,000	22,000
HP COBOL (I64)	48,000	44,000

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
```

1.5.4 Backing Up Your System Disk

Hewlett-Packard recommends that you do a system disk backup before installing any software.

Use the backup procedures that are established at your site. For details on performing a system disk backup, see the section on backing up the system disk in the *HP OpenVMS System Manager's Manual*.

1.6 Standard System Maintenance Procedures

This section explains how to do various standard procedures:

- Calculate values for global pagelets and global sections.
- Change parameter values with the OpenVMS AUTOGEN command procedure.

Preparing for HP COBOL Installation

1.6 Standard System Maintenance Procedures

1.6.1 Calculating the Values for Global Pagelets and Global Sections

You must have an adequate number of free global pagelets and global sections to install and run HP COBOL. First, determine how many free global pagelets and sections you have on your system, then use AUTOGEN to increase the global pagelets and global sections system parameters as necessary.

The following DCL command will return a figure that you can use as an approximation of the number of global pagelets needed:

```
$ DIR/SIZE SYS$LIBRARY:DCLTABLES.EXE
```

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

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

Section 1.6.2 describes the procedures for increasing these values using AUTOGEN.

1.6.2 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 SYS\$SYSTEM:MODPARAMS.DAT file.

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 = 8096
```

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

```
ADD_GBLPAGES = 2000
```

Note that when you set the page file quota, you do not use a value that exceeds the amount of page file space available on the system.

Preparing for HP COBOL Installation

1.6 Standard System Maintenance Procedures

After you make all your changes, exit from the editor and execute the AUTOGEN procedure to recalculate your system parameters. The following command recalculates your system parameters and reboots the system:

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

When you specify REBOOT, AUTOGEN performs an automatic system shutdown and then reboots the system.

Note

Any users logged on to the system are immediately disconnected during the shutdown.

The automatic reboot puts the new parameter values into effect.

The AUTOGEN utility 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 *HP OpenVMS System Manager's Manual*.

2

Installing HP COBOL

After you register and load the license PAK (including the COBOL DBMS PAK, if you have it), the installation will take approximately 5 to 10 minutes, depending on your system configuration.

If you encounter any failures during installation, see Appendix B.

HP COBOL for OpenVMS Alpha is packaged as one PCSI kit:

```
[COBOL029.KIT]DEC-AXPVMS-COBOL-V0209-xxxx.PCSI
```

HP COBOL for OpenVMS I64 is packaged as one PCSI kit:

```
[COBOL029.KIT]HP-I64VMS-COBOL-V0209-xxxx.PCSI
```

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 to DCL level. To retry the installation procedure after pressing Ctrl/Y, proceed from Step 5.

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

Step-by-Step Instructions

To install HP COBOL, perform the following steps:

1. **Log in to a privileged account and set your default device and directory to SYSSUPDATE.**

```
Username: SYSTEM
Password:
```

```
$ SET DEFAULT SYSSUPDATE
```

Your account must have the BYPASS, CMKRNL, SYSLCK, and SYSPRV privileges enabled. If your process has the SETPRV privilege, you can enable these privileges by typing the following command:

```
$ SET PROCESS/PRIVILEGE=(BYPASS,CMKRNL,SYSLCK,SYSPRV)
```

Installing HP COBOL

To check whether you have these privileges enabled, type the following command:

```
$ SHOW PROCESS/PRIVILEGES
```

2. **Ascertain that the license registration PAK is installed on your system.**

HP COBOL utilizes the OpenVMS License Management Facility (LMF). If you have not registered and loaded your PAK or PAKs, you must do so to successfully complete the installation (see Section 1.2).

3. **Locate HP COBOL on the media**

For OpenVMS I64, mount the OpenVMS I64 Layered Products Library DVD and view the contents.

For OpenVMS Alpha, get the number of the CD-ROM and the directory name from the *CD-ROM User's Guide*. You can also do one of the following:

- Use the CDMENU utility provided on the media CD-ROM.
- View the CD-ROM master index file on the media CD-ROM.

4. **Invoke PCSI and extract the Release Notes so that you can read them before completing the installation.**

To extract the online Release Notes, type the following command:

```
$ PRODUCT EXTRACT RELEASE_NOTES COBOL/FILE=SYS$HELP:COBOL029.RELEASE_NOTES -  
$_/SOURCE=device:[directory]
```

This command will extract the Release Notes into SYS\$HELP.

Read the Release Notes before continuing with the installation.

Note

If you extract the Release Notes using CDMENU instead of PCSI, the Release Notes will be named COBOL.PCSI\$RELEASE_NOTES instead of COBOL029.RELEASE_NOTES.

5. **Use PCSI to install the COBOL compiler.**

To install HP COBOL, use this command:

```
$ PRODUCT INSTALL COBOL/VERSION=2.9  
$_/SOURCE=device:[directory]
```

Installing HP COBOL

If the system disk for this installation is shared in your cluster, do the following on the other nodes that share the system disk:

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


3

After Installation

After HP COBOL is installed, it can be invoked by all users with the COBOL command.

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

```
$ SET COMMAND /TABLE=SYS$LIBRARY:DCLTABLES
```

The following tasks can be performed after HP COBOL is installed:

- Running the Installation Verification Procedure separately
- Customizing the HP COBOL messages
- Making HP COBOL usable on an OpenVMS Cluster System
- Setting user account privileges
- Installing HP COBOL as a shared image
- Running the REFORMAT utility

3.1 Running the Installation Verification Procedure Separately

The Installation Verification Procedure (IVP) runs automatically during installation of the COBOL compiler. It requires the installation of the COBOL compiler on your system. If you want to run the IVP separately to ensure the integrity of installed files should system problems occur, in a privileged account use the following command procedure:

```
$ @SYS$COMMON: [SYSTEST] COBOL$IVP.COM
```

After Installation

3.2 Customizing HP COBOL Error Messages

3.2 Customizing HP COBOL Error Messages

The PCSI installation automatically copies the HP COBOL message file, COBOL\$MSG.MSG, into the system directory [SYSUPD]. You can edit COBOL\$MSG.MSG to customize the error messages that users receive when using HP COBOL. Customized messages are often desirable for international users.

You must install HP COBOL before editing the message file. If you install HP COBOL after editing COBOL\$MSG.MSG, the software installation will supersede the revised message file in the [SYSMSG] directory. Also, you must have the OpenVMS Message utility installed on your system before editing COBOL\$MSG.MSG. The edited version of COBOL\$MSG.MSG must be processed through the Message utility before the file can be accessed by HP COBOL.

The following steps explain how to edit the HP COBOL messages and install the customized message file on your system:

1. Edit the message file.

Each error message appears on a separate line and is enclosed in angle brackets (< >). You can edit the text portion of the error messages, but for HP COBOL to correctly identify the errors, you must *not* change the following:

- The 3- to 9-character mnemonic that appears in the first column
- The sequence in which the error messages appear in the file
- The severity level of the error message
- The number, type, and order of the formatted ASCII output (FAO) arguments that appear in the message

2. Run the OpenVMS Message utility.

To translate the new message text into a file that HP COBOL can access, run the text file through the Message utility by entering the following command:

```
$ MESSAGE COBOL$MSG
```

The Message utility creates the object module COBOL\$MSG.OBJ.

3. Enter the LINK command with the /SHARE qualifier to create the shareable image COBOL\$MSG.EXE:

```
$ LINK/SHARE COBOL$MSG
```

After Installation

3.2 Customizing HP COBOL Error Messages

4. Install COBOL\$MSG.EXE in the system directory [SYSMSG]:

```
$ COPY COBOL$MSG.EXE SYS$COMMON:[SYSMSG]/PROT=W:RE
```

5. If HP COBOL is installed as a known image, you must reinstall COBOL\$MSG.EXE by entering the following command:

```
$ INSTALL REPLACE SYS$MESSAGE:COBOL$MSG
```

HP COBOL will now generate your customized error messages.

3.3 Making HP COBOL Usable on an OpenVMS Cluster System

If you want to run HP COBOL on multiple nodes of a VMScluster, first check to see that you have the appropriate software license (see Section 1.2). Then, perform the following steps *after* you install HP COBOL:

1. Issue the LICENSE LOAD command to activate the license on each node in the VMScluster on which HP COBOL is to be executed.
2. Use the OpenVMS System Management utility (SYSMAN) to execute a set of commands on all cluster nodes, whether or not the nodes are licensed to use HP COBOL; failure to do so may cause unexpected errors for users.

Note

If you are using a mixed-architecture (VAX and Alpha) heterogeneous cluster, before executing these commands, make sure the appropriate logical names have been set to define the scope of the SYSMAN DO commands. For more information, see the OpenVMS system management documentation.

While logged in as SYSTEM, or as another user name that has the SETPRV privilege or the CMKRNL and SYSPRV privileges, use the SYSMAN utility to update the version of DCLTABLES.EXE available, as follows:

```
$ RUN SYS$SYSTEM:SYSMAN
SYSMAN> SET ENVIRONMENT/CLUSTER
%SYSMAN-I-ENV, current command environment:
      Clusterwide on local cluster
      Username SYSTEM          will be used on nonlocal nodes
SYSMAN> DO INSTALL REPLACE SYS$LIBRARY:DCLTABLES.EXE
%SYSMAN-I-OUTPUT, command execution on node NODE1
%SYSMAN-I-OUTPUT, command execution on node NODE2
```

After Installation

3.3 Making HP COBOL Usable on an OpenVMS Cluster System

The SYSMAN utility will cause each DO command to be executed on all nodes of the local cluster.

3. If HP COBOL is installed as a known image, then also do the following:

```
SYSMAN> DO INSTALL REPLACE SYS$SYSTEM:COBOL.EXE
%SYSMAN-I-OUTPUT, command execution on node NODE1
%SYSMAN-I-OUTPUT, command execution on node NODE2
```

4. If the HP COBOL messages file is installed as a known image, then also do the following:

```
SYSMAN> DO INSTALL REPLACE SYS$MESSAGE:COBOL$MSG.EXE
%SYSMAN-I-OUTPUT, command execution on node NODE1
%SYSMAN-I-OUTPUT, command execution on node NODE2
```

5. Finally, exit from SYSMAN.

```
SYSMAN> EXIT
$
```

3.4 User Account Privileges

To use HP COBOL, each user account must have at least TMPMBX and NETMBX privileges. Use the OpenVMS Authorize utility to determine whether users have the privileges they require.

3.5 Installing HP COBOL as a Shared Image

If you expect HP COBOL to be used extensively on your system, you can reduce the system overhead and memory requirements by installing it as a shared image. To install HP COBOL as a shared image on a system that is currently running, use the OpenVMS Install utility (INSTALL). It is recommended that you install HP COBOL as shared on a system that has been rebooted recently, because the available space in the global page table is less likely to be fragmented. Invoke the OpenVMS Install utility from a privileged account and install HP COBOL as a shared image:

```
$ INSTALL ADD SYS$SYSTEM:COBOL.EXE /OPEN/SHARED/HEADER_RESIDENT
```

Add the following line to the appropriate system startup command file so that HP COBOL is available as a shared image each time the system is started:

```
$ INSTALL ADD SYS$SYSTEM:COBOL.EXE/OPEN/SHARED/HEADER_RESIDENT
```

The default operating system startup command file, for example, is SYSSMANAGER:SYSTARTUP_VMS.COM (previously named SYSTARTUP_V5.COM). If your site has modularized the system startup procedure using multiple command files, add the lines to the correct file.

After Installation

3.5 Installing HP COBOL as a Shared Image

To install the message file, use the following commands:

```
$ INSTALL ADD SYS$MESSAGE:COBOL$MSG.EXE
```

3.6 REFORMAT Utility

The PCSI installation automatically includes installation of REFORMAT.EXE, the REFORMAT utility. It is ready to run.

A

Sample Installation

This appendix contains sample logs of the following operations, which are identical on OpenVMS Alpha and OpenVMS I64:

- An installation of HP COBOL
- An Installation Verification (IVP) of HP COBOL
- A Removal of HP COBOL

A.1 Installation of the Compiler on OpenVMS Alpha and OpenVMS I64

The installation is identical on both OpenVMS Alpha and OpenVMS I64. However, you will see the platform specified in the product name and a four-digit string after the version. The following example shows an installation of V2.9 on an OpenVMS I64 system.

```
$ PRODUCT INSTALL COBOL
```

```
The following product has been selected:
```

```
  HP I64VMS COBOL V2.9-xxxx          Layered Product
```

```
Do you want to continue? [YES]
```

```
Configuration phase starting ...
```

```
You will be asked to choose options, if any, for each selected product and for any products that may be installed to satisfy software dependency requirements.
```

```
HP I64VMS COBOL V2.9-xxxx: HP COBOL for OpenVMS I64 Systems
```

```
  Copyright 2007 Hewlett-Packard Development Company, L.P.
```

```
  This software is the product of Hewlett-Packard Development Company, L.P.
```

```
  A valid Product Authorization Key (PAK) is required.
```

```
Do you want the defaults for all options? [YES]
```

Sample Installation

A.1 Installation of the Compiler on OpenVMS Alpha and OpenVMS I64

Do you want to review the options? [NO]

Execution phase starting ...

The following product will be installed to destination:

HP I64VMS COBOL V2.9-xxxx DISK\$I64SYS:[VMS\$COMMON.]

Portion done: 0%...90%...100%

The following product has been installed:

HP I64VMS COBOL V2.9-xxxx Layered Product

%PCSI-I-IVPEXECUTE, executing test procedure for HP I64VMS COBOL V2.9-xxxx ...

%PCSI-I-IVPSUCCESS, test procedure completed successfully

A.2 Installation Verification (IVP) Run Separately

\$ @SYS\$TEST:COBOL\$IVP.COM

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Confidential computer software. Valid license from HP and/or its subsidiaries required for possession, use or copying.

Successful test of HP COBOL V2.9-xxxx

\$

A.3 Removal of the COBOL Compiler

The removal command operates the same on both OpenVMS Alpha and OpenVMS I64. This example shows the OpenVMS I64 product.

\$ PRODUCT REMOVE COBOL

The following product has been selected:

HP I64VMS COBOL V2.9-xxxx Layered Product

Do you want to continue? [YES]

The following product will be removed from destination:

HP I64VMS COBOL V2.9-xxxx DISK\$I64SYS:[VMS\$COMMON.]

Portion done: 0%...10%...20%...30%...40%...50%...60%...70%...100%

The following product has been removed:

HP I64VMS COBOL V2.9-xxxx Layered Product

B

Recovering from Errors

This appendix provides information to help you with failures or errors that might occur during product installation or product use.

B.1 Failures During HP COBOL Installations

If PCSI detects any problems during installation, it notifies you and asks if you want to continue the installation.

The following PCSI messages are issued if the PCSI product kit is not found in the specified directory:

```
$ PRODUCT INSTALL /SOURCE=device:[directory]
%PCSIUI-I-NOMATCH, no products found matching: COBOL
%PCSIUI-E-NOPROD, no products found on which to perform this operation
%PCSIUI-E-ABORT, fatal error encountered - operation terminated
```

The following PCSI and RMS messages are issued if the PCSI product kit is not found in the specified directory and you have defined the logical name PCSI\$SOURCE:

```
$ PRODUCT INSTALL /SOURCE=device:[directory]
%PCSI-E-OPENIN, error opening PCSI$SOURCE:[SYSUPD]*-*--%%%-*-.PCSI*;
  as input
-RMS-F-DEV, error in device name or inappropriate device type for operation
%PCSI-E-S_OPFAIL, operation failed
%PCSIUI-E-ABORT, fatal error encountered - operation terminated
```

The following PCSI messages are issued when the installation and the IVP test procedure execute properly:

Recovering from Errors

B.1 Failures During HP COBOL Installations

```
$ PRODUCT INSTALL /SOURCE=device:[directory]
```

```
.  
.  
.
```

```
The following product has been installed:  
DEC AXPVMS COBOL V2.9-xxxx
```

```
.  
.  
.
```

```
%PCSI-I-EXETSTOK, end of test procedure; completed with no errors
```

The following PCSI messages are issued when the COBOL installation fails only because the IVP test procedure fails.

Note

This failure is in the IVP test procedure. After reporting the failure it asks you if you wish to terminate the installation. If you answer YES at this advanced stage (100%), the installation terminates quietly. The product has been installed on the system.

```
$ PRODUCT INSTALL /SOURCE=device:[directory]
```

The PRODUCT INSTALL fails, with the following messages:

```
Portion Done: 10%...30%...40%...70%...80%...90%...100%  
%PCSI-I-PRCOUTPUT, output from subprocess follows..  
%LICENSE-F-NOAUTH, DEC COBOL use is not authorized on this node  
-LICENSE-F-NOLICENSE, no license is active for this software product  
-LICENSE-I-SYSMGR, please see your system manager  
%SYSTEM-F-ABORT, abort
```

The IVP test procedure fails, with the following messages:

```
%PCSI-E-EXETSTFAIL, end of test procedure; completed with errors;  
status returned from DCL follows  
-SYSTEM-F-ABORT, abort  
%PCSI-E-OPFAILED, operation failed  
Terminating is strongly recommended. Do you want to terminate? [YES] y
```

B.2 Problems During HP COBOL Use

This section describes problems that might occur when you use HP COBOL.

Recovering from Errors B.2 Problems During HP COBOL Use

B.2.1 Other Problems

If you encounter a problem while using HP COBOL, see the section on Troubleshooting Tips in the Release Notes. If the problem is unresolved, report it to Hewlett-Packard. If you have a Software Product Services Support Agreement, contact HP Services by the method specified in your support agreement.

When you initially contact HP Services, please indicate the following:

- The name (OpenVMS Alpha or OpenVMS I64) and the version number of the operating system you are using
- The product name (HP COBOL) and the version number of HP COBOL you are using
- The hardware system you are using, such as a model number
- A very brief description of the problem (one sentence if possible)
- How critical the problem is

When you submit information electronically or are speaking on the phone to the appropriate HP COBOL support specialist, you can provide more detailed information. The information should include the specific commands used to compile and link the program, the error messages displayed, and relevant detailed information (possibly including source program listings). Please attempt to narrow the cause of the problem to a specific module or lines of code.

HP Services personnel may ask for additional information, such as listings of any command files, INCLUDE and COPY files, relevant data files, and so forth. If the program is longer than 50 lines, submit a copy of it electronically or provide machine-readable media (CD-ROM or magnetic tape).

