

HP C

Installation Guide for OpenVMS Alpha Systems

Order Number: AA-PUP1J-TE

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This guide contains instructions for installing HP C on OpenVMS Alpha systems.

This guide applies to HP C Version 7.1 for OpenVMS Alpha, and all subsequent point releases for Version 7.0.

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Operating System and Version: OpenVMS Alpha Version 7.3-2 or higher. Future maintenance releases might require higher versions.

Software Version: HP C Version 7.1 for OpenVMS Alpha.

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Preface

This guide describes how to install HP C on Alpha processors running the OpenVMS operating system. It is intended for system managers.

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

You can send comments or suggestions regarding this guide or any HP C document by sending electronic mail to the following Internet address:

c_docs@hp.com

Intended Audience

The audience for this guide is the system manager who installs HP C software.

Structure of this Document

This guide contains the following chapters and appendixes:

- Chapter 1 describes how to prepare for HP C installation.
- Chapter 2 describes the procedure to install HP C.
- Chapter 3 describes what to do after installing HP C.
- Appendix A shows sample installations.
- Appendix B lists files installed.
- Appendix C describes how to recover from errors.

Manuals in the HP C Documentation Set

In addition to this guide, the HP C for OpenVMS Alpha documentation set includes the following books:

- *HP C Language Reference Manual*
- *HP C User's Guide for OpenVMS Systems*
- *HP C Run-Time Library Reference Manual for OpenVMS Systems*

The *Read Before Installing HP C Version 7.n for OpenVMS Alpha Systems* letter is provided along with this installation guide on the CD media.

Related Manuals

For information on OpenVMS system management, see the following documents in the OpenVMS documentation set:

- *HP OpenVMS System Manager's Manual*
- *Guide to Maintaining a VMS System*
- *HP OpenVMS License Management Utility Manual*
- *Guide to OpenVMS Performance Management*

For help understanding OpenVMS system error messages, see the *OpenVMS System Messages and Recovery Procedures Reference Manual* or the online HELP/MESSAGE facility.

Conventions

Table 1 lists the conventions used in this guide.

Table 1 Conventions Used in this Guide

Convention	Meaning
UPPERCASE TEXT	Uppercase text indicates a command, the name of a routine, the name of a file, the name of a file protection code, or the abbreviations for a system privilege.
\$ @SYS\$UPDATE:VMSINSTAL	In interactive examples, prompts and displayed text appear in a monospace font. User input appears in bold monospace font.

(continued on next page)

Table 1 (Cont.) Conventions Used in this Guide

Convention	Meaning
<i>italic type</i>	Italic type indicates important information, complete titles of manuals, or variables. Variables include information that varies in system output (Internal error <i>number</i>), in command lines (/PRODUCER= <i>name</i>), and in command parameters in text (where <i>dd</i> represents the predefined code for the device type).
<code>Return</code>	In interactive examples, a key name is shown enclosed to indicate that you press a key on the keyboard.
<code>Ctrl/x</code>	In interactive examples, a sequence such as <code>Ctrl/x</code> indicates that you must hold down the key labeled Ctrl while you press another key; for example, Ctrl/C or Ctrl/Z.
<code>[YES]</code>	Square brackets indicate that the enclosed item is a default value in an installation prompt. Also, square brackets serve as delimiters for a directory name in a file specification.

In this manual, some version numbers are given as *Vn.n*. When you install HP C, the actual version number appears on your screen.

1

Preparing for HP C for OpenVMS Alpha Installation

This chapter describes the preparations and requirements necessary for installing HP C for OpenVMS Alpha Systems.

This guide applies to Version 7.1 of HP C for OpenVMS Alpha Systems and all subsequent maintenance releases up to the next release of the product that includes an updated installation guide.

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 HP representative.

HP C provides online release notes. Reading the release notes before proceeding with the installation is strongly recommended. For information on accessing the online release notes, see Section 2.1, step 6.

The release notes contain installation-related notes and a summary of technical changes, known problems, restrictions, and incompatibilities.

1.1 Hardware Requirements

You can install HP C on any Alpha processor system capable of running OpenVMS Alpha Version 7.3-2 or higher. See the OpenVMS Operating System's Software Product Description (SPD 25.01.*nn*) for details.

1.2 Required Operating System Components

HP C Version 7.1 for OpenVMS Alpha Systems requires OpenVMS Alpha Version 7.3-2 or higher.

Future HP C releases may require higher versions of the OpenVMS operating system, as described in the release notes or the cover letter.

The OpenVMS Alpha operating system comes with a variety of support options (or components). Components include such features as networking and RMS journaling. To use HP C, your system should be running a version of OpenVMS Alpha that includes that includes the base component and the following other components:

- Programming support
- Utilities

For a complete list of the required components, see the HP C Software Product Description (SPD).

1.3 Optional Software

You can use the following optional OpenVMS software with HP C:

- HP Language-Sensitive Editor/Source Code Analyzer (LSE/SCA). Support for C requires that LSE be installed before the compiler is installed.
- HP Test Manager (DTM)
- HP Performance and Coverage Analyzer (PCA)
- HP Code Management System (CMS)
- HP Module Management System (MMS)

1.4 License Registration

Before you install and run HP C Version 7.1 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 specific LMF product names used by HP C are:

- C: Unlimited or Personal-Use License
- C-USER: Concurrent-Use License

The HP C compiler accepts a C(-USER) PAK. 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 C as an update on a node or cluster already licensed for this software, you have already completed the License PAK registration requirements.

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

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

To register a license under OpenVMS, log in to a privileged account, such as 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 the License PAK information.

If you plan to use HP C on more than one node in a cluster, 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 the LMF, see the *VMS License Management Utility Manual* or the online HELP LICENSE utility.

1.5 Installation Procedure Requirements

After you have registered and loaded the license PAK and read the appropriate parts of this installation guide, the installation takes approximately 5 to 15 minutes, depending on your type of media, your system configuration, and the kit components chosen.

1.5.1 Installation Account Privileges and Disk Space

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

- CMKRNL
- WORLD
- SYSPRV

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

Table 1–1 lists the storage requirements for free disk storage space. You can also install the C documentation in .ps, .txt, and .html formats. The installation default is to not install the documentation, but if you do, note the additional disk space required.

Table 1–1 Disk Space Requirements

Kit	Blocks During Installation	Blocks After Installation
Compiler only	150,000	100,000
Compiler and documentation	250,000	160,000

These counts refer to the disk space required on the system disk. The sizes are approximate; actual sizes may vary depending on the user's system environment, configuration, and software options.

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

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

1.5.2 System Parameters

Installing HP C requires certain system parameter settings.

The minimum number of free global pagelets (512-byte subpage unit) and global sections needed for the installation depends on whether `SYS$SYSTEM:DECC$COMPILER.EXE` was previously installed as a shared known image:

- If not previously installed as shared, 1 global section and a sufficient number of contiguous free global pagelets to contain the file `SYS$LIBRARY:DCLTABLES.EXE`
- If previously installed as shared, 2 global sections and approximately 10,000 contiguous free global pagelets plus a sufficient number of contiguous free global pagelets to contain the file `SYS$LIBRARY:DCLTABLES.EXE`

These 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 tables can become corrupted in some situations.

1.5.2.1 Calculating Values for GBLPAGES and GBLSECTIONS

To install and run HP C, you must have sufficient free global pagelets and global sections.

Enter the following DCL command to determine the number of global pagelets required by SYS\$LIBRARY:DCLTABLES.EXE:

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

This command returns the size (in blocks) of SYS\$LIBRARY:DCLTABLES.EXE. As an approximation, use this figure as the number of global pagelets needed for the file.

You can use the WRITE command with the F\$GETSYI lexical function to find the number of free contiguous global pagelets and free global sections. 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
```

If the value of free global pagelets or global sections is less than the required value (see Section 1.5.2), you must increase the system parameter setting.

Section 1.5.2.2 describes the procedures for increasing these values using AUTOGEN.

1.5.2.2 Changing System Parameter Values with AUTOGEN

If you do not have enough free global pages or free global sections to install HP C, you can do either of the following:

- Delete an existing known image using the OpenVMS INSTALL utility.
- Use the AUTOGEN command procedure to increase the GBLPAGES or GBLSECTIONS 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
```

Use an editor to access the 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 GBLPAGES and GBLSECTIONS, use the ADD_ prefix. The following example increases the global page setting by 2000:

```
ADD_GBLPAGES = 2000
```

After you make all your changes, exit from the editor, then execute the AUTOGEN procedure to recalculate your system parameters and reboot the system:

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

When you specify REBOOT, AUTOGEN does an automatic system shutdown and then reboots the system. 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 *OpenVMS System Management Subkit*.

1.5.3 VMSINSTAL and Installation Requirements

When you invoke VMSINSTAL, it checks the following:

- Whether you have set your default device and directory to SYS\$UPDATE
- Whether you are logged in to a privileged account
- Whether you have adequate quotas for installation (see Section 1.5.3.1)
- Whether DECnet is running
- Whether any users are logged in to the system

If VMSINSTAL detects any problems during the installation, it notifies you and asks if you want to continue the installation. In some instances, you can enter YES to continue. To stop the installation process and correct the situation, type NO or press Return. Then correct the problem and restart the installation.

1.5.3.1 VMSINSTAL Installation Process Requirements

VMSINSTAL requires that the installation account have the following minimum quotas:

```
ASTLM = 100
BIOLM = 100
DIOLM = 100
ENQLM = 300
FILLM = 300
```

1.5.3.2 Modifying Process Quotas

Use the OpenVMS Authorize Utility to change the process quotas for the installation account in the user authorization file (UAF). (Some sites may restrict the use of the OpenVMS Authorize Utility to certain accounts or people.) For example, to change the BIOLM quota for the *account-name* installation account, you might enter the following command sequence:

```
$ RUN SYS$SYSTEM:AUTHORIZE
UAF> MODIFY account-name /BIOLM = 100
UAF> SHOW account-name
UAF> EXIT
$ LOGOUT
```

After the quotas for the installation account have been changed, log out of the installation account and log in again for the new quotas to take effect. You can then proceed with the installation.

For more information on modifying account quotas, see the description of the AUTHORIZE utility in the *OpenVMS System Management Subkit*.

1.5.4 Backing Up Your System Disk

At the beginning of the installation, VMSINSTAL asks if you have backed up your system disk. You should 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 BACKUP utility in the *OpenVMS System Management Subkit*.

1.6 Installing and Using Multiple Compiler Versions

HP C Version 6.4 and higher provides support for installing and using multiple versions of the compiler on the same node.

During installation of Version 7.*n*, if a Version 6.*n* of the compiler is already installed, you have the opportunity to preserve that compiler rather than overwrite it. If you choose to preserve the currently installed compiler, you are then given a choice to keep the currently installed compiler as the system default and install the new compiler as an alternate.

By default, the currently installed system compiler is preserved by making it an alternate compiler and installing the new compiler as the system default. Users can make the choice to use an alternate compiler instead of the installed system compiler by running a command procedure that changes the behavior of the `cc` command for the process that invokes it.

1.6.1 Displaying and Selecting the Compiler Version

This kit provides two command procedures to display and control which *HP C* compiler is used by a process:

- `SYS$SYSTEM:DECC$SHOW_VERSIONS.COM`

This procedure displays the *HP C* compilers available on the system, along with their version numbers. It also displays which compiler is the default for the current process. The procedure takes an optional version-number argument. Examples:

```
$ @sys$system:decc$show_versions.com
```

The following *HP C* compiler(s) are available in `SYS$SYSTEM`:

Filename	Version	
-----	-----	
DECC\$COMPILER.EXE	V6.4-005	
DECC\$COMPILER_T06_04-002.EXE	T6.4-002	
DECC\$COMPILER_T06_04-001.EXE	T6.4-001	
DECC\$COMPILER_V06_00-001.EXE	V6.0-001	Process Default
DECC\$COMPILER_V06_02-008.EXE	V6.2-008	

```
$ @sys$system:decc$show_versions.com V6.0
```

The following *HP C* compiler(s) are available in `SYS$SYSTEM`:

Filename	Version	
-----	-----	
DECC\$COMPILER_V06_00-001.EXE	V6.0-001	Process Default

- `SYS$SYSTEM:DECC$SET_VERSION.COM`

This procedure sets up process logicals that point to an alternate *HP C* compiler in SYS\$SYSTEM, or it removes the process logicals to revert to using the default system compiler. The procedure takes one argument, a version number or the keyword SYSTEM. If no arguments are specified you are prompted for them. The SYSTEM argument selects the installed system compiler, which is the one displayed with the filename DECC\$COMPILER.EXE in the output of decc\$show_versions.com. Alternate compilers are shown in that output with their version number appended to the simple filename; for example, the version 6.2-008 compiler is shown as DECC\$COMPILER_V06_02-008.EXE.

To select a compiler, pass a full ident string or enough of the ident string to be unique. For example: to select the V6.2-008 compiler from the previous list, pass V6.2-008 or V6.2 to the decc\$set_version.com routine. However, to select a 6.4 compiler, a full ident string is required to distinguish between the V6.4-005, T6.4-001, and the T6.4-002 compiler:

```
@sys$system:decc$set_version.com V6.2-008
```

```
@sho logical DECC$*
```

```
(LNM$PROCESS_TABLE)
```

```
"DECC$COMPILER" =
  "SYS$SYSTEM:DECC$COMPILER_V06_02-008.EXE"
"DECC$MSG_SHR" =
  "SYS$MESSAGE:DECC$MSG_SHR_V06_02-008.EXE"
```

```
$ @decc$set_version.com 6.4
```

The following 6.4 *HP C* compiler(s) are available in SYS\$SYSTEM:

Filename	Version
DECC\$COMPILER.EXE	V6.4-005
DECC\$COMPILER_T06_04-001.EXE	T6.4-001
DECC\$COMPILER_T06_04-002.EXE	T6.4-002

Ambiguous version number, please be specify a full version number, ex: V6.4-005
Version number : V6.4-005

```
$ sho logical DECC$COMPILER
```

```
"DECC$COMPILER" = "SYS$SYSTEM:DECC$COMPILER_V06_04-005.EXE" (LNM$PROCESS_TABLE)
```

```
$ sho logical DECC$msg_shr
```

```
"DECC$MSG_SHR" = "SYS$MESSAGE:DECC$MSG_SHR_V06_04-005.EXE" (LNM$PROCESS_TABLE)
```

When this procedure is run in a process, subsequent *cc* commands invoke the selected compiler version (until the procedure is run again). The process-level logicals used do not affect other processes or users on the system.

1.6.2 Side Effects and Restrictions on Multiple Versions

Installing this kit provides the latest DECC\$RTLDEF.TLB file and the latest documentation, even if you select the option of having the new compiler as the alternate compiler. Because it is upwardly compatible, the new DECC\$RTLDEF.TLB does not adversely impact a preexisting Version 6-based compiler.

If you run an older installation procedure, you should rerun the V7.*n* installation procedure to make sure you have all the files to support V7.*n* as a coexistent compiler.

Note that there are two logical names involved in establishing the compiler version: one for the compiler image and one for its message file. Beginning with *HP C* V6.4, the compiler issues a diagnostic if it is invoked with the wrong version of the message file; previous versions of the compiler do not detect this situation. If you find that an older version of the compiler is issuing diagnostics that do not make sense for the code construct they are attached to, or if the message text is missing and only a message number is issued, use the `$ SHOW LOGICAL DECC$COMPILER*` command to check that you have matched versions of the files designated by the two logicals. The response should show matching version-numbered files as in the example that selects the Version 6.2 compiler. Or if you are using the system compiler, the response should be the message "%SHOW-S-NOTRAN, no translation for logical name DECC\$COMPILER*".

1.6.3 Installation Procedure Changes

When you install *HP C* Version 6.4 or higher on a system that already has a Version 6.0 or higher compiler installed, you are given the chance to preserve the currently installed system compiler. To do this, answer YES to the following question (the *xxx* will be replaced by the full version number of the existing system compiler):

```
"Should the existing xxx system compiler be preserved [NO]:"
```

If you answer NO, the installation proceeds in the traditional manner, overwriting the currently installed system compiler.

If you answer YES, you are then asked an additional question. To get the traditional behavior of installing the kit compiler as the system default, answer NO to the question:

```
"Should this xxx system compiler remain the default when cc is typed [NO]:"
```

Because you have previously asked to preserve the existing system compiler, that compiler is made an alternate compiler before the new system compiler is installed from the kit. If you answer YES to the question, the kit compiler is installed as an alternate compiler with a name that is based on its ident, and the existing system default compiler remains the default.

2

Installing HP C

This chapter explains how to install HP C:

- Section 2.1 contains a step-by-step description of the installation procedure.
- Section 2.2 covers error recovery considerations.

2.1 Installation Procedure

The HP C installation procedure consists of a series of questions and informational messages. See Appendix A for sample installations.

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.

Defaults appear in brackets ([]) throughout the installation procedure.

1. **Log in to a privileged account and set your default device and directory to SYS\$UPDATE, where VMSINSTAL resides.**

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

2. **Invoke VMSINSTAL.**

```
@SYS$UPDATE:VMSINSTAL saveset-name device-name OPTIONS N
```

saveset-name

The installation name for the component. For HP C, use the following installation name:

```
CC07n
```

Where *n* represents the minor (point) release number of HP C, such as CC065 for Version 6.5 or CC071 for Version 7.1. Refer to the label on the HP C distribution kit or the HP C BOM or BIL for the maintenance update number of your kit.

device-name

The name of the device on which you plan to mount the media, or the name of the *device:[directory]* that contains the save sets. For example, DKA400: is the device name used in examples in this guide. The directory is [CC07n.KIT], where *n* is the minor release number.

To specify the device name on the @VMSINSTAL command line, type:

```
DKA400: [CC07n.KIT]
```

OPTIONS N

An optional parameter that indicates you want to see the question on release notes. 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.

There are several other options you can select when you invoke VMSINSTAL:

- Auto_answer (A): Initially creates a file that contains your answers to VMSINSTAL questions and prompts. This option, and the answer file it produces, can save time during a reinstallation (typically after upgrading your system).
- Get save set (G): Stores product save sets temporarily on a magnetic tape or in a disk directory.
- File log (L): Logs all activity to the terminal during installation.
- Alternate root (R): Installs the product to a system root other than that of the running system.

See the OpenVMS documentation on software installation in the *OpenVMS System Management Subkit* for detailed information on these options. If you specify more than one option, separate the options with commas (for example: OPTIONS A,N).

The following example invokes VMSINSTAL to install HP C and shows the system response. This example uses the OPTIONS N release note parameter.

```
$ @SYS$UPDATE:VMSINSTAL CC07n DKA400:[CC07n.KIT] OPTIONS N
```

OpenVMS Alpha Software Product Installation Procedure V7.3

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 this information later in the installation procedure. VMSINSTAL does not prompt you for any options, so be sure to include OPTIONS N on the VMSINSTAL command line to access the release notes during the installation.

When you invoke VMSINSTAL, it checks for the following requirements:

- Whether you logged in to a privileged account. We recommend that you install software from the system manager's account with your default device and directory set to SYS\$UPDATE.
- Whether you have adequate quotas for installation. VMSINSTAL checks for the quota values shown in Section 1.5.3.1.
- Whether any users are logged in to the system. If users are logged in, you are asked whether you want to continue the installation. If you want to continue, enter YES. If you want to stop the installation, press Return.

3. Confirm system backup.

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

VMSINSTAL asks if you are satisfied with your system backup. 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.

4. Mount the media.

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

```
Where will the distribution volumes be mounted: DKA400:[CC07n.KIT]
```

If this prompt appears, enter the name of the distribution (media) device and directory the contains the HP C kit (save set). For example, if the media is contained on a CD located on unit DKA400:, enter DKA400:[CC07n.KIT] in reply to this question (where *n* is the minor release number.)

Depending on the type of device and whether the device is already mounted, the following prompt may or may not appear:

```
Please mount the first volume of the set on DKA400:.  
* Are you ready? YES  
%MOUNT-I-MOUNTED, HP C mounted on DKA400:
```

If you have not already done so, you should now insert the distribution volume on the device you specified when you invoked VMSINSTAL. The device name appears in the line preceding the question. VMSINSTAL then asks you if you are ready to continue with the installation.

If you enter YES to indicate that you are ready, VMSINSTAL displays a message that the media containing HP C has been mounted on the specified device and that the installation has started.

If you entered the wrong device name when you invoked VMSINSTAL and need to restart the installation, enter NO in response to the “Are you ready?” question. To abort the installation for other reasons, press Ctrl/Y.

5. **Verify the product being installed**

```
The following products will be processed:  
  CC V7.n
```

```
  Beginning installation of CC V7.n at hh:mm  
%VMSINSTAL-I-RESTORE, Restoring product saveset A...
```

The product name and version are displayed. The save set (A) is restored to a subdirectory of SYS\$UPDATE.

6. **Select a release notes option.**

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

- Select option 1 to immediately display the release notes online. You can terminate the display at any time by pressing Ctrl/C.

- Select option 2 to print the release notes. You are prompted for the name of the print queue that you want to use:
 - * Queue name [SYS\$PRINT] :

Either press Return to send the file to the default output print device (SYS\$PRINT) or enter another queue name.
- Select option 3 to immediately display the release notes online and then be prompted for a queue name for the printed version.
- Select option 4 if you have already reviewed the release notes and are restarting the installation.

Next, VMSINSTAL displays the following question:

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

To continue the installation, enter YES. Otherwise, press Return. In either case, the release notes are copied to the following file in the SYS\$HELP directory (where *n* is the minor version number):

```
SYS$HELP:CC.RELEASE_NOTES
```

Note

Do not delete release notes for previous versions of HP C (if any).

7. Read license information.

HP C Version 7.n for OpenVMS Alpha Systems

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Confidential computer software. Valid license from HP required for possession, use or copying. Consistent with FAR 12.211 and 12.212, Commercial Computer Software, Computer Software Documentation, and Technical Data for Commercial Items are licensed to the U.S. Government under vendor's standard commercial license.

8. Respond to HP C multiple-version queries.

The installation procedure detects any previous version of the HP C compiler installed on your system (back to Version 6.0), and asks if you want to keep it or supersede it with the new version you are installing. Enter YES to keep the previous version, or enter NO to supersede it with the new version:

A C V6.0-001 compiler was found on your system.
Type YES to keep this compiler on your system either as
the default system compiler or as an alternate compiler.
Type NO to supersede C V6.0-001.

* Should the existing V6.0-001 system compiler be preserved [NO]: **YES**

If you answer YES to the previous question, the installation procedure then asks if you want the currently installed ("old") compiler to remain the default compiler on your system. Enter YES to keep the "old" version as the system default compiler. Enter NO to make the "new" version the default system compiler:

Type NO to have the compiler on this kit become the default system compiler and to have the currently installed compiler saved as an alternate compiler. Type YES to keep the current system compiler as the default compiler and to have the compiler on this kit available as an alternate compiler. Alternate compilers can be invoked with the cc command after invoking sys\$system:decc\$set_version.com passing a version_number.

Should this V6.0-001 system compiler remain the default when cc is typed [NO]:

9. Respond to license registration query for the new compiler.

HP C supports the OpenVMS License Management Facility (LMF). The installation procedure displays license information about your product and asks if you have registered and loaded your Product Authorization Key (PAK) for HP C. The following is an example of such information:

```
Product:      C
Producer:    DEC
Version:     7.1
Release Date: dd-mmm-yyyy
```

* Does this product have an authorization key registered and loaded?: yes

If you have not registered and loaded your PAK, you must answer No to this question. You have to register and load your PAK to run the Installation Verification Procedure (IVP). If you have not done so, you should stop the installation, register and load your PAK, and then restart the installation.

10. Choose the IVP option.

The installation procedure asks if you want to run the IVP. The IVP for HP C checks to be sure that the installation is successful. It is recommended that you run the IVP; answer YES to the following prompt:

This kit contains an Installation Verification Procedure (IVP) to verify the correct installation of HP C. The IVP will be left in:

```
SYS$COMMON:[SYSTEST]DECC$IVP.COM
```

After the installation is complete, you can invoke the command file at any time to verify that HP C is installed and working correctly.

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

After HP C is installed, 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 HP C.

11. **Decide whether to install the documentation.**

HTML, postscript and text versions of the HP C Users Guide, Language Reference Manual and RTL Reference Manual may be optionally installed into SYS\$COMMON:[SYSHLP.CC\$ALPHA_HELP_07n]. These documents consume approximately 60000 blocks.

* Should these manuals be provided [NO]? yes

If you have adequate disk space and wish to install the C documentation, enter YES. Once the documentation is installed, you can browse the HTML version by opening the following file from your browser:

```
SYS$COMMON:[SYSHLP.CC$ALPHA_HELP_07n]INDEX.HTM
```

12. **Read release-notes informational message.**

This kit contains a file summarizing the new features, changes, restrictions, and compatibility issues in this release of HP C. This file is named CC.RELEASE_NOTES and has been placed in SYS\$HELP:.

This file contains information valuable to HP C programmers. Please inform your user community of this file's existence.

13. **Purge files.**

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

The directories SYS\$HELP, SYS\$MESSAGE, SYS\$SYSTEM, DECC\$LIBRARY, and SYS\$TEST may contain previous versions of HP C files. These files are replaced during the installation with new files, but the old files are not automatically purged. Purging is recommended.

In response to the purging prompt, press Return to purge the files or enter NO to keep them.

14. **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. If you chose to have files purged, that work is done now. The following messages are displayed:

You have answered all of the questions for this installation. The installation will now execute in 5 to 15 minutes without further intervention, depending on your configuration, installation media, and so forth.

The C Runtime Library headers and Starlet headers are installed as a Text Library (.TLB). The traditional text form of the headers (.H files) are also provided for reference purposes only) in the directories: SYS\$COMMON:[DECC\$LIB.REFERENCE.DECC\$RTLDEF] and SYS\$COMMON:[DECC\$LIB.REFERENCE.SYS\$STARLET_C].

Please note that the compiler does not search the reference areas SYS\$COMMON:[DECC\$LIB.REFERENCE.DECC\$RTLDEF] and SYS\$COMMON:[DECC\$LIB.REFERENCE.SYS\$STARLET_C] during compilation. Instead headers are taken from the text library.

%VMSINSTAL-I-SYSDIR, This product creates system disk directory
VMI\$ROOT:[SYSTEST.DECC].

Your OpenVMS system will now be modified to include the following new and modified files:

[SYSEXE] DECC\$COMPILER_V06_00-001.EXE	[renamed]
[SYSMMSG] DECC\$COMPILER_MSG_V06_01-001.EXE	[renamed]
[SYSEXE] DECC\$COMPILER.EXE	[new]
[SYSMMSG] DECC\$COMPILER_MSG.EXE	[new]
[SYSHLP] HELPLIB.HLB	[modified]
[SYSHLP] CC\$HELP*.HTML	[new]
[SYSHLP] CC\$ALPHA_HELP_07n]	[new]
[SYSHLP] CC.RELEASE_NOTES	[new]
[SYSHLP] CC_RELEASE_NOTES.PS	[new]
[SYSLIB] DCLTABLES.EXE	[modified]
[SYSLIB] DECC\$COMPILED_PRINTF.OLB	[new]
[SYSLIB] DECC\$RTLDEF.TLB	[new]
[DECC\$LIB.REFERENCE.SYS\$STARLET_C]*.H	[new]
[DECC\$LIB.REFERENCE.DECC\$RTLDEF]*.H	[new]
[SYS\$STARTUP] DECC\$STARTUP.COM	[modified]
[SYSTEST] DECC\$IVP.COM	[new]
[SYSEXE] DECC\$SET_VERSIONS.COM	[new]
[SYSEXE] DECC\$SHOW_VERSIONS.COM	[new]
[SYSTEST.DECC] DECC\$IVP*.*	[new]

The file SYSS\$STARTUP:DECC\$STARTUP.COM contains commands to be executed at system startup to allow for the best compilation performance. You may want to invoke this command file from your system's site-specific startup file. This command file does not have to be invoked for correct operation of HP C.

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

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

15. **Observe the IVP.**

If you chose to run the IVP, VMSINSTAL now invokes the IVP to verify that HP C was installed successfully:

```
Copyright 2005 Hewlett-Packard Development Company, L.P.

Confidential computer software. Valid license from HP required for
possession, use or copying. Consistent with FAR 12.211 and 12.212,
Commercial Computer Software, Computer Software Documentation, and
Technical Data for Commercial Items are licensed to the U.S.
Government under vendor's standard commercial license.

Beginning HP C V7.n Installation Verification Procedure

Image Check Complete
License Check Complete
Version Check Complete
Help Check Complete
Message Check Complete
Header Check Complete
Run Time Library Check Complete

HP C V7.n Installation Verification Procedure Successful
```

16. **The installation procedure ends.**

```
Installation of CC V7.n completed at hh:mm

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

Creating installation data file: VMI$ROOT:[SYSUPD]CC07n.VMI_DATA

VMSINSTAL procedure done at hh:mm

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

When the installation 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.

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

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 HP C V7.n has failed.
```

If the IVP fails, you see these messages:

```
The HP C V7.n Installation Verification Procedure failed.
```

```
%VMSINSTAL-E-IVPFAIL, The IVP for HP C V7.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 Section 1.5.

If the installation fails, you must restart the installation procedure from step 2 in Section 2.1. For an explanation of any system messages, see the *OpenVMS System Messages and Recovery Procedures Reference Manual* or the online HELP/MESSAGE facility. If the installation fails due to an IVP failure, contact a HP field service representative.

After Installing HP C

HP C is now installed and can be invoked by all users with the CC command.

The installation procedure modifies the DCL command table so that the CC 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 CC command must log out and log in again, or use the following DCL command:

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

You can perform the following system management tasks after HP C is installed:

- Running the Installation Verification Procedure (IVP) separately
- Editing the system startup files
- Making the product usable on an OpenVMS cluster
- Setting user account privileges and quotas
- Enhancing performance
- Removing the compiler from your system
- Reporting problems

The following sections describe these tasks in detail.

3.1 Running the Installation Verification Procedure Separately

You usually run the IVP during installation. If you want to run the IVP separately to ensure the integrity of installed files if system problems should occur, execute the following command procedure:

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

If the IVP fails for any reason, the following message is displayed:

```
HP C VERSION 7.n TEST FAILED
```

3.2 Editing the System Startup File

You must edit the system startup file to provide for automatic startup of HP C when your system is rebooted.

Add the command line that starts HP C to the system startup file, SYS\$MANAGER:SYSTARTUP_VMS.COM. HP C cannot start until after the network has started. You must position this new command line after the line that invokes the network startup command procedure. The following example shows the network startup command line followed by the HP C startup command line:

```
$ @SYS$MANAGER:STARTNET.COM
.
.
.
$ @SYS$STARTUP:DECC$STARTUP.COM
```

3.3 OpenVMS Cluster Considerations

If you want to run HP C on multiple nodes of an OpenVMS cluster, first check to see that you have the appropriate software license (see Section 1.4). Then perform the following steps after you install HP C:

1. Enter the LICENSE LOAD command, as described in the *HP OpenVMS License Management Utility Manual*, to activate the license on each node in the cluster on which HP C is to be executed.
2. Log in to the installation node and use the OpenVMS INSTALL Utility to determine whether DECC\$COMPILER.EXE is a known image:

```
$ INSTALL
INSTALL> LIST SYS$SYSTEM:DECC$COMPILER.EXE
```

If the output of the preceding LIST command shows DECC\$COMPILER.EXE to be a known image, perform all of the following steps. Otherwise, perform all of the following steps except step 4b.

3. Log in to a node on the cluster.
4. Run the OpenVMS INSTALL utility as described in Section 3.5.2, with the following exceptions:
 - a. After invoking the OpenVMS INSTALL utility, enter the following command:


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

This command updates the DCL tables. It should be entered on each node in the cluster, regardless of whether you activated the HP C license (step 1) on all of the nodes.

- b. If DECC\$COMPILER.EXE was established as a known image using the INSTALL utility, enter the following command:

```
INSTALL> REPLACE SYS$SYSTEM:DECC$COMPILER.EXE
```

This command replaces the INSTALL entry for DECC\$COMPILER.EXE. It should be entered only on those nodes on which you activated the HP C license in step 1. (In most cases, all of the nodes will be licensed.)

5. Repeat steps 3 and 4 for each node of the cluster.

3.4 User Account Requirements

Some products cannot be used unless certain privilege and quota requirements are met by user accounts. The following sections describe the privilege and quota requirements needed to work with HP C.

3.4.1 User Privileges

To use HP C, each account must have TMPMBX and NETMBX privileges. Use the OpenVMS AUTHORIZE utility to determine whether users have the privileges they require.

3.4.2 User Account Quotas

To use HP C, a user account does not need to meet any special quota requirements. However, for users who will be compiling very large programs (many program units compiled together), consider adjusting working set (WSDEF, WSQUOTA, WSEXTENT) and pagefile (PGFLQUOTA) account quotas to improve performance.

See Section 1.5.3.2 for a description of how to verify and change account quotas.

3.5 Enhancing HP C Performance

The following sections include information on system tuning and explain how to install HP C as a shared image.

3.5.1 Tuning Your System

After you install HP C, you might want to adjust your system to enhance performance or lower the use of some system resources. General information about tuning an OpenVMS system is included in the *Guide to OpenVMS Performance Management*.

3.5.2 Installing HP C as a Shared Image

If you expect HP C 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 C as a shared image on a system that is currently running, use the OpenVMS INSTALL utility. It is recommended that you install HP C 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.

To install HP C as a shared image:

1. Determine the number of available global pagelets and global sections on your system. You will need to increase them. Section 1.5.2 contains guidelines for showing and setting these parameters.
2. After you have reset the system parameter values, run the following .com file:

```
$ $ @SYS$STARTUP:DECC$STARTUP
```

3.6 Removing the Compiler from Your System

A command procedure CC\$PRODUCT_REMOVE is available should you wish to remove the HP C compiler product from your system for any reason. The procedure performs the equivalent of a PCSI PRODUCT REMOVE command.

Before issuing the command procedure, you are required to disable the product license to prevent a compilation from interfering with the delete process.

If the compiler has been installed as a shared image, the command procedure will uninstall the image.

The command procedure takes no parameters and can be run as follows:

```
$ @SYS$SYSTEM:CC$PRODUCT_REMOVE
```

```
Do you wish to proceed with removing HP C <No>? Yes [Ret]
```

Enter "Yes" to remove the compiler from your system.

3.7 Getting Help and Reporting Problems

If you encounter a problem while using HP C, see the release notes. If the problem is unresolved, report it to HP. Depending on the type of support you have and the nature of the problem, take one of the following actions:

- If you have a Software Product Services Support Agreement, contact your Customer Support Center (CSC) by telephone or by using the electronic means provided with your support agreement (such as DSNlink). The CSC provides telephone support for high-level advisory and remedial assistance. When you initially contact the CSC, indicate the following:
 - The name and version number of the operating system you are using
 - The product name (HP C) and the version number of HP C you are using
 - The hardware system you are using (such as a model number)
 - A 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 C 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.

CSC personnel might 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 (floppy diskette or magnetic tape).

- If the problem is related to HP C documentation, you can report the problem to the CSC (if you have a Software Product Services Support Agreement and the problem is severe); otherwise, send your comments about HP C documentation to the following Internet address:

`c_docs@hp.com`

To obtain information about purchasing a HP Software Product Services Support Agreement or other support services, please contact your local HP sales representative.

A

Sample Installations

This appendix contains sample installations of the HP C kit. These are only samples. Sometimes the installation procedure is modified in maintenance updates of this product.

Because this installation guide is not always revised for maintenance updates, be sure to read the *Read Before Installing HP C for OpenVMS Alpha Systems Version 7.n* letter before you install this product. This letter notes any significant changes to the installation samples shown here.

Depending on which layered products you have on your system, you might see additional messages and questions when you perform your installation.

The sample installations assume that DECnet has been shut down, and that no users are logged on to your system. The Installation Verification Procedure (IVP) runs at the end of the installations.

A.1 Initial Installation

This sample was run on a system that had no previous version of HP C installed.

```
$ @sys$update:vmsinstal CC071 DKA400:[CC071.KIT]
      OpenVMS AXP Software Product Installation Procedure V7.2-1
It is 11-June-2005 at 12:58.
Enter a question mark (?) at any time for help.
%VMSINSTAL-W-NOTSYSTEM, You are not logged in to the SYSTEM account.
%VMSINSTAL-W-ACTIVE, The following processes are still active:
      TCPIP$NTP
      TCPIP$PORTM
* Do you want to continue anyway [NO]? yes 
* Are you satisfied with the backup of your system disk [YES]? 
The following products will be processed:
      CC V7.1
```

Beginning installation of CC V7.1 at 12:58

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

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

HP C Version 7.1 for OpenVMS Alpha Systems

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Product: C
Producer: DEC
Version: 7.1
Release Date: dd-mmm-2005

* Does this product have an authorization key registered and loaded? **yes**

This kit contains an Installation Verification Procedure (IVP) to verify the correct installation of HP C. The IVP will be left in:

SYS\$TEST:DECC\$IVP.COM

After the installation is complete, you can invoke the command file at any time to verify that HP C is installed and working correctly.

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

HTML, postscript and text versions of the HP C Users Guide, Language Reference Manual and RTL Reference Manual may be optionally installed into SYS\$COMMON:[SYSHLP.CC\$ALPHA_HELP_071]. These documents consume approximately 60000 blocks.

* Should these manuals be provided [NO]:

This kit contains a file summarizing the new features, changes, restrictions, and compatibility issues in this release of HP C. This file is named CC.RELEASE_NOTES and has been placed in SYS\$HELP:.

This file contains information valuable to HP C programmers. Please inform your user community of this file's existence.

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

You have answered all of the questions for this installation. The installation will now execute in 5 to 15 minutes without further intervention, depending on your configuration, installation media, and so forth.

The C Runtime Library headers and Starlet headers are installed as a Text Library (.TLB). The traditional text form of the headers (.H files) is also provided (for reference purposes only) in the directories: SYS\$COMMON:[DECC\$LIB.REFERENCE.DECC\$RTLDEF] and SYS\$COMMON:[DECC\$LIB.REFERENCE.SYS\$STARLET_C].

Please note that the compiler does not search the reference areas SYS\$COMMON:[DECC\$LIB.REFERENCE.DECC\$RTLDEF] and SYS\$COMMON:[DECC\$LIB.REFERENCE.SYS\$STARLET_C] during compilation. Instead headers are taken from the text library.

The CXXDEMANGLE utility appears on this system.
Installation of the kit version will not be performed.

%VMSINSTAL-I-SYSDIR, This product creates system disk directory
VMI\$ROOT:[SYSHLP.CC\$ALPHA_HELP_071].

Your OpenVMS system will now be modified to include the following new and modified files:

[SYSEXE] DECC\$COMPILER.EXE	[new]
[SYMSG] DECC\$COMPILER_MSG.EXE	[new]
[SYSHLP] HELPLIB.HLB	[modified]
[SYSHLP] CC\$HELP*.HTML	[new]
[SYSHLP] CC\$ALPHA_HELP_071]	[new]
[SYSHLP] CC.RELEASE_NOTES	[new]
[SYSHLP] CC_RELEASE_NOTES.PS	[new]
[SYSLIB] DCLTABLES.EXE	[modified]
[SYSLIB] DECC\$RTLDEF.TLB	[new]
[DECC\$LIB.REFERENCE.SYS\$STARLET_C]*.H	[new]
[DECC\$LIB.REFERENCE.DECC\$RTLDEF]*.H	[new]
[SYS\$STARTUP] DECC\$STARTUP.COM	[modified]
[SYSEXE] DECC\$SET_VERSIONS.COM	[new]
[SYSEXE] DECC\$SHOW_VERSIONS.COM	[new]
[SYSTEST] DECC\$IVP.COM	[new]

The file SYS\$STARTUP:DECC\$STARTUP.COM contains commands to be executed at system startup to allow for the best compilation performance. You may want to invoke this command file from your system's site-specific start up file. This command file does not have to be invoked for correct operation of HP C.

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

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Beginning HP C V7.1 Installation Verification Procedure

```

Image Check Complete
License Check Complete
Version Check Complete
Message Check Complete
Header Check Complete
Run Time Library Check Complete

HP C V7.1 Installation Verification Procedure Successful

Installation of CC V7.1 completed at 13:10

Adding history entry in VMI$ROOT:[SYSUPD]VMSINSTAL.HISTORY
Creating installation data file: VMI$ROOT:[SYSUPD]CC071.VMI_DATA

VMSINSTAL procedure done at 13:11

```

A.2 Upgrade Installation

This sample was run on a system that had a previous version of HP C installed. The system is upgraded to the new version of the compiler, which replaces the old one.

```

$ @sys$update:vmsinstal CC071 DKA400:[CC071.KIT]

OpenVMS Alpha Software Product Installation Procedure V7.2-1
It is 11-June-2005 at 14:24.
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:
    TCPIP$NTP
    TCPIP$PORTM
* Do you want to continue anyway [NO]? yes 
* Are you satisfied with the backup of your system disk [YES]? 
The following products will be processed:
    CC V7.1

Beginning installation of CC V7.1 at 14:24
(Waiting for demon to record initial state...
...done)
%VMSINSTAL-I-RESTORE, Restoring product save set A ...
%VMSINSTAL-I-REMOVED, Product's release notes have been moved to SYS$HELP.

HP C Version 7.1 for OpenVMS Alpha Systems
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```


Confidential computer software. Valid license from HP required for possession, use or copying. Consistent with FAR 12.211 and 12.212, Commercial Computer Software, Computer Software Documentation, and Technical Data for Commercial Items are licensed to the U.S. Government under vendor's standard commercial license.

A C V6.2-008 compiler was found on your system.
Type YES to keep this compiler on your system either as the default system compiler or as an alternate compiler.
Type NO to supersede C V6.2-008.

- * Should the existing V6.2-008 system compiler be preserved [NO]:

Product: C
Producer: DEC
Version: 7.1
Release Date: dd-mmm-2005

- * Does this product have an authorization key registered and loaded? **yes**

This kit contains an Installation Verification Procedure (IVP) to verify the correct installation of HP C. The IVP will be left in:

SYS\$TEST:DECC\$IVP.COM

After the installation is complete, you can invoke the command file at any time to verify that HP C is installed and working correctly.

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

HTML, postscript and text versions of the HP C Users Guide, Language Reference Manual and RTL Reference Manual may be optionally installed into SYS\$COMMON:[SYSHLP.CC\$ALPHA_HELP_071]. These documents consume approximately 60000 blocks.

- * Should these manuals be provided [NO]: **yes**

This kit contains a file summarizing the new features, changes, restrictions, and compatibility issues in this release of HP C. This file is named CC.RELEASE_NOTES and has been placed in SYS\$HELP:.

This file contains information valuable to HP C programmers. Please inform your user community of this file's existence.

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

You have answered all of the questions for this installation. The installation will now execute in 5 to 15 minutes without further intervention, depending on your configuration, installation media, and so forth.

The C Runtime Library headers and Starlet headers are installed as a Text Library (.TLB). The traditional text form of the headers (.H files) is also provided (for reference purposes only) in the directories: SYS\$COMMON:[DECC\$LIB.REFERENCE.DECC\$RTLDEF] and SYS\$COMMON:[DECC\$LIB.REFERENCE.SYS\$STARLET_C].

Please note that the compiler does not search the reference areas
SYS\$COMMON:[DECC\$LIB.REFERENCE.DECC\$RTLDEF] and
SYS\$COMMON:[DECC\$LIB.REFERENCE.SYS\$STARLET_C] during compilation.
Instead headers are taken from the text library.

The CXXDEMANGLE utility appears on this system.
Installation of the kit version will not be performed.

Your OpenVMS system will now be modified to include the
following new and modified files:

[SYSEXE] DECC\$COMPILER.EXE	[new]
[SYSMSG] DECC\$COMPILER_MSG.EXE	[new]
[SYSHLP] HELPLIB.HLB	[modified]
[SYSHLP] CC\$HELP*.HTML	[new]
[SYSHLP] CC\$ALPHA_HELP_071]	[new]
[SYSHLP] CC.RELEASE_NOTES	[new]
[SYSHLP] CC_RELEASE_NOTES.PS	[new]
[SYSLIB] DCLTABLES.EXE	[modified]
[SYSLIB] DECC\$RTLDEF.TLB	[new]
[DECC\$LIB.REFERENCE.SYS\$STARLET_C]*.H	[new]
[DECC\$LIB.REFERENCE.DECC\$RTLDEF]*.H	[new]
[SYS\$STARTUP] DECC\$STARTUP.COM	[modified]
[SYSEXE] DECC\$SET_VERSIONS.COM	[new]
[SYSTEST] DECC\$IVP.COM	[new]

The file SYS\$STARTUP:DECC\$STARTUP.COM contains commands to be
executed at system startup to allow for the best compilation
performance. You may want to invoke this command file from your
system's site-specific start up file. This command file does not
have to be invoked for correct operation of HP C.

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

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possession, use or copying. Consistent with FAR 12.211 and 12.212,
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Technical Data for Commercial Items are licensed to the U.S.
Government under vendor's standard commercial license.

Beginning HP C V7.1 Installation Verification Procedure

Image Check Complete
License Check Complete
Version Check Complete
Message Check Complete
Header Check Complete
Run Time Library Check Complete

HP C V7.1 Installation Verification Procedure Successful

Installation of CC V7.1 completed at 14:36

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

```
Creating installation data file: VMI$ROOT:[SYSUPD]CC071.VMI_DATA
VMSINSTAL procedure done at 14:40
```

A.3 Installation with Alternate Compiler

This sample was run on a system that had a previous version of HP C installed. In this sample, the new version of the compiler is installed, but a previous version of the compiler is kept as an alternate compiler. The installation procedure prompts you to designate one of the compiler versions as the system default compiler. See Section 1.6 for more information on installing and using multiple compiler versions.

Note that in this example, `OPTIONS N` is specified on the `vmsinstal` command to print the release notes.

```
$ @sys$update:vmsinstal CC071 DKA400:[CC071.KIT] options n
      OpenVMS Alpha Software Product Installation Procedure  X5F7-SSB
It is 12-June-2005 at 14:07.
Enter a question mark (?) at any time for help.
%VMSINSTAL-W-NOTSYSTEM, You are not logged in to the SYSTEM account.
* Do you want to continue anyway [NO]? yes
* Are you satisfied with the backup of your system disk [YES]? 
The following products will be processed:
      CC V7.1
      Beginning installation of CC V7.1 at 14:07
%VMSINSTAL-I-RESTORE, Restoring product save set A ...
      Release notes included with this kit are always copied to SYS$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]: 2
* Queue name [SYS$PRINT]:
* Do you want to continue the installation [NO]? yes 
%VMSINSTAL-I-RELMOVED, Product's release notes have been moved to SYS$HELP.
      HP C Version 7.1 for OpenVMS Alpha Systems
      Copyright 2005 Hewlett-Packard Development Company, L.P.
```

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A C V6.0-001 compiler was found on your system.
Type YES to keep this compiler on your system either as the default system compiler or as an alternate compiler.
Type NO to supersede C V6.0-001.

- * Should the existing V6.0-001 system compiler be preserved [NO]: **yes**

Type NO to have the compiler on this kit become the default system compiler and to have the currently installed compiler saved as an alternate compiler. Type YES to keep the current system compiler as the default compiler and to have the compiler on this kit available as an alternate compiler. Alternate compilers can be invoked with the cc command after invoking sys\$system:decc\$set_version.com passing a version_number.

- * Should this V6.0-001 system compiler remain the default when cc is typed [NO]: **yes**

Product: C
Producer: DEC
Version: 7.1
Release Date: dd-mmm-2005

- * Does this product have an authorization key registered and loaded? **yes**

This kit contains an Installation Verification Procedure (IVP) to verify the correct installation of HP C. The IVP will be left in:

SYS\$COMMON:[SYSTEST]DECC\$IVP.COM

After the installation is complete, you can invoke the command file at any time to verify that HP C is installed and working correctly.

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

HTML, postscript and text versions of the HP C Users Guide, Language Reference Manual and RTL Reference Manual may be optionally installed into SYS\$COMMON:[SYSHLP.CC\$ALPHA_HELP_071]. These documents consume approximately 60000 blocks.

- * Should these manuals be provided? [NO]? **yes**

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

This kit contains a file summarizing the new features, changes, restrictions, and compatibility issues in this release of HP C. This file is named CC.RELEASE_NOTES and has been placed in SYS\$HELP:.

This file contains information valuable to HP C programmers. Please inform your user community of this file's existence.

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

You have answered all of the questions for this installation. The installation will now execute in 5 to 15 minutes without further intervention, depending on your configuration, installation media, and so forth.

The C Runtime Library headers and Starlet headers are installed as a Text Library (.TLB). The traditional text form of the headers (.H files) are also provided for reference purposes only in the directories: SYS\$COMMON:[DECC\$LIB.REFERENCE.DECC\$RTLDEF] and SYS\$COMMON:[DECC\$LIB.REFERENCE.SYS\$STARLET_C].

Please note that the compiler does not search the reference areas SYS\$COMMON:[DECC\$LIB.REFERENCE.DECC\$RTLDEF] and SYS\$COMMON:[DECC\$LIB.REFERENCE.SYS\$STARLET_C] during compilation. Instead headers are taken from the text library.

%VMSINSTAL-I-SYSDIR, This product creates system disk directory
VMI\$ROOT:[SYSTEST.DECC].

Your OpenVMS system will now be modified to include the following new and modified files:

[SYSEXE] DECC\$COMPILER_V06_00-001.EXE	[renamed]
[SYSMMSG] DECC\$COMPILER_MSG_V06_01-001.EXE	[renamed]
[SYSEXE] DECC\$COMPILER.EXE	[new]
[SYSMMSG] DECC\$COMPILER_MSG.EXE	[new]
[SYSHLP] HELPLIB.HLB	[modified]
[SYSHLP] CC\$HELP*.HTML	[new]
[SYSHLP] CC\$ALPHA_HELP_071]	[new]
[SYSHLP] CC.RELEASE_NOTES	[new]
[SYSHLP] CC_RELEASE_NOTES.PS	[new]
[SYSLIB] DCLTABLES.EXE	[modified]
[SYSLIB] DECC\$COMPILED_PRINTF.OLB	[new]
[SYSLIB] DECC\$RTLDEF.TLB	[new]
[DECC\$LIB.REFERENCE.SYS\$STARLET_C]*.H	[new]
[DECC\$LIB.REFERENCE.DECC\$RTLDEF]*.H	[new]
[SYS\$STARTUP] DECC\$STARTUP.COM	[modified]
[SYSTEST] DECC\$IVP.COM	[new]
[SYSEXE] DECC\$SET_VERSIONS.COM	[new]
[SYSEXE] DECC\$SHOW_VERSIONS.COM	[new]
[SYSTEST.DECC] DECC\$IVP*.*	[new]

The file SYS\$STARTUP:DECC\$STARTUP.COM contains commands to be executed at system startup to allow for the best compilation performance. You may want to invoke this command file from your system's site-specific startup file. This command file does not have to be invoked for correct operation of HP C.

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

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Beginning HP C V7.1 Installation Verification Procedure

Image Check Complete
License Check Complete
Version Check Complete
Help Check Complete
Message Check Complete
Header Check Complete
Run Time Library Check Complete

HP C V7.1 Installation Verification Procedure Successful

Installation of CC V7.1 completed at 14:15

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

Creating installation data file: VMI\$ROOT:[SYSUPD]CC071.VMI_DATA

VMSINSTAL procedure done at 14:16

B

Files Installed

The HP C installation procedure installs and modifies a number of files on your system, as follows:

[SYSEXE]DECC\$COMPILER_V06_00-001.EXE	[renamed]	
[SYSMMSG]DECC\$COMPILER_MSG_V06_01-001.EXE	[renamed]	
[SYSEXE]DECC\$COMPILER.EXE	[new]	
[SYSMMSG]DECC\$COMPILER_MSG.EXE	[new]	
[SYSHLP]HELPLIB.HLB	[modified]	
[SYSHLP]CC\$HELP*.HTML	[new]	
[SYSHLP]CC\$ALPHA_HELP_071]	[new]	
[SYSHLP]CC.RELEASE_NOTES	[new]	
[SYSHLP]CC_RELEASE_NOTES.PS	[new]	
[SYSLIB]DCLTABLES.EXE	[modified]	
[SYSLIB]DECC\$COMPILED_PRINTF.OLB	[new]	! OpenVMS V7.2 or lower
[SYSLIB]DECC\$RTLDEF.TLB	[new]	
[DECC\$LIB.REFERENCE.SYS\$STARLET C]*.H	[new]	
[DECC\$LIB.REFERENCE.DECC\$RTLDEF]*.H	[new]	
[SYS\$STARTUP]DECC\$STARTUP.COM	[modified]	
[SYSTEST]DECC\$IVP.COM	[new]	
[SYSEXE]DECC\$SET_VERSION.COM	[new]	
[SYSEXE]DECC\$SHOW_VERSIONS.COM	[new]	

Note that the files [SYSEXE]DECC\$COMPILER_V06_00-001.EXE and [SYSMMSG]DECC\$COMPILER_MSG_V06_01-001.EXE are examples of files installed only when installing an alternate compiler. In this case, the new version of the compiler is installed, but a previous version of the compiler is kept as an alternate compiler. The installation procedure prompts you to designate one of the compiler versions as the system default compiler. See Section 1.6 for more information on installing and using multiple compiler versions.

C

Recovering from Errors

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

C.1 Failures During HP C Installation

If VMSINSTAL detects any problems during the installation, it notifies you and asks if you want to continue the installation. In some instances, you can enter yes to continue. To stop the installation process and correct the situation, enter no or press Return, then correct the problem and restart the installation.

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 HP C V7.n has failed.
```

If the IVP fails, you see these messages:

```
The HP C V7.n Installation Verification Procedure failed.
```

```
%VMSINSTAL-E-IVPFAIL, The IVP for HP C V7.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 Section 1.5.

If the installation fails, you must restart the installation procedure from step 2 in Section 2.1. For an explanation of any system messages, see the *OpenVMS System Messages and Recovery Procedures Reference Manual* or the online HELP/MESSAGE facility. If the installation fails due to an IVP failure, contact a HP field service representative.

C.2 Problems During HP C Use

If you encounter a problem while using HP C, see the release notes. If the problem is unresolved, report it to HP. Depending on the type of support you have and the nature of the problem, take one of the following actions:

- If you have a Software Product Services Support Agreement, contact your Customer Support Center (CSC) by telephone or by using the electronic means provided with your support agreement (such as DSNlink). The CSC provides telephone support for high-level advisory and remedial assistance. When you initially contact the CSC, indicate the following:
 - The name and version number of the operating system you are using
 - The product name (HP C) and the version number of HP C you are using
 - The hardware system you are using (such as a model number)
 - A 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 C 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.

CSC personnel might 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 (floppy diskette or magnetic tape).

- If the problem is related to HP C documentation, you can report the problem to the CSC (if you have a Software Product Services Support Agreement and the problem is severe); otherwise, send your comments about HP C documentation to the following Internet address:

c_docs@hp.com

To obtain information about purchasing a HP Software Product Services Support Agreement or other support services, please contact your local HP sales representative.

