VAX COBOL Installation Guide

Order Number: AA–K026M–TE

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This document contains instructions for installing VAX COBOL on the VMS operating system. It also explains how to read the online release notes before or after installing the product. This document applies to VAX COBOL Version 4.4 and any maintenance updates for that version.

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Preface

This document describes how to install VAX COBOL on the VMS operating system. It is intended for system managers. This document applies to VAX COBOL Version 4.4 and any maintenance updates for that version.

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

At the back of this document are two Reader's Comments forms. If you have any comments about this document, please fill out one form and mail it. Your comments will be considered for the next revision of the installation guide.

For more information about installing VAX COBOL on VMS systems, refer to your processor-specific installation/operations guide.

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

Defaults appear in brackets ([ ]) throughout the installation procedure. Text you type is indicated in red.

1 Preparing to Install VAX COBOL

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

Distribution media must be mounted in numerical order. The installation procedure prompts you to mount the volumes. For more information on how to mount distribution media, refer to your processor-specific installation/operations guide.

This guide also details several options to the installation procedure.

System Prerequisites

This is a complete kit for VAX COBOL; you need not install any previous versions of VAX COBOL before installing Version 4.n. (Note that for *n* you should use the actual maintenance-update number after the decimal point, for example, 4 in Version 4.4, which appears on the title page as the Software Version.)

VAX COBOL requires VMS Version 5.0 or higher. Certain VAX COBOL features may require higher versions of VMS. See the SPD for information about specific system dependencies.

If you are installing Rdb/VMS and/or CDD/Plus, you should make certain that they have been successfully installed before you attempt to install VAX COBOL. To eliminate possible installation errors, execute the following command procedure to startup CDD/Plus:

```
$ @SYS$STARTUP:CDDSTRTUP.COM RETURN
```

1.1 Accessing the Online Release Notes

VAX COBOL provides online release notes. The prompt to display or print the release notes before installation appears in step 4 of the installation procedure when you invoke VMSINSTAL with the OPTIONS N parameter.

To obtain the release notes after the installation, type or print the file SYS$HELP:COBOL04n.RELEASE_NOTES. Online help also directs you to the release notes file. After the installation, type the following:

```
$ HELP COBOL RELEASE_NOTES RETURN
```

1.2 Installation Procedure Requirements

The installation should take approximately 10 to 60 minutes, depending on the type of media and your system configuration. Before installing VAX COBOL, you must have the following privileges and resources:

- SETPRV privileges, or CMKRNL, WORLD, and SYSPRV privileges.
- A minimum of 6000 blocks of free disk space during installation. After the installation, 2000 blocks are used.
- A minimum of 950 free global pages plus the size (in number of disk blocks) of the file SYS$LIBRARY:DCLTABLES.EXE at installation. After the installation, 950 free global pages plus the size of SYS$LIBRARY:DCLTABLES.EXE are used.
- A minimum of 3 free global sections are needed at installation; 3 global sections are used after installation.

NOTE

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

To determine the number of available global pages on your system, invoke the VMS Install Utility (INSTALL) by typing the following command:

```
$ INSTALL RETURN
```

Then type the following command:

```
INSTALL> LIST/GLOBAL/SUMMARY RETURN

        Summary of Local Memory Global Sections

     nn Global Sections Used,  nnn/nnnn Global Pages Used/Unused

INSTALL> EXIT RETURN
```

When you issue these commands, the system displays a summary of the number of global sections used, the number of global pages used, and the number of global pages unused. To exit from the VMS Install Utility, type the EXIT command.

VAX COBOL requires approximately 950 global pages. If fewer than 950 pages are available, you can delete an existing known image with the VMS Install Utility, or you can increase the GBLPAGES system parameter with the VMS System Generation Utility (SYSGEN) by editing the file SYS$SYSTEM:MODPARAMS.DAT and then invoking the AUTOGEN

command procedure, SYS$UPDATE:AUTOGEN.COM. For more information on the AUTOGEN command procedure, refer to your processor-specific installation/operations guide.

You can determine the number of available global sections by invoking SYSGEN as follows:

```
$ RUN SYS$SYSTEM:SYSGEN [RETURN]
SYSGEN> USE CURRENT [RETURN]
SYSGEN> SHOW GBLSECTIONS [RETURN]

SYSGEN> EXIT [RETURN]
```

The last number displayed is the maximum number of global sections. Compare this to the number of global sections in use displayed by the VMS Install Utility. VAX COBOL requires 3 global sections. Therefore, if the number of global sections used plus 3 exceeds the current number of global sections, you must increase the number of available global sections before you can install VAX COBOL.

To increase the number, you must increase the GBLSECTIONS system parameter with SYSGEN by editing the file SYS$SYSTEM:MODPARAMS.DAT and then invoking the SYS$UPDATE:AUTOGEN.COM procedure. For more information on the AUTOGEN.COM procedure, refer to your processor-specific installation/operations guide.

If the number of global sections used plus 3 is less than the maximum number of global sections, you can exit from SYSGEN and continue.

1.3 Special Requirements

For new customers, VAX COBOL requires manual registration with a Product Authorization Key (PAK). To ensure a successful installation, be sure to register VAX COBOL before starting the installation procedure. You can register the information contained in the PAK that is shipped to new customers with VAX COBOL by using either the VMS License command procedure (VMSLICENSE) or the LICENSE REGISTER command, as described in the *VMS License Management Utility Manual*.

NOTE

If you are missing your PAK and you have purchased a software support contract, you can obtain a Temporary Service PAK from the Digital Software Information Network (DSIN). For more information about DSIN, call your Customer Support Center.

Hardware Requirements

Object modules produced by the VAX COBOL compiler can be executed incorrectly if your VMS operating system does not meet the following requirements when you install the compiler:

- A VAX-11/780 computer must have the hardware engineering change order (ECO) status of system level 4 or higher.
- A VAX-11/730 must have the writeable control store (WCS) status of system level 50 or higher.

NOTE

The VAX COBOL Installation Verification Procedure (IVP) checks for the presence or absence of these ECOs.

When using VAX COBOL on a VMS operating system with the VAX Database Management System (VAX DBMS), CDD/Plus, or both, refer to the installation guides for these products for information on their ECO requirements.

1.4 Using VMSINSTAL

After you log in to a privileged account to install VAX COBOL, set the default to SYS$UPDATE: and then invoke VMSINSTAL, the command procedure that installs this product. The VMSINSTAL command has the following format:

```
$ SET DEFAULT SYS$UPDATE RETURN
$ @VMSINSTAL COBOLvvv ddn: OPTIONS N RETURN
```

The following paragraphs describe the command parameters.

vvv
Represents the maintenance update number of VAX COBOL. Refer to the label on the VAX COBOL distribution kit or the VAX COBOL BOM or BIL for the maintenance update number of your kit.

ddn:
Represents a device name where the distribution volumes will be mounted for the VAX COBOL installation media, where *dd* is the device code and *n* is the unit number. It is not necessary to use the console drive to install VAX COBOL. If you do use the console drive, you should replace any media you removed from the drive. CSA1: is the device name used in examples in this document.

OPTIONS N

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

You can also type an asterisk (*) in place of COBOL. If you are installing from magnetic tape, you can use the asterisk to save installation time; the asterisk causes VAX COBOL to be installed with a minimum of tape passes.

For example, the first parameter to VMSINSTAL for COBOL Version 4.4 could be either COBOL044 or *.

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

```
$ @SYS$UPDATE:VMSINSTAL "" "" OPTIONS N RETURN
```

When you invoke VMSINSTAL, it checks the following:

- Whether or not you are logged in to a privileged account. Digital recommends that you install software from the system manager's account with your default device and directory set to SYS$UPDATE.
- Whether or not you have adequate quotas for installation. VMSINSTAL checks for the following quota values:
  - ASTLM = 24
  - BIOLM = 18
  - BYTLM = 18000
  - DIOLM = 18
  - ENQLM = 30
  - FILLM = 20

VMSINSTAL then checks whether or not the following conditions exist:

- DECnet is up and running
- Any users are logged in to the system

If VMSINSTAL detects either of these conditions, you will be asked whether or not you want to continue the installation. If you want to continue, type YES. If you want to stop the installation, press RETURN.

2 Installing VAX COBOL

This section contains excerpts from the installation procedure and explains each step.

NOTE

Defaults appear in brackets throughout the installation procedure.

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

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

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

Step 2: Invoke VMSINSTAL.

```
$ @VMSINSTAL COBOLvvv CSA1: OPTIONS N  RETURN

      VAX/VMS Software Product Installation Procedure VX.X


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

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

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

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

Step 3: Insert the first installation kit volume.

Depending on your media, you may get the following prompts:

```
Please mount the first volume of the set on CSA1:.
* Are you ready?  YES  RETURN
```

To indicate that you want to continue the installation, mount volume 1, type YES, and then press RETURN.

```
The following products will be processed:

  VAX COBOL V4.n

    Beginning installation of VAX COBOL V4.n at hh:mm

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

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

Step 4: Select a release notes option.

This step applies only if you specified OPTIONS N in step 2.

```
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]:  RETURN
```

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

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

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

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

NOTE

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

Next, VMSINSTAL displays the following prompt:

```
* Do you want to continue the installation [NO]?  Y RETURN
%VMSINSTAL-I-RELMOVED, The product's release notes have been successfully
 moved to SYS$HELP.
```

If you want to continue the installation, type YES and press RETURN. If you type NO or press RETURN, VMSINSTAL discontinues the installation. In either case, VMSINSTAL moves the release notes to SYS$HELP.

Step 5: Install the COBOL Run-Time Library image.

VAX COBOL allows you to install the COBOL Run-Time Library (COBRTL) image (COBRTL.EXE) separately from the full product installation. This option can be useful if your COBRTL has been overwritten or lost, or if you need to run a COBOL application compiled with VAX COBOL V4.n on a system that does not have VAX COBOL V4.n installed. Press RETURN at the prompt to continue with the full installation of VAX COBOL. Or, if you want to install the COBRTL image only, type YES and press RETURN in response to the prompt, as follows:

```
* Do you want to install only the COBRTL [NO]?  Y RETURN
```

In this case, the installation skips any subsequent inquiries, including the question about the PAK, and proceeds to install only the COBRTL image.

As in the full installation, the version of the current COBRTL.EXE is automatically checked. If the version already installed on your system is later than the COBRTL.EXE you are attempting to install, the installation procedure issues the following message followed by another prompt:

```
%COBOL-I-IDNTCK, COBRTL found in SYS$SHARE has later ident than
 COBRTL to be installed.
Do you still want to install COBRTL from kit [NO]?  RETURN
```

Press RETURN at the prompt to terminate the installation without installing the COBRTL image supplied with your VAX COBOL kit. Or type YES and press RETURN to install it.

```
* Do you still want to install COBRTL from kit [NO]?  Y RETURN
%COBOL-I-UPDIMG, Installing new COBRTL image
%PATCH-I-NOLCL, image does not contain local symbols
%PATCH-I-WRTFIL, updating image file ...
 DKB300:[SYS0.SYSUPD.COBOLvvv]COBRTL.EXE;2
%COBOL-I-UPDOBJ, Updating system object library
%VMSINSTAL-I-MOVEFILES, Files will now be moved to their target
 directories...
```

NOTE

If your system includes a later version of the COBRTL.EXE than the one that is supplied with your VAX COBOL kit, it is highly recommended that you **NOT** install the earlier kit version. Backward compatibility for your applications is not guaranteed; that is, while applications compiled with older versions of COBOL will run compatibly with newer versions of the COBRTL, the reverse may not be true.

Step 6: Respond to LMF queries.

This product supports the VMS License Management Facility (LMF). For more information on LMF, see the *VMS License Management Utility Manual*.

During the installation procedure, the VAX COBOL Product Authorization Key (PAK) is invoked and the following questions are asked:

```
* Does this product have an authorization key registered and
   loaded?  YES RETURN
```

This step allows you to indicate whether or not your LMF license for VAX COBOL is registered and loaded.

It is strongly recommended that you install the PAK for VAX COBOL prior to installing the product.

If the PAK is not installed, you can still proceed with the installation and install the PAK after the installation is complete. The following list summarizes the outcome of your responses to this query:

- If you answer YES and the PAK is installed, the installation proceeds normally.
- If you answer YES and the PAK is not installed, and you selected the IVP option, the IVP will fail.
- If you answer YES and the PAK is not installed, the installation fails if you selected the REFORMAT Utility option.
- If you answer NO, the installation terminates.

In any case, VAX COBOL will not execute until the PAK for VAX COBOL is installed.

Step 7: Install the VAX LSE environment update.

```
* Do you want the VAX LSE environment updated for
   VAX COBOL [YES]? RETURN
```

This question appears if the VAX Language-Sensitive Editor (LSE) is installed on your system, and the VAX COBOL installation kit contains updates to the VAX LSE environment for VAX COBOL.

If you answer yes to this question or accept the default, the VAX LSE environment for VAX COBOL is automatically updated.

Step 8: Install the REFORMAT Utility.

```
* Do you want the REFORMAT Utility installed [YES]? RETURN
```

Depending on your use of VAX COBOL, you may want to install the optional REFORMAT Utility.

Step 9: Respond to the message file query.

```
* Do you want to save the COBOL message file for
   modification [NO]? RETURN
```

This query enables you to edit the VAX COBOL message file (COBOLMSG.MSG). Customized messages are often desirable for international users. If you plan to edit the message file, type YES and press RETURN. If you do not want to edit the message file, press RETURN. For more information, see Section 5.

Step 10: Install the optional DECwindows Compiler Interface.

```
Do you want to install the DECwindows Compiler Interface
 (DWCI) [YES]? RETURN
```

The DECwindows Compiler Interface (DWCI) allows you to easily establish named sets of compilation options for use in compiling your programs. Use FileView to access DWCI.

To install DWCI, press RETURN.

NOTE

Because DWCI requires VMS Version 5.1 or higher, this prompt appears only when you install VAX COBOL on systems running VMS Version 5.1 or higher.

Step 11: Select installation options.

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

The Installation Verification Procedure (IVP) runs tests to check whether or not the installation was successful. Press RETURN to run the IVP after the installation. If you do not want to run the IVP, type NO in response to the prompt.

Step 12: Respond to the purge files query.

If the installation is successful, the SYS$EXAMPLES, SYS$HELP, SYS$LIBRARY, SYS$MANAGER, SYS$UPDATE, SYS$MESSAGE, and SYS$SYSTEM directories may contain previous versions of the following VAX COBOL files:

- [SYSEXE]COBOL.EXE
- [SYSEXE]REFORMAT.EXE
- [SYSLIB]DCLTABLES.EXE
- [SYSTEST.COBOL]COBOL$IVP.COM
- [SYSHLP]COBOLvvv.RELEASE_NOTES
- [SYSLIB]LSE$SYSTEM_ENVIRONMENT.ENV

- [SYSMSG]COBOLMSG.EXE
- [SYSUPD]COBOLMSG.MSG
- [VUE$LIBRARY.USER]COBOL$DWCI.EXE
- [VUE$LIBRARY.USER]COBOL$DWCI.UID
- [SYSHLP]COBOL$DWCI.HLB

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

These files are replaced during the installation with new files, but the old files are not automatically purged. Purging is recommended. (Purging will not destroy earlier versions of the release notes, which you should retain.) In response to the purging prompt, press RETURN to purge the files or type NO to keep them. In either case, the system help files are updated.

The installation may also create new versions of the following files, which are not purged along with the previously listed files:

- [SYSLIB]COBRTL.EXE
- [SYSLIB]IMAGELIB.OLB
- [SYSLIB]STARLET.OLB

Not purging these files allows you to go back to a previous version of a file, if necessary.

The query on purging files is the last one you have to respond to during the installation. After you respond to this query, the following message is displayed:

```
  No more questions will be asked during this installation.
```

You may need to mount additional distribution volumes depending on the type of media you use. In this case, you will receive a prompt from VMSINSTAL to determine that you are ready to proceed. (See step 13.)

Step 13: Insert the subsequent installation kit volumes.

```
%BACKUP-I-READYREAD, mount volume 2 on _CSA1: for reading

Enter "YES" when ready:  YES  RETURN
```

VMSINSTAL prompts you to insert the next volume and waits for you to type YES after inserting it. If you type NO, VMSINSTAL displays the prompt again. This prompt is displayed only if your installation kit contains more than one volume. Exactly when these prompts appear depends on the type of media that you are using.

Step 14: Read the informational messages.

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

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

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

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

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

Step 15: Observe the Installation Verification Procedure.

If you chose to run the IVP in step 11, VMSINSTAL now calls the IVP to verify that VAX COBOL was installed successfully.

```
          Start of VAX COBOL Installation Verification Procedure

          Successful test of VAX COBOL V4.n-cc
          Installation of COBOL V4.n completed at hh:mm
```

Step 16: End the installation procedure.

```
   VMSINSTAL procedure done at hh:mm

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

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

Note 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.

Installing VAX COBOL on a VAXcluster

You can use the VMS System Management Utility (SYSMAN) to facilitate running VAX COBOL on multiple nodes in a cluster. With SYSMAN, you can define a system management environment so that operations performed on one node are automatically executed on all other nodes in the VAXcluster. (See the VMS documentation for more information.)

First, check to see that you have the appropriate software license. Then, once you have installed VAX COBOL on one system disk in the VAXcluster, you can update the version of the DCL tables installed on the other nodes in the cluster by performing the following steps:

1. Log in to a node on the VAXcluster.
2. If you are a new customer, ensure that the PAK has been registered before attempting to install VAX COBOL. To load the PAK on all nodes in your cluster environment simultaneously, invoke SYSMAN and enter the following command at the SYSMAN> prompt:

   ```
   SYSMAN> LICENSE LOAD COBOL RETURN
   ```

3. Enter the following command at the SYSMAN> prompt:

   ```
   SYSMAN> DO INSTALL REPLACE SYS$SHARE:DCLTABLES.EXE RETURN
   ```

3 After the Installation

VAX COBOL is now installed and 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 newly installed version of VAX COBOL must log out of the system and log in again or issue the following command:

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

If VAX COBOL will be used extensively on your system, you can reduce system overhead and memory requirements by installing it as a shared image by using the VMS Install Utility. For more information, see Section 7.

4 Running the Installation Verification Procedure Separately

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

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

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

```
The VAX COBOL V4.n Installation Verification Procedure failed.

%VMSINSTAL-E-IVPFAIL, The IVP for VAX COBOL V4.n has failed.
```

What to Do If the Installation Fails During or After Running the IVP

Some reasons for installation failure after running the IVP can produce error messages such as the following:

```
%CLI-F-SYNTAX, error parsing ...

%COBOL-F-BADVALUE ...
```

These errors indicate an incompatibility between SYS$SYSTEM:COBOL.EXE and the COBOL command syntax in SYS$LIBRARY:DCLTABLES. To understand the reasons for such errors and to correct them, follow this procedure:

1. If either SYS$SYSTEM:COBOL.EXE or SYS$LIBRARY:DCLTABLES exists in SYS$SPECIFIC, the SYS$SPECIFIC file will override the file in SYS$COMMON (where the installation procedure places these files). Ensure that neither of these files exists in SYS$SPECIFIC.
2. Deassign any logical names for COBOL or DCLTABLES.
3. If neither 1 nor 2 applies and you are in the same account on the same node where VAX COBOL was installed, this error indicates that DCLTABLES was not updated. This error usually occurs when another user had DCLTABLES locked during the installation procedure. To correct the error, you must reinstall VAX COBOL.

Other reasons for installation failure after running the IVP can produce error messages such as the following:

```
%DCL-W-ACTIMAGE, error activating image RPC$SHARE
-CLI-E-IMGNAME, image file DISK$:[SYS0.SYSCOMMON.][SYSLIB]RPC$SHARE.EXE;1
SYSTEM-F-PROTINSTALL, protected images must be installed

%DCL-W-ACTIMAGE, error activating image RPC$SHARE
-CLI-E-IMGNAME, image file DISK$:[SYS0.SYSCOMMON.][SYSLIB]RPC$SHARE.EXE;1
SYSTEM-F-SHRIDMISMATCH, ident mismatch with shareable image
```

These errors occur because VAX COBOL accesses RPC$SHARE indirectly through CDDSHR.EXE. Such errors usually indicate a problem with the CDD/Plus installation. To correct these errors, execute the following command procedure:

```
$ @SYS$STARTUP:CDDSTRTUP.COM RETURN
```

If you encounter other errors after executing this command procedure, consult the CDD/Plus documentation for further information or contact your Customer Support Center.

5 Customizing VAX COBOL Error Messages

If you choose to customize the VAX COBOL message file, the installation procedure copies the VAX COBOL message file COBOLMSG.MSG into the system directory [SYSUPD]. After the file is copied to the system directory, you can edit COBOLMSG.MSG to customize the error messages that users receive when using VAX COBOL. Customized messages are often desirable for international users.

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

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

1. Run the VAX COBOL installation procedure and answer YES to the question ''Do you want to save the COBOL message file for modification.''

   The installation procedure copies the message file, COBOLMSG.MSG, into the system directory [SYSUPD].

2. 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 VAX 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 ouput (FAO) arguments that appear in the message

3. Run the VMS Message Utility.

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

   ```
   $ MESSAGE COBOLMSG RETURN
   ```

   The Message Utility creates the object module COBOLMSG.OBJ.

4. Enter the LINK command with the /SHARE qualifier to create the shareable image COBOLMSG.EXE:

```
$ LINK/SHARE COBOLMSG RETURN
```

5. Install COBOLMSG.EXE in the system directory [SYSMSG]:

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

6. If VAX COBOL is installed as a known image, you must reinstall COBOLMSG.EXE by entering the following command:

```
$ INSTALL REPLACE SYS$MESSAGE:COBOLMSG RETURN
```

VAX COBOL will now generate your customized error messages.

6 Error Conditions

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

```
%VMSINSTAL-E-INSFAIL, The installation of VAX COBOL V4.n has failed.
```

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

- Operating system version is incorrect
- Prerequisite software version is incorrect
- Quotas necessary for successful installation are insufficient (see Section 1.2)
- Process quotas required by VMSINSTAL are incorrect (see Section 1.4)
- VMS Help library is currently in use
- Product was registered incorrectly or not registered

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

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

If the installation fails, you must restart the installation procedure from step 2 in Section 2. The installation may fail due to an IVP failure. If so, you should first consult the What to Do if the Installation Fails During or After Running the IVP subsection of Section 4. If you still need assistance, contact a Digital field service representative.

7 Installing VAX COBOL as a Shared Image

If VAX COBOL will be used extensively on your system, you can reduce the system overhead and memory requirements by installing it as a shared image. To perform the installation on a system that is currently running, use the VMS Install Utility while you are logged in to a privileged account. If errors occur, consult the *VMS System Messages and Recovery Procedures Reference Volume*.

First, determine the number of available global pages and global sections on your system. See Section 1.2 for information on how to do this.

Then, invoke the VMS Install Utility and install VAX COBOL as a shared image, as follows:

```
$ INSTALL RETURN

INSTALL> ADD SYS$SYSTEM:COBOL.EXE/OPEN/SHARED RETURN
INSTALL> ADD SYS$MESSAGE:COBOLMSG.EXE/OPEN/SHARED RETURN
INSTALL> EXIT RETURN
```

Then, update the system startup file to install VAX COBOL.

To ensure that VAX COBOL is installed as a shared image each time the system is bootstrapped, include the following lines in SYS$MANAGER:SYSTARTUP_V5.COM (the site-specific startup file):

```
$ INSTALL :== $INSTALL/COMMAND_MODE
$ INSTALL
$ ADD SYS$SYSTEM:COBOL.EXE/OPEN/SHARED
$ ADD SYS$MESSAGE:COBOLMSG.EXE/OPEN/SHARED
$ EXIT
```

8 Maintenance Updates

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

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

The updated release notes are provided on line. You should read the release notes when you first install VAX COBOL; they are also accessible at any time after the product is installed. For information on reading the release notes at the time that you install VAX COBOL, follow the installation procedure through step 5 in Section 2. To locate the release notes after VAX COBOL is installed, display or print the file SYS$HELP:COBOLvvv.RELEASE_NOTES, or type the following:

```
$ HELP COBOL RELEASE_NOTES RETURN
```

9 Determining and Reporting Problems

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

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

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

10 Sample Installation

This section contains a sample installation of VAX COBOL. Note that this is only a sample. Sometimes the installation procedure is modified in maintenance updates of this product. Because this installation guide is not usually revised for maintenance updates, be sure to read the *Read Before Installing or Using VAX COBOL* letter before you install this product. This

letter notes any significant changes in the installation that vary from this sample.

```
$ @SYS$UPDATE:VMSINSTAL COBOL CSA1: OPTIONS N [RETURN]

   VAX/VMS Software Product Installation Procedure V5.x

It is dd-mmm-yy at hh:mm

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

* Are you satisfied with the backup of your system disk [YES]? [RETURN]
__CSA1: allocated

Please mount the first volume of the set on CSA1:.
* Are you ready?  YES [RETURN]
%MOUNT-I-MOUNTED, COBOL1 mounted on _CSA1:

The following products will be processed:

  COBOL  V4.n

      Beginning installation of COBOL V4.n at hh:mm

%VMSINSTAL-I-RESTORE, Restoring product saveset 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 [RETURN]

* Queue name [SYS$PRINT]:  [RETURN]
Job COBOLvvv (queue SYS$PRINT, entry 1248) started on SYS$LPA0
* Do you want to continue the installation [NO]?   YES [RETURN]
%VMSINSTAL-I-RELMOVED, The product's release notes have been moved to SYS$HELP.
* Do you want to install only the COBRTL [NO]? [RETURN]

        Product:      COBOL
        Producer:     DEC
        Version:      4.n
        Release Date: dd-mmm-yyyy

* Does this product have an authorization key registered and loaded?  YES [RETURN]
```

```
 The ANSI/Terminal-Format REFORMAT Utility may optionally be installed.

* Do you want the REFORMAT Utility installed  [YES]? RETURN
* Do you want to save the COBOL message file for modification [NO]?  RETURN
* Do you want to install the DECwindows Compiler Interface (DWCI) [YES]?   RETURN
* Do you want to run the IVP after the installation [YES]? RETURN

This installation procedure creates a new version of or updates some
or all of the following files:

   [SYSEXE]COBOL.EXE
   [SYSEXE]REFORMAT.EXE
   [SYSLIB]DCLTABLES.EXE
   [SYSTEST.COBOL]COBOL$IVP.COM
   [SYSHLP]COBOLvvv.RELEASE_NOTES
   [SYSMSG]COBOLMSG.EXE
   [SYSUPD]COBOLMSG.MSG
   [VUE$LIBRARY.USER]COBOL$DWCI.EXE
   [VUE$LIBRARY.USER]COBOL$DWCI.UID
   [SYSHLP]COBOL$DWCI.HLB


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

  This installation procedure additionally creates a new version of,
  or updates the following files which will not be purged.

    [SYSLIB]COBRTL.EXE
    [SYSLIB]IMAGELIB.OLB
    [SYSLIB]STARLET.OLB


  No more questions will be asked during this installation.


%COBOL-I-UPDIMG, Installing new COBRTL image
%PATCH-I-NOLCL, image does not contain local symbols
%PATCH-I-WRTFIL, updating image file VMI$ROOT:[SYSUPD.COBOLvvv]COBRTL.EXE;2
%COBOL-I-UPDOBJ, Updating system object library
%VMSINSTAL-I-RESTORE, Restoring product saveset B...
%VMSINSTAL-I-SYSDIR, This product creates system disk directory
 VMI$ROOT:[SYSTEST.COBOL].

    The IVP has been moved to directory [SYSTEST.COBOL]

    To invoke the IVP, enter @SYS$COMMON:[SYSTEST.COBOL]COBOL$IVP.COM

Please mount the next distribution volume on CSA1:
* Are you ready?  YES RETURN
%MOUNT-I-MOUNTED, COBOL2 mounted on _CSA1:
%VMSINSTAL-I-RESTORE, Restoring product saveset C...
%BACKUP-I-READYREAD, mount volume 2 on _CSA1: for reading
Enter "YES" when ready:  YES RETURN
%BACKUP-I-READYREAD, mount volume 3 on _CSA1: for reading
Enter "YES" when ready:  YES RETURN
```

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

      Start of VAX COBOL Installation Verification Procedure

      Successful test of VAX COBOL V4.n-xx
      Installation of COBOL V4.n completed at hh:mm

Please mount the console volume on CSA1:.
* Are you ready?  YES RETURN
%MOUNT-I-MOUNTED, CONSOLE mounted on _CSA1:

Enter the products to be installed from the next distribution volume set.
* Products:  EXIT RETURN
      VMSINSTAL procedure done at hh:mm

$ LOGOUT RETURN
SYSTEM  logged out dd-mmm-yyy hh:mm:ss.cc
```