VAX DIBOL
Installation Guide

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This document contains instructions for installing VAX DIBOL Version 4.1 on the VMS operating system. It also explains how to read the online release notes before or after installing the product.

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Preface

This document describes how to install VAX DIBOL Version 4.1 on the VMS operating system and is intended for system managers. Additional information on performing software installations is available in your processor-specific installation/operations guide.

Keep this document with your distribution kit. You will need it to reinstall VAX DIBOL should that be necessary.

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.

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

Chapter 1

Installation Procedure

1.1 Preparing to Install VAX DIBOL

Your bill of materials (BOM) specifies 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 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, see your processor-specific installation/operations guide, which also details several options to the installation procedure.

The VAX DIBOL Version 4.1 kit is distributed on the following media:

RX01 floppy diskettes	9 volumes
TU58 tape cartridges	9 volumes
Magtape	1 volume
TK50 magtape cartridge	1 volume

The kit is installed using the VMSINSTAL command procedure for installing optional software products.

The Version 4.1 kit contains one or more distribution volumes. Each volume is marked with a unique label that identifies each volume in the kit. The volumes in a multi-volume kit must be mounted sequentially in order.

The installation basically operates in two phases:

1. Phase 1 loads the files from the distribution media to the system disk.

2. Phase 2 builds any system-specific files and moves them to the appropriate system directories.

VMSINSTAL operates in safety mode if sufficient free blocks are available, so that system failure during the installation leaves the system in a recoverable state. If a sufficient number of blocks are not available, VMSINSTAL operates in an alternate mode that reduces peak utilization. If a system failure occurs in the alternate mode, files on the system disk can be corrupted.

1.1.1 Accessing the Online Release Notes

VAX DIBOL provides online release notes. The prompt to display or print the release notes during installation appears in step 5 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:DIBOL041.RELEASE_NOTES. Online help also directs you to the release notes file. After the installation, type the following command:

```
$ HELP DIBOL RELEASE_NOTES
```

1.1.2 Installation Procedure Requirements

The installation takes approximately 5 to 30 minutes, depending on the type of media and your system configuration. Before installing VAX DIBOL, you must have the following privileges and resources:

- SETPRV privileges, or CMKRNL, WORLD, and SYSPRV privileges
- A minimum of 7500 blocks of free disk space during installation; 6500 blocks are used after installation
- The number of unused global sections and global pages needed to install DCLTABLES.EXE. Failure to have the sufficient number of unused global sections and global pages could cause the DCL tables to be corrupted in some situations. You must determine these as shown in the following step.

To determine the number of global sections and global pages needed, type the following command:

```
$  INSTALL LIST SYS$LIBRARY:DCLTABLES.EXE/GLOBAL/FULL

DISK$VAXVMS053:<SYS0.SYSCOMMON.SYSLIB>.EXE
   DCLTABLES;68     Open Hdr Shar          Lnkbl
        Entry access count         = 408
        Current / Maximum shared   = 1 / 5
        Global section count       = 1 ❶


        System Global Sections
DCLTABLES_001  (06000000)              PRM SYS      Pagcnt/Refcnt=525/12075 ❷
               Owner:       [SYSTEM]
               Protection:  S:RWED,O:RWED,G:RWED,W:RE
```

❶ This is the number of global sections needed (1 in this example).

❷ This is the number of global pages needed (525 in this example).

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

```
$  INSTALL LIST/GLOBAL/SUMMARY

        Summary of Local Memory Global Sections

335 Global Sections Used,  32778/2222 Global Pages Used/Unused
```

When you issue this command, 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. Compare the number of unused Global pages to the number of global pages you need.

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

```
$  RUN SYS$SYSTEM:SYSGEN
SYSGEN>  USE CURRENT
SYSGEN>  SHOW GBLSECTIONS
Parameter Name           Current  Default  Minimum  Maximum  Unit  Dynamic
--------- ----           -------  -------  -------  -------  ----  -------
GBLSECTIONS                1000      250       20     4095  Sections
SYSGEN>  EXIT
```

The first number displayed is the current number of global sections. Subtract the number of global sections used from the value listed under the heading Current (the current limit of global sections on your system). This result is the number of unused global sections available. Compare the number of unused global sections to the number of global sections you need. For example:

1000 Current - 335 Used = 665 Unused global sections

If there are fewer global pages or global sections available than you need, then perform one of the following steps to obtain the required global pages and/or global sections:

- Delete an existing known image with the VMS Install Utility.
- Increase the GBLPAGES or GBLSECTIONS system parameter with the VMS System Generation Utility (SYSGEN) by editing the file SYS$SYSTEM:MODPARAMS.DAT. Then invoke the AUTOGEN command procedure, SYS$UPDATE:AUTOGEN.COM. (For more information on the AUTOGEN command procedure, see your processor-specific installation/operations guide.)

1.1.3 User Account Quotas and Privileges

To use VAX DIBOL, each account must have TMPMBX and NETMBX privileges and the working set size (WSDEF) must be at least 512 pages.

Use the VMS Authorize Utility (AUTHORIZE) to compare the current values of these quotas with the requirements for VAX DIBOL. For example, the account used in the following example is the SYSTEM account:

```
$  SET DEFAULT SYS$SYSTEM
$  RUN AUTHORIZE
UAF>  SHOW SYSTEM
```

To change the values of these quotas, use the VMS Authorize Utility's MODIFY command. For more information, see the *VMS Authorize Utility Manual*.

1.1.4 VMS License Management Facility

You must register your VAX DIBOL software license to install VAX DIBOL Version 4.1.

The license registration information you need is contained in the Product Authorization Key (PAK) that is shipped with VAX DIBOL. The PAK is a paper certificate that contains information about the license which enables you to run a particular piece of software.

During the installation, you are asked if you have registered the VAX DIBOL license and loaded the appropriate authorization key. You must register and load your license for VAX DIBOL *before* you start the installation in order to run the Installation Verification Procedure (IVP) and use the software.

To register a license, first log in to the system manager's account, SYSTEM. You then have a choice of two ways to perform the registration:

- Invoke the SYS$UPDATE:VMSLICENSE.COM procedure. When it prompts you for information, respond with data from your Product Authorization Key (PAK).
- Issue the LICENSE REGISTER command with the appropriate qualifiers that correspond to information on the PAK.

For complete information on using LMF, see the manual on the License Management Utility in the VMS documentation set.

1.1.5 Special Requirements

If you want VAX DIBOL Language-Sensitive Editor (LSE) support, the LSE license must be installed before you install VAX DIBOL Version 4.1. Ensure the following before using VMSINSTAL:

- All users are logged out.
- All batch jobs are completed.
- Users are prevented from gaining access to the system.

If you are installing the VAX DIBOL kit on a clustered system using a shared system disk, you should perform the steps listed at the start of Section 1.1.5 for each system in the cluster. In this case, the installation will place the files in the common system directories, and must be performed only once to update the entire cluster.

VAX DIBOL Version 4.1 can be installed on a system root or system disk other than that of the running system. Follow the VMSINSTAL instructions for doing so.

1.1.6 Using VMSINSTAL

After you log in to a privileged account to install VAX DIBOL, invoke VMSINSTAL, the command procedure that installs this product. An example of this procedure is shown in steps 1 and 2 of Section 1.2

The VMSINSTAL command procedure has the following syntax:

```
$ @SYS$UPDATE:VMSINSTAL DIBOL041 ddcu: [OPTIONS N]
```

ddcu:
Represents a device name where the distribution volumes will be mounted for the VAX DIBOL installation media; where *dd* is the device code, *c* is the controller code, and *n* is the unit number. It is not necessary to use the console drive to install VAX DIBOL. If you do use the console drive, you should replace any media you removed from the drive. MUA0: 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. VMSINSTAL permits the use of several other options. For more information on the other options, see your processor-specific installation/operations guide.

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
```

When you invoke VMSINSTAL, it checks the following:

- Whether you 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 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

- Whether the following conditions exist

  If they do, discontinue the conditions before resuming the installation procedure.

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

If VMSINSTAL detects either of these conditions, you will be asked whether you want to continue the installation. If you want to continue, type YES. If you want to stop the installation, press RETURN.

1.2 Installing VAX DIBOL

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

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

Step 2: Invoke VMSINSTAL.

```
$  @VMSINSTAL DIBOL041 MUA0: OPTIONS N

      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]?
```

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.

```
Please mount the first volume of the set on MUA0:.
* Are you ready?  YES
The following products will be processed:

  VAX DIBOL V4.1


    Beginning installation of VAX DIBOL V4.1 at hh:mm

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

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

Step 4: Select a release notes option.

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

```
Release Notes Options:

    1. Display release notes
    2. Print release notes
    3. Both 1 and 2

    4. Copy release notes to SYS$HELP
    5. Do not display, print or copy release notes

* Select option [3]:
```

If you select option 1, VMSINSTAL displays the release notes online 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]:
```

If you select option 3, VMSINSTAL displays the release notes on line immediately. You can terminate the display at any time by pressing CTRL/C. VMSINSTAL then prompts you for a queue name. Either type a queue name or press RETURN to send the file to the default output print device. The VAX DIBOL release notes are then copied to SYS$HELP:DIBOL041.RELEASE_NOTES.

If you select option 4, VMSINSTAL copies the release notes to SYS$HELP immediately.

If you select option 5, VMSINSTAL does not display, print or copy the release notes; typically this option is selected when the user wants to terminate the installation.

Next, VMSINSTAL displays the following prompt:

```
* Do you want to continue the installation [N]?:  Y
%VMSINSTAL-I-RELMOVED, The product 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: Respond to License Registration Queries.

VAX DIBOL supports the VMS License Management Facility (LMF). The installation procedure displays license information about your product and then asks if you have registered and loaded your authorization key for VAX DIBOL. The following is an example of such information:

```
Product:       DIBOL
Producer:      DEC
Version:       4.1

Release Date:  26-FEB-1990


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

If you have not registered and loaded your authorization key, you must answer NO to this question. The installation procedure will be completed but you will have to register and load your product authorization key to run the IVP. The following messages will be displayed:

```
VAX DIBOL requires that  the  license  be  installed and
loaded  to  run.   The  IVP  will NOT  be run after this
installation is complete.  Please run the IVP  by typing
@SYS$TEST:DIBOL$IVP.COM. after you have  registered  and
loaded  the  VAX DIBOL license.

Installation continuing...
```

The installation will then proceed but the Installation Verification Program will not be run and use of the DIBOL compiler will not be permitted until a valid license has been loaded.

Step 6: Insert the subsequent installation kit volumes.

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

Enter "YES" when ready:  YES
```

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.

Step 7: Select installation options.

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

The directories SYS$EXAMPLES, SYS$HELP, SYS$LIBRARY, SYS$STARTUP, and SYS$SYSTEM may contain previous versions of VAX DIBOL 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 type NO to keep them.

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

The Installation Verification Procedure (IVP) runs tests to check whether the installation procedure 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.

```
* Do you want the entire DIBOL kit installed [YES]?
```

If you answer YES, the entire DIBOL kit (all of the file savesets) will be installed and you will be asked only the following two questions:

```
* Do you want to decompress DBLSTARLET.TLB [YES]?
```

If you answer YES, DBLSTARLET.TLB will be decompressed.

```
* Do you want to supersede the bundled DIBOL routines [NO]?
```

The DIBOL Run-Time Library and the DIBOL Message Manager are bundled with VMS. If you answer YES, the versions of the DIBOL Run-Time Library and the DIBOL Message Manager on the installation kit will replace the existing VMS versions.

NOTE

This question will not be asked if you are installing VAX DIBOL Version 4.1 on VMS Version 5.2 or higher. Instead, VMSINSTAL determines if the Run-Time Library on the kit is a newer version than the version on your system. If so, VMSINSTAL replaces the files. If not, VMSINSTAL will not replace your files.

If you decide not to install the entire DIBOL kit, the following questions are asked:

```
* Do you want to install DBLSTARLET.TLB [YES]?
```

If you answer YES, DBLSTARLET.TLB from saveset C will be installed.

```
* Do you want to decompress DBLSTARLET.TLB [YES]?
```

If you answer YES, DBLSTARLET.TLB will be decompressed.

```
* Do you want the compiler [YES]?
```

If you answer YES, the following question is displayed:

```
* Do you want LSE support [NO]?
```

If you answer YES, the appropriate saveset files are installed.

```
* Do you want the utilities [NO]?
```

If you answer YES, the following message is displayed:

```
The DIBOL kit includes utilities compatible
with PDP-11 DIBOLs for sorting, file indexing,
and file creating.

Please select:
   1 - To install ALL utilities
   2 - To install NO utilities
   3 - To install SELECTED utilities

* Please enter choice for utilities [1]:
```

Enter the number which represents your choice for utilities. If you enter 3, the prompting will continue as follows:

```
* Do you want the SORT utilities [NO]?

* Do you want the ISAM utility [NO]?

* Do you want the message-manager status utility [NO]?

* Do you want the menu compiler and utilities [NO]?

* Do you want the message files and examples [NO]?
```

If you respond YES to any of the previous prompts, the appropriate saveset files are installed.

When you have responded to all of the prompts, the following message is displayed:

```
+-----------------------------------------------------+
|      This is the end of the questions required to   |
|       install VAX DIBOL.                            |
|      After all of the files have been loaded from   |
|       the media, installation will complete in      |
|       10-25 minutes.                                |
+-----------------------------------------------------+
```

Step 8: Read informational messages.

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

Before the IVP is run, any of the following messages are displayed:

```
VMSINSTAL-I-RESTORE, Restoring product saveset  B...
VMSINSTAL-I-RESTORE, Restoring product saveset  C...
VMSINSTAL-I-RESTORE, Restoring product saveset  D...
VMSINSTAL-I-RESTORE, Restoring product saveset  E...
VMSINSTAL-I-RESTORE, Restoring product saveset  F...
VMSINSTAL-I-RESTORE, Restoring product saveset  G...
```

These messages indicate that VMSINSTAL is retrieving saveset files from the media. Individual saveset messages are displayed depending on the options selected during installation.

During the installation, the IVP programs are moved to [SYSTEST.DIBOL]. If [SYSTEST.DIBOL] does not exist, the directory will be automatically created and the following message displayed:

```
VMSINSTAL-I-SYSDIR, This product creates system directory
[SYSTEST.DIBOL].
```

If you are installing DIBOL on the boot node of a cluster, the following message will also be displayed if [SYSTEST.DIBOL] had to be created:

```
If you intend to execute this layered product on other nodes of your
VAXcluster, and you have the appropriate software license, you must
prepare the system-specific roots on the other nodes by
issuing the following command on each node (using a suitably
privileged account):

$ CREATE/DIRECTORY SYS$SPECIFIC:[SYSTEST.DIBOL]

    %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 following message is displayed immediately before the IVP program is run and indicates the process ID of the DIBOL message manager utility which has been started for the IVP. In this example, the process ID is 00030000D.

```
RUN-S-PROC_ID, identification of created process is 00030000D
```

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

```
This installation will add the following files:

SYS$SYSTEM: DIBOL85.EXE
            DBLISMUTL.EXE
            DBLMSGMGR.EXE
            DBLSORT.EXE
            DBLSORT2.EXE
            DBLSORTG.EXE
            DBLSTATUS.EXE
            DBLMNUGEN.EXE

SYS$LIBRARY: DBLRTL.EXE
             DBLSORTM.DBL
             DBLRTL.OPT
             DBLOSSL.OLB
             DBLUESL.OLB
             DBLTEXT.TLB
             DBLSTARLET.TLB

SYS$STARTUP: DBLSTRTUP.COM
```

```
SYS$HELP: DIBOL.HLB
          DIBOL041.RELEASE_NOTES

SYS$MESSAGE: DIB85MSG.EXE
             DBLRTLMSG.EXE
             DIB85MSG.MSG
             DBLISMMSG.MSG
             DBLMGNMSG.MSG
             DBLMGRMSG.MSG
             DBLMNUMSG.MSG
             DBLRTLMSG.MSG
             DBLSRTMSG.MSG
             DBLSTSMSG.MSG

SYS$UPDATE: DBLREADME.LIS
            DBLTNMBRS.COM

SYS$EXAMPLES: DBLDBGINI.COM
              DSMNT.DBL
              MNT.DBL
              SORT.DBL
              DIBOL85.CLD
              DBLIVPDET.EXE

SYS$SYSROOT:[SYSTEST] DIBOL$IVP.COM

SYS$SYSROOT:[SYSTEST.DIBOL]
        DBLIVP.DBL
        DBLIVPSUB.DBL
        DBLIVPFUN.DBL
        DBLIVPDET.DBL
```

If you typed YES in response to the prompt that requests a file purge at step 7, previous versions of the VAX DIBOL files are now purged.

Step 9: Observe the Installation Verification Procedure.

If you chose to run the IVP in step 7, VMSINSTAL now calls the IVP to verify that VAX DIBOL was installed successfully. The following is a sample run of the IVP:

```
+-----------------------------------------------------------------+
| Starting VAX DIBOL Version 4.1 Installation Verification Program |
+-----------------------------------------------------------------+
|       Seventeen tests follow                                    |
|       Completed test number 01  (OPEN, DISPLAY)                 |
|       Completed test number 02  (WRITES, FLUSH)                 |
|       Completed test number 03  (READS, FIND)                   |
|       Completed test number 04  (READ by RFA)                   |
|       Completed test number 05  (Error handling)                |
|       Completed test number 06  (Arithmetic)                    |
|       Completed test number 07  (Booleans)                      |
|       Completed test number 08  (CALL, RETURN)                  |
|       Completed test number 09  (Substrings, MD Arrays)         |
|       Completed test number 10  (Functions)                     |
|       Completed test number 11  (UESL XCALLS)                   |
|       Starting SLEEP at 13:23:58.96 for 4.5 seconds             |
|       Finished SLEEP at 13:24:03.81                             |
|       Completed test number 12  (SLEEP)                         |
|       Completed test number 13  (XCALL MONEY, Edit-strings)     |
|       Completed test number 14  (XCALL to a DIBOL subroutine)   |
|       Completed test number 15  (LOCASE)                        |
|       Completed test number 16A  (SEND, RECV: Part 1)           |
|       Next section may take up to two minutes                   |
|       Completed test number 16B  (SEND, RECV: Part 2)           |
|       Completed test number 17  (FOR, USING)                    |
+-----------------------------------------------------------------+
|       Date is 23-APR-90        Time is 13:24                    |
|       Job number is 1669       Terminal number is  618          |
|       DIBOL Run-Time Library Version is "VAX/VMS  V4.01"        |
+-----------------------------------------------------------------+
|       VAX DIBOL Version 4.1 IVP successfully completed          |
+-----------------------------------------------------------------+
Installation of DIBOL V4.1 completed at 13:24
```

Step 10: End the installation procedure.

```
   Installation of VAX DIBOL V4.1 completed at hh:mm

   VMSINSTAL procedure done at hh:mm

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

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

VMSINSTAL deletes or changes entries in the process symbol tables during the installation. 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.

1.2.1 Installing VAX DIBOL on a VAXcluster

If you want to run VAX DIBOL Version 4.1 on multiple nodes of a VAXcluster, first check to see that you have the appropriate software license.

If you have installed the VAX DIBOL kit on a clustered system using a shared system disk, you should perform the following steps on each system in the cluster (other than the one used for the installation) to ensure that the other systems in the cluster access the correct files.

1. Log in to the system manager's account on the system to be updated.
2. Issue the LICENSE LOAD command to activate the license on each node in the VAXcluster on which VAX DIBOL is to be executed, as described in the *VMS License Management Utility Manual*.

   NOTE

   As of Version 4.1, VAX DIBOL uses the VMS License Management Facility (LMF) to register the product on-line. If VAX DIBOL is registered using LMF, and it is to be used on a node in a VAXcluster other than the node on which the installation is taking place, then the user must issue the LICENSE LOAD command on each node on which the product is to be executed.

3. Replace the known image entries for DCLTABLES and DBLRTL (if installed) using the INSTALL utility.

   ```
   $ INSTALL
   INSTALL> REPLACE SYS$SHARE:DCLTABLES
   INSTALL> REPLACE SYS$SHARE:DBLRTL
   INSTALL> EXIT
   ```

4. Restart the DIBOL message manager by executing the following command:

   ```
   $ @SYS$STARTUP:DBLSTRTUP RESTART
   ```

If you have installed other DIBOL files which have been replaced by the Version 4.1 installation, you should use now INSTALL to replace those known image entries as well. See Section 1.6, Installing VAX DIBOL as a Shared Image for a list of those files.

1.3 After the Installation

VAX DIBOL is now installed and can be invoked by all users with the DIBOL command.

The installation procedure modifies the DCL command table so that the DIBOL 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 new DIBOL command must log out of the system and log in again. After installation, SYS$STARTUP:SYSTARTUP_V5.COM must be edited to include SYS$STARTUP:DBLSTRTUP.COM, which must be excuted to start the DIBOL Message Manager.

1.4 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$TEST:DIBOL$IVP.COM
```

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

```
The VAX DIBOL V4.1 Installation Verification Procedure failed.
```

1.5 Error Conditions

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

```
%VMSINSTAL-E-INSFAIL, The installation of VAX DIBOL V4.1 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.
- Process quotas required by VMSINSTAL are incorrect (see Section 1.1.6).
- The VMS HELP library is currently in use.

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, you should 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. If the installation fails due to an IVP failure, see Section 1.7, Determining and Reporting Problems.

The following is a list of error messages that may be generated by the VAX DIBOL installation procedure:

```
VAX DIBOL requires that  the  license  be  installed and
loaded  to  run.   The  IVP  will NOT  be run after this
installation is complete.  Please run the IVP  by typing
@SYS$TEST:DIBOL$IVP.COM. after you have  registered  and
loaded  the  VAX DIBOL license.

Installation continuing...
```

Explanation: The installation will then proceed but the Installation Verification Program will not be run and use of the DIBOL compiler will not be permitted until a valid license has been loaded.

```
VAX DIBOL V4.1 is not being installed with VAX
Language-Sensitive  Editor  support because the Editor's
license is not registered and loaded on your system. If
you want the VAX Language-Sensitive Editor support
you must do the following:

1. Register and load the VAX Language-Sensitive Editor license

2. Reinstall VAX DIBOL V4.1
```

Explanation: If the user requests LSE support, the procedure checks to ensure that LSE is installed prior to continuing with this section of the installation. Following the check for LSE installation, the procedure will verify the presence of a valid LSE license. If a valid license is not found, LSE support will not be installed and this message will be displayed. If a valid license is found, LSE support will be installed.

```
This kit requires Version 5.0 or later of VMS
```

Explanation: Upgrade the version of VMS to Version 5.0 or higher.

```
The file CDDSHR.EXE was not found
```

Explanation: This file is supplied by VMS. Determine why the file was not there and restore the file.

```
The file CRFSHR.EXE was not found
```

Explanation: This file is supplied by VMS. Determine why the file was not there and restore the file.

1.6 Installing VAX DIBOL as a Shared Image

If VAX DIBOL will be used extensively on your system, you can reduce the system overhead and memory requirements by installing it as a shared image. There are four files that can improve memory usage and performance if they are installed as shared images. Either the Run-Time System files or the Compiler files or both sets of files can be installed.

To install the files as a shared image, use the VMS Install Utility while you are logged in to a privileged account. If errors occur, see *VMS System Messages and Recovery Procedures Reference Volume*.

First, determine the number of available global pages and global sections on your system. See Section 1.1.2, Installation Procedure Requirements for information on how to do this. The following table lists the number of global sections and approximate number of global pages for the Run-Time System files and the Compiler files.

Files	Number of GBLSECTIONS Needed	Approximate Number of GBLPAGES Needed
Run-Time Library Files		
SYS$SHARE:DBLRTL.EXE	1	225
SYS$MESSAGE:DBLRTLMSG.EXE	1	35

Files	Number of GBLSECTIONS Needed	Approximate Number of GBLPAGES Needed
Compiler Files		
SYS$SYSTEM:DIBOL85.EXE	2	285
SYS$MESSAGE:DIB85MSG.EXE	1	30
Total	5	575

Then, invoke the VMS Install Utility and install the VAX DIBOL files as shared images by typing the following commands (replacing <filename>) with the file to be replaced:

```
$  RUN SYS$SYSTEM:INSTALL

INSTALL>  ADD SYS$SYSTEM:<filename>.EXE/OPEN/SHARED
   .
   .
   .
INSTALL>  EXIT
```

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

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

```
$ INSTALL
ADD SYS$SYSTEM:<filename>.EXE/OPEN/SHARED
   .
   .
   .
EXIT
```

1.7 Determining and Reporting Problems

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

- If you purchased VAX DIBOL within the past 90 days and you think the problem is caused by a software error, you can submit a Software Performance Report (SPR).

- If you have a Basic or DECsupport Software Agreement, you should 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, you can submit a Software Performance Report (SPR).

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

1.8 Sample Installation

This section contains a sample installation of VAX DIBOL. Note that this is only a sample.

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

      VAX/VMS Software Product Installation Procedure VX.X

It is 23-APR-1990 at 13:15

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

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

Where will the distribution volumes be mounted:  CSA1:.
* Are you ready?  YES

Enter the products to be processed from the first distribution
volume set.
* Products: DIBOL

The following products will be processed:

  VAX DIBOL V4.1

      Beginning installation of DIBOL V4.1 at 13:16

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


Release Notes Options:

    1. Display release notes
    2. Print release notes
    3. Both 1 and 2

    4. Copy release notes to SYS$HELP
    5. Do not display, print or copy release notes


* Select option [3]:

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

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

      VAX DIBOL Version V4.1 Installation

Product:       DIBOL
Producer:      DEC
Version:       4.1

Release Date:  26-FEB-1990


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


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

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

* Do you want the entire DIBOL kit installed [YES]?   NO

* Do you want to install DBLSTARLET.TLB [YES]?  YES
* Do you want to decompress DBLSTARLET.TLB [YES]?  YES
* Do you want the compiler [YES]?  YES
* Do you want LSE support [NO]?  YES
* Do you want the utilities [NO]?  YES

The DIBOL kit includes utilities compatible
with PDP-11 DIBOLs for sorting, file indexing,
and file creating.

Please select:
   1 - To install ALL utilities
   2 - To install NO utilities
   3 - To install SELECTED utilities

* Please enter choice for utilities [1]: 3
* Do you want the SORT utilities [NO]?  YES
* Do you want the ISAM utility [NO]?  YES
* Do you want the message-manager status utility [NO]?  YES
* Do you want the ISAM utility [NO]?  YES
* Do you want the menu compiler and utilities [NO]?  YES
* Do you want the message files and examples [NO]?  YES

+-----------------------------------------------------------+
|      This is the end of the questions required to         |
|       install VAX DIBOL.                                  |
|      After all of the files have been loaded from         |
|       the media, installation will be completed in        |
|       10-25 minutes.                                      |
+-----------------------------------------------------------+

    VMSINSTAL-I-RESTORE, Restoring product saveset  B...
    VMSINSTAL-I-RESTORE, Restoring product saveset  C...
    VMSINSTAL-I-RESTORE, Restoring product saveset  D...
    VMSINSTAL-I-RESTORE, Restoring product saveset  E...
    VMSINSTAL-I-RESTORE, Restoring product saveset  F...
    VMSINSTAL-I-RESTORE, Restoring product saveset  G...
```

```
If you intend to execute this layered product on other nodes of your
VAXcluster, and you have the appropriate software license, you must
prepare the system-specific roots on the other nodes by
issuing the following command on each node (using a suitably
privileged account):

$  CREATE/DIRECTORY SYS$SPECIFIC:[SYSTEST.DIBOL]

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

RUN-S-PROC_ID, identification of created process is 00030000D

+--------------------------------------------------------------------+
| Starting VAX DIBOL Version 4.1 Installation Verification Program   |
+--------------------------------------------------------------------+
|       Seventeen tests follow                                       |
|       Completed test number 01  (OPEN, DISPLAY)                    |
|       Completed test number 02  (WRITES, FLUSH)                    |
|       Completed test number 03  (READS, FIND)                      |
|       Completed test number 04  (READ by RFA)                      |
|       Completed test number 05  (Error handling)                   |
|       Completed test number 06  (Arithmetic)                       |
|       Completed test number 07  (Booleans)                         |
|       Completed test number 08  (CALL, RETURN)                     |
|       Completed test number 09  (Substrings, MD Arrays)            |
|       Completed test number 10  (Functions)                        |
|       Completed test number 11  (UESL XCALLS)                      |
|       Starting SLEEP at 13:23:58.96 for 4.5 seconds                |
|       Finished SLEEP at 13:24:03.81                                |
|       Completed test number 12  (SLEEP)                            |
|       Completed test number 13  (XCALL MONEY, Edit-strings)        |
|       Completed test number 14  (XCALL to a DIBOL subroutine)      |
|       Completed test number 15  (LOCASE)                           |
|       Completed test number 16A  (SEND, RECV: Part 1)              |
|       Next section may take up to two minutes                      |
|       Completed test number 16B  (SEND, RECV: Part 2)              |
|       Completed test number 17  (FOR, USING)                       |
+--------------------------------------------------------------------+
|       Date is 23-APR-90        Time is 13:24                       |
|       Job number is 1669       Terminal number is  618             |
|       DIBOL Run-Time Library Version is "VAX/VMS  V4.01"           |
+--------------------------------------------------------------------+
|       VAX DIBOL Version 4.1 IVP successfully completed             |
+--------------------------------------------------------------------
Installation of DIBOL V4.1 completed at 13:24

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

* Products: EXIT

   VMSINSTAL procedure done at 13:25

$  LOGOUT
```

1.9 Files Distributed

The files listed in Table 1–1 are distributed as part of VAX DIBOL Version 4.1 and are included in a full installation. You can save space on your system disk by removing any files which are not used in your system environment. The DIBOL.RTL (DBLRTL.EXE) is required to execute any DIBOL program, and the message manager utility is required for SEND/RECV and for XCALL WAIT. The Language-Sensitive Editor (LSE) support files (DIBOL.ENV and LSEUPDATE_ENV.TPU) are required for installation. When the installation procedure is successfully completed, these files are automatically deleted.

Table 1–1: VAX DIBOL Distributed Files

Directory	Filename	Description
SYS$SYSTEM	DIBOL85.EXE	VAX DIBOL compiler image
	DBLISMUTL.EXE	DIBOL ISAM utility image
	DBLMSGMGR.EXE	DIBOL message manager utility image
	DBLSORT.EXE	DIBOL sort utility (command phase) image
	DBLSORT2.EXE	DIBOL sort utility (sort/merge phase) image
	DBLSORTG.EXE	DIBOL SORTG/M utility (command phase) image
	DBLSTATUS.EXE	DIBOL status utility image
	DBLMNUGEN.EXE	DIBOL menu generator utility image
SYS$LIBRARY	DBLRTL.EXE	DIBOL Run-Time Library shareable image
	DBLSORTM.DBL	DIBOLSORTG/M utility (sort/merge phase) source
	DBLRTL.OPT	DIBOL RTL linker options file
	DBLOSSL.OLB	DIBOL OSSL library
	DBLUESL.OLB	DIBOL UESL library

(continued on next page)

Table 1–1 (Cont.): VAX DIBOL Distributed Files

Directory	Filename	Description
	DBLTEXT.TLB	DIBOL Text library
	DBLSTARLET.TLB	DIBOL STARLET Text library of SYS$LIBRARY:STARLET.MLB
SYS$STARTUP	DBLSTRTUP.COM	DIBOL message manager utility startup command procedure
SYS$HELP	DIBOL.HLB	Extended DIBOL help library
	DIBOL041.RELEASE_NOTES	Release Notes for VAX DIBOL Version 4.1
SYS$MESSAGE	DIB85MSG.EXE	VAX DIBOL compiler error message file
	DBLRTLMSG.EXE	DBLRTL and utilities error message file
	DIB85MSG.MSG	Source file for compiler error messages
	DBLISMMSG.MSG	Source file for DBLISMUTL messages
	DBLMGNMSG.MSG	Source file for DBLMNUGEN messages
	DBLMGRMSG.MSG	Source file for DBLMSGMGR messages
	DBLMNUMSG.MSG	Source file for MENU subroutine messages
	DBLRTLMSG.MSG	Source file for DBLRTL messages
	DBLSRTMSG.MSG	Source file for DBLSORT messages
	DBLSTSMSG.MSG	Source file for DBLSTATUS messages
SYS$UPDATE	DBLREADME.LIS	Miscellaneous information
	DBLTNMBRS.COM	Terminal number table update procedure

(continued on next page)

Table 1–1 (Cont.): VAX DIBOL Distributed Files

Directory	Filename	Description
SYS$EXAMPLES	DBLDBGINI.COM	Sample VAX/VMS Symbolic Debugger initialization file
	DSMNT.DBL MNT.DBL SORT.DBL	Sample VAX DIBOL programs
	DIBOL85.CLD	DIBOL–85 Command Language Definitions file
	DBLIVPDET.EXE	Installation Verification Program executable file
SYS$SYSROOT:[SYSTEST]		
	DIBOL$IVP.COM	Command file for Installation Verification Procedure
SYS$SYSROOT:[SYSTEST.DIBOL]		
	DBLIVP.DBL DBLIVPSUB.DBL DBLIVPFUN.DBL DBLIVPDET.DBL	Sample Installation Verification Procedure programs . . .

1.9.1 File Savesets

Files are classified into savesets A through G. When you are installing the DIBOL kit, you can choose a full installation (savesets A through G) or select from savesets C through G (all installations contain savesets A and B).

The contents of the savesets are as follows:

Table 1–2: Contents of the Savesets

Saveset A	Installation
KITINSTAL.COM	temporary

(continued on next page)

Table 1–2 (Cont.): Contents of the Savesets

Saveset A	Installation
DIBOL041.RELEASE_NOTES	
DIBOL$IVP.COM	
DBLIVP.DBL	IVP routines
DBLIVPSUB.DBL	IVP source
	.
	.
	.
DBLIVPFUN.DBL	
DBLIVPDET.DBL	
DBLIVP.EXE	
DBLIVPDET.EXE	temporary IVP

Saveset B	Run-Time Library
DBLRTL.EXE	run-time system
DBLRTLMSG.EXE	error message files
DBLOSSL.OLB	OSSL library
DBLUESL.OLB	UESL library
DBLREADME.LIS	‘‘read me’’ text
DBLSTRTUP.COM	message manager utility startup
DBLTNMBRS.COM	change default terminal numbers
DIBOL.HLB	extended help library
DBLMSGMGR.EXE	message manager

Saveset C	Compiler
DIBOL85.CLD	command line description
DIBOL85.EXE	native mode compiler
DIBOLCMD.HLP	DCL help
DIB85MSG.EXE	compiler error messages
DBLRTL.OPT	link options file

(continued on next page)

Table 1–2 (Cont.): Contents of the Savesets

Saveset C	Compiler
DBLTEXT.TLB	text library
DBLDBGINI.COM	DEBUG initialization file
DBLSTARLET.TLB	STARLET text library

Saveset D	LSE
DIBOL.ENV	environment file—temporary
LSEUPDATE_ENV.TPU	used to insert environment file—temporary

Saveset E	Utilities
DBLSORT.EXE	SORT
DBLSORT2.EXE	SORT
DBLSORTG.EXE	SORT
DBLSORTM.EXE	SORT
DBLISMUTL.EXE	ISAM utility
DBLSTATUS.EXE	message manager status utility

Saveset F	Menu
DBLMNUGEN.EXE	menu generator

Saveset G	Menu
DBLRTLMSG.MSG	Source file for DBLRTL messages
DBLISMMSG.MSG	Source file for DBLISMUTL messages
DBLMGNMSG.MSG	Source file for DBLMNUGEN messages
DBLMGRMSG.MSG	Source file for DBLMSGMGR messages
DBLMNUMSG.MSG	Source file for MENU subroutine messages
DBLSRTMSG.MSG	Source file for DBLSORT messages
DBLSTSMSG.MSG	Source file for DBLSTATUS messages

(continued on next page)

Table 1–2 (Cont.): Contents of the Savesets

Saveset G	Menu
DIB85MSG.MSG	
DSMNT.DBL	
MNT.DBL	
SORT.DBL	

If you install Saveset G, the DBLIVP*.DBL from Saveset A are moved to the SYS$EXAMPLES directory and saved. Otherwise, the files are automatically deleted after installation.