VAX PASCAL
Installation Guide

August 1988

This document contains instructions for installing VAX PASCAL 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 PASCAL Version 3.8 and all maintenance updates throughout that version.

Revision/Update Information: This revised manual supersedes the *VAX PASCAL Installation Guide* (Order Number AA-J181I-TE).

Operating System and Version: VMS Version 5.0 or higher. Future maintenance releases may require higher versions.

Software Version: VAX PASCAL Version 3.8

The postpaid Reader's Comments forms at the end of this document request the user's critical evaluation to assist in preparing future documentation.

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Contents

Preface

This document describes how to install VAX PASCAL on the VMS oper-
ating system. It is intended for system managers. This document applies
to VAX PASCAL Version 3.8 and all maintenance updates in that version.
A major version number is represented by the digits to the left of the
decimal point, and the maintenance update version number is indicated
by the digits to the right of the decimal point.

Keep this document with your distribution kit. You will need it to install
maintenance updates or to reinstall VAX PASCAL 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 a form and
mail it; your comments will be considered for the next revision of the
installation guide.

For more information about installing VAX PASCAL 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 should type during the installation process is indicated in red.

Preparing To Install VAX PASCAL

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.

VAX PASCAL Version 3.8 requires VMS Version 5.0 or higher.

Accessing the Online Release Notes

VAX PASCAL 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:PASCAL038.RELEASE_NOTES. Online help also directs you
to the release notes. After the installation, type the following:

```
$ HELP PASCAL RELEASE_NOTES  RETURN
```

Installation Procedure Requirements

VAX PASCAL installation should take approximately 5 to 120 minutes,
depending on the type of media and your system configuration. If you
also install the PASSTR saveset, the set of files containing VMS and Run-
Time Library definitions, installation should take an additional 20 to 25
minutes. Before installing VAX PASCAL, you must have the following
privileges and resources:

• SETPRV privilege, or CMKRNL, WORLD, and SYSPRV privileges.

• A minimum of 4000 blocks of free disk space during installation,
  and 2000 blocks of disk space after installation of the VAX PASCAL
  compiler.

• A sufficient number of contiguous free global pages to contain the file
  SYS$LIBRARY:DCLTABLES.EXE.

- Approximately 1100 contiguous free global pages and two global sections if you are installing the VAX PASCAL compiler as a shared known image.

- Approximately 80 contiguous free global pages and one global section if you are installing the PASRTL (the VAX PASCAL-specific, shareable Run-Time Library image) as a shared known image.

- Approximately 1180 contiguous free global pages and three global sections if you are installing both of the foregoing as shared known images.

- A minimum of 7000 blocks of free disk space during installation, and 6000 blocks of disk space after installation of the PASSTR kit.

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.

You can determine the number of available global pages on your system by invoking the VMS Install Utility as follows:

```
$ INSTALL  RETURN
INSTALL> LIST/GLOBAL/SUMMARY  RETURN
        Summary of Local Memory Global Sections
 315 Global Sections Used,  26170/13830 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. Exit from the VMS Install Utility by typing the EXIT command.

VAX PASCAL requires approximately 1100 contiguous global pages, and the Run-Time Library requires approximately 80 contiguous global pages. If there are fewer than 1100 unused pages (1180 if you are installing both the compiler and the Run-Time Library), you can delete an existing known image with the VMS Install Utility, or 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 using the AUTOGEN.COM 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 first number displayed is the current number of global sections. Compare this to the number of global sections in use (as displayed by the VMS Install Utility). VAX PASCAL requires two global sections. Therefore, if the number displayed plus 2 (3 if you are installing the Run-Time Library) exceeds the system maximum, you must increase the number of available global sections before you can install VAX PASCAL. 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 displayed plus 2 (3 if you are installing the Run-Time Library) is less than the system maximum, you can exit from SYSGEN and continue.

Special Requirements

VAX PASCAL Version 3.8 requires VMS Version 5.0 or higher.

Before you install VAX PASCAL, you must register the product using the Product Authorization Key (PAK) provided in the PASCAL kit. See the *VMS License Management Utility Manual* for registration instructions.

Using VMSINSTAL

After you log in to a privileged account to install VAX PASCAL, set the default to SYS$UPDATE: and then invoke VMSINSTAL, the command procedure that installs this product. An example of this procedure is shown in steps 1 and 2 of the Installing VAX PASCAL section.

```
$ SET DEFAULT SYS$UPDATE
$ @SYS$UPDATE:VMSINSTAL PASCAL03n ddn:[OPTIONS N,...]
```

The command parameters are described in the next paragraphs. 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 prompted to display or print the release notes, type the following:

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

n
Represents the maintenance update of VAX PASCAL. You can also type an asterisk (*) in place of PASCAL03n. If you are installing from magnetic tape, you can use the asterisk to save installation time; the asterisk causes VAX PASCAL to be installed with a minimum of tape passes.

ddn:
Represents the name of the device on which the distribution volumes will be mounted for the VAX PASCAL 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 PASCAL. 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. (Note that the device name CSA1: is not appropriate for the VAX 8600 or 8650.)

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.

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:
  - AST limit (ASTLM) = 24
  - Buffered I/O quota (BIOLM) = 18
  - Buffered I/O byte count quota (BYTLM) = 18000
  - Direct I/O quota (DIOLM) = 18
  - Enqueue quota (ENQLM) = 30
  - Open file limit (FILLM) = 20

VMSINSTAL then checks whether the following conditions exist. If so, discontinue the conditions before resuming the installation procedure.

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

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

Installing VAX PASCAL

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

```
$ @SYS$UPDATE:VMSINSTAL PASCAL038 CSA1: OPTIONS N  RETURN


   VAX/VMS Software Product Installation Procedure V5.0

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]? Y  RETURN
```

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

Step 3: Insert the first installation kit volume.

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

The following products will be processed:

  PASCAL V3.8

Beginning installation of PASCAL V3.8 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 then press the RETURN key.

Step 4: Select a release notes option.

This step applies only if you specified OPTIONS N in step 2. (The OPTIONS N parameter is described in the Using VMSINSTAL section.)

```
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 [2]: 2  RETURN
```

The effects of these options are as follows:

- If you select option 1, VMSINSTAL displays the release notes immediately on your screen. You can terminate the display at any time by pressing CTRL/C. When you have finished, VMSINSTAL copies the release notes to SYS$HELP.

- If you select option 2, VMSINSTAL prompts you for a queue name.

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

  Either type a queue name or press the RETURN key to send the file to the default output print device. When printing has finished, VMSINSTAL copies the release notes to SYS$HELP.

- If you select option 3, VMSINSTAL displays the release notes, prints them, and then copies them to SYS$HELP.

- If you select option 4, VMSINSTAL copies the release notes to SYS$HELP, but does not print or display them.

- If you select option 5, VMSINSTAL does not print, display, or copy the release notes in this step. However, the release notes will be copied to SYS$HELP later during the installation procedure.

Next, VMSINSTAL displays the following prompt:

`Do you want to continue the installation [NO]?: Y` `RETURN`

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 the release notes for previous versions of VAX PASCAL.

If you want to continue the installation, type YES and press the RETURN key. If you type NO or press the RETURN key, VMSINSTAL discontinues the installation.

Step 5: Respond to licensing prompt.

```
Product:      PASCAL
Producer:     DEC
Version:      3.8
Release Date: 12-AUG-1988
```

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

This prompt refers to the Product Authorization Key (PAK) provided in the PASCAL kit. You must verify that VAX PASCAL has been registered correctly. If you have registered VAX PASCAL using the PAK, type YES and press the RETURN key. If you have not, type NO or press RETURN, and the installation will be discontinued. See the *VMS Licensing Management Utility Manual* for registration instructions.

Step 6: Select installation options.

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

The directories SYS$SYSTEM and SYS$LIBRARY contain previous versions of VAX PASCAL 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 the RETURN key to purge the files, or type NO to keep them. The system HELP files are updated in either case.

Step 7: 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.

Step 8: Read informational messages.

The VAX PASCAL installation procedure produces a number of informa-
tional messages that report on the progress of the installation.

```
    This kit contains a file summarizing the new features, changes,
    restrictions, and compatibility issues in this release of VAX
    PASCAL.  This file is named PASCAL038.RELEASE_NOTES and is
    placed in SYS$HELP:.

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

    The IVP (Installation Verification Procedure) will be left in
    SYS$COMMON:[SYSTEST.PASCAL]PASCAL$IVP.COM.  This command file
    will be automatically invoked by this installation.  After the
    installation is complete, you can invoke the command file at
    any time to reverify that VAX PASCAL is installed and working
    correctly.

    All questions regarding the installation have now been asked.
    The installation of VAX PASCAL V3.8 will now continue for
    approximately 5 to 120 minutes depending on your configuration.

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

If the installation procedure is successful, the new and modified files are
moved to their target directories and the following messages are displayed:

```
Your VMS system will now be updated to include the following new and
modified files:
```

```
SYS$COMMON:[SYSTEST.PASCAL]PASCAL$IVP.COM   [new]
SYS$COMMON:[SYSTEST.PASCAL]PASCAL$IVP.PAS   [new]
SYS$HELP:HELPLIB.HLB                        [modified]
SYS$HELP:PASCALO38.RELEASE_NOTES            [new]
SYS$LIBRARY:DCLTABLES.EXE                   [modified]
SYS$LIBRARY:LIBDEF.PAS                      [new]
SYS$LIBRARY:MTHDEF.PAS                      [new]
SYS$LIBRARY:PASDEF.PAS                      [new]
SYS$LIBRARY:PASSTATUS.PAS                   [new]
SYS$LIBRARY:SIGDEF.PAS                      [new]
SYS$MESSAGE:PASCALER1.EXE                   [new]
SYS$MESSAGE:PASCALER2.EXE                   [new]
SYS$SYSTEM:PASCAL.EXE                       [new]
```

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

Also, if you typed YES in response to the prompt that requests a file purge
(step 6), previous versions of the VAX PASCAL files are now purged.

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

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

Step 9: Verify successful installation.

The installation procedure now calls the Installation Verification Procedure
(IVP) to verify that VAX PASCAL was successfully installed.

```
*------------------------------------------*
* Installation Verfication Procedure for *
*            VAX PASCAL V3.8              *
*------------------------------------------*
```

If VAX PASCAL has been successfully installed, the IVP displays the
following message:

```
** Successful Installation of VAX PASCAL V3.8 on dd-mmm-yyyy at hh:mm **
```

Step 10: End the installation procedure.

```
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 at dd-mmm-yyyy hh:mm:ss.ss
```

When the VAX PASCAL 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 those symbols, you should log out and log in again.

Installing the PASSTR Saveset

VAX PASCAL supplies a PASSTR saveset of several files that contain VMS and Run-Time Library definitions. (The list of these files appears at the end of this section.)

Included in these files is the following information:

- External declarations for system services and VAX RMS routines
- System symbolic names, such as system status codes and type codes for job/process information requests
- Data structures, such as record type definitions for record access blocks, file access blocks, extended attribute blocks, and name blocks

If you want to install these files on your system, invoke VMSINSTAL to install the PASSTR saveset included with your kit. For example:

```
$ @SYS$UPDATE:VMSINSTAL PASSTR038 CSA1: OPTIONS N  RETURN
```

If the PASSTR saveset is not provided with the compiler release, it is recommended that you reinstall PASSTR from the most recent release with which it was included. The STARLET Library files that are built by the PASSTR facility are derived from a file of definitions shipped with the VMS kit. This file, SYS$LIBRARY:STARLETSD.TLB, may be updated in future VMS releases. After each VMS update or upgrade, reinstalling PASSTR allows you to obtain any corrections or enhancements made to SYS$LIBRARY:STARLETSD.TLB.

The following files comprise the PASSTR saveset:

```
SYS$LIBRARY:STARLET.PAS
SYS$LIBRARY:STARLET.PEN
SYS$LIBRARY:PASCAL$DTK_ROUTINES.PAS
SYS$LIBRARY:PASCAL$DTK_ROUTINES.PEN
SYS$LIBRARY:PASCAL$LIB_ROUTINES.PAS
SYS$LIBRARY:PASCAL$LIB_ROUTINES.PEN
```

```
SYS$LIBRARY:PASCAL$MTH_ROUTINES.PAS
SYS$LIBRARY:PASCAL$MTH_ROUTINES.PEN
SYS$LIBRARY:PASCAL$NCS_ROUTINES.PAS
SYS$LIBRARY:PASCAL$NCS_ROUTINES.PEN
SYS$LIBRARY:PASCAL$OTS_ROUTINES.PAS
SYS$LIBRARY:PASCAL$OTS_ROUTINES.PEN
SYS$LIBRARY:PASCAL$PPL_ROUTINES.PAS
SYS$LIBRARY:PASCAL$PPL_ROUTINES.PEN
SYS$LIBRARY:PASCAL$SMG_ROUTINES.PAS
SYS$LIBRARY:PASCAL$SMG_ROUTINES.PEN
SYS$LIBRARY:PASCAL$SOR_ROUTINES.PAS
SYS$LIBRARY:PASCAL$SOR_ROUTINES.PEN
SYS$LIBRARY:PASCAL$STR_ROUTINES.PAS
SYS$LIBRARY:PASCAL$STR_ROUTINES.PEN
```

After the Installation

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

The installation procedure modifies the DCL command table so that the
PASCAL 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 PASCAL command must log
out of the system and log in again.

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

Installing VAX PASCAL on a VAXcluster

If you want to run VAX PASCAL on multiple nodes of a VAXcluster,
first check to see that you have the appropriate software license. Then,
perform the following steps after you install VAX PASCAL:

1. Determine whether PASCAL.EXE was installed using the INSTALL
   utility (as described in Section 7, Installing VAX PASCAL as a Shared
   Image). If INSTALL was used, perform all of the following steps. If
   INSTALL was not used, omit step 6.
2. Log in to the SYSTEM account.

3. Invoke the SYSMAN utility with the following command:

```
$ MCR SYSMAN
```

4. Instruct SYSMAN to perform the commands you enter on every node in the VAXcluster, as follows:

```
SYSMAN> SET ENVIRONMENT /CLUSTER
```

5. Enter the following command to update the DCL tables:

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

6. Then, if PASCAL.EXE was installed using the INSTALL utility, enter the following command to replace the INSTALL entry for PASCAL.EXE:

```
SYSMAN> DO INSTALL REPLACE SYS$SYSTEM:PASCAL.EXE
```

Running the Installation Verification Procedure Separately

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

```
$ @SYS$SYSROOT:[SYSTEST.PASCAL]PASCAL$IVP.COM
```

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

```
The V3.8 Installation Verification Procedure failed.
%VMSINSTAL-E-IVPFAIL, The IVP for V3.8 has failed.
```

Error Conditions

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

```
%VMSINSTAL-E-INSFAIL, The installation of V3.8 has failed.
```

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

- Operating system version is incorrect.
- Quotas necessary for successful installation (see the Installation Procedure Requirements section) are insufficient.
- Process quotas required by VMSINSTAL (see the Using VMSINSTAL section) are incorrect.

- The VMS help library is currently in use.
- The product was registered incorrectly or not registered.

For descriptions of the error messages generated by these conditions, see the *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. For information on requirements, see the material provided in the Installation Procedure Requirements and Using VMSINSTAL sections.

If the installation fails, you must restart the installation procedure from step 2. If the installation fails due to an IVP failure, contact a DIGITAL field service representative.

Installing VAX PASCAL as a Shared Image

If VAX PASCAL 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, refer to your processor-specific installation/operations guide.

If VAX PASCAL programs are frequently executed, you should also specify PASRTL, the VAX PASCAL-specific, shareable Run-Time Library image, as a shared known image. When more than one user is compiling or running VAX PASCAL programs, designating both VAX PASCAL and PASRTL as shared known images reduces both the memory required and the overhead associated with invoking the compiler.

You should perform the following steps on a system that has just been bootstrapped because the available space in the global page table is less likely to be fragmented. If errors occur, consult the *VMS Message Utility Manual.*

First, determine the number of available global pages and global sections on your system. See the Installation Procedure Requirements section for information on how to do this.

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

```
$ INSTALL  RETURN
INSTALL> ADD SYS$SYSTEM:PASCAL.EXE/OPEN/SHARED/HEADER_RESIDENT  RETURN
```

You can if you wish, also install the VAX PASCAL Run-Time Library as a shared image, as follows:

```
INSTALL> DELETE SYS$SHARE:PASRTL.EXE  RETURN
INSTALL> ADD SYS$SHARE:PASRTL.EXE/OPEN/SHARED/HEADER_RESIDENT  RETURN
INSTALL> EXIT  RETURN
```

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

To ensure that VAX PASCAL 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):

```
$INSTALL
ADD SYS$SYSTEM:PASCAL.EXE/OPEN/SHARED/HEADER_RESIDENT
DELETE SYS$SHARE:PASRTL.EXE
ADD SYS$SHARE:PASRTL.EXE/OPEN/SHARED/HEADER_RESIDENT
EXIT
```

Maintenance Updates

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

Each time 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. In addition, the maintenance update usually includes new release notes. The release notes describe the changes that have been made to VAX PASCAL since the previous release.

VAX PASCAL provides release notes for each maintenance update. You should read the release notes before you install VAX PASCAL. For information on reading the release notes before VAX PASCAL is installed, follow the installation procedure through step 4. The release notes are also accessible at any time after the product is installed. To locate the release notes after VAX PASCAL is installed, display or print the file SYS$HELP:PASCAL038.RELEASE_NOTES, or type the following:

```
$ HELP PASCAL RELEASE_NOTES  RETURN
```

Determining and Reporting Problems

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

- If you purchased VAX PASCAL 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 submit a Software Performance Report (SPR), be sure to include all source files, %INCLUDE files, and data files on machine-readable media.

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

Sample Installation

This section contains a sample installation of VAX PASCAL. Note that it 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 PASCAL* letter before you install this product. This letter notes any significant changes in the installation that vary from this sample.

Sample VAX PASCAL Installation

```
$ @SYS$UPDATE : VMSINSTAL PASCALO38 DDCU: OPTIONS N RETURN

        VAX/VMS Software Product Installation Procedure V5.0

It is 12-AUG-1988 at 12:00.
Enter a question mark (?) at any time for help.

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

The following products will be processed:

  PASCAL V3.8

Beginning installation of PASCAL V3.8 at 12:05

%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 [2]: 5  RETURN
* Do you want to continue the installation? YES  RETURN

                *------------------------------------*
                * Installation Command Procedure for *
                *         VAX PASCAL V3.8             *
                *------------------------------------*

                Product :      PASCAL
                Producer :     DEC
                Version :      3.8
                Release Date : 12-AUG-88


* Does this product have an authorization key registered and loaded?
Y  RETURN
* Do you want to purge files replaced by this installation [YES]?
Y  RETURN

    This kit contains a file summarizing the new features, changes,
    restrictions, and compatibility issues in this release of VAX
    PASCAL.  This file is named PASCALO38.RELEASE_NOTES and will
    be placed in SYS$HELP:.

    This file contains information valuable to VAX PASCAL programmers.
    Please inform your user community of this file's existence.
```

The IVP (Installation Verification Procedure) will be left in
SYS$COMMON:[SYSTEST.PASCAL]PASCAL$IVP.COM. This command file
will be automatically invoked by this installation. After the
installation is complete, you can invoke the command file at
any time to reverify that VAX PASCAL is installed and working
correctly.

All questions regarding the installation have now been asked.
The installation of VAX PASCAL V3.8 will now continue for
approximately 5 to 120 minutes, depending on your configuration.

%VMSINSTAL-I-RESTORE, Restoring product saveset B...
%VMSINSTAL-I-SYSDIR, This product creates system disk directory
VMI$ROOT:[SYSTEST.PASCAL].

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

    SYS$COMMON:[SYSTEST.PASCAL]PASCAL$IVP.COM [new]
    SYS$COMMON:[SYSTEST.PASCAL]PASCAL$IVP.PAS [new]
    SYS$HELP:HELPLIB.HLB   [modified]
    SYS$HELP:PASCALO38.RELEASE_NOTES   [new]
    SYS$LIBRARY:DCLTABLES.EXE   [modified]
    SYS$LIBRARY:LIBDEF.PAS   [new]
    SYS$LIBRARY:MTHDEF.PAS   [new]
    SYS$LIBRARY:PASDEF.PAS   [new]
    SYS$LIBRARY:PASSTATUS.PAS   [new]
    SYS$LIBRARY:SIGDEF.PAS   [new]
    SYS$MESSAGE:PASCALER1.EXE   [new]
    SYS$MESSAGE:PASCALER2.EXE   [new]
    SYS$SYSTEM:PASCAL.EXE   [new]

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

            --
            * Installation Verification Procedure for *
            *   VAX PASCAL V3.8   *
            --

** Successful Installation of VAX PASCAL T3.8-nnn on 12-AUG-1988 at 12:10 **

        Installation of VAX PASCAL V3.8 completed at 12:10

        VMSINSTAL procedure done at 12:11

Sample PASSTR Installation

```
$ SET DEFAULT SYS$UPDATE  RETURN
$ @VMSINSTAL PASSTRO38 DDCU: OPTIONS N  RETURN

         VAX/VMS Software Product Installation Procedure V5.0

It is 12-AUG-1988 at 15:16.
Enter a question mark (?) at any time for help.

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

The following products will be processed:

  PASSTR V3.8

Beginning installation of PASSTR V3.8 at 15:16

%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 [2]: 5  RETURN
* Do you want to continue the installation? YES  RETURN

        *-------------------------------------------------*
        * Installation Command Procedure for  VAX PASCAL *
        *      system definition libraries.              *
        *-------------------------------------------------*

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

    This kit will construct the following files:

    SYS$LIBRARY:STARLET.PAS/PEN
    SYS$LIBRARY:PASCAL$DTK_ROUTINES.PAS/PEN
    SYS$LIBRARY:PASCAL$LIB_ROUTINES.PAS/PEN
    SYS$LIBRARY:PASCAL$MTH_ROUTINES.PAS/PEN
    SYS$LIBRARY:PASCAL$NCS_ROUTINES.PAS/PEN
    SYS$LIBRARY:PASCAL$OTS_ROUTINES.PAS/PEN
    SYS$LIBRARY:PASCAL$PPL_ROUTINES.PAS/PEN
    SYS$LIBRARY:PASCAL$SOR_ROUTINES.PAS/PEN
    SYS$LIBRARY:PASCAL$SMG_ROUTINES.PAS/PEN
    SYS$LIBRARY:PASCAL$STR_ROUTINES.PAS/PEN
```

The STARLET.PAS file contains the same set of system interfaces as previous versions. The additional files contain entry point and symbol definitions for several run-time libraries.

For compatibility with existing programs, symbols in previous versions of STARLET.PAS will remain in STARLET.PAS even though the symbols might be associated with a run-time library. For example, the SMG$K_* symbols are still in STARLET.PAS instead of PASCAL$SMG_ROUTINES.PAS, while the SMG$ entry points and the SMG message numbers are in PASCAL$SMG_ROUTINES.PAS.

This kit contains a file summarizing the new features, changes, restrictions, and compatibility issues in this release of the VAX PASCAL STARLET library. This file is named PASSTRO38.RELEASE_NOTES and will be placed in SYS$HELP:.

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

All questions regarding the installation have now been asked. The installation of the VAX PASCAL STARLET libraries will now continue for approximately 20 to 25 minutes.

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

Generating STARLET.PAS/PEN...
Generating SYS$LIBRARY:PASCAL$DTK_ROUTINES.PAS/PEN...
Generating SYS$LIBRARY:PASCAL$LIB_ROUTINES.PAS/PEN...
Generating SYS$LIBRARY:PASCAL$MTH_ROUTINES.PAS/PEN...
Generating SYS$LIBRARY:PASCAL$NCS_ROUTINES.PAS/PEN...
Generating SYS$LIBRARY:PASCAL$OTS_ROUTINES.PAS/PEN...
Generating SYS$LIBRARY:PASCAL$PPL_ROUTINES.PAS/PEN...
Generating SYS$LIBRARY:PASCAL$SOR_ROUTINES.PAS/PEN...
Generating SYS$LIBRARY:PASCAL$SMG_ROUTINES.PAS/PEN...
Generating SYS$LIBRARY:PASCAL$STR_ROUTINES.PAS/PEN...

Your VMS system will now be updated to include the following new files.

```
SYS$COMMON:[SYSTEST.PASSTR]PASSTR$IVP.COM
SYS$COMMON:[SYSTEST.PASSTR]PASSTR$IVP.PAS
SYS$HELP:PASSTR038.RELEASE_NOTES
SYS$LIBRARY:STARLET.PAS
SYS$LIBRARY:STARLET.PEN
SYS$LIBRARY:PASCAL$DTK_ROUTINES.PAS
SYS$LIBRARY:PASCAL$DTK_ROUTINES.PEN
SYS$LIBRARY:PASCAL$LIB_ROUTINES.PAS
SYS$LIBRARY:PASCAL$LIB_ROUTINES.PEN
SYS$LIBRARY:PASCAL$MTH_ROUTINES.PAS
SYS$LIBRARY:PASCAL$MTH_ROUTINES.PEN
SYS$LIBRARY:PASCAL$NCS_ROUTINES.PAS
SYS$LIBRARY:PASCAL$NCS_ROUTINES.PEN
SYS$LIBRARY:PASCAL$OTS_ROUTINES.PAS
SYS$LIBRARY:PASCAL$OTS_ROUTINES.PEN
SYS$LIBRARY:PASCAL$PPL_ROUTINES.PAS
SYS$LIBRARY:PASCAL$PPL_ROUTINES.PEN
SYS$LIBRARY:PASCAL$SOR_ROUTINES.PAS
SYS$LIBRARY:PASCAL$SOR_ROUTINES.PEN
SYS$LIBRARY:PASCAL$SMG_ROUTINES.PAS
SYS$LIBRARY:PASCAL$SMG_ROUTINES.PEN
SYS$LIBRARY:PASCAL$STR_ROUTINES.PAS
SYS$LIBRARY:PASCAL$STR_ROUTINES.PEN
SYS$LIBRARY:PASCAL$D_FLOAT.PAS
SYS$LIBRARY:PASCAL$D_FLOAT.PEN
SYS$LIBRARY:PASCAL$G_FLOAT.PAS
SYS$LIBRARY:PASCAL$G_FLOAT.PEN
```

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

```
    *-----------------------------------------*
    * Installation Verification Procedure for *
    *           VAX PASCAL STARLET Libraries   *
    *-----------------------------------------*
```

** Successful Installation of VAX PASCAL STARLET libraries **

Installation of PASSTR V3.8 completed at 15:32

VMSINSTAL procedure done at 15:36

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Thank you for your assistance.

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Clarity (easy to understand)	☐	☐	☐	☐
Organization (structure of subject matter)	☐	☐	☐	☐
Figures (useful)	☐	☐	☐	☐
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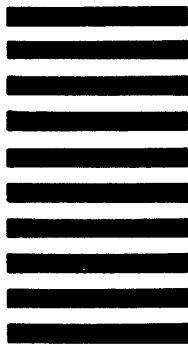
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