

VAX BASIC Installation Guide

Order Number: AA-HY12B-TE

This document contains instructions for installing VAX BASIC on the VAX/VMS and MicroVMS operating systems. It also explains how to read the online release notes before installing the product.

Operating System and Version: VAX/VMS Version 4.5 or higher;
MicroVMS Version 4.5 or higher

Software Version: VAX BASIC Version 3.2 or higher

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This book was produced with the VAX DOCUMENT electronic publishing system, a software tool developed and sold by DIGITAL. In this system, writers use an ASCII text editor to create source files containing text and English-like code; this code labels the structural elements of the document, such as chapters, paragraphs, and tables. The VAX DOCUMENT software, which runs on the VMS operating system, interprets the code to format the text, generate a table of contents and index, and paginate the entire document. Writers can print the document on the terminal or line printer, or they can use DIGITAL-supported devices, such as the LN03 laser printer and PostScript[™] printers (PrintServer 40 or LN03R ScriptPrinter), to produce a typeset-quality copy containing integrated graphics.

Contents

Preface

vii

Preparing to Install VAX BASIC	1
Prerequisite Software	1
Accessing the Online Release Notes	2
Installation Procedure Requirements	2
Using VMSINSTAL	3
Installing VAX BASIC	4
After the Installation	11
Testing VAX BASIC Graphics	11
Choosing a Default Editor	13
Disallowing Access to DCL	13
Adjusting the Working Set in the BASIC Environment	14
Customizing VAX BASIC Error Messages and Environment Prompts	14
Error Conditions	16
Installing VAX BASIC as a Shared Image	16
Determining and Reporting Problems	18
Maintenance Updates	19
A Sample Installation	19

Preface

This document describes how to install VAX BASIC on VAX/VMS and MicroVMS operating systems. It is intended for system managers. This document applies to VAX BASIC Version 3.2.

Keep this document with your distribution kit. You will need to refer to it again should you receive any maintenance updates or need to reinstall VAX BASIC for any other reason.

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

At the back of this document are **Reader's Comments Forms**. If you have any comments on this manual, please fill out a form and mail it.

For information on submitting Software Performance Reports (SPRs), see the section *Determining and Reporting Problems*.

This document does not contain release notes information; instead, release notes are provided online. You can read the release notes before you install VAX BASIC and at any time after the product is installed.

NOTE

To gain access to the release notes before VAX BASIC is installed, follow the installation procedure up to step 4, in which you may choose to display or print the release notes and discontinue the installation procedure.

For more information on installing VAX BASIC on the VAX/VMS operating system, see the VAX/VMS documentation on software installations and system management.

Refer to the VAX Systems Software Order Table (SPD 28.98.xx) for a list of supported processors, configurations, and ordering information for this and other VAX/VMS software products. Also refer to the VAX/VMS Optional Software Cross Reference Tables (SPD 25.99.xx and SPD 28.99.xx) for information on optional products and versions.

Preparing to Install VAX BASIC

Your **Bill of Materials (BOM)** specifies the contents of the kit and the number of volumes of your media. Be sure to check the contents of your kit against the list in the BOM.

Distribution media must be mounted in numerical order. The installation procedure will prompt you to mount the volumes.

For information on how to mount the distribution medium, see the VAX/VMS documentation on software installations.

Prerequisite Software

VAX BASIC Version 3.2 requires VAX/VMS Version 4.5 or higher or MicroVMS Version 4.5 or higher. If you are installing VAX BASIC on MicroVMS with the VWS software, you must first install MicroVMS/VWS Version 3.0 or higher. To use VAX BASIC graphics, you must have VAX GKS Version 2.0 or higher installed.

If you have the VAX Common Data Dictionary (CDD) installed, you must have the file CDDSHR.EXE installed as a protected image to access the dictionary from VAX BASIC. To find out if CDDSHR.EXE is installed as a protected image on your system, enter the following command lines:

```
$ INSTALL=="$INSTALL/COMMAND_MODE"  
$ INSTALL LIST SYS$SHARE:CDDSHR
```

If CDDSHR is installed, the system responds with the full file specification of the file CDDSHR.EXE. If CDDSHR is not installed, you receive the following error message:

```
%INS-E-NOKFIFND, no known file entry found
```

If you receive this error message, you must install CDDSHR as a protected image by entering the following command line:

```
$ INSTALL ADD SYS$SHARE CDDSHR/PROT
```

Note that if you are installing VAX BASIC in a clustered environment, you should install CDDSHR as a protected image on all nodes in the cluster.

Accessing the Online Release Notes

VAX BASIC provides online release notes. The prompt to display or to print the release notes appears in step 4 of the installation procedure when you invoke VMSINSTAL with the N option. After the installation, you can read the release notes by typing or printing the file SYS\$HELP: BASIC032.RELEASE_NOTES.

Installation Procedure Requirements

The VAX BASIC installation procedure takes approximately 15 minutes to 2 hours depending on your type of media and your system configuration.

Before you can install VAX BASIC, you must have the following:

- SETPRV privileges, or CMKRNL, WORLD, and SYSPRV privileges.
- A minimum of 1600 blocks of free disk space during the installation. After the installation is complete, VAX BASIC will use a minimum of approximately 1100 blocks of disk space.
- If a prior version of VAX BASIC is installed on your system and you have installed the BASIC images as shared known images, the VAX BASIC installation will require 796 available global pages and 3 available global sections. Failure to meet these minimum requirements may cause the DCL tables to become corrupted.

Also, DIGITAL recommends that you make a backup of your system disk before installing any layered products.

Refer to the VAX/VMS documentation on system management operations for information on modifying the GBLPAGES and GBLSECTIONS values and for information on how to use the VAX/VMS Authorize Utility to change the resource control fields.

Using VMSINSTAL

When you install VAX BASIC, you use VMSINSTAL, a VAX/VMS installation command procedure. Before invoking VMSINSTAL, log in to the system manager's account (SYSTEM) and set your default device and directory to SYS\$UPDATE. When you enter the command line to invoke VMSINSTAL, as described in step 2 of the installation dialogue, you provide the following parameters:

1. BASIC—The facility name of VAX BASIC.

You can also enter an asterisk (*) in place of the facility name. For example, the first parameter to VMSINSTAL for VAX BASIC Version 3.2 could be either BASIC or *.

2. The device name—Device names have the form *ddn:*, where *dd* is the device code and *n* is the unit number. CSA1: is the device name used in examples in this document.

It is not necessary to use the console drive for installing VAX BASIC. If you do use the console drive, when the installation is complete, be sure to replace any media you may have found in the drive. Note that you cannot use the console drive if you are installing VAX BASIC on a VAX 8600, or 8650.

3. OPTIONS N—Specify OPTIONS N to indicate that the release notes be displayed or printed. For example:

```
$ @SYS$UPDATE.VMSINSTAL BASIC CSA1: OPTIONS N
```

VMSINSTAL will prompt you for the product and device names if you do not supply these parameters. However, if you do not include the OPTIONS N parameter, VMSINSTAL will not display the release notes query.

When you invoke VMSINSTAL, it checks the following:

- Are you logged in to the system manager's account?

It is recommended that you install layered software from the system manager's account with your default device and directory set to SYS\$UPDATE.

- Do you have adequate quotas for installing VAX BASIC?

VAX BASIC requires the following quota values:

- BYTLM = 10240
- FILLM = 20

VMSINSTAL then checks to see if either of the following conditions exist:

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

If VMSINSTAL detects either of these conditions, it gives you the opportunity to stop the installation procedure by prompting you to continue. If you want to stop the installation, press RETURN.

Installing VAX BASIC

This section contains excerpts from the installation dialogue, along with explanatory text.

If at any time during the installation you need to abort the installation procedure, press CTRL/Y. When you press CTRL/Y, the installation procedure deletes all files it has created up to that point and exits. If you want to retry the installation procedure after pressing CTRL/Y, you must start over from step 2.

Note that enhancements to VMSINSTAL in future releases of the VAX/VMS system may result in additional prompts appearing during the course of the installation. Such prompts may not be documented in this installation guide; however, the installation should proceed as expected. Refer to the *Read Before Installing or Using VAX BASIC* letter for any notes about installing this product.

Step 1: Log in to the system manager's account.

Username: SYSTEM

Password:

Then, set your default device and directory to SYSS\$UPDATE.

```
$ SET DEFAULT SYSS$UPDATE
```

Step 2: Invoke VMSINSTAL.

```
$ @SYS$UPDATE VMSINSTAL BASIC CSA1: OPTIONS N
```

VAX/VMS Software Product Installation Procedure

It is 10-NOV-1987 at 08:35.

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 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? YES

```
%MOUNT-I-MOUNTED, BASIC mounted on _CSA1:
```

The following products will be processed:

BASIC V3.2

Beginning installation of BASIC V3.2 at 08:36

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

```
%VMSINSTAL-I-REMOVED, The products release notes have been successfully moved  
to SYS$HELP.
```

Mount volume 1 and press RETURN to continue the installation.

Step 4: Select a release notes option.

Release Notes Options:

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

* Select option [3]:

To select a release notes option, enter the number of an option or press RETURN to select the default, option 3.

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

If you select option 2, VMSINSTAL prompts you for a queue name with the following prompt:

* Queue name [SYS\$PRINT]:

```
Job BASIC032 (queue SYS$PRINT, entry 346) started on LPAO
```

Either enter a queue name or press RETURN to send the file to the default queue on your system.

After you select a release notes option, VMSINSTAL asks if you want to continue with the installation:

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

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

Step 5: Select installation options.

VAX BASIC V3.2 Installation Procedure

There are three possible installation options. They are described as follows:

1. Perform a normal installation of BASIC.
2. Install VAX/VMS system definitions text library only (10-45 minutes).
3. Obtain a copy of the BASIC message text for modification.

* Which option do you want to use [1]:

Enter the number of an option, or press RETURN to select the default, option 1.

Option 1 installs VAX BASIC and copies the release notes into the [SYSHLP] directory. Option 1 also gives you the opportunity to:

- Install online HELP
- Install the VAX/VMS system definitions text library
- Install sample graphics programs
- Purge system library files

Options 2 and 3 do not install VAX BASIC. Option 2 generates a text library of VAX BASIC source code containing the VAX/VMS systems definitions. Users can include this source code in their VAX BASIC programs to define VAX/VMS constants and procedure declarations. Choose option 2 if you want to update the VAX/VMS system definitions, but do not want to reinstall the VAX BASIC software. You should update the system definitions after installing each functional release of VAX/VMS.

Option 3 copies the VAX BASIC message file BASICMSG.MSG into the [SYSUPD] directory. You can edit BASICMSG.MSG to provide customized VAX BASIC environment prompts and error messages. Choose option 3 only after installing VAX BASIC, because the installation procedure supersedes any previous version of BASICMSG.MSG. See the section *Customizing VAX BASIC Error Messages and Environment Prompts* for information on how to edit the VAX BASIC message file.

If you choose option 2 or 3, VMSINSTAL displays messages indicating that the option has been installed. For example, if you select option 2, VMSINSTAL displays the following messages:

```
%VMSINSTAL-I-RESTORE, Restoring product saveset D...
%VMSINSTAL-I-INSSTARLET, Installing BASIC system definitions
%VMSINSTAL-I-INSSTARLET1, Requires approximately 10 to 45 minutes
%VMSINSTAL-I-MOVEFILES, Files will now be moved to their target directories...
      Installation of BASIC V3.2 completed at 8:38
```

VMSINSTAL procedure done at 8:38

Note that when you select option 2 or 3, the last message indicates that the installation of the option is complete, not that the installation of VAX BASIC is complete.

VMSINSTAL then ends the installation. You must start the installation procedure over again from step 2 if you want to select another option.

Option 1 installs the VAX BASIC software. If you select option 1, VMSINSTAL asks you the following additional questions:

* Do you want to install the BASIC HELP files [YES]?

The VAX BASIC HELP files use 510 blocks of disk space. DIGITAL recommends that you install the online HELP files as they provide an important documentation resource; however, if your system is low on disk space you can choose not to install online HELP. The VAX BASIC HELP library, [SYSHLP]BASICHELP.HLB, exists in compressed format. If you have available disk space, you may want to expand the help library. Expanding the HELP library will improve performance when the HELP files are accessed. For information on how to expand the HELP library, see the description of the /DATA qualifier in the VAX/VMS Librarian Utility documentation. If you want to install the VAX BASIC HELP files, press RETURN. Otherwise, type NO and press RETURN.

* Do you want to install the VAX/VMS system definitions [YES]?

VAX BASIC supports the inclusion of source code from text libraries. Press RETURN if you want to generate a text library of VAX BASIC source code containing the VAX/VMS system definitions. (Note that choosing this option will add approximately 10 to 45 minutes to the installation time.) The generated file will be [SYSLIB]BASIC\$STARLET.TLB. This file will require approximately 2,400 blocks of disk space. If you do not want to install the VAX/VMS system definitions, type NO and press RETURN.

* Do you want to install the sample graphics programs [YES]?

VAX BASIC includes graphics support. Press RETURN to install the sample VAX BASIC graphics programs on your system. The sample graphics programs use approximately 130 blocks of disk space. Once the sample programs are installed, you can access the programs in the directory SYS\$SYSROOT:[SYSHLP.EXAMPLES.BASIC] to help you get started using VAX BASIC graphics. Note that you must have VAX GKS Version 2.0 or higher installed on your system to use VAX BASIC graphics. If you do not want to install the sample graphics programs, type NO and press RETURN.

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

The installation procedure does not automatically purge files that are replaced during the installation. These are the files residing in SYS\$SYSTEM, SYS\$LIBRARY, and SYS\$HELP which constitute each release of VAX BASIC. To purge, press RETURN. To disable purging, type NO and press RETURN. Note that purging is recommended.

Once you have answered the preceding questions, proceed to the next step to continue installing the VAX BASIC software.

Step 6: Insert the subsequent installation kit volumes.

```
%BACKUP-I-READYREAD, mount volume 2 on _CSA1: for reading
Enter "YES" when ready: YES
```

If your installation kit contains more than one volume, VMSINSTAL prompts you to insert the next volume and waits for you to type YES after inserting it. If you type NO in response to the prompt, VMSINSTAL will display the question again. This prompt is not displayed if your installation kit contains only one volume.

Depending on the installation options you choose and the type of media you are using, you may not need to mount all the volumes supplied in your installation kit to install VAX BASIC. For certain types of media, the extra volume is necessary only if you choose the option to edit the VAX BASIC message file. In general, you should read the messages on your terminal. VMSINSTAL will continue to prompt you until you have

inserted all the necessary volumes and will tell you when the installation is complete.

Step 7: Read informational messages.

VMSINSTAL displays informational messages as each saveset is moved onto your system, and if the installation is successful, displays a message indicating that the files comprising VAX BASIC have been moved to their target directory. VMSINSTAL also displays several informational messages verifying that additional installation options have been installed.

For example, the following messages are displayed if you answered YES to all the additional installation options:

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

```
*****  
If you have VAX GKS V2.0 or later on your system, VAX BASIC V3.2 allows  
you to use graphics language statements. The procedure:
```

```
SY$UPDATE: BASIC$GRAPHICS_IVP.COM
```

```
will verify that VAX BASIC graphics capabilities work on your system.  
You must execute this procedure on a terminal with graphics capabilities.
```

```
*****
```

```
%VMSINSTAL-I-RESTORE, Restoring product saveset C...  
%VMSINSTAL-I-INSHELP, Installing BASIC Help files  
%VMSINSTAL-I-RESTORE, Restoring product saveset D...  
%VMSINSTAL-I-INSTARLET, Installing BASIC system definitions  
%VMSINSTAL-I-INSTARLT1, Requires approximately 10-45 minutes  
%VMSINSTAL-I-RESTORE, Restoring product saveset E...  
%VMSINSTAL-I-INSSAMPLE, Installing sample programs and PICTURE libraries  
%VMSINSTAL-I-RESTORE, Restoring product saveset F...  
%VMSINSTAL-I-SYSDISK, This product creates system disk directory  
VMI$ROOT: [SYSHLP.EXAMPLES.BASIC]
```

```
*****  
A number of sample programs demonstrating BASIC graphics statements  
have been copied to [SYSHLP.EXAMPLES.BASIC].
```

```
Read [SYSHLP.EXAMPLES.BASIC]BASIC_EXAMPLES.TXT for information on the  
sample programs provided.
```

```
*****
```

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

The installation procedure then invokes the Installation Verification Procedure (IVP) to verify that VAX BASIC was successfully installed. If

VAX BASIC was successfully installed, VMSINSTAL displays the following messages:

```
%VMSINSTAL-I-RUNIVP, Executing installation verification procedure
%VMSINSTAL-I-IVPSUCCESS, VAX BASIC V3.2 Installation test PASSED
      Installation of BASIC V3.2 completed at 8:50
      VMSINSTAL procedure done at 8:50
```

If you have support for VAX GKS Version 2.0, the installation provides a separate graphics IVP to test that VAX BASIC graphics support is installed properly. For information on how to invoke the graphics IVP, see the section *Testing VAX BASIC Graphics*.

The following files have potentially been created or modified by the VAX BASIC installation procedure:

- [SYSEXE]BASIC.EXE
- [SYSMSG]BASICMSG.EXE
- [SYSHLP]BASICHELP.HLB
- [SYSHLP]BASIC032.RELEASE_NOTES
- [SYSHLP.EXAMPLES.BASIC] and its contents
- [SYSLIB]BASIC\$STARLET.TLB
- [SYSLIB]DCLTABLES.EXE

Step 8: End the installation procedure.

Enter the products to be installed from the next distribution volume set.
* Products [EXIT]:

```
VMSINSTAL procedure done at 8:51
```

```
$ LOGOUT
SYSTEM      logged out at 10-NOV-1987 8:56
```

When the VAX BASIC installation procedure is complete, you can choose to install another product or end the installation procedure. To end the installation procedure, press RETURN. 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 want to restore those symbols, log out and then log back in again.

After the Installation

VAX BASIC is now installed and can be invoked with the DCL command BASIC. This section describes several things you may want to do after installing VAX BASIC. These include verifying that VAX BASIC graphics support is installed properly, choosing a default editor, disallowing user access to DCL, and customizing the VAX BASIC message file.

The VAX BASIC installation procedure has modified the DCL command table so that the BASIC command is recognized and processed. However, the old command table is still in effect for those users who are currently logged in. All users who want to use the BASIC command must log out of the system and log in again.

If VAX BASIC will be used extensively on your system, you can reduce system overhead and memory requirements by installing it as a shared image using the VAX/VMS Install Utility. Note that if a prior version of VAX BASIC has already been installed as a shared image, the VAX BASIC installation procedure will automatically install the new version as a shared image as well. For information on how to install VAX BASIC as a shared image, see the section *Installing VAX BASIC as a Shared Image*.

Testing VAX BASIC Graphics

VAX BASIC includes graphics support. Graphics support requires VAX GKS Version 2.0 or higher. Once you have installed VAX GKS Version 2.0 and VAX BASIC Version 3.2, you can test that VAX BASIC graphics have been installed properly by invoking a graphics Installation Verification Procedure (IVP). To invoke the graphics IVP, use either a graphics terminal or a workstation, and type the following command:

```
$ @SYS$UPDATE: BASIC$GRAPHICS_IVP
```

This command causes the following output to appear on your screen:

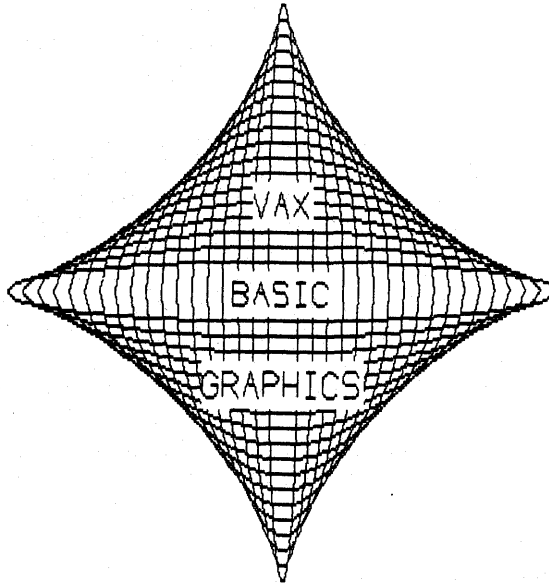
```
VAX BASIC V3.2 Graphics Verification Procedure
```

```
You must execute this procedure on a graphics terminal or workstation.  
Valid devices include:
```

```
VT125  
VT240  
VT241  
VT330  
VT340  
VSI  
VSII  
VSII/GPX
```


What type of graphics device are you using: VT240 RET

Compiling and linking VAX BASIC Graphics IVP



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The output on your device should be similar to the output shown here. If you have a color terminal, the output will appear in several different colors. If the output on your device is dissimilar to the output shown here, or if the output fails to appear altogether, check to make sure the following conditions are true:

- You entered the *full* name of the device you are using
- Your system has VAX GKS Version 2.0 installed

If neither of these conditions is the cause of the error, you should contact a DIGITAL field representative.

Choosing a Default Editor

Once you have successfully installed VAX BASIC, the default text editor is VAX EDT. However, you can choose another default text editor for system users by defining the logical name BASIC\$EDIT. Besides VAX EDT, VAX BASIC supports the VAX Language-Sensitive Editor (LSE) and the VAX Text Processing Utility (TPU).

When you establish a default editor, the name you assign to BASIC\$EDIT must be in the form *nnn*\$EDIT, where the characters *nnn* represent the acronym for the editor. For example, you can make LSE the default editor with the following command:

```
$ ASSIGN "LSE$EDIT" BASIC$EDIT
```

Note that if the logical name BASIC\$EDIT translation is other than *nnn*\$EDIT, VAX BASIC spawns a subprocess to invoke the editor assigned to BASIC\$EDIT.

Disallowing Access to DCL

By using the \$ system-command in the BASIC environment, a user can type and execute a DCL command. If this is not desirable for system security, you can deny a BASIC environment user access to DCL by setting the user's subprocess limit (PRCLM) to zero. If the user's subprocess limit is set to zero, VAX BASIC will signal an error message when that user enters the \$ system-command.

While in a captive account, a user can execute the EDIT command only if the logical name BASIC\$EDIT translates to a callable editor or if BASIC\$EDIT is undefined. If BASIC\$EDIT translates to an editor not supported by VAX BASIC, the user receives an error message while attempting to invoke an editor. The previous section provides information on selecting a default editor for VAX BASIC users.

Adjusting the Working Set in the BASIC Environment

Prior to Version 3.2, VAX BASIC automatically performed calls to the system service \$ADJWSL in order to limit the size of the working set in the BASIC environment. (The working set is the set of process pages resident in physical memory.) However, if a system did not have memory constraints, this system service call caused the system not to utilize all of its available memory, thus slowing the execution of your VAX BASIC commands.

To address this problem, the logical name BASIC\$ADJWSL has been added for Version 3.2. If BASIC\$ADJWSL exists and is assigned to any equivalence name string, VAX BASIC performs automatic working set adjustment in the VAX BASIC environment. You should only define the logical BASIC\$ADJWSL if your system has limited memory resources and many interactive BASIC environment users. You can define this logical name with the following command:

```
$ ASSIGN "TRUE" BASIC$ADJWSL
```

BASIC\$ADJWSL can be defined at the process, group, job, or system level.

By default, if you do not define the logical name BASIC\$ADJWSL, automatic working set adjustment is not performed in the VAX BASIC environment.

See the VAX/VMS documentation on performance management for more information on working sets.

Customizing VAX BASIC Error Messages and Environment Prompts

Option 3 of the installation procedure copies the VAX BASIC message file BASICMSG.MSG into the system directory [SYSUPD]. Once you choose this option, you can edit BASICMSG.MSG to customize the error messages or environment prompts (such as Ready) that users receive when using VAX BASIC. Customized prompts and messages are often desirable for international users.

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

NOTE

The MicroVMS Extended Base System Kit does not contain the Message Utility. If you are installing VAX BASIC on a MicroVMS system, you must install the MicroVMS program development option and indicate that you want to install the Message Utility before you can install an edited message file.

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

1. Run the VAX BASIC installation procedure and choose option 3.

Installation option 3 copies the message file, BASICMSG.MSG, into the system directory [SYSUPD].

2. Edit the message file.

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

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

3. Run the VAX/VMS Message Utility.

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

```
§ MESSAGE BASICMSG
```

The Message Utility creates the object module BASICMSG.OBJ.

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

```
§ LINK/SHARE BASICMSG
```

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

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

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

```
$ INSTALL REPLACE SYS$MESSAGE: BASICMSG
```

VAX BASIC will now generate your customized error messages and environment prompts.

Error Conditions

If the installation procedure or IVP fails for any reason, one or both of the following messages is displayed:

```
VAX BASIC V3.2 Installation Verification Procedure FAILED.  
The installation of VAX BASIC has failed.
```

An error during the installation can be caused by one or more of the following conditions:

- Insufficient disk space to complete the installation
- Incorrect version of VAX/VMS or MicroVMS

For a description of the error messages generated by these conditions, refer to the VAX/VMS documentation on system messages and the VAX/VMS documentation on software installations.

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, contact a DIGITAL field service representative.

Installing VAX BASIC as a Shared Image

If VAX BASIC will be used extensively on your system, you can reduce the system overhead and memory requirements by installing the VAX BASIC images.

To install the VAX BASIC images on a system that is currently running, use the Install Utility while you are logged in under the system manager's account.

It is recommended that you perform the following steps on a system that has just been bootstrapped, because it is less likely to fragment the space in the global page table. If an error occurs, refer to the VAX/VMS documentation on system management operations.

Step 1: Invoke the Install Utility.

```
$ INSTALL=="$INSTALL/COMMAND_MODE"  
$ INSTALL
```

Step 2: Determine the number of global pages available.

```
INSTALL> LIST/GLOBAL/SUMMARY
```

Type the LIST command line to determine whether there are enough available global pages to install VAX BASIC. This command line lists a summary of the number of global sections used, number of global pages used, and the number of global pages unused. Note the number of global sections used. Then, exit from the Install Utility by typing EXIT.

VAX BASIC requires approximately 796 global pages. If there are fewer than 796 unused pages, you can delete an existing known image with the Install Utility, or increase the GBLPAGES system parameter with the System Generation Utility by using the AUTOGEN.COM procedure. For more information on using the AUTOGEN procedure, refer to the VAX/VMS system management documentation.

Step 3: Determine the number of global sections available.

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

These commands determine whether there are enough global sections available to install VAX BASIC. The first number displayed is the maximum number of global sections. Compare this number to the number of global sections in use displayed by the Install Utility.

VAX BASIC requires 3 global sections. Therefore, if the amount displayed plus 3 exceeds the system maximum, you must increase the number of available global sections before you can install VAX BASIC. To increase the amount, you must increase the GBLSECTIONS parameter with the System Generation Utility by using AUTOGEN.COM. For more information on the AUTOGEN procedure, refer to the VAX/VMS documentation on system management operations.

If the amount displayed plus 3 is less than the system maximum, you can exit from the System Generation Utility and continue.

Step 4: Invoke the Install Utility and install VAX BASIC as a shared image.

```
$ INSTALL
INSTALL> ADD SYS$SYSTEM: BASIC.EXE/OPEN/SHARED
INSTALL> ADD SYS$MESSAGE: BASICMSG.EXE/OPEN/SHARED
INSTALL> EXIT
```

Step 5: Update the system startup file to install VAX BASIC.

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

```
$ INSTALL=="$INSTALL/COMMAND_MODE"
$ INSTALL
ADD SYS$SYSTEM: BASIC.EXE/OPEN/SHARED
ADD SYS$MESSAGE: BASICMSG.EXE/OPEN/SHARED
EXIT
```

Determining and Reporting Problems

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

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

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

Maintenance Updates

DIGITAL may periodically issue maintenance update releases of VAX BASIC. Each update will consist of an installation kit. You should install this kit as described in this book or in any documentation that may accompany the maintenance update.

Each time a maintenance update is released, the version number will change. For example, if the current version is 3.0, the version number of the first maintenance update will be 3.1. In addition, the maintenance update will usually include changes to the release notes. The release notes state what changes have been made to VAX BASIC since the previous release.

The updated release notes are provided online. You can read the release notes before you install VAX BASIC and at any time after the product is installed. For information on reading the release notes before VAX BASIC is installed, follow the installation procedure up to step 4. To read the release notes after the installation, display or print the file `SYS$HELP: BASIC03n.RELEASE_NOTES`. Here, *n* refers to the maintenance release number. In addition, the release notes are available as a topic under HELP in the BASIC environment.

A Sample Installation

This section includes a sample installation of VAX BASIC. Please note that this is only a sample. Sometimes the installation procedure is modified slightly in maintenance releases of this product, that is, in releases you receive between major versions. Since this installation guide is not usually updated with maintenance releases, be sure to read the *Read Before Installing or Using VAX BASIC* letter before you install this product. This letter will note any significant changes in the installation that vary from this sample.

Username: SYSTEM
Password:
\$ SET DEFAULT SYS\$UPDATE
\$ @SYS\$UPDATE:VMSINSTAL BASIC CSA1: OPTIONS N

VAX/VMS Software Product Installation Procedure

It is 24-NOV-1987 at 13:58.
Enter a question mark (?) at any time for help.

* Are you satisfied with the backup of your system disk [YES]?
Please mount the first volume of the set on CSA1:
* Are you ready? YES
%MOUNT-I-MOUNTED, BASIC mounted on _CSA1:

The following products will be processed:
BASIC V3.2

Beginning installation of BASIC V3.2 at 13:59
%VMSINSTAL-I-RESTORE, Restoring product saveset A...
Release Notes Options:

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

* Select option [3]: 2
* Queue name [SYS\$PRINT]:
Job BASIC032 (queue SYS\$PRINT, entry 346) started on LPAO

Do you want to continue the installation [N]?Y
%VMSINSTAL-I-REMOVED, The products release notes have been successfully moved
to SYS\$HELP.

VAX BASIC V3.2 Installation Procedure

There are three possible installation options. They are described
as follows:

1. Perform a normal installation of BASIC.
2. Install VAX/VMS system definitions text library only (10-45 minutes).
3. Obtain a copy of the BASIC message text for modification.

* Which option do you want to use [1]:
* Do you want to install the BASIC HELP files [YES]?
* Do you want to install the VAX/VMS system definitions [YES]?
* Do you want to install the sample graphics programs [YES]?
* Do you want to purge files replaced by this installation [YES]?

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

If you have VAX GKS V2.0 or later on your system, VAX BASIC V3.2 allows
you to use graphics language statements. The procedure:

SYS\$UPDATE: BASIC\$GRAPHICS_IVP.COM

will verify that VAX BASIC graphics capabilities work on your system.
You must execute that procedure on a terminal with graphics capabilities.

%VMSINSTAL-I-RESTORE, Restoring product saveset C...
%VMSINSTAL-I-INSHELP, Installing BASIC Help files
%VMSINSTAL-I-RESTORE, Restoring product saveset D...
%VMSINSTAL-I-INSTARLET, Installing BASIC system definitions
%VMSINSTAL-I-INSTARLT1, Requires approximately 10-45 minutes
%VMSINSTAL-I-RESTORE, Restoring product saveset E...
%VMSINSTAL-I-INSSAMPLE, Installing sample programs and PICTURE libraries
%VMSINSTAL-I-RESTORE, Restoring product saveset F...
%VMSINSTAL-I-SYSDISK, This product creates system disk directory
VMI\$ROOT: [SYSHLP.EXAMPLES.BASIC].

A number of sample programs demonstrating BASIC graphics statements
have been copied to [SYSHLP.EXAMPLES.BASIC].

Read [SYSHLP.EXAMPLES.BASIC]BASIC_EXAMPLES.TXT for information on the
sample programs provided.

%VMSINSTAL-I-MOVEFILES, Files will now be moved to their target directories...
%VMSINSTAL-I-RUNIVP, Executing installation verification procedure

%VMSINSTAL-I-IVPSUCCESS, VAX BASIC V3.2 Installation test PASSED
Installation of BASIC V3.2 completed at 14:09

VMSINSTAL procedure done at 14:09

\$

Reader's Comments

VAX BASIC Installation Guide
AA-HY12B-TE

Please use this postage-paid form to comment on this manual. If you require a written reply to a software problem and are eligible to receive one under Software Performance Report (SPR) service, submit your comments on an SPR form.

Thank you for your assistance.

I rate this manual's:	Excellent	Good	Fair	Poor
Accuracy (software works as manual says)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Completeness (enough information)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Clarity (easy to understand)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Organization (structure of subject matter)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Figures (useful)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Examples (useful)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Index (ability to find topic)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Page layout (easy to find information)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

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Page	Description
_____	_____
_____	_____
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