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Cover Letter/Installation Instructions for DECram for VMS Version 1.0

AV–PFM3A–TE

Digital is pleased to provide the DECram for VMS Version 1.0 product to our customers. DECram for VMS is a disk device that allows a VMS system manager to create pseudo disks (RAMdisks) that reside in VAX main memory for the purpose of improving I/O performance.

The DECram for VMS Version 1.0 product is distributed on TK50, magtape, and CDROM. The media also contains the *DECram for VMS User's Manual* Version 1.0 and Release Notes in PostScript and text formats. [1]

Kit Contents

The kit contains the following items:

- Cover Letter/Installation Instructions
- Software Product Description
- System Support Addendum
- DECram for VMS Version 1.0 on TK50, magtape, or CDROM
  - — DECram for VMS Version 1.0 Device Driver (MDDRIVER)
  - — DECram for VMS Release Notes
  - — *DECram for VMS User's Manual*

Documentation

During the DECram for VMS installation, the documentation will be copied to your system and placed in the SYS$HELP directory. The *DECram for VMS User's Manual* and the DECram for VMS Installation Instructions will be copied in both PostScript and text formats. The file names are:

DECRAM_DRIVER_MANUAL.PS
DECRAM_DRIVER_MANUAL.TXT
DECRAM_INSTAL_GUIDE.PS
DECRAM_INSTAL_GUIDE.TXT

Release Note

When attempting to initialize a DECram device using the INITIALIZE command, the system returns the following incorrect error message:

```
%INIT-F-INTDIV, arithmetic trap, integer divide by zero at PC=xxxxxxxx
```

The correct message that the system should return is:

```
%SYSTEM-F-NOPRIV, no privilege for attempted operation
```

This problem will be corrected in a later release of VMS.

[1] The following are trademarks of Digital Equipment Corporation: Digital, the Digital logo, VAX, VMS, DECram.

Copyright Information

The following copyright information applies only to Version 1.0 of the DECram product:

Customers are hereby authorized to make one or more printed copies of the *DECram for VMS User's Manual* in PostScript and/or text form. Any such copy shall serve as Customer's user manual for this product. This copying is hereby authorized only within Customer's Corporate Group, and this authorization applies to electronic-to-electronic, electronic-to-hardcopy, and hardcopy-to-hardcopy forms of copying. Any copy hereby authorized is for Customer's internal use and distribution only, and Customer may not sell, or otherwise use and/or distribute any such copy. This authorization for copying applies only to Version 1.0 of the DECram product.

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Preparing to Install DECram for VMS

This document describes how to install DECram for VMS. You can install DECram for VMS on VMS Version 5.2 and on subsequent versions.

Your bill of materials (BOM) and indented bills report (BIL) specify the contents of your kit. Be sure to verify the contents of your kit with this information. If your kit is damaged or if parts of it are missing, contact your Digital representative.

DECram for VMS provides online release notes. Digital recommends that you read the release notes before proceeding with the installation. For information on accessing the online release notes, see Section 3.

1 License Registration

You must register and load your license for DECram for VMS *before* you start the installation. This will allow you to to run the Installation Verification Procedure (IVP) and use the software after the installation completes.

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

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

If you plan to use DECram for VMS on more than one node in a VAXcluster, you will need to load a license, register it, and install DECram for VMS on the other nodes as well.

For complete information on using LMF, see the *VMS License Management Utility Manual*.

2 Installation Procedure Requirements

This section and those that follow discuss various requirements for installing DECram for VMS. The installation takes approximately 15 minutes, depending on your type of media and your system configuration.

2.1 Privileges and Disk Space

To install DECram for VMS, you must be logged in to an account that has SETPRV or at least the following privileges enabled:

- CMKRNL
- WORLD
- SYSPRV

Note that VMSINSTAL disables BYPASS privilege at the start of the installation.

The requirements of DECram for VMS for free disk storage space are different during installation and after installation. Table 1 summarizes the storage requirements.

Table 1: Disk Space Requirements

Kit	Blocks During Installation	Blocks After Installation
DECram for VMS Version 1.0	1,600	655

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

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

2.2 System Parameters

Installing DECram for VMS requires no changes to default system parameter settings. However, using DECram for VMS requires that you increase the number of System Page Table Entries (SPTEs) and also increase the SYSGEN parameter SPTREQ.

The number of SPTEs is determined by the size of the DECram disk to be created. All SPTEs must be available contiguously or the configuration procedure will fail.

Additional SPTEs for a DECram disk can be created by increasing the size of SYSGEN parameter SPTREQ. Use the following algorithm to determine the SPTREQ increase:

(Size of DECram disk in blocks + 127)/128 + 128 = SPTREQ increase

For example, the algorithm determines an SPTREQ increase of 207 is required for a DECram disk of 10,000 blocks:

((10,000+127)/128)+128 = 207

If the current value of SPTREQ is inadequate for a given disk, the system must be rebooted to allow for a larger value. Therefore, Digital recommends that you increase the SPTREQ value to a multiple of 128. Consequently, the increase for this example should be 256; the amount of memory wasted would be negligible.

To increase SPTREQ by 256, edit the file SYS$SYSROOT:[SYSEXE]MODPARAMS.DAT and add the following line:

```
ADD_SPTREQ 256
```

You must then run AUTOGEN.COM using the following command:

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

The SPTREQ value now includes the increase required for the DECram disk.

If more than one DECram disk is created, use the algorithm to determine the initial SPTREQ increase for each disk. Then increase each initial value to a multiple of 128. The sum of the individual SPTREQ increases is the total amount required to accommodate all the disks.

2.3 VMSINSTAL Requirements

When you invoke the VMSINSTAL command procedure, it checks the following, all of which are transparent to the user:

- The default device and directory are set to SYS$UPDATE.
- The installer is logged in to a privileged account.

- Adequate quotas for installation have been set. VMSINSTAL requires that the installation account have a minimum of the following quotas:

  ASTLM = 24
  BIOLM = 18
  BYTLM = 18,000
  DIOLM = 18
  ENQLM = 30
  FILLM = 20

  Use the VMS Authorize Utility to check the values of these quotas for the installation account.

- No other users are logged in on the system.

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

2.4 Backing Up Your System Disk

At the beginning of the installation, VMSINSTAL asks if you have backed up your system disk. Digital recommends that you perform a system disk backup before installing any software.

Use the backup procedures that are established at your site. For details on performing a system disk backup, see the processor-specific upgrade and installation supplement for your system.

Installing DECram for VMS

This section explains how to install DECram for VMS and includes information on error recovery, the Installation Verification Procedure (IVP), and how to report problems.

3 The Installation Procedure

The DECram for VMS installation procedure consists of a series of questions and informational messages. See the Sample Installation section for a sample installation.

To abort the installation procedure at any time, press CTRL/Y. When you press CTRL/Y, the installation procedure deletes all files it has created up to that point and exits. You can start the installation again at a later time.

1. Invoke VMSINSTAL.

To start the installation, invoke the VMSINSTAL command procedure from a privileged account, such as the SYSTEM account. VMSINSTAL is in the SYS$UPDATE directory.

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

The following list defines the elements of the VMSINSTAL command procedure:

saveset-name

The installation name for the component. For DECram for VMS, use the following installation name:

```
DECRAM010
```

device-name

The name of the device on which you plan to mount the installation media. For example, MTA0: is the device name for some tape drives. It is not necessary to use the console drive for this installation. However, if you do use the console drive, once the installation is complete you should return the console media to the console drive.

OPTIONS N

An optional parameter that indicates you want to see the question on release notes. If you do not include the OPTIONS N parameter, VMSINSTAL does not ask you about the release notes. You should review the release notes before proceeding with the installation. If you are restarting the installation and have already reviewed the release notes, you do not need to specify OPTIONS N.

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

- Auto_answer option (A): Initially creates a file that contains your answers to VMSINSTAL questions and prompts. You can then use the option (and the answer file) to save time during a re-installation.
- Get save set option (G): Lets you store product save sets temporarily on a magnetic tape or in a disk directory.
- File log option (L): Logs all activity to the terminal during installation.
- Alternate root option (R): Lets you install the product to a system root other than that of the running system.

If you specify more than one option, separate the options with commas and no spaces.

The following example invokes VMSINSTAL to install DECram for VMS from tape drive MTA0: and shows the system response. This example uses the OPTIONS A auto-answer and the OPTIONS N release note parameters.

```
$  @SYS$UPDATE:VMSINSTAL DECRAM010 MTA0: OPTIONS A,N

       VAX/VMS Software Product Installation Procedure V5.3


It is 15-MAY-1991 at 09:10.
Enter a question mark (?) at any time for help.
```

If you do not supply either the product name or the device name, VMSINSTAL prompts you for this information later in the installation procedure.

2. Confirm system disk backup.

VMSINSTAL asks if you are satisfied with your system disk backup. You should back up your system disk before performing an installation. If you are satisfied with the backup of your system disk, press RETURN. Otherwise, enter NO to discontinue the installation. After you back up your system disk, you can restart the installation.

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

3. Mount the media.

You should now mount the distribution volume on the device you specified when you invoked VMSINSTAL. The device name appears in the line preceding the question. VMSINSTAL then asks you if you are ready to continue with the installation.

If you respond YES to indicate that you are ready, VMSINSTAL displays a message that the media containing DECram for VMS has been mounted on the specified device and that the installation has begun.

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

```
Please mount the first volume of the set on MTA0:.
* Are you ready?  YES
%MOUNT-I-MOUNTED, DECRAM MOUNTED ON _$$MTA0:  (NODE 1)
The following products will be processed:
  DECRAM  V1.0

    Beginning installation of DECRAM V1.0 at 09:12

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

4. Select a release notes option.

If you specified OPTIONS N, VMSINSTAL asks a question on release notes. You have four options for handling the release notes:

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

Additional Release Notes Options:

 1.  Display release notes
 2.  Print release notes
 3.  Both 1 and 2
 4.  None of the above

* Select option [2]:
```

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

If you select option 2, VMSINSTAL prompts you for the name of the print queue:

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

You can press RETURN to send the file to the default output print device or you can enter another queue name.

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

Select option 4 if you have already reviewed the release notes and are restarting the installation.

Next, VMSINSTAL displays the following question:

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

To continue the installation, enter YES. Otherwise, press RETURN. In either case, the release notes are copied to a file in the SYS$HELP directory:

```
SYS$HELP:DECRAM010.RELEASE_NOTES
```

After the installation, you can enter the following command to review the release notes through the Help facility:

```
$  HELP DECRAM010 RELEASE_NOTES
```

5. Purge files.

You have the option to purge files from previous versions of DECram for VMS that are superseded by this installation. Since no previous version of DECram for VMS exists, enter NO in response to the question:

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

6. Choose the Installation Verification Procedure (IVP) option.

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

The installation procedure now asks if you want to run the IVP. The IVP for DECram for VMS checks to be sure that the installation is successful. Digital recommends that you run the IVP.

NOTE

The IVP creates a DECram disk MDA0 that remains after the IVP completes. If you do not want this disk, do not run the IVP.

After DECram for VMS is installed, you can run the IVP independently to verify that the software is available on your system. You may also need to run the IVP after a system failure to make sure that users can access DECram for VMS.

7. Observe the Installation Verification Procedure (IVP).

If you chose to run the IVP, VMSINSTAL runs it now. When the IVP runs successfully, you see the following display:

```
Successful Termination of DECram V1.0 IVP.
```

8. The installation procedure ends.

```
    Installation of DECRAM V1.0 completed at 09:27

    Enter the products to be processed from the next distribution
     volume set.
  * Products: exit

    VMSINSTAL procedure done at 09:27
```

The previous messages indicate that the installation procedure is complete.

You can now log out of the privileged account:

```
$  LOGOUT
SYSTEM     logged out at 15-MAY-1991 43:21.13
```

Note that VMSINSTAL deletes or changes entries in the process symbol tables during the installation. Log out and then log in to restore these symbols if you wish to continue using the account from which you performed the installation.

4 Error Recovery

If errors occur during the installation or when the Installation Verification Procedure (IVP) is running, VMSINSTAL displays failure messages. If the installation fails, you see the following message:

```
%VMSINSTAL-E-INSFAIL, The installation of DECRAM V1.0 has failed.
```

If the IVP fails, you will see two messages: either of the first two messages that follow, and the third message:

```
Problem encountered attempting to create a DECram disk.

Problem encountered initializing a DECram disk.

Unsuccessful termination of DECram V1.0 IVP.
```

Errors can occur during the installation if any of the following conditions exist:

- The operating system is a version prior to VMS Version 5.2.
- Installation account quotas necessary for successful installation are insufficient.
- System parameter values for successful installation are insufficient.
- The VMS help library is currently in use.
- The product license has not been registered and loaded.

For descriptions of the error messages generated by these conditions, see the VMS documentation on system messages, recovery procedures, and VMS software installation. If you are notified that any of these conditions exist, you should take the appropriate action as described in the message. For information on installation requirements, see the **Preparing to Install DECram for VMS** section.

5 DECram Installation Messages

The following messages may be generated by the DECram for VMS installation procedure.

Missing License Message

The installation procedure checks for the presence of the license to use DECram for VMS. If the license is not found, the following message is sent:

```
A license for DECRAM has not been registered
and loaded. DECRAM will not be installed.
```

No DECram for VMS Driver Installed Message

The installation procedure determines if the DECram for VMS driver is already installed in the system. If there is no driver installed in the system, the following message is sent:

```
%SYSTEM-W-NOSUCHDEV, no such device available
```

This message can be ignored; the installation will proceed normally.

DECram for VMS Driver Already Installed Message

If the installation procedure determines that the DECram for VMS driver is already installed on the system, the following message is sent:

```
A DECRAM Driver is already installed on the system.
```

Digital recommends that you reboot your system, rather than perform a SYSGEN RELOAD, to invoke DECram for VMS.

6 Running the Installation Verification Procedure Separately

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

```
$  @SYS$UPDATE:DECRAM$IVP
```

NOTE

The IVP creates a DECram disk MDA0 that remains after the IVP completes. If you do not want this disk, do not run the IVP.

7 Determining and Reporting Problems

If you encounter a problem while using DECram for VMS, report it to Digital. Depending on the nature of the problem and the type of support you have, you can take one of the following actions:

- Call Digital Services if your software contract or warranty agreement entitles you to telephone support.
- Submit a Software Performance Report (SPR).

Review the Software Product Description (SPD) and Warranty Addendum for an explanation of your warranty. If you encounter a problem during the warranty period, report the problem as indicated above or follow alternate instructions provided by Digital for reporting SPD nonconformance problems.

8 DECram Documentation

Print the *DECram for VMS User's Manual*, which is contained in the following files:

SYS$HELP:DECRAM_DRIVER_MANUAL.PS
SYS$HELP:DECRAM_DRIVER_MANUAL.TXT

Print the release notes, if you have not already done so. The release notes are contained in the following file:

SYS$HELP:DECRAM010.RELEASE_NOTES

Installed Files

The DECram for VMS installation procedure installs a number of files on your system. Section 9 lists the installed files.

9 File Names

The following list contains the names of all files changed or created on your system when DECram for VMS is installed.

- SYS$LIBRARY:DCLTABLES.EXE

  This file is changed when you install DECram Version 1.0 on VMS Versions 5.2 and 5.3.

- SYS$LOADABLE_IMAGES:MDDRIVER.EXE

  This file is the DECram for VMS device driver (MDDRIVER).

- SYS$SYSTEM:DECRAM$SIZE.EXE

  This file is applicable to VMS Versions 5.2 and 5.3 only.

- SYS$HELP:DECRAM010.RELEASE_NOTES

  This file contains the release notes for Version 1.0 of DECram for VMS.

- SYS$HELP:DECRAM_DRIVER_MANUAL.PS
  SYS$HELP:DECRAM_DRIVER_MANUAL.TXT

  These files contain the *DECram for VMS User's Manual*. This manual describes the features of the DECram for VMS driver and includes information on how to configure the device and use the device driver.

- SYS$HELP:DECRAM_INSTAL_GUIDE.PS
  SYS$HELP:DECRAM_INSTAL_GUIDE.TXT

  These files contain the instructions for installing DECram for VMS. (This is the document you are now reading.)

- SYS$TEST:DECRAM$IVP.COM

  This file is the Installation Verification Procedure (IVP).

- SYS$EXAMPLES:DECRAM$CONFIG.COM

  A command procedure that is used to automatically create and initialize a DECram disk. The *DECram for VMS User's Manual* shows an example of using this procedure.

- SYS$EXAMPLES:RAMDISK$STARTUP.COM

  A procedure used to build a read-only DECram disk.

- SYS$EXAMPLES:RAMDISK$NODE.DAT

The data file used by RAMDISK$STARTUP.COM.

- SYS$EXAMPLES:SCRATCHRAM$STARTUP.COM

  A procedure used to build a read/write DECram disk.

- SYS$EXAMPLES:SCRATCHRAM$NODE.DAT

  The data file used by SCRATCHRAM$STARTUP.COM.

Sample Installation

This section contains a sample installation of DECram for VMS. The sample installation assumes that no users are logged on to your system, and that OPTIONS N is specified to print the release notes. The Installation Verification Procedure (IVP) runs at the end of the installation.

```
$ @SYS$UPDATE:VMSINSTAL

        VAX/VMS Software Product Installation Procedure V5.3


It is 15-MAY-1991 at 08:01.

Enter a question mark (?) at any time for help.
* Are you satisfied with the backup of your system disk [YES]? y
* Where will the distribution volumes be mounted: MUA0:

Enter the products to be processed from the first distribution volume set.
* Products: decram010
* Enter installation options you wish to use (none): N
The following products will be processed:
  DECRAM V1.0

 Beginning installation of DECRAM V1.0 at 08:02

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

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

    Additional Release Notes Options:

 1.  Display release notes
 2.  Print release notes
 3.  Both 1 and 2
 4.  None of the above

* Select option [2]: 4
* Do you want to continue the installation [NO]? Y

$!  Copyright (c) 1990 Digital Equipment Corporation.  All rights reserved.

%DECRAM-I-VMSOK, Installing DECRam V1.0 on VMS Version V5.3
* Do you want to purge files replaced by this installation [YES]?
* Do you want to run the IVP after the installation [YES]?

        The installation will check for the DECram driver already
        installed in the system.  If there is no driver installed in the
        system you will receive the following message:

        "%SYSTEM-W-NOSUCHDEV, no such device available"

        This message can be ignored, the installation will proceed normally.

%SYSTEM-W-NOSUCHDEV, no such device available
%VMSINSTAL-I-RESTORE, Restoring product save set C ...
%VMSINSTAL-I-RESTORE, Restoring product save set E ...
%VMSINSTAL-I-RESTORE, Restoring product save set F ...
%VMSINSTAL-I-MOVEFILES, Files will now be moved to their target directories...
%SYSTEM-W-NOSUCHDEV, no such device available
```

```
Device              Device           Error    Volume         Free  Trans Mnt
 Name               Status           Count     Label        Blocks Count Cnt
MDA0:               Online               0

Device              Device           Error    Volume         Free  Trans Mnt
 Name               Status           Count     Label        Blocks Count Cnt
MDA0:               Online               0
%MOUNT-I-MOUNTED, MDTST        mounted on _JONAS$MDA0:
Successful Termination of DECram V1.0 IVP.
 Installation of DECRAM V1.0 completed at 08:04

Enter the products to be processed from the next distribution volume set.
* Products: exit
 VMSINSTAL procedure done at 08:04

$
```