Software Product Description

PRODUCT NAME: HP DECram for OpenVMS
SPD 34.26.12

DESCRIPTION

This Software Product Description describes the following Versions of HP DECram for OpenVMS:

- HP DECram for OpenVMS Alpha and Integrity servers Version 8.3
- HP DECram for OpenVMS Alpha Version 3.2
- HP DECram for OpenVMS Alpha and VAX Version 2.5

DECram for OpenVMS is a disk device driver that improves I/O performance by allowing an OpenVMS system manager to create pseudo disks (RAMdisks), which reside in main memory. Frequently accessed data can be accessed much faster from a DECram device than from a physical disk device. These RAMdisks can be accessed through the file system just as physical disks are accessed, requiring no change to the application or the system software.

Because main memory is allocated for a DECram device, extra memory is generally required. The OpenVMS system manager can designate the amount of memory dedicated to the DECram device(s) and the files that will be stored on it.

Beginning with OpenVMS Version 8.2, the images for HP DECram ship with the HP OpenVMS Alpha and Integrity servers distribution kits. To run the DECram software, customers must first purchase and install a separate DECram or Enterprise Operating Environment (EOE) license package.

Before upgrading to OpenVMS Alpha Version 8.2 or higher, you must manually remove earlier versions of DECram for OpenVMS. The upgrade procedure cannot remove DECram for OpenVMS automatically. If an old version of DECram for OpenVMS is installed, the upgrade procedure might abort; if the upgrade does complete, DECram for OpenVMS might cause errors or work improperly.

Note: This requirement applies to OpenVMS Alpha systems only, and only to upgrades from any version of OpenVMS prior to Version 8.2.

Beginning with DECram Alpha Version 3.2, DECram's capability was extended to use OpenVMS Galaxy shared memory to create a VMS shared memory disk. This allows users to take advantage of OpenVMS Galaxy shared memory without modifications to any of their applications.

With DECram Alpha Version 3.2 or higher, the limit on DECram disk size is 4,294,967,296 blocks on OpenVMS Alpha systems running OpenVMS Version 7.2-1H1 or higher.

However, the largest value that OpenVMS supports is 2,147,483,647 for ODS-2 and ODS-5 volumes.

With DECram Version 2.5, the maximum disk size on an OpenVMS Alpha system is limited to 67,108,864 blocks.The maximum disk size on an OpenVMS VAX system is limited to 524,280 blocks. It is possible to create logically contiguous devices greater than these limits by creating multiple DECram devices and binding them together.

Note: An actual DECram device is limited by the number of available system page table entries (SPTEs) on the system. A DECram device cannot be bigger than the available physical memory of the host.

Cluster Environment

DECram Versions 8.3, 8.2, 3.2 and 2.5 are fully campatible and there can be any combination of these versions of DECram in a VMScluster.

DECram Alpha Version 3.2 or higher will run only on OpenVMS Alpha systems and DECram for Integrity servers Version 8.2 or higher will run on both Alpha and Integrity server systems; however, the RAMdisk can be accessed by OpenVMS VAX and Alpha systems in an OpenVMS Cluster system.

DECram Versions 8.3 will run in the following configurations:

- AlphaServer systems with OpenVMS Galaxy configured with one or more instances as nodes in an OpenVMS Cluster
- Standalone OpenVMS Alpha systems
- Standalone OpenVMS Integrity server systems
- OpenVMS Cluster systems consisting of all Alphas or all Integrity server systems or a combination of Integrity server, Alpha and VAX systems.

DECram Version 3.2 will run in the following configurations:

- AlphaServer systems with OpenVMS Galaxy configured with one or more instances as nodes in an OpenVMS Cluster.
- Standalone OpenVMS Alpha systems.
- OpenVMS Cluster systems consisting of all Alphas or a combination of Alpha and VAX systems.

DECram Version 3.2 can be installed over a previously installed copy of DECram Version 2.5, on Alpha systems only. If DECram Version 3.2 is removed for any reason, DECram Version 2.5 is automatically removed as well. If you want to continue to run DECram Version 2.5, it must be reinstalled.

If this is an initial installation of DECram Version 3.2, using OpenVMS Version 7.2-2 or higher on an Alpha-based system in a clustered environment, and all nodes that will be using DECram have a common system disk, then only one installation of the DECram software on the cluster is required. However, for each node in the cluster that will be using the DECram product, a license key must be installed. If you are installing DECram in a cluster, be sure there is only one installation active at any given time.

If this is an initial installation of DECram Version 3.2 using OpenVMS Version 7.2-2 or higher in a clustered environment and there is no common system disk, the DECram Version 3.2 software must be installed on each node of the cluster where you want to create a DECram disk.

If this is an upgrade of a clustered environment from DECram Version 2.5 to DECram Version 3.2, the DECram Version 3.2 software must be installed on *all* nodes in the cluster where you want to create a DECram disk.

Installation of DECram versions prior to DECram Version 3.2 on a clustered system requires installation of the DECram software and a license key for all nodes that are members of the cluster.

DECram Versions 8.3 is fully supported when installed on any valid and licensed stadalone or clustered Alpha or Integrity server system.

DECram Version 3.2 is fully supported when installed on any valid and licensed standalone or clustered Alpha system.

DECram Version 2.5 is fully supported when installed on any valid and licensed standalone Alpha or VAX system, or any clustered VAX system.

A minimum of DECram Version 2.3 is required for any OpenVMS Cluster systems running any version of OpenVMS Alpha.

DECram for OpenVMS Version 3.2 supports operation in an Adaptive Partitioned Multi-Processing (APMP) environment, also known as HP Galaxy Software Architecture on OpenVMS. Previous versions of DECram must not be used if RAM disks are being served, or served and shadowed, across nodes within a cluster, or if DECram is being used in an Adaptive Partitioned Multi-Processing instance.

Multiple DECram devices can be members of a Volume Shadowing for OpenVMS shadow set. The MDA devices are compatible across the cluster, but the actual data is hosted by a single node and that is served across the cluster via the mass storage control protocol (MSCP) server.

With DECram Version 3.2 or higher, Volume Shadowing for OpenVMS will support shadow sets composed of DECram devices and other disk class devices. Removal of the last non DECram device will cause the shadow set virtual unit to abort and become unavailable. Please refer to the Volume Shadowing for OpenVMS Software Product Description (SPD 27.29.xx) for more information.

With DECram Version 3.2 or higher, you can use the new DECram command interface or continue using the same familiar commands from SYSMAN for creating, initializing, and mounting DECram disks.

With DECram Version 3.2 or higher, the disk is configured using the DECRAM> user interface to create and format the Random Access Memory (RAM) disk. The

INITIALIZE command is then used to write the OpenVMS cluster file system to the RAM disk.

With DECram Version 2.5, the user interface to a DECram device is the same as other disk class devices.

Management Interface

A DECram device is managed by the same tools as any other OpenVMS disk device. For example, the INITIALIZE, MOUNT, and DIRECTORY commands will work the same on both hard disk and DECram devices. However, the standard utilities are used differently to set up a DECram device.

System Analysis

Before creating a DECram device, the OpenVMS system manager must determine its size. Each disk block allocated to a DECram device will mean one less disk block of available memory. The system manager should also assess the need for multiple DECram units. See Restrictions listed below.

System Generation

When adding a DECram device, the OpenVMS system manager must reassess the values for the SYSGEN parameters that control paging and swapping behavior.

Restrictions

DECram for OpenVMS currently has the following restrictions:

- Data in a DECram device is volatile unless shadowed with a physical disk.
- DECram Version 3.2 or higher cannot be installed on a VAX system.
- With DECram Version 3.2, the maximum size of a single DECram device on OpenVMS Alpha systems running OpenVMS V7.2-2 or higher is 2048 Gigabytes (GB).
- In DECram Version 2.5, a single DECram device size on OpenVMS Alpha systems running OpenVMS Version 7.2-2 or higher is limited to 32 GB.
- In DECram Version 2.5, a single DECram device size on OpenVMS VAX systems running OpenVMS Version 6.2 or higher is limited to 256 Megabytes (MB).
- DECram V3.2-3HP is the minimum version for OpenVMS V7.3-1 or higher.

Note: For disk volumes larger than 256 MB on VAX or 2048 GB on Alpha, multiple DECram disk devices can be created and bound into a volume set.

DECram for OpenVMS is not designed to support long-term data storage. If a system or hardware failure occurs, data stored in the DECram device is lost and must be recreated. This restriction does not apply if the device is shadowed to a real physical device, using a supported version of OpenVMS Volume Shadowing.

HARDWARE REQUIREMENTS

There are no special hardware requirements to install DECram for OpenVMS.

Processor and hardware configurations must conform to specifications in the *HP OpenVMS Operating System for Alpha Version 7.3-1 and 7.3-2, and VAX Version 7.3 Software Product Description* (SPD 25.01.xx) or the *HP OpenVMS for Alpha and Integrity Servers Version 8.3 Software Product Description* (SPD 82.35.xx), or the appropriate operating system documentation set.

SOFTWARE REQUIREMENTS

DECram for OpenVMS Version 8.3 supports OpenVMS Alpha and OpenVMS for Integrity servers Version 8.3.

DECram for OpenVMS Version 3.2 supports OpenVMS Alpha Version 7.2-2 or higher.

DECram for OpenVMS Version 2.5 supports OpenVMS Alpha Versions 7.2-2, and 7.3. A minimum of DECram Version 2.3 or higher is required for any OpenVMS Cluster systems running any version of OpenVMS Alpha or VAX.

DECram for OpenVMS Version 2.5 supports OpenVMS VAX Version 6.2 or higher.

ORDERING INFORMATION

OpenVMS for Integrity servers

Software License: BA407AC

For HP OpenVMS for Integrity server customers, a software license for HP DECram may be purchased either as a separate per-processor core license (PCL): BA407AC or as part of the OpenVMS Enterprise Operating Environment (EOE) license bundle. Please refer to the *HP Operating Environments for OpenVMS for Integrity servers* Software Product Description (SPD 82.34.xx) for ordering information.

Software Media:
Foundation Operating Environment Media, BA322AA
or
Enterprise Operating Environment Media, BA323AA
or
Mission Critical Operating Environment Media, BA324AA

OpenVMS for Alpha

Software Licenses: QL-MV3A*-**
Software Media: QA-03XAA-H8

DECram for OpenVMS Version 3.2 (for Alpha) is distributed on the OpenVMS Alpha Software Product Library Distribution CD-ROMs (order number QA-03XAA-H8).

DECram for OpenVMS Version 2.5 (for Alpha) is distributed on the OpenVMS Alpha Software Product Library Distribution CD-ROMs (order number QA-03XAA-H8).

OpenVMS for VAX

Software Licenses: QL-GJ9A*-**
Software Media: QA-YL48A-H8

DECram for OpenVMS Version 2.5 (for VAX) is distributed on the OpenVMS VAX Software Product Library Distribution CD-ROMs (order number QA-YL48A-H8).

DECram is no longer available on TK50 and magtape media.

* Denotes variant fields. For additional information on available licenses, services, and media, refer to the appropriate price book.

DECram for OpenVMS documentation is available in text, PostScript®, HTML, and PDF formats.

SOFTWARE PRODUCT SERVICES

A variety of service options are available from HP. For more information, contact your local HP account representative or distributor. Information is also available from:

http://www.hp.com/hps/software.

License Management Facility Support

This layered product supports the OpenVMS License Management Facility (LMF).

License units for this product are allocated on a CPU-capacity basis.

For more information about the License Management Facility, refer to the *HP OpenVMS Operating System for Alpha Version 7.3-1 and 7.3-2, and VAX Version 7.3 Software Product Description* (SPD 25.01.xx) or the *HP OpenVMS for Alpha and Integrity Servers Version 8.3 Software Product Description* (SPD 82.35.xx) or documentation set.

SOFTWARE WARRANTY

This software product is provided by HP with a 90-day conformance warranty in accordance with the HP warranty terms applicable to the license purchase.

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