COMPAQ

Software Product Description

PRODUCT NAME: DECset Release 12.2A for OpenVMS VAX Systems **SPD 27.07.21**

DESCRIPTION

DECset for OpenVMS VAX Systems is an integrated programming tool set that supports software developers' coding, debugging, testing, and maintenance activities.

DECset for OpenVMS VAX Systems contains the following components:

- DIGITAL Language-Sensitive Editor/Source Code Analyzer (LSE/SCA), Version 4.5, for OpenVMS VAX Systems
- DIGITAL Test Manager, Version 3.8, for OpenVMS VAX Systems
- DIGITAL Performance and Coverage Analyzer (PCA), Version 4.5, for OpenVMS VAX Systems
- DIGITAL Code Management System (CMS), Version 3.9, for OpenVMS VAX Systems
- DIGITAL Module Management System (MMS), Version 3.2, for OpenVMS VAX Systems

The components of the DECset tool set can be used in either a workstation or character-cell terminal environment. All components include both DECwindows Motif® for OpenVMS VAX and command-line interfaces.

In addition to these six tools, DECset also provides an Environment Manager (ENVMGR), which provides a single mechanism for tailoring the execution environment for a set of DECset tools. DECset also provides the program design facility, a set of features in LSE, SCA, and the compilers that aid in the detailed program design phase of software development.

DECset for OpenVMS VAX Systems Components

DIGITAL Language-Sensitive Editor/Source Code Analyzer for OpenVMS VAX Systems:

Language-Sensitive Editor

The Language-Sensitive Editor (LSE) is a multilanguage programmer's editor. Language-specific templates and online language help assist both new and experienced programmers in developing programs faster. With LSE, users can efficiently edit, compile, review diagnostic information from compilations, and correct compile time errors without exiting the editor. LSE also enables users to customize and extend their editing environment.

Programmers can perform low-level program designs with LSE by embedding pseudocode in source code. Users can also view source code at various levels of detail by replacing a sequence of source lines with a single overview line.

LSE provides an interface via callable routines, as well as through the LSE command-line interface and the DECwindows Motif for OpenVMS VAX interface.

The following VAX compilers fully support LSE; the language templates are included with LSE:

DEC Ada
DEC BASIC
DEC C
DEC C++
VAX COBOL
DIGITAL Fortran
DEC PASCAL
VAX BLISS-32
VAX C
VAX MACRO

VAX PL/1

The following VAX products partially support LSE (refer to product SPDs for more details); the templates are included with the product:

DIGITAL ACMS (SPD 25.50.xx)
DEC DATATRIEVE (SPD 24.44.xx)

Note: Certain LSE features are not available when using language preprocessors, such as those supplied for Oracle Rdb.

LSE works in concert with CMS, SCA, and the VAX Debugger to provide a highly interactive, online environment that facilitates the NAVIGATE-EDIT-COMPILE-DEBUG portion of the program development cycle. DECset users can directly reserve and replace files from CMS while in LSE, go to the exact source code location in LSE from the SCA, and go to the exact source code location in LSE from the VAX Debugger.

Source Code Analyzer

The Source Code Analyzer (SCA) aids programmers in understanding the complexities of software systems. Since it allows users to analyze an entire system, as opposed to individual modules, and helps users understand unfamiliar systems, SCA is extremely useful during both the implementation and maintenance phases of a project.

SCA provides navigation capabilities to assist users in locating and viewing components of their source code. SCA accomplishes this by storing compiler-generated information about a set of source files in an SCA library. SCA then allows users to perform queries about their source code in the following ways:

- Using a name browser to locate all items that match a search string.
- Specifying a cross-reference query to find how and where program symbols are used.
- Specifying a call graph query to graphically display call relationships between routines.
- Specifying a data structure query to graphically display the structure of data types in the source code or to find symbols of a given type.

After users have a query result, they can use the go-to-source feature to navigate to locations of interest in their source code.

SCA also provides static analysis capabilities to assist users in checking consistent use of program symbols.

SCA provides an interface via callable routines, as well as through the SCA command-line interface and the DECwindows Motif for OpenVMS VAX interface. The following VAX compilers generate information to populate an SCA library:

DEC Ada
DEC BASIC
DEC C
VAX C
VAX COBOL
DIGITAL Fortran
DEC PASCAL
VAX BLISS-32
VAX MACRO
VAX PL/1

Note: SCA is not available when using language preprocessors, such as those supplied for Oracle Rdb.

The following VAX compilers also generate pseudocode and specialized comment processing information so SCA can produce design reports, cross-reference and analysis information:

DEC Ada
DEC BASIC
VAX C
VAX COBOL
DIGITAL Fortran
DEC PASCAL
VAX BLISS-32
VAX PL/1

DIGITAL Language-Sensitive Editor/Source Code Analyzer for OpenVMS VAX Systems is a component of the DECset for OpenVMS VAX Systems product and is also available separately. Please refer to the *ORDERING INFORMATION* section of this SPD.

DIGITAL Test Manager for OpenVMS VAX Systems

The DIGITAL Test Manager for OpenVMS VAX Systems is a regression testing tool that automates the creation and maintenance of regression tests. It also automatically compares test run results with expected test results. The DIGITAL Test Manager provides users with flexibility in organizing tests, selecting tests for execution, and verifying and reviewing test results. With the DIGITAL Test Manager users can:

- Test batch and command-line applications.
- Test interactive applications that input and output text to character-cell terminals (DEC and ANSI CRT) with single display plane.
- Create and record tests.
- Group tests into meaningful combinations.
- Execute specific tests, groups of tests, or combinations of groups of tests.

- Compare the results of the executed tests with benchmark test results to determine differences.
- View test results interactively.
- Update benchmarks as needed.
- Filter test results to ignore output that is expected to change for each test execution.

The DIGITAL Test Manager enables users to store software test descriptions and related files in CMS libraries for storage efficiency.

The DIGITAL Test Manager provides an interface through callable routines, as well as through the DIGITAL Test Manager command-line interface and the DECwindows Motif for OpenVMS VAX interface.

The DIGITAL Test Manager for OpenVMS VAX Systems is a component of the DECset for OpenVMS VAX Systems product and is also available separately. Please refer to the *ORDERING INFORMATION* section of this SPD.

DIGITAL Performance and Coverage Analyzer for OpenVMS VAX Systems

The DIGITAL Performance and Coverage Analyzer (PCA) for OpenVMS VAX Systems helps users pinpoint execution bottlenecks in application programs. PCA can also identify which parts of an application are not executed by a given set of test data. PCA has two components: the Collector, which gathers performance or test coverage data on the running user program; and the Analyzer, which later processes and displays the collected data. The Analyzer graphically presents information in four types of charts: histograms, tables, annotated source listings, and call trees.

PCA does not analyze operating system performance or aid in hardware resource planning.

PCA can gather and report on the following types of performance data:

- Call stacks
- CPU sampling data
- Event markers
- PC sampling data
- Page fault data
- System services data
- Input/Output data
- Exact execution counts
- Test coverage data
- Ada tasking data

Additional PCA features include the following:

- Traversing commands to sift through performance data
- Screen mode to display different types of data in separate windows
- Multiple data kinds allowing the display of different categories of performance data in the same histogram or table
- Acceptable noncoverage indicating portions of code that are acceptably noncovered to the Analyzer
- Filtering to analyze only a subset of data

With PCA, users can analyze applications written in any of the following OpenVMS languages:

DEC Ada

DEC BASIC

DEC C

DEC C++

VAX COBOL

DIGITAL Fortran

DEC PASCAL

VAX BLISS-32

VAX PL/1

PCA works in concert with LSE and the DIGITAL Test Manager. From the character-cell version of PCA, users can communicate with LSE and can examine source code. When used with the DIGITAL Test Manager, PCA can evaluate the code coverage of a user's test system.

PCA provides a command-line interface and the DECwindows Motif for OpenVMS VAX interface.

DIGITAL Performance and Coverage Analyzer for OpenVMS VAX Systems is a component of the DECset for OpenVMS VAX Systems product and is also available separately. Please refer to the *ORDERING INFORMATION* section of this SPD.

DIGITAL Code Management System for OpenVMS VAX Systems

The DIGITAL Code Management System (CMS) for OpenVMS VAX Systems provides an efficient method for storing project files and tracking all changes to those files. Code management is especially important to projects that have long life spans or several versions of the software.

CMS stores any kind of RMS file, including documents; plans; specifications; status reports; source code files; object files; executable images; sixel files; or other records, and keeps these files in project libraries. CMS also stores history information. As a project evolves, CMS tracks changes to the library by storing only the changes made to a file. Not only does this reduce the amount of disk space used for storing multiple versions of files, but it also allows CMS to reconstruct any previous version of a file and to identify the changes made between any two versions. In addition to storing successive changes, CMS maintains a record of who is currently working on a library element and a historical record of library access.

With CMS, users can:

- Support multiple project libraries.
- Retrieve previous generations (versions).
- Delete, purge, or collapse generations.
- Obtain a report of file modifications, including when, why, and by whom the modification was made.
- Determine the origin of each line of a file, either as an annotated listing or as comments in the file.
- Manage concurrent modifications.
- Merge separately developed modifications.
- Combine related files together as a class (group).
- Relate the generation of one element to the corresponding generations of other elements for purposes of freezing baselines or releases and for organizing ongoing development.
- Interface via callable routines, as well as through the CMS command-line interface and the DECwindows Motif for OpenVMS VAX interface.
- Through the use of CMS access control lists, fine tune security mechanisms applied to CMS libraries, and provide a means of notification about library events.

CMS can act as a project's central repository, by storing and tracking source-code files, object code, documentation, and a variety of files generated by other tools. CMS can store files for MMS and the DIGITAL Test Manager. LSE and DIGITAL Test Manager users can access CMS elements directly from within LSE and DIGITAL Test Manager.

The DIGITAL Code Management System provides an interface through callable routines, as well as through the command-line interface and the DECwindows Motif for OpenVMS VAX interface.

DIGITAL Code Management System for OpenVMS VAX Systems is a component of the DECset for OpenVMS VAX Systems product and is also available separately. Please refer to the *ORDERING INFORMATION* section of this SPD.

DIGITAL Module Management System for OpenVMS VAX Systems:

DIGITAL Module Management System (MMS) for OpenVMS VAX Systems automates and simplifies the building of software applications, whether they are simple programs of only one or two files or complex programs consisting of many source files, message files, and documentation. MMS can optimize the build process by rebuilding only those components (and their dependencies) in a system that have changed since the system was last built. In this way, MMS eliminates the steps of recompiling and linking modules that have not changed. MMS can automatically generate description files. Once users create a description file containing the rules describing the relationships among the components of their application and the MMS commands to build the application, MMS can build both small or large systems with a single command.

MMS provides a command-line interface and the DECwindows Motif for OpenVMS VAX interface.

DIGITAL Module Management System for OpenVMS VAX Systems is a component of the DECset for OpenVMS VAX Systems product and is also available separately. Please refer to the *ORDERING INFORMATION* section of this SPD.

HARDWARE REQUIREMENTS

Processors Supported:

VAXft: VAXft 3000 Processors

VAX:
VAX 4000 Model 50
VAX 4000 Model 100, 100A, 105A
VAX 4000 Model 200
VAX 4000 Model 300
VAX 4000 Model 500, 500A, 505A
VAX 4000 Model 600, 600A
VAX 4000 Model 700A, 705A

VAX 6000 Model 210, 220, 230, 240
VAX 6000 Model 310, 320, 330, 340, 360
VAX 6000 Model 410, 420, 430, 440, 450, 460
VAX 6000 Model 510, 520, 530, 540, 550, 560
VAX 6000 Model 610, 620, 630, 640, 650, 660

VAX 7000 Model 610, 620, 630, 640, 650, 660
VAX 7000 Model 710, 720, 730, 740, 750, 760
VAX 7000 Model 810, 820, 830, 840, 850, 860

VAX 8200, VAX 8250
VAX 8300, VAX 8350
VAX 8530, VAX 8550
VAX 8600, VAX 8650
VAX 8700
VAX 8800, VAX 8810, VAX 8820
VAX 8830, VAX 8840
VAX 8842, VAX 8974, VAX 8978

VAX 9000 Model 110, 110VP
VAX 9000 Model 210, 210VP
VAX 9000 Model 310, 310VP
VAX 9000 Model 320, 320VP
VAX 9000 Model 330, 330VP
VAX 9000 Model 340, 340VP
VAX 9000 Model 410, 410VP
VAX 9000 Model 420, 420VP
VAX 9000 Model 430, 430VP
VAX 9000 Model 440, 440VP

VAX 10000 Model 610, 620, 630, 640, 650, 660

MicroVAX: MicroVAX II
MicroVAX 2000

MicroVAX 3100 Model 10/10E, 20/20E, 30, 40,
MicroVAX 3100 Model 80, 85, 88, 90, 95, 96, 98
MicroVAX 3200, MicroVAX 3300
MicroVAX 3400, MicroVAX 3500
MicroVAX 3600, MicroVAX 3800
MicroVAX 3900

VAXstation: VAXstation II/GPX, VAXstation II/QVSS
VAXstation 2000
VAXstation 2000/GPX
VAXstation 2000/MFB

VAXstation 3100 Model 30, 38, 40, 48, 76
VAXstation 3100/GPX Model 38, 48, 76
VAXstation 3100/SPX Model 38, 48, 76
VAXstation 3200
VAXstation 3500, VAXstation 3520
VAXstation 3540

VAXstation 4000 Model 60, 90, 95, 96, VLC

VAXserver: VAXserver 3100 Model 10, 10E, 20, 20E
VAXserver 3200, 3300, 3400
VAXserver 3500, 3600, 3800, 3900

VAXserver 4000 Model 200, 300, 400, 500, 600

VAXserver 6000 Model 210, 220
VAXserver 6000 Model 310, 320
VAXserver 6000 Model 410, 420
VAXserver 6000 Model 510, 520

VAXserver: VAXserver 8200, 8250
VAXserver 8300, 8350
VAXserver 8530, 8550
VAXserver 8600, 8650
VAXserver 8700
VAXserver 8800, 8810, 8820, 8830, 8840

Processors Not Supported:

MicroVAX I
VAXstation I
VAXstation 8000
VAX–11/725, VAX–11/730
VAX–11/750, VAX–11/751
VAX–11/780, VAX–11/782, VAX–11/785

Processor Restrictions:

A TK50 Tape Drive is required for standalone MicroVAX 2000 and VAXstation 2000 systems.

Terminals

Character-cell interfaces for DECset are supported on the following terminals:

- VT1xx
- VT2xx
- VT3xx
- VT4xx
- VT5xx
- ANSI CRT

Disk Space Requirements (Block Cluster Size = 1):

Each component of DECset for OpenVMS VAX Systems can be installed separately. Each component requires the following disk space for a successful installation:

COMPONENT	Space required to install	Space required for use (permanent)
LSE:	40,000 blocks (20.5M bytes)	23,000 blocks (12.0M bytes)
SCA:	13,000 blocks (6.7M bytes)	10,000 blocks (5.1M bytes)
DIGITAL Test Manager:	15,000 blocks (7.7M bytes)	5,500 blocks (2.6M bytes)
PCA:	12,000 blocks (6.1M bytes)	9,000 blocks (4.6M bytes)
MMS:	4,000 blocks (2.0M bytes)	1,500 blocks (1.0M bytes)
CMS:	10,000 blocks (5.1M bytes)	4,000 blocks (2.0M bytes)

COMPONENT	Space required to install	Space required for use (permanent)
ENVMGR:	2,500 blocks (1.3M bytes)	1,000 blocks (0.5M bytes)

Requirements for installation of all DECset for OpenVMS VAX Systems components, including Language-Sensitive Editor support for all languages, requires the following disk space:

COMPONENT	Space required to install	Space required for use (permanent)
ALL COMPONENTS:	87,800 blocks (45.3M bytes)	48,600 blocks (24.9M bytes)

These counts refer to the maximum disk space required on the system disk. The sizes are approximate; actual sizes may vary depending on the user's system environment, configuration, and software options.

The minimum supported memory for this application running in a standalone DECwindows Motif® for OpenVMS VAX environment, with both the client and server executing on that same system, is 32 MB.

The performance and memory usage of DECwindows Motif for OpenVMS VAX applications are particularly sensitive to system configuration. Less memory may be required on the DECwindows Motif for OpenVMS VAX client system (the system where the software is installed and executed) if the server (the component that displays the application) resides on another system. More memory may be required on a system with several applications running or where it may be desirable to improve the performance of an application.

CLUSTER ENVIRONMENT

This layered product is fully supported when installed on any valid and licensed VMScluster* configuration without restrictions. The HARDWARE REQUIREMENTS sections of this product's Software Product Description detail any special hardware required by this product.

* VAXcluster configurations are fully described in the VAXcluster Software Product Description (SPD 29.78.xx) and include CI, Ethernet, and Mixed Interconnect configurations.

SOFTWARE REQUIREMENTS

For Systems Using Terminals (Without DECwindows Motif for OpenVMS VAX Interface):

- OpenVMS VAX Operating System, Version 5.5-2—Version 7.1

For Systems Running DECwindows Motif for OpenVMS VAX:

- OpenVMS VAX Operating System, Version 5.5-2—Version 7.1
- DECwindows Motif for OpenVMS VAX, Version 1.2

OPTIONAL SOFTWARE

Certain versions of these products depend upon a specific version of the operating system. Please refer to the SPD of the product in question to determine which version is necessary.

- DEC Ada Version 3.4 (SPD 26.60.xx)
- DEC BASIC Version 3.8 (SPD 25.36.xx)
- DEC C Version 5.6 (SPD 25.38.xx)
- DEC C++ Version 5.6 (SPD 37.39.xx)
- VAX COBOL Version 5.4 (SPD 25.04.xx)
- DIGITAL Fortran Version 6.5 (25.16.xx)
- DEC PASCAL Version 5.6 (SPD 25.11.xx)
- VAX PL/1 Version 3.5 (SPD 25.30.xx)

GROWTH CONSIDERATIONS

The minimum hardware/software requirements for any future version of this product may be different from the requirements for the current version.

Year 2000 Ready

This product is Year 2000 Ready.

"Year 2000 Ready" products are defined by Compaq as products capable of accurately processing, providing, and/or receiving date data from, into and between the twentieth and the twenty-first centuries, and the years 1999 and 2000, including leap year calculations, when used in accordance with the associated product documentation and provided that all hardware, firmware and software used in combination with such products properly exchange accurate date data with the products.

For additional information visit the DIGITAL Brand area on Compaq's Year 2000 Ready web site located at http://www.compaq.com/year2000/warranties3.html.

DISTRIBUTION MEDIA

9-track 1600 BPI Magtape, TK50 Streaming Tape

The software binaries and documentation are also available on various CD–ROM distributions:

- *OpenVMS VAX Software Layered Products Library*— This offering includes the OpenVMS VAX Layered Product software binaries. (QA–5FW8A–A8)
- *OpenVMS VAX Online Documentation Library*—This offering includes the documentation for the OpenVMS VAX Layered Products. (QA–VYR8A–G8)
- *OpenVMS VAX Software Layered Products Library Package*— This offering contains both the software binaries and documentation for the OpenVMS VAX Layered Products. (QA–5G88A–H8)

ORDERING INFORMATION

To order the DECset for OpenVMS VAX Systems product (includes all components):

Software Licenses:
Personal Use: QL–965AA–2B
Concurrent Use: QP–965AA–3B
Unlimited System Use: QL–965A*–**
Software Media/Documentation: QA–965AB–H*
Software Documentation (Hard Copy): QA–965AA–GZ
Software Product Services: QT–965A*–**

To Order Components Separately:

DIGITAL Language-Sensitive Editor/Source Code Analyzer for OpenVMS VAX Systems:

Software Licenses:
Personal Use: QL–057AA–2B
Concurrent Use: QL–057AA–3B
Unlimited System Use: QL–057**–**
Software Media/Documentation: QA–965AB–H*
Software Documentation (Hard Copy): QA–965AA–GZ
Software Product Services: QT–057A*–**

DIGITAL Test Manager for OpenVMS VAX Systems:

Software Licenses:
Personal Use: QL–927AA–2B
Concurrent Use: QL–927AA–3B
Unlimited System Use: QL–927**–**
Software Media/Documentation: QA–965AB–H*
Software Documentation (Hard Copy): QA–965AA–GZ
Software Product Services: QT–927A*–**

DIGITAL Performance and Coverage Analyzer for OpenVMS VAX Systems:

Software Licenses:
Personal Use: QL–119AA–2B
Concurrent Use: QL–119AA–3B
Unlimited System Use: QL–119**–**
Software Media/Documentation: QA–965AB–H*
Software Documentation (Hard Copy): QA–965AA–GZ
Software Product Services: QT–119A*–**

DIGITAL Code Management System for OpenVMS VAX Systems:

Software Licenses:
Personal Use: QL–007AA–2B
Concurrent Use: QL–007AA–3B
Unlimited System Use: QL–007**–**
Software Media/Documentation: QA–965AB–H*
Software Documentation (Hard Copy): QA–965AA–GZ
Software Product Services: QT–007A*–**

DIGITAL Module Management System for OpenVMS VAX Systems:

Software Licenses:
Personal Use: QL–VADAA–2B
Concurrent Use: QL–VADAA–3B
Unlimited System Use: QL–VAD**–**
Software Media/Documentation: QA–965AB–H*
Software Documentation (Hard Copy): QA–965AA–GZ
Software Product Services: QT–VADA*–**

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

SOFTWARE LICENSING

This software is only furnished under a license. For more information about Compaq's licensing terms and policies, contact your local Compaq office.

License Management Facility Support:

These layered products support the OpenVMS License Management Facility.

License units for the DECset for OpenVMS VAX Systems product AND for the component products are allocated on an Unlimited System Use and Personal and Concurrent Use basis.

Each Personal Use license allows one identified individual to use the layered product. Each Concurrent Use license allows any one individual at a time to use the layered product. These licenses are shared on VAX and Alpha Systems.

For more information on the OpenVMS License Management Facility, refer to the OpenVMS Operating System Software Product Description (SPD 25.01.xx) or documentation.

SOFTWARE PRODUCT SERVICES

A variety of service options are available from Compaq. For more information, contact your local Compaq office.

SOFTWARE WARRANTY

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

The warranty period is 90 days. It begins when the software is installed or thirty days after delivery to the end user. Whichever occurs first and expires 90 days later. All warranty related support for this software will end one year after release of the subsequent versions.

Warranty is provided in the country of purchase. Compaq will provide a service location that will accept reporting (in format prescribed by Compaq) of a nonconformance problem caused when using the licensed software under normal conditions as defined by this SPD. Compaq will remedy a nonconformance problem in the current unaltered release of the licensed software by issuing a correction information such as: correction documentation, corrected code; or a notice of availability of corrected code; or a restriction or a bypass. The customer will be responsible for the preparation and submission of the problem report to the service location.

WARRANTY EXCLUSION

Compaq does not warrant that the software licensed to customer shall be error free, that the software shall operate with any hardware and software other than as specified in this SPD, that the software shall satisfy customer's own specific requirements, or that copies of the software other than those provided or authorized by Compaq shall conform to the SPD.

Compaq makes no warranties with respect to the fitness and operability of modifications not made by Compaq.

If the software fails to function for reasons stated above, the customer's warranty will be invalidated and all service calls will be billable at the prevailing per call rates.

The previous information is valid at time of release. Please contact your local Compaq office for the most up-to-date information.

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