Software Product Description

PRODUCT NAME: VAXELN Ada, Version 2.2 **SPD 27.22.05**

DESCRIPTION

VAXELN Ada is a VMS layered product for developing Ada language applications which run in a standalone or embedded environment on VAX processors under the VAXELN real-time executive.

Typical VAXELN Ada applications are ones in which individual processors have "dedicated" or otherwise predetermined functions and are not needed simultaneously for general computing, program development, or other uses for which a general-purpose operating system (e.g., VMS) is more appropriate. Other uses are in "embedded" systems, where the processor is an integral part of a larger device and the resources of a general-purpose computer system, such as a disk, are not available. Examples include industrial automation, workstations designed for a particular profession, Ethernet server networks and robots.

VAXELN Ada is especially suited to, although not limited to, creating "real-time" applications; that is, applications in which the system's response to external events is critical. Such applications include the typical scientific and industrial data processing situations in which the computer's operation has to be precisely synchronized with machines and special input/output devices.

VAXELN Ada applications are developed using VAX Ada and the VAXELN Toolkit on a host VMS system. The resulting bootable, VAXELN-based Ada application is then moved to the VAXELN target system using disk or tape media, an Ethernet Local Area Network (LAN) link, or programmable read-only memory (PROM). The application program executes on the target system as a dedicated system. The network link to the host development system may be used for remote debugging.

Users are expected to have the necessary hardware to provide both host development and target execution environments. Applications may not be run in the development environment if they use any VAXELN-specific features.

VAXELN Ada, in combination with VAX Ada and VAXELN, has been validated as fully conforming to ANSI/MIL-STD-1815A-1983 (*Reference Manual for the Ada Programming Language*) by the Ada Joint Program Office.

System Features and Special Extensions

- VAXELN Ada applications are compiled with the Ada compiler supplied with the VAX Ada product. The choice of target system can be deferred until the application is linked.
- VAXELN Ada supports all VAX Ada features except the following:

  1. Access to relative and indexed organization files. The VAX Ada packages RELATIVE_IO, RELATIVE_MIXED_IO, INDEXED_IO and INDEXED_MIXED_IO are not supported.

  2. Support of the VMS Asynchronous System Trap (AST) mechanism.

  3. Timeslicing. VAXELN Ada tasks run until blocked or preempted.

- Applications are linked using the program library manager utility supplied with the VAX Ada product. Each program library or sublibrary has a default target associated with it. This default can be changed or overridden as desired.
- A high-level, fully-symbolic remote debugging capability is provided. This feature requires that the user has the optional DECnet-VAX license and an Ethernet Local Area Network link between the host and target systems. It can be used to debug remote applications from a programmer's terminal on a VMS system.
- Support is included for:

  1. Mixed Ada and non-Ada code

  2. Packages

  3. Tasking programs

- A user interface compatible with the VMS Debugger

- Integration with VAXELN real-time executive including:

  1. Conformance to the VAX Calling Standard, which allows Ada code to call and be called by code written in other languages, as well as to call VAXELN system services and utility routines.

  2. The ability to handle exceptions from non-Ada code and generate exceptions to be handled by non-Ada code.

  3. The ability of Ada-language applications to control custom devices, including the ability to write device drivers in Ada.

  4. The ability to link with shared images and access shared areas of memory between applications on the same target system.

  5. Tasks run as separate VAXELN processes under control of the VAXELN scheduler, and can be combined with non-Ada processes and jobs in the same system.

HARDWARE REQUIREMENTS

VAX, MicroVAX, VAXstation or VAXserver configuration as specified in the System Support Addendum (SSA 27.22.05-x).

SOFTWARE REQUIREMENTS*

For Systems Using Terminals: (No DECwindows Interface)

- VMS Operating System
- VAX Ada
- VAXELN Toolkit
- DECnet-VAX

For Workstations Running VMS Workstation Software:

- VMS Operating System
- VMS Workstation Software
- VAX Ada
- VAXELN Toolkit
- DECnet-VAX

* Refer to the System Support Addendum for availability and required versions of Software Requirements (SSA 27.22.05-x).

ORDERING INFORMATION

Software Licenses: QL-A97A*-**
Software Media: QA-A97A*-**
Software Documentation: QA-A97AA-GZ
Software Product Services: QT-A97A*-**

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

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LICENSE MANAGEMENT FACILITY SUPPORT

This layered product supports the VMS License Management Facility.

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

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

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