



Software Product Description

PRODUCT NAME: VSI C++ for OpenVMS

SPD DO-DCCSPD-01A

DESCRIPTION

This document addresses VSI C++ Version 7.4-7 for OpenVMS for VSI Alpha and VSI Integrity.

VSI C++ for OpenVMS is a native programming language product, which generates highly optimized object code. VSI C++ for OpenVMS is based on the ANSI/ISO C++ International Standard, reference designation number ISO/IEC 14882:1998. In addition to this standard, VSI C++ supports the ARM, GNU, and MS dialects.

VSI C++ for OpenVMS includes access to the following language libraries. Some of these components ship with the compiler kit, while others are shipped with the base OpenVMS operating system:

- The C++ Standard Library, which is an implementation of the ANSI/ISO C++ Standard Library. Portions of this library are implemented using source code licensed from and copyrighted by Rogue Wave Software, Inc.
- The C++ Class Library, which is a set of headers and other files implementing a collection of basic C++ classes including the pre-ANSI IOSTREAMS classes. This library is provided to support software developers using VSI C++ for OpenVMS in conjunction with preexisting software that depends upon pre-ANSI library features.
- The OpenVMS C Run-Time Library header files, reference manual, and library. These components allow programmers to access the rich functionality of the C Run-Time Library.
- Features to facilitate porting between VSI C++ for OpenVMS and other implementations of the C++ language. The compiler allows you to choose from several C++ language dialects that have evolved over the past several years:
 - The *MS* dialect for maximizing compatibility with Microsoft's Visual C++ product.
 - The *GNU* dialect for compatibility with the Open Source compilers.
 - The *ARM* dialect for compatibility with *The Annotated C++ Reference Manual* by Ellis and Stroustrup. Using this dialect minimizes the source changes necessary for applications that compile with C++ Version 5.6.
 - The *ANSI* dialect for developers who want to write applications that comply with the C++ International Standard.
- CXXDEMANGLE, a tool to decode compiler-generated names, that enables other tools (besides the compiler and debugger) to present these decoded names to the user.
- CXXLINK, a facility that lets you link your C++ application. Global names which are displayed by the linker utility are automatically demangled for readability.

VSI C++ for OpenVMS documentation provides comprehensive reference and usage information for all product components.

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Features

VSI C++ for OpenVMS provides the following features:

- Extensive error checking diagnostics
- Automatic template instantiation compatible with older compilers for the OpenVMS Alpha platform. New ELF comdat-based template instantiation model for the OpenVMS Integrity servers platform.
- Enhanced debugger support
- Language mode and diagnostic message options increase compatibility with earlier versions of the compiler as well as with other implementations of C++.
- Fast compilation and increased code optimization by directly translating C++ source programs to object files
- Extensive global and local optimizations of generated code for increased performance
- Option for running only the preprocessor phase of compilation
- Pragmas to control compiler options
- Pragmas to control extern models, sharing of data between concurrent processes, and structure member alignment
- Compiler-generated listing file, including optional:
 - Machine code
 - Macro expansion
 - Compilation statistics
- Data types for numeric, nonnumeric, and systems programming, as follows:
 - 8, 16, 32, and 64-bit [un]signed integers
 - 32, 64, and 128-bit IEEE floating point
 - 32 and 64-bit VAX floating-point
- Integration into the Program Development Environment:
 - Generation of debug and traceback records for symbolic debugger support
 - Conformance to the OpenVMS calling standard
 - Access to OpenVMS run-time libraries for general purpose routines and support of multi-language environments
 - Access to the data management facilities of OpenVMS RMS (Record Management Services)
 - Ability to package C++ code as shareable libraries
 - Ability to use additional class libraries
 - Support for generation of diagnostic information that can be used by the VSI Language-Sensitive Editor

Run-Time Library for C Applications

The complete C Run-Time Library that is needed for use with VSI C++ for OpenVMS is distributed with the OpenVMS operating system. The C Run-Time Library provides routines to perform input/output, character and string handling, mathematical computations, memory allocation, and emulation of selected UNIX features. These routines are provided both in shared image and object module library form.

C++ Standard Library

The C++ Standard Library is an implementation of the ANSI/ISO C++ Standard Library. This library is comprised of a suite of header files and the run-time code needed to implement the string library, numeric limits, auto pointer, exceptions, complex math, and the STL (Standard Template Library). Portions of this library are implemented using source code licensed from and copyrighted by Rogue Wave Software, Inc.

C++ Run-Time Support Library (OpenVMS Integrity servers)

The C++ Run-Time Support Library is distributed with the OpenVMS Integrity servers operating system. This library provides support for language features such as RTTI, new and delete, exception support, and some parts of 128-bit IEEE floating point support. These routines are provided both in shared image and object module library form.

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C++ Class Library

The C++ Class Library Run-Time components are distributed with the OpenVMS operating system. The Class Library provides the following packages: iostream, generic, mutex, objection, stopwatch, string, message and vector. These routines are provided both in shared image and object module library form.

Run-Time Library Redistribution

The VSI C++ for OpenVMS kit may include Run-Time Library components in either shareable image or object library form. VSI grants the user a nonexclusive royalty-free worldwide right to reproduce and distribute these Run-Time Libraries ("the RTLs") provided that the user:

- Distributes the RTLs only in conjunction with and as a part of the user's software application product, which is designed to operate in the OpenVMS environment;
- Does not use VSI's name, logo, or trademarks to market the user's software application product;
- Includes VSI's copyright notice for VSI C++ for OpenVMS on one of the following:
 - a. the user's product disk label
 - b. each copy of the application
 - c. the title or copyright page of the documentation for the software application product
- Agrees to indemnify, hold harmless, and defend VSI from and against any claims or lawsuits, including attorney's fees, that arise or result from the use or distribution of the software application product. Except as expressly provided herein, VSI grants no implied grants no implied or express license under any of its patents, copyrights, trade secrets, trademarks, or any license or other proprietary interests and rights.

See the chapter *Deploying Your Application* in the User's Guide.

HARDWARE REQUIREMENTS

Processors Supported:

- Integrity: Any HPE Integrity system capable of running the VSI OpenVMS Integrity Operating System Version 8.4-2 or higher.
- Alpha: Any HPE AlphaServer system capable of running the VSI OpenVMS Alpha Operating System Version 8.4-2L1 or higher.

Refer to the VSI OpenVMS Integrity or Alpha Software Product Description for information about supported servers.

Disk Space Requirements (Block Cluster Size = 1)

The following counts refer to the 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.

	VSI C for OpenVMS Alpha	VSI C for OpenVMS Integrity
Disk space required for kit installation (without docs):	150,000 blocks (75 MB)	225,000 (110MB)
Disk space required for kit installation: (with docs):	250,000 blocks (125 MB)	325,000 (159MB)
Disk space required for use (permanent) without docs:	100,000 blocks (50 MB)	150,000 (75MB)
Disk space required for use (permanent) with docs:	160,000 blocks (80 MB)	210,000 (106MB)

SOFTWARE REQUIREMENTS

On HPE Integrity servers, VSI OpenVMS Integrity Version 8.4-2 or higher is the required operating system version for this product. On HPE AlphaServer systems, VSI OpenVMS Alpha Version 8.4-2L1 is the required operating system version for this product.

VSI C++ for OpenVMS

Note: A version update represents a complete distribution media replacement for the previous release of VSI C++ for OpenVMS. To provide for proper operation with the new release of VSI C++ for OpenVMS, product changes and functional enhancements in a version update may require the recompilation and relinking of all modules in an application built with a prior version.

SOFTWARE LICENSING

A software license is required in order to use the VSI C++ software product.

- For Integrity servers, the license is a Concurrent Use license. Version update licenses are not available for the Integrity servers platform. Rights to use future revisions of VSI C++ are available only through a Support Agreement or through a new license purchase.
- For AlphaServer systems, the license to use VSI C++ is included in the ALPHA-LP license.

For more information about OpenVMS licensing terms and policies, contact your VSI account representative. Information is also available at the following website:

<http://vmsoftware.com/services>

LICENSE MANAGEMENT FACILITY SUPPORT

VSI C++ for OpenVMS supports the *OpenVMS License Management Facility*.

For more information about the License Management Facility, refer to the *VSI OpenVMS License Management Utility Manual* in the OpenVMS documentation set.

CLUSTER ENVIRONMENT

This layered product is fully supported when installed on any valid and licensed OpenVMS Cluster configuration, which are fully described in the *OpenVMS Cluster Software Product Description (SPD DO-VIBHAA-032)*. See the HARDWARE REQUIREMENTS section in this document for hardware requirements.

OPTIONAL SOFTWARE

VSI DECset for OpenVMS Integrity servers is available and includes:

- Language-Sensitive Editor/Source Code Analyzer (LSE/SCA) for OpenVMS Systems
- Test Manager (DTM) for OpenVMS Systems
- Performance and Coverage Analyzer (PCA) for OpenVMS Systems
- Code Management System (CMS) for OpenVMS Systems
- Module Management System (MMS) for Open- VMS Systems

For more information on VSI DECset Release 12.7 for OpenVMS Integrity server Systems, refer to the Software Product Description (SPD DO-VIBHAA-036).

GROWTH CONSIDERATIONS

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

ORDERING INFORMATION

For VSI C++ on OpenVMS, licenses are available as electronic licenses (E-LTU) or physical licenses (P-LTU):

For VSI Integrity:

- | | |
|------------------------------------|---------------|
| • VSI C++ for OpenVMS E-LTU | SL-LICP0E-73V |
| • VSI C++ for OpenVMS P-LTU | SL-LICP0P-73V |
| • VSI C++ for OpenVMS Trade-in LTU | SL-LICP0T-73V |

For VSI Alpha:

- | | |
|-----------------------|---|
| • VSI C++ for OpenVMS | Included in the ALPHA-LP license bundle |
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SOFTWARE PRODUCT SERVICES

A variety of service options are available from VSI. For more information, contact your VSI account representative or distributor. Information is also available at the following website:
<http://vmssoftware.com/services>

SOFTWARE WARRANTY

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

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The VSI OpenVMS documentation set is available on DVD.