Intel® Parallel Studio XE 2015 Composer Edition for Linux* Installation Guide and Release Notes

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1 Introduction

This document describes how to install the product, provides a summary of new and changed features and includes notes about features and problems not described in the product documentation. For the most current update to these release notes, see the release notes posted at the Intel® Software Development Products Registration Center where you downloaded this product.

Due to the nature of this comprehensive integrated software development tools solution, different Intel® Parallel Studio XE components may be covered by different licenses. Please see the licenses included in the distribution as well as the Disclaimer and Legal Information section of these release notes for details.

1.1 Product Contents

*Intel® Parallel Studio XE 2015 Update 1 Composer Edition for Linux** includes the following components:

- Intel® C++ Compiler XE 15.0.1 for building applications that run on IA-32, Intel® 64 architecture, Intel® Xeon Phi™ coprocessors, or Intel® Graphics Technology running the Linux* operating system
- Intel® Fortran Compiler XE 15.0.1 for building applications that run on IA-32, Intel® 64 architecture, or Intel® Xeon Phi™ coprocessors running the Linux* operating system
- GNU* Project Debugger (GDB*) 7.7
- Intel® Math Kernel Library 11.2 Update 1
- Intel® Integrated Performance Primitives 8.2 Update 1
- Intel® Threading Building Blocks 4.3 Update 1
- Integration into the Eclipse* development environment
- On-disk documentation

1.2 Intel® Debugger (IDB) is removed from this release

The Intel Debugger (IDB) has been removed from this release. A debugger based on the GNU* Project Debugger (GDB*) is now provided for debugging.

1.3 System Requirements

For an explanation of architecture names, see http://intel.ly/q9JVjE

- A PC based on an IA-32 or Intel® 64 architecture processor supporting the Intel® Streaming SIMD Extensions 2 (Intel® SSE2) instructions (Intel® Pentium® 4 processor or later, or compatible non-Intel processor)
    - Development of 64-bit applications or applications targeting Intel® MIC Architecture is supported on a 64-bit version of the OS only. Development of 32-bit applications is supported on either 32-bit or 64-bit versions of the OS Development for a 32-bit on a 64-bit host may require optional library components (ia32-libs, lib32gcc1, lib32stdc++6, libc6-dev-i386, gcc-multilib, g++-multilib) to be installed from your Linux distribution.
- For Intel® MIC Architecture development/testing:
    - Intel® Xeon Phi™ coprocessor
    - Intel® Manycore Platform Software Stack (Intel® MPSS) (See the C++ or Fortran specific release notes for details)
- For offload to or native support for Intel® Graphics Technology development/testing
    - Offload is supported from 64-bit applications only
    - SUSE LINUX Enterprise Server* 11 SP3
        - Kernel 3.0.76-11
    - Ubuntu* 12.04 LTS
        - Kernel 3.2.0-41 for 3rd Generation Intel® Core™ Processors
        - Kernel 3.8.0-23 for 4th Generation Intel® Core™ Processors
    - The following processor models are supported:

        - Intel® Xeon® Processor E3-1285 v3 and E3-1285L v3 (Intel® C226 Chipset) with Intel® HD Graphics P4700
        - 4th Generation Intel® Core™ Processors with Intel® Iris™ Pro Graphics, Intel® Iris™ Graphics or Intel® HD Graphics 4200+ Series
        - 3rd Generation Intel® Core™ Processors with Intel® HD Graphics 4000/2500

        Please note: Intel® Xeon® processors are only supported with the chipsets listed. Intel® Xeon® configurations with other chipsets are not supported. Previous generations of Intel® Core™ processors are not supported. Intel® Celeron and Intel® Atom™ processors are also not compatible.
    - The latest 64-bit graphics driver with support for Intel® Graphics Technology (available from the Intel® Software Development Products Registration Center at http://registrationcenter.intel.com). You should have access to the Intel® HD Graphics Drivers for Linux* download area as part of your Intel® Parallel Studio XE registration. If you do not see this area, please contact support.
- For the best experience, a multi-core or multi-processor system is recommended
- 2GB of RAM (4GB recommended)
- 8GB free disk space for all features
- One of the following Linux distributions (this is the list of distributions tested by Intel; other distributions may or may not work and are not recommended - please refer to Technical Support if you have questions):
    - Fedora* 20
    - Red Hat Enterprise Linux* 5, 6, 7
    - SUSE LINUX Enterprise Server* 11, 12
    - Ubuntu* 12.04 LTS (64-bit only), 13.10, 14.04 LTS
    - Debian* 6.0, 7.0
    - Intel® Cluster Ready
- Linux Developer tools component installed, including gcc, g++ and related tools
    - gcc versions 4.1-4.9 supported
    - binutils versions 2.17-2.24 supported
- Library libunwind.so is required in order to use the –traceback option. Some Linux distributions may require that it be obtained and installed separately.

Additional requirements to use the integration into the Eclipse development environment (C++ only)*

- Eclipse Platform version 4.3 with:
    - Eclipse C/C++ Development Tools (CDT) 8.2 or later
    - Java* Runtime Environment (JRE) 6.0 (also called 1.6†) or later
- Eclipse Platform version 4.2 with:
    - Eclipse C/C++ Development Tools (CDT) 8.1 or later
    - Java* Runtime Environment (JRE) 6.0 (also called 1.6†) or later

- Eclipse Platform version 3.8 with:
    - Eclipse C/C++ Development Tools (CDT) 8.1 or later
    - Java* Runtime Environment (JRE) 6.0 (also called 1.6†) or later

† There is a known issue with JRE 6.0 through update 10 that causes a crash on Intel® 64 architecture. It is recommended to use the latest update for your JRE. See http://www.eclipse.org/eclipse/development/readme_eclipse_3.7.html section 3.1.3 for details.

Notes

- The Intel compilers are tested with a number of different Linux distributions, with different versions of gcc. Some Linux distributions may contain header files different from those we have tested, which may cause problems. The version of glibc you use must be consistent with the version of gcc in use. For best results, use only the gcc versions as supplied with distributions listed above.
- The default for the Intel® compilers is to build IA-32 architecture applications that require a processor supporting the Intel® SSE2 instructions - for example, the Intel® Pentium® 4 processor. A compiler option is available to generate code that will run on any IA-32 architecture processor. However, if your application uses Intel® Integrated Performance Primitives or Intel® Threading Building Blocks, executing the application will require a processor supporting the Intel® SSE2 instructions.
- Compiling very large source files (several thousands of lines) using advanced optimizations such as -O3, -ipo and -openmp, may require substantially larger amounts of RAM.
- The above lists of processor model names are not exhaustive - other processor models correctly supporting the same instruction set as those listed are expected to work. Please refer to Technical Support if you have questions regarding a specific processor model
- Some optimization options have restrictions regarding the processor type on which the application is run. Please see the documentation of these options for more information.

1.3.1 SuSE Enterprise Linux 10* is Not Supported

Support has been removed for installation and use on these operating system versions. Intel recommends migrating to a newer version of these operating systems.

1.3.2 Red Hat Enterprise Linux 5* is Deprecated

Support for Red Hat Enterprise Linux 5* is deprecated and will be removed in a future release.

1.4 Documentation

Product documentation can be found in the `Documentation` folder as shown under Installation Folders.

Optimization Notice

Intel's compilers may or may not optimize to the same degree for non-Intel microprocessors for optimizations that are not unique to Intel microprocessors. These optimizations include SSE2, SSE3, and SSSE3 instruction sets and other optimizations. Intel does not guarantee the availability, functionality, or effectiveness of any optimization on microprocessors not manufactured by Intel. Microprocessor-dependent optimizations in this product are intended for use with Intel microprocessors. Certain optimizations not specific to Intel microarchitecture are reserved for Intel microprocessors. Please refer to the applicable product User and Reference Guides for more information regarding the specific instruction sets covered by this notice.

Notice revision #20110804

1.5 Samples

Samples for each product component can be found in the `Samples` folder as shown under Installation Folders.

1.6 Japanese Language Support

Intel compilers provide support for Japanese language users (when the combined Japenese-English installation is used). Error messages, visual development environment dialogs and some documentation are provided in Japanese in addition to English. By default, the language of error messages and dialogs matches that of your operating system language selection. Japanese-language documentation can be found in the `ja_JP` subdirectory for documentation and samples.

Japanese language support will be available in an update on or after the release of Intel® Parallel Studio XE Composer Edition 2015.

If you wish to use Japanese-language support on an English-language operating system, or English-language support on a Japanese-language operating system, you will find instructions at http://intel.ly/qhINDv

1.7 Technical Support

If you did not register your compiler during installation, please do so at the Intel® Software Development Products Registration Center at http://registrationcenter.intel.com. Registration entitles you to free technical support, product updates and upgrades for the duration of the support term.

For information about how to find Technical Support, Product Updates, User Forums, FAQs, tips and tricks, and other support information, please visit http://www.intel.com/software/products/support/

Note: If your distributor provides technical support for this product, please contact them for support rather than Intel.

2 For more details

For further details on installation and component features in this release, please refer to the C++-specific release notes in Release_Notes_C_2015_L_EN.pdf and the Fortran-specific release notes in Release_Notes_F_2015_L_EN.pdf found in the Documentation/{en_US | ja_JP} directory.

3 Disclaimer and Legal Information

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Contact your local Intel sales office or your distributor to obtain the latest specifications and before placing your product order.

Copies of documents which have an order number and are referenced in this document, or other Intel literature, may be obtained by calling 1-800-548-4725, or go to: http://www.intel.com/design/literature.htm

Intel processor numbers are not a measure of performance. Processor numbers differentiate features within each processor family, not across different processor families. Go to:

http://www.intel.com/products/processor%5Fnumber/

The Intel® C++ Compiler, Intel® Debugger, Intel® Integrated Performance Primitives, Intel® Math Kernel Library, and Intel® Threading Building Blocks are provided under Intel's End User License Agreement (EULA).

The GNU* Project Debugger, GDB is provided under the General GNU Public License GPL V3.

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