Intel® C++ Compiler 8.1 for QNX Neutrino RTOS Release Notes*

For Intel® IA-32 Processors

Contents

Overview

The Intel® Compilers make your software run at top speeds on all Intel® IA-32 processors. Optimizations include support for Streaming SIMD Extensions 2 (SSE2) in the Intel® Pentium® 4 and Pentium® M processors, Streaming SIMD Extensions 3 (SSE3) in the Intel Pentium 4 processor with Streaming SIMD Extensions 3 (SSE3) instruction support. The inter-procedural optimization (IPO) and profile-guided optimization (PGO) can provide greater application performance.

Product Contents

This product contains the following components:

- Intel® C++ Compiler for QNX Neutrino* RTOS, version 8.1
- Utilities: Utility icpi to isolate compile/link time errors located at: `<installation_directory>\Compiler81\EIA\bin\icpi.exe`
- Documentation and documentation index can be found at

`<installation_directory>\Compiler81\EIA\docs\ccompindex.htm`.

Note:
The `<installation_directory>` defaults to `C:\Intel\`.

System Requirements

Minimum Hardware Requirements to Develop IA-32 Applications

- A system based on a 450 MHz Intel® Pentium® II processor or greater, Intel Pentium 4 recommended
- 256 MB of RAM (512 MB recommended)
- 100 MB of free hard disk space, plus an additional 200 MB during installation for download and temporary files.
- 100 MB of hard disk space for the virtual memory paging file. Be sure to use at least the minimum amount of virtual memory recommended by your operating system.

Software Requirements to Develop IA-32 Applications on an IA-32 System

- Windows* 2000 or Windows XP.
- Supported QNX Momentics* environments
    - QNX Momentics 6.3

Note:
Adobe* Acrobat Reader* version 4.0 or later is required to view some of the product documentation.

It is the responsibility of application developers to ensure that the machine instructions contained in the application are supported by the processors on which the application is to run.

Installation

The following files are required for a successful installation of the Intel C++ Compiler 8.1 for QNX Neutrino RTOS:

- License file received through email (.lic extension). This file is required by

the FLEXlm* electronic licensing software.

- An electronically downloaded version (For example w_ccqnx_[c]_8_1.xxx. exe) or a CD version of the Intel® C++ Compiler 8.1 for QNX Neutrino RTOS.

Perform the following steps to properly install the Intel C++ Compiler 8.1 for QNX Neutrino RTOS:

1. Prior to beginning installation make sure you have an account on the host system with administrative privileges. If you do not have administrative privileges, contact the host system administrator to either have the administrator perform the installation, or to get an account with administrative privileges.

Note:
Although an account with administrative privileges is needed for installation, any normal account with at least "Users" or "Debugger Users" or higher user privilege can use Intel C++ Compiler 8.1 for QNX Neutrino RTOS through the Momentics IDE or command line.

2. Install QNX Momentics version 6.3. After this, you must apply the QNX Momentics patch for the Intel C++ Compiler. This patch can be found at http://www.qnx.com/download/index.html. This version of QNX Momentics and the patch are required in conjunction with the Intel C++ Compiler 8.1 for QNX Neutrino RTOS.

3. If there are earlier versions of the Intel C++ Compiler for QNX Neutrino RTOS installed on the host system, uninstall it using the Windows Control Panel. See the Uninstalling the Compiler section for more instructions.

4. Install the FLEXlm* license for the compiler. The Intel C++ Compiler 8.1 for QNX Neutrino RTOS uses Macrovision Corporation's FLEXlm* electronic licensing technology. License management is transparent. The installation program of the Intel C++ Compiler 8.1 for QNX Neutrino RTOS checks for a valid license before installing any component of the product. Also, the license must remain in place on the system in order to use the Intel C++ Compiler 8.1 for QNX Neutrino RTOS to compile and build programs.

Before installation, please register your product**.** Using the product serial number provided by QNX, visit the web site http://www.intel.com/software/products/registrationcenter/ and follow the instructions. After the registration you will receive an email within 24 hours containing a new license. Please follow the

instructions in the email to install the license file.

Note:
The license file must have an extension ".lic". The default license directory is `<Program Files>\common files\intel\licenses\`

5. If you have downloaded the package: simply run the downloaded executable (For example `w_ccqnx_[c]_8.1.xxx.exe`).

6. If you have a CD version then:

- Insert the CD into you CD-ROM drive: if Window® runs the CD-ROM automatically then click on **Install Now**.

- If the CD-ROM does not run automatically:

    1. Click **Start**.

    2. Select **Run.**

    3. Type the following: **D:\AutoRun.exe**.(If D is not your CD-ROM drive, substitute D with the correct drive letter)

    4. Click on **Install Now**.

Note:
Before installing any component, the installation program of Intel C++ Compiler 8.1 for QNX Neutrino RTOS checks for a valid license. It searches for a valid license file at folders pointed by "INTEL_LICENSE_FILE" first. If there's no valid license, you will be prompted to enter a valid license file that you have just created in the previous step.

6. After the license checking, simply follow the setup program to complete the installation. The installation program will install the corresponding license for you to `C:\Program Files\Common Files\Intel\Licenses`.

6. You can use the Intel C++ Compiler 8.1 for QNX Neutrino RTOS from a command window or within the Momentics IDE.

To use the Intel C++ Compiler 8.1 for QNX Neutrino RTOS from a command window, the easiest way is to open the command window from the Intel C++ Compiler's menu from `[Start]->[All Programs]->[Intel(R) Software Development Tools]-> [Intel(R) C++ Compiler 8.1 for QNX Neutrino RTOS]->[Build Environment]`. This sets up the environment automatically. Or you can open a normal command window and run `<installation_directory>\Compiler81\EIA\bin\iccvars.bat` . This also sets up the environment correctly to use the Intel C++ Compiler 8.1 for QNX Neutrino RTOS.

If you have any problems running the compiler, please make sure a valid license file (*.lic) is located in the license directory. If you still have problems, please contact QNX.

Please check the *Intel® C++ Compiler for QNX Neutrino* RTOS User's Guide* for complete information on using the Intel C++ compiler for QNX Neutrino RTOS.

Uninstalling the Compiler

To uninstall the Intel C++ Compiler 8.1 for QNX Neutrino RTOS completely, you need to uninstall the following with `"Add/Remove Programs"` from the `"Control Panel"`.

- Intel C++ Compiler 8.1 for QNX Neutrino* RTOS
- Intel® License Manager for FLEXlm if installed

Note:
Uninstalling the Intel C++ Compiler 8.1 for QNX Neutrino RTOS does not delete the corresponding license file.

Known Limitations

Installation related limitations

- The compiler cannot be installed into a directory containing spaces. Doing so will prohibit you from calling icc through qcc.
- After installation from an electronic download, an unpacked copy of the installation files remains in a temporary directory, by default `C:\Documents and Settings\username\Local Settings\Temp\w_ccqnx`. If desired, you may delete these files.

- If you install the Intel C++ Compiler 8.1 for QNX Neutrino RTOS through Microsoft Terminal Services Client*, you need to log off after finishing the installation and re-log on in order for environment variables to be set correctly when using the Intel C++ Compiler 8.1 for QNX Neutrino RTOS.

Optimizations support for Streaming SIMD Extensions 3

Compilation which generates SSE3 instructions (e.g. as a possible result of –xP) or uses SSE3 assembly code, will fail with the default QNX installation because the underlying cross assembler does not have SSE3 support. If you would like to use SSE3, please contact QNX support to receive an updated assembler and instructions for installation.

Compile time slow down when using both -g and inlining

There will be an increase in compile time when -Zi is used together with inlining. Inlining can happen if the user specifies -ipo, -ip or compiles a C++/C99 program at option levels -O1 or above. This is due to the generation of debug information. For many applications, this combination of compiler options will not increase compile time or compile-time memory use.

Building QNX source packages with icc

When building any of the QNX source packages that include the QNX header "x86/neutrino.h" (like the audio DDK for example), you will see a catastrophic error: "Compiler not defined". This is an error in the header file, and can be fixed by changing the following line in $QNX_TARGET/usr/include/x86/neutrino.h, from:

```
#elif defined(__GNUC__)
```

to:

```
#elif defined(__GNUC__) || defined(__INTEL_COMPILER)
```

This won’t happen if the patch of Momentics* 6.3 is applied.

Using qcc with IPO options

IPO is currently incompatible with qcc on the command line and in the Momentics* IDE. If you wish to use IPO, please use the Intel compiler directly from the command line. This won’t happen if the patch of Momentics* 6.3 is applied.

Using qcc and linking with the GNU libraries

A number of warnings about GNU pragma statements may be displayed as a result of compiling with qcc and linking with the GNU libraries. These warnings can be ignored. This won’t happen if the patch of Momentics* 6.3 is applied.

Please click on the following links to see additional notes and known issues in the latest

version of each tool.

- Intel® C++ Compiler to produce IA-32 applications
  Note: This file is available only if the compiler is installed.

Technical Support

Your feedback is very important to us. To receive technical support for the tools provided in this product and technical information including FAQ's and product updates, you need to be registered for a MyQNX account. Please contact QNX for further information.

Documentation

You can view the Intel compiler and related HTML-based documentation with your Web browser, which provides full navigation, index look-up, search, and hyperlink capabilities.

The documentation index is provided for easy access to all the documents. The Document index is available from the Intel C++ Compiler 8.1 for QNX Neutrino* RTOS program folder and is located at: `<installation_directory>\Compiler81\EIA\docs\ccompindex.htm`.

The document *Intel® C++ Compiler User's Guide* is organized into the following sections:

- Welcome
- Options Quick Reference Guide
- User's Guide for Building Applications
- User's Guide for Optimizing Applications
- Reference Information

Note:
In the documentation index file (`ccompindex.htm`), if you find that certain links do not work, please access the following Web page to download a patch for Internet Explorer* applicable to your operating system:

http://support.microsoft.com/default.aspx?scid=http://support.microsoft.com:80/support/KB/articles/Q811/6/30.asp&NoWebContent=1

For more information on problems opening HTML Help files using the windows. showhelp attribute, see *Microsoft Knowledge Base Article 822989*.

Additional Information

Related Products and Services

Information on Intel software development products is available at http://www.intel.com/software/products. Some of the related products include:

- The Intel® Software College provides a one-stop shop at Intel for training developers on leading edge software development technologies. Training consists of online and instructor led courses covering all Intel architectures, platforms and technologies.
- The VTune(TM) Performance Analyzer allows you to evaluate how your application is utilizing the CPU and helps you determine if there are modifications you can make to improve your application's performance.
- The Intel® C++ and Fortran Compilers are an important part of making software run at top speeds and fully support the latest Intel IA-32 and Itanium processors.
- The Intel® Performance Library Suite provides a set of routines optimized for various Intel processors. The Intel® Math Kernel Library, which provides developers of scientific and engineering software with a set of linear algebra, fast Fourier transforms and vector math functions optimized for the latest Intel Pentium and Intel Itanium processors. The Intel® Integrated Performance Primitives consists of cross platform tools to build high performance software for several Intel architectures and several operating systems.

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