



Nios II Embedded Design Suite 7.0 Release Notes

March 2007, Version 7.0

Release Notes

This document lists the release notes for the Nios® II Embedded Design Suite (EDS) version 7.0.

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New Features & Enhancements

The Nios II EDS version 7.0 addresses issues found in previous releases, and adds the following primary features:

- Cyclone III device family support
- Instruction master burst support

The sections below provide a detailed list of all product updates, including known issues fixed in this release.

Device & Host Support

This release supports the following Altera® FPGA families:

- Cyclone™ III
- Stratix® III
- Stratix II and Stratix II GX
- Stratix and Stratix GX
- Cyclone II
- Cyclone



The host system requirements for the Nios II EDS are based on the requirements for the Altera Complete Design Suite. Refer to *Quartus II Installation & Licensing for PCs* or *Quartus II Installation & Licensing for UNIX and Linux Workstations* manual.

Installation and Licensing Instructions



For installation instructions, refer to *Quartus II Installation & Licensing for PCs* or *Quartus II Installation & Licensing for UNIX & Linux Workstations* on the Altera website at www.altera.com/literature/lit-qts.jsp.

Using Previously Installed Versions of the Nios II EDS

SOPC Builder and the Nios II IDE refer to the most recently installed version of components (such as the Nios II processor and peripherals) and their software drivers. To revert to a prior version of the Nios II development tools, you can reinstall the previous version of tools or modify the following environment variables.

- `SOPC_BUILDER_PATH` - Ensure that `SOPC_BUILDER_PATH` points to the installation directory of the desired Nios II version and no other Nios II versions.
- `SOPC_KIT_NIOS2` - Ensure `SOPC_KIT_NIOS2` points to the installation directory of the desired Nios II version and no other Nios II versions.

If you have multiple versions of the Quartus II software installed, launch the supported version of Quartus II to ensure that the `QUARTUS_ROOTDIR` environment variable is updated.

Nios II Processor Cores

This section describes changes to the Nios II processor cores.

Instruction master burst support

The Nios II instruction master now optionally supports Avalon burst transfers for cores that include an instruction cache. You can enable this option in the Nios II wizard. Refer to the *Nios II Processor Reference Handbook* for details.

SOPC Builder

This section describes changes to SOPC Builder which affect Nios II designers. For complete revision history of SOPC Builder and the Quartus II software, refer to the release notes for the Quartus II software version 7.0. The *Quartus II Handbook, Volume 4: SOPC Builder* contains complete documentation for SOPC Builder.

There are no major changes to SOPC Builder that affect the Nios II processor this release.

Nios II IDE

This section describes changes to the Nios II integrated development environment (IDE).

There are no major changes to the Nios II IDE in this release.

Nios II C-to-Hardware Acceleration (C2H) Compiler

The Nios II C-to-Hardware Acceleration (C2H) Compiler was introduced in the Nios II EDS version 6.0. The C2H Compiler is a tool that allows you to create custom hardware accelerators directly from ANSI C source code, which can often improve the execution performance by an order of magnitude. Documentation on the C2H Compiler is available on the Nios II literature page, <http://www.altera.com/literature/lit-nio2.jsp>.

This section describes changes to the C2H Compiler.

There are no major changes to the C2H Compiler in this release.

Flash Programmer

This section describes changes to the flash programmer in the Nios II IDE.

There are no major changes to the Flash Programmer in this release.

Target Software

This section describes changes to Altera-provided target software which runs on the Nios II processor, such as the hardware abstraction layer (HAL) system library.

There are no major changes to the Nios II target software in this release.

Example Designs

Hardware Example Designs

There are no major changes to hardware example designs in this release.

Software Example Designs

There are no major changes to software example designs in this release.

Errata Fixed in this Release

This section lists errata items from previous releases which are fixed in version 7.0.

Command-line utilities don't display any output

Command-line utilities for creating and manipulating Nios II IDE projects on Windows might not display any output, even though the command completed successfully. The following commands function correctly but do not produce output to stdout:

- nios2-build-project
- nios2-create-application-project
- nios2-create-system-library
- nios2-delete-project
- nios2-import-project

Communication issue with multi-CPU or multi-JTAG UART designs

Designs that contain multiple CPUs or multiple JTAG UARTs might not be able to communicate with the target when running, debugging, or programming flash memory. Designs which have only a single CPU and JTAG UART are not affected by this issue.

'Additional nios2-terminal arguments' field is not functional

On the **Target Connection** tab of the Run or Debug launch configuration dialog boxes, the **Additional nios2-terminal arguments** field is not functional. Entering commands in these fields will have no effect.

Accelerator returns -1 if C/C++ project doesn't rebuild before running

A call to an accelerated function might return the invalid result -1 if you do not build your C application project before running it on hardware. The Nios II IDE does not detect that a new FPGA configuration file (**.sof**) needs to be downloaded if the system library is not rebuilt, which might result in attempting to execute an accelerated function on hardware that does not contain the hardware accelerator.

GNU documentation is missing

The GNU documentation was erroneously omitted from the Nios II EDS v6.1 installation.



101 Innovation Drive
San Jose, CA 95134
(408) 544-7000
www.altera.com
Applications Hotline:
(800) 800-EPLD
Literature Services:
literature@altera.com

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