Power Architecture® Technology

CodeWarrior Development Studio v10.0 for Power Architecture® Technology

Overview

Reach the full potential of your communications application with CodeWarrior v10.0 for Power Architecture® development tools for the Freescale QorIQ processors built on Power Architecture® technology. Integrated within an Eclipse framework, the CodeWarrior Development Studio for Power Architecture technology combines GNU build tools and highly advanced asymmetric multiprocessor (AMP)/symmetric multiprocessor (SMP) Linux® multicore debugging with software analysis capabilities, allowing you to build, debug and maximize the performance of Power Architecture-based multicore applications.

Highlights

- Feature-rich, Eclipse-based IDE
- Multicore AMP/Linux SMP debugger with multicore run-control commands
- Highly advanced software analysis tools, including program and data path acceleration architecture (DPAA) trace tools and extended, integrated support for popular open source tools such as the GNU Linux Trace Tool (LTTng), OProfile and Valgrind
- Support for Linux application and kernel development (tool capabilities vary with the targeted processor)

Eclipse IDE

- Common IDE platform
- Open standard
  - Common framework
  - Leverages larger ecosystem
- Extensible
  - Eclipse-based tools enable extensions via plug-ins
- Ease of use
  - Common look and feel across Freescale Eclipse-based CodeWarrior platforms
  - Eclipse perspectives
- Customizable window layout

Software Analysis[i]

Several of Freescale's QorIQ processors include advanced features such as packet processing accelerators (i.e., parts of DPAA on the P4080). The CodeWarrior Development Studio for Power Architecture technology provides software analysis capabilities that give developers the tools they need to tune application performance or debug complex timing issues issues.

Trace Analysis

For applicable target devices, CodeWarrior trace tools provide developers with timing information for:

- Program flow trace
- Data access
- Packet processing events (available for some processing units)
- Linux kernel events using the LTTng

[1] The software analysis capabilities vary by the processor that is being targeted. This is partially the result of the fact that different processors have different capabilities, including different accelerators and different debug, trace and event counting capabilities.

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Performance Analysis

Performance analysis tools provide another way to non-intrusively debug functional and performance application issues.
Tools include:

- Configuration of event counters
- Pre-defined “metrics” that provide meaningful performance information for networking applications. Examples include:
  - Cache hit/miss ratios
  - Branch hit/miss ratios
  - Stall cycles per address collision
  - Instructions per cycle
- Various views for event data, including:
  - Average values
  - Timelines
  - Raw data

CodeWarrior Debugger

CodeWarrior multicore debugging support allows the developer to issue commands across user-defined subsets of cores. Special support for Linux kernel and application development is also included.

Multicore debugging features include:

- Multicore run, start and stop commands
- Multicore reset
- SMP debugging
- AMP debugging
- Support for debugging applications using Freescale hypervisor or Light Weight Executive

Build Tools

The CodeWarrior Development Studio v10.0 for Power Architecture technology includes GNU build tools for all e500mc-based cores. For e500v2-based processors, the Freescale CodeWarrior build tools generate optimized code for C.

Learn More: For more information about Freescale CodeWarrior software solutions, please visit **freescale.com/CodeWarrior**.

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