



Sourcery G++ for SuperH

Spring 2009 Meeting with Renesas



Status

- Lite Edition Release
 - Ready for release
 - Waiting for Renesas approval
- Personal/Professional Edition Release
 - Scheduled for April 20th
 - Includes Eclipse IDE and other components
- Validation Results

Testsuite	Pass	Fail
GCC	46430	1
G++	17575	2
Libstdc++	4933	0
GLIBC	948	0
GDB	10830	1239



Future Toolchain Improvements

Core Tools

- GNU Debugger
 - We are seeing significant issues with GDB and gdbserver
 - Others are problems with compiler and/or debugger
 - Some appear to be kernel problems
 - We believe this is the most important improvement for SuperH
- Native POSIX Threads Library
 - We are still tracking down some threading test failures
 - These may be compiler, GLIBC, or kernel problems

Other Functionality

- GNU/Linux Prelinker
 - Provides faster application startup
 - Available for ARM, MIPS, x86
- uClibc
 - NPTL and other issues
- uClinux Toolchains
 - Several customers have asked about SH-2 uClinux
- Other tools
 - oprofile
 - Valgrind
- Benchmarking
 - EEMBC



QEMU for SuperH

Core Functionality

- Functional correctness
 - Correct emulation details of instruction core and important peripherals
 - Improvements to Linux kernel as necessary
 - Success criteria:
 - Same test results for tools (compiler, libraries, benchmarks) as on real hardware
- Peripheral support
 - Graphics features
 - Other unimplemented peripherals
 - Success criteria:
 - Existing peripheral drivers work

Performance Improvements

- Core changes to QEMU to improve primary emulation loop
- Analysis/improvement of SuperH instruction and peripheral emulation
- Use of paravirtual peripherals to reduce cost of emulating full system
- Success criteria:
 - Time to run benchmarks reduced