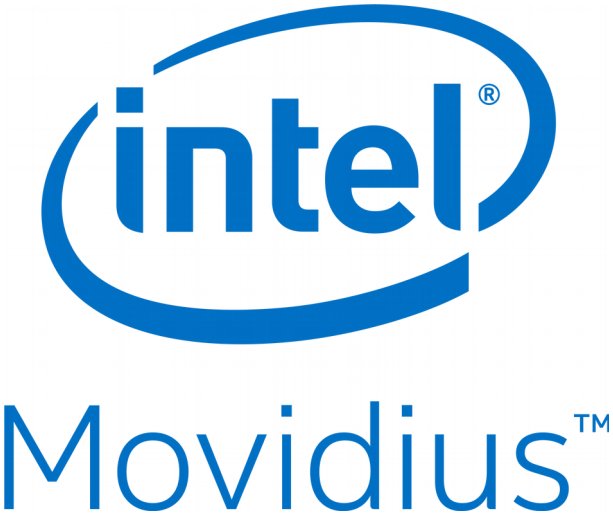

Tools Release Notes

v18.06.6 / June 2018

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1 Changes in 18.06.6 (vs. 18.05.2)

1.1 moviCompile

- Added new optimization pass to eliminate redundant register copies
- Fixed issues with fp64 math library (bug 29023)
- Supplemented the ISO C math library functions with fp16 variants
- Removed options -faligned-allocation and -fsized-deallocation
- Fixed bugs:
  - 29826 - Wrong code generation with '`-mstack-overflow-instrumentation`' flag
  - 29662 - '`vsnprintf`' does not respect the size of the buffer provided
  - 29755 - CMU.CMVV.I16 instructions generated for comparison of v2i16 values in IRF registers
  - 29510 - moviCompile interleaving instructions at –O0
  - 29023 - Incorrect handling of some fp64 math functions

Please see the "What's new" section in the moviCompile.pdf for more detail.

1.2 moviAsm

- Fixed bug 29653 - mark empty expressions as invalid (comma terminated int-like directives)
- Updated documentation - int-like directives expect 'one or more expressions' instead of 'zero or more'
- Fixed reopened bug 25047 - demoted LSU.SWZ error to warning
- Fixed bug 29231 - warning 10 - corrected target instruction stall warning
- Fixed bug 29700 - .nowarn adds up warnings
- Fixed bug 29802 - corrected ma2x8x analyzer table description for SAU.EXP2, LOG2, ATN, RQT, COS and SIN
- Fixed bug 29848 - corrected handling for V/S_ACC0/1 specifier
- KMB - Added floating point to instructions for microCore
- Moved Windows binary to x86_64 configuration
- Fixed bug 30021 - output filename extension being ignored

1.3 moviSim

- Fixed bug 29749 - Movisim v00.90.0 Build 144439 doesn't exit when called with -version option
- Fixed bug 29699 - SDK - movisim on ma2150 architecture generates error message
- KMB – Update Warp model
- KMB – updated SIPP model
- KMB - Added CmxDma model
- KMB - Added NCE barriers model
- Fixed bugs: 27685, 28655
- Fixed halt on clash stopping shave regardless of DCU bit
- Fixed segfaults with -encorelogs command
- Fixed simulation not working on standalone with shave only code
- KMB - Fixed DPU address base
- KMB - Added DPU clock signals
- KMB - Fixed slave interface access to data path and microShave
- KMB - Fixed freeze when debugger tries to connect

1.4 moviDebug2

- Fixed potential segmentation fault caused by use of `sym list` command.
- Improved and fixed Tcl commands e.g `state -reg -F`; `mdump -target`
- KMB - multicore**ore** LeonRT support.
- LRT0 and LRT1 cores instead of LRT – it can be disabled via `--single-leon-rt` command line option.
  Note: This breaks backward compatibility
- KMB - display some state information about LEON cores even when the DSU-EXT signal is reset (LRT1)
- KMB - updated register maps to candidate FPGA RTL version containing Leon RT and Leon NN fixes
- KMB - preliminary microCore support; can be disabled with `--no-shave-nn` or `--no-ucnn`.
- KMB - `nce-cmx-init` Tcl command
- Partially fixed bug 28937 - GPIO tcl set direction and output enable inverter and CSS_GPIO reset
- Fixed bug 27345 - moviDebug2 - doesn't notify when a trap is encountered in BM use case trap messages are now displayed as warnings

1.5 moviDebugServer

- KMB - Updated register maps to candidate FPGA RTL version containing Leon RT and Leon NN fixes
- KMB - added extra log message in case of Coresight powerup failure
- Enable debugging the post-reset JTAG chain scan via command line option `--debug-jtag-scan-chain`
- Linux-specific: refactored "libfixftd2xxdetachkerneldriver.so" helper: replaced moviDebugServer-specific message with generic one, added customizable callback

1.6 moviConvert

- MX - Fixed bug with hex output files CNN_CMX
- Fixed bug 29770 - moviConvert: ERROR: Attempt to load section using tools ver 18.05.3
- Fixed bug 29977 - moviConvert doesn't work as expected (it required the default Hex config file, even when another file was specified at command line)

1.7 moviProf

- MoviProf Release 1.18.8
- Added profiling support for dynamic loading projects
- Fixed line endings for build system v2 files.
- Fixed bug 29949 - moviProf - TraceProfiler does not work properly
- Fixed bug 29951 - moviProf - SampleProfilerExample does not work properly
- Fixed bug 30125 - moviProf: after using function profiling, unexpected trap at adresses found
- Fixed bug 26709 - SDK- No statistics and empty call stack at Profiling simpleRTEMS_shave app in Eclipse
- Fixed bug 29867 - SDK - SampleProfiler does not work properly
- Fixed bug 30129 - moviProf: Application failed to run with function profiling active
- Fixed bug 30126 - moviProf: application got a timeout when using function profiling active
- Fixed bug 30087 - Replace ERROR word with WARNING word. Deceiving output on function Profiler
- Fixed bug 30132 - Trace Profiler error at collecting buffers

- Fixed bug 30219 - Function Profiling - specific core, new build system gets a timeout & error
- Fixed bug 30251 - Disable Profile Guided Optimization ON on NBS

1.8 RTEMS

- RTEMS release v4.0.1.0
- Fixed bug 28454 - Spurious interrupts due to Leon write latency

2 Changes in 18.05.2 (vs. 18.04.0)

2.1 moviCompile

- No changes

2.2 moviAsm

- updated documentation to reflect removal of the optimizer
- Fixed bug 29508 - incorrect value for symbols in concatenated sections
- Use of deprecated semicolon character for comments is now illegal
- Feature request 25047 - detect invalid use of LSU.SWZ
- Feature request 23031 - use a temporary file unless the assembly process completed with errors

2.3 MoviConvert

- Fixed bug 29247 - Secure Boot for Myriad X - Implementation Issues
- Hex64 files support
- Fixed bug 29306 - Secure Boot doesn't work for Myriad X
- Fixed bug 29560 - boot image memory size mismatches

2.4 moviSim

- Added separate loading path variable for models (needed for moviSim.dll)
- Added moviSim.dll library (for Simics support)
- MX – added missing features to AXI DMA
- MX – fixed segmentation fault when read before write check is enabled
- MX – fixed CMX clock control register functionality
- MX - Fixed ISP model interrupt trigger logic
- KMB – added Stereo model
- KMB – enabled Leon NN as startup core
- KMB – Added DPUs for NCE subsystem, including microCore
- KMB – updated CPR model to accommodate use with moviDebug2

2.5 moviDebug2

- Improved Leon core support (indicate power down status when stopped)
- Fixed bug 25892 - Segmentation fault on Jenkins environment
- MX – Added CPR summary command implementation
- Fixed Leon Core Data breakpoint support allowing data breakpoints to be detected.

- updated documentation for `-stopgroup` option of `breakpoint add|change` subcommand to reflect actual behavior
- KMB - support for legacy debug via moviDebugServer with/without OpenOCD
- KMB – added support for Leon NN core, without CPR management
- KMB – Added switch `--no-leon-nn` to disable LNN creation
- KMB – Added support LRT/LNN apps using `lnn_` elf section prefix
- KMB - Removed internal cache bypass address mapping (the JTAG TAP is no longer behind cache)
- KMB - `ddrinit` command on KeemBay FPGA turns on the path to the DDR
- KMB - updated registers to RTL revision 143376 and adjusted FPGA DDR init routine

2.6 moviDebugServer

- Print timestamp at begin / end of debug sessions
- Fixed issue with register access logging (-debugMsg)
- improved and fixed KMB / ARM Coresight JTAG support
- Fixed bug 28816 - increase moviUsbJtag timeout
- Fixed bug 28535 - correctly recover chip that was found in bad state, even if using MV229.
- KMB - updated registers to RTL revision 143376

2.7 moviProf

- FunctionProfiler updated to work with build system v2, decoupled from MDK.
- Profiling hooks moved from MDK common folder into tools/common/moviProf/lib/<platform>/<arch>/lib<type>.a
- Sample Profiler startup hooks connected in the new TraceProfile API.
- Csv output enhancements - easier to read and more useful data at the end of the file (useful for vim editor folding and syntax + navigation)
- Function profiling - Graphviz generation after any function profile. A .png with the callgraph can be viewed after the execution
- Added simProf - script to gather sample profiling using moviSim. Can be used in cases when the regular profiler is not usable (Myriad X projects using RTEMS, where the API for controlling the required timer directly is not yet available)

2.8 RTEMS

- No changes.

3 Known issues/limitations

3.1 moviAsm

- The assembler does not flag ACC/MAC instruction adder usage port clashing correctly. Some parts of this problem have been addressed, but it is not fully functional yet.
- The port clash detection does not cover all the possible repetitions of the BRU.RPI[M] instructions.
- The analyzer does not consider register rebasing, so it may not show all the register clashes if rebasing is used.

3.2 moviSim

- Because the Windows version of the tool is built for 32 bits, there may be cases where the simulator will report that it cannot allocate enough memory. This is usually caused by memory fragmentation. In case this happens, the user should try to close unnecessary applications, in order to free up the memory, or try to run the tool on a machine with more memory (16GB of RAM is recommended).
- Fast simulation may yield different result than cycle accurate execution when executing applications requiring strict synchronization between various events in multiple parts of the SoC. This mode abstracts away the concept of synchronous execution, so the applications should not rely on strict sequencing of events in this mode (e.g. interrupts coming from different accelerators may be in different order).
- KMB – current version requires moviDebug2 to use -no-shave-nn because of an address missmatch problem that will be fixed in the next patch release.

3.3 moviDebug2

- Debug information for dynamically allocated memory regions is not supported at this time.

3.4 moviConvert

- MX – Secure boot is working only for single process block applications. The multi-PB support will be fixed in a subsequent patch release.

3.5 Profiling

- Profiling is currently not working properly for projects that use dynamic loading, unless they are using the build system v2.