Studio Fusion

Product brief

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Overview

Codasip Studio has been the toolset to generate both the RTL and the software development tools from one processor model for years.

The latest version, Codasip Studio Fusion, improves this fundamental capability and adds a layer of segmentation. You can configure the core from set options, create custom instructions within set bounds, or design freely.

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Benefits
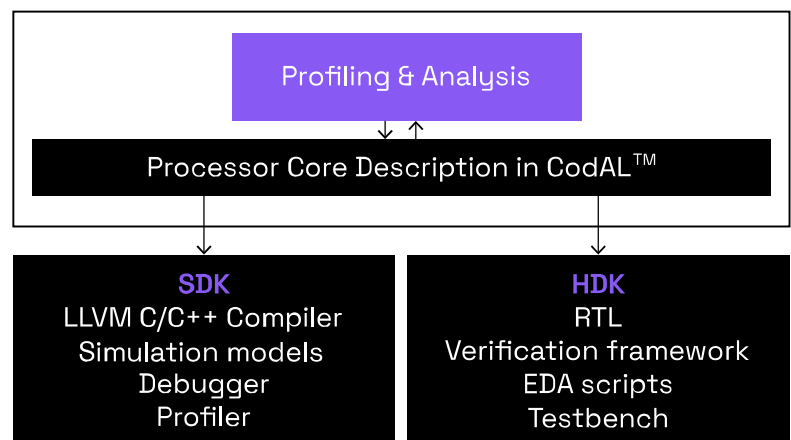
Higher degree of design automation
- New CodAL 3.0 language extended with design constructs allowing to fuse the architectural and microarchitectural description of the processor
- Declarative description of common processor aspect automatically converted into low-level logic by Studio
- Used in Codasip L110 baseline core or deployable in your custom processor design

Improved software development tools
- C/C++ compiler generated by Studio optimized for microarchitectural details captured in processor CodAL description
- Support for new standard and proprietary code size reduction instruction set extensions
- Studio Fusion generates new SystemC-based event-driven simulation model able to simulate parallel behavior in the processor core or cluster
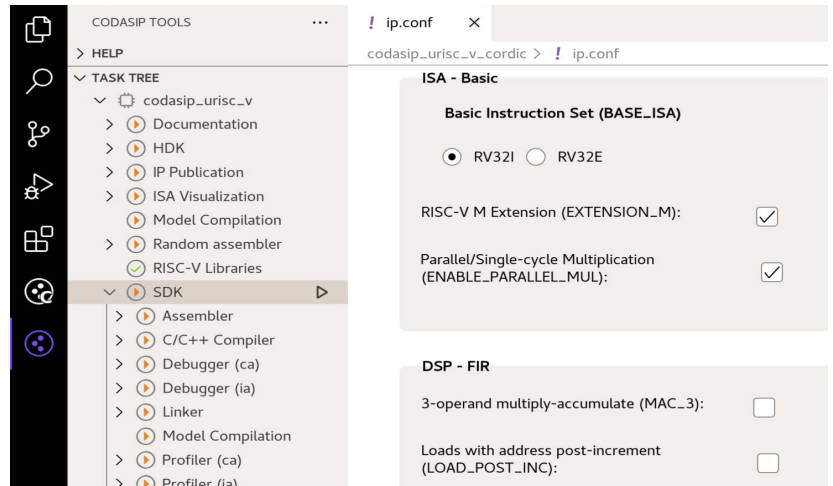
Levels of customization
- Configurator lets you experiment with available core configuration options keeping RTL and SDK in synch
- Bounded customization lets you implement custom instructions without risk
- Full Designer offers complete freedom

Profiling & Analysis

Processor Core Description in CodAL™

SDK
LLVM C/C++ Compiler
Simulation models
Debugger
Profiler

HDK
RTL
Verification framework
EDA scripts
Testbench

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Specifications

Configuration Options

- Explore configuration options for our RISC-V processors in a user-friendly graphical interface
- Instantly generate the RTL and software development toolkit
- Profile benchmarks or your own code
- No processor design experience is needed

Customize within bounds

- Add custom instructions without risk
- Follow a set of rules allowing for many common customizations
- Instantly generate custom RTL and software development toolkit
- The functionality of the baseline core is guaranteed
- The verification of custom instructions is aided by the provided verification framework

Co-optimize hardware and software
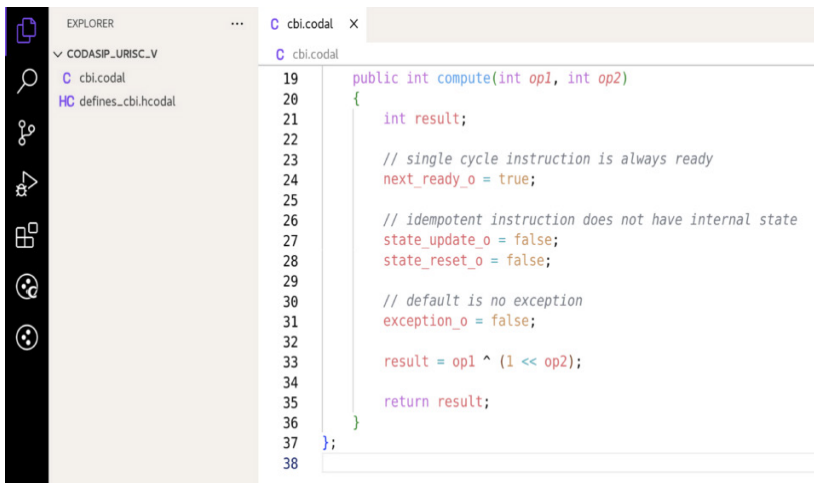
- Experiment with different configurations
- Use Profiler to identify the right custom instructions
- Simplified verification of custom core
- Full Designer offers complete freedom to customize outside bounds