systemc-compiler

Public

1 Branch 0 Tags Go to file t Go to file Add file Code

mikhailmoiseev Version 1.7.4 Some fixes for record constructors

4ac7278 · 2 days ago

.github	Examples added	5 months ago
cmake	Version 1.6.18. C++20 …	9 months ago
components/co…	Version 1.6.34. Loosely…	4 months ago
designs	Version 1.7.0. Record i…	2 months ago
doc	Version 1.7.0. Record i…	2 months ago
gdb	Version 1.6.13. Extra r…	last year
sc_elab	Version 1.6.20. Big liter…	7 months ago
sc_tool	Version 1.7.4 Some fix…	2 days ago
systemc	Version 1.6.18. C++20 …	9 months ago
.gitignore	Version 1.6.9. LLVM 18…	2 years ago
CMakeLists.txt	Version 1.6.18. C++20 …	9 months ago
LICENSE.txt	Temporal assertions ini…	6 years ago
README.md	Update README.md	3 days ago
SECURITY.md	add required SECURIT…	2 years ago

About

This tool translates synthesizable SystemC code to synthesizable SystemVerilog.

#hls #llvm #clang #hardware-designs #systemc

Readme
View license
Code of conduct
Contributing
Security policy
Activity
Custom properties
300 stars
15 watching
43 forks
Report repository

Releases

No releases published

Packages

No packages published

contributing.md	Update contributing.md	5 years ago
install.sh	Version 1.6.18. C++20 …	9 months ago
install2.sh	Version 1.6.18. C++20 …	9 months ago
install_icsc.sh	Version 1.6.18. C++20 …	9 months ago

README Code of conduct Contributing License Security

Intel® Compiler for SystemC*

**Other names and brands may be claimed as the property of others.*

Introduction

The SystemC Compiler (ICSC) translates synthesizable SystemC design into equivalent SystemVerilog code.

The SystemC compiler checks a SystemC design for common coding mistakes and generates human-readable SystemVerilog code. The tool supports SystemC synthesizable subset in method and thread processes, and arbitrary C++ code in module constructors. ICSC is based on Clang/LLVM 18.1.8, supports C++ 11/14/17/20 standards and includes SystemC 3.0.1.

See more information at Intel Compiler for SystemC wiki.

Single Source Library

Contributors 12

guages

- **C++** 67.4%
- **SystemVerilog** 26.1%
- **C** 2.3%
- **CMake** 2.2%
- **Assembly** 0.8%
- **Makefile** 0.4%
- **Other** 0.8%

The Single Source library consists of communication channels including Target/Initiator, FIFO, Pipe, Buffer, Register and others. The channels have functional interfaces similar to TLM 1.0.

There are Single Source training slides.

See more information at Single Source library.

Getting started

The SystemC Compiler can be installed at most Linux and Windows Subsystem for Linux (WSL). There is `install.sh` script that downloads and builds the compiler and the required dependencies at **Ubuntu 24.04**, **Ubuntu 22.04**, **Ubuntu 20.04**, **SLES15**, **SLES12** and others.

An instruction how to install and run ISCS is given at Getting started.

Documentation

User guide document describes installation procedure, run tool options, preparation of SystemC design for synthesis, tool extensions and advanced verification features.

The SystemC Compiler supports SystemC Synthesizable Subset. Details of SystemC/C++ subset supported are described at SystemC/C++ supported.

Publications

- Single Source library for high-level modelling and hardware synthesis, at DvCon'2024
- Intel Compiler for SystemC and SystemC common library at CHIPS tech summit

2022

- Temporal assertions in SystemC at DvCon'2020 and SystemC evolution day'2020
- SystemC-to-Verilog Compiler: a productivity-focused tool for hardware design in cycle-accurate SystemC at DvCon'2019

License

ICSC is distributed under the Apache License v2.0 with LLVM Exceptions.

Help

To get help please submit your question or issue