SystemC Project

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SystemC Software Download Page

http://accellera.org/downloads/standards/systemc

SystemC

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Current Releases

Item	Document Name	Date Modified
SystemC 2.3.1 (Includes TLM)	Core SystemC Language and Examples	2014-04-23
	SystemC Regression Test Suite	2014-04-23
AMS 2.0	Analog/Mixed-signal (AMS) Language Reference Manual	2013-03-19
SystemC Verification 2.0	SystemC Verification Library (SCV)	2014-04-23
SystemC Synthesis 1.4.7	SystemC Synthesis Subset	2016-03-11

systemc-2.3.1.tgz

Some useful links in SystemC Installation

http://chaitulabs.blogspot.kr/

https://vinaydvd.wordpress.com/2012/05/30/installing-systemc-in-ubuntu/

http://www.electrobucket.com/systemc/getting-started-with-systemc

Sample and tutorial programs

http://www.asic-world.com/systemc/first1.html#Hello_World_Program_Output

Configure and Make install

* uncompress tgz file
  tar -xzvf systemc-2.3.1.tgz

* cd into the newly created directory
  cd systemc-2.3.1/

* make the installation directory, this needs su privilege so use sudo
  sudo mkdir /usr/local/systemc-2.3.1

* still we are in the directory where uncompressing was done
* make temporary direcory (objdir)
  mkdir objdir
  cd objdir

* first configure your computers environment in objdir --> ../configure
* prefix means the final installed directory
  ../configure --prefix=/usr/local/systemc-2.3.1

* now start to install
  sudo make install

First Sample Program

save the following into first.cpp

<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<

```
// All systemc modules should include systemc.h header file
#include "systemc.h"
// Hello_world is module name
SC_MODULE (hello_world) {
  SC_CTOR (hello_world) {
    // Nothing in constructor
  }
  void say_hello() {
    //Print "Hello World" to the console.
    cout << "Hello World.\n";
  }
};

// sc_main in top level function like in C++ main
int sc_main(int argc, char* argv[]) {
  hello_world hello("HELLO");
  // Print the hello world
  hello.say_hello();
  return(0);
}
```

>>>

Environment Variable Setup

export SYSTEMC_HOME=/usr/local/systemc-2.3.1/ (X)
export SYSTEMC_HOME=/usr/local/systemc-2.3.1 (O)

export LD_LIBRARY_PATH=/usr/local/systemc-2.3.1/lib-linux64 (64-bit pc)
export LD_LIBRARY_PATH=/usr/local/systemc-2.3.1/lib-linux (old 32-bit)

First Sample Program

* -I. (include current directory for searching *.h)
* -I$SYSTEM_HOME/include (systemc include directory for systemc.h ...)
* -L. (library directory for search libraries)
* -L$SYSTEMC_HOME/lib-linux64 or (.../lib-linux) (systemc library search path)

* must link with math library (-lm)
* must link with systemc library (-lsystemc)

```
g++ -I. -I$SYSTEMC_HOME/include \
      -L. -L$SYSTEMC_HOME/lib-linux64 \
      -o out first.cpp \
      -lsystemc -lm
```

* run the executable

```
./out
```

References

[1] http://en.wikipedia.org/
[2] http://www.allaboutcircuits.com/
[3] W. Wolf, “Modern VLSI Design : Systems on Silicon
[4] N. Weste, D. Harris, “CMOS VLSI Design: A Circuits and Systems Perspective”
[5] J. P. Uyemura, “Introduction to VLSI Circuits and Systems”
[6] https://en.wikiversity.org/wiki/The_necessities_in_SOC_Design
[7] https://en.wikiversity.org/wiki/The_necessities_in_Digital_Design
[8] https://en.wikiversity.org/wiki/The_necessities_in_Computer_Design
[9] https://en.wikiversity.org/wiki/The_necessities_in_Computer_Architecture
[10] https://en.wikiversity.org/wiki/The_necessities_in_Computer_Organization