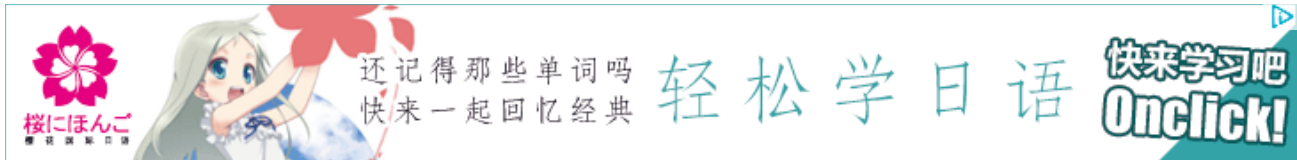


electroBucket

SYSTEMC

GETTING STARTED WITH SYSTEMC

APRIL 20, 2013 | SANTOSH | 13 COMMENTS



SystemC is a set of C++ libraries, which enables a designer to perform concurrent simulation of system level model. It is used for Electronic System Level design and Transaction Level Modelling(TLM). In this article we will discuss the setup of SystemC in an Ubuntu 12.04 Machine and executing our first Hello World! program.

1. Download SystemC source from [Accellera website](#).
2. Untar the package using `tar -xzf systemc-2.3.0.tgz`
3. Change to the top level directory systemc-2.3.0: `cd systemc-2.3.0`
4. Make a directory systemc230 for installation in your `/usr/local/` path.

`sudo mkdir /usr/local/systemc230`
5. Create a directory for object code using `mkdir objdir`
6. Change directory to objdir using `cd objdir`
7. Run configure from your top level directory: `../configure --prefix=/usr/local/systemc230`
8. Do `make`
9. Install by typing command: `sudo make install`

You are done with installation of SystemC 2.3.0. This version is packed with TLM package also. Now we can run our first Hello World! program.

Open your favourite text editor and enter the following program:

```
// 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);
}

```

Save the file as hello.cpp. Use following command to export a variable SYSTEMC_HOME.

```
export SYSTEMC_HOME=/usr/local/systemc230/
```

Now you can use following command to compile the program:

```
g++ -I. -I$SYSTEMC_HOME/include -L. -L$SYSTEMC_HOME/lib-linux -Wl,-rpath=$SYSTEMC_HOME/lib-linux -o he
```



Once the program is compiled type following to run your program

```
./hello
```

and you should get output

```

SystemC 2.3.0-ASI --- Aug 12 2012 09:27:22
Copyright (c) 1996-2012 by all Contributors,
ALL RIGHTS RESERVED

```

Hello World.

If you get above output, you have successfully completed the setup and run your first SystemC program.

Note: This set of instruction has been tested with Linux Mint 14 which is derivative of Ubuntu Linux. In Ubuntu 12.10, user might need to install g++ before going through these steps.


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Paul Ehrlich • 10 months ago

Thanks worked even for Ubuntu 13.04.

Two thanks a had to to additionally

1)sudo apt-get install g++ (wasn't somehow not on my system, maybe 13.04 standard?)

2) export LD_LIBRARY_PATH=/usr/local/systemc-2.3.0/lib-linux64:\$LD_LIBRARY_PATH

otherwise my SystemC example wouldn't start and stop with the followin error

./example.o: error while loading shared libraries: libsystemc-2.3.0.so:

cannot open shared object file: No such file or directory

1 ^ | v • Reply • Share >



Santosh Mod → Paul Ehrlich • 10 months ago

Yes Paul.

Somehow g++ is not installed by default in Ubuntu 12.10 too.

I was not aware of LD_LIBRARY_PATH issue. I will test it and update the article accordingly. Thanks a lot for updating.

^ | v • Reply • Share >



Santosh Mod • 11 months ago

Hi All,

Sorry for creating confusions. There were some mistakes in the article. Article has been updated now.

Thanks Nathanael for pointing out.

^ | v • Reply • Share >



bhargv • 11 months ago

any one please help me on this.

when i execute step 5 i got this error.

“bash: ../configure: No such file or directory”

& if just use ../configure then at a time of compilion it gives error

“fatal error as systemc.h:No such file or directory”

^ | v • Reply • Share >



skjoshi → bhargv • 11 months ago

The article has been updated. Please follow it now and let me know if problem persists.

^ | v • Reply • Share >



Chi • 11 months ago

Hello,

While I am trying to compile your hello example, the follow error shows:

/usr/bin/ld: cannot find -lsystemc

collect2: ld returned 1 exit status

Anhy idea?

Thanks

^ | v • Reply • Share >



Sanju → Chi • 11 months ago

Did you define \$SYSTEMC_HOME? If yes, is it pointing to the correct path?

^ | v • Reply • Share >



Sanju • 11 months ago

I am not sure about 2.2.0.

Have you added the systemC installation path in include directories while compiling?

-I. -I\$SYSTEMC_HOME/include

option can add the include path where -I. -I\$SYSTEMC_HOME should point to your SystemC installation directory. Try adding proper command options. It will be helpful you could post your compilation command here.

^ | v • Reply • Share >



nikilla • 11 months ago

I am getting the error while compiling the code given in examples (i.e) in systemc-2.2.0-examples....



Commands used are..

cd —installation path of systemc till simple_fifo

make check....

after this i am getting as systemc.h file not found..

Help me out..

^ | v • Reply • Share >



Nathanael → nikilla • 11 months ago

please please please !!!!

when you make a copy paste do it well !!!

when you are to the step 5 before running the configuration, you have to do:

mkdir objdir

cd objdir

after you have to configure:

../configure --prefix=/usr/local/systemc230

and now you can do the rest.

ps the command make have to be run in objdir directory

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nikilla • 11 months ago

can you plz help me to rectify the error

Thank you

^ | v • Reply • Share >



nikilla • 11 months ago

i am getting fatal error as systemc.h:No such file or directory

Compilation terminated

^ | v • Reply • Share >



Sanju → nikilla • 11 months ago

Is this error appearing while compiling SystemC or your program?

^ | v • Reply • Share >

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