

# 嵌入式系统导论实验报告

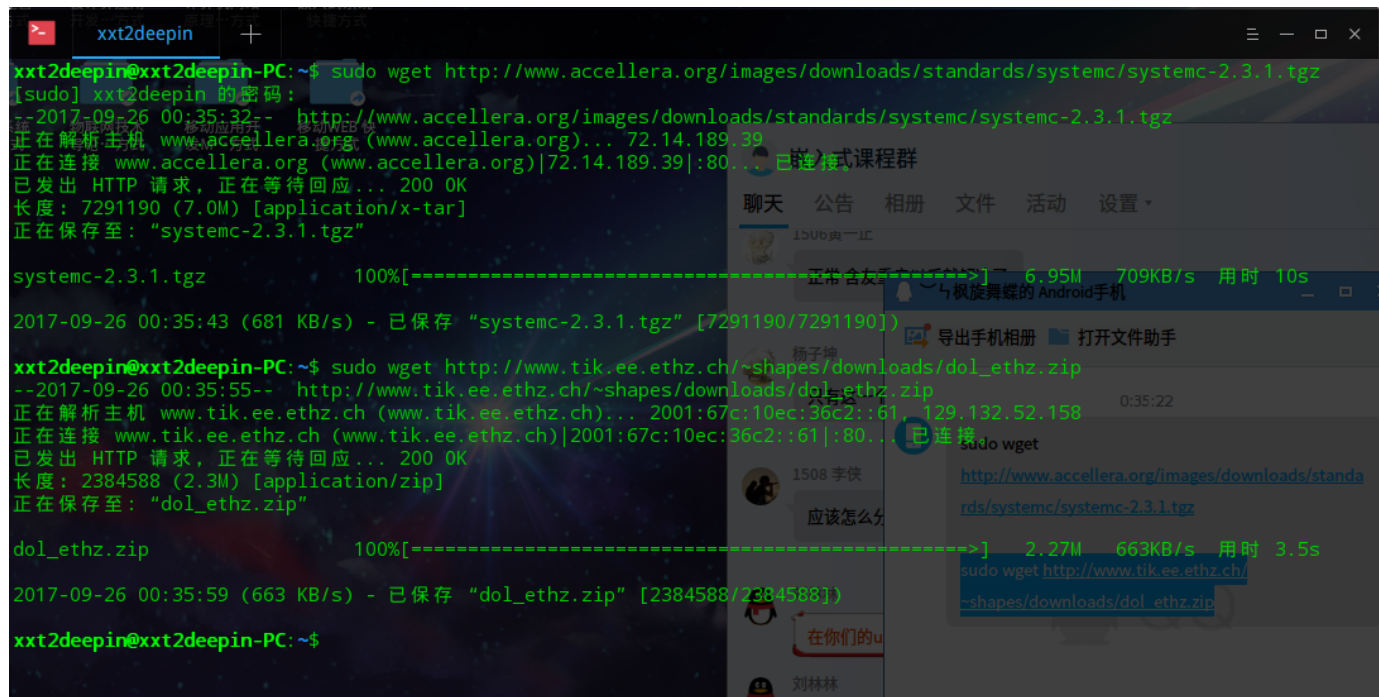
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## 1.实验题目

### DOL开发环境配置

## 2.实验结果

- 下载相关软件环境



- 编译systemc，运行configure

```

objdir
mc-2.3.1的目录下
emc-2.3.1
Directory setup (based on classic layout):
Installation prefix (aka SYSTEMC_HOME):
/home/xxt2deepin/systemc-2.3.1
Header files : <SYSTEMC_HOME>/include
Libraries : <SYSTEMC_HOME>/lib-linux64
Documentation : <SYSTEMC_HOME>/docs
Examples : <SYSTEMC_HOME>/examples

Architecture : linux64
Compiler (flags): g++

Build settings:
Enable compiler optimizations : yes
Include debugging symbols : no
Coroutine package for processes: QuickThreads
Disable async_request_update : yes
Phase callbacks (experimental) : no
Additional settings :

WARNING: The selected SystemC library configuration is non-conforming
to IEEE Std. 1666-2011. See INSTALL.

root@iZ28ikkbzgeZ:~/systemc-2.3.1/objdir#

```

- 运行install

```

objdir
CXX      sc_object_manager.lo
CXX      sc_phase_callback_registry.lo
CXX      sc_process.lo
CXX      sc_reset.lo
CXX      sc_sensitive.lo
CXX      sc_simcontext.lo
In file included from ../../../../src/sysc/packages/boost/mem_fn.hpp:25:0,
                  from ../../../../src/sysc/packages/boost/bind.hpp:26,
                  from ../../../../src/sysc/kernel/sc_boost.h:42,
                  from ../../../../src/sysc/kernel/sc_simcontext.cpp:50:
../../../../src/sysc/packages/boost/get_pointer.hpp:21:40: warning: 'template<class> class std::auto_ptr' [-Wdeprecated-declarations]
    template<class T> T * get_pointer(std::auto_ptr<T> const& p)
                                   ~~~~~~
In file included from /usr/include/c++/6/memory:81:0,
                  from ../../../../src/sysc/packages/boost/get_pointer.hpp:8,
                  from ../../../../src/sysc/packages/boost/mem_fn.hpp:25,
                  from ../../../../src/sysc/packages/boost/bind.hpp:26,
                  from ../../../../src/sysc/kernel/sc_boost.h:42,
                  from ../../../../src/sysc/kernel/sc_simcontext.cpp:50:
/usr/include/c++/6/bits/unique_ptr.h:49:28: note: declared here
    template<typename> class auto_ptr;
                          ~~~~~
CXX      sc_spawn_options.lo
CXX      sc_thread_process.lo
CXX      sc_time.lo

```

```

objdir
GEN copy-check-data
make[4]: Entering directory '/home/xxt2deepin/systemc-2.3.1/objdir/examples/tlm/common'
make[4]: Nothing to be done for 'install-exec-am'.
make[4]: Leaving directory '/home/xxt2deepin/systemc-2.3.1/objdir/examples/tlm/common'
make[3]: Leaving directory '/home/xxt2deepin/systemc-2.3.1/objdir/examples/tlm/common'
make[3]: Entering directory '/home/xxt2deepin/systemc-2.3.1/objdir/examples/tlm'
make[4]: Entering directory '/home/xxt2deepin/systemc-2.3.1/objdir/examples/tlm'
make[4]: Nothing to be done for 'install-exec-am'.
make[4]: Leaving directory '/home/xxt2deepin/systemc-2.3.1/objdir/examples/tlm'
make[3]: Leaving directory '/home/xxt2deepin/systemc-2.3.1/objdir/examples/tlm'
make[2]: Leaving directory '/home/xxt2deepin/systemc-2.3.1/objdir/examples/tlm'
make[2]: Entering directory '/home/xxt2deepin/systemc-2.3.1/objdir/examples'
GEN copy-check-data
make[3]: Entering directory '/home/xxt2deepin/systemc-2.3.1/objdir/examples'
make[3]: Nothing to be done for 'install-exec-am'.
make[3]: Leaving directory '/home/xxt2deepin/systemc-2.3.1/objdir/examples'
make[2]: Leaving directory '/home/xxt2deepin/systemc-2.3.1/objdir/examples'
make[1]: Leaving directory '/home/xxt2deepin/systemc-2.3.1/objdir/examples'
make[1]: Entering directory '/home/xxt2deepin/systemc-2.3.1/objdir'
make[2]: Entering directory '/home/xxt2deepin/systemc-2.3.1/objdir'
make[2]: Nothing to be done for 'install-exec-am'.
make[1]: Leaving directory '/home/xxt2deepin/systemc-2.3.1/objdir'
xxt2deepin@xxt2deepin-PC: ~/systemc-2.3.1/objdir$

```

- 修改dol文件中的build\_zip.xml文件

```

文档  build_zip.xml 保存(S)
build_zip.xml x
1 <?xml version="1.0" encoding="UTF-8"?>
2
3 <project name="dol" default="compile" basedir=".">
4
5   <description>
6     Build file for ETHZ SHAPES Toolbox.
7   </description>
8
9   <!-- ***** -->
10  <!-- * properties * -->
11  <!-- ***** -->
12
13  <!-- modify the following properties as required -->
14
15  <!-- SystemC paths -->
16  <!-- systemc.inc is the path of the SystemC include directory -->
17  <!-- systemc.lib is the filename of the executable SystemC library -->
18  <!-- These two paths will be used to generate the Makefile that is
19  used to build the SystemC
20  executable binary file. -->
21  <property name="systemc.inc" value="/home/xxt2deepin/systemc-2.3.1/
22  include"/>
23  <property name="systemc.lib" value="/home/xxt2deepin/systemc-2.3.1/
24  lib-linux64/libsystemc.a"/>
25
26  <!-- classpath delimiter (use ":" for UNIX, use ";" for Windows) -->
27  <property name="classpathdelimiter" value=":"/>
28
29  <!-- java compiler properties: a java compiler for Java Platform 5.0
30  is required -->
31  <!-- do _not_ comment out the following line to use the specified
32  external java
33  compiler and virtual machine -->
34  <!-- <property name="use.external.java" value="yes"/> -->
35  <!-- <property name="use.external.java" value="yes"/> -->
36
37  </project>
38
XML 制表符宽度: 4 行 21, 列 14 插入

```

- 编译ant文件

```

dol
showjavaversion2:
config:
    [echo] Create new dol.properties file.
    [copy] Copying 1 file to /home/xxt2deepin/dol/bin
    [jar] Updating jar: /home/xxt2deepin/dol/bin/dol.jar
    [delete] Deleting: /home/xxt2deepin/dol/bin/dol.properties
compile:
    [echo] Create build directory tree.
    [mkdir] Created dir: /home/xxt2deepin/dol/build
    [mkdir] Created dir: /home/xxt2deepin/dol/build/bin
    [mkdir] Created dir: /home/xxt2deepin/dol/build/bin/main
    [copy] Copying 1 file to /home/xxt2deepin/dol/build/bin/main
    [copy] Copying 1 file to /home/xxt2deepin/dol/build/bin/main
updatebuildxml:
updatebuildxml1:
updatebuildxml2:
all:
BUILD SUCCESSFUL
BUILD SUCCESSFUL
Total time: 0 seconds
Total time: 19 seconds
xxt2deepin@xxt2deepin-PC: ~/dol$

```

- 编译第一个example

```

main
[java] Read process network from XML file
[java] -- full filename: file:/home/xxt2deepin/dol/build/bin/main/example1/example1_flattened.xml
[java] Parsing error: line 59: org.xml.sax.SAXParseException: Content is not allowed in trailing section.
[java] Exception
[java] null
[java] java.lang.NullPointerException
[java] at dol.parser.xml.pnschema.PNXmlParser.doParse(PNXmlParser.java:58)
[java] at dol.main.Main.main(Main.java:73)
[java] -- Process network model from XML [Finished]
[java] Consistency check:
[java] -- Consistency check [Finished]
[java] -- Generation [Finished]
[java]
dol12:
execute:
BUILD FAILED
/home/xxt2deepin/dol/build/bin/main/runexample.xml:37: The following error occurred while executing this line:
/home/xxt2deepin/dol/build/bin/main/runexample.xml:216: Unparseable date: "09/28/2017 03:04 下午"
Total time: 1 second
xxt2deepin@xxt2deepin-PC: ~/dol/build/bin/main$

```

(由于C++版本过高出现错误，检查后发现在新版本中是函数std::gets没有识别出来)

```

main +
dol2:
execute:
[echo] Make HdS application.
[exec] g++ -g -O0 -Wall -D__DOL_ETHZ_GEN__ -DINCLUDE_PROFILER -I/home/xt2deepin/systemc-2.3.1/include -Ilib
-Isystemc_wrappers -Iprocesses -c -o sc_application.o sc_application.cpp
[exec] In file included from lib/ProcessWrapper.h:4:0,
[exec] from sc_wrappers/generator_wrapper.h:4,
[exec] from sc_application.cpp:8:
[exec] /home/xt2deepin/systemc-2.3.1/include/systemc.h:118:16: error: 'std::gets' has not been declared
[exec] using std::gets;
[exec] ^~~~~
[exec] sc_application.cpp: In constructor 'sc_application::sc_application(sc_core::sc_module_name)':
[exec] sc_application.cpp:46:20: warning: ISO C++ forbids converting a string constant to 'char*' [-Wwrite-strin
ngs]
[exec] C2_ins("C2", 10)
[exec] ^
[exec] sc_application.cpp:46:20: warning: ISO C++ forbids converting a string constant to 'char*' [-Wwrite-strin
ngs]
[exec] sc_application.cpp:46:20: warning: ISO C++ forbids converting a string constant to 'char*' [-Wwrite-strin
ngs]
[exec] sc_application.cpp:46:20: warning: ISO C++ forbids converting a string constant to 'char*' [-Wwrite-strin
ngs]
[exec] sc_application.cpp:46:20: warning: ISO C++ forbids converting a string constant to 'char*' [-Wwrite-strin
ngs]
[exec] <builtin>: recipe for target 'sc_application.o' failed
[exec] make: *** [sc_application.o] Error 1
[exec] Result: 2

```

- 上网查找解决方案如下



`std::gets` has been removed in C++11 (See [What is gets\(\) equivalent in C11?](#))

8

If you're building using C++11 flag (maybe with a g++ alias), you have to disable this line in `systemc.h`.



Replace



```
using std::gets;
```

with

```
#if defined(__cplusplus) && (__cplusplus < 201103L)
using std::gets;
#endif
```

share improve this answer

edited May 23 at 11:46



Community ♦

1 • 1

answered Jul 13 '16 at 14:00

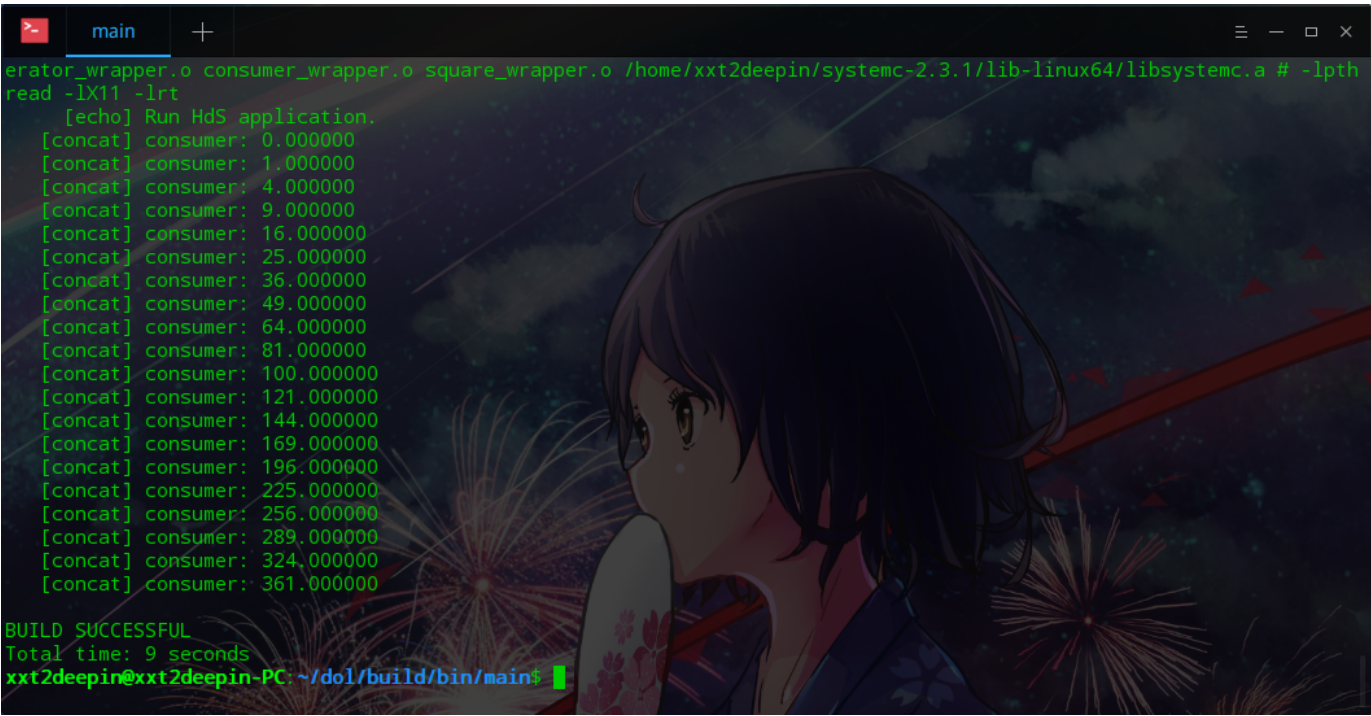


Guillaume

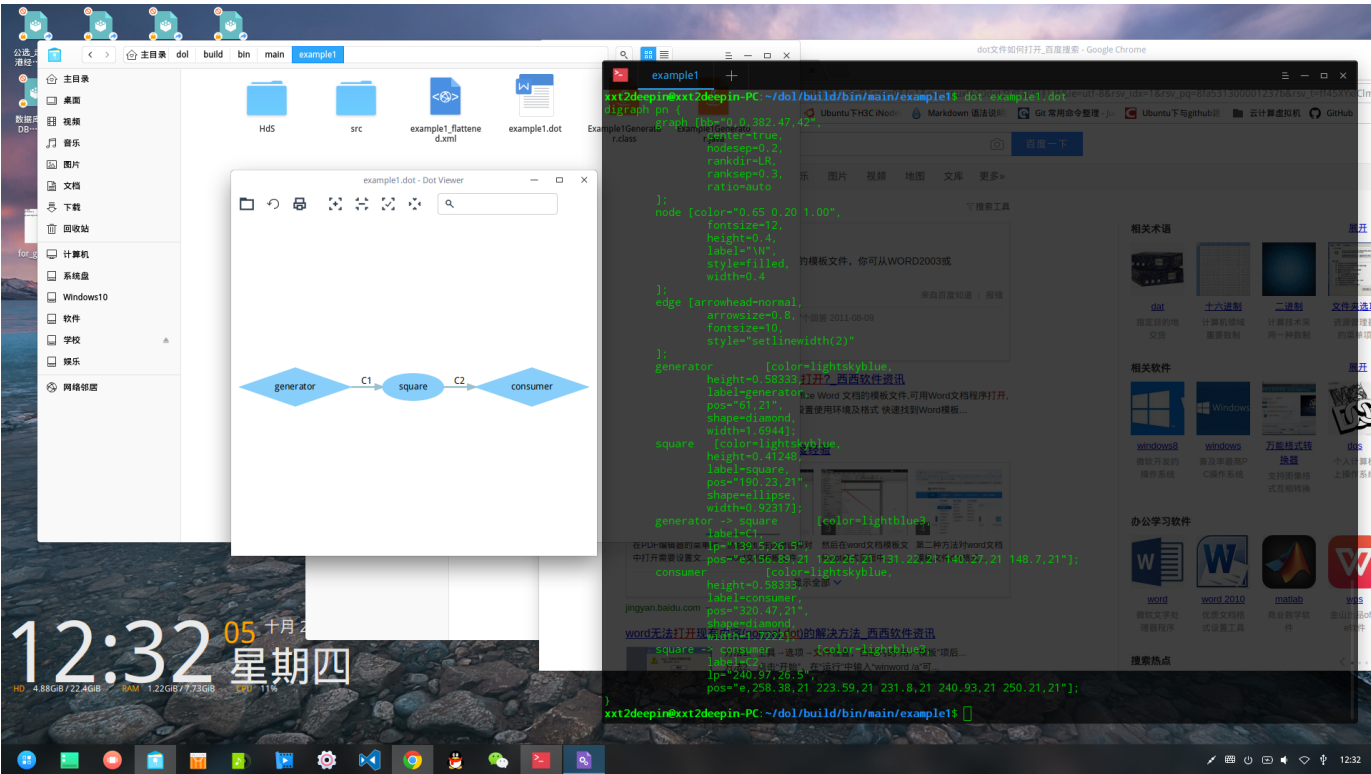
460 • 2 • 6

- 运行后successful





- 最后运行dot文件得到如图的结果



### 关于systemC和dol的一些理解

对于这次实验中用到的systemC和dol,从TA那里就已经了解到了, systemC是为dol所调用的编译语言, 包含各种需要的库, 而dol则是利用systemC和其他语言(Java...)完成多线程编译的一个工具。

### 3.实验心得

这次实验也是主要照着ppt的提示完成就ok了，遇到的问题也就是最后一步的build由于系统自带gcc版本较高无法识别出systemc库中的std::gets导致的编译失败，所以只要将std::gets给相应注释掉就OK了。

然后是排版的问题，由于在markdown中并不支持图片的直接修改大小，一般都是用html语句进行兼容执行，同时由于无法通过markdown的修改直接看到所导出的pdf具体排版，所以我也只能随机地导出，结果就是导致了pdf的图片排版很不好，目前还找不到什么方法来有效快捷的让pdf的排版也同时顾及到。