

# DOL配置过程

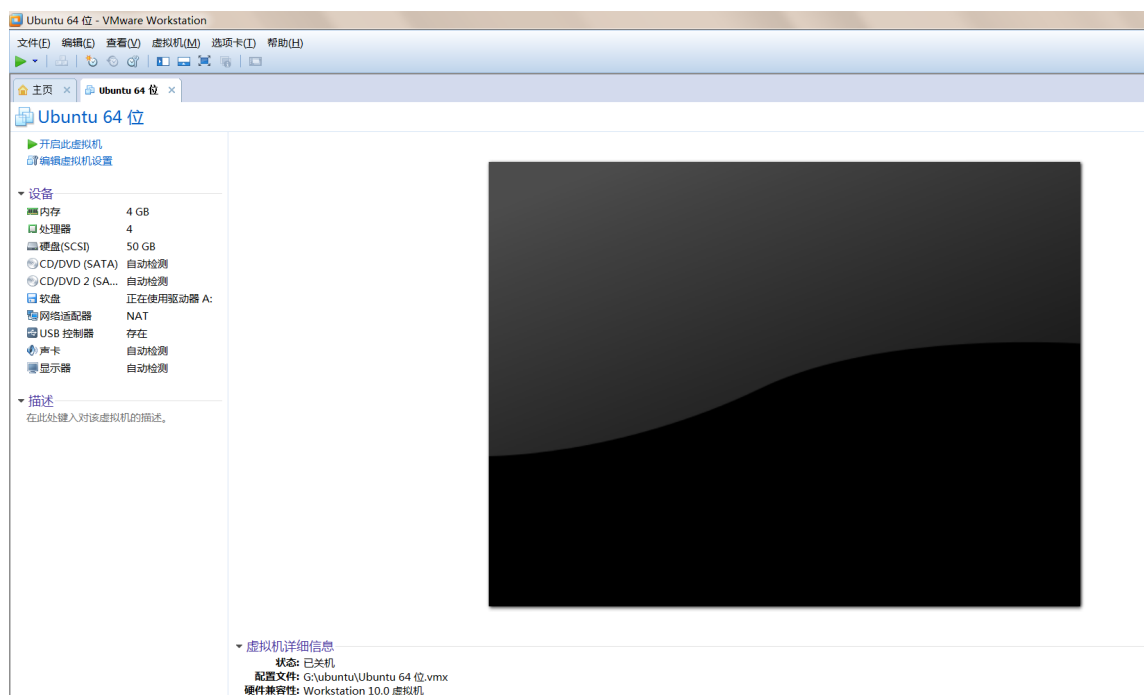
## DOL框架描述

DOL是分布式操作层（distributed operation layer）的简称。DOL结构允许从应用层到多处理器SHAPES结构平台的自动映射。同时，DOL包含了以下三个主要部分：

- DOL API：DOL定义了一系列允许SHAPES 平台上的分布且平行的应用编程的计算以及交互程序。
- DOL 功能性仿真：为了让程序员可以更好的测试他们的程序，DOL建立了仿真功能。除了应用的功能性验证，这个结构可以帮助衡量应用层的表现。
- DOL 映射优化：DOL映射优化的功能是可以计算一系列从应用层到SHAPES 结构平台的映射的优化映射。

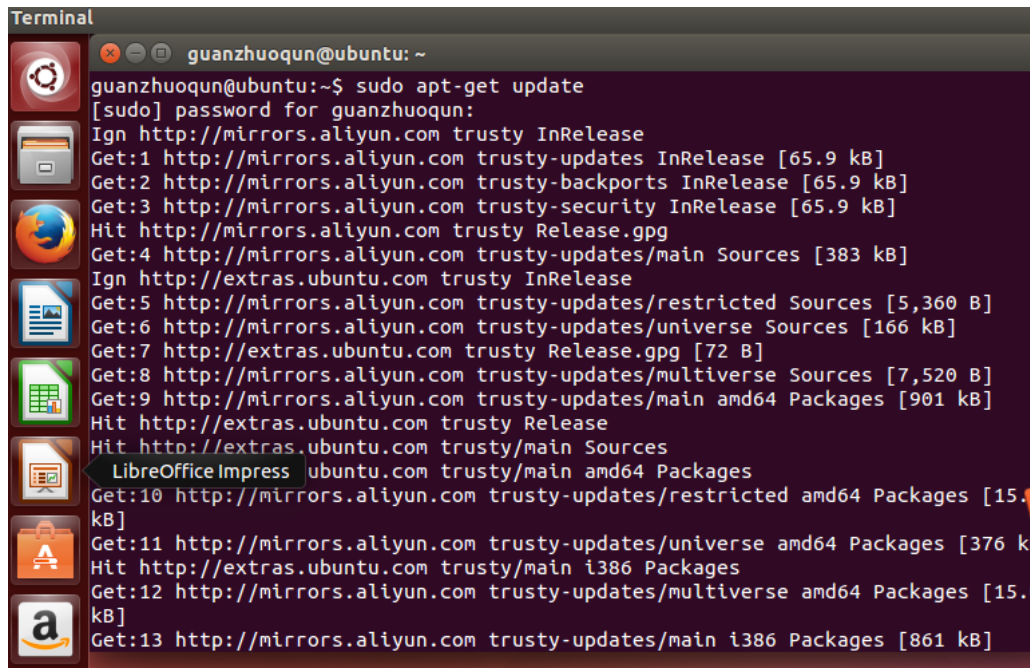
## DOL配置过程

### 先配置环境：在VMWARE中安装UBUNTU虚拟机



### 在UBUNTU下配置必要的环境

step1: `sudo apt-get update`



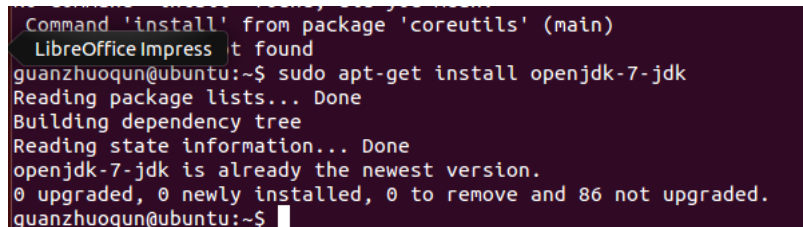
```

Terminal
guanzhuoqun@ubuntu: ~
guanzhuoqun@ubuntu:~$ sudo apt-get update
[sudo] password for guanzhuoqun:
Ign http://mirrors.aliyun.com trusty InRelease
Get:1 http://mirrors.aliyun.com trusty-updates InRelease [65.9 kB]
Get:2 http://mirrors.aliyun.com trusty-backports InRelease [65.9 kB]
Get:3 http://mirrors.aliyun.com trusty-security InRelease [65.9 kB]
Hit http://mirrors.aliyun.com trusty Release.gpg
Get:4 http://mirrors.aliyun.com trusty-updates/main Sources [383 kB]
Ign http://extras.ubuntu.com trusty InRelease
Get:5 http://mirrors.aliyun.com trusty-updates/restricted Sources [5,360 B]
Get:6 http://mirrors.aliyun.com trusty-updates/universe Sources [166 kB]
Get:7 http://extras.ubuntu.com trusty Release.gpg [72 B]
Get:8 http://mirrors.aliyun.com trusty-updates/multiverse Sources [7,520 B]
Get:9 http://mirrors.aliyun.com trusty-updates/main amd64 Packages [901 kB]
Hit http://extras.ubuntu.com trusty Release
Hit http://extras.ubuntu.com trusty/main Sources
LibreOffice Impress ubuntu.com trusty/main amd64 Packages
Get:10 http://mirrors.aliyun.com trusty-updates/restricted amd64 Packages [15.
kB]
Get:11 http://mirrors.aliyun.com trusty-updates/universe amd64 Packages [376 k
Hit http://extras.ubuntu.com trusty/main i386 Packages
Get:12 http://mirrors.aliyun.com trusty-updates/multiverse amd64 Packages [15.
kB]
Get:13 http://mirrors.aliyun.com trusty-updates/main i386 Packages [861 kB]

```

step2: `sudo apt-get install ant`

step3: `sudo apt-get install openjdk-7-jdk`

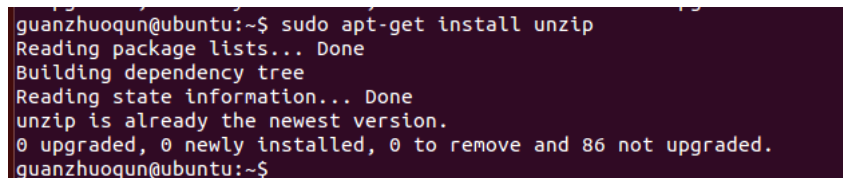


```

Terminal
Command 'install' from package 'coreutils' (main)
LibreOffice Impress t found
guanzhuoqun@ubuntu:~$ sudo apt-get install openjdk-7-jdk
Reading package lists... Done
Building dependency tree
Reading state information... Done
openjdk-7-jdk is already the newest version.
0 upgraded, 0 newly installed, 0 to remove and 86 not upgraded.
guanzhuoqun@ubuntu:~$

```

step4: `sudo apt-get install unzip`



```

Terminal
guanzhuoqun@ubuntu:~$ sudo apt-get install unzip
Reading package lists... Done
Building dependency tree
Reading state information... Done
unzip is already the newest version.
0 upgraded, 0 newly installed, 0 to remove and 86 not upgraded.
guanzhuoqun@ubuntu:~$

```

## 下载文件

`$ sudo wget http://www.accellera.org/images/downloads/standards/systemc/systemc-2.3.1.tgz/`

`$ sudo wget http://www.tik.ee.ethz.ch/~shapes/downloads/dol\_ethz.zip/`

(因为之前已经成功下载并解压安装，这两步无法给出图片，请谅解)

## 解压文件

- 新建dol文件夹  
`mkdir dol`
- 将dolethz.zip解压到dol文件夹中  
`unzip dol_ethz.zip -d dol`
- 解压systemc  
`tar -zxvf systemc-2.3.1.tgz`

## 编译systemc

- 解压后进入systemc-2.3.1目录  
`cd systemc-2.3.1`

- 新建一个临时文件夹objdir
 

```
cd objdir
```
- 编译运行configure
 

```
../configure CXX=g++ --disable-async-updates
```

```

guanzhuoqun@ubuntu: ~/systemc-2.3.1/objdir
Search your computer and online sources (C_HOME):
/home/guanzhuoqun/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.
-----
guanzhuoqun@ubuntu:~/systemc-2.3.1/objdir$

```

- 编译systemc
 

```
sudo make install
```

```
cd
```

```
ls
```

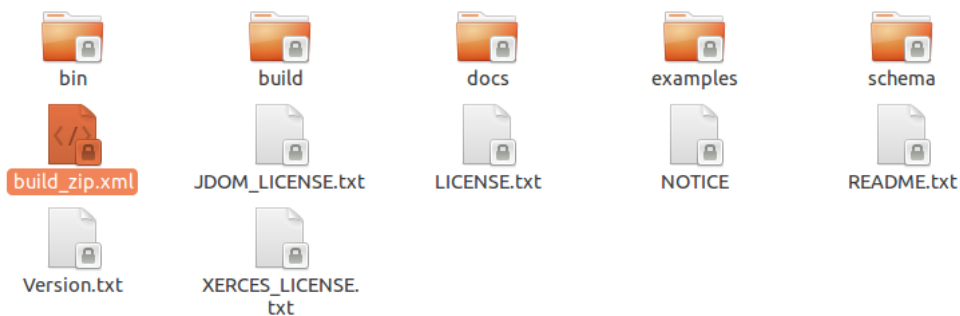
```

guanzhuoqun@ubuntu: ~
make[4]: Nothing to be done for `install-exec-am'.
make[4]: Leaving directory `/home/guanzhuoqun/systemc-2.3.1/objdir/examples'
make[3]: Leaving directory `/home/guanzhuoqun/systemc-2.3.1/objdir/examples'
make[2]: Leaving directory `/home/guanzhuoqun/systemc-2.3.1/objdir/examples'
make[2]: Entering directory `/home/guanzhuoqun/systemc-2.3.1/objdir/examples'
  GEN      copy-check-data
make[3]: Entering directory `/home/guanzhuoqun/systemc-2.3.1/objdir/examples'
make[3]: Nothing to be done for `install-exec-am'.
make[3]: Nothing to be done for `install-data-am'.
make[3]: Leaving directory `/home/guanzhuoqun/systemc-2.3.1/objdir/examples'
make[2]: Leaving directory `/home/guanzhuoqun/systemc-2.3.1/objdir/examples'
make[1]: Leaving directory `/home/guanzhuoqun/systemc-2.3.1/objdir/examples'
make[1]: Entering directory `/home/guanzhuoqun/systemc-2.3.1/objdir'
make[2]: Entering directory `/home/guanzhuoqun/systemc-2.3.1/objdir'
make[2]: Nothing to be done for `install-exec-am'.
make[2]: Leaving directory `/home/guanzhuoqun/systemc-2.3.1/objdir'
make[1]: Leaving directory `/home/guanzhuoqun/systemc-2.3.1/objdir'
guanzhuoqun@ubuntu:~/systemc-2.3.1/objdir$ cd
guanzhuoqun@ubuntu:~$ ls
Desktop      Downloads      jdk-8u40-linux-x64.gz  systemc-2.3.1
Documents    embeddedsystem Music           systemc-2.3.1.tgz
dol          ES2016_14353426 Pictures        Templates
dol_ethz.zip examples.desktop Public          Videos
guanzhuoqun@ubuntu:~$

```

工作路径为 /home/guanzhuoqun/systemc-2.3.1

- 编译DOL



修改build\_zip.xml文件

```
property name="systemc.inc" value="/home/guanzhuoqun/systemc-2.3.1/include"
property name="systemc.lib" value="/home/guanzhuoqun/systemc-2.3.1/lib-linux64/libsystemc.a"
```

- 编译DOL

```
ant -f build_zip.xml all
```

```
guanzhuoqun@ubuntu: ~/dol
guanzhuoqun@ubuntu:~/systemc-2.3.1$ cd ../dol
guanzhuoqun@ubuntu:~/dol$ ant -f build_zip.xml all
Buildfile: /home/guanzhuoqun/dol/build_zip.xml

showantversion:
    [echo] Use Apache Ant(TM) version 1.9.3 compiled on April 8 2014.

showjavaversion1:
    [echo] Use Java version 1.7.0_111 (required version: 1.5.0 or higher).

showjavaversion2:

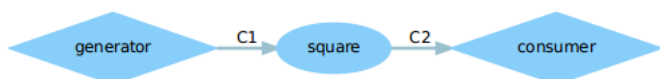
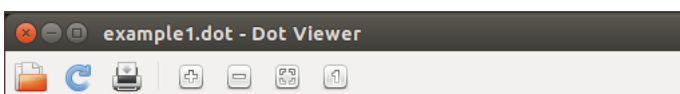
config:
    [echo] Create new dol.properties file.
    [copy] Copying 1 file to /home/guanzhuoqun/dol/bin

BUILD FAILED
/home/guanzhuoqun/dol/build_zip.xml:63: Failed to copy /home/guanzhuoqun/dol/bin/dol_template.properties to /home/guanzhuoqun/dol/bin/dol.properties due to java.io.FileNotFoundException /home/guanzhuoqun/dol/bin/dol.properties (Permission denied)

Total time: 1 second
guanzhuoqun@ubuntu:~/dol$
```

- 运行build/bin/main 路径下的第一个例子

```
ant -f runexample.xml -Dnumber=1
```



## 实验收获与感想

- 比较笼统的知道了Linux下命令行的一些基本操作指令以及DOL的基本安装过程，成功配置了DOL的基本编译环境。
- 在配置过程中很容易出现权限低不被允许的情况，这时候要在命令前面加入`sudo`，代表以管理员权限运行
- 看了挺多关于Markdown的文本，markdown的确是一种非常有趣的语言，非常适合于自动排版以及PPT的制作
- 建立了自己的github仓库，并发现github仓库可以用于非常非常多的地方，非常开心学习到这个平台的使用方法。