

安装Nvidia1070ti驱动

```
sudo add-apt-repository ppa:graphics-drivers/ppa
sudo apt-get update
sudo apt-get install nvidia-390 #此处要根据上面查询到的版本适当更改
sudo apt-get install mesa-common-dev
sudo apt-get install freeglut3-dev

nvidia-smi #若出现电脑GPU列表，即安装成功
```

服务器备份

我是先给这个服务器备份了一下，这几天搞了不少小问题出来

备份命令：

```
sudo -i
cd /
tar cvpzf backup.tgz --exclude=/proc --exclude=/lost+found --exclude=/backup.tgz -
-exclude=/mnt --exclude=/sys --exclude=/media /
```

恢复指令：

```
sudo rm -rf /media/磁盘名称/分区名称*
```

将备份文件”backup.tgz”拷入该分区；

```
sudo cp -i backup.tgz /media/磁盘名/分区名sdaX
```

进入分区并将压缩文件解压缩，参数x是告诉tar程序解压缩备份文件。

```
sudo tar xvpfz backup.tgz
```

重新创建那些在备份时被排除在外的目录；

```
sudo mkdir proc lost+found mnt sys media
```

在Android上的部署

Requirements:

JDK、Android NDK、Android设备，LLVM在构建shared library已装

Gradle的安装

```
requires only a Java JDK or JRE version 8 or higher to be installed. To check, run
java -version
java -version
```

要装个**sdkman**！

```
https://sdkman.io/install
curl -s "https://get.sdkman.io" | bash
source "$HOME/.sdkman/bin/sdkman-init.sh"
```

检查版本

```
sdk version
sdk install gradle 5.5.1
```

NDK安装

我是通过Android Studio来装的

但AS在Linux x64 上要先安装32位库

```
sudo apt-get install lib32z1 lib32ncurses5 lib32bz2-1.0 lib32stdc++6
```

装好AS后注意安装Android SDK路径，在sdk manager那里把NDK也要选中，选好路径

AS网络连接不是很好要下好几次。

PATH 导入

```
sudo vim /etc/profile
export PATH=$PATH:/home/s5/android-stuudio/bin
export PATH=$PATH:/home/s5/Android/SDK/ndk-bundle/
export ANDROID_HOME=~/.Android/Sdk/
```

刷新

```
source /etc/profile
```

JDK安装

TVM目前只支持openjdk8

换Ubuntu 下切换 JDK 版本

```
sudo update-alternatives --config java

java -version
```

Maven 3

```
sudo apt-get install maven

mvn --version
```

编译安装TVM4J

jvmkg

```
make jvmpkg

Reactor Summary for TVM4J Package - Parent 0.0.1-SNAPSHOT:
[INFO]
[INFO] TVM4J Package - Parent ..... SUCCESS [ 1.510 s]
[INFO] TVM4J Package - Core ..... SUCCESS [ 3.713 s]
[INFO] TVM4J Package - Native Parent ..... SUCCESS [ 0.025 s]
[INFO] TVM4J Package - Native Linux-x86_64 ..... SUCCESS [ 58.494 s]
[INFO] TVM4J Package - Full Parent ..... SUCCESS [ 0.028 s]
[INFO] TVM4J Package - Full Linux-x86_64 ..... SUCCESS [01:47 min]
[INFO] -----
[INFO] BUILD SUCCESS
```

jvminstall

```
make jvminstall
```

我前面是用**sudo make jvmpkg** 导致后面的依赖装到**/root/.m2**

解决办法: `sudo cp /root/.m2 /home/s5 -R`

```
sudo make jvminstall
```

安装RPC App到Android手机

换目录

```
cd tvn/app/android_rpc/
```

PATH设定

```
export ANDROID_HOME=~/.Android/Sdk/  
export PATH=$PATH:/home/s5/.Android/Sdk/ndk-bundle/
```

编译RPC的apk

```
gradle clean build or gradle clean build --no-daemon
```

编译完成后

```
find . -name "*.apk" -exec ls -l {} \+
```

会看到

```
./app/build/outputs/apk/release/app-release-unsigned.apk
```

密钥和签名

你要生成签名, 不然不能通过**adb**安装

```
keytool -genkey -keystore /home/s5/tvm/apps/android_rpc/dev_tools/tvmrpc.keystore  
-alias tvmrpc -keyalg RSA -validity 10000
```

为**apk**生成签名

```
jarsigner -keystore /home/s5/tvm/apps/android_rpc/dev_tools/tvmrpc.keystore \  
-signedjar  
  
/home/s5/tvm/apps/android_rpc/dev_tools/../../app/build/outputs/apk/release/tvmrpc-  
release.apk \  
  
/home/s5/tvm/apps/android_rpc/dev_tools/../../app/build/outputs/apk/release/app-  
release-unsigned.apk 'tvmrpc'
```

通过adb装上去

```
adb install -r  
/home/s5/tvm/apps/android_rpc/dev_tools/../../app/build/outputs/apk/release/tvmrpc-  
release.apk  
  
Success
```

Android机上调试RPC

```
python -m tvm.exec.rpc_tracker --port 7030 开放在7030端口
```

在TVMRPC上调试

```
Address: 192.168.xxx.xxx  
Port: 7030  
Key: android
```

宿主机上查看RPC连接

```
python -m tvm.exec.query_rpc_tracker --port 7030  
  
Server List  
-----  
server-address  key
```

```
-----  
10.66.79.132:47700      server:android  
-----  
  
Queue Status  
-----  
key          total  free  pending  
-----  
android      1      1      0
```

测试

```
tests/android_rpc_test.py  
  
Run CPU test ...
```

编译安装android_deploy示例

安装ninja:

```
sudo apt install ninja-build  
  
cd tvm/apps/android_deploy
```

setup env

```
export PATH=$PATH:/home/s5/Android/Sdk/ndk-bundle/  
export ANDROID_HOME=~/.Android/Sdk/
```

和构建RPC一样构建Deploy

build

```
gradle clean build --no-daemon
```

出现一个错误

```
Execution failed for task ':app:packageDebug'.
```

开始以为是zip损坏了，后来发现应该是在每次构建执行都要启动一个新JVM

解决办法：在编译目录下创建**gradle.properties**

```
Just create a file called gradle.properties in your root project:
```

```
root
```

```
|--gradle.properties
```

```
|--build.gradle
```

```
|--settings.gradle
```

```
|--app
```

```
|----build.gradle
```

```
Then add inside the file:
```

```
org.gradle.jvmargs=-Xmx2048m
```

密钥和签名和安装

```
find . -name "*.apk" -exec ls -l {} \+
```

再生成密钥和签名

```
jarsigner -keystore /home/s5/tvm/apps/android_deploy/dev_tools/tvmrpc.keystore \  
-signedjar  
/home/s5/tvm/apps/android_deploy/dev_tools/../../app/build/outputs/apk/release/tvmrpc  
-release.apk \  
  
/home/s5/tvm/apps/android_deploy/dev_tools/../../app/build/outputs/apk/release/app-  
release-unsigned.apk 'tvmrpc'
```

再通过**adb**安装

```
adb install -r  
/home/gemfield/projects/tvm/apps/android_deploy/dev_tools/../../app/build/outputs/apk  
/release/tvmdemo-release.apk
```