

Downloading and Compiling Android9.0.0-2.0.0 BSP

on Ubuntu16.04.2 LTS

Some of Chinese customer couldn't normally download android source code from google site, here give a way to download android source from Mirror site of Tsinghua University.

Preparations

1. Installing Ubuntu16.04.2 LTS

Customer can download ubuntu-16.04.2-desktop-amd64.iso from
<https://www.ubuntu.com/download/desktop>

Then install it to VMware workstation player v12 or PC, after finishing installation, use "Software Update" to update system.

In order to compile android9.0.0-2.0.0 BSP, necessary packages should also be installed on Ubuntu 16.04.

```
$ sudo apt-get install gnupg
$ sudo apt-get install flex
$ sudo apt-get install bison
$ sudo apt-get install gperf
$ sudo apt-get install build-essential
$ sudo apt-get install zip
$ sudo apt-get install zlib1g-dev
$ sudo apt-get install libc6-dev
$ sudo apt-get install lib32ncurses5-dev

$ sudo apt-get install x11proto-core-dev
$ sudo apt-get install libx11-dev
$ sudo apt-get install lib32z1-dev

$ sudo apt-get install libgl1-mesa-dev
$ sudo apt-get install tofrodos
$ sudo apt-get install python-markdown
$ sudo apt-get install libxml2-utils
$ sudo apt-get install xsltproc
$ sudo apt-get install uuid-dev:i386 liblzo2-dev:i386

$ sudo apt-get install gcc-multilib g++-multilib
$ sudo apt-get install subversion
$ sudo apt-get install openssh-server openssh-client
```

```
$ sudo apt-get install uuid uuid-dev
$ sudo apt-get install zlib1g-dev liblz-dev
$ sudo apt-get install liblzo2-2 liblzo2-dev
$ sudo apt-get install lzop
$ sudo apt-get install git-core curl
$ sudo apt-get install u-boot-tools
$ sudo apt-get install mtd-utils
$ sudo apt-get install android-tools-fsutils
$ sudo apt-get install openjdk-8-jdk
$ sudo apt-get install device-tree-compiler
$ sudo apt-get install gdisk
$ sudo apt-get install liblz4-tool
$ sudo apt-get install m4
$ sudo apt-get install libz-dev
```

More detail, see [Android_User's_Guide.pdf](#) (android 9.0.0-2.0.0 BSP documents)

2. Downloading and unpacking Android release package

https://www.nxp.com/support/developer-resources/evaluation-and-development-boards/sabre-development-system/android-os-for-i.mx-applications-processors:IMXANDROID?tab=Design_Tools_Tab

-- [P9.0.0 2.0.0 GA ANDROID SOURCE](#)

File name is **imx-p9.0.0_2.0.0-ga.tar.gz**

```
# cd ~
```

```
# tar xzvf imx-p9.0.0_2.0.0-ga.tar.gz
```

Downloading Android 9.0.0-2.0.0 source code

1. Getting repo

```
# cd ~
```

```
# mkdir bin
```

```
# cd bin
```

```
# curl https://mirrors.tuna.tsinghua.edu.cn/git/git-repo > ~/bin/repo
```

```
# chmod a+x ~/bin/repo
```

```
# export PATH=${PATH}:~/bin
```

2. Modifying repo File

Open `~/bin/repo` file with 'gedit' and Change google address

From

REPO_URL = 'https://gerrit.googlesource.com/git-repo'

To

REPO_URL = ' https://mirrors.tuna.tsinghua.edu.cn/git/git-repo/ '

3、 Setting email address

```
# git config --global user.email "xxxx@nxp.com"
```

```
# git config --global user.name "xxxx"
```

[Email & Name should be yours]

4、 Modifying android setup script and Running it

Open ~/imx-p9.0.0_2.0.0-ga/imx_android_setup.sh and add a line like below:

```
if [ "$rc" != 0 ]; then
    echo "-----"
    echo "----Repo Init failure"
    echo "-----"
    return 1
fi
find -name 'aosp-p9.0.0_2.0.0-ga.xml' | \
xargs perl -pi -e 's|https://android.googlesource.com/|https://aosp.tuna.tsinghua.edu.cn/|g'
fi
```

```
if [ "$rc" != 0 ]; then
    echo "-----"
    echo "----Repo Init failure"
    echo "-----"
    return 1
fi
find -name 'aosp-p9.0.0_2.0.0-ga.xml'|xargs perl -pi -e 's|https://android.googlesource.com/|https://aosp.tuna.tsinghua.edu.cn/|g'
else
    cd "$android_builddir"
fi
```

Then save it and exit.

```
# cd ~/
```

```
# source ~/imx-p9.0.0_2.0.0-ga/imx_android_setup.sh
```

Then android_build directory is created at ~/

If fetching errors occur, like below, run "repo sync" again.

```

weidong@ubuntu: ~/android_build
* [new tag]      android-wear-o-preview-4 -> android-wear-o-preview-4
* [new tag]      android-wear-p-preview-2 -> android-wear-p-preview-2
error: RPC failed; curl 56 GnuTLS recv error (-54): Error in the pull function.
fatal: The remote end hung up unexpectedly
fatal: early EOF
fatal: index-pack failed
error: RPC failed; curl 56 GnuTLS recv error (-54): Error in the pull function.
fatal: The remote end hung up unexpectedly
fatal: early EOF
fatal: index-pack failed
error: RPC failed; curl 56 GnuTLS recv error (-54): Error in the pull function.
fatal: The remote end hung up unexpectedly
fatal: early EOF
fatal: index-pack failed
error: Cannot fetch platform/system/extras from https://source.codeaurora.org/external/imx/aosp/platform/system/extras
error: Cannot fetch platform/development from https://source.codeaurora.org/external/imx/aosp/platform/development
fatal: unable to access 'https://source.codeaurora.org/external/imx/linux-imx/': Could not resolve host: source.codeaurora.org
error: Cannot fetch linux-imx from https://source.codeaurora.org/external/imx/linux-imx

error: Exited sync due to fetch errors
-----
-----Repo sync failure
-----

```

repo sync

```

Checking out files: 100% (4534/4534), done. ut files: 34% (1563/4534)
Checking out files: 100% (4112/4112), done.
Checking out files: 100% (5661/5661), done. ut files: 35% (2026/5661)
Checking out files: 100% (9936/9936), done. ut files: 20% (2020/9936)
Checking out files: 100% (9937/9937), done.
Checking out files: 100% (488/488), done. out files: 9% (48/488)
Checking out files: 100% (5766/5766), done. ut files: 12% (732/5766)
Checking out files: 100% (2842/2842), done.
Checking out files: 100% (4195/4195), done. ut files: 13% (580/4195)
Checking out files: 100% (30031/30031), done. files: 11% (3428/30031)
Checking out files: 100% (576/576), done. out files: 36% (212/576)
Checking out files: 100% (1478/1478), done.
Checking out files: 100% (8137/8137), done. ut files: 28% (1783/8137)
Checking out files: 100% (6259/6259), done. ut files: 58% (3191/6259)
Checking out files: 100% (4278/4278), done. ut files: 31% (1335/4278)
Checking out files: 100% (3226/3226), done. ut files: 46% (1496/3226)
Checking out files: 100% (323/323), done. out files: 4% (15/323)
Checking out files: 100% (16/16), done. ng out files: 25% (4/16)
Checking out files: 100% (15073/15073), done.
Checking out files: 100% (16166/16166), done.
Checking out files: 100% (37036/37036), done.
Checking out files: 100% (4427/4427), done. ut files: 10% (465/4427)
Checking out files: 100% (222/222), done.
Checking out files: 100% (259/259), done.
Checking out files: 100% (7584/7584), done. ut files: 13% (1002/7584)
Checking out files: 100% (7584/7584), done.
Checking out files: 100% (33748/33748), done.
Checking out files: 100% (683/683), done.
Checking out files: 100% (763/763), done.
Checking out files: 100% (12188/12188), done. files: 25% (3065/12188)
Checking out files: 100% (2218/2218), done.
Checking out files: 100% (8081/8081), done.
Checking out files: 100% (4085/4085), done. ut files: 0% (3/4085)
Checking out files: 100% (10158/10158), done.
Checking out files: 100% (1150/1150), done.
Checking out files: 100% (892/892), done. out files: 12% (109/892)
Checking out files: 100% (18572/18572), done. files: 16% (3028/18572)
Checking out files: 100% (17/17), done. ng out files: 41% (7/17)
Checking out files: 100% (615/615), done. out files: 25% (154/615)
Checking out files: 100% (63364/63364), done. files: 4% (2959/63364)
Syncing work tree: 100% (689/689), done.

weidong@ubuntu:~/android_build$ ls
Android.bp  bootable  compatibility  developers  external  kernel  Makefile  platform_testing  system  tools
art         bootstrap.bash  cts          development  frameworks  libcore  packages  prebuilts        test   vendor
bionic     build      dalvik       device       hardware   libnativehelper  pdk      sdk               toolchain

weidong@ubuntu:~/android_build$

```

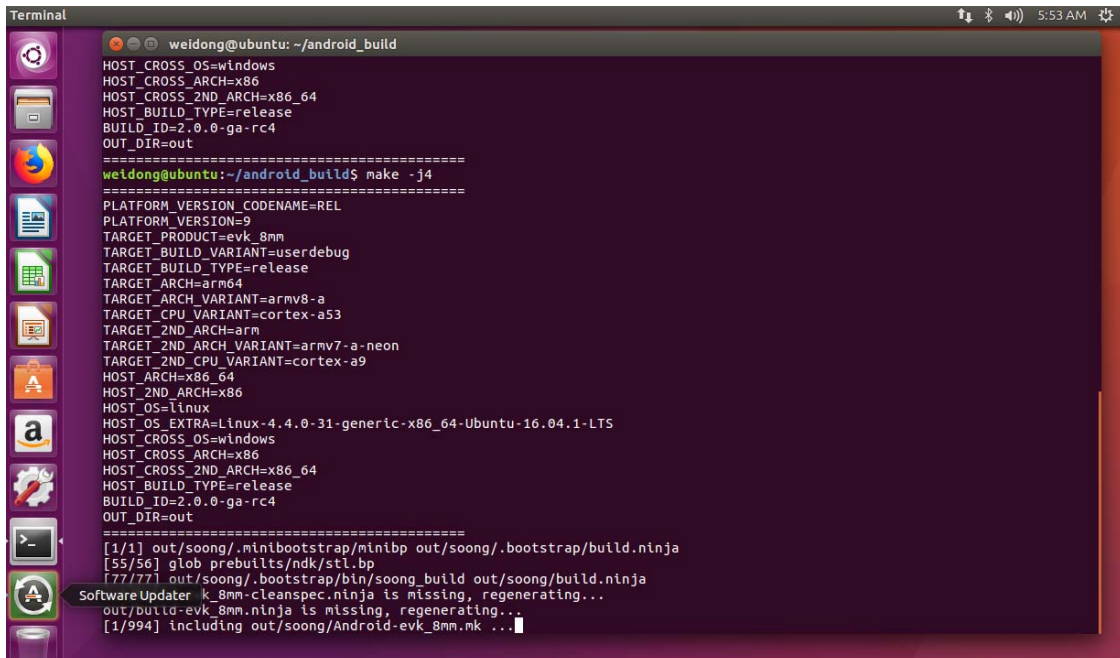
export MY_ANDROID=~ /android_build

[Note] imx_android_setup.sh will be in charge of downloading all android source code.

5. Begin to compile android 9.0.0-2.0.0 BSP

```
$ export ARCH=arm64
$ export CROSS_COMPILE=${MY_ANDROID}/prebuilts/gcc/linux-
x86/aarch64/aarch64-linuxandroid-4.9/bin/aarch64-linux-android-
```

```
$ cd ~/android_build/vendor
$ cp -r ~/imx-p9.0.0_2.0.0-ga/vendor/* ./
$ cd ~/android_build
$ source build/envsetup.sh
$ lunch evk_8mm-userdebug
$ make -j4
```



```
Terminal
weidong@ubuntu: ~/android_build
HOST_CROSS_OS=windows
HOST_CROSS_ARCH=x86
HOST_CROSS_2ND_ARCH=x86_64
HOST_BUILD_TYPE=release
BUILD_ID=2.0.0-ga-rc4
OUT_DIR=out
=====
weidong@ubuntu:~/android_build$ make -j4
=====
PLATFORM_VERSION_CODENAME=REL
PLATFORM_VERSION=9
TARGET_PRODUCT=evk_8mm
TARGET_BUILD_VARIANT=userdebug
TARGET_BUILD_TYPE=release
TARGET_ARCH=arm64
TARGET_ARCH_VARIANT=armv8-a
TARGET_CPU_VARIANT=cortex-a53
TARGET_2ND_ARCH=arm
TARGET_2ND_ARCH_VARIANT=armv7-a-neon
TARGET_2ND_CPU_VARIANT=cortex-a9
HOST_ARCH=x86_64
HOST_2ND_ARCH=x86
HOST_OS=linux
HOST_OS_EXTRA=Linux-4.4.0-31-generic-x86_64-Ubuntu-16.04.1-LTS
HOST_CROSS_OS=windows
HOST_CROSS_ARCH=x86
HOST_CROSS_2ND_ARCH=x86_64
HOST_BUILD_TYPE=release
BUILD_ID=2.0.0-ga-rc4
OUT_DIR=out
=====
[1/1] out/soong/.minibootstrap/minibp out/soong/.bootstrap/build.ninja
[55/56] glob prebuilts/ndk/stl.bp
[77/77] out/soong/.bootstrap/bin/soong_build out/soong/build.ninja
SoftwareUpdater: k_8mm-cleanspec.ninja is missing, regenerating...
out/build-evk_8mm.ninja is missing, regenerating...
[1/994] including out/soong/Android-evk_8mm.mk ...
```

```
weidong@ubuntu: ~/android_build
r.jar]
Reading system jar [/home/weidong/android_build/out/target/common/obj/JAVA_LIBRARIES/core-libart_intermediates/classes-header.jar]
Reading system jar [/home/weidong/android_build/out/target/common/obj/JAVA_LIBRARIES/ext_intermediates/classes-header.jar]
Reading system jar [/home/weidong/android_build/out/target/common/obj/JAVA_LIBRARIES/framework_intermediates/classes-header.jar]
Reading system jar [/home/weidong/android_build/out/target/common/obj/JAVA_LIBRARIES/okhttp_intermediates/classes-header.jar]
Reading system jar [/home/weidong/android_build/out/target/common/obj/JAVA_LIBRARIES/core-lambda-stubs_intermediates/classes-header.jar]
Reading system jar [/home/weidong/android_build/out/target/common/obj/JAVA_LIBRARIES/telephony-common_intermediates/classes-header.jar]
Reading program jar [/home/weidong/android_build/out/target/common/obj/APPS/TelephonyProvider_intermediates/classes.jar]
Preparing output jar [/home/weidong/android_build/out/target/common/obj/APPS/TelephonyProvider_intermediates/classes-proguard.jar]
Copying resources from program jar [/home/weidong/android_build/out/target/common/obj/APPS/TelephonyProvider_intermediates/classes.jar]
[ 99% 105205/105283] target Package: TelephonyProvider (ou..._8mm/obj/APPS/TelephonyProvider_intermediates/package.apk)
warning: ignoring flag -c mdpi-v4. Use --preferred-density instead.
warning: ignoring flag -c tvdpi-v4. Use --preferred-density instead.
warning: ignoring flag -c hdpi-v4. Use --preferred-density instead.
warning: ignoring flag -c xhdpi-v4. Use --preferred-density instead.
warning: ignoring flag -c mdpi-v4. Use --preferred-density instead.
warning: ignoring flag -c tvdpi-v4. Use --preferred-density instead.
warning: ignoring flag -c hdpi-v4. Use --preferred-density instead.
warning: ignoring flag -c xhdpi-v4. Use --preferred-density instead.
[ 99% 105278/105283] Target vendor fs image: out/target/product/evk_8mm/vendor.img
depmod: WARNING: could not open /home/weidong/android_build/out/target/product/evk_8mm/obj/PACKAGING/depmod_vendor_intermediates/lib/modules/0.0/modules.order: No such file or directory
depmod: WARNING: could not open /home/weidong/android_build/out/target/product/evk_8mm/obj/PACKAGING/depmod_vendor_intermediates/lib/modules/0.0/modules.builtin: No such file or directory
[100% 105283/105283] build out/target/product/evk_8mm/vbmeta-lmx8mm.img

#### build completed successfully (05:43:45 (hh:mm:ss)) ####
weidong@ubuntu:~/android_build$
```

NXP TIC team
Weidong sun
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