



A76XX Series_ Android Linux Upgrade_Application Note

LTE Module

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Document Title:	A76XX Series_Android Linux Upgrade_Application Note
Version:	1.00
Date:	2023.04.27
Status:	Released

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About Document

Version History

Version	Date	Owner	What is new
1.00	2023.03.09	Minghao.zhang	New version

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Scope

Based on module AT command manual, this document will introduce Android linux application process. Developers could understand and develop application quickly and efficiently based on this document. This document applies to ASR1603 Series, ASR1606 Series.

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1 Introduction

1.1 Purpose of the document

The document describes the upgrade tools and how to use them. The purpose of this document is to make the reader able to use the tools in Linux system.

1.2 Related documents

[1] A76XX Series_AT Command Manual

2 Compile

For example:

Compiler tool: arm-poky-linux-gnueabi-gcc

Directory: aboot-tiny-2021.02.03\apps\aboot-tiny

Enter the appsaboot-tiny directory in the source directory, execute the make command, and the resulting target file is appsaboot-tinybuildnativeadownload-tiny.native

1. For Linux compilation

```
make -j 16 CONTIKI_VERSION_OVERRIDE=2021.01.08-9-ge7f964a3f  
CROSS_COMPILE_PREFIX=arm-poky-linux-gnueabi- HOST_OS=Linux
```

2. For Android compilation, Android tool chain shall be adopted

```
make -j 16 CONTIKI_VERSION_OVERRIDE=2021.01.08-9-ge7f964a3f  
CROSS_COMPILE_PREFIX=arm-linux-androideabi- CC=armv7a-linux-androideabi16-clang  
LD_OVERRIDE=armv7a-linux-androideabi16-clang HOST_OS=Android
```

3. Execute the preceding make command on the corresponding directory

The generated **adownload-tiny.native** is the upgrade tool

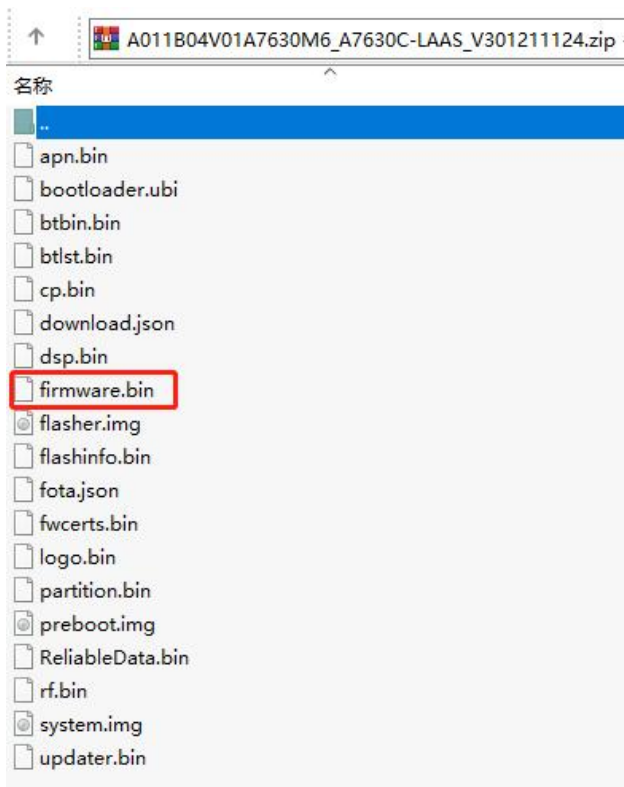
```
pc:~/aboot-tiny-2021.02.03/apps/aboot-tiny$ make  
fatal: Not a git repository: '../../.git'  
using saved target 'native'  
fatal: Not a git repository: '../../.git'  
make: Nothing to be done for 'all'.  
pc:~/aboot-tiny-2021.02.03/apps/aboot-tiny$ cd build/native/  
pc:~/aboot-tiny-2021.02.03/apps/aboot-tiny/build/native$ ls  
adownload-tiny.native  contiki-ng-native.a  libaboot-tiny.map  obj  
pc:~/aboot-tiny-2021.02.03/apps/aboot-tiny/build/native$
```

3 Upgrade

Tools	Description
adownload-tiny.native	Upgrade Tool

Upgrade tool: **adownload-tiny.native**

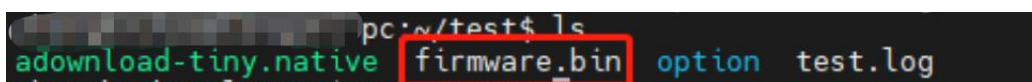
1. Open the package where you want to download firmware and locate the Firemware .bin file.



NOTE

“firmware.bin” file may not exist in some module versions. Please communicate with FAE

2. Copy the firmware .bin and adownload-tiny.native files into your Ubuntu system, as shown in the following figure:




```
~/test$ ls
adownload-tiny.native  firmware.bin  option  test.log
```

- Execute the command "ls -l" to get the size of the firmware .bin file.

```
4096 3月 31 14:14 ./
4096 4月 10 11:17 ./
184576 3月 28 11:09 adownload-tiny.native*
8761484 3月 28 11:09 firmware.bin
4096 3月 31 14:15 option/
5017 3月 30 15:20 test.log
```

- Execute the command

`./adownload-tiny.native [-b base] [-s size] [-r baud] [-g] [-m] [-d device] filename` (The values in parentheses are optional)

NOTE

"base" is set to 0, "size" is set according to the actual file size, and "device" is not required, the tool can automatically detect.

- Then the module is powered off, then powered on, and the firmware download process is automatically carried out. The log of the download process is as follows:

```
~/test$ sudo ./adownload-tiny.native -b 0 -s 8761484 -r 115200 -g -m firmware.bin
[INFO: Main ] Starting Adownload-Tiny (Version: Contiki-NG)
[INFO: Main ] - Routing: nullrouting
[INFO: Main ] - Net: ether_uip
[INFO: Main ] - MAC: nullmac
[INFO: Main ] Node ID: 16540
[INFO: Main ] Link-layer address: 0029.0a0a.409c
[INFO: Main ] Tentative link-local IPv6 address: fe80::229:aff:fe0a:409c
*****重启模组*****
[INFO: Hotplug ] ID 2ecc:3004 ASR Microelectronics Arom Usb Boot Port (/dev/ttyACM0) - ONLINE 备注: /dev/ttyACM0 是开机上电的时候才会有的,
STATUS: CONNECTING
STATUS: RUNNING
[INFO: Download ] Found a crane firmware with size 8761484
[PR: Preboot ] Executing preboot application...

.....

PROGRESS: 96
PROGRESS: 97
PROGRESS: 98
PROGRESS: 99
PROGRESS: 100
[INFO: Transport ] program "nvm" done.
PROGRESS: 100
STATUS: SUCCEEDED
```