



Instructions to Build BCM4709+BCM43602/BCM4366 Router Platform on Local Fedora Machine

- WLAN AE Team

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Revision History

Version	Date	Author	Changes
0.1	06/01/2015	WLAN AE Team	Initial version.

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1 Preface

1.1 Purpose

This document is intended for the instructions of local build of BCM4709+BCM43602/BCM4366 router platform on Fedora machine.

1.2 Fedora versions

The toolchains, Broadcom router SDK, post-processing tools, have been verified on Fedora 19 as well as Fedora 15.

1.3 Toolchain to build firmware

The official toolchain for WiFi SoC firmware, arm-none-eabi-*, is from Mentor Graphics.

NOTE:

Different radio product may use different version of firmware toolchain. Please use the exact same version as described to build firmware code.

2 Build Instructions

2.1 Install Fedora 19 (32bit version)

Fedora 19 (32bit version) can be downloaded from the following link:

<https://mirrors.fedoraproject.org/publiclist/Fedora/19/i386/>

NOTE: Select gcc package option when you install Fedora. Or you can install gcc later with “yum install” command.

2.2 Install necessary software packages for local build

Following software packages are necessary to build Broadcom router platform, so make sure these packages have been installed on your local Fedora machine before build:

yum install ncurses-devel	# for menuconfig
yum install perl-Digest-MD5	# for MD5 integrity validation
yum install zlib-devel	# for gzip compilation

2.3 Install the toolchain for BCM43602 firmware

The toolchain to build BCM43602 is Mentor Graphics Sourcery Codebench Lite 2011.09-69:

arm-none-eabi-gcc (Sourcery CodeBench Lite 2011.09-69) 4.6.1
Copyright (C) 2011 Free Software Foundation, Inc.

Please contact Mentor Graphics to get the toolchain of this version, then install it to /projects/hnd/tools/linux/ and make sure the directory of the toolchain is renamed to “hndtools-armeabi-2011.09”.

Now the directory structure should look like as below:

/projects/hnd/tools/linux/ hndtools-armeabi-2011.09/bin/...

2.4 Install the toolchain for BCM4366 firmware

The toolchain to build BCM4366 is Mentor Graphics Sourcery Codebench Lite 2013.11-24:

arm-none-eabi-gcc (Sourcery CodeBench Lite 2013.11-24) 4.8.1
Copyright (C) 2013 Free Software Foundation, Inc..

Please contact Mentor Graphics to get the toolchain of this version, then install it to /projects/hnd/tools/linux/ and make sure the directory of the toolchain is renamed to “hndtools-armeabi-2013.11”.

Now the directory structure should look like as below:

```
/projects/hnd/tools/linux/ hndtools-armeabi-2013.11/bin/...
```

2.5 Install the toolchain for BCM4709 BSP

BCM4709 runs Linux system and uses ARM Linux toolchain.

The current version of the toolchain is hndtools-arm-linux-2.6.36-uclibc-4.5.3 and can be downloaded from Broadcom DocSafe, then extract to /projects/hnd/tools/linux/.

Now the directory structure should look like as below:

```
/projects/hnd/tools/linux/hndtools-arm-linux-2.6.36-uclibc-4.5.3/bin/...
```

2.6 Install post-processing build tools

Some post-processing tools (CRC validation, compression, etc.) are needed after the compiling/linking is done. These tools are packed into the post-process-tools.zip file, which is released together with this document.

Extract these post-processing tools to /projects/hnd/tools/linux/bin/, then change the file permission:

```
chmod 0755 addcrc bin2c fwtag fwtag.ini trxv2
```

2.7 Download the router platform SDK

Download the Broadcom router platform SDK from Broadcom DocSafe and extract to your local work directory on Fedora machine.

Then copy the files in <SDK>/main/tools/ to /projects/hnd/tools/linux/bin/.

2.8 Set the environment variables

```
PATH=/projects/hnd/tools/linux/hndtools-arm-linux-2.6.36-uclibc-4.5.3/bin:/projects/hnd/tools/linux/bin:$PATH
```

```
LD_LIBRARY_PATH=/projects/hnd/tools/linux/hndtools-arm-linux-2.6.36-uclibc-4.5.3/lib
```

2.9 Build the router SDK platform including WiFi SoC firmware

Under `<SDK>/main/src/router/`, run the following commands:

```
make oldconfig LINUX_VERSION=2_6_36 PLT=arm ARCH=arm
```

```
make all install LINUX_VERSION=2_6_36 PLT=arm ARCH=arm
```

2.10 Clean the build

```
make LINUX_VERSION=2_6_36 PLT=arm ARCH=arm clean cleanall
```