



Compile & Build Uboot, Linux kernel

U-boot:

1. Boot sequence of an ARM board using linux kernel will be

**Boot ROM code => MLO (1st stage) => U-boot.bin(2nd stage) => kernel
=> rootfs**

2. Download u-boot source from:

<ftp://ftp.denx.de/pub/u-boot/>

4. Export path of cross compiler to PATH variable

\$ PATH=\$PATH:(PATH_TO_BUILDDROOT)/output/host/usr/bin

5. Check board support for beaglebone black in **configs** file.

6. Assign default configuration file

\$ make am335x_boneblack_defconfig

7. Compile & build u-boot

\$ make ARCH=arm CROSS_COMPILE=arm-linux-

8. Multiple files are generated in the process in u-boot top folder and two files are important:

MLO (first stage bootloader)

u-boot.img (second stage bootloader)

* u-boot.bin is the binary compiled U-Boot bootloader.



* u-boot.img contains u-boot.bin along with an additional header to be used by the boot ROM/MLO to determine how and where to load and execute U-Boot.

Kernel:

1. Download linux kernel source from:

<https://www.kernel.org/>

2. Export path of cross compiler to PATH variable

\$ PATH=\$PATH:(PATH_TO_BUILDROOT)/output/host/usr/bin

3. Check board support for beaglebone black in **arch/arm/configs** file.

4. Assign default configuration file

\$ make ARCH=arm omap2plus_defconfig

5. Compile & build linux kernel

\$ make ARCH=arm CROSS_COMPILE=arm-linux-

6. Vmlinux is created at the root level in kernel tree .

Creates bootable kernel images in \$(linux_source)/arch/arm/boot/ we find:

Image => uncompressed kernel image

zImage => compressed kernel image

7. Building Device Tree Binary:

dtb files for BBB: am335x-boneblack.dts

dtb files are: am33xx.dtsi, am335x-bone-common.dtsi

\$ make ARCH=arm CROSS_COMPILE=arm-linux- am335x-boneblack.dtb



the corresponding am335x-boneblack.dtb file is generated at
\$(linux_source)/arch/arm/boot/dts.

-----**End**

