

IDO-SBC6Y15-SDK编译

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下载SDK和交叉编译链

链接: <https://pan.baidu.com/s/1vFaJ3OFqi6MKcA2t-PnsFQ>

提取码: **4oqo**

sdk目录包含kernel和uboot源码:

☐		kernel_sbc6y15.tar.bz2	2022-01-26 12:31	bz2文件	147.13MB
☐		rootfs.tar	2022-01-26 12:31	tar文件	87.83MB
☐		sbc6y15_mfgtools_upgrade_20210908.zip	2022-01-26 12:31	zip文件	251.24MB
☐		u-boot-2016-imx6ull-sbc6y15.tar.bz2	2022-01-26 12:31	bz2文件	27.48MB

toolchain目录包含交叉编译链:

☐		imx6ull_qt4.8.7_sdk_hf.tar.bz2	2022-01-26 13:44	bz2文件	244.06MB
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把以上两个目录的文件下载下来。

安装交叉编译链

下载imx6ull_qt4.8.7_sdk_hf.tar.bz2并解压:

```
# tar -jxvf imx6ull_qt4.8.7_sdk_hf.tar.bz2
```

得到gcc-linaro-4.9.4-2017.01-i686_arm-linux-gnueabihf和imx6ull_qt4.8.7_sdk_hf两个目录, 进入gcc-linaro-4.9.4-2017.01-i686_arm-linux-gnueabihf/bin:

```
# cd gcc-linaro-4.9.4-2017.01-i686_arm-linux-gnueabihf/bin
```

```

ronnie@dell-PowerEdge-R430:~/work/imx6ull/toolchain$ ls
gcc-linaro-4.9.4-2017.01-i686_arm-linux-gnueabihf imx6ull_qt4.8.7_sdk_hf imx6ull_qt4.8.7_sdk_hf.tar.bz2
ronnie@dell-PowerEdge-R430:~/work/imx6ull/toolchain$ cd gcc-linaro-4.9.4-2017.01-i686_arm-linux-gnueabihf/bin
ronnie@dell-PowerEdge-R430:~/work/imx6ull/toolchain/gcc-linaro-4.9.4-2017.01-i686_arm-linux-gnueabihf/bin$ ls
arm-linux-gnueabihf-addt2line arm-linux-gnueabihf-gcc-ar arm-linux-gnueabihf-objcopy
arm-linux-gnueabihf-ar arm-linux-gnueabihf-gcc-nm arm-linux-gnueabihf-objdump
arm-linux-gnueabihf-as arm-linux-gnueabihf-gcc-ranlib arm-linux-gnueabihf-ranlib
arm-linux-gnueabihf-c++ arm-linux-gnueabihf-gcov arm-linux-gnueabihf-readelf
arm-linux-gnueabihf-c++filt arm-linux-gnueabihf-gdb arm-linux-gnueabihf-size
arm-linux-gnueabihf-cpp arm-linux-gnueabihf-gfortran arm-linux-gnueabihf-strings
arm-linux-gnueabihf-elfedit arm-linux-gnueabihf-gprof arm-linux-gnueabihf-strip
arm-linux-gnueabihf-g++ arm-linux-gnueabihf-ld gdbserver
arm-linux-gnueabihf-gcc arm-linux-gnueabihf-ld.bfd runtest
arm-linux-gnueabihf-gcc-4.9.4 arm-linux-gnueabihf-nm
ronnie@dell-PowerEdge-R430:~/work/imx6ull/toolchain/gcc-linaro-4.9.4-2017.01-i686_arm-linux-gnueabihf/bin$

```

获取当前目录路径，并将该目录路径加入到环境变量PATH中：

```
# pwd
```

```
# vi ~/.bashrc
```

```

ronnie@dell-PowerEdge-R430:~/work/imx6ull/toolchain/gcc-linaro-4.9.4-2017.01-i686_arm-linux-gnueabihf/bin$ pwd
/home/ronnie/work/imx6ull/toolchain/gcc-linaro-4.9.4-2017.01-i686_arm-linux-gnueabihf/bin
ronnie@dell-PowerEdge-R430:~/work/imx6ull/toolchain/gcc-linaro-4.9.4-2017.01-i686_arm-linux-gnueabihf/bin$ vi ~/.bashrc
ronnie@dell-PowerEdge-R430:~/work/imx6ull/toolchain/gcc-linaro-4.9.4-2017.01-i686_arm-linux-gnueabihf/bin$

```

```
export PATH=${PATH}:/home/ronnie/work/imx6ull/toolchain/gcc-linaro-4.9.4-2017.01-i686_arm-linux-gnueabihf/bin/
```

生效并确认安装成功：

```
# source ~/.bashrc
```

```
# which arm-linux-gnueabihf-gcc
```

```

ronnie@dell-PowerEdge-R430:~/work/imx6ull/toolchain/gcc-linaro-4.9.4-2017.01-i686_arm-linux-gnueabihf/bin$ source ~/.bashrc
ronnie@dell-PowerEdge-R430:~/work/imx6ull/toolchain/gcc-linaro-4.9.4-2017.01-i686_arm-linux-gnueabihf/bin$ which arm-linux-gnueabihf-gcc
/home/ronnie/work/imx6ull/toolchain/gcc-linaro-4.9.4-2017.01-i686_arm-linux-gnueabihf/bin/arm-linux-gnueabihf-gcc
ronnie@dell-PowerEdge-R430:~/work/imx6ull/toolchain/gcc-linaro-4.9.4-2017.01-i686_arm-linux-gnueabihf/bin$

```

结果指示arm-linux-gnueabihf-gcc位于gcc-linaro-4.9.4-2017.01-i686_arm-linux-gnueabihf/bin下，说明安装成功。

编译Uboot

请确认已经安装了交叉编译链。

下载并解压u-boot-2016-imx6ull-sbc6y15.tar.bz2：

```
# tar -jxvf u-boot-2016-imx6ull-sbc6y15.tar.bz2
```

得到u-boot-2016-imx6ull目录，进入该目录并执行make defconfig：

```
# make mx6ull_14x14_evk_nand_defconfig (nand)
```

```
# make mx6ull_14x14_evk_emmc_defconfig (emmc)
```

配置交叉编译链

```
#vi Makefile
```

```
CROSS_COMPILE ?=
endif

ARCH ?=arm
CROSS_COMPILE ?=/usr/bin/arm-linux-gnueabihf-
```

然后执行make开始编译：

```
# make -j16
```

生成的u-boot.imx即为uboot烧录镜像：

```
connie@dell-PowerEdge-R430:~/work/imx6ull/6yl5/u-boot-2016-imx6ull$ ls
api      common      dist      examples  Kconfig    MAKEALL    README     test      u-boot.cfg  u-boot-nodtb.bin
arch     config.mk   dpc       fs         lib         Makefile   scripts    tools     u-boot.imx  u-boot.srec
board    config     drivers   include   license    net        snapshot.commit  u-boot    u-boot.lds  u-boot.sys
cmd      debug enable_and_disable  dtc       Kbuild    MAINTAINERS  post      System.map  u-boot.bin  u-boot.map
connie@dell-PowerEdge-R430:~/work/imx6ull/6yl5/u-boot-2016-imx6ull$
```

编译 kernel

请确认已经安装了交叉编译链。

下载并解压kernel_sbc6y15.tar.bz2：

```
# tar -jxvf kernel_sbc6y15.tar.bz2
```

得到kernel目录，进入该目录并执行make defconfig：

```
# make imx6ull_sbc6y15_defconfig
```

然后执行make & make zi编译：

```
# make -j16
```

```
# make zi
```

生成的zImage和imx6ull-14x14-evk-emmc.dtb(emmc)或

imx6ull-14x14-evk-gpmi-weim.dtb(nand)为kernel烧录镜像：

```
connie@dell-PowerEdge-R430:~/work/imx6ull/6yl5/kernel$ ls
arch          imx6ull-14x14-evk-gpmi-weim.dtb  mm          System.map          vmlinux.o
block         include                            modules.builtin    System.map-4.1.15   vmlinux-4.1.15
COPYING       init                              modules.order      System.map-4.1.15-2.1.0  vmlinux-4.1.15-2.1.0
CREDITS       ipc                               Module.symvers     System.map-4.1.15-2.1.0+g30278ab  vmlinux-4.1.15-2.1.0+g30278ab
crypto        Kbuild                           net               System.map-4.1.15-2.1.0+g30278ab.old  vmlinux-4.1.15-2.1.0+g30278ab.old
defconfig     Kconfig                          REPORTING-BUGS     System.map-4.1.15-2.1.0.old  vmlinux-4.1.15-2.1.0.old
Documentation  kernel                           README            System.map-4.1.15.old    vmlinux-4.1.15.old
drivers       lib                               samples           tools                zImage
firmware      MAINTAINERS                      scripts           usr
fs            Makefile                         security          virt
imx6ull-14x14-evk-emmc.dtb  make_result                      sound            vmlinux
connie@dell-PowerEdge-R430:~/work/imx6ull/6yl5/kernel$
```

打包 rootfs

默认提供了一个基础的rootfs文件系统，如果有需要，可以基于此文件系统做裁减定制。

```
#mkdir rootfs
```

```
#tar -xvf rootfs.tar -C rootfs
```

```
#cd rootfs
#tar -cvf rootfs.tar ./*
```

更新固件

完成以前的步骤后，我们得到以下烧录文件，将它们拷贝出来并重命名：

存储类型	烧录文件	重命名
nand	u-boot.imx	u-boot- imx6ull14x14evk.imx- nand
	zImage	zImage
	imx6ull-14x14-evk-gpmi- weim.dtb	zImage-imx6ull-14x14- evk-gpmi-weim.dtb
	rootfs.tar	rootfs.tar
emmc	u-boot.imx	u-boot- imx6ull14x14evk_emmc.i mx
	zImage	zImage
	mx6ull-14x14-evk- emmc.dtb	zImage-imx6ull-14x14- evk-emmc.dtb
	rootfs.tar	rootfs.tar