

开发环境：Red Hat Enterprise Linux 5

交叉编译工具：arm-linux-gcc-4.5.1

开发板内核版本：linux-3.5

libtool-1.5.6.tar.gz

jpegsrvc.v6b.tar.gz

mjpg-streamer-r63.tar.gz

1、添加内核支持

1.1、Linux 内核目录

make menuconfig

Device Drivers --->

<*> Multimedia support --->

<*> Video For Linux

[*] Enable Video For Linux API 1 (DEPRECATED) (NEW)

[*] Video capture adapters (NEW) --->

[*] V4L USB devices (NEW) --->

<*> USB Video Class (UVC)

[*] UVC input events device support (NEW)

1.2、重新编译内核烧写

make ulmage

2、移植 jpegsrvc.v6b.tar.gz

2.1、安装 libtool-1.5.6.tar.gz（如果编译过，可以直接用）

2.1.1、解压源码包

tar xvfz libtool-1.5.6.tar.gz

```
root@localhost:~/xydz/v4l2 - Shell - Konsole
会话 编辑 查看 书签 设置 帮助

[root@localhost v4l2]# ls
jpegsrvc.v6b.tar.gz  libtool-1.5.6.tar.gz
libtool-1.5.6        mjpg-streamer-r63.tar.gz
[root@localhost v4l2]#
```

2.1.2、进入解压目录进行配置安装

cd libtools-1.5.6

/usr/local/share/libtool/config.guess
/usr/local/share/libtool/config.sub
/usr/local/bin/libtool

```
[root@localhost v4l2]# cd libtool-1.5.6
[root@localhost libtool-1.5.6]# ls
acinclude.m4  ChangeLog.1  depdemo      libtool.m4    mdemo2       tests
aclocal.m4    config.guess  doc           ltdl.m4        missing      THANKS
AUTHORS       config.sub    f77demo      ltmain.in     mkstamp      TODO
bootstrap     configure     INSTALL      ltmain.sh     NEWS
cdemo         configure.ac  install-sh   Makefile.am    pdemo
ChangeLog     COPYING      libltdl      Makefile.in    README
ChangeLog.0   demo         libtoolize.in  mdemo         tagdemo
[root@localhost libtool-1.5.6]#
```

默认配置安装：

```
# ./configure
# make && make install
```

2.2、编译 jpeg

2.2.1、解压 jpegsrc.v6b.tar.gz 进入解压目录

```
# tar xvf jpegsrc.v6b.tar.gz
```

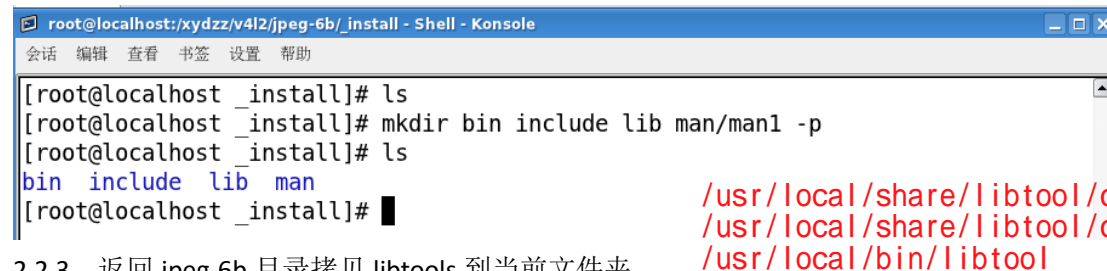
```
[root@localhost v4l2]# ls
jpeg-6b          libtool-1.5.6      mjpg-streamer-r63.tar.gz
jpegsrc.v6b.tar.gz libtool-1.5.6.tar.gz
[root@localhost v4l2]# cd jpeg-6b/
[root@localhost jpeg-6b]# ls
```

2.2.2、在 jpeg-6b 新建编译生成安装目录：

```
# mkdir _install
```

```
# cd _install
```

在指定安装目录下新建以下文件夹：



```
root@localhost:~/xydzz/v4l2/jpeg-6b/_install - Shell - Konsole
会话 编辑 查看 书签 设置 帮助
[root@localhost _install]# ls
[root@localhost _install]# mkdir bin include lib man/man1 -p
[root@localhost _install]# ls
bin include lib man
[root@localhost _install]#
```

/usr/local/share/libtool/config.guess
/usr/local/share/libtool/config.sub
/usr/local/bin/libtool

2.2.3、返回 jpeg-6b 目录拷贝 libtools 到当前文件夹

```
[root@localhost jpeg-6b]# cp /xydzz/v4l2/libtool-1.5.6/config.sub ./
cp: 是否覆盖"./config.sub"? y
[root@localhost jpeg-6b]# cp /xydzz/v4l2/libtool-1.5.6/config.guess ./
cp: 是否覆盖"./config.guess"? y
[root@localhost jpeg-6b]# cp /xydzz/v4l2/libtool-1.5.6/libtool ./
[root@localhost jpeg-6b]#
```

2.2.4、配置编译选项

```
# ./configure --prefix=/test/jpeg6 --host=arm-unknown-linux --prefix=/xydzz/v4l2/jpeg-6b/_install --enable-shared --enable-static
```

2.2.5、修改生成的 Makefile 的编译链

```
CC = arm-none-linux-gnueabi-gcc
```

```
16 includedir = $(prefix)/include
17 binprefix =
18 manprefix =
19 manext = 1
20 mandir = $(prefix)/man/man$(manext)
21
22 # The name of your C compiler:
23 CC= arm-none-linux-gnueabi-gcc
24
25 # You may need to adjust these cc options:
```

25,1

2%

2.2.6、编译安装

```
# make && make install
```

2.2.7、安装目录拷贝动态库到开发板根文件系统

```
[root@localhost jpeg-6b]# cd _install/
[root@localhost _install]# ls
bin include lib man
[root@localhost _install]# cd lib/
[root@localhost lib]# ls
libjpeg.a libjpeg.la libjpeg.so libjpeg.so.62 libjpeg.so.62.0.0
[root@localhost lib]# cp *so* /xydzz/rootfs/lib/
[root@localhost lib]#
```

3、移植 mjpg-streamer

3.1、解压源码包进入解压目录

```
# tar xvzf mjpg-streamer-r63.tar.gz
```

```
[root@localhost v4l2]# ls
jpeg-6b libtool-1.5.6 mjpg-streamer-r63
jpegsrc.v6b.tar.gz libtool-1.5.6.tar.gz mjpg-streamer-r63.tar.gz
[root@localhost v4l2]# cd mjpg-streamer-r63
[root@localhost mjpg-streamer-r63]# ls
CHANGELOG Makefile mjpg_streamer.h README utils.c www
LICENSE mjpg_streamer.c plugins start.sh utils.h
[root@localhost mjpg-streamer-r63]#
```

3.2、修改顶层 Makefile，指定编译工具为 arm-linux-gcc

```
[root@localhost mjpg-streamer-r63]# vim Makefile
```

```
1 #####
2 #
3 # Purpose: Makefile for "M-JPEG Streamer"
4 # Author.: Tom Stoeveken (TST)
5 # Version: 0.3
6 # License: GPL
7 #
8 #####
9
10 CC = arm-linux-gcc
11
12 CFLAGS += -O2 -DLINUX -D_GNU_SOURCE -Wall
13 #CFLAGS += -O2 -DDEBUG -DLINUX -D_GNU_SOURCE -Wall
14 LFLAGS += -lpthread -ldl
```

3.3、修改 plugins/input_uvc/Makfile，指定编译工具为 arm-linux-gcc 和添加编译依赖库的路径

```
10 CC = arm-linux-gcc
```

```
14 CFLAGS += -O2 -DLINUX -D_GNU_SOURCE -Wall -shared -fPIC -I/xydzz/v4l2/jpeg-6
b/_install/include
```

(注意-I 指定的头文件路径为 2.2 节编译 jpeg-6b 安装目录的 include)

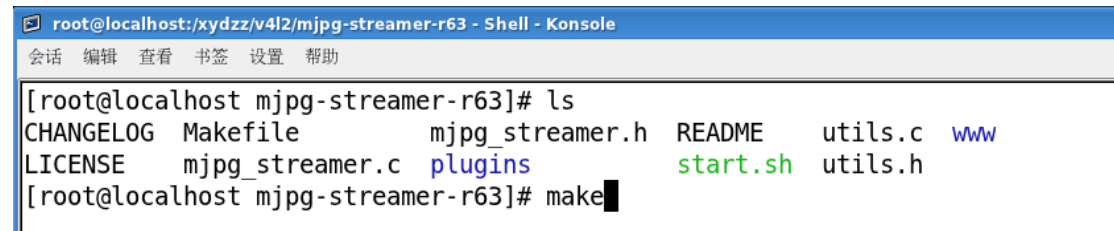
```
10 CC = arm-linux-gcc
11
12 OTHER_HEADERS = ../../mjpg_streamer.h ../../utils.h ../output.h ../input.h
13
14 CFLAGS += -O2 -DLINUX -D_GNU_SOURCE -Wall -shared -fPIC -I/xydzz/v4l2/jpeg-6
b/_install/include
```

```
24 $(CC) $(CFLAGS) -ljpeg -L/xydzz/v4l2/jpeg-6b/_install/lib -o $@ input_uvc.c v4l2uvc.lo  
jpeg_utils.lo dynctrl.lo
```

(注意-L指定的头文件路径为2.2节编译jpeg-6b安装目录的lib)

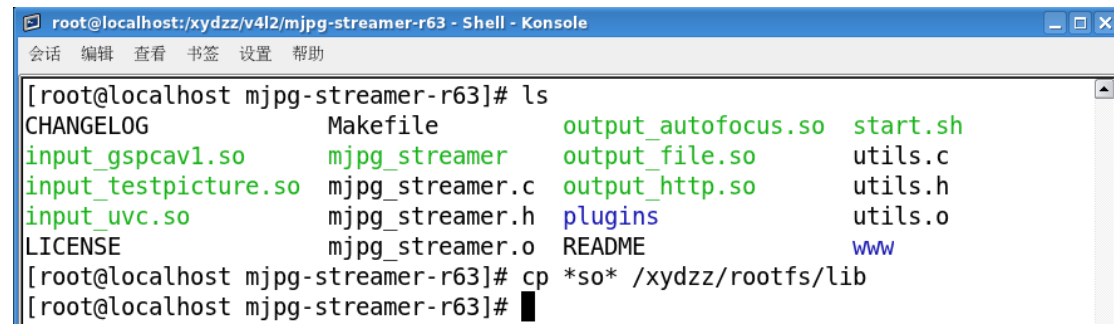
```
24 $(CC) $(CFLAGS) -ljpeg -L/xydzz/v4l2/jpeg-6b/_install/lib -o $@ input_uvc.c v4l2uvc.  
lo jpeg_utils.lo dynctrl.lo
```

3.4、编译



```
root@localhost:/xydzz/v4l2/mjpg-streamer-r63 - Shell - Konsole  
会话 编辑 查看 书签 设置 帮助  
[root@localhost mjpg-streamer-r63]# ls  
CHANGELOG  Makefile      mjpg_streamer.h  README    utils.c  www  
LICENSE    mjpg_streamer.c  plugins          start.sh  utils.h  
[root@localhost mjpg-streamer-r63]# make
```

3.5、将生成的库拷贝到开发板



```
root@localhost:/xydzz/v4l2/mjpg-streamer-r63 - Shell - Konsole  
会话 编辑 查看 书签 设置 帮助  
[root@localhost mjpg-streamer-r63]# ls  
CHANGELOG      Makefile      output_Autofocus.so  start.sh  
input_gspcav1.so  mjpg_streamer  output_File.so       utils.c  
input_testpicture.so  mjpg_streamer.c  output_Http.so       utils.h  
input_uvc.so      mjpg_streamer.h  plugins              utils.o  
LICENSE          mjpg_streamer.o  README               www  
[root@localhost mjpg-streamer-r63]# cp *so* /xydzz/rootfs/lib  
[root@localhost mjpg-streamer-r63]#
```

4、测试

将 linux 摄像头项目\ v4l2_sample_v1.0_ok\ v4l2_sample 拷贝到开发板运行测试