**HackMD** Cross Compile Madplay 1 🕒 變更於 幾秒前 口 收藏 ▲ 已訂閱 ~ ♡ 讚賞 **9** 0 Cross Compile M... **Cross Compile Madplay** Cross Compile ... zlib libid3tag • 參考這本書Chapter 7.4:ARM 嵌入式系统移植实战开发 libmad http://www.wenqujingdian.com/Public/editor/attached/file/20180317/20180317215634\_641 madplay 29.pdf aplay 將madplay移... • 裡面有些指令有錯,因此下面的command有做修正 全部收起 Cross Compile 需要的庫 回到頂部 移至底部 • 解壓所需的文件 mkdir /usr/local/madplay-source tar zxvf zlib-1.2.3.tar.gz -C /usr/local/madplay-source/ tar zxvf libid3tag-0.15.1b.tar.gz -C /usr/local/madplay-source/ tar zxvf libmad-0.15.1b.tar.gz -C /usr/local/madplay-source/ tar zxvf madplay-0.15.2b.tar.gz -C /usr/local/madplay-source/ zlib mkdir /usr/local/mymadplay/zlib-1.2.3 ./configure -shared --prefix=/usr/local/mymadplay/zlib-1.2.3 gedit Makefile • 修改下列參數: • AR=arm-linux-gnueabihf-ar rc: 這用於指定靜態庫(archive)的創建命令,使用 arm-linuxgnueabihf-ar 創建一個靜態庫。 • RANLIB=arm-linux-gnueabihf-ranlib:這指定了庫索引(library index)的創建命令,即使用 arm-linux-gnueabihf-ranlib 創建一個庫的索引。 CC = arm-linux-gnueabihf-gcc \ LDSHARED=arm-linux-gnueabihf-gcc \ -shared -Wl,-soname,libz.so.1 \ CPP=arm-linux-gnueabihf-gcc -E \ AR=arm-linux-gnueabihf-ar rc \ RANLIB=arm-linux-gnueabihf-ranlib make make install libid3tag • 修改配置 • -prefix=/usr/local/madplay-source/libid3tag: 這個選項指定了軟件包的安裝目錄,即將編譯後 的文件安裝到 /usr/local/madplay-source/libid3tag 目錄中。 • CC:使用交叉編譯器 arm-linux-gnueabihf-gcc 來進行編譯 • -host=arm-linux-gnueabihf:這指定了目標主機的體系結構, • CPPFLAGS=-I:指定了頭文件(include)的搜索路徑 • LDFLAGS=-L:指定鏈接器的選項,具體來說是指定了庫文件(library)的搜索路徑, ./configure --prefix=/usr/local/madplay-source/libid3tag \ CC=arm-linux-gnueabihf-gcc --host=arm-linux-gnueabihf \ CPPFLAGS=-I/usr/local/mymadplay/zlib-1.2.3/include/ \ LDFLAGS=-L/usr/local/mymadplay/zlib-1.2.3/lib/ \ make make install libmad ./configure --prefix=/usr/local/madplay-source/libmad \ CC=arm-linux-gnueabihf-gcc \ --host=arm-linux-gnueabihf \ CPPFLAGS=-I/usr/local/mymadplay/libid3tag/include/ \ LDFLAGS=-L/usr/local/mymadplay/libid3tag/lib \ make • 報錯按這篇修改 https://www.twblogs.net/a/5e6b933dbd9eee211685f17d? fbclid=IwAR1a9ZtyoccMP\_94uWY gedit Makefile //remove -fforce-mem gedit fixed.h # define MAD\_F\_MLN(hi, lo) \ asm ("rsbs %0, %2, #0\n\t" \ "rsc %1, %3, #0" \ : "=r" (lo), "=r" (hi) \ : "0" (lo), "1" (hi) \ : "cc") 改爲 #ifdef \_\_\_thumb\_\_\_ /\* In Thumb-2, the RSB-immediate instruction is only allowed with a zero operand. I (simply append "s" to the end of the second two instructions). \*/# define MAD\_F\_MLN(hi, lo) \ asm ("rsbs %0, %0, #0\n\t" \ " sbc %1, %1, %1\n\t" \ "sub %1, %1, %2" \ : "+&r" (lo), "=&r" (hi) \ : "r" (hi) \ : "cc") #else /\* ! \_\_thumb\_\_ \*/ # define MAD\_F\_MLN(hi, lo) \ asm ("rsbs %0, %2, #0\n\t" \ "rsc %1, %3, #0" \ : "=r" (lo), "=r" (hi) \ : "=&r" (lo), "=r" (hi) \ : "0" (lo), "1" (hi) \ : "cc") #endif /\* \_\_thumb\_\_ \*/ make make install madplay ./configure \ --prefix=/usr/local/mymadplay/madplay-0.15.2 \ CC=arm-linux-gnueabihf-gcc \ --host=arm-linux-gnueabihf \ CPPFLAGS="-I/usr/local/madplay-source/libid3tag/include/ -I/usr/local/madplay-sour LDFLAGS="-L/usr/local/mymadplay/zlib-1.2.3/lib/ \ -L/usr/local/madplay-source/libid3tag/lib/ \ -L/usr/local/madplay-source/libmad/lib/" make make install • 確認執行所需要的依賴 arm-linux-gnueabihf-readelf -d madplay | grep Shared Shared library: [libmad.so.0] Shared library: [libid3tag.so.0] Shared library: [libm.so.6] Shared library: [libc.so.6] Shared library: [ld-linux-armhf.so.3] • 確認庫的連結 cd /usr/local/madplay-source/libmad/lib ls -l /usr/local/madplay-source/libmad/lib/libmad.so.0 # lrwxrwxrwx 1 root root 15 11月 24 09:18 /usr/local/madplay-source/libmad/lib/libm ls -l /usr/local/madplay-source/libid3tag/lib/libid3tag.so.0 # lrwxrwxrwx 1 root root 18 11月 24 09:09 /usr/local/madplay-source/libid3tag/lib/l 參考資料 http://www.armbbs.net/home.php?mod=space&uid=4351&do=blog&id=260&mobile=no

## • 流程與上述都差不多,交叉編譯後,把東西與依賴上傳到板子上

- /configure --host=arm-linux-gnueabihf \
- --prefix=/home/book/downloads/madplay/arm-alsa \ --enable-static \
- --disable-shared \

```
--disable-python \
--disable-alsamixer \
 --disable-xmlto \ --with-configdir=/usr/local/share/alsa \ --with-plugindir=/usr/local/share/alsa \ --with-plugindir=/u
make
make install
  測試aplay
aplay a.wav
```

## 2. 建立軟連結檔案 libmad.so.0 和 libid3tag.so.0 在開發板終端使用以下命令建立: ln -s libmad.so.0.2.1 libmad.so.0

將madplay移植到開發版

3. 查看移植是否成功

1. 將 PC 機的libmad.so.0.2.1和libid3tag.so.0.3.0 兩個庫檔案拷貝到開發板的/lib目錄下

在開發板終端機輸入指令

lrwxrwxrwx 1root root 15Mar 909:58libmad.so.0 -> libmad.so.0.2.1

板/usr/bin下面,再傳一首.mp3格式的音樂檔案到開發板/mnt目錄。

## lrwxrwxrwx1root root 18Mar 909:58libid3tag.so.0 -> libid3tag.so.0.3.0

如果出現以下結果則表示移植成功:

5. 測試 madplay是否移植成功

ls -l libmad.so.0 libid3tag.so.0

```
4. 移植 madplay應用程式到開發板
 把/usr/local/mymadplay/madplay-0.15.2/bin 目 錄 下 的 可 執 行 文 件 madplay 複製到開發
```

在開發板控制終 端 下 進 入/mnt目 錄,使 用 "命 令 madplay+ 文 件 名"的 形 式 播 放 mp3格式 的音樂文件,如果成功播放則說明移植 madplay成功。

madplay -o wav:a.wav a.mp3 & aplay a.wav