

MPlayer 研究报告

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1. MPLAYER 简介

MPlayer 播放器是 Linux 下最优秀的多媒体播放器之一，它的播放速度最快，支持的文件格式也最多，在 X86 PC 机上运行很稳定，也可以把它移植到非 X86CPU 上的嵌入式系统中去。

MPlayer 能使用众多本地的 Xanim, RealPlayer 和 Win32 DLL 编解码器，可播放 MPEG、VOB、AVI、OGG、VIVO、ASF/WMV、QT/MOV、FLI、RM、NuppelVideo、yuv4mpeg、FILM、RoQ 文件。借助于 MPlayer 你能观看 VideoCD、SVCD、DVD、3ivx、RealMedia 和 DivX 格式的电影。MPlayer 的另一个大的特色是支持广泛的输出设备，它可以在 X11、Xv、DGA、OpenGL、SVGAlib、fbdev、Aalib、DirectFB 下工作，而且你也能使用 GGI 和 SDL(由此使用它们支持的各种驱动模式)和一些低级的硬件相关的驱动模式。这个播放器能很稳定地播放被破坏的 MPEG 文件，并且它能播放 Windows media player 都打不开的有损坏的 AVI 文件，甚至，没有索引部分的 AVI 文件也可以播放。

具体信息可参考 MPlayer 官方网站：<http://www.mplayerhq.hu/>。

MPlayer 采用的编解码器包是 libavcodec，在 MPlayer0.91 版本中此编解码器包可以在多种平台上对 H263/MPES/RV10/DivX4/DivX5/MP41/MP42/WMV1 编码格式的视频流进行解码，它同时也是已知完成这些任务最快的解码器。MEncoder (MPlayer 电影解码器)可以生成 MPEG(MPEG-PS) 格式的输出文件。它们只能用于 libavcodec 的 mpeg1video 编解码器，因为一般播放器 (除了 MPlayer) 为 MPEG 文件中包含的是 MPEG1 视频流和 MPEG1 layer 2(MP2)音频流。要改变 MEncoder 的输出文件格式，可以使用 -of mpeg 选项。例如：
`mencoder -of mpeg -ovc lavc -lavcopts vcodec-mpeg1video -oac copy media.avi -o output.mpg。`

MEncoder 能用两种方式处理输入流：编码和复制。

视频流 (-ovc copy 选项)：MEncoder 可以把 FLI 或者 VIVO 或者 MPEG1 的视频放到 AVI 文件中；还可以将视频流复制用于只有音频流需要被编码的情况。

音频流 (-oac copy 选项)：可以把一个外部音频文件(MP3, Vorbis)传到输出流中。使用 -audiofile 选择来实现这个功能。

MEncoder 可以修复交错损坏的 AVI 文件，我们可以简单地复制视频和音频流，并用 MEncoder 产生索引。命令为：`mencoder -idx input.avi -ovc copy -oac copy -o output.avi。`

MEncoder 还可以用来修复两个或多个 AVI 文件并将其合并成一个文件。

2. 安装与移植 MPlayer

2.1 在 PC 机的 Linux 环境下安装 MPlayer

选择的 MPlayer 的版本与系统的编译器的版本有关系, 我的 Gcc 版本是 3.2.2, 编译最新版的 MPlayer-1.0rc2 时有一点问题, 所以选择老版本安装。还要注意选择的 source 版本和与之相对应的 codecs 版本。

(1). 下载 source, codecs, skins 以及 font 文件:

MPlayer-1.0rc1.tar.bz2 # source

essential-20061022.tar.bz2 #codecs

windows-all-20061022.zip # codecs

Ater-1.2.tar.bz2 # skins #skin

gb2312-ming.tar.bz2 #font

网上地址:

<http://www1.mplayerhq.hu/MPlayer/releases/>

<http://www1.mplayerhq.hu/MPlayer/releases/codecs/>

<http://www.mplayerhq.hu/design7/dload.html>

<http://www1.mplayerhq.hu/MPlayer/contrib/fonts/chinesefonts/>

<http://www1.mplayerhq.hu/MPlayer/>

(2). 安装各部分:

各个文件下载到某个目录中, 例如/home/mplayer, 然后按以下各个步骤安装。

a. 安装 codecs:

解压 codecs, 并将目录重命名为 codecs, 然后将其移动或复制到/usr/local/lib/, 因为这里是 MPlayer Codecs 的默认路径之一。在编译之前, Codecs 就需要放在这里, 或者在编译的时候加上你放置 Codecs 的位置。显然前者要方便一些, 但最好两者同时使用。有的建议说下载 Codecs 使用 all 文件 (all codecs for Linux x86 (Win32 .dll and Linux .so)), 但我尚未尝试过。

```
$cd /home/mplayer
```

```
$tar jxvf essential-20061022.tar.bz2
```

```
$mv essential-20061022 /usr/lib/codecs
```

```
$chmod 644 /usr/lib/codecs/*
```

```
$chown root.root /usr/lib/codecs/*
```

```
$ unzip windows-all-20061022.zip
```

```
$ mv windows-all-20061022 /usr/lib/wincodecs
```

```
$chmod 644 /usr/lib/wincodecs/*
```

```
$chown root.root /usr/lib/wincodecs/*
```

b. 安装 source:

```
$tar jxvf MPlayer-1.0rc1.tar.bz2
```

```
$cd MPlayer-1.0rc1/
```

```
$./configure --enable-gui \                               //选择安装界面
              --enable-largefiles \
              --enable-menu \
              --prefix=/usr/local/mplayer \                 //选择安装目录
              --language=zh_CN \                           //选择语言
              --with-codecsdir=/usr/lib/codecs/ \           //解码器路径
              --with-win32libdir=/usr/lib/wincodecs/ \     //解码器路径
```

```
$make
```

```
$make install
```

```
$cd ..
```

安装完成后, 执行文件在 `/usr/local/mplayer/bin` 中。每次在终端中启动 `mplayer` 的话, 得进入该目录中。好象若设置 `--prefix=/usr`, 在终端启动直接 `mplayer` 而不用先进入安装目录。

c. 安装 skin:

注意: MPlayer 默认的 skin 是在 `../default` 目录下的。

```
$tar jxvf Ater-1.2.tar.bz2
```

```
$mv Ater-1.2/* /usr/local/mplayer/share/mplayer/skin/default/
```

d. 安装 font:

```
$tar jvxf gb2312-ming.tar.bz2
```

```
$cd gb2312-ming/gbsn00lp16/
```

```
$cp * /usr/local/mplayer/share/mplayer/font/
```

当然也可以将以上的操作命令作成 `bulid_x86.sh` 的可执行文本, 使之自动安装。

(3). 运行 mplayer/gmplayer

使用 MPlayer 时, 在终端输入 `mplayer` 是文本界面播放器, `gmplayer` 打开图形界面。

2.2 在 S3C2410 上移植 MPlayer

在交叉编译 MPlayer 的时候，出现程序出错的地方以及程序出错的概率与所选择的交叉编译工具版本有关。如使用 arm-linux-gcc-2.95.3 或者 arm-linux-gcc-3.4.3 编译时，libavcodec 目录下面的 huffyuv.c、dsputil.c、snow.c 可能会编译不通过。若出现错误，可能需要修改的文件主要有：config.mak 中改相应的已配置选项；头文件的匹配；Makefile 中的代码优化选项；以及 libcodecs 中的一些.c 文件等。

一般建议使用 arm-linux-gcc-3.3.2，经过检验，此版本在编译时出现的问题是比较少的。

(1). 下载 source 文件

MPlayer-1.0rc1.tar.bz2

网址：<http://www1.mplayerhq.hu/MPlayer/releases/>

(2). 解压

将 MPlayer 解压到某个目录下面，如/home/mplayer 中：

```
#cd /home/mplayer
```

```
#tar xvzf MPlayer-1.0rc1.tar.bz2
```

```
#mv MPlayer-1.0rc1 MPlayer
```

```
#cd MPlayer
```

(3). 配置

根据所要编译的 MPlayer 的版本的不同，编译选项也有所变化，具体的选项可利用./configure --help 或者打开文件 configure 查看。

一般的编译选项有以下几项：

```
./configure --cc=arm-linux-gcc \
            --host-cc=gcc \
            --enable-cross-compile \
            --target=arm-armv41-linux \
            --enable-linux-devfs \
            --disable-win32 \
            --disable-dvdread \
            --enable-fbdev \
            --disable-mencoder \
            --enable-libavcodec \
            --enable-liba52 \
            --enable-mp3lib \
```

```
--enable-static \
--disable-live \    (或者--disable-live 2>&1|tee logfile)
--disable-armv5te \
--disable-rtc \
--disable-iconv \
--charset=noconv \
--prefix=/tmp/mplayer (是否与--enable-static 相冲突)
```

配置选项的简单解释如下:

--cc=arm-linux-gcc 设置交叉编译器, 如果上面没有将 arm-linux-gcc 的位置加入到\$PATH 中的话 (即设定环境变量), 在这个指定绝对路径好了;

--host-cc=gcc 是用来编译一些需要在 host 上执行的中间文件的, 如 codec-cfg, 切记不能少了或搞错了! 网上的《mplayer 在 ARM9(s3c2410)上的移植》一文介绍说遇到提示 codec-cfg 不能被执行出错时的解决方法是先将 codec-cfg 编译成 i386 平台的在再这里停下来时用 i386 的 codec-cfg 替代从而使编译继续。通过实验设置了这个参数就不用那么麻烦了;

--enable-cross-compile 是允许交叉编译, 这个选项在 MPlayer-1.0rc 版本才有, 在 MPlayer-1.0pre 版本没有此选项;

--target=arm-armv4l-linux 这个参数要注意的是一个分三部分, 第一部分的 arm 是指 arch, 这里设定为 arm; 第二部分的 armv4l 是指具体的版本, 这个要注意了, 一定要跟 libavcodec 目录下的平台目录名一致, 否则为这个平台的优化代码没办法编译进去; 第三部分是系统平台。这个主要是用在 libavcodec 的编译中, libavcodec 下面支持很多平台, 比如 i386,armv4l,ppc,sh……进入 libavcodec 的目录下就可看到这些子目录, 里面分别存放着跟这些平台相关的优化汇编代码。

--enable-linux-devfs 在 configure 中的解释是 set default devices to devfs ones, 具体的含义还不是很清楚;

--enable-fbdev 在 configure 中的解释是 build with FBDev render support, 选项支持 video 输出显示(不加将只能解不能自动播);

--disable-mencoder 这个选项一定要加上;

--enable-mp3lib 是对 mp3 解码的库文件, 由于是用浮点运算, 在 ARM 平台上利用此解码器解 mp3 相当占用 CPU 资源;

--enable-static 是设定静态连接, 不需要一堆动态库, 这样就省了很多的麻烦。如果设置了这个参数就不用设置--prefix 了, 另外也不用执行 make install;

--disable-live 2>&1|tee logfile 意思是将执行的情况在输出到屏幕的同时记

录到 logfile 文件中, 在控制台编译比较有用;

另外的几个选项是根据具体加的, 其中:

--disable-armv5te 是使 MPlayer 编译成不支持 ARMV5TE 的, 配置输出信息为 Checking for ARMv5TE (Enhanced DSP Extensions) ... no;

--disable-rtc 在 configure 中的解释是 disable RTC (/dev/rtc) on Linux, 因为不加此项, 播放时出现 Failed to open /dev/rtc:No such file or directory 提示信息, 这可能是板子上没有 RTC 驱动, 还有办法就是修改 MPlayer 顶层目录下的 config.h 文件, 将文件中的#define HAVE_RTC 1 这一行给注释掉;

--disable-iconv 与--charset=noconv 这两项加上的原因是配置时输出信息 iconv 不可读;

--prefix=/tmp/mplayer是安装MPlayer的路径, 此项应该可以不加, 若加上后配置信息提示:

Install prefix: /tmp/mplayer;

Data directory: /tmp/mplayer/share/mplayer;

Config direct.: /tmp/mplayer/etc/mplayer。

配置完成后会创建config.mak和config.h, 在该文件中可以看到刚才配置的选项情况。

(4). 编译

编译比较简单, 只有一个命令就可以了:

#make

编译过程是很漫长的, 主要是在配置的时候没有把一些没用的 codec 给去掉, 所以导致最后生成的文件也很大。

若没有出错的话, 编译完成后, 则在 MPlayer 目录下面看到生成的 MPlayer 可执行文件。

3. MPlayer 视频研究

利用上面交叉编译出来的 MPlayer，在开发板上播放视频文件，主要测试了比较常见的.mpg 和.avi 格式。

在开发板上播放.mpg 视频文件：

```
#!/mplayer -nosound matrix.mpg
```

在开发板上播放.avi 视频文件：

```
#!/mplayer -nosound just_married.avi
```

可以看到视频播放正常，画面很流畅。选项“-nosound”是不播放音频，所以上面的就是仅仅播放的视频流。输出信息如下：

```
[root@lyt Documents]# ./mplayer -nosound matrix.mpg
```

```
MPlayer 1.0rc1-3.3.2 (C) 2000-2006 MPlayer Team
```

```
CPU: ARM
```

```
Playing matrix.mpg.
```

```
MPEG-PS file format detected.
```

```
VIDEO: MPEG1 320x176 (aspect 1) 24.000 fps 0.0 kbps ( 0.0 kbyte/s)
```

```
=====
```

```
Opening video decoder: [mpegpes] MPEG 1/2 Video passthrough
```

```
VDec: vo config request - 320 x 176 (preferred colorspace: Mpeg PES)
```

```
Could not find matching colorspace - retrying with -vf scale...
```

```
Opening video filter: [scale]
```

```
The selected video_out device is incompatible with this codec.
```

```
Try adding the scale filter, e.g. -vf spp,scale instead of -vf spp.
```

```
VDecoder init failed :(
```

```
Opening video decoder:[libmpeg2]MPEG 1/2 Video decoder libmpeg2-v0.4.0b
```

```
Selected video codec: [mpeg12] vfm: libmpeg2 (MPEG-1 or 2 (libmpeg2))
```

```
=====
```

```
Audio: no sound
```

```
Starting playback...
```

```
VDec: vo config request - 320 x 176 (preferred colorspace: Planar YV12)
```

```
Could not find matching colorspace - retrying with -vf scale...
```

```
Opening video filter: [scale]
```

```
VDec: using Planar YV12 as output csp (no 0)
```

```
V: 30.4 718/718 24% 23% 0.0% 0 0
```

MPlayer 可以支持的具体视频编解码器参考以下网站：
<http://www.mplayerhq.hu/DOCS/codecs-status.html>

4. MPlayer 音频研究及改善方案

由于 MPlayer 主要是针对 PC 机开发的，所以它的音频解码一般是利用浮点数运算，那么在开发板上播放音频文件就相当占用 CPU 资源（一般 CPU 占用率在 200%~2000%），根本无法正常播放。MPlayer 可支持的具体音频编解码器参考网站：<http://www.mplayerhq.hu/DOCS/codecs-status.html>。

所以，在目前情况下浮点转定点是改善 MPlayer 在开发板上播放音频文件的方案之一。

4.1 mp3

由于 MPlayer 中默认的 mp3 解码器是 mp3lib，使用的是浮点数运算，相当占用 CPU 资源，故在编译的时候可以使用 libmad 进行音频输出，使用之前需要自己手动编译 libmad，保证交叉编译器能够找到 libmad 库以及头文件，编译时增加--enable-mad 就可以了。利用 mad 解码 mp3 文件，可以看到 CPU 占用率降低到了 20%左右。

(1). 交叉编译 libmad

下载 libmad 包（libmad-0.15.1b.tar.gz）

网址：<http://www.linuxfromscratch.org/blfs/view/6.1/multimedia/libmad.html>
http://sourceforge.net/project/showfiles.php?group_id=12349

将其解压后，进入 libmad 的目录，输入配置命令：

```
./configure --enable-fpm=arm \
            --host=arm-linux \
            --disable-shared \（这个选项就是说明要静态编译）
            --disable-debugging \
            --prefix=/usr/local/arm/3.3.2/lib
            --cc=arm-linux-gcc
```

对于--cc=arm-linux-gcc 选项，要保证 arm-linux-gcc 的路径已经有 export 过，否则给出完整路径。

```
#make
```

```
#make install
```

这样就可以看到在/usr/local/arm/3.3.2/lib 目录下多了 include 和 lib 目录，这些就是 libmad 相关的库文件。

(2). 配置 MPlayer

在 MPlayer 的 configure 选项中，有以下改变：

```
--disable-mp3lib //使编译的时候不包含 mp3lib 解码器，因为编译进去也
```

不能正常使用。

```
--enable-mad          //Enable libmad (MPEG audio) support
--with-extraincdir=/usr/local/arm/3.3.2/lib/include //这个指明 mad.h 这个文件所在的路径)
--with-extralibdir=/usr/local/arm/3.3.2/lib/lib    // (这个指明 libmad 相关链接库所在的路径)
```

```
--enable-ossaudio          //不加此项可能没有声音
```

所以，MPlayer 的完整的 configure 选项为：

```
./configure --cc=arm-linux-gcc \
            --host-cc=gcc \
            --enable-cross-compile \
            --target=arm-armv4l-linux \
            --enable-linux-devfs \
            --disable-win32 \
            --disable-dvdread \
            --enable-fbdev \
            --disable-mencoder \
            --enable-libavcodec \
            --disable-liba52 \
            --disable-mp3lib \
            --enable-static \
            --disable-live \
            --disable-armv5te \
            --disable-iconv \
            --charset=noconv \
            --enable-mad \
            --enable-ossaudio \
            --with-extraincdir=/usr/local/arm/3.3.2/arm-linux/sys-include/:/usr/
local/arm/3.3.2/lib/include \
            --with-extralibdir=/usr/local/arm/3.3.2/arm-linux/lib:/usr/local/arm/
3.3.2/lib/lib
            #make
```

(3). 播放

将编译完成的 MPlayer 放到开发板上，播放 mp3:

```
#!/mplayer -ac mad 1943.mp3
```

-ac mad 是告诉 MPlayer 使用 mad 解码。

输出信息:

Opening audio decoder: [libmad] libmad mpeg audio decoder

Selected audio codec: [mad] afm: libmad (libMAD MPEG layer 1-2-3)

以前使用 mp3lib 时输出信息:

Opening audio decoder: [mp3lib] MPEG layer-2, layer-3

Selected audio codec: [mp3] afm: mp3lib (mp3lib MPEG layer-2, layer-3)

具体的 MPlayer 使用 mad 解码器解码时输出信息:

```
[root@lyt Documents]# ./mplayer -ac mad 1943.mp3
```

MPlayer 1.0rc1-3.3.2 (C) 2000-2006 MPlayer Team

CPU: ARM

Playing 1943.mp3.

Audio file file format detected.

Clip info:

Title: ?.o?.?.?.?

Artist: 周杰..

Album: 周杰.. o?.纳?.a.?.?. ?

Year: 2002

Comment:

Track: 2

Genre: Pop

=====

Forced audio codec: mad

Opening audio decoder: [libmad] libmad mpeg audio decoder

AUDIO: 44100 Hz, 2 ch, s16le, 128.0 kbit/9.07% (ratio: 16000->176400)

Selected audio codec: [mad] afm: libmad (libMAD MPEG layer 1-2-3)

=====

[AO OSS] audio_setup: Can't open audio device /dev/sound/dsp: Device or resourcyAO: [null] 44100Hz 2ch s16le (2 bytes per sample)

Video: no video

Starting playback...

A: 4.2 (04.1) of 195.0 (03:15.0) **20.9%**

而使用 libmp3 解码时具体的输出信息为:

```
[root@lyt Documents]# ./mplayer 1943 .mp3
MPlayer 1.0rc1-3.3.2 (C) 2000-2006 MPlayer Team
CPU: ARM
```

Playing 1943.mp3.

Audio file format detected.

Clip info:

Title: ?.o?.?.?.?..

Artist: 周杰..

Album: 周杰.. o?.纳?.a.?....?. ?

Year: 2002

Comment:

Track: 2

Genre: Pop

=====

Opening audio decoder: [mp3lib] MPEG layer-2, layer-3

AUDIO: 44100 Hz, 2 ch, s16le, 128.0 kbit/9.07% (ratio: 16000->176400)

Selected audio codec: [mp3] afm: mp3lib (mp3lib MPEG layer-2, layer-3)

=====

[AO OSS] audio_setup: Can't open audio device /dev/sound/dsp: Device or
resourcyAO: [null] 44100Hz 2ch s16le (2 bytes per sample)

Video: no video

Starting playback...

A: 1.5 (01.4) of 195.0 (03:15.0) 1810.5%

可以看到 CPU 占用率从 1800% 下降到了 20%。

由于使用 PC 机上的 MPlayer 播放.mpg 和.avi 格式的电影时, 使用的音频
解码默认的也是 mp3lib, 所以, 推理应该也可以使用 mad 代替 mp3lib 解音频:

```
#!/mplayer -ac mad matrix.mpg
```

```
#!/mplayer -ac mad just_married.avi
```

信息显示音频和视频都可以正常播放, 输出信息如下:

```
[root@lyt Documents]# ./mplayer -ac mad matrix.mpg
MPlayer 1.0rc1-3.3.2 (C) 2000-2006 MPlayer Team
```

CPU: ARM

Playing matrix.mpg.

MPEG-PS file format detected.

VIDEO: MPEG1 320x176 (aspect 1) 24.000 fps 0.0 kbps (0.0 kbyte/s)

Opening video decoder: [mpegpes] MPEG 1/2 Video passthrough

VDec: vo config request - 320 x 176 (preferred colorspace: Mpeg PES)

Could not find matching colorspace - retrying with -vf scale...

Opening video filter: [scale]

The selected video_out device is incompatible with this codec.

Try adding the scale filter, e.g. -vf spp,scale instead of -vf spp.

VDecoder init failed :(

Opening video decoder:[libmpeg2]MPEG 1/2 Video decoder libmpeg2-v0.4.0b

Selected video codec: [mpeg12] vfm: libmpeg2 (MPEG-1 or 2 (libmpeg2))

=====

Forced audio codec: mad

Opening audio decoder: [libmad] libmad mpeg audio decoder

AUDIO: 44100 Hz, 2 ch, s16le, 96.0 kbit/6.80% (ratio: 12000->176400)

Selected audio codec: [mad] afm: libmad (libMAD MPEG layer 1-2-3)

=====

[AO OSS] audio_setup: Can't open audio device /dev/sound/dsp: Cannot allocate myAO: [null] 44100Hz 2ch s16le (2 bytes per sample)

Starting playback...

VDec: vo config request - 320 x 176 (preferred colorspace: Planar YV12)

Could not find matching colorspace - retrying with -vf scale...

Opening video filter: [scale]

VDec: using Planar YV12 as output csp (no 0)

A: 11.3 V: 11.3 A-V: 0.011 ct: 0.053 258/258 15% 23% 13.8% 0 0

最后一行的数字表示的具体含义是:

- A: 以秒计算的音频位置
- V: 以秒计算的视频位置
- A-V: 以秒计算的音频视频位置差(延迟)
- ct: 所有完成的 A-V 同步纠正

- 播放的帧数(从最后一次搜索开始计算)
- 解码的帧数(从最后一次搜索开始计算)
- 视频解码器占用的 `cpu` 的百分比
- 视频输出的 `cpu` 占用
- 音频解码器占用的 `cpu` 的百分比
- 为保持 A-V 同步而丢弃的帧数
- 目前图像后处理的级别(当使用 `-autoq` 时)或当前 `cache` 使用量

4.2 asf/wma

使用安装在 PC 机上的 MPlayer 播放.asf 和.wma 格式音频文件时，都显示如下所示的信息：

```
Opening audio decoder: [ffmpeg] FFmpeg/libavcodec audio decoders
```

```
Selected audio codec: [ffwmav2] afm: ffmpeg (DivX audio v2 (FFmpeg))
```

所以播放.asf 和.wma 格式音频文件应该使用的是同一个音频解码器，即 ffmpeg 中的 ffwmav2。

在开发板上直接播放.asf 和.wma 格式音频文件时，同样是 CPU 占用率高而导致不能正常播放。

从以上分析看来，解决在开发板上播放.asf 音频文件的方案有：

(1) 参考解决 mp3 音频的方法，找到代替 ffmpeg，而使用定点运算的其它解码库文件，将该库编译到 MPlayer 中，在播放.asf 音频文件时指定使用该解码器。

(2) 由于.asf 和.wma 格式音频文件使用的是同一个音频解码器，所以对 MPlayer 上的 wma 解码进行优化，即将 mplayer/libavcodec/wmadec.c 浮点转定点化。这方面的工作已经有人做过。

(3) MPlayer 可以使用 XMMS 的输入插件来播放各种格式，那么就需要找到或者制作播放.asf 和.wma 格式音频文件的插件。

(4) 采用更强大的带 DSP 功能的 ARMV5 及其以上系列处理器。

关于 ffmpeg 的信息可参考以下网站：<http://svn.mplayerhq.hu/ffmpeg/trunk/>

在开发板上播放 radio.asf 时输出的信息为：

```
[root@lyt Documents]# ./mplayer radio.asf
```

```
MPlayer 1.0rc1-3.3.2 (C) 2000-2006 MPlayer Team
```

```
CPU: ARM
```

```
Playing radio.asf.
```

```
ASF file format detected.
```

```
Clip info:
```

```
name: W 瑋?.
```

```
=====
Opening audio decoder: [ffmpeg] FFmpeg/libavcodec audio decoders
```

```
AUDIO: 22050 Hz, 2 ch, s16le, 32.0 kbit/4.54% (ratio: 4003->88200)
```

```
Selected audio codec: [ffwmav2] afm: ffmpeg (DivX audio v2 (FFmpeg))
```

```
=====
[AO OSS] audio_setup: Can't open audio device /dev/sound/dsp: Device or
resourceAO: [null] 22050Hz 2ch s16le (2 bytes per sample)
```

Video: no video

Starting playback...

A:2738191.8 (760:36:31.8) of 0.0 (unknown) 395.7%

在开发板上播放 music.wma 时输出的信息为:

```
[root@lyt Documents]# ./mplayer music.wma
```

MPlayer 1.0rc1-3.3.2 (C) 2000-2006 MPlayer Team

CPU: ARM

Playing music.wma.

ASF file format detected.

Invalid length in ASF header!

libavformat file format detected.

```
=====
Opening audio decoder: [ffmpeg] FFmpeg/libavcodec audio decoders
```

AUDIO: 44100 Hz, 2 ch, s16le, 64.0 kbit/4.54% (ratio: 8003->176400)

Selected audio codec: [ffwmav2] afm: ffmpeg (DivX audio v2 (FFmpeg))

```
=====
[AO OSS] audio_setup: Can't open audio device /dev/sound/dsp: Device or
resource busy
```

AO: [null] 44100Hz 2ch s16le (2 bytes per sample)

Video: no video

Starting playback...

A: 2.3 (02.2) of 255.0 (04:14.9) 1108.8%

4.3 audio

关于在开发板上播放音频文件时没有声音的问题，网络上有两种方案，现摘录在下面：

(1). 《mplayer 在 ARM9(s3c2410)上的移植》中提到：

声音这块不解决，当然是不能说移植成功的，因为 mplayer 还支持那么多格式的音频解码。但是问题究竟出在哪里呢？用排除法吧！找一个未经任何音频压缩的 WAV 音频文件，其时就是 PCM 文件，上传到 ramdisk，然后用 mplayer 播放，还是出现一样的问题，程序死了。好了，这就说明问题并非出现在音频解码部分，极有可能出现在音频流的播放部分。现在市面上大多数的嵌入式开发板的音频驱动是 oss 规范的驱动，以前自己做过 oss 的编程，对这块还是比较熟悉。于是开始查看 mpalyer.c 源文件，看看它是如何实现音频流播放的。

在音频播放部分它使用到了 libao2 库的音频播放/控制模块，通过进一步查看 ao_oss.c 源代码进一步获知 mplayer 是如何与音频的 linux 驱动工作的。这一步弄清楚后，重新编译 mplayer，打开 debug 选项，打开调试字符串输出，并在音频播放处设置多处断点，并加上 printf 语句输出一些变量内容，最终发现在调用 ao_oss.c 的 play() 函数时出现除零出错。

这个问题产生的根源最终追溯到音频的驱动部分。现在大部分的嵌入式板子都使用菲利普 uda1341 音频芯片，因而也都使用了相同一个音频驱动，即 MIZI 公司拥有版权的 linux uda1341 音频驱动，这个驱动基本上符合了 oss 的规范，但是当使用到多段 DMA 音频数据传输时，出现了一个问题，即 DMA 缓冲的建立发生在第一次调用 write() 函数将音频数据传送到设备描述符的时候，然而 oss 驱动的调用者通常要在打开音频设备描述时候，就期望获取 DMA 缓冲的信息，然而因为缓冲尚未建立，因而返回缓冲大小为 0 这个结果。

解决的办法是在音频驱动源码的 **smdk2410_audio_open()** 函数体，加上如下一段代码：

```
if (!output_stream.buffers&&audio_setup_buf(&output_stream))
    return -ENOMEM;
```

添加的位置具体见以下代码的粗体部分：

```
static int smdk2410_audio_open(struct inode *inode, struct file *file)
{
    int cold = !audio_active;
    DPRINTK("audio_openn");
    if ((file->f_flags & O_ACCMODE) == O_RDONLY) {
        if (audio_rd_refcount || audio_wr_refcount)
```

```
    return -EBUSY;
    audio_rd_refcount++;
} else if ((file->f_flags & O_ACCMODE) == O_WRONLY) {
    if (audio_wr_refcount)
        return -EBUSY;
    audio_wr_refcount++;
} else if ((file->f_flags & O_ACCMODE) == O_RDWR) {
    if (audio_rd_refcount || audio_wr_refcount)
        return -EBUSY;
    audio_rd_refcount++;
    audio_wr_refcount++;
} else
    return -EINVAL;
if (cold) {
    audio_rate = AUDIO_RATE_DEFAULT;
    audio_channels = AUDIO_CHANNELS_DEFAULT;
    audio_fragsize = AUDIO_FRAGSIZE_DEFAULT;
    audio_nbfrags = AUDIO_NBFRAGS_DEFAULT;
    if ((file->f_mode & FMODE_WRITE)){
        init_s3c2410_iis_bus_tx();
        audio_clear_buf(&output_stream);
        // 加上以下这行代码
        if (!output_stream.buffers&&audio_setup_buf(&output_stream))
            return -ENOMEM;
    }
    if ((file->f_mode & FMODE_READ)){
        init_s3c2410_iis_bus_rx();
        audio_clear_buf(&input_stream);
    }
}
MOD_INC_USE_COUNT;
return 0;
}
```

改完驱动后，重新编译内核。

(2). 在《移植 MPlayer 通过》一文中提到:

如果你不想修改你的音频驱动(之所以要修改音频驱动, 网上有相关介绍, 主要原因是代码中与驱动的结合不太好, 代码中出现了一个整数除以 0 的情况导致程序异常), 就按照以下的方法修改 libao2/ao_oss.c 文件:

第一步: 找到 static int play(void* data,int len,int flags)函数,在第一行加入 ao_data.outburst = 8192;

第二步: 找到 static float get_delay(void)函数,注释掉里面所有内容,最后加入: return 0.8;

第三步: 找到 static int init(int rate,int channels,int format,int flags)函数中的如下代码,并注释掉:

#if 0

```
if(ioctl(audio_fd, SNDCTL_DSP_GETOSPACE, &zz)==-1){
    int r=0;
    mp_msg(MSGT_AO,MSGL_WARN,MSGTR_AO_OSS_CantUseGetospace);
    if(ioctl(audio_fd, SNDCTL_DSP_GETBLKSIZE, &r)==-1){
        mp_msg(MSGT_AO,MSGL_V,"audio_setup: %d bytes/frag (config.h)\n",ao_data.outburst);
    } else {
        ao_data.outburst=r;
        mp_msg(MSGT_AO,MSGL_V,"audio_setup: %d bytes/frag
(GETBLKSIZE)\n",ao_data.outburst);
    }
} else {
    mp_msg(MSGT_AO,MSGL_V,"audio_setup: frags: %3d/%d (%d bytes/frag) free: %6d\n",
zz.fragments, zz.fragstotal, zz.fragsize, zz.bytes);
    if(ao_data.buffer_size==0) ao_data.buffer_size=zz.bytes;
    ao_data.outburst=zz.fragsize;
}
```

#endif

在之后加入以下两行:

ao_data.outburst=8192;

ao_data.buffer_size=32768;

到此大功告成,在命令行下输入 make,最终将会在当前目录下生成 mplayer 文件,下载到板子上就可以播放音频或者视频文件了。注意: 如果你没有使用 RTC, 就需要用软件同步的方法, 也就是在播放同时有音频与视频的文件时, 需要加上参数: -softsleep。

5. MPlayer 播放 radio

MPlayer 支持通过 HTTP, MMS 或者 RTSP/RTP 协议播放网络上的文件。只要直接把 URL 地址加到命令行中就可以进行播放。MPlayer 也支持 http_proxy 环境变量, 并且在可能的情况下使用代理。也可以强行指定使用代理:

```
mplayer http_proxy://proxy.micorsops.com:3128/http://micorsops.com:80/stream.asf
```

MPlayer 能从 stdin(不称为管道)输入。例如这样能从 FTP 上播放:

```
wget ftp://micorsops.com/something.avi -O - | mplayer -
```

注意: 当使用网络播放功能时推荐打开 cache 功能:

```
wget ftp://micorsops.com/something.avi -O - | mplayer -cache 8192 -
```

在 PC 机上播放 radio 是非常的容易的, MPlayer 的播放命令格式为:

```
mplayer [选项] [URL|路径/]文件名
```

在 PC 机上利用 MPlayer 中播放 <http://83.241.238.21/rixfm/?MSWMEExt=.asf> 上的广播, 命令为:

```
#./mplayer http://83.241.238.21/rixfm/?MSWMEExt=.asf
```

播放时提示信息如下:

```
[root@www bin]# ./mplayer http://83.241.238.21/rixfm/?MSWMEExt=.asf
```

```
MPlayer 1.0rc1-3.2.2 (C) 2000-2006 MPlayer Team
```

```
CPU: Intel(R) Celeron(R) CPU 2.40GHz (Family: 15, Model: 2, Stepping: 9)
```

```
CPUflags: MMX: 1 MMX2: 1 3DNow: 0 3DNow2: 0 SSE: 1 SSE2: 1
```

```
编译用了针对 x86 CPU 的扩展指令集: MMX MMX2 SSE SSE2
```

```
正在播放 http://83.241.238.21/rixfm/?MSWMEExt=.asf。
```

```
正在连接到服务器 83.241.238.21[83.241.238.21]: 80...
```

```
STREAM ASF, URL: http://83.241.238.21/rixfm/?MSWMEExt=.asf
```

```
正在连接到服务器 83.241.238.21[83.241.238.21]: 80...
```

```
正在连接到服务器 83.241.238.21[83.241.238.21]: 80...
```

```
缓存大小设为 90 K 字节
```

```
缓存填充: 17.78% (16384 字节)
```

```
检测到 ASF 文件格式。
```

```
剪辑信息:
```

```
name: Rix FM
```

```
author: MTG Radio
```

```
copyright: MTG Radio 2006
```

```
=====
```

打开音频解码器: [ffmpeg] FFmpeg/libavcodec audio decoders

AUDIO: 44100 Hz, 2 ch, s16le, 48.0 kbit/3.40% (ratio: 6003->176400)

已选音频编解码器: [ffwmav2] afm: ffmpeg (DivX audio v2 (FFmpeg))

=====

AO: [oss] 44100Hz 2ch s16le (2 bytes per sample)

视频: 没视频

开始播放...

A:2181896.5 (606:04:56.4) of 0.0 (unknown) 1.1% 35%

所以，由此推论，如果在开发板中使用 MPlayer 播放.asf 音频文件的问题已经解决，并且开发板中的网络和音频都是可用的，则在开发板中实现使用 MPlayer 播放 radio 将是非常容易的。

6. MPlayer 播放控制

关于 MPlayer 的播放控制，有很多的 GUI 界面已经实现了这一点，如它自带的 GUI，即前面提到的 gmpayer，还有的就是利用 MPlayer 为核开发的其它一些前端控制界面，如 KMPlayer、SMPlayer 等，关于 SMPlayer 的信息可参考以下网站：<http://smplayer.sourceforge.net/en/index.php>

关于利用 MPlayer 开发的一些前端控制界面播放器信息可参考以下网站：http://www.mplayerhq.hu/design7/projects.html#mplayer_frontend

网络上讨论为 mplayer 编写前端界面的问题，基本上有两种思路：

一种是把 mplayer 解剖，直接修改它里面的代码，这样我们做得界面就可以和 mplayer 合成一体了（当然也可以通过 link mplayer 用到的所有的库和.o 文件，把它无缝的集成在程序里面）

第二种方法就是利用 mplayer 所谓的 slave 模式。

所谓的 slave 模式，就是 mplayer 在运行过程中可以接收用户的输入命令行，具体支持哪些命令行，可以通过 `mplayer -input cmdlist` 这条命令来得到。linux 是可以采用管道的方式把一个程序的输出做为另外一个程序的输入来用的。

简单的讲程序 A 可以从命令行调用程序 B，如果程序 B 可以在运行过程中支持参数的话，那么程序 A 就可以在程序 B 运行过程中，向 B 通过管道发送新的指令。mplayer 恰好就属于程序 B 这种类型的软件。有了这个特性，可以为开发控制 MPlayer 方面节省很多时间。

MPlayer slave 模式的命令大全参见附录 2：slave 模式。

另外，MPlayer 有一个完全可配置的，命令驱动的控制层使得可以使用键盘，鼠标，游戏杆或遥控器(使用 LIRC)来控制 MPlayer，具体内容可以参考以下网站：<http://ftp.uni-sofia.bg/mplayer/DOCS/HTML/zh/documentation.html>

7. 结论

还有很多问题尚未解决，未完待续！

附录 1: MPlayer 播放命令

用法: `mplayer [选项] [URL|路径/]文件名`

基本选项: (完整列表参见手册页)

<code>-vo <drv></code>	选择视频输出驱动 (查看驱动列表用 “-vo help”)
<code>-ao <drv></code>	选择音频输出驱动 (查看驱动列表用 “-ao help”)
<code>vcd: //<trackno></code>	播放 (S)VCD 轨迹号 (原始设备, 无需安装)
<code>dvd: //<titleno></code>	从设备而不是普通文件上播放 DVD 标题号
<code>-alang/-slang</code>	选择 DVD 音轨/字幕的语言 (使用两位字符的国家代码)
<code>-ss <position></code>	寻找到给定 (多少秒或时分秒 hh:mm:ss 的) 位置
<code>-nosound</code>	不播放声音
<code>-fs</code>	全屏播放 (或者用 <code>-vm</code> , <code>-zoom</code> , 详见于手册页)
<code>-x <x> -y <y></code>	设置显示的分辨率 (提供给 <code>-vm</code> 或者 <code>-zoom</code> 使用)
<code>-sub <file></code>	指定字幕文件 (参见 <code>-subfps</code> , <code>-subdelay</code>)
<code>-playlist <file></code>	指定播放列表文件
<code>-vid x -aid y</code>	选择用于播放的 x 视频流和 y 音频流通道号
<code>-fps x -srate y</code>	改变视频率为 x 帧秒 (fps) 和音频率为 y 赫兹 (Hz)
<code>-pp <quality></code>	使用后期处理过滤器/滤镜 (详见于手册页)
<code>-framedrop</code>	使用丢帧 (用于慢机器)

基本控制键: (完整的列表参见于手册页, 同时也请核查 `input.conf`)

<code><- or -></code>	后退/快进 10 秒
<code>down or up</code>	后退/快进 1 分钟
<code>pgdown or pgup</code>	后退/快进 10 分钟
<code>< or ></code>	跳到播放列表中的前一个/后一个
<code>p or SPACE</code>	暂停播放 (按任意键继续)
<code>q or ESC</code>	停止播放并退出程序
<code>+ or -</code>	调整音频延迟增加/减少 0.1 秒
<code>o</code>	循环 OSD 模式: 无/搜索条/搜索条加定时
<code>* or /</code>	增加或减少 PCM 音量
<code>x or z</code>	调整字幕延迟增加/减少 0.1 秒
<code>r or t</code>	上/下调整字幕位置, 参见 “-vf expand”

* * * 详细内容, 更多的 (高级) 选项和控制键, 请参见手册页 * * *

附录 2: MPlayer 的 slave 模式

SLAVE MODE PROTOCOL——mplayer-1.0pre8

The `-slave` option switches on slave mode, in which MPlayer works as a backend for other programs. Instead of intercepting keyboard events, MPlayer will read commands separated by a newline (`\n`) from stdin.

To try slave mode out by hand, run

```
mplayer -slave -quiet <movie>
```

and type slave commands into the console window.

Most slave mode commands are equivalent to command line options, though not necessarily under the same name. Detailed descriptions can be found in the man page.

All commands can be prefixed with one of "pausing ", "pausing_keep ", or "pausing_toggle ". "pausing " tells MPlayer to pause as soon as possible after processing the command. "pausing_keep " tells MPlayer to do so only if it was already in paused mode. "pausing_toggle " tells MPlayer to do so only if it was not already in paused mode. Please note that "as soon as possible" can be before the command is fully executed.

Available commands ('mplayer -input cmdlist' will print a list):

`alt_src_step <value>` (ASX playlist only)

When more than one source is available it selects the next/previous one.

`audio_delay <value> [abs]`

Set/adjust the audio delay.

If [abs] is not given or is zero, adjust the delay by <value> seconds.

If [abs] is nonzero, set the delay to <value> seconds.

`[brightness|contrast|gamma|hue|saturation] <value> [abs]`

Set/adjust video parameters.

If [abs] is not given or is zero, modifies parameter by <value>.

If [abs] is non-zero, parameter is set to <value>.

<value> is in the range [-100, 100].

`change_rectangle <val1> <val2>`

Change the position of the rectangle filter rectangle.

<val1>

Must be one of the following:

0 = width

1 = height

2 = x position

3 = y position

<val2>

If <val1> is 0 or 1:

Integer amount to add/subtract from the width/height.

Positive values add to width/height and negative values subtract from it.

If <val1> is 2 or 3:

Relative integer amount by which to move the upper left rectangle corner. Positive values move the rectangle right/down and negative values move the rectangle left/up.

dvb_set_channel <channel_number> <card_number>

Set DVB channel.

dvdnav <button>

Press the given dvdnav button.

1 up

2 down

3 left

4 right

5 menu

6 select

edl_mark

Write the current position into the EDL file.

frame_drop [value]

Toggle/set frame dropping mode.

get_audio_bitrate

Print out the audio bitrate of the current file.

get_audio_codec

Print out the audio codec name of the current file.

get_audio_samples

Print out the audio frequency and number of channels of the current file.

get_file_name

Print out the name of the current file.

get_meta_album

Print out the 'Album' metadata of the current file.

get_meta_artist

Print out the 'Artist' metadata of the current file.

get_meta_comment

Print out the 'Comment' metadata of the current file.

get_meta_genre

Print out the 'Genre' metadata of the current file.

get_meta_title

Print out the 'Title' metadata of the current file.

get_meta_track

Print out the 'Track Number' metadata of the current file.

get_meta_year

Print out the 'Year' metadata of the current file.

get_percent_pos

Print out the current position in the file, as integer percentage [0-100).

get_property <property>

Print out the current value of a property.

get_sub_visibility

Print out subtitle visibility (1 == on, 0 == off).

get_time_length

Print out the length of the current file in seconds.

get_time_pos

Print out the current position in the file in seconds, as float.

get_vo_fullscreen

Print out fullscreen status (1 == fullscreened, 0 == windowed).

get_video_bitrate

Print out the video bitrate of the current file.

get_video_codec

Print out the video codec name of the current file.

get_video_resolution

Print out the video resolution of the current file.

screenshot <value>

Take a screenshot. Requires the screenshot filter to be loaded.

0 Take a single screenshot.

1 Start/stop taking screenshot of each frame.

gui_[about|loadfile|loadsubtitle|play|playlist|preferences|skinbrowser|stop]

GUI actions

key_down_event <value>

Inject <value> key code event into MPlayer.

loadfile <file|url> <append>

Load the given file/URL, stopping playback of the current file/URL.

If <append> is nonzero playback continues and the file/URL is

appended to the current playlist instead.

loadlist <file> <append>

Load the given playlist file, stopping playback of the current file.

If <append> is nonzero playback continues and the playlist file is

appended to the current playlist instead.

loop <value> [abs]

Adjust/set how many times the movie should be looped. -1 means no loop,
and 0 forever.

menu <command>

Execute an OSD menu command.

up Move cursor up.

down Move cursor down.

ok Accept selection.

cancel Cancel selection.

hide Hide the OSD menu.

set_menu <menu_name>

Display the menu named <menu_name>.

mute [value]

Toggle sound output muting or set it to [value] when [value] ≥ 0
(1 == on, 0 == off).

osd [level]

Toggle OSD mode or set it to [level] when [level] ≥ 0 .

osd_show_property_text <string> [duration] [level]

Show an expanded property string on the OSD, see -playing-msg for a description of the available expansions. If [duration] is ≥ 0 the text is shown for [duration] ms. [level] sets the minimum OSD level needed for the message to be visible (default: 0 - always show).

osd_show_text <string> [duration] [level]

Show <string> on the OSD.

panscan <-1.0 - 1.0> | <0.0 - 1.0> <abs>

Increase or decrease the pan-and-scan range by <value>, 1.0 is the maximum. Negative values decrease the pan-and-scan range. If <abs> is $\neq 0$, then the pan-and scan range is interpreted as an absolute range.

pause

Pause/unpause the playback.

frame_step

Play one frame, then pause again.

pt_step <value> [force]

Go to the next/previous entry in the playtree. The sign of <value> tells the direction. If no entry is available in the given direction it will do nothing unless [force] is non-zero.

pt_up_step <value> [force]

Similar to pt_step but jumps to the next/previous entry in the parent list. Useful to break out of the inner loop in the playtree.

quit [value]

Quit MPlayer. The optional integer [value] is used as the return code for the mplayer process (default: 0).

radio_set_channel <channel>

Switch to <channel>. The 'channels' radio parameter needs to be set.

radio_set_freq <frequency in MHz>

Set the radio tuner frequency.

radio_step_channel <-1|1>

Step forwards (1) or backwards (-1) in channel list. Works only when the 'channels' radio parameter was set.

radio_step_freq <value>

Tune frequency by the <value> (positive - up, negative - down).

seek <value> [type]

Seek to some place in the movie.

0 is a relative seek of +/- <value> seconds (default).

1 is a seek to <value> % in the movie.

2 is a seek to an absolute position of <value> seconds.

seek_chapter <value> [type]

Seek to the start of a chapter.

0 is a relative seek of +/- <value> chapters (default).

1 is a seek to chapter <value>.

set_mouse_pos <x> <y>

Tells MPlayer the coordinates of the mouse in the window.

This command doesn't move the mouse!

set_property <property> <value>

Set a property.

speed_incr <value>

Add <value> to the current playback speed.

speed_mult <value>

Multiply the current speed by <value>.

speed_set <value>

Set the speed to <value>.

step_property <property> [value] [direction]

Change a property by value, or increase by a default if value is not given or zero. The direction is reversed if direction is less than zero.

sub_alignment [value]

Toggle/set subtitle alignment.

0 top alignment

1 center alignment

2 bottom alignment

sub_delay <value> [abs]

Adjust the subtitle delay by +/- <value> seconds or set it to <value> seconds when [abs] is nonzero.

sub_load <subtitle_file>

Loads subtitles from <subtitle_file>.

sub_log

Logs the current or last displayed subtitle together with filename and time information to ~/.mplayer/subtitle_log. Intended purpose is to allow convenient marking of bogus subtitles which need to be fixed while watching the movie.

sub_pos <value> [abs]

Adjust/set subtitle position.

sub_remove [value]

If the [value] argument is present and non-negative, removes the subtitle file with index [value]. If the argument is omitted or negative, removes all subtitle files.

sub_select [value]

Display subtitle with index [value]. Turn subtitle display off if [value] is -1 or greater than the highest available subtitle index. Cycle through the available subtitles if [value] is omitted or less than -1. Supported subtitle sources are -sub options on the command line, VOBSUBs, DVD subtitles, and Ogg and Matroska text streams.

sub_scale <value> [abs]

Adjust the subtitle size by +/- <value> or set it to <value> when [abs] is nonzero.

vobsub_lang

This is a stub linked to sub_select for backwards compatibility.

sub_step <value>

Step forward in the subtitle list by <value> steps or backwards if <value> is negative.

sub_visibility [value]

Toggle/set subtitle visibility.

forced_subs_only [value]

Toggle/set forced subtitles only.

switch_audio [value] (MPEG and Matroska only)

Switch to the audio track with the id [value]. Cycle through the available tracks if [value] is omitted or negative.

switch_ratio [value]

Change aspect ratio at runtime. [value] is the new aspect ratio expressed as a float (e.g. 1.77778 for 16/9).

There might be problems with some video filters.

switch_vsync [value]

Toggle vsync (1 == on, 0 == off). If [value] is not provided, vsync status is inverted.

teletext_add_digit <value>

Enter/leave teletext page number editing mode and append given digit to previously entered one.

0..9 - Append appropriate digit. (Enables editing mode if called from normal mode, and switches to normal mode when third digit is entered.)

- - Delete last digit from page number. (Backspace emulation, works only in page number editing mode.)

tv_start_scan

Start automatic tv channels scanning

tv_step_channel <channel>

Select next/previous TV channel.

tv_step_norm

Change TV norm.

tv_step_chanlist

Change channel list.

tv_set_channel <channel>

Set the current TV channel.

tv_last_channel

Set the current TV channel to the last one.

tv_set_freq <frequency in MHz>

Set the TV tuner frequency.

`tv_step_freq <frequency offset in MHz>`

Set the TV tuner frequency relative to current value.

`tv_set_norm <norm>`

Set the TV tuner norm (PAL, SECAM, NTSC, ...).

`tv_set_brightness <-100 - 100> [abs]`

Set TV tuner brightness or adjust it if [abs] is set to 0.

`tv_set_contrast <-100 -100> [abs]`

Set TV tuner contrast or adjust it if [abs] is set to 0.

`tv_set_hue <-100 - 100> [abs]`

Set TV tuner hue or adjust it if [abs] is set to 0.

`tv_set_saturation <-100 - 100> [abs]`

Set TV tuner saturation or adjust it if [abs] is set to 0.

`use_master`

Switch volume control between master and PCM.

`vo_border [value]`

Toggle/set borderless display.

`vo_fullscreen [value]`

Toggle/set fullscreen mode.

`vo_ontop [value]`

Toggle/set stay-on-top.

`vo_rootwin [value]`

Toggle/set playback on the root window.

`volume <value> [abs]`

Increase/decrease volume or set it to <value> if [abs] is nonzero.

The following commands are really only useful for OSD menu console mode:

`help`

Displays help text, currently empty.

exit

Exits from OSD menu console. Unlike 'quit', does not quit MPlayer.

hide

Hides the OSD menu console. Clicking a menu command unhides it. Other keybindings act as usual.

run <value>

Run <value> as shell command. In OSD menu console mode stdout and stdin are through the video output driver.

Available properties:

name	type	min	max	get	set	step	comment
=====							
osdlevel	int	0	3	X	X	X	as -osdlevel
speed	float	0.01	100	X	X	X	as -speed
loop	int	-1		X	X	X	as -loop
filename	string			X			file playing wo path
path	string			X			file playing
demuxer	string			X			demuxer used
stream_pos	pos	0		X	X		position in stream
stream_start	pos	0		X			start pos in stream
stream_end	pos	0		X			end pos in stream
stream_length	pos	0		X			(end - start)
length	time			X			length of file in seconds
percent_pos	int	0	100	X	X	X	position in percent
time_pos	time	0		X	X	X	position in seconds
metadata	str list			X			list of metadata key/value
metadata/*	string			X			metadata values
volume	float	0	100	X	X	X	change volume
balance	float	-1	1	X	X	X	change audio balance
mute	flag	0	1	X	X	X	
audio_delay	float	-100	100	X	X	X	
audio_format	int			X			
audio_codec	string			X			
audio_bitrate	int			X			
samplerate	int			X			
channels	int			X			
switch_audio	int	-2	255	X	X	X	select audio stream
fullscreen	flag	0	1	X	X	X	
deinterlace	flag	0	1	X	X	X	

ontop	flag	0	1	X	X	X	
rootwin	flag	0	1	X	X	X	
border	flag	0	1	X	X	X	
framedropping	int	0	2	X	X	X	1 = soft, 2 = hard
gamma	int	-100	100	X	X	X	
brightness	int	-100	100	X	X	X	
contrast	int	-100	100	X	X	X	
saturation	int	-100	100	X	X	X	
hue	int	-100	100	X	X	X	
panscan	float	0	1	X	X	X	
vsync	flag	0	1	X	X	X	
video_format	int			X			
video_codec	string			X			
video_bitrate	int			X			
width	int			X			"display" width
height	int			X			"display" height
fps	float			X			
aspect	float			X			
switch_video	int	-2	255	X	X	X	select video stream
switch_program	int	-1	65535	X	X	X	(see TAB default keybind)
sub	int	-1		X	X	X	select subtitle stream
sub_delay	float			X	X	X	
sub_pos	int	0	100	X	X	X	subtitle position
sub_alignment	int	0	2	X	X	X	subtitle alignment
sub_visibility	flag	0	1	X	X	X	show/hide subtitles
sub_forced_only	flag	0	1	X	X	X	
sub_scale	float	0	100	X	X	X	subtitles font size
tv_brightness	int	-100	100	X	X	X	
tv_contrast	int	-100	100	X	X	X	
tv_saturation	int	-100	100	X	X	X	
tv_hue	int	-100	100	X	X	X	
teletext_page	int	0	799	X	X	X	
teletext_subpage	int	0	64	X	X	X	
teletext_mode	flag	0	1	X	X	X	0 - off, 1 - on
teletext_format	int	0	3	X	X	X	0 - opaque, 1 - transparent, 2 - opaque inverted, 3 - transp. inv.
teletext_half_page	int	0	2	X	X	X	0 - off, 1 - top half, 2 - bottom half

说明：该文件是 mplayer-1.0pre8 的 slave mode 参数。

附录 3: Mplayer 的配置选项

`./configure --help`

Installation directories:

<code>--prefix=DIR</code>	use this prefix for installing mplayer [/usr/local]
<code>--bindir=DIR</code>	use this prefix for installing mplayer binary [PREFIX/bin]
<code>--datadir=DIR</code>	use this prefix for installing machine independent data files (fonts, skins) [PREFIX/share/mplayer]
<code>--mandir=DIR</code>	use this prefix for installing manpages [PREFIX/man]
<code>--confdir=DIR</code>	use this prefix for installing configuration files [PREFIX/etc/mplayer]
<code>--libdir=DIR</code>	use this prefix for object code libraries [PREFIX/lib]

Optional features:

<code>--disable-mencoder</code>	disable mencoder (a/v encoder) compilation [enable]
<code>--enable-gui</code>	enable gmpayer compilation (GTK+ GUI) [disable]
<code>--enable-gtk1</code>	force using GTK 1.2 for GUI [disable]
<code>--enable-largefiles</code>	enable support for files > 2 GBytes [disable]
<code>--enable-linux-devfs</code>	set default devices to devfs ones [disable]
<code>--enable-termcap</code>	use termcap database for key codes [autodetect]
<code>--enable-termios</code>	use termios database for key codes [autodetect]
<code>--disable-iconv</code>	do not use iconv(3) function [autodetect]
<code>--disable-langinfo</code>	do not use langinfo [autodetect]
<code>--enable-lirc</code>	enable LIRC (remote control) support [autodetect]
<code>--enable-lircd</code>	enable LIRCCD (LIRC client daemon) input [autodetect]
<code>--enable-joystick</code>	enable joystick support [disable]
<code>--disable-vm</code>	disable support X video mode extensions [autodetect]
<code>--disable-xf86keysym</code>	disable support for 'multimedia' keys [autodetect]
<code>--enable-radio</code>	enable Radio Interface [disable]
<code>--enable-radio-capture</code>	enable Capture for Radio Interface (through pci/line-in)

[disable]

<code>--disable-radio-v4l2</code>	disable Video4Linux2 Radio Interface support [autodetect]
<code>--disable-tv</code>	disable TV Interface (tv/dvb grabbers) [enable]
<code>--disable-tv-v4l1</code>	disable Video4Linux TV Interface support [autodetect]
<code>--disable-tv-v4l2</code>	disable Video4Linux2 TV Interface support [autodetect]
<code>--disable-tv-bsdbt848</code>	disable BSD BT848 Interface support [autodetect]
<code>--disable-pvr</code>	disable Video4Linux2 MPEG PVR support [autodetect]
<code>--disable-rtc</code>	disable RTC (/dev/rtc) on Linux [autodetect]
<code>--disable-network</code>	disable network support (for: http/mms/rtp) [enable]
<code>--enable-winsoc2</code>	enable winsoc2 usage [autodetect]
<code>--enable-smb</code>	enable Samba (SMB) input support [autodetect]
<code>--enable-live</code>	enable LIVE555 Streaming Media support [autodetect]
<code>--disable-dvdnav</code>	disable libdvdnav support [autodetect]

```

--disable-dvdread      Disable libdvdread support [autodetect]
--disable-mpdvdkit     Disable mpdvdkit2 support [autodetect]
--disable-cdparanoia   Disable cdparanoia support [autodetect]
--disable-bitmap-font  Disable bitmap font support [enable]
--disable-freetype     Disable freetype2 font rendering support [autodetect]
--disable-fontconfig   Disable fontconfig font lookup support [autodetect]
--disable-unrarlib     Disable Unique RAR File Library [enabled]
--enable-menu          Enable OSD menu support (NOT DVD MENU) [disabled]
--disable-sortsub      Disable subtitles sorting [enabled]
--enable-fribidi       Enable using the FriBiDi libs [autodetect]
--disable-enca         Disable using ENCA charset oracle library [autodetect]
--disable-macosx       Disable Mac OS X specific features [autodetect]
--disable-maemo        Disable maemo specific features [autodetect]
--enable-macosx-finder-support Enable Mac OS X Finder invocation parameter parsing
--enable-macosx-bundle Enable Mac OS X bundle file locations [autodetect]
--disable-inet6        Disable IPv6 support [autodetect]
--disable-gethostbyname2 gethostbyname() function is not provided by the C
                        library [autodetect]
--disable-ftp          Disable ftp support [enabled]
--disable-vstream      Disable tivo vstream client support [autodetect]
--disable-pthreads     Disable Posix threads support [autodetect]
--disable-ass          Disable internal SSA/ASS subtitles support [autodetect]
--enable-rpath         Enable runtime linker path for extra libs [disabled]

```

Codecs:

```

--enable-gif          enable gif support [autodetect]
--enable-png          enable png input/output support [autodetect]
--enable-jpeg         enable jpeg input/output support [autodetect]
--enable-libcdio      enable external libcdio support [autodetect]
--enable-liblzo       enable external liblzo support [autodetect]
--disable-win32       disable Win32 DLL support [autodetect]
--disable-qtx         disable Quicktime codecs [autodetect]
--disable-xanim       disable XAnim DLL support [autodetect]
--disable-real        disable RealPlayer DLL support [autodetect]
--disable-xvid        disable XviD codec [autodetect]
--disable-x264        disable H.264 encoder [autodetect]
--disable-nut         disable libnut demuxer [autodetect]
--disable-libavutil   disable libavutil [autodetect]
--disable-libavcodec  disable libavcodec [autodetect]
--disable-libavformat disable libavformat [autodetect]
--disable-libpostproc disable libpostproc [autodetect]
--disable-libavutil_so  disable shared libavutil [autodetect]
--disable-libavcodec_so  disable shared libavcodec [autodetect]
--disable-libavformat_so  disable shared libavformat [autodetect]

```

```

--disable-libpostproc_so disable shared libpostproc [autodetect]
--disable-libavcodec_mpegaudio_hp disable high precision audio decoding
                                in libavcodec [enabled]
--enable-libfame                enable libfame realtime encoder [autodetect]
--disable-tremor-internal do not build internal Tremor support [enabled]
--enable-tremor-low            build with lower accuracy internal Tremor [disabled]
--enable-tremor-external build with external Tremor [autodetect]
--disable-libvorbis            disable libvorbis support [autodetect]
--disable-speex                disable Speex support [autodetect]
--enable-theora                build with OggTheora support [autodetect]
--enable-faad-external build with external FAAD2 (AAC) support [autodetect]
--disable-faad-internal disable internal FAAD2 (AAC) support [autodetect]
--enable-faad-fixed            enable fixed-point mode in internal FAAD2 [disabled]
--disable-faac                disable support for FAAC (AAC encoder) [autodetect]
--disable-ladspa                disable LADSPA plugin support [autodetect]
--disable-libdv                disable libdv 0.9.5 en/decoding support [autodetect]
--disable-mad                  disable libmad (MPEG audio) support [autodetect]
--disable-toolame              disable Toolame (MPEG layer 2 audio) support in mencoder
[autodetect]
--disable-twolame              disable Twolame (MPEG layer 2 audio) support in mencoder
[autodetect]
--enable-xmms                  build with XMMS inputplugin support [disabled]
--disable-mp3lib                disable builtin mp3lib [enabled]
--disable-liba52                disable builtin liba52 [enabled]
--enable-libdts                enable libdts support [autodetect]
--disable-libmpeg2              disable builtin libmpeg2 [enabled]
--disable-musepack              disable musepack support [autodetect]
--disable-amr_nb                disable amr narrowband, floating point [autodetect]
--disable-amr_nb-fixed disable amr narrowband, fixed point [autodetect]
--disable-amr_wb                disable amr wideband, floating point [autodetect]
--disable-decoder=DECODER disable specified FFmpeg decoder
--enable-decoder=DECODER enable specified FFmpeg decoder
--disable-encoder=ENCODER disable specified FFmpeg encoder
--enable-encoder=ENCODER enable specified FFmpeg encoder
--disable-parser=PARSER disable specified FFmpeg parser
--enable-parser=PARSER enable specified FFmpeg parser
--disable-demuxer=DEMUXER disable specified FFmpeg demuxer
--enable-demuxer=DEMUXER enable specified FFmpeg demuxer
--disable-muxer=MUXER disable specified FFmpeg muxer
--enable-muxer=MUXER enable specified FFmpeg muxer

```

Video output:

```

--disable-vidix-internal disable internal VIDIX [for x86 *nix]
--disable-vidix-external disable external VIDIX [for x86 *nix]

```



```

--enable-gl          build with OpenGL render support [autodetect]
--enable-dga[=n]     build with DGA [n in {1, 2} ] support [autodetect]
--enable-vesa        build with VESA support [autodetect]
--enable-svga        build with SVGAlib support [autodetect]
--enable-sdl         build with SDL render support [autodetect]
--enable-aa          build with AALib render support [autodetect]
--enable-caca        build with CACA render support [autodetect]
--enable-ggi         build with GGI render support [autodetect]
--enable-ggiwmh      build with GGI libggiwmh extension [autodetect]
--enable-directx     build with DirectX support [autodetect]
--enable-dxr2        build with DXR2 render support [autodetect]
--enable-dxr3        build with DXR3/H+ render support [autodetect]
--enable-ivtv        build with IVTV TV-Out render support [autodetect]
--enable-dvb         build with support for output via DVB-Card [autodetect]
--enable-dvbhead     build with DVB support (HEAD version) [autodetect]
--enable-mga         build with mga_vid (for Matrox G200/G4x0/G550) support
                    (check for /dev/mga_vid) [autodetect]
--enable-xmga        build with mga_vid X Window support
                    (check for X & /dev/mga_vid) [autodetect]
--enable-xv          build with Xv render support for X 4.x [autodetect]
--enable-xvmc        build with XvMC acceleration for X 4.x [disable]
--enable-vm          build with XF86VidMode support for X11 [autodetect]
--enable-xinerama    build with Xinerama support for X11 [autodetect]
--enable-x11         build with X11 render support [autodetect]
--enable-xshape      build with XShape support [autodetect]
--enable-fbdev       build with FBDev render support [autodetect]
--enable-mlib        build with mediaLib support (Solaris only) [disable]
--enable-3dfx        build with obsolete /dev/3dfx support [disable]
--enable-tdfxfb      build with tdfxfb (Voodoo 3/banshee) support [disable]
--enable-s3fb        build with s3fb (S3 ViRGE) support [disable]
--enable-directfb    build with DirectFB support [autodetect]
--enable-zr          build with ZR360[56]7/ZR36060 support [autodetect]
--enable-bl          build with Blinkenlights support [disable]
--enable-tdfxvid     build with tdfx_vid support [disable]
--disable-tga        disable targa output support [enable]
--disable-pnm        disable pnm output support [enable]
--disable-md5sum     disable md5sum output support [enable]

```

Audio output:

```

--disable-alsa       disable ALSA sound support [autodetect]
--disable-ossaudio   disable OSS sound support [autodetect]
--disable-arts       disable aRts sound support [autodetect]
--disable-esd        disable esd sound support [autodetect]
--disable-polyp      disable Polypaudio sound support [autodetect]

```

```

--disable-jack      disable JACK sound support [autodetect]
--disable-openal    disable OpenAL sound support [autodetect]
--disable-nas       disable NAS sound support [autodetect]
--disable-sgi-audio disable SGI sound support [autodetect]
--disable-sunaudio  disable Sun sound support [autodetect]
--disable-win32waveout disable Windows waveout sound support [autodetect]
--disable-select    disable using select() on audio device [enable]

```

Miscellaneous options:

```

--enable-runtime-cpudetection  Enable runtime CPU detection [disable]
--enable-cross-compile         Enable cross-compilation [autodetect]
--cc=COMPILER                  use this C compiler to build MPlayer [gcc]
--host-cc=COMPILER             use this C compiler to build apps needed for the build
process [gcc]
--as=ASSEMBLER                 use this assembler to build MPlayer [as]
--target=PLATFORM              target platform (i386-linux, arm-linux, etc)
--enable-static                build a statically linked binary. Set further linking
options with --enable-static="-lslang -lncurses"
--charset                      convert the help messages to this charset
--language=list                a white space or comma separated list of languages
for translated man pages, the first language is the
primary and therefore used for translated messages
and GUI (also the environment variable $LINGUAS is
honored) [en]
(Available: bg cs de dk el en es fr hu it ja ko mk nb nl pl
ro ru sk sv tr uk pt_BR zh_CN zh_TW all)
--with-install=PATH            use a custom install program (useful if your OS uses
a GNU-incompatible install utility by default and
you want to use GNU version)
--install-path=PATH            the path to a custom install program
this option is obsolete and will be removed soon,
use --with-install instead.

```

Advanced options:

```

--enable-mmx             build with MMX support [autodetect]
--enable-mmxext          build with MMX2 support (PIII, Athlon) [autodetect]
--enable-3dnow           build with 3DNow! support [autodetect]
--enable-3dnowext        build with extended 3DNow! support [autodetect]
--enable-sse             build with SSE support [autodetect]
--enable-sse2            build with SSE2 support [autodetect]
--enable-shm             build with shm support [autodetect]
--enable-altivec         build with AltiVec support (PowerPC) [autodetect]
--enable-armv5te         build with DSP extensions support (ARM) [autodetect]
--enable-iwmmxt          build with iWMMXt support (ARM) [autodetect]

```

```

--disable-fastmemcpy    disable 3DNow! /SSE/MMX optimized memcpy() [enable]
--enable-big-endian      Force byte order to big-endian [autodetect]
--enable-debug[=1-3]    compile debugging information into mplayer [disable]
--enable-profile         compile profiling information into mplayer [disable]
--disable-sighandler     disable sighandler for crashes [enable]
--enable-crash-debug     enable automatic gdb attach on crash [disable]
--enable-dynamic-plugins Enable support for dynamic a/v plugins [disable]

```

Hazardous options a.k.a. "DO NOT REPORT ANY BUGS!"

```

--disable-gcc-check      disable gcc version checking [enable]

```

Use these options if autodetection fails (Options marked with (*) accept multiple paths separated by ':'):

```

--with-extraincdir=DIR    extra headers (png, mad, sdl, ...) in DIR (*)
--with-extralibdir=DIR    extra linker search paths in DIR (*)
--extra-libs=FLAGS        extra linker flags
--with-x11libdir=DIR       X library files in DIR (*)
--with-mllibdir=DIR        libmLib (mediaLib support) in DIR (Solaris only)
--with-codecsdir=DIR       Binary codec files in DIR
--with-win32libdir=DIR     W*ndows DLL files in DIR
--with-xanimlibdir=DIR     XAnim DLL files in DIR
--with-reallibdir=DIR      RealPlayer DLL files in DIR
--with-xvidlibdir=DIR      libxvidcore (XviD) in DIR  (*)
--with-x264libdir=DIR      libx264 in DIR
--with-libdtslibdir=DIR    libdts library in DIR  (*)
--with-livelibdir=DIR      LIVE555 Streaming Media libraries in DIR
--with-toolamelibdir=DIR   Toolame library in DIR
--with-xmmsplugindir=DIR   XMMS plugins in DIR
--with-xmmslibdir=DIR      libxmms.so.1 in DIR
--with-cdparanoialibdir=DIR cdparanoia libraries (libcdda_*) in DIR (*)
--with-xvmlib=NAME         name of adapter-specific library (e.g. XvMCNVIDIA)

--with-freetype-config=PATH path to freetype-config
                           (e.g. /opt/bin/freetype-config)
--with-fribidi-config=PATH  path to fri bidi -config
                           (e.g. /opt/bin/fri bidi -config)
--with-glib-config=PATH     path to glib*-config (e.g. /opt/bin/glib-config)
--with-gtk-config=PATH      path to gtk*-config (e.g. /opt/bin/gtk-config)
--with-sdl-config=PATH      path to sdl*-config (e.g. /opt/bin/sdl-config)
--with-dvdnav-config=PATH   path to dvdnav-config (e.g. /opt/bin/dvdnav-config)

```

This configure script is NOT autoconf-based, even though its output is similar. It will try to autodetect all configuration options. If you --enable an option it will be forcefully turned on, skipping autodetection. This can break compilation, so you need to know what you are doing.

附录 4: MPlayer 播放比较 (PC 与 ARM)

1. 播放视频

在 PC 上播放时输出信息为:

```
[root@www bin]# ./mplayer matrix.mpg
```

MPlayer 1.0rc1-3.2.2 (C) 2000-2006 MPlayer Team

CPU: Intel(R) Celeron(R) CPU 2.40GHz (Family: 15, Model: 2, Stepping: 9)

CPUflags: MMX: 1 MMX2: 1 3DNow: 0 3DNow2: 0 SSE: 1 SSE2: 1

编译用了针对 x86 CPU 的扩展指令集: MMX MMX2 SSE SSE2

正在播放 matrix.mpg。

检测到 MPEG-PS 文件格式。

VIDEO: MPEG1 320x176 (aspect 1) 24.000 fps 0.0 kbps (0.0 kbyte/s)

```
=====
打开视频解码器: [mpegpes] MPEG 1/2 Video passthrough
```

```
VDec: vo 配置请求 - 320 x 176 (色彩空间首选项: Mpeg PES)
```

```
找不到匹配的色彩空间 - 重新尝试 -vf scale...
```

```
打开视频滤镜: [scale]
```

选定的视频输出设备和这个编解码器不兼容。

试着添加缩放过滤器, 例如以 -vf spp,scale 来代替 -vf spp。

```
VDecoder 初始化失败 :(
```

```
打开视频解码器: [libmpeg2] MPEG 1/2 Video decoder libmpeg2-v0.4.0b
```

```
已选视频编解码器: [mpeg12] vfm: libmpeg2 (MPEG-1 or 2 (libmpeg2))
```

```
=====
打开音频解码器: [mp3lib] MPEG layer-2, layer-3
```

```
AUDIO: 44100 Hz, 2 ch, s16le, 96.0 kbit/6.80% (ratio: 12000->176400)
```

```
已选音频编解码器: [mp3] afm: mp3lib (mp3lib MPEG layer-2, layer-3)
```

```
=====
AO: [oss] 44100Hz 2ch s16le (2 bytes per sample)
```

开始播放...

```
VDec: vo 配置请求 - 320 x 176 (色彩空间首选项: Planar YV12)
```

```
VDec: using Planar YV12 as output csp (no 0)
```

电影宽高比为 1.82:1 - 预放大到正确的电影宽高比。

```
V0: [xv] 320x176 => 320x176 Planar YV12
```

```
A: 12.1 V: 12.1 A-V: 0.031 ct: 0.055 277/277 2% 0% 0.5% 10
```

在 ARM 上播放时输出信息为:

```
[root@lyt Documents]# ./mplayer -ac mad matrix.mpg
MPlayer 1.0rc1-3.3.2 (C) 2000-2006 MPlayer Team
CPU: ARM
Playing matrix.mpg.
MPEG-PS file format detected.
VIDEO: MPEG1 320x176 (aspect 1) 24.000 fps 0.0 kbps ( 0.0 kbyte/s)

=====

Opening video decoder: [mpegpes] MPEG 1/2 Video passthrough
VDec: vo config request - 320 x 176 (preferred colorspace: Mpeg PES)
Could not find matching colorspace - retrying with -vf scale...
Opening video filter: [scale]
The selected video_out device is incompatible with this codec.
Try adding the scale filter, e.g. -vf spp,scale instead of -vf spp.
VDecoder init failed :(
Opening video decoder:[libmpeg2] MPEG 1/2 Video decoder
libmpeg2-v0.4.0b
Selected video codec:[mpeg12]vfm: libmpeg2 (MPEG-1 or 2 (libmpeg2))

=====

Forced audio codec: mad
Opening audio decoder: [libmad] libmad mpeg audio decoder
AUDIO: 44100 Hz, 2 ch, s16le, 96.0 kbit/6.80% (ratio: 12000->176400)
Selected audio codec: [mad] afm: libmad (libMAD MPEG layer 1-2-3)

=====

[AO OSS] audio_setup: Can't open audio device /dev/sound/dsp: Cannot
allocate myAO: [null] 44100Hz 2ch s16le (2 bytes per sample)
Starting playback...
VDec: vo config request - 320 x 176 (preferred colorspace: Planar YV12)
Could not find matching colorspace - retrying with -vf scale...
Opening video filter: [scale]
VDec: using Planar YV12 as output csp (no 0)
A: 11.3 V: 11.3 A-V: 0.011 ct: 0.053 258/258 15% 23% 13.8% 0 0
```

2. 播放音频

2.1 mp3

在 PC 上播放时输出信息为：

```
[root@www bin]# ./mplayer 1943.mp3
```

MPlayer 1.0rc1-3.2.2 (C) 2000-2006 MPlayer Team

CPU: Intel(R) Celeron(R) CPU 2.40GHz (Family: 15, Model: 2, Stepping: 9)

CPUflags: MMX: 1 MMX2: 1 3DNow: 0 3DNow2: 0 SSE: 1 SSE2: 1

编译用了针对 x86 CPU 的扩展指令集: MMX MMX2 SSE SSE2

正在播放 1943.mp3。

检测到 Audio file 文件格式。

剪辑信息:

Title: 薹 0?8 0?5 九四三

Artist: 薹 1?7 芳?

Album: 薹 1?7 芳? 方文 t 联薹 0?4 醋甦秘 0?5

Year: 2002

Comment:

Track: 2

Genre: Pop

=====

打开音频解码器: [mp3lib] MPEG layer-2, layer-3

AUDIO: 44100 Hz, 2 ch, s16le, 128.0 kbit/9.07% (ratio: 16000->176400)

已选音频编解码器: [mp3] afm: mp3lib (mp3lib MPEG layer-2, layer-3)

=====

AO: [oss] 44100Hz 2ch s16le (2 bytes per sample)

视频: 没视频

开始播放...

A: 10.4 (10.4) of 195.0 (03:15.0) 0.9%

在 ARM 上播放时输出信息为（利用 mp3lib）：

```
[root@lyt Documents]# ./mplayer 1943.mp3
```

MPlayer 1.0rc1-3.3.2 (C) 2000-2006 MPlayer Team

CPU: ARM

Playing 1943.mp3.

Audio file format detected.

Clip info:

Title: ?o??.??.?..

Artist: 周杰..

Album: 周杰.. o?.纳?.a.?...?. ?

Year: 2002

Comment:

Track: 2

Genre: Pop

=====

Opening audio decoder: [mp3lib] MPEG layer-2, layer-3

AUDIO: 44100 Hz, 2 ch, s16le, 128.0 kbit/9.07% (ratio: 16000->176400)

Selected audio codec: [mp3] afm: mp3lib (mp3lib MPEG layer-2, layer-3)

=====

[AO OSS] audio_setup: Can't open audio device /dev/sound/dsp: Device or
resourcyAO: [null] 44100Hz 2ch s16le (2 bytes per sample)

Video: no video

Starting playback...

A: 1.5 (01.4) of 195.0 (03:15.0) **1810.5%**

在 ARM 上播放时输出信息为（利用 mad）：

[root@lyt Documents]# ./mplayer -ac mad 1943.mp3

MPlayer 1.0rc1-3.3.2 (C) 2000-2006 MPlayer Team

CPU: ARM

Playing 1943.mp3.

Audio file format detected.

Clip info:

Title: ?o??.??.?..

Artist: 周杰..

Album: 周杰.. o?.纳?.a.?...?. ?

Year: 2002

Comment:

Track: 2

Genre: Pop

=====

Forced audio codec: mad

Opening audio decoder: [libmad] libmad mpeg audio decoder

AUDIO: 44100 Hz, 2 ch, s16le, 128.0 kbit/9.07% (ratio: 16000->176400)

Selected audio codec: [mad] afm: libmad (libMAD MPEG layer 1-2-3)

=====

[AO OSS] audio_setup: Can't open audio device /dev/sound/dsp: Device or
resourcyAO: [null] 44100Hz 2ch s16le (2 bytes per sample)

Video: no video

Starting playback...

A: 4.2 (04.1) of 195.0 (03:15.0) **20.9%**

2.2 asf

在 PC 上播放时输出信息为:

[root@www bin]# ./mplayer radio.asf

MPlayer 1.0rc1-3.2.2 (C) 2000-2006 MPlayer Team

CPU: Intel(R) Celeron(R) CPU 2.40GHz (Family: 15, Model: 2, Stepping: 9)

CPUflags: MMX: 1 MMX2: 1 3DNow: 0 3DNow2: 0 SSE: 1 SSE2: 1

编译用了针对 x86 CPU 的扩展指令集: MMX MMX2 SSE SSE2

正在播放 radio.asf。

检测到 ASF 文件格式。

剪辑信息:

name: W 峰拆

=====

打开音频解码器: [ffmpeg] FFmpeg/libavcodec audio decoders

AUDIO: 22050 Hz, 2 ch, s16le, 32.0 kbit/4.54% (ratio: 4003->88200)

已选音频编解码器: [ffwmav2] afm: ffmpeg (DivX audio v2 (FFmpeg))

=====

AO: [oss] 22050Hz 2ch s16le (2 bytes per sample)

视频: 没视频

开始播放...

A:2738203.5 (760:36:43.6) of 0.0 (unknown) **0.3%**

在 ARM 上播放时输出信息为:

```
[root@lyt Documents]# ./mplayer radio.asf
```

MPlayer 1.0rc1-3.3.2 (C) 2000-2006 MPlayer Team

CPU: ARM

Playing radio.asf.

ASF file format detected.

Clip info:

name: W 峰?.

=====

Opening audio decoder: [ffmpeg] FFmpeg/libavcodec audio decoders

AUDIO: 22050 Hz, 2 ch, s16le, 32.0 kbit/4.54% (ratio: 4003->88200)

Selected audio codec: [ffwmav2] afm: ffmpeg (DivX audio v2 (FFmpeg))

=====

[AO OSS] audio_setup: Can't open audio device /dev/sound/dsp: Device or
resourcyAO: [null] 22050Hz 2ch s16le (2 bytes per sample)

Video: no video

Starting playback...

A:2738191.8 (760:36:31.8) of 0.0 (unknown) **395.7%**

2.3 wma

在 PC 上播放输出信息为:

```
[root@www bin]# ./mplayer music.wma
```

MPlayer 1.0rc1-3.2.2 (C) 2000-2006 MPlayer Team

CPU: Intel(R) Celeron(R) CPU 2.40GHz (Family: 15, Model: 2, Stepping: 9)

CPUflags: MMX: 1 MMX2: 1 3DNow: 0 3DNow2: 0 SSE: 1 SSE2: 1

编译用了针对 x86 CPU 的扩展指令集: MMX MMX2 SSE SSE2

正在播放 music.wma。

检测到 ASF 文件格式。

=====

打开音频解码器: [ffmpeg] FFmpeg/libavcodec audio decoders

AUDIO: 44100 Hz, 2 ch, s16le, 64.0 kbit/4.54% (ratio: 8003->176400)

已选音频编解码器: [ffwmav2] afm: ffmpeg (DivX audio v2 (FFmpeg))

=====

AO: [oss] 44100Hz 2ch s16le (2 bytes per sample)

视频: 没视频

开始播放...

A: 9.1 (09.0) of 255.0 (04:15.0) 0.7%

在 ARM 上播放时输出信息为:

[root@lyt Documents]# ./mplayer music.wma

MPlayer 1.0rc1-3.3.2 (C) 2000-2006 MPlayer Team

CPU: ARM

Playing music.wma.

ASF file format detected.

Invalid length in ASF header!

libavformat file format detected.

=====

Opening audio decoder: [ffmpeg] FFmpeg/libavcodec audio decoders

AUDIO: 44100 Hz, 2 ch, s16le, 64.0 kbit/4.54% (ratio: 8003->176400)

Selected audio codec: [ffwmav2] afm: ffmpeg (DivX audio v2 (FFmpeg))

=====

[AO OSS] audio_setup: Can't open audio device /dev/sound/dsp: Device or resource busy

AO: [null] 44100Hz 2ch s16le (2 bytes per sample)

Video: no video

Starting playback...

A: 2.3 (02.2) of 255.0 (04:14.9) 1108.8%

2.4 radio

在 PC 上播放输出信息为:

[root@www bin]# ./mplayer <http://83.241.238.21/rixfm/?MSWMExt=.asf>

MPlayer 1.0rc1-3.2.2 (C) 2000-2006 MPlayer Team

CPU: Intel(R) Celeron(R) CPU 2.40GHz (Family: 15, Model: 2, Stepping: 9)

CPUflags: MMX: 1 MMX2: 1 3DNow: 0 3DNow2: 0 SSE: 1 SSE2: 1

编译用了针对 x86 CPU 的扩展指令集: MMX MMX2 SSE SSE2

正在播放 <http://83.241.238.21/rixfm/?MSWMEExt=.asf>。
正在连接到服务器 83.241.238.21[83.241.238.21]: 80...
STREAM_ASF, URL: <http://83.241.238.21/rixfm/?MSWMEExt=.asf>
正在连接到服务器 83.241.238.21[83.241.238.21]: 80...
正在连接到服务器 83.241.238.21[83.241.238.21]: 80...
缓存大小设为 90 K 字节
缓存填充: 17.78% (16384 字节)
检测到 ASF 文件格式。
剪辑信息:

name: Rix FM

author: MTG Radio

copyright: MTG Radio 2006

=====

打开音频解码器: [ffmpeg] FFmpeg/libavcodec audio decoders
AUDIO: 44100 Hz, 2 ch, s16le, 48.0 kbit/3.40% (ratio: 6003->176400)
已选音频编解码器: [ffwmav2] afm: ffmpeg (DivX audio v2 (FFmpeg))

=====

AO: [oss] 44100Hz 2ch s16le (2 bytes per sample)

视频: 没视频

开始播放...

A:2181896.5 (606:04:56.4) of 0.0 (unknown) 1.1% 35%