

添加动态依赖库

ffmpeg 版本: 4.2.7-0ubuntu0.1

通过命令ldd查看ffmpeg依赖的动态库

```
root@ubuntu:/home/josen/ffmpeg# ldd ffmpeg
linux-vdso.so.1 (0x00007ffd933ea000)
libavdevice.so.58 => /lib/x86_64-linux-gnu/libavdevice.so.58 (0x00007f866a599000)
libavfilter.so.7 => /lib/x86_64-linux-gnu/libavfilter.so.7 (0x00007f866a218000)
libavformat.so.58 => /lib/x86_64-linux-gnu/libavformat.so.58 (0x00007f8669f9e000)
libavcodec.so.58 => /lib/x86_64-linux-gnu/libavcodec.so.58 (0x00007f86689dd000)
libavresample.so.4 => /lib/x86_64-linux-gnu/libavresample.so.4 (0x00007f86689b9000)
libpostproc.so.55 => /lib/x86_64-linux-gnu/libpostproc.so.55 (0x00007f8668997000)
libswresample.so.3 => /lib/x86_64-linux-gnu/libswresample.so.3 (0x00007f8668973000)
libswscale.so.5 => /lib/x86_64-linux-gnu/libswscale.so.5 (0x00007f86688dc000)
```

由于数量较多, 使用以下脚本移动到测例下更方便

```
#!/bin/bash

TARGET_DIR="/home/josen/opencamp/lib"

if [ ! -d "$TARGET_DIR" ]; then
    echo "Error: $TARGET_DIR does not exist."
    exit 1
fi

FILES=(
    /lib/x86_64-linux-gnu/libavdevice.so.58
    /lib/x86_64-linux-gnu/libavfilter.so.7
    /lib/x86_64-linux-gnu/libavformat.so.58
    /lib/x86_64-linux-gnu/libavcodec.so.58
    /lib/x86_64-linux-gnu/libpostproc.so.55
    /lib/x86_64-linux-gnu/libswresample.so.3
    /lib/x86_64-linux-gnu/libswscale.so.5
    /lib/x86_64-linux-gnu/libavutil.so.56
    /lib/x86_64-linux-gnu/libm.so.6
    /lib/x86_64-linux-gnu/libc.so.6
    /lib/x86_64-linux-gnu/libraw1394.so.11
    /lib/x86_64-linux-gnu/libavc1394.so.0
    /lib/x86_64-linux-gnu/libbrom1394.so.0
    /lib/x86_64-linux-gnu/libiec61883.so.0
    /lib/x86_64-linux-gnu/libjack.so.0
    /lib/x86_64-linux-gnu/libdrm.so.2
    /lib/x86_64-linux-gnu/libopenal.so.1
    /lib/x86_64-linux-gnu/libxcb.so.1
    /lib/x86_64-linux-gnu/libxcb-shm.so.0
    /lib/x86_64-linux-gnu/libxcb-shape.so.0
    /lib/x86_64-linux-gnu/libxcb-xfixes.so.0
    /lib/x86_64-linux-gnu/libcdio_paranoia.so.2
    /lib/x86_64-linux-gnu/libcdio_cdda.so.2
    /lib/x86_64-linux-gnu/libdc1394.so.25
    /lib/x86_64-linux-gnu/libasound.so.2
    /lib/x86_64-linux-gnu/libcaca.so.0
    /lib/x86_64-linux-gnu/libGL.so.1
    /lib/x86_64-linux-gnu/libpulse.so.0
```

/lib/x86_64-linux-gnu/libSDL2-2.0.so.0
/lib/x86_64-linux-gnu/libsndio.so.7
/lib/x86_64-linux-gnu/libXv.so.1
/lib/x86_64-linux-gnu/libX11.so.6
/lib/x86_64-linux-gnu/libXext.so.6
/lib/x86_64-linux-gnu/libpocketsphinx.so.3
/lib/x86_64-linux-gnu/libspinxbase.so.3
/lib/x86_64-linux-gnu/libbs2b.so.0
/lib/x86_64-linux-gnu/liblilv-0.so.0
/lib/x86_64-linux-gnu/librubberband.so.2
/lib/x86_64-linux-gnu/libmysofa.so.1
/lib/x86_64-linux-gnu/libflite_cmu_us_awb.so.1
/lib/x86_64-linux-gnu/libflite_cmu_us_kal.so.1
/lib/x86_64-linux-gnu/libflite_cmu_us_kal16.so.1
/lib/x86_64-linux-gnu/libflite_cmu_us_rms.so.1
/lib/x86_64-linux-gnu/libflite_cmu_us_slt.so.1
/lib/x86_64-linux-gnu/libflite.so.1
/lib/x86_64-linux-gnu/libfribidi.so.0
/lib/x86_64-linux-gnu/libass.so.9
/lib/x86_64-linux-gnu/libva.so.2
/lib/x86_64-linux-gnu/libvidstab.so.1.1
/lib/x86_64-linux-gnu/libzmq.so.5
/lib/x86_64-linux-gnu/libzimg.so.2
/lib/x86_64-linux-gnu/libOpenCL.so.1
/lib/x86_64-linux-gnu/libfontconfig.so.1
/lib/x86_64-linux-gnu/libfreetype.so.6
/lib/x86_64-linux-gnu/libmfx.so.1
/lib/x86_64-linux-gnu/libxml2.so.2
/lib/x86_64-linux-gnu/libbz2.so.1.0
/lib/x86_64-linux-gnu/libgme.so.0
/lib/x86_64-linux-gnu/libopenmpt.so.0
/lib/x86_64-linux-gnu/libchromaprint.so.1
/lib/x86_64-linux-gnu/libbluray.so.2
/lib/x86_64-linux-gnu/libz.so.1
/lib/x86_64-linux-gnu/libgnutls.so.30
/lib/x86_64-linux-gnu/librabbitmq.so.4
/lib/x86_64-linux-gnu/libsrtp-gnutls.so.1.4
/lib/x86_64-linux-gnu/libssh-gcrypt.so.4
/lib/x86_64-linux-gnu/libvpx.so.7
/lib/x86_64-linux-gnu/libwebpmux.so.3
/lib/x86_64-linux-gnu/libwebp.so.7
/lib/x86_64-linux-gnu/liblzma.so.5
/lib/x86_64-linux-gnu/libdav1d.so.5
/lib/x86_64-linux-gnu/librsvg-2.so.2
/lib/x86_64-linux-gnu/libgobject-2.0.so.0
/lib/x86_64-linux-gnu/libglib-2.0.so.0
/lib/x86_64-linux-gnu/libcairo.so.2
/lib/x86_64-linux-gnu/libzvbi.so.0
/lib/x86_64-linux-gnu/libsnappy.so.1
/lib/x86_64-linux-gnu/libaom.so.3
/lib/x86_64-linux-gnu/libcodec2.so.1.0
/lib/x86_64-linux-gnu/libgsm.so.1
/lib/x86_64-linux-gnu/libmp3lame.so.0
/lib/x86_64-linux-gnu/libopenjp2.so.7
/lib/x86_64-linux-gnu/libopus.so.0

/lib/x86_64-linux-gnu/libshine.so.3
/lib/x86_64-linux-gnu/libspeex.so.1
/lib/x86_64-linux-gnu/libtheoraenc.so.1
/lib/x86_64-linux-gnu/libtheoradec.so.1
/lib/x86_64-linux-gnu/libtwolame.so.0
/lib/x86_64-linux-gnu/libvorbis.so.0
/lib/x86_64-linux-gnu/libvorbisenc.so.2
/lib/x86_64-linux-gnu/libx264.so.163
/lib/x86_64-linux-gnu/libx265.so.199
/lib/x86_64-linux-gnu/libxvidcore.so.4
/lib/x86_64-linux-gnu/libsoxr.so.0
/lib/x86_64-linux-gnu/libva-drm.so.2
/lib/x86_64-linux-gnu/libva-x11.so.2
/lib/x86_64-linux-gnu/libvdpau.so.1
/lib/x86_64-linux-gnu/libdb-5.3.so
/lib/x86_64-linux-gnu/libstdc++.so.6
/lib/x86_64-linux-gnu/libgcc_s.so.1
/lib/x86_64-linux-gnu/libXau.so.6
/lib/x86_64-linux-gnu/libXdmcp.so.6
/lib/x86_64-linux-gnu/libcdio.so.19
/lib/x86_64-linux-gnu/libusb-1.0.so.0
/lib/x86_64-linux-gnu/libslang.so.2
/lib/x86_64-linux-gnu/libncursesw.so.6
/lib/x86_64-linux-gnu/libtinfo.so.6
/lib/x86_64-linux-gnu/libGLdispatch.so.0
/lib/x86_64-linux-gnu/libGLX.so.0
/usr/lib/x86_64-linux-gnu/pulseaudio/libpulsecommon-15.99.so
/lib/x86_64-linux-gnu/libdbus-1.so.3
/lib/x86_64-linux-gnu/libXcursor.so.1
/lib/x86_64-linux-gnu/libXinerama.so.1
/lib/x86_64-linux-gnu/libXi.so.6
/lib/x86_64-linux-gnu/libXfixes.so.3
/lib/x86_64-linux-gnu/libXrandr.so.2
/lib/x86_64-linux-gnu/libXss.so.1
/lib/x86_64-linux-gnu/libXxf86vm.so.1
/lib/x86_64-linux-gnu/libgbm.so.1
/lib/x86_64-linux-gnu/libwayland-egl.so.1
/lib/x86_64-linux-gnu/libwayland-client.so.0
/lib/x86_64-linux-gnu/libwayland-cursor.so.0
/lib/x86_64-linux-gnu/libxkbcommon.so.0
/lib/x86_64-linux-gnu/libdecor-0.so.0
/lib/x86_64-linux-gnu/libbsd.so.0
/lib/x86_64-linux-gnu/libblas.so.3
/lib/x86_64-linux-gnu/liblapack.so.3
/lib/x86_64-linux-gnu/libdl.so.2
/lib/x86_64-linux-gnu/libserd-0.so.0
/lib/x86_64-linux-gnu/libsord-0.so.0
/lib/x86_64-linux-gnu/libsratom-0.so.0
/lib/x86_64-linux-gnu/libamplerate.so.0
/lib/x86_64-linux-gnu/libflite_usenglish.so.1
/lib/x86_64-linux-gnu/libflite_cmulex.so.1
/lib/x86_64-linux-gnu/libharfbuzz.so.0
/lib/x86_64-linux-gnu/libgomp.so.1
/lib/x86_64-linux-gnu/libsodium.so.23
/lib/x86_64-linux-gnu/libpgm-5.3.so.0

/lib/x86_64-linux-gnu/libnorm.so.1
/lib/x86_64-linux-gnu/libgssapi_krb5.so.2
/lib/x86_64-linux-gnu/libexpat.so.1
/lib/x86_64-linux-gnu/libuuid.so.1
/lib/x86_64-linux-gnu/libpng16.so.16
/lib/x86_64-linux-gnu/libbrotlidec.so.1
/lib/x86_64-linux-gnu/libicuuc.so.70
/lib/x86_64-linux-gnu/libmpg123.so.0
/lib/x86_64-linux-gnu/libvorbisfile.so.3
/lib/x86_64-linux-gnu/libudfread.so.0
/lib/x86_64-linux-gnu/libp11-kit.so.0
/lib/x86_64-linux-gnu/libidn2.so.0
/lib/x86_64-linux-gnu/libunistring.so.2
/lib/x86_64-linux-gnu/libtasn1.so.6
/lib/x86_64-linux-gnu/libnettle.so.8
/lib/x86_64-linux-gnu/libhogweed.so.6
/lib/x86_64-linux-gnu/libgmp.so.10
/lib/x86_64-linux-gnu/libssl.so.3
/lib/x86_64-linux-gnu/libcrypto.so.3
/lib/x86_64-linux-gnu/libgcrypt.so.20
/lib/x86_64-linux-gnu/libgpg-error.so.0
/lib/x86_64-linux-gnu/libcairo-gobject.so.2
/lib/x86_64-linux-gnu/libgdk_pixbuf-2.0.so.0
/lib/x86_64-linux-gnu/libgio-2.0.so.0
/lib/x86_64-linux-gnu/libpangocairo-1.0.so.0
/lib/x86_64-linux-gnu/libpango-1.0.so.0
/lib/x86_64-linux-gnu/libffi.so.8
/lib/x86_64-linux-gnu/libpcre.so.3
/lib/x86_64-linux-gnu/libpixman-1.so.0
/lib/x86_64-linux-gnu/libxcb-render.so.0
/lib/x86_64-linux-gnu/libxrender.so.1
/lib/x86_64-linux-gnu/libogg.so.0
/lib/x86_64-linux-gnu/libnuma.so.1
/lib/x86_64-linux-gnu/libpthread.so.0
/lib/x86_64-linux-gnu/libudev.so.1
/lib/x86_64-linux-gnu/libsndfile.so.1
/lib/x86_64-linux-gnu/libX11-xcb.so.1
/lib/x86_64-linux-gnu/libsystemd.so.0
/lib/x86_64-linux-gnu/libasyncns.so.0
/lib/x86_64-linux-gnu/libapparmor.so.1
/lib/x86_64-linux-gnu/libwayland-server.so.0
/lib/x86_64-linux-gnu/libmd.so.0
/lib/x86_64-linux-gnu/libgfortran.so.5
/lib/x86_64-linux-gnu/libgraphite2.so.3
/lib/x86_64-linux-gnu/libkrb5.so.3
/lib/x86_64-linux-gnu/libk5crypto.so.3
/lib/x86_64-linux-gnu/libcom_err.so.2
/lib/x86_64-linux-gnu/libkrb5support.so.0
/lib/x86_64-linux-gnu/libbrotlicommon.so.1
/lib/x86_64-linux-gnu/libicudata.so.70
/lib/x86_64-linux-gnu/libgmodule-2.0.so.0
/lib/x86_64-linux-gnu/libjpeg.so.8
/lib/x86_64-linux-gnu/libmount.so.1
/lib/x86_64-linux-gnu/libselinux.so.1
/lib/x86_64-linux-gnu/libpangoft2-1.0.so.0

```

/lib/x86_64-linux-gnu/libthai.so.0
/lib/x86_64-linux-gnu/libFLAC.so.8
/lib/x86_64-linux-gnu/libzstd.so.1
/lib/x86_64-linux-gnu/liblz4.so.1
/lib/x86_64-linux-gnu/libcap.so.2
/lib/x86_64-linux-gnu/libquadmath.so.0
/lib/x86_64-linux-gnu/libkeyutils.so.1
/lib/x86_64-linux-gnu/libresolv.so.2
/lib/x86_64-linux-gnu/libb1kid.so.1
/lib/x86_64-linux-gnu/libpcre2-8.so.0
/lib/x86_64-linux-gnu/libdatрие.so.1
)

for FILE in "${FILES[@]}"; do
    if [ -f "$FILE" ]; then
        cp "$FILE" "$TARGET_DIR/"
        if [ $? -eq 0 ]; then
            echo "Moved $FILE to $TARGET_DIR"
        else
            echo "Error moving $FILE"
        fi
    else
        echo "Error: $FILE does not exist."
    fi
done

```

修改文件镜像大小

文件镜像目前给的128m只是刚好够放zlm，需要改大点。

| platforms/x86_64-qemu-q35.toml | | |
|--------------------------------|----|---|
| | | @@ -39,7 +39,7 @@ timer-frequency = "4_000_000_000" # 4.0GHz |
| 39 | 39 | # Testcase memory start address. |
| 40 | 40 | testcase-memory-start = "0x1_8000_0000" |
| 41 | 41 | # Testcase memory size. |
| 42 | | - testcase-memory-size = "0x800_0000" |
| | 42 | + testcase-memory-size = "0x1700_0000" |
| 43 | 43 | # The base address of the user heap. |
| 44 | 44 | user-heap-base = "0x3FA0_0000" |
| 45 | 45 | # The base address of the user stack. And the stack bottom is `user |

寄存动态库自动下载

另外特别大的链接库跟ffmpeg本体写进.gitignore里，不要放进git项目，确实太大了，通过脚本自动下载zlm+ffmpeg并放到对应测例文件夹里，将ffmpeg和动态库寄存在gitee上，在testcases/x86_64_ZLM路径下通过脚本下载并添加到ZLM的文件镜像中

```
rm -rf lib ffmpeg MediaServer
git clone https://gitee.com/baiqiaosen/zlm_ffmpeg.git
mv zlm_ffmpeg/lib ./
mv zlm_ffmpeg/ffmpeg ./
mv zlm_ffmpeg/MediaServer ./
rm -rf zlm_ffmpeg
```

CI问题

ffmpeg和动态库加入文件镜像的代码，跑CI有一例失败

Summary

Jobs

unit-test

app-test-for-unikernel (ubuntu-latest, ...)

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app-test-for-monolithic (ubuntu-lates...

app-test-for-monolithic (ubuntu-late...

app-test-for-monolithic (ubuntu-lates...

Run details

Usage

Workflow file

app-test-for-monolithic (ubuntu-latest, riscv64)

failed 1 hour ago in 1m 39s

Run app tests

1 ▶ Run make disk_img

8 Creating FAT32 disk image "disk.img" ...

9 64+0 records in

10 64+0 records out

11 67108864 bytes (67 MB, 64 MiB) copied, 0.0663957 s, 1.0 GB/s

12 mkfs.fat 4.2 (2021-01-31)

13 /home/runner/work/Starry/Starry/scripts/test/app_test_for_monolithic.sh

14 Testing apps/monolithic_userboot:

15 90+0 records in

16 90+0 records out

17 377487360 bytes (377 MB, 360 MiB) copied, 0.366835 s, 1.0 GB/s

18 run with "LOG=off ARCH=riscv64 APP_FEATURES=batch ACCEL=n": mkfs.fat 4.2 (2021-01-31)

19 Copying riscv64 fat32 sdcard/* to disk

20 failed! 0.286s

21 actual output:

22 make[1]: Entering directory '/home/runner/work/Starry/Starry'

23 Running on qemu...

24 qemu-system-riscv64 -m 2G -smp 1 -machine virt -bios default -kernel /home/runner/work/Starry/...

在 riscv 下跑宏内核测试出现了问题，因为镜像大小不适合于riscv的内存空间分布，之前修改文件镜像过大，修改build_img.sh如下图所示，默认为120M，但是可以自己调整大小

build_img.sh

3 3 # MacOS : brew install dosfstools

4 4 # Ubuntu : apt-get install dosfstools

5 5 # Usage:

6 - # build_img.sh -m [arch] -fs [ext4|fat32] -file [testcast]

6 + # build_img.sh -m [arch] -fs [ext4|fat32] -file [testcast] -s [size]

7 7 #####

8 8 # default setting

9 9 arch=x86_64

10 10 fs=fat32

11 + size=30

12 FILE=

13

14 display_help()

15 {

16 echo ""

16 echo "./build_img.sh -m [arch] -fs [filesystem] -file [testcast]"

18 + echo " -s | --size size of the disk image in 4MB batch size, default is set to 30, which means 120MB disk image"

17 echo ""

18 exit 1

19 }

20

21

22 while [-n "\$1"]; do

32 shift

33 FILE="\$1"

34 ;;

37 + -s | --size)

38 + shift

39 + size=\$1

40 + ;;

35 riscv64)

36 arch=riscv64

37 ;;

41

42

43

44 if ["\$FILE" = "testsuits-x86_64-linux-musl"] && [! -e testcases/\$FILE]; then

96 fi

97

98 rm -f disk.img

99 - dd if=/dev/zero of=disk.img bs=4M count=30

105 + dd if=/dev/zero of=disk.img bs=4M count=\$size

106

运行结果

./MediaServer -h

```
11: initialize program: ./MediaServer
11:
1970-01-01 00:02:58.445 I [MediaServer] [11-MediaServer] Factory.cpp:41 registerPlugin | Load codec: H264
1970-01-01 00:02:58.484 I [MediaServer] [11-MediaServer] Factory.cpp:41 registerPlugin | Load codec: H265
1970-01-01 00:02:58.488 I [MediaServer] [11-MediaServer] Factory.cpp:41 registerPlugin | Load codec: JPEG
1970-01-01 00:02:58.492 I [MediaServer] [11-MediaServer] Factory.cpp:41 registerPlugin | Load codec: mpeg4-generic
1970-01-01 00:02:58.496 I [MediaServer] [11-MediaServer] Factory.cpp:41 registerPlugin | Load codec: opus
1970-01-01 00:02:58.500 I [MediaServer] [11-MediaServer] Factory.cpp:41 registerPlugin | Load codec: PCMA
1970-01-01 00:02:58.504 I [MediaServer] [11-MediaServer] Factory.cpp:41 registerPlugin | Load codec: PCMU
1970-01-01 00:02:58.505 I [MediaServer] [11-MediaServer] Factory.cpp:41 registerPlugin | Load codec: L16
11:
11: transferring control: ./MediaServer
11:
-h --help      无参 默认:null      选填 打印此信息
-d --daemon    无参 默认:null      选填 是否以Daemon方式启动
-l --level     有参 默认:1        选填 日志等级,LTrace~LError(0~4)
-m --max_day   有参 默认:7        选填 日志最多保存天数
-c --config    有参 默认:/config.ini 选填 配置文件路径
-s --ssl       有参 默认:/default.pem 选填 ssl证书文件或文件夹,支持p12/pem类型
-t --threads   有参 默认:1        选填 启动事件触发线程数
--affinity     有参 默认:1        选填 是否启动cpu亲和性设置
-v --version   无参 默认:null      选填 显示版本号
--log-slice    有参 默认:100       选填 最大保存日志切片个数
--log-size     有参 默认:256       选填 单个日志切片最大容量,单位MB
--log-dir      有参 默认:/log/      选填 日志保存文件夹路径

1970-01-01 00:02:58.789 I [MediaServer] [11-MediaServer] logger.cpp:87 ~Logger |
11:
11: calling fini: ./MediaServer [0]
```

./ffmpeg -h

```
9: calling fini: /lib/libchromaprint.so.1 [0]
9:
Hyper fast Audio and Video encoder
usage: ffmpeg [options] [[infile options] -i infile]... {[outfile options] outfile}...

Getting help:
-h          -- print basic options
-h long     -- print more options
-h full     -- print all options (including all format and codec specific options, very long)
-h type=name -- print all options for the named decoder/encoder/demuxer/muxer/filter/bsf
See man ffmpeg for detailed description of the options.

Print help / information / capabilities:
-L          show license
-h topic    show help
-? topic    show help
-help topic show help
--help topic show help
-version    show version
-buildconf  show build configuration
-formats    show available formats
-muxers     show available muxers
-demuxers   show available demuxers
-devices    show available devices
-codecs     show available codecs
-decoders   show available decoders
-encoders   show available encoders
-bsfs       show available bit stream filters
-protocols  show available protocols
-filters     show available filters
-pix_fmts   show available pixel formats
-layouts    show standard channel layouts
-sample_fmts show available audio sample formats
-colors     show available color names
-sources device list sources of the input device
-sinks device list sinks of the output device
-hwaccels   show available HW acceleration methods
```