hfreire / **qemu_osx_rpi_raspbian_jessie.sh**

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How to emulate a Raspberry Pi (Raspbian Jessie) on Mac OSX (El Capitan)

qemu_osx_rpi_raspbian_jessie.sh

```
1   # Install QEMU OSX port with ARM support
2   sudo port install qemu +target_arm
3   export QEMU=$(which qemu-system-arm)
4
5   # Dowload kernel and export location
6   curl -OL \
7   https://github.com/dhruvvyas90/qemu-rpi-kernel/blob/master/kernel-qemu-4.1.7-jessie
8   export RPI_KERNEL=./kernel-qemu-4.1.7-jessie
9
10  # Download filesystem and export location
11  curl -o 2015-11-21-raspbian-jessie.zip \
12  -L http://downloads.raspberrypi.org/raspbian/images/raspbian-2015-11-24/2015-11-21-raspbian-jessie.zip
13  unzip 2015-11-21-raspbian-jessie.zip
14  export RPI_FS=./2015-11-21-raspbian-jessie.img
15
16  # Tweak filesystem: start qemu with init flag, switch to guest window to execute tweak and close window afterwards
17  $QEMU -kernel $RPI_KERNEL \
18  -cpu arm1176 -m 256 \
19  -M versatilepb -no-reboot -serial stdio \
20  -append "root=/dev/sda2 panic=1 rootfstype=ext4 rw init=/bin/bash" \
21  -hda $RPI_FS
22
23  sed -i -e 's/^/#/' /etc/ld.so.conf
24  sed -i -e 's/^/#/' /etc/fstab
25
26  # Emulate Raspberry Pi
27  $QEMU -kernel $RPI_KERNEL \
28  -cpu arm1176 -m 256 \
29  -M versatilepb -no-reboot -serial stdio \
30  -append "root=/dev/sda2 panic=1 rootfstype=ext4 rw" \
31  -hda $RPI_FS \
32  -redir tcp:5022::22
33
34  # Login to Raspberry Pi
35  ssh -p 5022 pi@localhost
36
37  # Referenced from OSX raspberry pi emulation via QEMU - https://gist.github.com/JasonGhent/e7deab904b30cbc08a7d
38  # Referenced from Emulating Jessie image with 4.1.7 kernel - https://github.com/dhruvvyas90/qemu-rpi-kernel/wiki/Emulating-Jess
```

MrAndersonMD commented on Mar 6, 2017

Hi, first of all great job!! Your script helped me a lot trying to emulate Raspbian on MacOS Sierra using qemu.

I'd like to make some contributions.

It's easier to install qemu by using hombrew so line 2 should be replaced by

> /usr/bin/ruby -e "$(curl -fsSL https://raw.githubusercontent.com/Homebrew/install/master/install)"
> brew install qemu

Using curl to download files it's nice but using wget it easier. Yo can install wget using hombrew using

> brew install wget

There is a newer version of kernel so lines 6-8 can be replaced by

> wget https://github.com/dhruvvyas90/qemu-rpi-kernel/raw/master/kernel-qemu-4.4.34-jessie
> export RPI_KERNEL=./kernel-qemu-4.4.34-jessie

There is a newer version of Raspbian Jessie compatible with last kernel available so lines 11-14 can be replaced by

> wget http://downloads.raspberrypi.org/raspbian/images/raspbian-2016-11-29/2016-11-25-raspbian-jessie.zip
> unzip raspbian-2016-11-29/2016-11-25-raspbian-jessie.zip
> export RPI_FS=./raspbian-2016-11-29/2016-11-25-raspbian-jessie.zip

With -hda option I had a warning that raw format was selected automatically but it should be avoided, so line 21 and line 31 should be replaced by

> -drive "file=2016-11-25-raspbian-jessie.img,index=0,media=disk,format=raw"

It's supposed that lines 23 and 24 should modify /etc/ld.so.conf and /etc/fstab, but every time that part of the script failed and stated an error.

Newer guides that give directions for emulation of Raspbian using qemu states that the first file you need to modify is /etc/ld.so.preload so line 23 should be replaced by

> sed -i -e 's/^/#/' /etc/ld.so.preload

Finally -redir option is deprecated, I managed to solve it with -net option so line 32 can be replaced by

> -net user,hostfwd=tcp::5022-:22

Again, thanks for your great job, I will not be able to emulate Raspbian on MacOS Sierra without your script. I hope you consider my contributions, it's done with the best of intentions.

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bainss commented on Apr 8, 2017

Here's my working version

Install QEMU OSX port with ARM support

/usr/bin/ruby -e "$(curl -fsSL https://raw.githubusercontent.com/Homebrew/install/master/install)" && brew update && brew install qemu

export QEMU=$(which qemu-system-arm)

Dowload kernel and export location

curl -OL
https://github.com/dhruvvyas90/qemu-rpi-kernel/raw/master/kernel-qemu-4.4.34-jessie
export RPI_KERNEL=./kernel-qemu-4.4.34-jessie

Download filesystem and export location

curl -o 2017-03-02-raspbian-jessie.zip
-L http://downloads.raspberrypi.org/raspbian/images/raspbian-2017-03-03/2017-03-02-raspbian-jessie.zip
unzip 2017-03-02-raspbian-jessie.zip
export RPI_FS=./2017-03-02-raspbian-jessie.zip

Tweak filesystem: start qemu with init flag, switch to guest window to execute tweak and close window afterwards

$QEMU -kernel $RPI_KERNEL
-cpu arm1176 -m 256
-M versatilepb -no-reboot -serial stdio
-append "root=/dev/sda2 panic=1 rootfstype=ext4 rw init=/bin/bash"
-drive "file=2017-03-02-raspbian-jessie.img,index=0,media=disk,format=raw"

enter these on the qemu terminal and exit after

sed -i -e 's/^/#/' /etc/ld.so.preload
sed -i -e 's/^/#/' /etc/ld.so.conf
sed -i -e 's/^/#/' /etc/fstab

Emulate Raspberry Pi

```
$QEMU -kernel $RPI_KERNEL
-cpu arm1176 -m 256
-M versatilepb -no-reboot -serial stdio
-append "root=/dev/sda2 panic=1 rootfstype=ext4 rw"
-drive "file=2017-03-02-raspbian-jessie.img,index=0,media=disk,format=raw"
-net user,hostfwd=tcp::5022-:22
```

Login to Raspberry Pi

ssh -p 5022 pi@localhost

Referenced from OSX raspberry pi emulation via QEMU - https://gist.github.com/JasonGhent/e7deab904b30cbc08a7d

Referenced from Emulating Jessie image with 4.1.7 kernel - https://github.com/dhruvvyas90/qemu-rpi-kernel/wiki/Emulating-Jessie-image-with-4.1.7-kernel

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theconsultant commented on Jun 19, 2017

"Referenced from Emulating Jessie image" has now moved to:
https://github.com/dhruvvyas90/qemu-rpi-kernel/wiki/Emulating-Jessie-image-with-4.x.xx-kernel

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224XS commented on Aug 30, 2017

Has anyone discovered a working set of qemu invocation switches/options to enable networking for the RPi/jessie-4.4.34 on macOS 10.12.6 Sierra?
Otherwise, the script works. Needs two sequential boots on the RPi, and the SED lines that comment out the ld.so's and fstab fail, but a working RPi is instantiated and even startx works. Just no network. Only pinging to the loopback works, nothing else.

Here is my version of the script:
`qemu-system-arm -kernel ./kernel-qemu-4.4.34-jessie
-cpu arm1176 -m 256
-M versatilepb -no-reboot -serial stdio
-append "root=/dev/sda2 panic=1 rootfstype=ext4 rw init=/bin/bash"
-drive "file=2016-11-25-raspbian-jessie.img,index=0,media=disk,format=raw"

sed -i -e 's/^/#/' /etc/ld.so.preload
sed -i -e 's/^/#/' /etc/ld.so.conf
sed -i -e 's/^/#/' /etc/fstab

```
    # Emulate Raspberry Pi
```

qemu-system-arm -kernel ./kernel-qemu-4.4.34-jessie
-cpu arm1176 -m 256
-M versatilepb -no-reboot -serial stdio
-append "root=/dev/sda2 panic=1 rootfstype=ext4 rw"
-drive "file=2016-11-25-raspbian-jessie.img,index=0,media=disk,format=raw"
-net user,hostfwd=tcp::5022-:22

```
    # Login to Raspberry Pi
    ssh –p 5022 pi@localhost
```

`
Of course, since the network fails with no NICs, the ssh also fails

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224XS commented on Aug 31, 2017

The script generally works well. I can boot the RPi on my macOS Sierra system without a problem.

There is a new Jessie and a new QEMU since these scripts were written.

The new QEMU (>= 2.8) no longer requires commenting out /etc/ld.so.conf or fstab

I cannot discover a way to enable networking on the RPi, however, ifconfig contains only a LO (local loopback), no eth0, etc.

There the final line of ssh'ing to the RPi is nfg.

Here is my working script with the updates:

```
`qemu-system-arm -kernel ./kernel-qemu-4.4.34-jessie
-cpu arm1176 -m 256
-M versatilepb -no-reboot -serial stdio
-append "root=/dev/sda2 panic=1 rootfstype=ext4 rw init=/bin/bash"
-drive "file=2016-11-25-raspbian-jessie.img,index=0,media=disk,format=raw"

#sed -i -e 's/^/#/' /etc/ld.so.preload
#sed -i -e 's/^/#/' /etc/ld.so.conf
#sed -i -e 's/^/#/' /etc/fstab


    # Emulate Raspberry Pi


qemu-system-arm -kernel ./kernel-qemu-4.4.34-jessie
-cpu arm1176 -m 256
-M versatilepb -no-reboot -serial stdio
-append "root=/dev/sda2 panic=1 rootfstype=ext4 rw"
-drive "file=2016-11-25-raspbian-jessie.img,index=0,media=disk,format=raw"
-net user,hostfwd=tcp::5022-:22


    # Login to Raspberry Pi
    ssh -p 5022 pi@localhost


`
```

zhukandrey commented on Nov 30, 2017

@224XS Hi, did you have success with enabling networking on RPi emulator?

chaimpeck commented 27 days ago

The instructions from **@bainss** work on Mac OS High Sierra.