

Raspberry Pi - Support #933

Virtualize Arch Linux ARM on x86_64 Arch Linux

04/17/2018 10:31 PM - Daniel Curtis

Status:	Closed	Start date:	04/17/2018
Priority:	Normal	Due date:	
Assignee:	Daniel Curtis	% Done:	100%
Category:	Operating Systems	Estimated time:	1.00 hour
Target version:	Arch Linux	Spent time:	2.00 hours

Description

This is a guide on virtualizing an ARM based operating system, in this case Arch Linux ARM, on an x86_64 Arch Linux system.

Prepare the environment

- Make sure the system is up to date:

```
pacman -Syu
```

- Install a few dependencies:

```
pacman -S git base-devel
```

Install Arch Linux ARM

- Create a 4GB image and mount it to ~/alarm/root:

```
mkdir -p ~/alarm/root && cd ~/alarm  
dd if=/dev/zero of=./alarm.img bs=8M count=512  
mkfs.ext4 alarm.img  
sudo mount alarm.img root
```

- Download and install alarm into the image:

```
wget http://archlinuxarm.org/os/ArchLinuxARM-armv7-latest.tar.gz  
sudo bsdtar -xpf ArchLinuxARM-armv7-latest.tar.gz -C ./root  
sync
```

- Remove the getty systemd unit link to prevent the console from locking up:

```
sudo rm root/etc/systemd/system/getty.target.wants/getty@tty1.service
```

- Copy the kernel and device tree blob out of the image:

```
cp ./root/boot/zImage ./zImage_alarm  
cp ./root/boot/dtbs/vexpress-v2p-ca9.dtb ./
```

- Unmount the image so it can be booted from:

```
sudo umount root
```

- With the kernel and rootfs ready, start the VM:

```
qemu-system-arm \  
-M vexpress-a9 \  
-smp 2 \  
-m 1G \  
-dtb vexpress-v2p-ca9.dtb \  
-kernel zImage_alarm \  
-append "root=/dev/mmcblk0 rw roottype=ext4 console=ttyAMA0" \  
-drive if=sd,driver=raw,cache=writeback,file=./alarm.img \  
-redir tcp:2222::22 \  
--nographic
```

- Now log in as **root** with the password **root**.
- The host system also redirects ssh requests on **2222** to the virtualized arch linux arm install.

Resources

- <https://medicineyeh.wordpress.com/2016/03/29/buildup-your-arm-image-for-qemu/>
- <https://wiki.archlinux.org/index.php/QEMU>
- <https://qemu.weilnetz.de/doc/qemu-doc.html>

History

#1 - 04/17/2018 10:39 PM - Daniel Curtis

- Status changed from *New* to *Resolved*

- % Done changed from *0* to *100*

#2 - 04/17/2018 10:52 PM - Daniel Curtis

- Description updated

#3 - 04/17/2018 11:29 PM - Daniel Curtis

- Description updated

#4 - 06/10/2019 02:34 PM - Daniel Curtis

- Status changed from *Resolved* to *Closed*