

Clustered Samba in a Briefcase

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Outline

Introduction

- Hardware Used

- Software Used

Setup

- Hardware

- Software

Remaining Issues

Demo

Introduction

- ▶ About Myself
- ▶ Hardware Used
- ▶ Software Used

About Myself

- ▶ M.Sc. in computational biology
- ▶ Ph.D. in microbiology
- ▶ Samba Team member

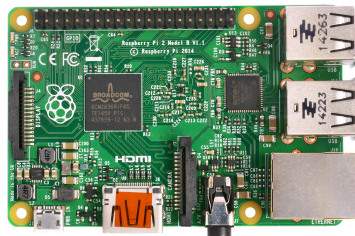


Hardware Used

- ▶ 3x RaspberryPi2
- ▶ 4-port switch
- ▶ 4-port USB PSU

RaspberryPi2

- ▶ 900 MHz ARMv7 Cortex-A7 QuadCore
- ▶ 1 GB RAM
- ▶ 4 USB 2.0 ports
- ▶ 100 MbE



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<https://commons.wikimedia.org/w/index.php?curid=38558176>

Software Used

- ▶ Arch Linux ARM
- ▶ GlusterFS
- ▶ Samba 4.4.2 / CTDB



- ▶ ARM port of Arch Linux
- ▶ Supports ARMv5 – ARMv7 hardware
- ▶ Lightweight
- ▶ Active community

- ▶ Current release: 3.7.11
- ▶ Clustering for common, off-the-shelf hardware
- ▶ Packaged for ArchLinux



Samba 4

- ▶ Current release: Samba 4.4.3
- ▶ Active Directory Domain controller
- ▶ Scales from micro to macro



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Hardware



Basic Setup

- ▶ Set up RaspberryPis
- ▶ It's in GitHub: <https://github.com/kblin/rpi-cluster>

```
# Push system on pre-partitioned SD card at /dev/mmcblk0
./install/format.sh

# restore host-specific config
./install/bootstrap.sh <hostname>

# Done :)
# Ok, actually, you still need to put SD into the
# RPi, boot, and pacman -S python2
```

Ansible

- ▶ Use to bootstrap the setup
- ▶ It's in GitHub: <https://github.com/kblin/rpi-ctdb-ansible>

```
# First install GlusterFS
ansible-playbook -i inventory install_gluster.yml

# For now, we need a custom version of the Samba packages
pacman -U samba*xz

# Then install Samba stuff
ansible-playbook -i inventory install_samba.yml]
```

- ▶ Need to add `--with-clustering` to ArchLinux build
 - ▶ Binaries packaged, config files not
 - ▶ Copy over files using Ansible
- ▶ Some fixes to config files needed for Arch
- ▶ Tweaks to startup scripts
- ▶ Details on GitHub

smb.conf

```
[global]
# Cluster settings
  clustering = yes

# Load shares from registry
  ctdb:registry.tdb=yes
  include=registry
```


Samba (cont.)

```
net conf setparm global "workgroup" "CLUSTER"  
net conf setparm global "netbios name" "storage"  
net conf setparm global "security" "user"  
net conf setparm global "idmap backend" "tdb2"  
  
net conf addshare public /data/packages \  
        writeable=y guest_ok=N "Demo share"
```

- ▶ Round-robin A record for public IPs
- ▶ Here: dnsmasq and /etc/hosts
- ▶ Should use BIND in real setup
- ▶ Or maybe Samba DNS once we implement round-robin

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SCHED_FIFO

- ▶ Not working in ARM for some reason
- ▶ Fortunately, CTDB doesn't need it

- ▶ Locking doesn't work properly (yet)

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DEMO

Future Plans

- ▶ Get CTDB packaged in ArchLinux
- ▶ Go fully self-contained
- ▶ 2-node cluster + 1 Samba AD DC?

Thank you

- ▶ Questions?
- ▶ ArchLinuxArm bootstrapping: <https://github.com/kblin/rpi-cluster>
- ▶ Ansible CTDB setup: <https://github.com/kblin/rpi-ctdb-ansible>
- ▶ This talk: <http://kblin.org/talks/sambaxp/2016/talk.pdf>