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
Raspberry Pi 2

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

Source: Multicherry, CC BY-SA 4.0, 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
GlusterFS

- 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

http://crazeric.deviantart.com CC-BY-SA
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Hardware
Basic Setup

- Set up Raspberry Pis
- It’s in GitHub: https://github.com/kblin/rpi-cluster

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

# Load shares from registry
  ctdb:registry.tdb=yes
  include=registry
Samba (cont.)

```bash
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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- Not working in ARM for some reason
- Fortunately, CTDB doesn’t need it
GlusterFS

- 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