

DNSing Samba: The Guide to using Samba 4.0 DNS

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Outline

Introduction

- The Abouts

- Hardware Used

- Software Used

Configuration

- Internal DNS

- Bind 9

- General Debugging Notes

Configuration

- Samba-Tool

- nsupdate

- DNS MMC

Demo

Future Work

- Future Work

The Abouts

- ▶ About Myself
- ▶ About This Talk

About Myself

- ▶ M.Sc. in computational biology
- ▶ Ph.D. student in microbiology
- ▶ Open Source developer
- ▶ Samba Team member
- ▶ Wrote the Samba internal DNS server



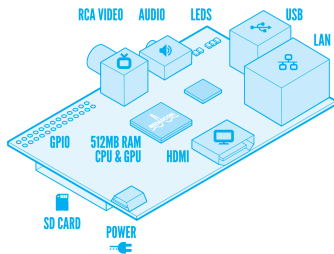
About This Talk

- ▶ Many ways to run AD with DNS
- ▶ Talk will present two
 - ▶ Internal DNS
 - ▶ Bind9 with DLZ module

Meet the Pi

- ▶ 45 g of raw ARM computing power
- ▶ 700 MHz ARM11 (ARMv6) CPU
- ▶ 512 MB RAM
- ▶ 100 MbE
- ▶ 2 USB2 ports

RASPBERRY PI MODEL B



<http://www.raspberrypi.org/>

Software Used

- ▶ Arch Linux ARM
- ▶ Samba 4.0
- ▶ Bind 9



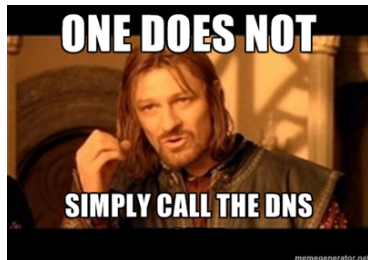
- ▶ ARM port of Arch Linux
- ▶ Supports ARMv5 – ARMv7 hardware
- ▶ Lightweight
- ▶ Active community

Samba 4

- ▶ Current release: Samba 4.0.5
- ▶ Active Directory Domain controller
- ▶ Scales from micro to macro



- ▶ Current release: 9.2.2 patch 1
- ▶ The DNS server that "runs the internet"
- ▶ Intricate configuration



<http://memegenerator.net>

DNS Solutions Not Covered

- ▶ dnsmasq
- ▶ powerdns
- ▶ BIND10

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Internal DNS

internal DNS install

```
# first, build samba
./configure && make

# then install
sudo make install

# and provision
sudo samba-tool domain provision

# Done :)
```

Current Limitations and Caveats

- ▶ Not a caching resolver
- ▶ bug with MX records
- ▶ bug with TSIG ddns registrations

Bind 9

Samba install for Bind 9

```
# first, build samba
./configure && make

# then install
sudo make install

# and provision
sudo samba-tool domain provision
```

Bind 9, part 2

Bind 9 install

```
# is Bind compiled and new enough?
named -V
# look for a 9.8.x or 9.9.x version here as well as
# --with-dlopen=yes and
# --with-gssapi

# add to your named.conf file
include "/usr/local/samba/private/named.conf";

# set up the correct version of the DLZ module
$EDITOR /usr/local/samba/private/named.conf

# for signed DDNS updates add to named.conf options:
options {
    ...
    tkey-gssapi-keytab "/usr/local/samba/private/dns.keytab";
    ...
};
```



Current Limitations and Caveats

- ▶ Not all config options available from samba-tool/DNS.mmc
- ▶ Debugging can be tricky

Debugging

/etc/resolv.conf

```
nameserver 127.0.0.1
```

```
# recreates sambd hardlinks  
samba_upgradedns --dns-backend=BIND9_DLZ  
# but also ../private/named.conf include
```

Use dig and samba-tool dns to look at DNS and directory side

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Future Work

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- ▶ command line interface
- ▶ talks to server via DCE/RPC (`dnsserver`)

- ▶ command line interface
- ▶ talks to server via DNS
- ▶ not all changes possible yet

- ▶ graphical interface
- ▶ talks to server via DCE/RPC (dnsserver)
- ▶ most complete tool
- ▶ needs Windows to run

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DEMO

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Future Work

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Internal DNS

- ▶ Fix bugs
- ▶ Extend DNS client library

- ▶ Feature complete
- ▶ Bug fixes if needed

Some Words About Bind10

- ▶ It's a framework
 - ▶ RESTful HTTPS configuration
 - ▶ SQLite3 zone backend
 - ▶ Python plugin framework (python3)
 - ▶ DHCP server (experimental)
- ▶ Current release: BIND 10 1.0.0
 - ▶ No production quality caching resolver
 - ▶ No backend for AD/LDAP zones

It's web scale!



<http://mongodb-is-web-scale.com/>

Thank you

▶ Questions?