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Power your directory with SAMBA

Case study: Linux and SAMBA/AD in K-12
education

Ohio LinuxFest 2019

Agenda

- Why would anyone do this?
- Samba and openSUSE
- Case study environment
- Implementation
- Live “Look-in”



Why Do This At All?

- You have more time than money (CAL avoidance)
- AD is the standard for interoperability
- Simplicity/ubiquity of administration tools
- Linux is just cooler than Windows

How Samba4 delivers AD

- Several key services are consolidated into samba-ad-dc service:
 - LDAP, DNS, and Kerberos
- Single configuration tool: samba-tool
- Default kerberos server: Heimdal (MIT added in 4.7)
- DNS – samba internal or bind (requires extra configuration)
- LDAP handled by internal samba service only
- Samba recommends a separate domain controller for AD – with shares delivered on member instances

Current Limitations of Samba AD

- No PowerShell AD module
- Limited SYSVOL replication (manual, hacky)
- Directory mode maximum 2008R2
- Limited application of computer GPO's

State of Samba4 /AD in openSUSE

- Samba 4 first arrived in openSUSE 13.1
- Release notes (2014-01-08) 5.3. Samba Version 4.1:

"Samba version 4.1 shipped with openSUSE 13.1 **does not** include support to operate as an Active Directory style domain controller. This functionality is currently disabled, as it lacks integration with system-wide MIT Kerberos."

State of Samba AD in openSUSE - 2019



- openSUSE Leap 15.1 - samba 4.9, currently 4.9.5+git.187
 - Tumbleweed samba 4.11, currently 4.11.0
- Several rpm packages are part of this:
 - samba
 - samba-client
 - samba-ceph
 - samba-doc
 - samba-dsdb-modules
 - **samba-ad-dc- /usr/bin/samba-tool**
 - samba-libs
 - samba-pidl
 - samba-python
 - samba-winbind

SAMBA

Official Samba Releases



series	git branch	status	started	maintenance	security	discontinued (EOL)
4.12 (details)	master	next upcoming release series				
4.11 (details)	v4-11-test	current stable release series	2019-09-17			
4.10 (details)	v4-10-test	maintenance mode	2019-03-19	2019-09-17		
4.9 (details)	v4-9-test	security fixes only	2018-09-13	2019-03-19	2019-09-17	
4.8 (details)	v4-8-test	discontinued (EOL)	2018-03-13	2018-09-13	2019-03-19	2019-09-17
4.7 (details)	v4-7-test	discontinued (EOL)	2017-09-21	2018-03-13	2018-09-13	2019-03-19



Case study environment



Liberty Christian School

- Two facilities in Anderson, IN
- ~550 students K-12, 80 staff
- ~150 Windows PC's (Windows 10 standard)
- ~575 Chromebooks
- ~1 Old sysadmin
 - Two teenage helpers
 - One part-time staff



LCS IT information

- Each facility has two clustered KVM servers
 - Storage via iSCSI on Leap 15.1
- Windows servers (2) running as appliances
- SLES was default
 - Started with 11
- Windows 10 standard
- Share server in each building



Compelling events

- 9-yr-old Samba 3/LDAP domain getting harder to support
- Windows 10 1803 – breaks domain join
- Need for better standardization, interoperability
- No budget
- Local admins know Windows



Implementation design

- Install Leap 15.1 DC VM in each facility
- [“Classic Upgrade”](#), DNS internal (ad.libertyonline.org)
- Retain old share server names, rebuild on Leap 15.1 VM's as domain members
- Reconfigure dependent services
 - PowerSchool (SIS)
 - Google G Suite (GCDS)
- Replicate in virtual world first to test
- Get Trent and Zack to help



Results – Good, Bad, Ugly

- **Good:** All users and machines with passwords imported, shares work, Windows admin tools work, accomplished over winter break in January 2019, running continuously since then
- **Bad:** All users in one OU, groups imported but unpopulated with users, file permission changes needed, manual SYSVOL replication for policies – **all mitigated now**
- **Ugly:** MIT kerberos labeled “experimental”
 - [Samba backed away](#)
 - Bug affected it at deploy time:
 - [CVE-2018-20217](#)





Live "Look-in"



Have a lot of fun!



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Credits

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