Setup and Configure Samba on AIX

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UNIX ... really?

- Isn’t there just Linux and *BSD left?
- Almost all (commercial) UNIX flavors died, yes: IRIX, Tru64, HP-UX, ...
- Solaris had some enthusiastic fans but it suffered from being owned by Sun in the past and this didn’t improve a lot since Oracle holds it
Necrophilia

Not only is UNIX dead, it’s starting to smell really bad.

Rob Pike
AIX is actually still alive

- AIX 7 is what Linux distributions call „rolling release“ these days
- Not a lot of glitter, bells and whistles
- No fan boys (m/f/diverse) like Solaris used to have them
- Mature and stable OS base
Who uses AIX?

• Companies that can afford the hardware and maintenance prices of IBM :-)
• Those who don‘t end up in hospital while doing the required stuff on the ibm.com web sites
• Companies, who used to do so in the past and who don‘t want to learn from scratch how to manage a new version of their Linux distribution every 2 years ;)

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OSS on AIX?

- Most people can’t live without some basic Tools like VIM, Bash and other some GNU tools
- There used to be Bull Freeware but that disappeared
- There is AIX OSS Toolbox from IBM. Here you find OSS packages compiled as-is but without any guarantees or vendor support
Samba ... yes!

• Like the quality of a Samba box on Linux depends on who created and maintains the Samba packages, the same applies to Samba on AIX
• We (SerNet) got several requests to support SAMBA+ also for AIX
• Since 2020 SerNet offers also fully supported SAMBA+ for AIX (https://samba.plus/samba-aix)
Package-Installation

# rpm -e "samba*" (or installp -u samba ...)

# gunzip < sambaplus-4.16.1-1.aix7.tar.gz | tar xvf -
# sambaplus-4.16.1-1.aix7
x sambaplus-4.16.1-1.aix7/README, 3957 bytes, 8 media blocks.
x sambaplus-4.16.1-1.aix7/VERSION, 14 bytes, 1 media blocks.
x sambaplus-4.16.1-1.aix7/sambaplus-bin.tar, 156231680 bytes, 305140 media blocks.
x sambaplus-4.16.1-1.aix7/setup.sh, 1863 bytes, 4 media blocks.
x sambaplus-4.16.1-1.aix7/smb.conf.example, 477 bytes, 1 media blocks.

# cd  sambaplus-4.16.1-1.aix7

# ./setup.sh
...
# ln -s /usr/local/sambaplus-4.16.1-1.aix7 /usr/local/sambaplus

# cd /etc/rc.d/rc2.d
# ln -s /usr/local/sambaplus/init/winbindd.init S00winbindd
...

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Adjust basic OS settings

- Maximum number of groups per user:
  
  Query first:
  
  ```
  # lsattr -El sys0 -a ngroups_allowed
  ```

- Raise to the max:
  
  ```
  # chdev -l sys0 -a ngroups_allowed=2048
  ```
Adjust basic OS settings

- Maximum number of characters for usernames

Query first:
# lsattr -El sys0 -a max_logname

Raise to the max:
# chdev -lsys0 -a max_logname=256
Reboot / Restart / IPL

The previous basic OS settings don’t become effective immediately but you should **really** get them effective. You will probably see weird Samba or Winbind errors otherwise!

So …

- On bare metal or WPAR: Reboot the host now!
- In a Logical Partition: Reboot the LPAR now!
Adjust methods/LAM

- Replace or add WINBIND section in /etc/methods.cfg

  WINBIND:
  
  program = /usr/local/sambaplus/lib/WINBIND
  program_64 = /usr/local/sambaplus/lib/WINBIND64

- Enable WINBIND system authentication (not required for SMB fileserver authentication):

  # chsec -f /etc/security/user -s default -a "SYSTEM=compat or WINBIND"
Enhanced OS settings

- Enable EAv2 support (recommended!)

Benefits:
  - EA support
  - NFS4 ACL support

# chfs -a ea=v2 /yourpartition
Back to „normal“ Samba

• Create basic smb.conf in /var/sambaplus/etc/

```plaintext
[globals]
realm = ad.example.com
workgroup = ad
security = ads
Idmap config * : range = 10000-99999
idmap config AD : backend = rid
idmap config AD : range = 100000-199999
winbind separator = +
```
Join your Active Directory

- Check hostname, IP and correct DNS server
- Check that no old smbd or winbinddd processes are running
- Finally join the domain:

  ```
  # /usr/local/sambaplus/bin/net ads join -U "my admin account"
  Using short domain name -- AD
  Joined 'POWER' to dns domain 'ad.example.com'
  ...
  ```
Winbind on AIX

- Start Winbindd:
  ```
  # /usr/local/sambaplus/init/winbindd.init start
  ```

- Testing Winbind:
  ```
  # /usr/local/sambaplus/bin/wbinfo -t
  ```

- Testing the WINBIND methods.cfg module:
  ```
  # Isuser AD+administrator
  ```

AD+administrator id=100500 pgrp=AD+domain users
groups=100500,100513,100512,100572,100518,100519,100520,10001,10000 home=/home/AD/administrator shell=/bin/sh
gecos= login=false su=true rlogin=true daemon=true admin=false sugroups=ALL admgroups= tpath=nosak ttys=ALL
expires= auth1=SYSTEM auth2=NONE umask=22 registry=WINBIND SYSTEM=compat or WINBIND logintimes= loginretries=0
pwdwarntime=0 account_locked=false minage=0 maxage=0 maxexpired=-1 minalpha=0 minloweralpha=0 minupperalpha=0
minother=0 mindigit=0 minspecialchar=0 mindiff=0 maxrepeats=8 minlen=0 histexpire=0 histsize=0 pwdchecks= dictionlist=
default_roles= efs_initialks_mode=admin efs_keystore_algo=RSA_2048 efs_keystore_access=file efs_adminks_access=file
efs_allowksmodechangebyuser=true efs_file_algo=AES_128_CBC fsize=2097151 cpu=-1 data=1262144 stack=65536
core=2097151 rss=65536 nofiles=16000 roles=
Starting smbd finally

If you made sure that all the Winbind stuff looks cool, **then**:

- Create a share like:

  `[test]
  path = /tmp
  read only = no`

- `/usr/local/sambaplus/init/smbd.init start`

- Access the server from a Windows client and check the results in /tmp
Forget old limitations!

- Make use of Winbind‘s ability to provide domain users and groups on the fly!
- You have a mature OS with a modern filesystem with standardized NFS4 ACLs!

Make use of those and don‘t stick with config hacks from previous decades!
Thank you ...

Questions?

Feel free to mail me at Björn Jacke <bj@sernet.de>