

CIFS client for Solaris



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www.opensolaris.org/os/project/smbfs

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What is the Solaris CIFS client?

- Virtual File System module (smbfs)
 - > Allows “mount” of CIFS shares
 - > File & directory access via normal APIs (open, read, write, close, readdir...)
- New commands:
 - > mount_smbfs
 - > smbutil
- GNOME-VFS plug-in (planned) so the OpenSolaris Desktop will create real mounts

Initial Release Goals

- Essential file & directory operations
- Make smbfs/net smb MT-safe
- Support Solaris Zones, Trusted Extensions
- AD-compatible authentication
- Password “keychain”, PAM hooks
- Stability (no P1,P2 bugs)

Initial Release Limitations

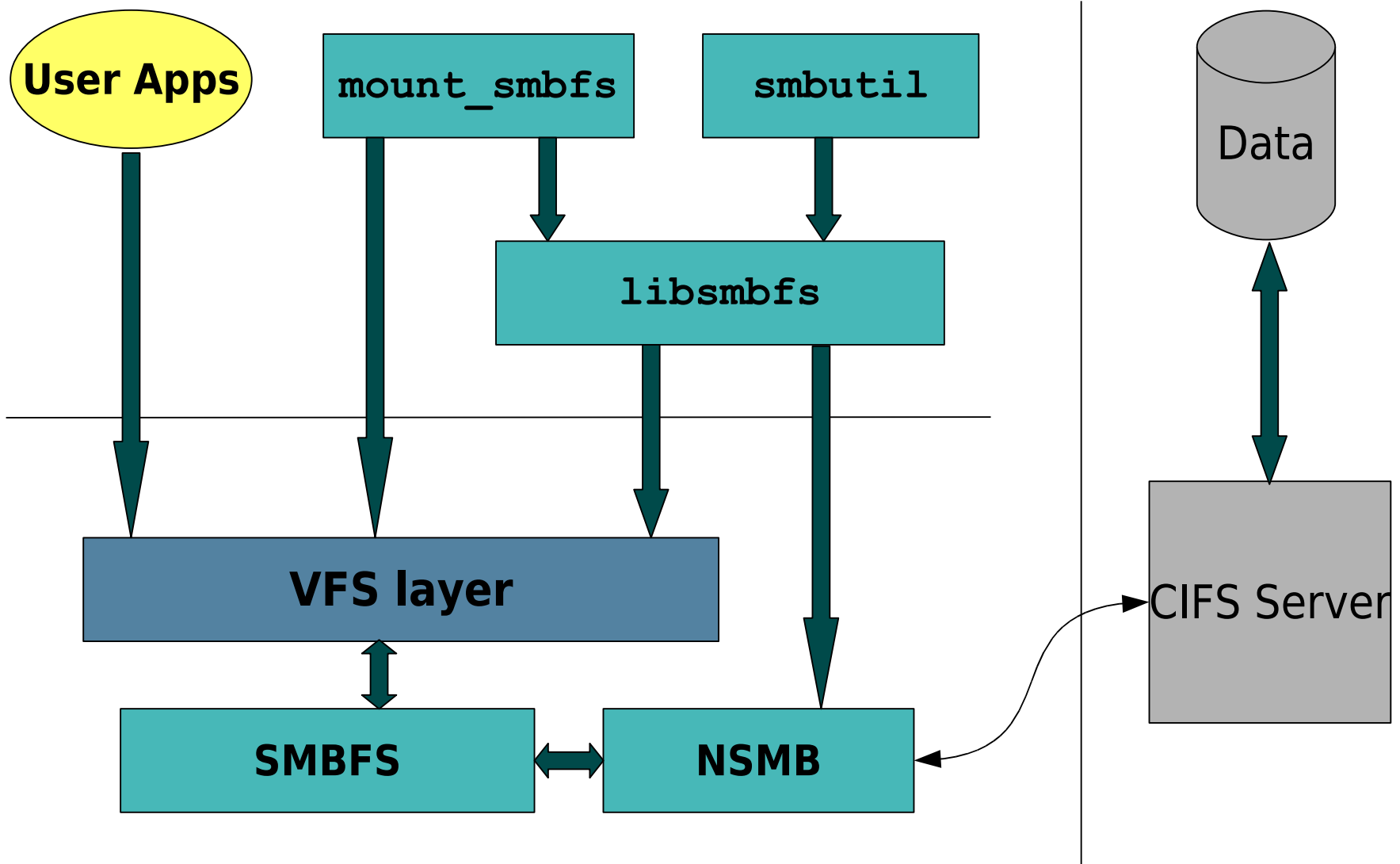
- Single user credentials per mount point
 - > Owner of mount is owner of everything inside
 - > CIFS ACLs neither used nor presented
- Deferred Features
 - > automatic reconnect
 - > mapped-file access / page cache
 - > Directory Name Lookup cache (DNLC)
 - > IPC pipes (RPC support)
 - > port 445 (SMB over TCP)

OpenSolaris community participation on these?

Solaris CIFS Client Components

- `nsmb` - netsmb driver
- `smbfs` - Loadable file system module
- `libsmbfs` - Used by CIFS client commands
- `smbutil(1)` - List shares, lookup names, etc.
- `mount_smbfs(1M)` - Mount a CIFS share
- `pam_smbfs_login(5)` - save p/w hash at login
- `mdb(1)/kmdb(1)` modules for `nsmb` and `smbfs`

Solaris CIFS Client Architecture



More About the Design

- Most SMB protocol knowledge is in netsmb
 - > Can be tested independently of smbfs
 - > Opportunity for sharing code w/ other OS
- Most OS-specific code is in smbfs
- VFS interface code mostly from NFS
- For more details, see the “smbfs internals” presentation *
* on the OpenSolaris project page

Current Status and Plans

- Integrated into OpenSolaris
 - > Nevada builds 84 and later
 - > Good stability
- Working on the “deferred features” list
 - > Improved connection management
 - > Updated authentication methods
 - > Named streams, signing, IPC support, ...
 - > See our OpenSolaris project page

Lessons Learned

- VFS interfaces: BSD, Solaris, ...
- Kernel environment, concurrency
- Port it first, then add features
- Mix-n-Match approach has risks
- Have to track CIFS protocol evolution

Credit where Credit is Due

- In case this looks like “advertising” to anyone: “This product includes software developed by Boris Popov.”
- Copyright license (etc.) files are here: `usr/src/uts/common/fs/smbclnt/smbfs/netsmb/COPYRIGHT CREDITS README`
- In his CREDITS file, Boris Popov also gives credit to:
 - > The Samba Team
 - > Thursby Software
- We thank Apple too, for their contributions.

More information

opensolaris

<http://www.opensolaris.org>

CIFS Client Project (smbfs)

<http://www.opensolaris.org/os/project/smbfs>

Contact us:

see “leaders” on the project page,
also the “discuss” link, etc.