

Sharing file and printers

□ The problem

- Question: Can we share files and printers between UNIX and Windows world?
 - UNIX NFS/LPD: Native TCP/IP applications
 - Windows file/printer sharing: NetBIOS using SMB (Server Message Block Protocol)
- Two things needed:
 - Run NetBIOS on a TCP/IP
 - Map NetBIOS addresses (names) to TCP/IP addresses (numbers)
- One solution: Samba

Samba 1-1

What is Samba

- A suite of Unix applications that speak Server Message Block (SMB)
- Offering
 - Share directory trees
 - Share printers among Windows client on the network
 - Assist clients with network browsing
 - Authenticate clients logging onto a Windows domain
 - Provide or assist with Windows Internet Name Service (WINS) name-server resolution
 - Allow users on a Unix to access folders and printers that Windows Systems offer on the network.

Samba 1-2

How did SAMBA get started

- A little history
 - Samba was started in early 90's by Andrew Tridgell who wanted to mount a disk share from his Unix host on to a DOC PC
 - Reverse Engineered the SMB/NetBIOS protocol using packet sniffer
 - Thus was born the SAMBA package as we know it today
 - Samba is currently maintained and extended by a group of volunteers - Open source software
 - Samba development has been sponsored by universities, organizations, such as HP, IBM, etc.
 - Microsoft offered SMB protocol definition to IETF in 1996 as Common Internet File System (CIFS)

Samba 1-3

Why bother Samba

- Can the files and printers be shared on a Windows Server instead of Unix?
 - Yes.
 - But
 - Unix Operating System is reliable
 - Samba offers better performance under heavy load
 - Samba is free and does not need client license.
 - Windows Server requires Client Access Licenses (CALs)
 - And
 - You are supporting a group of mixed Windows and Unix Computers
 - You want to provide a common area for data
 - You want to share printers among Windows and Unix
 - You want to integrate Unix and Windows authentication, maintaining a single database of user accounts that works with both systems

Samba 1-4

What is Samba

- ❑ Samba services are implemented as a pair of Unix daemons:
 - smbd :
 - handles file and printer sharing
 - Provides authentication and authorization
 - nmbd
 - Supports NetBIOS Name Service and WINS

Samba 1-5

Installing Samba

- ❑ Many Unix distributions come with it
 - On Linux
 - /etc/samba
 - `$rpm -rq | grep samba`
- ❑ Install yourself
 - Download from <http://www.samba.org>
 - Follow the documentation
 - Compile/Install it
 - Configure it
 - Test it

Samba 1-6

Configuring a Samba Server

- The configuration file smb.conf
 - Global section
 - Share sections
- Global

```
[global]
workgroup = MYGROUP
server string = Samba Server
printcap name = /etc/printcap
load printers = yes
printing = lprng
log file= /var/log/samba/%m.log
max log size=0
security = user
encrypt passwords = yes
smb passwd file = /etc/samba/smbpasswd
... ..
```

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Configuring a Samba Server

- Homes section
 - A special share section
 - Use the home dir from /etc/passwd based on user name requesting the share
 - Example

```
[homes]
comment = Home directories
browseable = no
writable = yes
valid users = %S
create mode = 0664
directory mode = 0775
```

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Configuring a Samba Server

❑ Sharing directories

○ Example:

[research]

comment = Research Department Shared Dir

path = /home/research

browsable = no

writable = yes

create mode = 0750

hosts allow = horseshow,crab

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Configuring a Samba Server

❑ Sharing printers

○ Example:

[printers]

comment = all printers

path = /var/spool/samba

browsable = no

guest ok = no

writable = no

printable = yes

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