



Samba

just a quick look

Rick Troth <rtroth@bmc.com>
BMC Software
Houston, Texas, USA



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Outline

- What is SAMBA?
- What's required for SAMBA?
- Installation
- Defining shares
- Common Problems
- References and Examples



What is SAMBA

- "Samba is way cool"
- A suite of tools for sharing resources such as printers and files across a network
- Released under the GNU/GPL



What does Samba Do?

- Samba uses the Server Message Block (SMB) protocol (endorsed jointly by Microsoft and IBM) to pass low-level data between Windows clients and Unix servers.
- SMB is native to Windows, unlike NFS



What does Samba Do?

- Samba can divorce the user (and management) from where the data is stored while retaining the MS environment most users/managers expect
- Interoperability is more important than compatibility
- ...and SAMBA does that!



Why Samba

- Integrate Microsoft or IBM style desktop machines with Enterprise servers
- Integrate Microsoft servers with Enterprise servers
- Replace multiple protocols (e.g. DecNet, Novell NCP)



Samba provided services

- Serve UNIX files to Windows clients
- Allow UNIX clients to access PC files
- Serve network printers to Windows clients
- Provide name services (broadcast & WINS)
- Allow browsing of network resources from windows clients
- Create windows workgroups or domains
- Enforce username and password authentication



File Sharing

- UNIX files on Windows
- Windows files on UNIX
- 'mount' Windows shares to Linux



Printer Sharing

- UNIX printers on Windows
- Windows printers on UNIX



The Samba Suite

- NMBD - Name services
- SMBD - File and print services
- SWAT - Web-based administration tool
- Clients
- VFS driver - SMB as a native Linux file system



Samba Install

- Standard `./configure, make, make install`
- .. or via RPM `-i`
- Download from www.samba.org.
- Enable SWAT:

```
/etc/services
```

```
swat          901/tcp
```

```
/etc/inetd
```

```
swat  stream  tcp  nowait.400  root  /usr/local/samba/bin/swat  swat
```



Important Files

- **Samba configuration**

`/etc/smb.conf`

- **SuSE configuration**

`/etc/rc.config`

- **Startup configuration**

`/etc/rc.d/init.d/smb` [start | stop]



smb.conf

- `[globals]`
default parameters for all sections
- `[homes]`
usually the user's home dir `/home/%u`
- `[printers]`
shared printers or `/etc/printtab`
- `[...more...]`
other directories to be shared



Starting Samba

- Two components

`smbd` - file and print sharing

`nmbd` - services broadcasting

- Manual method

```
/usr/local/samba/bin/smbd -D
```

```
/usr/local/samba/bin/nmbd -D
```

-Or-

```
/etc/rc.d/init.d/smb [ start | stop ]
```



Windows Client Configuration

- Match Windows and Linux userids **
- TCP/IP protocol support required
- MS Client for File and Printer sharing
- Windows files marked as shareable if a Samba *client* will access them
- NetBIOS and NetBEUI are not required



Windows 95/98 Setup

- Install TCP/IP
- Install MS client for file and print sharing.
- Enable user names
- Hint - keep the user name on the 95/98/NT machines the same as on the Samba server (pre-version 2.2)



Windows NT 4.0 Configuration

- Assign the machine a name
- Install the Workstation service
- Install the TCP/IP protocol
- Set the machine's name and IP address
- Configure the DNS and WINS, if needed
- Bind the protocol and service together



Test it

- Network neighborhood
- Search for the Domain name or workgroup of your Samba service.
- Also check SAMBA client side:
`smbclient -L ntserver`
`smbclient //ntserver/ntshare`



Common Problems

- Windows id != Linux/Samba id.
- Smbpasswd not run
- Browseable = no
- Encrypted passwords
 - Windows 3.1 & Windows 95 – no encryption.
 - Windows 98 & Windows NT – required.



Common Problems

- `"EnablePlainTextPassword"=dword:00000001`
- `HKEY_LOCAL_MACHINE\
SYSTEM\
CurrentControlSet\
Services\
LanmanWorkstation\
Parameters`



Common Problems

- `"EnablePlainTextPassword"=dword:00000001`
- `HKEY_LOCAL_MACHINE\
SYSTEM\
CurrentControlSet\
Services\
Rdr\
Parameters`



Common Problems

- Case sensitive.
- “`Guest ok = yes`” – permits world access
- “`writable = yes`” – permits write access
- DNS -vs- `/etc/hosts`
- Look at the logs



Suggestions

- Use `hosts.allow` and `hosts.deny` parameters in `smb.conf` to limit access
- Use `interfaces =` to limit the interfaces Samba will respond to.
- Look at the logs!
- Buy the "Using Samba" book!
- Have fun



Cool stuff

- Virtual servers
- Recover unused workstation disk space.
- Printer servers w/ autoload device drivers.
- Central Backup - Amanda + Samba + cron
- Samba can provide Wins services.
- Loadrunner (and winrunner) from Mercury Interactive

<http://www-svca.mercuryinteractive.com/>



Browsers

- Samba can serve as a:
 - Local master browser
 - Preferred master browser
 - Domain master browser
 - Primary domain controller
- Domain master browser and primary domain controller should be the same machine
- If joining an existing domain do not setup samba as a master browser, samba will win the election every time



Share Names

- No blanks
- No slashes
- Generally avoid punctuation



Interfaces

- `Interfaces = <my-ip-address>/255.255.255.0`



Domains

- a member of the domain for
"security = domain"
- Linux account not need login privs
but does need to exist



Printer Drivers

- Auto-install print driver:
 - 95 yes,
 - NT no

Examples

```
ps -ugax | grep -i mb
root      15343  0.0  0.2  2428  584 ?      S    Jul16   0:00  smbd  -D
root      15354  0.0  0.3  1992  796 ?      S    Jul16   0:38  nmbd  -D
root      22849  0.0  1.0  3960 2756 ?      S    Jul17   0:05  smbd  -D
```

Example smb.conf

```
# Samba config file created using SWAT
# from guest3.casita.net (192.168.29.131)
# Date: 2001/07/21 14:10:29

# Global parameters
[global]
    workgroup = CASITA.NET
    netbios aliases = main
    server string = La Casita Samba Server
    map to guest = Bad User
    log file = /var/log/samba/%m.log
    keepalive = 30
```




Example `smb.conf`

```
logon script = %U.bat
logon drive = H:
domain logons = Yes
os level = 2
domain master = Yes
kernel oplocks = No
hosts allow = 192.168.29.0/255.255.255.0
```

```
[netlogon]
```

```
path = /export/netlogon
```



Example `smb.conf`

```
[homes]
```

```
comment = user home directories
```

```
writable = Yes
```

```
create mask = 0750
```

```
browseable = No
```

```
[cdrom]
```

```
comment = CD-ROM
```

```
path = /cdrom
```

```
locking = No
```

Example smb.conf

```
[printers]
    comment = All Printers
    path = /tmp
    create mask = 0700
    printable = Yes
    browseable = No

[tmp]
    path = /tmp
    writeable = Yes
```



Example `smb.conf`

```
[web]
```

```
comment = World Wide Web Files  
path = /var/web  
writeable = Yes  
guest ok = Yes
```

```
[home]
```

```
comment = Home Directory  
path = /home/%u  
writeable = Yes
```

Command Prompt

D:\home\rtroth>net use
New connections will be remembered.

Status	Local	Remote	Network
OK	G:	\\syslexia\l390team	Microsoft Windows Network
OK	U:	\\fs02-hou\rtroth\$	Microsoft Windows Network

The command completed successfully.

D:\home\rtroth>

A screenshot of the Windows Network Places window, which displays various network resources. The window is titled "Network Places" and contains several icons representing different types of storage and network locations. The items are arranged in two rows. The first row includes a 3 1/2 Floppy (A:), hda1 (C:), and hda5 (D:). The second row includes l390team on 'syslexia' (G:), rtroth\$ on 'fs02-hou' (U:), and Control Panel. The 3 1/2 Floppy (A:) icon is highlighted with a dashed border.

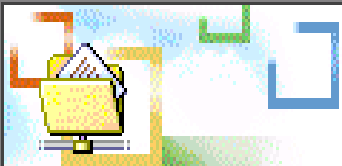
3 1/2 Floppy (A:)	hda1 (C:)	hda5 (D:)
l390team on 'syslexia' (G:)	rtroth\$ on 'fs02-hou' (U:)	Control Panel

rtrth on trothnec

File Edit View Favorites Tools Help

Back Search Folders History

Address rtrth Go



rtrth

Select an item to view its description.

Home Directories

Capacity: 1.80 GB

Used: 1.63 GB

- .vmesa
- .VMESA
- .vmware
- .vnc
- .wastebasket
- .Windows
- .wine
- .workspace
- .xauth
- aim
- bin
- boot
- cmsfs
- cmsfs.d
- doc

245 object(s)

15.6 MB

Local intranet

rtr0th on trothnec

File Edit View Favorites Tools Help

Back Forward Home Search Folders History

Address rtr0th Go



rtr0th

cmsfs
File Folder

Modified: 1/24/2001 2:35 AM

Attributes: (normal)

3270v4.1-gl...	antiworm.bat	autoexec.bat	autofile.asc	backneup	

blindbox	bmclogo.gif	bookmark.html	boot.ini	brown

cmsfs.tar	copytree	days	dead.letter	diddlebug-s...

1 object(s) selected

Local intranet

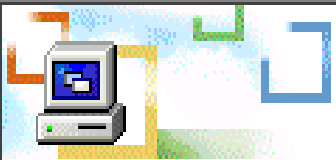
trothnec

File Edit View Favorites Tools Help

Back Search Folders History

Address trothnec

Go



trothnec

\\trothnec\sww

Comment: /sww (automounted)



casita



cdrom



flathead



hilbeprinter



incoming



l390home



l390team



myhome



rtroth



seaturtle



sww



trothnec



trothv15



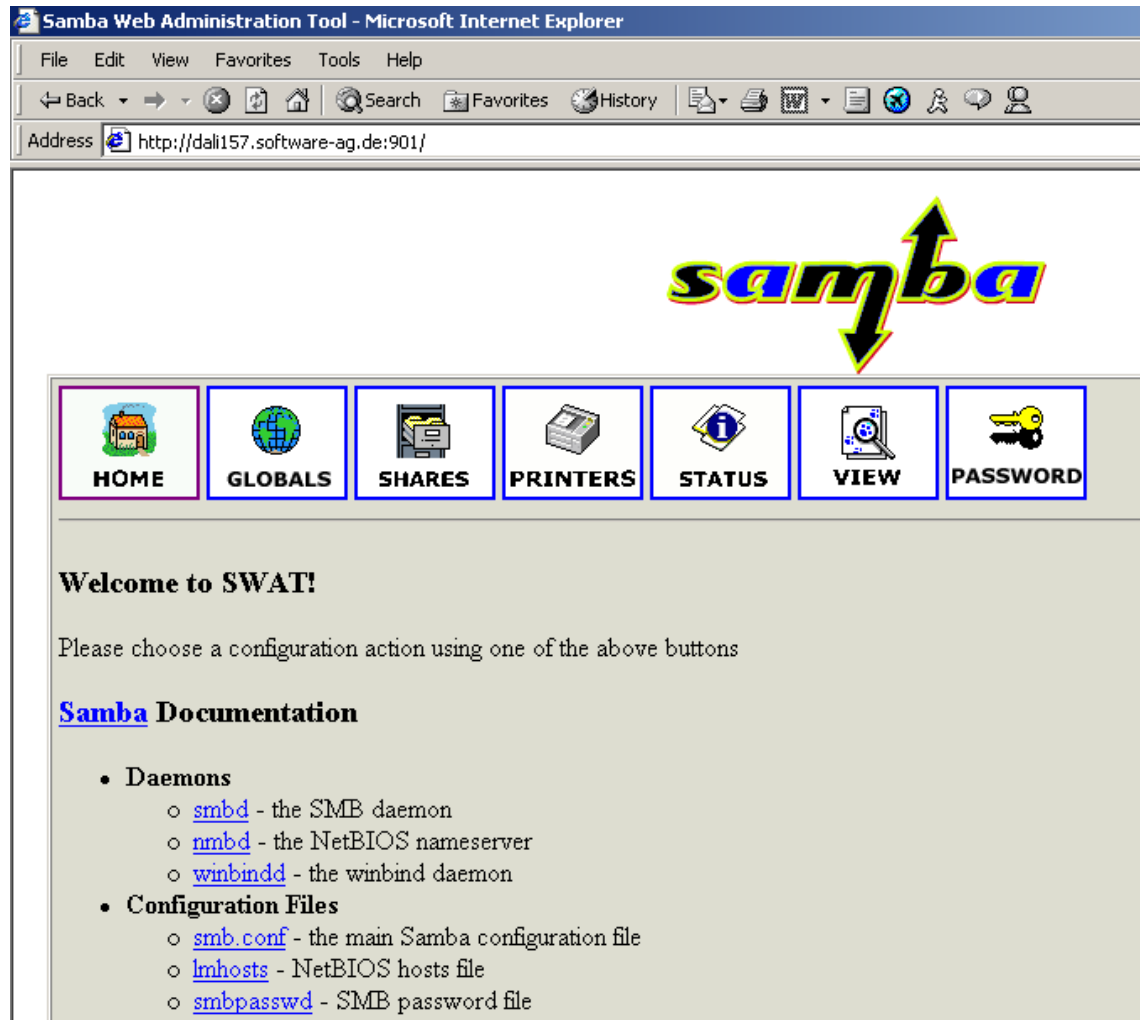
vmware



whitewhale

1 object(s) selected

SWAT




Samba Web Administration Tool - Microsoft Internet Explorer

File Edit View Favorites Tools Help

Back Forward Stop Home Search Favorites History Print Copy Paste Refresh Stop

Address <http://dali157.software-ag.de:901/>



HOME **GLOBALS** **SHARES** **PRINTERS** **STATUS** **VIEW** **PASSWORD**

Welcome to SWAT!

Please choose a configuration action using one of the above buttons

Samba Documentation

- **Daemons**
 - [smbd](#) - the SMB daemon
 - [nmbd](#) - the NetBIOS nameserver
 - [winbindd](#) - the winbind daemon
- **Configuration Files**
 - [smb.conf](#) - the main Samba configuration file
 - [lmhosts](#) - NetBIOS hosts file
 - [smbpasswd](#) - SMB password file


SWAT

Samba Web Administration Tool - Microsoft Internet Explorer

File Edit View Favorites Tools Help

← Back → Search Favorites History

Address <http://dali157.software-ag.de:901/globals>



HOME **GLOBALS** **SHARES** **PRINTERS** **STATUS** **VIEW** **PASSWORD**

Global Variables

Commit Changes Reset Values Advanced View

Base Options

Help	workgroup	<input type="text" value="LINUX390"/>	<input type="button" value="Set Default"/>
Help	netbios name	<input type="text" value="DALI157"/>	<input type="button" value="Set Default"/>
Help	server string	<input type="text" value="Samba 2.2.0a for S/390"/>	<input type="button" value="Set Default"/>
Help	interfaces	<input type="text" value="10.20.45.157"/>	<input type="button" value="Set Default"/>

Security Options

Help	security	<input type="text" value="USER"/>	<input type="button" value="Set Default"/>
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Samba Version 2.2

■ PDC Support

- Ability to act as limited PDC for NT & W2K
 - Adding NT & W2K clients to domain
 - Authenticate users logging on to domain
- Domain account can be viewed using User Manager for Domains
- Viewing/adding/deleting resources on Samba PDC via Server Manager for Domains



Samba V2.2

■ PDC Support

- Win95/98/ME clients will allow user level security to be set and browsing of domain accounts
- Machine account password updates
- Changing of user passwords from NT client
- Partial support for NT username mapping
 - Group name mapping is slated for later release



Samba V2.2

- PDC features not supported
 - Trust relationships
 - PDC and BDC integration
- Kernel oplocks
 - Allow Linux to present a consistent view of file system
- Samba can act as Microsoft DFS server
- Full Windows printer support



Now in 2.2.2

■ Winbind

- Allows NT domain users & groups to automatically appear to exist under Linux (no need to appear in /etc/passwd)
- Allows Linux services to authenticate against NT domains

■ ACL Support

- Used to set permissions on files & directories
- Finer-grained control over permissions than most UNIX
- Samba will preserve NTFS ACLs rather than mapping to UNIX scheme



Now in 2.2.2

- Added/Changed parameters
 - strict allocate
 - Causes Samba not to create UNIX 'sparse' files, but to follow the Windows behaviour of always allocating on-disk space.
 - use mmap
 - Set to 'on' by default, only set to 'off' on HPUX 11.x or below or other UNIX systems that don't have coherent mmap/read-write internal caches.
 - nt acl support
 - This parameter has been changed to a per-share option, and is very useful in enabling Windows 2000 SP2 to load/save profiles from a Samba share.



Now in 2.2.2

■ Added/Changed parameters

■ disable spoolss

- Setting this parameter causes Samba to go back to the old 2.0.x LANMAN printing behaviour, for people who wish to disable the new SPOOLSS pipe.

■ use client driver

- Causes Windows NT/2000 clients to need have a local printer driver installed and to treat the printer as local.



Now in 2.2.3

- LDAP Update (backend improvements)
- Fix for memory leak in winbindd
- Parameter changes:
 - unix extensions
 - Enables the experimental UNIX CIFS extensions in smbd. See the manpage for more details.
 - default devmode
 - Some printer drivers will crash the Windows NT/2000 spooler service if given a default devmode, some require it.
 - share modes
 - This parameter has been restored to allow people who wish smbd to ignore client share modes.



Now in 2.2.3a

- Fix for “ACCESS DENIED” problem with W2K Explorer



Thank You!

- <ftp://www.samba.org/>