Samba - Opening Windows To A Wider World

What is Samba?

Samba incorporates the smb and nmb protocals into a Unix environment

Version Being Discussed

Samba Version 2.2.3a Patch Level 12, Installed from package on Debian Woody
Windows 2000 SP3

License

Samba is distributed under GNU GPL.
Windows is not.

Special Note:

Although not a requirement, I've found it helpful to have a working knowledge of both Unix and Windows Networking. Samba is written for people who are experienced in Unix rather than experienced with Windows.

Some things Samba can do:

- File and Print Services (both as Client and Server)
- Authentication and Authorization
- Name Resolution
- Service Announcements (Browsing)

Some things Samba Cannot Do:

- Completely emulate an NT Primary Domain Controller (PDC)
- Cannot establish a “Trust” relationship with a Windows PDC
- Cannot replicate a SAM database with a windows PDC
- Act as an NT Backup Domain Controller (BDC)
- Cannot utilize Microsoft Active Directory Services
- Does not support adding users via Windows User Manager
- Authenticate User Level Shares in Peer-to-Peer Networking

Installation: Most Linux distributions provide a Samba package installed and running on the default installation. Compiling and installing from source is relatively painless.

General Windows Networking Definitions:

Domain: Don't confuse an NT domain with an Internet Domain. An NT Domain can be thought of as a workgroup designation.
Primary Domain Controller: Authenticates users and in an NT environment assigns user/workgroup file permissions.
WINS: Windows Internet Naming Service. An automated version of DNS which functions through broadcast packets.
Browse Master: Keeps track of computers, file shares and networking protocols in an Windows environment. Allows the use of "Network Neighborhood".

Configuration Tools:

- Edit the Config file by hand
- Webmin (web based)
- SWAT (web based)
- Ksamba
- Gnosamba
- smbedit (win32)
- See the website at www.samba.org for a complete listing.

Personally I prefer editing the smb.conf file by hand. The comments tend to get removed by the configuration tools, and I've found the comments to be extremely useful.

smb.conf – see attached sample smb.conf file

DIAGNOSIS.txt – Step by step troubleshooting guide to help with your Samba Install and initial configuration. Found with the Samba Docs.

Config Printers: Install Printers as normal for the linux box. Samba does not support the printer$ function of windows printersharing, so drivers will have to be installed manually at each workstation.

Configure Windows9x computers:

- Can be configured to use Domain Login or Share Level Login

Profiles-Policies-Login scripts:

- Allow Roaming users to keep preferred settings
- Allow Administrators to lock users from certain sections of their workstation.
- Allow Automated scripts to run at login (such as drive shares or net time).

Configuring Users

- User must have an account on the server to be accessed.
- User must have an account on the "Domain Server"
    - If a "Domain Server" is used, then smbpasswd is only required on the password server.
- User accounts can be denied access to Unix shells without affecting ability to access Windows Shares.
- Groups are configured at the server level, not the Domain Level.

smbclient – General tool to allow access to windows shares from a Unix Client

nmblookup – General tool to query netbios networking features from Unix.

General Problems

- No smbpasswd aging
- No way to enforce password policy
- No way to disable account after a certain number of login attempts.
- If these functions are really important, it would be possible to write scripts to enable these functions. Last changed is stored in smbpasswd and bad password attempts would be found in /var/log/smb.

Special Notes:

- Windows XP Home Edition is even more broken than other systems. By design, it will not authenticate or logon to a windows domain, samba domain or peer-to-peer networking. The recommended solution is to upgrade to WinXP pro, Win2K or downgrade to Win9x
- We have run into problems with users logging on to a Samba domain with a Windows XP Professional Box. By default the requiresignorseal is set to "0" in W2K and "1" in XP. You may need to change the registry setting of:
  [HKEY_LOCAL_MACHINE\SYSTEM\CurrentControlSet\Services\Netlogon\Parameters]
  "requiresignorseal"=dword:00000000 from "1" to "0"
- Win2K (SP1 and greater) and WinXP have a problem when joining a domain. You may need to add:
  `add user script = /usr/sbin/useradd -n -g machines -c Machine -d /dev/null -s /bin/false %m`
  to your smb.conf file
- If you delete a user from your system (ie /etc/passwd) you MUST delete that user from smbpasswd or it will cause some problems!

Recommended books:

- Samba – Integrating Unix and Windows by John D. Blair – Published By SSC – ISBN: 1-57831-006-7 (old, but still a great book).
- Using Samba – by Eckstien, Collier-Brown, Kelly – Published By O'Reilly- ISBN: 1-56591-449-5 and is available for download at the O'Reilly Website.

This is just an introductory look at some of the things Samba can do.

NWCLUG – February 4, 2003 - Ken Beach
For more information, please feel free to email me at squirrel@squirrelsnest.org

```
#
# Sample configuration file for the Samba suite for Debian GNU/Linux.
#

#======================= Global Settings =======================

[global]

# Change this for the workgroup/NT-domain name your Samba server will part of
   workgroup = NWCLUG

# server string is the equivalent of the NT Description field
   server string = %h server (Samba %v)

# If you want to automatically load your printer list rather
# than setting them up individually then you'll need this
;   load printers = yes

# You may wish to override the location of the printcap file
;   printcap name = /etc/printcap

# 'printing = cups' works nicely
;   printing = bsd

;   guest account = nobody
;   invalid users = root

# This tells Samba to use a separate log file for each machine
# that connects
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   log file = /var/log/samba/log.%m

# Put a capping on the size of the log files (in Kb).
   max log size = 1000

# If you want Samba to log though syslog only then set the following
# parameter to 'yes'. Please note that logging through syslog in
# Samba is still experimental.
;   syslog only = no

# We want Samba to log a minimum amount of information to syslog. Everything
# should go to /var/log/samba/log.{smb,nmb} instead. If you want to log
# through syslog you should set the following parameter to something higher.
   syslog = 0

# "security = user" is always a good idea. This will require a Unix account
# in this server for every user accessing the server. See
# security_level.txt for details.
   security = user
   domain logons = yes
   logon home = \\%L\%U\.profile
   login drive = f:
   logon path = \\%L\profiles\%U
   admin users = root
   add user script = /usr/sbin/useradd -g machines -c Machine -s /bin/false %m$

# You may wish to use password encryption. Please read ENCRYPTION.txt,
# Win95.txt and WinNT.txt in the Samba documentation. Do not enable this
# option unless you have read those documents
   encrypt passwords = true

# Using the following line enables you to customise your configuration
# on a per machine basis. The %m gets replaced with the netbios name
# of the machine that is connecting
;   include = /home/samba/etc/smb.conf.%m

# Most people will find that this option gives better performance.
# See speed.txt and the manual pages for details
# You may want to add the following on a Linux system:
#         SO_RCVBUF=8192 SO_SNDBUF=8192
   socket options = TCP_NODELAY

# --- Browser Control Options ---

# Please _read_ BROWSING.txt and set the next four parameters according
# to your network setup. The defaults are specified below (commented
# out.) It's important that you read BROWSING.txt so you don't break
# browsing in your network!

# set local master to no if you don't want Samba to become a master
# browser on your network. Otherwise the normal election rules apply
   local master = yes

# OS Level determines the precedence of this server in master browser
# elections. The default value should be reasonable
   os level = 20

# Domain Master specifies Samba to be the Domain Master Browser. This
# allows Samba to collate browse lists between subnets. Don't use this
# if you already have a Windows NT domain controller doing this job
   domain master = auto

# Preferred Master causes Samba to force a local browser election on startup
# and gives it a slightly higher chance of winning the election
   preferred master = auto

# --- End of Browser Control Options ---
```

```
# Windows Internet Name Serving Support Section:
# WINS Support - Tells the NMBD component of Samba to enable it's WINS Server
   wins support = yes

# WINS Server - Tells the NMBD components of Samba to be a WINS Client
# Note: Samba can be either a WINS Server, or a WINS Client, but NOT both
;   wins server = w.x.y.z

# This will prevent nmbd to search for NetBIOS names through DNS.
   dns proxy = no

# What naming service and in what order should we use to resolve host names
# to IP addresses
;   name resolve order = lmhosts host wins bcast

# Name mangling options
;   preserve case = yes
;   short preserve case = yes

# This boolean parameter controlls whether Samba attempts to sync. the Unix
# password with the SMB password when the encrypted SMB password in the
# /etc/samba/smbpasswd file is changed.
;   unix password sync = false

# For Unix password sync. to work on a Debian GNU/Linux system, the following
# parameters must be set (thanks to Augustin Luton <aluton@hybrigenics.fr> for
# sending the correct chat script for the passwd program in Debian Potato).
   passwd program = /usr/bin/passwd %u
   passwd chat = *Enter\snew\sUNIX\spassword:* %n\n *Retype\snew\sUNIX\spassword:* %n\n .

# This boolean controls whether PAM will be used for password changes
# when requested by an SMB client instead of the program listed in
# 'passwd program'. The default is 'no'.
;   pam password change = no

# The following parameter is useful only if you have the linpopup package
# installed. The samba maintainer and the linpopup maintainer are
# working to ease installation and configuration of linpopup and samba.
;   message command = /bin/sh -c '/usr/bin/linpopup "%f" "%m" %s; rm %s' &

   obey pam restrictions = yes

# Some defaults for winbind (make sure you're not using the ranges
# for something else.)
;   winbind uid = 10000-20000
;   winbind gid = 10000-20000
;   template shell = /bin/bash

#======================= Share Definitions =======================

[homes]
   comment = Home Directories
   browseable = yes

# By default, the home directories are exported read-only. Change next
# parameter to 'yes' if you want to be able to write to them.
   writable = yes

# File creation mask is set to 0700 for security reasons. If you want to
# create files with group=rw permissions, set next parameter to 0775.
   create mask = 0700

# Directory creation mask is set to 0700 for security reasons. If you want to
# create dirs. with group=rw permissions, set next parameter to 0775.
   directory mask = 0700

# Un-comment the following and create the netlogon directory for Domain Logons
# (you need to configure Samba to act as a domain controller too.)
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[profiles]
   path = /home/samba/profiles
   writeable = yes
   browseable = no
   create mask = 0600
   directory mask = 0700

[netlogon]
   comment = Network Logon Service
   path = /home/samba/netlogon
   guest ok = yes
   writable = no
   share modes = no

[printers]
   comment = All Printers
   browseable = no
   path = /tmp
   printable = yes
   public = no
   writable = no
   create mode = 0700

# A sample share for sharing your CD-ROM with others.
;[cdrom]
;   comment = Samba server's CD-ROM
;   writable = no
;   locking = no
;   path = /cdrom
;   public = yes

# The next two parameters show how to auto-mount a CD-ROM when the
#      cdrom share is accesed. For this to work /etc/fstab must contain
#      an entry like this:
#
#       /dev/scd0   /cdrom  iso9660 defaults,noauto,ro,user   0 0
#
# The CD-ROM gets unmounted automatically after the connection to the
#
# If you don't want to use auto-mounting/unmounting make sure the CD
#      is mounted on /cdrom
#
;   preexec = /bin/mount /cdrom
;   postexec = /bin/umount /cdrom
```

This document was written using OpenOffice 6.0 on both Linux Debian Woody and Windows 2000