Please use a Screen or Video Capture software to save your works!

OBJECTIVE & PREPARATION

This lab's primary focus is to set up a Samba server on a Linux server in order to allow Linux & MS Windows users to share common files from the Linux's Samba server.

This lab will first install, setup, and enable a Samba server. Then users will access files on the Linux Samba server from Linux and Windows client machines (both graphically and command line).

Case 1: Installing & Configuring a Samba Server

In this case, you will set up a **Samba server** on your **Server VM**. We will first install, configure and enable the samba server on our virtual machine, and then we will quickly test to see if the Samba server works.

Perform the following steps:

1. Make sure both your **Server VM** and **Client VM** are running.
2. Switch to your **Server VM** as the **root** user.
3. Issue the following Linux command to install Samba server & utility:
   yum install samba samba-client
4. Backup the file /etc/samba/smb.conf to another filename by issuing the following command:
   cp /etc/samba/smb.conf /etc/samba/smb.conf.original
5. Edit /etc/samba/smb.conf and check the default settings.
6. Modify / delete lines so the file match the following.

```
[global]

    workgroup = WORKGROUP

    server string = "put anything here without the quotes"

    log file = /var/log/samba/%m

    log level = 1

    server role = standalone server

[homes]

    comment = "put anything here without the quotes"

    valid users = %S, %D%w%S

    browseable = yes

    read only = no

[YourSenecaID]

    comment = "put anything here without the quotes"

    valid users = YourSenecaID

    path = /home/YourSenecaID

    create mask = 0700

    directory mask = 0700
```

7. Append (add) the following parameter to the bottom of the [global] section that will limit access to the share so that only machines in your virtual network will be able to access it:

hosts allow = 192.168.0. 10.0.0. 127.0.0.1

8. Confirm the following parameter to the [yourSenecaID] section so that only your user account can access that share:

vaid users = <yourSenecaID>

path = /home/ <yourSenecaID>

9. Create a Samba account and password for yourSenecaID by issuing the following command:

smbpasswd -a <yourSenecaID>

Note: you may encounter "Failed to add entry for user xxxxx", which require you create the same account at the OS level. adduser <yourSenecaID>

```
[root@server ops345]# smbpasswd -a jasonpang
New SMB password:
Retype new SMB password:
tdbsam_open: Converting version 0.0 database to version 4.0.
tdbsam_convert_backup: updated /var/lib/samba/private/passdb.tdb file.
Failed to add entry for user jasonpang.

[root@server ops345]# adduser jasonpang
[root@server ops345]# smbpasswd -a jasonpang
New SMB password:
Retype new SMB password:
Added user jasonpang.
[root@server ops345]#
```

10. Changing Existing Samba Account Passwords

If you need to change a user's existing Samba account password, you can issue the following command as root: smbpasswd <yourSenecaID>.

11. Confirm the user you created has been added using the following command:

pdbedit -L -v

```
[root@server ops345]# pdbedit -L -v
--------------
Unix username:          jasonpang
NT username:
Account Flags:          [U          ]
User SID:               S-1-5-21-117853536-1477283506-1022517321-1000
Primary Group SID:      S-1-5-21-117853536-1477283506-1022517321-513
Full Name:
Home Directory:         \\server\jasonpang
HomeDir Drive:
Logon Script:
Profile Path:           \\server\jasonpang\profile
Domain:                 SERVER
Account desc:
Workstations:
Munged dial:
Logon time:             0
Logoff time:            Wed, 06 Feb 2036 10:06:39 EST
Kickoff time:           Wed, 06 Feb 2036 10:06:39 EST
Password last set:      Wed, 15 Mar 2023 17:00:54 EDT
Password can change:    Wed, 15 Mar 2023 17:00:54 EDT
Password must change:   never
Last bad password   :   0
Bad password count  :   0
Logon hours         :   FFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFF
[root@server ops345]#
```

12.   Test and review your configuration with the command:

Testparm

```
[root@server ops345]# testparm
Load smb config files from /etc/samba/smb.conf
Loaded services file OK.
Server role: ROLE_STANDALONE

Press enter to see a dump of your service definitions
```

13. Use the systemctl command to **start** the smb.service and **enable** the service to run on boot-up

14. If you have SELinux set to enforcing, you'll will need to tell it to allow samba access to home directories by running:

    setsebool -P samba_enable_home_dirs 1

15. Use the ss -nautp command to see with port Samba is running on.

16. Use the information from the previous step to modify the firewall on Server VM to allow samba traffic.

    iptables -I INPUT -p tcp --dport 139 -j ACCEPT

    iptables -I INPUT -p tcp --dport 445 -j ACCEPT

    iptables-save > /etc/sysconfig/iptables

17. Test to see that you can connect to your Samba server (locally) by issuing the following command:

    smbclient -U <yourSenecaID> -L 127.0.0.1

18. When prompted, enter your Samba account password.

19. The output from that issued command should appear similar to example displayed below:

```
[root@server ops345]# smbclient -U jasonpang -L 127.0.0.1
Enter WORKGROUP\jasonpang's password:

        Sharename       Type        Comment
        ---------       ----        -------
        homes           Disk        homesShare
        jasonpang       Disk        jasonpangShare
        IPC$            IPC         IPC Service (ServerGlobal)
Reconnecting with SMB1 for workgroup listing.

        Server                  Comment
        ---------               -------


        Workgroup               Master
        ---------               -------
[root@server ops345]#
```

20. To access the Samba client shell on your local Samba share, issue the following command:
    smbclient '\\127.0.0.1\homes' -U <yourSenecaID>
21. Enter your Samba account password.
22. Issue few common commands (dir, cd, ls, put, get).
23. Enter **exit** to terminate your local Samba session.

You can use smbclient to access, browse and share files within other Linux and Windows servers using a variety of tools which will be demonstrated in Cases 2 and 3.

Case 2: Connecting To a Linux SMB Server From a Linux Client

In this Case you will explore some of the different ways to access a shared directory from a Linux client machine (Client VM).

Installing and Using smbclient

Perform the following steps on your Client VM

1. Install the samba-client and cifs-utils packages.
    yum install samba-client cifs-utils
2. Use the "smbclient" command in a terminal window.
    smbclient '\\192.168.0.10\homes' -U <yourSenecaID>
3. After entering your password, you should get a prompt similar to:
    smb: \>
4. Enter the ls command to see a list of the files in your home directory:
    smb: \> ls
5. Once you have access to the directory use the get and put commands (similar to ftp) to move files.
6. When you are finished close the connection.

Note: This tool only gave temporary access with a limited set of commands.

Using 'mount -t cifs'

Instead of always having to use the smbclient command to connect to your network share, you can have the share automatically mounted upon your VM boot-up.

Perform the following steps on your Client VM

1. Issue the following commands to create a mount-point and mount your home directory from your Server:
   mkdir /tmp/server-home
   mount -t cifs //192.168.0.10/<yourSenecaID> /tmp/server-home -o username=<yourSenecaID>
   ls /tmp/server-home
2. Create a file in that directory, then switch to Server VM to confirm that file is created.
3. Use umount -l /tmp/server-homes on Client VM to unmount that directory.

Note that this tool would leave the directory mounted until the machine rebooted or it was manually unmounted. It would also allow other users access to the directory, as it effectively became part of the local filesystem. It could even be added to fstab to be mounted on boot (though this would require another configuration file we don't cover).

Case 3: Connecting To a Samba Server From A Windows Client

Accessing Files on a Linux Samba Server via Windows Explorer

You should be able to access files from a Windows machine on the same network. You will be creating a Samba share for your home directory of your regular user account.

Perform the following tasks:

1. Make sure that your **Server** VM is running, it is still allowing samba traffic through the firewall, and it is still running the samba service.
2. Use the **Windows VM** that connected to the same network.
3. Open the Windows File Explorer application.
    a. At the top of the application, enter the following:
    b. \\Server_VM_IPADDR\homes # e.g. \\192.168.0.10\homes or \\server.yoursenecaid.ops\homes
    c. You will be prompted (once only) for the Samba username and password for your SERVER VM.
4. You can create a mapped network drive (e.g. z:) for your Linux Samba server network share.
    a. You will be prompted to enter your samba username and password (one time only).
5. NOTE: It may take approximately 30 seconds to display the file contents.
6. Were you successful? If not, try to troubleshoot the problem first, then ask your instructor for assistance.
7. SMB access from Windows:
    a. SMBv1 access is disabled by default on Windows 10 or later.
    b. Run **"gpedit.msc"**, then, Local Computer Policy\Administrative Templates\Network\Lanman Workstation\"Enable insecure guest logons" to Enabled
    c. Turn Windows features on or off \ SMB 1.0/CIFS File Sharing Support to checked.
8. When finished, click on Network in Windows file manager to confirm that the network share is present.

9. Try to create a file on Windows on your Linux Samba machine. Were you able to create or save a file?

10. Switch to your SERVER VM and check to see if that file was created in your home directory.

Once everything tested working. Remove the newly created Windows VM.

Save the captured file(s) as OPS345_Lab07_yourusername and upload to Blackboard.

If it is video recordings, upload to OneDrive and share with jason.pang@senecacollege.ca

Related commands:

yum install samba samba-client

cp /etc/samba/smb.conf /etc/samba/smb.conf.original

cat /dev/null > /etc/samba/smb.conf

smbpasswd -a <yourSenecaID>

smbpasswd <yourSenecaID>

adduser <yourSenecaID>

groupadd demo

usermod -a -G demo ops345

pdbedit -L -v

jason.pang@senecacollege.ca

testparm

ss -nautp

getsebool -a | grep samba

setsebool -P samba_enable_home_dirs 1

iptables -I INPUT -p tcp --dport 139 -j ACCEPT

iptables -I INPUT -p tcp --dport 445 -j ACCEPT

smbclient -U <yourSenecaID> -L 127.0.0.1

smbclient '\\127.0.0.1\home' -U <yourSenecaID>

yum install samba-client cifs-utils

smbclient '\\192.168.0.10\home' -U <yourSenecaID>

mkdir /tmp/server-home

mount -t cifs //server/home /tmp/server-home -o username=<yourSenecaID>

ls /tmp/server-home

my sample smb.conf file:

[global]

    workgroup = WORKGROUP

    server string = Jason

    map to guest = Bad User

    log file = /var/log/samba/%m

    log level = 1

    server role = standalone server

[guest]

    # This share allows anonymous (guest) access

    # without authentication!

    path = /datastore/samba/guest/

    read only = no

    guest ok = yes

    browseable = yes

    public = yes

[shared]

    # this share allows credential access

with authentication!

path = /datastore/samba/shared/

valid users = @demo

read only = no

guest ok = no

create mask = 0770

directory mask = 0770

browseable = yes

public = no

[home]

comment = Home Director of OPS335

valid users = ops345

path = /home/ops345

browseable = yes

read only = no

create mask = 0700

directory mask = 0700