AutoFS SAMBA

At Server Side:

1. Check samba server IP-

```
[root@rhel9-server ~]# ifconfig
ens160: flags=4163<UP,BROADCAST,RUNNING,MULTICAST>  mtu 1500
        inet 192.168.78.157  netmask 255.255.255.0  broadcast 192.168.78.255
```

2. Install required packages-

```
[root@rhel9-server ~]#
[root@rhel9-server ~]# yum install samba samba-client -y
```

3. Create samba share & change permission as shown-

```
[root@rhel9-server ~]# mkdir /samba
```

```
[root@rhel9-server /]#
[root@rhel9-server /]# chmod 770 /samba
```

4. Create few service accounts for samba share-

```
useradd -s /sbin/nologin a1
useradd -s /sbin/nologin a2
useradd -s /sbin/nologin p1
useradd -s /sbin/nologin p2
```

5. Set smb password for them in including one local user (abhay)-

```
smbpasswd -a a1
smbpasswd -a a2
smbpasswd -a p1
smbpasswd -a p2
smbpasswd -a abhay
```

6. Create two groups as shown-

```
groupadd aws
groupadd php
```

7. Add service account users to the group & verify-

```
gpasswd -M a1,a2 aws
gpasswd -M p1,p2 php
```

```
[root@rhel9-server /]# cat /etc/group | grep aws
aws:x:1005:a1,a2
[root@rhel9-server /]#
[root@rhel9-server /]# cat /etc/group | grep php
php:x:1006:p1,p2
[root@rhel9-server /]#
```

8. Now set ACL permissions for the samba directory as shown-

```
setfacl -m u:abhay:rwx /samba/
```

```
setfacl -m g:aws:rwx /samba
```

```
setfacl -m g:php:rx /samba
```

9. Check ACL permissions over samba directory-

```
[root@rhel9-server /]# ls -ld samba/
drwxrwx---+ 7 root root 93 Dec 28 10:52 samba/
[root@rhel9-server /]#
[root@rhel9-server /]# getfacl /samba
getfacl: Removing leading '/' from absolute path names
# file: samba
# owner: root
# group: root
user::rwx
user:abhay:rwx
group::rwx
group:aws:rwx
group:php:r-x
mask::rwx
other::---

[root@rhel9-server /]#
```

10. Change semange context for samba directory & verify it as shown-

```
semanage fcontext -a -t samba_share_t '/samba(/.*)?'
restorecon -vRF /samba/
```

```
[root@rhel9-server /]# ls -ldZ /samba/
drwxrwx---+ 7 root root system_u:object_r:samba_share_t:s0 93 Dec 28 10:52 /samba/
[root@rhel9-server /]#
```

11. Add samba service in firewall-

```
firewall-cmd --permanent --add-service=samba --zone=public
firewall-cmd --reload
```

12. Edit /etc/samba/smb.conf file & add below lines as shown-

```
[secret]
path=/samba
browseable=yes
write list=@aws,@php,@abhay
valid users=@aws,@php,@abhay
hosts allow=192.168.78.
"/etc/samba/smb.conf" 48L, 971B
```

13. Restart samba services-

```
systemctl enable smb.service nmb.service --now
systemctl status smb.service nmb.service
```

14. We have few files added in shared directory previously. We can list it as-

```
[root@rhel9-server /]# ls -ll /samba
total 4
drwxr-xr-x. 2 a1    a1       6 Dec 27 10:51 a1
drwxr-xr-x. 2 a2    a2       6 Dec 27 10:51 a2
drwxr-xr-x. 2 abhay abhay    6 Dec 27 10:52 abhay
-rw-r--r--. 1 root  root  2196 Dec 27 10:39 passwd
```

At Client Side:

1. Check client IP-

```
[root@rhel9-client1 ~]# ifconfig
ens160: flags=4163<UP,BROADCAST,RUNNING,MULTICAST>  mtu 1500
        inet 192.168.78.154  netmask 255.255.255.0  broadcast 192.168.78.255
```

2. Create samba share in parent-child format-

```
[root@rhel9-client1 /]# mkdir smb_share/
[root@rhel9-client1 /]#
```

```
[root@rhel9-client1 /]# mkdir -p smb_share/share
[root@rhel9-client1 /]#
```

3. Install required packages-

```
[root@rhel9-client1 /]# yum install cifs-utils
```

```
[root@rhel9-client1 /]#
[root@rhel9-client1 /]# yum install autofs -y
```

4. Edit /etc/auto.master file & add below line-

```
/smb_share /etc/smb.txt --timeout 30
+auto.master
~
~
~
~
~
~
~
~
"/etc/auto.master" 39L, 1326B
```

Here, /smb_share is parent directory. We will create smb.txt in next step.

5. Create & edit smb.txt-

```
[root@rhel9-client1 ~]# vim /etc/smb.txt
share -fstype=cifs,credentials=/pass.txt,multiuser,sec=ntlmssp ://192.168.78.157/secret
```

Here, 'share' is child directory for parent /smb_share. We will create pass.txt in next step for authentication purpose.

6. Create & edit pass.txt-

```
[root@rhel9-client1 ~]# vim /pass.txt
username=a1
password=1234
```

Here, we used service account a1 & mentioned its smb password.

7. Start & enable AutoFS service-

```
[root@rhel9-client1 /]# systemctl enable autofs.service --now
Created symlink /etc/systemd/system/multi-user.target.wants/autofs.service → /usr/lib/systemd/system/autofs.service.
[root@rhel9-client1 /]#
[root@rhel9-client1 /]#
[root@rhel9-client1 /]# systemctl status autofs.service
● autofs.service - Automounts filesystems on demand
     Loaded: loaded (/usr/lib/systemd/system/autofs.service; enabled; vendor preset: disabled)
     Active: active (running) since Wed 2022-12-28 10:44:10 IST; 24s ago
```

8. Now go to parent directory & list the content-

```
[root@rhel9-client1 /]# cd /smb_share/
[root@rhel9-client1 smb_share]# ls
[root@rhel9-client1 smb_share]#
```

Here, 'share' child directory is not visible. We need to manually go to that directory to list the samba share contents-

```
[root@rhel9-client1 smb_share]# cd share
[root@rhel9-client1 share]#
[root@rhel9-client1 share]# ls -ll
total 4
drwxr-xr-x. 2 root root    0 Dec 27 10:51 a1
drwxr-xr-x. 2 root root    0 Dec 27 10:51 a2
drwxr-xr-x. 2 root root    0 Dec 27 10:52 abhay
-rwxr-xr-x. 1 root root 2196 Dec 27 10:39 passwd
[root@rhel9-client1 share]#
```

9. Now, shared samba directory is mounted. Verify its mount point-

```
[abhay@rhel9-client1 share]$ df -h
Filesystem              Size  Used Avail Use% Mounted on
devtmpfs                4.0M     0  4.0M   0% /dev
tmpfs                   872M     0  872M   0% /dev/shm
tmpfs                   349M  9.6M  340M   3% /run
/dev/mapper/rhel-root    39G  4.2G   35G  11% /
/dev/nvme0n1p1         1014M  284M  731M  28% /boot
/dev/mapper/rhel-home    19G  170M   19G   1% /home
tmpfs                   175M   52K  175M   1% /run/user/42
tmpfs                   175M   36K  175M   1% /run/user/0
//192.168.78.157/secret   39G   13G   26G  34% /smb_share/share
[abhay@rhel9-client1 share]$
```

10. Create one directory & verify it at both client & server side-

```
[root@rhel9-client1 share]# mkdir my_autofs
[root@rhel9-client1 share]# ls -ll
total 4
drwxr-xr-x. 2 root root    0 Dec 27 10:51 a1
drwxr-xr-x. 2 root root    0 Dec 27 10:51 a2
drwxr-xr-x. 2 root root    0 Dec 27 10:52 abhay
drwxr-xr-x. 2 root root    0 Dec 28 10:49 my_autofs
-rwxr-xr-x. 1 root root 2196 Dec 27 10:39 passwd
[root@rhel9-client1 share]#
```

```
[root@rhel9-server /]# ls -ll /samba/
total 4
drwxr-xr-x. 2 a1    a1       6 Dec 27 10:51 a1
drwxr-xr-x. 2 a2    a2       6 Dec 27 10:51 a2
drwxr-xr-x. 2 abhay abhay    6 Dec 27 10:52 abhay
drwxr-xr-x. 2 a1    a1       6 Dec 28 10:49 my_autofs
-rw-r--r--. 1 root  root  2196 Dec 27 10:39 passwd
[root@rhel9-server /]#
```

11. If we switch to other local user (For which we already created smb password at server side), we will see permission denied error-

```
[root@rhel9-client1 share]# su abhay
[abhay@rhel9-client1 share]$
[abhay@rhel9-client1 share]$ ls
ls: cannot open directory '.': Permission denied
[abhay@rhel9-client1 share]$
```

```
[abhay@rhel9-client1 smb_share]$ ls -ll
ls: cannot access 'share': Permission denied
total 0
d????????? ? ? ? ?            ? share
[abhay@rhel9-client1 smb_share]$
```

12. To fix this, we will add its smb credential-

```
[abhay@rhel9-client1 share]$ cifscreds add 192.168.78.157
Password:
[abhay@rhel9-client1 share]$
[abhay@rhel9-client1 share]$
[abhay@rhel9-client1 share]$ ls -ll
total 4
drwxr-xr-x. 2 abhay abhay    0 Dec 27 10:51 a1
drwxr-xr-x. 2 abhay abhay    0 Dec 27 10:51 a2
drwxr-xr-x. 2 abhay abhay    0 Dec 27 10:52 abhay
drwxr-xr-x. 2 abhay abhay    0 Dec 28 10:49 my_autofs
-rwxr-xr-x. 1 abhay abhay 2196 Dec 27 10:39 passwd
[abhay@rhel9-client1 share]$
```

Note: To mount, user should have proper permission defined at server side inside /etc/smb.conf (User or group should be in 'valid users' & 'write list') & it should have rwx permission on samba shared directory in order to modify content.

13. This user has rwx permission. So, it creates file/dir as shown-

```
[abhay@rhel9-client1 share]$ mkdir my_autofs_abhay
[abhay@rhel9-client1 share]$
[abhay@rhel9-client1 share]$ ls -ll
total 4
drwxr-xr-x. 2 abhay abhay    0 Dec 27 10:51 a1
drwxr-xr-x. 2 abhay abhay    0 Dec 27 10:51 a2
drwxr-xr-x. 2 abhay abhay    0 Dec 27 10:52 abhay
drwxr-xr-x. 2 abhay abhay    0 Dec 28 10:49 my_autofs
drwxr-xr-x. 2 abhay abhay    0 Dec 28 10:52 my_autofs_abhay
-rwxr-xr-x. 1 abhay abhay 2196 Dec 27 10:39 passwd
```

14. Verify it at server side as well-

```
[root@rhel9-server /]# ls -ll /samba/
total 4
drwxr-xr-x. 2 a1    a1       6 Dec 27 10:51 a1
drwxr-xr-x. 2 a2    a2       6 Dec 27 10:51 a2
drwxr-xr-x. 2 abhay abhay    6 Dec 27 10:52 abhay
drwxr-xr-x. 2 a1    a1       6 Dec 28 10:49 my_autofs
drwxr-xr-x. 2 abhay abhay    6 Dec 28 10:52 my_autofs_abhay
-rw-r--r--. 1 root  root  2196 Dec 27 10:39 passwd
[root@rhel9-server /]#
```

This is it!!!