

Linux export and mount a file system with NFS CentOS 7.

The NFS protocol allows a machine to access an exported filesystem.

This exercise needs 2 machines: *vm3* and *vm4*

The outcome: The server has exported a directory and the client mounts it.
The root-user of the client is able to write to the server's directory.

Perform the following tasks on the server: *vm3*.

1. Create a directory to share.
2. Install `nfs-utils`.
3. Add entry to the exports file.
4. Enable and start `nfs`.
5. Export all entries in the exports file.

```
[root@vm3 ~]# mkdir -p /shares/data
[root@vm3 ~]# yum install -y nfs-utils
[root@vm3 ~]# echo '/shares/data vm4(rw,no_root_squash)' >> /etc/exports
[root@vm3 ~]# systemctl enable nfs
[root@vm3 ~]# systemctl start nfs
[root@vm3 ~]# exportfs -a
```

If the server has `firewalld` enabled, make sure you allow NFS traffic.

6. Add `nfs`.
7. Add `mountd`.
8. Add `rpc-bind`.
9. Reload config.

```
[root@vm3 ~]# firewall-cmd --list-all|egrep 'nfs|rpc-bind|mountd'

[root@vm3 ~]# firewall-cmd --permanent --add-service=nfs
[root@vm3 ~]# firewall-cmd --permanent --add-service=mountd
[root@vm3 ~]# firewall-cmd --permanent --add-service=rpc-bind
[root@vm3 ~]# firewall-cmd -reload

[root@vm3 ~]# firewall-cmd --list-all|egrep 'nfs|rpc-bind|mountd'
services: dhcpv6-client mountd nfs rpc-bind ssh
```

Perform the following tasks on the client: *vm4*

10. Create a mountpoint.
11. Install `nfs-utils`.
12. Check the server's exports.
13. Mount the server's directory.
14. Create a file in the mounted directory.

```
[root@vm4 ~]# mkdir /mnt/data
[root@vm4 ~]# yum install -y nfs-utils
[root@vm4 /]# showmount -e vm3
Export list for vm3:
/shares/data vm4
[root@vm4 ~]# mount 192.168.4.233:/shares/data /mnt/data
[root@vm4 ~]# touch /mnt/data/vm4-file
```

On the server, check the client connection and check the exported directory.

```
[root@vm3 ~]# netstat -a | grep vm4
tcp 0 0 vm3:nfs vm4:974 ESTABLISHED
[root@vm3 ~]# ls /shares/data
vm4-file
```

On the client, check the nfs version you used to mount the remote directory.

```
[root@vm4 ~]# nfsstat -m
/mnt/data from vm3:/shares/data
Flags:rw,relatime,vers=4.1,rsize=262144,wsiz=262144,namlen=255,hard,proto=tcp,port=0,timeo=600,retrans=2,sec=sys,clientaddr=192.168.4.234,local_lock=none,addr=192.168.4.233
```

On the client, umount and remount with nfs version 3.

```
[root@vm4 /]# umount /mnt/data
[root@vm4 /]# mount -o nfsvers=3 vm3:/shares/data /mnt/data

[root@vm4 ~]# nfsstat -m
/mnt/data from vm3:/shares/data
Flags:rw,relatime,vers=3,rsize=262144,wsiz=262144,namlen=255,hard,proto=tcp,timeo=600,retrans=2,sec=sys,mountaddr=192.168.4.233,mountvers=3,mountport=20048,mountproto=udp,local_lock=none,addr=192.168.4.233
```

Exercise competed.