How To Set Up an NFS Mount on CentOS 6

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NFS mounts work to share a directory between several servers. This has the advantage of saving disk space, as the home directory is only kept on one server, and others can connect to it over the network. When setting up mounts, NFS is most effective for permanent fixtures that should always be accessible.

Setup

An NFS mount is set up between at least two servers. The machine hosting the shared network is called the server, while the ones that connect to it are called "clients".

This tutorial requires 2 servers: one acting as the server and one as the client. We will set up the server machine first, followed by the client. The following IP addresses will refer to each one:

Master: 12.34.56.789
Client: 12.33.44.555

The system should be set up as root. You can access the root user by typing

```
sudo su
```

Setting Up the NFS Server

Step One—Download the Required Software

Start off by using apt-get to install the nfs programs.

```
yum install nfs-utils nfs-utils-lib
```

Subsequently, run several startup scripts for the NFS server:

```
chkconfig nfs on
service rpcbind start
service nfs start
```

Step Two—Export the Shared Directory

The next step is to decide which directory we want to share with the client server. The chosen directory should then be added to the /etc/exports file, which specifies both the directory to be shared and the details of how it is shared.

Suppose we wanted to share the directory, /home.

We need to export the directory:

```
vi /etc/exports
```

Add the following lines to the bottom of the file, sharing the directory with the client:

```
/home            12.33.44.555(rw,sync,no_root_squash,no_subtree_check)
```

These settings accomplish several tasks:

 rw: This option allows the client server to both read and write within the shared directory
 sync: Sync confirms requests to the shared directory only once the changes have been committed.
 no_subtree_check: This option prevents the subtree checking. When a shared directory is the subdirectory of a larger filesystem, nfs performs scans of every directory above it, in order to verify its permissions and details. Disabling the subtree check may increase the reliability of NFS, but reduce security.
 no_root_squash: This phrase allows root to connect to the designated directory

Once you have entered in the settings for each directory, run the following command to export them:

```
exportfs -a
```

Setting Up the NFS Client

Step One—Download the Required Software

Start off by using apt-get to install the nfs programs.

```
yum install nfs-utils nfs-utils-lib
```

Step Two—Mount the Directories

Once the programs have been downloaded to the the client server, create the directory that will contain the NFS shared files

```
mkdir -p /mnt/nfs/home
```

Then go ahead and mount it

```
mount 12.34.56.789:/home /mnt/nfs/home
```

You can use the df -h command to check that the directory has been mounted. You will see it last on the list.

```
df -h
```

```
Filesystem              Size  Used Avail Use% Mounted on
/dev/sda                20G   783M   18G    5% /
12.34.56.789:/home      20G   785M   18G    5% /mnt/nfs/home
```

Additionally, use the mount command to see the entire list of mounted file systems.

```
mount
```

Your list should look something like this:

```
/dev/sda on / type ext4 (rw,errors=remount-ro)
none on /proc/sys/fs/binfmt_misc type binfmt_misc (rw)
sunrpc on /var/lib/nfs/rpc_pipefs type rpc_pipefs (rw)
nfsd on /proc/fs/nfsd type nfsd (rw)
12.34.56.789:/home on /mnt/nfs/home type nfs
(rw,noatime,nolock,bg,nfsvers=2,intr,tcp,actimeo=1800,addr=12.34.56.789)
```

Testing the NFS Mount

Once you have successfully mounted your NFS directory, you can test that it works by creating a file on the Client and checking its availability on the Server.

Create a file in the directory to try it out:

```
touch /mnt/nfs/home/example
```

You should then be able to find the files on the Server in the /home.

```
ls /home
```

You can ensure that the mount is always active by adding the directory to the fstab file on the client. This will ensure that the mount starts up after the server reboots.

```
vi /etc/fstab
```

```
12.34.56.789:/home  /mnt/nfs/home   nfs
auto,noatime,nolock,bg,nfsvers=3,intr,tcp,actimeo=1800 0 0
```

You can learn more about the fstab options by typing in:

```
man nfs
```

After any subsequent server reboots, you can use a single command to mount directories specified in the fstab file:

```
mount -a
```

You can check the mounted directories with the two earlier commands:

```
df -h
```

```
mount
```

Removing the NFS Mount

Should you decide to remove a directory, you can unmount it using the umount command:

```
 cd
sudo umount / directory name
```

You can see that the mounts were removed by then looking at the filesystem again.

```
df -h
```

You should find your selected mounted directory gone.