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Ubuntu Linux NFS Server installation and Configuration

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Q. How do I install and configure NFS 4 Server under Ubuntu Linux ?

A. In order to set NFS server you need to install the following packages:

=> **nfs-kernel-server** - Linux NFS Server

=> **nfs-common** - NFS Common programs

=> **portmap** - The RPC portmapper

[1]

Ubuntu Linux install NFS Server

Use apt-get command to install all required packages:

```
$ sudo apt-get install nfs-kernel-server portmap nfs-common
```

Sharing directory with /etc/exports

The NFS file systems being exported / shared using /etc/exports file. You need to specify directory (file system) to share with rest of the nfs client computers. The file /etc/exports serves as the access control list for file systems which may be exported to NFS clients.

```
$ sudo vi /etc/exports
```

To export /data directory to 192.168.1.0/24 network enter the following in /etc/exports file:

```
/data 192.168.1.0/24(rw,rsync)
```

To export /sales to hostname tom and jerry, enter:

```
/sales tom(ro,sync) jerry(ro,sync)
```

To export /users to 192.168.1.0/24 in read write format, enter:

```
/users 192.168.1.0/24(ro,sync) jerry(rw,fsid=0,insecure,no_subtree_check,async)
```

Where,

- **rw** : Allow clients to read as well as write access
- **ro** : Read only access
- **insecure** : Tells the NFS server to use unprivileged ports (ports > 1024).
- **no_subtree_check** : If the entire volume (/users) is exported, disabling this check will speed up transfers.
- **async** : async will speed up transfers.

Save and close the file. Just restart nfs-server:

```
$ sudo /etc/init.d/nfs-kernel-server restart
```

Now your NFS sever is sharing /sales and /data directories.

How do I access shared directories from Linux client computer?

Login to Linux desktop system and enter the following command to mount shared directories. First, create a mountpoint on your client computer:

```
# mkdir /mnt/data
```

Mount the server:

```
# mount nfs-server:/data /mnt/data
```

You can also use following syntax for NFS client version 4:

```
# mount -t nfs4 -o proto=tcp,port=2049 nfs-server:/data /mnt/data
```

OR

```
# mount -t nfs4 -o proto=tcp,port=2049 192.168.1.100:/data /mnt/data
```

Where,

- 192.168.1.100 : NFS Server IP address
- proto=tcp,port=2049 : Force to use TCP protocol i.e. mount the NFS filesystem using TCP. The numeric value of the port to connect to the NFS server on. If the port number is 0 (the default) then query the remote host's portmapper for the port number to use. If the remote host's NFS daemon is not registered with its portmapper, the standard NFS port number 2049 is used instead.

How do I access my files?

To access shared files use regular commands or GUI file manager:

```
$ cd /mnt/data
$ ls
$ mkdir office
$ pwd
```

See [Linux NFS client how to](#) ^[2] for more information.

To see mounted file system and available disk space use df command:

```
$ df -h
```

Output:

Filesystem	Size	Used	Avail	Use%	Mounted on
/dev/sda2	92G	23G	65G	26%	/
varrun	1013M	128K	1013M	1%	/var/run
varlock	1013M	0	1013M	0%	/var/lock
udev	1013M	84K	1013M	1%	/dev
devshm	1013M	0	1013M	0%	/dev/shm
/dev/sda1	98G	22G	77G	23%	/media/sda1
/dev/sda5	274G	29G	245G	11%	/share
/dev/sdb2	230G	4.9G	213G	3%	/backup.iscsi
nfs-server:/data/	230G	31G	188G	14%	/mnt/data

How do I see all shared directories from client computer?

Use showmount command to query the mount daemon (NFS Server) on a remote host for information about the state of the NFS server on that machine:

```
$ showmount -a
```

Output:

```
All mount points on nfs-server:
nfs-server:/olddisk
nfs-server:/sales
nfs-server:/data
nfs-server:/mp3s-video
nfs-server:/wwwroot
```

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