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<https://access.redhat.com/documentation/en-US/Red_Hat_Enterprise_Linux/3/html/Reference_Guide/s1-nfs-client-config.html>

<https://www.linode.com/docs/networking/basic-nfs-configuration-on-debian-7>

<http://www.slashroot.in/linux-nfs-network-file-system-client-and-server-complete-guide>

**Q: - What is NFS ?**

NFS stands for Network File System. NFS was originally developed by Sun Microsystems in the 1980's. NFS allows remote hosts to mount file systems over a network and interact with those file systems as though they are mounted locally. This enables system administrators to consolidate resources onto centralized servers on the network.

**Q. What are the port numbers for nfs?**

     2049(nfsd), 111(port map)

**Q. Two Types of the mounting in client Side-**

1- Soft Mounting

2- Hard Mounting

If you just mount a file system without specifying hard or soft, the default is a hard mount. Hard mounts are preferable because of the stateless nature of NFS.

**Q: What is Soft Mount And Hard Mount in NFS**

Soft Mounting :-

Suppose you have mount the nfs by using “soft mount’ when a program request a file from nfs server. Nfs demon will try to retrieve the data from the nfs server. If doesn't get any response from nfs server due to some failure or crash on nfs server. Then nfs client report an error to the process on the client machine requesting the file access the Advantage “fast responsiveness” it doesn't wait to the nfs server to respond. The Main Disadvantage of this method is data corruption or loss of data so this is not the recommended option to use.

Ex. mount -o rw,soft host.nf\_server.com/home /techhome

OR

192.168.0.105:/data         /mnt      nfs     rw,soft       0 0

Hard mounting :-

Hard mounting works a little different than soft mounting. If a process that requires a file from the nfs share, cant access it due to some problem at the nfs server, the process will wait (kind of get's hang) till the nfs server becomes proper and completes its request.  And the process will resume from the point where it was stopped when NFS server responds back properly. Once the server is back online the program will continue to execute undisturbed the state where it was during the crash.

Ex. mount -o rw,hard,intr host.nf\_server.com/home /techhome

OR

192.168.0.105:/data        /mnt          nfs     rw,hard,intr  0 0

**Q: What are different options used in /etc/exports file ?**

Ans: Below are list of options used in /etc/exports file :

ro: The directory is shared read only; the client machine will not be able to write to it. This is the default.  
rw: The client machine will have read and write access to the directory.  
root\_squash: By default, any file request made by user root on the client machine is treated as if it is made by user nobody on the server. (Exactly which UID the request is mapped to depends on the UID of user “nobody” on the server, not the client.)  
no\_root\_squash : if this option is used , then root on the client machine will have the same level of access to the files on the system as root on the server. This can have serious security implications, although it may be necessary if you want to perform any administrative work on the client machine that involves the exported directories. You should not specify this option without a good reason.  
no\_subtree\_check : If only part of a volume is exported, a routine called subtree checking verifies that a file that is requested from the client is in the appropriate part of the volume. If the entire volume is exported, disabling this check will speed up transfers.  
sync : Replies to the NFS request only after all data has been written to disk. This is much safer than async, and is the default in all nfsutils versions after 1.0.0.  
async : Replies to requests before the data is written to disk. This improves performance, but results in lost data if the server goes down.  
no\_wdelay : NFS has an optimization algorithm that delays disk writes if NFS deduces a likelihood of a related write request soon arriving. This saves disk writes and can speed performance  
wdelay : Negation of no\_wdelay , this is default  
nohide : Normally, if a server exports two filesystems one of which is mounted on the other, then the client will have to mount both filesystems explicitly to get access to them. If it just mounts the parent, it will see an empty directory at the place where the other filesystem is mounted. That filesystem is “hidden”. Setting the nohide option on a filesystem causes it not to be hidden, and an appropriately authorised client will be able to move from the parent to that filesystem without noticing the change.  
hide : Negation of nohide This is the default

**Q: - What is the role of "sync" option for NFS server**

sync is used to synchronize the data from server to client. The sync option is recommended because it follows the NFS protocol

**Q. What is nfslock service ?**

NFS file locking. It implements the Network Status Monitor (NSM) RPC protocol which is a reboot notification service used to implement file lock recovery when an NFS server crashes and reboots.

**Q: How to check nfs server version ?**

**‘nfsstat -o all’** command shows all information about active versions of NFS.

**Q: Why to use NFS ?**

A Network File System (NFS) allows remote machine to mount file systems over a network and interact with those file systems as though they are mounted locally. This enables system administrators to consolidate resources onto centralized servers over the network.

**Q: What is the default port of NFS server ?**

By default NFS uses 2049 TCP port.

**Q: What are different versions of NFS Server ?**

Currently, there are three versions of NFS. NFS version 2 (**NFSv2**) is older and widely supported. NFS version 3 (**NFSv3**) supports safe asynchronous writes and is more robust at error handling than NFSv2; it also supports **64-bit file sizes** and offsets, allowing clients to access more than **2Gb** of file data. NFS version 4 (**NFSv4**) works through firewalls and on the Internet, no longer requires an **rpcbind** service, supports ACLs, and utilizes stateful operations. Red Hat Enterprise Linux 6.X & Centos 6.X supports NFSv2,NFSv3, and NFSv4 clients. When mounting a file system via NFS, Red Hat Enterprise Linux uses NFSv4 by default, if the server supports it.

**Q: What are configuration files of NFS server ?**

**‘/etc/exports’** is the main configuration file that controls which file systems are exported to remote hosts and specifies options.  
**‘/etc/sysconfig/nfs**‘ is the file through which we can fix ports for **RQUOTAD\_PORT, MOUNTD\_PORT, LOCKD\_TCPPORT, LOCKD\_UDPPORT and STATD\_PORT**

**Q: How to list available nfs share on local machine & remote machine ?**

**‘showmount -e localhost’** : Shows the available shares on your local machine  
**‘showmount -e <Remote-server-ip or hostname>**‘: Lists the available shares at the remote server

**Q: What is pNFS ?**

Parallel NFS (pNFS) as part of the NFS v4.1 standard is available as of Red Hat Enterprise Linux 6.4. The **pNFS** architecture improves the scalability of NFS, with possible improvements to performance. That is, when a server implements pNFS as well, a client is able to access data through multiple servers concurrently. It supports three storage protocols or layouts: **files, objects, and blocks.**

**Q: What is “portmap”?**

The portmapper keeps a list of what services are running on what ports. This list is used by a connecting machine to see what ports it wants to talk to access certain services.

**Q:Which option is used with exportfs command to re-export all directories?**

exportfs –r

**Q: Explain “nfsstat” command?**

The nfsstat command displays the statistics about NFS client and NFS server activity.

**Q: How you will check “portmap” service is running or not?**

rpcinfo –p

**Q: What is the difference between NFS share and a Samba share?**

NFS sharing is done between linux to Linux where Samba sharing can be done between Linux‐Linux and Linux‐windows

**Q:What is the role of "sync" option for NFS server**  
 If sync is specified, the server waits until the request is written to disk before responding to the client. The sync option is recommended because it follows the NFS protocol.

Q: – What is “portmap”?

The portmapper keeps a list of what services are running on what ports. This list is used by a connecting machine to see what ports it wants to talk to access certain services.

Q: – Explain “exportfs” command?

Ans: The exportfs command is used to maintain the current table of exported file systems for NFS.

Q: – Can we grant access by Username and password for nfs share?

No, access is granted only for IP address.(only root can use)

Q: – Which option is used with exportfs command to display the current export list, also displays the list of export options?

exportfs -v

Q: – Which option is used with exportfs command to re-export all directories?

exportfs -r

Q. What is the difference between NFS share and a Samba share?

Ans: NFS sharing is done between linux to Linux where Samba sharing can be done between Linux‐Linux and Linux‐windows