**NFS Server and Client Set UP**

**Network File System** (**NFS**) is a file system protocol used to export local file systems over the network. Users can share directories and files with others over a network and interact with them as though they are mounted locally. NFS protocol is not encrypted by default, and unlike Samba, it does not provide user authentication. Access to the server is restricted by the clients' IP addresses or hostnames.

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| **Step 1** install the required packages:  The **nfs-utils** package provides the NFS utilities and daemons for the NFS server**.** | #dnf install nfs-utils  #rpm -q nfs-utils  nfs-utils-2.3.3-31.el8.x86\_64 |
| **Step 2** start the **nfs-server** service, enable it to automatically start at system boot. By default, on CentOS 8 NFS versions 3 and 4.x are enabled.  The other services that are required for running an NFS server or mounting NFS shares such as **nfsd, nfs-idmapd, rpcbind, rpc.mountd, lockd, rpc.statd, rpc.rquotad**, and **rpc.idmapd** will be automatically started.  The configuration files for the NFS server are:  **/etc/nfs.conf** – main configuration file for the NFS daemons and tools.  **/etc/nfsmount.conf** – an NFS mount configuration file.  The default settings are sufficient for us | # systemctl start nfs-server.service  # systemctl enable nfs-server.service  # systemctl status nfs-server.service |
| **Step 3** Create the file systems to export or share on the NFS server. | # mkdir -p /share/IT\_Projects  #chmomd 777 /share/IT\_Projects |
| **Step 4** export the above file system in the NFS server **/etc/exports** configuration file to determine local physical file systems that are accessible to NFS clients. The file contains **export point** and **list of clients** allowed to mount the file system at that point and comma-separated list of **export options** for that client.  Some exports options(read man exports for more information)  **rw** – allows both read and write access on the file system.  **sync** – tells the NFS server to write changes to disk before reply (applies by default).  **all\_squash** – maps all UIDs and GIDs from client requests to the anonymous user.  **no\_all\_squash** – used to map all UIDs and GIDs from client requests to identical UIDs and GIDs on the NFS server.  **root\_squash** – maps requests from root user or UID/GID 0 from the client to the anonymous UID/GID. | # vi /etc/exports  /share/IT\_Projects 10.0.2.0/24(rw,sync) |
| **Step 5** To export the above file system, run the **exportfs** command with the **-a** flag means export or unexport all directories, -r means reexport all directories, synchronizing /var/lib/nfs/etab with /etc/exports and files under /etc/exports.d, and **-v** enables verbose output. | # exportfs -arv |
| **Step 6** To display the current export list. | #exportfs -s  Or  #exportfs -v |
| **Step 7** If you have the firewalld service running, you need to allow traffic to the necessary NFS services (mountd, nfs, rpc-bind) via the firewall, then reload the firewall rules to apply the changes | # firewall-cmd --permanent --add-service=nfs  # firewall-cmd --permanent --add-service=rpc-bind  # firewall-cmd --permanent --add-service=mountd  # firewall-cmd --reload |
| **Step 8** On the client node(s), install the necessary packages to access NFS shares on the client systems. | # dnf install nfs-utils nfs4-acl-tools |
| **Step 9** Run the **showmount** command to show mount information for the NFS server | # showmount -e 10.0.2.1 |
| **Step 10** Create a local file system/directory for mounting the remote NFS file system and mount it as an ntf file system. Confirm that the remote file system has been mounted by running the mount command and filter nfs mounts | # mkdir -p /mnt/projects  # mount -t nfs4 10.0.2.1:/share/IT\_Projects /mnt/projects  # mount | grep nfs |
| **Step 11** To enable the mount to persistent even after a system reboot, run the following command to enter the appropriate entry in the /etc/fstab. | # echo "10.0.2.1:/share/IT\_Projects /mnt/projects nfs defaults 0 0">>/etc/fstab |