## How To Setup and Configure NFS on Ubuntu 16.04

### **Installing the Packages on Storage Server**

We will install the ‘nfs-kernel’, which will be allowed us to share the directories on the server to share the files and folders. Below is the command to install the nfs package.

**$ sudo apt update  
$ sudo apt install nfs-kernel-server**  
**Installing the Packages on Client (OpenVpn Server's) Side**

We have to install the nfs packages on the client in general nfs-common ie., the package which provides the access to the NFS share folders from the server.

**Note:** Run following commands on both OpenVpn Servers

**$ sudo apt update  
$ sudo apt install nfs-common**

### **Creating a Shared Folder for General Purpose**

**$ sudo mkdir /usr/nfs/keys –p**

Change the folder permission, so that anybody can write in the folder

**$ sudo chown nobody:nogroup /usr/nfs/keys**

And now try to access the folder from a client with the below command

### **Configuring the NFS Settings on the Storage Server**

Open /etc/exports file with an editor

**$ sudo vi /etc/exports**

Add below lines to the configuration file –  
**/usr/nfs/keys <Primary Vpn Server IP>(rw,sync,no\_root\_squash,no\_subtree\_check)**

**/usr/nfs/keys <Secondary Vpn Server IP>(rw,sync,no\_root\_squash,no\_subtree\_check)**

Below is the explanation for each option we used in the above commands which we used.

Rw -> This will allow client computers to read and write to the share.

Sync -> This will allow the data to be written in the NFS before it applies to queries and It also increase consistent environment and will be stable.

Nosubtreecheck -> This will prevent subtree checking, where if we enable this option, it will cause many problems if the client has opened the file.Norootsquash -> This will makes the NFS translation request from the root user for the client into a not –privileged users of the server, where it will also prevent the root account on the client from using the file system of the server as root.

**$ sudo systemctl restart nfs-kernel-server**

### **Mounting the Directories on the Client (OpenVpn Server's)**

**Note:** Run following command on both OpenVpn Servers  
**$ sudo mount <Storage IP>:/usr/nfs/keys /etc/openvpn/easy-rsa/keys**

After we run the commands we will not verify that the NFS share folders are mounted correctly or not

**$ df –h**  
Filesystem Size Used Avail Use% Mounted on  
udev 538M 0 538M 0% /dev  
tmpfs 249M 628K 249M 2% /run  
/dev/vda1 100G 10G 90G 10% /  
tmpfs 445M 0 445M 0% /dev/shm  
tmpfs 10.0M 0 10.0M 0% /run/lock  
tmpfs 245M 0 245M 0% /sys/fs/cgroup  
<Storage IP>:/usr/nfs/keys 124G 11.28G 118.8G 9% /etc/openvpn/easy-rsa/keys

As we can see that they both share are mounted and we can see them at the bottom, as they are mounted from the same server so we can see the same disk usage.

### **Mounting the NFS Share at the Boot Time**

We can mount the NFS share at the time of boot so that if we needed to connect the NFS share folders, we can directly access the folders at the mount points

Open the /etc/fstab file and add the below lines.

**Note:** Run following command on both OpenVpn Servers

**$ sudo vi /etc/fstab**

Add the below line at the bottom of the files  
**<Storage Server IP>:/usr/nfs/keys /etc/openvpn/easy-rsa/keys nfs auto,nofail,noatime,nolock,intr,tcp,actimeo=1800 0 0**

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### **Ensure User will get same IP address after getting connected to any of the OpenVpn Server**

Copy **ipp.txt** from **/etc/openvpn** directory from primary OpenVpn server on Storage Server in **/usr/nfs/keys directory.** After copying edit **/etc/openvpn/server.conf** and make following change on both OpenVpn servers-

**Ifconfig-pool-persist /etc/openvpn/easy-rsa/keys/ipp.txt**

Then restart both OpenVpn servers.

**$ service openvpn@server restart**

### **How to Unmount the NFS Share Folders**

As if we do not want to use the folders, we can unmount the NFS share folders using the below commands

**$ sudo umount /etc/openvpn/easy-rsa/keys**