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Task : Configure NFS between client and Server from Ubuntu server to OpenSuse leap 15.0

Objective: This task involves setting up an NFS server on an Ubuntu machine and configuring an NFS client on an OpenSUSE machine to access a shared directory.

Scenario: You need to share a directory '/tmp/project_data' from an Ubuntu server with an OpenSUSE client using the NFS protocol. The shared directory should be mounted persistently at '/mnt/myproject' and accessible for read-only operations on the client.

Ubuntu server side :

Update repository and install nfs-server package it will directly install nfs-kernal-server package

```
root@prasad:~# apt update -y
Hit:1 https://download.docker.com/linux/ubuntu focal InRelease
Hit:2 http://in.archive.ubuntu.com/ubuntu focal InRelease
Get:3 http://in.archive.ubuntu.com/ubuntu focal-updates InRelease [128 kB]
Hit:4 http://in.archive.ubuntu.com/ubuntu focal-backports InRelease
Get:5 http://in.archive.ubuntu.com/ubuntu focal-security InRelease [128 kB]
Get:6 http://in.archive.ubuntu.com/ubuntu focal-security/main amd64 Packages [3,092 kB]
Get:7 http://in.archive.ubuntu.com/ubuntu focal-security/universe amd64 Packages [997 kB]
Fetched 4,345 kB in 10s (445 kB/s)
Reading package lists... Done
Building dependency tree
Reading state information... Done
170 packages can be upgraded. Run 'apt list --upgradable' to see them.
root@prasad:~#
```

```
root@prasad:~# apt install nfs-server -y
Reading package lists... Done
Building dependency tree
Reading state information... Done
Note, selecting 'nfs-kernel-server' instead of 'nfs-server'
nfs-kernel-server is already the newest version (1:1.3.4-2.5ubuntu3.7).
0 upgraded, 0 newly installed, 0 to remove and 170 not upgraded.
root@prasad:~#
```

Create share directory assign permission 755

```
root@prasad:~# mkdir /tmp/project_data
root@prasad:~# chown nobody:nogroup /tmp/project_data
root@prasad:~#
root@prasad:~# chmod 755 /tmp/project_data
root@prasad:~# ls -ld /tmp/project_data/
drwxr-xr-x 2 nobody nogroup 4096 Aug  8 07:12 /tmp/project_data/
root@prasad:~#
```

Open /etc/exports file and add entry for this share directory and <ip Client> like this format .

```
root@prasad:~# vi /etc/exports
```

```
#               to NFS clients.  See exports(5).
#
# Example for NFSv2 and NFSv3:
# /srv/homes       hostname1(rw,sync,no_subtree_check) hostname2(ro,sync,no_subtree_check)
#
# Example for NFSv4:
# /srv/nfs4        gss/krb5i(rw,sync,fsid=0,crossmnt,no_subtree_check)
# /srv/nfs4/homes  gss/krb5i(rw,sync,no_subtree_check)
#
/tmp/project_data       192.168.227.60(rw,sync,no_root_squash)
~
~
~
~
~
~
~
~
~
~
~
```

Verify the written entry is correct using this command .

```
root@prasad:~# exportfs -a
exportfs: /etc/exports [1]: Neither 'subtree_check' or 'no_subtree_check' specified for export "192
168.227.60:/tmp/project_data".
  Assuming default behaviour ('no_subtree_check').
  NOTE: this default has changed since nfs-utils version 1.0.x

root@prasad:~# _
```

Restart and enable the nfs-server service for the refresh and automatically start the service after reboot .

```
root@prasad:~# systemctl restart nfs-server
root@prasad:~# systemctl enable nfs-server
root@prasad:~#
```

OpenSuse Client side :
Install nfs-client package on suse

```
localhost:~ # zypper install nfs-client
Retrieving repository 'Update repository of openSUSE Backports' metadata .....................[done]
Building repository 'Update repository of openSUSE Backports' cache .........................[done]
Retrieving repository 'Update repository with updates from SUSE Linux Enterprise 15' metadata [done]
Building repository 'Update repository with updates from SUSE Linux Enterprise 15' cache .....[done]
Loading repository data...
Reading installed packages...
Resolving package dependencies...

The following package is going to be upgraded:
  nfs-client

1 package to upgrade.
Overall download size: 252.7 KiB. Already cached: 0 B. After the operation, additional 547.0 B will
be used.
Continue? [y/n/v/...? shows all options] (y): y
Retrieving: nfs-client-2.1.1-150500.22.3.1.x86_64 (Update repository with updates from SUSE Linux
Enterprise 15)
                                                                              (1/1), 252.7 KiB
Retrieving delta: ./x86_64/nfs-client-2.1.1-150500.20.2_150500.22.3.1.x86_64.drpm, 50.0 KiB
Retrieving: nfs-client-2.1.1-150500.20.2_150500.22.3.1.x86_64.drpm .............[done (50.0 KiB/s)]
Applying delta: ./nfs-client-2.1.1-150500.20.2_150500.22.3.1.x86_64.drpm .....................[done]

Checking for file conflicts: ..................................................................[done]
Updating /etc/sysconfig/nfs ...
setting /sbin/mount.nfs to root:root 4755. (wrong permissions 0755)
(1/1) Installing: nfs-client-2.1.1-150500.22.3.1.x86_64 .......................................[done]

[3]+  Killed                  zypper update -y
localhost:~ # _
```

Create a mount point /mnt/myproject
Add entry in /etc/fstab file for permenant <ip Server>

```
UUID=49a5cbca-ab47-4a5f-950e-3ab607a5db4b  /                       btrfs  defaults
    0  0
UUID=49a5cbca-ab47-4a5f-950e-3ab607a5db4b  /var                    btrfs  subvol=/@/var
    0  0
UUID=49a5cbca-ab47-4a5f-950e-3ab607a5db4b  /usr/local              btrfs  subvol=/@/usr/local
    0  0
UUID=49a5cbca-ab47-4a5f-950e-3ab607a5db4b  /tmp                    btrfs  subvol=/@/tmp
    0  0
UUID=49a5cbca-ab47-4a5f-950e-3ab607a5db4b  /srv                    btrfs  subvol=/@/srv
    0  0
UUID=49a5cbca-ab47-4a5f-950e-3ab607a5db4b  /root                   btrfs  subvol=/@/root
    0  0
UUID=49a5cbca-ab47-4a5f-950e-3ab607a5db4b  /opt                    btrfs  subvol=/@/opt
    0  0
UUID=49a5cbca-ab47-4a5f-950e-3ab607a5db4b  /home                   btrfs  subvol=/@/home
    0  0
UUID=49a5cbca-ab47-4a5f-950e-3ab607a5db4b  /boot/grub2/x86_64-efi  btrfs  subvol=/@/boot/grub2/x86_6
4-efi  0  0
UUID=49a5cbca-ab47-4a5f-950e-3ab607a5db4b  /boot/grub2/i386-pc     btrfs  subvol=/@/boot/grub2/i386-
pc  0  0
UUID=49a5cbca-ab47-4a5f-950e-3ab607a5db4b  /.snapshots             btrfs  subvol=/@/.snapshots
    0  0
UUID=549caba4-9b82-4856-95e7-0587d66b02d2  swap                    swap   defaults
    0  0
192.168.227.192:/tmp/project_data       /mnt/myproject  nfs     ro,sync 0 0
~
~
~
~
~
~
~
~
~
~
"/etc/fstab" 13L, 1376B                                               13,11         All
```

Run the mount –a command for fstab file entry will read the kernel

```
localhost:~ # mount -a
localhost:~ # _
```

To verify the mounting is done by df –h command

```
localhost:~ # df -h
Filesystem                      Size  Used Avail Use% Mounted on
devtmpfs                        4.0M     0  4.0M   0% /dev
tmpfs                           1.4G  4.0K  1.4G   1% /dev/shm
tmpfs                           547M   22M  525M   4% /run
tmpfs                           4.0M     0  4.0M   0% /sys/fs/cgroup
/dev/sda2                        20G  2.8G   16G  15% /
/dev/sda2                        20G  2.8G   16G  15% /.snapshots
/dev/sda2                        20G  2.8G   16G  15% /boot/grub2/x86_64-efi
/dev/sda2                        20G  2.8G   16G  15% /home
/dev/sda2                        20G  2.8G   16G  15% /opt
/dev/sda2                        20G  2.8G   16G  15% /srv
/dev/sda2                        20G  2.8G   16G  15% /root
/dev/sda2                        20G  2.8G   16G  15% /boot/grub2/i386-pc
/dev/sda2                        20G  2.8G   16G  15% /tmp
/dev/sda2                        20G  2.8G   16G  15% /usr/local
/dev/sda2                        20G  2.8G   16G  15% /var
tmpfs                           274M  4.0K  274M   1% /run/user/0
192.168.227.192:/tmp/project_data  9.8G  5.4G  4.0G  58% /mnt/myproject
localhost:~ #
```

Now task is done client and server side is complete .

Thank you …. !