NFS lab setup/troubleshooting

//checking for the nfs server service

```
d17-suse:/home/onemantech # systemctl status nfs-server.service
● nfs-server.service - NFS server and services
     Loaded: loaded (/usr/lib/systemd/system/nfs-server.service; enabled; vendor preset: disabled)
    Drop-In: /usr/lib/systemd/system/nfs-server.service.d
             └─10-options.conf, nfsserver.conf
             /run/systemd/generator/nfs-server.service.d
             └─order-with-mounts.conf
     Active: active (exited) since Wed 2025-10-15 17:40:11 EDT; 22h ago
    Process: 1185 ExecStartPre=/usr/sbin/exportfs -r (code=exited, status=0/SUCCESS)
    Process: 1187 ExecStart=/usr/sbin/rpc.nfsd $NFSD_OPTIONS (code=exited, status=0/SUCCESS)
   Main PID: 1187 (code=exited, status=0/SUCCESS)

Oct 15 17:40:09 d17-suse systemd[1]: Starting NFS server and services...
Oct 15 17:40:11 d17-suse systemd[1]: Finished NFS server and services.
d17-suse:/home/onemantech #
```

//listing created shares for nfs exports on the server

```
d17-suse:/home/onemantech # ls -lsht /nfstest/
total 0
0 drwxr-xr-x 1 onemantech users 28 Oct 15 21:13 nfs2
0 drwxr-xr-x 1 onemantech users 28 Oct 15 21:12 nfs1
0 drwxrwxrwx 1 onemantech users 28 Oct 14 21:00 nfs3
d17-suse:/home/onemantech #
```

//premount checking

```
d17-suse:/home/onemantech # ls -lsht /mnt/nfs{1,2,3}
/mnt/nfs1:
total 0

/mnt/nfs2:
total 0

/mnt/nfs3:
total 0
d17-suse:/home/onemantech #
```

//premount checking of /etc/exports , 'no_root_squash' intentionally omitted

```
d17-suse:/home/onemantech # cat /etc/exports
# See the exports(5) manpage for a description of the syntax of this file.
# This file contains a list of all directories that are to be exported to
# other computers via NFS (Network File System).
# This file used by rpc.nfsd and rpc.mountd. See their manpages for details
# on how make changes in this file effective.

/nfstest/nfs1    172.16.10.103(rw,no_subtree_check,sync)
/nfstest/nfs2    172.16.10.103(rw,no_subtree_check,sync)
/nfstest/nfs3    172.16.10.103(rw,no_subtree_check,sync)
d17-suse:/home/onemantech #
```

//premount checking of /etc/fstab, 'user' parameter intentional to allow local user mounts

```
d17-suse:/home/onemantech # cat /etc/fstab
UUID=47c1c763-2b1c-41b9-8c06-463f3a53ff67  /                       btrfs  defaults                         0  0
UUID=47c1c763-2b1c-41b9-8c06-463f3a53ff67  /var                    btrfs  subvol=/@/var                    0  0
UUID=47c1c763-2b1c-41b9-8c06-463f3a53ff67  /usr/local              btrfs  subvol=/@/usr/local              0  0
UUID=47c1c763-2b1c-41b9-8c06-463f3a53ff67  /tmp                    btrfs  subvol=/@/tmp                    0  0
UUID=47c1c763-2b1c-41b9-8c06-463f3a53ff67  /srv                    btrfs  subvol=/@/srv                    0  0
UUID=47c1c763-2b1c-41b9-8c06-463f3a53ff67  /root                   btrfs  subvol=/@/root                   0  0
UUID=47c1c763-2b1c-41b9-8c06-463f3a53ff67  /opt                    btrfs  subvol=/@/opt                    0  0
UUID=47c1c763-2b1c-41b9-8c06-463f3a53ff67  /home                   btrfs  subvol=/@/home                   0  0
UUID=47c1c763-2b1c-41b9-8c06-463f3a53ff67  /boot/grub2/x86_64-efi  btrfs  subvol=/@/boot/grub2/x86_64-efi  0  0
UUID=47c1c763-2b1c-41b9-8c06-463f3a53ff67  /boot/grub2/i386-pc     btrfs  subvol=/@/boot/grub2/i386-pc     0  0
UUID=06F4-C67F                             /boot/efi               vfat   utf8                             0  2
UUID=9ebce4c0-4338-46a4-a324-595c2d067637  swap                    swap   defaults                         0  0
UUID=47c1c763-2b1c-41b9-8c06-463f3a53ff67  /.snapshots             btrfs  subvol=/@/.snapshots             0  0
172.16.10.103:/zstor/naspool               /mnt/zstor              nfs    rw,user,defaults,noauto          0  0
172.16.10.103:/nfstest/nfs1                /mnt/nfs1               nfs    user,defaults,noauto             0  0
172.16.10.103:/nfstest/nfs2                /mnt/nfs2               nfs    user,defaults,noauto             0  0
172.16.10.103:/nfstest/nfs3                /mnt/nfs3               nfs    user,defaults,noauto             0  0
d17-suse:/home/onemantech #
```

//system re-reading the fstab file and exporting the file system

```
d17-suse:/home/onemantech # mount -a
d17-suse:/home/onemantech #
d17-suse:/home/onemantech # exportfs -rav
exporting 172.16.10.103:/nfstest/nfs3
exporting 172.16.10.103:/nfstest/nfs2
exporting 172.16.10.103:/nfstest/nfs1
d17-suse:/home/onemantech #
```

//mounting of the shares

```
d17-suse:/home/onemantech # mount -v -t nfs 172.16.10.103:/nfstest/nfs1 /mnt/nfs1
mount.nfs: timeout set for Thu Oct 16 16:19:25 2025
mount.nfs: trying text-based options 'vers=4.2,addr=172.16.10.103,clientaddr=172.16.10.103'
d17-suse:/home/onemantech #
d17-suse:/home/onemantech # mount -v -t nfs 172.16.10.103:/nfstest/nfs2 /mnt/nfs2
mount.nfs: timeout set for Thu Oct 16 16:19:33 2025
mount.nfs: trying text-based options 'vers=4.2,addr=172.16.10.103,clientaddr=172.16.10.103'
d17-suse:/home/onemantech #
d17-suse:/home/onemantech # mount -v -t nfs 172.16.10.103:/nfstest/nfs3 /mnt/nfs3
mount.nfs: timeout set for Thu Oct 16 16:19:41 2025
mount.nfs: trying text-based options 'vers=4.2,addr=172.16.10.103,clientaddr=172.16.10.103'
d17-suse:/home/onemantech #
```

//post mount checking

```
172.16.10.103:/nfstest/nfs1 on /mnt/nfs1 type nfs4 (rw,relatime,vers=4.2,rsize=1048576,wsize=1048576,namlen=255,hard,proto=tcp,timeo=600,retrans=2,sec=sys,clientaddr=172.16.10.103,local_lock=none,addr=172.16.10.103)
172.16.10.103:/nfstest/nfs2 on /mnt/nfs2 type nfs4 (rw,relatime,vers=4.2,rsize=1048576,wsize=1048576,namlen=255,hard,proto=tcp,timeo=600,retrans=2,sec=sys,clientaddr=172.16.10.103,local_lock=none,addr=172.16.10.103)
172.16.10.103:/nfstest/nfs3 on /mnt/nfs3 type nfs4 (rw,relatime,vers=4.2,rsize=1048576,wsize=1048576,namlen=255,hard,proto=tcp,timeo=600,retrans=2,sec=sys,clientaddr=172.16.10.103,local_lock=none,addr=172.16.10.103)
d17-suse:/home/onemantech #
```

//enlarged view

```
172.16.10.103:/nfstest/nfs1 on /mnt/nfs1 type nfs4 (rw,relatime,vers=4.2,rsize=1048576,wsize=1048576,
6.10.103,local_lock=none,addr=172.16.10.103)
172.16.10.103:/nfstest/nfs2 on /mnt/nfs2 type nfs4 (rw,relatime,vers=4.2,rsize=1048576,wsize=1048576,
6.10.103,local_lock=none,addr=172.16.10.103)
172.16.10.103:/nfstest/nfs3 on /mnt/nfs3 type nfs4 (rw,relatime,vers=4.2,rsize=1048576,wsize=1048576,
6.10.103,local_lock=none,addr=172.16.10.103)
d17-suse:/home/onemantech #
```

```
d17-suse:/home/onemantech # ls -lsht /mnt/nfs{1,2,3}
/mnt/nfs2:
total 0
0 -rw-r--r-- 1 root root 0 Oct 14 20:48 localtestfile2

/mnt/nfs1:
total 0
0 -rw-r--r-- 1 root root 0 Oct 14 20:48 localtestfile1

/mnt/nfs3:
total 0
0 -rw-r--r-- 1 root root 0 Oct 14 20:48 localtestfile3
d17-suse:/home/onemantech #
```

//showing exports on local/specified server

```
d17-suse:/home/onemantech # showmount -e 172.16.10.103
Export list for 172.16.10.103:
/nfstest/nfs3 172.16.10.103
/nfstest/nfs2 172.16.10.103
/nfstest/nfs1 172.16.10.103
d17-suse:/home/onemantech #
```

//showing rpcinfo [truncated output]

```
d17-suse:/home/onemantech # rpcinfo
   program version netid     address              service    owner
   100000    4     tcp6      :::.0.111            portmapper superuser
   100000    3     tcp6      :::.0.111            portmapper superuser
   100000    4     udp6      :::.0.111            portmapper superuser
   100000    3     udp6      :::.0.111            portmapper superuser
   100000    4     tcp       0.0.0.0.0.111        portmapper superuser
   100000    3     tcp       0.0.0.0.0.111        portmapper superuser
   100000    2     tcp       0.0.0.0.0.111        portmapper superuser
   100000    4     udp       0.0.0.0.0.111        portmapper superuser
   100000    3     udp       0.0.0.0.0.111        portmapper superuser
   100000    2     udp       0.0.0.0.0.111        portmapper superuser
   100000    4     local     /run/rpcbind.sock    portmapper superuser
   100000    3     local     /run/rpcbind.sock    portmapper superuser
   100005    1     udp       0.0.0.0.78.80        mountd     superuser
   100005    1     tcp       0.0.0.0.78.80        mountd     superuser
   100005    1     udp6      :::.78.80            mountd     superuser
   100005    1     tcp6      :::.78.80            mountd     superuser
   100005    2     udp       0.0.0.0.78.80        mountd     superuser
   100005    2     tcp       0.0.0.0.78.80        mountd     superuser
   100005    2     udp6      :::.78.80            mountd     superuser
   100005    2     tcp6      :::.78.80            mountd     superuser
   100005    3     udp       0.0.0.0.78.80        mountd     superuser
   100005    3     tcp       0.0.0.0.78.80        mountd     superuser
   100005    3     udp6      :::.78.80            mountd     superuser
   100005    3     tcp6      :::.78.80            mountd     superuser
   100024    1     udp       0.0.0.0.194.65       status     479
   100024    1     tcp       0.0.0.0.230.97       status     479
```

//testing creation of new file on shares, nfs1 and nfs2 will have permission denied as expected due to 'no_root_squash' parameter, while nfs3 will write the file, also due to share permissions of nfs3

```
d17-suse:/home/onemantech # cat /etc/exports
# See the exports(5) manpage for a description of the syntax of this file.
# This file contains a list of all directories that are to be exported to
# other computers via NFS (Network File System).
# This file used by rpc.nfsd and rpc.mountd. See their manpages for details
# on how make changes in this file effective.

/nfstest/nfs1    172.16.10.103(rw,no_root_squash,no_subtree_check,sync)
/nfstest/nfs2    172.16.10.103(rw,no_root_squash,no_subtree_check,sync)
/nfstest/nfs3    172.16.10.103(rw,no_subtree_check,sync)
d17-suse:/home/onemantech #
d17-suse:/home/onemantech # exportfs -rav
exporting 172.16.10.103:/nfstest/nfs3
exporting 172.16.10.103:/nfstest/nfs2
exporting 172.16.10.103:/nfstest/nfs1
d17-suse:/home/onemantech #
```

//reconfigured the /etc/exports file with the correct parameter, re-exported the share and tested the write to the share, executed as expected

```
d17-suse:/home/onemantech # touch /mnt/nfs1/newtestfile
touch: cannot touch '/mnt/nfs1/newtestfile': Permission denied
d17-suse:/home/onemantech #
d17-suse:/home/onemantech # touch /mnt/nfs2/newtestfile
touch: cannot touch '/mnt/nfs2/newtestfile': Permission denied
d17-suse:/home/onemantech #
d17-suse:/home/onemantech # touch /mnt/nfs3/newtestfile
d17-suse:/home/onemantech #
d17-suse:/home/onemantech #
d17-suse:/home/onemantech # ls -lsht /mnt/nfs3
total 0
0 -rw-r--r-- 1 nobody nobody 0 Oct 16 16:25 newtestfile
0 -rw-r--r-- 1 root    root   0 Oct 14 20:48 localtestfile3
d17-suse:/home/onemantech #
```

```
d17-suse:/home/onemantech # touch /mnt/nfs1/newtestfile
d17-suse:/home/onemantech #
d17-suse:/home/onemantech # touch /mnt/nfs2/newtestfile
d17-suse:/home/onemantech #
d17-suse:/home/onemantech # ls -lsht /mnt/nfs{1,2,3}
/mnt/nfs2:
total 0
0 -rw-r--r-- 1 root root 0 Oct 16 16:30 newtestfile
0 -rw-r--r-- 1 root root 0 Oct 14 20:48 localtestfile2

/mnt/nfs1:
total 0
0 -rw-r--r-- 1 root root 0 Oct 16 16:30 newtestfile
0 -rw-r--r-- 1 root root 0 Oct 14 20:48 localtestfile1

/mnt/nfs3:
total 0
0 -rw-r--r-- 1 nobody nobody 0 Oct 16 16:25 newtestfile
0 -rw-r--r-- 1 root   root   0 Oct 14 20:48 localtestfile3
d17-suse:/home/onemantech #
```

//unmounted the shares

```
d17-suse:/home/onemantech # umount -v /mnt/nfs1
/mnt/nfs1: nfs4 mount point detected
/mnt/nfs1: umounted
d17-suse:/home/onemantech # umount -v /mnt/nfs2
/mnt/nfs2: nfs4 mount point detected
/mnt/nfs2: umounted
d17-suse:/home/onemantech # umount -v /mnt/nfs3
/mnt/nfs3: nfs4 mount point detected
/mnt/nfs3: umounted
d17-suse:/home/onemantech #
```

//showing local user mounting without escalated privileges

```
onemantech@d17-suse:~> mount -v -t nfs 172.16.10.103:/nfstest/nfs1 /mnt/nfs1
mount.nfs: timeout set for Thu Oct 16 16:38:35 2025
mount.nfs: trying text-based options 'vers=4.2,addr=172.16.10.103,clientaddr=172.16.10.103'
onemantech@d17-suse:~>
onemantech@d17-suse:~> mount -v -t nfs 172.16.10.103:/nfstest/nfs2 /mnt/nfs2
mount.nfs: timeout set for Thu Oct 16 16:38:49 2025
mount.nfs: trying text-based options 'vers=4.2,addr=172.16.10.103,clientaddr=172.16.10.103'
onemantech@d17-suse:~>
onemantech@d17-suse:~> mount -v -t nfs 172.16.10.103:/nfstest/nfs3 /mnt/nfs3
mount.nfs: timeout set for Thu Oct 16 16:38:55 2025
mount.nfs: trying text-based options 'vers=4.2,addr=172.16.10.103,clientaddr=172.16.10.103'
onemantech@d17-suse:~>
```

```
172.16.10.103:/nfstest/nfs1 on /mnt/nfs1 type nfs4 (rw,nosuid,nodev,noexec,relatime,vers=4.2,rsize=1048576,wsize=1048576,namlen=255,hard,proto=tcp,timeo=600,retrans=2,sec=sys,clientaddr=172.16.10.103,local_lock=none,addr=172.16.10.103,user=onemantech)
172.16.10.103:/nfstest/nfs2 on /mnt/nfs2 type nfs4 (rw,nosuid,nodev,noexec,relatime,vers=4.2,rsize=1048576,wsize=1048576,namlen=255,hard,proto=tcp,timeo=600,retrans=2,sec=sys,clientaddr=172.16.10.103,local_lock=none,addr=172.16.10.103,user=onemantech)
172.16.10.103:/nfstest/nfs3 on /mnt/nfs3 type nfs4 (rw,nosuid,nodev,noexec,relatime,vers=4.2,rsize=1048576,wsize=1048576,namlen=255,hard,proto=tcp,timeo=600,retrans=2,sec=sys,clientaddr=172.16.10.103,local_lock=none,addr=172.16.10.103,user=onemantech)
onemantech@d17-suse:~>
```

//enlarged

```
172.16.10.103:/nfstest/nfs1 on /mnt/nfs1 type nfs4 (rw,nosuid,nodev,noexec,relatime,
sys,clientaddr=172.16.10.103,local_lock=none,addr=172.16.10.103,user=onemantech)
172.16.10.103:/nfstest/nfs2 on /mnt/nfs2 type nfs4 (rw,nosuid,nodev,noexec,relatime,
sys,clientaddr=172.16.10.103,local_lock=none,addr=172.16.10.103,user=onemantech)
172.16.10.103:/nfstest/nfs3 on /mnt/nfs3 type nfs4 (rw,nosuid,nodev,noexec,relatime,
sys,clientaddr=172.16.10.103,local_lock=none,addr=172.16.10.103,user=onemantech)
onemantech@d17-suse:~>
```

```
onemantech@d17-suse:~> ls -lsht /mnt/nfs{1,2,3}
/mnt/nfs2:
total 0
0 -rw-r--r-- 1 root root 0 Oct 16 16:30 newtestfile
0 -rw-r--r-- 1 root root 0 Oct 14 20:48 localtestfile2

/mnt/nfs1:
total 0
0 -rw-r--r-- 1 root root 0 Oct 16 16:30 newtestfile
0 -rw-r--r-- 1 root root 0 Oct 14 20:48 localtestfile1

/mnt/nfs3:
total 0
0 -rw-r--r-- 1 nobody nobody 0 Oct 16 16:25 newtestfile
0 -rw-r--r-- 1 root   root   0 Oct 14 20:48 localtestfile3
onemantech@d17-suse:~>
```

//local server/client packet capture of loopback interface of nfs traffic of writing to the share and the nfsiostat capture

```
d17-suse:/home/onemantech # tcpdump -G 60 -W 1 -i lo 'tcp port 2049' -w /mnt/nfs1/tcpdump-pcap
tcpdump: listening on lo, link-type EN10MB (Ethernet), snapshot length 262144 bytes
Maximum file limit reached: 1
19907 packets captured
57930 packets received by filter
16598 packets dropped by kernel
d17-suse:/home/onemantech #
```

```
d17-suse:/home/onemantech # ls -lsht /mnt/nfs1
total 1.5G
1.1G -rw-r--r-- 1 root        root   1.1G Oct 16 16:51 tcpdump-pcap
500M -rw-r--r-- 1 onemantech users 500M Oct 16 16:50 testfile500m
   0 -rw-r--r-- 1 root        root      0 Oct 16 16:30 newtestfile
   0 -rw-r--r-- 1 root        root      0 Oct 14 20:48 localtestfile1
d17-suse:/home/onemantech #
```

```
onemantech@d17-suse:~> dd if=/dev/zero of=/mnt/nfs1/testfile500m bs=1M count=500
500+0 records in
500+0 records out
524288000 bytes (524 MB, 500 MiB) copied, 10.4369 s, 50.2 MB/s
onemantech@d17-suse:~>
```

```
172.16.10.103:/nfstest/nfs1 mounted on /mnt/nfs1:

           ops/s        rpc bklog
        396.000            0.000

read:            ops/s              kB/s             kB/op          retrans      avg RTT (ms)     avg exe (ms)
                0.000             0.000             0.000        0 (0.0%)            0.000            0.000
write:           ops/s              kB/s             kB/op          retrans      avg RTT (ms)     avg exe (ms)
              382.000        391321.539          1024.402        0 (0.0%)            9.565           92.482

172.16.10.103:/nfstest/nfs1 mounted on /mnt/nfs1:

           ops/s        rpc bklog
        107.000            0.000

read:            ops/s              kB/s             kB/op          retrans      avg RTT (ms)     avg exe (ms)
                0.000             0.000             0.000        0 (0.0%)            0.000            0.000
write:           ops/s              kB/s             kB/op          retrans      avg RTT (ms)     avg exe (ms)
              118.000        120879.703          1024.404        0 (0.0%)            8.949          206.932
```

//reading of the pcap file from the cli [truncated]

```
d17-suse:/home/onemantech # tcpdump -r /mnt/nfs1/tcpdump-pcap | less
```
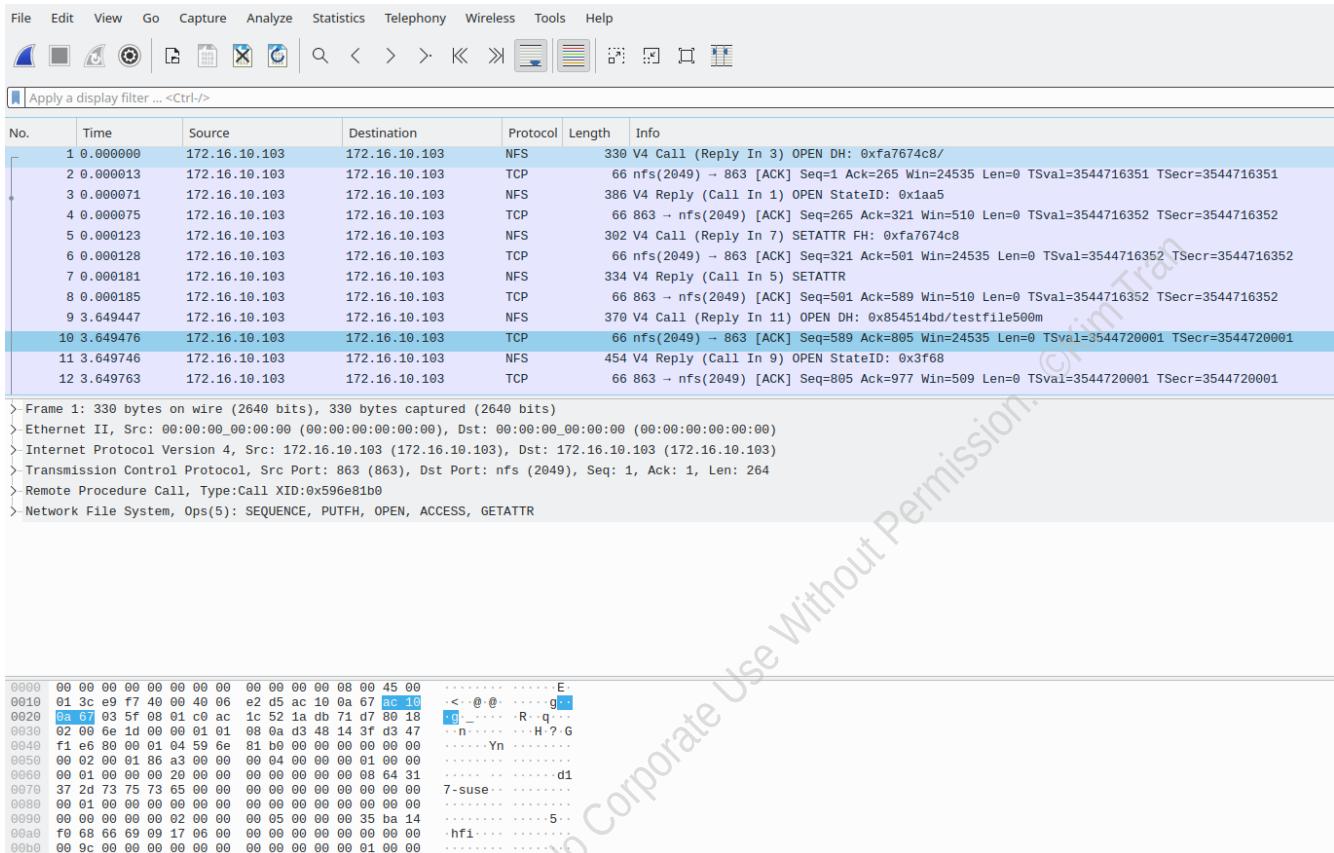
```
16:50:40.304277 IP 172.16.10.103.863 > 172.16.10.103.nfs: Flags [P.], seq 3232504914:3232505178, ack 450589143, win 512, options [nop,nop,TS val 3544716351 ecr 3544707558]
, length 264: NFS request xid 1500414384 260 getattr fh 0,2/53
16:50:40.304290 IP 172.16.10.103.nfs > 172.16.10.103.863: Flags [.], ack 264, win 24535, options [nop,nop,TS val 3544716351 ecr 3544716351], length 0
16:50:40.304348 IP 172.16.10.103.nfs > 172.16.10.103.863: Flags [P.], seq 1:321, ack 264, win 24535, options [nop,nop,TS val 3544716352 ecr 3544716351], length 320: NFS re
ply xid 1500414384 reply ok 316 getattr NON 5 ids 0/-1173032856 sz 1718159639
16:50:40.304352 IP 172.16.10.103.863 > 172.16.10.103.nfs: Flags [.], ack 321, win 510, options [nop,nop,TS val 3544716352 ecr 3544716352], length 0
16:50:40.304400 IP 172.16.10.103.863 > 172.16.10.103.nfs: Flags [P.], seq 264:500, ack 321, win 512, options [nop,nop,TS val 3544716352 ecr 3544716352], length 236: NFS re
quest xid 1517191600 232 getattr fh 0,2/53
16:50:40.304405 IP 172.16.10.103.nfs > 172.16.10.103.863: Flags [.], ack 500, win 24535, options [nop,nop,TS val 3544716352 ecr 3544716352], length 0
16:50:40.304458 IP 172.16.10.103.nfs > 172.16.10.103.863: Flags [P.], seq 321:589, ack 500, win 24535, options [nop,nop,TS val 3544716352 ecr 3544716352], length 268: NFS
reply xid 1517191600 reply ok 264 getattr NON 4 ids 0/-1173032856 sz 1718159639
```

//enlarged

```
16:50:40.304277 IP 172.16.10.103.863 > 172.16.10.103.nfs: Flags [P.], seq 32325049
, length 264: NFS request xid 1500414384 260 getattr fh 0,2/53
16:50:40.304290 IP 172.16.10.103.nfs > 172.16.10.103.863: Flags [.], ack 264, win
16:50:40.304348 IP 172.16.10.103.nfs > 172.16.10.103.863: Flags [P.], seq 1:321, a
ply xid 1500414384 reply ok 316 getattr NON 5 ids 0/-1173032856 sz 1718159639
16:50:40.304352 IP 172.16.10.103.863 > 172.16.10.103.nfs: Flags [.], ack 321, win
16:50:40.304400 IP 172.16.10.103.863 > 172.16.10.103.nfs: Flags [P.], seq 264:500,
quest xid 1517191600 232 getattr fh 0,2/53
```

```
ack 450589143, win 512, options [nop,nop,TS val 3544716351 ecr 3544707558]

[nop,nop,TS val 3544716351 ecr 3544716351], length 0
535, options [nop,nop,TS val 3544716352 ecr 3544716351], length 320: NFS re

nop,nop,TS val 3544716352 ecr 3544716352], length 0
512, options [nop,nop,TS val 3544716352 ecr 3544716352], length 236: NFS re

[nop,nop,TS val 3544716352 ecr 3544716352], length 0
24535, options [nop,nop,TS val 3544716352 ecr 3544716352], length 268: NFS
```

//reading output of same file through the wireshark gui

//similar packet capture with tcpdump equivalent of tshark

```
d17-suse:/home/onemantech # tshark -i lo -a duration:60 -f 'tcp port 2049' -w /mnt/nfs2/tsharkdump-pcap
Running as user "root" and group "root". This could be dangerous.
Capturing on 'Loopback: lo'
 ** (tshark:17364) 17:01:31.784756 [Main MESSAGE] -- Capture started.
 ** (tshark:17364) 17:01:31.784823 [Main MESSAGE] -- File: "/mnt/nfs2/tsharkdump-pcap"
7234
17188 packets dropped from lo
d17-suse:/home/onemantech #
```

```
d17-suse:/home/onemantech # ls -lsht /mnt/nfs2
total 373M
373M -rw------- 1 root root 373M Oct 16 17:02 tsharkdump-pcap
   0 -rw-r--r-- 1 root root    0 Oct 16 16:30 newtestfile
   0 -rw-r--r-- 1 root root    0 Oct 14 20:48 localtestfile2
d17-suse:/home/onemantech #
```

//commenting out the /etc/exports, setting the fstab for user mount with protocol udp and version 3 of nfs for the share mounts

```
d17-suse:/home/onemantech # cat /etc/exports
# See the exports(5) manpage for a description of the syntax of this file.
# This file contains a list of all directories that are to be exported to
# other computers via NFS (Network File System).
# This file used by rpc.nfsd and rpc.mountd. See their manpages for details
# on how make changes in this file effective.

#/nfstest/nfs1  172.16.10.103(rw,no_subtree_check,sync)
#/nfstest/nfs2  172.16.10.103(rw,no_subtree_check,sync)
#/nfstest/nfs3  172.16.10.103(rw,no_subtree_check,sync)
d17-suse:/home/onemantech #
d17-suse:/home/onemantech # exportfs -rav
exportfs: No file systems exported!
d17-suse:/home/onemantech #
```

```
d17-suse:/home/onemantech # cat /etc/fstab
UUID=47c1c763-2b1c-41b9-8c06-463f3a53ff67  /                      btrfs   defaults                           0  0
UUID=47c1c763-2b1c-41b9-8c06-463f3a53ff67  /var                   btrfs   subvol=/@/var                      0  0
UUID=47c1c763-2b1c-41b9-8c06-463f3a53ff67  /usr/local             btrfs   subvol=/@/usr/local                0  0
UUID=47c1c763-2b1c-41b9-8c06-463f3a53ff67  /tmp                   btrfs   subvol=/@/tmp                      0  0
UUID=47c1c763-2b1c-41b9-8c06-463f3a53ff67  /srv                   btrfs   subvol=/@/srv                      0  0
UUID=47c1c763-2b1c-41b9-8c06-463f3a53ff67  /root                  btrfs   subvol=/@/root                     0  0
UUID=47c1c763-2b1c-41b9-8c06-463f3a53ff67  /opt                   btrfs   subvol=/@/opt                      0  0
UUID=47c1c763-2b1c-41b9-8c06-463f3a53ff67  /home                  btrfs   subvol=/@/home                     0  0
UUID=47c1c763-2b1c-41b9-8c06-463f3a53ff67  /boot/grub2/x86_64-efi btrfs   subvol=/@/boot/grub2/x86_64-efi  0  0
UUID=47c1c763-2b1c-41b9-8c06-463f3a53ff67  /boot/grub2/i386-pc    btrfs   subvol=/@/boot/grub2/i386-pc     0  0
UUID=06F4-C67F                             /boot/efi              vfat    utf8                               0  2
UUID=9ebce4c0-4338-46a4-a324-595c2d067637  swap                   swap    defaults                           0  0
UUID=47c1c763-2b1c-41b9-8c06-463f3a53ff67  /.snapshots            btrfs   subvol=/@/.snapshots               0  0
172.16.10.103:/zstor/naspool               /mnt/zstor            nfs     rw,user,defaults,noauto            0  0
172.16.10.103:/nfstest/nfs1                /mnt/nfs1             nfs     user,proto=udp,vers=3,noauto          0  0
172.16.10.103:/nfstest/nfs2                /mnt/nfs2             nfs     user,proto=udp,vers=3,noauto          0  0
172.16.10.103:/nfstest/nfs3                /mnt/nfs3             nfs     user,proto=udp,vers=3,noauto          0  0
d17-suse:/home/onemantech #
```

```
d17-suse:/home/onemantech # showmount -e 172.16.10.103
Export list for 172.16.10.103:
d17-suse:/home/onemantech #
```

//manual export of shares and mounting, confirmation of version 3 and protocol udp

```
d17-suse:/home/onemantech # exportfs -v -o rw,sync,no_subtree_check 172.16.10.103:/nfstest/nfs1
exportfs: No file systems exported!
exporting 172.16.10.103:/nfstest/nfs1
d17-suse:/home/onemantech #
d17-suse:/home/onemantech # exportfs -v -o rw,sync,no_subtree_check 172.16.10.103:/nfstest/nfs2
exportfs: No file systems exported!
exporting 172.16.10.103:/nfstest/nfs2
d17-suse:/home/onemantech #
d17-suse:/home/onemantech # exportfs -v -o rw,sync,no_subtree_check 172.16.10.103:/nfstest/nfs3
exportfs: No file systems exported!
exporting 172.16.10.103:/nfstest/nfs3
d17-suse:/home/onemantech #
```

```
onemantech@d17-suse:~> mount -v -t nfs 172.16.10.103:/nfstest/nfs1 /mnt/nfs1
mount.nfs: timeout set for Thu Oct 16 17:25:46 2025
mount.nfs: trying text-based options 'proto=udp,vers=3,addr=172.16.10.103'
mount.nfs: prog 100003, trying vers=3, prot=17
mount.nfs: trying 172.16.10.103 prog 100003 vers 3 prot UDP port 2049
mount.nfs: prog 100005, trying vers=3, prot=17
mount.nfs: trying 172.16.10.103 prog 100005 vers 3 prot UDP port 20048
onemantech@d17-suse:~>
onemantech@d17-suse:~> mount -v -t nfs 172.16.10.103:/nfstest/nfs2 /mnt/nfs2
mount.nfs: timeout set for Thu Oct 16 17:25:53 2025
mount.nfs: trying text-based options 'proto=udp,vers=3,addr=172.16.10.103'
mount.nfs: prog 100003, trying vers=3, prot=17
mount.nfs: trying 172.16.10.103 prog 100003 vers 3 prot UDP port 2049
mount.nfs: prog 100005, trying vers=3, prot=17
mount.nfs: trying 172.16.10.103 prog 100005 vers 3 prot UDP port 20048
onemantech@d17-suse:~>
onemantech@d17-suse:~> mount -v -t nfs 172.16.10.103:/nfstest/nfs3 /mnt/nfs3
mount.nfs: timeout set for Thu Oct 16 17:25:59 2025
mount.nfs: trying text-based options 'proto=udp,vers=3,addr=172.16.10.103'
mount.nfs: prog 100003, trying vers=3, prot=17
mount.nfs: trying 172.16.10.103 prog 100003 vers 3 prot UDP port 2049
mount.nfs: prog 100005, trying vers=3, prot=17
mount.nfs: trying 172.16.10.103 prog 100005 vers 3 prot UDP port 20048
onemantech@d17-suse:~>
```

```
172.16.10.103:/nfstest/nfs1 on /mnt/nfs1 type nfs (rw,nosuid,nodev,noexec,relatime,vers=3,rsize=32768,wsize=32768,namlen=255,hard,proto=udp,timeo=11,retrans=3,sec=sys,moun
taddr=172.16.10.103,mountvers=3,mountport=20048,mountproto=udp,local_lock=none,addr=172.16.10.103,user=onemantech)
172.16.10.103:/nfstest/nfs2 on /mnt/nfs2 type nfs (rw,nosuid,nodev,noexec,relatime,vers=3,rsize=32768,wsize=32768,namlen=255,hard,proto=udp,timeo=11,retrans=3,sec=sys,moun
taddr=172.16.10.103,mountvers=3,mountport=20048,mountproto=udp,local_lock=none,addr=172.16.10.103,user=onemantech)
172.16.10.103:/nfstest/nfs3 on /mnt/nfs3 type nfs (rw,nosuid,nodev,noexec,relatime,vers=3,rsize=32768,wsize=32768,namlen=255,hard,proto=udp,timeo=11,retrans=3,sec=sys,moun
taddr=172.16.10.103,mountvers=3,mountport=20048,mountproto=udp,local_lock=none,addr=172.16.10.103,user=onemantech)
onemantech@d17-suse:~>
```

//enlarged

```
172.16.10.103:/nfstest/nfs1 on /mnt/nfs1 type nfs (rw,nosuid,no
taddr=172.16.10.103,mountvers=3,mountport=20048,mountproto=udp,
172.16.10.103:/nfstest/nfs2 on /mnt/nfs2 type nfs (rw,nosuid,no
taddr=172.16.10.103,mountvers=3,mountport=20048,mountproto=udp,
172.16.10.103:/nfstest/nfs3 on /mnt/nfs3 type nfs (rw,nosuid,no
taddr=172.16.10.103,mountvers=3,mountport=20048,mountproto=udp,
onemantech@d17-suse:~>
```

```
d17-suse:/home/onemantech # mount -v -t nfs -o vers=3,proto=udp 172.16.10.103:/nfstest/nfs1 /mnt/nfs1
mount.nfs: timeout set for Thu Oct 16 17:42:06 2025
mount.nfs: trying text-based options 'vers=3,proto=udp,addr=172.16.10.103'
mount.nfs: prog 100003, trying vers=3, prot=17
mount.nfs: trying 172.16.10.103 prog 100003 vers 3 prot UDP port 2049
mount.nfs: prog 100005, trying vers=3, prot=17
mount.nfs: trying 172.16.10.103 prog 100005 vers 3 prot UDP port 20048
d17-suse:/home/onemantech #
d17-suse:/home/onemantech #
```