

SYSTEM ADMINISTRATION

LAB ASSIGNMENT : NFS

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NFS Server

Install NFS Package on your Ubuntu Server

```
sudo apt-get install nfs-kernel-server
```

```
anupam@anupam-Inspiron-7548:~$ sudo apt-get install nfs-kernel-server
Reading package lists... Done
Building dependency tree
Reading state information... Done
The following NEW packages will be installed:
  nfs-kernel-server
0 upgraded, 1 newly installed, 0 to remove and 22 not upgraded.
Need to get 88.0 kB of archives.
After this operation, 487 kB of additional disk space will be used.
Get:1 http://in.archive.ubuntu.com/ubuntu xenial-updates/main amd64 nfs-kernel-server amd64 1:1.2.8-9ubuntu12.1 [88.0 kB]
Fetched 88.0 kB in 3s (27.3 kB/s)
Selecting previously unselected package nfs-kernel-server.
(Reading database ... 228054 files and directories currently installed.)
Preparing to unpack .../nfs-kernel-server_1%3a1.2.8-9ubuntu12.1_amd64.deb ...
Unpacking nfs-kernel-server (1:1.2.8-9ubuntu12.1) ...
Processing triggers for systemd (229-4ubuntu21.2) ...
Processing triggers for ureadahead (0.100.0-19) ...
ureadahead will be reprofiled on next reboot
Processing triggers for man-db (2.7.5-1) ...
Setting up nfs-kernel-server (1:1.2.8-9ubuntu12.1) ...

Creating config file /etc/exports with new version
Creating config file /etc/default/nfs-kernel-server with new version
Processing triggers for systemd (229-4ubuntu21.2) ...
Processing triggers for ureadahead (0.100.0-19) ...
```

Create Folder List to Share

This example I will be sharing my whole RAID folder with any user (except root) in my LAN.

```
sudo nano /etc/exports
```

Add the following line to the end of the exports file.

The spacing is very important, e.g. there is no space between the IP address and Options list.

```
/mnt/raiddisk 192.168.1.0/255.255.255.0(rw, sync, root_squash, subtree_check)
```

```
anupam@anupam-Inspiron-7548:~$ cat /etc/exports
# /etc/exports: the access control list for filesystems which may be exported
# 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)
#
/home/anupam/xyz 192.168.43.241/255.255.255.0(rw,sync,root_squash,subtree_check)
anupam@anupam-Inspiron-7548:~$
```

```
anupam@anupam-Inspiron-7548:~$ touch xyz/abcd.text
```

Start NFS Service

```
sudo service nfs-kernel-server start
```

```
anupam@anupam-Inspiron-7548:~$ sudo service nfs-kernel-server start
```

If all is well you will see the message:

```
* Exporting directories for NFS kernel daemon... [ OK ]
* Starting NFS kernel daemon [ OK ]
```

Otherwise if there is an error you can stop the NFS service, and then go back and edit the Export list.

```
sudo service nfs-kernel-server stop
```

NFS Clients

Install NFS Client Package

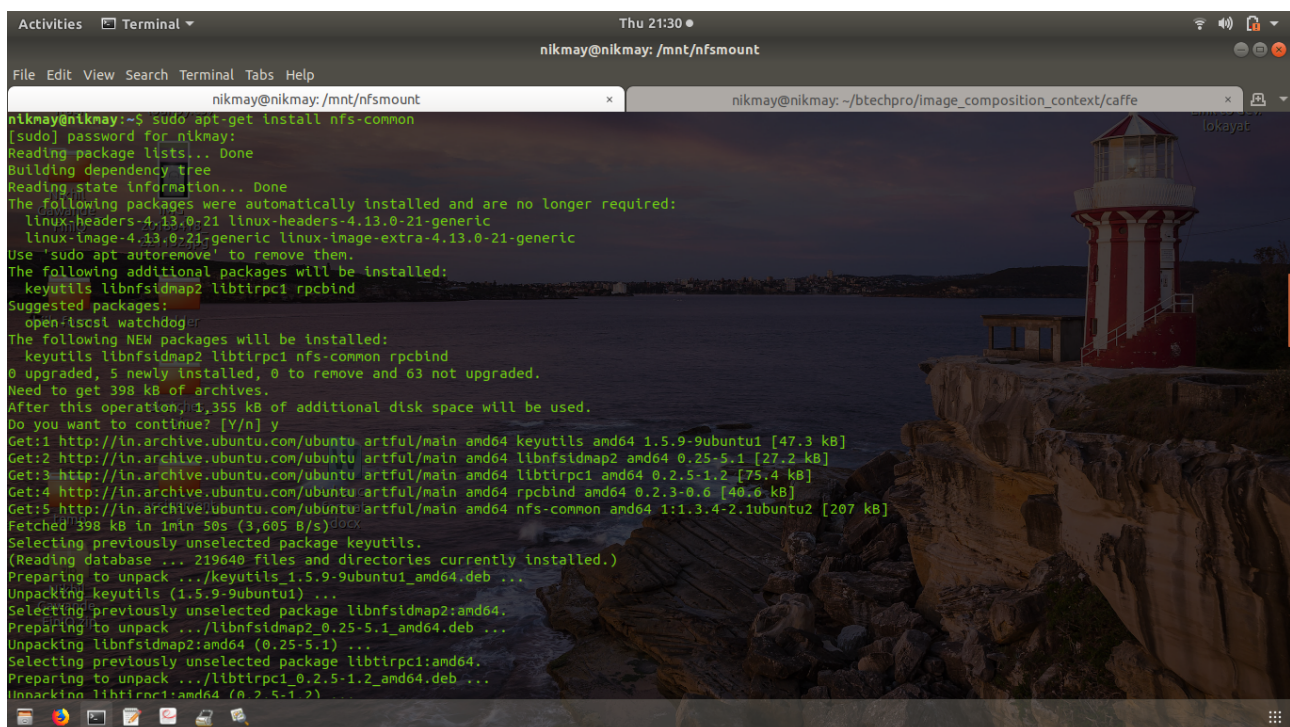
```
sudo apt-get install nfs-common
```

Create Mount Point

You could either create a mount point under the /mnt folder, or use your home folder.

Here is how to create a folder under /mnt:

```
sudo mkdir /mnt/nfsmount
```

A terminal window titled 'nikmay@nikmay: /mnt/nfsmount' showing the command 'sudo apt-get install nfs-common' being executed. The output displays the package lists, dependency tree, and the installation of nfs-common along with other packages like keyutils, libnfsidmap2, libtirpc1, and rpcbind. The terminal also shows the disk space requirements and the progress of downloading and unpacking the packages. The background of the terminal window features a scenic image of a lighthouse on a rocky cliff overlooking the ocean.

```
nikmay@nikmay:~$ sudo apt-get install nfs-common
[sudo] password for nikmay:
Reading package lists... Done
Building dependency tree
Reading state information... Done
The following packages were automatically installed and are no longer required:
  linux-headers-4.13.0-21 linux-headers-4.13.0-21-generic
  linux-image-4.13.0-21-generic linux-image-extra-4.13.0-21-generic
Use 'sudo apt autoremove' to remove them.
The following additional packages will be installed:
  keyutils libnfsidmap2 libtirpc1 rpcbind
Suggested packages:
  openiscsi watchdog
The following NEW packages will be installed:
  keyutils libnfsidmap2 libtirpc1 nfs-common rpcbind
0 upgraded, 5 newly installed, 0 to remove and 63 not upgraded.
Need to get 398 kB of archives.
After this operation, 1,355 kB of additional disk space will be used.
Do you want to continue? [Y/n] y
Get:1 http://in.archive.ubuntu.com/ubuntu/artful/main amd64 keyutils amd64 1.5.9-9ubuntu1 [47.3 kB]
Get:2 http://in.archive.ubuntu.com/ubuntu/artful/main amd64 libnfsidmap2 amd64 0.25-5.1 [27.2 kB]
Get:3 http://in.archive.ubuntu.com/ubuntu/artful/main amd64 libtirpc1 amd64 0.2.5-1.2 [75.4 kB]
Get:4 http://in.archive.ubuntu.com/ubuntu/artful/main amd64 rpcbind amd64 0.2.3-0.6 [40.0 kB]
Get:5 http://in.archive.ubuntu.com/ubuntu/artful/main amd64 nfs-common amd64 1:1.3.4-2.1ubuntu2 [207 kB]
Fetched 398 kB in 1min 50s (3,605 B/s)
Selecting previously unselected package keyutils.
(Reading database ... 219640 files and directories currently installed.)
Preparing to unpack .../keyutils_1.5.9-9ubuntu1_amd64.deb ...
Unpacking keyutils (1.5.9-9ubuntu1) ...
Selecting previously unselected package libnfsidmap2:amd64.
Preparing to unpack .../libnfsidmap2_0.25-5.1_amd64.deb ...
Unpacking libnfsidmap2:amd64 (0.25-5.1) ...
Selecting previously unselected package libtirpc1:amd64.
Preparing to unpack .../libtirpc1_0.2.5-1.2_amd64.deb ...
Unpacking libtirpc1:amd64 (0.2.5-1.2) ...
```

Edit fstab

(Substitute nano for your favorite text editor)

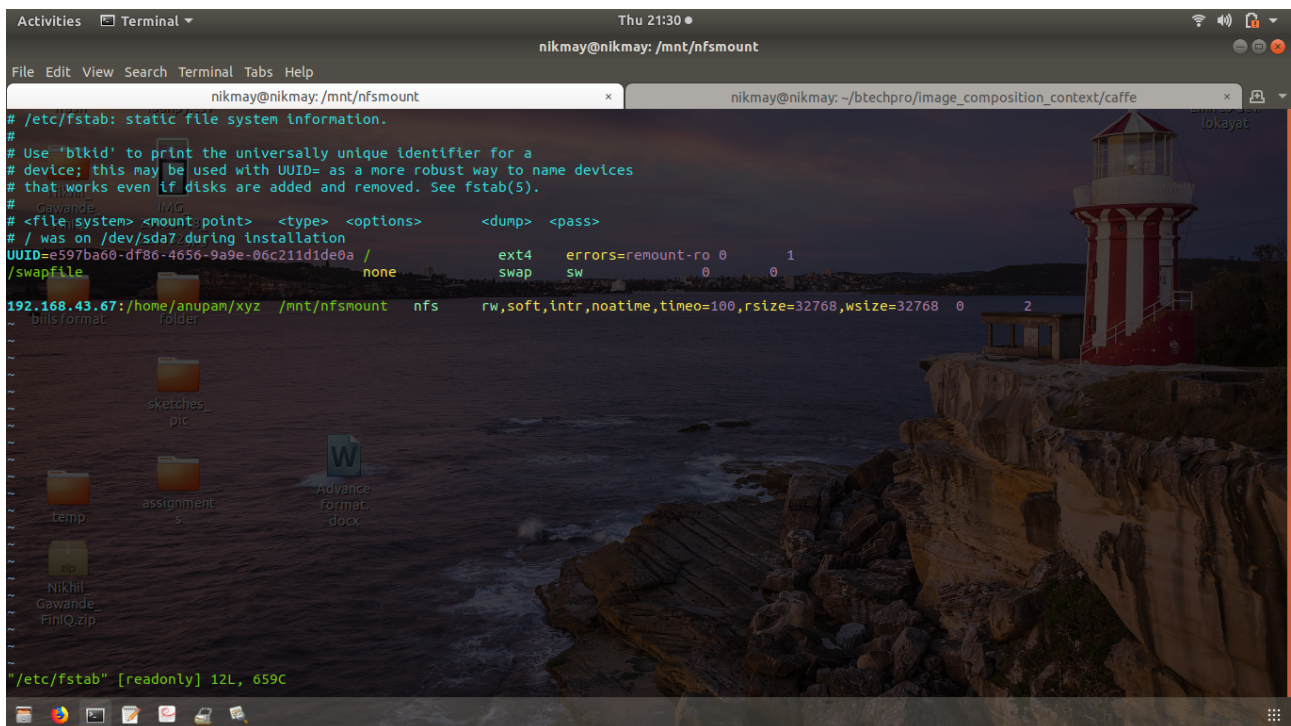
```
sudo nano /etc/fstab
```

Add the following line to the end of the fstab file:

```
ServerIP:/ServerFolder ClientFolder nfs Options dump pass
```

For Example:

```
192.168.1.100:/mnt/raiddisk /mnt/nfsmount nfs  
rw,soft,intr,noatime,timeo=100,rsize=32768,wsiz=32768 0 2
```



Accessing the file:

```
nikmay@nikmay:/mnt/nfsmount$ ls  
a abcd.text  
nikmay@nikmay:/mnt/nfsmount$
```