

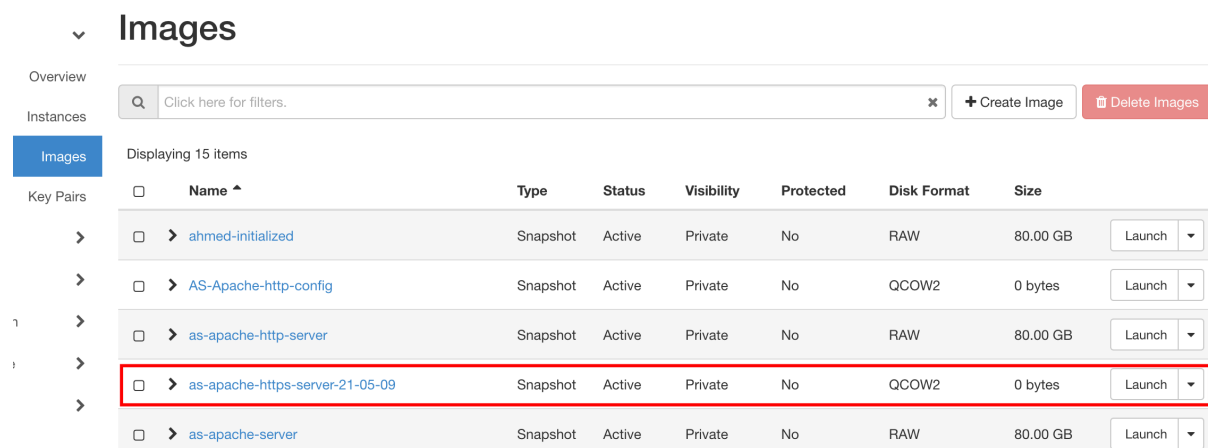
# NFS configuration to Ubuntu20 - TotD 2.0

## Abdullah Sajal

**Learning Goal:** Configuring NFS file share service to Linux for sharing files and directories across servers

### Task 1: Snapshot backup from Pouta

I have taken a snapshot backup of my server from Pouta Dashboard. Name: *as-apache-https-server-21-05-09*



The screenshot shows the Pouta Images dashboard. On the left, there is a sidebar with 'Overview' and 'Instances' tabs, and a 'Key Pairs' section. The main area is titled 'Images' and shows 'Displaying 15 items'. At the top, there is a search bar and buttons for '+ Create Image' and 'Delete Images'. Below is a table of images with columns: Name, Type, Status, Visibility, Protected, Disk Format, and Size. The table lists several snapshots, with the one 'as-apache-https-server-21-05-09' highlighted by a red box. Each row has a 'Launch' button.

Name	Type	Status	Visibility	Protected	Disk Format	Size
ahmed-initialized	Snapshot	Active	Private	No	RAW	80.00 GB
AS-Apache-http-config	Snapshot	Active	Private	No	QCOW2	0 bytes
as-apache-http-server	Snapshot	Active	Private	No	RAW	80.00 GB
as-apache-https-server-21-05-09	Snapshot	Active	Private	No	QCOW2	0 bytes
as-apache-server	Snapshot	Active	Private	No	RAW	80.00 GB

### Task 2: Create a new host for NFS server setup to Pouta (Launch new Instance)

SSH key generate:

```
as@as-server-tech21:~$ ssh-keygen
```

```

as@as-server-tech21:~$ pwd
/home/as
as@as-server-tech21:~$ ssh-keygen
Generating public/private rsa key pair.
Enter file in which to save the key (/home/as/.ssh/id_rsa):
Enter passphrase (empty for no passphrase):
Enter same passphrase again:
Your identification has been saved in /home/as/.ssh/id_rsa
Your public key has been saved in /home/as/.ssh/id_rsa.pub
The key fingerprint is:
SHA256:BrW7SrtR/I7cNSP8GQd3o0w9Tfn8G+0U8/cnp07ho1w as@as-server-tech21
The key's randomart image is:
+----[RSA 3072]-----+
|
|   .
|  . .
| . . .
|  o . . . .
|   S   + o+o
|  o + . = **
|   o . + * E.O
|  . = + = X.=B
|   +.o o =.o=*
+-----[SHA256]-----+

```

SSH public key for user 'as'

```

as@as-server-tech21:~$ cat .ssh/id_rsa.pub
ssh-rsa AAAAB3NzaC1yc2EAAAADAQABAAQGC915nArmfXm+F+PCrt7YZ/XG7wQ6DfEmx4IvPTIL6fpX/
kGU3Ayc0nS38pKis+SqVibYw62nQ6EdL+EoYciVWSwjJ+y77wGu7lpc9sT8x+KcZKz5rCiHJaM+xX+heWzw
yz3g3svH03NPxxN0oZ0JzoXd+RdZawW8LCbQTszp3+iZP5VJOAFWq000HXcReJXypoEchY5kdUbWnn1JU/V
9yN8j7A30wk3t3IuJjqP2EUfMxHKUNK8S18/HAYggqHrw0HEljRDdzLuo0a9YT96yj0p+8K1Uou2HJ/APChT
2c1ru0ibwF0UCAohSkuDDLx/f4xlJPFnb2fRId2o+M6jwJg9VnplqE50wypijfXx0z5onaJ4s1gZXFZ60i6
1lVXzQ9A32IdqigVcm706UyDyXHqYEnjKrtpmJEsxo06iolezaU5H0zqq88hcBYv92dNcM9FFSgo9qw9zyi
OFih/iWanBr3hrYANP6uq0FoeHok0tfICGunboUN/AMyMsHDLIAB8= as@as-server-tech21

```

Create a new Security Group in Pouta dashboard:

The security group name is “Allow all internal traffic”

Compute

Volumes

Network

Network Topology

Networks

Routers

Security Groups

Floating IPs

Orchestration

Object Store

Manage Security Group Rules: Allow all internal traffic (5984614c-a647-4728-a479-e72e328f692d)

+ Add Rule

Delete Rules

Displaying 4 items

<input type="checkbox"/>	Direction	Ether Type	IP Protocol	Port Range	Remote IP Prefix	Remote Security Group	Actions
<input type="checkbox"/>	Egress	IPv4	Any	Any	0.0.0.0/0	-	Delete Rule
<input type="checkbox"/>	Egress	IPv6	Any	Any	::/0	-	Delete Rule
<input type="checkbox"/>	Ingress	IPv4	ICMP	Any	192.168.1.0/24	-	Delete Rule
<input type="checkbox"/>	Ingress	IPv4	TCP	Any	192.168.1.7/24	-	Delete Rule

Launch new instance:

Name the new Instance is “mssserver” with key pair name “as-pouta-nfs” and security group name “Allow all internal traffic”

## Instances

Overview

Instances

Images

Displaying 4 items

Key Pairs

	Instance Name	Image Name	IP Address	Flavor	Key Pair	Status	Availability Zone	Task	Power State	Time since created	Actions
>	msserver	Ubuntu-20.04	192.168.1.16	standard.tiny	as-pouta-nfs	Active	nova	None	Running	1 hour, 15 minutes	Create Snapshot
>	as-server-tech21	-	192.168.1.7 Floating IPs: 193.166.25.246	standard.tiny	ST21	Active	nova	None	Running	3 days, 13 hours	Create Snapshot

```
as@as-server-tech21:~$ ping 192.168.1.16
PING 192.168.1.16 (192.168.1.16) 56(84) bytes of data.
64 bytes from 192.168.1.16: icmp_seq=1 ttl=64 time=0.699 ms
64 bytes from 192.168.1.16: icmp_seq=2 ttl=64 time=0.686 ms
64 bytes from 192.168.1.16: icmp_seq=3 ttl=64 time=1.35 ms
64 bytes from 192.168.1.16: icmp_seq=4 ttl=64 time=0.607 ms
^C
```

**Task 3: Configure the new host according to the general instructions for Pouta hosts.**

```
ubuntu@msserver:~$ sudo useradd -u 1381 -m -s /bin/bash as
ubuntu@msserver:~$ sudo useradd -u 1371 -m -s /bin/bash edawg
ubuntu@msserver:~$ sudo useradd -u 1391 -m -s /bin/bash ef
ubuntu@msserver:~$
```

```
ubuntu@msserver:~$ sudo -i
root@msserver:~# cd ~as
root@msserver:/home/as# cp -p -r ~ubuntu/.ssh .
root@msserver:/home/as# ls -la
total 24
drwxr-xr-x 3 as      as      4096 May 10 01:09 .
drwxr-xr-x 6 root    root    4096 May 10 01:07 ..
-rw-r--r-- 1 as      as      220  Feb 25  2020 .bash_logout
-rw-r--r-- 1 as      as     3771  Feb 25  2020 .bashrc
-rw-r--r-- 1 as      as      807  Feb 25  2020 .profile
drwx----- 2 ubuntu ubuntu 4096 May  9 23:37 .ssh
root@msserver:/home/as# chown -R as:as .ssh/
root@msserver:/home/as# chmod 600 .ssh/authorized_keys
root@msserver:/home/as# exit
logout
```

```
root@msserver:~# vi /etc/sudoers.d/
root@msserver:~# vi /etc/sudoers.d/90-cloud-init-users
root@msserver:~# exit
logout
ubuntu@msserver:~$ exit
logout
Connection to 192.168.1.16 closed.
as@as-server-tech21:~$ exit
logout
Connection to 193.166.25.246 closed.
```

```
# User rules for ubuntu
ubuntu ALL=(ALL) NOPASSWD:ALL
as ALL=(ALL) NOPASSWD:ALL
~
```

#### Task 4: Install the required the NFS packages

First update apt and install the packages for host server and client server

On the Host:

```
as@msserver:~$ sudo apt update
as@msserver:~$ sudo apt upgrade
as@msserver:~$ sudo apt install nfs-kernel-server
```

On the client:

```
as@as-server-tech21:~$ sudo apt update
as@as-server-tech21:~$ sudo apt upgrade
as@as-server-tech21:~$ sudo apt install nfs-common
```

#### Task 5: Configure server to share a directory that contains the tips files.

```
as@msserver:~$ sudo mkdir /var/nfs/general -p
```

```
as@msserver:~$ sudo chown nobody:nogroup /var/nfs/general
```

```
as@msserver:~$ cd /var/nfs/general/
as@msserver:/var/nfs/general$ sudo mkdir tips
as@msserver:/var/nfs/general$ sudo chown -R as:as tips
as@msserver:/var/nfs/general$ cd tips/
as@msserver:/var/nfs/general/tips$ vi 1.txt
as@msserver:/var/nfs/general/tips$
```

```
as@msserver:~$ sudo vi /etc/exports
as@msserver:~$ sudo systemctl restart nfs-kernel-server
as@msserver:~$ sudo systemctl status nfs-kernel-server
● nfs-server.service - NFS server and services
   Loaded: loaded (/lib/systemd/system/nfs-server.service; enabled; vendor
   Active: active (exited) since Mon 2021-05-10 01:48:46 UTC; 9s ago
     Process: 20615 ExecStartPre=/usr/sbin/exportfs -r (code=exited, status=0
     Process: 20616 ExecStart=/usr/sbin/rpc.nfsd $RPCNFSDARGS (code=exited, s
    Main PID: 20616 (code=exited, status=0/SUCCESS)

May 10 01:48:45 msserver systemd[1]: Starting NFS server and services...
May 10 01:48:46 msserver systemd[1]: Finished NFS server and services.
```

## Task 6: Configure the client host for accessing the directory from NFS server

```
as@as-server-tech21:~$ sudo mkdir -p /nfs/general
as@as-server-tech21:~$ sudo mkdir -p /nfs/home
as@as-server-tech21:~$ sudo mount 192.168.1.16:/var/nfs/general /nfs/general

as@as-server-tech21:~$ cd /nfs/general/
as@as-server-tech21:/nfs/general$ ls
tips
as@as-server-tech21:/nfs/general$ cd tips/
as@as-server-tech21:/nfs/general/tips$ ls
1.txt
as@as-server-tech21:/nfs/general/tips$ cat 1.txt
NFS command to mount:

sudo mount 192.168.1.16:/var/nfs/general /nfs/general
as@as-server-tech21:/nfs/general/tips$ sudo vi /etc/fstab
as@as-server-tech21:/nfs/general/tips$ sudo vi /etc/fstab
```

```
as@as-server-tech21: /nfs/general/tips
File Edit View Search Terminal Help
LABEL=cloudimg-rootfs / ext4 defaults 0 1
LABEL=UEFI /boot/efi vfat defaults 0 1
msserver:/var/nfs/general /nfs/general nfs auto,nofail,noatime,nolock,intr,tcp,actimeo=1800 0 0
~
```

as@as-server-tech21:~\$ sudo vi /etc/hosts

```
as@as-server-tech21: /nfs/general/tips
File Edit View Search Terminal Help
127.0.0.1 localhost

# The following lines are desirable for IPv6 capable hosts
::1 ip6-localhost ip6-loopback
fe00::0 ip6-localnet
ff00::0 ip6-mcastprefix
ff02::1 ip6-allnodes
ff02::2 ip6-allrouters
ff02::3 ip6-allhosts

192.168.1.16 msserver
~
```

## Task 7: Modify and configure the TotD script to access files from NFS server instead of local disk.

```

as@msserver:~$ exit
logout
Connection to 192.168.1.16 closed.
as@as-server-tech21:~$ ssh 192.168.1.16
Enter passphrase for key '/home/as/.ssh/id_rsa':
Welcome to Ubuntu 20.04.2 LTS (GNU/Linux 5.4.0-72-generic x86_64)

 * Documentation:  https://help.ubuntu.com
 * Management:    https://landscape.canonical.com
 * Support:       https://ubuntu.com/advantage

System information as of Mon May 10 12:31:54 UTC 2021

System load:  0.0               Processes:           117
Usage of /:   1.9% of 77.36GB   Users logged in:    1
Memory usage: 25%              IPv4 address for ens3: 192.168.1.16
Swap usage:   0%

 * Pure upstream Kubernetes 1.21, smallest, simplest cluster ops!

https://microk8s.io/

```

```

=====
TIP OF TODAY (/home/as/scripts/tips/6.txt)
-----
# Author: Abdullah Sajal <abdullah.sajal@tuni.fi>
# Date: 2021-03-23
#
# Answer to exercise "6.1 Gzip1 1"
# Give command to compresss "file.txt" with `gzip(1)` using best posi
ble compression.
# === Answer start ===

gzip --best file.txt

gzip -d file.txt.gz
gunzip file.txt.gz

# End of file
=====
as@msserver:~$ █

```

**Task 7: Make sure the configuration is permanent.**

Boot both hosts to verify the configuration.