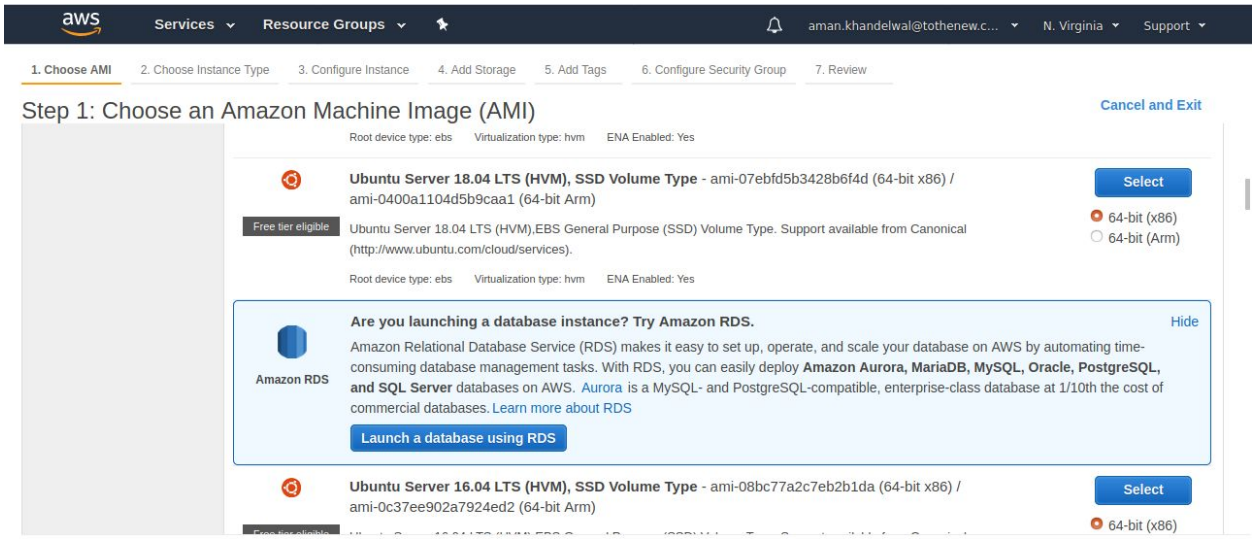
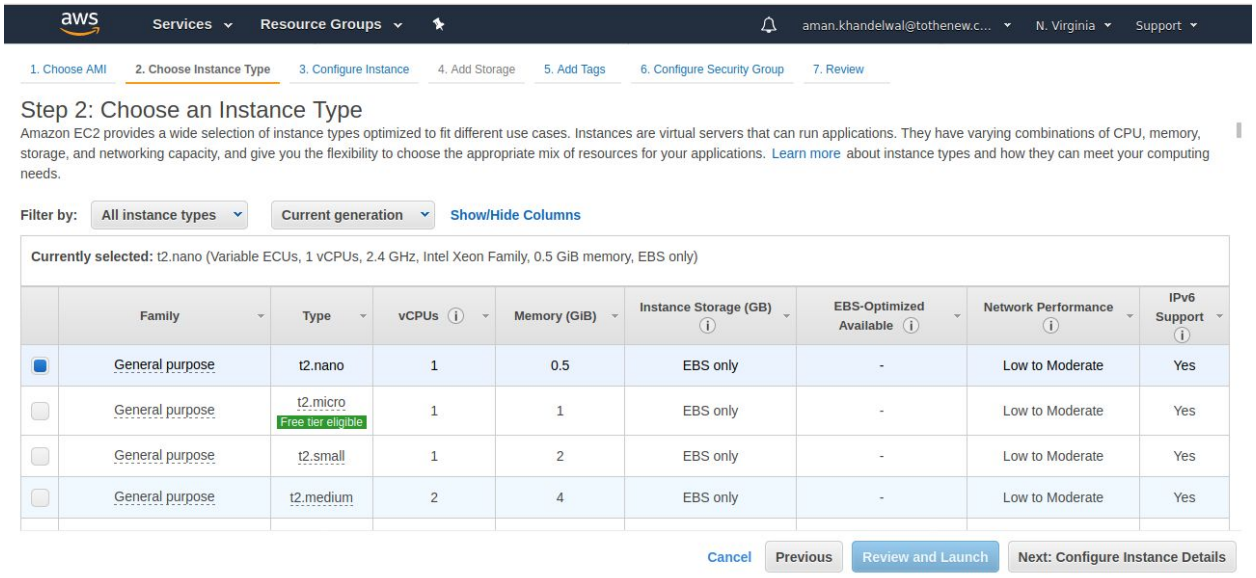
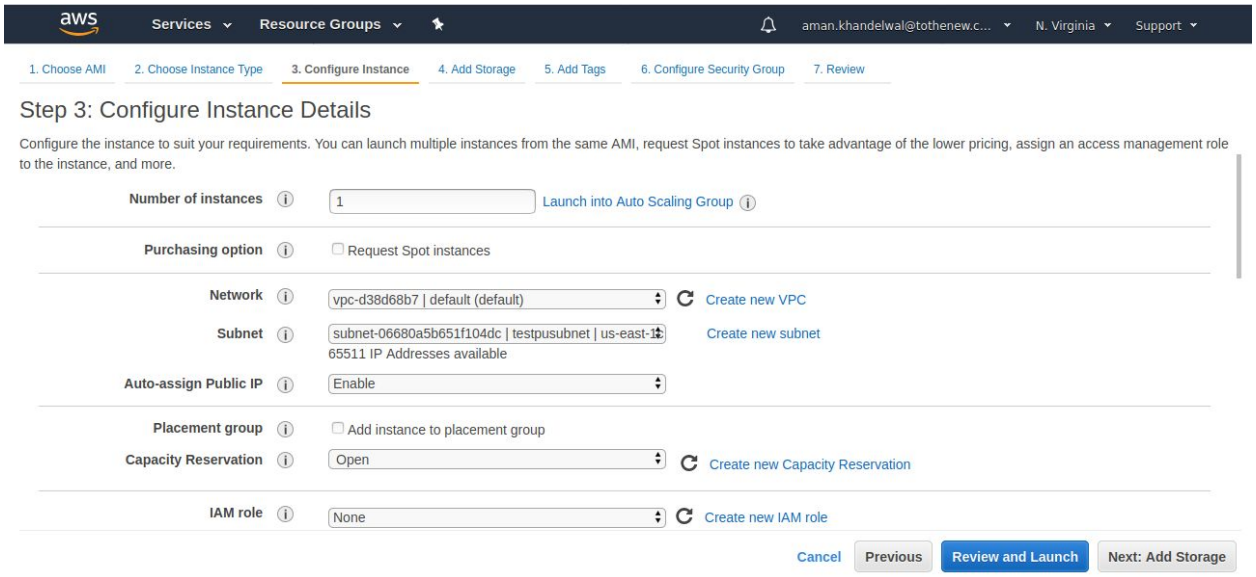
Assignment EC2 and EBS

1. Create an EC2 instance (Ubunutu 18.04, T3 nano).(instance A)
2. Create AMI of above instance and launch it. (instance B)
3. Attach EBS (8 GB) on that running instance.
4. Stop, Start, Restart that EBS (EBS must be auto-attached).
5. Make some mistake in fstab file, stop and start the instance, then troubleshoot it.
6. Resize the EBS from 8 to 10GB
7. SSH from one instance A to instance B.
8. Copy the EBS in different region(oregon).
9. Deatach the root EBS, create its snapshot, than create the AMI and run it as instance such that nginx should be preinstalled at the boot time of instance.

Question 1: Create an EC2 instance (Ubunutu 18.04, T3 nano).(instance A)
Solution 1.




aws
Services
Resource Groups
aman.khandelwal@tothenew.c...
N. Virginia
Support
1. Choose AMI
2. Choose Instance Type
3. Configure Instance
4. Add Storage
5. Add Tags
6. Configure Security Group
7. Review
Step 2: Choose an Instance Type
Amazon EC2 provides a wide selection of instance types optimized to fit different use cases. Instances are virtual servers that can run applications. They have varying combinations of CPU, memory, storage, and networking capacity, and give you the flexibility to choose the appropriate mix of resources for your applications. Learn more about instance types and how they can meet your computing needs.
Filter by:
All instance types
Current generation
Show/Hide Columns
Currently selected: t2.nano (Variable ECUs, 1 vCPUs, 2.4 GHz, Intel Xeon Family, 0.5 GiB memory, EBS only)
Family
Type
vCPUs
Memory (GiB)
Instance Storage (GB)
EBS-Optimized Available
Network Performance
IPv6 Support
General purpose
t2.nano
1
0.5
EBS only
-
Low to Moderate
Yes
General purpose
t2.micro
Free tier eligible
1
1
EBS only
-
Low to Moderate
Yes
General purpose
t2.small
1
2
EBS only
-
Low to Moderate
Yes
General purpose
t2.medium
2
4
EBS only
-
Low to Moderate
Yes
Cancel
Previous
Review and Launch
Next: Configure Instance Details


aws
Services
Resource Groups
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N. Virginia
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1. Choose AMI
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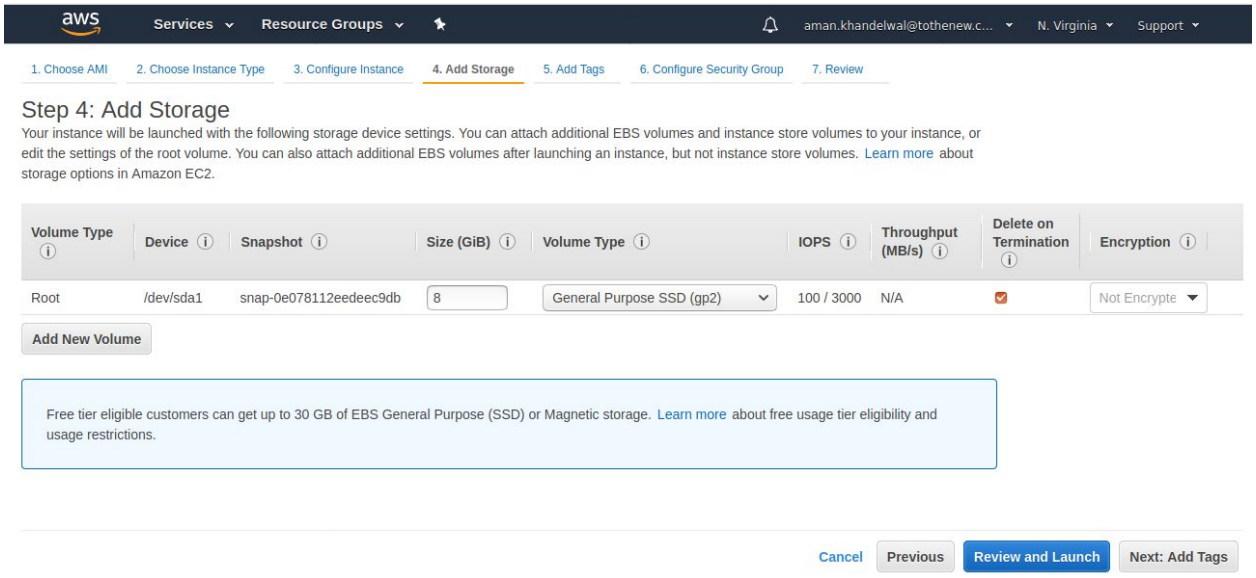
7. Review
Step 3: Configure Instance Details
Configure the instance to suit your requirements. You can launch multiple instances from the same AMI, request Spot instances to take advantage of the lower pricing, assign an access management role to the instance, and more.
Number of instances
1
Launch into Auto Scaling Group
Purchasing option
Request Spot instances
Network
vpc-d38d68b7 | default (default)
Create new VPC
Subnet
subnet-06680a5b651f104dc | testpusubnet | us-east-1
Create new subnet
65511 IP Addresses available
Auto-assign Public IP
Enable
Placement group
Add instance to placement group
Capacity Reservation
Open
Create new Capacity Reservation
IAM role
None
Create new IAM role
Cancel
Previous
Review and Launch
Next: Add Storage


aws
Services
Resource Groups
aman.khandelwal@tothenew.c...
N. Virginia
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1. Choose AMI
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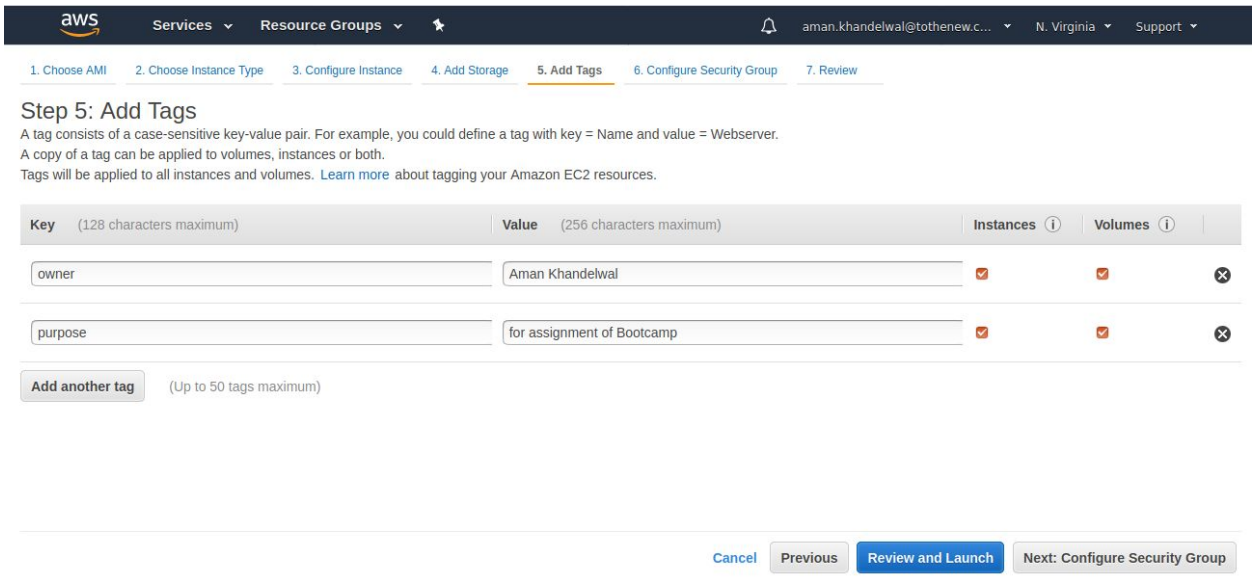
7. Review
Step 4: Add Storage
Your instance will be launched with the following storage device settings. You can attach additional EBS volumes and instance store volumes to your instance, or edit the settings of the root volume. You can also attach additional EBS volumes after launching an instance, but not instance store volumes. Learn more about storage options in Amazon EC2.
Volume Type
Device
Snapshot
Size (GiB)
Volume Type
IOPS
Throughput (MB/s)
Delete on Termination
Encryption
Root
/dev/sda1
snap-0e078112eedeec9db
8
General Purpose SSD (gp2)
100 / 3000
N/A
Not Encrypte
Add New Volume
Free tier eligible customers can get up to 30 GB of EBS General Purpose (SSD) or Magnetic storage. Learn more about free usage tier eligibility and usage restrictions.
Cancel
Previous
Review and Launch
Next: Add Tags


aws
Services
Resource Groups
aman.khandelwal@tothenew.c...
N. Virginia
Support
1. Choose AMI
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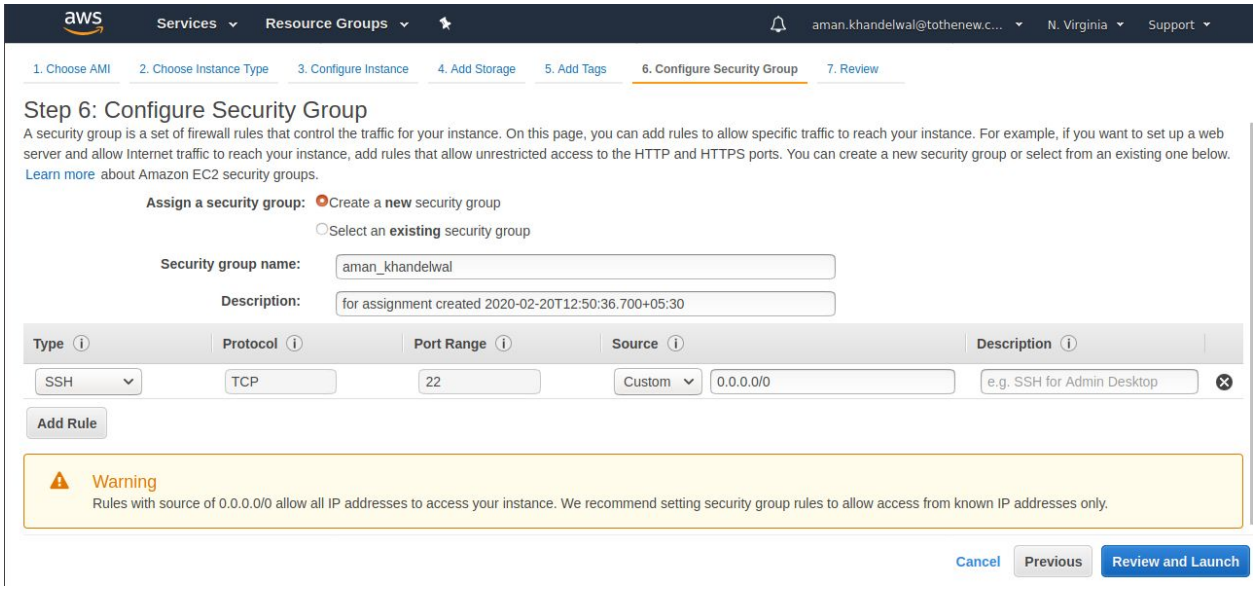
5. Add Tags
6. Configure Security Group
7. Review
Step 5: Add Tags
A tag consists of a case-sensitive key-value pair. For example, you could define a tag with key = Name and value = Webserver.
A copy of a tag can be applied to volumes, instances or both.
Tags will be applied to all instances and volumes. Learn more about tagging your Amazon EC2 resources.
Key (128 characters maximum)
Value (256 characters maximum)
Instances
Volumes
owner
Aman Khandelwal
purpose
for assignment of Bootcamp
Add another tag
(Up to 50 tags maximum)
Cancel
Previous
Review and Launch
Next: Configure Security Group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Resource Groups
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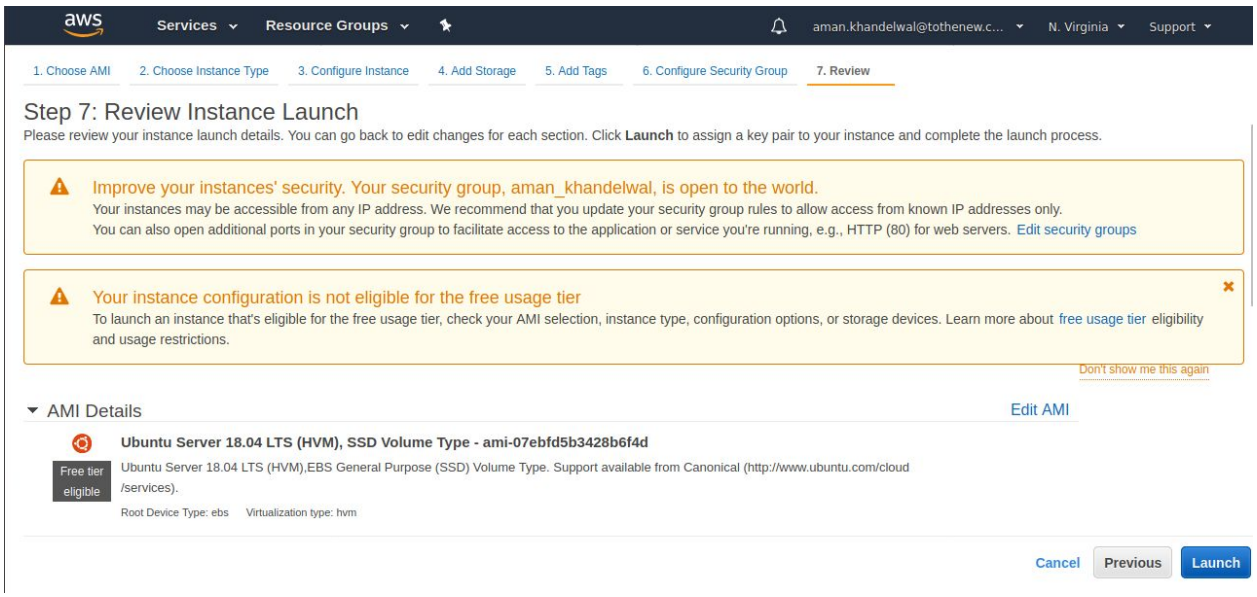
7. Review
Step 6: Configure Security Group
A security group is a set of firewall rules that control the traffic for your instance. On this page, you can add rules to allow specific traffic to reach your instance. For example, if you want to set up a web server and allow Internet traffic to reach your instance, add rules that allow unrestricted access to the HTTP and HTTPS ports. You can create a new security group or select from an existing one below.
Learn more about Amazon EC2 security groups.
Assign a security group: Create a new security group
Select an existing security group
Security group name: aman_khandelwal
Description: for assignment created 2020-02-20T12:50:36.700+05:30
Type
Protocol
Port Range
Source
Description
SSH
TCP
22
Custom
0.0.0.0/0
e.g. SSH for Admin Desktop
Add Rule
Warning
Rules with source of 0.0.0.0/0 allow all IP addresses to access your instance. We recommend setting security group rules to allow access from known IP addresses only.
Cancel
Previous
Review and Launch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Resource Groups
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Step 7: Review Instance Launch
Please review your instance launch details. You can go back to edit changes for each section. Click Launch to assign a key pair to your instance and complete the launch process.
Improve your instances' security. Your security group, aman_khandelwal, is open to the world.
Your instances may be accessible from any IP address. We recommend that you update your security group rules to allow access from known IP addresses only.
You can also open additional ports in your security group to facilitate access to the application or service you're running, e.g., HTTP (80) for web servers. Edit security groups
Your instance configuration is not eligible for the free usage tier
To launch an instance that's eligible for the free usage tier, check your AMI selection, instance type, configuration options, or storage devices. Learn more about free usage tier eligibility and usage restrictions.
Don't show me this again
AMI Details
Edit AMI
Ubuntu Server 18.04 LTS (HVM), SSD Volume Type - ami-07ebfd5b3428b6f4d
Free tier eligible
Ubuntu Server 18.04 LTS (HVM),EBS General Purpose (SSD) Volume Type. Support available from Canonical (http://www.ubuntu.com/cloud/services).
Root Device Type: ebs
Virtualization type: hvm
Cancel
Previous
Launch

Select an existing key pair or create a new key pair

A key pair consists of a **public key** that AWS stores, and a **private key file** that you store. Together, they allow you to connect to your instance securely. For Windows AMIs, the private key file is required to obtain the password used to log into your instance. For Linux AMIs, the private key file allows you to securely SSH into your instance.

Note: The selected key pair will be added to the set of keys authorized for this instance. Learn more about removing existing key pairs from a public AMI.

Create a new key pair

Key pair name

aman_khandelwal_key

Download Key Pair

You have to download the **private key file** (*.pem file) before you can continue. **Store it in a secure and accessible location.** You will not be able to download the file again after it's created.

Cancel Launch Instances

aws Services Resource Groups aman.khandelwal@tothenew.c... N. Virginia Support

Launch Status

Your instances are now launching
The following instance launches have been initiated: i-05d7183c1c45f489e View launch log

Get notified of estimated charges
Create billing alerts to get an email notification when estimated charges on your AWS bill exceed an amount you define (for example, if you exceed the free usage tier).

How to connect to your instances

Your instances are launching, and it may take a few minutes until they are in the **running** state, when they will be ready for you to use. Usage hours on your new instances will start immediately and continue to accrue until you stop or terminate your instances.

Click **View Instances** to monitor your instances' status. Once your instances are in the **running** state, you can **connect** to them from the Instances screen. Find out how to connect to your instances.

Here are some helpful resources to get you started

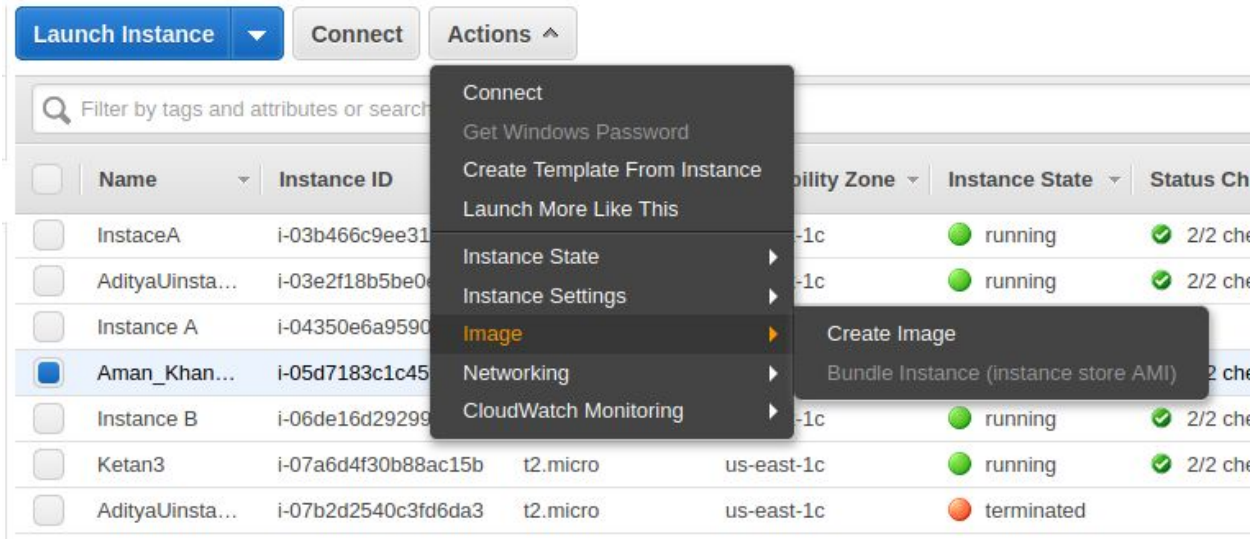
- How to connect to your Linux instance
- Learn about AWS Free Usage Tier
- Amazon EC2: User Guide
- Amazon EC2: Discussion Forum

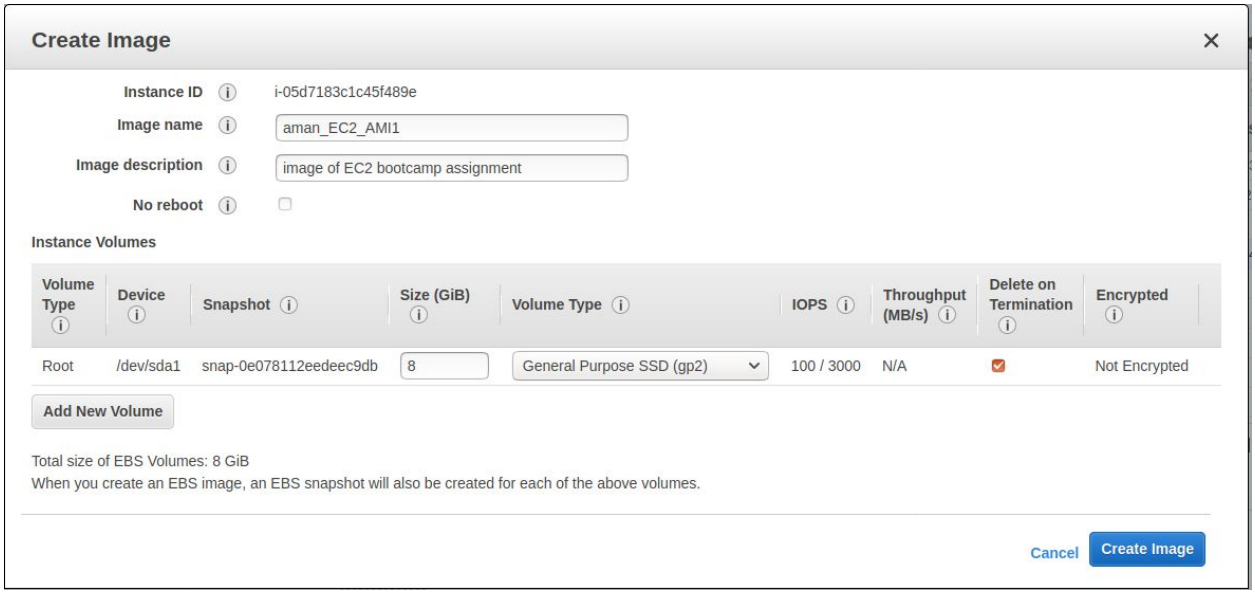
```
aman@Aman-Khandelwal:~/Downloads$ chmod 600 aman_khandelwal_key.pem
aman@Aman-Khandelwal:~/Downloads$ ssh -i ~/Downloads/aman_khandelwal_key.pem ubuntu@3.84.44.60
Welcome to Ubuntu 18.04.3 LTS (GNU/Linux 4.15.0-1057-aws x86_64)

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

  System information as of Thu Feb 20 07:36:08 UTC 2020

  System load:  0.0               Processes:           85
  Usage of /:   13.6% of 7.69GB   Users logged in:     0
  Memory usage: 30%               IP address for eth0: 172.31.229.221
  Swap usage:   0%

0 packages can be updated.
0 updates are security updates.



The programs included with the Ubuntu system are free software;
the exact distribution terms for each program are described in the
individual files in /usr/share/doc/*/copyright.

Ubuntu comes with ABSOLUTELY NO WARRANTY, to the extent permitted by
applicable law.

To run a command as administrator (user "root"), use "sudo <command>".
See "man sudo_root" for details.

ubuntu@ip-172-31-229-221:~$
```

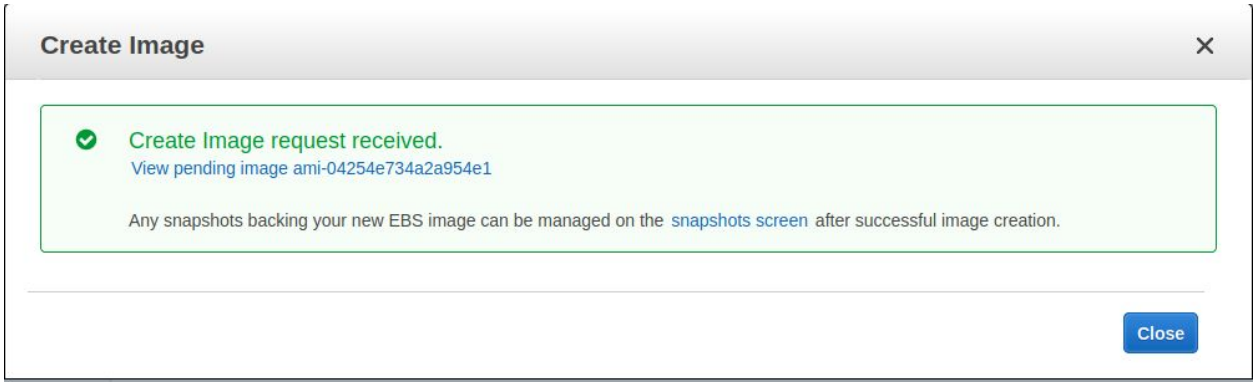
```
ubuntu@ip-172-31-229-221:~$ sudo apt-get install nginx
Reading package lists... Done
Building dependency tree
Reading state information... Done
The following additional packages will be installed:
  fontconfig-config fonts-dejavu-core libfontconfig1 libgd3 libjbig0 libjpeg-turbo8 libjpeg8
  libnginx-mod-http-geoip libnginx-mod-http-image-filter libnginx-mod-http-xslt-filter
  libnginx-mod-mail libnginx-mod-stream libtiff5 libwebp6 libxpm4 nginx-common nginx-core
Suggested packages:
  libgd-tools fcgiwrap nginx-doc ssl-cert
The following NEW packages will be installed:
  fontconfig-config fonts-dejavu-core libfontconfig1 libgd3 libjbig0 libjpeg-turbo8 libjpeg8
  libnginx-mod-http-geoip libnginx-mod-http-image-filter libnginx-mod-http-xslt-filter
  libnginx-mod-mail libnginx-mod-stream libtiff5 libwebp6 libxpm4 nginx nginx-common nginx-core
0 upgraded, 18 newly installed, 0 to remove and 49 not upgraded.
Need to get 2461 kB of archives.
After this operation, 8210 kB of additional disk space will be used.
Do you want to continue? [Y/n] y
Get:1 http://us-east-1.ec2.archive.ubuntu.com/ubuntu bionic-updates/main amd64 libjpeg-turbo8 amd64 1.5
.2-0ubuntu5.18.04.3 [110 kB]
Get:2 http://us-east-1.ec2.archive.ubuntu.com/ubuntu bionic/main amd64 fonts-dejavu-core all 2.37-1 [10
41 kB]
Get:3 http://us-east-1.ec2.archive.ubuntu.com/ubuntu bionic/main amd64 fontconfig-config all 2.12.6-0ub
untu2 [55.8 kB]
Get:4 http://us-east-1.ec2.archive.ubuntu.com/ubuntu bionic/main amd64 libfontconfig1 amd64 2.12.6-0ubu
ntu2 [137 kB]
Get:5 http://us-east-1.ec2.archive.ubuntu.com/ubuntu bionic/main amd64 libjpeg8 amd64 8c-2ubuntu8 [2194
 B]
```

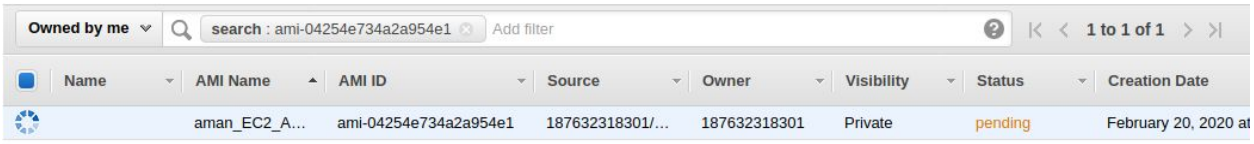
```
ubuntu@ip-172-31-229-221:~$ service nginx status
● nginx.service - A high performance web server and a reverse proxy server
   Loaded: loaded (/lib/systemd/system/nginx.service; enabled; vendor preset: enabled)
   Active: active (running) since Thu 2020-02-20 07:39:42 UTC; 54s ago
     Docs: man:nginx(8)
 Main PID: 2392 (nginx)
    Tasks: 2 (limit: 547)
   CGroup: /system.slice/nginx.service
           ├─2392 nginx: master process /usr/sbin/nginx -g daemon on; master_process on;
           └─2394 nginx: worker process

Feb 20 07:39:42 ip-172-31-229-221 systemd[1]: Starting A high performance web server and a reverse prox
Feb 20 07:39:42 ip-172-31-229-221 systemd[1]: nginx.service: Failed to parse PID from file /run/nginx.p
Feb 20 07:39:42 ip-172-31-229-221 systemd[1]: Started A high performance web server and a reverse proxy
lines 1-13/13 (END)
```

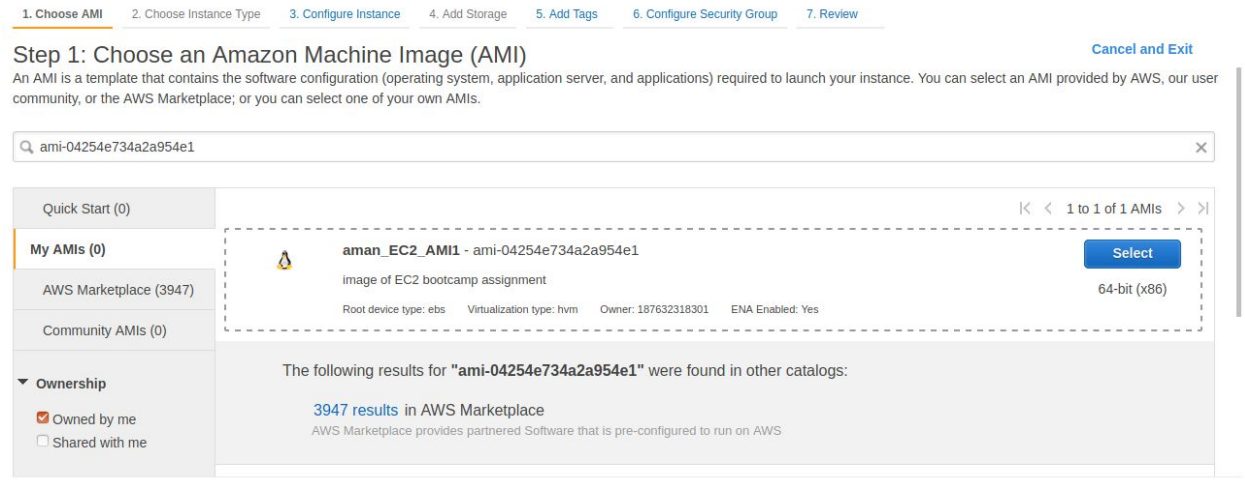
Question 2: Create AMI of above instance and launch it. (instance B)
Solution 2:-

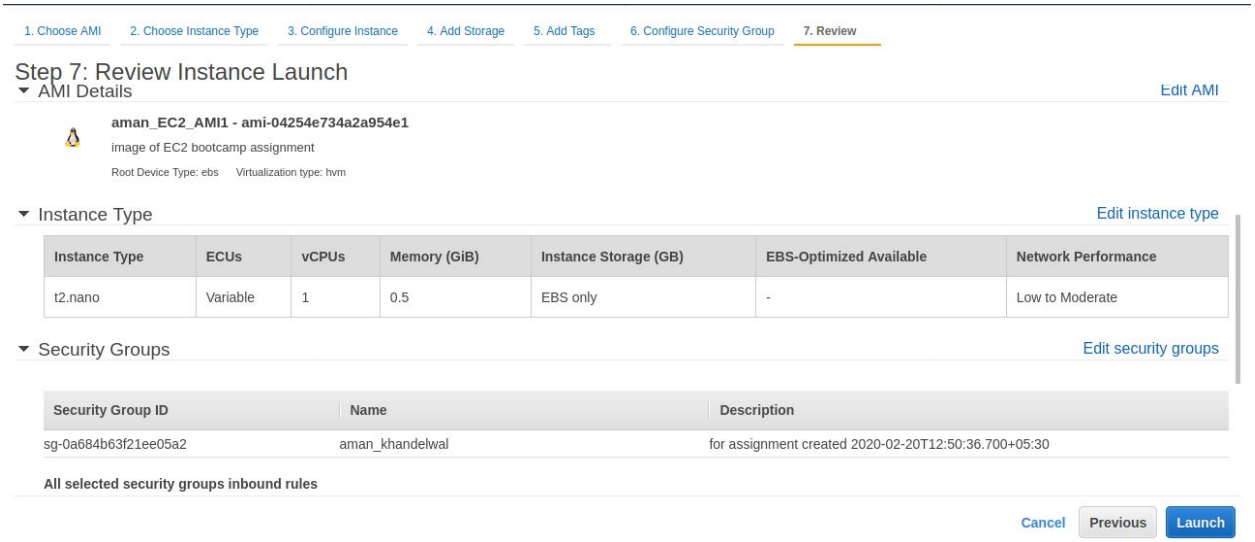


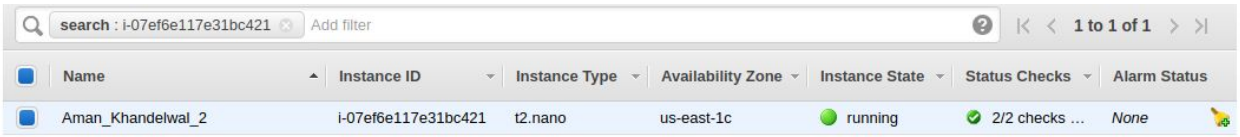



Create Image
Create Image request received.
View pending image ami-04254e734a2a954e1
Any snapshots backing your new EBS image can be managed on the snapshots screen after successful image creation.
Close


Owned by me
search : ami-04254e734a2a954e1
Add filter
1 to 1 of 1
Name
AMI Name
AMI ID
Source
Owner
Visibility
Status
Creation Date
aman_EC2_A...
ami-04254e734a2a954e1
187632318301/...
187632318301
Private
pending
February 20, 2020 at

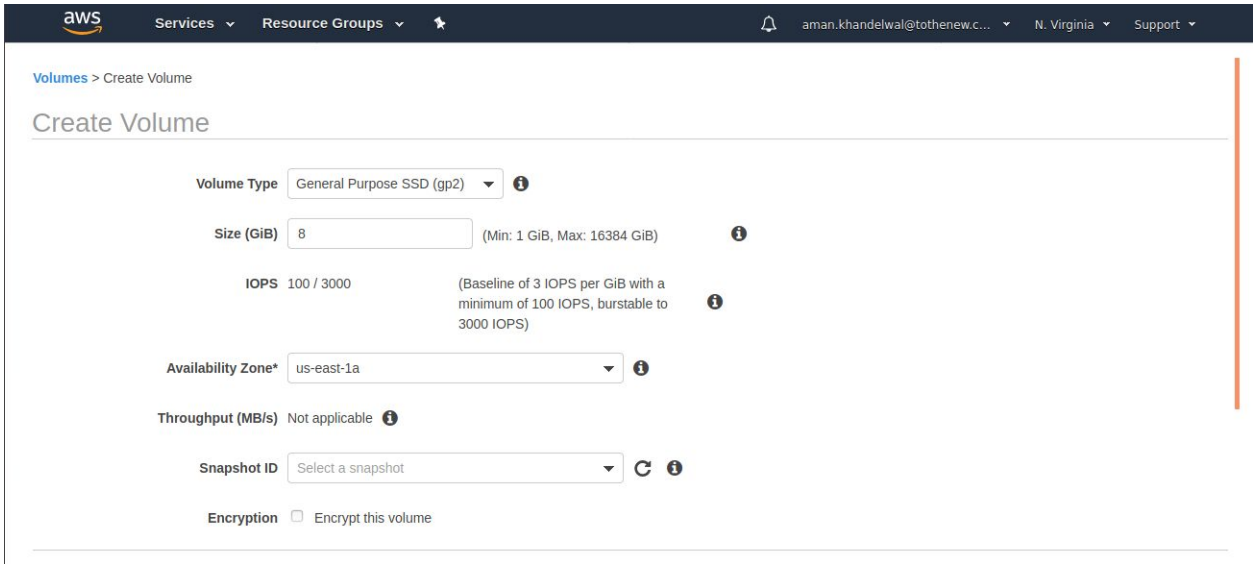

1. Choose AMI
2. Choose Instance Type
3. Configure Instance
4. Add Storage
5. Add Tags
6. Configure Security Group
7. Review
Step 1: Choose an Amazon Machine Image (AMI)
Cancel and Exit
An AMI is a template that contains the software configuration (operating system, application server, and applications) required to launch your instance. You can select an AMI provided by AWS, our user community, or the AWS Marketplace; or you can select one of your own AMIs.
ami-04254e734a2a954e1
Quick Start (0)
My AMIs (0)
AWS Marketplace (3947)
Community AMIs (0)
Ownership
Owned by me
Shared with me
1 to 1 of 1 AMIs
aman_EC2_AMI1 - ami-04254e734a2a954e1
image of EC2 bootcamp assignment
Root device type: ebs
Virtualization type: hvm
Owner: 187632318301
ENA Enabled: Yes
Select
64-bit (x86)
The following results for "ami-04254e734a2a954e1" were found in other catalogs:
3947 results in AWS Marketplace
AWS Marketplace provides partnered Software that is pre-configured to run on AWS

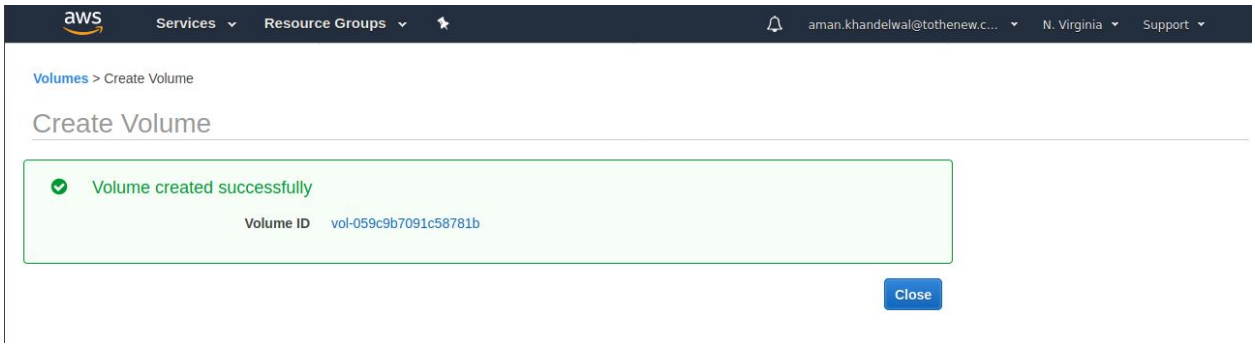

1. Choose AMI
2. Choose Instance Type
3. Configure Instance
4. Add Storage
5. Add Tags
6. Configure Security Group
7. Review
Step 7: Review Instance Launch
AMI Details
Edit AMI
aman_EC2_AMI1 - ami-04254e734a2a954e1
image of EC2 bootcamp assignment
Root Device Type: ebs
Virtualization type: hvm
Instance Type
Edit instance type
Instance Type
ECUs
vCPUs
Memory (GiB)
Instance Storage (GB)
EBS-Optimized Available
Network Performance
t2.nano
Variable
1
0.5
EBS only
-
Low to Moderate
Security Groups
Edit security groups
Security Group ID
Name
Description
sg-0a684b63f21ee05a2
aman_khandelwal
for assignment created 2020-02-20T12:50:36.700+05:30
All selected security groups inbound rules
Cancel
Previous
Launch

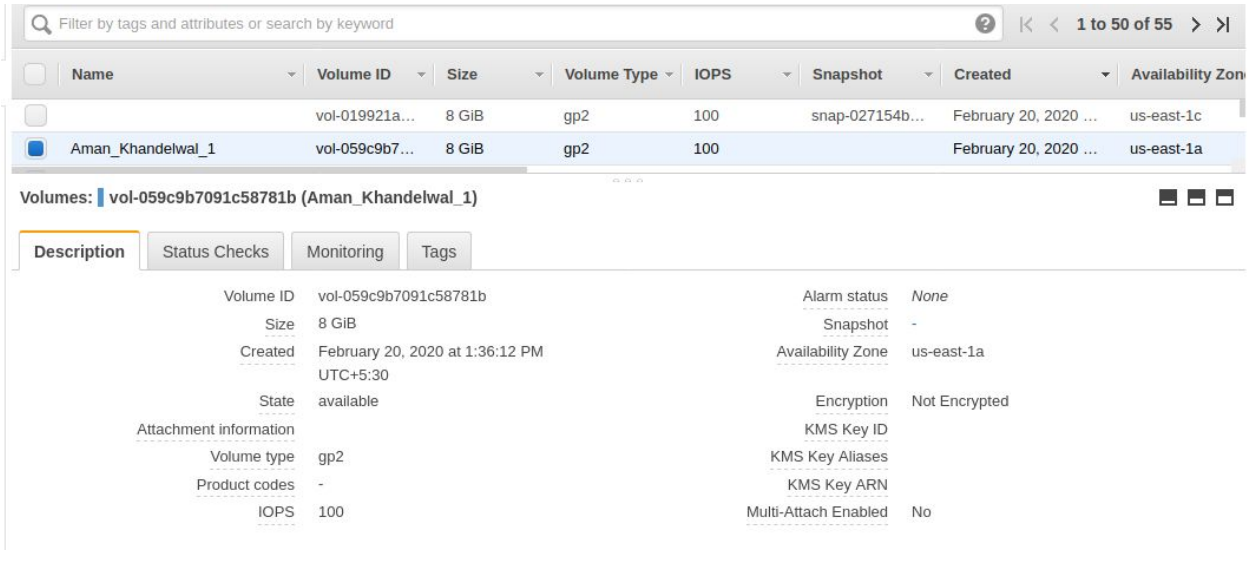


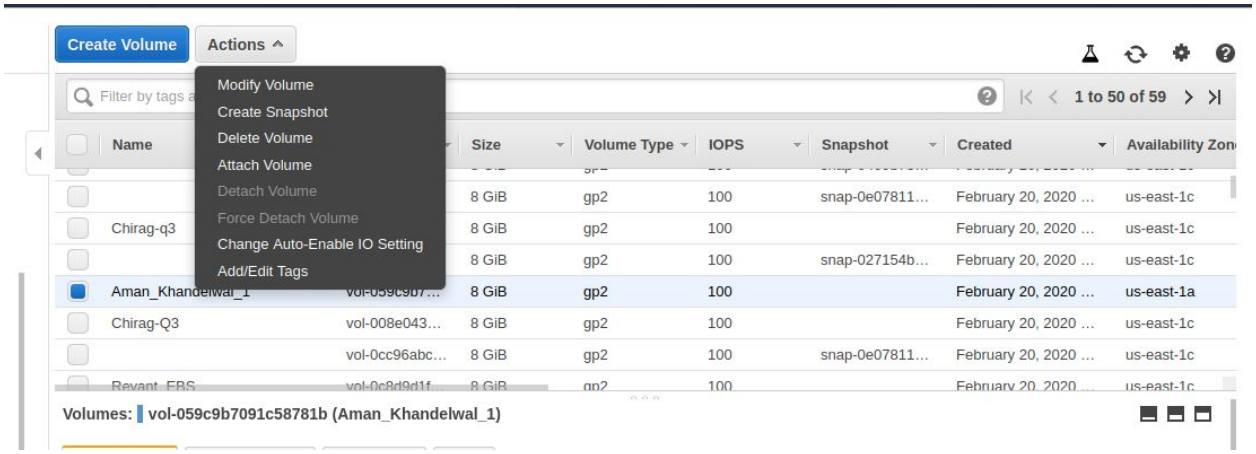
Question 3: Attach EBS (8 GB) on that running instance.

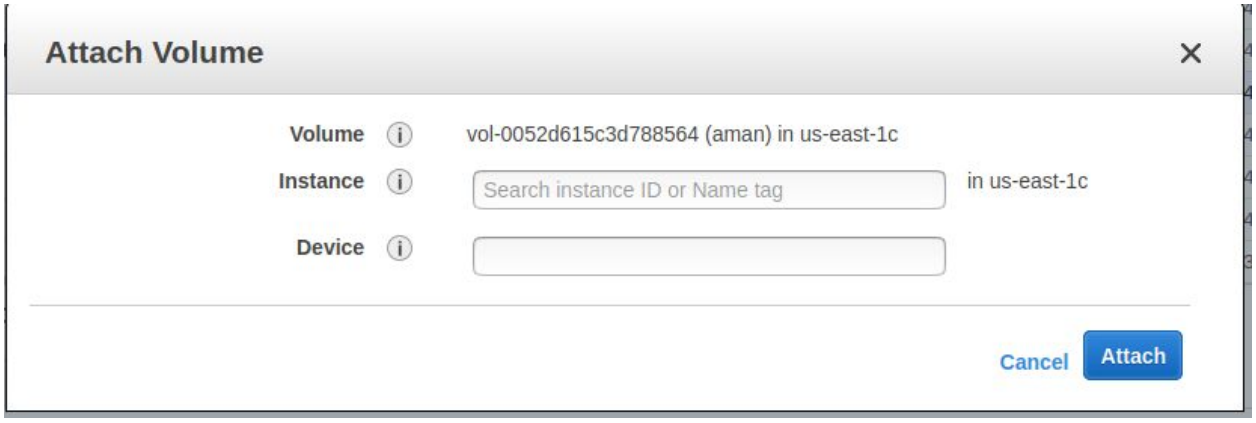
Solution 3:

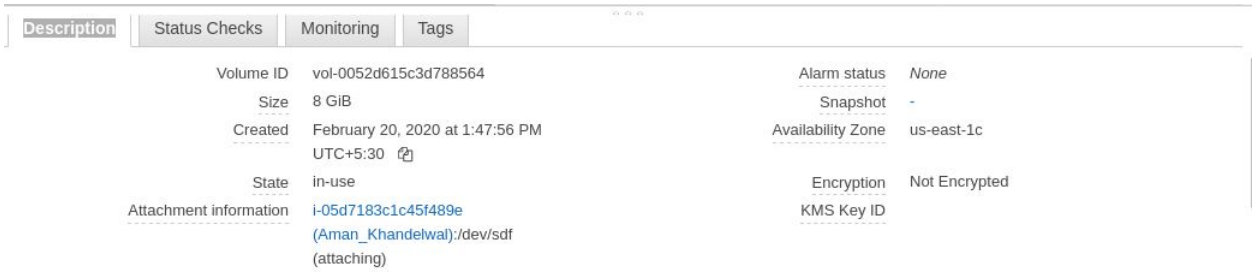





Filter by tags and attributes or search by keyword
1 to 50 of 55
Name
Volume ID
Size
Volume Type
IOPS
Snapshot
Created
Availability Zone
vol-019921a...
8 GiB
gp2
100
snap-027154b...
February 20, 2020 ...
us-east-1c
Aman_Khandelwal_1
vol-059c9b7...
8 GiB
gp2
100
February 20, 2020 ...
us-east-1a
Volumes: vol-059c9b7091c58781b (Aman_Khandelwal_1)
Description
Status Checks
Monitoring
Tags
Volume ID
vol-059c9b7091c58781b
Size
8 GiB
Created
February 20, 2020 at 1:36:12 PM UTC+5:30
State
available
Attachment information
Volume type
gp2
Product codes
-
IOPS
100
Alarm status
None
Snapshot
-
Availability Zone
us-east-1a
Encryption
Not Encrypted
KMS Key ID
KMS Key Aliases
KMS Key ARN
Multi-Attach Enabled
No


Create Volume
Actions
Modify Volume
Create Snapshot
Delete Volume
Attach Volume
Detach Volume
Force Detach Volume
Change Auto-Enable IO Setting
Add/Edit Tags
1 to 50 of 59
Name
Size
Volume Type
IOPS
Snapshot
Created
Availability Zone
Chirag-q3
Aman_Khandelwal_1
Chirag-Q3
vol-008e043...
vol-0cc96abc...
snap-0e07811...
snap-027154b...
February 20, 2020 ...
us-east-1c
us-east-1a
Volumes: vol-059c9b7091c58781b (Aman_Khandelwal_1)


Attach Volume
Volume
vol-0052d615c3d788564 (aman) in us-east-1c
Instance
Search instance ID or Name tag
in us-east-1c
Device
Cancel
Attach




```
ubuntu@ip-172-31-229-221:~$ lsblk
NAME    MAJ:MIN RM  SIZE RO TYPE MOUNTPOINT
loop0     7:0    0   18M  1 loop /snap/amazon-ssm-agent/1480
loop1     7:1    0 89.1M  1 loop /snap/core/8268
xvda    202:0    0    8G  0 disk
└─xvda1 202:1    0    8G  0 part /
xvdf    202:80   0    8G  0 disk
ubuntu@ip-172-31-229-221:~$ df -h
Filesystem      Size  Used Avail Use% Mounted on
udev            229M     0  229M   0% /dev
tmpfs            48M  752K   48M   2% /run
/dev/xvda1      7.7G  1.3G  6.5G  16% /
tmpfs           240M     0  240M   0% /dev/shm
tmpfs           5.0M     0  5.0M   0% /run/lock
tmpfs           240M     0  240M   0% /sys/fs/cgroup
/dev/loop0       18M   18M     0 100% /snap/amazon-ssm-agent/1480
/dev/loop1       90M   90M     0 100% /snap/core/8268
tmpfs            48M     0   48M   0% /run/user/1000
```

```
ubuntu@ip-172-31-229-221:~$ lsblk
NAME    MAJ:MIN RM  SIZE RO TYPE MOUNTPOINT
loop0     7:0    0   18M  1 loop /snap/amazon-ssm-agent/1480
loop1     7:1    0 89.1M  1 loop /snap/core/8268
xvda    202:0    0    8G  0 disk
└─xvda1 202:1    0    8G  0 part /
xvdf    202:80   0    8G  0 disk
```

```
ubuntu@ip-172-31-229-221:~$ sudo mkfs -t ext4 /dev/xvdf
mke2fs 1.44.1 (24-Mar-2018)
/dev/xvdf contains a ext4 file system
        created on Thu Feb 20 08:32:18 2020
Proceed anyway? (y,N) y
Creating filesystem with 2097152 4k blocks and 524288 inodes
Filesystem UUID: ca1281f3-1a2b-4817-94ea-4bad992de74f
Superblock backups stored on blocks:
        32768, 98304, 163840, 229376, 294912, 819200, 884736, 1605632

Allocating group tables: done
Writing inode tables: done
Creating journal (16384 blocks): done
Writing superblocks and filesystem accounting information: done
```

```
ubuntu@ip-172-31-229-221:~$ sudo mount /dev/xvdf /mnt/drive/
ubuntu@ip-172-31-229-221:~$ mount -a
mount: only root can use "--all" option
ubuntu@ip-172-31-229-221:~$ sudo mount -a
ubuntu@ip-172-31-229-221:~$ lsblk
NAME    MAJ:MIN RM  SIZE RO TYPE MOUNTPOINT
loop0     7:0    0   18M  1 loop /snap/amazon-ssm-agent/1480
loop1     7:1    0 89.1M  1 loop /snap/core/8268
xvda    202:0    0    8G  0 disk
└─xvda1 202:1    0    8G  0 part /
xvdf    202:80   0    8G  0 disk /mnt/drive
ubuntu@ip-172-31-229-221:~$
```

```
ubuntu@ip-172-31-229-221:/mnt/drive$ sudo touch abc.txt
ubuntu@ip-172-31-229-221:/mnt/drive$ sudo touch aman.txt
ubuntu@ip-172-31-229-221:/mnt/drive$ sudo touch test
ubuntu@ip-172-31-229-221:/mnt/drive$ ls
abc.txt  aman.txt  lost+found  test
ubuntu@ip-172-31-229-221:/mnt/drive$
```

Question 4: Stop, Start, Restart that EBS (EBS must be auto-attached).
Solution : 4

```
ubuntu@ip-172-31-229-221:~$ blkid
/dev/xvda1: LABEL="cloudimg-rootfs" UUID="c03b791b-60ef-4ae1-82b5-5c9ab6b4d08f" TYPE="ext4" PARTUUID="b32e823c-01"
/dev/xvdf: UUID="ca1281f3-1a2b-4817-94ea-4bad992de74f" TYPE="ext4"
ubuntu@ip-172-31-229-221:~$
```

```
                                                    ubuntu@ip-172-31-229-221: ~
File  Edit  View  Search  Terminal  Help
  GNU nano 2.9.3                                                    /etc/fstab

LABEL=cloudimg-rootfs   /        ext4   defaults,discard        0 0
UUID="ca1281f3-1a2b-4817-94ea-4bad992de74f"     /mnt/drive      ext4    defaults        0       0
```

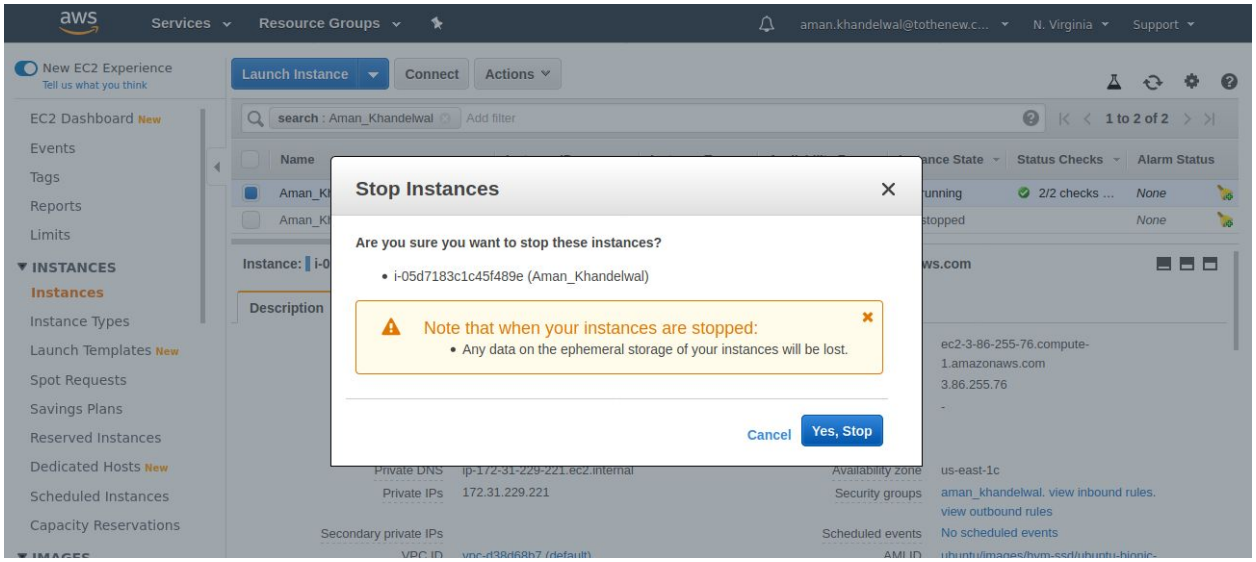
```
ubuntu@ip-172-31-229-221:~$ sudo findmnt --verify
/
   [W] recommended root FS passno is 1 (current is 0)

0 parse errors, 0 errors, 1 warning
ubuntu@ip-172-31-229-221:~$
```

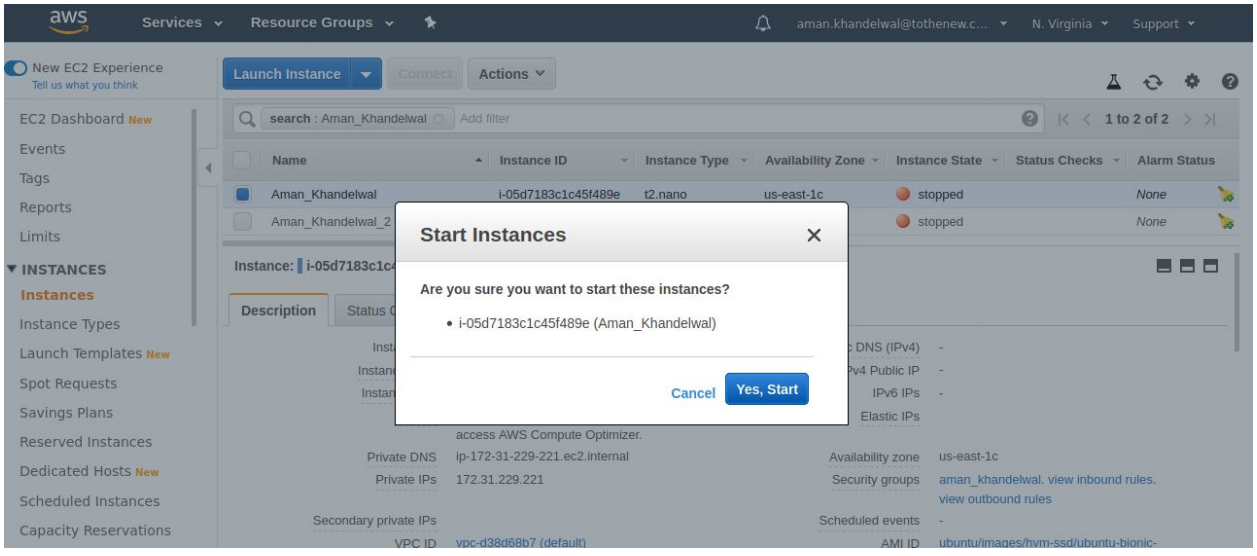
```
aman@Aman-Khandelwal:~/Downloads$ ssh -i aman_khandelwal_key.pem ubuntu@3.86.255.76
Welcome to Ubuntu 18.04.3 LTS (GNU/Linux 4.15.0-1057-aws x86_64)

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

  System information as of Thu Feb 20 19:53:41 UTC 2020

  System load:  0.3               Processes:           94
  Usage of /:   17.5% of 7.69GB   Users logged in:     0
  Memory usage: 30%               IP address for eth0: 172.31.229.221
  Swap usage:   0%

 * Multipass 1.0 is out! Get Ubuntu VMs on demand on your Linux, Windows or
   Mac. Supports cloud-init for fast, local, cloud devops simulation.

     https://multipass.run/

53 packages can be updated.
31 updates are security updates.


Last login: Thu Feb 20 19:50:43 2020 from 150.242.173.117
ubuntu@ip-172-31-229-221:~$ lsblk
NAME    MAJ:MIN RM  SIZE RO TYPE MOUNTPOINT
loop0     7:0    0   18M  1 loop /snap/amazon-ssm-agent/1480
loop1     7:1    0 89.1M  1 loop /snap/core/8268
loop2     7:2    0 91.4M  1 loop /snap/core/8689
xvda    202:0    0    8G  0 disk
└─xvda1 202:1    0    8G  0 part /
xvdf    202:80   0    8G  0 disk /mnt/drive
ubuntu@ip-172-31-229-221:~$
```

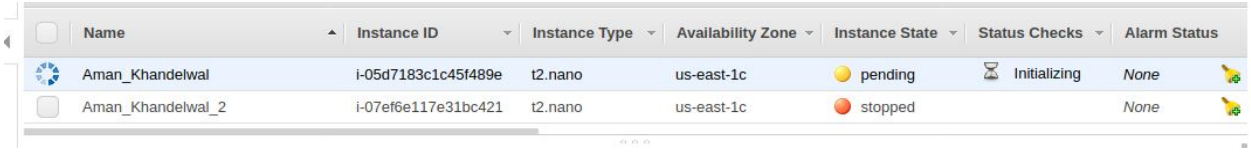
Question 5: - Make some mistake in fstab file, stop and start the instance, then troubleshoot it.

Solution 5 : -

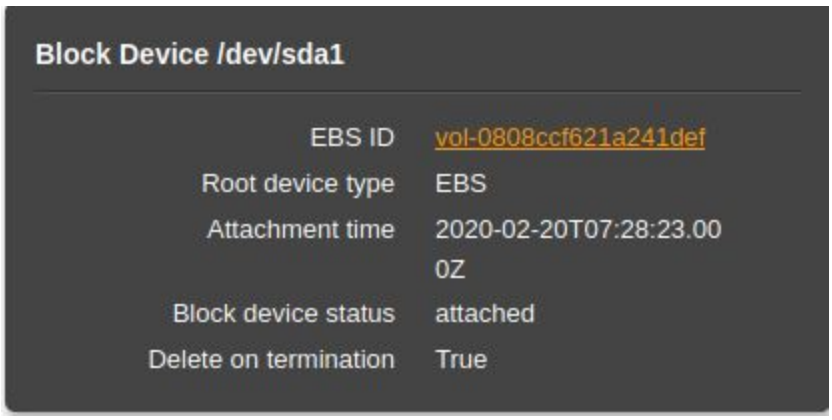
```
ubuntu@ip-172-31-229-221:~$ mv /etc/fstab /etc/fstab1
mv: cannot move '/etc/fstab' to '/etc/fstab1': Permission denied
ubuntu@ip-172-31-229-221:~$ sudo mv /etc/fstab /etc/fstab1
ubuntu@ip-172-31-229-221:~$ ls /etc/
```

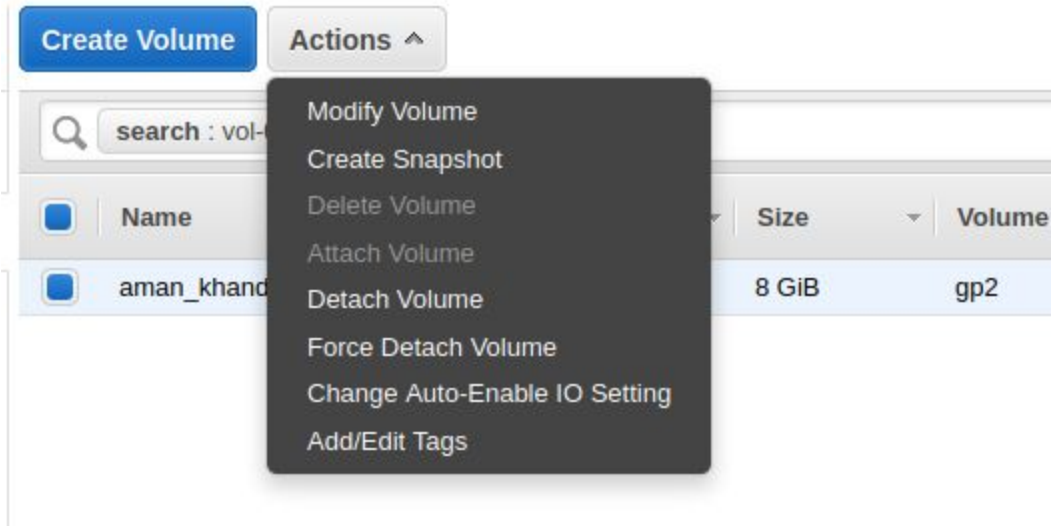


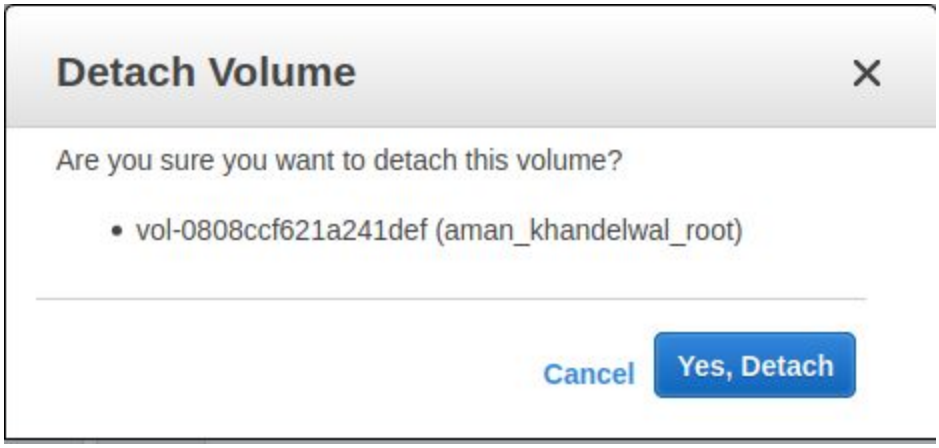


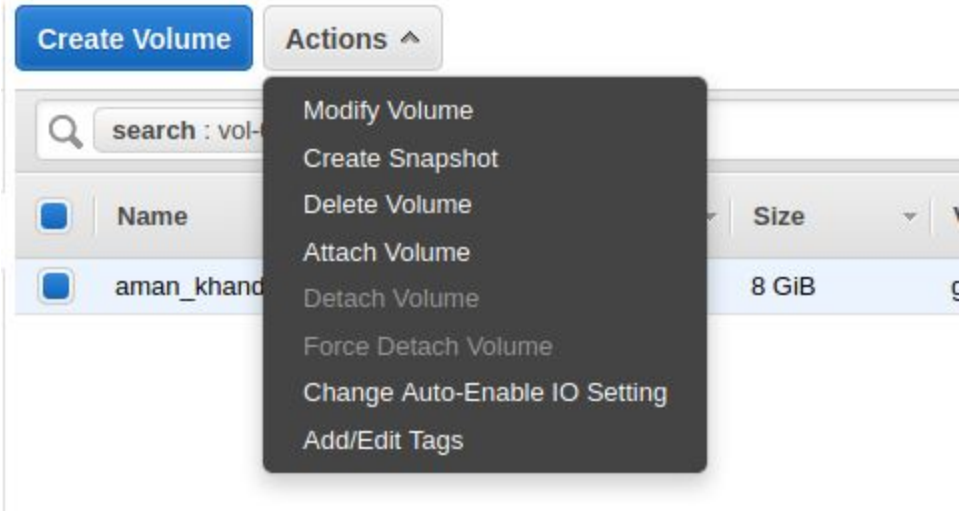


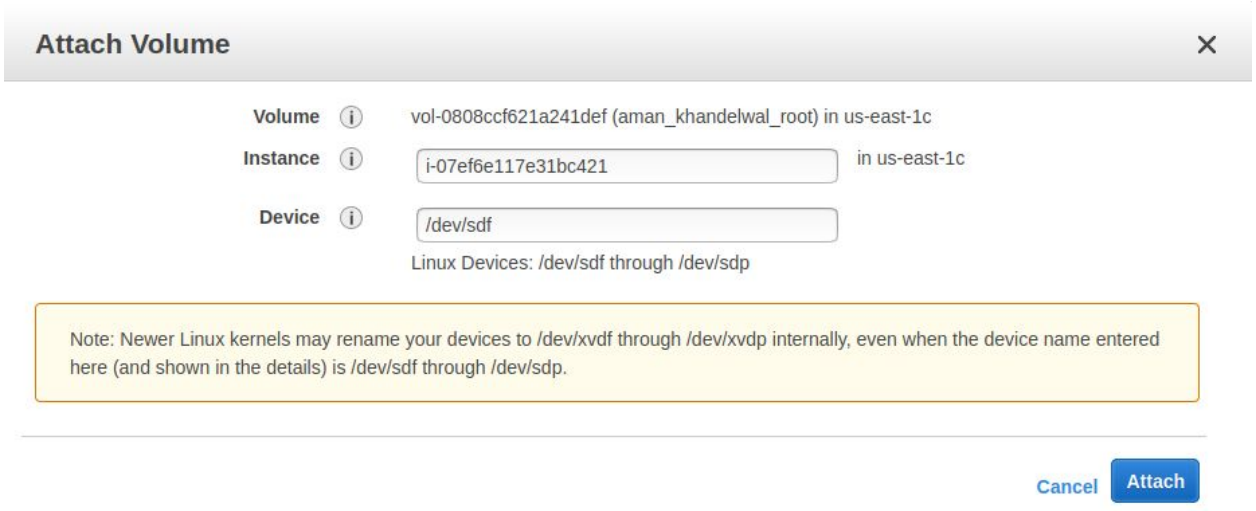
Name
Instance ID
Instance Type
Availability Zone
Instance State
Status Checks
Alarm
Aman_Khandelwal
i-05d7183c1c45f489e
t2.nano
us-east-1c
stopped
None
Aman_Khandelwal_2
i-07ef6e117e31bc421
t2.nano
us-east-1c
stopped
None
Root device type
ebs
Root device
/dev/sda1
Block devices
/dev/sda1
/dev/sdf
Termination protection
True
Lifecycle
normal
Monitoring
basic


Block Device /dev/sda1
EBS ID
vol-0808ccf621a241def
Root device type
EBS
Attachment time
2020-02-20T07:28:23.000Z
Block device status
attached
Delete on termination
True


Create Volume
Actions
Modify Volume
Create Snapshot
Delete Volume
Attach Volume
Detach Volume
Force Detach Volume
Change Auto-Enable IO Setting
Add/Edit Tags
search : vol-
Name
Size
Volume
aman_khand
8 GiB
gp2


Detach Volume
Are you sure you want to detach this volume?
vol-0808ccf621a241def (aman_khandelwal_root)
Cancel
Yes, Detach


Create Volume
Actions
search : vol-
Name
Size
aman_khand
8 GiB
Modify Volume
Create Snapshot
Delete Volume
Attach Volume
Detach Volume
Force Detach Volume
Change Auto-Enable IO Setting
Add/Edit Tags


Attach Volume
Volume
vol-0808ccf621a241def (aman_khandelwal_root) in us-east-1c
Instance
i-07ef6e117e31bc421
in us-east-1c
Device
/dev/sdf
Linux Devices: /dev/sdf through /dev/sdp
Note: Newer Linux kernels may rename your devices to /dev/xvdf through /dev/xvdp internally, even when the device name entered here (and shown in the details) is /dev/sdf through /dev/sdp.
Cancel
Attach

```
ubuntu@ip-172-31-25-84:~$ lsblk
NAME    MAJ:MIN RM  SIZE RO TYPE MOUNTPOINT
loop0     7:0    0   18M  1 loop /snap/amazon-ssm-agent/1480
loop1     7:1    0 89.1M  1 loop /snap/core/8268
loop2     7:2    0 91.4M  1 loop /snap/core/8689
xvda    202:0    0    8G  0 disk
└─xvda1 202:1    0    8G  0 part /
xvdf    202:80   0    8G  0 disk
└─xvdf1 202:81   0    8G  0 part
```

```
ubuntu@ip-172-31-25-84:~$ sudo mkdir /mnt/ebs1
ubuntu@ip-172-31-25-84:~$ sudo mount /dev/xvdf1 /mnt/ebs1
ubuntu@ip-172-31-25-84:~$ cd /mnt/ebs1/etc/
ubuntu@ip-172-31-25-84:/mnt/ebs1/etc$ ls fstab1
fstab1
ubuntu@ip-172-31-25-84:/mnt/ebs1/etc$ mv fstab1 fstab
mv: cannot move 'fstab1' to 'fstab': Permission denied
ubuntu@ip-172-31-25-84:/mnt/ebs1/etc$ sudo !!
sudo mv fstab1 fstab
ubuntu@ip-172-31-25-84:/mnt/ebs1/etc$ ls fstab
fstab
ubuntu@ip-172-31-25-84:/mnt/ebs1/etc$
```

Attach Volume ✕

Volume ⓘ	vol-0808ccf621a241def (aman_khandelwal_root) in us-east-1c	
Instance ⓘ	i-05d7183c1c45f489e	in us-east-1c
Device ⓘ	/dev/sda1	

Linux Devices: /dev/sdf through /dev/sdp

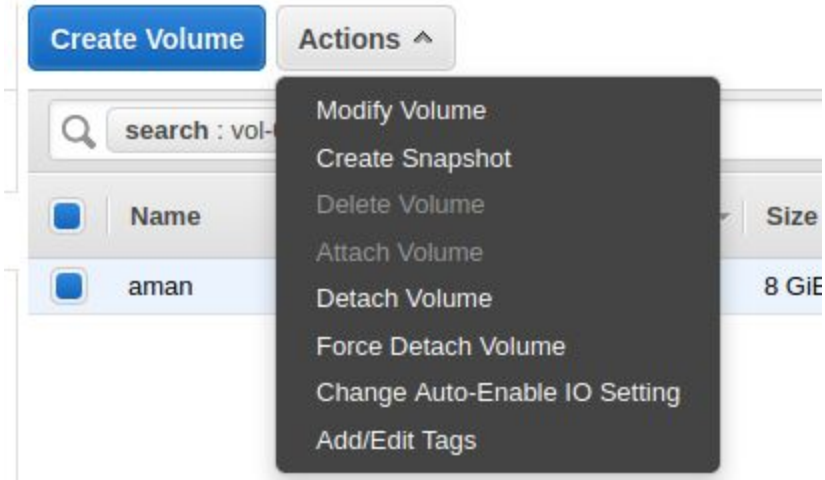
Note: Newer Linux kernels may rename your devices to /dev/xvdf through /dev/xvdp internally, even when the device name entered here (and shown in the details) is /dev/sdf through /dev/sdp.

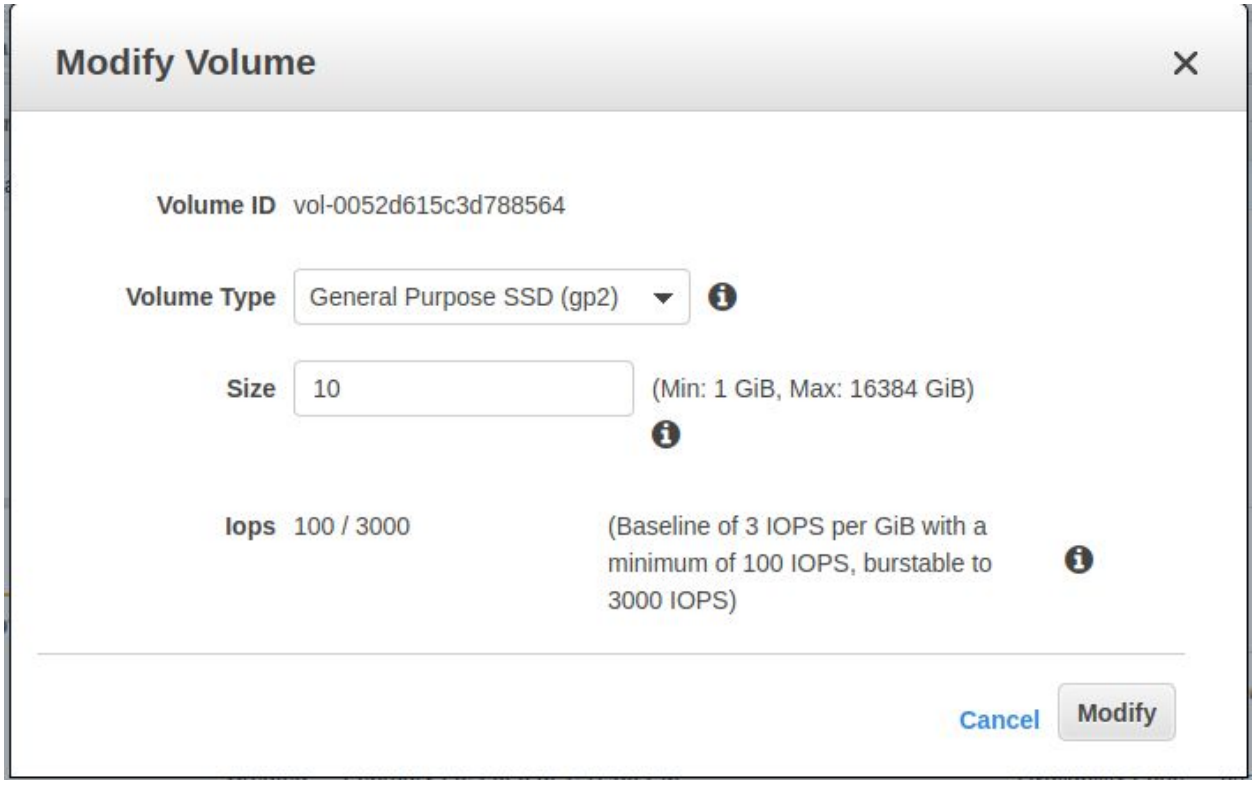
Cancel **Attach**

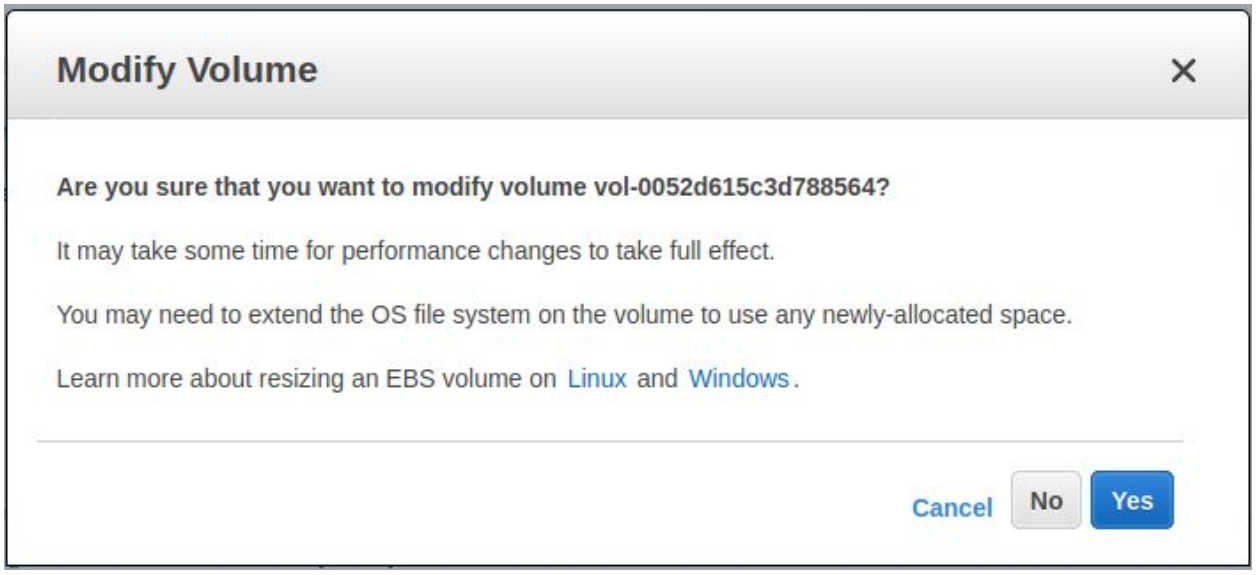
Name	Instance ID	Instance Type	Availability Zone	Instance State	Status Checks
Aman_Khandelwal	i-05d7183c1c45f489e	t2.nano	us-east-1c	pending	Initializing

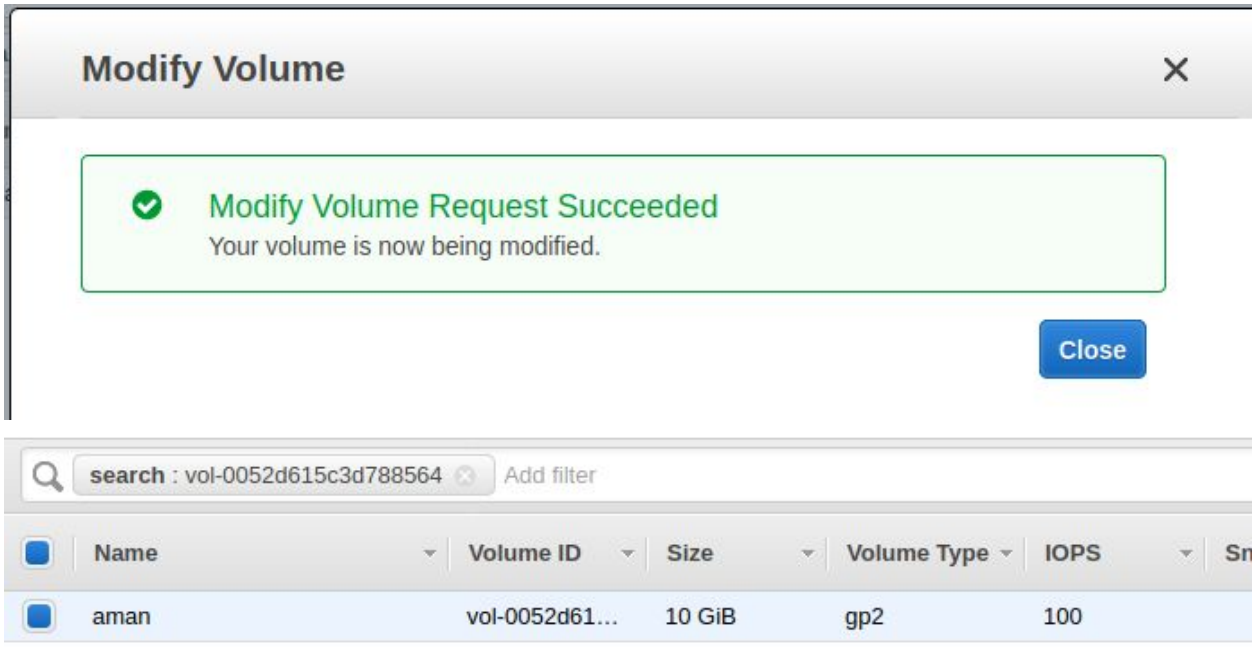
```
aman@Aman-Khandelwal:~/Downloads$ ssh -i aman_khandelwal_key.pem ubuntu@3.83.9.75
The authenticity of host '3.83.9.75 (3.83.9.75)' can't be established.
ECDSA key fingerprint is SHA256:nO+cw/xcm+hPMOfX9nF8TR6Xdr2s9QjV5CFo1it8pWA.
Are you sure you want to continue connecting (yes/no)? yes
Warning: Permanently added '3.83.9.75' (ECDSA) to the list of known hosts.
Welcome to Ubuntu 18.04.3 LTS (GNU/Linux 4.15.0-1057-aws x86_64)

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

  System information as of Thu Feb 20 20:40:08 UTC 2020

  System load:  0.33              Processes:           94
  Usage of /:   17.5% of 7.69GB   Users logged in:     0
  Memory usage: 30%               IP address for eth0: 172.31.229.221
  Swap usage:   0%

 * Multipass 1.0 is out! Get Ubuntu VMs on demand on your Linux, Windows or
   Mac. Supports cloud-init for fast, local, cloud devops simulation.

     https://multipass.run/

53 packages can be updated.
31 updates are security updates.


Last login: Thu Feb 20 19:53:43 2020 from 150.242.173.117
ubuntu@ip-172-31-229-221:~$ lsblk
NAME    MAJ:MIN RM  SIZE RO TYPE MOUNTPOINT
loop0     7:0    0   18M  1 loop /snap/amazon-ssm-agent/1480
loop1     7:1    0 91.4M  1 loop /snap/core/8689
loop2     7:2    0 89.1M  1 loop /snap/core/8268
xvda    202:0    0    8G  0 disk
└─xvda1 202:1    0    8G  0 part /
xvdf    202:80   0    8G  0 disk /mnt/drive
ubuntu@ip-172-31-229-221:~$
```

Question 6: Resize the EBS from 8 to 10GB
Solution 6:-


Create Volume
Actions
Modify Volume
Create Snapshot
Delete Volume
Attach Volume
Detach Volume
Force Detach Volume
Change Auto-Enable IO Setting
Add/Edit Tags
search : vol-
Name
Size
aman
8 GiB

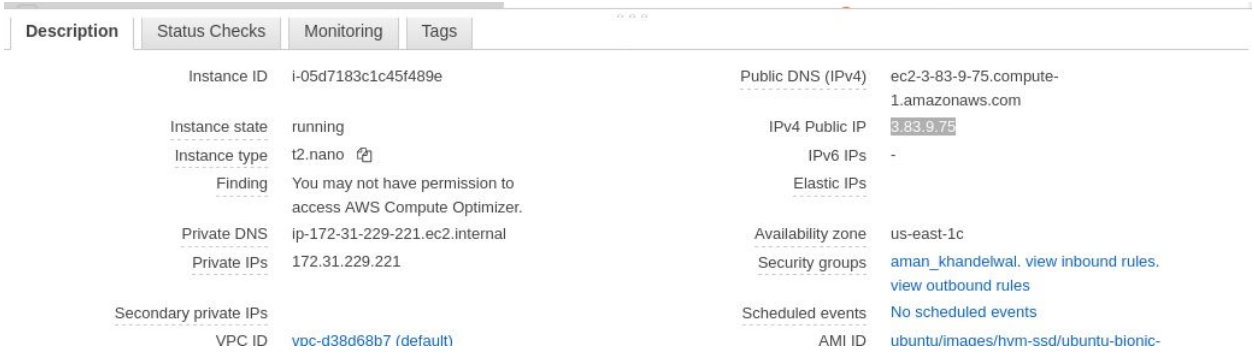

Modify Volume
Volume ID vol-0052d615c3d788564
Volume Type General Purpose SSD (gp2)
Size 10
(Min: 1 GiB, Max: 16384 GiB)
Iops 100 / 3000
(Baseline of 3 IOPS per GiB with a minimum of 100 IOPS, burstable to 3000 IOPS)
Cancel
Modify





Question 7: SSH from one instance A to instance B.

Solution 7:



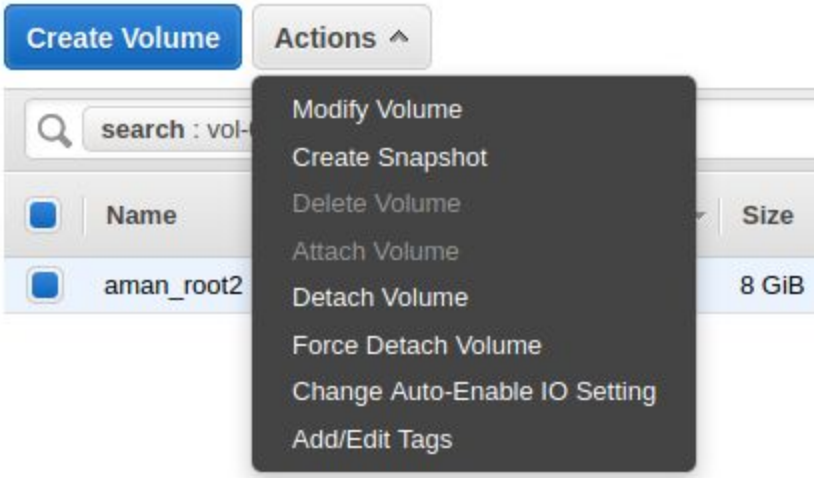

```
aman@Aman-Khandelwal:~/Downloads$ scp -i aman_khandelwal_key.pem aman_khandelwal_key.pem ubuntu@3.83.9.75:/home/ubuntu
```

```
aman@Aman-Khandelwal:~/Downloads$ ssh -i aman_khandelwal_key.pem ubuntu@3.83.9.75
Welcome to Ubuntu 18.04.3 LTS (GNU/Linux 4.15.0-1057-aws x86_64)

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

```
ubuntu@ip-172-31-229-221:~$ ssh -i aman_khandelwal_key.pem ubuntu@172.31.25.84
The authenticity of host '172.31.25.84 (172.31.25.84)' can't be established.
ECDSA key fingerprint is SHA256:HftQCny+EiPA9N+fk7VppNnbE7ZQbPFLEAxXFNFs9XQ.
Are you sure you want to continue connecting (yes/no)? yes
Warning: Permanently added '172.31.25.84' (ECDSA) to the list of known hosts.
Welcome to Ubuntu 18.04.3 LTS (GNU/Linux 4.15.0-1057-aws x86_64)
```

Question 8 :- Copy the EBS in different region(oregon).
Solution 8 :- No have roles to do this task.

Question 9 :- Detach the root EBS, create its snapshot, than create the AMI and run it as instance such that nginx should be preinstalled at the boot time of instance.
Solution 9 :-



Description | Status Checks | Monitoring | Tags

Volume ID	vol-0acadb8c408cc6523
Size	8 GiB
Created	February 20, 2020 at 1:27:52 PM UTC+5:30
State	available
Attachment information	
Volume type	gp2
Product codes	-
IOPS	100

Volumes > Create Snapshot

Create Snapshot

Volume vol-0acadb8c408cc6523

Description backup for Aman 2

Encrypted Not Encrypted

Key (128 characters maximum)	**Value** (256 characters maximum)	
Owner	Aman_Khandelwal	
Purpose	for the bootcamp assignment	

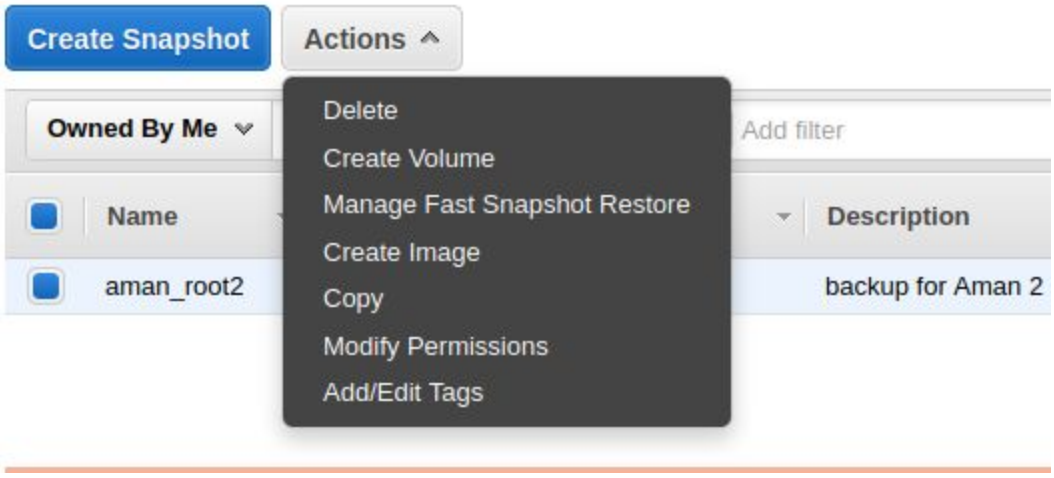
Add Tag 48 remaining (Up to 50 tags maximum)

Create Snapshot

Create Snapshot Request Succeeded

snap-0f7b578ec2716dda3

Manage Fast Snapshot Restore | Close



Create Image from EBS Snapshot

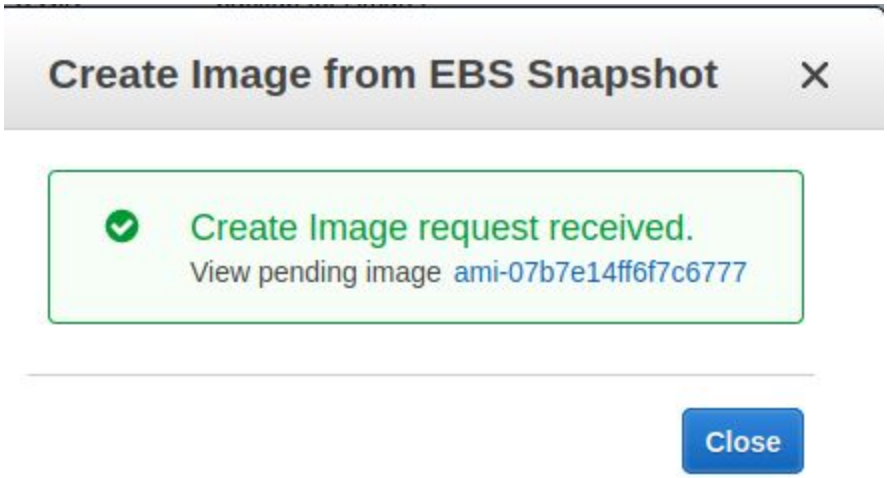
Name	aman_AMI2	Description	AMI for the backup
Architecture	x86_64	Virtualization type	Hardware-assisted virtualization
Root device name	/dev/sda1	Kernel ID	Use default
RAM disk ID	Use default		

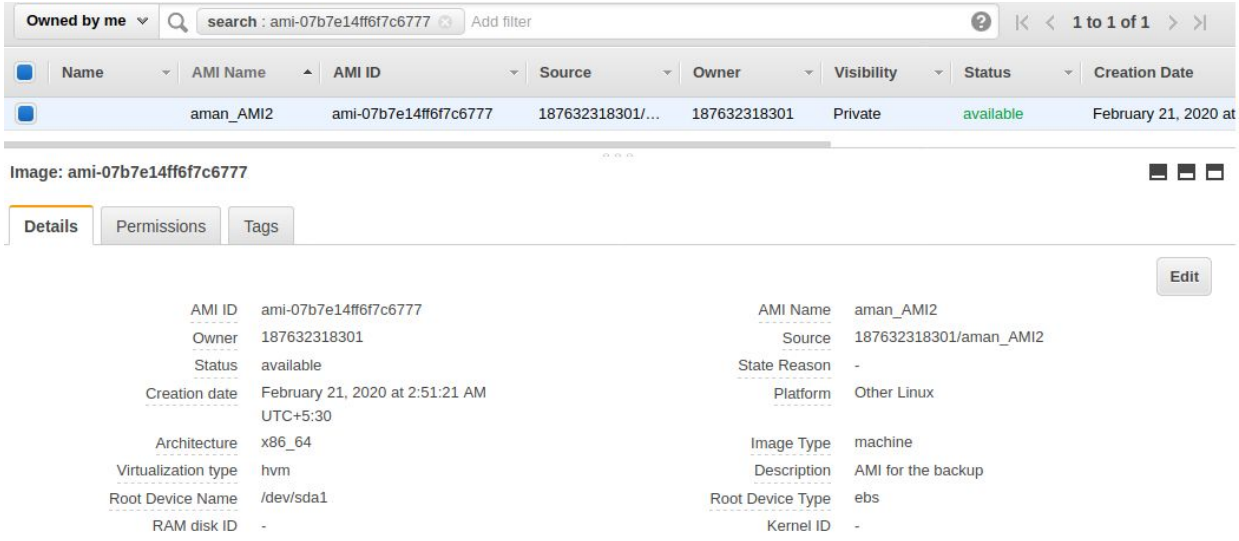
Block Device Mappings

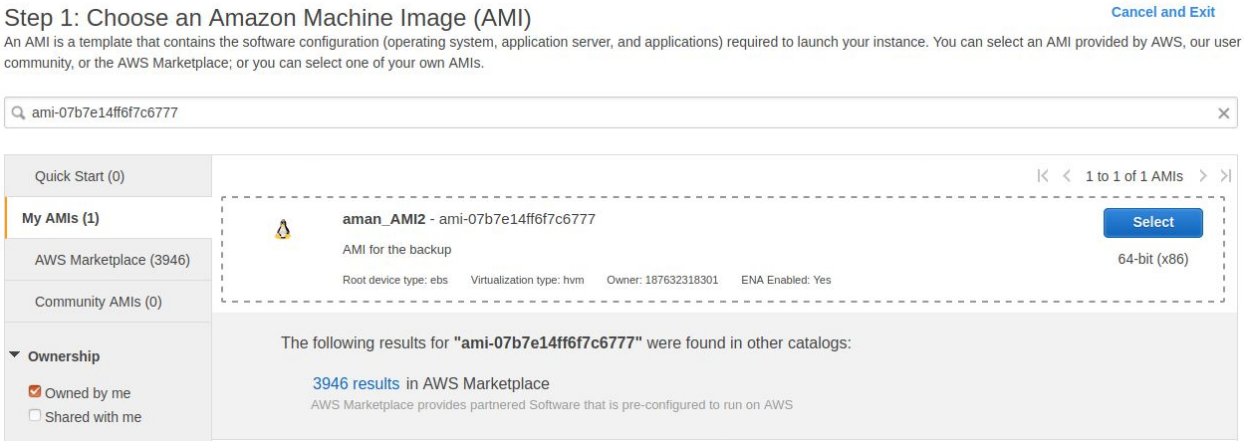
Volume Type	Device	Snapshot	Size (GiB)	Volume Type	IOPS	Throughput (MB/s)	Delete on Termination	Encrypted
Root	/dev/sda1	snap-0f7b578ec2716dda3	8	General Purpose	100 / 3000	N/A	☑	Not Encrypted

Add New Volume

Cancel | Create


Create Image from EBS Snapshot
Create Image request received.
View pending image ami-07b7e14ff6f7c6777
Close


Owned by me
search : ami-07b7e14ff6f7c6777
Add filter
1 to 1 of 1
Name
AMI Name
AMI ID
Source
Owner
Visibility
Status
Creation Date
aman_AMI2
ami-07b7e14ff6f7c6777
187632318301/...
187632318301
Private
available
February 21, 2020 at
Image: ami-07b7e14ff6f7c6777
Details
Permissions
Tags
Edit
AMI ID ami-07b7e14ff6f7c6777
Owner 187632318301
Status available
Creation date February 21, 2020 at 2:51:21 AM UTC+5:30
Architecture x86_64
Virtualization type hvm
Root Device Name /dev/sda1
RAM disk ID -
AMI Name aman_AMI2
Source 187632318301/aman_AMI2
State Reason -
Platform Other Linux
Image Type machine
Description AMI for the backup
Root Device Type ebs
Kernel ID -


Step 1: Choose an Amazon Machine Image (AMI)
Cancel and Exit
An AMI is a template that contains the software configuration (operating system, application server, and applications) required to launch your instance. You can select an AMI provided by AWS, our user community, or the AWS Marketplace; or you can select one of your own AMIs.
ami-07b7e14ff6f7c6777
Quick Start (0)
My AMIs (1)
AWS Marketplace (3946)
Community AMIs (0)
Ownership
Owned by me
Shared with me
1 to 1 of 1 AMIs
aman_AMI2 - ami-07b7e14ff6f7c6777
AMI for the backup
Root device type: ebs
Virtualization type: hvm
Owner: 187632318301
ENA Enabled: Yes
Select
64-bit (x86)
The following results for "ami-07b7e14ff6f7c6777" were found in other catalogs:
3946 results in AWS Marketplace
AWS Marketplace provides partnered Software that is pre-configured to run on AWS

Step 3: Configure Instance Details

File systems ⓘ Add file system Create new file system

▾ Network interfaces ⓘ

Device	Network Interface	Subnet	Primary IP	Secondary IP addresses	IPv6 IPs
eth0	New network interfac	subnet-06680af	Auto-assign	Add IP	Add IP

Add Device

▾ Advanced Details

User data ⓘ As text As file Input is already base64 encoded

```
#!/bin/bash
sudo apt-get install nginx
sudo service nginx start
```

Select an existing key pair or create a new key pair

A key pair consists of a **public key** that AWS stores, and a **private key file** that you store. Together, they allow you to connect to your instance securely. For Windows AMIs, the private key file is required to obtain the password used to log into your instance. For Linux AMIs, the private key file allows you to securely SSH into your instance.

Note: The selected key pair will be added to the set of keys authorized for this instance. Learn more about removing existing key pairs from a public AMI.

Choose an existing key pair

Select a key pair

aman_khandelwal_key

I acknowledge that I have access to the selected private key file (aman_khandelwal_key.pem), and that without this file, I won't be able to log into my instance.

Cancel **Launch Instances**