

**TO
THE
NEW™**



Assessment

EC2 and EBS

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College : UPES

1. Create an EC2 instance (Ubuntu 18.04, T3 nano).(instance A)

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)

**SUSE Linux**
Free tier eligible

SUSE Linux Enterprise Server 15 SP1 (HVM), SSD Volume Type - ami-04c5bab51cc146925 (64-bit x86) / ami-02e73902018018171 (64-bit Arm)

SUSE Linux Enterprise Server 15 Service Pack 1 (HVM), EBS General Purpose (SSD) Volume Type. Public Cloud, Advanced Systems Management, Web and Scripting, and Legacy modules enabled.

Root device type: ebs Virtualization type: hvm ENA Enabled: Yes

**Ubuntu Server 18.04 LTS (HVM), SSD Volume Type** - ami-0fc20dd1da406780b (64-bit x86) / ami-0959e8feedaf156bf (64-bit Arm)

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 ENA Enabled: Yes

Cancel and Exit

Select

☒ 64-bit (x86)
☐ 64-bit (Arm)

Select

☒ 64-bit (x86)
☐ 64-bit (Arm)

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

Filter by: All instance types Current generation Show more columns

Currently selected: t2.micro (Variable ECUs, 1 vCPUs, 2.5 GHz, Intel Xeon Family, 1 GiB memory, EBS only)

	Family	Type	vCPUs	Memory (GiB)	Instance Storage (GB)	EBS-Optimized Available	Network Performance	IPv6 Support
<input type="checkbox"/>	General purpose	t2.nano	1	0.5	EBS only	-	Low to Moderate	Yes
<input checked="" type="checkbox"/>	General purpose	t2.micro Free tier eligible	1	1	EBS only	-	Low to Moderate	Yes
<input type="checkbox"/>	General purpose	t2.small	1	2	EBS only	-	Low to Moderate	Yes
<input type="checkbox"/>	General purpose	t2.medium	2	4	EBS only	-	Low to Moderate	Yes
<input type="checkbox"/>	General purpose	t2.large	2	8	EBS only	-	Low to Moderate	Yes
<input type="checkbox"/>	General purpose	t2.xlarge	4	16	EBS only	-	Moderate	Yes
<input type="checkbox"/>	General purpose	t2.2xlarge	8	32	EBS only	-	Moderate	Yes

Cancel

Previous

Review and Launch

Next: Configure Instance Details

1. Choose AMI 2. Choose Instance Type 3. Configure Instance 4. Add Storage 5. Add Tags 6. Configure Security Group 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 account 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 | testsubnet | us-east-1 ⓘ

Create new subnet

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

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-0e078112eedec9db	8	General Purpose SSD (gp2) ▾	100 / 3000	N/A	<input checked="" type="checkbox"/>	Not Encrypt ▾
Add New Volume								

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

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.

AMI Details

[Edit AMI](#)

 **Ubuntu Server 18.04 LTS (HVM), SSD Volume Type - ami-07bfd5b3428b6f4d**

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

Instance Type

[Edit instance type](#)

Instance Type	ECUs	vCPUs	Memory (GiB)	Instance Storage (GB)	EBS-Optimized Available	Network Performance
t2.micro	Variable	1	1	EBS only	-	Low to Moderate

Security Groups

[Edit security groups](#)

Security group name launch-wizard-38
Description launch-wizard-38 created 2020-02-20T12:28:43.502+05:30

Cancel Previous **Launch**

Launch Status

✓ **Your instances are now launching**
The following instance launches have been initiated: **i-01f20f4a7542d707c** [View launch log](#)

search : aditya

Add filter

1 to 1 of 1

<input checked="" type="checkbox"/>	Name	Instance ID	Instance Type	Availability Zone	Instance State	Status Checks	Alarm Status	Public DNS (IPv4)
<input checked="" type="checkbox"/>	AdityaU	i-01f20f4a7542d707c	t2.micro	us-east-1c	<div><div></div>running</div>	<div><div></div>Initializing</div>	None	ec2-3-92-187-159.c

2. Create AMI of above instance and launch it. (instance B)

Launch Instance

Connect

Actions

search : aditya

Add filter

Name

Aditya's ec2 i

AdityaU

Type

Availability Zone

Instance State

us-east-1c

running

Connect

Get Windows Password

Create Template From Instance

Launch More Like This

Instance State

Instance Settings

Image

Networking

CloudWatch Monitoring

Create Image

Bundle Instance (instance store AMI)

AdityaUpadhyay

Quick Start (0)

My AMIs (1)

AWS Marketplace (0)

Community AMIs (0)

Ownership

☒ Owned by me

☐ Shared with me

AdityaU - ami-07c59b08add8810fd

Aditya Upadhyay TTN bootcamp ec2

Root device type: ebs Virtualization type: hvm Owner: 187632318301 ENA Enabled: Yes

Select

64-bit (x86)

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.micro (Variable ECUs, 1 vCPUs, 2.5 GHz, Intel Xeon Family, 1 GiB memory, EBS only)

	Family	Type	vCPUs	Memory (GiB)	Instance Storage (GB)	EBS-Optimized Available	Network Performance	IPv6 Support
<input type="checkbox"/>	General purpose	t2.nano	1	0.5	EBS only	-	Low to Moderate	Yes
<input checked="" type="checkbox"/>	General purpose	t2.micro Free tier eligible	1	1	EBS only	-	Low to Moderate	Yes
<input type="checkbox"/>	General purpose	t2.small	1	2	EBS only	-	Low to Moderate	Yes
<input type="checkbox"/>	General purpose	t2.medium	2	4	EBS only	-	Low to Moderate	Yes

[Cancel](#) [Previous](#) [Review and Launch](#) [Next: Configure Instance Details](#)

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	<input type="text" value="1"/>	Launch into Auto Scaling Group
Purchasing option	<input type="checkbox"/> Request Spot instances	
Network	<input type="text" value="vpc-d38d68b7 default (default)"/>	Create new VPC
Subnet	<input type="text" value="subnet-06680a5b651f104dc testpusubnet us-east-1:65511 IP Addresses available"/>	Create new subnet
Auto-assign Public IP	<input type="text" value="Use subnet setting (Disable)"/>	
Placement group	<input type="checkbox"/> Add instance to placement group	
Capacity Reservation	<input type="text" value="Open"/>	Create new Capacity Reservation
IAM role	<input type="text" value="None"/>	Create new IAM role

[Cancel](#) [Previous](#) [Review and Launch](#) [Next: Add Storage](#)

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-077a0c0a784067b54	<input type="text" value="8"/>	General Purpose SSD (gp2)	100 / 3000	N/A	<input checked="" type="checkbox"/>	Not Encrypt

Add New Volume

Launch Status

Your instances are now launching

The following instance launches have been initiated: [i-07b2d2540c3fd6da3](#) [View launch log](#)

Launch Instance

Connect

Actions

search : i-07b2d2540c3fd6da3

Add filter

Name	Aditya's ec2 i	Instance ID	Instance Type	Availability Zone	Instance State	Status Checks	Alarm Status
AdityaUinsta...		i-07b2d2540c3fd6da3	t2.micro	us-east-1c	running	Initializing	None

Instance: i-07b2d2540c3fd6da3 (AdityaUinstanceB) Private IP: 172.31.191.166

DescriptionStatus ChecksMonitoringTags

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

Volume Type

General Purpose SSD (gp2)

Size (GiB)

8

(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)

Availability Zone*

us-east-1a

Throughput (MB/s)

Not applicable

Snapshot ID

Select a snapshot

Encryption

☐ Encrypt this volume

Key	Value
(128 characters maximum)	(256 characters maximum)
Name	AdityaUEBS

Volumes > Create Volume

Create Volume

✓ Volume created successfully

Volume ID `vol-0fab62022e3098fac`

Close

Attach Volume



Volume ⓘ `vol-0f6733d380adbeec6 (AdityaUebs)` in us-east-1c
Instance ⓘ in us-east-1c
Device ⓘ
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

Create VolumeActions

Q

search : aditya

✕

Add filter

?

⏪

⏩

<input type="checkbox"/>	Name	Volume ID	Size	Volume Type	IOPS	Snapshot	Created	Availability Zone
<input checked="" type="checkbox"/>	AdityaUebs	vol-0f6733d3...	8 GiB	gp2	100		February 20, 2020 ...	us-east-1
<input type="checkbox"/>	AdityaUinsta...	vol-071af1ae...	8 GiB	gp2	100	snap-077a0c0...	February 20, 2020 ...	us-east-1
<input type="checkbox"/>		vol-039dd9ff...	8 GiB	gp2	100	snap-0e07811...	February 20, 2020 ...	us-east-1

Created		February 20, 2020 at 1:05:52 PM UTC+5:30		Availability Zone		us-east-1c	
State		In-use		Encryption		Not Encrypted	
Attachment information		i-07b2d2540c3fd6da3 (AdityaUinstanceB):/dev/sdf (attached)		KMS Key ID			
Volume type		gp2		KMS Key Aliases			

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


```
Introduction to databases, python, nginx, redis
aditya@aditya-0:~$ chmod 400 AdityaTTN.pem
aditya@aditya-0:~$ ssh -i "AdityaTTN.pem" root@ec2-107-22-128-190.compute-1.amazonaws.com
Please login as the user "ubuntu" rather than the user "root".

Connection to ec2-107-22-128-190.compute-1.amazonaws.com closed.
aditya@aditya-0:~$ ssh -i "AdityaTTN.pem" ubuntu@ec2-107-22-128-190.compute-1.amazonaws.com
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 07:46:42 UTC 2020

System load:  0.03          Processes:           89
Usage of /:   13.8% of 7.69GB Users logged in:       0
Memory usage: 14%          IP address for eth0: 172.31.172.244
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-172-31-172-244:~$
```

```
ubuntu@ip-172-31-172-244:~$ 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-172-31-172-244:~$
```

```
ubuntu@ip-172-31-172-244:~$ sudo fdisk /dev/xvdf

Welcome to fdisk (util-linux 2.31.1).
Changes will remain in memory only, until you decide to write them.
Be careful before using the write command.

Device does not contain a recognized partition table.
Created a new DOS disklabel with disk identifier 0x203f5c76.

Command (m for help): n
Partition type
   p   primary (0 primary, 0 extended, 4 free)
   e   extended (container for logical partitions)
Select (default p): p
Partition number (1-4, default 1):
First sector (2048-16777215, default 2048):
Last sector, +sectors or +size{K,M,G,T,P} (2048-16777215, default 16777215):

Created a new partition 1 of type 'Linux' and of size 8 GiB.

Command (m for help): w
The partition table has been altered.
Calling ioctl() to re-read partition table.
Syncing disks.

ubuntu@ip-172-31-172-244:~$
```

```
ubuntu@ip-172-31-172-244:~$ 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
└─xvdf1      202:81    0    8G   0 part
ubuntu@ip-172-31-172-244:~$
```



```

ubuntu@ip-172-31-172-244:~$ sudo mkfs.ext4 /dev/xvdf1
mke2fs 1.44.1 (24-Mar-2018)
Creating filesystem with 2096896 4k blocks and 524288 inodes
Filesystem UUID: 9ddc4b05-a757-46bb-940d-9d68c17adf4c
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-172-31-172-244:~$ ls
ubuntu@ip-172-31-172-244:~$ pwd
/home/ubuntu
ubuntu@ip-172-31-172-244:~$ mkdir testing
ubuntu@ip-172-31-172-244:~$ ls
testing
ubuntu@ip-172-31-172-244:~$ sudo mount /dev/xvdf1 /home/ubuntu/testing
ubuntu@ip-172-31-172-244:~$ echo $?
0
ubuntu@ip-172-31-172-244:~$ █

```

```

ubuntu@ip-172-31-172-244:~$ df -h
Filesystem      Size  Used Avail Use% Mounted on
udev            481M     0  481M   0% /dev
tmpfs           99M    752K   98M   1% /run
/dev/xvda1      7.7G   1.1G   6.7G  14% /
tmpfs           492M     0  492M   0% /dev/shm
tmpfs           5.0M     0   5.0M   0% /run/lock
tmpfs           492M     0  492M   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           99M     0   99M   0% /run/user/1000
/dev/xvdf1      7.9G   36M   7.4G   1% /home/ubuntu/testing
ubuntu@ip-172-31-172-244:~$ █

```

```

ubuntu@ip-172-31-172-244:~/testing$ sudo !!
sudo mkdir test{1..8}
ubuntu@ip-172-31-172-244:~/testing$ ls
lost+found test1 test2 test3 test4 test5 test6 test7 test8
ubuntu@ip-172-31-172-244:~/testing$ sudo blkid
/dev/xvda1: LABEL="cloudimg-rootfs" UUID="c03b791b-60ef-4ae1-82b5-5c9ab6b4d08f" TYPE="ext4" PARTUUID="b32e823c-01"
/dev/loop0: TYPE="squashfs"
/dev/loop1: TYPE="squashfs"
/dev/xvdf1: UUID="9ddc4b05-a757-46bb-940d-9d68c17adf4c" TYPE="ext4" PARTUUID="203f5c76-01"
ubuntu@ip-172-31-172-244:~/testing$ sudo vim /etc/fstab
ubuntu@ip-172-31-172-244:~/testing$ sudo findmnt --verify
/
[W] recommended root FS passno is 1 (current is 0)

0 parse errors, 0 errors, 1 warning
ubuntu@ip-172-31-172-244:~/testing$ █

```

```
ubuntu@ip-172-31-172-244:~/testing$ cat /etc/fstab
LABEL=cloudimg-rootfs / ext4 defaults,discard 0 0
UUID=9ddc4b05-a757-46bb-940d-9d68c17adf4c /home/ubuntu/testing ext4 defaults 0 0
ubuntu@ip-172-31-172-244:~/testing$
```

Launch Instance ▼ Connect Actions ▼

search : aditya ✕ Add filter ? << >> 1 to 3 of 3

<input type="checkbox"/>	Name	Aditya's ec2 i	Instance ID	Instance Type	Availability Zone	Instance State	Status Checks	Alarm Status
<input type="checkbox"/>	AdityaU		i-01f20f4a7542d707c	t2.micro	us-east-1c	running	2/2 checks ...	None
<input checked="" type="checkbox"/>	AdityaUinsta...		i-03e2f18b5be0e6d0b	t2.micro	us-east-1c	stopped		None
<input type="checkbox"/>	AdityaUinsta...		i-07b2d2540c3fd6da3	t2.micro	us-east-1c	terminated		None

Launch Instance ▼ Connect Actions ^

search : aditya ✕ Add filter ? << >> 1 to 3 of 3

<input type="checkbox"/>	Name	Aditya's ec2 i	Type	Availability Zone	Instance State	Status Checks	Alarm Status
<input type="checkbox"/>	AdityaU				running	2/2 checks ...	None
<input checked="" type="checkbox"/>	AdityaUinsta...				stopped		None
<input type="checkbox"/>	AdityaUinsta...				terminated		None

Connect

Get Windows Password

Create Template From Instance

Launch More Like This

Instance State ▶

Instance Settings ▶

Image ▶

Networking ▶

CloudWatch Monitoring ▶

Start

Stop

Stop - Hibernate

Reboot

Terminate

```
aditya@aditya-0:~$ ssh -i "AdityaTTN.pem" ubuntu@ec2-54-234-40-141.compute-1.amazonaws.com
The authenticity of host 'ec2-54-234-40-141.compute-1.amazonaws.com (54.234.40.141)' can't be established.
ECDSA key fingerprint is SHA256:xL0sfXp/95Uny0DdTnr1XMV2lmlGiHD0zS8sRH1Ynvs.
Are you sure you want to continue connecting (yes/no)? yes
Warning: Permanently added 'ec2-54-234-40-141.compute-1.amazonaws.com,54.234.40.141' (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 08:20:50 UTC 2020

System load: 0.04          Processes:           91
Usage of /:  13.8% of 7.69GB Users logged in:       0
Memory usage: 14%          IP address for eth0: 172.31.172.244
Swap usage:  0%

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

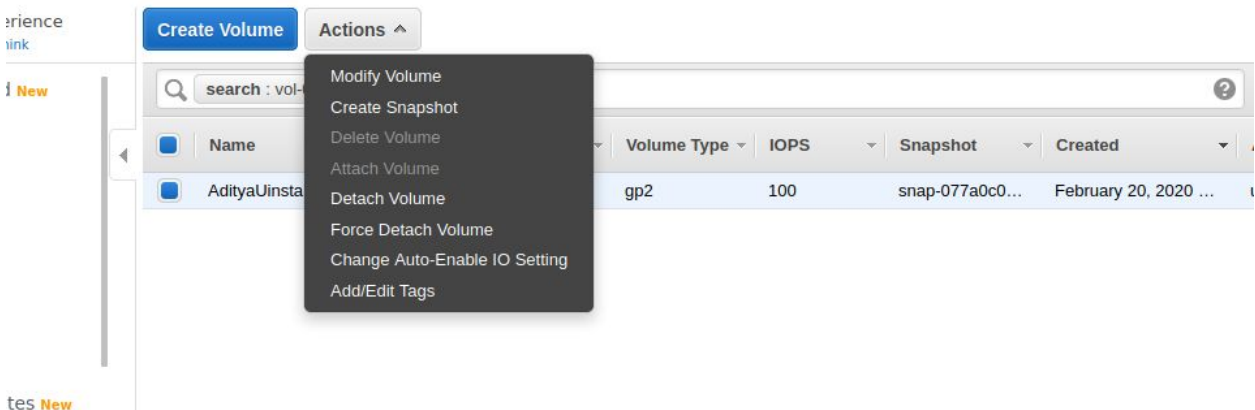
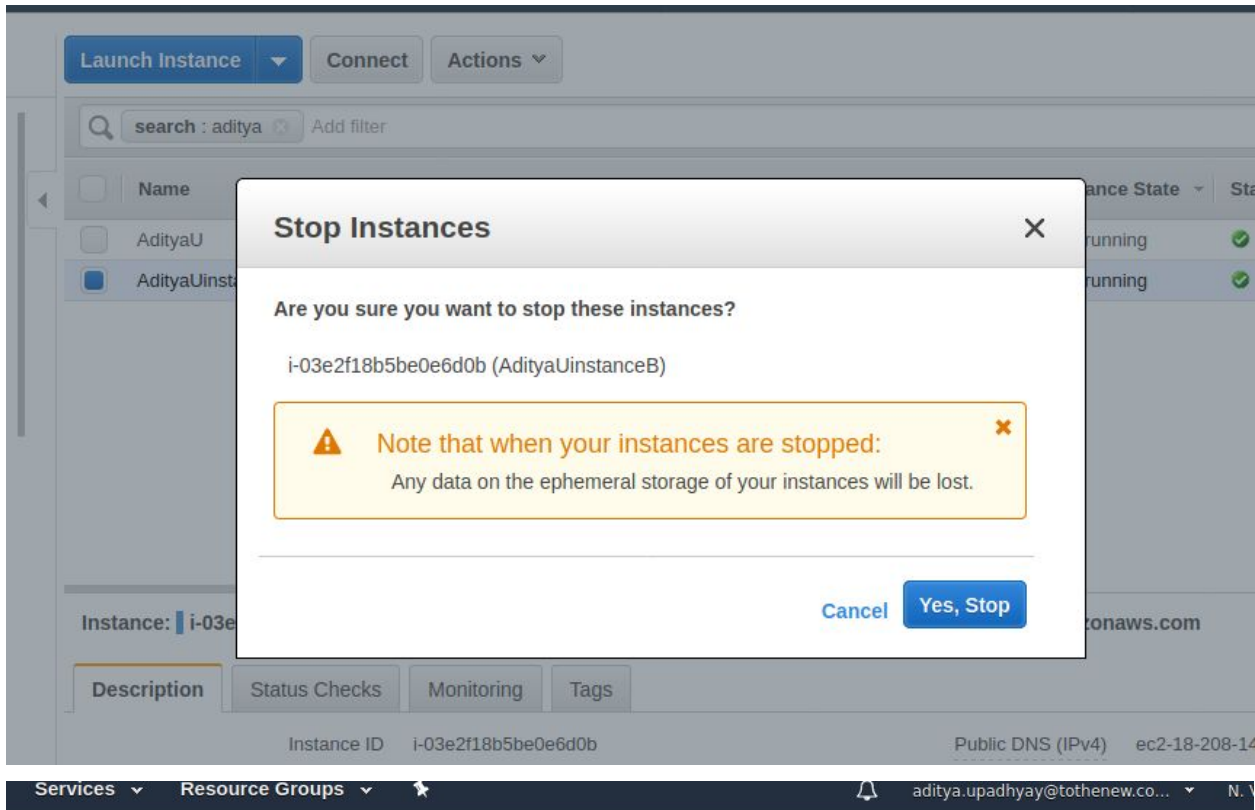
Last login: Thu Feb 20 07:46:43 2020 from 182.71.160.186
ubuntu@ip-172-31-172-244:~$ df -h
Filesystem      Size  Used Avail Use% Mounted on
udev            481M   0    481M   0% /dev
tmpfs           99M   756K  98M    1% /run
/dev/xvda1      7.7G  1.1G  6.7G  14% /
tmpfs           492M   0    492M   0% /dev/shm
tmpfs           5.0M   0    5.0M   0% /run/lock
tmpfs           492M   0    492M   0% /sys/fs/cgroup
/dev/loop0      18M   18M    0 100% /snap/amazon-ssm-agent/1480
/dev/loop1      90M   90M    0 100% /snap/core/8268
/dev/xvdf1      7.9G  37M   7.4G   1% /home/ubuntu/testing
tmpfs           99M   0    99M    0% /run/user/1000
ubuntu@ip-172-31-172-244:~$
```

```
ubuntu@ip-172-31-172-244:~$ cd testing/
ubuntu@ip-172-31-172-244:~/testing$ ls
lost+found test1 test2 test3 test4 test5 test6 test7 test8
ubuntu@ip-172-31-172-244:~/testing$
```

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

```
ubuntu@ip-172-31-172-244:~/testing$ cat /etc/fstab
LABEL=cloudimg-rootfs      ext4      defaults,discard          0 0
UUID=9ddc4b05-a757-46bb-940d-9d68c17adf4c /home/ubuntu/testing      ext4      defaults          0 0
ubuntu@ip-172-31-172-244:~/testing$
```

```
ubuntu@ip-172-31-172-244:~/testing$ sudo vim abc.txt
sudo: unable to resolve host ip-172-31-172-244: Resource temporarily unavailable
ubuntu@ip-172-31-172-244:~/testing$
```




```
aditya@aditya-~$ ssh -i "AdityaTTN.pem" ubuntu@ec2-3-92-187-159.compute-1.amazonaws.com
The authenticity of host 'ec2-3-92-187-159.compute-1.amazonaws.com (3.92.187.159)' can't be established.
ECDSA key fingerprint is SHA256:LWVeVpMt0aHLf20CTw0IlshME8G3FD/U8B1xLmJMCgo.
Are you sure you want to continue connecting (yes/no)? yes
Warning: Permanently added 'ec2-3-92-187-159.compute-1.amazonaws.com,3.92.187.159' (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 12:10:04 UTC 2020

```
System load:  0.0          Processes:      86
Usage of /:   13.6% of 7.69GB    Users logged in:  0
Memory usage: 14%          IP address for eth0: 172.31.220.159
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-172-31-220-159:~$ 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   10G  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-172-31-220-159:~$ sudo mount /dev/xvdf1 /mnt
ubuntu@ip-172-31-220-159:~$ cd /mnt
ubuntu@ip-172-31-220-159:/mnt$ ls
bin  dev  home  initrd.img  lib64  media  opt  root  sbin  srv  tmp  var  vmlinuz  vmlinuz.old
boot  etc  initrd.img  lib      lost+found  mnt  proc  run  snap  sys  usr  vmlinuz
ubuntu@ip-172-31-220-159:/mnt$ cd /etc
```

```
ubuntu@ip-172-31-220-159:/etc$ sudo vim fstab
ubuntu@ip-172-31-220-159:/etc$ cd /mnt/etc
ubuntu@ip-172-31-220-159:/mnt/etc$ sudo vim fstab
ubuntu@ip-172-31-220-159:/mnt/etc$
```

```
LABEL=cloudimg-rootfs ext4 defaults,discard 0 0
UUID=9ddc4b05-a757-46bb-940d-9d68c17adf4c /home/ubuntu/testing ext4 defaults 0 0
```

Services Resource Groups

aditya.upadhyay@tothenew.co... N. Virginia Support

Create Volume Actions

search: vol-

AdityaUinst

Modify Volume
Create Snapshot
Delete Volume
Attach Volume
Detach Volume
Force Detach Volume
Change Auto-Enable IO Setting
Add/Edit Tags

Volume Type	IOPS	Snapshot	Created	Availability Zone	State
gp2	100	snap-077a0c0...	February 20, 2020 ...	us-east-1c	in-use

	Name	Volume ID	Size	Volume Type	IOPS
	AdityaUinsta...	vol-0c4a213...	8 GiB	gp2	100

```

State      in-use
Attachment information  i-03e2f18b5be0e6d0b
                        (AdityaUinstanceB):/dev/sda1
                        (attached)
Volume type  gp2
Product codes -

```

```

aditya@aditya-130:~$ ssh -i "AdityaTTN.pem" ubuntu@ec2-52-91-78-127.compute-1.amazonaws.com
The authenticity of host 'ec2-52-91-78-127.compute-1.amazonaws.com (52.91.78.127)' can't be established.
ECDSA key fingerprint is SHA256:xL0sfxp/95Uny0DdTnr1XMMV2lmLGiHDOzS8sRH1Ynvs.
Are you sure you want to continue connecting (yes/no)? yes
Warning: Permanently added 'ec2-52-91-78-127.compute-1.amazonaws.com,52.91.78.127' (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 12:21:06 UTC 2020

System load:  0.26           Processes:            94
Usage of /:   15.0% of 7.69GB Users logged in:       0
Memory usage: 15%           IP address for eth0: 172.31.172.244
Swap usage:   0%

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

Last login: Thu Feb 20 08:20:52 2020 from 61.12.91.218
ubuntu@ip-172-31-172-244:~$ ls
testing
ubuntu@ip-172-31-172-244:~$ cd testing/
ubuntu@ip-172-31-172-244:~/testing$ ls
abc.txt  lost+found  test1  test2  test3  test4  test5  test6  test7  test8
ubuntu@ip-172-31-172-244:~/testing$ sudo vim abc.txt
ubuntu@ip-172-31-172-244:~/testing$

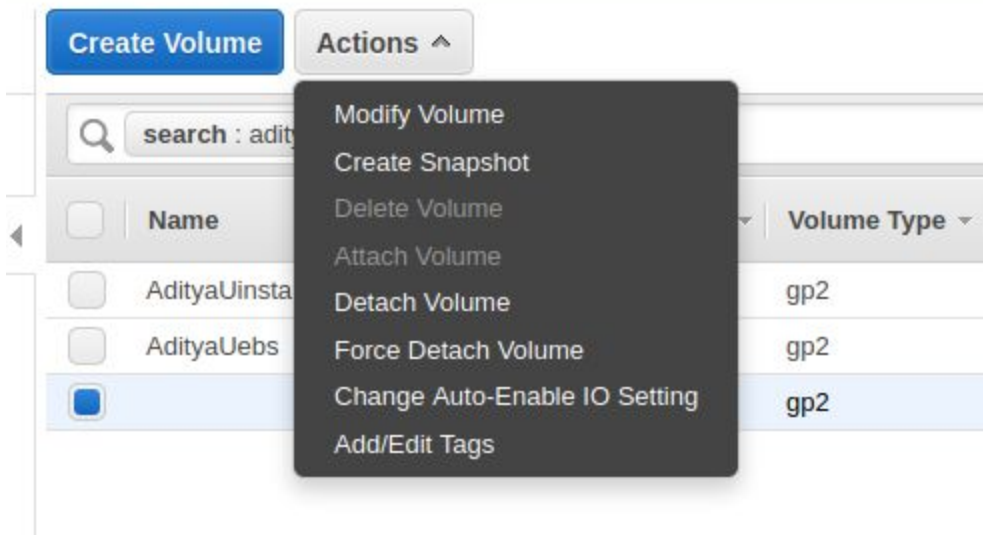
```



```
ubuntu@ip-172-31-172-244:~/testing$ sudo vim abc.txt
ubuntu@ip-172-31-172-244:~/testing$ sudo findmnt --verify
/
[W] recommended root FS passno is 1 (current is 0)

0 parse errors, 0 errors, 1 warning
ubuntu@ip-172-31-172-244:~/testing$
```

6. Resize the EBS from 8 to 10GB



vol-0c4a213... 8 GiB gp2 100 snap-077a0c0... February 20, 2020 ... us-east-1c

vol-0f6733d3... 8 GiB gp2 100 February 20, 2020 ... us-east-1c

vol-039dd9ff... 10 GiB gp2 100 snap-0e07811... February 20, 2020 ... us-east-1c

Modify Volume

✓ **Modify Volume Request Succeeded**
Your volume is now being modified.

Close

State in-use Encryption Not Encrypted KMS Key ID i-01f20f4a7542d707c

Create Volume Actions

search : aditya Add filter

Name	Volume ID	Size	Volume Type	IOPS	Snapshot	Created	Availability Zone	State
AdityaUinsta...	vol-0c4a213...	8 GiB	gp2	100	snap-077a0c0...	February 20, 2020 ...	us-east-1c	in-use
AdityaUebs	vol-0f6733d3...	8 GiB	gp2	100		February 20, 2020 ...	us-east-1c	in-use
	vol-039dd9ff...	10 GiB	gp2	100	snap-0e07811...	February 20, 2020 ...	us-east-1c	in-use

7. SSH from one instance A to instance B.

```
aditya@aditya-1:~$ scp -i AdityaTTN.pem AdityaTTN.pem ubuntu@ec2-54-84-36-121.compute-1.amazonaws.com:~/
AdityaTTN.pem
aditya@aditya-0:~$ ssh -i "AdityaTTN.pem" ubuntu@ec2-54-84-36-121.compute-1.amazonaws.com
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 Fri Feb 21 04:54:09 UTC 2020

System load:  0.01          Processes:      91
Usage of /:   13.9% of 9.63GB Users logged in: 0
Memory usage: 16%          IP address for eth0: 172.31.220.159
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: Fri Feb 21 04:49:55 2020 from 182.71.160.186
```

```

ubuntu@ip-172-31-220-159:~$ ls
AdityaTTN.pem
ubuntu@ip-172-31-220-159:~$ ssh -i AdityaTTN.pem 172.31.172.244
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 Fri Feb 21 04:55:43 UTC 2020

System load:  0.08               Processes:            89
Usage of /:   18.6% of 7.69GB    Users logged in:     0
Memory usage: 16%               IP address for eth0: 172.31.172.244
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 12:31:03 2020 from 61.12.91.218
ubuntu@ip-172-31-172-244:~$

```

8. Copy the EBS in different region(oregon).

The screenshot shows the AWS Management Console interface. On the left, the navigation menu includes 'New EC2 Experience', 'Reserved Instances', 'Dedicated Hosts', 'Scheduled Instances', 'Capacity Reservations', 'IMAGES', 'ELASTIC BLOCK STORE', and 'Volumes'. The main content area displays a table of EBS volumes. A context menu is open over the first volume, showing actions such as 'Modify Volume', 'Create Snapshot', 'Delete Volume', 'Attach Volume', 'Detach Volume', 'Force Detach Volume', 'Change Auto-Enable IO Setting', and 'Add/Edit Tags'.

Volume Type	IOPS	Snapshot	Created	Availability Zone	State
gp2	100	snap-077a0c0...	February 20, 2020 ...	us-east-1c	in-use
gp2	100		February 20, 2020 ...	us-east-1c	in-use
gp2	100	snap-0e07811...	February 20, 2020 ...	us-east-1c	in-use

Volumes > Create Snapshot

Create Snapshot

Volume vol-0c4a2137c90f48fa6 ⓘ

Description snapshot to copy in another region ⓘ

Encrypted Not Encrypted ⓘ

Key (128 characters maximum)	Value (256 characters maximum)
Name	AdityaEBSsnapshot ✕
Add Tag	49 remaining (Up to 50 tags maximum)

* Required

Cancel Create Snapshot

Volumes > Create Snapshot

Create Snapshot

✓ Create Snapshot Request Succeeded

snap-085bc2e807004e2ff

Manage Fast Snapshot Restore Close

aws

Services ▾

Resource Groups ▾

★

aditya.upadhyay@tothenew.co... ▾

N. Virginia ▾

Support ▾

New EC2 Experience

Tell us what you think

Reserved Instances

Dedicated Hosts New

Scheduled Instances

Capacity Reservations

▼ IMAGES

AMIs

Bundle Tasks

▼ ELASTIC BLOCK STORE

Create Snapshot

Actions ▾

Owned By Me ▾

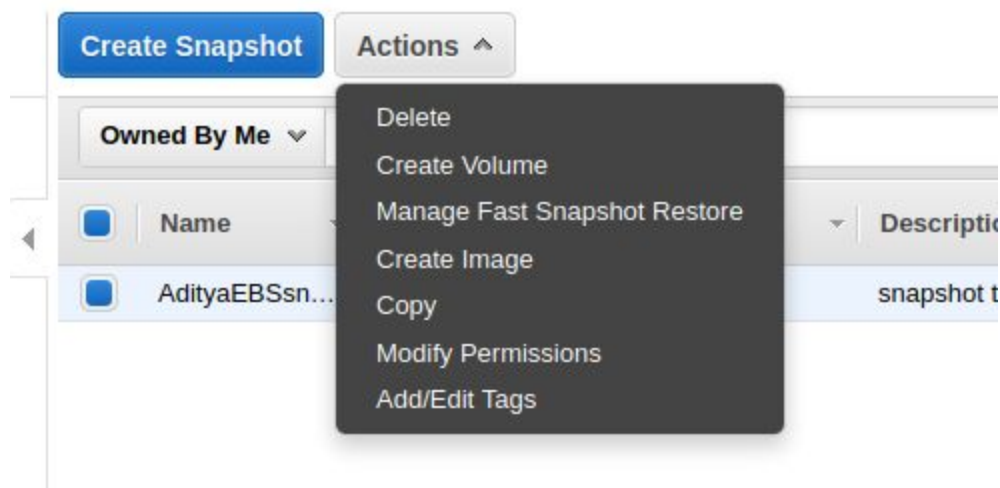
search : aditya ⓘ

Add filter ⓘ

1 to 1 of 1

< >

	Name ▾	Snapshot ID ▴	Size ▾	Description ▾	Status ▾	Started
<input checked="" type="checkbox"/>	AdityaEBSsn...	snap-085bc2e8070...	8 GiB	snapshot to copy in another region	completed	February 21, 2020



Copy Snapshot

This snapshot, **snap-085bc2e807004e2ff (AdityaEBSsnappshot)**, will be copied to a new snapshot. Set the new snapshot settings below:

Destination Region ⓘ

Description ⓘ

Encryption ☐ Encrypt this snapshot ⓘ

[Cancel](#) [Copy](#)

Copy Snapshot

This snapshot, **snap-085bc2e807004e2ff (AdityaEBSsnappshot)**, will be copied to a new snapshot. Set the new snapshot settings below:

Destination Region ⓘ

Description ⓘ

Encryption ☐ Encrypt this snapshot ⓘ

Error copying Snapshot

You are not authorized to perform this operation. Encoded authorization failure message: 6vPMC5Uagm84ivi5_7lrm5A_-rZ8pD3wla9Z9EQrlpdr3TccT_NkupBuljU_UQPB7k2FKj9G5APWSws6wSIOQ56Pq2jJvROIXBed54YfVTmRa_pJ_rsTkZteFd5xc d3a0O6WVwzNaezZRHaz4_KulbLp5q5_gTGV0iuuolRQB4zSwT-eaynO8OrP6iq0mqdYvh1rc-qboH4T2ehSJM6sxVK2UI-ywzKUsxNxfh-rPeaPqAol6ToMV-iO_boKuTIOenxxHe5JcMZ3F7skR0wBo4MvpxoHgt8wqzt8On6FX2coRPYHE7d_0KqJta5kGw3_y588-jH-rhzySbF360tqxSWBxyhrNJqkEDrJgGiaRkxSKIsFGcFyh2dOUBJ2wPsgdYVhgZ2LbXw5Km6gHUo9J6lnM1K2pLjVY8BKfAcV025UpYagzncK6N2XRzciYV39KPBocegZwLgLoolnM-RogIRLKOMFgi7XrmfHjxtVfFqAjd2k3dM4g-YpkR-reOqjTpi9yQD81u_qnQlpwvGNEknKu33g

[Cancel](#) [Copy](#)

9. Deattach 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.

Create Volume Actions

search : vol-039dd9ff6ea1e0494 Add filter

	Name	Volume ID	Size	Volume Type	IOPS	Snapshot	Created	Availability Zone	State
<input checked="" type="checkbox"/>		vol-039dd9ff...	12 GiB	gp2	100	snap-0e07811...	February 20, 2020 ...	us-east-1c	in

Create Volume Actions

search : vol-

☒ Name

☒ Volume Type IOPS

gp2 100

- Modify Volume
- Create Snapshot
- Delete Volume
- Attach Volume
- Detach Volume
- Force Detach Volume
- Change Auto-Enable IO Setting
- Add/Edit Tags

Volumes > Create Snapshot

Create Snapshot

Volume vol-039dd9ff6ea1e0494

Description snapshot for nginx ques

Encrypted Not Encrypted

Key	Value
(128 characters maximum)	(256 characters maximum)
Name	EC2NGINX
Add Tag 49 remaining (Up to 50 tags maximum)	

* Required

Cancel Create Snapshot

Volumes > Create Snapshot

Create Snapshot

✓ Create Snapshot Request Succeeded

snap-0e75428e4d4f90bb3

Manage Fast Snapshot Restore

Close

aws Services Resource Groups

aditya.upadhyay@tothenew.co... N. Virginia Support

New EC2 Experience Tell us what you think

Create Snapshot Actions

Owned By Me search : nginx Add filter

	Name	Snapshot ID	Size	Description	Status	Started
<input type="checkbox"/>	EC2NGINX	snap-0e75428e4d4f...	12 GiB	snapshot for nginx ques	completed	February 21, 2
<input type="checkbox"/>	Root-containi...	snap-0f1df13b045d...	8 GiB	For detaching and attaching to the other Instance	completed	February 19, 2

Select a snapshot above

Create Snapshot Actions

Owned By Me

☐ Name

☒ EC2NGINX

☐ Root-containi...

- Delete
- Create Volume
- Manage Fast Snapshot Restore
- Create Image
- Copy
- Modify Permissions
- Add/Edit Tags

Create Image from EBS Snapshot



Name	<input type="text" value="nginxAditya"/>	Description	<input type="text" value="installing nginx"/>
Architecture	<input type="text" value="x86_64"/>	Virtualization type	<input type="text" value="Hardware-assisted virtualization"/>
Root device name	<input type="text" value="/dev/sda1"/>	Kernel ID	<input type="text" value="Use default"/>
RAM disk ID	<input type="text" value="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-0e75428e4d4f90bb3	12	General Purpose	100 / 3000	N/A	<input checked="" type="checkbox"/>	Not Encrypted

Add New Volume

Cancel Create

Create Image from EBS Snapshot



Create Image request received.

View pending image [ami-063901da3dc1cf61c](#)

Close

Launch

Actions



Owned by me

search : nginx Add filter

1 to 2 of 2

	Name	AMI Name	AMI ID	Source	Owner	Visibility	Status	Creation Date
<input type="checkbox"/>		Fahad-Nginx	ami-0e0ba30b2ad3944ea	187632318301/...	187632318301	Private	available	February 19, 2020 at
<input type="checkbox"/>		nginxAditya	ami-063901da3dc1cf61c	187632318301/...	187632318301	Private	available	February 21, 2020 at

Launch

Actions

Owned by

AMI ID

Source

Owner

Visibility

Status

Creation Date

Launch

Spot Request

Deregister

Register New AMI

Copy AMI

Modify Image Permissions

Add/Edit Tags

Modify Boot Volume Setting

	ami-0e0ba30b2ad3944ea	187632318301/...	187632318301	Private	available	February 19, 2020 at
	ami-063901da3dc1cf61c	187632318301/...	187632318301	Private	available	February 21, 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 2: Choose an Instance Type

	Family	Type	vCPUs	Memory (GiB)	Instance Storage (GB)	EBS-Optimized Available	Network Performance	IPv6 Support
<input type="checkbox"/>	General purpose	t2.nano	1	0.5	EBS only	-	Low to Moderate	Yes
<input checked="" type="checkbox"/>	General purpose	t2.micro Free tier eligible	1	1	EBS only	-	Low to Moderate	Yes
<input type="checkbox"/>	General purpose	t2.small	1	2	EBS only	-	Low to Moderate	Yes
<input type="checkbox"/>	General purpose	t2.medium	2	4	EBS only	-	Low to Moderate	Yes
<input type="checkbox"/>	General purpose	t2.large	2	8	EBS only	-	Low to Moderate	Yes
<input type="checkbox"/>	General purpose	t2.xlarge	4	16	EBS only	-	Moderate	Yes
<input type="checkbox"/>	General purpose	t2.2xlarge	8	32	EBS only	-	Moderate	Yes
<input type="checkbox"/>	General purpose	t3a.nano	2	0.5	EBS only	Yes	Up to 5 Giqabit	Yes

Cancel

Previous

Review and Launch

Next: Configure Instance Details

1. Choose AMI 2. Choose Instance Type 3. Configure Instance 4. Add Storage 5. Add Tags 6. Configure Security Group 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

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

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 interface▼	subnet-06680a1c▼	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 -y update
sudo apt install -y nginx
```

Cancel

Previous

Review and Launch

Next: Add Storage

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-0e75428e4d4f90bb3	12	General Purpose SSD (gp2) ▼	100 / 3000	N/A	<input checked="" type="checkbox"/>	Not Encrypt ▼

Add New Volume

Launch Status

✔ Your instances are now launching

The following instance launches have been initiated: i-04d5e393c036fd8f4 [View launch log](#)

ℹ 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).

Launch Instance

Connect

Actions

search : aditya

Add filter

1 to 3 of 3

	Name	Aditya's ec2 i	Instance ID	Instance Type	Availability Zone	Instance State	Status Checks	Alarm Status
<input type="checkbox"/>	AdityaU		i-01f20f4a7542d707c	t2.micro	us-east-1c	running	2/2 checks ...	None
<input type="checkbox"/>	AdityaUinsta...		i-03e2f18b5be0e6d0b	t2.micro	us-east-1c	stopped		None
<input checked="" type="checkbox"/>	Aditya_nginx		i-04d5e393c036fd8f4	t2.micro	us-east-1c	running	Initializing	None

Instance: i-04d5e393c036fd8f4 (Aditya_nginx)

Public DNS: ec2-54-152-151-132.compute-1.amazonaws.com

Description

Status Checks

Monitoring

Tags

Instance ID

i-04d5e393c036fd8f4

Public DNS (IPv4)

ec2-54-152-151-132.compute-1.amazonaws.com

Instance state

running

IPv4 Public IP

54.152.151.132

Instance type

t2.micro

IPv6 IPs

-

Type	Protocol	Port Range	Source	Description
HTTP	TCP	80	0.0.0.0/0	
HTTP	TCP	80	::/0	
SSH	TCP	22	0.0.0.0/0	

54.152.151.132

Welcome to nginx!

If you see this page, the nginx web server is successfully installed and working. Further configuration is required.

For online documentation and support please refer to nginx.org.
Commercial support is available at nginx.com.

Thank you for using nginx.

