

# Elastic Cloud Compute

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

**Ans 1.**

The screenshot displays the AWS Management Console interface for an EC2 instance. At the top, there are buttons for 'Launch Instance', 'Connect', and 'Actions'. Below these is a search bar with the text 'search : i-0df9d9af8109c4b4a' and a filter icon. A table lists the instance details:

Name	Instance ID	Instance Type	Availability Zone	Instance State	Status Checks	Alarm Status	Public DNS (IPv4)
kaushlendra	i-0df9d9af8109c4b4a	t2.micro	us-east-1c	running	2/2 checks ...	None	ec2-34-238-126-36

Below the table, the instance details for 'i-0df9d9af8109c4b4a (kaushlendra)' are shown. The public DNS is 'ec2-34-238-126-36.compute-1.amazonaws.com'. The 'Description' tab is active, showing the following details:

Instance ID	i-0df9d9af8109c4b4a	Public DNS (IPv4)	ec2-34-238-126-36.compute-1.amazonaws.com
Instance state	running	IPv4 Public IP	34.238.126.36
Instance type	t2.micro	IPv6 IPs	-
Finding	You may not have permission to view AWS Config details		

```

kaushlendra@kaushlendra:Downloads $ sudo chmod 400 kaushu.pem
kaushlendra@kaushlendra:Downloads $ ssh -i "kaushu.pem" ubuntu@ec2-34-238-126-36.compute-1.amazonaws.com
The authenticity of host 'ec2-34-238-126-36.compute-1.amazonaws.com (34.238.126.36)' can't be established.
ECDSA key fingerprint is SHA256:j4E0yK6KI4dHqyLV51vvEOIYtcM7FDLN8T53yv6XXxU.
Are you sure you want to continue connecting (yes/no)? y
Please type 'yes' or 'no': yes
Warning: Permanently added 'ec2-34-238-126-36.compute-1.amazonaws.com,34.238.126.36' (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 Wed Feb 19 15:12:32 UTC 2020

System load:  0.02               Processes:    89
Usage of /:   13.6% of 7.69GB    Users logged in: 0
Memory usage: 15%               IP address for eth0: 172.31.50.17
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-172-31-50-17:~$

```

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

**Ans 2.**

IPv4 Public IP	54.172.150.87
IPv6 IPs	-
Elastic IPs	-
Availability zone	us-east-1c
Security groups	launch-wizard-15. <a href="#">view inbound rules.</a> <a href="#">view outbound rules</a>
Scheduled events	No scheduled events
AMI ID	kaushlendra 2 (ami-0d8558d71a225db8b)
Platform	-
IAM role	-



kaushlendra 2 - ami-0d8558d71a225db8b

backup of kaushlendra

Root device type: ebs

Virtualization type: hvm

Owner: 187632318301

ENA Enabled: Yes

Select

64-bit (x86)

```
kaushlendra@kaushlendra:Downloads $ ssh -i "kaushu.pem" ubuntu@ec2-54-172-150-87.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 Wed Feb 19 15:34:21 UTC 2020

System load: 0.0          Processes:            87
Usage of /:  13.8% of 7.69GB   Users logged in:    0
Memory usage: 14%          IP address for eth0: 172.31.41.97
Swap usage:  0%
Terminal

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

Last login: Wed Feb 19 15:12:33 2020 from 103.83.127.156
To run a command as administrator (user "root"), use "sudo <command>".
See "man sudo_root" for details.

ubuntu@ip-172-31-41-97:~$
```

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

**Ans 3.**

Create Volume

Actions

Filter by tags and attributes or search by keyword








<input type="checkbox"/>	Name	Volume ID	Size	Volume Type	IOPS	Snapshot
<input checked="" type="checkbox"/>	kaushu ebs	vol-06d3feee...	8 GiB	gp2	100	

Volumes: **vol-06d3feee97c8d2d41 (kaushu ebs)**









Description	Status Checks	Monitoring	Tags
Volume ID	vol-06d3feee97c8d2d41		
Size	8 GiB		
Created	February 19, 2020 at 9:22:11 PM UTC+5:30		
State	in-use		
Attachment information	<a href="#">i-0df9d9af8109c4b4a</a> (kaushlendra):/dev/sdf (attached)		
Volume type	gp2		
Product codes	-		
IOPS	100		

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

**Ans 4. Instance Stopped**

	kaushlendra	i-0df9d9af8109c4b4a	t2.micro	us-east-1c	 stopped		None	
	Fahad-AMI-T...	i-0e9bff2a65dfcd03f	t3.nano	us-east-1c	 running	 2/2 checks ...	None	 ec2-54-161-135

**Instance Starting**

	kaushlendra	i-0df9d9af8109c4b4a	t2.micro	us-east-1c	 pending	 Initializing	None	
	Fahad-AMI-T...	i-0e9bff2a65dfcd03f	t3.nano	us-east-1c	 running	 2/2 checks ...	None	 ec2-54-161-135-25

**Ebs is Attached as they were attached earlier.**

Create Volume

Actions

search : i-0df9d9af8109c4b4a

Add filter

1 to 3 of 3

<input type="checkbox"/>	Name	Volume ID	Size	Volume Type	IOPS	Snapshot	Created	Availability Zone	State
<input type="checkbox"/>	kaushu ebs	vol-06d3feee...	8 GiB	gp2	100		February 19, 2020 ...	us-east-1c	<div>in-use</div>
<input type="checkbox"/>		vol-05dd5f69...	8 GiB	gp2	100		February 19, 2020 ...	us-east-1c	<div>in-use</div>
<input type="checkbox"/>		vol-0521656...	8 GiB	gp2	100	snap-0e07811...	February 19, 2020 ...	us-east-1c	<div>in-use</div>

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

**Ans 5.**

**CREATED INSTANCE 1 AND DONE SOME CHANGES IN FSTAB**

```
File Edit View Search Terminal Help
Usage of /: 16.1% of 7.69GB Users logged in: 1
Memory usage: 18% IP address for eth0: 172.31.247.151
Swap usage: 0%

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

Last login: Thu Feb 20 08:27:43 2020 from 61.12.91.218
ubuntu@ip-172-31-247-151:~$ df -h
Filesystem      Size  Used Avail Use% Mounted on
udev            481M   0  481M   0% /dev
tmpfs           99M   772K  98M   1% /run
/dev/xvda1      7.7G  1.3G  6.5G  17% /
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      90M   90M   0 100% /snap/core/8268
/dev/loop1      18M   18M   0 100% /snap/amazon-ssm-agent/1480
tmpfs           99M   0   99M   0% /run/user/1000
ubuntu@ip-172-31-247-151:~$ cd /etc/
ubuntu@ip-172-31-247-151:/etc$ sudo vi fstab
ubuntu@ip-172-31-247-151:/etc$ cd ..
ubuntu@ip-172-31-247-151:/ $ lsblk
NAME        MAJ:MIN RM  SIZE RO TYPE MOUNTPOINT
loop0       7:0      0 89.1M 1 loop /snap/core/8268
loop1       7:1      0  18M 1 loop /snap/amazon-ssm-agent/1480
xvda        202:0    0    8G 0 disk
└─xvda1     202:1    0    8G 0 part /
xvdb        202:16   0    8G 0 disk
xvdc        202:32   0    8G 0 disk
ubuntu@ip-172-31-247-151:/ $ exit
logout
Connection to ec2-3-84-94-137.compute-1.amazonaws.com closed.
kaushlendra@kaushlendra:Downloads$ ssh -i "kaushu.pem" ubuntu@ec2-100-26-183-46.compute-1.amazonaws.com
ssh: connect to host ec2-100-26-183-46.compute-1.amazonaws.com port 22: Connection refused
kaushlendra@kaushlendra:Downloads$
```





```

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-172-31-32-223:~$ lsblk
NAME        MAJ:MIN RM  SIZE RO TYPE  MOUNTPOINT
loop0       7:0      0   89.1M  1 loop /snap/core/8268
loop1       7:1      0    18M  1 loop /snap/amazon-ssm-agent/1480
xvda        202:0    0     8G  0 disk
├─xvda1     202:1    0     8G  0 part /
└─xvdh      202:112  0     8G  0 disk
   └─xvdh1   202:113  0     8G  0 part
ubuntu@ip-172-31-32-223:~$ sudo mount /dev/xvdh /mnt/
mount: /mnt: wrong fs type, bad option, bad superblock on /dev/xvdh, missing codepage or helper program, or other error.
ubuntu@ip-172-31-32-223:~$ sudo mount /dev/xvdh1 /mnt/
ubuntu@ip-172-31-32-223:~$ cd /mnt/xvdh1
-bash: cd: /mnt/xvdh1: No such file or directory
ubuntu@ip-172-31-32-223:~$ cd /mnt
ubuntu@ip-172-31-32-223:/mnt$ ls
bin  dev  home  initrd.img.old  lib64  media  opt  root  sbin  srv  tmp  var  vmlinuz.old
boot  etc  initrd.img  lib  lost+found  mnt  proc  run  snap  sys  usr  vmlinuz
ubuntu@ip-172-31-32-223:/mnt$ cd etc
ubuntu@ip-172-31-32-223:/mnt/etc$ ls -ld fstab
-rw-r--r-- 1 root root 56 Feb 20 11:07 fstab
ubuntu@ip-172-31-32-223:/mnt/etc$ cat fstab
LABEL=cloudimg-rootfs /sakru ext4 defaults,discard 0 0
ubuntu@ip-172-31-32-223:/mnt/etc$

```

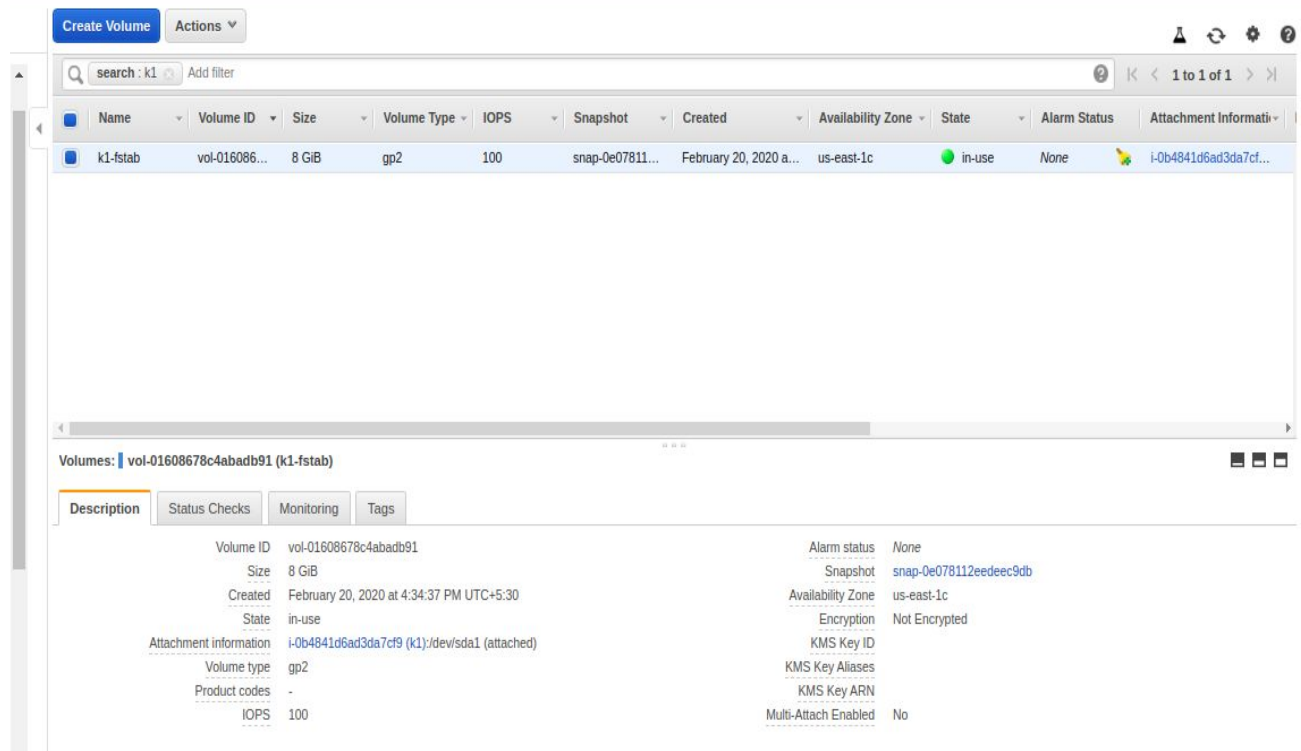
**AFTER THIS SOLVE THE ERROR IN ATTCHED ROOT EBS**

```

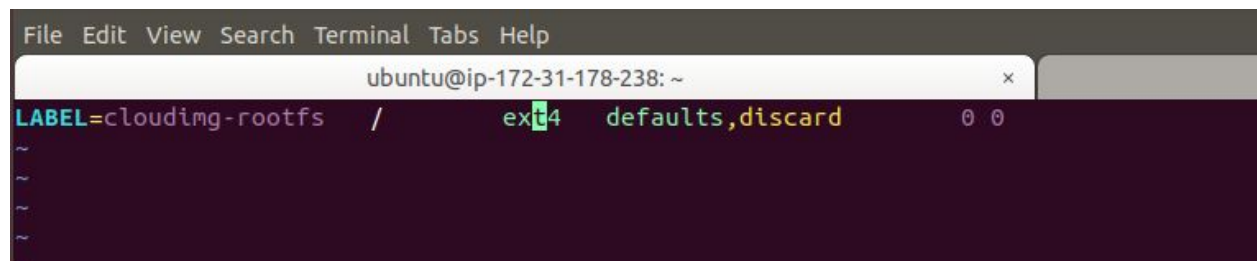
ubuntu@ip-172-31-32-223: /mnt/etc
LABEL=cloudimg-rootfs /sakru ext4 defaults,discard 0 0

```

**THEN AGAIN ATTACH THE ROOT EBS INSTANCE 1**



**AFTER ATTACHING THE ERROR SOLVED**



**Ques 6. Resize the EBS from 8 to 10GB**

**Ans 6.**



Modify Volume

✕

Volume ID

vol-0521656c742b831ea

Volume Type

General Purpose SSD (gp2)

ⓘ

Size

10

(Min: 1 GiB, Max: 16384 GiB)

ⓘ

iopts

100 / 3000

(Baseline of 3 IOPS per GiB with a minimum of 100 IOPS, burstable to 3000 IOPS)

ⓘ

## Status after resizing the EBS

Create Volume

Actions ▾

⚠️ ↺ ⚙️ ?

search : i-0dff9d9af8109c4b4a

Add filter

1 to 3 of 3

	Name	Volume ID	Size	Volume Type	IOPS	Snapshot	Created	Availability Zone	State
<input type="checkbox"/>	kaushu ebs	vol-06d3feee...	8 GiB	gp2	100		February 19, 2020 ...	us-east-1c	in-use
<input type="checkbox"/>		vol-05dd5f69...	8 GiB	gp2	100		February 19, 2020 ...	us-east-1c	in-use
<input type="checkbox"/>		vol-0521656...	10 GiB	gp2	100	snap-0e07811...	February 19, 2020 ...	us-east-1c	in-use

**Ques 7. SSH from one instance A to instance B.**

**Ans 7.**

```
ubuntu@ip-172-31-50-17:~$ ssh -i "kaushu.pem" ubuntu@ec2-54-172-185-55.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 Wed Feb 19 17:26:32 UTC 2020

System load:  0.0               Processes:            89
Usage of /:   15.0% of 7.69GB   Users logged in:     0
Memory usage: 15%              IP address for eth0: 172.31.101.126
Swap usage:   0%

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

Last login: Wed Feb 19 17:17:07 2020 from 103.83.127.161
To run a command as administrator (user "root"), use "sudo <command>".
See "man sudo_root" for details.

ubuntu@ip-172-31-101-126:~$ █
```

**Ques 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.**

**Ans 9. The root EBS has been detached**

Volumes: **vol-06d3feee97c8d2d41 (kaushu ebs)**

Description

Status Checks

Monitoring

Tags

Volume ID vol-06d3feee97c8d2d41

Size 8 GiB

Created February 19, 2020 at 9:22:11 PM  
UTC+5:30

State available

Attachment information

Volume type gp2

Product codes -

IOPS 100

## Creating snapshot

Create Snapshot

Actions

Owned By Me

Filter by tags and attributes or search by keyword

<input type="checkbox"/>	Name	Snapshot ID	Size	Description	Status
<input type="checkbox"/>		snap-010de9183bb...	8 GiB	Created by CreateImage(i-0df9d9af8109c4b4a) for ami-0d8558...	completed
<input type="checkbox"/>		snap-03d0b579a84...	8 GiB	Rishabh Snapshot of instance 1 with nginx	completed
<input checked="" type="checkbox"/>	kaushlendra ...	snap-0409b73cc58...	8 GiB	detached root ebs	completed

## INSTALL NGINX AT THE BOOT TIME WITH THE HELP OF USER DATA

## View/Change User Data



Instance ID: i-0b2e11aacb01fe9ce

User Data:

```
#!/bin/bash
sudo apt-get update -y
sudo apt-get install nginx -y
sudo systemctl start nginx
sudo systemctl enable nginx
```

To edit your instance's user data you first need to stop your instance.

## NGINX INSTALLED

```
ubuntu@ip-172-31-247-151:~$ sudo 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: en
   Active: active (running) since Thu 2020-02-20 08:28:44 UTC; 1min 43s ago
     Docs: man:nginx(8)
   Main PID: 2366 (nginx)
    Tasks: 2 (limit: 1152)
   CGroup: /system.slice/nginx.service
           └─2366 nginx: master process /usr/sbin/nginx -g daemon on; master_pro
              └─2368 nginx: worker process

Feb 20 08:28:44 ip-172-31-247-151 systemd[1]: Starting A high performance web se
Feb 20 08:28:44 ip-172-31-247-151 systemd[1]: nginx.service: Failed to parse PID
Feb 20 08:28:44 ip-172-31-247-151 systemd[1]: Started A high performance web ser
lines 1-13/13 (END)...skipping...
● 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 08:28:44 UTC; 1min 43s ago
     Docs: man:nginx(8)
   Main PID: 2366 (nginx)
    Tasks: 2 (limit: 1152)
   CGroup: /system.slice/nginx.service
           └─2366 nginx: master process /usr/sbin/nginx -g daemon on; master_process on;
              └─2368 nginx: worker process
```

