Elastic Cloud Compute

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

Ans 1.

```
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:j4E0yK6KI4dHqyLVS1vvEOIYtcM7FDlN8T53yv6XXxU.
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. view inbound rules. view outbound rules
Scheduled events	No scheduled events
AMI ID	kaushlendra 2 (ami-0d8558d71a225db8b)
Platform	-
IAM role	-

```
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

	Name	Volume ID	Size	Volume Type	IOPS	Snapshot
☑	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   i-0df9d9af8109c4b4a
(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.

	Name	Volume ID	Size	Volume Type	IOPS	Snapshot	Created	Availability Zone	State
	kaushu ebs	vol-06d3feee...	8 GiB	gp2	100		February 19, 2020 ...	us-east-1c	🟢 in-use
		vol-05dd5f69...	8 GiB	gp2	100		February 19, 2020 ...	us-east-1c	🟢 in-use
		vol-0521656...	8 GiB	gp2	100	snap-0e07811...	February 19, 2020 ...	us-east-1c	🟢 in-use

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

THEN DETTACH THE EBS FROM INSTANCE 1

AFTER THIS CREATED A NEW INSTANCE 2 AND ATTACHED THE DETACH ROOT EBS OF INSTANCE 1

```
0 packages can be updated.
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individual files in /usr/share/doc/*/copyright.

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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
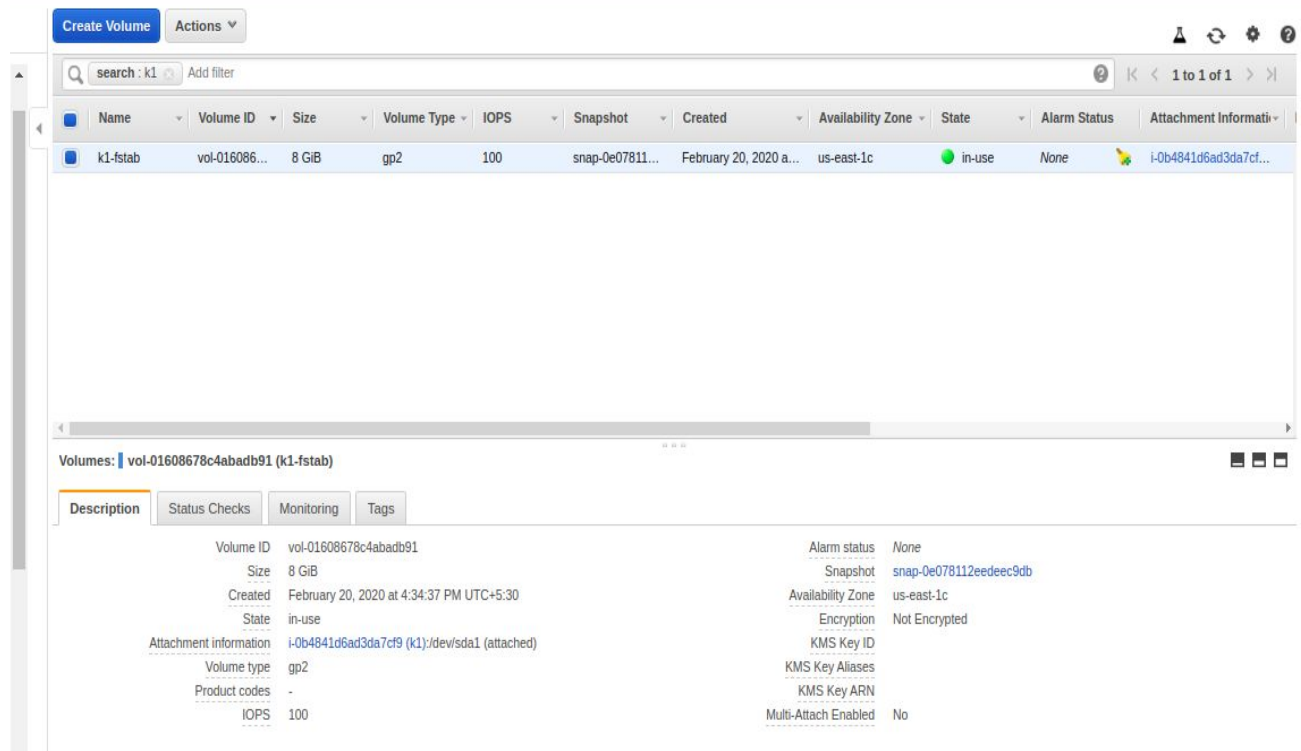
AFTER ATTACHING THE ERROR SOLVED
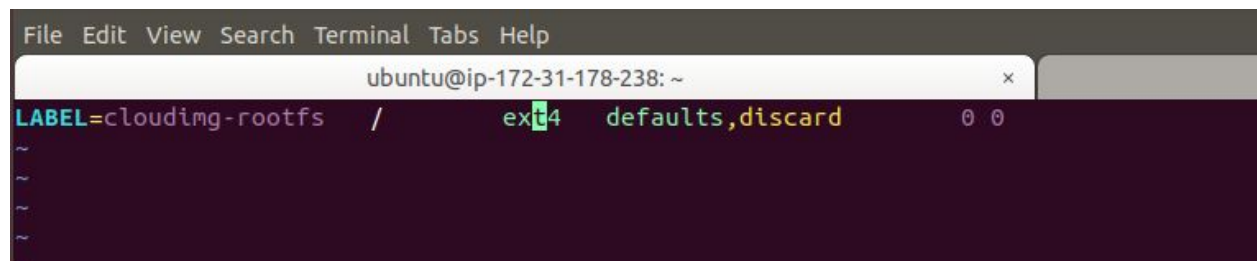
Ques 6. Resize the EBS from 8 to 10GB

Ans 6.

Modify Volume

Volume ID vol-0521656c742b831ea

Volume Type General Purpose SSD (gp2)

Size 10 (Min: 1 GiB, Max: 16384 GiB)

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

Status after resizing the EBS

Name	Volume ID	Size	Volume Type	IOPS	Snapshot	Created	Availability Zone	State
kaushu ebs	vol-06d3feee...	8 GiB	gp2	100		February 19, 2020 ...	us-east-1c	🟢 in-use
	vol-05dd5f69...	8 GiB	gp2	100		February 19, 2020 ...	us-east-1c	🟢 in-use
	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   ❓ |< < 1

	Name	▼	Snapshot ID	▲	Size	▼	Description	▼	Status
☐			snap-010de9183bb…		8 GiB		Created by CreateImage(i-0df9d9af8109c4b4a) for ami-0d8558…		🟢 completed
☐			snap-03d0b579a84…		8 GiB		Rishabh Snapshot of instance 1 with nginx		🟢 completed
☑	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
```