

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

The screenshot shows the AWS Management Console with the Services menu open. The menu lists various AWS services categorized into groups:

- Compute**: EC2, Lightsail, ECR, ECS, EKS, Lambda, Batch, Elastic Beanstalk, Serverless Application Repository, AWS Outposts, EC2 Image Builder.
- Customer Enablement**: AWS IQ, Support, Managed Services.
- Machine Learning**: Amazon SageMaker, Amazon CodeGuru, Amazon Comprehend, Amazon Forecast, Amazon Fraud Detector, Amazon Kendra, Amazon Lex, Amazon Machine Learning, Amazon Personalize, Amazon Poly, Amazon Rekognition, Amazon Textract, Amazon Transcribe, Amazon Translate, AWS DeepLens.
- Application Integration**: Step Functions, Amazon EventBridge, Amazon MQ, Simple Notification Service, Simple Queue Service, SWF.
- Blockchain**: Amazon Managed Blockchain.
- Satellite**: Ground Station.
- Storage**: Amazon Braket.
- Quantum Technologies**: Amazon Braket.
- Customer Engagement**.

The search bar at the top of the Services menu contains the placeholder text "Find a service by name or feature (for example, EC2, S3 or VM, storage)".

The screenshot shows the EC2 Resources page in the AWS Management Console. The left sidebar includes links for New EC2 Experience, EC2 Dashboard, Events, Tags, Reports, Limits, Instances (selected), Instance Types, Launch Templates, Spot Requests, Savings Plans, Reserved Instances, Dedicated Hosts, and Capacity Reservations. The main content area displays a table of resources:

Running Instances	Elastic IPs
Dedicated Hosts	Snapshots
Volumes	Load balancers
Key pairs	Security groups
Placement groups	

A callout box in the bottom right corner provides information about creating Microsoft SQL Server Always On availability groups on AWS using the AWS Launch Wizard for SQL Server.

The footer of the page includes links for Feedback, English (US), Privacy Policy, and Terms of Use.

Activities Google Chrome ▾ Thu Feb 20, 13:10:57 25.4KB/s 20.9KB/s ▲ 🔍 96% ▾

How 14.04 Apac! AWS Launch Learn My Di EC2 + Apps Gmail YouTube Maps

Thu Feb 20, 13:10:57 us-east-2.console.aws.amazon.com/ec2/v2/home?region=us-east-2#LaunchInstanceWizard:

Services Resource Groups

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)

Search for an AMI by entering a search term e.g. "Windows"

Quick Start

My AMIs

Amazon Linux 2 AMI (HVM), SSD Volume Type - ami-0e38b48473ea57778 (64-bit x86) / ami-0fb3bb3e1ae2da0be (64-bit Arm)

Select 64-bit (x86) 64-bit (Arm)

AWS Marketplace

Community AMIs

Free tier eligible

Amazon Linux 2018.03.0 (HVM), SSD Volume Type - ami-0998bf58313ab53d (64-bit x86)

Select 64-bit (x86)

Free tier only

Amazon Linux 2018.03.0 (HVM), SSD Volume Type - ami-0998bf58313ab53d (64-bit x86)

The Amazon Linux AMI is an EBS-backed, AWS-supported image. The default image includes AWS command line tools, Python, Ruby, Perl, and Java. The repositories include Docker, PHP, MySQL, PostgreSQL, and other packages.

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

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Activities Google Chrome ▾ Thu Feb 20, 13:12:30 5.16KB/s 5.70KB/s ▲ 🔍 95% ▾

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Thu Feb 20, 13:12:30 console.aws.amazon.com/ec2/v2/home?region=us-east-1#LaunchInstanceWizard:

Services Resource Groups

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

Capacity Reservation Open Create new Capacity Reservation

IAM role None Create new IAM role

Shutdown behavior Stop

Enable termination protection Protect against accidental termination

Monitoring Enable CloudWatch detailed monitoring Additional charges apply.

Tenancy Shared - Run a shared hardware instance Additional charges will apply for dedicated tenancy.

Elastic Inference Add an Elastic Inference accelerator Additional charges apply.

T2/T3 Unlimited Enable Additional charges may apply

Cancel Previous Review and Launch Next: Add Storage

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console.aws.amazon.com/ec2/v2/home?region=us-east-1#LaunchInstanceWizard:

Apps Gmail YouTube Maps

windows Services Resource Groups

1. Choose AMI 2. Choose Instance Type 3. Configure Instance 4. Add Storage 5. Add Tags 6. Configure Security Group 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-0e078112eedeeec9db	8	General Purpose SSD (gp2)	100 / 3000	N/A	<input checked="" type="checkbox"/>	Not Encrypted

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

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How 14.04 Apac! AWS Launch Learn My Di EC2 +

console.aws.amazon.com/ec2/v2/home?region=us-east-1#LaunchInstanceWizard:

Apps Gmail YouTube Maps

windows Services Resource Groups

1. Choose AMI 2. Choose Instance Type 3. Configure Instance 4. Add Storage 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
Name	Revant	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Owner	Revant	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Purpose	Bootcamp Assignment	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>

Add another tag (Up to 50 tags maximum)

Cancel Previous Review and Launch Next: Configure Security Group

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How 14.04 Apac! AWS Launch Learn My Di EC2 +

console.aws.amazon.com/ec2/v2/home?region=us-east-1#LaunchInstanceWizard:

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aws Services Resource Groups

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

Description: launch-wizard-45 created 2020-02-20T13:13:53.847+05:30

Type	Protocol	Port Range	Source	Description
SSH	TCP	22	Anywhere	0.0.0.0/0, ::/0

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

Feedback English (US)

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How 14.04 Apac! AWS Launch Learn My Di EC2 +

console.aws.amazon.com/ec2/v2/home?region=us-east-1#LaunchInstanceWizard:

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aws Services Resource Groups

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 Details

i2.micro Variable

Security Groups

Security group name	Description
launch-wizard-45	launched by launch-wizard-45

Type: SSH

Instance Details

Storage

Tags

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: revant_bootcamp

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

Low to Moderate

Edit security groups

Description

Edit instance details

Edit storage

Edit tags

Cancel Previous Launch

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The screenshot shows the AWS EC2 Instances page. On the left, there's a sidebar with links like EC2 Dashboard, Events, Tags, Reports, Limits, Instances (selected), Instance Types, Launch Templates, Spot Requests, Savings Plans, Reserved Instances, Dedicated Hosts, Scheduled Instances, Capacity Reservations, and Images. The main content area has tabs for Launch Instance, Connect, and Actions. A search bar at the top right says "search : revant". Below it is a table with columns: Name, Instance ID, Instance Type, Availability Zone, Instance State, Status Checks, Alarm Status, and Public DNS (IPv4). One row is selected for an instance named "Revant" with the ID "i-0659998f863956b07", which is an "t2.micro" type in "us-east-1c" and is currently "running". At the bottom of the table, there are buttons for "Edit", "Delete", and "Actions".

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

The screenshot shows the "Create Image" dialog box. It has fields for "Instance ID" (set to "i-0659998f863956b07"), "Image name" (set to "ami_instanceA"), and "Image description" (empty). There's a checkbox for "No reboot". Below this is a section for "Instance Volumes" with a table. The table has columns: Volume Type, Device, Snapshot, Size (GiB), Volume Type, IOPS, Throughput (MB/s), Delete on Termination, and Encrypted. One row is shown for a "Root" volume with device "/dev/sda1", snapshot "snap-0e078112eedeec9db", size "8", volume type "General Purpose SSD (gp2)", IOPS "100 / 3000", throughput "N/A", delete on termination checked, and encrypted status "Not Encrypted". Below the table is a button "Add New Volume". At the bottom of the dialog are "Cancel" and "Create Image" buttons.

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How 14.04 Apache Apache AWS Learn My Drive AMIs EC2 ▾ +

console.aws.amazon.com/ec2/v2/home?region=us-east-1#Images:visibility=owned-by-me;search=ami-0cd8603ed08cf12eb;sort=name

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New EC2 Experience Tell us what you think

EC2 Dashboard New Events Tags Reports Limits

INSTANCES Instances Instance Types Launch Templates New Spot Requests Savings Plans Reserved Instances Dedicated Hosts New Scheduled Instances Capacity Reservations

IMAGES

Launch Actions

Owned by me search : ami-0cd8603ed08cf12eb Add filter

Name	AMI Name	AMI ID	Source	Owner	Visibility	Status	Creation Date
Ami_instanceA	ami_instanceA	ami-0cd8603ed08cf12eb	187632318301...	187632318301	Private	available	February 20, 2020 at 1:19:27 PM

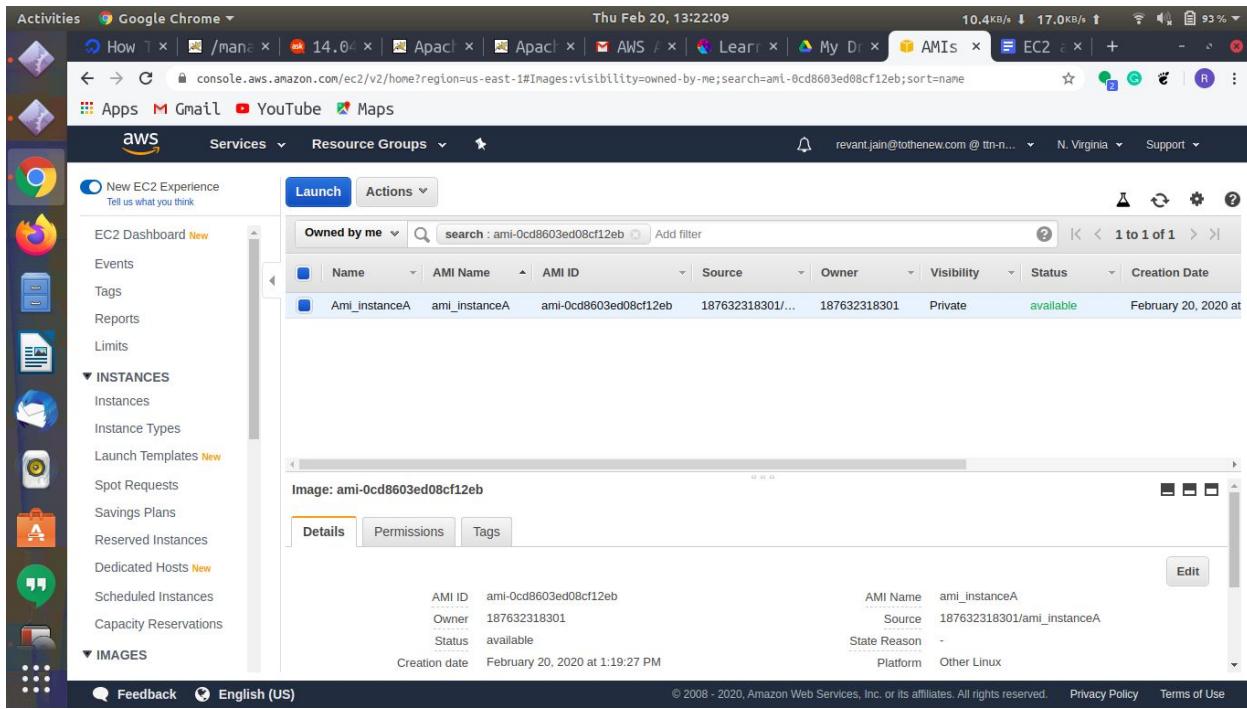
Image: ami-0cd8603ed08cf12eb

Details Permissions Tags

AMI ID: ami-0cd8603ed08cf12eb Owner: 187632318301 Status: available Creation date: February 20, 2020 at 1:19:27 PM

AMI Name: ami_instanceA Source: 187632318301/ami_instanceA State Reason: - Platform: Other Linux

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Activities Google Chrome ▾ Thu Feb 20, 13:23:24 3.56KB/s 3.68B/s ▾ 93 % ▾

How 14.04 Apache Apache AWS Learn My Drive AMIs Launch EC2 ▾ +

console.aws.amazon.com/ec2/v2/home?region=us-east-1#LaunchInstanceWizard:ami=ami-0cd8603ed08cf12eb

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1. Choose AMI 2. Choose Instance Type 3. Configure Instance 4. Add Storage 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.

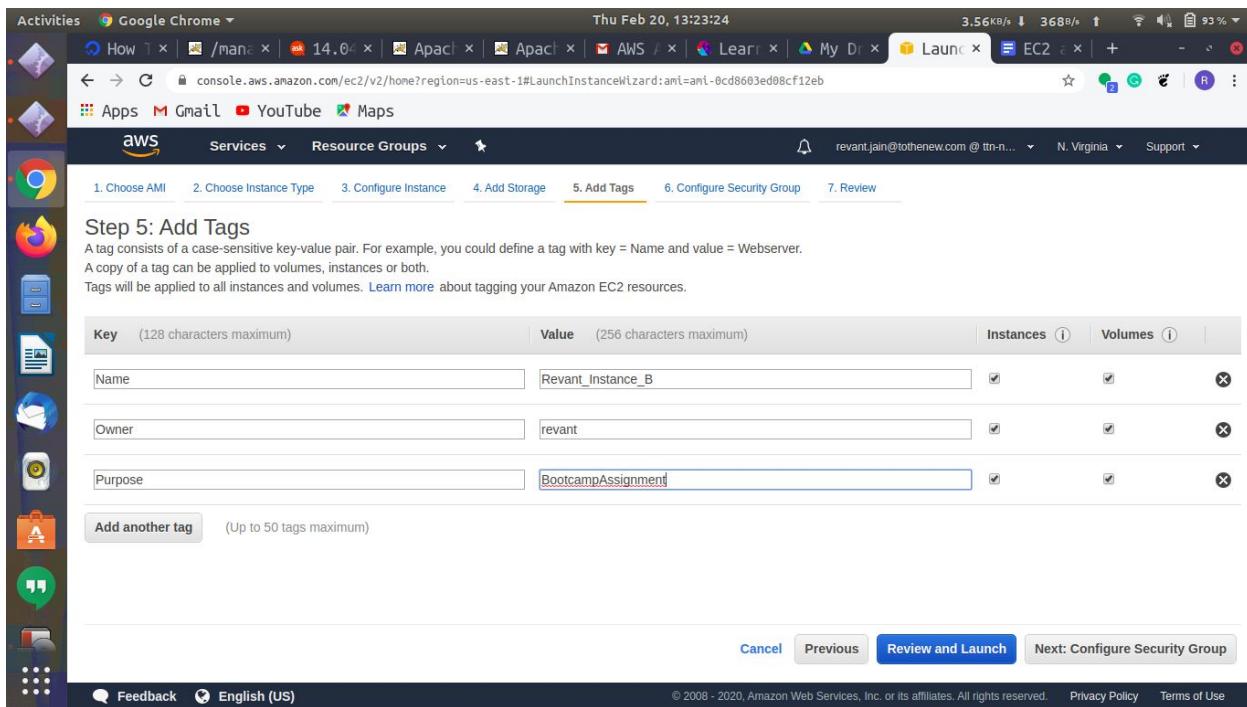
Tags will be applied to all instances and volumes. [Learn more](#) about tagging your Amazon EC2 resources.

Key (128 characters maximum)	Value (256 characters maximum)	Instances (1)	Volumes (1)
Name	Revant_Instance_B	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Owner	revant	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Purpose	BootcampAssignment	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>

Add another tag (Up to 50 tags maximum)

Cancel Previous Review and Launch Next: Configure Security Group

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How 14.04 Apache Apache AWS Learn My Drive Launch EC2 +

console.aws.amazon.com/ec2/v2/home?region=us-east-1#LaunchInstanceWizard:ami=ami-0cd8603ed08cf12eb

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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 Details

Instance Type t2.micro ECUs 1 vCPU 1.0 GB RAM 1.0 GB Network Variable

Security Groups

Security group name Description launch-1 launch-1

Type SSH SSH

Choose an existing key pair Select a key pair revant_bootcamp

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

Cancel Launch Instances

Network Performance Low to Moderate

Description

Edit security groups

Edit instance details

Edit storage

Edit tags

Cancel Previous Launch

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Activities Google Chrome ▾ Thu Feb 20, 13:24:02 7.46KB/s 35.7KB/s 92% ▾

How 14.04 Apache Apache AWS Learn My Drive Launch EC2 +

console.aws.amazon.com/ec2/v2/home?region=us-east-1#LaunchInstanceWizard:ami=ami-0cd8603ed08cf12eb

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Launch Status

Your instances are now launching

The following instance launches have been initiated: i-0e00ddbb09ef7565 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

While your instances are launching you can also

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The screenshot shows the AWS EC2 Instances page. On the left sidebar, under 'INSTANCES', 'Instances' is selected. In the main content area, a table lists two instances:

Name	Instance ID	Instance Type	Availability Zone	Instance State	Status Checks	Alarm Status	Public Dl
Revant_Instance_B	i-0e00ddbb09eef7565	t2.micro	us-east-1c	running	Initializing	None	ec2-34-22
Revant_InstanceA	i-065999fb863956b07	t2.micro	us-east-1c	running	2/2 checks ...	None	ec2-54-15

At the bottom of the table, it says 'Select an instance above'.

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

The screenshot shows the AWS Volumes page. On the left sidebar, under 'ELASTIC BLOCK STORE', 'Volumes' is selected. In the main content area, a table lists several volumes:

Name	Volume ID	Size	Volume Type	IOPS	Snapshot	Created	Availability Zone	State
Revant_Insta...	vol-0fb67581...	8 GiB	gp2	100	snap-00cad0...	February 20, 2020 ...	us-east-1c	in-use
Chirag-Ques2	vol-080dbba...	8 GiB	gp2	100	snap-019a420...	February 20, 2020 ...	us-east-1c	in-use
	vol-0cf1d1c39...	8 GiB	gp2	100	snap-0e07811...	February 20, 2020 ...	us-east-1c	in-use
	vol-0697d79f...	8 GiB	gp2	100	snap-0bdd0ef7...	February 20, 2020 ...	us-east-1c	in-use
	vol-0ca5000...	8 GiB	gp2	100	snap-0e07811...	February 20, 2020 ...	us-east-1c	in-use
	vol-09b9feb8...	8 GiB	gp2	100	snap-0e07811...	February 20, 2020 ...	us-east-1c	in-use
Revant	vol-02a7445...	8 GiB	gp2	100	snap-0e07811...	February 20, 2020 ...	us-east-1c	in-use
AdityaUlinsta...	vol-0c4a213...	8 GiB	gp2	100	snap-077a0c0...	February 20, 2020 ...	us-east-1c	in-use
Ardiyal lehs	vol-0f6733d3...	8 GiB	gp2	100		February 20, 2020 ...	us-east-1c	in-use

At the bottom of the table, it says 'Select a volume above'.

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How 14.0.4 Apac! AWS Learn My Dr EC2 +

console.aws.amazon.com/ec2/v2/home?region=us-east-1#CreateVolume;

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revant.jain@tothenew.com @ ttn-n... N. Virginia Support

Volumes > Create Volume

Create Volume

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 ⓘ C ⓘ

Encryption Encrypt this volume

Feedback English (US)

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How 14.0.4 Apac! AWS Learn My Dr EC2 +

console.aws.amazon.com/ec2/v2/home?region=us-east-1#Volumes:volumeId=vol-0feb938bf98a6ae0c;sort=desc:createTime

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New EC2 Experience Tell us what you think

Dedicated Hosts New

Scheduled Instances

Capacity Reservations

IMAGES AMIs

Bundle Tasks

ELASTIC BLOCK STORE Volumes

Snapshots

Lifecycle Manager

NETWORK & SECURITY Security Groups

Elastic IPs New

Placement Groups New

Key Pairs New

Create Volume Actions

Name	Volume ID	Size	Volume Type	IOPS	Snapshot	Created	Availability Zone	State
Revant_Ebs...	vol-0feb938bf98a6ae0c	8 GiB	gp2	100	-	February 20, 2020 at 1:26:33 PM	us-east-1a	available

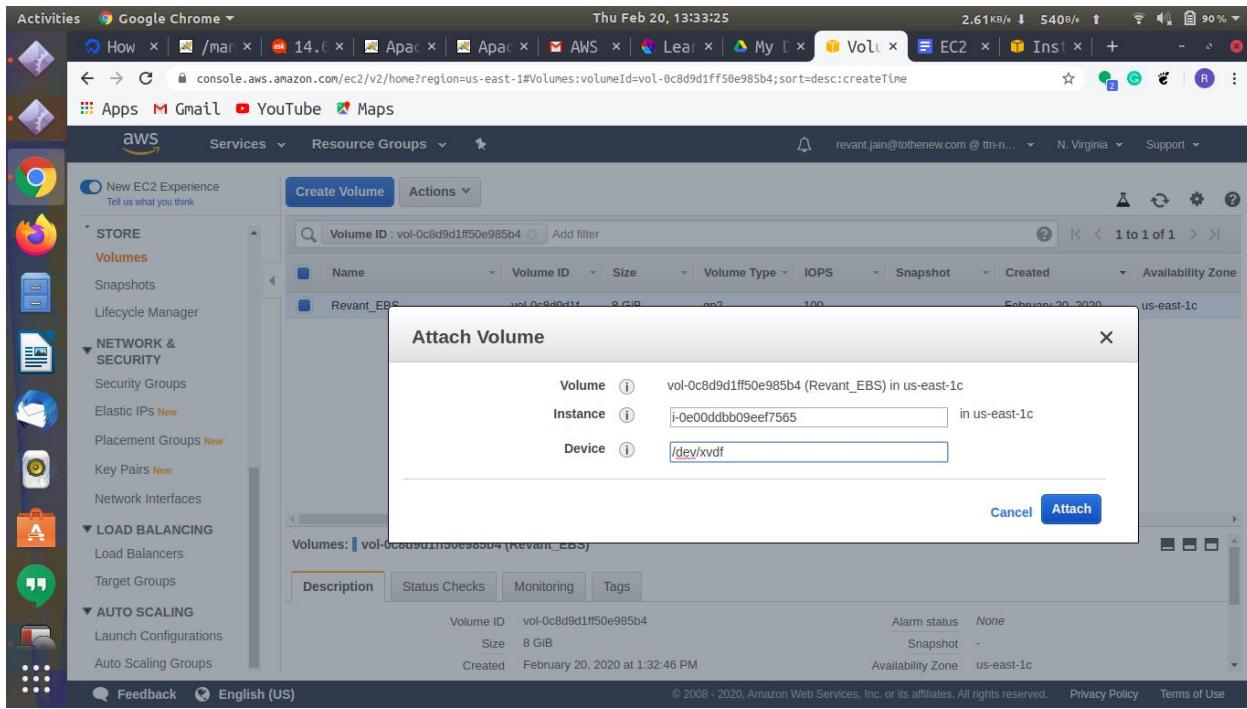
Volumes: vol-0feb938bf98a6ae0c (Revant_Ebs_volume)

Description Status Checks Monitoring Tags

Volume ID	vol-0feb938bf98a6ae0c	Alarm status	None
Size	8 GiB	Snapshot	-
Created	February 20, 2020 at 1:26:33 PM	Availability Zone	us-east-1a

Feedback English (US)

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Activities Terminal Thu Feb 20, 13:42:30
ubuntu@ip-172-31-175-167: ~

```
File Edit View Search Terminal Help
ubuntu@ip-172-31-175-167:~$ 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-172-31-175-167:~$ |
```

Activities Terminal Thu Feb 20, 13:44:14
ubuntu@ip-172-31-175-167: ~

```
File Edit View Search Terminal Help
ubuntu@ip-172-31-175-167:~$ 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-172-31-175-167:~$ mkfs -t ext4 /dev/xvdf
mke2fs 1.44.1 (24-Mar-2018)
Could not open /dev/xvdf: Permission denied
ubuntu@ip-172-31-175-167:~$ sudo mkfs -t ext4 /dev/xvdf
mke2fs 1.44.1 (24-Mar-2018)
Creating filesystem with 2097152 4k blocks and 524288 inodes
Filesystem UUID: 8a590b95-0be9-4f17-a45e-ed3df51a3585
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-172-31-175-167:~$ |
```

Activities Terminal Thu Feb 20, 13:46:08
ubuntu@ip-172-31-175-167: ~/revant_ebs_b

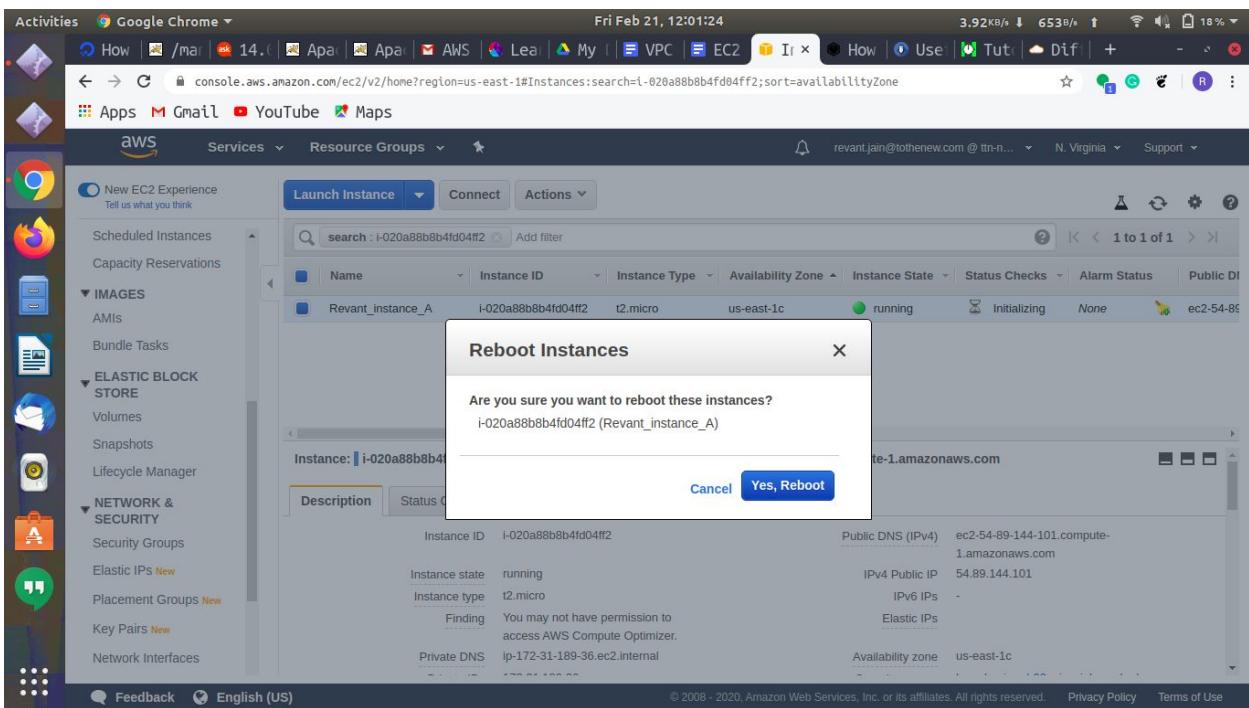
```
File Edit View Search Terminal Help
ubuntu@ip-172-31-175-167:~$ sudo mount /dev/xvdf ~/revant_ebs_b/
ubuntu@ip-172-31-175-167:~$ lsblk
NAME   MAJ:MIN RM  SIZE RO TYPE MOUNTPOINT
loop0    7:0    0  18M  1 loop /snap/amazon-ssm-agent/1480
loop1    7:1    0 89.1M  1 loop /snap/core/8268
xvda   202:0    0   8G  0 disk 
└─xvda1 202:1    0   8G  0 part /
xvdf   202:80   0   8G  0 disk /home/ubuntu/revant_ebs_b
ubuntu@ip-172-31-175-167:~$ cd ~/revant_ebs_b/
ubuntu@ip-172-31-175-167:~/revant_ebs_b$ ls
lost+found
ubuntu@ip-172-31-175-167:~/revant_ebs_b$ |
```

Activities Terminal Thu Feb 20, 13:50:39
ubuntu@ip-172-31-175-167: ~/revant_ebs_b

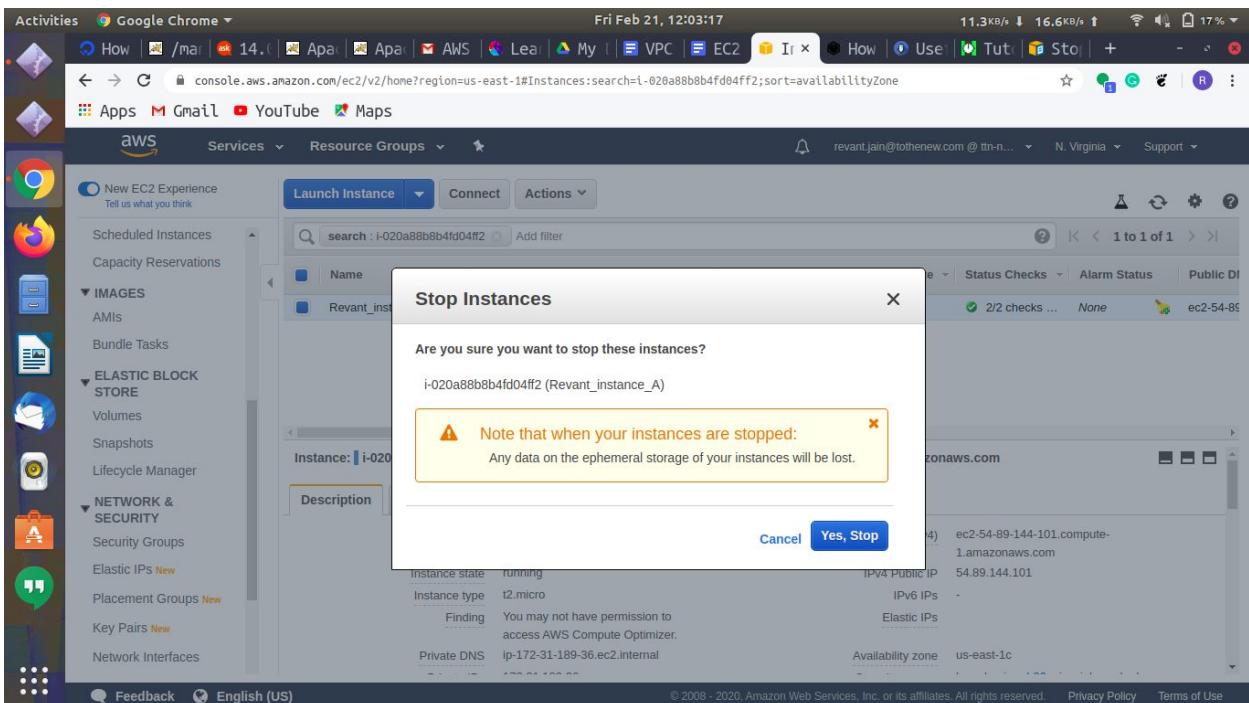
```
File Edit View Search Terminal Help
LABEL=cloudimg-rootfs  /          ext4  defaults,discard  0 0
LABEL=revant_ebs       /home/ubuntu/revant_ebs_b      ext4  defaults,discard  0 0
~
```

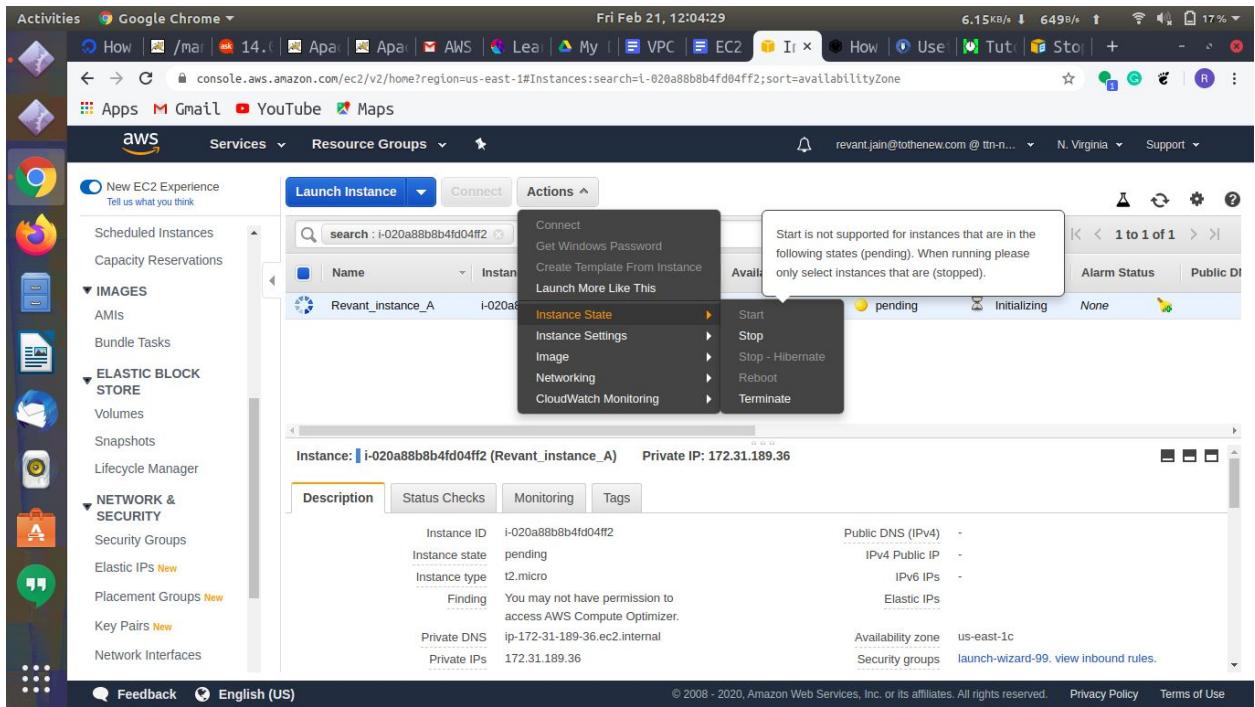
"/etc/fstab" 2L, 120C 2,68-91 All

4. Stop, Start, Restart that EC2 .



On reboot public ip remain same. The hardware which the instance uses for virtualization remains the same.





On stop and start the EC2 instance Our public ip gets changed and even the hardware on which it is virtualized gets changed.Aws doesn't charge for the instance when it is stopped.

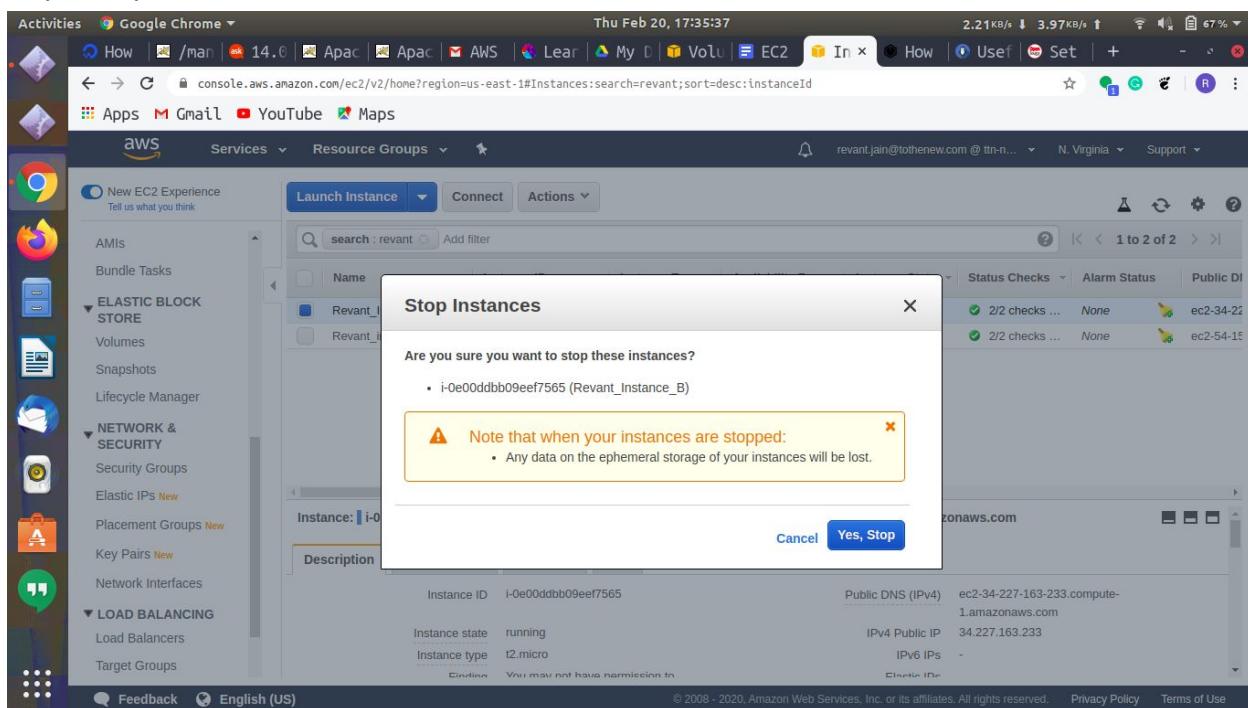
5. Make some mistake in fstab file, stop and start the instance, then troubleshoot it.
- Step 1: Making mistake in fstab.

```

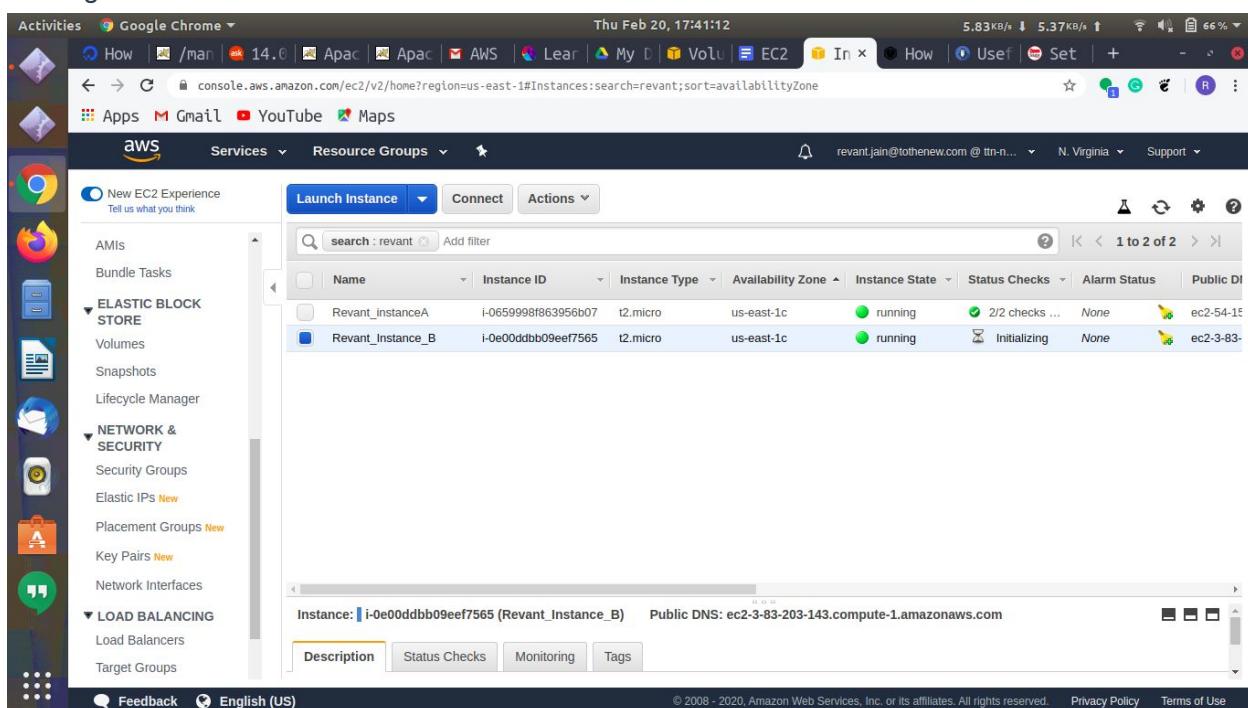
File Edit View Search Terminal Help
Thu Feb 20, 17:34:46
ubuntu@ip-172-31-175-167: ~
LABEL=cloudimg-rootfs      /          ext4    defaults,discard      0 0
LABEL=revant_ebs           /home/ubuntu/revant_ebs_b
~
```

The terminal window shows the contents of the /etc/fstab file. It includes two entries: one for the root file system (ext4, mounted at /) and one for an EBS volume (ext4, mounted at /home/ubuntu/revant_ebs_b). There is a syntax error in the second entry, specifically a missing colon after 'revant_ebs'.

Step2 :Stop the instance.



Starting that instance.



```

Activities Terminal Thu Feb 20, 17:42:10
2.44KB/s 298B/s 66%
File Edit View Search Terminal Help
ubuntu@ip-172-31-175-167:~$ sudo mount /dev/xvdf ~/revant_ebs_b/
ubuntu@ip-172-31-175-167:~$ 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 /home/ubuntu/revant_ebs_b
ubuntu@ip-172-31-175-167:~$ cd ~/revant_ebs_b/
ubuntu@ip-172-31-175-167:~/revant_ebs_b$ ls
lost+found
ubuntu@ip-172-31-175-167:~/revant_ebs_b$ sudo vim /etc/fstab
ubuntu@ip-172-31-175-167:~/revant_ebs_b$ sudo vim /etc/fstab
ubuntu@ip-172-31-175-167:~/revant_ebs_b$ sudo vim /etc/fstab
ubuntu@ip-172-31-175-167:~/revant_ebs_b$ sudo vim /etc/fstab
ubuntu@ip-172-31-175-167:~$ Connection to ec2-34-227-163-233.compute-1.amazonaws.com closed by remote host.
Connection to ec2-34-227-163-233.compute-1.amazonaws.com closed.
[revant@revant:~/Downloads]-[05:41:47 IST]-[G:master]
->$ ssh -i "revant_bootcamp.pem" ubuntu@ec2-3-83-203-143.compute-1.amazonaws.com
ss: connect to host ec2-3-83-203-143.compute-1.amazonaws.com port 22: Connection refused
[revant@revant:~/Downloads]-[05:41:56 IST]-[G:master]
->$ |

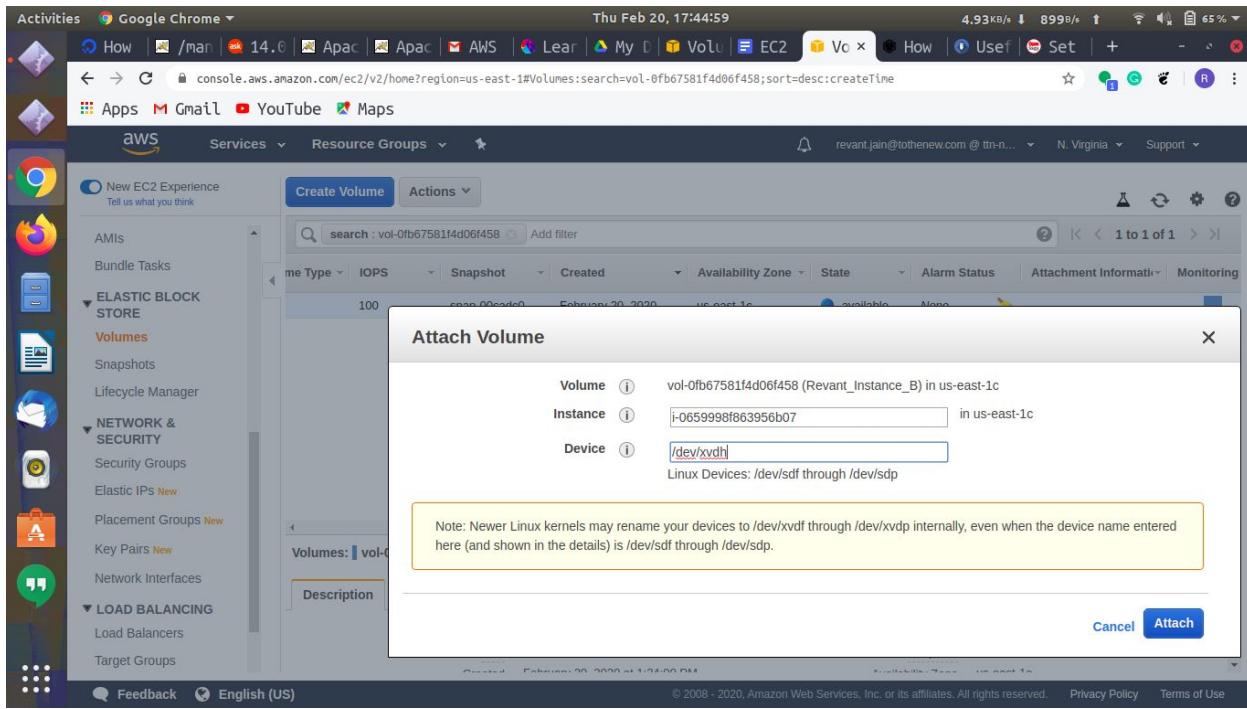
```

Now ssh is refused as the entry in fstab is not correct.

We will troubleshoot it by attaching it to another EC2 instance.

The screenshot shows the AWS Management Console interface. The left sidebar navigation bar includes links for Google Chrome, AWS, Services, Resource Groups, and various AWS services like AMIs, ELASTIC BLOCK STORE, Volumes, NETWORK & SECURITY, and LOAD BALANCING. The main content area displays a list of volumes under the 'ELASTIC BLOCK STORE' section. One volume, 'Revant_Instance_B', is selected. A modal dialog box titled 'Detach Volume' is open, asking 'Are you sure you want to detach this volume?' with a list item 'vol-0fb67581f4d06f458 (Revant_Instance_B)'. At the bottom right of the dialog are 'Cancel' and 'Yes, Detach' buttons. Below the dialog, the volume details are shown: Volume ID: vol-0fb67581f4d06f458, Size: 8 GiB, Volume Type: gp2, IOPS: 100, Snapshot: snap-00cad0e5bc9b2093, Created: February 20, 2020 at 1:30:00 PM. The footer of the page includes links for Feedback, English (US), and standard legal disclaimers.

Attaching that EBS to another EC2



Login in to that instance.

```
Activities Terminal Thu Feb 20, 17:47:04 2.37KB/s 0B/s 64% File Edit View Search Terminal Help
* Documentation: https://help.ubuntu.com
* Management: https://landscape.canonical.com
* Support: https://ubuntu.com/advantage

System information as of Thu Feb 20 12:17:00 UTC 2020

System load: 0.0          Processes:      86
Usage of /: 13.6% of 7.69GB  Users logged in:   0
Memory usage: 14%
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.

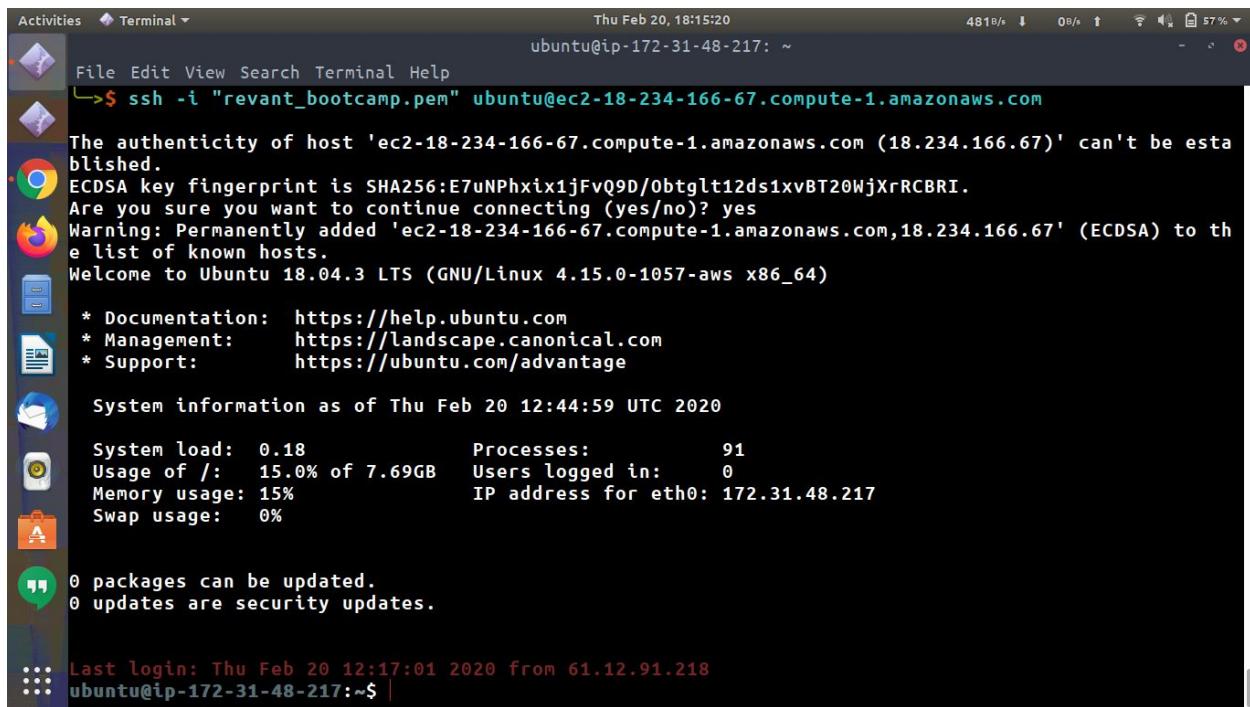
ubuntu@ip-172-31-48-217:~$
```



```
Activities Terminal Thu Feb 20, 17:51:26
ubuntu@ip-172-31-48-217: ~/instance_ebs_a
File Edit View Search Terminal Help
ubuntu@ip-172-31-48-217:~$ 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-172-31-48-217:~$ mkdir instance_ebs_a
ubuntu@ip-172-31-48-217:~$ mount /dev/xvdh1 instance_ebs_a/
mount: only root can do that
ubuntu@ip-172-31-48-217:~$ sudo mount /dev/xvdh1 instance_ebs_a/
ubuntu@ip-172-31-48-217:~$ 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 /home/ubuntu/instance_ebs_a
ubuntu@ip-172-31-48-217:~$ cd instance_ebs_a/
ubuntu@ip-172-31-48-217:~/instance_ebs_a$ ls
bin  etc  initrd.img.old  lost+found  opt  run  srv  usr      vmlinuz.old
boot home  lib           media       proc  sbin  sys  var
dev  initrd.img  lib64      mnt       root  snap  tmp  vmlinuz
ubuntu@ip-172-31-48-217:~/instance_ebs_a$ |
```

Changing that fstab file in that instance.

Attaching that ebs to that instance again.



```
Activities Terminal Thu Feb 20, 18:15:20
ubuntu@ip-172-31-48-217: ~
└->$ ssh -i "revant_bootcamp.pem" ubuntu@ec2-18-234-166-67.compute-1.amazonaws.com
The authenticity of host 'ec2-18-234-166-67.compute-1.amazonaws.com (18.234.166.67)' can't be established.
ECDSA key fingerprint is SHA256:E7uNPhxix1jFvQ9D/0btglt12ds1xvBT20WjXrRCBRI.
Are you sure you want to continue connecting (yes/no)? yes
Warning: Permanently added 'ec2-18-234-166-67.compute-1.amazonaws.com,18.234.166.67' (ECDSA) to the list of known hosts.
Welcome to Ubuntu 18.04.3 LTS (GNU/Linux 4.15.0-1057-aws x86_64)

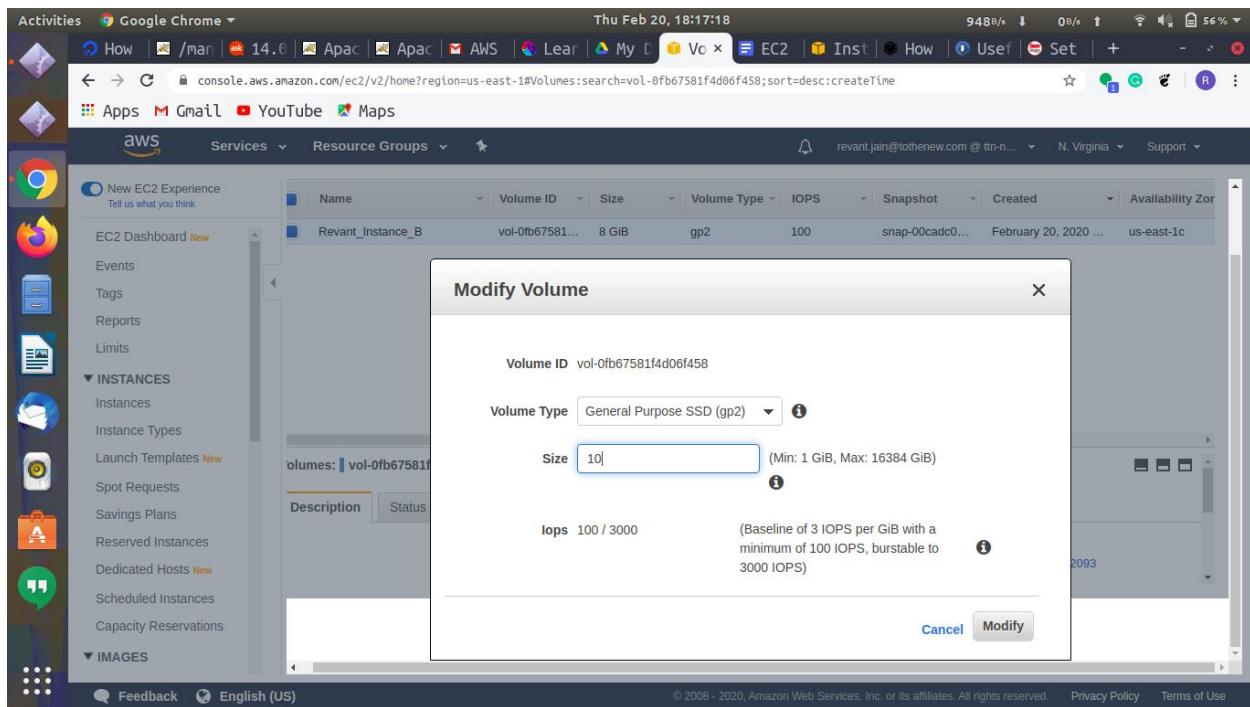
 * Documentation: https://help.ubuntu.com
 * Management: https://landscape.canonical.com
 * Support: https://ubuntu.com/advantage

 System information as of Thu Feb 20 12:44:59 UTC 2020

 System load: 0.18      Processes:         91
 Usage of /: 15.0% of 7.69GB  Users logged in:    0
 Memory usage: 15%          IP address for eth0: 172.31.48.217
 Swap usage: 0%
 
 0 packages can be updated.
 0 updates are security updates.

>Last login: Thu Feb 20 12:17:01 2020 from 61.12.91.218
ubuntu@ip-172-31-48-217:~$ |
```

6. Resize the EBS from 8 to 10GB.



The screenshot shows the AWS CloudWatch Metrics interface. On the left, there's a navigation sidebar with options like New EC2 Experience, EC2 Dashboard, Events, Tags, Reports, Limits, INSTANCES (Instances, Instance Types, Launch Templates, Spot Requests, Savings Plans, Reserved Instances, Dedicated Hosts, Scheduled Instances, Capacity Reservations), and IMAGES. The main area displays a table of metrics. A modal window titled "Modify Volume" is open over the table, showing details for a volume named "Revant_Instance_B". The volume has a Volume ID of "vol-0fb67581f4d06f458", a Volume Type of "General Purpose SSD (gp2)", and an IOPS of 100 / 3000. The current Size is 8 GiB, and the new Size is set to 10. The modal also includes a note about IOPS baseline and a "Modify" button.

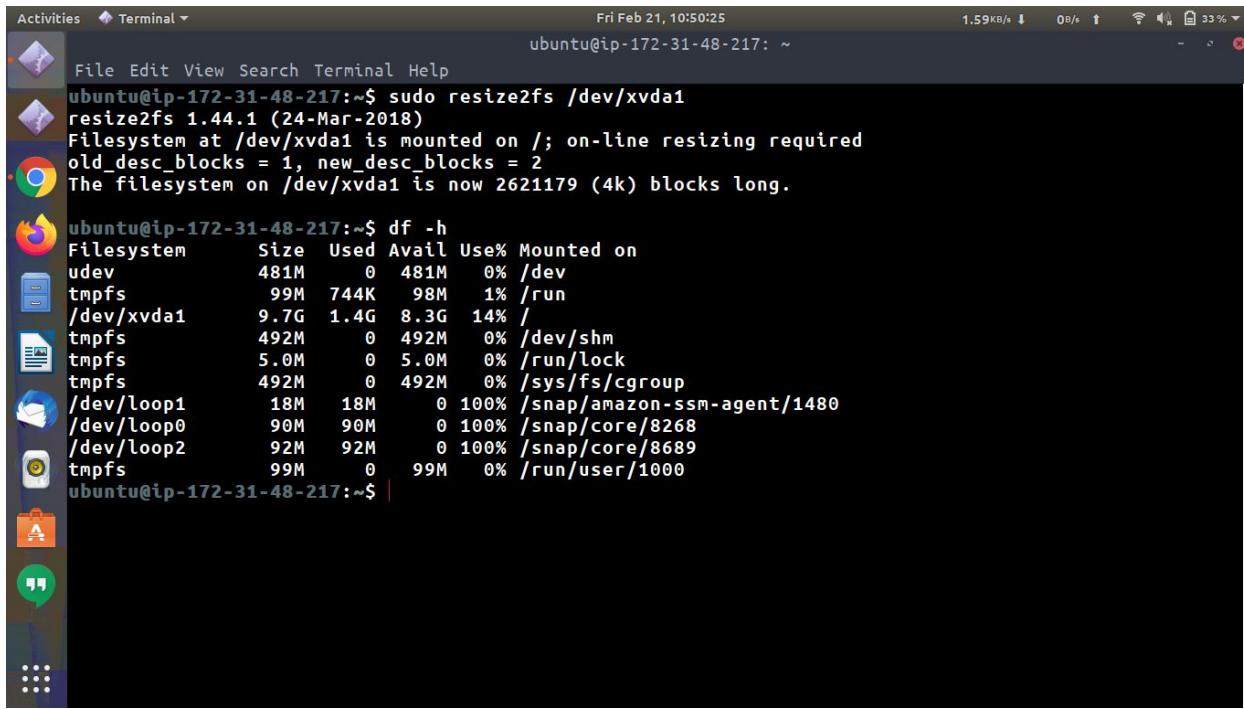
The screenshot shows the AWS EC2 console interface. On the left, there's a sidebar with various navigation links like EC2 Dashboard, Instances, and Images. The main area shows a table of volumes. One row is selected, labeled 'Revant_EBS' with Volume ID 'vol-0c8d9d1ff50e985b4'. Below the table, a modal window titled 'Modify Volume' displays a green success message: 'Modify Volume Request Succeeded' and 'Your volume is now being modified.' At the bottom of the modal, there's a 'Close' button.

It is showing 10GB as compared to 8GB

We will use growpart command to increase the size of partition.

```
Fri Feb 21, 10:48:09
ubuntu@ip-172-31-48-217: ~
File Edit View Terminal Help
ubuntu@ip-172-31-48-217:~$ 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
loop2 7:2 0 91.4M 1 loop /snap/core/8689
xvda 202:0 0 10G 0 disk
└─xvda1 202:1 0 8G 0 part /
ubuntu@ip-172-31-48-217:~$ sudo growpart /dev/xvda 0
FAILED: failed to get start and end for /dev/xvda0 in /dev/xvda
ubuntu@ip-172-31-48-217:~$ sudo growpart /dev/xvda 1
CHANGED: partition=1 start=2048 old: size=16775135 end=16777183 new: size=20969439,end=20971487
ubuntu@ip-172-31-48-217:~$ 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
loop2 7:2 0 91.4M 1 loop /snap/core/8689
xvda 202:0 0 10G 0 disk
└─xvda1 202:1 0 10G 0 part /
ubuntu@ip-172-31-48-217:~$
```

Then we will grow the size of the filesystem



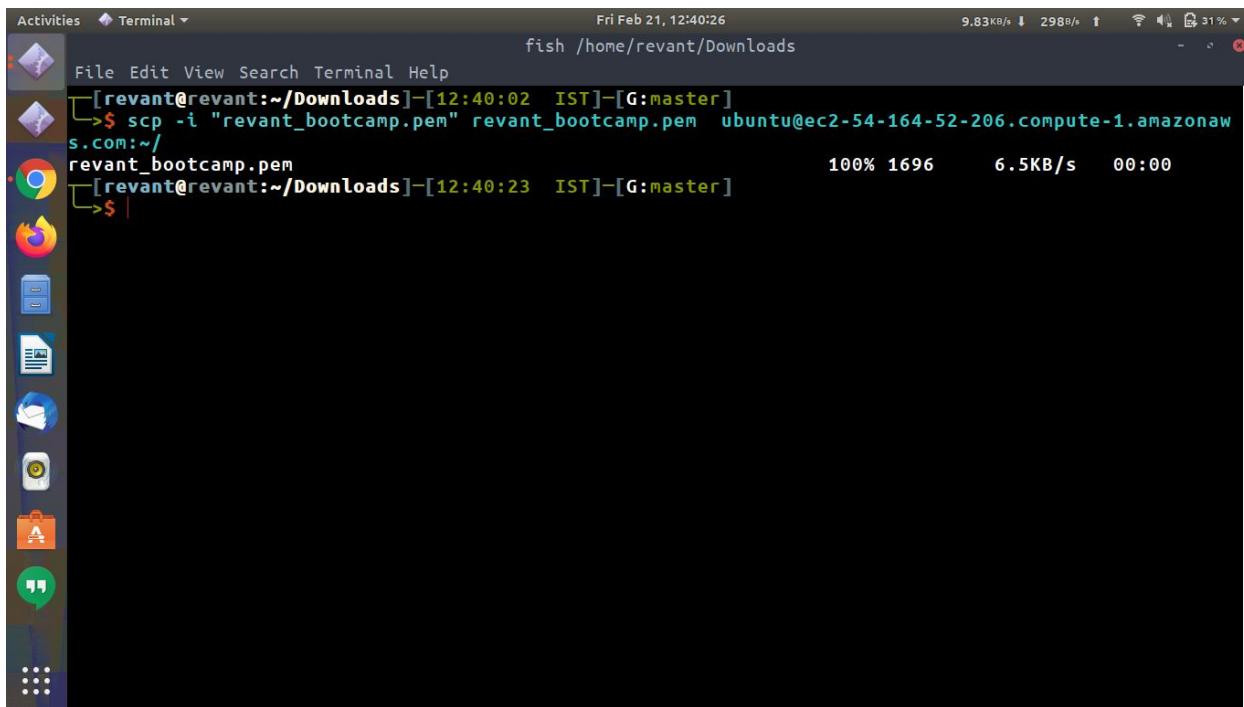
A screenshot of an Ubuntu desktop environment. A terminal window titled "Terminal" is open, showing the command line interface. The terminal shows the user has run the "sudo resize2fs /dev/xvda1" command to resize a filesystem. It also displays the output of the "df -h" command, showing disk usage across various partitions including /dev/xvda1 which is mounted at /. The terminal window has a dark theme and is located on the desktop.

```
File Edit View Search Terminal Help
ubuntu@ip-172-31-48-217:~$ sudo resize2fs /dev/xvda1
resize2fs 1.44.1 (24-Mar-2018)
Filesystem at /dev/xvda1 is mounted on /; on-line resizing required
old_desc_blocks = 1, new_desc_blocks = 2
The filesystem on /dev/xvda1 is now 2621179 (4k) blocks long.

ubuntu@ip-172-31-48-217:~$ df -h
Filesystem      Size  Used Avail Use% Mounted on
udev            481M    0  481M   0% /dev
tmpfs           99M  744K  98M   1% /run
/dev/xvda1      9.7G  1.4G  8.3G  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/loop1       18M    18M    0 100% /snap/amazon-ssm-agent/1480
/dev/loop0       90M    90M    0 100% /snap/core/8268
/dev/loop2       92M    92M    0 100% /snap/core/8689
tmpfs           99M    0  99M   0% /run/user/1000
ubuntu@ip-172-31-48-217:~$
```

7. SSH from one instance A to instance B.

Copy the private key in that particular instance A



A screenshot of an Ubuntu desktop environment. A terminal window titled "Terminal" is open, showing the command line interface. The terminal shows the user has run the "scp -i "revant_bootcamp.pem" revant_bootcamp.pem ubuntu@ec2-54-164-52-206.compute-1.amazonaws.com:~/revant_bootcamp.pem" command to copy a private key file from their local machine to an Amazon EC2 instance. The progress bar indicates the transfer is 100% complete at 1696 bytes, with a speed of 6.5KB/s and a duration of 00:00. The terminal window has a dark theme and is located on the desktop.

```
File Edit View Search Terminal Help
[revant@revant:~/Downloads]-[12:40:02 IST]-[G:master]
->$ scp -i "revant_bootcamp.pem" revant_bootcamp.pem ubuntu@ec2-54-164-52-206.compute-1.amazonaws.com:~/revant_bootcamp.pem
revant_bootcamp.pem
[revant@revant:~/Downloads]-[12:40:23 IST]-[G:master]
```

Login into that particular instance.

A screenshot of a Ubuntu 18.04 LTS desktop environment. The terminal window shows the following output:

```
Fri Feb 21, 12:41:33  
ubuntu@ip-172-31-189-36: ~  
Warning: Permanently added 'ec2-54-164-52-206.compute-1.amazonaws.com,54.164.52.206' (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 Fri Feb 21 07:11:31 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: 172.31.189.36  
Swap usage: 0%  
* Canonical Livepatch is available for installation.  
- Reduce system reboots and improve kernel security. Activate at:  
https://ubuntu.com/livepatch  
0 packages can be updated.  
0 updates are security updates.  
To run a command as administrator (user "root"), use "sudo <command>".  
See "man sudo_root" for details.  
ubuntu@ip-172-31-189-36:~$
```

Login into another instance

A screenshot of a Ubuntu 18.04 LTS desktop environment. The terminal window shows the following output:

```
Fri Feb 21, 12:43:52  
ubuntu@ip-172-31-189-36: ~  
ubuntu@ip-172-31-189-36:~$ ls  
revant_bootcamp.pem  
ubuntu@ip-172-31-189-36:~$ ssh -i "revant_bootcamp.pem" ubuntu@ec2-54-210-43-88.compute-1.amazonaws.com  
The authenticity of host 'ec2-54-210-43-88.compute-1.amazonaws.com (172.31.25.96)' can't be established.  
ECDSA key fingerprint is SHA256:W6WIZPNTcP2J7rF7nHia7eY1J0vBhJcESaPLhzTWj+g.  
Are you sure you want to continue connecting (yes/no)?
```

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

First we will create the snapshot of that ebs.

The screenshot shows the AWS Cloud9 IDE interface. The browser tab is titled "Create Snapshot". A green success message box displays the text "Create Snapshot Request Succeeded" and the snapshot ID "snap-0f6356e6997e609b0". Below the message are two buttons: "Manage Fast Snapshot Restore" and "Close". The AWS navigation bar at the top includes "Services", "Resource Groups", and "Support". The left sidebar lists various AWS services like CloudWatch, Lambda, and CloudFront. The bottom of the screen shows standard browser footer links for "Feedback", "English (US)", "Privacy Policy", and "Terms of Use".

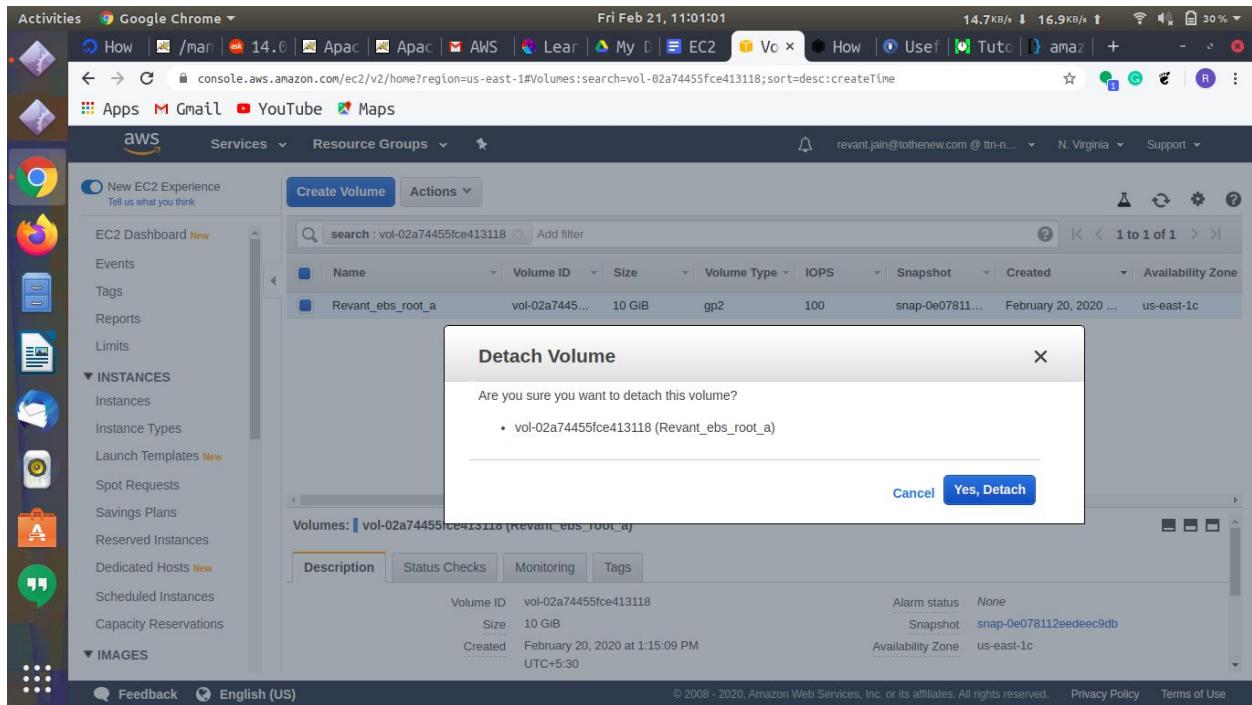
Copy that snapshot in oregon.

The screenshot shows the AWS EC2 console. The main pane displays a table of snapshots, with one row selected. A modal dialog box titled "Copy Snapshot" is open over the table. The dialog contains fields for "Destination Region" (set to "US West (Oregon)"), "Description" (set to "[Copied snap-0f6356e6997e609b0 from us-east-1] revert_ebs"), and an "Encryption" checkbox which is unchecked. At the bottom of the dialog are "Cancel" and "Copy" buttons. The background shows the EC2 dashboard with various filters and a table of instances. The bottom of the screen shows the usual AWS footer links.

Then we will restore that Snapshot in that region.

Screenshot not available as we are not authorised.

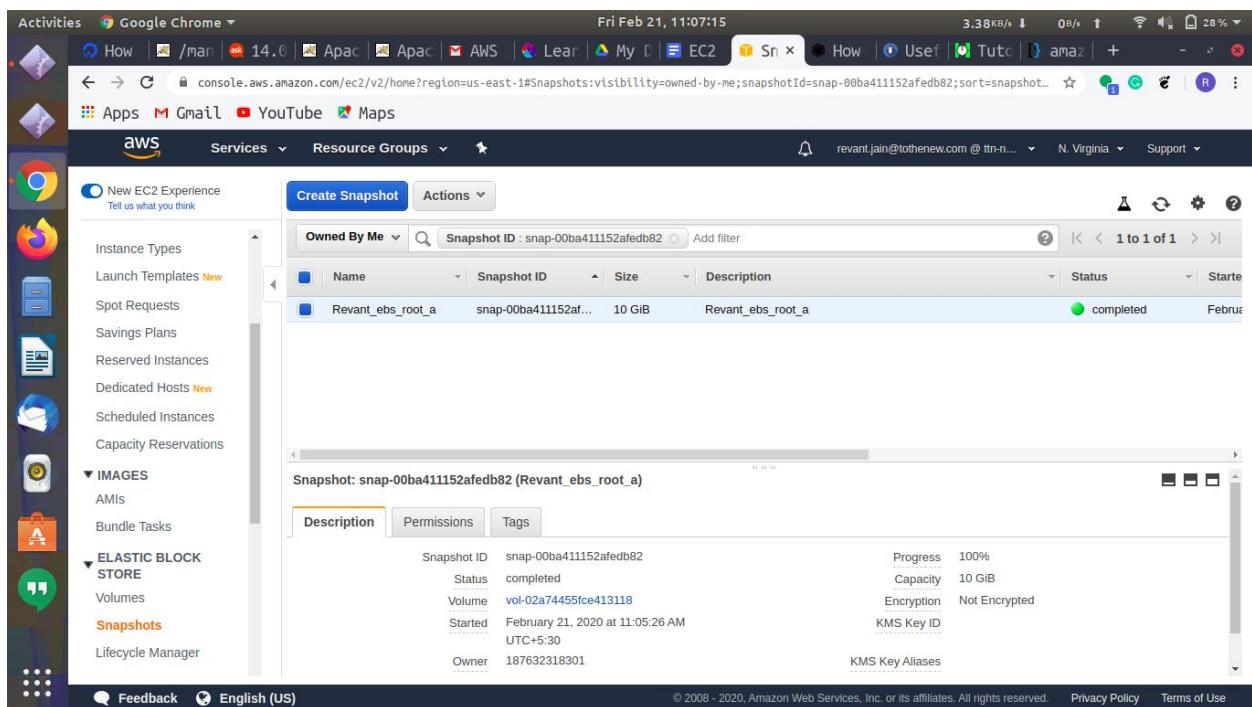
9. Detach the root EBS, create its snapshot, then create the AMI and run it as instance such that nginx should be pre installed at the boot time of instance.



The screenshot shows the AWS EC2 service interface. On the left sidebar, under the 'VOLUMES' section, 'Instances' is selected. In the main content area, a table lists a single volume entry:

Name	Volume ID	Size	Volume Type	IOPS	Snapshot	Created	Availability Zone
Revant_ebs_root_a	vol-02a74455fce413118	10 GiB	gp2	100	snap-0e07811...	February 20, 2020 ...	us-east-1c

A modal dialog box titled 'Detach Volume' is open over the table, asking 'Are you sure you want to detach this volume?'. The volume listed is 'vol-02a74455fce413118 (Revant_ebs_root_a)'. At the bottom right of the modal are 'Cancel' and 'Yes, Detach' buttons.

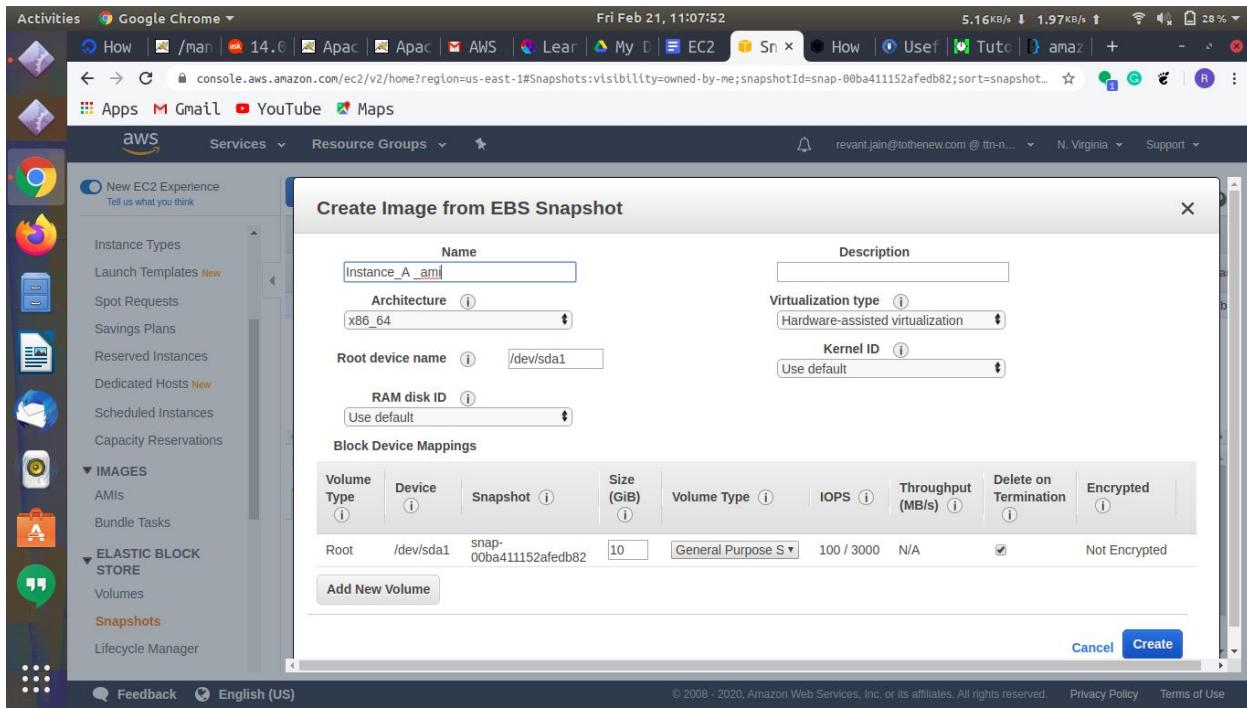


The screenshot shows the AWS EC2 service interface. On the left sidebar, under the 'ELASTIC BLOCK STORE' section, 'Schemas' is selected. In the main content area, a table lists a single snapshot entry:

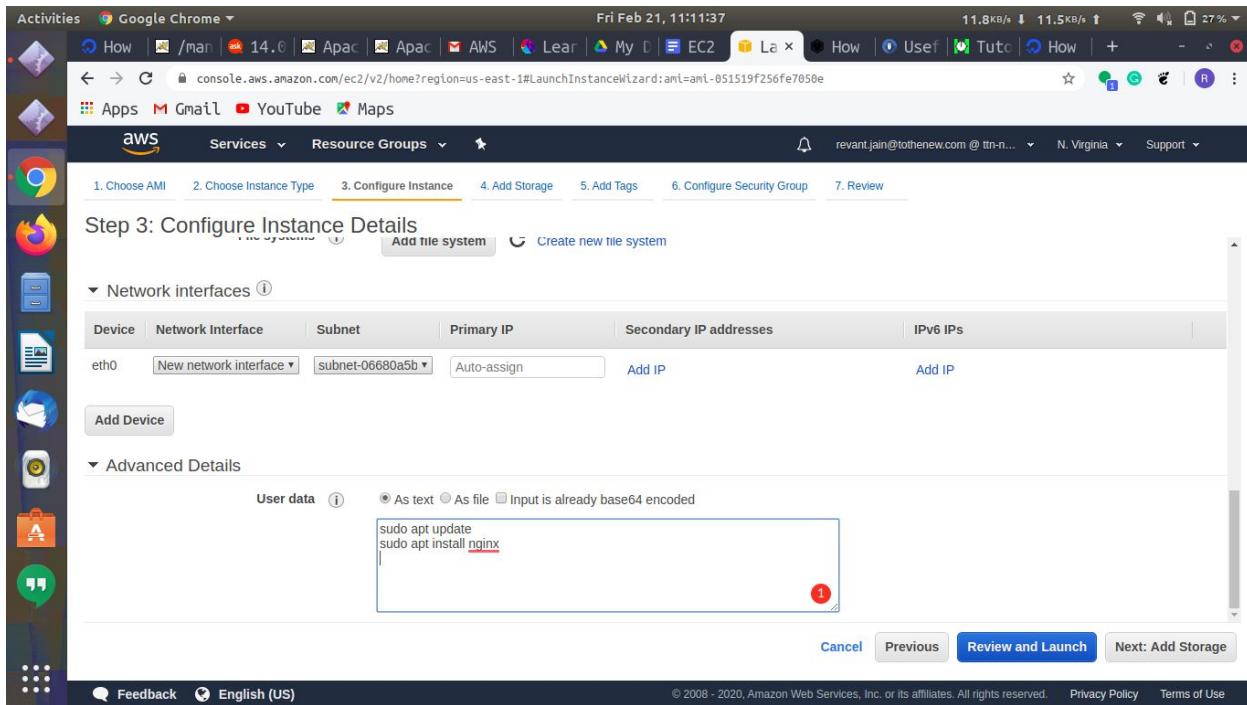
Name	Snapshot ID	Size	Description	Status	Start
Revant_ebs_root_a	snap-00ba411152afedb82	10 GiB	Revant_ebs_root_a	completed	February 21, 2020 at 11:05:26 AM UTC+5:30

A modal dialog box titled 'Snapshot: snap-00ba411152afedb82 (Revant_ebs_root_a)' is open over the table, showing details for the snapshot. The details include:

Snapshot ID	Progress	Capacity
snap-00ba411152afedb82	100%	10 GiB
Status	Encryption	KMS Key ID
completed	Not Encrypted	
Volume	Owner	KMS Key Aliases
vol-02a74455fce413118	187632318301	



For installing Nginx write command in user_data.



Configure Security group.

Activities Google Chrome Fri Feb 21, 11:12:37 9.18KB/s 4.82KB/s 27 %

How /man 14.0 Apac Apac AWS Lear My D EC2 La How Useful Tuto How +

console.aws.amazon.com/ec2/v2/home?region=us-east-1#LaunchInstanceWizard:ami=ami-051519f256fe7050e

Apps Gmail YouTube Maps

aws Services Resource Groups

1. Choose AMI 2. Choose Instance Type 3. Configure Instance 4. Add Storage 5. Add Tags 6. Configure Security Group 7. Review

Step 6: Configure Security Group

Assign a security group: Create a new security group Select an existing security group

Security group name: launch-wizard-97

Description: launch-wizard-97 created 2020-02-21T11:12:10.782+05:30

Type	Protocol	Port Range	Source	Description
SSH	TCP	22	Anywhere	e.g. SSH for Admin Desktop
HTTP	TCP	80	Anywhere	e.g. SSH for Admin Desktop
HTTPS	TCP	443	Anywhere	e.g. SSH for Admin Desktop

Add Rule

Warning
Rules with source of 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

Feedback English (US)

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Activities Google Chrome Fri Feb 21, 11:24:48 5.62KB/s 82.0B/s 23 %

How /man 14.0 Apac Apac AWS Lear My D EC2 La How Useful Tuto How +

console.aws.amazon.com/ec2/v2/home?region=us-east-1#LaunchInstanceWizard:ami=ami-051519f256fe7050e

Apps Gmail YouTube Maps

aws Services Resource Groups

Launch Status

Your instances are now launching
The following instance launches have been initiated: i-0e998455d9c4b87cf 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
- Amazon EC2: User Guide
- Learn about AWS Free Usage Tier
- Amazon EC2: Discussion Forum

While your instances are launching you can also

Feedback English (US)

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Activities Terminal Fri Feb 21, 11:30:40
ubuntu@ip-172-31-10-109: /etc/nginx

```
File Edit View Search Terminal Help
ubuntu@ip-172-31-10-109:~$ cd /etc/nginx/
ubuntu@ip-172-31-10-109:/etc/nginx$ ls
conf.d      koi-utf    modules-available  proxy_params   sites-enabled  win-utf
fastcgi.conf  koi-win    modules-enabled   scgi_params   snippets
fastcgi_params  mime.types  nginx.conf     sites-available uwsgi_params
ubuntu@ip-172-31-10-109:/etc/nginx$ curl -I localhost
HTTP/1.1 200 OK
Server: nginx/1.14.0 (Ubuntu)
Date: Fri, 21 Feb 2020 06:00:38 GMT
Content-Type: text/html
Content-Length: 612
Last-Modified: Fri, 21 Feb 2020 05:59:21 GMT
Connection: keep-alive
ETag: "5e4f71b9-264"
Accept-Ranges: bytes

ubuntu@ip-172-31-10-109:/etc/nginx$ |
```