

# AWS Zero to Hero (Essentials)

## LetsUpgrade Day - 2

### Assignment - 2

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## Task 1 : Create an ec2 instance

The screenshot shows the AWS Launch Instance Wizard interface. The top navigation bar includes links for 'Launch instance wizard | EC2 M...' and 'lucifer-here01/LetsUpgrade-Z...'. The main search bar contains the placeholder 'Search for services, features, marketplace products, and docs [Alt+S]'. Below the search bar, a breadcrumb trail shows '1. Choose AMI' (highlighted in blue), '2. Choose Instance Type', '3. Configure Instance', '4. Add Storage', '5. Add Tags', '6. Configure Security Group', and '7. Review'. A 'Cancel and Exit' button is located in the top right corner of the main content area.

**Step 1: Choose an Amazon Machine Image (AMI)**

An AMI is a template that contains the software configuration (operating system, application server, and applications) required to launch your instance. You can select an AMI provided by AWS, our user community, or the AWS Marketplace; or you can select one of your own AMIs.

The 'Quick Start' sidebar lists categories: 'My AMIs', 'AWS Marketplace', and 'Community AMIs'. Under 'Free tier eligible', three AMIs are listed:

- Amazon Linux 2 AMI (HVM), SSD Volume Type** - ami-04db49c0fb2215364 (64-bit x86) / ami-0086e63bfa49c3b49 (64-bit Arm)  
Amazon Linux 2 comes with five years support. It provides Linux kernel 4.14 tuned for optimal performance on Amazon EC2, systemd 219, GCC 7.3, Glibc 2.26, Binutils 2.29.1, and the latest software packages through extras. This AMI is the successor of the Amazon Linux AMI that is approaching end of life on December 31, 2020 and has been removed from this wizard.  
Root device type: ebs Virtualization type: hvm ENA Enabled: Yes  
Select button (radio buttons for 64-bit (x86) and 64-bit (Arm))
- Red Hat Enterprise Linux 8 (HVM), SSD Volume Type** - ami-06a0b4e3b7eb7a300 (64-bit x86) / ami-0cbe04a3ce796c98e (64-bit Arm)  
Red Hat Enterprise Linux version 8 (HVM), EBS General Purpose (SSD) Volume Type  
Root device type: ebs Virtualization type: hvm ENA Enabled: Yes  
Select button (radio buttons for 64-bit (x86) and 64-bit (Arm))
- SUSE Linux Enterprise Server 15 SP2 (HVM), SSD Volume Type** - ami-0b3acf3edf2397475 (64-bit x86) / ami-0ab71076ab9b53b0d (64-bit Arm)  
SUSE Linux Enterprise Server 15 Service Pack 2 (HVM), EBS General Purpose (SSD) Volume Type. Amazon EC2 AMI Tools preinstalled, Apache 2.2, MySQL 5.5, PHP 7.4  
Select button (radio buttons for 64-bit (x86) and 64-bit (Arm))

The bottom of the page includes standard browser controls, a footer with copyright information (© 2008 - 2021, Amazon Internet Services Private Ltd. or its affiliates. All rights reserved.), and a status bar showing 'ENG IN' and '2:58 PM 8/30/2021'.

**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.

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

**Review and Launch**

**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	<input type="checkbox"/> Request Spot Instances	
Network	vpc-2167ac4a (default)	<input type="button"/> Create new VPC
Subnet	No preference (default subnet in any Availability Zone)	<input type="button"/> Create new subnet
Auto-assign Public IP	Enable	
Placement group	<input type="checkbox"/> Add instance to placement group	
Capacity Reservation	Open	
Domain join directory	No directory	<input type="button"/> Create new directory
IAM role	None	<input type="button"/> Create new IAM role
Shutdown behavior	Stop	
Standby behavior	<input type="checkbox"/> Enable hibernation as an additional stop behavior	

**Review and Launch**

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https://ap-south-1.console.aws.amazon.com/ec2/v2/home?region=ap-south-1#LaunchInstanceWizard:

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Services Search for services, features, marketplace products, and docs [Alt+S]

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**

Additional charges will apply for dedicated tenancy.

Credit specification  Unlimited Additional charges may apply

File systems  Add file system  Create new file system

Advanced Details

Enclave  Enable

Metadata accessible  Enabled

Metadata version  V1 and V2 (token optional)

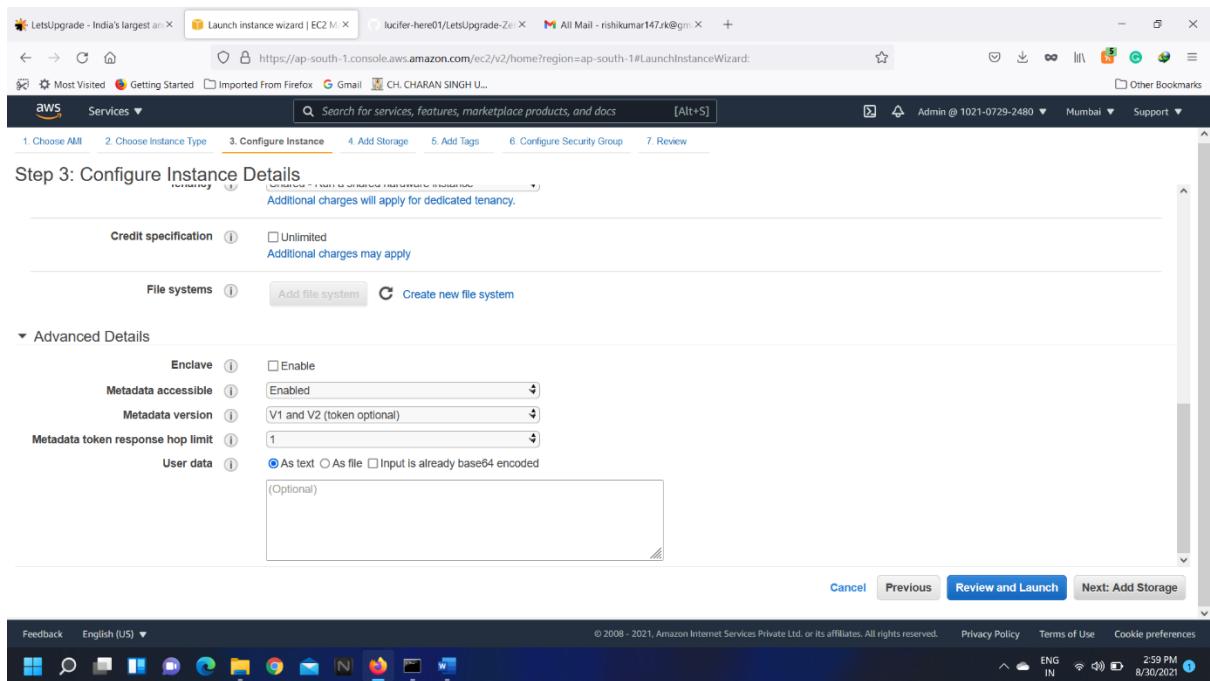
Metadata token response hop limit  1

User data  As text  As file  Input is already base64 encoded

(Optional)

Cancel Previous Review and Launch Next: Add Storage

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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 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.

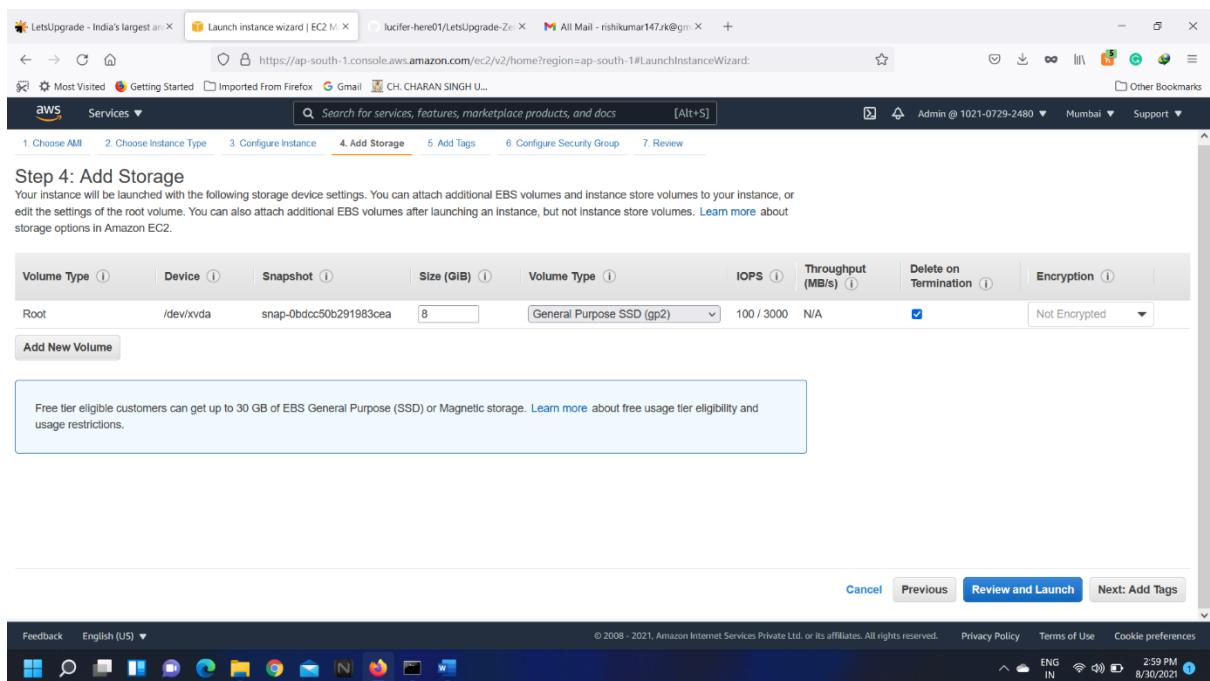
Volume Type	Device	Snapshot	Size (GiB)	Volume Type	IOPS	Throughput (MB/s)	Delete on Termination	Encryption
Root	/dev/xvda	snap-0bdcc50b291983cea	8	General Purpose SSD (gp2)	100 / 3000	N/A	<input checked="" type="checkbox"/>	Not Encrypted

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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**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:

Type	Protocol	Port Range	Source	Description
SSH	TCP	22	Custom 0.0.0.0/0	e.g. SSH for Admin Desktop
All traffic	All	0 - 65535	Custom CIDR, IP or Security Group	e.g. SSH for Admin Desktop

[Add Rule](#)

**Warning**  
Rules with source of 0.0.0.0/0 allow all IP addresses to access your instance. We recommend setting security group rules to allow access from known IP addresses only.

[Cancel](#) [Previous](#) [Review and Launch](#)

**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	Network Interfaces
Name		ec2 - 1		<input checked="" type="checkbox"/>	<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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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

t2.micro	-	1	1	EBS only	-	Low to Moderate
----------	---	---	---	----------	---	-----------------

▼ Security Groups

Security group name: launch-wizard-1  
Description: launch-wizard-1 created 2021-08-30T14:59:48.393+05:30

Type	Protocol	Port Range	Source	Description
SSH	TCP	22	0.0.0.0/0	
SSH	TCP	22	::/0	
All traffic	All	All	0.0.0.0/0	
All traffic	All	All	::/0	

► Instance Details

► Storage

► Tags

Edit security groups Edit instance details Edit storage Edit tags

Cancel Previous Launch

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Step 7: Review Instance Launch

t2.micro	-	1	1	EBS only	-	Low to Moderate
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▼ Security Groups

Security group name: launch-wizard-1  
Description: launch-wizard-1 created 2021-08-30T14:59:48.393+05:30

Type	Protocol	Port Range	Source	Description
SSH	TCP	22	0.0.0.0/0	
SSH	TCP	22	::/0	
All traffic	All	All	0.0.0.0/0	
All traffic	All	All	::/0	

► 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. Amazon EC2 supports ED25519 and RSA key pair types.

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

Choose an existing key pair Select a key pair ssp-key-pair | RSA  I acknowledge that I have access to the corresponding private key file, and that without this file, I won't be able to log into my instance.

Cancel Launch Instances

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## Launch Status

Your instances are now launching  
The following instance launches have been initiated: i-0f176d191caa04b90 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

- Create status check alarms to be notified when these instances fail status checks. (Additional charges may apply)
- Create and attach additional EBS volumes / Additional charges may apply

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## Instances (1) Info

Filter instances

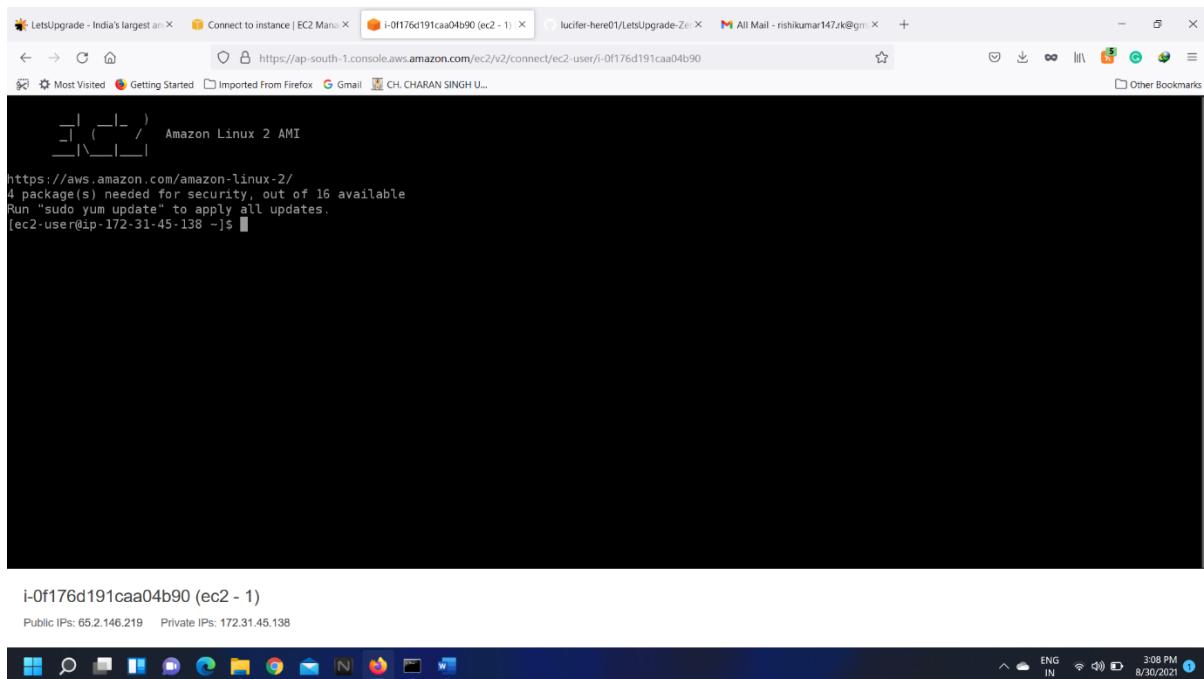
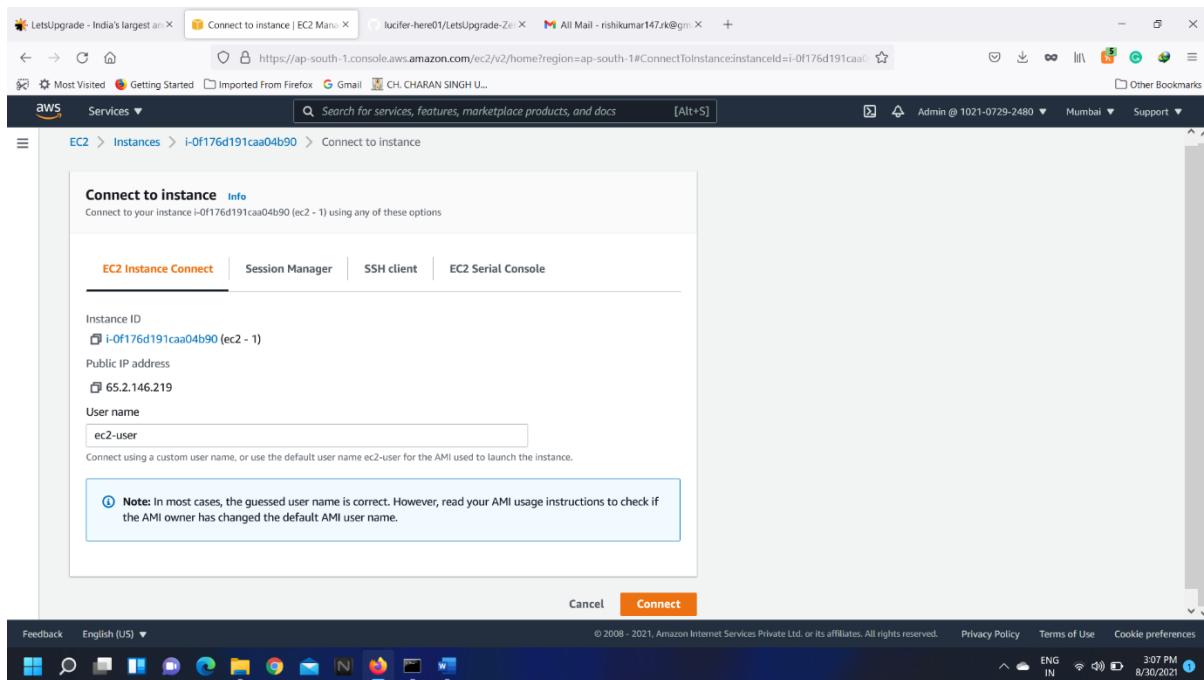
search: i-0f176d191caa04b90 Clear filters

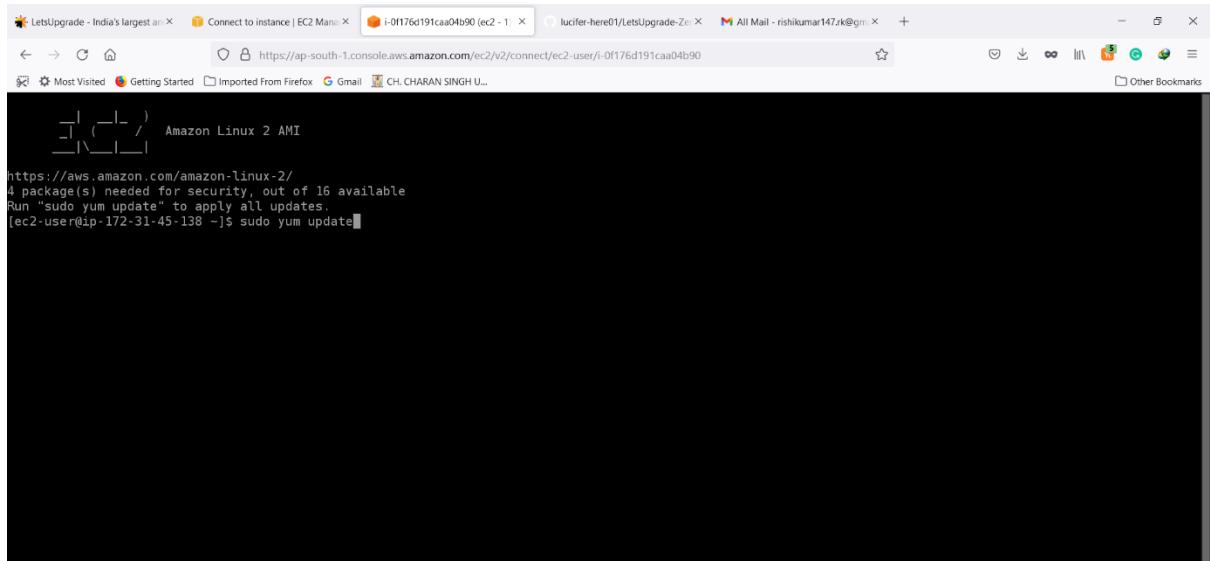
Name	Instance ID	Instance state	Instance type	Status check	Alarm status	Availability Zone
ec2-1	i-0f176d191caa04b90	Running	t2.micro	2/2 checks passed	No alarms	ap-south-1a

Select an instance above

## Task 2 : Connect to the an instance and run a System

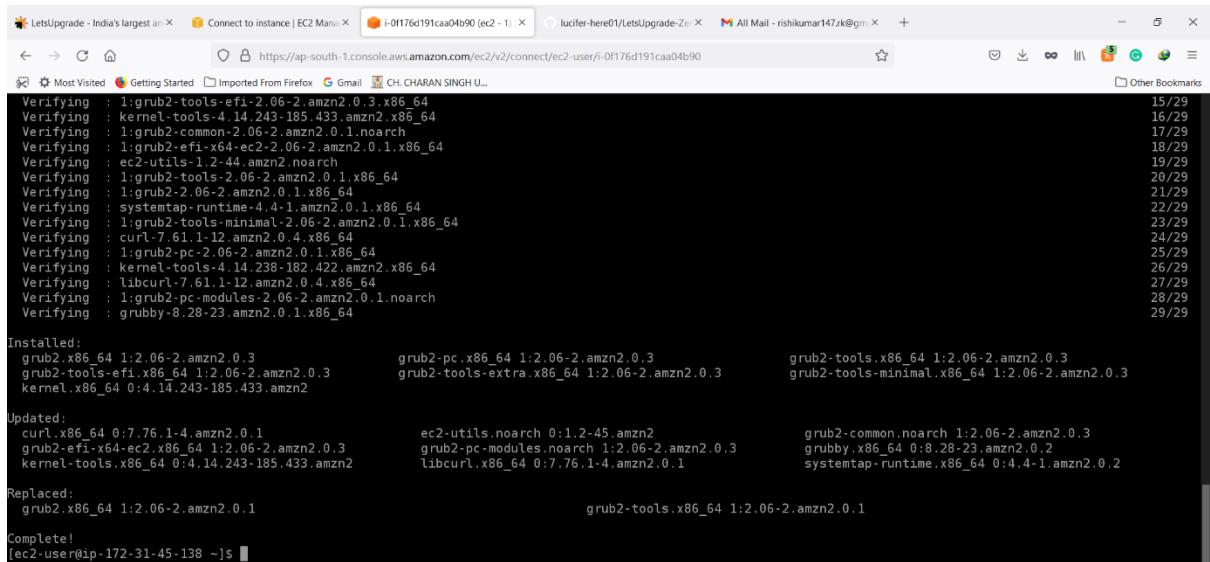
### Upadate





i-0f176d191caa04b90 (ec2 - 1)

Public IPs: 65.2.146.219 Private IPs: 172.31.45.138



i-0f176d191caa04b90 (ec2 - 1)

Public IPs: 65.2.146.219 Private IPs: 172.31.45.138



# Task 3 : Enable Termination Protection and check how it's works

The screenshot shows the 'Change termination protection' dialog box on the AWS EC2 Management Console. The instance ID 'i-0f176d191caa04b90' is selected. The 'Termination protection' checkbox is checked and labeled 'Enable'. At the bottom are 'Cancel' and 'Save' buttons.

The screenshot shows the 'Instances' page in the AWS EC2 Management Console. A green banner at the top indicates 'Enabled termination protection for i-0f176d191caa04b90'. The main table lists one instance: 'ec2 - 1' (Instance ID: i-0f176d191caa04b90, Instance state: Running, Instance type: t2.micro, Status check: 2/2 checks passed, Alarm status: No alarms, Availability Zone: ap-south-1a). A modal window titled 'Select an instance above' is open. The left sidebar shows navigation options like EC2 Dashboard, Events, Tags, Limits, Instances (selected), Instance Types, Launch Templates, Spot Requests, Savings Plans, Reserved Instances (New), Dedicated Hosts, Capacity Reservations, Images (AMIs), and Elastic Block Store (Volumes).

The screenshot shows the AWS EC2 Management Console. A prominent green banner at the top states "Enabled termination protection for i-0f176d191caa04b90". Below this, a red banner displays the error message: "Failed to terminate an instance: The instance i-0f176d191caa04b90 may not be terminated. Modify its 'disableApiTermination' instance attribute and try again." The main interface shows a table of instances with one entry: "ec2 - 1" (Instance ID: i-0f176d191caa04b90, Instance state: Running, Instance type: t2.micro, Status check: 2/2 checks passed, Alarm status: No alarms, Availability Zone: ap-south-1a). The "Actions" dropdown menu is open, showing options like "Stop", "Start", "Reboot", "Terminate", and "Launch instances".

## Task 4 : Disable Termination Protection and terminate the instance

This screenshot shows the same EC2 console interface after the user has disabled termination protection. A new green banner at the top says "Disabled termination protection for i-0f176d191caa04b90". A modal dialog box titled "Terminate instance?" is displayed, containing a warning message: "⚠️ On an EBS-backed instance, the default action is for the root EBS volume to be deleted when the instance is terminated. Storage on any local drives will be lost." Below the message, it asks "Are you sure you want to terminate these instances?", listing "i-0f176d191caa04b90 (ec2 - 1)". At the bottom of the dialog are "Cancel" and "Terminate" buttons. The main instance table now shows the instance as "Terminating" instead of "Running".

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

Images AMIs

Elastic Block Store Volumes

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Instances | EC2 Management Console https://ap-south-1.console.aws.amazon.com/ec2/v2/home?region=ap-south-1#Instances:

Disabled termination protection for i-0f176d191caa04b90

Successfully terminated i-0f176d191caa04b90

Instances (1/1) Info Filter Instances

Name	Instance ID	Instance state	Instance type	Status check	Alarm status	Availability Zone
ec2 - 1	i-0f176d191caa04b90	Shutting-down	t2.micro	2/2 checks passed	No alarms	ap-south-1a

Instance: i-0f176d191caa04b90 (ec2 - 1)

Details Security Networking Storage Status checks Monitoring Tags

Instance summary Info

Instance ID i-0f176d191caa04b90 (ec2 - 1)	Public IPv4 address 65.2.146.219   open address	Private IPv4 addresses 172.31.45.138
IPv6 address -	Instance state Shutting-down	Public IPv4 DNS ec2-65-2-146-219.ap-south-1.compute.amazonaws.com   open address

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The screenshot shows the AWS EC2 Management Console interface. On the left, there's a sidebar with navigation links like EC2 Dashboard, Instances, Images, and Elastic Block Store. The main area displays a table of instances. A message at the top indicates that termination protection has been disabled for one instance. Below that, another message shows the instance has been successfully terminated. The table lists one instance named 'ec2 - 1' with the ID 'i-0f176d191caa04b90'. It shows the instance is currently 'Shutting-down' and is a 't2.micro' type. The status check section shows '2/2 checks passed' and no alarms. The instance is located in the 'ap-south-1a' availability zone. At the bottom, there's a detailed view for the selected instance, showing its public and private IP addresses, DNS name, and current state.