

Course: Online Session AWS Weekday BC=230404

Project– Project-1

NAME: SONU NIGAM U S

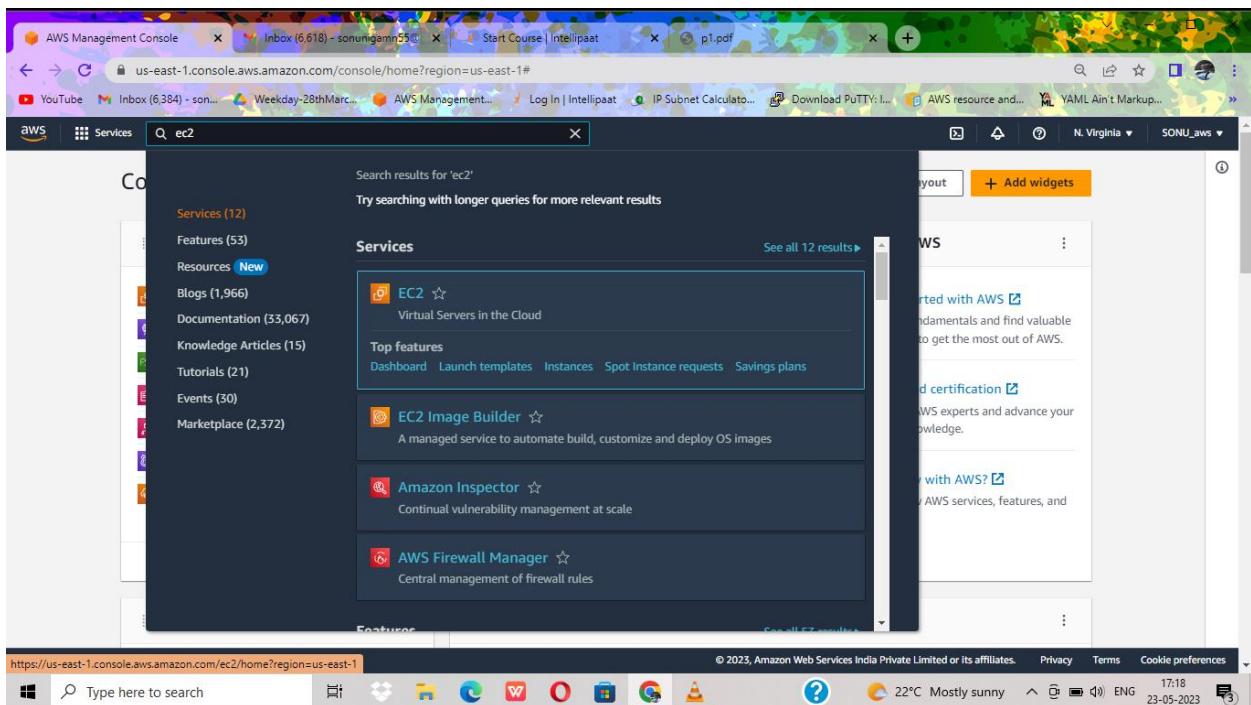
Mail id: sonunigamn55@gmail.com

Problem Statement:

Company ABC wants to move their product to AWS. They have the following things setup right now:

1. MySQL DB
2. Website (PHP) The company wants high availability on this product, therefore wants autoscaling to be enabled on this website..

1.Going to the EC2 dashboard



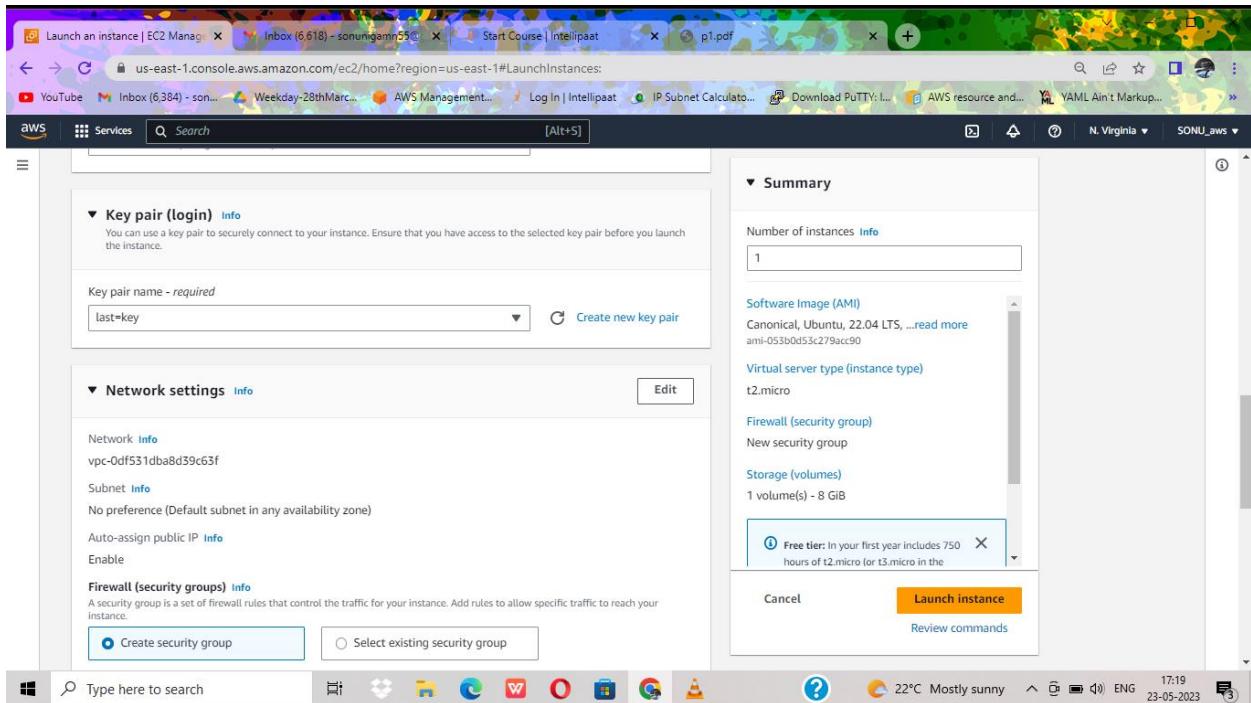
2 clicking on launch instance

The screenshot shows the AWS EC2 Management console. On the left, there's a sidebar with various navigation options like EC2 Dashboard, Instances, Images, and Services. The main area is titled 'Resources' and displays statistics for running instances, auto scaling groups, dedicated hosts, elastic IPs, instances, key pairs, load balancers, placement groups, security groups, snapshots, and volumes. Below this, there's a callout box about Microsoft SQL Server Always On availability groups. To the right, there's a panel for 'Account attributes' showing supported platforms (VPC), default VPC (vpc-0df531dba8d39c63f), settings for EBS encryption and zones, and options for EC2 Serial Console, Default credit specification, and Console experiments. At the bottom, there's an 'Explore AWS' section with a 'Get Up to 40% Better Price Performance' offer for T4g instances.

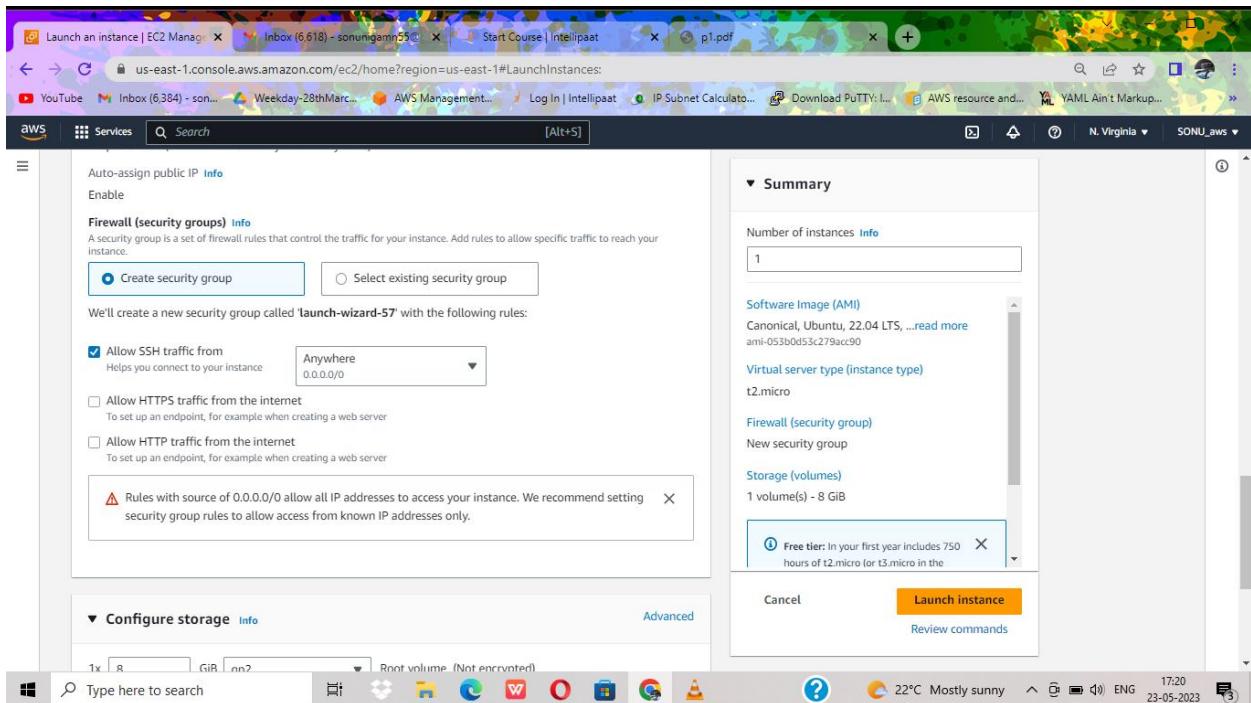
3 giving name and choosing AMI

The screenshot shows the 'Launch an instance' wizard. In the 'Name and tags' step, the name 'project-1-instance' is entered. Below it, the 'Application and OS Images (Amazon Machine Image)' section is expanded, showing a search bar and a grid of OS icons: Amazon Linux, macOS, Ubuntu, Windows, and Red Hat. A 'Quick Start' section provides links to 'Amazon Machine Image (AMI)', 'Software Image (AMI)', 'Virtual server type (instance type)', 'Firewall (security group)', and 'Storage (volumes)'. The 'Summary' section indicates 1 instance will be launched. A note states a free tier of 750 hours for t2.micro or t3.micro instances. At the bottom, there are 'Cancel', 'Launch instance', and 'Review commands' buttons.

4 we select key pair



5 we give ssh and launch instance



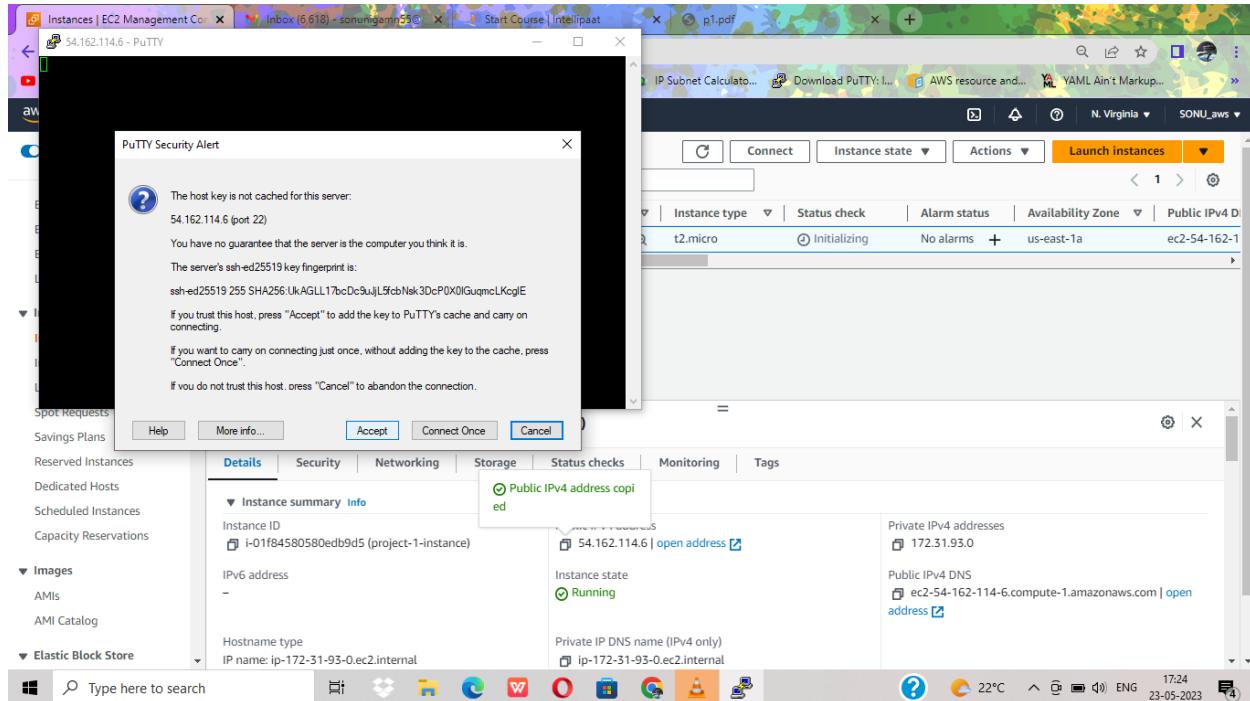
6 our instance is launched

The screenshot shows the AWS Management Console with the EC2 Instances page open. The left sidebar shows navigation options like EC2 Dashboard, Instances, and Images. The main content area displays a table of instances. One instance is selected: "project-1-instance" (i-01f84580580edb9d5). The instance details show it is "Running" on port 22. The public IP address is 54.162.114.6. The Putty configuration window is overlaid on the page, showing the session details for connecting to this instance.

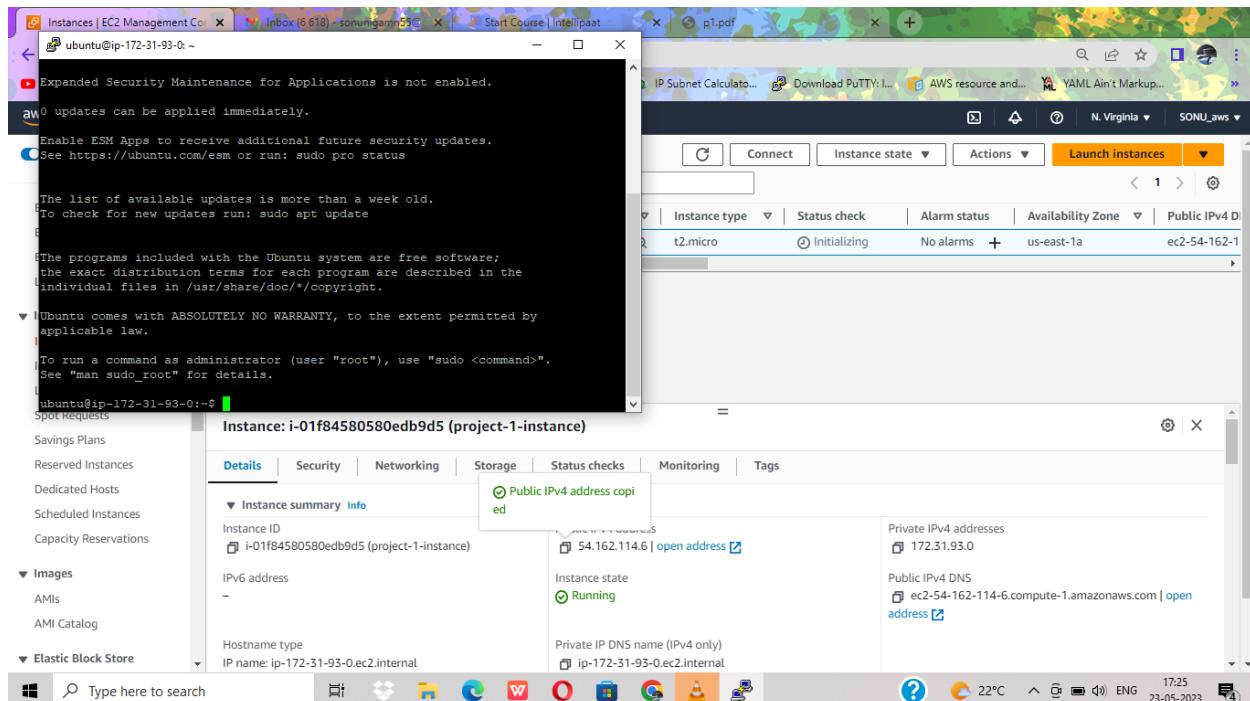
7 we now connect via putty

The screenshot shows the AWS Management Console with the EC2 Instances page open. The left sidebar shows navigation options like EC2 Dashboard, Instances, and Images. The main content area displays a table of instances. One instance is selected: "project-1-instance" (i-01f84580580edb9d5). The instance details show it is "Running" on port 22. The public IP address is 54.162.114.6. The Putty configuration window is overlaid on the page, showing the session details for connecting to this instance.

8 accept



9 we select our service and create



11 we now update the system

The screenshot shows a Windows desktop environment. On the left, there is a terminal window titled 'Instances | EC2 Management Con...' with the command 'sudo apt update' running. The output shows the download of various packages from the Ubuntu repositories. On the right, the AWS Management Console is open to the 'Instances' page, showing a single t2.micro instance named 'i-01f84580580edb9d5 (project-1-instance)' in the 'us-east-1a' availability zone. The instance is currently in the 'Initializing' state. Below the terminal window, the taskbar shows several icons including File Explorer, Task View, Start, Taskbar settings, and a search bar.

```
ubuntu@ip-172-31-93-0: ~
To check for new updates run: sudo apt update

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-172-31-93-0: ~$ sudo apt-get update
Get:1 http://us-east-1.ec2.archive.ubuntu.com/ubuntu jammy InRelease [110 kB]
Get:2 http://us-east-1.ec2.archive.ubuntu.com/ubuntu jammy-updates InRelease [110 kB]
Get:3 http://us-east-1.ec2.archive.ubuntu.com/ubuntu jammy-backports InRelease [108 kB]
Get:4 http://security.ubuntu.com/ubuntu jammy-security InRelease [110 kB]
Get:5 http://us-east-1.ec2.archive.ubuntu.com/ubuntu jammy/universe amd64 Packages [14.1 MB]
Get:6 http://us-east-1.ec2.archive.ubuntu.com/ubuntu jammy/universe Translation-en [5652 kB]
Spot Requests
Savings Plans
Reserved Instances
Dedicated Hosts
Scheduled Instances
Capacity Reservations
▼ Images
AMIs
AMI Catalog
▼ Elastic Block Store
IP name: ip-172-31-93-0.ec2.internal
Type here to search
File Explorer Task View Start Taskbar settings
17:25 23-05-2023
```

12 we now install apache 2

The screenshot shows a Windows desktop environment. On the left, there is a terminal window titled 'Instances | EC2 Management Con...' with the command 'sudo apt-get install apache2' running. The output shows the download and installation of the Apache web server package. On the right, the AWS Management Console is open to the 'Instances' page, showing the same t2.micro instance. The instance is now in the 'Running' state. Below the terminal window, the taskbar shows several icons including File Explorer, Task View, Start, Taskbar settings, and a search bar.

```
ubuntu@ip-172-31-93-0: ~
Get:31 http://security.ubuntu.com/ubuntu jammy-security/main Translation-en [113 kB]
Get:32 http://security.ubuntu.com/ubuntu jammy-security/main amd64 c-n-f Metadata [9812 B]
Get:33 http://security.ubuntu.com/ubuntu jammy-security/restricted amd64 Package Translation-en [260 kB]
Get:34 http://security.ubuntu.com/ubuntu jammy-security/restricted Translation-en [38.3 kB]
Get:35 http://security.ubuntu.com/ubuntu jammy-security/universe amd64 Packages [727 kB]
Get:36 http://security.ubuntu.com/ubuntu jammy-security/universe Translation-en [127 kB]
Get:37 http://security.ubuntu.com/ubuntu jammy-security/universe amd64 c-n-f Metadata [14.6 kB]
Get:38 http://security.ubuntu.com/ubuntu jammy-security/multiverse amd64 Packages [30.2 kB]
Get:39 http://security.ubuntu.com/ubuntu jammy-security/multiverse Translation-en [5828 B]
Get:40 http://security.ubuntu.com/ubuntu jammy-security/multiverse amd64 c-n-f Metadata [252 B]
Fetched 24.8 MB in 4s (5528 kB/s)
Reading package lists... Done
ubuntu@ip-172-31-93-0: ~$ sudo apt-get install apache2
Spot Requests
Savings Plans
Reserved Instances
Dedicated Hosts
Scheduled Instances
Capacity Reservations
▼ Images
AMIs
AMI Catalog
▼ Elastic Block Store
IP name: ip-172-31-93-0.ec2.internal
Type here to search
File Explorer Task View Start Taskbar settings
17:25 23-05-2023
```

13 we run following commands as shown

The screenshot shows a Windows desktop environment with several open windows:

- AWS Management Console:** The left sidebar lists services like Instances, Images, AMIs, and Elastic Block Store. The main pane displays instance details for an 'i-01f845080580edb9d5' instance, including its Public IPv4 address (54.162.114.6), Private IP address (172.31.93.0), and Public IPv4 DNS name (ec2-54-162-114-6.compute-1.amazonaws.com).
- Terminal Window:** A terminal window titled 'ubuntu@ip-172-31-93-0: ~' is open, showing the output of various commands related to security updates and the Apache web server.
- File Explorer:** A file named 'p1.pdf' is open in the background.
- Taskbar:** The taskbar includes icons for File Explorer, Edge browser, FileZilla, and other system tools.

14

The screenshot shows a Windows desktop environment with several open windows:

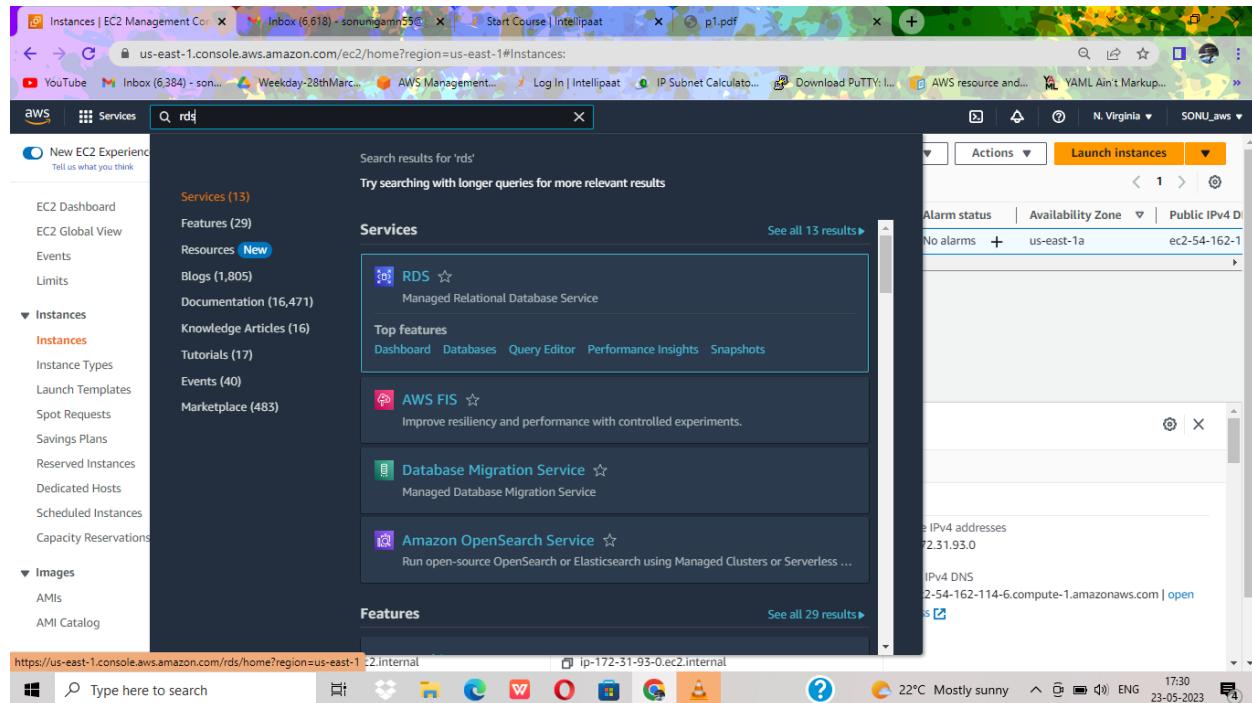
- Instances | EC2 Management Con**: A terminal window showing the output of a command to add an apt repository for PHP 5.6 on an Ubuntu 12.04 LTS instance. The command includes setting LC_ALL=C.UTF-8 and adding the repository from launchpad.net.
- Inbox (6,618) - sonuunamn55**: An email client showing a large number of unread messages.
- Start Course | Intellipaat**: A browser tab for an online course.
- p1.pdf**: A PDF document viewer.
- Subnet Calculato...**: A utility for calculating subnetting details.
- Download PuTTY: I...**: A browser tab for downloading the PuTTY SSH client.
- AWS resource and...**: A browser tab for AWS resources.
- YAML Ain't Markup...**: A browser tab for YAML syntax information.
- N. Virginia**: A dropdown menu for AWS regions.
- SONU_aws**: A dropdown menu for AWS accounts.
- AWS Management Console**: The main interface for managing AWS services, showing a list of EC2 instances. One instance, 'ec2-54-162-1-114', is selected and its details are shown in a modal dialog.

The modal dialog for the selected EC2 instance 'ec2-54-162-1-114' displays the following information:

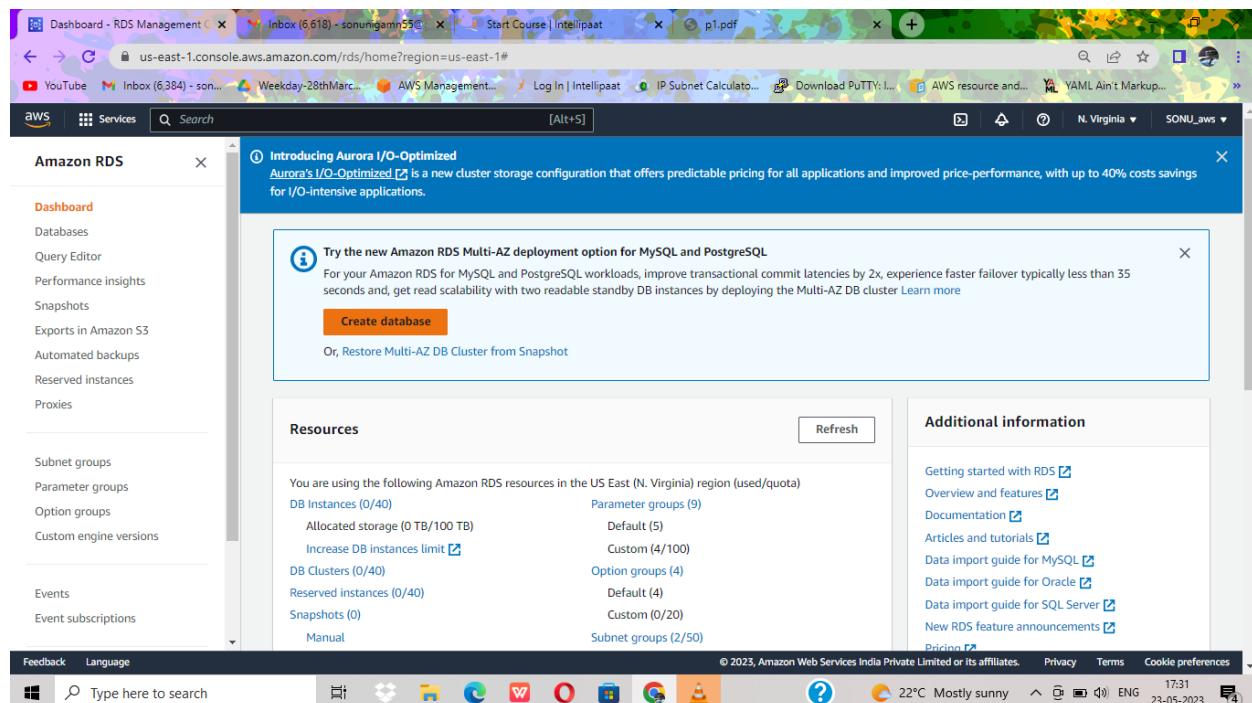
Details	Security	Networking	Storage	Status checks	Monitoring	Tags	
Instance summary							
Public IPv4 address copied							
Instance ID	i-01f84580580edbd9d5 (project-1-instance)						
IPv6 address	-						
Hostname type	IP name: ip-172-31-93-0.ec2.internal						
IP name: ip-172-31-93-0.ec2.internal	Private IP DNS name (IPv4 only)	ip-172-31-93-0.ec2.internal					
54.162.114.6	open address	Instance state	Running				
54.162.114.6	open address	Private IP addresses	172.31.93.0				
54.162.114.6	open address	Public IPv4 DNS	ec2-54-162-114-6.compute-1.amazonaws.com open address				

At the bottom of the screen, there is a taskbar with icons for File Explorer, File History, Task View, Start, Taskbar settings, and a search bar.

15 now we go to RDS database



16 we now create database



17 selecting my sql

The screenshot shows the AWS RDS MySQL creation wizard. On the left, under 'Engine options', the 'MySQL' engine type is selected. On the right, a detailed description of MySQL is provided, highlighting its popularity and various features like support for up to 64 TiB, multiple instance classes, automated backups, and up to 15 read replicas.

MySQL

MySQL is the most popular open source database in the world. MySQL on RDS offers the rich features of the MySQL community edition with the flexibility to easily scale compute resources or storage capacity for your database.

- Supports database size up to 64 TiB.
- Supports General Purpose, Memory Optimized, and Burstable Performance instance classes.
- Supports automated backup and point-in-time recovery.
- Supports up to 15 Read Replicas per instance, within a single Region or 5 read replicas cross-region.

18 we go with free tier

The screenshot shows the AWS RDS MySQL creation wizard. Under 'Templates', the 'Free tier' option is selected. This section describes the Free Tier as intended for development use outside of a production environment. On the right, the MySQL details are repeated, emphasizing its popularity and features.

MySQL

MySQL is the most popular open source database in the world. MySQL on RDS offers the rich features of the MySQL community edition with the flexibility to easily scale compute resources or storage capacity for your database.

- Supports database size up to 64 TiB.
- Supports General Purpose, Memory Optimized, and Burstable Performance instance classes.
- Supports automated backup and point-in-time recovery.
- Supports up to 15 Read Replicas per instance, within a single Region or 5 read replicas cross-region.

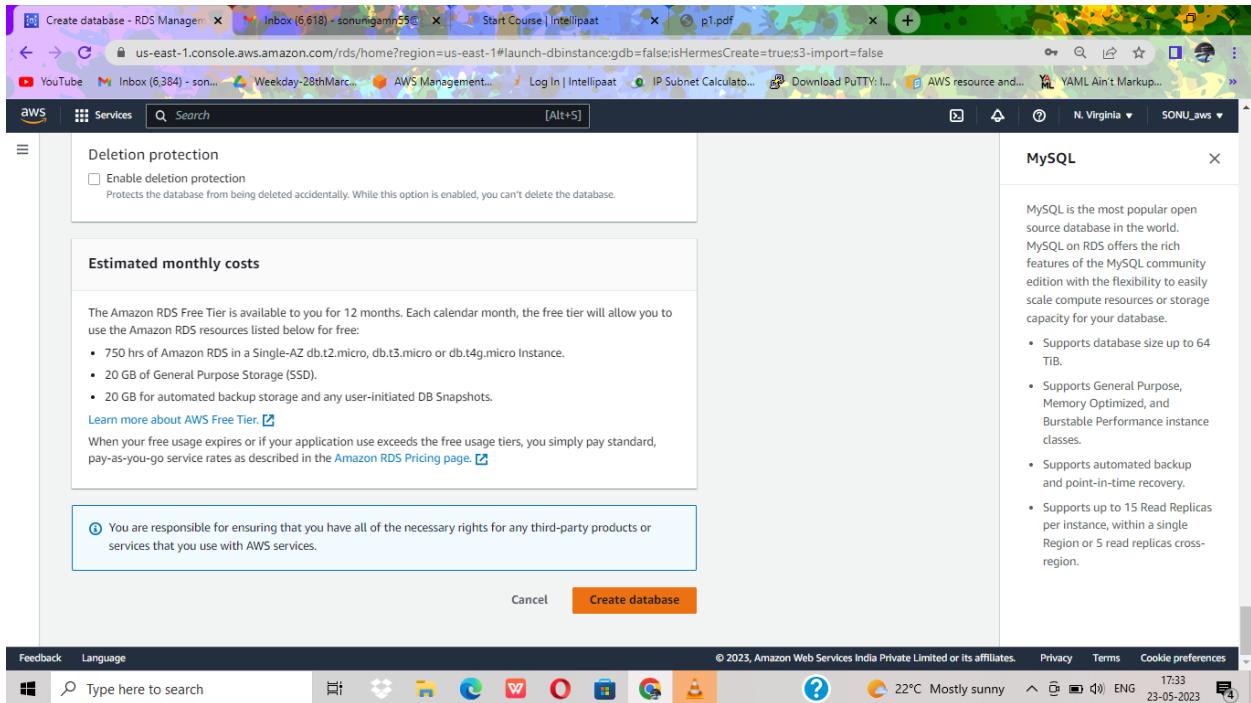
19 we name our DB and we set password

The screenshot shows the AWS RDS console with the 'Create database' wizard open. The 'DB instance identifier' field contains 'database-1-project'. Under 'Credentials Settings', the 'Master username' is set to 'admin'. A note states: 'If you manage the master user credentials in Secrets Manager, some RDS features aren't supported.' Below this, there are options for generating a password or providing a custom one. On the right, a sidebar provides information about MySQL, listing its features such as support for up to 64 TiB, various instance classes, automated backups, and up to 15 read replicas. The bottom of the screen shows the Windows taskbar with various pinned icons.

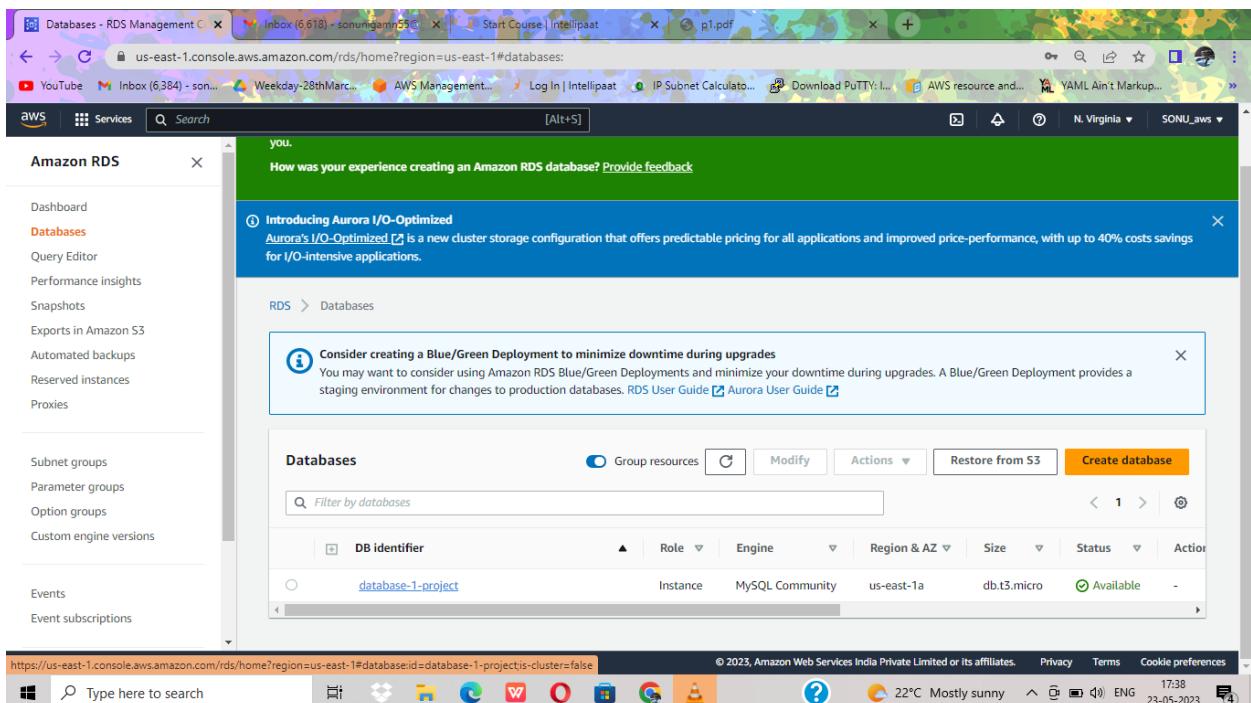
20 we give public access

The screenshot shows the continuation of the 'Create database' wizard. In the 'Virtual private cloud (VPC)' section, the 'Default VPC' is selected. A note says: 'After a database is created, you can't change its VPC.' In the 'DB subnet group' section, 'default-vpc-0df531dba8d39c63f' is chosen. Under 'Public access', the 'Yes' option is selected, with a note explaining that Amazon EC2 instances and other resources outside the VPC can connect to the database. The 'VPC security group (firewall)' section is also visible. The right sidebar for MySQL remains the same, detailing its features. The bottom of the screen shows the Windows taskbar.

21 create



22 Now our DB is created



23 we copy the security group id and select the same in DB security

The screenshot shows the AWS EC2 Management Console with the URL <https://us-east-1.console.aws.amazon.com/ec2/home?region=us-east-1#SecurityGroup:groupId=sg-0796fe49e7133335e>. The page displays the details of a security group named 'sg-0796fe49e7133335e - launch-wizard-57'. The 'Inbound rules' tab is active, showing one rule: 'All traffic' from '0.0.0.0/0' on port 3306. A tooltip suggests using the Reachability Analyzer. The left sidebar shows various EC2 management options like Instances, AMIs, and Images.

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The screenshot shows the AWS EC2 Management Console with the URL <https://us-east-1.console.aws.amazon.com/ec2/v2/home?region=us-east-1#ModifyInboundSecurityGroupRules:securityGroupId=sg-058fd8123cf6a028>. The page is titled 'Edit inbound rules' and shows the configuration for a security group. It lists three rules: 1) MySQL/Aurora on port 3306 from 0.0.0.0/0, 2) All traffic from 0.0.0.0/0, and 3) MySQL/Aurora on port 3306 from the security group 'sg-0796fe49e7133335e'. The 'Save rules' button is highlighted at the bottom right. The left sidebar shows various EC2 management options like Instances, AMIs, and Images.

25 we try to connect to our DB using putty using end points

```
ubuntu@ip-172-31-93-0:~
```

```
Last login: Tue May 23 12:21:28 2023 from 27.97.22.95
ubuntu@ip-172-31-93-0:~$ mysql -h hostname -u username -p
Enter password:
ERROR 2005 (HY000): Unknown MySQL server host 'hostname' (-3)
ubuntu@ip-172-31-93-0:~$ mysql -h hostname -u admin -p
Enter password:
ERROR 2005 (HY000): Unknown MySQL server host 'hostname' (-3)
ubuntu@ip-172-31-93-0:~$ mysql -h database-1-project-1.coivddk1qfp.us-east-1.rds.amazonaws.com -u admin -p
Enter password:
```

Subnet groups	Port	Subnets
database-1-project-1.coivddk1qfp.us-east-1.rds.amazonaws.com	3306	subnet-0a7931547ad133451 subnet-025c4e03c4f433cf2 subnet-041ab95c6911ea0f4

Security

VPC security groups
DatabaseSecuritygroup (sg-05f0fd8123cf6a028)
Active

Publicly accessible
Yes

Certificate authority info
rds-ca-2019

Certificate authority date
August 22, 2024, 22:38 (UTC+05:30)

26 we are connected

```
ubuntu@ip-172-31-93-0:~
```

```
Last login: Tue May 23 12:21:28 2023 from 27.97.22.95
ubuntu@ip-172-31-93-0:~$ mysql -h hostname -u username -p
Enter password:
ERROR 2005 (HY000): Unknown MySQL server host 'hostname' (-3)
ubuntu@ip-172-31-93-0:~$ mysql -h hostname -u admin -p
Enter password:
ERROR 2005 (HY000): Unknown MySQL server host 'hostname' (-3)
ubuntu@ip-172-31-93-0:~$ mysql -h database-1-project-1.coivddk1qfp.us-east-1.rds.amazonaws.com -u admin -p
Enter password:
Welcome to the MySQL monitor. Commands end with ; or \g.
Your MySQL connection id is 16
Server version: 8.0.32 Source distribution

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affiliates. Other names may be trademarks of their respective
owners.

Type 'help;' or '\h' for help. Type '\c' to clear the current input statement.
mysql>
```

Subnet groups	Port	Subnets
database-1-project-1.coivddk1qfp.us-east-1.rds.amazonaws.com	3306	subnet-0a7931547ad133451 subnet-025c4e03c4f433cf2 subnet-041ab95c6911ea0f4

Security

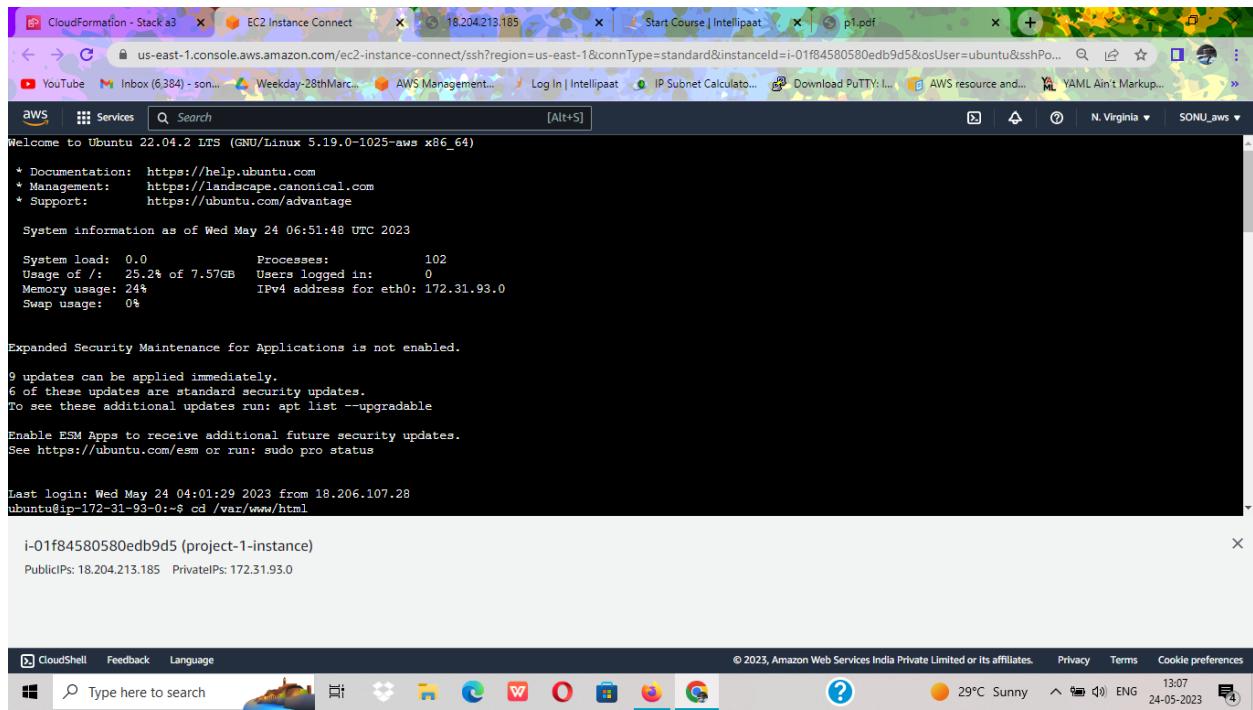
VPC security groups
DatabaseSecuritygroup (sg-05f0fd8123cf6a028)
Active

Publicly accessible
Yes

Certificate authority info
rds-ca-2019

Certificate authority date
August 22, 2024, 22:38 (UTC+05:30)

27 To make things easy we connect to our instance via browser and run the following commands



```
Welcome to Ubuntu 22.04.2 LTS (GNU/Linux 5.19.0-1025-aws x86_64)

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

 System information as of Wed May 24 06:51:48 UTC 2023

 System load: 0.0          Processes:          102
 Usage of /: 25.2% of 7.57GB Users logged in: 0
 Memory usage: 24%          IPv4 address for eth0: 172.31.93.0
 Swap usage: 0%

Expanded Security Maintenance for Applications is not enabled.

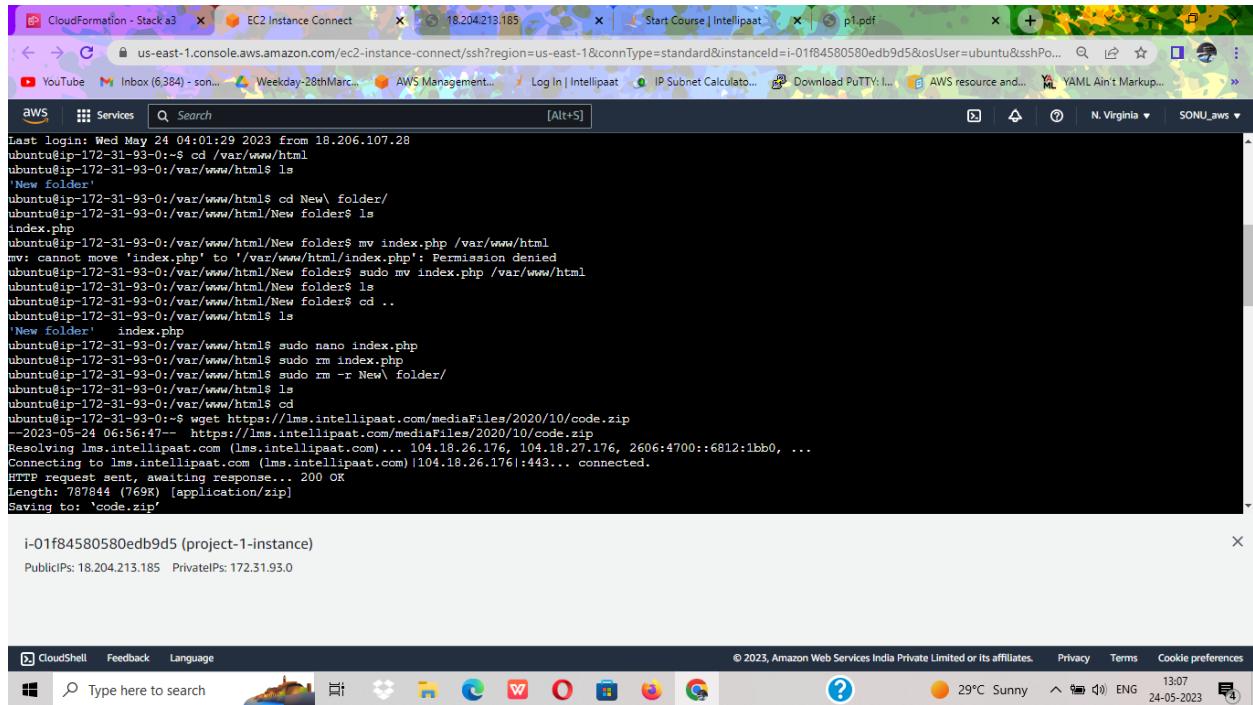
9 updates can be applied immediately.
6 of these updates are standard security updates.
To see these additional updates run: apt list --upgradable

Enable ESM Apps to receive additional future security updates.
See https://ubuntu.com/esm or run: sudo pro status

Last login: Wed May 24 04:01:29 2023 from 18.206.107.28
ubuntu@ip-172-31-93-0:~ cd /var/www/html

i-01f84580580edb9d5 (project-1-instance)
Public IPs: 18.204.213.185 Private IPs: 172.31.93.0
```

28



```
Last login: Wed May 24 04:01:29 2023 from 18.206.107.28
ubuntu@ip-172-31-93-0:~ cd /var/www/html
ubuntu@ip-172-31-93-0:/var/www/html$ ls
'New folder'
ubuntu@ip-172-31-93-0:/var/www/html$ cd New\ folder/
ubuntu@ip-172-31-93-0:/var/www/html/New folder$ ls
index.php
ubuntu@ip-172-31-93-0:/var/www/html/New folder$ mv index.php /var/www/html
mv: cannot move 'index.php' to '/var/www/html/index.php': Permission denied
ubuntu@ip-172-31-93-0:/var/www/html/New folder$ sudo mv index.php /var/www/html
ubuntu@ip-172-31-93-0:/var/www/html/New folder$ ls
ubuntu@ip-172-31-93-0:/var/www/html/New folder$ cd ..
ubuntu@ip-172-31-93-0:/var/www/html$ ls
'New folder' index.php
ubuntu@ip-172-31-93-0:/var/www/html$ sudo nano index.php
ubuntu@ip-172-31-93-0:/var/www/html$ sudo rm index.php
ubuntu@ip-172-31-93-0:/var/www/html$ sudo rm -r New\ folder/
ubuntu@ip-172-31-93-0:/var/www/html$ ls
ubuntu@ip-172-31-93-0:/var/www/html$ cd ..
ubuntu@ip-172-31-93-0:~$ wget https://lms.intellipaat.com/mediaFiles/2020/10/code.zip
--2023-05-24 06:56:47 - https://lms.intellipaat.com/mediaFiles/2020/10/code.zip
Resolving lms.intellipaat.com (lms.intellipaat.com)... 104.18.26.176, 104.18.27.176, 2606:4700::6812:1bb0, ...
Connecting to lms.intellipaat.com (lms.intellipaat.com)|104.18.26.176|:443... connected.
HTTP request sent, awaiting response... 200 OK
Length: 787844 (769K) [application/zip]
Saving to: 'code.zip'

i-01f84580580edb9d5 (project-1-instance)
Public IPs: 18.204.213.185 Private IPs: 172.31.93.0
```

29

```
Length: 787844 (769K) [application/zip]
Saving to: `code.zip'

code.zip          100%[=====] 769.38K --=KB/s   in 0.01s

2023-05-24 06:56:47 (67.5 MB/s) - `code.zip' saved [787844/787844]

ubuntu@ip-172-31-93-0:~$ ls
'New folder'  code.zip  fl
ubuntu@ip-172-31-93-0:~$ sudo apt install unzip -y
Reading package lists... Done
Building dependency tree... Done
Reading state information... Done
Suggested packages:
  zip
The following NEW packages will be installed:
  unzip
0 upgraded, 1 newly installed, 0 to remove and 13 not upgraded.
Need to get 174 kB of archives.
After this operation, 385 kB of additional disk space will be used.
Get:1 http://us-east-1.ec2.archive.ubuntu.com/ubuntu jammy-updates/main amd64 unzip amd64 6.0-26ubuntu3.1 [174 kB]
Fetched 174 kB in 0s (8035 kB/s)
Selecting previously unselected package unzip.
(Reading database ... 65272 files and directories currently installed.)
Preparing to unpack .../unzip_6.0-26ubuntu3.1_amd64.deb ...
Unpacking unzip (6.0-26ubuntu3.1) ...

i-01f84580580edb9d5 (project-1-instance)
PublicIPs: 18.204.213.185 PrivateIPs: 172.31.93.0
```

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30

```
(Reading database ... 65272 files and directories currently installed.)
Preparing to unpack .../unzip_6.0-26ubuntu3.1_amd64.deb ...
Unpacking unzip (6.0-26ubuntu3.1) ...
Setting up unzip (6.0-26ubuntu3.1) ...
Processing triggers for mailcap (3.70+nmmlubuntul) ...
Processing triggers for man-db (2.10.2-1) ...
Scanning processes...
Scanning linux images...

Running kernel seems to be up-to-date.

No services need to be restarted.

No containers need to be restarted.

No user sessions are running outdated binaries.

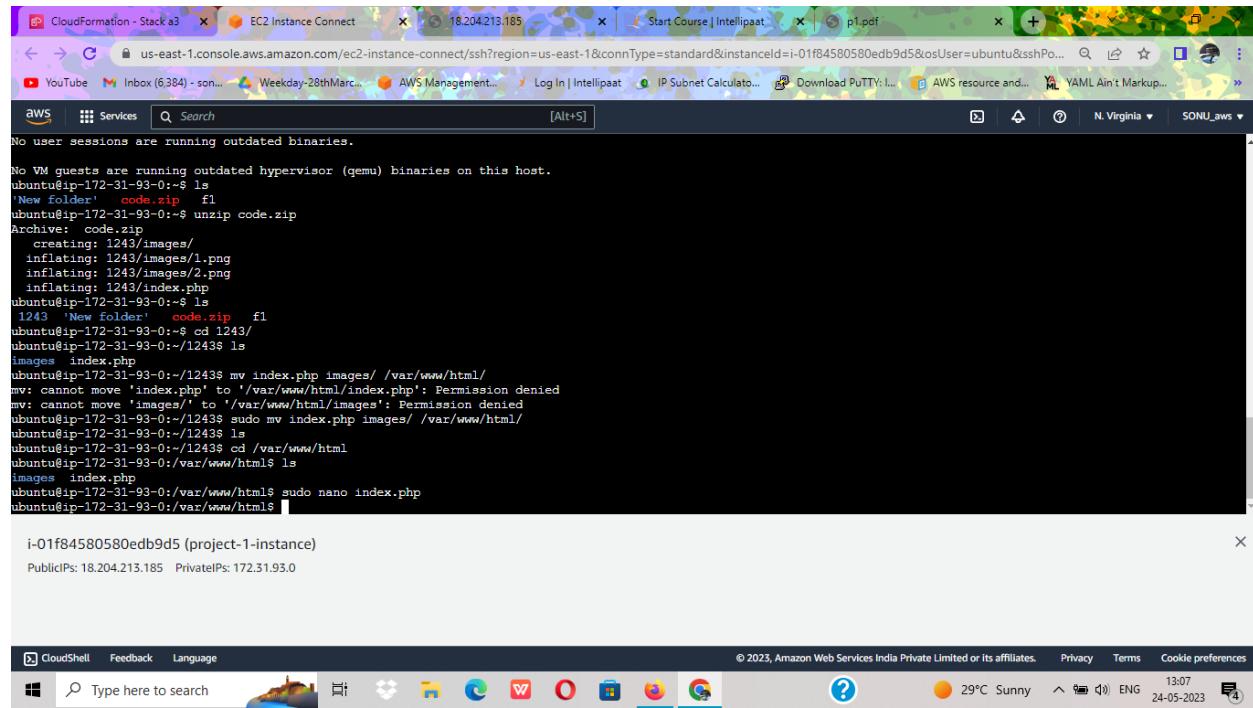
No VM guests are running outdated hypervisor (gemu) binaries on this host.

ubuntu@ip-172-31-93-0:~$ ls
'New folder'  code.zip  fl
ubuntu@ip-172-31-93-0:~$ unzip code.zip
Archive: code.zip
  creating: 1243/images/
  inflating: 1243/images/1.png
  inflating: 1243/images/2.png
  inflating: 1243/index.php

i-01f84580580edb9d5 (project-1-instance)
PublicIPs: 18.204.213.185 PrivateIPs: 172.31.93.0
```

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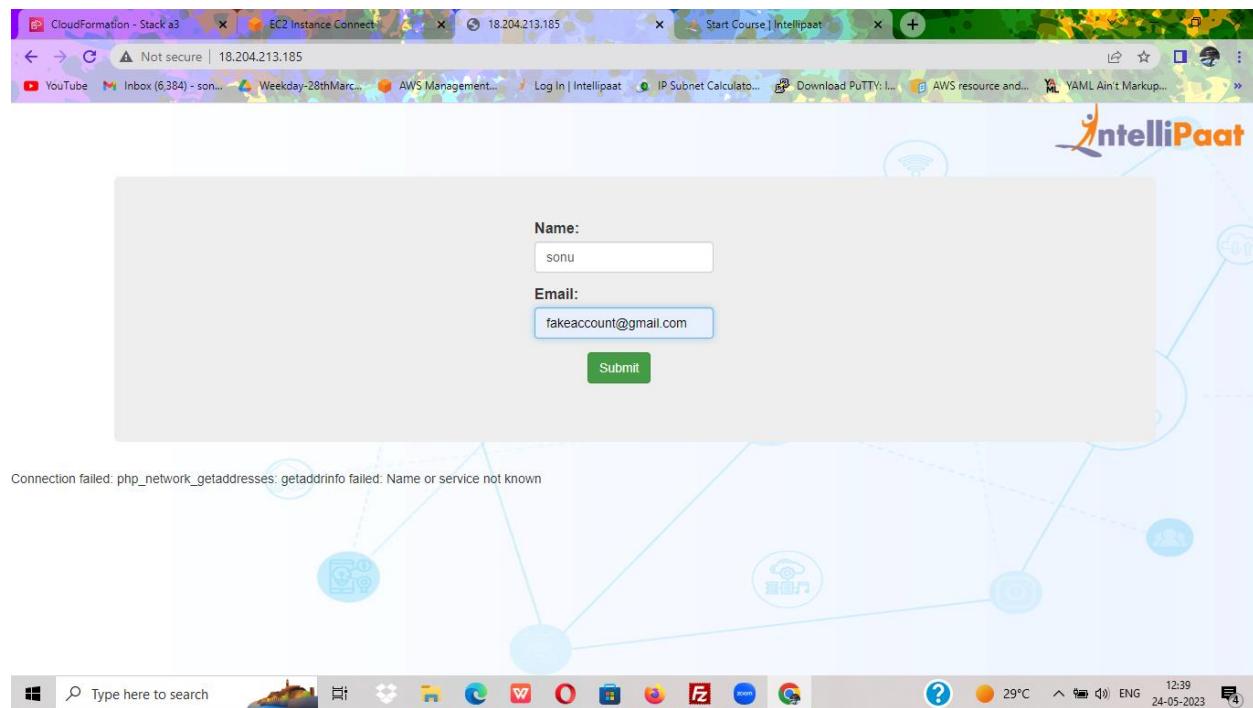


```
No VM guests are running outdated hypervisor (qemu) binaries on this host.  
ubuntu@ip-172-31-93-0:~$ ls  
'New folder' code.zip fl  
ubuntu@ip-172-31-93-0:~$ unzip code.zip  
Archive: code.zip  
  creating: 1243/images/  
  inflating: 1243/images/1.png  
  inflating: 1243/images/2.png  
  inflating: 1243/index.php  
ubuntu@ip-172-31-93-0:~$ ls  
1243 'New folder' code.zip fl  
ubuntu@ip-172-31-93-0:~$ cd 1243/  
ubuntu@ip-172-31-93-0:~/1243$ ls  
images index.php  
ubuntu@ip-172-31-93-0:~/1243$ mv index.php images/ /var/www/html/  
mv: cannot move 'index.php' to '/var/www/html/index.php': Permission denied  
mv: cannot move 'images/' to '/var/www/html/images': Permission denied  
ubuntu@ip-172-31-93-0:~/1243$ sudo mv index.php images/ /var/www/html/  
ubuntu@ip-172-31-93-0:~/1243$ ls  
ubuntu@ip-172-31-93-0:~/var/www/html$ ls  
images index.php  
ubuntu@ip-172-31-93-0:~/var/www/html$ sudo nano index.php  
ubuntu@ip-172-31-93-0:~/var/www/html$ [REDACTED]
```

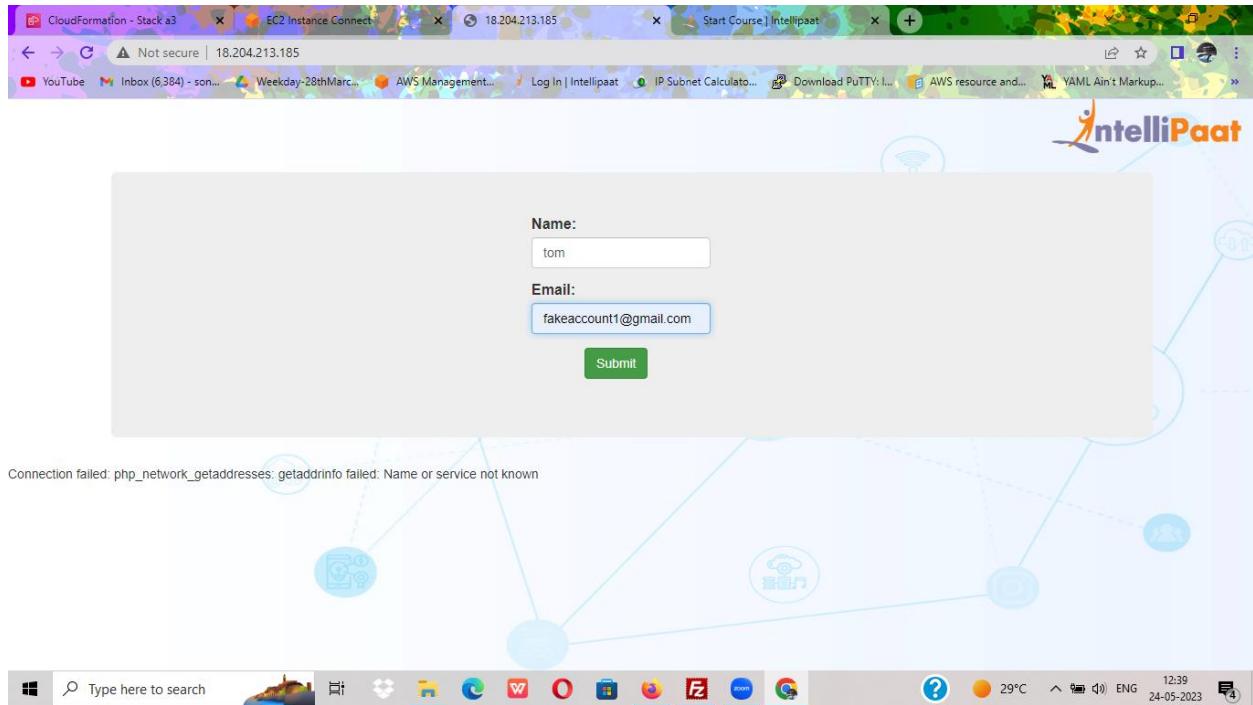
i-01f84580580edb9d5 (project-1-instance)
PublicIPs: 18.204.213.185 PrivateIPs: 172.31.93.0

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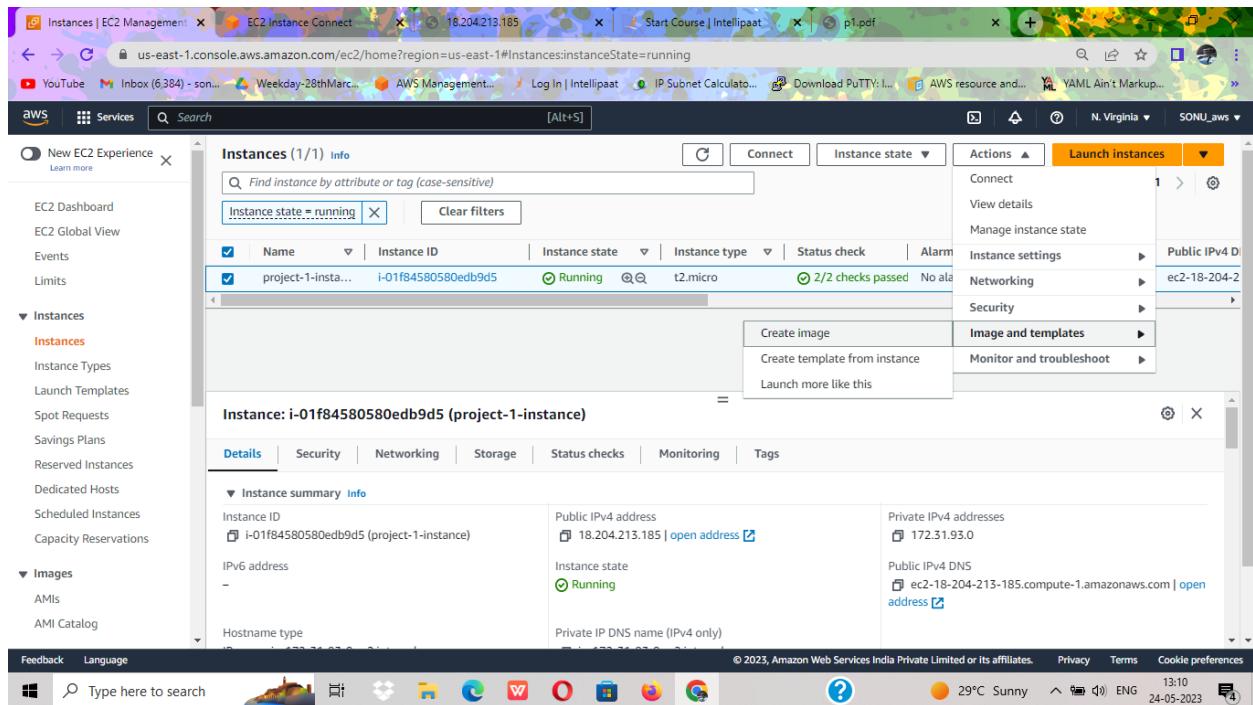
32 we now browse our IP address



33 we add some data



34 now we go for autoscaling for that we create image of our instance



35 we give name to our image

The screenshot shows the 'Create Image' wizard on the AWS Management Console. The current step is 'Image name'. The 'Image name' field contains 'project-image'. Below it is an optional 'Image description' field with placeholder text 'Image description'. Underneath are two checkboxes: 'No reboot' (unchecked) and 'Enable' (unchecked). The 'Instance volumes' section is visible, showing a single volume configuration: EBS storage type, device '/dev/sda1', size 8 GiB, volume type EBS General Purpose S., IOPS 100, Throughput 100, Delete on termination checked, and Encrypted unchecked. A note below states: 'During the image creation process, Amazon EC2 creates a snapshot of each of the above volumes.' At the bottom, there's a 'Tags - optional' section with a note about tags being labels for AWS resources, and two radio button options: 'Tag image and snapshots together' (selected) and 'Tag image and snapshots separately'. The status bar at the bottom right shows the date and time as 24-05-2023 13:10.

36 create image

This screenshot continues the 'Create Image' wizard. The 'Tags' step is shown, featuring a note about tags being labels for AWS resources. It includes two radio button options: 'Tag image and snapshots together' (selected) and 'Tag image and snapshots separately'. Below is a note: 'No tags associated with the resource.' A 'Add new tag' button is available, with a note stating 'You can add up to 50 more tags.' At the bottom right are 'Cancel' and 'Create image' buttons. The status bar at the bottom right shows the date and time as 24-05-2023 13:10.

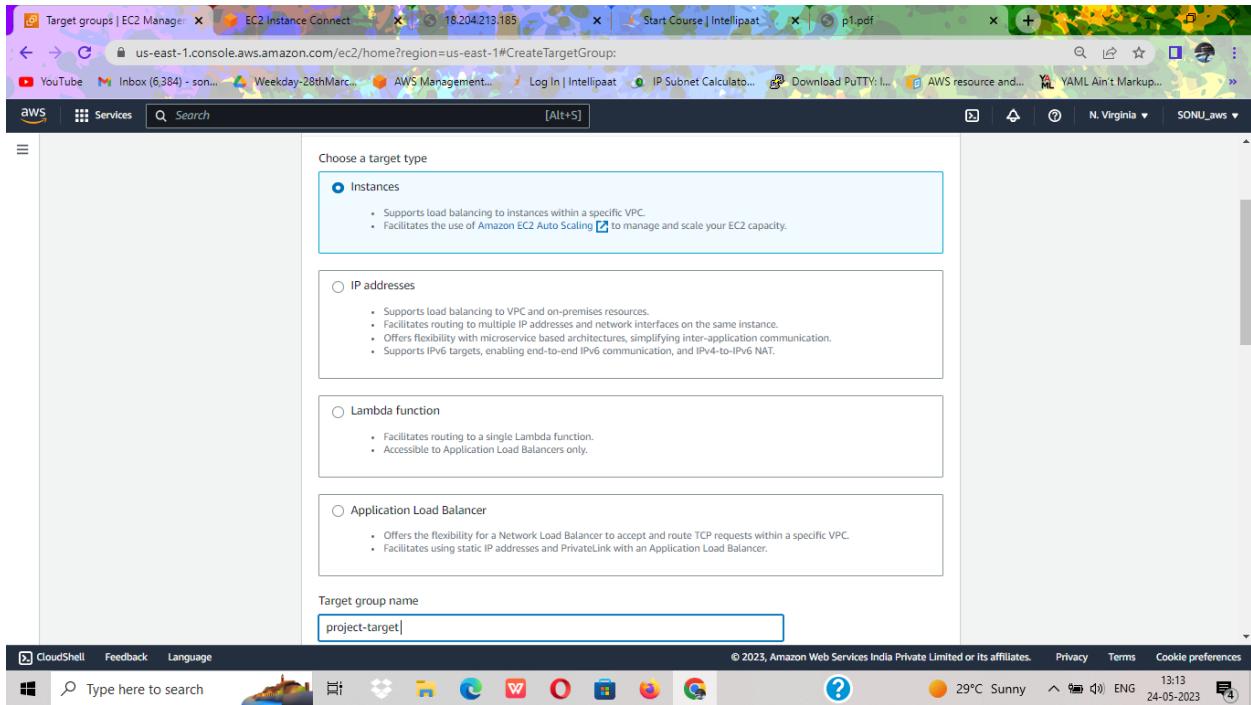
37 our image is created

The screenshot shows the AWS EC2 Management Console. A green notification bar at the top states: "Currently creating AMI ami-0d6f4c16f294ebec0 from instance i-01f84580580edb9d5. Check that the AMI status is 'Available' before deleting the instance or carrying out other actions related to this AMI." Below this, the "Instances (1/2) Info" section displays a table with one row. The row shows an instance named "project-1-instance" with Instance ID "i-01f84580580edb9d5", which is currently "Running". The table includes columns for Name, Instance ID, Instance state, Instance type, Status check, Alarm status, Availability Zone, and Public IPv4 IP. At the bottom of the page, there is a detailed view for the instance "i-01f84580580edb9d5 (project-1-instance)" with tabs for Details, Security, Networking, Storage, Status checks, Monitoring, and Tags.

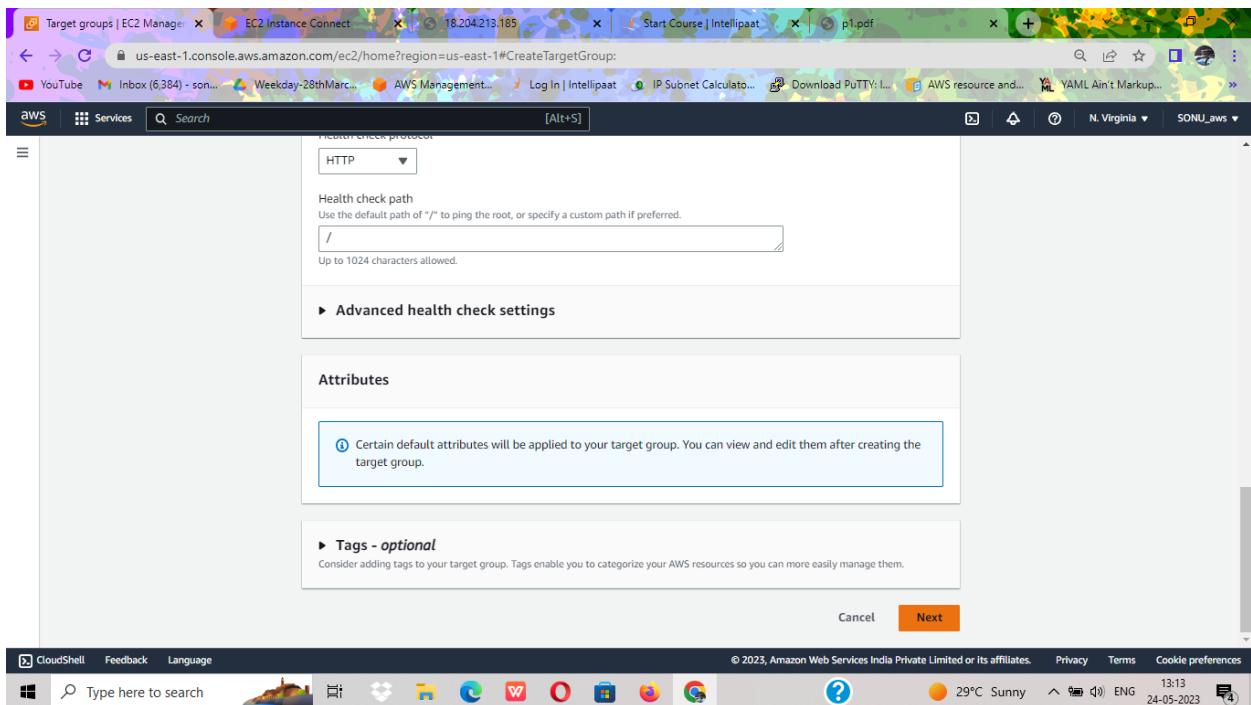
38 we now create target group

The screenshot shows the AWS EC2 Management Console. The left sidebar navigation menu is expanded, showing sections like AMIs, Elastic Block Store, Network & Security, Load Balancing, and Auto Scaling. Under the "Load Balancing" section, the "Target Groups" option is selected. In the main content area, a table titled "Create target group" lists two target groups: "new-targetgroup" and "targetgroup-1". Both entries have "Name" as "new-targetgroup" and "Port" as "80". The "Protocol" column shows "HTTP" and the "Target type" column shows "instance". The "VPC ID" column lists "vpc-0df531dba8d39c63f" for both rows. At the bottom of the page, there is a search bar and a footer with standard AWS links and information.

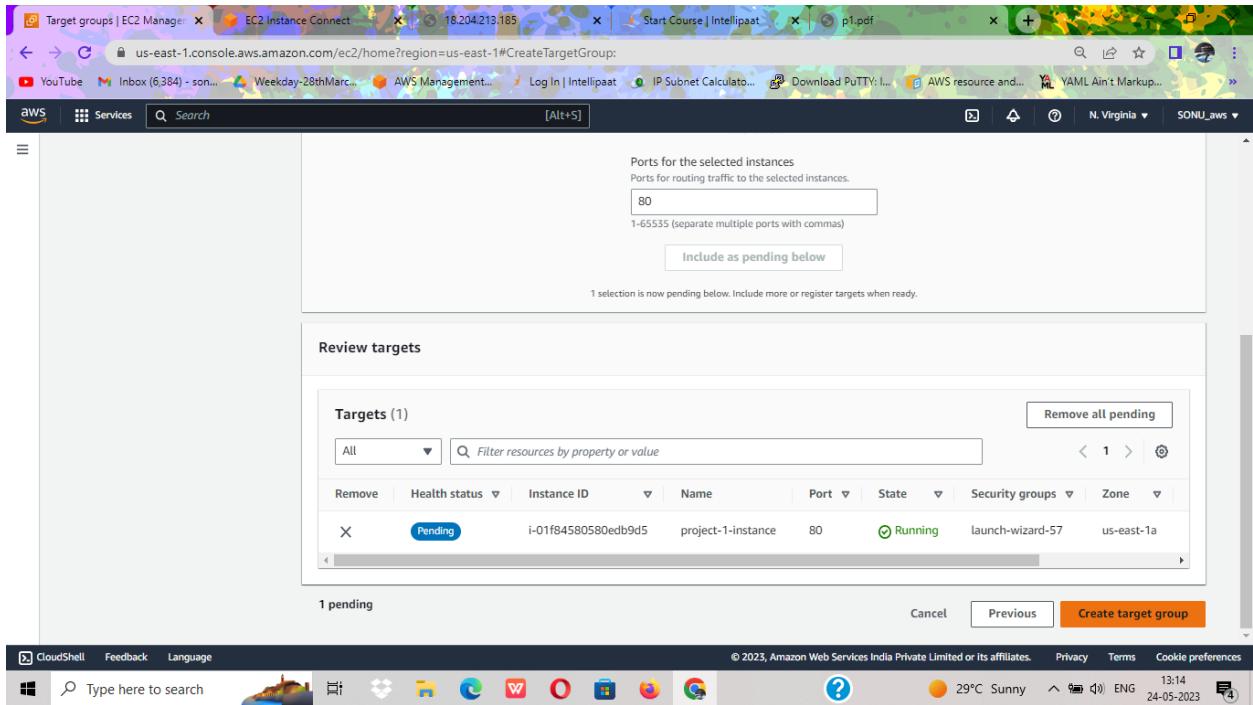
39 we select instance type target group



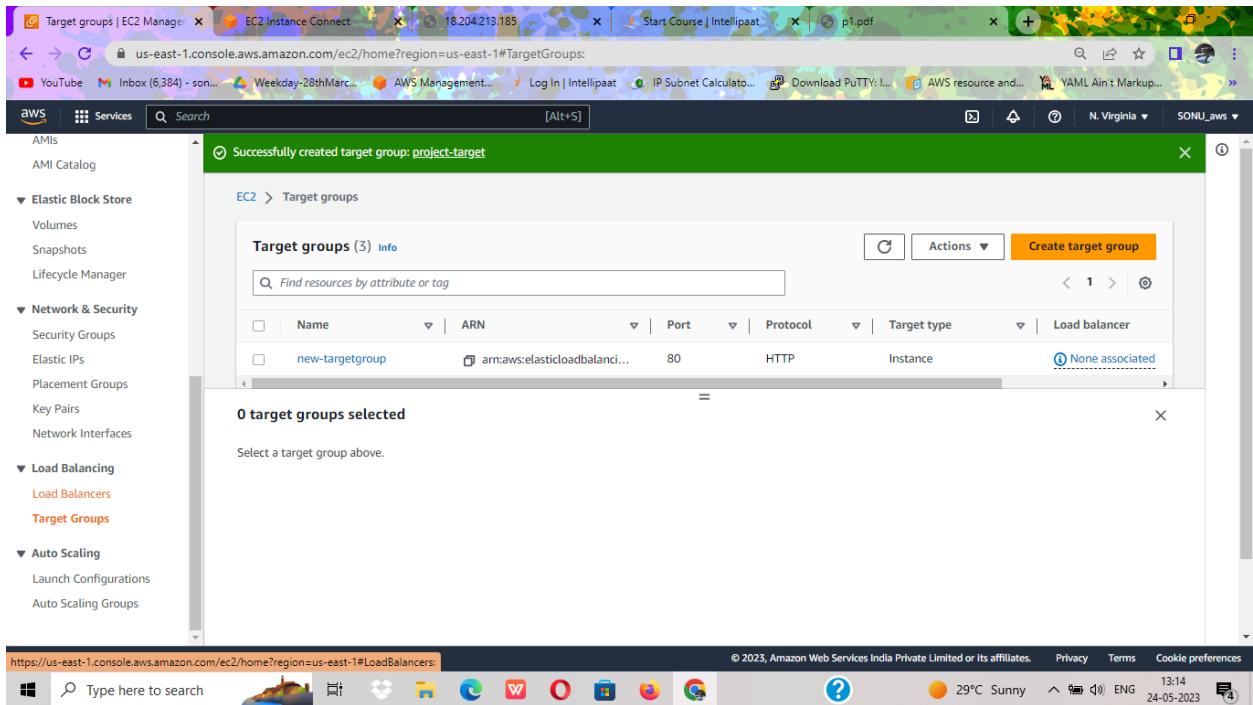
40 next



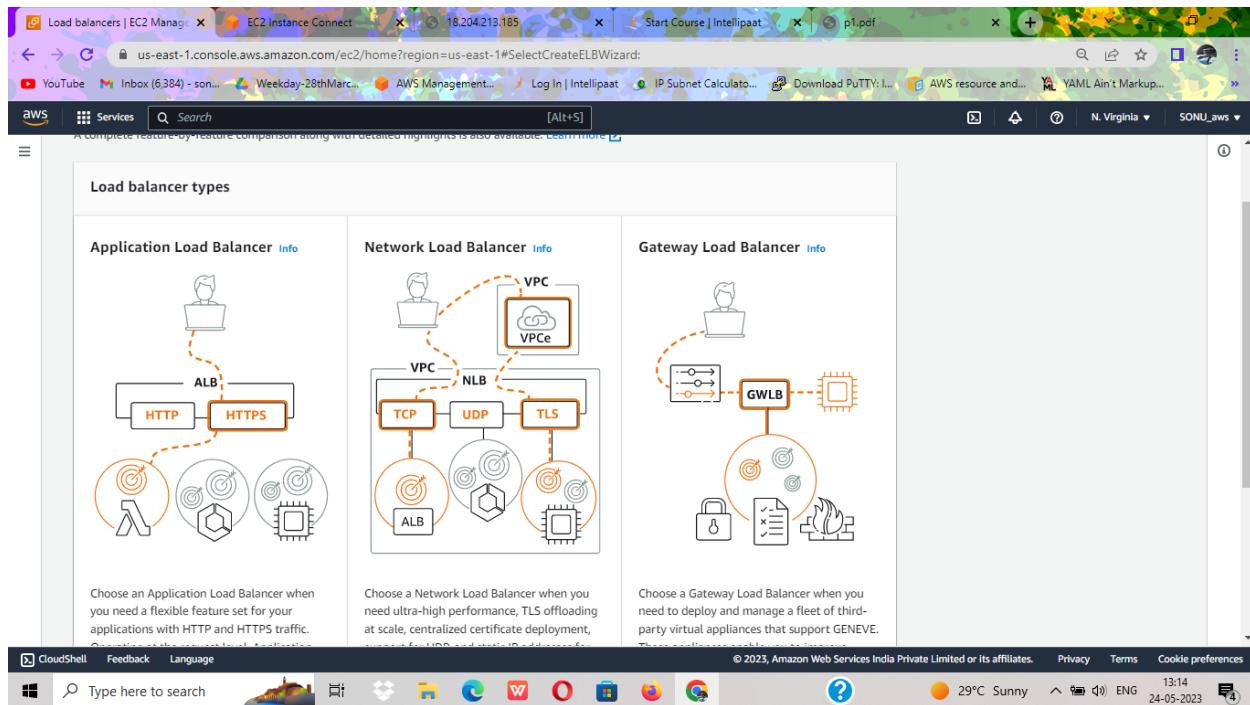
41 we select our instance and create



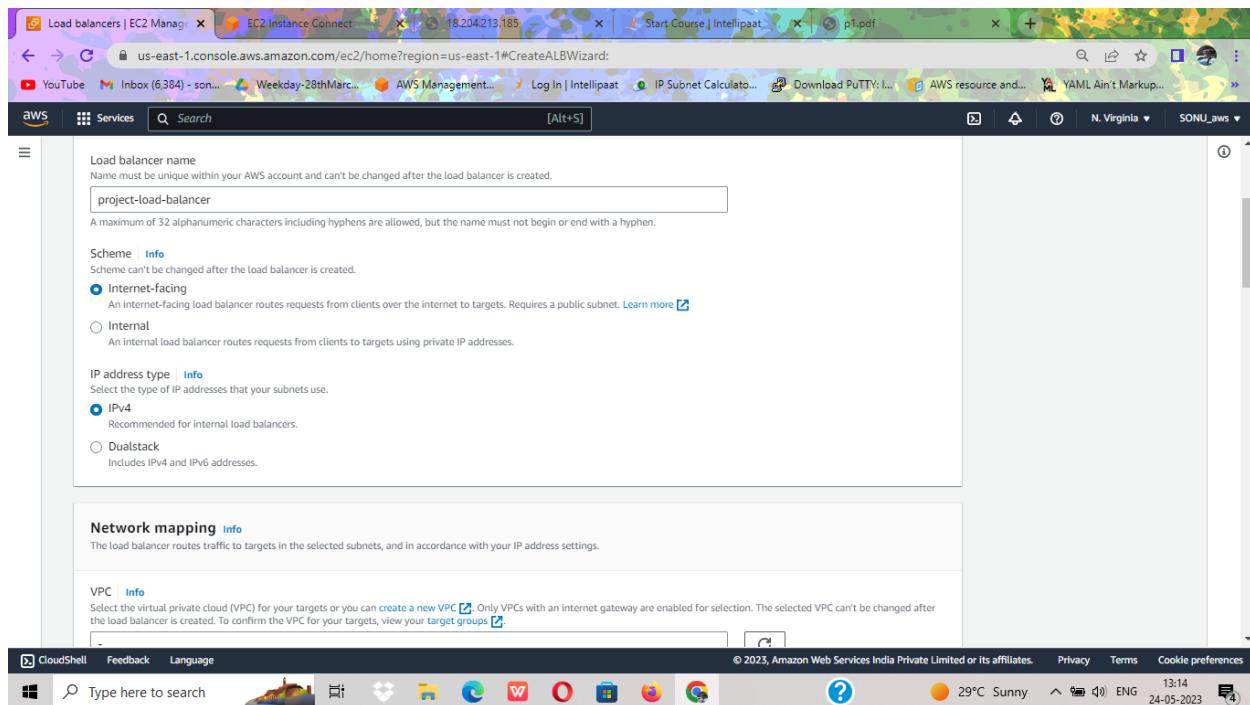
42 our target group is created



43 we now create our application load balancer



44 we give name to our load balancer



45 we select All AZs

The screenshot shows the AWS CloudFront console with the URL <https://us-east-1.console.aws.amazon.com/cloudfront/home?region=us-east-1#CreateALBWizard>. The page displays two target groups:

- us-east-1e (use1-az3)**: Subnet subnet-0664c92d9ea7a2d32, IPv4 address Assigned by AWS.
- us-east-1f (use1-az5)**: Subnet subnet-0a7931547ad133451, IPv4 address Assigned by AWS.

Below the target groups, there is a section titled "Security groups" with a note: "A security group is a set of firewall rules that control the traffic to your load balancer. Select an existing security group, or you can create a new security group." The status bar at the bottom indicates it's 29°C Sunny, 13:15, and the date is 24-05-2023.

46 we select target group

The screenshot shows the AWS CloudFront console with the URL <https://us-east-1.console.aws.amazon.com/cloudfront/home?region=us-east-1#CreateALBWizard>. The page displays a Listener configuration:

- Listener HTTP:80**: Protocol: HTTP, Port: 80, Default action: Forward to project-target (Target type: Instance, IPv4).

Below the listener, there is a section titled "Add-on services - optional" with a note: "Additional AWS services can be integrated with this load balancer at launch. You can also add these and other services after your load balancer is created by reviewing the 'Integrated Services' tab for the selected load balancer." The status bar at the bottom indicates it's 29°C Sunny, 13:15, and the date is 24-05-2023.

47 create

The screenshot shows the AWS CloudFront console with the URL <https://us-east-1.console.aws.amazon.com/cloudfront/home?region=us-east-1#CreateCloudFrontDistribution>. The page is titled "Create CloudFront Distribution". It displays a form with several sections: "Origin", "Default Cache Behavior", "Custom Origins", "Lambda Functions", "CloudFront Origin Access Identity", and "Tags". At the bottom right, there is a large orange "Create CloudFront Distribution" button.

48 now we create configuration

The screenshot shows the AWS EC2 Management Console with the URL <https://us-east-1.console.aws.amazon.com/ec2/home?region=us-east-1#LaunchConfigurations>. The page is titled "Launch Configurations". It displays a table with columns: Name, AMI ID, Instance type, Spot price, and Creation time. A blue banner at the top states: "Recommendation to not use launch configurations: Amazon EC2 Auto Scaling no longer adds support for new EC2 features to launch configurations and will stop supporting new EC2 instance types after December 31, 2022. We recommend that customers using launch configurations migrate to launch templates. For more information, see the documentation." At the bottom right, there is a large orange "Create launch configuration" button.

49 we give name

EC2 Management Console | EC2 Instance Connect | 18.204.213.185 | Start Course | Intellipaat | p1.pdf

Name: project=configuration

Amazon machine image (AMI): project-image

Instance type: Choose instance type

Additional configuration - optional

Purchasing option: Info

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50 create

EC2 Management Console | EC2 Instance Connect | 18.204.213.185 | Start Course | Intellipaat | p1.pdf

sg-0f74d75f310f815e7 default vpc-0df531dba8d39c63f default VPC security group

sg-053071146019336a9 default vpc-01d455eb6012cba7f default VPC security group

sg-0eb30c76b104a97a3 launch-wizard-2 vpc-0df531dba8d39c63f launch-wizard-2 created 2023-04-05T12:59:42.828Z

⚠️ 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.

Key pair (login): Info

Key pair options: Choose an existing key pair

Existing key pair: last=key

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

Create launch configuration

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51 now we create auto scaling group as shown below

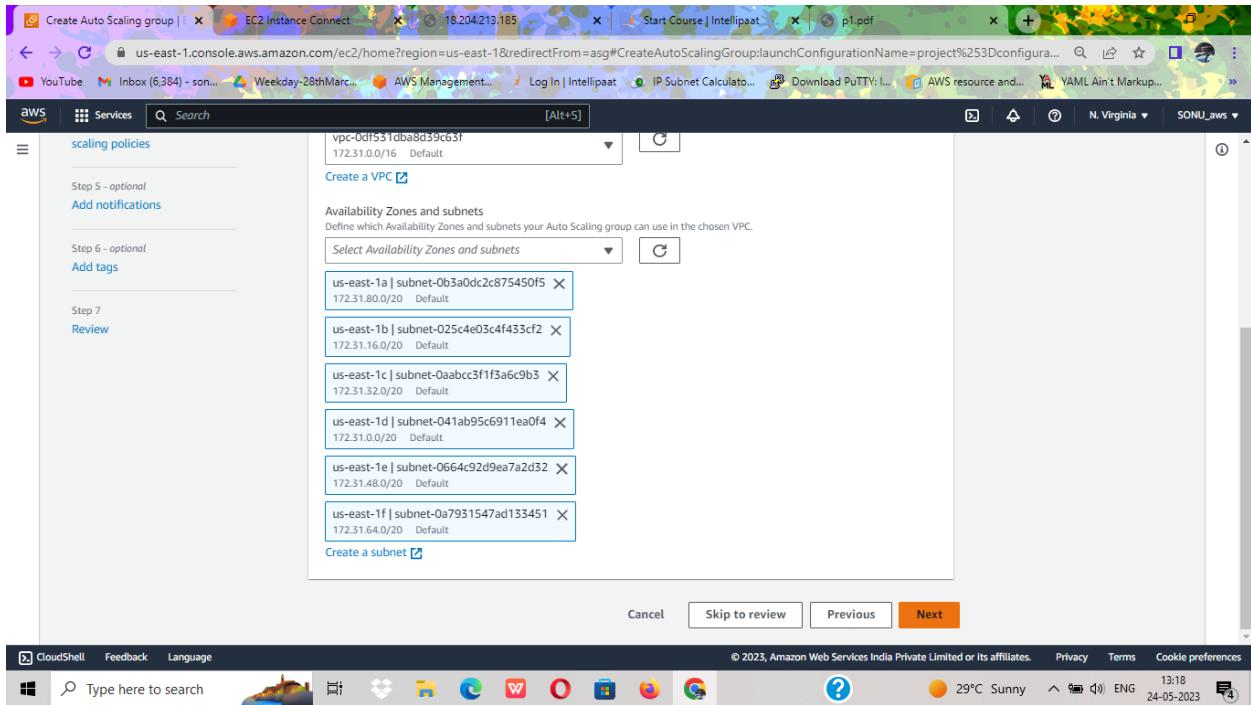
The screenshot shows the AWS EC2 Management Console. In the top navigation bar, there are several tabs: EC2 Management Console, EC2 Instance Connect, 18.204.213.185, Start Course | Intellipaat, p1.pdf, and others like YouTube, Inbox, AWS Management, Log In | Intellipaat, IP Subnet Calculator, Download PuTTY, AWS resource and..., and YAML Ain't Markup. Below the tabs, the AWS logo and Services menu are visible. A search bar with the placeholder 'Search' and an 'Alt+S' keyboard shortcut are also present.

The main content area displays a green success message: "Successfully created launch configuration: project=configuration". Above this message, a warning note states: "Amazon EC2 Auto Scaling no longer adds support for new EC2 features to launch configurations and will stop supporting new EC2 instances types after December 31, 2022. We recommend that customers using launch configurations migrate to launch templates. For more information, see the documentation." Below the message, the "Launch configurations (1/1)" section is shown. It lists one entry: "project=configuration" (ami-0d6f4c16f294ebec0, t2.micro, Wed May 24 2023 13:17:28 GMT+0530 (India Standard Time)). Action buttons for "Create Auto Scaling group", "Delete launch configuration", and "Copy launch configuration" are available for this item. The bottom of the page includes standard browser navigation buttons and a status bar showing the date and time.

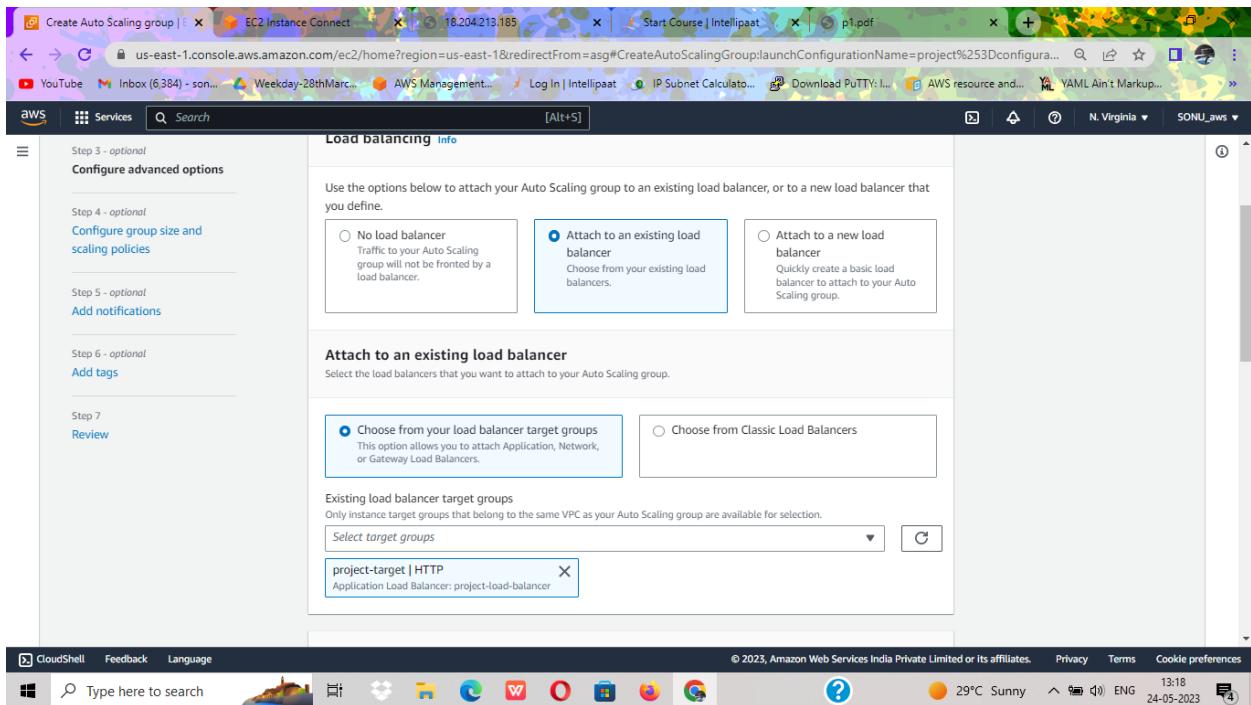
52 we name our group

The screenshot shows the "Create Auto Scaling group" wizard. The current step is "Step 4 - optional: Configure group size and scaling policies". On the left, a sidebar lists other optional steps: Step 3 - optional: Configure advanced options; Step 5 - optional: Add notifications; Step 6 - optional: Add tags; and Step 7: Review. The main content area has a heading "Auto Scaling group name" with a sub-instruction "Enter a name to identify the group." A text input field contains "project-auto-scaling". Below it, a note says "Must be unique to this account in the current Region and no more than 255 characters." To the right, there's a "Launch configuration" section with a "Info" button and a "Switch to launch template" link. A warning message in a box advises against using launch configurations and recommends using launch templates. The "Launch configuration" dropdown is set to "project=configuration". Below it, a table provides details: Launch configuration (project=configuration), AMI ID (ami-0d6f4c16f294ebec0), Date created (Wed May 24 2023 13:17:28 GMT+0530 (India Standard Time)), Security groups (sg-06909bee5d5324b8b), Instance type (t2.micro), and Key pair name (last-key). The bottom of the page includes standard browser navigation buttons and a status bar showing the date and time.

53 select all AZs and next



54 we attach our load balancer



55 next

Additional health check types - optional [Info](#)

Turn on Elastic Load Balancing health checks [Recommended](#)
Elastic Load Balancing monitors whether instances are available to handle requests. When it reports an unhealthy instance, EC2 Auto Scaling can replace it on its next periodic check.

Turn on VPC Lattice health checks
VPC Lattice can monitor whether instances are available to handle requests. If it considers a target as failed a health check, EC2 Auto Scaling replaces it after its next periodic check.

Health check grace period [Info](#)
This time period delays the first health check until your instances finish initializing. It doesn't prevent an instance from terminating when placed into a non-running state.
300 seconds

Additional settings

Monitoring [Info](#)
 Enable group metrics collection within CloudWatch

Default instance warmup [Info](#)
The amount of time that CloudWatch metrics for new instances do not contribute to the group's aggregated instance metrics, as their usage data is not reliable yet.
 Enable default instance warmup

Cancel [Skip to review](#) Previous **Next**

56 we specify our max and min instances

Step 3 - optional [Configure advanced options](#)

Step 4 - optional [Configure group size and scaling policies](#)

Step 5 - optional [Add notifications](#)

Step 6 - optional [Add tags](#)

Step 7 [Review](#)

Specify the size of the Auto Scaling group by changing the desired capacity. You can also specify minimum and maximum capacity limits. Your desired capacity must be within the limit range.

Desired capacity
2

Minimum capacity
2

Maximum capacity
5

Scaling policies - optional

Choose whether to use a scaling policy to dynamically resize your Auto Scaling group to meet changes in demand. [Info](#)

Target tracking scaling policy
Choose a desired outcome and leave it to the scaling policy to add and remove capacity as needed to achieve that outcome.

None

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57 we give scaling policy

Scaling policy name: Target Tracking Policy

Metric type: Application Load Balancer request count per target

Target group: project-target

Target value: 300

Instances need: 300 seconds warm up before including in metric

Disable scale in to create only a scale-out policy

58

Instance scale-in protection - optional

Instance scale-in protection: If protect from scale in is enabled, newly launched instances will be protected from scale in by default.

Enable instance scale-in protection

Cancel Skip to review Previous Next

59 our autoscaling group is created

The screenshot shows the AWS EC2 Auto Scaling Groups page. At the top, a green banner indicates "1 Scaling policy created successfully". Below this, the "Auto Scaling groups (1) Info" section displays a table with one row for "project-auto-scaling". The table columns include Name, Launch template/configuration, Instances, Status, Desired capacity, Min, Max, and Availability zone. The status for the instance is "Updating capacity...". At the bottom of the table, it says "0 Auto Scaling groups selected". The browser's address bar shows the URL: us-east-1.console.aws.amazon.com/ec2/home?region=us-east-1&redirectFrom=asg#AutoScalingGroups.

60 we copy our DNS link

The screenshot shows the AWS EC2 Load Balancers page. On the left, a sidebar lists various services: AMIs, AMI Catalog, Elastic Block Store (Volumes, Snapshots, Lifecycle Manager), Network & Security (Security Groups, Elastic IPs, Placement Groups, Key Pairs, Network Interfaces), Load Balancing (Load Balancers, Target Groups), and Auto Scaling (Launch Configurations, Auto Scaling Groups). The main content area shows the "Load balancers (1)" section with a table containing one row for "project-load-balancer". The table columns include Name, State, VPC ID, Availability Zones, Type, and Last updated. The status for the load balancer is "Active". A message "DNS name copied" is displayed next to the Name column. At the bottom, it says "0 load balancers selected". The browser's address bar shows the URL: us-east-1.console.aws.amazon.com/ec2/home?region=us-east-1&redirectFrom=asg#LoadBalancers.

61 OUR DNS link is working and is sucessfull

