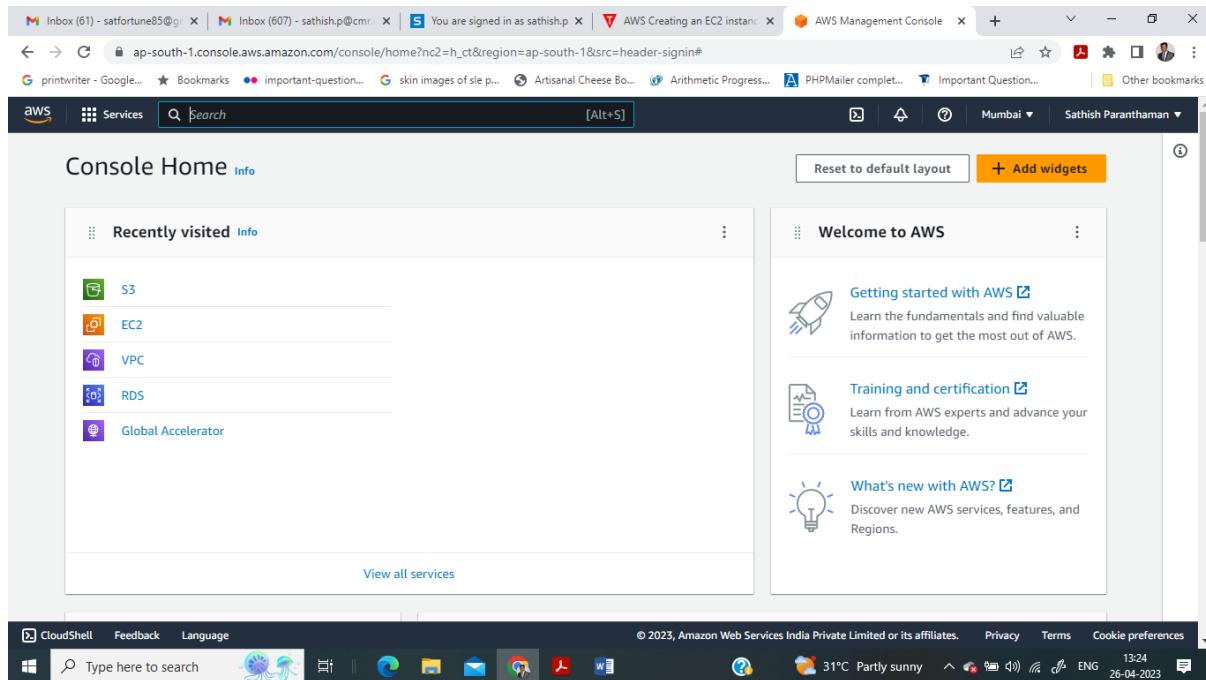


Cloud Computing lab: MAEC27

1a. Set up an AWS EC2 Instance with Linux and Windows operating systems.

Create a Linux based EC2 Instance

Step 1: Sign in to the AWS Management Console.



Step 2: Click on the EC2 service. Select instances.

The screenshot shows the AWS EC2 Management console. The left sidebar has sections for EC2 Dashboard, Instances (with sub-options like Instances, Instance Types, Launch Templates, etc.), and Images. The main content area is titled 'Resources' and displays a summary of Amazon EC2 resources in the Asia Pacific (Mumbai) Region. It includes tables for Instances (running), Dedicated Hosts, Instances, Load balancers, Security groups, Volumes, Auto Scaling Groups, Elastic IPs, Key pairs, Placement groups, and Snapshots. Below the summary is a callout box about Microsoft SQL Server Always On availability groups. To the right, there's a panel for 'Account attributes' listing supported platforms (VPC), default VPC (vpc-02b93b772a29b61d2), and various settings like EBS encryption and zones. At the bottom, there's an 'Explore AWS' section and a status bar showing the date and time.

Step 3: Click on the **Launch Instance** button to create a new instance.

The screenshot shows the AWS EC2 Management console on the 'Instances' page. The left sidebar shows the 'Instances' section with options like Instance Types, Launch Templates, and Spot Requests. The main content area is titled 'Instances Info' and shows a table with columns for Name, Instance ID, Instance state, Instance type, Status check, Alarm status, and Availability Zone. A message states 'No instances' and 'You do not have any instances in this region'. Below the table is a large button labeled 'Launch instances'. At the bottom, there's a 'Select an instance' dropdown and a status bar.

Step 4: Enter the name of the instance and select Amazon Linux AMI

Name
LinuxInstance

Number of instances Info
1

Software Image (AMI)
Amazon Linux 2023 AMI 2023.0.2...[read more](#)
ami-0c768662cc797cd75

Virtual server type (instance type)
t2.micro

Launch instance

Step 5: Under instance type select free tier eligible instance.

Click on create new key pair to generate the .pem file

Instance type
t2.micro
Family: t2 1 vCPU 1 GB Memory Current generation: true
On-Demand Linux pricing: 0.0124 USD per Hour
On-Demand Windows pricing: 0.017 USD per Hour
On-Demand RHEL pricing: 0.0724 USD per Hour
On-Demand SUSE pricing: 0.0124 USD per Hour

All generations

Compare instance types

Key pair (login) Info
You can use a key pair to securely connect to your instance. Ensure that you have access to the selected key pair before you launch the instance.

Key pair name - required
Select [Create new key pair](#)

Network settings Info
Edit

Launch instance

Step 6: Enter the name of the key pair and click create key pair. Now .pem file is created and downloaded to the local computer.

The screenshot shows the AWS EC2 Launch Instance wizard at Step 7: Network settings. The instance type is set to t2.micro. A key pair named 'klin' is selected. The private key file format is chosen as '.pem'. The 'Create key pair' button is highlighted in yellow.

Step 7: Network settings

The screenshot shows the AWS EC2 Launch Instance wizard at Step 7: Network settings. The instance type is t2.micro. The VPC selected is 'vpc-0b521b802b4e1be48 (MYVPC)'. A specific subnet is chosen. The 'Auto-assign public IP' option is set to 'Enable'. A security group named 'MySG' is selected. The 'Launch instance' button is highlighted in yellow.

Step 8: Add required elastic block storages (EBS) under Configure storage section. Click on Launch Instance

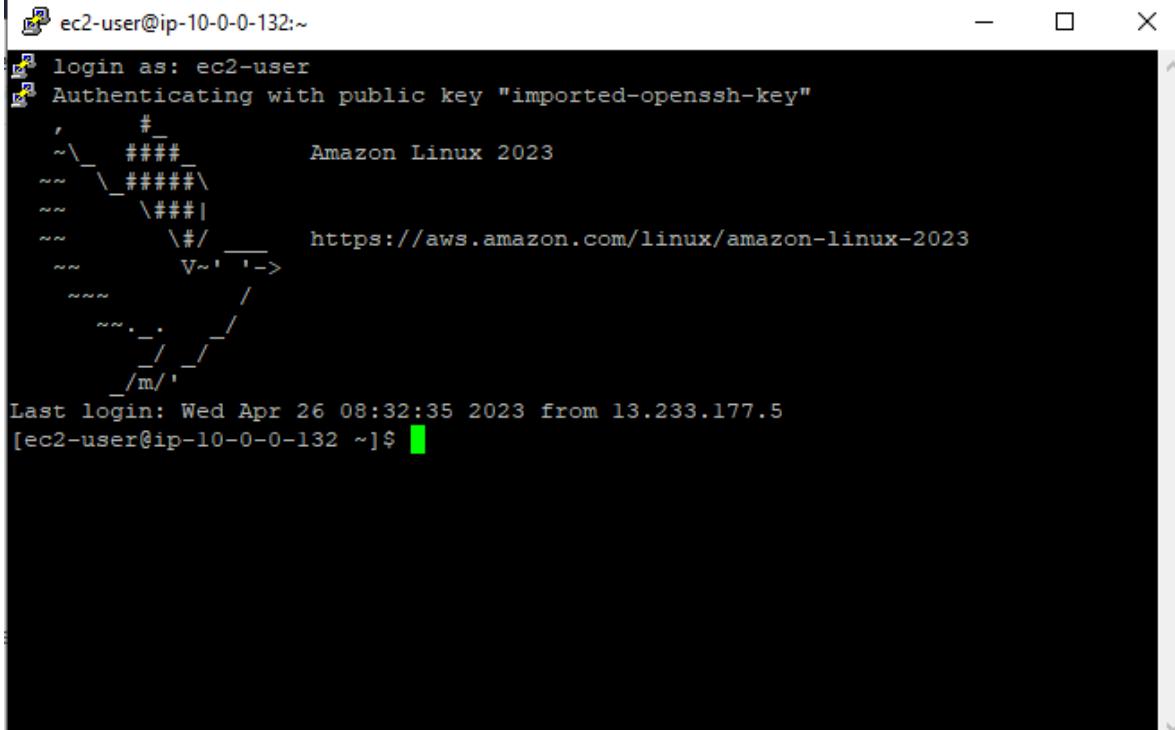
The screenshot shows the 'Configure storage' section of the AWS EC2 Launch Instance wizard. It displays two volumes: a root volume of 8 GiB gp3 and an EBS volume of 30 GiB gp3. There are buttons for 'Add new volume' and 'Edit'. To the right, the 'Summary' section shows 1 instance, the software image (Amazon Linux 2023.0.2), the instance type (t2.micro), and the launch button.

Step 9: Now instance has been created successfully

The screenshot shows the 'Launch log' section of the AWS EC2 Instances page. It displays a success message: 'Successfully initiated launch of instance (i-00c2172a5e8af2589)'. Below this, there is a 'Next Steps' section with links to 'Create billing and free tier usage alerts', 'Connect to your instance', 'Connect an RDS database', and 'Create EBS snapshot policy'.

Step 10: Click on instances to view active instances.

Step 11 : select connect



The screenshot shows a terminal window with the following text:

```
ec2-user@ip-10-0-0-132:~  
login as: ec2-user  
Authenticating with public key "imported-openssh-key"  
, #  
~\ _ #####_ Amazon Linux 2023  
~~ \_#####\|  
~~ \|##|  
~~ \#/ \| https://aws.amazon.com/linux/amazon-linux-2023  
~~ V~' \| ->  
~~ /  
~~ .-. /  
~/m/ |  
Last login: Wed Apr 26 08:32:35 2023 from 13.233.177.5  
[ec2-user@ip-10-0-0-132 ~]$
```

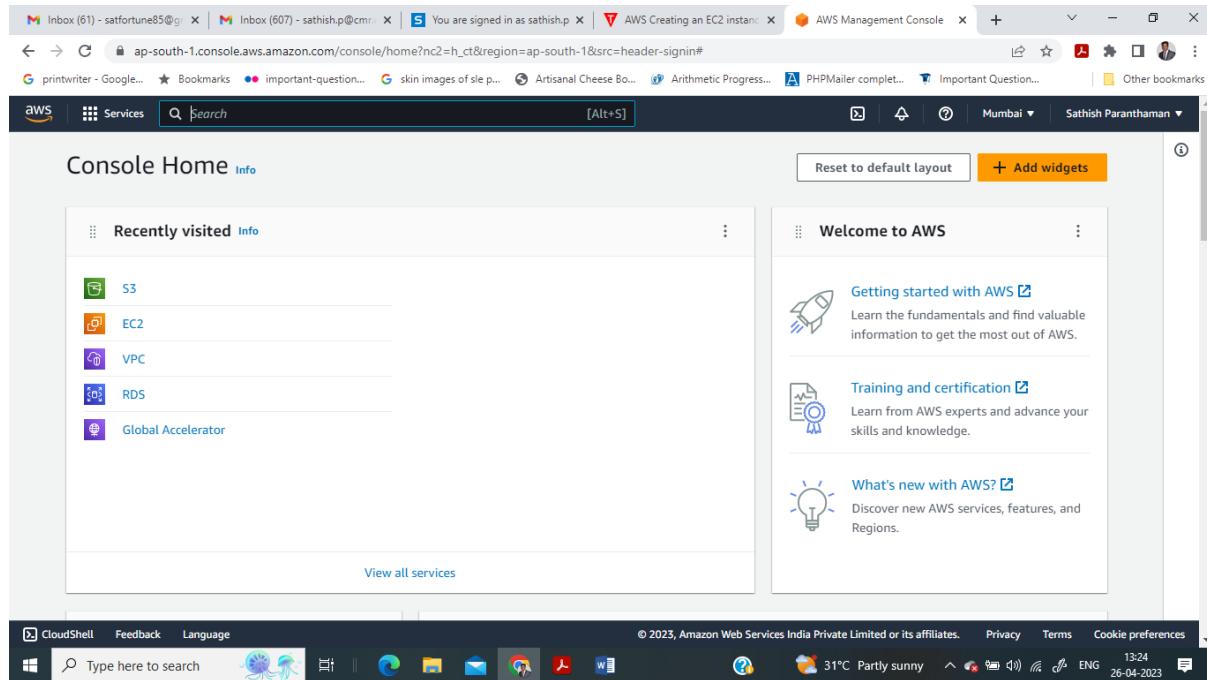
Linux instance is created and launched successfully.

1 b) Create a Windows based EC2 Instance

Program 1b: Create a Linux and Windows based EC2 Instance.

Create a Windows based EC2 Instance

Step 1: Sign in to the AWS Management Console.



Step 2: Click on the EC2 service. Select instances.

The screenshot shows the AWS EC2 Management console. The left sidebar has sections for EC2 Dashboard, Instances (with sub-options like Instances, Instance Types, Launch Templates, etc.), and Images. The main content area is titled 'Resources' and displays a summary of Amazon EC2 resources in the Asia Pacific (Mumbai) Region. It includes tables for Instances (running), Dedicated Hosts, Instances, Load balancers, Security groups, Volumes, Auto Scaling Groups, Elastic IPs, Key pairs, Placement groups, and Snapshots. Below the summary is a callout box about Microsoft SQL Server Always On availability groups. To the right, there's a panel for 'Account attributes' listing supported platforms (VPC), default VPC (vpc-02b93b772a29b61d2), and various settings like EBS encryption and zones. At the bottom, there's an 'Explore AWS' section and a status bar showing the date and time.

Step 3: Click on the **Launch Instance** button to create a new instance.

The screenshot shows the AWS EC2 Management console on the 'Instances Info' page. The left sidebar is identical to the previous screenshot. The main content area shows a table for 'Instances' with columns for Name, Instance ID, Instance state, Instance type, Status check, Alarm status, and Availability Zone. A message states 'No instances' and 'You do not have any instances in this region'. Below the table is a large button labeled 'Launch instances'. A modal window titled 'Select an instance' is open at the bottom. The status bar at the bottom indicates it's 31°C, partly sunny, and the date is 26-04-2023.

Step 4: Enter the name of the instance and select Windows AMI

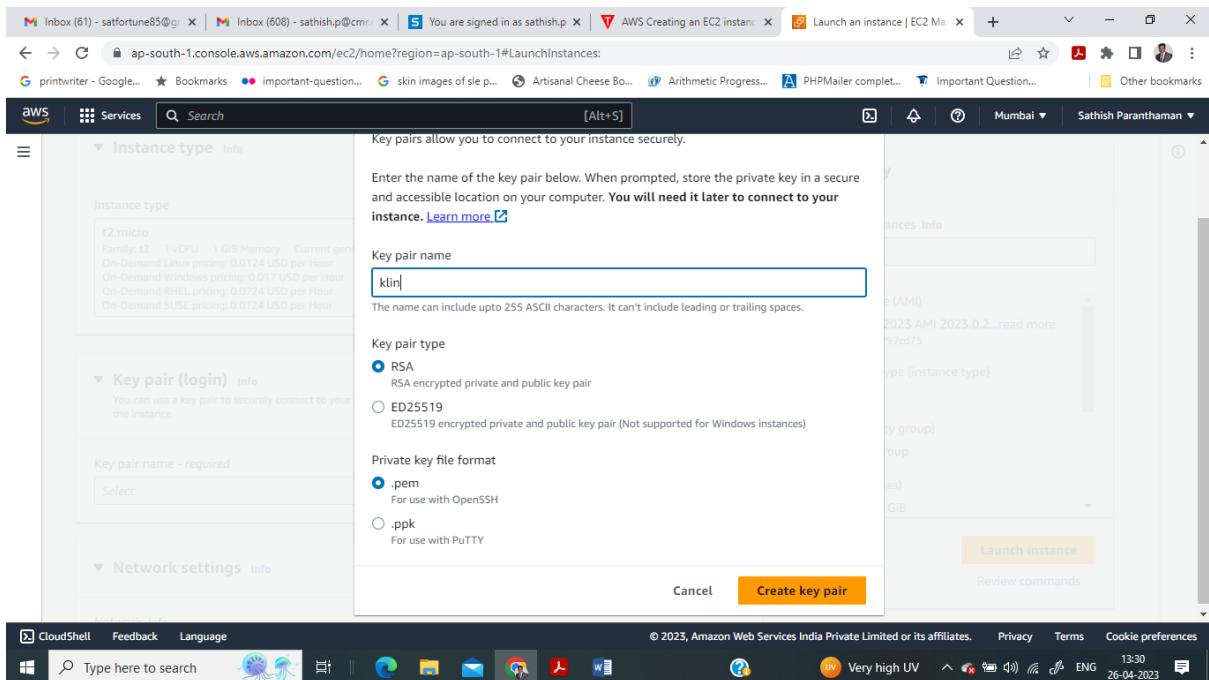
The screenshot shows the 'Name and tags' step of the EC2 instance creation process. In the 'Name' field, 'Wininstance' is entered. The 'Software Image (AMI)' dropdown is set to 'Microsoft Windows Server 2022'. The 'Virtual server type (instance type)' is 't2.micro'. Under 'Storage (volumes)', it shows '1 volume(s) - 30 GB'. On the right, there's a summary panel with a 'Launch instance' button.

Step 5: Under instance type select free tier eligible instance.

Click on create new key pair to generate the .pem file

The screenshot shows the 'Instance type' step of the EC2 instance creation process. The 't2.micro' instance type is selected, which is labeled as 'Free tier eligible'. The 'Key pair (login)' section is expanded, showing a dropdown menu for 'Key pair name - required' with 'Select' as the current option. The 'Network settings' section is also visible. On the right, there's a summary panel with a 'Launch instance' button.

Step 6: Enter the name of the key pair and click create key pair. Now .pem file is created and downloaded to the local computer.



Step 7: Network settings

Click on edit button to edit the network details as follows

Select the custom VPC which was created

Select the appropriate subnet

Select the security group which was assigned to VPC

VPC - required Info
vpc-0b521b802b4e1be48 (MYVPC)
10.0.0.0/16

Subnet Info
subnet-0eae7a08f14a1af6a Sub1
VPC: vpc-0b521b802b4e1be48 Owner: 463300738314 Availability Zone: ap-south-1a IP addresses available: 251 CIDR: 10.0.0.0/24

Create new subnet

Auto-assign public IP Info
Enable

Firewall (security groups) Info
A security group is a set of firewall rules that control the traffic for your instance. Add rules to allow specific traffic to reach your instance.
Create security group Select existing security group

Common security groups Info
Select security groups
MySG sg-0ab988751ff132d8b

Compare security group rules

Summary
Number of instances Info
1

Software Image (AMI)
Amazon Linux 2023.0.2...read more
ami-0c768662cc797cd75

Virtual server type (instance type)
t2.micro

Firewall (security group)
MySG

Storage (volumes)
1 volume(s) - 8 GiB

Cancel Launch instance Review commands

Step 8: Add required elastic block storages(EBS) under Configure storage section. Click on Launch Instance

VPC: vpc-0b521b802b4e1be48

Security groups that you add or remove here will be added to or removed from all your network interfaces.

Advanced network configuration

Configure storage Info Advanced

1x 8 GiB gp3 Root volume (Not encrypted)

1x 30 GiB gp3 EBS volume (Not encrypted) Remove

Add new volume

0 x File systems Edit

Advanced details Info

Summary
Number of instances Info
1

Software Image (AMI)
Amazon Linux 2023.0.2...read more
ami-0c768662cc797cd75

Virtual server type (instance type)
t2.micro

Firewall (security group)
MySG

Storage (volumes)
2 volume(s) - 38 GiB

Cancel Launch instance Review commands

Step 9: Now instance has been created successfully

The screenshot shows the AWS EC2 'Launch an instance' success page. At the top, there are several browser tabs: 'Inbox (61) - satfortune85@gmail.com', 'Inbox (607) - sathish.p@cmr...', 'You are signed in as sathish.p', 'AWS Creating an EC2 inst...', 'Launch an instance | EC2 Ma...', and others. The main content area has a green header bar with a checkmark icon and the word 'Success'. Below it, a message says 'Successfully initiated launch of instance (i-00c2172a5e8af2589)'. A link '▶ Launch log' is present. Below this, a section titled 'Next Steps' contains several links: 'Create billing and free tier usage alerts', 'Connect to your instance' (with a 'Connect to instance' button), 'Connect an RDS database' (with a 'Connect an RDS database' button), and 'Create EBS snapshot policy' (with a 'Create EBS snapshot policy' button). The bottom of the screen shows the Windows taskbar with various icons and the date/time as 26-04-2023.

Step 10: Click on instances to view active instances.

Select the instance created as shown and click on connect

The screenshot shows the AWS EC2 Instances page. The left sidebar includes 'New EC2 Experience' (radio button selected), 'EC2 Dashboard', 'EC2 Global View', 'Events', 'Tags', 'Limits', and 'Instances' (selected). Under 'Instances', there are links for 'Instances', 'Instance Types', 'Launch Templates', 'Spot Requests', 'Savings Plans', 'Reserved Instances', 'Dedicated Hosts', and 'Capacity Reservations'. The main content area shows a table of instances. One row is highlighted with a blue border: 'Name' (LinuxInstance), 'Instance ID' (i-00c2172a5e8af2589), 'Instance state' (Terminated), 'Instance type' (t2.micro), 'Status check' (No alarms), 'Alarm status' (No alarms), and 'Availability Zone' (ap-south-1a). Another row is shown below: 'Name' (Wininstance), 'Instance ID' (i-0f4bb18bef0f4229e), 'Instance state' (Pending), 'Instance type' (t2.micro), 'Status check' (No alarms), 'Alarm status' (No alarms), and 'Availability Zone' (ap-south-1a). The bottom of the screen shows the Windows taskbar with various icons and the date/time as 26-04-2023.

Step 11: Select RDP Client in connect to instance window. As follows

EC2 > Instances > i-0f4bb18bef0f4229e > Connect to instance

Connect to instance Info

Connect to your instance i-0f4bb18bef0f4229e (Wininstance) using any of these options

Session Manager | **RDP client** | **EC2 serial console**

Instance ID
i-0f4bb18bef0f4229e (Wininstance)

Connection Type

- Connect using RDP client
Download a file to use with your RDP client and retrieve your password.
- Connect using Fleet Manager
To connect to the instance using Fleet Manager Remote Desktop, the SSM Agent must be installed and running on the instance. For more information, see [Working with SSM Agent](#).

You can connect to your Windows instance using a remote desktop client of your choice, and by downloading and running the RDP shortcut file below:

CloudShell Feedback Language Show all

keywin.pem

Type here to search

31°C Partly sunny 14:18 26-04-2023

Step 12: Click on Get Password and upload the .pem file created by clicking upload private key file

Inbox (61) - satfortune85@gmail.com | Inbox (607) - sathish.p@cmr.edu.in | You are signed in as sathish.p | AWS Creating an EC2 instance | Connect to instance | EC2 | +

ap-south-1.console.aws.amazon.com/ec2/home?region=ap-south-1#GetWindowsPassword:instanceId=i-0f4bb18bef0f4229e:previousPlace=ConnectToInstance

CloudShell Feedback Language Show all

keywin

Private key

Either upload your private key file or copy and paste its contents into the field below.

keywin.pem
1.674KB

Private key contents - optional

```
-----BEGIN RSA PRIVATE KEY-----
MIIEogIBAAKCAQEAv0Qpfde3Y+ap/Ik4j2HOrKer4Za424bJWrcR27kor2SvT
oeuHmSM2+u6WV9qGFF6LbV47GLyBBMPVfwGngGwKRWcpXqr8/fb5W61s9eobQX
nPJhVkpW++TqAftidJKSwBmxu/Ou1hekqvchmSpEzNuvW6j0gWscxX7/z9pnQ
nSwtKYqcs0Ggup62rCwKf0R6uuVcdmTuVVM5bAygDE2Zi/b5B_Czo3+fZpqxpj
/hpPuFDC+7WpLydrX/FOTneqRky61sUXvfwt0ZQ0EoCObillZQzyLG1BBt6psHXi
nfdyBaYcbgzs+er2mjldP6YPmwuuvyy4kkQJDQAQABaoIADCaLeY44kR3EYs
Njcl3YMUxPo8NU0fd49jtpPp4OMd7Qe/HYNOQc54ZFtJqlMLFW922xzwkCT0Wfms
-----END RSA PRIVATE KEY-----
```

Cancel Decrypt password

CloudShell Feedback Language Show all

keywin.pem

Type here to search

31°C Partly sunny 14:21 26-04-2023

Step 13: Click on Decrypt Password and copy the password generated. Now click on download remote desktop file to download setup of windows instance. Wininstance.rdp file is downloaded.

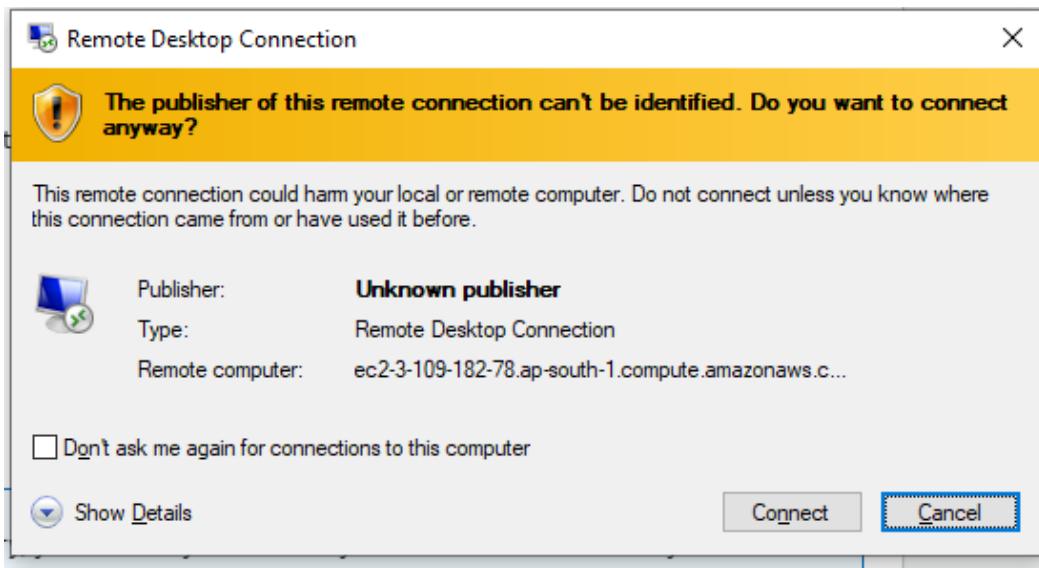
The screenshot shows the AWS CloudShell interface. At the top, there are several tabs: 'Inbox (61) - satfortune85@gmail.com', 'Inbox (607) - sathish.p@cmr...', 'You are signed in as sathish.p...', 'AWS Creating an EC2 inst...', 'Connect to instance | EC2 M...', and a blank tab. Below the tabs, the AWS logo and 'Services' button are visible. A search bar contains the placeholder 'Search' and an 'Alt+S' keyboard shortcut. The main content area displays connection details for a Windows instance:

- Public DNS:** ec2-3-109-182-78.ap-south-1.compute.amazonaws.com
- User name:** Administrator
- Password:** 1o%ZL9&LXILCYU9z;Saze;@;M?HwCx0

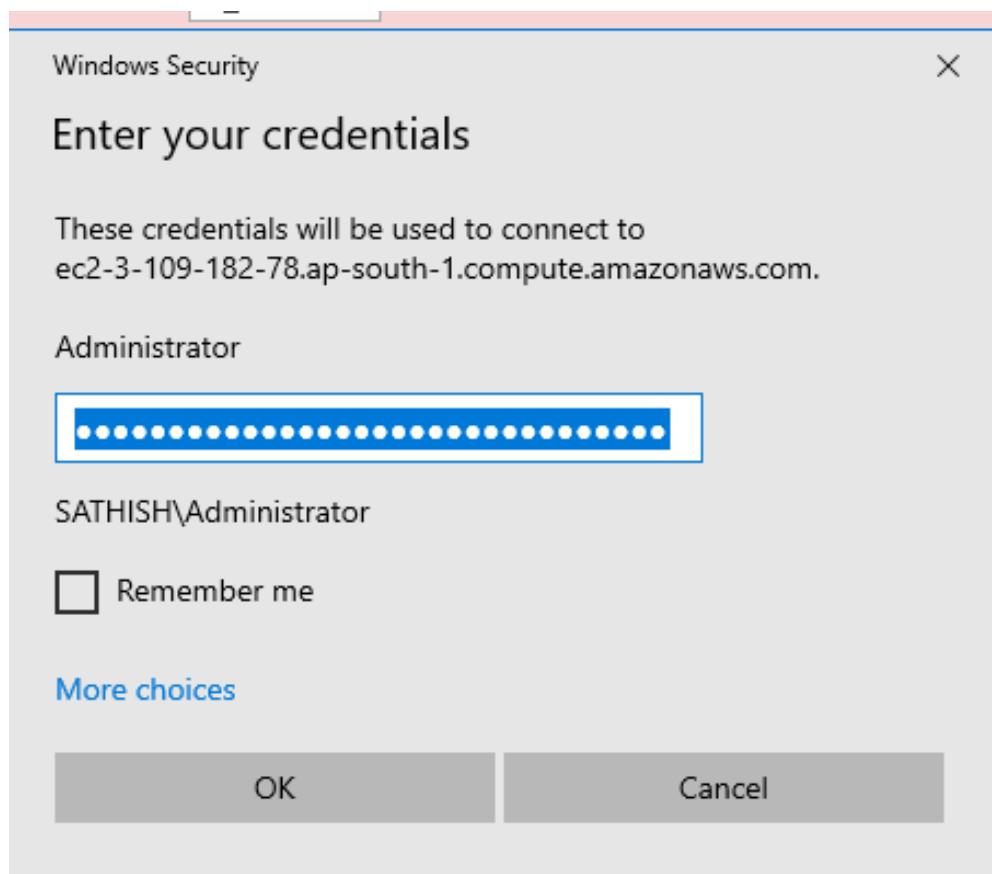
A note below the password says: "If you've joined your instance to a directory, you can use your directory credentials to connect to your instance." A 'Cancel' button is at the bottom right of the main window.

At the bottom of the screen, the Windows taskbar shows the Start button, a search bar with 'Type here to search', and various pinned icons like File Explorer, Edge, Mail, Google Chrome, and File History. The system tray shows the date (26-04-2023), time (14:23), battery level (31°C Partly sunny), and network status.

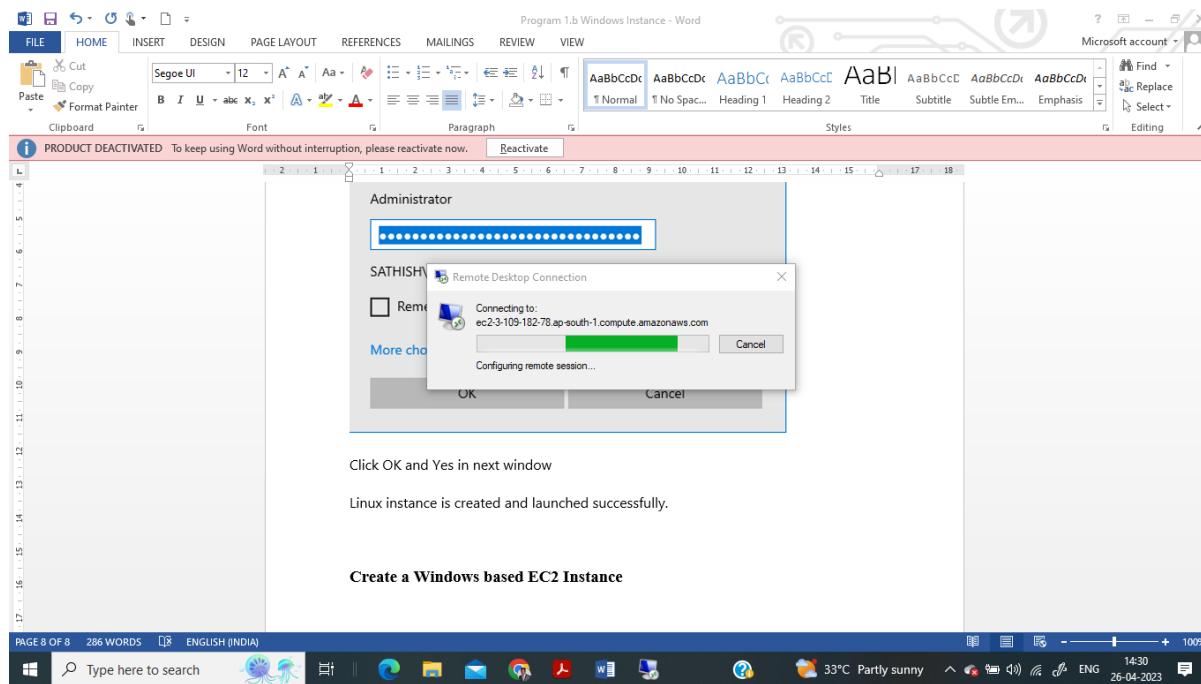
Step 14: Click on Wininstance.rdp file and click connect button to run the windows instance

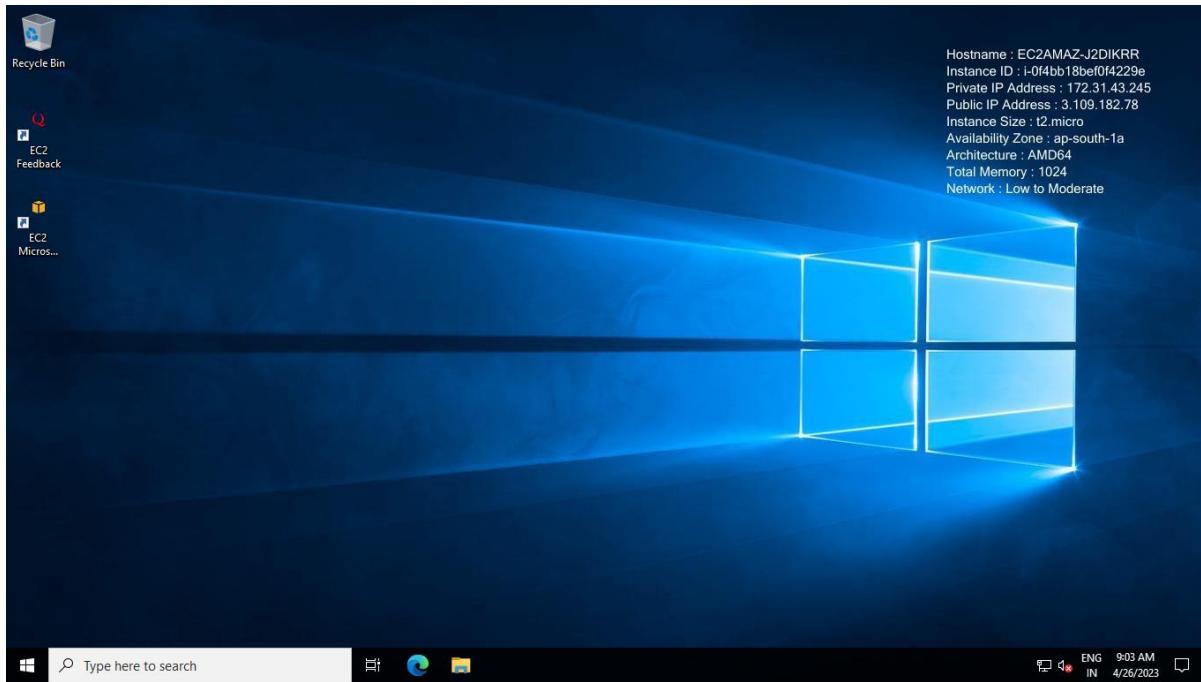


Step 15: Paste the password which was created in step 13.



Click OK and Yes in next window

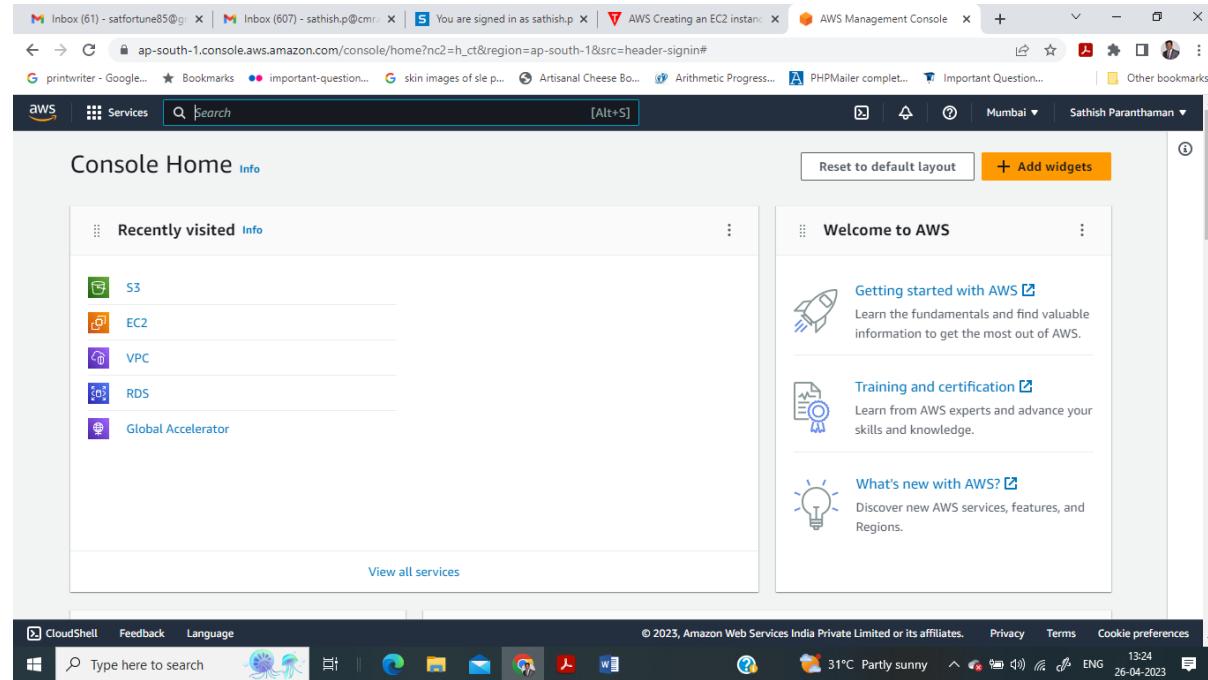




Windows instance is created and launched successfully.

2. Establish and link an EBS Volume to a Linux installation.

Step 1: Sign in to the AWS Management Console.



Step 2: Click on the EC2 service. Select instances.

The screenshot shows the AWS EC2 Management console. The left sidebar has sections for EC2 Dashboard, Instances (with sub-options like Instances, Instance Types, Launch Templates, etc.), and Images. The main content area is titled 'Resources' and displays various Amazon EC2 resources in the Asia Pacific (Mumbai) Region. A callout box highlights the 'Launch instance' button. On the right, there's a panel for 'Account attributes' showing supported platforms (VPC), default VPC (vpc-02b93b772a29b61d2), and other settings like EBS encryption and zones. A 'Explore AWS' section is also present.

Step 3: Click on the **Launch Instance** button to create a new instance.

The screenshot shows the AWS EC2 Management console on the 'Instances Info' page. The left sidebar shows the 'Instances' section with sub-options like Instance Types, Launch Templates, etc. The main content area shows a table with columns for Name, Instance ID, Instance state, Instance type, Status check, Alarm status, and Availability Zone. A message states 'No instances' and 'You do not have any instances in this region'. Below the table is a 'Launch instances' button. A modal window titled 'Select an instance' is open at the bottom.

Step 4: Enter the name of the instance and select Amazon Linux AMI

Name
LinuxInstance

Number of instances Info
1

Software Image (AMI)
Amazon Linux 2023 AMI 2023.0.2...[read more](#)

Virtual server type (instance type)
t2.micro

Launch instance

Step 5: Under instance type select free tier eligible instance.

Click on create new key pair to generate the .pem file

Instance type
t2.micro
Family: t2 1 vCPU 1 GB Memory Current generation: true
On-Demand Linux pricing: 0.0124 USD per Hour
On-Demand Windows pricing: 0.017 USD per Hour
On-Demand RHEL pricing: 0.0724 USD per Hour
On-Demand SUSE pricing: 0.0124 USD per Hour

All generations

Compare instance types

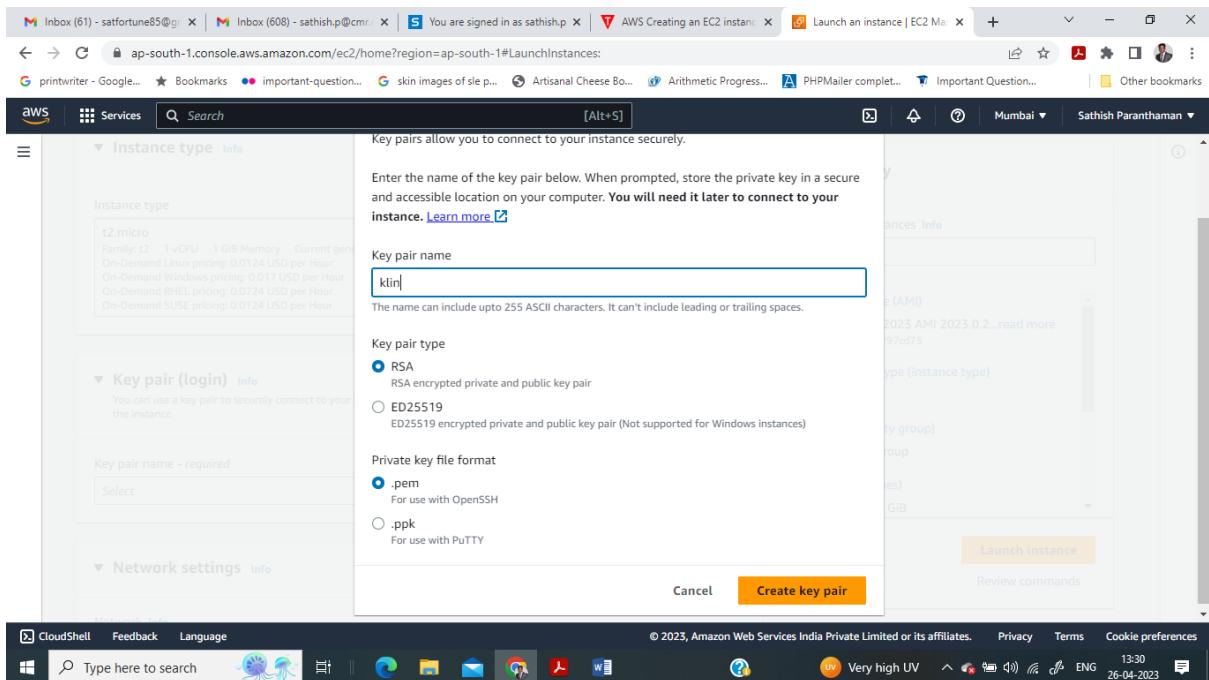
Key pair (login) Info
You can use a key pair to securely connect to your instance. Ensure that you have access to the selected key pair before you launch the instance.

Key pair name - required
Select

Network settings Info

Launch instance

Step 6: Enter the name of the key pair and click create key pair. Now .pem file is created and downloaded to the local computer.



Step 7: Network settings

Click on edit button to edit the network details as follows

Select the custom VPC which was created

Select the appropriate subnet

Select the security group which was assigned to VPC

VPC - required Info
vpc-0b521b802b4e1be48 (MyVPC)
10.0.0.0/16

Subnet Info
subnet-0eae7a08f14a1af6a Sub1
VPC: vpc-0b521b802b4e1be48 Owner: 463300738314 Availability Zone: ap-south-1a IP addresses available: 251 CIDR: 10.0.0.0/24

Create new subnet

Auto-assign public IP Info
Enable

Firewall (security groups) Info
A security group is a set of firewall rules that control the traffic for your instance. Add rules to allow specific traffic to reach your instance.
Create security group Select existing security group

Common security groups Info
Select security groups
MySG sg-0ab988751ff132d8b

Compare security group rules

Summary
Number of instances Info
1

Software Image (AMI)
Amazon Linux 2023.0.2...read more
ami-0c768662cc797cd75

Virtual server type (instance type)
t2.micro

Firewall (security group)
MySG

Storage (volumes)
1 volume(s) - 8 GiB

Cancel Launch instance Review commands

Step 8: Add required elastic block storages(EBS) under Configure storage section. Click on Launch Instance

VPC: vpc-0b521b802b4e1be48

Security groups that you add or remove here will be added to or removed from all your network interfaces.

Advanced network configuration

Configure storage Info Advanced

1x 8 GiB gp3 Root volume (Not encrypted)

1x 30 GiB gp3 EBS volume (Not encrypted) Remove

Add new volume

0 x File systems Edit

Advanced details Info

Summary
Number of instances Info
1

Software Image (AMI)
Amazon Linux 2023.0.2...read more
ami-0c768662cc797cd75

Virtual server type (instance type)
t2.micro

Firewall (security group)
MySG

Storage (volumes)
2 volume(s) - 38 GiB

Cancel Launch instance Review commands

Step 9: Now instance has been created successfully

The screenshot shows a browser window with multiple tabs open, including AWS services like CloudWatch Metrics, Lambda, and CloudWatch Logs. The main content is the AWS Management Console for EC2 Instances, specifically the 'Launch an instance' page. A green success message box states: 'Successfully initiated launch of instance (i-00c2172a5e8af2589)'. Below this, there's a link to 'Launch log'. The 'Next Steps' section contains several options: 'Create billing and free tier usage alerts', 'Connect to your instance' (with a 'Connect to instance' button), 'Connect an RDS database' (with a 'Connect an RDS database' button), and 'Create EBS snapshot policy' (with a 'Create EBS snapshot policy' button). The bottom of the screen shows the Windows taskbar with various pinned icons and the system tray.

Step 10: Create new EBS storage and link the EBS with EC2 instance. (The availability Zone for EBS and Ec2 instance should be same)

3. Generate a snapshot of an existing EBS instance.

Program 3: Create a snapshot of an existing EBS Instance.

Step 1: Sign in to the AWS Management Console.

Inbox (61) - satfortune85@gmail.com | Inbox (607) - sathish.p@cmr.edu.in | You are signed in as sathish.p | AWS Creating an EC2 instance | AWS Management Console

Console Home [Info](#)

Recently visited [Info](#)

- S3
- EC2
- VPC
- RDS
- Global Accelerator

View all services

Welcome to AWS

- Getting started with AWS [Info](#)
Learn the fundamentals and find valuable information to get the most out of AWS.
- Training and certification [Info](#)
Learn from AWS experts and advance your skills and knowledge.
- What's new with AWS? [Info](#)
Discover new AWS services, features, and Regions.

CloudShell Feedback Language © 2023, Amazon Web Services India Private Limited or its affiliates. Privacy Terms Cookie preferences

Type here to search 31°C Partly sunny 13:24 26-04-2023

Step 2: Click on the EC2 service. Select instances.

Inbox (61) - satfortune85@gmail.com | Inbox (607) - sathish.p@cmr.edu.in | You are signed in as sathish.p | AWS Creating an EC2 instance | Dashboard | EC2 Management

New EC2 Experience [Tell us what you think](#)

EC2 Dashboard

EC2 Global View

Events

Tags

Limits

Instances

Instances

Instance Types

Launch Templates

Spot Requests

Savings Plans

Reserved Instances

Dedicated Hosts

Capacity Reservations

Images

Resources

EC2 Global view [Info](#)

Instances (running)	0	Auto Scaling Groups	0
Dedicated Hosts	0	Elastic IPs	0
Instances	0	Key pairs	2
Load balancers	0	Placement groups	0
Security groups	5	Snapshots	0
Volumes	2		

Easily size, configure, and deploy Microsoft SQL Server Always On availability groups on AWS using the AWS Launch Wizard for SQL Server. [Learn more](#)

Account attributes

Supported platforms [Info](#)

- VPC

Default VPC [Info](#)
vpc-02b93b772a29b61d2

Settings

EBS encryption

Zones

EC2 Serial Console

Default credit specification

Console experiments

Explore AWS

Amazon GuardDuty Malware Protection
GuardDuty now provides agentless malware

CloudShell Feedback Language © 2023, Amazon Web Services India Private Limited or its affiliates. Privacy Terms Cookie preferences

Type here to search 31°C Partly sunny 13:24 26-04-2023

Step 3: Select Snapshot under Elastic Block Storage and click [create snapshot](#)

The screenshot shows the AWS Management Console with the EC2 service selected. The left sidebar navigation includes 'Images', 'AMIs', 'AMI Catalog', 'Elastic Block Store' (with 'Volumes' and 'Snapshots' selected), 'Network & Security' (with 'Security Groups', 'Elastic IPs', 'Placement Groups', 'Key Pairs', and 'Network Interfaces'), 'Load Balancing' (with 'Load Balancers' and 'Target Groups'), and 'Auto Scaling'. The main content area is titled 'Snapshots' and displays a message: 'You currently have no snapshots in this Region.' Below this, it says 'Select a snapshot above.' There are three small icons for creating, deleting, and cloning snapshots. At the bottom of the page, there is a search bar, CloudShell, Feedback, Language, and a footer with copyright information and weather.

Step 4: Select the volume which you need to snapshot and click create snapshot.

The screenshot shows the 'Create snapshot' wizard. The first step, 'Snapshot settings', is displayed. Under 'Resource type', the 'Volume' option is selected, with the sub-instruction 'Create a snapshot from a specific volume.' The 'Instance' option is also available. Below this, the 'Volume ID' field contains 'vol-0efc21e2516514b3c', and there is a 'Description' field with a placeholder 'Add a description for your snapshot.' and a note '255 characters maximum'. The 'Encryption' section indicates 'Not encrypted'. At the bottom, there is a 'Tags' section with a note about assigning tags to the snapshot. The footer of the page includes CloudShell, Feedback, Language, and a footer with copyright information and weather.

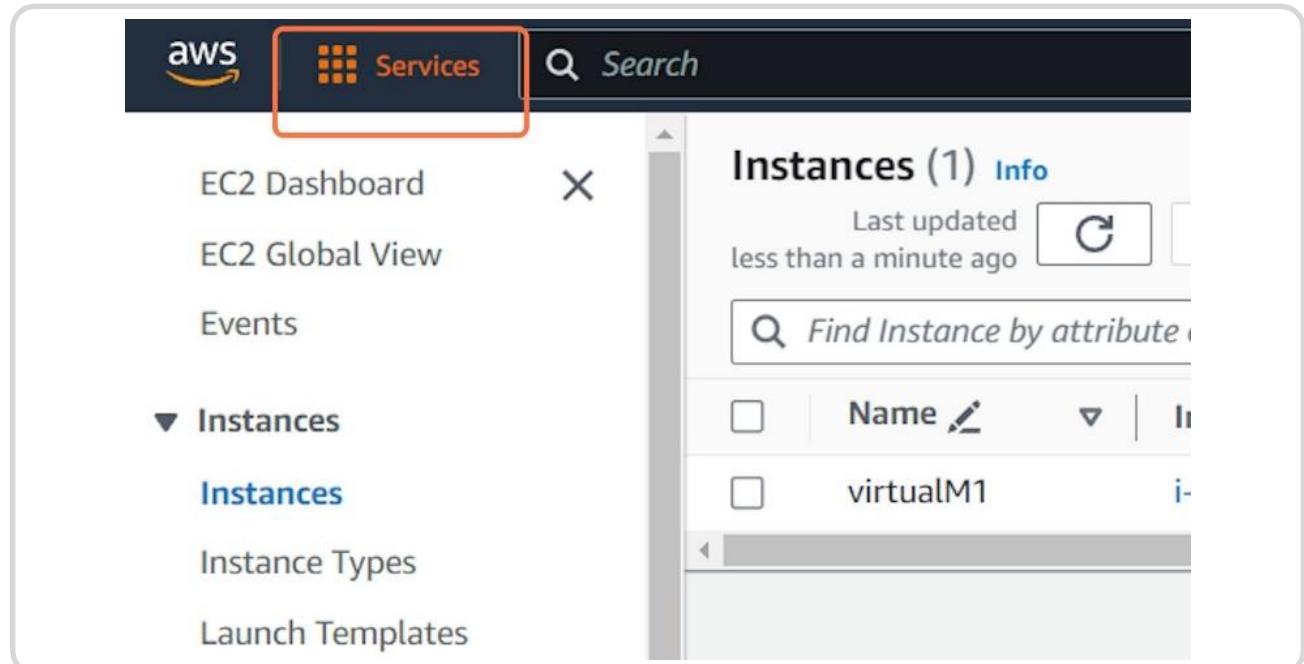
Step 5: Snapshot is created successfully

The screenshot shows the AWS EC2 Snapshots page. A green success message at the top says "Successfully created snapshot snap-0b2f91ecba4ab9ac0." Below it is a table titled "Snapshots (1)". The table has columns for Name, Snapshot ID, Size, Description, Storage..., Snapshot status, and Started. One row is shown: "snap-0b2f91ecba4ab9ac0" with a size of 30 GiB, no description, Standard storage, Completed status, and a date of 2023/04. Below the table, a message says "Select a snapshot above." The left sidebar shows navigation links for EC2 Dashboard, EC2 Global View, Events, Tags, Limits, Instances (with sub-links for Instances, Instance Types, Launch Templates, Spot Requests, Savings Plans, Reserved Instances, Dedicated Hosts, Capacity Reservations), and Images.

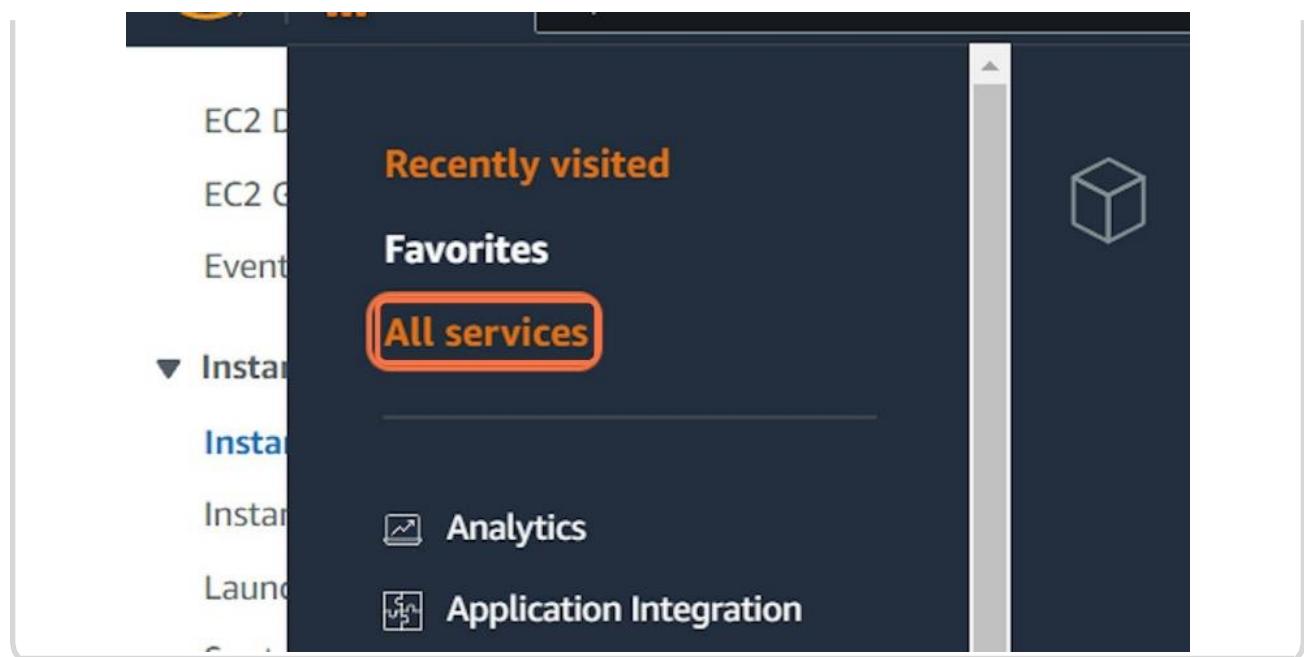
The screenshot shows the AWS EC2 Snapshot details page for the snapshot "snap-0b2f91ecba4ab9ac0". The top bar shows the URL "ap-south-1.console.aws.amazon.com/ec2/home?region=ap-south-1#SnapshotDetails:snapshotId=snap-0b2f91ecba4ab9ac0". The main content area is titled "snap-0b2f91ecba4ab9ac0" and contains a "Snapshot settings" table. The table includes fields for Snapshot ID (snap-0b2f91ecba4ab9ac0), Size (30 GiB), Progress (Available (100%)), Snapshot status (Completed), Owner (463300738314), Volume ID (vol-0efc21e2516514b3c), Started (Wed Apr 26 2023 14:54:28 GMT+0530 (India Standard Time)), Encryption (Not encrypted), KMS key ID (-), KMS key alias (-), and KMS key ARN (-). Below the table are tabs for "Permissions", "Storage tier", and "Tags". The left sidebar is identical to the one in the previous screenshot.

4 .Conduct an experiment to configure and implement Route 53

STEP 1
Click on Services

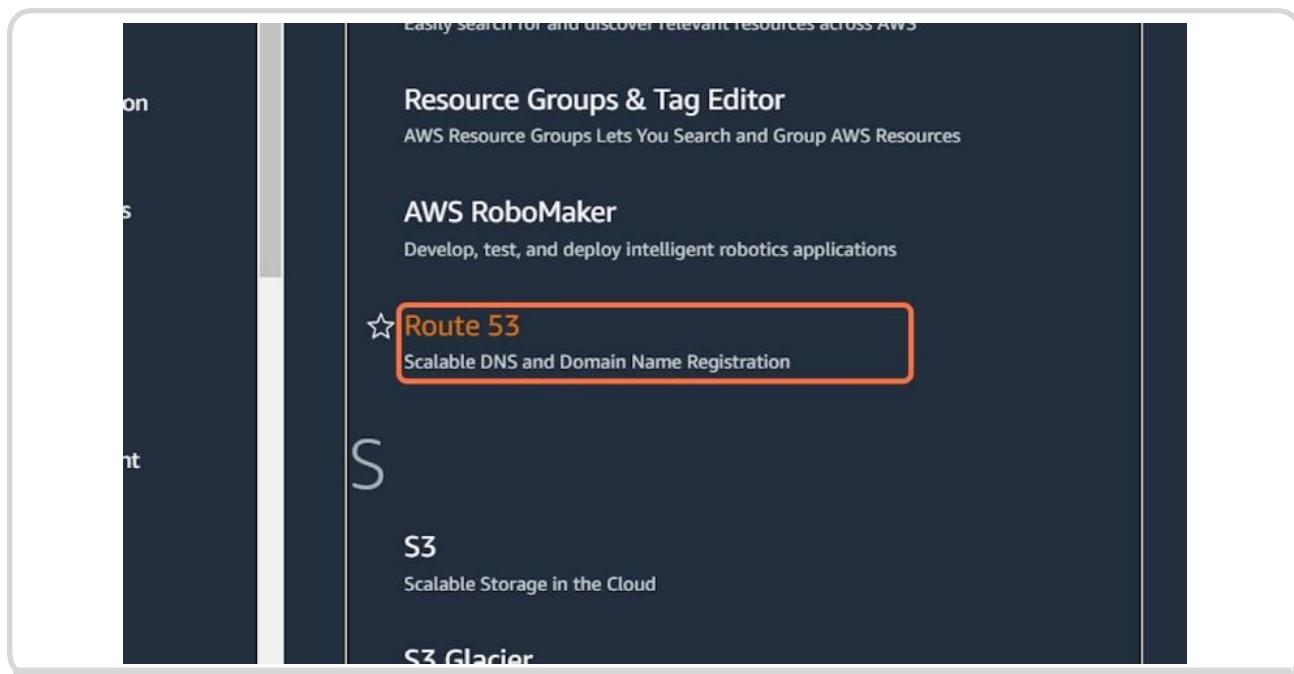


STEP 2
Click on All services



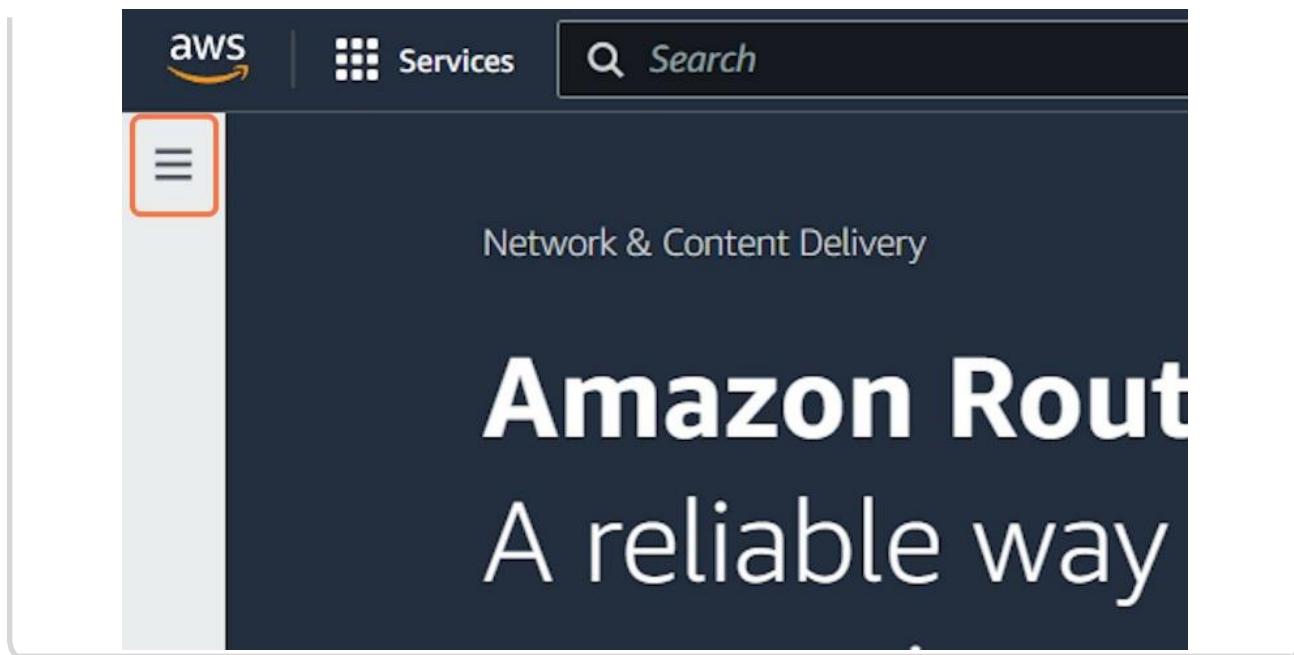
STEP 3

Click on Route 53...



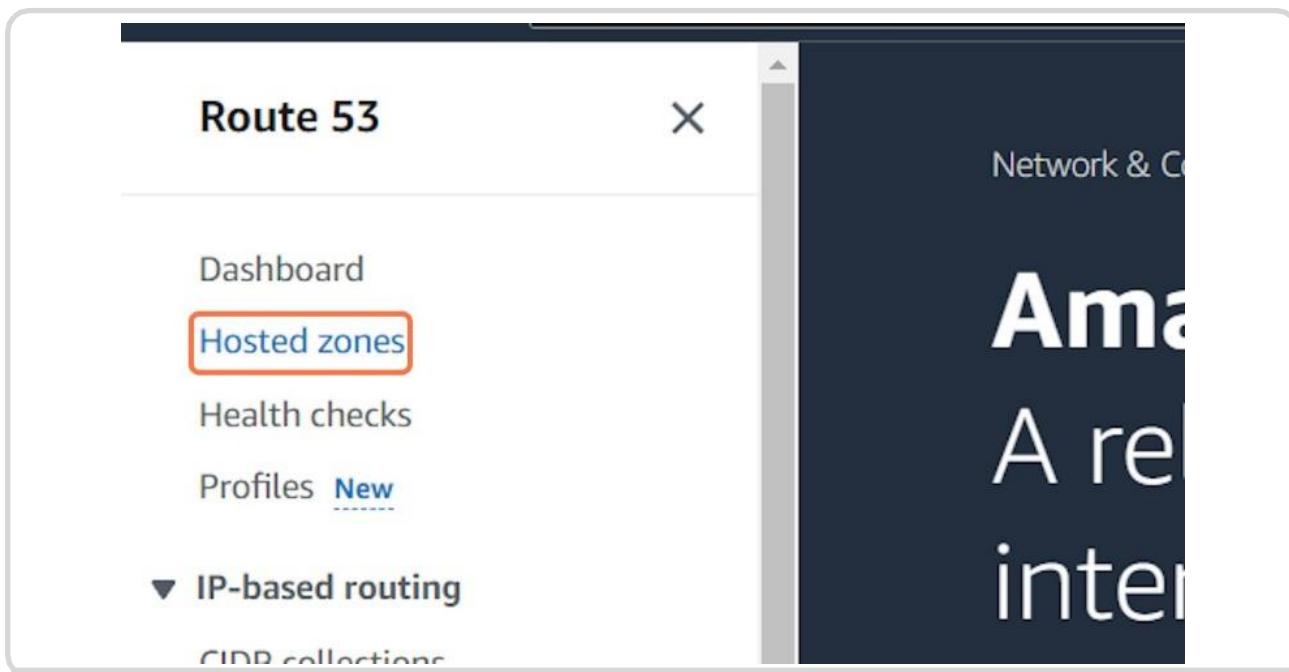
STEP 4

[Click on dropdown trigger](#)



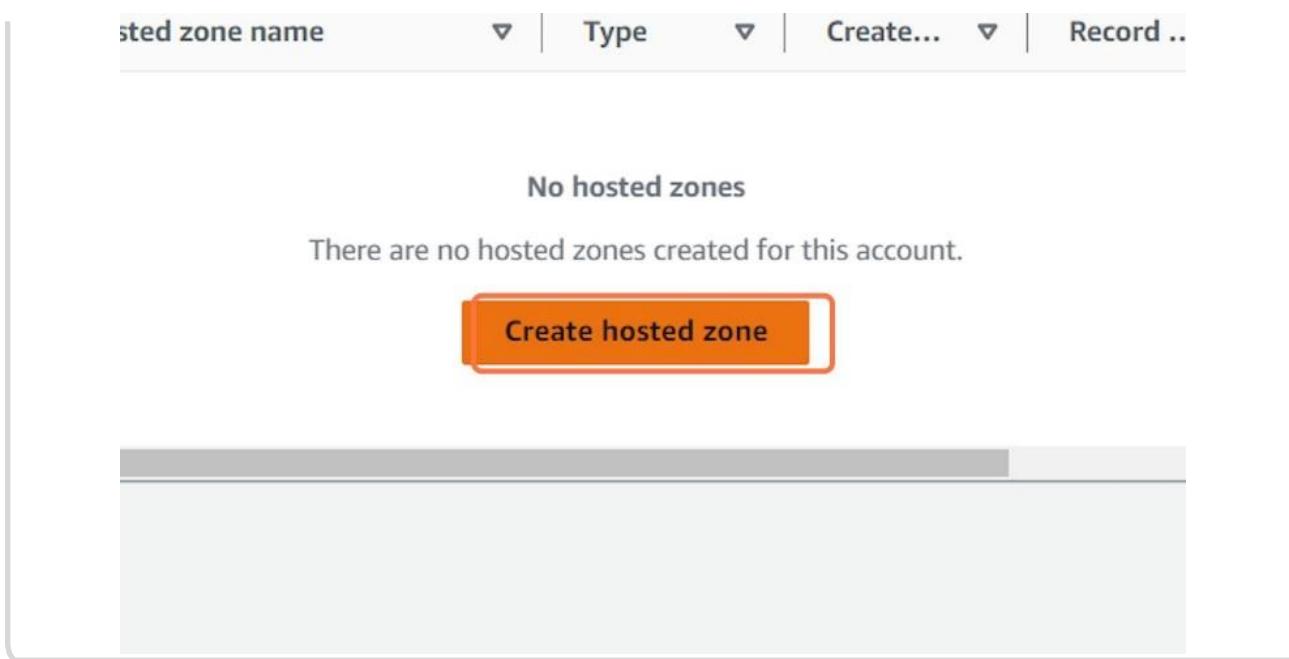
STEP 5

Click on Hosted zones



STEP 6

Click on Create hosted zone



STEP 7

Type "route53.com"

Route 53 > Hosted zones > Create hosted zone

Create hosted zone Info

Hosted zone configuration

A hosted zone is a container that holds information about how you want to route traffic for a domain, such as example.com, and its subdomains.

Domain name Info
This is the name of the domain that you want to route traffic for.

route53.com

Valid characters: a-z, 0-9, ! * # \$ % & ' () * + , - / ; < = > ? @ [\] ^ _ ' { } , ~

Description - optional Info
This value lets you distinguish hosted zones that have the same name.

The hosted zone is used for...

The description can have up to 256 characters. 0/256

Type Info
The type indicates whether you want to route traffic on the internet or in an Amazon VPC.

Public hosted zone Private hosted zone

STEP 8

Click on Type

Valid characters: a-z, 0-9, ! * # \$ % & ' () * + , - / ; < = > ? @ [\] ^ _ ' { } , ~

Description - optional Info
This value lets you distinguish hosted zones that have the same name.

The hosted zone is used for...

The description can have up to 256 characters. 0/256

Type Info
The type indicates whether you want to route traffic on the internet or in an Amazon VPC.

Public hosted zone Private hosted zone

A public hosted zone determines how traffic is routed on the internet.
A private hosted zone determines how traffic is routed within an Amazon VPC.

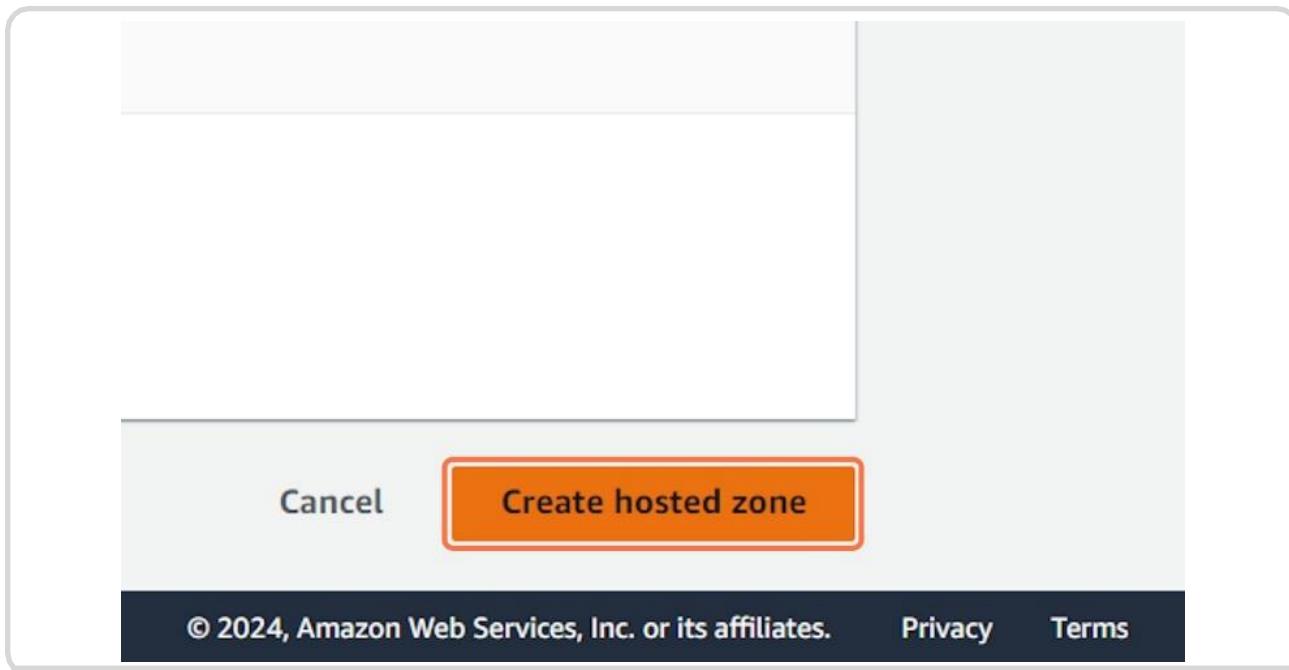
Tags Info
Apply tags to hosted zones to help organize and identify them.

No tags associated with the resource.

CloudShell Feedback © 2024, Amazon Web Services, Inc. or its affiliates. Privacy

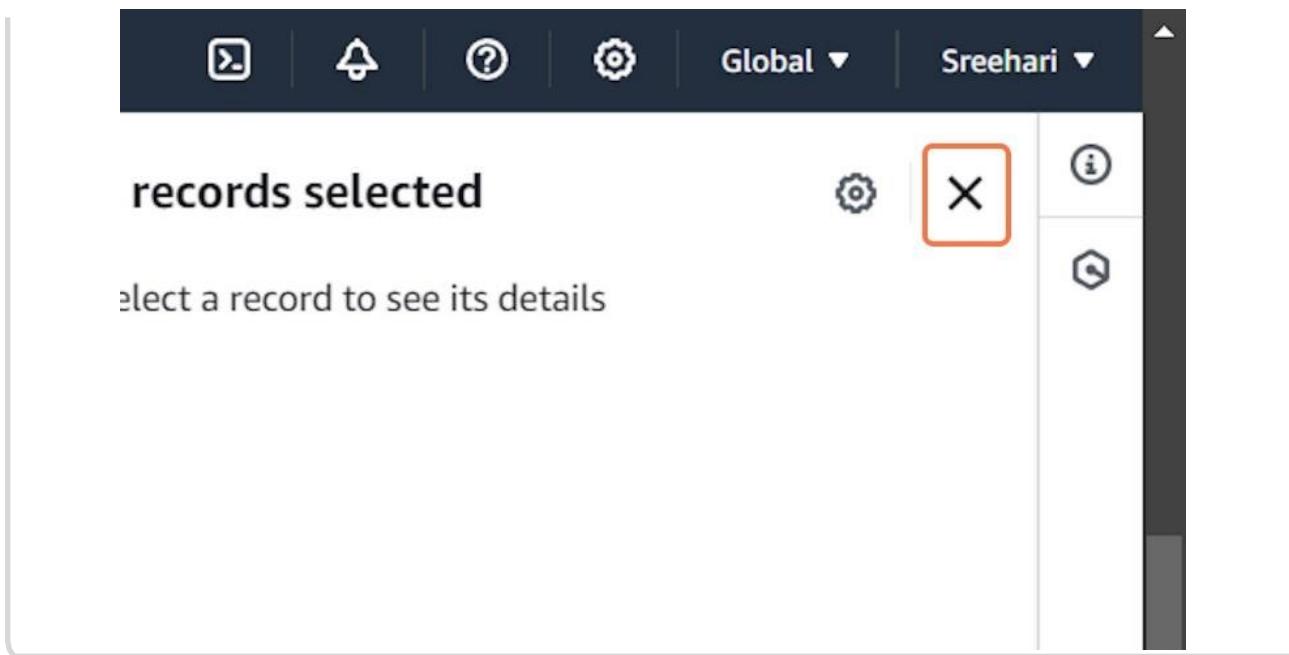
STEP 9

Click on Create hosted zone



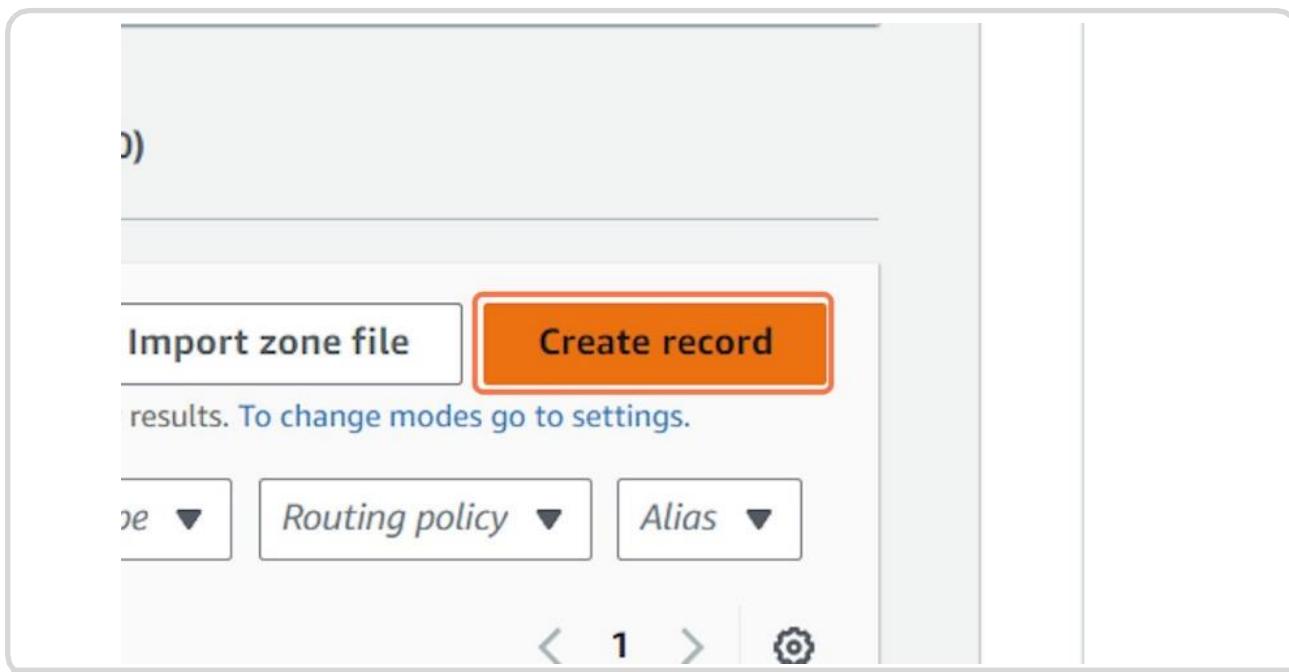
STEP 10

Click on Close



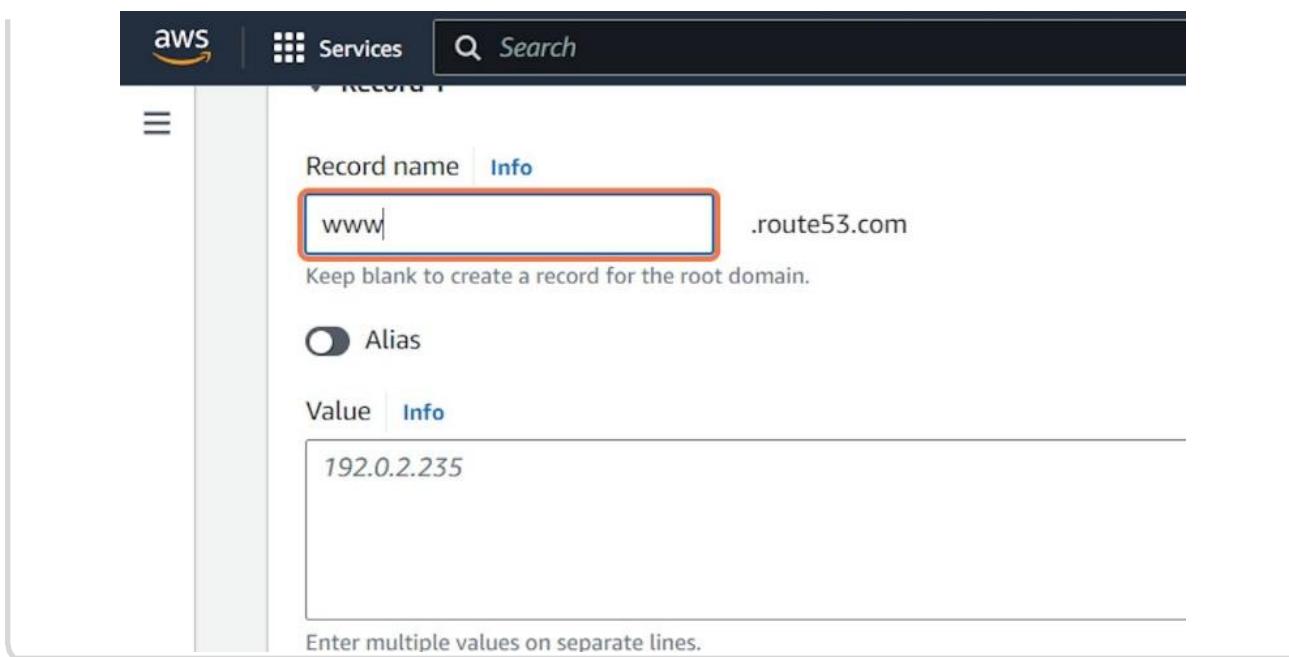
STEP 11

Click on Create record



STEP 12

Type "www"



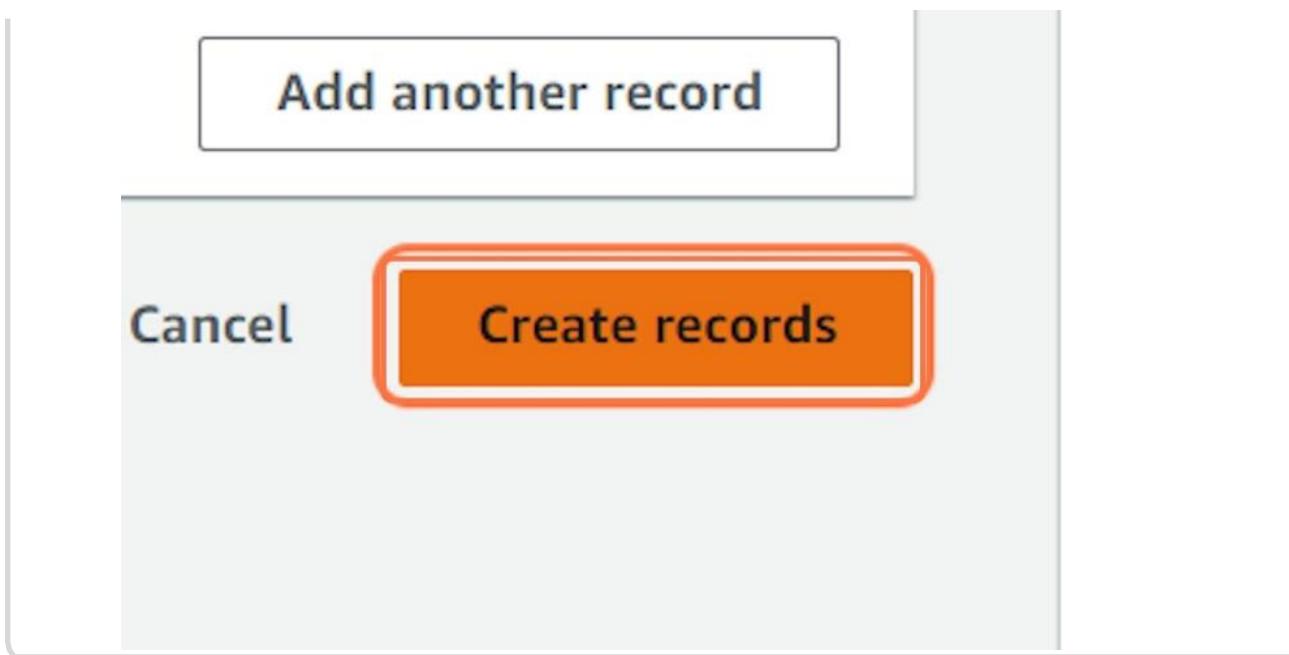
STEP 13

Type "192.0.2.235"

The screenshot shows the AWS Route 53 'Create Record' dialog. The 'Record name' field contains 'www' and the 'Record type' is set to 'A'. The 'Value' field contains '192.0.2.235'. The 'TTL (seconds)' field is set to '300'. The 'Routing policy' is 'Simple routing'. At the bottom right, there are 'Cancel' and 'Create records' buttons, with 'Create records' being highlighted.

STEP 14

Click on Create records



STEP 15

After completing the creation of Record , Go to new tab and enter ("www.route53.com") to check it is working or not If It shows AWS Screen It Is it is working

5. Conduct an experiment to establish an environment with automatic scaling

- Step 1: Set Up an AWS Account
- If you don't have an AWS account, sign up at aws.amazon.com. After registering, sign in to the AWS Management Console

The screenshot shows the AWS EC2 Instances page. On the left, there's a navigation sidebar with 'EC2' selected. The main area displays a table of instances with one row selected: 'vm44' (Instance ID: i-0cb716fc730b31f0e). The 'Actions' button in the top right of the table has a dropdown menu open, showing options like 'Create image', 'Create template from instance', and 'Launch more like this'. Below the table, there's a detailed view for the selected instance 'i-0cb716fc730b31f0e (vm44)' with tabs for 'Details', 'Status and alarms', 'Monitoring', 'Security', 'Networking', 'Storage', and 'Tags'. The 'Details' tab is active, showing fields for Instance ID (i-0cb716fc730b31f0e), Public IPv4 address (13.235.81.119), Private IPv4 addresses (172.31.2.203), Instance state (Running), and Public DNS (ec2-13-235-81-119.ap-south-1.compute.amazonaws.com).

Step 2: Launch an Amazon EC2 Instance

- Navigate to the **EC2 Dashboard**:
- Search for **EC2** in the AWS Management Console and open the EC2 service.
- Launch a new instance:
- Click **Launch Instance**.
- Choose an **Amazon Machine Image (AMI)**, for example, Amazon Linux 2.
- Select an instance type (e.g., t2.micro for free-tier usage).

- Configure **Instance Details**, including network settings.
 - In the storage settings, you can leave the defaults.
 - In **Security Groups**, configure inbound rules for required protocols (e.g., HTTP, SSH).
 - Review and click **Launch**.
-
- Step 3: Create an AMI from the EC2 Instance**
 - To ensure Auto Scaling creates identical instances, create an AMI (Amazon Machine Image) from the EC2 instance:
 - In the **EC2 Dashboard**, select your running instance.
 - Choose **Actions → Image and templates → Create Image**.
 - Enter a name and description for the image and click **Create Image**.
-
- Step 4: Set Up an Auto Scaling Group**
 - Navigate to the **Auto Scaling** dashboard:
 - In the AWS Console, search for **Auto Scaling** and open the Auto Scaling Groups service.
 - Create a Launch Template:**
 - A launch template is required to specify the instance configuration.
 - Click on **Launch Templates → Create Launch Template**.
 - Enter a name for the template.
 - Under **Launch template contents**, configure the instance details (instance type, AMI ID, key pair, and security group) based on your earlier EC2 setup.

The Volume initialization rate and ENA queues settings of the source instance have not been automatically included. If they are required, you must manually set them.

Create launch template

Creating a launch template allows you to create a saved instance configuration that can be reused, shared and launched at a later time. Templates can have multiple versions.

Launch template name and description

Source instance
i-0cb716fc730b31f0e

Launch template name - required
temp44

Must be unique to this account. Max 128 chars. No spaces or special characters like '&', '*', '@'.

Template version description
template

Max 255 chars

Auto Scaling guidance | **Info**
Select this if you intend to use this template with EC2 Auto Scaling
 Provide guidance to help me set up a template that I can use with EC2 Auto Scaling

Template tags

Summary

Software Image (AMI)
Amazon Linux 2023 AMI 2023.7.2...[read more](#)
ami-0b09627181c8d5778

Virtual server type (instance type)
t2.micro

Firewall (security group)
launch-wizard-4

Storage (volumes)
1 volume(s) - 8 GiB

Free tier: In your first year of opening an AWS account, you get 750 hours per month of t2.micro instance usage (or t3.micro where t2.micro isn't available) when used with free tier AMIs, 750 hours per month of public IPv4 address usage, 30 GiB of EBS storage, 2 million I/Os, 1 GB of snapshots, and 100 GB of bandwidth to the internet.

Create launch template

- Click **Create Launch Template**.

- **Create an Auto Scaling Group:**
- After creating the launch template, navigate to **Auto Scaling Groups** → **Create Auto**

Choose launch template Info

Specify a launch template that contains settings common to all EC2 instances that are launched by this Auto Scaling group.

Name

Auto Scaling group name
Enter a name to identify the group.

Must be unique to this account in the current Region and no more than 255 characters.

Launch template Info

Choose a launch template that contains the instance-level settings, such as the Amazon Machine Image (AMI), instance type, key pair, and security groups.

▲ ↻

✓

▼ ↻

↗

Description Template	Launch template temp44 <small>↗</small>	Instance type t2.micro <small>↗</small>
--------------------------------	---	---

© 2025, Amazon Web Services, Inc. or its affiliates. [Privacy](#) [Terms](#) [Cookie preferences](#)

Scaling Group.

- Select the previously created launch template.
- Specify the **Group Name** and **VPC/Subnets** for the scaling group.
- **Configure Group Size and Scaling Policies.**

Configure group size and scaling - optional Info

Define your group's desired capacity and scaling limits. You can optionally add automatic scaling to adjust the size of your group.

Group size Info

Set the initial size of the Auto Scaling group. After creating the group, you can change its size to meet demand, either manually or by using automatic scaling.

Desired capacity type
Choose the unit of measurement for the desired capacity value. vCPUs and Memory(GiB) are only supported for mixed instances groups configured with a set of instance attributes.

▼

Desired capacity
Specify your group size.
 ▼

Scaling Info

You can resize your Auto Scaling group manually or automatically to meet changes in demand.

Scaling limits
Set limits on how much your desired capacity can be increased or decreased.

Min desired capacity <input type="text" value="1"/>	Max desired capacity <input type="text" value="3"/>
---	---

Equal or less than desired capacity Equal or greater than desired capacity

Automatic scaling - optional

- Set the desired capacity (initial number of instances), minimum size, and maximum size.
- E.g., minimum = 1, desired = 2, maximum = 4.
- Select **Scaling Policies**:
- Choose **Target Tracking** to automatically scale based on CPU utilization or another metric.

Scaling Info

You can resize your Auto Scaling group manually or automatically to meet changes in demand.

Scaling limits
Set limits on how much your desired capacity can be increased or decreased.

Min desired capacity	Max desired capacity
1	3

Equal or less than desired capacity Equal or greater than desired capacity

Automatic scaling - optional

Choose whether to use a target tracking policy Info

You can set up other metric-based scaling policies and scheduled scaling after creating your Auto Scaling group.

No scaling policies
Your Auto Scaling group will remain at its initial size and will not dynamically resize to meet demand.

Target tracking scaling policy
Choose a CloudWatch metric and target value and let the scaling policy adjust the desired capacity in proportion to the metric's value.

Scaling policy name
Target Tracking Policy

Metric type Info
Monitored metric that determines if resource utilization is too low or high. If using EC2 metrics, consider enabling detailed monitoring for better scaling performance.

Average CPU utilization

Target value
50

Instance warmup Info

© 2025, Amazon Web Services, Inc. or its affiliates. Privacy Terms Cookie preferences

- For example, you can set a target to maintain CPU utilization at 50%.

Step 1
Choose launch template

Step 2
Choose instance launch options

Step 3 - optional
Integrate with other services

Step 4 - optional
Configure group size and scaling

Step 5 - optional
 Add notifications

Step 6 - optional
Add tags

Step 7
Review

Add notifications - optional Info

Send notifications to SNS topics whenever Amazon EC2 Auto Scaling launches or terminates the EC2 instances in your Auto Scaling group.

Notification 1 Remove

SNS Topic
Choose an SNS topic to use to send notifications

Create a topic

Event types
Notify subscribers whenever instances

Launch
 Terminate
 Fail to launch
 Fail to terminate

Add notification

Cancel Skip to review Previous Next

- Configure Load Balancing (Optional):

Add notifications - optional Info

Send notifications to SNS topics whenever Amazon EC2 Auto Scaling launches or terminates the EC2 instances in your Auto Scaling group.

Notification 1

Send a notification to Remove

With these recipients

Use existing topic

Event types

Notify subscribers whenever instances

- Launch
- Terminate
- Fail to launch
- Fail to terminate

Add notification

Cancel **Skip to review** **Previous** **Next**

- If you have a load balancer (e.g., an **Application Load Balancer**), attach it to to distribute traffic across multiple instances.

Capacity Reservation preference		
Preference	Capacity Reservation IDs	Resource Groups
Default	-	-

Step 5: Add notifications

Notifications

Notification 1

SNS Topic
exceeds_70percent (hrushithashetty@gmail.com)

Event types

- Launch
- Terminate
- Fail to launch
- Fail to terminate

Step 6: Add tags

Tags (0)

Key	Value	Action
Tag new instances		

No tags

Preview code **Cancel** **Previous** **Create Auto Scaling group**

- Ensure the health check is enabled for the instances.
- Review and Create:**

- Review all settings and click **Create Auto Scaling Group**.

The screenshot shows the AWS Auto Scaling groups page. At the top, there is a search bar with the placeholder "Search" and a "[Alt+S]" keyboard shortcut. To the right of the search bar are several icons: a magnifying glass, a bell, a question mark, a gear, and a user profile for "Hrushitha K L". The top navigation bar includes "aws" and "EC2 > Auto Scaling groups". On the far right of the top bar are "Asia Pacific (Mumbai)" and a dropdown menu.

The main content area has a header "Auto Scaling groups (1) Info" with a "Last updated less than a minute ago" timestamp and a circular refresh icon. Below the header is a search bar with the placeholder "Search your Auto Scaling groups". To the right of the search bar are navigation arrows and a refresh icon.

The table below the search bar has columns: "Name" (with a checkbox), "Launch template/configuration" (with a dropdown arrow), "Instances" (with a dropdown arrow), "Status" (with a dropdown arrow), "Desired capacity" (with a dropdown arrow), "Min" (with a dropdown arrow), "Max" (with a dropdown arrow), and "Actions" (with a dropdown arrow). A prominent orange button at the top right of the table says "Create Auto Scaling group".

The table displays one row for the Auto Scaling group "autoscale44", which is associated with the launch template "temp44 | Version Default". The status is "0" instances, and the desired capacity is "3". The min and max values are both "1". The "Actions" column for this row contains a link labeled "a...".

At the bottom left of the page, a message says "0 Auto Scaling groups selected". The footer contains links for "CloudShell", "Feedback", "© 2025, Amazon Web Services, Inc. or its affiliates.", "Privacy", "Terms", and "Cookie preferences".