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Class: Msc. Computer Science

Subject: Cloud Computing

Year: 2022-23

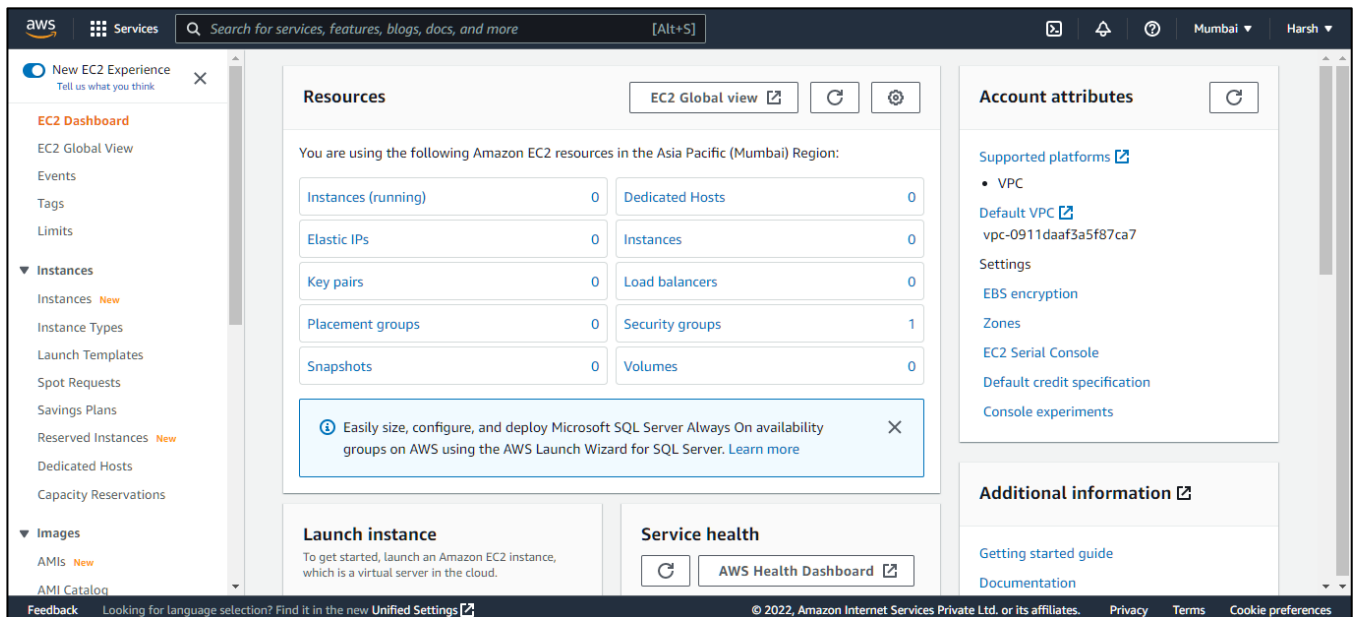
Practical 7

Aim: Implementation of Cloud services on Amazon web services.

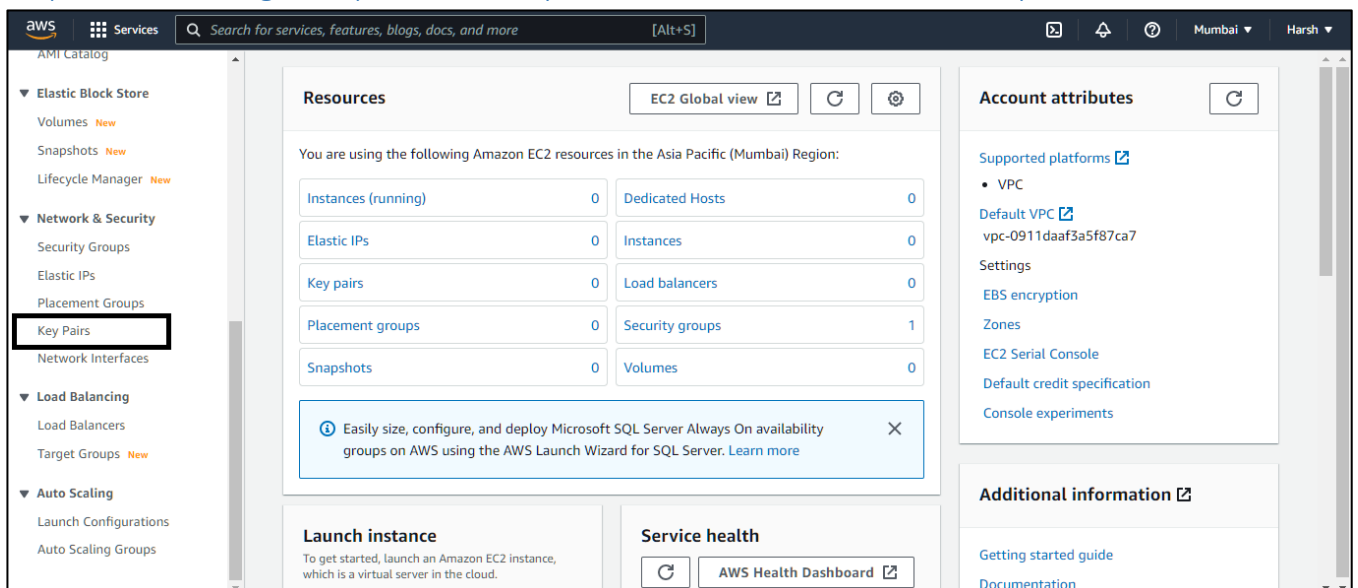
Code:

Setting up EC2 Key-Pairs

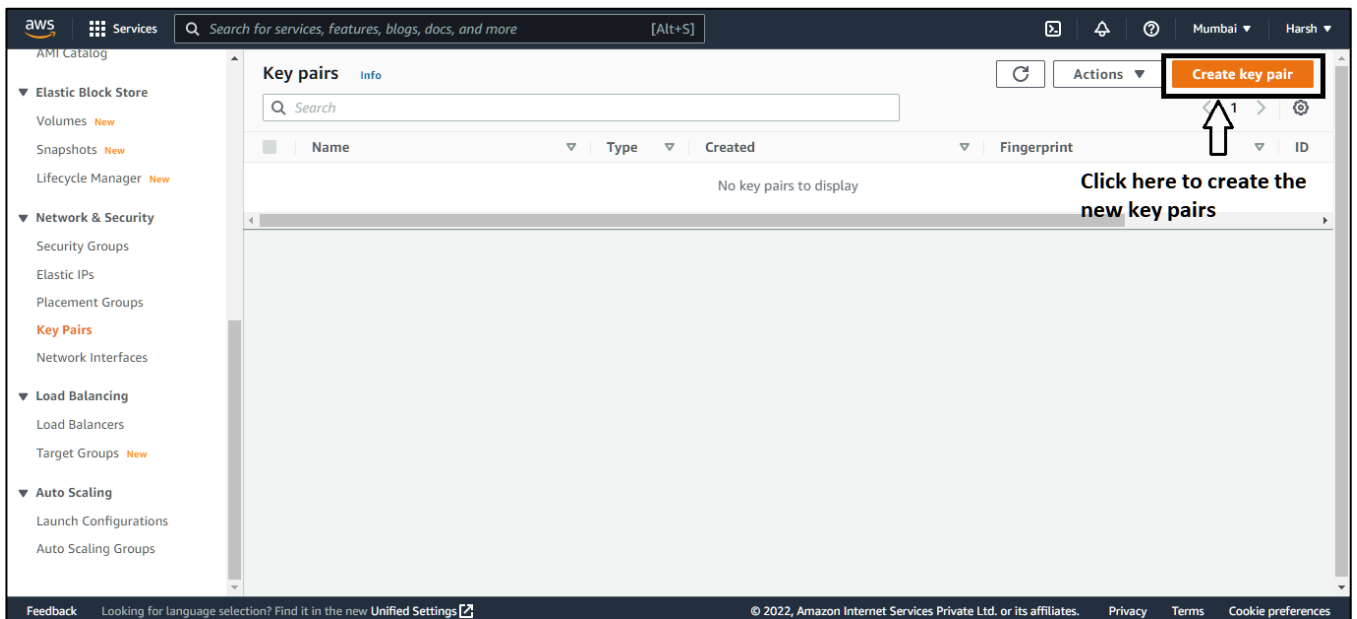
Step 1: Go to [Amazon EC2 Console](#)



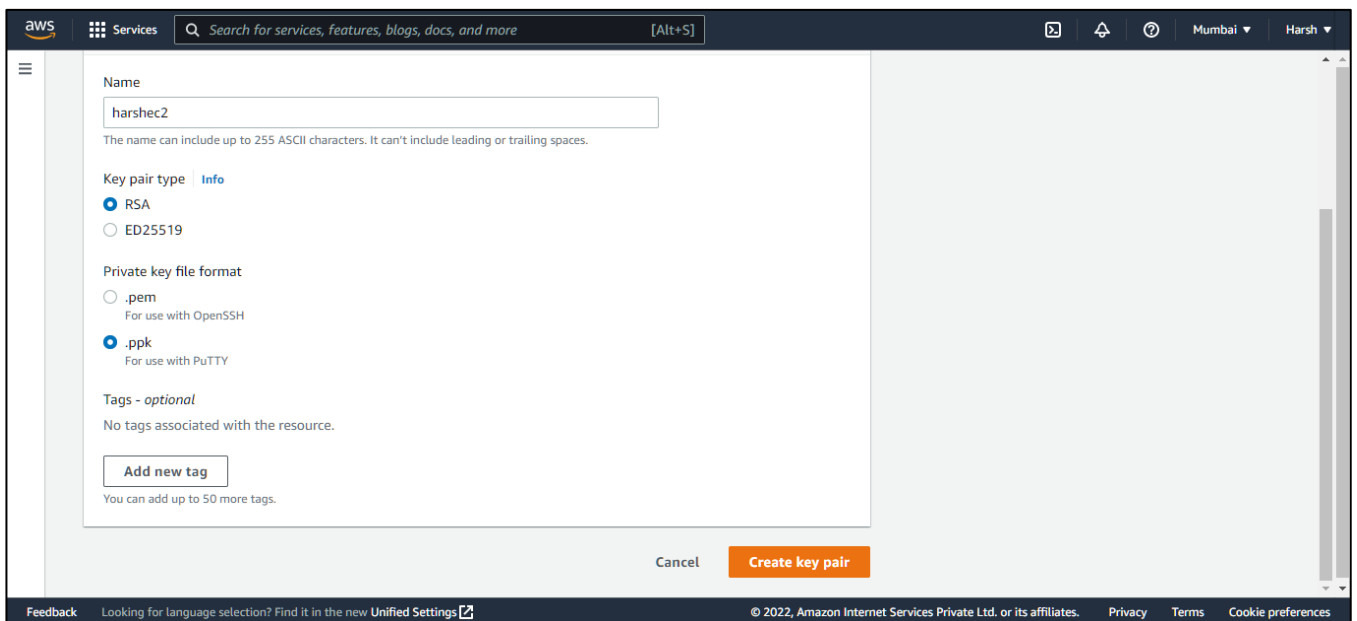
Step 2: In the Navigation pane, click Key Pairs under Network and Security Section



Step 3: On the Key Pairs page, click Create Key Pair

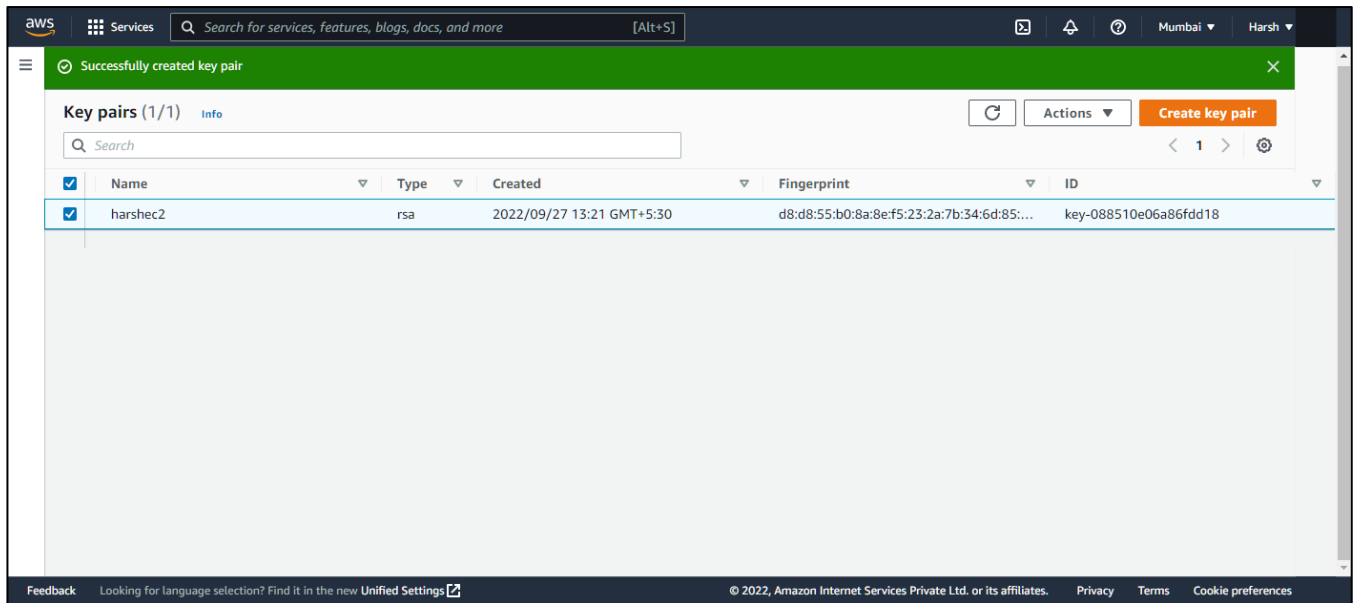


Step 4: In the Create Key Pair dialog box, enter a name for your key pair, such as, mykeypair



Step 5: Click Create key Pair

Step 6: Save the resulting PEM file in a safe location



Setting up your environment on Amazon EC2

Step 1: Sign in to the AWS console and search EC2.



Step 2: Create new Instance

The screenshot displays the AWS Management Console interface. At the top, the navigation bar includes the AWS logo, a search bar, and the user's name 'Harsh' with a dropdown arrow. The main content area is divided into several sections:

- Resources:** A section titled 'You are using the following Amazon EC2 resources in the Asia Pacific (Mumbai) Region:' containing a grid of resource counts: Instances (running) 0, Dedicated Hosts 0, Elastic IPs 0, Instances 0, Key pairs 1, Load balancers 0, Placement groups 0, Security groups 3, Snapshots 0, and Volumes 0.
- Launch instance:** A section with the text 'To get started, launch an Amazon EC2 instance, which is a virtual server in the cloud.' Below this, the 'Launch Instance' button is highlighted with a red rectangle. A 'Migrate a server' link is also visible.
- Service health:** A section showing the 'Region' as 'Asia Pacific (Mumbai)' and the 'Status' as 'OK'.
- Account attributes:** A section on the right side showing 'Supported platforms' (VPC), 'Default VPC' (vpc-0911daaf3a5f87ca7), and various settings like 'EBS encryption', 'Zones', 'EC2 Serial Console', 'Default credit specification', and 'Console experiments'.
- Explore AWS:** A section at the bottom right with a close button and a message: 'Enable Best Price-Performance with AWS Graviton2. AWS Graviton2 powered EC2 instances enable up to'.

The footer of the console includes a 'Feedback' link, a language selection prompt, the copyright notice '© 2022, Amazon Internet Services Private Ltd. or its affiliates.', and links for 'Privacy', 'Terms', and 'Cookie preferences'.

Services

Search for services, features, blogs, docs, and more

[Alt+S]

Mumbai

Harsh

EC2 > Instances > Launch an instance

Launch an instance

Amazon EC2 allows you to create virtual machines, or instances, that run on the AWS Cloud. Quickly get started by following the simple steps below.

Name and tags

Name

Harsh

Add additional tags

Application and OS Images (Amazon Machine Image)

An AMI is a template that contains the software configuration (operating system, application server, and applications) required to launch your instance. Search or Browse for AMIs if you don't see what you are looking for below.

Search our full catalog including 1000s of application and OS images

Quick Start

Amazon Linux

macOS

Ubuntu

Windows

Red Hat

S

Browse more AMIs

Including AMIs from AWS, Marketplace and the Community

Amazon Machine Image (AMI)

Ubuntu Server 22.04 LTS (HVM), SSD Volume Type

ami-062df10d14676e201 (64-bit x86) / ami-0c5dc4f4c271616f (64-bit ARM)

Virtualization: hvm ENA enabled: true Root device type: ebs

Free tier eligible

Description

Canonical, Ubuntu, 22.04 LTS, amd64 jammy image build on 2022-09-12

Architecture

AMI ID

64-bit (x86)

ami-062df10d14676e201

Verified provider

Instance type

Instance type

t2.micro

Family: t2 1 vCPU 1 GiB Memory

On-Demand Linux pricing: 0.0124 USD per Hour

On-Demand Windows pricing: 0.017 USD per Hour

Free tier eligible

Compare instance types

Key pair (login)

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

harshec2

Create new key pair

Network settings

Network

vpc-0911daaf3a5f87ca7

Subnet

No preference (Default subnet in any availability zone)

Auto-assign public IP

Enable

Firewall (security groups)

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

We'll create a new security group called 'launch-wizard-1' with the following rules:

Allow SSH traffic from

Helps you connect to your instance

Anywhere

0.0.0.0/0

Allow HTTP's traffic from the internet

To set up an endpoint, for example when creating a web server

Allow HTTP traffic from the internet

To set up an endpoint, for example when creating a web server

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.

Configure storage

Advanced

1x 8 GiB gp2

Root volume

Free tier eligible customers can get up to 30 GiB of EBS General Purpose (SSD) or Magnetic storage

Add new volume

The selected AMI contains more instance store volumes than the instance allows. Only the first 0 instance store volumes from the AMI will be accessible from the instance

0 x File systems

Edit

Advanced details

Summary

Number of instances

1

Software Image (AMI)

Canonical, Ubuntu, 22.04 LTS, ...read more

ami-062df10d14676e201

Virtual server type (instance type)

t2.micro

Firewall (security group)

New security group

Storage (volumes)

1 volume(s) - 8 GiB

Cancel

Launch Instance

Feedback

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The screenshot shows the AWS Management Console interface for launching an EC2 instance. The top navigation bar includes the AWS logo, a search bar, and user information (Mumbai, Harsh). The breadcrumb trail indicates the path: EC2 > Instances > Launch an instance. A green success message states: "Success Successfully initiated launch of instance (i-025be11e23e114a0b)". Below this, a "Launch log" section lists the following steps and their status: "Initializing requests" (Succeeded), "Creating security groups" (Succeeded), "Creating security group rules" (Succeeded), and "Launch initiation" (Succeeded). The "Next Steps" section provides guidance on getting notified of estimated charges, connecting to the instance, and viewing more resources. A "View all instances" button is located at the bottom right of the main content area. The footer contains feedback links, language selection options, and copyright information for 2022.

Success
Successfully initiated launch of instance (i-025be11e23e114a0b)

▼ Launch log

Initializing requests	Succeeded
Creating security groups	Succeeded
Creating security group rules	Succeeded
Launch initiation	Succeeded

Next Steps

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 instance
Your instance is launching and it might be a few minutes until it is in the running state, when it will be ready for you to use
Click View Instances to monitor your instance's status. Once your instance is in the 'running' state, you can connect to it from the Instances screen. Find out [how to connect to your instance](#)

[View more resources to get you started](#)

[View all instances](#)

The screenshot shows the AWS Management Console interface for the "Instances" page. The top navigation bar is consistent with the previous screenshot. The breadcrumb trail is: EC2 > Instances > Launch an instance. The page title is "Instances (1) Info". A search bar is present with the placeholder text "Find instance by attribute or tag (case-sensitive)". The "Launch instances" button is highlighted in orange. Below the search bar, a table lists the instances. The table has columns: Name, Instance ID, Instance state, Instance type, Status check, Alarm status, Availability Zone, and Public IPv4 DNS. The table contains one instance named "Harsh" with ID "i-025be11e23e114a0b", state "Running", type "t2.micro", and status "Initializing". Below the table, there is a "Select an instance" section with a search bar and a "Launch instances" button. The footer contains feedback links, language selection options, and copyright information for 2022.

Instances (1) Info

Find instance by attribute or tag (case-sensitive)

Name	Instance ID	Instance state	Instance type	Status check	Alarm status	Availability Zone	Public IPv4 DNS
Harsh	i-025be11e23e114a0b	Running	t2.micro	Initializing	No alarms	ap-south-1a	ec2-3-110-33-100.ap-

Select an instance

Step 3: Start the instance

Step 2. Click Connect

Connect

Instance state

Actions

Launch instances

Find instance by attribute or tag (case-sensitive)

Name	Instance ID	Instance state	Instance type	Status check	Alarm status	Availability Zone	Public IPv4 DNS
Harsh	i-025be11e23e114a0b	Running	t2.micro	Initializing	No alarms	ap-south-1a	ec2-3-110-33-100...

Step 1: Select the instance

Instance: i-025be11e23e114a0b (Harsh)

Details | Security | Networking | Storage | Status checks | Monitoring | Tags

▼ Instance summary Info

Instance ID i-025be11e23e114a0b (Harsh)	Public IPv4 address 3.110.33.100 open address	Private IPv4 addresses 172.31.35.239
IPv6 address -	Instance state Running	Public IPv4 DNS ec2-3-110-33-100.ap-south-1.compute.amazonaws.com open address

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EC2 > Instances > i-025be11e23e114a0b > Connect to instance

Connect to instance Info

Connect to your instance i-025be11e23e114a0b (Harsh) using any of these options

EC2 Instance Connect | Session Manager | SSH client | EC2 serial console

Instance ID
i-025be11e23e114a0b (Harsh)

Public IP address
3.110.33.100

User name
ubuntu

Connect using a custom user name, or use the default user name ubuntu for the AMI used to launch the instance.

Note: In most cases, the guessed user name is correct. However, read your AMI usage instructions to check if the AMI owner has changed the default AMI user name.

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```
Welcome to Ubuntu 22.04.1 LTS (GNU/Linux 5.15.0-1019-aws x86_64)

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

System information as of Tue Sep 27 15:10:51 UTC 2022

System load: 0.0107421875   Processes:      100
Usage of /:  19.6% of 7.57GB   Users logged in: 0
Memory usage: 19%           IPv4 address for eth0: 172.31.35.239
Swap usage:  0%

0 updates can be applied immediately.

The list of available updates is more than a week old.
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-172-31-35-239:~$
```

i-025be11e23e114a0b (Harsh)

PublicIPs: 3.110.33.100 PrivateIPs: 172.31.35.239

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