

CLOUD COMPUTING

Branch	CS - AIML
Division	A
Batch	2
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Experiment No. 04:

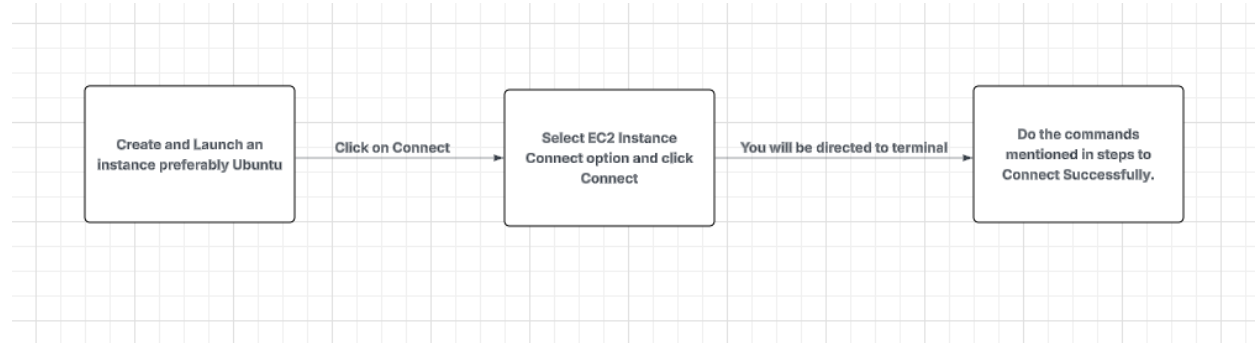
TITLE:

To use Infrastructure as a Service to facilitates for creating and deleting compute resources.
Create network and attach volumes to run instances.

OBJECTIVES:

- 1) Create an AWS account and log in to the AWS Management Console.
- 2) Access the S3 service.
- 3) Create and configure an S3 bucket for storing files.
- 4) Upload and manage data in the bucket.

Flowchart:



Steps:

1) Create and Launch an Instance

The screenshot shows the 'Launch an instance' page in the AWS Management Console. At the top, there's a blue banner with a message about taking a walkthrough. Below this, the 'Launch an instance' section includes a 'Name and tags' field with 'sql-server' entered, and an 'Application and OS Images (Amazon Machine Image)' section with a search bar. On the right, a 'Summary' panel lists configuration details: 1 instance, Amazon Linux 2023 AMI, t3.micro instance type, new security group, and 8 GiB storage. The bottom of the page shows the footer with '© 2025, Amazon Web Services, Inc. or its affiliates.'

The screenshot shows the 'Instance summary' page for the EC2 instance i-0321ef93798acbd5f. The left sidebar contains navigation links for EC2, Dashboard, EC2 Global View, Events, Instances, Instance Types, Launch Templates, Spot Requests, Savings Plans, Reserved Instances, Dedicated Hosts, Capacity Reservations, Images, AMIs, and AMI Catalog. The main content area displays the instance's status as 'Stopped' and provides various identifiers and addresses. The bottom of the page shows the footer with '© 2025, Amazon Web Services, Inc. or its affiliates.'

Instance ID	Public IPv4 address	Private IPv4 addresses
i-0321ef93798acbd5f	-	172.31.29.169

Instance state	Private IP DNS name (IPv4 only)	Public DNS
Stopped	ip-172-31-29-169.eu-north-1.compute.internal	-

Instance type	Elastic IP addresses	AWS Compute Optimizer finding
t3.micro	-	Opt-in to AWS Compute Optimizer for recommendations. Learn more

VPC ID	Auto Scaling Group name
vpc-0f109ae26463222f4	-

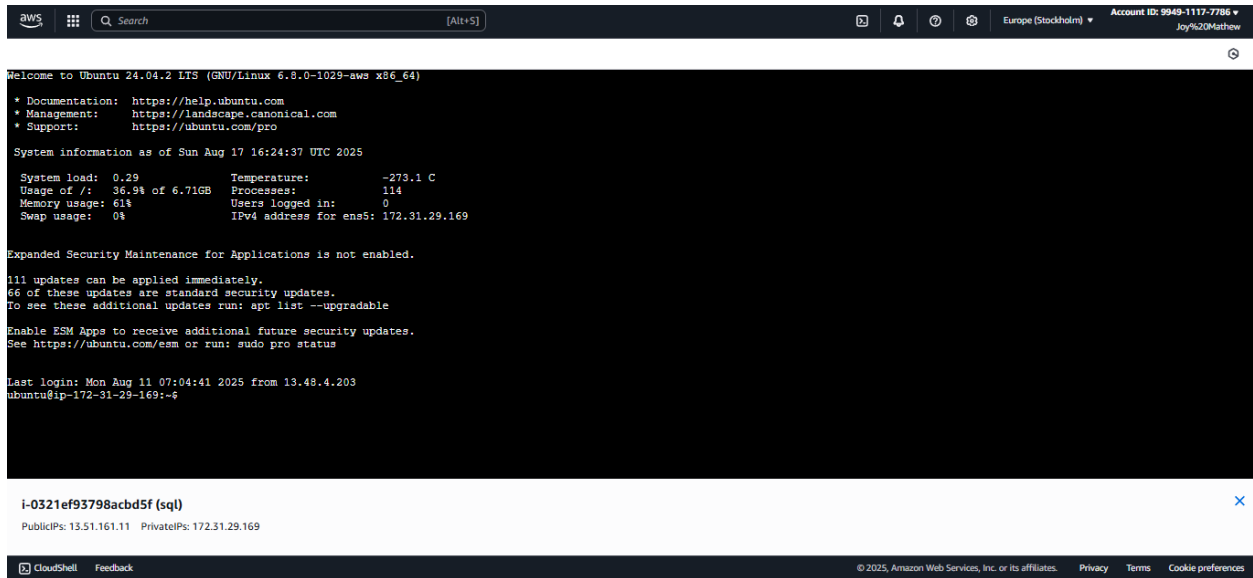
2) Select the instance and click on connect

The screenshot shows the AWS Management Console interface. On the left, the 'EC2' sidebar is visible with options like Dashboard, EC2 Global View, Events, Instances, Instance Types, Launch Templates, Spot Requests, Savings Plans, Reserved Instances, Dedicated Hosts, Capacity Reservations, Images, AMIs, and AMI Catalog. The main area displays 'Instances (1/3)' with a table listing three instances: 'myserver', 'demo-server', and 'sql'. The 'sql' instance is selected, and its details are shown in a pane on the right. The 'Connect' button is highlighted in the top right of the instance details pane. Below the table, the 'Instance summary' for 'i-0321ef93798acbd5f (sql)' is shown, including the Instance ID, Public IPv4 address (13.51.161.11), Private IPv4 addresses (172.31.29.169), and Public DNS.

3) Select the EC2 Instance Connect Option and click Connect.

The screenshot shows the 'Connect to instance' page in the AWS Management Console. The breadcrumb trail indicates the path: EC2 > Instances > i-0321ef93798acbd5f > Connect to instance. The 'Connect' page has tabs for 'EC2 Instance Connect', 'Session Manager', 'SSH client', and 'EC2 serial console'. The 'EC2 Instance Connect' tab is active. Under 'Instance ID', 'i-0321ef93798acbd5f (sql)' is listed. Under 'Connection type', there are two radio buttons: 'Connect using a Public IP' (selected) and 'Connect using a Private IP'. Below this, the 'Public IPv4 address' is listed as '13.51.161.11'. Under 'Username', 'ubuntu' is entered. A note at the bottom states: 'Note: In most cases, the default username, ubuntu, is correct. However, read your AMI usage instructions to check if the AMI owner has changed the default AMI username.' At the bottom right, there are 'Cancel' and 'Connect' buttons.

4) After that you will be directed to the terminal



The screenshot shows an AWS CloudShell terminal window. The top bar includes the AWS logo, a search bar, a keyboard shortcut [Alt+5], and account information for 'Europe (Stockholm)' with ID 9949-1117-7786. The terminal output is as follows:

```
Welcome to Ubuntu 24.04.2 LTS (GNU/Linux 6.8.0-1029-aws x86_64)

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

System information as of Sun Aug 17 16:24:37 UTC 2025

System load:  0.29      Temperature:   -273.1 C
Usage of /:   36.9% of 6.71GB   Processes:    114
Memory usage: 61%      Users logged in: 0
Swap usage:   0%          IPv4 address for ens5: 172.31.29.169

Expanded Security Maintenance for Applications is not enabled.

111 updates can be applied immediately.
66 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: Mon Aug 11 07:04:41 2025 from 13.48.4.203
ubuntu@ip-172-31-29-169:~$
```

Below the terminal window, the instance ID `i-0321ef93798acbd5f (sql)` and public/private IP addresses are listed. The bottom bar shows 'CloudShell' and 'Feedback' links, along with copyright and policy information.

5) Perform the following commands:

Step 1: Update the system

`sudo apt update`

Step 2: Install MySql

`sudo apt install mysql-server`

Step 3: Check the Status of MySql (Active or Inactive)

`sudo systemctl status mysql`

Step 4: Login to MySql as a root

`sudo mysql`

Step 5: Update the password for the MySql Server

`ALTER USER 'root'@'localhost' IDENTIFIED WITH mysql_native_password BY 'place-your-password-here';`

`FLUSH PRIVILEGES;`

Step 6: Test the MySql server if it is working by running sample sql queries

`CREATE DATABASE mysql_test;`

`USE mysql_test;`

`CREATE TABLE table1 (id INT, name VARCHAR(45));`

`INSERT INTO table1 VALUES(1, 'Virat'), (2, 'Sachin'), (3, 'Dhoni'), (4, 'ABD');`

`SELECT * FROM table1;`

6) After these steps your database will be connected.

```
mysql> CREATE DATABASE mysql_test;
Query OK, 1 row affected (0.01 sec)

mysql> USE mysql_test
Database changed
mysql> CREATE TABLE table1 (id INT, name VARCHAR(45));
Query OK, 0 rows affected (0.03 sec)

mysql> INSERT INTO table1 VALUES(1,'Virat'),(2,'Sachin'),(3,'Dhoni');
Query OK, 3 rows affected (0.01 sec)
Records: 3  Duplicates: 0  Warnings: 0

mysql> SELECT * FROM table1;
+-----+-----+
| id  | name  |
+-----+-----+
| 1   | Virat |
| 2   | Sachin |
| 3   | Dhoni |
+-----+-----+
3 rows in set (0.00 sec)
```

```
No user sessions are running outdated binaries.

No VM guests are running outdated hypervisor (qemu) binaries on this host.
ubuntu@ip-172-31-29-169:~$ sudo systemctl status mysql
● mysql.service - MySQL Community Server
   Loaded: loaded (/usr/lib/systemd/system/mysql.service; enabled; preset: enabled)
   Active: active (running) since Mon 2025-08-11 07:12:31 UTC; 40s ago
   Process: 2587 ExecStartPre=/usr/share/mysql/mysql-systemd-start pre (code=exited, status=0/SUCCESS)
  Main PID: 2595 (mysqld)
    Status: "Server is operational"
   Tasks: 38 (limit: 1072)
  Memory: 351.3M (peak: 377.8M)
     CPU: 1.069s
  CGroup: /system.slice/mysql.service
          └─2595 /usr/sbin/mysqld

Aug 11 07:12:30 ip-172-31-29-169 systemd[1]: Starting mysql.service - MySQL Community Server...
Aug 11 07:12:31 ip-172-31-29-169 systemd[1]: Started mysql.service - MySQL Community Server.
ubuntu@ip-172-31-29-169:~$ sudo mysql
Welcome to the MySQL monitor.  Commands end with ; or \g.
```

i-0321ef93798acbd5f (sql)

PublicIPs: 13.60.209.27 PrivateIPs: 172.31.29.169