

PROJECT - 1

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Batch no.: 138

3-Tier Architecture

1. Web-Tier : The user directly interacts with User Interface like Web services, Mobile apps, desktop apps, servers. This process we can call as a front-end process.

2.Application-Tier: The application tier's role is to process requests and information from the web tier and communicate with the database tier.

3.Data-Tier: working with database and storing data.

By using these three tiers we need to do specific tasks and manage(High Availability, security, scaling) independently of each other.

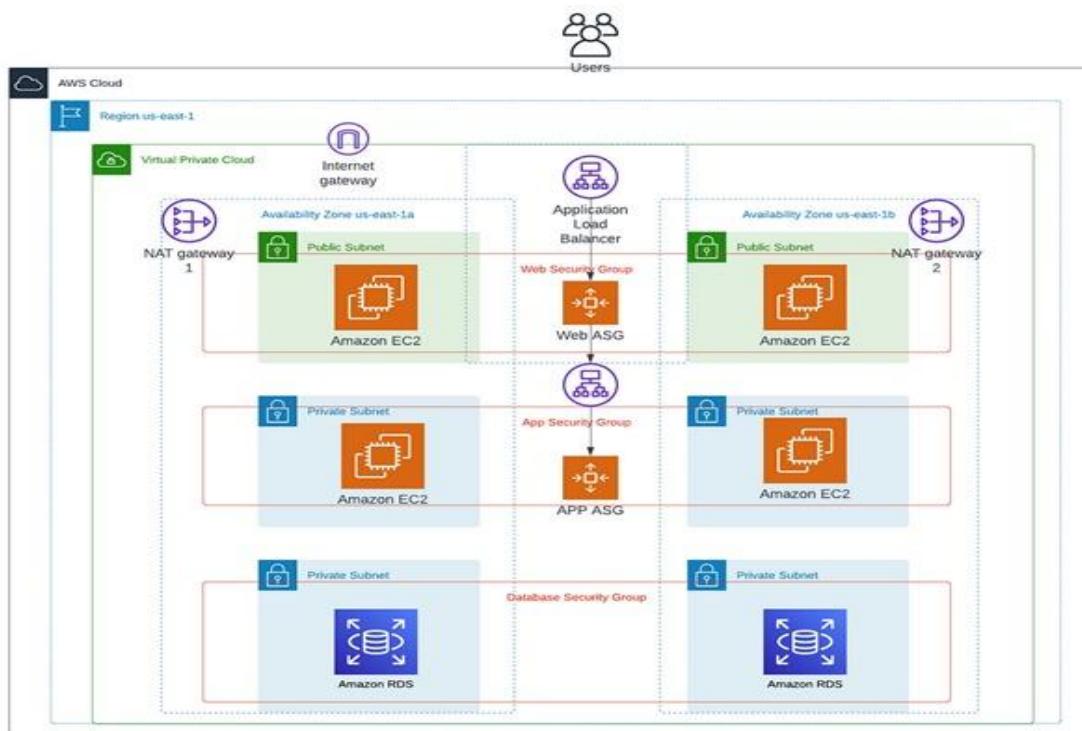


Fig1. 3 - Tier Architecture diagram

STEP 1:

1. Create VPC and name it as project1

- Enable DNS hostname.
- CIDR as 20.0.0.0/16

The screenshot shows the AWS VPC dashboard. A green success message at the top right states: "You have successfully modified the settings for vpc-03a61cf2f72ab4f38 / project1." Below this, the VPC details are displayed in a table:

VPC ID	State	Block Public Access	DNS hostnames
vpc-03a61cf2f72ab4f38	Available	Off	Enabled
DNS resolution	Tenancy	DHCP option set	Main route table
Enabled	default	dopt-005a61e4e757329b9	rtb-0a9d7fe4ed8f8ba1f
Main network ACL	Default VPC	IPv4 CIDR	IPv6 pool
acl-0337222df5f0e8e5a	No	20.0.0.0/16	-
IPv6 CIDR (Network border group)	Network Address Usage metrics	Route 53 Resolver DNS Firewall rule groups	Owner ID
-	Disabled	-	252177172204

Below the table are tabs for "Resource map", "CIDRs", "Flow logs", "Tags", and "Integrations".

STEP 2: Create six subnets.

- 2 public subnets for Web as public1,public2.
- 2 private subnets for App as private1,private2.
- 2 private subnets for DB as private3,private4.

The screenshot shows the "Create subnet" process in the AWS Subnets section. A progress bar at the top indicates "Creating subnet 6" is 83% complete. Below the progress bar, a list of subnets being created is shown:

- Creating subnet 1
- Creating subnet 2
- Creating subnet 3
- Creating subnet 4
- Creating subnet 5
- Creating subnet 6

These are 6 subnets were created. Among these 2 were public and 4 were private. These subnets are created in Multiple A-Z (1a,1b).

Subnets (12) <small>Info</small>				
	Name	Subnet ID	State	VPC
	pub2	subnet-06b5139d4b9e5f8bf	Available	vpc-03a61cf2f72ab4f38 project1
	pvt3	subnet-034a5a2756a5500ba	Available	vpc-03a61cf2f72ab4f38 project1
	pub1	subnet-04842805fe4ddbf62	Available	vpc-03a61cf2f72ab4f38 project1
	pvt4	subnet-01e12430893e223c6	Available	vpc-03a61cf2f72ab4f38 project1
	-	subnet-04923e814f74cff7e	Available	vpc-089b5746b75e32c13
	-	subnet-0fd27c0f17d22d4a3	Available	vpc-03a61cf2f72ab4f38 project1
	pvt1	subnet-0fc88bb33d6e727d0	Available	vpc-089b5746b75e32c13
	-	subnet-04c6cd26bb2391e72	Available	vpc-089b5746b75e32c13
	-	subnet-0e2cbfa74f4324f51	Available	vpc-03a61cf2f72ab4f38 project1
	pvt2			

➤ Enable public Ip address

Edit subnets --> Enable auto-assign public IPv4 address --> save

STEP 3: Create Route Table's for Public and private.

- Route table for public and Route table for private subnets.
- Go to Route table and select VPC as main.
- Edit it as add route and edit subnets associations
- Select all public subnets , so it can connect to the internet for better interaction and all private subnets to nat gateway.

Route tables (4) <small>Info</small>				
	Name	Route table ID	Explicit subnet associ...	Main
	-	rtb-090557bf932ce1646	-	Yes
	-	rtb-0a9d7fe4ed8f8ba1f	-	Yes
	pub-rt	rtb-0cca6dff5b98ba7fbf	2 subnets	No
	pvt-rt	rtb-02a4429f52bea5f13	4 subnets	No

STEP 4: Create Internet gateway:

- Internet gateway is used to communicate between VPC and internet.
- It is used to provide internet access to the public subnets in route table1.

The screenshot shows the AWS VPC dashboard with the 'Internet gateways' section selected. A success message at the top states: "Internet gateway igw-050f126264793c944 successfully attached to vpc-03a61cf2f72ab4f38". Below this, the details for the Internet gateway "igw-050f126264793c944 / proigw" are shown, including its ID, state (Attached), VPC ID, and owner. The 'Tags' section shows a single tag named "proigw".

- Add public subnets to Internet Gateway. Go to add routes in route table.

The screenshot shows the 'Edit routes' page for a route table. A new route is being added with the destination "0.0.0.0/0" and target "Internet Gateway" (specifically "igw-050f126264793c944"). The status is set to "Active" and propagation is disabled. The "Add route" button is visible at the bottom left, and "Save changes" is at the bottom right.

STEP 5: Create NAT gateway:

- NAT gateway is used to provide internet access to private subnets in route table.

The screenshot shows the 'NAT gateways' page. A success message indicates that the NAT gateway "nat-0284e124a802f553c / pro-natgw" was created successfully. The details page for this NAT gateway shows its ARN, connectivity type (Public), primary and secondary IPv4 addresses, subnet, VPC, and various state metrics like creation time and network interface ID.

- Add private subnets to NAT Gateway. Go to add routes in route table.

Destination	Target	Status	Propagated
20.0.0.0/16	local	Active	No
Q 0.0.0.0/0	X		
NAT Gateway	nat 0284e124a802f553c	-	No
Q nat 0284e124a802f553c	X		

Add route

Cancel **Preview** **Save changes**

STEP 6:

1. Navigate to EC2 in Console
2. Create instances names as (web1, web2, app1, app2)
3. Select application and osi (Ubuntu Server 24.04 LTS, HVM) for all instances
4. Select t2micro for all instances
5. Create one key pair and use one key pair for all instances
6. Edit network settings
 - a) Select VPC
 - b) Select subnets for specific instances as same as subnets for (ex:- instance as public-1a and subnet as public -1a)
 - c) Enable auto assign ip
7. Create one security group and use this for all instances
 - a) SSH-22port, anywhere – 0.0.0.0/0
8. Click create instance

Name	Instance ID	Instance state	Instance type	Status check	Alarm status
app-1	i-0171187def9a1becc	Running	t2.micro	Initializing	View alarms +
web1	i-02dee6aeb26e3da23	Running	t2.micro	2/2 checks passed	View alarms +
web2	i-0989e2a65cbdfb953	Running	t2.micro	2/2 checks passed	View alarms +
app2	i-05ee980d60aa46f8d	Pending	t2.micro	-	View alarms +

Select an instance

STEP 7:

- i. Create launch template
 - a) Name as web-template1
 - b) Description as template
 - c) Application and osi as recently used
 - d) Select instance type and key pair
 - e) In network settings security group

The screenshot shows the AWS Launch Templates page. On the left, there's a sidebar with navigation links for Instances, Launch Templates, Images, Elastic Block Store, and Network & Security. The main area is titled "Launch Templates (1)" and contains a table with one row. The table columns are: Launch Template ID, Launch Template Name, Default Version, Latest Version, and Create Time. The single entry is: "lt-090b48edbde52a16a" | "web-template1" | "1" | "1" | "2025-07-07T05:22:25". Below the table, a section titled "Select a launch template" is visible.

This screenshot shows the AWS Launch Templates page after a new entry has been created. The sidebar and main interface are similar to the first screenshot, but the table now contains two rows. The second row is: "lt-095f75204691a2ad2" | "template2" | "1" | "1" | "2025-07-07T05:22:25". The "Select a launch template" section remains below the table.

STEP 8:

1. Create targets groups for to show data
2. Name it as public target(tg1), private target(tg2)
3. In register targets select public target (public-1a, public-1b), private target(private-1a,private-1b)
4. Select include as pending below
5. Create target group

The screenshot shows the AWS EC2 Target groups page. On the left, there's a navigation sidebar with sections like Lifecycle Manager, Network & Security (Security Groups, Elastic IPs, Placement Groups, Key Pairs, Network Interfaces), Load Balancing (Load Balancers, Target Groups, Trust Stores), and Auto Scaling (Auto Scaling Groups). The 'Target Groups' section is currently selected. The main area displays a table titled 'Target groups (2)'. The table has columns for Name, ARN, Port, Protocol, Target type, and Lo. Two entries are listed: 'tg1' and 'tg2', both of which are instances of 'arn:aws:elasticloadbalancing:...'. Both entries have port 80 and protocol HTTP, and are categorized as 'Instance' target types.

STEP 9:

1. Create load balancer for balancing load between to servers
2. Create load balancer names as (loadbalancer1,loadbalancer2)
3. Select target groups for specified load balancer only

The screenshot shows the AWS EC2 Load balancers page. The left sidebar is identical to the previous screenshot. The main area displays a table titled 'Load balancers (2)'. The table has columns for Name, DNS name, State, VPC ID, and Availability Zones. Two entries are listed: 'loadbalancer1' and 'loadbalancer2'. Both entries have a DNS name starting with 'loadbalancer' followed by a long string of numbers and letters. Their state is 'Provisioning..', they belong to VPC IDs 'vpc-03a61cf2f72ab4f38', and are located in '2 Availability Zones'.

STEP 10:

- Go to target groups and edit load balancer for private and attach target existing for load Balancer.

STEP 11:

1. Create Auto scaling for both load balancers
2. Create asg and attach created launch template
3. Select instance launch option
4. Attach existing load balancers for both asg show in fig.
5. Create asg
6. Now you can see desired instance launched in instances
7. Edit it and name it

STEP 12:

1. Create rds
2. Create subnets groups where we can launch databases
3. Select private-1a, private-1b
4. Now come to database
5. Create database and select mysql engine type
6. Select 2 instance type of rds
7. Edit name in user and self managed password
8. Select public access as yes
9. Create rds

The screenshot shows the AWS EC2 Instances page. On the left, there's a navigation sidebar with options like Dashboard, EC2 Global View, Events, Instances (selected), Instance Types, Launch Templates, Spot Requests, Savings Plans, Reserved Instances, Dedicated Hosts, Capacity Reservations, and Images. The main area displays a table of instances with columns for Name, Instance ID, Instance state, Instance type, Status check, and Alarm status. There are four instances listed: app-1, web1, web2, and app2, all in the 'Running' state. A search bar at the top allows filtering by instance name or tag.

STEP 13:

1. After creating RDS come to ec2 console and select private-1a (or) private-1b instance
2. Connect it and copy ssh

```

$ TEJASRI@LAPTOP-3BML8014 MINGW64 ~/OneDrive/Desktop
$ ssh -i "project1.pem" ubuntu@ec2-52-204-212-232.compute-1.amazonaws.com
The authenticity of host 'ec2-52-204-212-232.compute-1.amazonaws.com (52.204.212.232)' can't be established.
ED25519 key fingerprint is SHA256:uyM9MF8xYzob0/K2rsIEP1H10ET1cE1U+iICU6Y8CyI.
This key is not known by any other names.
Are you sure you want to continue connecting (yes/no/[fingerprint])? yes
Warning: Permanently added 'ec2-52-204-212-232.compute-1.amazonaws.com' (ED25519) to the list of known hosts.
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 Tue Jul  8 09:55:13 UTC 2025
System load:  0.0          Processes:           104

```

- Connect Public EC2 instance and then connection Private Ec2 instance from public ec2 instance as below
- Connect to Public EC2 by SSH
- Copy key pair data --> create same key pair name in public ec2 as vi keypair.pem and copy data present in .pem file
- Change permissions by \$chmod 400 key-pair.pem

```

root@ip-20-0-1-91:~# ls
project1.pem  snap
root@ip-20-0-1-91:~# chmod 400 "project1.pem"
root@ip-20-0-1-91:~# ssh -i "project1.pem" ubuntu@20.0.3.234
The authenticity of host '20.0.3.234 (20.0.3.234)' can't be established.
ED25519 key fingerprint is SHA256:m4r/X1ZY5RCvo11CuNazfSDr19BchhBnxH1QTM
x9pww.
This key is not known by any other names.
Are you sure you want to continue connecting (yes/no/[fingerprint])? yes
Warning: Permanently added '20.0.3.234' (ED25519) to the list of known hosts.
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 Tue Jul  8 10:04:18 UTC 2025

System load:  0.0          Processes:           102
Usage of /:   25.3% of 6.71GB    Users logged in:      0

```

- Connect Private EC2 by SSH
- sudo -i
- apt update

```

ubuntu@ip-20-0-3-234:~$ sudo -i
root@ip-20-0-3-234:~# apt update
Get:1 http://us-east-1.ec2.archive.ubuntu.com/ubuntu noble InRelease
Get:2 http://us-east-1.ec2.archive.ubuntu.com/ubuntu noble-updates InRelease [126 kB]
Get:3 http://us-east-1.ec2.archive.ubuntu.com/ubuntu noble-backports InRelease [126 kB]
Get:4 http://security.ubuntu.com/ubuntu noble-security InRelease [126 kB]
Get:5 http://us-east-1.ec2.archive.ubuntu.com/ubuntu noble/universe amd64 Packages [15.0 MB]
Get:6 http://us-east-1.ec2.archive.ubuntu.com/ubuntu noble/universe Translation-en [5982 kB]
Get:7 http://security.ubuntu.com/ubuntu noble-security/main amd64 Packages [971 kB]
Get:8 http://us-east-1.ec2.archive.ubuntu.com/ubuntu noble/universe amd64 Components [3871 kB]
Get:9 http://us-east-1.ec2.archive.ubuntu.com/ubuntu noble/universe amd64 c-n-f Metadata [301 kB]
Get:10 http://us-east-1.ec2.archive.ubuntu.com/ubuntu noble/multiverse a

```

- apt install mysql-server

```

root@ip-20-0-3-234:~#
58 packages can be upgraded. Run 'apt list --upgradable' to see them.
root@ip-20-0-3-234:~# apt install mysql-server
Reading package lists... Done
Building dependency tree... Done
Reading state information... Done
The following additional packages will be installed:
libcgi-fast-perl libcgi-pm-perl libclone-perl libencode-locale-perl
libevent-pthreads-2.1-7t64 libfcgi-bin libfcgi-perl libfcgi0t64
libhtml-parser-perl libhtml-tagset-perl libhtml-template-perl
libhttp-date-perl libhttp-message-perl libio-html-perl
liblwp-mediatypes-perl libmecab2 libprotobuf-lite32t64
libtimedate-perl liburi-perl mecab-ipadic mecab-ipadic-utf8
mecab-utils mysql-client-8.0 mysql-client-core-8.0 mysql-common
mysql-server-8.0 mysql-server-core-8.0
Suggested packages:
libdata-dump-perl libipc-sharedcache-perl libio-compress-brotli-perl
libbusiness-isbn-perl libregexp-ipv6-perl libwww-perl mailx tinyca
The following NEW packages will be installed:
libcgi-fast-perl libcgi-pm-perl libclone-perl libencode-locale-perl
libevent-pthreads-2.1-7t64 libfcgi-bin libfcgi-perl libfcgi0t64
libhtml-parser-perl libhtml-tagset-perl libhtml-template-perl

```

- systemctl start mysql.service

```
root@ip-20-0-3-234:~#
No VM guests are running outdated hypervisor (qemu) binaries on this host.
root@ip-20-0-3-234:~# systemctl status mysql.service
● mysql.service - MySQL Community Server
    Loaded: loaded (/usr/lib/systemd/system/mysql.service; enabled; pr>
              Active: active (running) since Tue 2025-07-08 10:05:51 UTC; 1min 8s>
              Process: 2262 ExecStartPre=/usr/share/mysql/mysql-systemd-start pre>
              Main PID: 2271 (mysqld)
                Status: "Server is operational"
                  Tasks: 37 (limit: 1124)
                 Memory: 351.5M (peak: 378.0M)
                    CPU: 1.144s
                   CGrou: /system.slice/mysql.service
                           └─2271 /usr/sbin/mysqld

Jul 08 10:05:50 ip-20-0-3-234 systemd[1]: Starting mysql.service - MySQL>
Jul 08 10:05:51 ip-20-0-3-234 systemd[1]: Started mysql.service - MySQL>
set mark: ... skipping...
● mysql.service - MySQL Community Server
    Loaded: loaded (/usr/lib/systemd/system/mysql.service; enabled; pr>
              Active: active (running) since Tue 2025-07-08 10:05:51 UTC; 1min 8s>
```

- Connect mysql RDS database by command mysql -h <RDS DNS URL> -u admin -p

```
root@ip-20-0-3-234:~#
root@ip-20-0-3-234:~# mysql -h database-1.c27wqwkwonbg.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 29
Server version: 8.0.41 Source distribution

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owners.

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

mysql> show databases;
+-----+
| Database |
+-----+
```

- To see databases use **show databases;**
- Create databases **create database clg;**
- Which database want to use **use clg ;**

```
CREATE TABLE teachers (
  teacher_id INT PRIMARY KEY,
  first_name VARCHAR(50),
  last_name VARCHAR(50),
```

```

subject VARCHAR(100),
hire_date DATE,
email VARCHAR(100)
);
INSERT INTO teachers (teacher_id, first_name, last_name, subject, hire_date, email) VALUES
(1, 'Alice', 'Johnson', 'Mathematics', '2015-08-15', 'alice.johnson@example.com'),
(2, 'Bob', 'Smith', 'Physics', '2016-02-10', 'bob.smith@example.com'),
(3, 'Carol', 'Williams', 'English', '2017-07-22', 'carol.williams@example.com'),
(4, 'David', 'Brown', 'History', '2018-09-01', 'david.brown@example.com'),
(5, 'Eva', 'Taylor', 'Biology', '2020-01-13', 'eva.taylor@example.com');

```

```

root@ip-20-0-3-234: ~
mysql> use clg;
Database changed
mysql> CREATE TABLE teachers (
    ->     teacher_id INT PRIMARY KEY,
    ->     first_name VARCHAR(50),
    ->     last_name VARCHAR(50),
    ->     subject VARCHAR(100),
    ->     hire_date DATE,
    ->     email VARCHAR(100)
    -> );
Query OK, 0 rows affected (0.05 sec)

mysql> INSERT INTO teachers (teacher_id, first_name, last_name, subject,
    hire_date, email) VALUES
    -> (1, 'Alice', 'Johnson', 'Mathematics', '2015-08-15', 'alice.johnson@example.com'),
    -> (2, 'Bob', 'Smith', 'Physics', '2016-02-10', 'bob.smith@example.com'),
    -> (3, 'Carol', 'Williams', 'English', '2017-07-22', 'carol.williams@example.com'),
    -> (4, 'David', 'Brown', 'History', '2018-09-01', 'david.brown@example.com'),
    -> (5, 'Eva', 'Taylor', 'Biology', '2020-01-13', 'eva.taylor@example.com');

```

- Select * from teachers;

```

root@ip-20-0-3-234: ~
-> (5, 'Eva', 'Taylor', 'Biology', '2020-01-13', 'eva.taylor@example.com');
Query OK, 5 rows affected (0.00 sec)
Records: 5  Duplicates: 0  Warnings: 0

mysql> select * from teachers;
+-----+-----+-----+-----+-----+
| teacher_id | first_name | last_name | subject      | hire_date   | email
+-----+-----+-----+-----+-----+
|       1 | Alice     | Johnson   | Mathematics | 2015-08-15 | alice.johnson@example.com
|       2 | Bob       | Smith     | Physics     | 2016-02-10 | bob.smith@example.com
|       3 | Carol     | Williams  | English     | 2017-07-22 | carol.williams@example.com
|       4 | David     | Brown     | History    | 2018-09-01 | david.brown@example.com
|       5 | Eva       | Taylor    | Biology    | 2020-01-13 | eva.taylor@example.com

```

STEP 13:

1. Now select one instance in web
2. Select one instance (public-1a,public-1b)
3. Connect it and copy ssh
4. Paste ssh in git bash

Command for my sql launch in server

- a) Sudo -i
- b) apt install mysql-server
- c) systemctl status mysql.service
- d) mysql -h database-1.c27wqwkwnbg.us-east-1.rds.amazonaws.com -u admin -p
- e) enter password
- f) show databases;
- g) use clg;
- h) show tables;
- i) select * from teachers;

```
root@ip-20-0-2-194:~# Status: "Server is operational"
Tasks: 37 (limit: 1124)
Memory: 351.7M (peak: 378.0M)
CPU: 1.155s
cGroup: /system.slice/mysql.service
         └─1963 /usr/sbin/mysqld

Jul 08 10:15:53 ip-20-0-2-194 systemd[1]: Starting mysql.service - MySQL Community Server...
Jul 08 10:15:54 ip-20-0-2-194 systemd[1]: Started mysql.service - MySQL Community Server.
root@ip-20-0-2-194:~# mysql -h database-1.c27wqwkwnbg.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 33
Server version: 8.0.41 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> show databases;
+-----+
| Database |
+-----+
| clg      |
| information_schema |
| mysql    |
| performance_schema |
| sys      |
+-----+
5 rows in set (0.15 sec)

mysql> use clg;
Reading table information for completion of table and column names
You can turn off this feature to get a quicker startup with -A

Database changed
mysql> show tables;
+-----+
| Tables_in_clg |
+-----+
| teachers |
+-----+
1 row in set (0.00 sec)

mysql> select * from teachers;
+-----+
| teacher_id | first_name | last_name | subject | hire_date | email
+-----+
| 1          | Alice       | Johnson   | Mathematics | 2015-08-15 | alice.johnson@example.com
| 2          | Bob         | Smith     | Physics    | 2016-02-10 | bob.smith@example.com
| 3          | Carol       | Williams  | English    | 2017-07-22 | carol.williams@example.com
| 4          | David       | Brown     | History    | 2018-09-01 | david.brown@example.com
| 5          | Eva         | Taylor    | Biology    | 2020-01-13 | eva.taylor@example.com
+-----+
5 rows in set (0.01 sec)
```

```
root@ip-20-0-2-194:~# +-----+
| Tables_in_clg |
+-----+
| teachers |
+-----+
1 row in set (0.00 sec)

mysql> select * from teachers;
+-----+
| teacher_id | first_name | last_name | subject | hire_date | email
+-----+
| 1          | Alice       | Johnson   | Mathematics | 2015-08-15 | alice.johnson@example.com
| 2          | Bob         | Smith     | Physics    | 2016-02-10 | bob.smith@example.com
| 3          | Carol       | Williams  | English    | 2017-07-22 | carol.williams@example.com
| 4          | David       | Brown     | History    | 2018-09-01 | david.brown@example.com
| 5          | Eva         | Taylor    | Biology    | 2020-01-13 | eva.taylor@example.com
+-----+
5 rows in set (0.01 sec)
```

The screenshot shows a web browser window with the URL `us-east-1.console.aws.amazon.com/ec2-instance-connect/ssh/home?addressFamily=ipv4&connType=standard&instanceId=i-00b59f74538ba48b5&os...`. The browser tabs include AWS Management, securityGroups | VF, Connect to instance, EC2 Instance Conn, EC2 Instance Conn, database-1 - Database, and a plus sign tab. The search bar contains "aws". The top right corner shows "All Bookmarks", "United States (N. Virginia)", and "Sujitha Reddy".

The main content area displays a MySQL prompt:

```
owners.  
Type 'help;' or '\h' for help. Type '\c' to clear the current input statement.  
mysql> use clg;  
Reading table information for completion of table and column names  
You can turn off this feature to get a quicker startup with -A  
Database changed  
mysql> show databases;  
+-----+  
| Database |  
+-----+  
| clg     |  
| information_schema |  
| mysql   |  
| performance_schema |  
| sys     |  
+-----+
```

Below the prompt, the instance identifier is shown as **i-00b59f74538ba48b5 (web2)**, with Public IPs: 18.232.67.131 and Private IPs: 20.0.2.194.