

Capstone project-1 (Ankita Mardana)

The screenshot shows the AWS RDS 'Create database' interface. At the top, there are two tabs: 'Standard create' (selected) and 'Easy create'. Below this, the 'Engine options' section lists several database engines: Aurora (MySQL Compatible), Aurora (PostgreSQL Compatible), MySQL (selected), PostgreSQL, MariaDB, Oracle, Microsoft SQL Server, and IBM Db2. The MySQL engine is highlighted with a blue border. In the middle section, 'Templates' are shown: Production (selected), Dev/Test, and Free tier. The 'Production' template is described as providing high availability and fast, consistent performance. The 'Dev/Test' template is for development use outside a production environment. The 'Free tier' template allows users to develop new applications or test existing ones. The bottom section, 'Availability and durability', details deployment options. It shows three options: 'Multi-AZ DB cluster deployment (3 instances)', 'Multi-AZ DB instance deployment (2 instances)', and 'Single-AZ DB instance deployment (1 instance)'. Each option includes a diagram illustrating the setup. The 'Single-AZ DB instance deployment (1 instance)' is selected and highlighted with a blue border. The interface also includes standard browser navigation bars at the top and bottom.

Settings

DB instance identifier [Info](#)
Type a name for your DB instance. The name must be unique across all DB instances owned by your AWS account in the current AWS Region.
 The DB instance identifier is case-insensitive, but is stored as all lowercase (as in "mydbinstance"). Constraints: 1 to 63 alphanumeric characters or hyphens. First character must be a letter. Can't contain two consecutive hyphens. Can't end with a hyphen.

Credentials Settings

Master username [Info](#)
Type a login ID for the master user of your DB instance.
 1 to 16 alphanumeric characters. The first character must be a letter.

Credentials management
You can use AWS Secrets Manager or manage your master user credentials.

Managed in AWS Secrets Manager - most secure
RDS generates a password for you and manages it throughout its lifecycle using AWS Secrets Manager.

Self managed
Create your own password or have RDS create a password that you manage.

Master password [Info](#)
 Password strength 
formytask2025@gmail.com signin.aws.amazon.com
Minimum constraint: 16 characters, including uppercase letters, lowercase letters, numbers, and following symbols: / \ ^ @
 Auto generate password
Amazon RDS can generate a password for you, or you can specify your own password.

VPC security group (firewall) [Info](#)
Choose one or more VPC security groups to allow access to your database. Make sure that the security group rules allow the appropriate incoming traffic.

Choose existing
Choose existing VPC security groups

Create new
Create new VPC security group

Existing VPC security groups
 Choose one or more options
 database-sg-Ank

Availability Zone [Info](#)
No preference

RDS Proxy
RDS Proxy is a fully managed, highly available database proxy that improves application scalability, resiliency, and security.

Create an RDS Proxy [Info](#)
RDS automatically creates an IAM role and a Secrets Manager secret for the proxy. RDS Proxy has additional costs. For more information, see [Amazon RDS Proxy pricing](#).

Certificate authority - optional [Info](#)
Using a server certificate provides an extra layer of security by validating that the connection is being made to an Amazon database. It does so by checking the server certificate that is automatically installed on all databases that you provision.

rdc-ca-rsa2048-g1 (default)
Expiry: May 26, 2061
If you don't select a certificate authority, RDS chooses one for you.

Additional configuration

Screenshot of the AWS RDS Create Database wizard:

Database options

Initial database name: **intel**

DB parameter group: **default.mysql8.0**

Option group: **default.mysql-8.0**

Backup

Enable automated backups

Creates a point-in-time snapshot of your database.

⚠ Please note that automated backups are currently supported for InnoDB storage engine only. If you are using MyISAM, refer to details [here](#).

Backup retention period: **1 day**

Backup window: **Choose a window**

The number of days (1-35) for which automatic backups are kept.

Databases (1)

DB identifier	Status	Role	Engine	Region ...	Size
ankita-db	Creating	Instance	MySQL Co...	us-east-1b	db.t4g.micro

Create database

Screenshot of the AWS CloudShell interface showing the launch of an EC2 instance.

EC2 > Instances > Launch an instance

Name and tags

Name: dev-machine

Application and OS Images (Amazon Machine Image)

An AMI contains the operating system, application server, and applications for your instance. If you don't see a suitable AMI below, use the search field or choose **Browse more AMIs**.

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

Recent AMIs

- Amazon Linux
- macOS
- Ubuntu
- Windows
- Red Hat
- SUSE Linux
- Debian

Amazon Machine Image (AMI)

Ubuntu Server 24.04 LTS (HVM), SSD Volume Type

ami-0360c520857e310f (64-bit (x86)) / ami-02f0cd8446aa0bf (64-bit (x86))

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

Free tier eligible

Summary

Number of instances: 1

Software Image (AMI)

Microsoft Windows Server 2025 ...read more

ami-0feef5160a1079475

Virtual server type (instance type)

t3.micro

Firewall (security group)

New security group

Storage (volumes)

1 volume(s) - 30 GB

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

Launch instance

Preview code

Instance type

t2.micro

Family: t2 1 vCPU 1 GiB Memory Current generation: true

On-Demand Windows base pricing: 0.0162 USD per Hour

On-Demand Ubuntu Pro base pricing: 0.0134 USD per Hour

On-Demand SUSE base pricing: 0.0116 USD per Hour On-Demand RHEL base pricing: 0.026 USD per Hour

On-Demand Linux base pricing: 0.0116 USD per Hour

Key pair (login)

capstone_key.pem

Network settings

Network: vpc-02a5a50c89d0bcfb4

Subnet: No preference (Default subnet in any availability zone)

Summary

Number of instances: 1

Software Image (AMI)

Canonical, Ubuntu, 24.04, amd6...read more

ami-0360c520857e310f

Virtual server type (instance type)

t2.micro

Firewall (security group)

New security group

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

Launch instance

Preview code

Screenshot of the AWS EC2 Launch Instances page showing the configuration of a new instance.

Network settings:

- Network: vpx-02a5a50c89d0bcfb4
- Subnet: No preference (Default subnet in any availability zone)
- Auto-assign public IP: Enabled
- Firewall (security groups):
 - Create security group
 - Select existing security group (selected): Dev-webserver-sg sg-0716af5f3e0355b0b (VPC: vpc-02a5a50c89d0bcfb4)
 - database-sg-Ank sg-0d0f9f5eaedbc891 (VPC: vpc-02a5a50c89d0bcfb4)
- Common security groups: Hide all selected (selected)

Summary:

- Number of instances: 1
- Software Image (AMI): Canonical, Ubuntu, 24.04, amd64... (ami-0360c20857e513bf)
- Virtual server type (instance type): t2.micro
- Firewall (security group): 2 security groups
- 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.

Actions:

- Cancel
- Launch instance (selected)
- Preview code

Success: Successfully initiated launch of instance (i-00644f08bfda396eb)

Next Steps:

- Create billing and free tier usage alerts
- Connect to your instance
- Connect an RDS database
- Create EBS snapshot policy
- Manage detailed monitoring
- Create Load Balancer
- Create AWS budget
- Manage CloudWatch alarms

The screenshot displays two separate browser windows showing AWS management console interfaces.

Top Window (EC2 Instances):

- URL:** https://us-east-1.console.aws.amazon.com/ec2/home?region=us-east-1#instances
- Region:** United States (N. Virginia)
- Instances (1/6) Info:**

Name	Instance ID	Instance state	Instance type	Status check	Alarm status	Availability Zone	Public IPv4
For practice	i-05f9b7d28a963beb7	Stopped	t2.micro	-	View alarms	us-east-1b	-
ansible child	i-0ec09582b8157158d	Stopped	t2.micro	-	View alarms	us-east-1b	-
Jenkins	i-0b804275f4bc4ba4d	Stopped	t2.micro	-	View alarms	us-east-1b	-
dev-machine	i-00644f08bfda396eb	Running	t2.micro	Initializing	View alarms	us-east-1b	ec2-54-146-
ansible master	i-08c835a659c79209f	Stopped	t2.micro	-	View alarms	us-east-1b	-
Docker-practice	i-0ec473ce8cc178870	Stopped	t2.micro	-	View alarms	us-east-1b	-
- Details for i-00644f08bfda396eb (dev-machine):**
 - Public IPv4 address:** 54.146.244.1 | [open address](#)
 - Private IPv4 addresses:** 172.31.19.219
 - Public DNS:** ec2-54-146-244-1.compute-1.amazonaws.com | [open](#)

Bottom Window (Aurora and RDS Databases):

- URL:** https://us-east-1.console.aws.amazon.com/rds/home?region=us-east-1#databases
- Region:** United States (N. Virginia)
- Aurora and RDS Databases:**
 - Successfully created database ankitadb:** You can use settings from ankitadb to simplify configuration of suggested database add-ons while we finish creating your DB for you.
 - Databases (1):**

DB identifier	Status	Role	Engine	Region ...	Size
ankitadb	Available	Instance	MySQL Co...	us-east-1b	db.t4g.micro



```
System Load: 0.89 Processes: 113
Usage of /: 25.6% of 6.71GB Users logged in: 0
Memory usage: 21% IPv4 address for enx0: 172.31.19.219
Swap usage: 0%
Expanded Security Maintenance for Applications is not enabled.

0 updates can be applied immediately.

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

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.

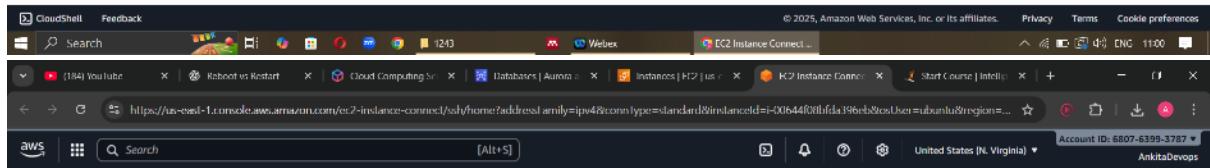
Ubuntu comes with ABSOLUTELY NO WARRANTY, to the extent permitted by
applicable law.

To run a command as administrator (user "root"), use "sudo <command>".
See "man sudo_root" for details.

ubuntu@ip-172-31-19-219:~$
```

i-00644f08bfda396eb (dev-machine)

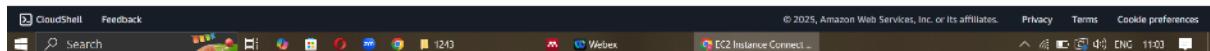
PublicIP: 54.146.244.1 PrivateIP: 172.31.19.219

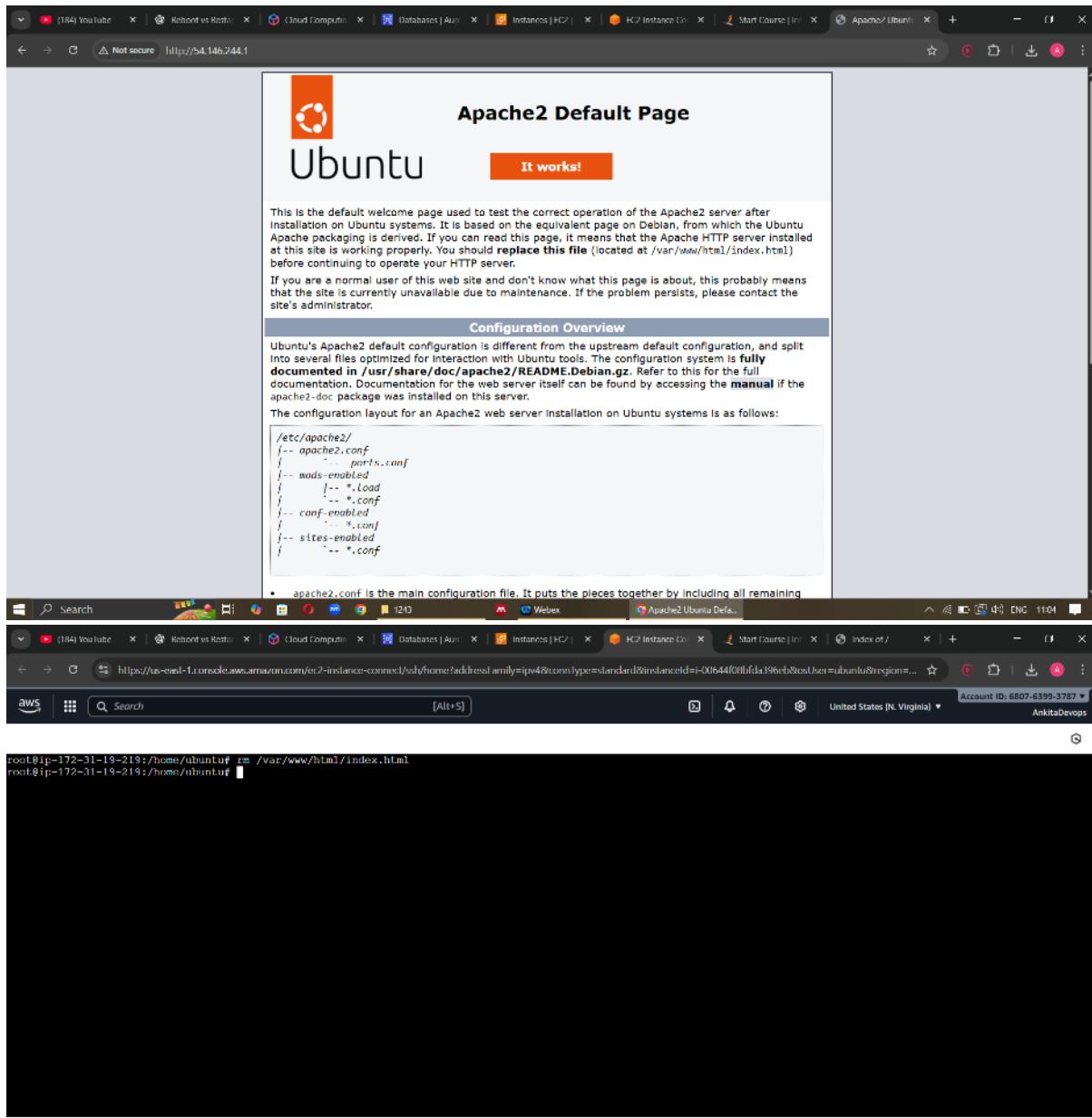


```
root@ip-172-31-19-219:/home/ubuntu# apt install apache2 -y
Reading package lists... Done
Building dependency tree... Done
Reading state information... Done
The following additional packages will be installed:
  apache2-bin apache2-data apache2-utils libaprutil1-dbd-sqlite3 libaprutil1-ldap libaprutil1t64 liblua5.4-0 ssl-cert
Suggested packages:
  apache2-doc apache2-suexec-pristine | apache2-suexec-custom www-browser
The following NEW packages will be installed:
  apache2 apache2-bin apache2-data apache2-utils libaprutil1-dbd-sqlite3 libaprutil1-ldap libaprutil1t64 liblua5.4-0 ssl-cert
0 upgraded, 10 newly installed, 0 to remove and 13 not upgraded.
Need to get 2066 kB of archives.
After this operation, 8090 kB of additional disk space will be used.
get:1 http://us-east-1.ec2.archive.ubuntu.com/ubuntu noble updates/main amd64 libaprutil1t64 amd64 1.7.2-3.lubuntu0.1 [108 kB]
get:2 http://us-east-1.ec2.archive.ubuntu.com/ubuntu/noble/main amd64 libaprutil1t64 amd64 1.6.3-1.lubuntu7 [91.9 kB]
get:3 http://us-east-1.ec2.archive.ubuntu.com/ubuntu/noble/main amd64 libaprutil1t64-ssl amd64 1.6.3-1.lubuntu7 [11.2 kB]
get:4 http://us-east-1.ec2.archive.ubuntu.com/ubuntu/noble/main amd64 libaprutil1-ldap amd64 1.6.3-1.lubuntu7 [9116 B]
get:5 http://us-east-1.ec2.archive.ubuntu.com/ubuntu/noble/main amd64 liblua5.4 0 amd64 5.4.6-3build2 [166 kB]
get:6 http://us-east-1.ec2.archive.ubuntu.com/ubuntu/noble-updates/main amd64 apache2-bin amd64 2.4.58-lubuntu8.8 [1331 kB]
get:7 http://us-east-1.ec2.archive.ubuntu.com/ubuntu/noble-updates/main amd64 apache2-data all 2.4.58-lubuntu8.8 [163 kB]
get:8 http://us-east-1.ec2.archive.ubuntu.com/ubuntu/noble-updates/main amd64 apache2-utils amd64 2.4.58-lubuntu8.8 [97.7 kB]
get:9 http://us-east-1.ec2.archive.ubuntu.com/ubuntu/noble-updates/main amd64 ssl-cert amd64 2.4.58-lubuntu8.8 [90.2 kB]
get:10 http://us-east-1.ec2.archive.ubuntu.com/ubuntu/noble/main amd64 ssl-cert all 1.1.2ubuntu1 [17.8 kB]
Watched 2086 kB in 0s (39.3 MB/s)
Preconfiguring packages ...
Selecting previously unselected package libaprilt64:amd64.
(Reading database ... 1/118 files and directories currently installed.)
Preparing to unpack .../0-libaprilt64_1.7.2-3.lubuntu0.1_amd64.deb ...
Unpacking libaprilt64:amd64 (1.7.2-3.lubuntu0.1) ...
```

i-00644f08bfda396eb (dev-machine)

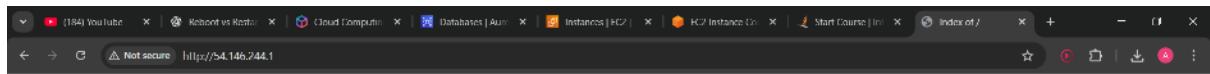
PublicIP: 54.146.244.1 PrivateIP: 172.31.19.219





i-00644f08bfda396eb (dev-machine)

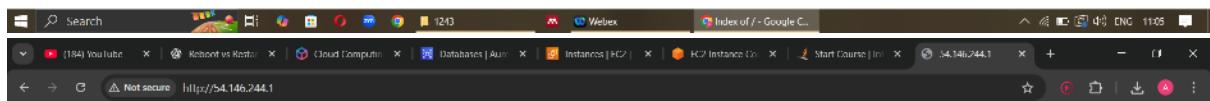
PublicIPs: 54.146.244.1 PrivateIPs: 172.31.19.219



Index of /

Name Last modified Size Description

Apache/2.4.58 (Ubuntu) Server at 54.146.244.1 Port 80



Name:

Email:

```
connect_error) { die("Connection failed: " . $conn->connect_error); } if(isset($_POST['firstname']) && isset($_POST['email'])){ $sql = "INSERT INTO data (firstname,email) VALUES ('".$_firstname."','".$$_email."'); if ($conn->query($sql) === TRUE) { echo "New record created successfully"; } else { echo "Error: " . $sql . " " . $conn->error; } $conn->close(); } ?>
```





```
PPA publishes dbgsym, you may need to include 'main/debug' component
Repository: 'Types: deb
URLs: https://ppa.launchpadcontent.net/ondrej/php/ubuntu/
Suites: noble
Components: main

Description:
Available PHP versions: PHP 5.6, PHP 7.x, PHP 8.x and most requested extensions are included. Packages are provided for *Current* Ubuntu *LTS* releases (https://wiki.ubuntu.com/releases). Expanded Security Maintenance releases ARE NOT supported.

debian stable, oldstable and Debian LTS packages are provided from a separate repository: https://deb.sury.org/debian dpa

You can get more information about the packages at https://deb.sury.org

BUGS&FEATURES: This PPA has a issue tracker:
https://deb.sury.org/bug-reporting

Issues reported in a private email don't scale and most likely will be ignored. I simply don't have capacity to answer questions privately.

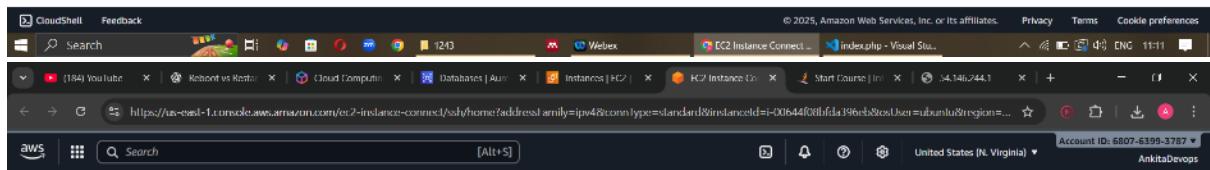
CAVEATS:
1. If you are using apache2, you are advised to add ppa:ondrej/apache2
2. If you are using nginx, you are advised to add ppa:ondrej/nginx

DONATION: If you like my work and you want to show appreciation, please consider donating regularly: https://donate.sury.org/

COMMERCIAL SUPPORT: Support for PHP packages for older Debian and Ubuntu release can be bought from https://www.freexian.com/lts/php/
```

i-00644f08bfda396eb (dev-machine)

PublicIPs: 54.146.244.1 PrivateIPs: 172.31.19.219

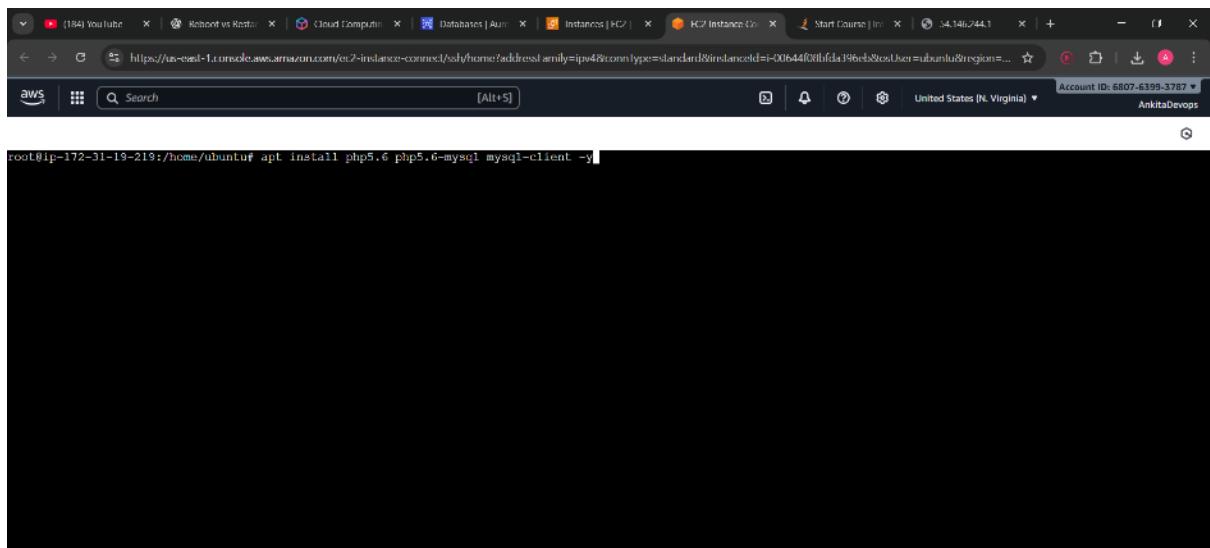


```
curl:4 <http://security.ubuntu.com/ubuntu/nobles-security 1/nRelease>
get:5 <https://ppa.launchpadcontent.net/ondrej/php/ubuntu/nobles-release [24.3 kB]
get:6 <https://ppa.launchpadcontent.net/ondrej/php/ubuntu/nobles/main\_amd64\_Packages [130 kB]
get:7 <https://ppa.launchpadcontent.net/ondrej/php/ubuntu/nobles/main\_Translation-en [40.8 kB]
Fetched 196 kB in 1s (179 kB/s)
Reading package lists... Done
root@ip-172-31-19-219:~# apt install php5.6 -y
Reading package lists... Done
Building dependency tree... Done
Reading state information... Done
The following additional packages will be installed:
  libapache2-mod-php5.6 libpcre3 php-common php5.6-cli php5.6-common php5.6-json php5.6-opcache php5.6-readline
Suggested packages:
  php pear
The following NEW packages will be installed:
  libapache2-mod-php5.6 libpcre3 php-common php5.6-cli php5.6-common php5.6-json php5.6-opcache php5.6-readline
0 upgraded, 9 newly installed, 0 to remove and 13 not upgraded.
Need to get 3883 kB of archives.
After this operation, 14.2 MB of additional disk space will be used.
Get:1 <http://us-west-1.ec2.archive.ubuntu.com/ubuntu/nobles-universe\_amd64/libpcre3\_amd64\_2:0.39-15build1 [248 kB]
Get:2 <https://ppa.launchpadcontent.net/ondrej/php/ubuntu/nobles/main\_amd64\_php-common\_11.2.96+ubuntu24.04.1+deb.sury.org+1 [13.3 kB]
Get:3 <https://ppa.launchpadcontent.net/ondrej/php/ubuntu/nobles/main\_amd64\_php5.6-common\_amd64\_5.6.40-86+ubuntu24.04.1+deb.sury.org+1 [677 kB]
Get:4 <https://ppa.launchpadcontent.net/ondrej/php/ubuntu/nobles/main\_amd64\_php5.6-json\_amd64\_5.6.40-86+ubuntu24.04.1+deb.sury.org+1 [19.0 kB]
Get:5 <https://ppa.launchpadcontent.net/ondrej/php/ubuntu/nobles/main\_amd64\_php5.6-opcache\_amd64\_5.6.40-86+ubuntu24.04.1+deb.sury.org+1 [66.7 kB]
Get:6 <https://ppa.launchpadcontent.net/ondrej/php/ubuntu/nobles/main\_amd64\_php5.6-readline\_amd64\_5.6.40-86+ubuntu24.04.1+deb.sury.org+1 [13.6 kB]
Get:7 <https://ppa.launchpadcontent.net/ondrej/php/ubuntu/nobles/main\_amd64\_php5.6-cgi\_amd64\_5.6.40-86+ubuntu24.04.1+deb.sury.org+1 [1348 kB]
Get:8 <https://ppa.launchpadcontent.net/ondrej/php/ubuntu/nobles/main\_amd64\_libapache2\_mod\_php5.6\_amd64\_5.6.40-86+ubuntu24.04.1+deb.sury.org+1 [192 kB]
Get:9 <https://ppa.launchpadcontent.net/ondrej/php/ubuntu/nobles/main\_amd64\_php5.6\_all\_5.6.40-86+ubuntu24.04.1+deb.sury.org+1 [192 kB]
Fetched 3803 kB in 2s (2450 kB/s)
```

i-00644f08bfda396eb (dev-machine)

PublicIPs: 54.146.244.1 PrivateIPs: 172.31.19.219

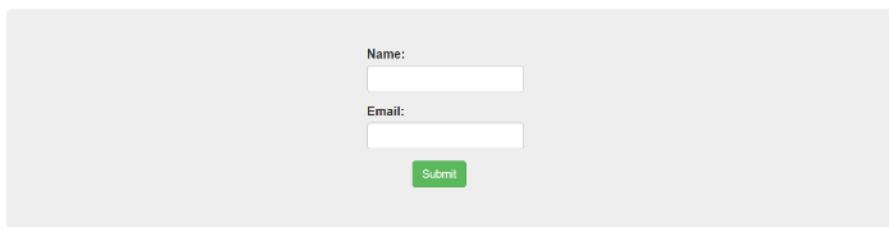
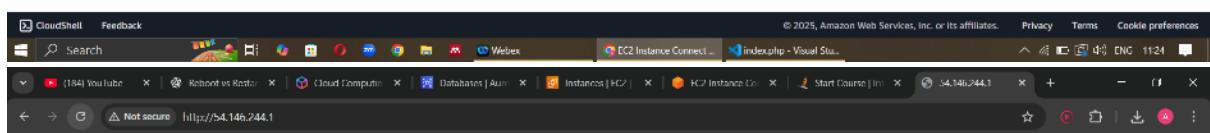




```
root@ip-172-31-19-219:/home/ubuntu# apt install php5.6 php5.6-mysql mysql-client -y
```

i-00644f08bfda396eb (dev-machine)

PublicIPs: 54.146.244.1 PrivateIPs: 172.31.19.219



Name:

Email:

Connection failed: php_network_getaddresses: getaddrinfo failed: Name or service not known



GNU nano 7.2

```
<div class="form-group">
    <label for="email">Email:</label>
    <input type="text" class="form-control" name="email">
</div>
</form></td>
<td colspan="4"></td>
</tr>
</table>
</div>
</div>
<?php
//firstname=&POST('firstname');
//email=&POST('email');
$servername = "anikita-db.cijgg44uk64.us-east-1.rds.amazonaws.com";
$username = "intel";
$password = "intel123";
$db = "intel";
// Create connection
$conn = new mysqli($servername, $username, $password, $db);

// Check connection
if ($conn->connect_error) {
    die("Connection failed: " . $conn->connect_error);
}

Help      Write Out  Where Is  Cut   Execute   Location  Undo  Set Mark  To Bracket  Previous
Exit     Read File  Replace  Paste  Justify  Go To Line  Redo  Copy  Where Was  Next

```

i-00644f08bfda396eb (dev-machine)

PublicIP: 54.146.244.1 PrivateIP: 172.31.19.219

CloudShell Feedback

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

Not secure http://54.146.244.1

Name:

Email:



```
root@ip-172-31-19-219:/home/ubuntu# mysql -h ankita-db.cijgg4uk64a.us-east-1.rds.amazonaws.com -u intel -pintel123
```

i-00644f08bfda396eb (dev-machine)

PublicIPs: 54.146.244.1 PrivateIPs: 172.31.19.219

```
root@ip-172-31-19-219:/home/ubuntu# mysql -h ankita-db.cijgg4uk64a.us-east-1.rds.amazonaws.com -u intel -pintel123
mysql: [Warning] Using a password on the command line interface can be insecure.
Welcome to the MySQL monitor.  Commands end with ; or \g.
Your MySQL connection id is 42
Server version: 8.0.42 Source distribution

Copyright (c) 2000, 2025, Oracle and/or its affiliates.

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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> 
```

i-00644f08bfda396eb (dev-machine)

PublicIPs: 54.146.244.1 PrivateIPs: 172.31.19.219

```
root@ip-172-31-19-219:/home/ubuntu# mysql -h ankita-db.cijgg4uk64a.us-east-1.rds.amazonaws.com -u intel -pintel123
```

```
root@ip-172-31-19-213:~# mysql -h ankitadb.cjgg44uk64.us-east-1.rds.amazonaws.com -u intel -pintel123
mysql: [Warning] Using a password on the command line interface can be insecure.
Welcome to the MySQL monitor.  Commands end with ; or \g.
Your MySQL connection id is 42
Server version: 8.0.42 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 |
+-----+
| information_schema |
| intel |
| mysql |
| performance_schema |
| sys |
+-----+
5 rows in set (0.01 sec)

mysql> 
```

i-00644f08bfda396eb (dev-machine)

PublicIP: 54.146.244.1 PrivateIP: 172.31.19.219

```
CloudShell Feedback https://us-east-1.console.aws.amazon.com/ec2-instance-connect/slv/home?addressFamily=ipv4&connType=standard&instanceId=i-00644f08bfda396eb&osUser=ubuntu&region=us-east-1 EC2 Instance Connect index.php - Visual Studio Code Account ID: 6807-6399-3787 United States (N. Virginia) Ankitadevops

root@ip-172-31-19-213:~# mysql -h ankitadb.cjgg44uk64.us-east-1.rds.amazonaws.com -u intel -pintel123
mysql: [Warning] Using a password on the command line interface can be insecure.
Welcome to the MySQL monitor.  Commands end with ; or \g.
Your MySQL connection id is 42
Server version: 8.0.42 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.

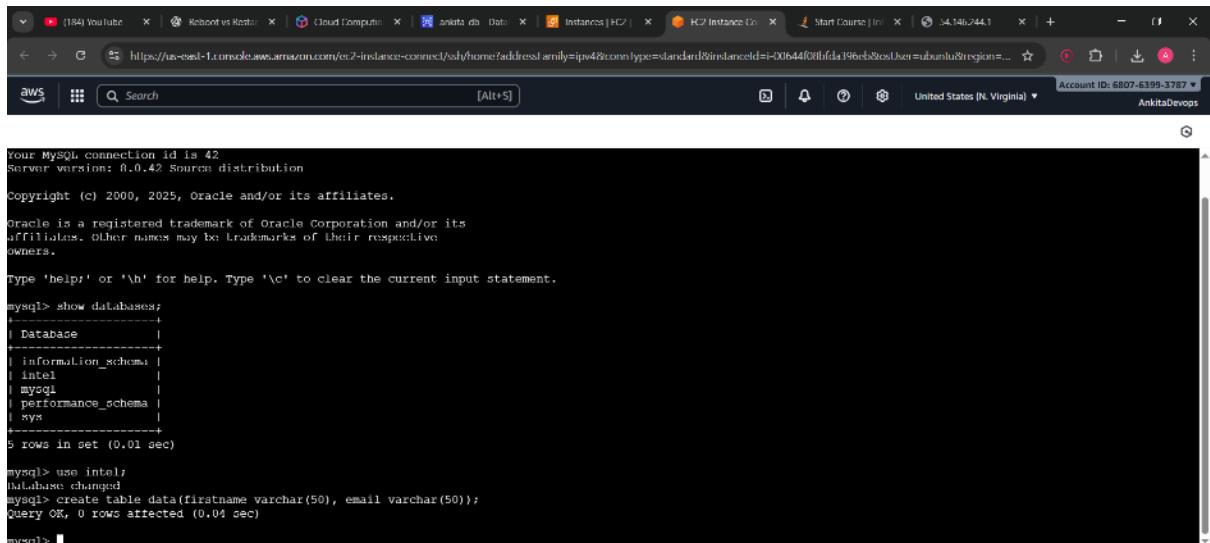
mysql> show databases;
+-----+
| Database |
+-----+
| information_schema |
| intel |
| mysql |
| performance_schema |
| sys |
+-----+
5 rows in set (0.01 sec)

mysql> use intel;
Database changed
mysql> 
```

i-00644f08bfda396eb (dev-machine)

PublicIP: 54.146.244.1 PrivateIP: 172.31.19.219

```
CloudShell Feedback https://us-east-1.console.aws.amazon.com/ec2-instance-connect/slv/home?addressFamily=ipv4&connType=standard&instanceId=i-00644f08bfda396eb&osUser=ubuntu&region=us-east-1 EC2 Instance Connect index.php - Visual Studio Code Account ID: 6807-6399-3787 United States (N. Virginia) Ankitadevops 
```

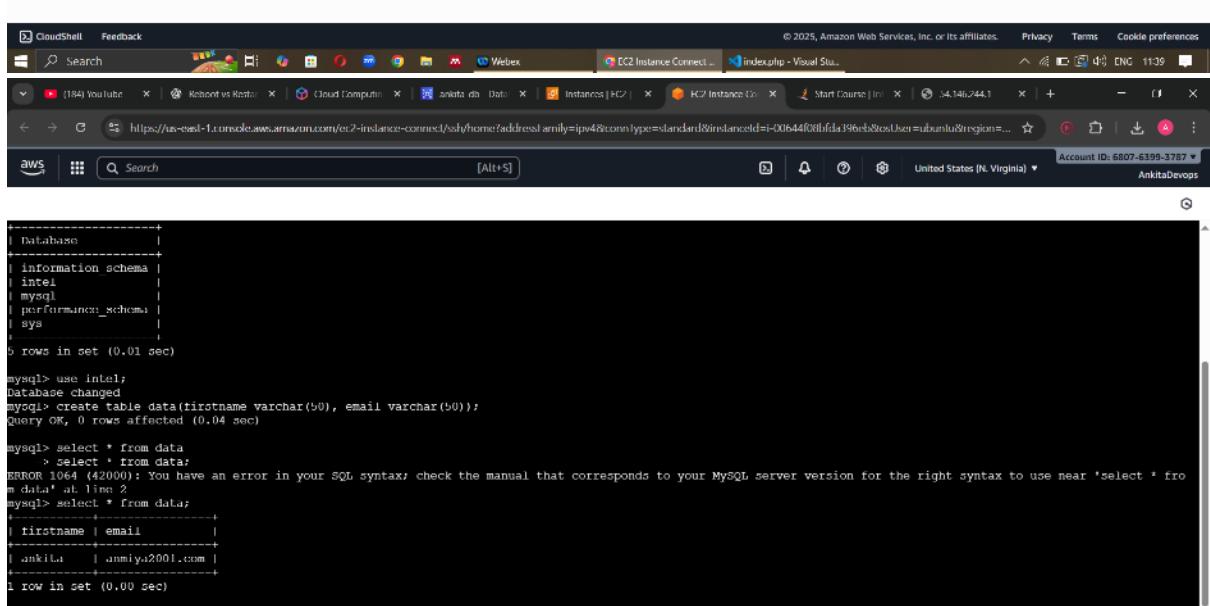


Your MySQL connection id is 42
Server version: 8.0.22 Source distribution
Copyright (c) 2000, 2025, Oracle and/or its affiliates.
Oracle is a registered trademark of Oracle Corporation and/or its
affiliates. Other names may be trademarks of their respective
owners.
Type 'help;' or '\h' for help. Type '\c' to clear the current input statement.
mysql> show databases;
+ Database +
| information_schema |
| intel |
| mysql |
| performance_schema |
| sys |
+-----+
5 rows in set (0.01 sec)

mysql> use intel;
Database changed
mysql> create table data(firstname varchar(50), email varchar(50));
Query OK, 0 rows affected (0.04 sec)

mysql> |

i-00644f08bfda396eb (dev-machine)
PublicIP: 54.146.244.1 PrivateIP: 172.31.19.219



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https://us-east-1.console.aws.amazon.com/ec2-instance-connect/sql/home?addressFamily=ipv4&connType=standard&instanceId=i-00644f08bfda396eb&osUser=ubuntu®ion=... Account ID: 6807-6399-3787 United States (N. Virginia) AnkitaDevops
aws Search [Alt+S]

| Database +
| information_schema |
| intel |
| mysql |
| performance_schema |
| sys |
+-----+
5 rows in set (0.01 sec)

mysql> use intel;
Database changed
mysql> create table data(firstname varchar(50), email varchar(50));
Query OK, 0 rows affected (0.04 sec)

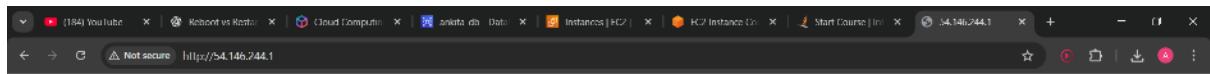
mysql> select * from data;
 > select * from data;
ERROR 1064 (42000): You have an error in your SQL syntax; check the manual that corresponds to your MySQL server version for the right syntax to use near 'select * fro
m data' at line 2
mysql> select * from data;
+firstname | email +
| Ankita | ankiyav2001.com |
+-----+
1 row in set (0.00 sec)

mysql> |

i-00644f08bfda396eb (dev-machine)
PublicIP: 54.146.244.1 PrivateIP: 172.31.19.219



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https://us-east-1.console.aws.amazon.com/ec2-instance-connect/sql/home?addressFamily=ipv4&connType=standard&instanceId=i-00644f08bfda396eb&osUser=ubuntu®ion=... Account ID: 6807-6399-3787 United States (N. Virginia) AnkitaDevops
aws Search [Alt+S]



New record created successfully

A screenshot of an AWS CloudShell terminal window. It shows a MySQL session with the following commands and output:

```
5 rows in set (0.01 sec)

mysql> use intel;
Database changed
mysql> create table data(firstname varchar(50), email varchar(50));
Query OK, 0 rows affected (0.04 sec)

mysql> select * from data
-> select * from data;
ERROR 1064 (42000): You have an error in your SQL syntax; check the manual that corresponds to your MySQL server version for the right syntax to use near 'select * fro
m data' at line 2
mysql> select * from data;
+----+----+
| firstname | email      |
+----+----+
| ankiti   | ammiya2001.com |
| Trina    | trina.2000.com |
+----+----+
1 row in set (0.00 sec)

mysql> select * from data;
+----+----+
| firstname | email      |
+----+----+
| anikita  | ammiya2001.com |
| Trina    | trina.2000.com |
+----+----+
2 rows in set (0.01 sec)

mysql>
```

i-00644f08bfda396eb (dev-machine)
PublicIPs: 54.146.244.1 PrivateIPs: 172.31.19.219

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Screenshot of the AWS Cloud9 IDE interface showing the creation of an Amazon Machine Image (AMI) from an EC2 instance.

The top navigation bar shows the URL: <https://us-east-1.console.aws.amazon.com/ec2/home?region=us-east-1#instances>.

The left sidebar menu is expanded to show:

- EC2** (selected)
- Dashboard
- EC2 Global View
- Events
- Instances** (selected)
 - Instances
 - Instance Types
 - Launch Templates
 - Spot Requests
 - Savings Plans
 - Reserved Instances
 - Dedicated Hosts
 - Capacity Reservations
- Images
- AMIs
- AMI Catalog
- Elastic Block Store
 - Volumes
 - Snapshots
 - Lifecycle Manager

The main content area displays the "Instances (1/6) Info" table. A context menu is open over the selected instance "dev-machine". The menu items are:

- Create image
- Create template from instance
- Launch more like this
- Instance diagnostics
- Instance settings
- Networking
- Security
- Image and templates
- Monitor and troubleshoot

The "Create image" option is highlighted.

The "Create image" dialog box is shown in three stages:

- Step 1: Instance volumes**

Storage type	Device	Snapshot	Size	Volume type	IOPS	Throughput	Delete on termination	Encrypted
EBS	/dev/sda1		8	EBS General Purpose SS...	3000		<input checked="" type="checkbox"/> Enable	<input type="checkbox"/> Enable

Add volume

Info: During the image creation process, Amazon EC2 creates a snapshot of each of the above volumes.

Tags - optional

A tag is a label that you assign to an AWS resource. Each tag consists of a key and an optional value. You can use tags to search and filter your resources or track your AWS costs.

Tag image and snapshots together (selected) Tag the image and the snapshots with the same tag.

Tag image and snapshots separately Tag the image and the snapshots with different tags.

No tags associated with the resource.

Add new tag

You can add up to 50 more tags.
- Step 2: Create image**
- Step 3: Confirmation**

Screenshot of the AWS EC2 Instances page showing a list of running instances. A message at the top indicates that an AMI is currently being created from instance i-00644f08bfda396eb.

Name	Instance ID	Instance state	Instance type	Status check	Alarm status	Availability Zone	Public IPv4
For practice	i-05f987d28a963beb7	Stopped	t2.micro	-	View alarms	us-east-1b	-
ansible child	i-0ec09582b8157158d	Stopped	t2.micro	-	View alarms	us-east-1b	-
Jenkins	i-0b804275fb4c4ba4d	Stopped	t2.micro	-	View alarms	us-east-1b	-
dev-machine	i-00644f08bfda396eb	Running	t2.micro	Passes	View alarm	us-east-1b	54.146.244.1

Screenshot of the AWS AMIs page showing a list of owned AMIs. One AMI named "my-project-image" is listed.

Name	AMI ID	Source	Owner	Visibility
my-project-image	ami-0a71d0bd856cb5a71	680763993787/my-project-image	680763993787	Private

The screenshot shows the AWS Cloud9 interface with multiple tabs open, including YouTube, RoboRov vs Rovita, Cloud Computing, anita db, Create launch template, EC2 Instance, Start Course, and a terminal window showing a Java application.

The main focus is the "Create launch template" wizard for an Amazon Machine Image (AMI). The first step, "Application and OS Images (Amazon Machine Image)", is shown. It lists a single AMI entry: "my-project-image" (ami-0a71d0bd856cb5a71), which was created on 2025-08-29T06:16:35.000Z, uses hvm virtualization, has ENA enabled, and has an ebs root device type. A note indicates that the instance uses uefi-preferred boot mode.

The second step, "Instance type", is also visible. It shows the "t2.micro" instance type selected. A tooltip for the "Free tier" explains that it includes 750 hours per month of t2.micro instance usage or t3.micro usage (if t2.micro is not available) for the first year of opening an AWS account.

The third step, "Storage (volumes)", is partially visible at the bottom. It shows an EBS volume configuration with two volumes: "prod-webserver-sg" (sg-0ff19b78070b46d40) and "database-sg-Ark" (sg-0dd0f9f5eaedbc891).

https://us-east-1.console.aws.amazon.com/ec2/home?region=us-east-1#CreateTemplate:

Success
Successfully created project-tem(lt-028167d7fa35816c9).

Actions log

Next Steps

Launch an instance
With On-Demand Instances, you pay for compute capacity by the second (for Linux, with a minimum of 60 seconds) or by the hour (for all other operating systems) with no long-term commitments or upfront payments. Launch an On-Demand Instance from your launch template.

Launch instance from this template

Create an Auto Scaling group from your template
Amazon EC2 Auto Scaling helps you maintain application availability and allows you to scale your Amazon EC2 capacity up or down automatically according to conditions you define. You can use Auto Scaling to help ensure that you are running your desired number of Amazon EC2 instances during demand spikes to maintain performance and decrease capacity during lulls to reduce costs.

Create Auto Scaling group

Create Spot Fleet
A Spot Instance is an unused EC2 instance that is available for less than the On-Demand price. Because Spot Instances enable you to request unused EC2 instances at steep discounts, you can lower your Amazon EC2 costs significantly. The hourly price for a Spot Instance (of each instance type in each Availability Zone) is set by Amazon EC2, and adjusted gradually based on the long-term supply of and demand for Spot Instances. Spot instances are well-suited for data-analysis, batch jobs, background processing, and optional tasks.

Create Spot Fleet

https://us-east-1.console.aws.amazon.com/ec2/home?region=us-east-1#LaunchTemplates:

CloudShell Feedback

CloudShell Feedback

Launch Templates (1) Info

Launch Template ID	Launch Template Name	Default Version	Latest Version	Create Time	Created By
lt-028167d7fa35816c9	project-tem	1	1	2025-08-29T07:06:22.000Z	arn:aws:iam::680763

Select a launch template

Screenshot of the AWS Cloud Console showing the EC2 Target groups page. The URL is https://us-east-1.console.aws.amazon.com/ec2/home?region=us-east-1#targetGroups:

The left sidebar shows navigation links for EC2, AMIs, AMI Catalog, Elastic Block Store, Network & Security, Load Balancing, Auto Scaling, and Settings.

The main content area displays the "Target groups" table with the following columns: Name, ARN, Port, Protocol, Target type, Load balancer, and VPC ID. A search bar at the top of the table allows filtering by Name or ARN. A button labeled "Create target group" is located in the top right corner of the table header.

A message at the bottom of the table states: "No target groups You don't have any target groups in us-east-1".

Below the table, a message says "0 target groups selected" and "Select a target group above.".

The second screenshot shows the "Create target group" wizard, Step 1: Create target group. It has the following fields:

- Protocol:** Application Load Balancer (selected)
- Target group name:** project-get
- Port:** 80
- IP address type:** IPv4 (selected)
- VPC:** vpc-02a5a50c89d0bcfb4 (selected)

The URL for this screen is https://us-east-1.console.aws.amazon.com/ec2/home?region=us-east-1>CreateTargetGroup.

Screenshot of the AWS Cloud Console showing the creation of a new Target Group named "project-get".

Details:

Target type	Protocol : Port	Protocol version
Instance	HTTP: 80	HTTP1
IP address type	Load balancer	VPC
IPv4	None associated	vpc-02a5a50c89d0acfb4

Targets:

Total targets	Healthy	Unhealthy	Unused	Initial	Draining
0	0	0	0	0	0
0 Anomalous					

Registered targets (0)

Anomaly mitigation: Not applicable

Load balancers

No load balancers

You don't have any load balancers in us-east-1.

Create load balancer

Screenshot of the AWS Cloud Console showing the process of creating an Application Load Balancer (ALB). The URL is https://us-east-1.console.aws.amazon.com/ec2/home?region=us-east-1#CreateALBWizard.

Basic configuration

Load balancer name: project-lb

Scheme: Internet-facing (selected)

Load balancer IP address type: IPv4 (selected)

Security groups: subnet-0ce3fae9109718340

Listeners and routing:

- Listener HTTP:80:** Protocol: HTTP, Port: 80, Default action: Forward to Select a target group (Create target group)

Screenshot of the AWS Cloud Console showing the creation of an Application Load Balancer named "project-lb".

Listeners and routing

A listener is a process that checks for connection requests using the port and protocol you configure. The rules that you define for a listener determine how the load balancer routes requests to its registered targets.

Listener HTTP:80

Protocol	Port	Default action
HTTP	80	Forward to project-get Target type: Instance, IPv4

Listener tags - optional
Consider adding tags to your listener. Tags enable you to categorize your AWS resources so you can more easily manage them.

Add listener tag
You can add up to 50 more tags.

Add listener
You can add up to 49 more listeners.

Success message: Successfully created load balancer: project-lb
It might take a few minutes for your load balancer to fully set up and route traffic. Targets will also take a few minutes to complete the registration process and pass initial health checks.

project-lb

Details

Load balancer type	Status	VPC	Load balancer IP address type
Application	Provisioning	vpc-02a5a50c89d0bcfb4	IPv4
Scheme	Hosted zone	Availability Zones	Date created
Internet-facing	Z355XDOTRQ7X7K	subnet-0e214099ffdf5564 us-east-1c (use1-az6) subnet-0d863f45049c88be us-east-1e (use1-az3) subnet-09624aad839d3152 us-east-1b (use1-az4) subnet-0dd25f1b894f77994 us-east-1d (use1-az1) subnet-0e3fae9109718340 us-east-1f (use1-az5) subnet-0ed4ca778dse3e4fs us-east-1a (use1-az2)	August 29, 2025, 12:40 (UTC+05:30)
		DNS name info	

Load balancer ARN

The screenshot shows two consecutive screenshots of the AWS EC2 Auto Scaling Groups interface.

Screenshot 1: Home Page

The top navigation bar shows the URL <https://us-east-1.console.aws.amazon.com/ec2/home?region=us-east-1#AutoScalingGroups>. The sidebar on the left includes sections for 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, Trust Stores), and Auto Scaling (Auto Scaling Groups). A central banner for "Amazon EC2 Auto Scaling" states: "helps maintain the availability of your applications". Below it, a note says: "Auto Scaling groups are collections of Amazon EC2 instances that enable automatic scaling and fleet management features. These features help you maintain the health and availability of your applications." A call-to-action button says "Create Auto Scaling group".

Screenshot 2: Create Auto Scaling Group Wizard

The URL is <https://us-east-1.console.aws.amazon.com/ec2/home?region=us-east-1#CreateAutoScalingGroup>. The sidebar shows the "Auto Scaling Groups" section is selected. The main content area displays the "How it works" diagram, which shows an "Auto Scaling group" containing four instances (one solid, three dashed). To the right, there are sections for "Pricing" (no additional fees beyond service fees) and "Getting started" (link to "What is Amazon EC2 Auto Scaling?"). On the left, a vertical sidebar lists optional steps: 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), and Step 7 - Review. The "Name" step is currently active, showing the input field "project-ac".

Screenshot of the AWS CloudFront console showing the creation of a new distribution.

Step 1: Set up the distribution

Choose the VPC that defines the virtual network for your Auto Scaling group.

VPC: vpc-02e5a50c89d0bcfb4
172.31.0.0/16 - Default

Create a VPC [\[Create\]](#)

Availability Zones and subnets

Define which Availability Zones and subnets your Auto Scaling group can use in the chosen VPC.

Select Availability Zones and subnets [\[Select\]](#)

use1-az1 (us-east-1a) | subnet-0dd25f1b6894f7994
172.31.0.0/20 - Default

use1-az2 (us-east-1a) | subnet-0ed4ca778d5e5e4f5
172.31.80.0/20 - Default

use1-az3 (us-east-1a) | subnet-0d863f4504e9c88be
172.31.48.0/20 - Default

use1-az4 (us-east-1b) | subnet-09624aad839d3152
172.31.16.0/20 - Default

Create a subnet [\[Create\]](#)

Availability Zone distribution - new

Auto Scaling automatically balances instances across Availability Zones. If launch failures occur in a zone, select a strategy.

Balanced best effort
If launches fail in one Availability Zone, Auto Scaling will attempt to launch in another healthy Availability Zone.

Balanced only
If launches fail in one Availability Zone, Auto Scaling will continue to attempt to launch in the unhealthy Availability Zone to preserve balanced distribution.

Step 2: Configure load balancing

Load balancing [\[Info\]](#)

Use the options below to attach your Auto Scaling group to an existing load balancer, or to a new load balancer that you define.

No load balancer
Traffic to your Auto Scaling group will not be fronted by a load balancer.

Attach to an existing load balancer
Choose from your existing load balancers.

Attach to a new load balancer
Quickly create a basic load balancer to attach to your Auto Scaling group.

Attach to an existing load balancer

Select the load balancers that you want to attach to your Auto Scaling group.

Choose from your load balancer target groups
This option allows you to attach Application, Network, or Gateway Load Balancers.

Choose from Classic Load Balancers

Existing load balancer target groups

Only instance target groups that belong to the same VPC as your Auto Scaling group are available for selection.

Select target groups [\[Select\]](#)

project-get | HTTP [\[X\]](#)
Application Load Balancer: project-lb

VPC Lattice integration options [\[Info\]](#)

To improve networking capabilities and scalability, integrate your Auto Scaling group with VPC Lattice. VPC Lattice facilitates communications between AWS services, and helps you connect and manage your applications across compute services in AWS.

Screenshot of the AWS CloudFront console showing the creation of a new distribution. The distribution is named "CloudFront vs Lambda" and is being created in the "us-east-1" region. The "Origin" tab is selected, and the "Origin Path" dropdown is set to "/". The "Default Cache Behavior" section shows "Cache Based on" "None" and "Forward All Headers". The "Compress" checkbox is checked. The "TLS Settings" section shows "Protocol Version" as "TLS 1.3" and "TLS Minimum Version" as "TLS 1.3". The "Custom Headers" section is empty. The "Advanced Settings" section includes "Lambda@Edge" and "Lambda Function" settings. The "Tags" section has one tag: "Name: CloudFront vs Lambda". The "Review Changes" button is visible at the bottom.

Screenshot of the AWS EC2 console showing the creation of a new Auto Scaling group. The "Step 4 - optional" step, "Configure group size and scaling", is selected. The "Group size" section shows a "Desired capacity type" of "Units (number of instances)" with a value of "2". The "Scaling" section shows "Min desired capacity" as "1" and "Max desired capacity" as "10". The "Automatic scaling - optional" section shows "No scaling policies" selected. The "Tags" section shows one tag: "Name: CloudFront vs Lambda". The "Next Step" button is visible at the bottom.

Screenshot of the AWS EC2 console showing the creation of a new Auto Scaling group. The "Step 6 - optional" step, "Add tags", is selected. The "Add tags - optional" section shows a note about adding tags to instances. The "Tags (0)" section has an "Add tag" button and a note that "50 remaining". The "Cancel", "Previous", and "Next" buttons are visible at the bottom.

Screenshot of the AWS CloudShell interface showing the creation of an Auto Scaling group.

Step 1: Choose launch template

- Choose instance launch options
- Integrate with other services
- Configure group size and scaling
- Add notifications
- Add tags
- Review

Step 2: Choose instance launch options

Network

VPC	Subnet	Subnet CIDR range
vpc-02a5a50c89d0befb4	subnet-0dd25f1b6b94f7994	172.31.0.0/20

Step 3: Create Auto Scaling group

Auto Scaling group name: project-ac

Launch template: project-lt-item

Version: Default

Description:

Step 4: Configure group size and scaling

Desired capacity: 2

Min: 1

Max: 10

Availability Zones: 4 Availability Zones

Step 5: Add notifications

Step 6: Add tags

Step 7: Review

Auto Scaling groups (1) Info

Last updated: less than a minute ago

Name	Launch template/configuration	Instances	Status	Desired capacity	Min	Max	Availability Zones
project-ac	project-lt-item Version Default	0	Updating capacity...	2	1	10	4 Availability Zones

0 Auto Scaling groups selected

Screenshot of the AWS CloudWatch Metrics Insights interface showing a query result for EC2 instances.

The URL in the browser bar is: `https://us-east-1.console.aws.amazon.com/ec2/home?region=us-east-1#instances;v=3;$viewlags=true%5Cclient=false%5C;regrexlags=false%5Cclient=false`

The search bar contains: `Find Instance by attribute or tag (case-sensitive)`

The results table shows the following data:

Name	Instance ID	Instance state	Instance type	Status check	Alarm status	Availability Zone	Public IPv4
For practice	i-05f087d28a963beb7	Stopped	t2.micro	-	View alarms +	us-east-1b	-
ansible child	i-0ec09582b8157158d	Stopped	t2.micro	-	View alarms +	us-east-1b	-
Jenkins	i-0b804275f4bc4baad	Stopped	t2.micro	-	View alarms +	us-east-1b	-
dev-machine	i-00644108bfda396eb	Running	t2.micro	2/2 checks passed	View alarms +	us-east-1b	ec2-54-146
<input checked="" type="checkbox"/> i-07e6b91e/2315dc1f	i-07e6b91e/2315dc1f	Running	t2.micro	Initializing	View alarms +	us-east-1b	ec2-34-203
ansible master	i-08c835a659c79209f	Stopped	t2.micro	-	View alarms +	us-east-1b	-
Docker-practice	i-0ec473ce8cc178870	Stopped	t2.micro	-	View alarms +	us-east-1b	-
<input checked="" type="checkbox"/> i-0cf1bb4662179e811	i-0cf1bb4662179e811	Running	t2.micro	Initializing	View alarms +	us-east-1d	ec2-34-200

Below the table, it says **2 instances selected**. There is a **Monitoring** tab and a **Configure CloudWatch agent** button.

CloudShell Feedback

Not secure <http://project-lb-1234210184.us-east-1.elb.amazonaws.com>

Name:

Email:



