

## Practical no: 4

Name: Saloni Vishwakarma

Batch-Roll no: C1-13

Subject: Introduction to Cloud Security Lab

Date of Execution: 17/02/2024

**Aim:** To create and connect to MySQL DB instance.

Tasks to be execute:

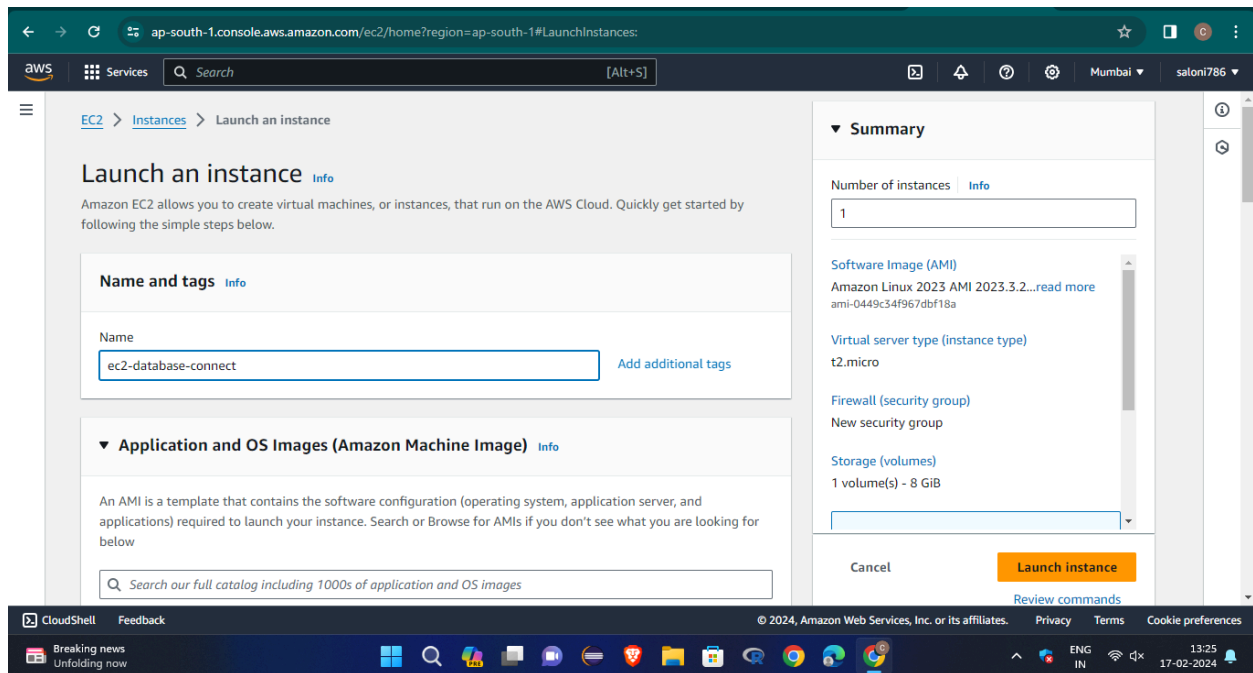
Step 1: Create an EC2 instance

Step 2: Create a MySQL DB instance

Step 3: Connect to a MySQL DB instance

Step 4: Delete the EC2 instance and DB instance

### Step 1



ap-south-1.console.aws.amazon.com/ec2/home?region=ap-south-1#LaunchInstances:

aws Services Search [Alt+S]

Mumbai saloni786

### Quick Start

Amazon Linux  
aws

macOS  
Mac

Ubuntu  
ubuntu

Windows  
Microsoft

Red Hat  
Red Hat

SUSE Linux  
SUSE

Browse more AMIs  
Including AMIs from AWS, Marketplace and the Community

Amazon Machine Image (AMI)

Amazon Linux 2023 AMI  
ami-0449c34f967dbf18a (64-bit (x86), uefi-preferred) / ami-0796d19ad30229ab5 (64-bit (Arm), uefi)  
Virtualization: hvm ENA enabled: true Root device type: ebs

Free tier eligible

Description  
Amazon Linux 2023 AMI 2023.3.20240205.2 x86\_64 HVM kernel-6.1

Architecture: 64-bit (x86) Boot mode: uefi-preferred AMI ID: ami-0449c34f967dbf18a **Verified provider**

### Summary

Number of instances: 1

Software Image (AMI)  
Amazon Linux 2023 AMI 2023.3.2...read more  
ami-0449c34f967dbf18a

Virtual server type (instance type)  
t2.micro

Firewall (security group)  
New security group

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

Cancel Launch instance Review commands

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

Breaking news Unfolding now

ap-south-1.console.aws.amazon.com/ec2/home?region=ap-south-1#LaunchInstances:

aws Services Search [Alt+S]

Mumbai saloni786

### Network settings

Network: vpc-0ae7bf59d1f7eea53

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

Auto-assign public IP: Enable

Firewall (security groups): Create security group (selected) | Select existing security group

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

- ☒ Allow SSH traffic from: My IP 117.254.209.22/32
- ☐ Allow HTTPS traffic from the internet
- ☐ Allow HTTP traffic from the internet

### Summary

Number of instances: 1

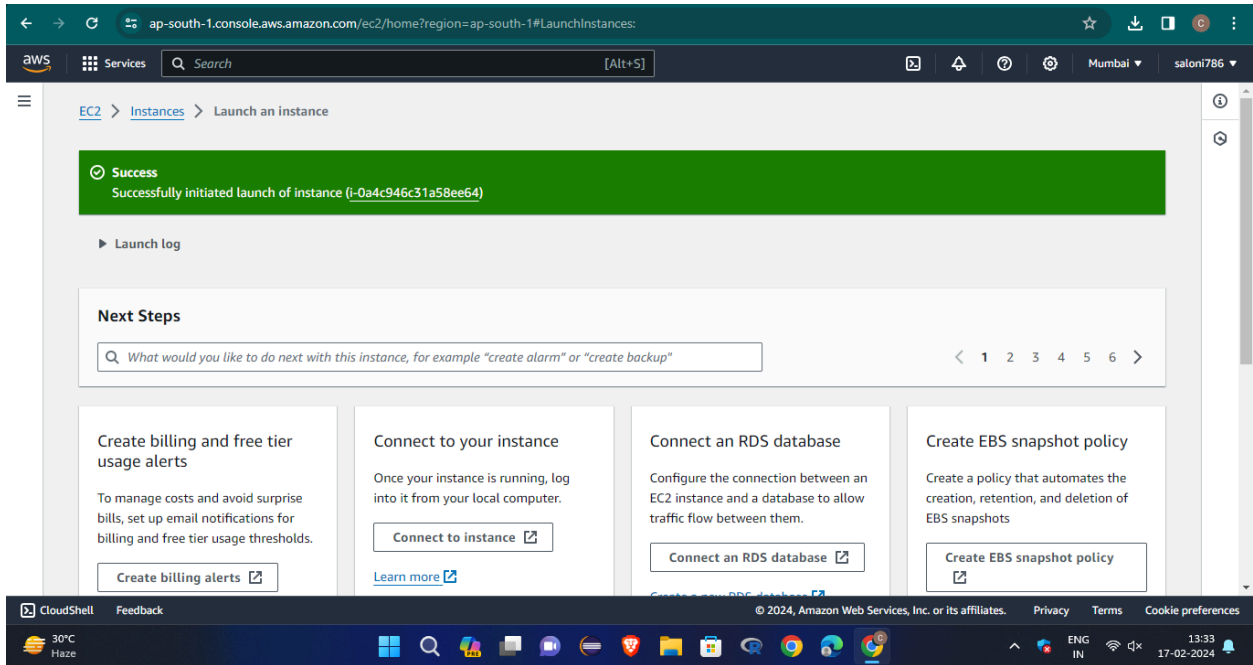
Storage (volumes)  
1 volume(s) - 8 GiB

**Free tier:** In your first year includes 750 hours of t2.micro (or t3.micro in the Regions in which t2.micro is unavailable) instance usage on free tier AMIs per month, 30 GiB of EBS storage, 2 million I/Os, 1 GB of snapshots, and 100 GB of bandwidth to the internet.

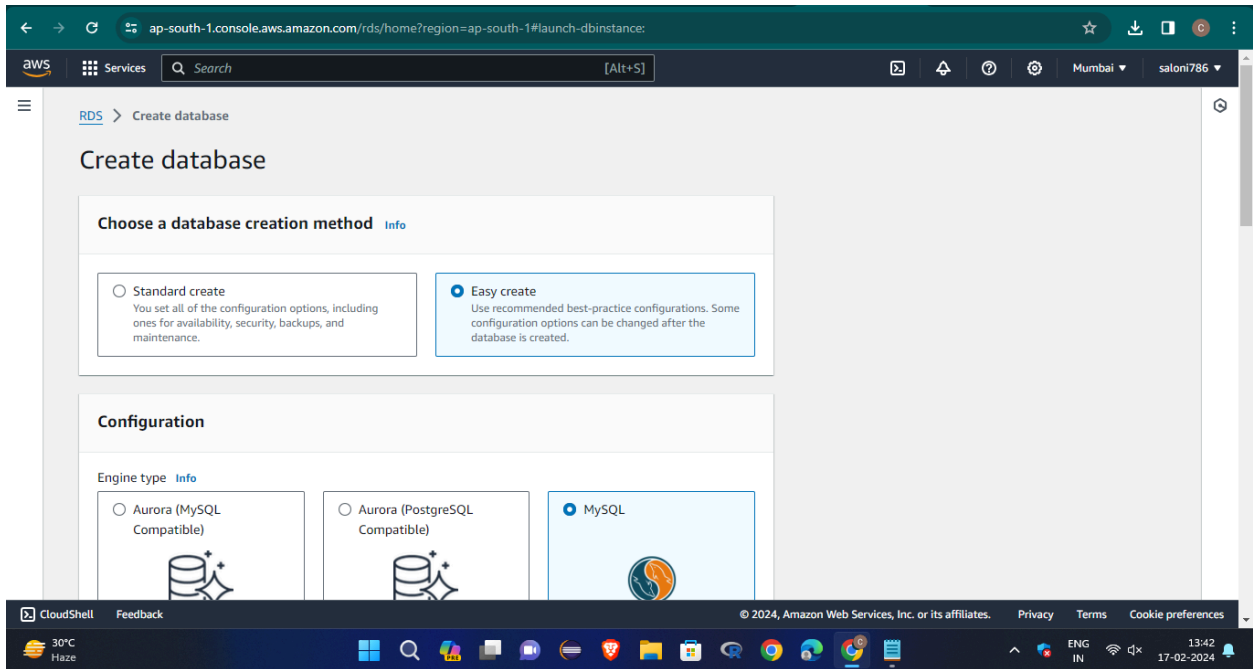
Cancel Launch instance Review commands

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

30°C Haze



## Step 2







## admin

☒ Auto generate a password

○



i-0a4c946c31a58ee64



Adding an EC2 compute resource automatically selects the VPC, DB subnet group, and public access settings for this database. To allow the EC2 instance to access the database, a VPC security group `rds-ec2-X` is added to the database and another called `ec2-rds-X` to the EC2 instance. You can remove the new security group for the database only by removing the compute resource.



←

→

↻

🌐

ap-south-1.console.aws.amazon.com/rds/home?region=ap-south-1#launch-dbinstance:

aws

Services

🔍 Search

[Alt+S]

☰

▼ View default settings for Easy create

Easy create sets the following configurations to their default values, some of which can be changed later. If you want to change any of these settings now, use [Standard create](#).

Configuration ▼	Value	Editable after database is created ▲
Encryption	Enabled	No
VPC	Default VPC (vpc-0ae7bf59d1f7eea53)	No
Option group	default:mysql-8-0	Yes
Subnet group	rds-ec2-db-subnet-group-1	Yes
Automatic backups	Enabled	Yes
VPC security group	rds-ec2-1	Yes
Publicly accessible	No	Yes
Database port	3306	Yes
DB instance identifier	database-test1	Yes
DB engine version	8.0.35	Yes

CloudShell Feedback

☀️ 30°C Haze

🪟

🔍

📁

📄

💬

🔌

🛡️

📁

📅

🔍

🌐

ap-south-1.console.aws.amazon.com/rds/home?region=ap-south-1#databases:

Amazon RDS

- Dashboard
- Databases**
- Query Editor
- Performance insights
- Snapshots
- Exports in Amazon S3
- Automated backups
- Reserved instances
- Proxies

- Subnet groups
- Parameter groups
- Option groups
- Custom engine versions

- Events
- Event subscriptions

Successfully set up a connection between database-test1 and EC2 Instance I-0a4c946c31a58ee64

Successfully created database database-test1

View connection details

Introducing Aurora I/O-Optimized

Aurora's I/O-Optimized is a new cluster storage configuration that offers predictable pricing for all applications and improved price-performance, with up to 40% costs savings for I/O-intensive applications.

RDS > Databases

Consider creating a Blue/Green Deployment to minimize downtime during upgrades

You may want to consider using Amazon RDS Blue/Green Deployments and minimize your downtime during upgrades. A Blue/Green Deployment provides a staging environment for changes to production databases. [RDS User Guide](#) [Aurora User Guide](#)

Databases (1)

Group resources

Modify

Actions

Restore from S3

Create database

Filter by databases

DB identifier	Status	Role	Engine	Region & AZ	Size	Recommen
---------------	--------	------	--------	-------------	------	----------

CloudShell Feedback

© 2024, Amazon Web Services, Inc. or its affiliates. Privacy Terms Cookie preferences

30°C Haze

ENG IN 17-02-2024

ap-south-1.console.aws.amazon.com/rds/home?region=ap-south-1#databaseid=database-test1;is-cluster=false

Amazon RDS

- Dashboard
- Databases**
- Query Editor
- Performance insights
- Snapshots
- Exports in Amazon S3
- Automated backups
- Reserved instances
- Proxies

- Subnet groups
- Parameter groups
- Option groups
- Custom engine versions

- Events
- Event subscriptions

Successfully set up a connection between database-test1 and EC2 Instance I-0a4c946c31a58ee64

Successfully created database database-test1

View connection details

RDS > Databases > database-test1

database-test1

Modify

Actions

Summary

DB identifier database-test1	Status Configuring-enhance d-monitoring	Role Instance	Engine MySQL Community	Recommendations
CPU -	Class db.t3.micro	Current activity 0 Connections	Region & AZ ap-south-1b	

Connectivity & security

Monitoring

Logs & events

Configuration

Maintenance & backups

Tags

Recommendations

CloudShell Feedback

© 2024, Amazon Web Services, Inc. or its affiliates. Privacy Terms Cookie preferences

30°C Haze

ENG IN 17-02-2024

← → ↻

ap-south-1.console.aws.amazon.com/rds/home?region=ap-south-1#database-test1-is-cluster=false

🔍 ☆ 📄 🔄

Mumbai ▾ saloni786 ▾

aws

Services

🔍 Search [Alt+S]

📄 🔔 ⚙️ 🔄

Amazon RDS

×

Dashboard

Databases

Query Editor

Performance insights

Snapshots

Exports in Amazon S3

Automated backups

Reserved instances

Proxies

Subnet groups

Parameter groups

Option groups

Custom engine versions

Events

Event subscriptions

RDS > Databases > database-test1

database-test1

🔄 Modify Actions ▾

Summary

DB identifier database-test1	Status 🔄 Backing-up	Role Instance	Engine MySQL Community	Recommendations
CPU 🔴 4.90%	Class db.t3.micro	Current activity 🔴 0 Connections	Region & AZ ap-south-1b	

Connectivity & security

Monitoring

Logs & events

Configuration

Maintenance & backups

Tags

Recommendations

Connectivity & security

Endpoint & port

Networking

Security

Endpoint  
database-test1.c9mc620wg82c.ap-south-1.rds.amazonaws.com

Availability Zone  
ap-south-1b

VPC security groups  
rds-ec2-1 (sg-0ced0f2c81bf6a3d7)  
✅ Active

CloudShell

Feedback

© 2024, Amazon Web Services, Inc. or its affiliates. Privacy Terms Cookie preferences

30°C Haze

🏠 🔍 📅 📁 📧 📞 📺 📷 📹 📽 📖 📄 📋 📌 📍 📎 📏 📐 📱 📲 📳 📴 📵 📶 📷 📸 📹 📺 📻 📼 📽 📾 📿 📰 📱 📲 📳 📴 📵 📶 📷 📸 📹 📺 📻 📼 📽 📾 📿

13:53 17-02-2024

```
[ec2-user@ip-172-31-3-86:~] X + v
```

Microsoft Windows [Version 10.0.22621.3155]  
(c) Microsoft Corporation. All rights reserved.

C:\Users\acer>ssh -i C:\Users\acer\Downloads\library\_69.pem ec2-user@ec2-13-233-159-55.ap-south-1.compute.amazonaws.com  
The authenticity of host 'ec2-13-233-159-55.ap-south-1.compute.amazonaws.com ([13.233.159.55])' can't be established.  
ED25519 key fingerprint is SHA256:2pkY/zgPTyvEbD256BWlO+zQ9Bwnv6fKE3PtQUmsMk.  
This key is not known by any other names  
Are you sure you want to continue connecting (yes/no/[fingerprint])? yes  
Warning: Permanently added 'ec2-13-233-159-55.ap-south-1.compute.amazonaws.com' (ED25519) to the list of known hosts.

```
|      # _  
|     ## ##_  
|    / \   ## ##_\n          |## |\n       \|#/\n        V\n           ^-->  
  
            /\n         ___/_/  
        /m/'
```

Amazon Linux 2023

<https://aws.amazon.com/linux/amazon-linux-2023>

[ec2-user@ip-172-31-3-86 ~]\$ sudo dnf update -y  
Last metadata expiration check: 1:08:30 ago on Sat Feb 17 08:04:28 2024.  
Dependencies resolved.  
Nothing to do.  
Complete!

[ec2-user@ip-172-31-3-86 ~]\$ sudo dnf install mariadb105  
Last metadata expiration check: 1:08:38 ago on Sat Feb 17 08:04:28 2024.  
Dependencies resolved.

Package	Architecture	Version	Repository	Size
<b>Installing:</b>				
mariadb105	x86_64	3:10.5.23-1.amzn2023.0.1	amazonlinux	1.6 M
<b>Installing dependencies:</b>				
mariadb-connector-c	x86_64	3.1.13-1.amzn2023.0.3	amazonlinux	196 k
mariadb-connector-c-config	noarch	3.1.13-1.amzn2023.0.3	amazonlinux	9.2 k

Upcoming Earnings

ENG IN 14:44 17-02-2024



```
ec2-user@ip-172-31-3-86:~  
perl-Sys-Hostname x86_64 1.23-477.amzn2023.0.6 amazonlinux 18 k  
Transaction Summary  
=====
```

Install 5 Packages			
Total download size: 1.8 M			
Installed size: 19 M			
Is this ok [y/N]: y			
Downloading Packages:			
(1/5): mariadb105-common-10.5.23-1.amzn2023.0.1.x86_64.rpm	459 kB/s	30 kB	00:00
(2/5): mariadb105-10.5.23-1.amzn2023.0.1.x86_64.rpm	18 MB/s	1.6 MB	00:00
(3/5): perl-Sys-Hostname-1.23-477.amzn2023.0.6.x86_64.rpm	192 kB/s	18 kB	00:00
(4/5): mariadb-connector-c-3.1.13-1.amzn2023.0.3.x86_64.rpm	6.1 MB/s	196 kB	00:00
(5/5): mariadb-connector-c-config-3.1.13-1.amzn2023.0.3.noarch.rpm	316 kB/s	9.2 kB	00:00
-----			
Total	11 MB/s	1.8 MB	00:00

```
Running transaction check  
Transaction check succeeded.  
Running transaction test  
Transaction test succeeded.  
Running transaction  
Preparing :  
Installing : mariadb-connector-c-config-3.1.13-1.amzn2023.0.3.noarch 1/1  
Installing : mariadb105-common-3:10.5.23-1.amzn2023.0.1.x86_64 1/5  
Installing : mariadb105-3:10.5.23-1.amzn2023.0.1.x86_64 2/5  
Installing : mariadb-connector-c-3.1.13-1.amzn2023.0.3.x86_64 3/5  
Installing : perl-Sys-Hostname-1.23-477.amzn2023.0.6.x86_64 4/5  
Installing : mariadb105-3:10.5.23-1.amzn2023.0.1.x86_64 5/5  
Running scriptlet: mariadb105-3:10.5.23-1.amzn2023.0.1.x86_64 5/5  
Verifying : mariadb105-3:10.5.23-1.amzn2023.0.1.x86_64 1/5  
Verifying : perl-Sys-Hostname-1.23-477.amzn2023.0.6.x86_64 2/5  
Verifying : mariadb105-common-3:10.5.23-1.amzn2023.0.1.x86_64 3/5  
Verifying : mariadb-connector-c-3.1.13-1.amzn2023.0.3.x86_64 4/5  
Verifying : mariadb-connector-c-config-3.1.13-1.amzn2023.0.3.noarch 5/5
```

```
Installing : mariadb-connector-c-3.1.13-1.amzn2023.0.3.x86_64 3/5  
Installing : perl-Sys-Hostname-1.23-477.amzn2023.0.6.x86_64 4/5  
Installing : mariadb105-3:10.5.23-1.amzn2023.0.1.x86_64 5/5  
Running scriptlet: mariadb105-3:10.5.23-1.amzn2023.0.1.x86_64 5/5  
Verifying : mariadb105-3:10.5.23-1.amzn2023.0.1.x86_64 1/5  
Verifying : perl-Sys-Hostname-1.23-477.amzn2023.0.6.x86_64 2/5  
Verifying : mariadb105-common-3:10.5.23-1.amzn2023.0.1.x86_64 3/5  
Verifying : mariadb-connector-c-3.1.13-1.amzn2023.0.3.x86_64 4/5  
Verifying : mariadb-connector-c-config-3.1.13-1.amzn2023.0.3.noarch 5/5  
  
Installed:  
mariadb-connector-c-3.1.13-1.amzn2023.0.3.x86_64 mariadb-connector-c-config-3.1.13-1.amzn2023.0.3.noarch  
mariadb105-3:10.5.23-1.amzn2023.0.1.x86_64 mariadb105-common-3:10.5.23-1.amzn2023.0.1.x86_64  
perl-Sys-Hostname-1.23-477.amzn2023.0.6.x86_64  
  
Complete!  
[ec2-user@ip-172-31-3-86 ~]$ mysql -h database-test1.c9mc620wg82c.ap-south-1.rds.amazonaws.com -P 3306 -u admin -p  
Enter password:  
Welcome to the MariaDB monitor. Commands end with ; or \g.  
Your MySQL connection id is 33  
Server version: 8.0.35 Source distribution  
  
Copyright (c) 2000, 2018, Oracle, MariaDB Corporation Ab and others.  
  
Type 'help;' or '\h' for help. Type '\c' to clear the current input statement.  
  
MySQL [(none)]> SELECT CURRENT_TIMESTAMP;  
+-----+  
| CURRENT_TIMESTAMP |  
+-----+  
| 2024-02-17 09:16:27 |  
+-----+  
1 row in set (0.002 sec)  
  
MySQL [(none)]> |
```

## Step 4

The screenshot shows the AWS Management Console interface for an EC2 instance named `i-0a4c946c31a58ee64` (ec2-database-connect). The instance is in the `Running` state. The `Actions` dropdown menu is open, and the `Terminate instance` option is selected.

**Instance summary for i-0a4c946c31a58ee64 (ec2-database-connect)**

Property	Value
Instance ID	i-0a4c946c31a58ee64 (ec2-database-connect)
Public IPv4 address	13.233.159.55 <a href="#">Open address</a>
Instance state	Running
Private IP address	172.31.3.1
Public IPv4 DNS name	ec2-13-233-159-55.compute-1.amazonaws.com <a href="#">Open address</a>
Private IP DNS name (IPv4 only)	ip-172-31-3-86.ap-south-1.compute.internal
Instance type	t2.micro
VPC ID	vpc-0ae7bf59d1f7eea53
Subnet ID	subnet-0fcf3325c027c332a
IAM Role	-
IMDSv2	Required

**Terminate instance?**

On an EBS-backed instance, the default action is for the root EBS volume to be deleted when the instance is terminated. Storage on any local drives will be lost.

Are you sure you want to terminate these instances?

Instance ID	Termination protection
i-0a4c946c31a58ee64 (ec2-database-connect)	Disabled

To confirm that you want to terminate the instances, choose the terminate button below. Instances with termination protection enabled will not be terminated. Terminating the instance cannot be undone.

[Cancel](#) [Terminate](#)

Successfully terminated i-0a4c946c31a58ee64

EC2 > Instances > i-0a4c946c31a58ee64

Instance summary for i-0a4c946c31a58ee64 (ec2-database-connect) info

Updated less than a minute ago

Instance ID i-0a4c946c31a58ee64 (ec2-database-connect)	Public IPv4 address 13.233.159.55 <a href="#">open address</a>	Private IPv4 addresses 172.31.3.86
IPv6 address -	Instance state Shutting-down	Public IPv4 DNS ec2-13-233-159-55.ap-south-1.compute.amazonaws.com <a href="#">open address</a>
Hostname type IP name: ip-172-31-3-86.ap-south-1.compute.internal	Private IP DNS name (IPv4 only) ip-172-31-3-86.ap-south-1.compute.internal	Elastic IP addresses -
Answer private resource DNS name IPv4 (A)	Instance type t2.micro	AWS Compute Optimizer finding <a href="#">Opt-in to AWS Compute Optimizer for recommendations.</a> <a href="#">Learn more</a>
Auto-assigned IP address 13.233.159.55 [Public IP]	VPC ID vpc-0ae7bf59d1f7ee533	Auto Scaling Group name -
IAM Role -	Subnet ID subnet-0fcf3325c027c332a	
IMDSv2 Required		

CloudShell Feedback

© 2024, Amazon Web Services, Inc. or its affiliates. Privacy Terms Cookie preferences

32°C Haze

ap-south-1.console.aws.amazon.com/rds/home?region=ap-south-1#databaseid=database-test1;is-cluster=false

Amazon RDS

Dashboard  
Databases  
Query Editor  
Performance Insights  
Snapshots  
Exports in Amazon S3  
Automated backups  
Reserved instances  
Proxies  
Subnet groups  
Parameter groups  
Option groups  
Custom engine versions  
Events  
Event subscriptions

Successfully set up  
Successfully created  
RDS has generated a way to view your instance. You can use settings.

database-test1

Summary

DB identifier  
database-test1

CPU

Connectivity & security

Delete database-test1 instance

Permanently delete database-test1 DB instance. You can't undo this action.

Proceeding with this action will delete the instance with all its content and can affect related resources. [Learn more](#)

☐ Create final snapshot  
Determines whether a final DB Snapshot is created before the DB instance is deleted.

☐ Retain automated backups  
Determines whether retaining automated backups for 7 days after deletion

☒ I acknowledge that upon instance deletion, automated backups, including system snapshots and point-in-time recovery, will no longer be available.

To avoid accidental deletion provide additional written consent.

To confirm deletion, type *delete me* into the field.

delete me

We strongly recommend taking a final snapshot before instance deletion since after your instance is deleted, automated backups will no longer be available.

Cancel Delete

CloudShell Feedback

© 2024, Amazon Web Services, Inc. or its affiliates. Privacy Terms Cookie preferences

Breaking news  
Unfolding now

14:58 17-02-2024

172.16. x Welcom x Google x C1-13() x Practic x Creatin x Databa x Conne x RDS | a x RDS | a x +

ap-south-1.console.aws.amazon.com/rds/home?region=ap-south-1#databaseid=database-test1;is-cluster=false

aws Services Q Search [Alt+S]

Mumbai saloni786

Amazon RDS

Dashboard

Databases

Query Editor

Performance insights

Snapshots

Exports in Amazon S3

Automated backups

Reserved instances

Proxies

Subnet groups

Parameter groups

Option groups

Custom engine versions

Events

Event subscriptions

Successfully set up a connection between database-test1 and EC2 instance i-0a4c946c31a58ee64

Deleting DB instance database-test1

Successfully created database database-test1

View connection details

RDS > Databases > database-test1

database-test1

Summary

DB identifier database-test1	Status Deleting	Role Instance	Engine MySQL Community	Recommendations
CPU -	Class db.t3.micro	Current activity 0 Connections	Region & AZ ap-south-1b	

CloudShell Feedback

© 2024, Amazon Web Services, Inc. or its affiliates. Privacy Terms Cookie preferences

Breaking news  
Unfolding now

14:58  
17-02-2024