

Cloud computing

Migrating a Database to Amazon RDS

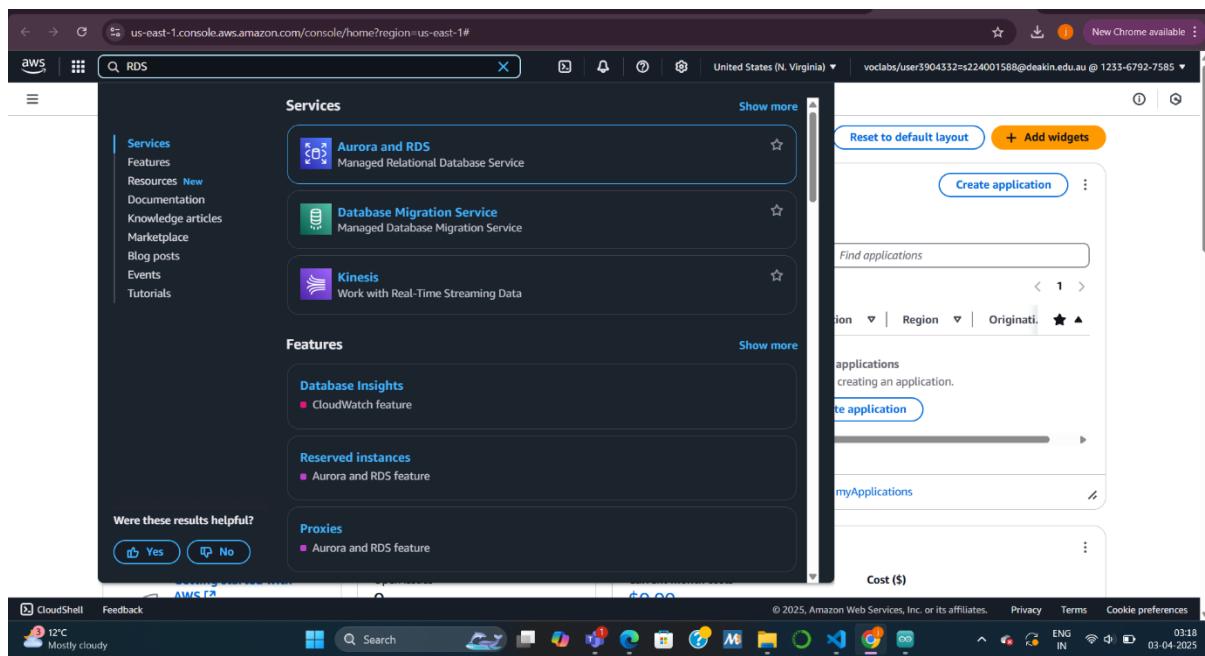
Task 1: Creating an RDS instance

Summary:

I created a managed MariaDB instance using Amazon RDS to replace the self-hosted database on the EC2 instance. We chose this approach to improve database reliability, automate backups, and reduce manual maintenance work.

Explanation:

We configured the instance with the identifier **CafeDatabase**, used **admin** as the username, and set a secure password. I selected a lightweight instance type (**db.t3.micro**) and allocated 20 GiB of SSD storage. The instance was placed in the lab VPC and subnet group with restricted access via the **dbSG** security group. Public access was disabled for security. This setup gave us a scalable, durable foundation to migrate the café's database.



Aurora and RDS > Dashboard

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.

Resources

You are using the following Amazon RDS resources in the US East (N. Virginia) region (used/quota)

Category	Count	Description
DB Instances (0/40)	0	Allocated storage (0 TB/100 TB)
Instances and storage include Neptune and DocumentDB.	0	Increase DB Instances limit
DB Clusters (0/40)	0	Default (0)
Reserved instances (0/40)	0	Custom (0/100)
Snapshots (0)	0	Option groups (0)
Manual	0	Default (0)
DB Cluster (0)	0	Custom (0/20)
Automated	0	Subnet groups (1/50)
DB Cluster (0)	0	Supported platforms: VPC
DB Instance (0)	0	Default network vpc-01049c80414080088
Recent events (0)	0	
Event subscriptions (0/20)	0	

Recommended services
Customers like you also use these services.

No recommendations yet
Recommended services will display based on your AWS console usage.

Recommended for you

Test Your DR Strategy in Minutes
Amazon Aurora Global Database now supports planned managed failover, making disaster recovery drills a breeze. [Learn more](#)

Build RDS Operational Tasks
Watch how to enable users to perform common tasks such as snapshots or restart DB instances in Amazon RDS. [Learn more](#)

Databases (0)

No instances found

Notifications: 0 | Group resources: 0 | Modify | Actions: 0 | Create database

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Aurora and 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 (0)

No instances found

Filter by databases

DB identifier | Status | Role | Engine | Region ... | Size | Recommendations

Notifications: 0 | Group resources: 0 | Modify | Actions: 0 | Create database

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

Aurora and RDS > Create database

Create database Info

Choose a database creation method

Standard create
You set all of the configuration options, including ones for availability, security, backups, and maintenance.

Easy create
Use recommended best-practice configurations. Some configuration options can be changed after the database is created.

Engine options

Engine type Info

<input type="radio"/> Aurora (MySQL Compatible)	<input checked="" type="radio"/> Aurora (PostgreSQL Compatible)
<input type="radio"/> MySQL	<input type="radio"/> PostgreSQL
<input type="radio"/> MariaDB	<input type="radio"/> Oracle

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

Aurora and RDS > Create database

<input checked="" type="radio"/> MariaDB	<input type="radio"/> Oracle
<input type="radio"/> Microsoft SQL Server	<input type="radio"/> IBM Db2

MariaDB

MariaDB Community Edition is a MySQL-compatible database with strong support from the open source community, and extra features and performance optimizations.

- Supports database size up to 64 TiB.
- Supports General Purpose, Memory Optimized, and Burstable Performance instance classes.
- Supports automated backup and point-in-time recovery.
- Supports up to 15 Read Replicas per instance, within a single Region or 5 read replicas cross-region.
- Supports global transaction ID (GTID) and thread pooling.
- Developed and supported by the MariaDB open source community.

Engine version Info
View the engine versions that support the following database features.

Hide filters

Show only versions that support the Amazon RDS Optimized Writes Info
Amazon RDS Optimized Writes improves write throughput by up to 2x at no additional cost.

Engine version

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

Aurora and RDS > Create database

Hide filters

Show only versions that support the Amazon RDS Optimized Writes [Info](#)
Amazon RDS Optimized Writes improves write throughput by up to 2x at no additional cost.

Engine version

MariaDB 11.4.4

Templates

Choose a sample template to meet your use case.

Production
Use defaults for high availability and fast, consistent performance.

Dev/Test
This instance is intended for development use outside of a production environment.

Free tier
Use RDS Free Tier to develop new applications, test existing applications, or gain hands-on experience with Amazon RDS. [Info](#)

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

CloudShell Feedback

Search

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

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.

Auto generate password
Amazon RDS can generate a password for you, or you can specify your own password.

Master password [Info](#)

Password strength **Strong**
Minimum constraints: At least 8 printable ASCII characters. Can't contain any of the following symbols: / ` ^ @

Confirm master password [Info](#)

Instance configuration
The DB instance configuration options below are limited to those supported by the engine that you selected above.

DB instance class [Info](#)
▼ Hide filters

Show instance classes that support Amazon RDS Optimized Writes [Info](#)
Amazon RDS Optimized Writes improves write throughput by up to 2x at no additional cost.

Include previous generation classes

Standard classes (includes m classes)

Memory optimized classes (includes r and x classes)

Burstable classes (includes t classes)

db.t3.micro
2 vCPUs 1 GiB RAM Network: Up to 2,085 Mbps

Storage

Storage type [Info](#)
Provisioned IOPS SSD (io2) storage volumes are now available.

General Purpose SSD (gp3)
Performance scales independently from storage

Allocated storage [Info](#)
200 GiB
Minimum: 20 GiB. Maximum: 6,144 GiB

Provisioned IOPS [Info](#)

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CloudShell Feedback © 2025, Amazon Web Services, Inc. or its affiliates. Privacy Terms Cookie preferences ENG IN 03:27 03-04-2025

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

Aurora and RDS > Create database

Include previous generation classes

Standard classes (includes m classes)

Memory optimized classes (includes r and x classes)

Burstable classes (includes t classes)

db.t3.micro

2 vCPUs 1 GiB RAM Network: Up to 2,085 Mbps

Storage

Storage type [Info](#) Provisioned IOPS SSD (io2) storage volumes are now available.

General Purpose SSD (gp2)

Allocated storage [Info](#) 20 GiB Allocated storage value must be 20 GiB to 6,144 GiB

Provisioning less than 100 GiB of General Purpose (SSD) storage for high throughput workloads could result in higher latencies upon exhaustion of the initial General Purpose (SSD) IO credit balance. [Learn more](#)

Additional storage configuration

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CloudShell Feedback 12°C Mostly cloudy us-east-1.console.aws.amazon.com/rds/home?region=us-east-1#launch-dbinstance:

Aurora and RDS > Create database

Network type [Info](#) To use dual-stack mode, make sure that you associate an IPv6 CIDR block with a subnet in the VPC you specify.

IPv4 Your resources can communicate only over the IPv4 addressing protocol.

Dual-stack mode Your resources can communicate over IPv4, IPv6, or both.

Virtual private cloud (VPC) [Info](#) Choose the VPC. The VPC defines the virtual networking environment for this DB instance.

Lab VPC (vpc-0b2968b72235d345)
3 Subnets, 2 Availability Zones Only VPCs with a corresponding DB subnet group are listed.

After a database is created, you can't change its VPC.

DB subnet group [Info](#) Choose the DB subnet group. The DB subnet group defines which subnets and IP ranges the DB instance can use in the VPC that you selected.

lab-db-subnet-group 2 Subnets, 2 Availability Zones

Public access [Info](#) Yes RDS assigns a public IP address to the database. Amazon EC2 instances and other resources outside of the VPC can connect to your database. Resources inside the VPC can also connect to the database. Choose one or more VPC security groups that specify which resources can connect to the database.

No RDS doesn't assign a public IP address to the database. Only Amazon EC2 instances and other resources inside the VPC can connect to your database. Choose one or more VPC security groups that specify which resources can connect to the database.

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.

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

AWS Search [Alt+S] United States (N. Virginia) voclabs/user3904332=s224001588@deakin.edu.au @ 1233-6792-7585

Aurora and RDS > Create database

No
RDS doesn't assign a public IP address to the database. Only Amazon EC2 instances and other resources inside the VPC can connect to your database. Choose one or more VPC security groups that specify which resources can connect to the database.

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

dbSG X

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 service 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.

rds-ca-rsa2048-g1 (default)
Expiry: May 26, 2061

If you don't select a certificate authority, RDS chooses one for you.

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12°C Mostly cloudy

Search

File Explorer Task View Taskbar

The screenshot shows the AWS RDS 'Create database' wizard. On the right, a sidebar titled 'MariaDB' provides an overview of the service, stating it's a MySQL-compatible database with strong support from the open source community and extra features like automated backup and point-in-time recovery. It lists several bullet points about its capabilities.

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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

Availability Zone [Info](#)
us-east-1a

RDS Proxy
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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.

rds-ca-rsa2048-g1 (default)
Expires: May 26, 2061

If you don't select a certificate authority, RDS chooses one for you.

CloudShell Feedback us-east-1.console.aws.amazon.com/rds/home?region=us-east-1#launch-dbinstance: [Alt+S] Search United States (N. Virginia) voclabs/user3904332=s224001588@deakin.edu.au @ 1233-6792-7585 New Chrome available

CloudShell Feedback us-east-1.console.aws.amazon.com/rds/home?region=us-east-1#launch-dbinstance: [Alt+S] Search United States (N. Virginia) voclabs/user3904332=s224001588@deakin.edu.au @ 1233-6792-7585 New Chrome available

CloudShell Feedback us-east-1.console.aws.amazon.com/rds/home?region=us-east-1#launch-dbinstance: [Alt+S] Search United States (N. Virginia) voclabs/user3904332=s224001588@deakin.edu.au @ 1233-6792-7585 New Chrome available

The screenshot shows the AWS RDS 'Create database' configuration page for a MariaDB instance. The left sidebar lists 'Additional monitoring settings', 'Enhanced Monitoring' (unchecked), 'Log exports' (Audit log, Error log, General log, iam-db-auth-error log, Slow query log), and 'IAM role' (RDS service-linked role). The main panel has a section for 'Additional configuration' with the note: 'Database options, encryption turned on, backup turned on, backtrack turned off, maintenance, CloudWatch Logs, delete protection turned off.' On the right, a 'MariaDB' sidebar provides information about the MySQL-compatible database, its features (up to 64 TiB, General Purpose, Memory Optimized, Performance Instance classes, automated backup, up to 15 Read Replicas, global transaction ID, thread pooling), and its development by the open source community.

Task 2: Analyzing the existing café application deployment

Summary:

I verified that the current café web application was running correctly on an EC2 instance by placing a test order and reviewing the order history. Then, I connected to the EC2 instance using AWS Systems Manager to prepare for the database export.

Explanation:

We used the public IP of the EC2 instance to load the app and confirm that it stores order data properly. After that, I accessed the instance terminal through Session Manager, which allowed me to work on the server without using SSH keys. This connection set me up for working directly with the local MariaDB database.

The screenshot shows the AWS Aurora service console with a search bar at the top containing 'ec2'. The left sidebar has a 'Databases' section with various options like 'Dashboard', 'Performance', 'Schemas', 'Exports in Amazon', 'Automated backups', 'Reserved instances', 'Proxies', and 'Events'. A message 'Were these results helpful?' with 'Yes' and 'No' buttons is displayed. The main area is titled 'Services' and lists 'EC2', 'EC2 Image Builder', and 'EC2 Global View'. Below this is a 'Features' section with 'Dashboard', 'AMIs', and 'EC2 Instances'. A modal window on the right says 'View credential details'.

The screenshot shows the AWS EC2 service console with a search bar at the top containing 'Search'. The left sidebar has sections for 'EC2', 'Dashboard', 'Instances', 'Images', and 'Elastic Block Store'. The main dashboard shows resource counts: 1 instance (running), 0 Auto Scaling Groups, 0 Capacity Reservations, 0 Dedicated Hosts, 0 Elastic IPs, 1 instance, 1 Key pair, 0 Load balancers, 0 Placement groups, 4 Security groups, 0 Snapshots, 0 Volumes. It also features a 'Launch instance' button, 'Service health' (AWS Health Dashboard), and 'Zones'. A 'Explore AWS' section highlights 'Get Up to 40% Better Price Performance' for T4g instances. The status bar at the bottom shows 'CloudShell Feedback' and weather information '12°C Mostly cloudy'.

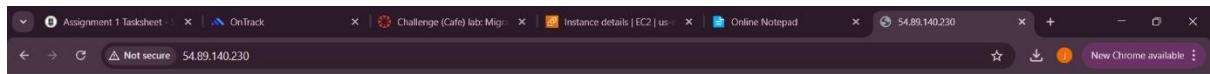
The screenshot shows the AWS EC2 Instances page. On the left, a navigation sidebar for 'EC2' is visible with sections for Dashboard, EC2 Global View, Events, Instances (selected), Images, and Elastic Block Store. The main content area displays a table titled 'Instances (1) Info' with one row for 'CafeServer'. The instance details are as follows:

Name	Instance ID	Instance state	Instance type	Status check	Alarm status	Availability Zone	Public IP
CafeServer	i-044416c2fa40c9496	Running	t2.micro	2/2 checks passed	View alarms +	us-east-1a	ec2-54-8!

Below the table, a modal window titled 'Select an instance' is open, showing the same instance information.

The screenshot shows the 'Instance summary for i-044416c2fa40c9496 (CafeServer)' page. The left sidebar is identical to the previous screen. The main content area is divided into several sections:

- Instance ID:** i-044416c2fa40c9496
- IPv6 address:** -
- Hostname type:** IP name: ip-10-0-0-205.ec2.internal
- Auto-assigned IP address:** 54.89.140.230 [Public IP]
- IAM Role:** CafeRole
- IMDSv2:** Optional
⚠️ EC2 recommends setting IMDSv2 to required | Learn more
- Public IPv4 address:** 54.89.140.230 [open address]
- Instance state:** Running
- Private IP DNS name (IPv4 only):** ip-10-0-0-205.ec2.internal
- Instance type:** t2.micro
- VPC ID:** vpc-0b29688b72235d345 (Lab VPC)
- Subnet ID:** subnet-06dd913b7c379fa95 (Public Subnet)
- Instance ARN:** arn:aws:ec2:us-east-1:123367927585:instance/i-044416c2fa40c9496
- Private IPv4 addresses:** 10.0.0.205
- Public IPv4 DNS:** ec2-54-89-140-230.compute-1.amazonaws.com [open address]
- Elastic IP addresses:** -
- AWS Compute Optimizer finding:** Opt-in to AWS Compute Optimizer for recommendation | Learn more
- Auto Scaling Group name:** -
- Managed:** false



Hello From Your Web Server!



Hello From Your Web Server!



A screenshot of a web browser window showing a cafe website. The address bar indicates the site is not secure and shows the URL 54.89.140.230/cafe/. The main content area features a large header "Café" and a navigation menu with links to Home, About Us, Contact Us, Menu, and Order History. Below the menu are two images: one of pastries like croissants and cinnamon rolls, and another of various cakes on display shelves.

Our café offers an assortment of delicious and delectable pastries and coffees that will put a smile on your face. From cookies to croissants, tarts and cakes, each treat is especially prepared to excite your tastebuds and brighten your day!

Frank bakes a rich variety of cookies. Try them all!

Tea, Coffee,

Our tarts are always a customer favorite!

The taskbar at the bottom shows the Windows Start button, a search bar, and various pinned icons. The weather widget on the left shows it's 12°C and mostly cloudy. The system tray on the right shows network status, battery level, and the date (03-04-2025).

Screenshot of a web browser showing a cafe website at 54.89.140.230/cafe/. The page features a header with the word "Café" and a navigation bar with links to Home, About Us, Contact Us, Menu, and Order History. Below the navigation bar are two images: one of pastries like croissants and cinnamon rolls, and another of various cakes in a display case.

Our café offers an assortment of delicious and delectable pastries and coffees that will put a smile on your face. From cookies to croissants, tarts and cakes, each treat is especially prepared to excite your tastebuds and brighten your day!

Frank bakes a rich variety of cookies. Try them all!

Tea, Coffee,

Our tarts are always a customer favorite!

54.89.140.230/cafe/orderHistory.php

12°C Mostly cloudy

Assignment 1 Tasksheet - OnTrack Challenge (Cafe) lab: Migrating Instance details | EC2 | us-east-1 Online Notepad Café! 03:41 03-04-2025

Not secure 54.89.140.230/cafe/processOrder.php

Screenshot of a web browser showing an order confirmation page at 54.89.140.230/cafe/processOrder.php. The page title is "Café". The navigation bar includes Home, Menu, and Order History. The main content is titled "Order Confirmation" and displays a message: "Thank for your order! It will be available for pickup within 15 minutes. Your order number and details are shown below." Below this, it shows the order number, date, time, and total amount. A table lists the items ordered with their prices, quantities, and amounts.

Item	Price	Quantity	Amount
Croissant	\$1.50	1	\$1.50
Donut	\$1.00	1	\$1.00
Chocolate Chip Cookie	\$2.50	1	\$2.50

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Temps to drop
Next Monday

Search

Assignment 1 Tasksheet - Ontrack Challenge (Cafe) lab: Migrating Instance details | EC2 | us-east-1 Online Notepad Café! 03:48 03-04-2025

EC2 Instance Connect Session Manager SSH client EC2 serial console

Instance ID
i-044416c2fa40c9496 (CafeServer)

Connection Type

Connect using EC2 Instance Connect
Connect using the EC2 Instance Connect browser-based client, with a public IPv4 or IPv6 address.

Connect using EC2 Instance Connect Endpoint
Connect using the EC2 Instance Connect browser-based client, with a private IPv4 address and a VPC endpoint.

Public IPv4 address
54.89.140.230

IPv6 address

Username
Enter the username defined in the AMI used to launch the instance. If you didn't define a custom username, use the default username, ec2-user.

ec2-user

Note: In most cases, the default username, ec2-user, is correct. However, read your AMI usage instructions to check if the AMI owner has changed the default AMI username.

Cancel Connect

CloudShell Feedback

Session ID: i-044416c2fa40c9496

Instance ID: i-044416c2fa40c9496

Termination

Session ID:
user3904332=s224001588@deakin.edu.au-
ja2gqbghdqzvnyu9hds547nae

stt-4..2\$

```
Session ID: Instance ID: i-044416c2fa40c9496
user5904332=s224001588@deakin.edu.au-ja2gqjghdqtzvnyu9hds547nae
sh-4.2$ bash
[ssm-user@cafeserver bin]$ sudo su
[root@cafeserver bin]# su ec2-user
[ec2-user@cafeserver bin]$ whoami
ec2-user
[ec2-user@cafeserver bin]$ cd /home/ec2-user/
```

Task 3: Exporting data from EC2 database

Summary:

I connected to the local MariaDB database on the EC2 instance, reviewed its contents, and used mysqldump to export the café's data into a SQL file for migration.

Explanation:

We first checked that MariaDB was running and confirmed its version. I retrieved the root password securely from Secrets Manager and logged into the database. After reviewing the cafe_db tables and data, I ran the mysqldump command to generate CafeDbDump.sql. This file included all existing customer order data, ready to be imported into the new RDS instance.

Assignment 1 Tasks | OnTrack | Challenge (Cafe) lab: | Instance details | EC2 | Systems Manager | Online Notepad | Café Order Confirmation | - | + | New Chrome available

Session ID: s224001588@deakin.edu.au-ja2gqbghdtqvnyu9hds547nae

Instance ID: i-044416c2fa40c9496

Terminate

```
sh-4.2$ bash
[ssm-user@cafeserver bin]$ sudo su
[root@cafeserver bin]# su ec2-user
[ec2-user@cafeserver bin]$ whoami
ec2-user
[ec2-user@cafeserver bin]$ cd /home/ec2-user/
[ec2-user@cafeserver ~]$ service mariadb status
Redirecting to /bin/systemctl status mariadb.service
● mariadb.service - MariaDB 10.2 database server
   Loaded: loaded (/usr/lib/systemd/system/mariadb.service; enabled; vendor preset: disabled)
   Drop-In: /usr/lib/systemd/system/mariadb.service.d
             └─tokudb.conf
     Active: active (running) since Wed 2025-04-02 16:17:47 UTC; 35min ago
   Process: 3800 ExecStartPost=/usr/libexec/mysql-check-upgrade (code=exited, status=0/SUCCESS)
   Process: 3596 ExecStartPre=/usr/libexec/mysql-prepare-db-dir %n (code=exited, status=0/SUCCESS)
   Process: 3572 ExecStartPre=/usr/libexec/mysql-check-socket (code=exited, status=0/SUCCESS)
 Main PID: 3729 (mysqld)
   Status: "Taking your SQL requests now..."
   CGroup: /system.slice/mariadb.service
           └─3729 /usr/libexec/mysqld --basedir=/usr

Apr 02 16:17:47 ip-10-0-0-205.ec2.internal mysql-check-upgrade[3800]: ERROR: ld.so: object '/usr/lib64/libjemalloc.so.1' from LD_PRELOAD cannot be preloaded (can...ignored).
Apr 02 16:17:47 ip-10-0-0-205.ec2.internal mysql-check-upgrade[3800]: ERROR: ld.so: object '/usr/lib64/libjemalloc.so.1' from LD_PRELOAD cannot be preloaded (can...ignored).
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Apr 02 16:17:47 ip-10-0-0-205.ec2.internal mysql-check-upgrade[3800]: ERROR: ld.so: object '/usr/lib64/libjemalloc.so.1' from LD_PRELOAD cannot be preloaded (can...ignored).
Apr 02 16:17:47 ip-10-0-0-205.ec2.internal mysql-check-upgrade[3800]: ERROR: ld.so: object '/usr/lib64/libjemalloc.so.1' from LD_PRELOAD cannot be preloaded (can...ignored).
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Apr 02 16:17:47 ip-10-0-0-205.ec2.internal mysql-check-upgrade[3800]: Hint: Some lines were ellipsized, use -l to show in full.
[ec2-user@cafeserver ~]$ mysql --version
```

Sports headline
Major Blow for...



ENG IN 03:52 03-04-2025

Sesson ID: Instance ID: i-044416c2fa40c9496

```
user:3904332=s224001588@deakin.edu.au-ja2gpbghdtqzvnyu9hds547nae
sh-4.2$ bash
[ssm-user@cafeserver bin]$ sudo su
[root@cafeserver bin]# su ec2-user
[ec2-user@cafeserver bin]$ whoami
ec2-user
[ec2-user@cafeserver bin]$ cd /home/ec2-user/
[ec2-user@cafeserver ~]$ service mariadb status
Redirecting to /bin/systemctl status mariadb.service
● mariadb.service - MariaDB 10.2 database server
   Loaded: loaded (/usr/lib/systemd/system/mariadb.service; enabled; vendor preset: disabled)
   Drop-In: /usr/lib/systemd/system/mariadb.service.d
             └─tokudb.conf
     Active: active (running) since Wed 2025-04-02 16:17:47 UTC; 35min ago
       Process: 3800 ExecStartPost=/usr/libexec/mysql-check-upgrade (code=exited, status=0/SUCCESS)
      Process: 3596 ExecStartPre=/usr/libexec/mysql-prepare-db-dir %n (code=exited, status=0/SUCCESS)
      Process: 3572 ExecStartPre=/usr/libexec/mysql-check-socket (code=exited, status=0/SUCCESS)
 Main PID: 3729 (mysqld)
   Status: "Taking your SQL requests now..."
   CGroup: /system.slice/mariadb.service
           └─3729 /usr/libexec/mysqld --basedir=/usr

Apr 02 16:17:47 ip-10-0-0-205.ec2.internal mysql-check-upgrade[3800]: ERROR: ld.so: object '/usr/lib64/libjemalloc.so.1' from LD_PRELOAD cannot be preloaded (can...ignored).
Apr 02 16:17:47 ip-10-0-0-205.ec2.internal mysql-check-upgrade[3800]: ERROR: ld.so: object '/usr/lib64/libjemalloc.so.1' from LD_PRELOAD cannot be preloaded (can...ignored).
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Apr 02 16:17:47 ip-10-0-0-205.ec2.internal mysql-check-upgrade[3800]: ERROR: ld.so: object '/usr/lib64/libjemalloc.so.1' from LD_PRELOAD cannot be preloaded (can...ignored).
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Apr 02 16:17:47 ip-10-0-0-205.ec2.internal mysql-check-upgrade[3800]: ERROR: ld.so: object '/usr/lib64/libjemalloc.so.1' from LD_PRELOAD cannot be preloaded (can...ignored).
Apr 02 16:17:47 ip-10-0-0-205.ec2.internal mysql-check-upgrade[3800]: ERROR: ld.so: object '/usr/lib64/libjemalloc.so.1' from LD_PRELOAD cannot be preloaded (can...ignored).
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Apr 02 16:17:47 ip-10-0-0-205.ec2.internal mysql-check-upgrade[3800]: Hint: Some lines were ellipsized, use -l to show it full.
[ec2-user@cafeserver ~]$ mysql --version
mysql Ver 15.1 Distrib 10.2.30-MariaDB, for Linux (x86_64) using EditLine wrapper
[ec2-user@cafeserver ~]$ 
```

Sports headline Major Blow for...

Assignment 1 Tasks OnTrack Challenge (Cafe) lab Instance details | EC Systems Manager Online Notepad Cafe Order Confirm 03:53 03-04-2025

aws Search United States (N. Virginia) ENG IN 03:53 03-04-2025

Assignment 1 Tasks OnTrack Challenge (Cafe) lab Secrets | Secrets Manager Online Notepad Cafe Order Confirm 03:53 03-04-2025

CloudShell Feedback © 2025, Amazon Web Services, Inc. or its affiliates. Privacy Terms Cookie preferences 03:54 03-04-2025

Session ID: i-044416c2fa40c9496 Instance ID: i-044416c2fa40c9496

user5904332=s224001588@deakin.edu.au-ja2gqbghdqtzvny9hds547nae

```
Drop-In: /usr/lib/systemd/system/mariadb.service.d
└─tokudb.conf
Active: active (running) since Wed 2025-04-02 16:17:47 UTC; 35min ago
Process: 3800 ExecStartPost=/usr/libexec/mysql-check-upgrade (code=exited, status=0/SUCCESS)
Process: 3594 ExecStartPre=/usr/libexec/mysql-prepare-db-dir %n (code=exited, status=0/SUCCESS)
Process: 3572 ExecStartPre=/usr/libexec/mysql-check-socket (code=exited, status=0/SUCCESS)
Main PID: 3729 (mysqld)
Status: "Taking your SQL requests now..."
CGroup: /system.slice/mariadb.service
└─3729 /usr/libexec/mysqld --basedir=/usr

Apr 02 16:17:47 ip-10-0-0-205.ec2.internal mysql-check-upgrade[3800]: ERROR: ld.so: object '/usr/lib64/libjemalloc.so.1' from LD_PRELOAD cannot be preloaded (can...ignored.
Apr 02 16:17:47 ip-10-0-0-205.ec2.internal mysql-check-upgrade[3800]: ERROR: ld.so: object '/usr/lib64/libjemalloc.so.1' from LD_PRELOAD cannot be preloaded (can...ignored.
Apr 02 16:17:47 ip-10-0-0-205.ec2.internal mysql-check-upgrade[3800]: ERROR: ld.so: object '/usr/lib64/libjemalloc.so.1' from LD_PRELOAD cannot be preloaded (can...ignored.
Apr 02 16:17:47 ip-10-0-0-205.ec2.internal mysql-check-upgrade[3800]: ERROR: ld.so: object '/usr/lib64/libjemalloc.so.1' from LD_PRELOAD cannot be preloaded (can...ignored.
Apr 02 16:17:47 ip-10-0-0-205.ec2.internal mysql-check-upgrade[3800]: ERROR: ld.so: object '/usr/lib64/libjemalloc.so.1' from LD_PRELOAD cannot be preloaded (can...ignored.
Apr 02 16:17:47 ip-10-0-0-205.ec2.internal mysql-check-upgrade[3800]: ERROR: ld.so: object '/usr/lib64/libjemalloc.so.1' from LD_PRELOAD cannot be preloaded (can...ignored.
Apr 02 16:17:47 ip-10-0-0-205.ec2.internal mysql-check-upgrade[3800]: ERROR: ld.so: object '/usr/lib64/libjemalloc.so.1' from LD_PRELOAD cannot be preloaded (can...ignored.
Apr 02 16:17:47 ip-10-0-0-205.ec2.internal mysql-check-upgrade[3800]: ERROR: ld.so: object '/usr/lib64/libjemalloc.so.1' from LD_PRELOAD cannot be preloaded (can...ignored.
Apr 02 16:17:47 ip-10-0-0-205.ec2.internal mysql-check-upgrade[3800]: ERROR: ld.so: object '/usr/lib64/libjemalloc.so.1' from LD_PRELOAD cannot be preloaded (can...ignored.
Apr 02 16:17:47 ip-10-0-0-205.ec2.internal mysql-check-upgrade[3800]: ERROR: ld.so: object '/usr/lib64/libjemalloc.so.1' from LD_PRELOAD cannot be preloaded (can...ignored.
Apr 02 16:17:47 ip-10-0-0-205.ec2.internal mysql-check-upgrade[3800]: ERROR: ld.so: object '/usr/lib64/libjemalloc.so.1' from LD_PRELOAD cannot be preloaded (can...ignored.
Apr 02 16:17:47 ip-10-0-0-205.ec2.internal mysql-check-upgrade[3800]: Hint: Some lines were ellipsized, use -l to show in full.
[ec2-user@cafeserver ~]$ mysql --version
mysql Ver 15.1 Distrib 10.2.38-MariaDB, for Linux (x86_64) using EditLine wrapper
[ec2-user@cafeserver ~]$ mysql -u root -p
Enter password:
Welcome to the MariaDB monitor. Commands end with ; or \g.
Your MariaDB connection id is 13
Server version: 10.2.38-MariaDB MariaDB Server

Copyright (c) 2000, 2018, Oracle, MariaDB Corporation Ab and others.

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

MariaDB [(none)]>
```

Session ID: i-044416c2fa40c9496 Instance ID: i-044416c2fa40c9496

user5904332=s224001588@deakin.edu.au-ja2gqbghdqtzvny9hds547nae

```
Server version: 10.2.38-MariaDB MariaDB Server

Copyright (c) 2000, 2018, Oracle, MariaDB Corporation Ab and others.

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

MariaDB [(none)]> show databases;
+-----+
| Database |
+-----+
| cafe_db |
| information_schema |
| mysql |
| performance_schema |
| test |
+-----+
5 rows in set (0.00 sec)

MariaDB [(none)]> use cafe_db;
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
MariaDB [cafe_db]> show tables;
+-----+
| Tables_in_cafe_db |
+-----+
| order |
| order_item |
| product |
| product_group |
+-----+
4 rows in set (0.00 sec)

MariaDB [cafe_db]> select * from `order`;

```

Session ID: s224001588@deakin.edu.au-ja2gqbghdqtzvnyu9hds547nae Instance ID: i-044416c2fa40c9496

4 rows in set (0.00 sec)

```
MariaDB [cafe_db]> select * from `order`;
+-----+-----+-----+
| order_number | order_date_time | amount |
+-----+-----+-----+
| 1 | 2020-06-20 13:09:07 | 20.00 |
| 2 | 2020-06-21 13:09:23 | 24.00 |
| 3 | 2020-06-22 13:09:38 | 32.50 |
| 4 | 2020-06-22 13:09:49 | 10.50 |
| 5 | 2020-06-24 13:10:02 | 42.00 |
| 6 | 2020-06-25 13:10:20 | 14.00 |
| 7 | 2020-06-25 13:10:30 | 35.00 |
| 8 | 2020-06-27 13:10:36 | 6.00 |
| 9 | 2020-06-28 13:10:46 | 18.00 |
| 10 | 2020-07-02 13:10:58 | 18.00 |
| 11 | 2020-07-03 13:11:08 | 19.50 |
| 12 | 2020-07-04 13:11:17 | 9.00 |
| 13 | 2020-07-05 13:11:27 | 26.50 |
| 14 | 2020-07-05 13:11:40 | 42.00 |
| 15 | 2020-07-06 13:12:27 | 35.00 |
| 16 | 2020-07-06 13:12:35 | 19.50 |
| 17 | 2020-07-12 13:12:48 | 57.50 |
| 18 | 2020-07-14 13:13:04 | 34.00 |
| 19 | 2020-07-15 13:13:17 | 29.00 |
| 20 | 2020-07-18 13:13:27 | 14.00 |
| 21 | 2020-07-20 13:13:36 | 17.50 |
| 22 | 2020-07-21 13:13:47 | 33.50 |
| 23 | 2020-07-22 13:13:54 | 6.00 |
| 24 | 2020-07-22 13:14:07 | 35.00 |
| 25 | 2025-04-02 16:48:47 | 5.00 |
+-----+-----+-----+
25 rows in set (0.00 sec)

MariaDB [cafe_db]>
```

Session ID: s224001588@deakin.edu.au-ja2gqbghdqtzvnyu9hds547nae Instance ID: i-044416c2fa40c9496

54 rows in set (0.00 sec)

```
MariaDB [cafe_db]>
```

Session ID: i-044416c2fa40c9496
 Instance ID: i-044416c2fa40c9496
 ja2gqbghdqtzvnyu9hds547nae

	13	1	3	4	10.00
13	2	5	3	10.50	
13	3	8	2	6.00	
14	1	6	8	28.00	
14	2	9	4	14.00	
15	1	6	10	35.00	
16	1	5	3	10.50	
16	2	8	3	9.00	
17	1	1	15	22.50	
17	2	5	10	35.00	
18	1	3	8	20.00	
18	2	9	4	14.00	
19	1	4	2	6.00	
19	2	5	4	14.00	
19	3	7	2	6.00	
19	4	8	1	3.00	
20	1	2	5	5.00	
20	2	8	3	9.00	
21	1	9	5	17.50	
22	1	3	3	7.50	
22	2	5	4	14.00	
22	3	7	4	12.00	
23	1	7	2	6.00	
24	1	5	4	14.00	
24	2	6	3	10.50	
24	3	9	3	10.50	
25	1	1	1	1.50	
25	2	2	1	1.00	
25	3	3	1	2.50	

54 rows in set (0.00 sec)

```
MariaDB [cafe_db]> exit;
Bye
[ec2-user@cafeserver ~]$
```

Session ID: i-044416c2fa40c9496
 Instance ID: i-044416c2fa40c9496
 ja2gqbghdqtzvnyu9hds547nae

	13	3	8	2	6.00
14	1	6	8	28.00	
14	2	9	4	14.00	
15	1	6	10	35.00	
16	1	5	3	10.50	
16	2	8	3	9.00	
17	1	1	15	22.50	
17	2	5	10	35.00	
18	1	3	8	20.00	
18	2	9	4	14.00	
19	1	4	2	6.00	
19	2	5	4	14.00	
19	3	7	2	6.00	
19	4	8	1	3.00	
20	1	2	5	5.00	
20	2	8	3	9.00	
21	1	9	5	17.50	
22	1	3	3	7.50	
22	2	5	4	14.00	
22	3	7	4	12.00	
23	1	7	2	6.00	
24	1	5	4	14.00	
24	2	6	3	10.50	
24	3	9	3	10.50	
25	1	1	1	1.50	
25	2	2	1	1.00	
25	3	3	1	2.50	

54 rows in set (0.00 sec)

```
MariaDB [cafe_db]> exit;
Bye
[ec2-user@cafeserver ~]$ mysqldump --databases cafe_db -u root -p > CafeDbDump.sql
Enter password:
[ec2-user@cafeserver ~]$
```

Session ID: user5904332=s224001588@deakin.edu.au-ja2gpbghdqtzvnyu9hds547nae

	14	2	9	4	14.00
15	1	6	10	35.00	
16	1	5	3	10.50	
16	2	8	3	9.00	
17	1	1	15	22.50	
17	2	5	10	35.00	
18	1	3	8	20.00	
18	2	9	4	14.00	
19	1	4	2	6.00	
19	2	5	4	14.00	
19	3	7	2	6.00	
19	4	8	1	3.00	
20	1	2	5	5.00	
20	2	8	3	9.00	
21	1	9	5	17.50	
22	1	3	3	7.50	
22	2	5	4	14.00	
22	3	7	4	12.00	
23	1	7	2	6.00	
24	1	5	4	14.00	
24	2	6	3	10.50	
24	3	9	3	10.50	
25	1	1	1	1.50	
25	2	2	1	1.00	
25	3	3	1	2.50	

54 rows in set (0.00 sec)

```
MariaDB [cafe_db]> exit;
Bye
[ec2-user@cafeserver ~]$ mysqldump --databases cafe_db -u root -p > CafeDbDump.sql
Enter password:
[ec2-user@cafeserver ~]$ ls
CafeDbDump.sql
[ec2-user@cafeserver ~]$
```

0401 ENG IN 03-04-2025

Session ID: user5904332=s224001588@deakin.edu.au-ja2gpbghdqtzvnyu9hds547nae

```
-- Table structure for table `product_group`  
--  
  
DROP TABLE IF EXISTS `product_group`;  
/*140101 SET @saved_cs_client      = @@character_set_client */;  
/*140101 SET character_set_client = utf8 */;  
CREATE TABLE `product_group` (  
  `product_group_number` int(3) NOT NULL,  
  `product_group_name` varchar(25) NOT NULL DEFAULT '',  
  PRIMARY KEY (`product_group_number`)  
) ENGINE=InnoDB DEFAULT CHARSET=latin1;  
/*140101 SET character_set_client = @saved_cs_client */;  
  
-- Dumping data for table `product_group`  
--  
  
LOCK TABLES `product_group` WRITE;  
/*140000 ALTER TABLE `product_group` DISABLE KEYS */;  
INSERT INTO `product_group` VALUES (1,'Pastries'),(2,'Drinks');  
/*140000 ALTER TABLE `product_group` ENABLE KEYS */;  
UNLOCK TABLES;  
/*140103 SET TIME_ZONE=@OLD_TIME_ZONE */;  
  
/*140101 SET SQL_MODE=@OLD_SQL_MODE */;  
/*140014 SET FOREIGN_KEY_CHECKS=@OLD_FOREIGN_KEY_CHECKS */;  
/*140014 SET UNIQUE_CHECKS=@OLD_UNIQUE_CHECKS */;  
/*140101 SET CHARACTER_SET_CLIENT=@OLD_CHARACTER_SET_CLIENT */;  
/*140101 SET CHARACTER_SET_RESULTS=@OLD_CHARACTER_SET_RESULTS */;  
/*140101 SET COLLATION_CONNECTION=@OLD_COLLATION_CONNECTION */;  
/*140111 SET SQL_NOTES=@OLD_SQL_NOTES */;  
  
-- Dump completed on 2025-04-02 17:01:12  
[ec2-user@cafeserver ~]$
```

0402 ENG IN 03-04-2025

Task 4: Connecting to the new RDS instance

Summary:

I confirmed that the RDS instance was up and running, and then successfully connected to it from the EC2 instance to ensure everything was correctly configured.

Explanation:

We checked the instance status and details such as subnet and security groups to answer lab questions. From the EC2 terminal, I used the MySQL client to connect to the RDS

endpoint using the admin credentials. At this point, we confirmed network connectivity, although the RDS database was still empty (as expected).

A screenshot of a web browser window titled "Challenge (Cafe)". The URL is "c144539a373690919814748t1w123367927585-htmlobucket-guu1cpheqa5f.s3-website.us-east-1.amazonaws.com". The page contains several tabs at the top, including "Assignment 1 To", "Loading...", "Challenge (Cafe)", "c144539a373690919814748t1w123367927585-htmlobucket-guu1cpheqa5f.s3-website.us-east-1.amazonaws.com", "Systems Manager", "Online Notepad", "Cafe Order Conf", and "+".

Question 2: Does the RDS instance have an IPv4 Public IP address assigned to it?

- Yes
- No

Submit

Question 3: What is the Name tag value applied to the subnet in which the RDS instance is running? (Tip: you may want to open another browser tab and browse to the VPC console to compare the information found in the RDS console's Connectivity & security panel with the VPC service's subnets page details)

- Public Subnet
- Private Subnet 1
- Private Subnet 2

Submit

Question 4: How many security group rules are defined for the RDS instance?

- 1
- 2
- 3
- 4

Submit

A screenshot of a Windows desktop. The taskbar shows various icons including File Explorer, Microsoft Edge, and the Start button. The system tray indicates the date as 03-04-2025 and the time as 04:07. The main window is titled "AWS Academy Cloud Architecting - Module 5 Challenge Lab Questions". It displays the same four questions as the previous screenshot, with the same answers selected (No for Q2, Private Subnet 1 for Q3, and 1 for Q4). The URL in the address bar is the same as the first screenshot.

AWS Academy Cloud Architecting - Module 5 Challenge Lab Questions

View questions in: [English](#)

Question 1: Where is the RDS instance running? Choose the answer that is true and that is the most specific.

- At the Region level
- At the Availability Zone level
- In an edge location
- All of the above

Submit

Question 2: Does the RDS instance have an IPv4 Public IP address assigned to it?

- Yes
- No

Submit

Question 3: What is the Name tag value applied to the subnet in which the RDS instance is running? (Tip: you may want to open another browser tab and browse to the VPC console to compare the information found in the RDS console's Connectivity & security panel with the VPC service's subnets page details)

- Public Subnet
- Private Subnet 1
- Private Subnet 2

Submit

A screenshot of a Windows desktop. The taskbar shows various icons including File Explorer, Microsoft Edge, and the Start button. The system tray indicates the date as 03-04-2025 and the time as 04:07. The main window is titled "AWS Academy Cloud Architecting - Module 5 Challenge Lab Questions". It displays the same three questions as the previous screenshots, with the same answers selected (At the Availability Zone level for Q1, No for Q2, and Private Subnet 1 for Q3). The URL in the address bar is the same as the first screenshot.

The screenshot shows the AWS RDS Dashboard for the US East (N. Virginia) region. The left sidebar includes links for Aurora and RDS, such as 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, Zero-ETL integrations, Events, and Event subscriptions.

The main content area displays the following resources:

- DB Instances (1/40)**: Allocated storage (0.02 TB/100 TB), Instances and storage include Neptune and DocumentDB. [Increase DB instances limit](#)
- DB Clusters (0/40)**: Reserved instances (0/40)
- Snapshots (1)**: Manual (DB Cluster (0/100), DB Instance (0/100)), Automated (DB Cluster (0), DB Instance (1))
- Recent events (7)**: Event subscriptions (0/20)
- Parameter groups (1)**: Default (1), Custom (0/100)
- Option groups (1)**: Default (1), Custom (0/20)
- Subnet groups (1/50)**: VPC
- Supported platforms**: Default network vpc-01049c80414080088

Recommended services: No recommendations yet. Recommended services will display based on your AWS console usage.

Recommended for you: Test Your DR Strategy in Minutes, Build RDS Operational Tasks.

Databases (1): Cafedatabase (Available, Instance: MariaDB, Region: us-east-1a, Size: db.t3.micro)

Notifications: 0 notifications.

CloudShell Feedback: 11°C Mostly cloudy.

Screenshot of the AWS RDS console showing the Database Details for 'cafedatabase'.

Summary

- DB identifier: cafedatabase
- Status: Available
- Role: Instance
- Engine: MariaDB
- CPU: 2.67%
- Class: db.t3.micro
- Current activity: 0 Connections
- Region & AZ: us-east-1a

Connectivity & security

Endpoint & port	Networking	Security
Endpoint: cafedatabase.cjoxzeakcdqr.us-east-1.rds.amazonaws.com	Availability Zone: us-east-1a	VPC security groups: dbSG (sg-0aa901d1bf83b5556) (Active)
Port: 3306	VPC: Lab VPC (vpc-0b29688b72235d345)	Publicly accessible: No
	Subnet group: lab-db-subnet-group	Certificate authority: rds-ca-rsa2048-g1
	Subnets:	

EC2

Security Groups (1) Info

Name	Security group ID	Security group name	VPC ID	Description
-	sg-0aa901d1bf83b5556	dbSG	vpc-0b29688b72235d345	dbSG

The screenshot shows the AWS CloudShell interface with multiple tabs open. The active tab is 'Edit inbound rules' for a security group named 'sg-Oaa901d1bf83b5556'. The page displays a message stating 'This security group has no inbound rules.' A blue 'Add rule' button is visible. At the bottom right are 'Cancel', 'Preview changes', and 'Save rules' buttons.

The screenshot shows the AWS CloudShell interface with multiple tabs open. The active tab is 'Edit inbound rules' for the same security group. A new inbound rule has been added: Type: MySQL/Aurora, Protocol: TCP, Port range: 3306, Source: sg-020d728a6d8b24b70. The 'Add rule' button is still present at the bottom left. The bottom right buttons remain 'Cancel', 'Preview changes', and 'Save rules'.



Screenshot of the AWS EC2 Security Groups page showing the modification of a security group rule.

Details: Inbound security group rules successfully modified on security group (sg-0aa901d1bf83b5556 | dbSG)

sg-0aa901d1bf83b5556 - dbSG

Details

Security group name dbSG	Security group ID sg-0aa901d1bf83b5556	Description dbSG	VPC ID vpc-0b29688b72235d345
Owner 123367927585	Inbound rules count 1 Permission entry	Outbound rules count 1 Permission entry	

Inbound rules (1)

Name	Security group rule ID	IP version	Type	Protocol	Port range
-	sgr-014ea0e1b68699256	-	MySQL/Aurora	TCP	3306

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Screenshot of the AWS Management Console showing the EC2 Security Groups and Aurora and RDS sections.

EC2 - Security Groups

sg-0aa901d1bf83b5556 - dbSG

Inbound security group rules successfully modified on security group (sg-0aa901d1bf83b5556 | dbSG)

Details

Security group name	sg-0aa901d1bf83b5556	Description	VPC ID
Owner	123367927585	Inbound rules count	1 Permission entry
		Outbound rules count	1 Permission entry

Inbound rules | Outbound rules | Sharing - new | VPC associations - new | Tags

Inbound rules (1)

Name	Security group rule ID	IP version	Type	Protocol	Port range
-	sgr-014ea0e1b68699256	-	MySQL/Aurora	TCP	3306

Aurora and RDS

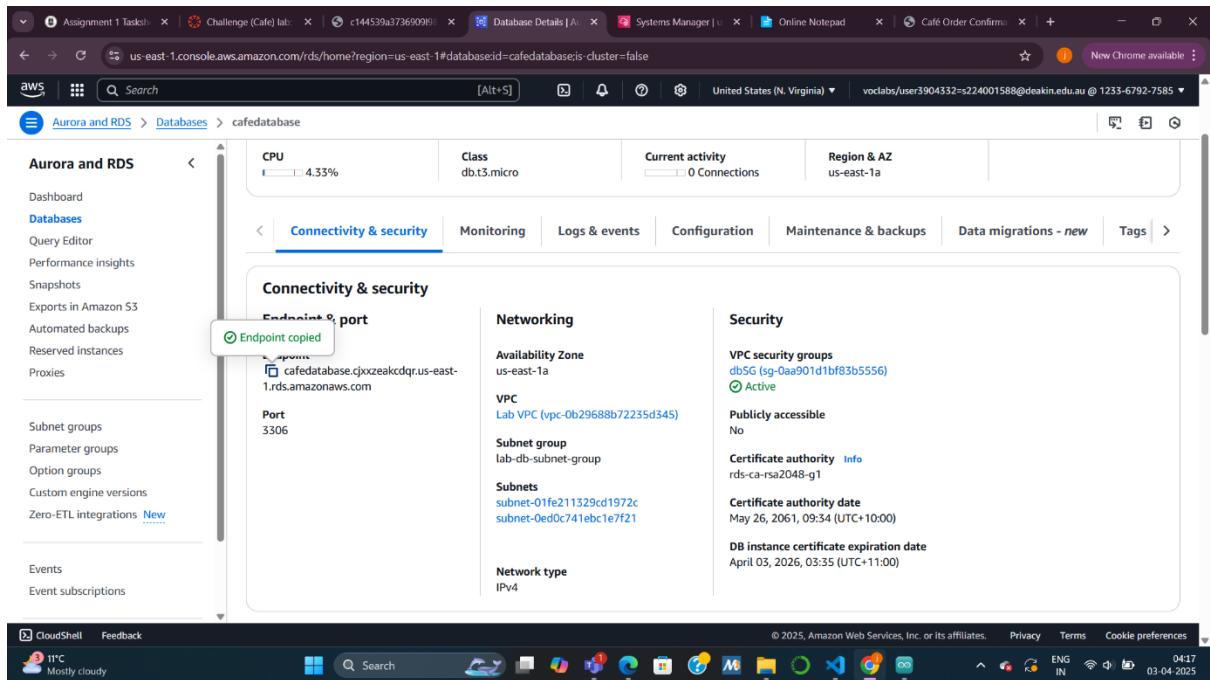
Databases

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)

DB identifier	Status	Role	Engine	Region ...	Size	Recommendations
cafedatabase	Available	Instance	MariaDB	us-east-1a	db.t3.micro	



Task 5: Importing data into RDS

Summary:

I imported the previously exported SQL data file into the new RDS MariaDB instance, then verified that all café order data was restored successfully.

Explanation:

We ran a command to import the contents of `CafeDbDump.sql` into the RDS instance. After importing, I logged into the RDS database and used SQL queries to confirm the presence of the `cafe_db`, including tables like `order` and `order_item`. The data matched what we had exported, indicating a successful migration.

```
Session ID: i-044416c2fa40c9496
Instance ID: i-044416c2fa40c9496
ja2gpbghdqtzvnyu9hds547nae
Terminate
```

```
/*140101 SET character_set_client = @saved_cs_client */;
-- Dumping data for table `product_group`
--
LOCK TABLES `product_group` WRITE;
/*140000 ALTER TABLE `product_group` DISABLE KEYS */;
INSERT INTO `product_group` VALUES (1,'Pastries'),(2,'Drinks');
/*140000 ALTER TABLE `product_group` ENABLE KEYS */;
UNLOCK TABLES;
/*140103 SET TIME_ZONE=@OLD_TIME_ZONE */;

/*140101 SET SQL_MODE=@OLD_SQL_MODE */;
/*140014 SET FOREIGN_KEY_CHECKS=@OLD_FOREIGN_KEY_CHECKS */;
/*140014 SET UNIQUE_CHECKS=@OLD_UNIQUE_CHECKS */;
/*140101 SET CHARACTER_SET_CLIENT=@OLD_CHARACTER_SET_CLIENT */;
/*140101 SET CHARACTER_SET_RESULTS=@OLD_CHARACTER_SET_RESULTS */;
/*140101 SET COLLATION_CONNECTION=@OLD_COLLATION_CONNECTION */;
/*140111 SET SQL_NOTES=@OLD_SQL_NOTES */;

-- Dump completed on 2025-04-02 17:01:12
[ec2-user@cafeserver ~]$ mysql -u admin -p --hostcafedatabase.cjxxzeakcdqr.us-east-1.rds.amazonaws.com
mysql: unknown option '--hostcafedatabase.cjxxzeakcdqr.us-east-1.rds.amazonaws.com'
[ec2-user@cafeserver ~]$ mysql -u admin -p --host cafedatabase.cjxxzeakcdqr.us-east-1.rds.amazonaws.com
Enter password:
Welcome to the MariaDB monitor. Commands end with ; or \g.
Your MariaDB connection id is 74
Server version: 11.4.4-MariaDB-log managed by https://aws.amazon.com/rds/

Copyright (c) 2000, 2018, Oracle, MariaDB Corporation Ab and others.

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

MariaDB [(none)]>
```

```
Session ID: i-044416c2fa40c9496
Instance ID: i-044416c2fa40c9496
ja2gpbghdqtzvnyu9hds547nae
Terminate
```

```
/*140101 SET SQL_MODE=@OLD_SQL_MODE */;
/*140014 SET FOREIGN_KEY_CHECKS=@OLD_FOREIGN_KEY_CHECKS */;
/*140014 SET UNIQUE_CHECKS=@OLD_UNIQUE_CHECKS */;
/*140101 SET CHARACTER_SET_CLIENT=@OLD_CHARACTER_SET_CLIENT */;
/*140101 SET CHARACTER_SET_RESULTS=@OLD_CHARACTER_SET_RESULTS */;
/*140101 SET COLLATION_CONNECTION=@OLD_COLLATION_CONNECTION */;
/*140111 SET SQL_NOTES=@OLD_SQL_NOTES */;

-- Dump completed on 2025-04-02 17:01:12
[ec2-user@cafeserver ~]$ mysql -u admin -p --hostcafedatabase.cjxxzeakcdqr.us-east-1.rds.amazonaws.com
mysql: unknown option '--hostcafedatabase.cjxxzeakcdqr.us-east-1.rds.amazonaws.com'
[ec2-user@cafeserver ~]$ mysql -u admin -p --host cafedatabase.cjxxzeakcdqr.us-east-1.rds.amazonaws.com
Enter password:
Welcome to the MariaDB monitor. Commands end with ; or \g.
Your MariaDB connection id is 74
Server version: 11.4.4-MariaDB-log managed by https://aws.amazon.com/rds/

Copyright (c) 2000, 2018, Oracle, MariaDB Corporation Ab and others.

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

MariaDB [(none)]> show databases;
+-----+
| Database |
+-----+
| information_schema |
| innodb |
| mysql |
| performance_schema |
| sys |
+-----+
5 rows in set (0.01 sec)

MariaDB [(none)]>
```

Session ID: s224001588@deakin.edu.au-ja2gqbghdqtzvnyu9hds547nae Instance ID: i-044416c2fa40c9496

Terminate

```
/*140014 SET FOREIGN_KEY_CHECKS=@OLD_FOREIGN_KEY_CHECKS */;
/*140014 SET UNIQUE_CHECKS=@OLD_UNIQUE_CHECKS */;
/*140101 SET CHARACTER_SET_CLIENT=@OLD_CHARACTER_SET_CLIENT */;
/*140101 SET CHARACTER_SET_RESULTS=@OLD_CHARACTER_SET_RESULTS */;
/*140101 SET COLLATION_CONNECTION=@OLD_COLLATION_CONNECTION */;
/*140111 SET SQL_NOTES=@OLD_SQL_NOTES */;

-- Dump completed on 2025-04-02 17:01:12
[ec2-user@cafeserver ~]$ mysql -u admin -p --hostcafedatabase.cjxxzeakcdqr.us-east-1.rds.amazonaws.com
mysql: unknown option '--hostcafedatabase.cjxxzeakcdqr.us-east-1.rds.amazonaws.com'
[ec2-user@cafeserver ~]$ mysql -u admin -p --host cafedatabase.cjxxzeakcdqr.us-east-1.rds.amazonaws.com
Enter password:
Welcome to the MariaDB monitor. Commands end with ; or \g.
Your MariaDB connection id is 74
Server version: 11.4.4-MariaDB-log managed by https://aws.amazon.com/rds/

Copyright (c) 2000, 2018, Oracle, MariaDB Corporation Ab and others.

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

MariaDB [(none)]> show databases;
+-----+
| Database |
+-----+
| information_schema |
| innodb |
| mysql |
| performance_schema |
| sys |
+-----+
5 rows in set (0.01 sec)

MariaDB [(none)]> exit;
Bye
[ec2-user@cafeserver ~]$ mysql -u admin -p --host <rds-endpoint> < CafeDbDump.sql
```

Temps to drop Saturday

Assignment 1 Tasks | Challenge (Cafe) lab | c144539a37369096 | Database Details | Systems Manager | Online Notepad | Cafe Order Confirm | + | - | X | 04:23 | 03-04-2025 | New Chrome available :

Session ID: s224001588@deakin.edu.au-ja2gqbghdqtzvnyu9hds547nae Instance ID: i-044416c2fa40c9496

Terminate

```
— Dump completed on 2025-04-02 17:01:12
[ec2-user@cafeserver ~]$ mysql -u admin -p --hostcafedatabase.cjxxzeakcdqr.us-east-1.rds.amazonaws.com
mysql: unknown option '--hostcafedatabase.cjxxzeakcdqr.us-east-1.rds.amazonaws.com'
[ec2-user@cafeserver ~]$ mysql -u admin -p --host cafedatabase.cjxxzeakcdqr.us-east-1.rds.amazonaws.com
Enter password:
Welcome to the MariaDB monitor. Commands end with ; or \g.
Your MariaDB connection id is 74
Server version: 11.4.4-MariaDB-log managed by https://aws.amazon.com/rds/

Copyright (c) 2000, 2018, Oracle, MariaDB Corporation Ab and others.

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

MariaDB [(none)]> show databases;
+-----+
| Database |
+-----+
| information_schema |
| innodb |
| mysql |
| performance_schema |
| sys |
+-----+
5 rows in set (0.01 sec)

MariaDB [(none)]> exit;
Bye
[ec2-user@cafeserver ~]$ mysql -u admin -p --host <rds-endpoint> < CafeDbDump.sql
bash: syntax error near unexpected token `<`'
[ec2-user@cafeserver ~]$ mysql -u admin -p --host <rds-endpoint> < CafeDbDump.sql
bash: syntax error near unexpected token `<`'
[ec2-user@cafeserver ~]$ mysql -u admin -p --host cafedatabase.cjxxzeakcdqr.us-east-1.rds.amazonaws.com < CafeDbDump.sql
Enter password:
[ec2-user@cafeserver ~]$
```

Temps to drop Saturday

Assignment 1 Tasks | Challenge (Cafe) lab | c144539a37369096 | Database Details | Systems Manager | Online Notepad | Cafe Order Confirm | + | - | X | 04:27 | 03-04-2025 | New Chrome available :

Session ID: s224001588@deakin.edu.au-ja2gqbghdqtzvnyu9hds547nae Instance ID: i-044416c2fa40c9496

Copyright (c) 2000, 2018, Oracle, MariaDB Corporation Ab and others.

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

MariaDB [(none)]> show databases;
+-----+
| Database          |
+-----+
| information_schema |
| innodb            |
| mysql              |
| performance_schema |
| sys                |
+-----+
5 rows in set (0.01 sec)

MariaDB [(none)]> exit;
Bye
```

[ec2-user@cafeserver ~]\$ mysql -u admin -p --host <rds-endpoint> < CafeDbDump.sql
mysql: syntax error near unexpected token `<'
[ec2-user@cafeserver ~]\$ mysql -u admin -p --host <rds-endpoint> < CafeDbDump.sql
mysql: syntax error near unexpected token `<'
[ec2-user@cafeserver ~]\$ mysql -u admin -p --host cafedbdatabase.cjxxzeakodqr.us-east-1.rds.amazonaws.com < CafeDbDump.sql
Enter password:
[ec2-user@cafeserver ~]\$ mysql -u admin -p --host cafedbdatabase.cjxxzeakodqr.us-east-1.rds.amazonaws.com
Enter password:
Welcome to the MariaDB monitor. Commands end with ; or \g.
Your MariaDB connection id is 90
Server version: 11.4.4-MariaDB-log managed by https://aws.amazon.com/rds/

Copyright (c) 2000, 2018, Oracle, MariaDB Corporation Ab and others.

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

MariaDB [(none)]>
```

Session ID: s224001588@deakin.edu.au-ja2gqbghdqtzvnyu9hds547nae Instance ID: i-044416c2fa40c9496

Copyright (c) 2000, 2018, Oracle, MariaDB Corporation Ab and others.

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

MariaDB [(none)]> show databases;
+-----+
| Database          |
+-----+
| cafe_db           |
| information_schema |
| innodb            |
| mysql              |
| performance_schema |
| sys                |
+-----+
6 rows in set (0.00 sec)

MariaDB [(none)]> use cafe_db;
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
MariaDB [cafe_db]> show tables;
+-----+
| Tables_in_cafe_db |
+-----+
| order             |
| order_item        |
| product           |
| product_group     |
+-----+
4 rows in set (0.00 sec)

MariaDB [cafe_db]> select * from `order`;
```

```

Session ID: i-044416c2fa40c9496
Instance ID: i-044416c2fa40c9496
user5904332=s224001588@deakin.edu.au-
ja2gqbjghdqtzvnyu9hds547nae
4 rows in set (0.00 sec)

MariaDB [cafe_db]> select * from `order`;
+-----+-----+-----+
| order_number | order_date_time | amount |
+-----+-----+-----+
| 1 | 2020-06-20 13:09:07 | 20.00 |
| 2 | 2020-06-21 13:09:23 | 24.00 |
| 3 | 2020-06-22 13:09:38 | 32.50 |
| 4 | 2020-06-22 13:09:49 | 10.50 |
| 5 | 2020-06-24 13:10:02 | 42.00 |
| 6 | 2020-06-25 13:10:20 | 14.00 |
| 7 | 2020-06-25 13:10:30 | 35.00 |
| 8 | 2020-06-27 13:10:36 | 6.00 |
| 9 | 2020-06-28 13:10:46 | 18.00 |
| 10 | 2020-07-02 13:10:58 | 18.00 |
| 11 | 2020-07-03 13:11:08 | 19.50 |
| 12 | 2020-07-04 13:11:17 | 9.00 |
| 13 | 2020-07-05 13:11:27 | 26.50 |
| 14 | 2020-07-05 13:11:40 | 42.00 |
| 15 | 2020-07-06 13:12:27 | 35.00 |
| 16 | 2020-07-09 13:12:35 | 19.50 |
| 17 | 2020-07-12 13:12:48 | 57.50 |
| 18 | 2020-07-14 13:13:04 | 34.00 |
| 19 | 2020-07-15 13:13:17 | 29.00 |
| 20 | 2020-07-18 13:13:27 | 14.00 |
| 21 | 2020-07-20 13:13:36 | 17.50 |
| 22 | 2020-07-21 13:13:47 | 33.50 |
| 23 | 2020-07-28 13:13:54 | 6.00 |
| 24 | 2020-07-28 13:14:07 | 35.00 |
| 25 | 2025-04-02 16:48:47 | 5.00 |
+-----+-----+-----+
25 rows in set (0.00 sec)

MariaDB [cafe_db]>

```

Task 6: Connecting the café application to the new database

Summary:

I updated the café web application to use the RDS instance instead of the local database, and confirmed that the app still works by placing a new order and viewing order history.

Explanation:

We updated the database endpoint stored in AWS Secrets Manager so the application would point to the RDS database. I then stopped the local MariaDB service on the EC2 instance to avoid any accidental usage. Finally, I tested the app again by placing an order and confirmed that the data was saved and retrieved from the RDS instance.

Secret details

Encryption key: aws/secretsmanager

Secret name: /cafe/dbPassword

Secret ARN: arn:aws:secretsmanager:us-east-1:123367927585:secret:/cafe/dbPassword-uJINfI

Secret description: -

Actions

Overview | Rotation | Versions | Replication | Tags

Secret value Info Retrieve secret value
Retrieve and view the secret value.

Resource permissions - optional Info Edit permissions
Add or edit a resource policy to access secrets across AWS accounts.

Secret details

Encryption key: aws/secretsmanager

Secret name: /cafe/dbPassword

Secret ARN: arn:aws:secretsmanager:us-east-1:123367927585:secret:/cafe/dbPassword-uJINfI

Secret description: -

Actions

Overview | Rotation | Versions | Replication | Tags

Secret value Info Close Edit
Retrieve and view the secret value.
Key/value Plaintext
Caf3DbPassw0rd!

Resource permissions - optional Info Edit permissions
Add or edit a resource policy to access secrets across AWS accounts.

Secret details

Encryption key: aws/secretsmanager

Secret name: /cafe/dbPassword

Secret ARN: arn:aws:secretsmanager:us-east-1:123367927585:secret:/cafe/dbPassword-uJINfI

Secret description: -

Actions

Overview | Rotation | Versions | Replication | Tags

Secret value Info Close Edit
Retrieve and view the secret value.
Key/value Plaintext
Caf3DbPassw0rd!

Resource permissions - optional Info Edit permissions
Add or edit a resource policy to access secrets across AWS accounts.

Inventory

Endpoint: Inventory-db.c7vd6paf3ka.us-east-1.rds.amazonaws.com

Database: Inventory

Username: admin

Password: iederjeetkaira15

Save



Your secret value has been updated.

/cafe/dbUser

Secret details

Encryption key: aws/secretsmanager

Secret name: /cafe/dbUser

Secret ARN: arn:aws:secretsmanager:us-east-1:123456789012:secret:/cafe/dbUser-DjQ8ek

Secret description: -

Actions

Overview | Rotation | Versions | Replication | Tags

Secret value Info Feedback Retrieve secret value

Resource permissions - optional Info Feedback Edit permissions

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The screenshot shows the AWS Secrets Manager console for a secret named "/cafe/dbUrl".

Secret value (Info):
Retrieve and view the secret value.
Key/value | **Plaintext**

ec2-54-89-148-230.compute-1.amazonaws.com

Resource permissions - optional (Info):
Add or edit a resource policy to access secrets across AWS accounts.
Edit permissions

Sample code:
Use these code samples to retrieve the secret in your application.

Java | JavaScript | C# | Python3 | Ruby | Go | Rust

The screenshot shows a Windows desktop environment with the AWS CloudShell interface open. The terminal window displays the same secret value:

```
cafedatabase.cjxxzeakcdqr.us-east-1.rds.amazonaws.com
```

Secret value (Info):
Retrieve and view the secret value.
Key/value | **Plaintext**

cafedatabase.cjxxzeakcdqr.us-east-1.rds.amazonaws.com

Resource permissions - optional (Info):
Add or edit a resource policy to access secrets across AWS accounts.
Edit permissions

Sample code:
Use these code samples to retrieve the secret in your application.

Java | JavaScript | C# | Python3 | Ruby | Go | Rust

Assignment 1 Tasksheet - 5 | Challenge (Cafe) lab: Migrating a Database to Amazon RDS | c144539a373690981474 | Systems Manager | us-east-1 | Online Notepad | Cafe Order Confirmation | + | - | X | us-east-1.console.aws.amazon.com/systems-manager/session_manager/i-044416c2fa40c9496?region=us-east-1# | New Chrome available

Session ID: user5904332=s224001588@deakin.edu.au-ja2gqbghdqtzvnyu9hds547nae Instance ID: i-044416c2fa40c9496

[Terminate](#)

order_number	order_date_time	amount
1	2020-06-20 13:09:07	20.00
2	2020-06-21 13:09:23	24.00
3	2020-06-22 13:09:38	32.50
4	2020-06-22 13:09:49	10.50
5	2020-06-24 13:10:02	42.00
6	2020-06-25 13:10:20	14.00
7	2020-06-25 13:10:30	35.00
8	2020-06-27 13:10:36	6.00
9	2020-06-28 13:10:46	18.00
10	2020-07-02 13:10:58	18.00
11	2020-07-03 13:11:08	19.50
12	2020-07-04 13:11:17	9.00
13	2020-07-05 13:11:27	26.50
14	2020-07-05 13:11:40	42.00
15	2020-07-08 13:12:27	35.00
16	2020-07-09 13:12:35	19.50
17	2020-07-12 13:12:48	57.50
18	2020-07-14 13:13:04	34.00
19	2020-07-15 13:13:17	29.00
20	2020-07-18 13:13:27	14.00
21	2020-07-20 13:13:36	17.50
22	2020-07-21 13:13:47	33.50
23	2020-07-26 13:13:54	6.00
24	2020-07-28 13:14:07	35.00
25	2025-04-02 16:48:47	5.00

25 rows in set (0.00 sec)

```
MariaDB [cafe_db]> exit;
Bye
[ec2-user@cafeserver ~]$ sudo service mariadb stop
Redirecting to /bin/systemctl stop mariadb.service
[ec2-user@cafeserver ~]$
```

11°C Cloudy

Assignment 1 Tasksheet - 5 | Database Dev | Instance details | Challenge (Cafe) lab: Migrating a Database to Amazon RDS | Systems Manager | us-east-1 | Online Notepad | Cafe Order Confirmation | RDS connect | + | - | X | awsacademy.instructure.com/courses/104153/assignments/1147508?module_item_id=9702651 | New Chrome available

ACAv3EN... > Assignments
Challenge (Cafe) lab: Migrating a Database to Amazon RDS

Challenge (Cafe) lab: Migrating a Database to Amazon RDS

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AWS

EN_US also stop the database that runs locally on the EC2 instance.

43. Return to the Secrets Manager console browser tab.
44. In the left navigation pane, choose **Secrets**.
Recall from an earlier challenge lab that the café application's PHP code references these values. For example, it uses the values to retrieve the connection information for the database.
45. Connect the café application to the RDS instance.
Because the database connection information has changed, you must update these values to connect the application to the new RDS database instance instead of to the database running on the EC2 instance.

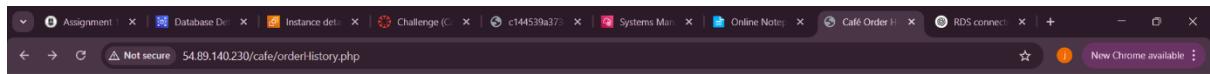
▼ Tip 5

Start Lab End Lab AWS Details Details

Task	Status	Score
[Task 1B] DB engine	2/2	
[Task 3] sqldump file	3/3	
[Task 4A] DB port access	5/5	
[Task 4B] SG configuration	2/2	
[Task 5] Data import	3/3	
[Task 6] Use new DB	-/3	

Submit Submission Report Grades

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```

Session ID:           Instance ID: i-044416c2fa40c9496
user5904332=s224001588@deakin.edu.au-
ja2gpbghdqzvnyu9hds547nae
                                         [Terminate]

|-----+-----+-----+
| 1 | 2020-06-25 13:09:07 | 20.00 |
| 2 | 2020-06-21 13:09:23 | 24.00 |
| 3 | 2020-06-22 13:09:38 | 32.50 |
| 4 | 2020-06-22 13:09:49 | 10.50 |
| 5 | 2020-06-24 13:10:02 | 42.00 |
| 6 | 2020-06-25 13:10:20 | 14.00 |
| 7 | 2020-06-25 13:10:30 | 35.00 |
| 8 | 2020-06-27 13:10:36 | 6.00 |
| 9 | 2020-06-28 13:10:46 | 10.00 |
| 10 | 2020-07-02 13:10:58 | 18.00 |
| 11 | 2020-07-03 13:11:08 | 19.50 |
| 12 | 2020-07-04 13:11:17 | 9.00 |
| 13 | 2020-07-05 13:11:27 | 26.50 |
| 14 | 2020-07-05 13:11:40 | 42.00 |
| 15 | 2020-07-05 13:12:27 | 35.00 |
| 16 | 2020-07-05 13:12:35 | 19.50 |
| 17 | 2020-07-12 13:12:48 | 57.50 |
| 18 | 2020-07-14 13:13:04 | 34.00 |
| 19 | 2020-07-15 13:13:17 | 29.00 |
| 20 | 2020-07-18 13:13:27 | 14.00 |
| 21 | 2020-07-20 13:13:36 | 17.50 |
| 22 | 2020-07-21 13:13:47 | 33.50 |
| 23 | 2020-07-28 13:13:54 | 6.00 |
| 24 | 2020-07-28 13:14:07 | 35.00 |
| 25 | 2025-04-02 16:48:47 | 5.00 |
+-----+-----+-----+
25 rows in set (0.00 sec)

MariaDB [cafe_db]> exit;
Bye
[ec2-user@cafeserver ~]$ sudo service mariadb stop
Redirecting to /bin/systemctl stop mariadb.service
[ec2-user@cafeserver ~]$ sudo service mariadb stop
Redirecting to /bin/systemctl stop mariadb.service
05:48
03-04-2025

```

Task 6 – not working successfully

Explanation

Even though I updated the Secrets Manager values, stopped the local MariaDB service, and restarted the web server, the café application still failed to connect to the RDS instance. This suggests a network connectivity issue between the EC2 instance and the RDS database.

RDS instances are placed in a VPC, and their connectivity is controlled through subnets and security groups. If the RDS security group (e.g., dbSG) does not allow inbound MySQL

traffic (port 3306) from the EC2 instance, the connection attempt will silently fail — and the application will not be able to access the database.

How do I rectify it :

Make sure that I am connected to a well connected internet connection.

Make sure that I've completed all the steps.

Make sure I've added appropriate inbound rules.

Questions :

. Where is the RDS instance running?

How to find it:

Go to the Amazon RDS Console → Click on your instance CafeDatabase → Under Connectivity & security, check the Availability Zone (AZ) or Region.

Example Answer:

The RDS instance is running in the us-east-1a Availability Zone, within the Lab VPC.

. Does the RDS instance have an IPv4 public IP address assigned to it?

How to find it:

Still in the Connectivity & security tab, look under Network & security → check the Public access setting.

Example Answer:

No, the RDS instance does not have an IPv4 public IP address assigned to it. Public access is disabled.

. What is the Name tag applied to the subnet in which the RDS instance is running?

- **How to find it:**

From the RDS instance details, note the subnet ID.

Then go to the VPC Console → Subnets → Search for that subnet ID, and view the "Name" tag.

- **Example Answer:**

The Name tag applied to the subnet is private-subnet-a (replace with the actual name you see).

. How many security group rules are defined for the RDS instance

- **How to find it:**
From the RDS instance page → Under Connectivity & security, find the Security group (dbSG) → Click it → Count the Inbound and Outbound rules.
- **Example Answer:**
The RDS instance has 1 inbound rule and 1 outbound rule defined in its security group.