

Upgrading AWS MySQL RDS 5.7 to 8.0



Introduction

Upgrading your AWS MySQL RDS instance from version 5.7 to 8.0 can bring significant performance improvements and new features. This comprehensive guide will walk you through the steps to successfully upgrade your MySQL RDS instance to version 8.0.

Preparation Steps

1. Ensure that the OvalEdge version is updated.
2. Stop the Apache Tomcat and MySQL RDS services.
3. Take a snapshot of the RDS instance to create a backup before upgrading.

Upgrade Steps

Assuming that your AWS MySQL RDS instance is currently running on version 5.7, as shown in the screenshot below:

MySQL 5.7 running in RDS

The screenshot shows the AWS Management Console interface for an Amazon RDS MySQL instance. The instance is named 'mysql' and is running on the 'db.t3.small' class. The 'Engine version' is set to '5.7.37'. The 'Status' is 'Available'. The 'Current activity' shows '0 Connections'. The 'Instance class' is 'db.t3.small'. The 'Storage type' is 'General Purpose SSD (gp2)'. The 'Performance Insights' are 'Turned off'. The 'DB identifier' and 'Engine version' are highlighted with red boxes.

Property	Value
DB identifier	mysql
CPU	3.08%
Status	Available
Class	db.t3.small
Role	Instance
Current activity	0 Connections
Engine	MySQL Community
Region & AZ	ap-south-1c
DB instance ID	mysql
Engine version	5.7.37
Instance class	db.t3.small
vCPU	2
RAM	2 GB
Storage type	General Purpose SSD (gp2)
Performance Insights	Turned off



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To proceed with the upgrade, follow the steps outlined below.

1. Open the **AWS Management Console** and navigate to the **RDS** service.
2. Click on the **"Actions"** button and select **"Take snapshot"** to create a backup of the RDS instance.

The screenshot shows the AWS Management Console interface for an RDS instance named 'mysql'. The instance is in an 'Available' state. The 'Actions' dropdown menu is open, and the 'Take snapshot' option is highlighted with a red box. The console displays various configuration details for the instance, including CPU usage (2.98%), Current activity (0 Connections), Instance class (db.t3.small), Engine (MySQL Community), and Storage type (General Purpose SSD (gp2)).

Upgrade RDS Instance

1. Once the snapshot process is completed, wait for the RDS instance to become available.
2. Go to the RDS console, select the RDS instance you wish to upgrade, and click on **"Modify."**

The screenshot shows the AWS Management Console interface for the same RDS instance 'mysql'. The 'Modify' button is highlighted with a red box. The console displays various configuration details for the instance, including CPU usage (2.76%), Current activity (0 Connections), Instance class (db.t3.small), Engine (MySQL Community), and Storage type (General Purpose SSD (gp2)).



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3. In the modification settings, locate the current MySQL version (5.7) from the **DB engine version** dropdown and change it to MySQL 8.0.X.

RDS > Databases > Modify DB Instance: mysql

Modify DB instance: mysql

Settings

DB engine version
Version number of the database engine to be used for this database

- 5.7.37
- 5.7.37 ✓
- 5.7.38
- 5.7.39
- 5.7.40
- 5.7.41
- 5.7.42
- 8.0.28
- 8.0.32
- 8.0.32 (highlighted)

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

New master password [Info](#)

Constraints: At least 8 printable ASCII characters. Can't contain any of the following: / (slash), ' (single quote), " (double quote) and @ (at sign).

Confirm master password [Info](#)

Copy tags to snapshots

Backup replication [Info](#)

Enable replication in another AWS Region
Enabling replication automatically creates backups of your DB instance in the selected Region, for disaster recovery, in addition to the current Region.

Log exports
Select the log types to publish to Amazon CloudWatch Logs

- Audit log
- Error log
- General log
- Slow query log

IAM role
The following service-linked role is used for publishing logs to CloudWatch Logs.

RDS service-linked role

Maintenance
Auto minor version upgrade [Info](#)

Enable auto minor version upgrade
Enabling auto minor version upgrade will automatically upgrade to new minor versions as they are released. The automatic upgrades occur during the maintenance window for the database.

DB instance maintenance window
The weekly time range during which system maintenance can occur.

Start day: Wednesday
Start time: 07 : 22 UTC
Duration: 0.5 hours

Deletion protection

Enable deletion protection
Protects the database from being deleted accidentally. While this option is enabled, you can't delete the database.

Cancel **Continue**



4. Verify the details you have filled in and click on the "Continue" button. The **Summary of Modifications** section is displayed with **Current** and **New Values** are displayed.

RDS > Databases > Modify DB instance: mysql

Modify DB instance: mysql

⚠ Are you sure you want to upgrade your DB Instance?
Once a DB instance has been upgraded, you cannot convert it back to the previous version. Please make sure you have tested both your database and your application with the new version before continuing. The upgrade will be applied either immediately (if you selected the Apply Immediately option) or during your next maintenance window (default). Please note that in either case, your database instance will have an availability impact for a few minutes as the upgrade is applied and your database instance is rebooted. For more information, see [major/minor version upgrade documentation](#).

Summary of modifications

You are about to submit the following modifications. Only values that will change are displayed. Carefully verify your changes and click Modify DB Instance.

Attribute	Current value	New value
Engine version	5.7.37	8.0.33
DB instance class	db.t3.small	db.t3.medium
DB parameter group	default.mysql5.7	default.mysql8.0

Schedule modifications

When to apply modifications

Apply during the next scheduled maintenance window
Current maintenance window: July 19, 2023 12:52 - 13:22 UTC+5.5

Apply immediately
The modifications in this request and any pending modifications will be asynchronously applied as soon as possible, regardless of the maintenance window setting for this database instance.

Cancel Back **Modify DB instance**

5. After reviewing the changes, select "Apply Immediately" and click on "Modify DB Instances."



Confirmation and Verification

1. Once the RDS instance status is available, confirm the upgraded **Engine Version** by checking the configuration.
2. In the RDS console, locate the modified RDS instance and review the **Engine Version** to ensure it reflects MySQL 8.0.X.

The screenshot shows the AWS RDS console for a MySQL instance. The 'Summary' section indicates the instance is 'Available'. The 'Configuration' tab is selected, showing the 'Engine version' as 8.0.33, which is highlighted with a red box. Other details include the instance class 'db.t3.medium', vCPU '2', RAM '4 GB', and storage type 'General Purpose SSD (gp2)'.

3. After the RDS has been successfully migrated to MySQL 8.0.X, update the Tomcat server by changing the RDS details in the Oasis properties file.

```
# MySQL 5.7.x
#driverClassName=com.mysql.jdbc.Driver
#url=jdbc:mysql://mysql.cqss4ijtzas1.ap-south-1.rds.amazonaws.com:3306/ovaledgedb?useUnicode=true&character_set_server=utf8mb4&useSSL=false

# MySQL 8.0.x
#driverClassName=com.mysql.cj.jdbc.Driver
#url=jdbc:mysql://mysql.cqss4ijtzas1.ap-south-1.rds.amazonaws.com:3306/ovaledgedb?useUnicode=true&character_set_server=utf8mb4&useSSL=false&allowPublicKeyRetrieval=true

# MariaDB 10.x.x
#driverClassName=org.mariadb.jdbc.Driver
#url=jdbc:mariadb://localhost:3306/ovaledgedb?useUnicode=true&character_set_server=utf8mb4&useSSL=false

### Read Replica Section ###
# MySQL 5.7.x
#read.url=jdbc:mysql://localhost:3306/ovaledgedb?useUnicode=true&character_set_server=utf8mb4&useSSL=false

# MySQL 8.0.x
#read.url=jdbc:mysql://mysql.cqss4ijtzas1.ap-south-1.rds.amazonaws.com:3306/ovaledgedb?useUnicode=true&character_set_server=utf8mb4&useSSL=false&allowPublicKeyRetrieval=true

# MariaDB 10.x.x
#read.url=jdbc:mariadb://localhost:3306/ovaledgedb?useUnicode=true&character_set_server=utf8mb4&useSSL=false

username=admin
password=password

# Connection Pool Configurations
```

End of the document

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