

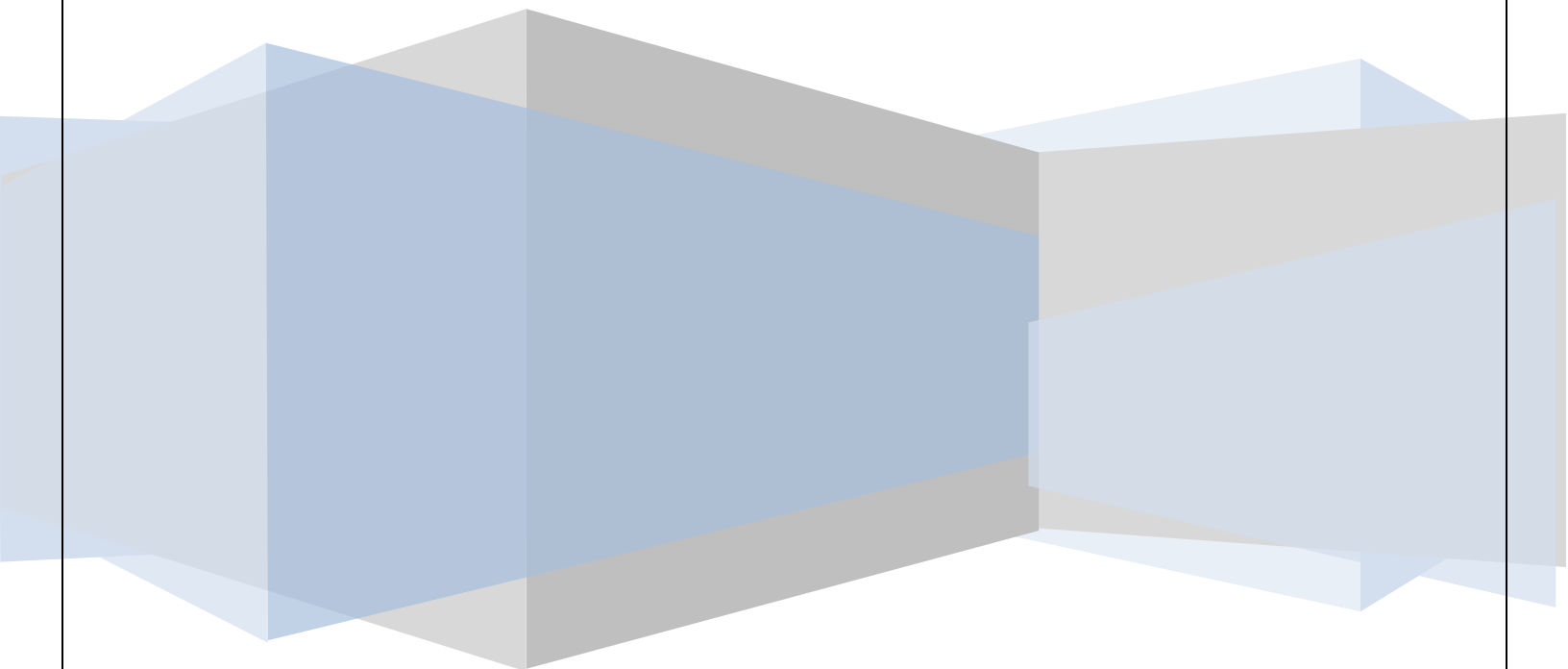


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AWS Cloud Training

RELATIONAL DATABASE SERVICE



RELATIONAL DATABASE SERVICE (RDS)

Amazon Relational Database Service (Amazon RDS) is a web service that makes it easier to set up, operate, and scale a relational database in the cloud. It provides cost-efficient, resizable capacity for an industry-standard relational database and manages common database administration tasks.

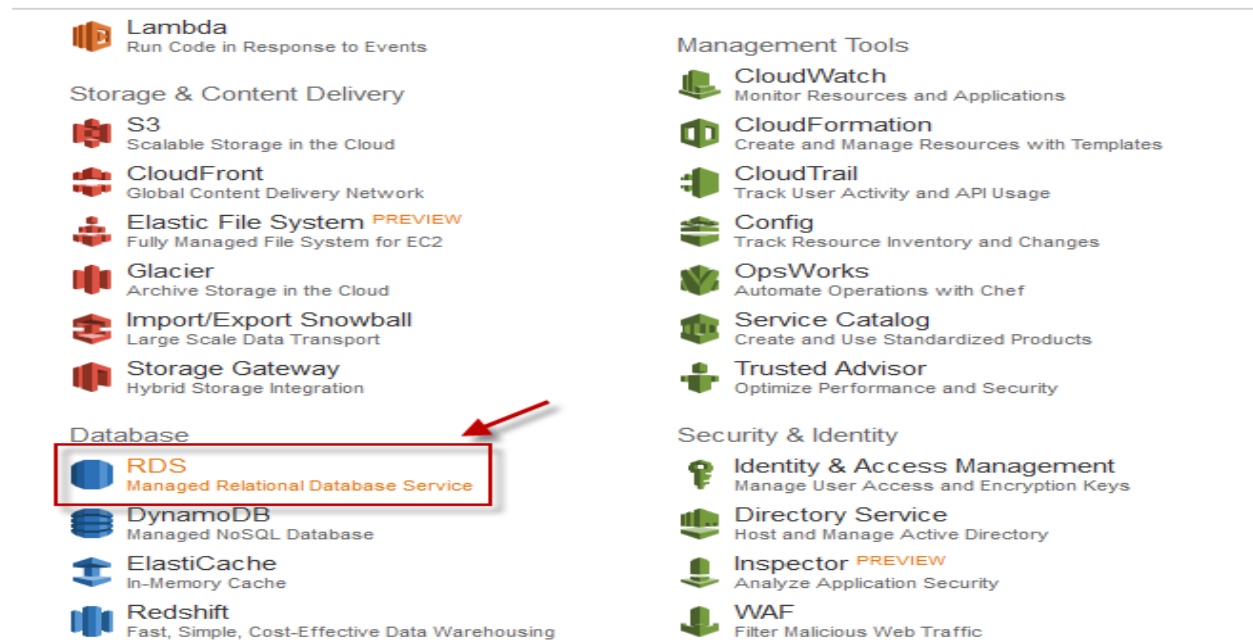
DB Instances: The basic building block of Amazon RDS is the DB instance. A DB instance is an isolated database environment in the cloud. A DB instance can contain multiple user-created databases, and you can access it by using the same tools and applications that you use with a stand-alone database instance.

Each DB instance runs a DB engine. Amazon RDS currently supports the MySQL, Maria DB, PostgreSQL, Oracle, and Microsoft SQL Server DB engines.

For each DB instance, you can select from 5 GB to 6 TB of associated storage capacity. Each DB instance class has minimum and maximum storage requirements for the DB instances that are created from it. It's important to have sufficient storage so that your databases have room to grow and that features for the DB engine have room to write content or log entries.

DB instance storage comes in three types: Magnetic, General Purpose (SSD), and Provisioned IOPS (SSD). They differ in performance characteristics and price, allowing you to tailor your storage performance and cost to the needs of your database.

Choose RDS from Database under AWS console page.



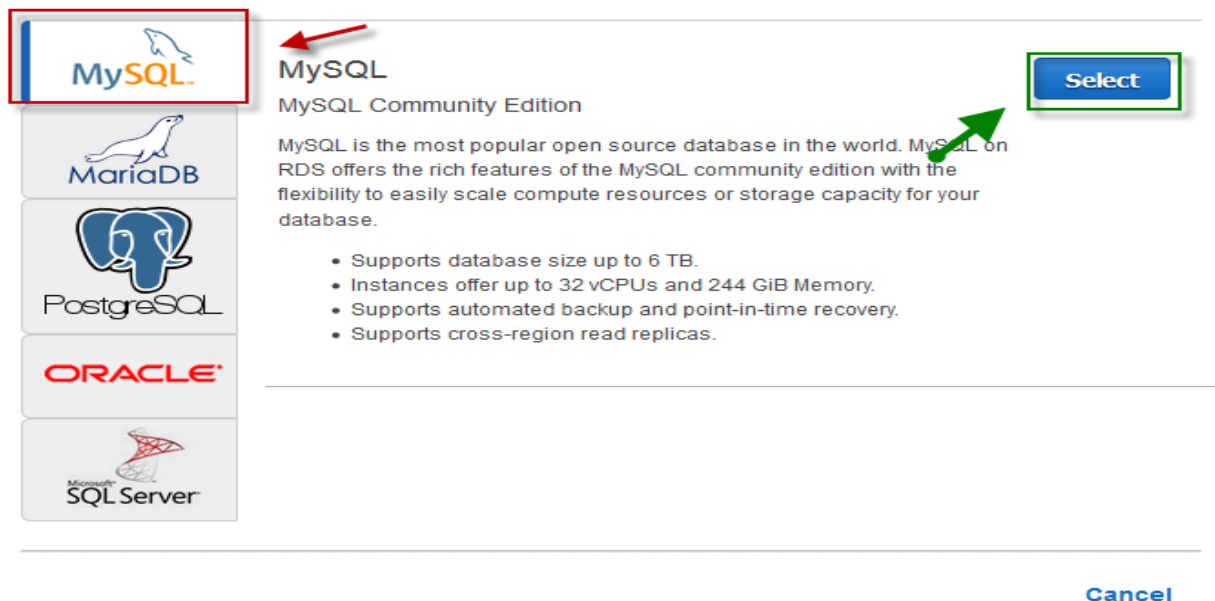
Choose Get started Now to start using RDS.



In the next page, choose the database engine and click on Select.

Select Engine

To get started, choose a DB Engine below and click Select.



MySQL
MySQL Community Edition

MySQL is the most popular open source database in the world. MySQL on RDS offers the rich features of the MySQL community edition with the flexibility to easily scale compute resources or storage capacity for your database.

- Supports database size up to 6 TB.
- Instances offer up to 32 vCPUs and 244 GiB Memory.
- Supports automated backup and point-in-time recovery.
- Supports cross-region read replicas.

Select

Cancel

Choose either Production or Dev/Test and choose Next Step.
Make sure to select Dev/Test if we are launching it under Free tier.

Do you plan to use this database for production purposes?

Production

☐ MySQL

Use [Multi-AZ Deployment](#) and [Provisioned IOPS Storage](#) as defaults for high availability and fast, consistent performance.

Dev/Test

☒ MySQL

This instance is intended for use outside of production or under the [RDS Free Usage Tier](#).

Billing is based on [RDS pricing](#).

Cancel

Previous

Next Step

In the next page choose license model and select DB engine version.

Specify DB Details

Free Tier

The Amazon RDS Free Tier provides a single db.t2.micro instance as well as up to 20 GB of storage, allowing new AWS customers to gain hands-on experience with Amazon RDS. Learn more about the RDS Free Tier and the instance restrictions [here](#).

☐ Only show options that are eligible for RDS Free Tier

Instance Specifications

DB Engine mysql

License Model general-public-license

DB Engine Version 5.6.27



Review the **Known Issues/Limitations** to learn about potential compatibility issues with specific database versions.

Next choose DB instance class from the drop down list, make sure to select db.t2.micro to use under Free Tier.

DB Instance Class

Multi-AZ Deployment

Storage Type

Allocated Storage*

- Select One -
- Select One -
- db.t2.micro — 1 vCPU, 1 GiB RAM
- db.t2.small — 1 vCPU, 2 GiB RAM
- db.t2.medium — 2 vCPU, 4 GiB RAM
- db.t2.large — 2 vCPU, 8 GiB RAM
- db.m4.large — 2 vCPU, 8 GiB RAM
- db.m4.xlarge — 4 vCPU, 16 GiB RAM
- db.m4.2xlarge — 8 vCPU, 32 GiB RAM
- db.m4.4xlarge — 16 vCPU, 64 GiB RAM
- db.m4.10xlarge — 40 vCPU, 160 GiB RAM
- db.m3.medium — 1 vCPU, 3.75 GiB RAM
- db.m3.large — 2 vCPU, 7.5 GiB RAM
- db.m3.xlarge — 4 vCPU, 15 GiB RAM
- db.m3.2xlarge — 8 vCPU, 30 GiB RAM



Provisioning less than 100 GB for high throughput workload may result in exhaustion of the initial General Purpose I/O capacity. [Click here](#) for more details.

Next choose Multi-AZ Deployment either yes or No, make sure to select no to use under Free Tier.

Multi-AZ Deployment No ▼

Storage Type - Select One -

No

Yes

Next choose Storage Type from the drop down list.

Storage Type General Purpose (SSD) ▼

Allocated Storage* - Select One -

General Purpose (SSD)

Provisioned IOPS (SSD)

Magnetic

Provisioning less than 100 GB of General Purpose (SSD) storage
high throughput workloads could result in higher latencies upon

Next specify storage in the Allocated storage text field.

Allocated Storage* 5 GB

Under Settings, specify a name for DB instance, master username, master user password.

Then choose Next Step to continue.

Settings

DB Instance Identifier* demo

Master Username* root

Master Password* ••••••••

Confirm Password* ••••••••

Specify a string that defines the password for the master user. Master Password must be at least eight characters long, as in "mypassword".

* Required

[Cancel](#)

[Previous](#)

[Next Step](#)

Under Network & Security choose VPC configurations.

- Select VPC from VPC drop down list.
- Select Default for Subnet Group.
- Choose either Yes or No for Public accessibility.
- Specify an Availability Zone from the drop down list.
- Choose VPC security groups from the list.

Configure Advanced Settings

Network & Security



This instance will be created with the new Certificate Authority rds-ca-2015. If you are using SSL to connect to this instance, you should use the [new certificate bundle](#). Learn more [here](#).

VPC*	Default VPC (vpc-adfea0c8)	▼
Subnet Group	default	▼
Publicly Accessible	Yes	▼
Availability Zone	No Preference	▼
VPC Security Group(s)	<div> demo1 (VPC) launch-wizard-1 (VPC) test (VPC) windows (VPC) </div>	

Under database options, specify a database name to be created with rds instance.

- Specify Database port to run RDS instance.
- Choose DB Parameter and Option groups.

Configure Advanced Settings

Network & Security



This instance will be created with the new Certificate Authority rds-ca-2015. If you are using SSL to connect to this instance, you should use the [new certificate bundle](#). Learn more [here](#).

VPC*	Default VPC (vpc-adfea0c8) ▼
Subnet Group	default ▼
Publicly Accessible	Yes ▼
Availability Zone	No Preference ▼
VPC Security Group(s)	<div> demo1 (VPC) launch-wizard-1 (VPC) test (VPC) windows (VPC) </div> <div> ^ ▼ </div>

Under the Backup section, specify backup, monitoring, and maintenance details.

- Like how many days of backups you need for this RDS instance.
- When to backup.
- Enhanced monitoring.
- Upgrade and patches to be installed or not.
- When to install upgrades and patches.

After specifying these details choose Launch DB instance to start creating.

Backup

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

Backup Retention Period days

Backup Window

Monitoring

Enable Enhanced Monitoring

Maintenance

Auto Minor Version Upgrade

Maintenance Window

* Required

[Cancel](#)
[Previous](#)
[Launch DB Instance](#)

Click on View your DB Instances to see the instances.

✓ **Your DB Instance is being created.**

Note: Your instance may take a few minutes to launch.

Connecting to your DB Instance

You will be unable to connect to your database instance unless you have previously authorized access on your chosen security group.

[Go to the Security Groups Page](#)

Related AWS Services

Amazon ElastiCache

Add a managed Memcached or Redis-compatible in-memory cache to speed up your database access.

[Click here to learn more and launch your Cache Cluster](#)

View Your DB Instances

Once RDS creation completed, the status will show as available.

Launch DB Instance

Show Monitoring

Instance Actions

Filter: All Instances

Search DB Instances...

Viewing

<input type="checkbox"/>	Engine	DB Instance	Status	CPU	Current Activity	Maintenance	Class
<input type="checkbox"/>	MySQL	demo	available	0.67%	0 Connections	None	db.t2.micro

Then click on arrow symbol to expand to see details.
End Point is used to connect to RDS instance.

Filter: All Instances DB Instances... X Viewing 1 of 1 DB Instance

	Engine	DB instance	Status	CPU	Current Activity	Maintenance	Class	VPC	MI
<input type="checkbox"/>	MySQL	demo	available	0.66%	0 Connections	None	db.t2.micro	vpc-adfea0c8	No

Endpoint: demo.cvjmahh4bxfu.ap-southeast-1.rds.amazonaws.com:3306 (authorized) ⓘ

Alarms and Recent Events

TIME (UTC+5:30)	EVENT
Apr 16 1:29 AM	Finished DB Instance backup
Apr 16 1:25 AM	Backing up DB instance
Apr 16 1:24 AM	DB instance created
Apr 16 1:24 AM	DB instance restarted

Monitoring

	CURRENT VALUE	THRESHOLD	LAST HOUR	CURRENT VALUE
CPU	0.745%			
Memory	552 MB			Read IOPS 0/sec
Storage	4,540 MB			Write IOPS 0.383/sec
				Swap Usage 0 MB

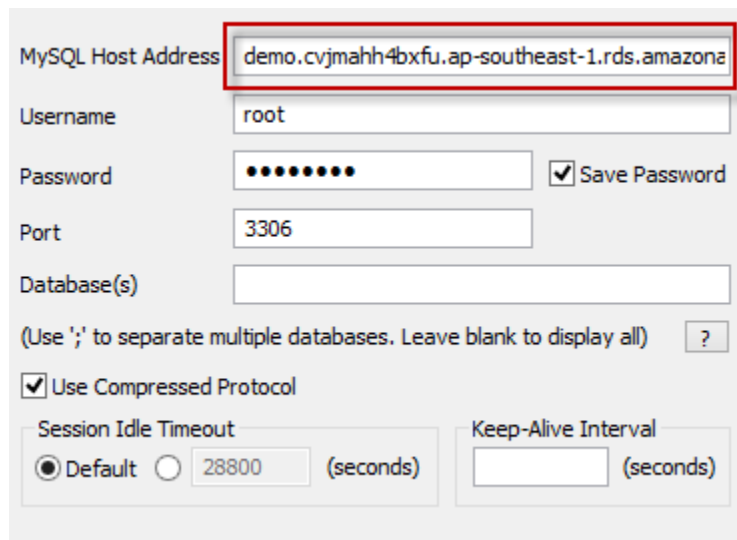
end point use to connect

Instance Actions Tags Logs

CONNECT TO RDS INSTANCE USING CLIENTS

Use MySQL clients to connect to RDS instances.

Specify End Point as Host or IP Address, Port 3306, and specify user and password combination to connect to RDS DB instance.



MySQL Host Address: demo.cvjmahh4bxfu.ap-southeast-1.rds.amazonaws.com

Username: root

Password: [masked] ☒ Save Password

Port: 3306

Database(s):

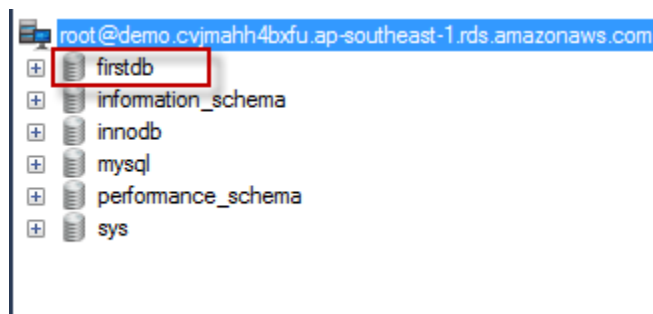
(Use ';' to separate multiple databases. Leave blank to display all) ?

☒ Use Compressed Protocol

Session Idle Timeout: ☒ Default ☐ 28800 (seconds)

Keep-Alive Interval: [] (seconds)

Once connected you can be able see the databases available on RDS.



Make sure to open DB instance port to connect in RDS security Group, otherwise you will not be able to connect.

TERMINATE RDS DB INSTANCE

Once you are in RDS page, click in Instances tab.

Then select instance, go to Instance Actions tab, choose Delete to RDS DB Instance.

The screenshot shows the AWS Management Console interface for RDS instances. At the top, there are buttons for 'Launch DB Instance', 'Show Monitoring', and 'Instance Actions'. Below these is a filter bar set to 'All Instances' and a search bar. A table lists the instances, with the 'demo' MySQL instance in an 'available' state selected. The 'Instance Actions' dropdown menu is open, showing options like 'See Details', 'Create Read Replica', 'Promote Read Replica', 'Take Snapshot', 'Restore to Point in Time', 'Migrate Latest Snapshot', 'Modify', 'Reboot', and 'Delete'. The 'Delete' option is highlighted with a red box. Below the table, the 'Alarms and Recent Events' section shows a list of events, including 'Finished DB Instance backup', 'Backing up DB instance', 'DB instance created', and 'DB instance restarted'.

TIME (UTC+5:30)	EVENT
Apr 16 1:29 AM	Finished DB Instance backup
Apr 16 1:25 AM	Backing up DB instance
Apr 16 1:24 AM	DB instance created
Apr 16 1:24 AM	DB instance restarted