iamneo

Amazon RDS

Introduction to Amazon 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 AWS Cloud.
- It provides cost-efficient, resizable capacity for an industry-standard relational database and manages common database administration tasks.

Benefits of RDS

Benefits of RDS

- Availability
- Scalability
- Vertical Scalability /Scaling Up
- Horizontal Scalability /Scaling Out
- Performance
- Backup

Creating RDS database instances using the AWS Management Console

- You can create a DB instance by using the AWS Management Console with **Easy create** enabled or not enabled.
- With **Easy create** enabled, you specify only the DB engine type, DB instance size, and DB instance identifier.
- **Easy create** uses the default setting for other configuration options.
- With **Easy create** not enabled, you specify more configuration options when you create a database, including ones for availability, security, backups, and maintenance.

Creating RDS database instances using CLI

Alternatively, With AWS CLI, developers can create, edit, and delete Amazon RDS DB instances, snapshots, and security groups using the command line instead of the AWS Management Console.

To create a DB instance by using the AWS CLI, call thecreate-db-instance command with the following parameters:

--db-instance-identifier
--db-instance-class
--vpc-security-group-ids
--db-subnet-group
--engine
--master-username
--master-user-password
--allocated-storage
--backup-retention-period

Understanding Amazon RDS Database Engines

Amazon RDS

- MySQLis the world's most popularopen-sourcerelational database and Amazon RDS makes it easier to set up, operate, and scale MySQL deployments inthe cloud.
- With Amazon RDS, you can deploy scalable MySQL servers in minutes with cost-efficient and resizable hardware capacity.
- Amazon RDS for MySQL frees you up to focus on application development by managing time-consuming database administration tasks, including backups, upgrades, software patching, performance improvements, monitoring, scaling, and replication.

Understanding Amazon RDS Database Engines

Amazon RDS

PostgreSQL

- PostgreSQLhas become the preferredopen-sourcerelational database for many enterprise developers and startups, powering leading business and mobile applications.
- Amazon RDS makes it easier to set up, operate, and scale PostgreSQL deploymentson the cloud. With Amazon RDS, you can deploy scalable PostgreSQL deployments in minutes with cost-efficient and resizable hardware capacity.
- Amazon RDS manages complex and time-consuming administrative tasks

Understanding Amazon RDS Database Engines

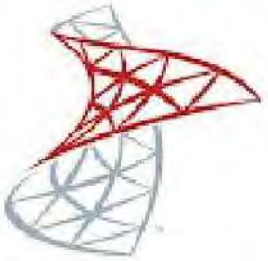
ORACLE

Amazon RDS

- Amazon RDS for Oracle is a fully managed commercial database that makes it easy to set up, operate, and scale Oracle deployments in the cloud.
- Amazon RDS frees you up to focus on innovation and application development by managing time-consuming database administration tasks, including provisioning, backups, software patching, monitoring, and hardware scaling.
- You can run Amazon RDS for Oracle under two different licensing models :
    - "License Included"
    - "Bring-Your-Own-License (BYOL)".

Understanding Amazon RDS Database Engines

Amazon RDS



- SQL Server is arelational databasemanagement system developed by Microsoft.
- Amazon RDS for SQL Server makes it easy to set up, operate, and scale SQL Server deployments inthe cloud.
- With Amazon RDS, you can deploy multiple editions of SQL Server (2014, 2016, 2017 and 2019), including Express, Web, Standard, and Enterprise, in minutes with cost-efficient and re-sizable compute capacity.

Understanding Amazon RDS Database Engines

Amazon RDS

MariaDB

- MariaDB is a popular open-sourcerelational databasecreated by the original developers of MySQL.
- Amazon RDS makes it easy to set up, operate, and scale MariaDB server deployments inthe cloud.
- With Amazon RDS, you can deploy scalable MariaDB cloud databases in minutes with cost-efficient and resizable hardware capacity.

Understanding Amazon RDS Database Engines

Amazon Aurora

- Amazon Aurora (Aurora) is a fully managed relational database engine that's compatible with MySQL and PostgreSQL.
- You already know how MySQL and PostgreSQL combine the speed and reliability of high-end commercial databases with the simplicity and cost-effectiveness of open-source databases.
- The code, tools, and applications you use today with your existing MySQL and PostgreSQL databases can be used with Aurora.

Scaling and Monitoring Amazon RDS

1

Scaling RDS Instances

Learn how to scale RDS instances for increased performance and capacity using manual or auto scaling techniques.

2

Monitoring RDS performance

Measure the performance of your RDS instances using Amazon CloudWatch metrics and alarms and opt for automated monitoring as an alternative.

3

Configuring auto scaling and read replicas

Learn how to configure auto scaling and read replicas for RDS instances for improved performance and durability.

Auto Scaling for RDS Instances

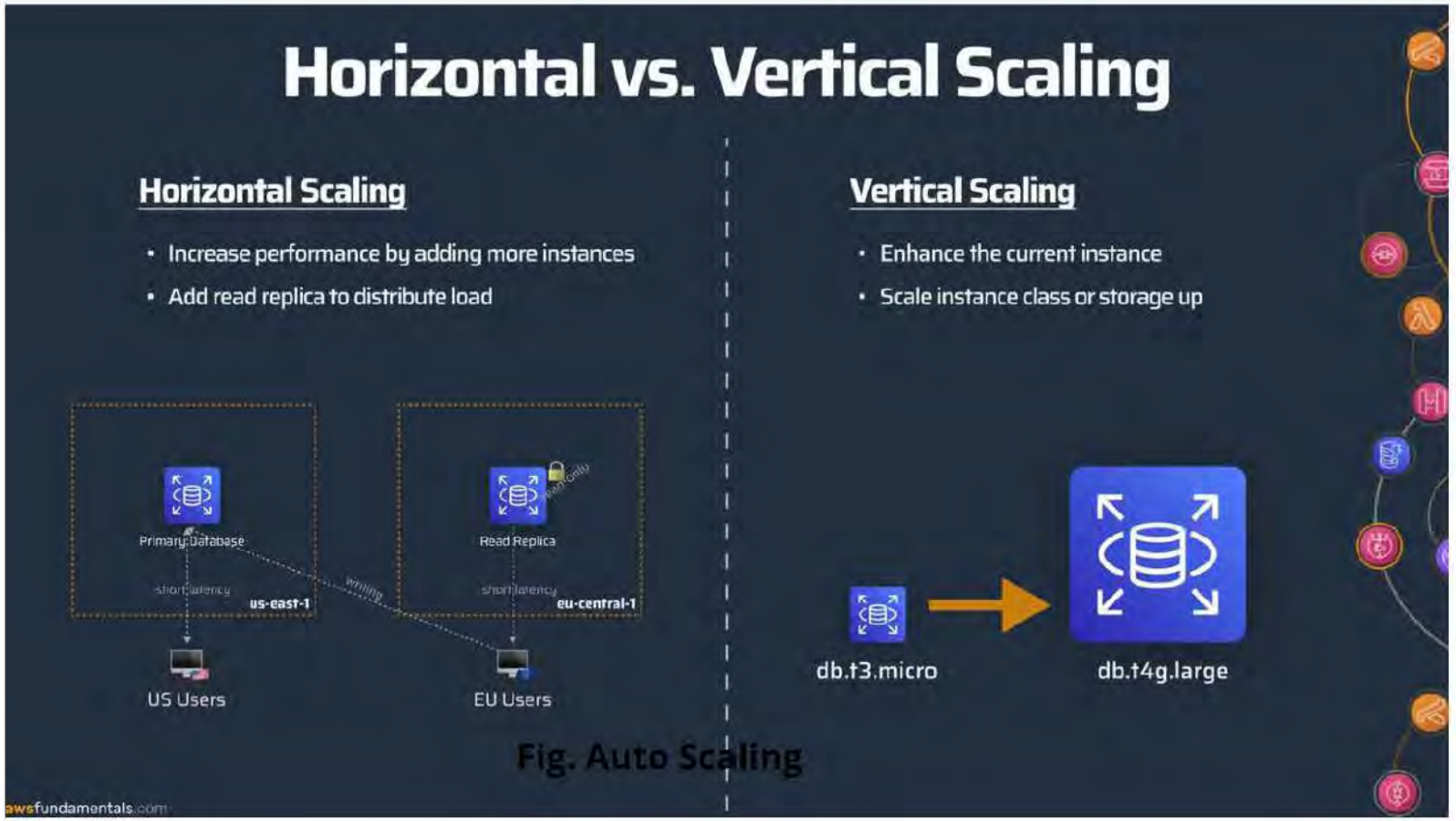


Fig. Auto Scaling

Auto Read Replicas for RDS Instances

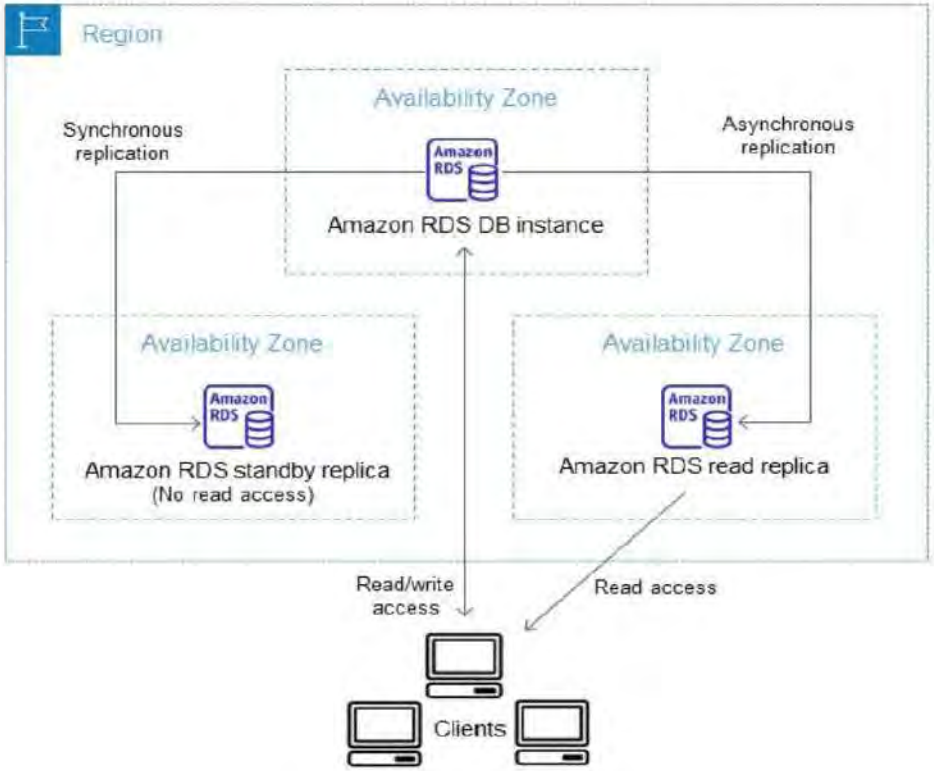
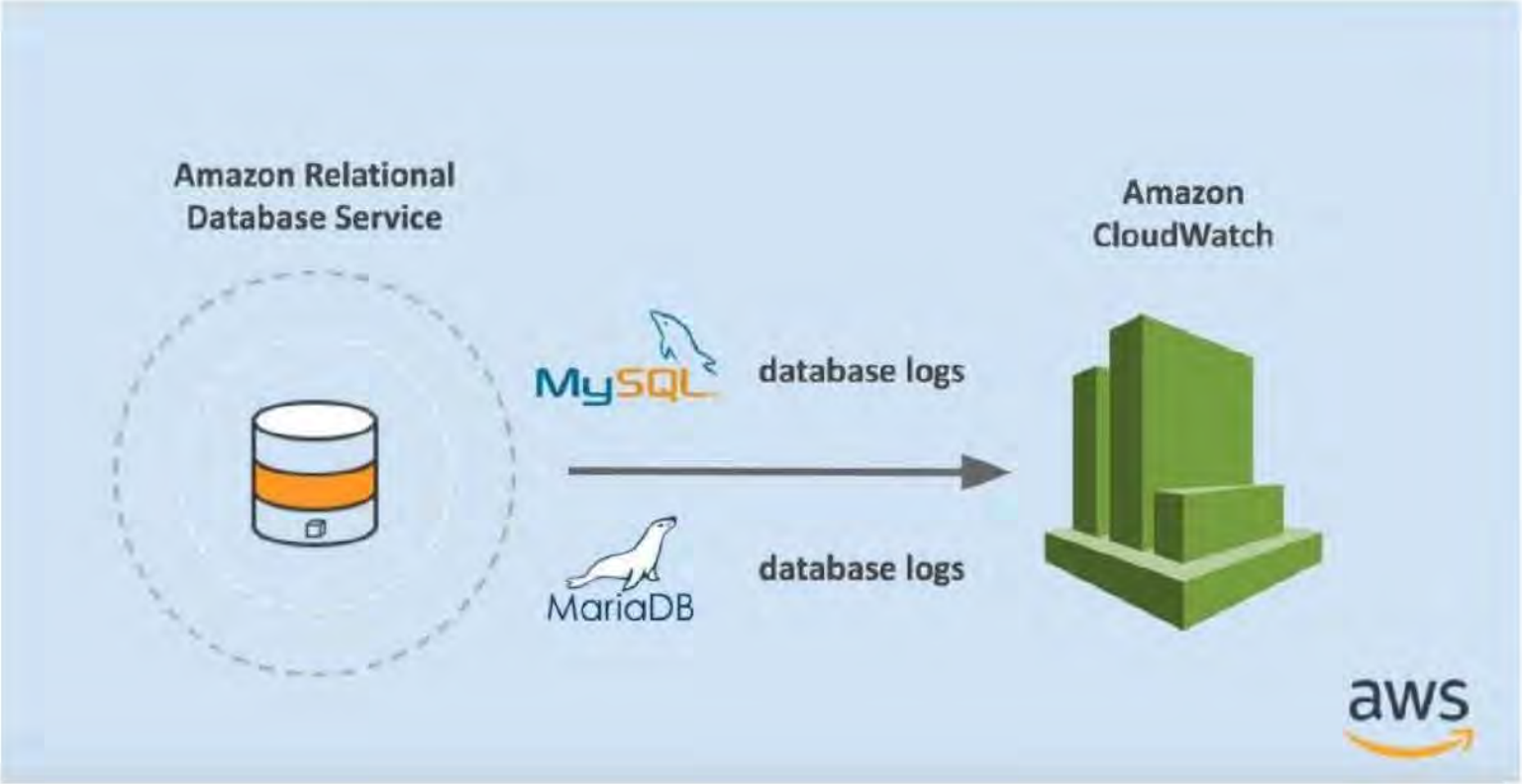


Fig. Read Replicas

Understanding Amazon RDS Database Engines



Understanding Amazon RDS Database Engines

You can monitor DB instances using Amazon CloudWatch, which collects and processes raw data from Amazon RDS into readable, near real-time metrics. These statistics are recorded for a period of two weeks, so that you can access historical information and gain a better perspective on how your web application or service is performing.

By default, Amazon RDS metric data is automatically sent to CloudWatch in 1-minute periods.

Utilizing RDS Features for High Availability and Durability