CLOUD COMPUTING

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Infrastructure as a Service

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Database Service

Cloud database services allow you to set-up and operate relational or non-relational databases in the cloud.

Relational Databases

- Popular relational databases provided by various cloud service providers include MySQL, Oracle, SQL Server, etc.

Non-relational Databases

- The non-relational (No-SQL) databases provided by cloud service providers are mostly proprietary solutions.

Database Service - Features

Scalability

- Cloud database services allow provisioning as much compute and storage resources as required to meet the application workload levels
- Provisioned capacity can be scaled-up or down. For read-heavy workloads, read-replicas can be created

Reliability

- Cloud database services are reliable and provide automated backup and snapshot options

Database Service - Features

Performance

- Cloud database services provide guaranteed performance with options such as guaranteed input/output operations per second (IOPS) which can be provisioned upfront

Security

- Cloud database services provide several security features to restrict the access to the database instances and stored data, such as network firewalls and authentication mechanisms

Amazon RDS

Amazon Relational Database Service (RDS) is a web service that makes it easy to setup, operate and scale a relational database in the cloud.

- Launching DB Instances : Choose DB type, size, username, password. Endpoint is created.
- Connecting to a DB Instance : Use endpoint to connect to the DB instance

Amazon DynamoDB

Amazon DynamoDB is the non-relational (No-SQL) database service from Amazon.

Data Model

- The DynamoDB data model includes include tables, items and attributes.
- A table is a collection of items and each item is a collection of attributes.
- To store data in DynamoDB you have to create a one or more tables and specify how much throughput capacity you want to provision and reserve for reads and writes.

Amazon DynamoDB

Fully Managed Service

- DynamoDB is a fully managed service that automatically spreads the data and traffic for the stored tables over a number of servers to meet the throughput requirements specified by the users.

Replication

- All stored data is automatically replicated across multiple availability zones to provide data durability.

Launch an RDS instance

1. Open the Amazon RDS console.
2. In the navigation bar, select your Region from the Region Selector.
3. In the Create database section, choose Create database.
4. For the Choose a database creation method section, select the creation method that best applies to you.
5. In the Engine options section, select one of the following engine types: MySQL, MariaDB, PostgreSQL or Microsoft SQL Server

Launch an RDS instance

6. For Templates, select Free tier.
7. In the Settings section, enter the DB instance identifier, Master user name, and Master password.
8. For DB instance class, Storage, Connectivity, and Database authentication, select the options that are best for your use case, or leave the default configurations.

Important: In the Storage section, clear Enable storage auto-scaling to avoid incurring charges.

Launch an RDS instance

9. In the Additional configuration section, for Initial database name, enter a name for your database. For all other configuration details, choose the options that are best for your use case, or leave the default settings.

Important: For Backup, clear Enable automatic backups to avoid incurring storage fees for retaining backups of your Amazon RDS instance.

10. Review the Estimated monthly costs, and then choose Create database.

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Connecting an RDS instance

1. Download and install mysql workbench
2. Open mysql work bench
3. Click on the + button to add a new mysql connection
4. Give a connection name of your choice
5. Connection method : standard TCP/IP
6. Hostname: End point of RDS
7. Username: as what you have specified in the db instance
8. Password: as what you have specified in the db instance
9. Click ok.
10. Check your connection. Wait for some time to get connected.

Connecting an RDS to EC2 instance

Click on the + button to add a new mysql connection

1. Give a connection name of your choice
2. Connection method : standard TCP/IP over SSH
3. Hostname: EC2 instance name
4. Username: ubuntu password: <leave empty>
5. Browse for key file and upload it
6. Hostname: End point of RDS
7. Username: as what you have specified in the db instance
8. Password: as what you have specified in the db instance
9. Click ok.
10. Check your connection. Wait for some time to get connected.

THANK YOU

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