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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**

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# 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 readheavy workloads, read-replicas can be created

# Reliability

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

## **Database Service - Features**

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## 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

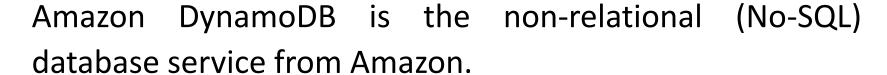
### **Amazon RDS**

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**



## **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**

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# **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 <u>Amazon RDS console</u>.
- 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.



# **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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