Database Services and Utilities



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AWS Databases & Related Services



Amazon RDS



Amazon Aurora



Amazon DynamoDB



Amazon Redshift

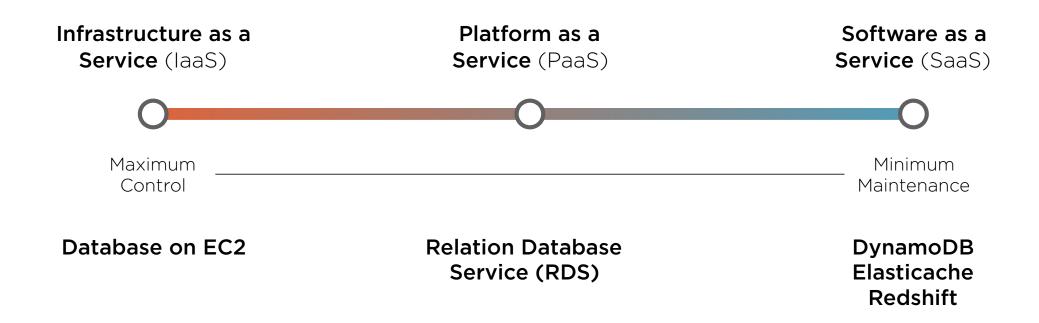


Amazon Elasticache



AWS Database Migration Service

Cloud Computing Models



Overview

Reviewing the cloud computing models for databases on AWS

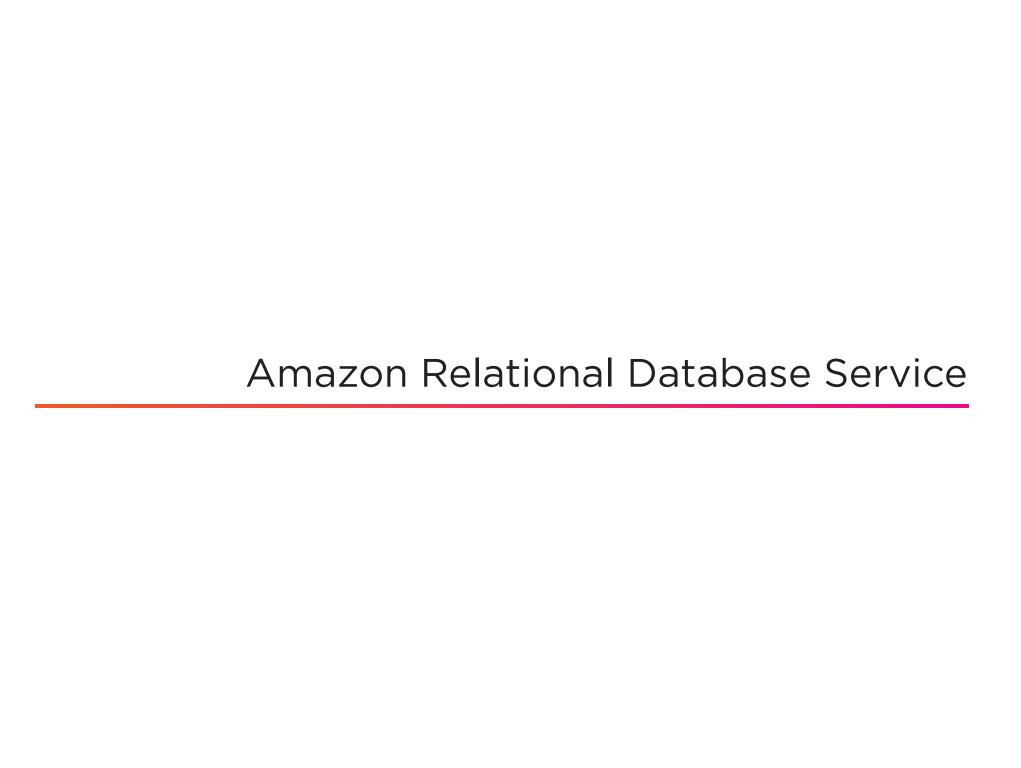
Introducing the Relational Database Service (RDS)

Examining the capabilities of Amazon Aurora

Introducing the DynamoDB service

Reviewing the Elasticache service

Examining data warehousing of data on AWS



Amazon Relational Database Service (RDS)



Fully managed service for relational databases

Handles provisioning, patching, backup, and recovery of your database

Supports deployment across multiple availability zones (multi-AZ)

Some platforms support read replicas

Launches into a VPC

Provides both general purpose SSD and provisioned IOPS SSD drive options

Amazon RDS Platforms MySQL

PostgresSQL

MariaDB

Oracle Database

SQL Server

Amazon Aurora

"Amazon Aurora is a MySQL and PostgreSQL-compatible relational database built for the cloud, that combines the performance and availability of traditional enterprise databases with the simplicity and cost-effectiveness of open source databases."

Amazon Web Services

Amazon Database Migration Service (DMS)



Enables you to move data into AWS from existing databases

Supports both one time and continual migration of data

Supports many popular commercial and open source databases

Only pay for compute leveraged in the migration process



Amazon DynamoDB



Fully managed NoSQL database service

Provides both key-value and document database

Enables extremely low latency at virtually any scale

Supports automated scaling based on configuration

Offers in-memory cache with the DynamoDB Accelerator (DAX)

"DynamoDB can handle more than 10 trillion requests per day and can support peaks of more than 20 million requests per second."

Amazon Web Services

Scale without excessive maintenance

Serverless applications

Implementations where low latency is key

Data models without BLOB storage

DynamoDB Use Cases



Amazon Elasticache



Fully managed in-memory data stores
Supports both Memcached and Redis
Provides low latency in response times
Enables scaling and replicas to meet
application demand

Handles common use cases including

- Database layer caching
- Session storage

Amazon Redshift



Scalable data warehouse service

Supports petabyte scale warehousing of data

Leverages high performance disks and columnar storage

Offers the ability to fully encrypt contents

Provides isolation with a VPC

Enables querying of exabytes of data in Amazon S3 using Redshift Spectrum





Jennifer is an IT executive in a financial services company

They are transitioning their data warehouse to AWS for analysis

The data warehouse would need to support up to 2 PB of data

Which approach would you recommend for Jennifer?



Sam is a DevOps engineer at a tech company

Sam needs to launch a MySQL database for a new web application

They need to have direct access to the virtual server that MySQL is running on

What approach would you recommend for Sam's company?



Frank is the CTO at a gaming company

They are trying to determine how to store realtime user analytics

They need low latency and the ability to scale to handle up to 1 million players

Frank wants to minimize the amount of time it takes to maintain the database

Which AWS approach would you recommend for Frank?

Summary

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Reviewed the cloud computing models for databases on AWS

Introduced the Relational Database Service (RDS)

Examined the capabilities of Amazon Aurora

Introduced the DynamoDB service

Reviewed the Elasticache service

Examined data warehousing of data on AWS



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Which approach would you recommend for Jennifer?

Solution: Amazon Redshift



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What approach would you recommend for Sam's company?

Solution: EC2 (this is a tricky question)



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They are trying to determine how to store realtime user analytics

They need low latency and the ability to scale to handle up to 1 million players

Frank wants to minimize the amount of time it takes to maintain the DB

Which AWS approach would you recommend for Frank?

Solution: DynamoDB