
AWS
re:Invent
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DAT314

Build for the future quickly with Amazon RDS open-source database engines

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Amazon Relational Database Service (Amazon RDS)

MANAGED RELATIONAL DATABASE SERVICE WITH YOUR CHOICE OF DATABASE ENGINE

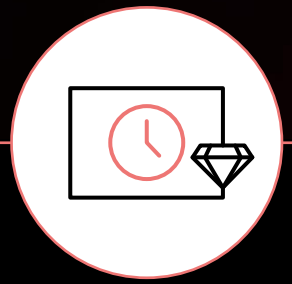
Amazon Aurora | MySQL | PostgreSQL | MariaDB | Microsoft SQL Server | Oracle

Easy to administer



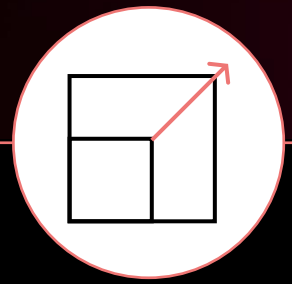
Easily deploy and maintain hardware, OS, and DB software; built-in monitoring

Available and durable



Automatic Multi-AZ data replication; automated backup, snapshots, and failover

Performant and scalable



Scale compute and storage with a few clicks; minimal downtime for your application

Designed to be secure and compliant



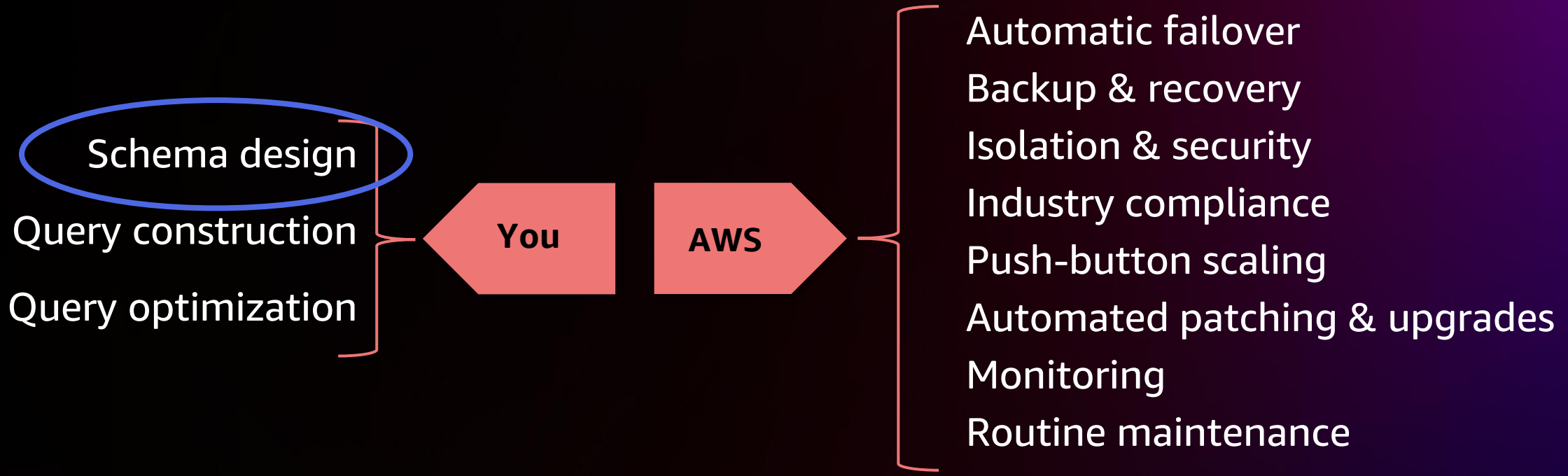
Data encryption at rest and in transit; industry compliance and assurance programs

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Amazon RDS – Fully managed

Spend time innovating & building new apps, not managing infrastructure



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Schema design core tenets

1

All information in a given table should be equally valuable and accessible through queries

2

Always choose the smallest data type that you can to represent the values stored in a given column

3

Use effective primary and secondary keys to minimize the amount of data stored and processed

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Schema design is about making trade-offs

1. **Application complexity**
   Business logic, data processing, and transformation models
2. **Database complexity**
   Data duplication, constraints enforcement, indexing, and mutability
3. **Performance and scalability**
   Response latency, concurrency, and coordination (locking)

Recommendations are *not* absolute nor universal

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Architect for evolving workloads

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Amazon RDS Multi-AZ with two readable standby DB instances

Highly available, durable relational databases deployed across 3 Availability Zones (AZs)

Benefits



50% reduced transaction commit latency



Automatic failover in typically under 35 seconds



Additional read capacity



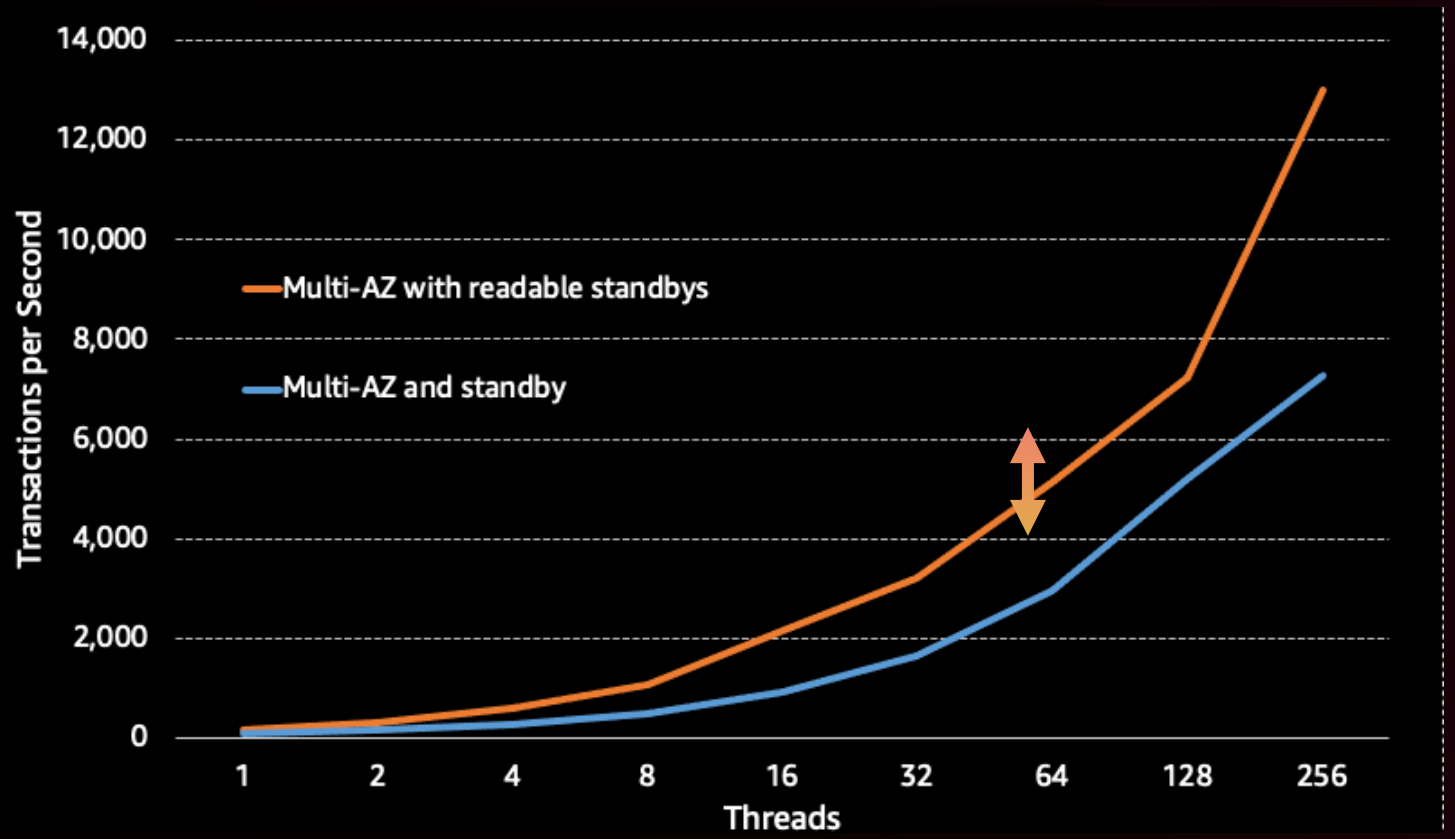
More scalability with different endpoints for reads & writes

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Amazon RDS Multi-AZ with two readable standbys

Improved write performance



1.7–2.3x
TPS increase

Average write latency reduced
up to 50%

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Introducing Amazon RDS Optimized Reads

ACHIEVE UP TO 50% FASTER QUERIES ON YOUR AMAZON RDS FOR MYSQL WORKLOADS



- Up to 50% faster query processing
- Speed up your read replicas and optimize your complex queries
- Deploy on Intel or Graviton instances today through the Amazon RDS Console or APIs

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Introducing Amazon RDS Optimized Writes

HIGH THROUGHPUT WRITES WITH UP TO 2X MORE TRANSACTIONAL THROUGHPUT FOR HIGHLY CONCURRENT TRANSACTIONAL WRITES IN RDS FOR MYSQL



Improve write transaction throughput by up to 2x

Guaranteed data durability

Available on MySQL versions 8.0.30 and higher in all Regions where r5b and r6i are available

Available when deploying new RDS for MySQL databases

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Introducing Amazon RDS Blue/Green Deployments

MAKE SAFER, SIMPLER, AND FASTER DATABASE UPDATES WITH ZERO DATA LOSS AS FAST AS A MINUTE ON AMAZON AURORA AND AMAZON RDS



- **Safely** test database changes in a staging environment without impacting production
- **Safely** promote your environment using built-in switchover guardrails
- **Simply** create a production-ready staging environment in a few clicks and switchover without application changes
- **Quickly** switchover your staging environment to production **as fast as a minute**

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** Downtime for workloads with long running tractions during switchover and workloads that have large replica lags may take longer.*

Purpose-built databases

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Why JSON



JSON is a flexible format



Modeling in JSON is natural



JSON is a common API output

Why document databases



Store, query, and index JSON data natively



Flexible schema for fast iteration



Ad hoc query capabilities



Flexible indexing



Operational and analytics workloads

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[1]Read the article on Forbes.com | [2]Read the report
[2]Source: 2022 internet minute, DBTA, Boston Consulting

Build for your future

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Continue your data journey



Swami Sivasubramanian
VP of AWS Data and
Machine Learning

Swami Sivasubramanian Keynote (KEY003)

Venetian Theatre

November 30
8:30–10:30 AM



Jeff Carter
VP of Databases
and Migrations

Your data: How you need it, where you need it, when you need it (DAT224-L)

Venetian Theatre

November 30
4:00–5:00 PM

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Thank you!

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