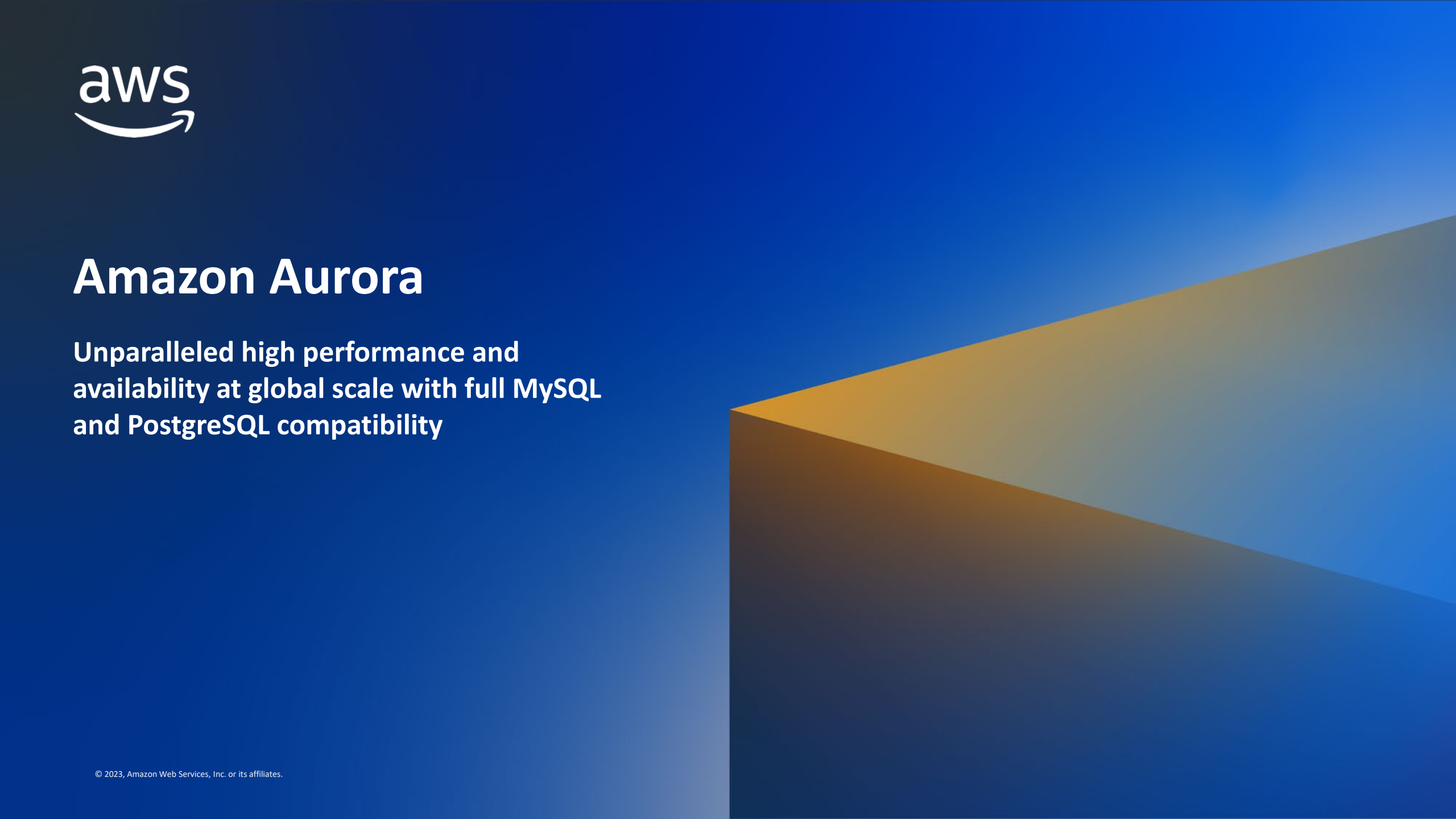


Amazon Aurora

Unparalleled high performance and availability at global scale with full MySQL and PostgreSQL compatibility

Most complete set of relational & purpose-built databases

Amazon RDS

Amazon Aurora

KEY-VALUE

Amazon DynamoDB

DOCUMENT

Amazon DocumentDB

CACHING

Amazon ElastiCache

GRAPH

Amazon Neptune

TIME-SERIES

Amazon Timestream

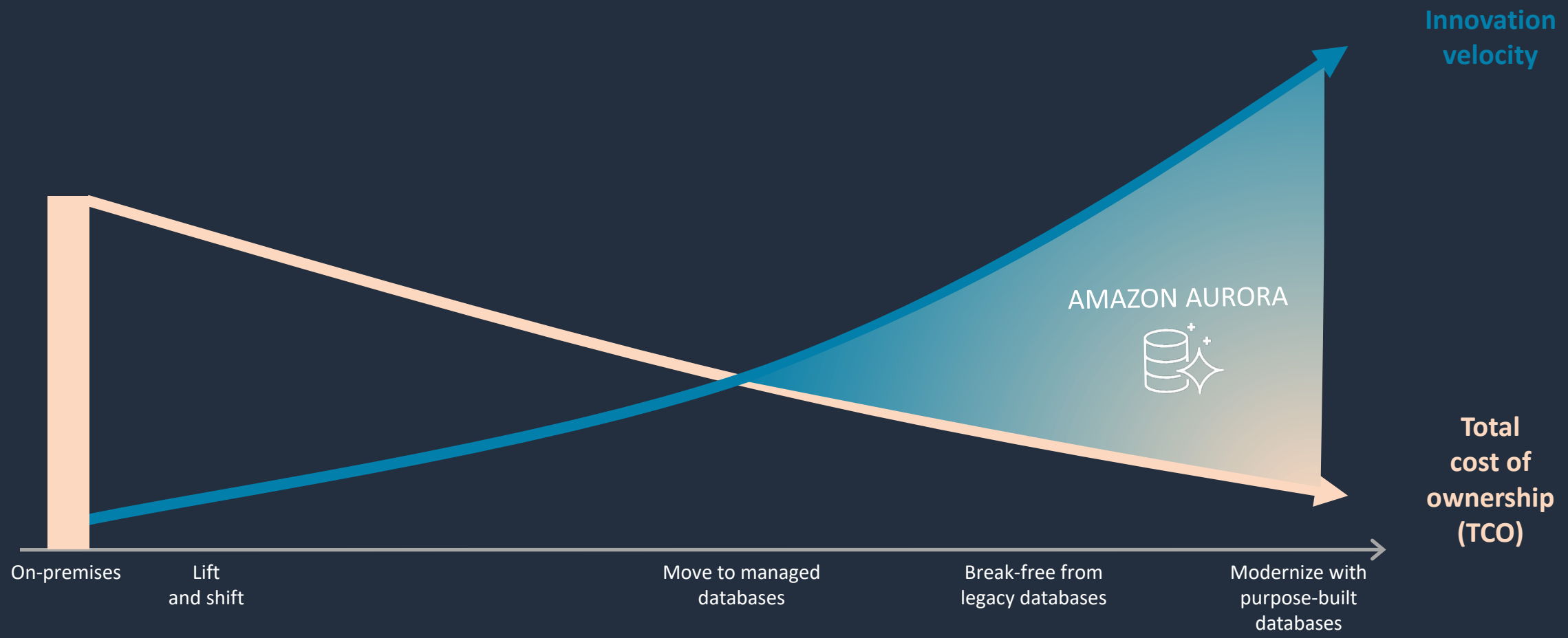
MEMORY

Amazon MemoryDB

WIDE COLUMN

Amazon Keyspaces

Modernizing leads to maximum innovation velocity and optimal total cost of ownership

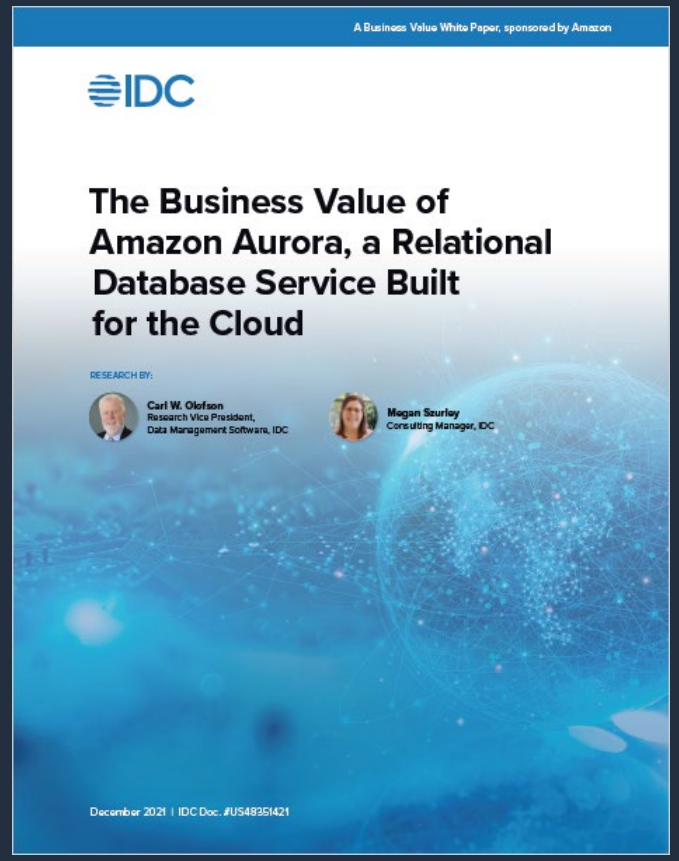


Amazon Aurora

Average organization **saves $9M annually** using Amazon Aurora vs. other solutions

439%
three year ROI

61%
more efficient database administration (DBA) teams



$525k
additional annual net revenue per 100 Amazon Aurora databases

32%
lower cost of databases

Source: IDC, The Business Value of Amazon Aurora, a Relational Database Service Built for the Cloud, Doc #US48351421, December 2021
https://pages.awscloud.com/global-ln-gc-600-db-business-value-amazon-aurora-wp-learn.html

Amazon Aurora

Designed for unparalleled high performance and availability at global scale with full MySQL and PostgreSQL compatibility at 1/10th the cost of commercial databases

Performance & scalability

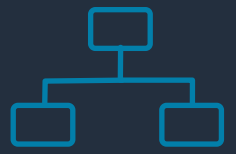
- 5x throughput of standard MySQL and 3x of standard PostgreSQL
- Scale out up to 15 read replicas
- Decoupled storage and compute enabling cost optimization
- Fast database cloning
- Distributed, dynamically scaling storage subsystem

Availability & durability

- 99.99% availability with Multi-AZ
- Data is durable across 3 AZs (*customers only pay for 1 copy)*
- Automatic, continuous, incremental backups with point-in-time recovery (PITR)
- Failovers in < 10 seconds
- Fault-tolerant, self-healing, auto-scaling storage
- Global Database for disaster recovery

Highly secure

- Network isolation
- Encryption at rest/in transit
- Supports multiple secure authentication mechanisms and audit controls



Fully managed

- Automates time-consuming management of administration tasks like hardware provisioning, database setup, patching, and backups
- Serverless configuration options

Amazon Aurora core features

Up to
99.99% SLA

Serverless with instant fine-grained scaling

Global Database

Encryption at rest
and in transit

Automatic,
continuous backups

Point-in-time
recovery (PITR)

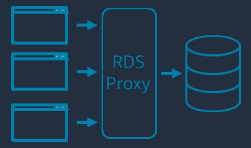
Data durable across
3 Multi-AZ

Full MySQL and
PostgreSQL compatibility

Database
cloning

Scale out up to
15 read replicas

Fault-tolerant, self healing,
auto-scaling storage



RDS Proxy

Examples of Aurora Integration with other AWS services

Amazon EKS

Amazon Lambda

AWS CloudTrail

Amazon S3

Amazon IAM

Amazon KMS

Amazon
Sagemaker

Amazon
DevOps Guru

Amazon
CloudWatch

Amazon Aurora use cases

Move to managed

Realize the benefits of a managed service that removes undifferentiated tasks while gaining the performance, security, and enterprise capabilities inaccessible with open source community databases

Build enterprise and SaaS apps

Operate enterprise apps, such as CRM and ERP, with high availability and performance. Support reliable, high-performance, and multi-tenant Software-as a-Service (SaaS) apps with flexible instance and storage scaling

Deploy globally distributed apps

Develop internet-scale apps, such as mobile games, social media apps, and online services, that require multi-Region scalability and resilience

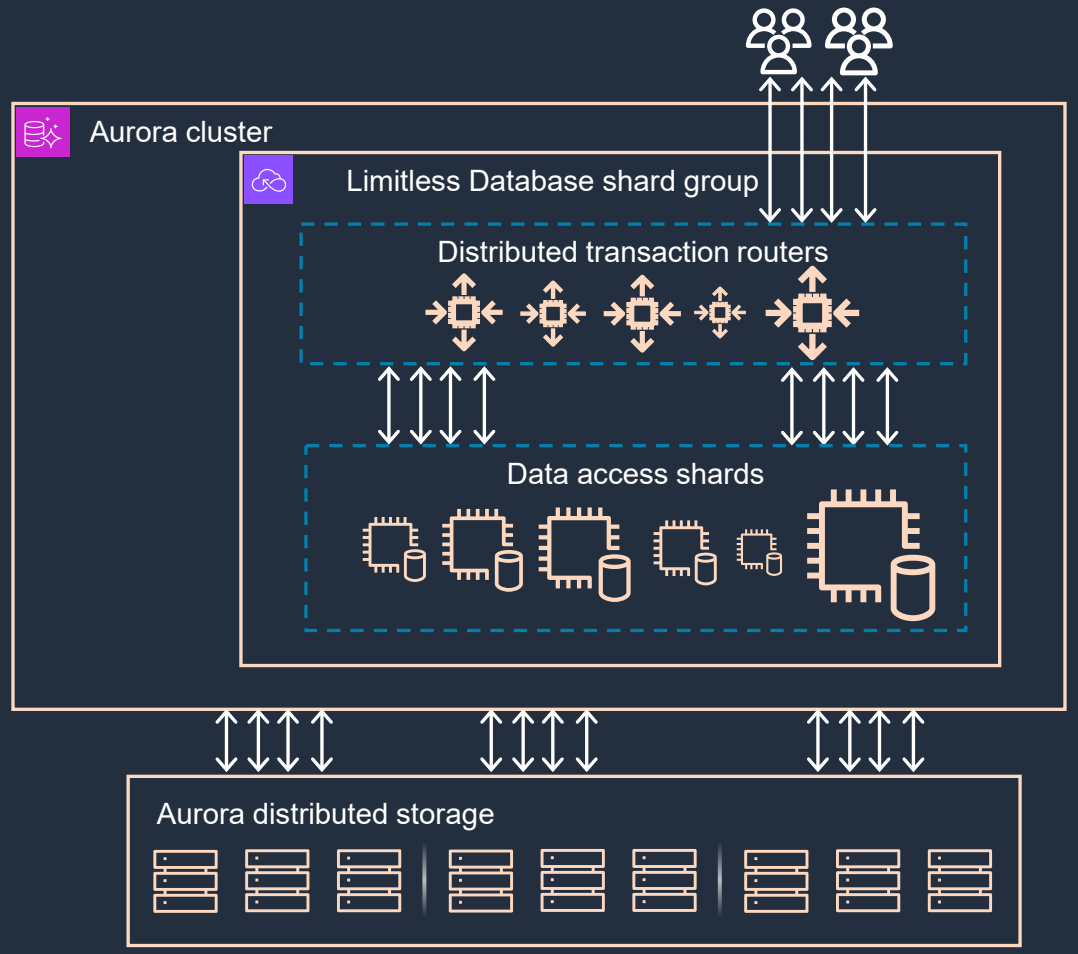
Go serverless

Hand off capacity management, and pay only for capacity consumed with instantaneous and fine-grained scaling to save up to 90% of cost

Aurora is the fastest-growing service in AWS history

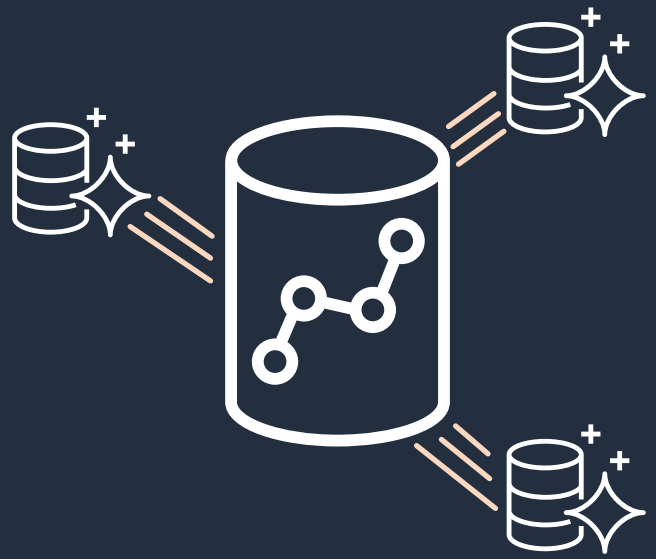
Aurora is used by 955 of the top 1000 AWS **customers**

NEW! Amazon Aurora PostgreSQL Limitless Database: automated horizontal scaling



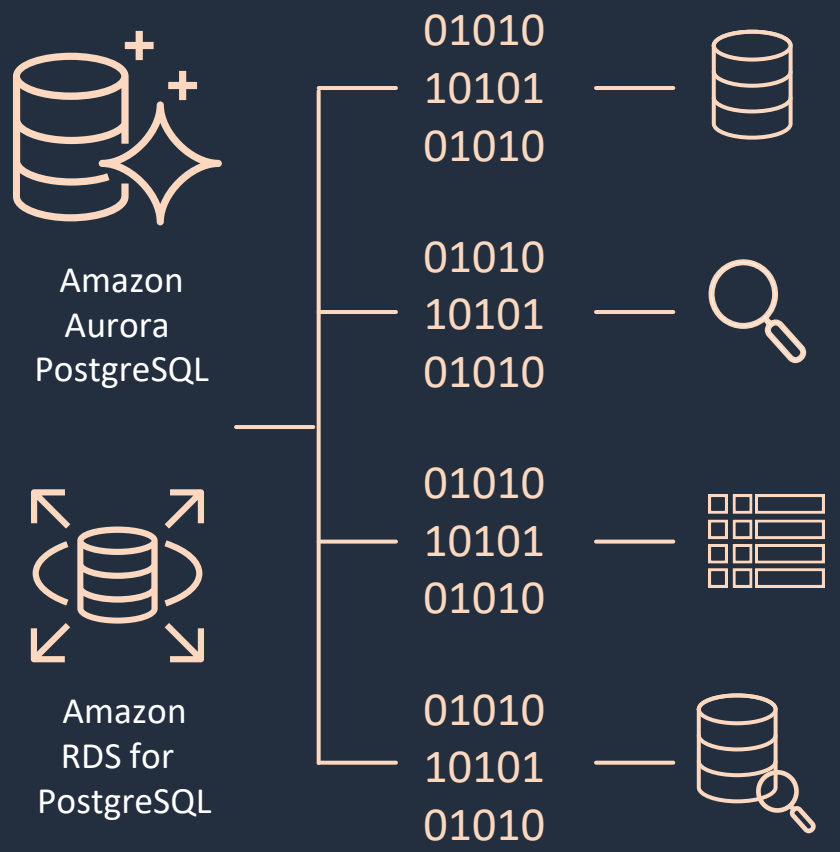
- For applications that need to scale horizontally and require more write throughput or data storage capacity than a single Aurora database instance
- Automatically scale your Aurora cluster to millions of write transactions per second and manage petabytes of data
- Distributes workload over multiple Aurora writer instances, while maintaining the ease of operating inside a single database
- Offers capabilities such as distributed query planning and transaction management
- PostgreSQL-compatible

Amazon Aurora zero-ETL integration with Amazon Redshift: near real-time analytics & machine learning



- **Near real-time data access**: Access transactional data from Amazon Aurora in Amazon Redshift within seconds to run near real-time analytics and machine learning on petabytes of data
- **Easy to use**: Removes need to build and manage ETL pipelines to move transactional data to analytics systems
- **Seamless data integration**: Consolidate transactional data from multiple Amazon Aurora database clusters, and replicate your data to one Amazon Redshift data warehouse to run unified analytics across multiple applications and data sources
- **No infrastructure management**: Run near real-time analytics without having to manage any infrastructure when using both Amazon Aurora Serverless v2 and Amazon Redshift Serverless

Vector database capabilities: store vector embeddings and perform similarity searches

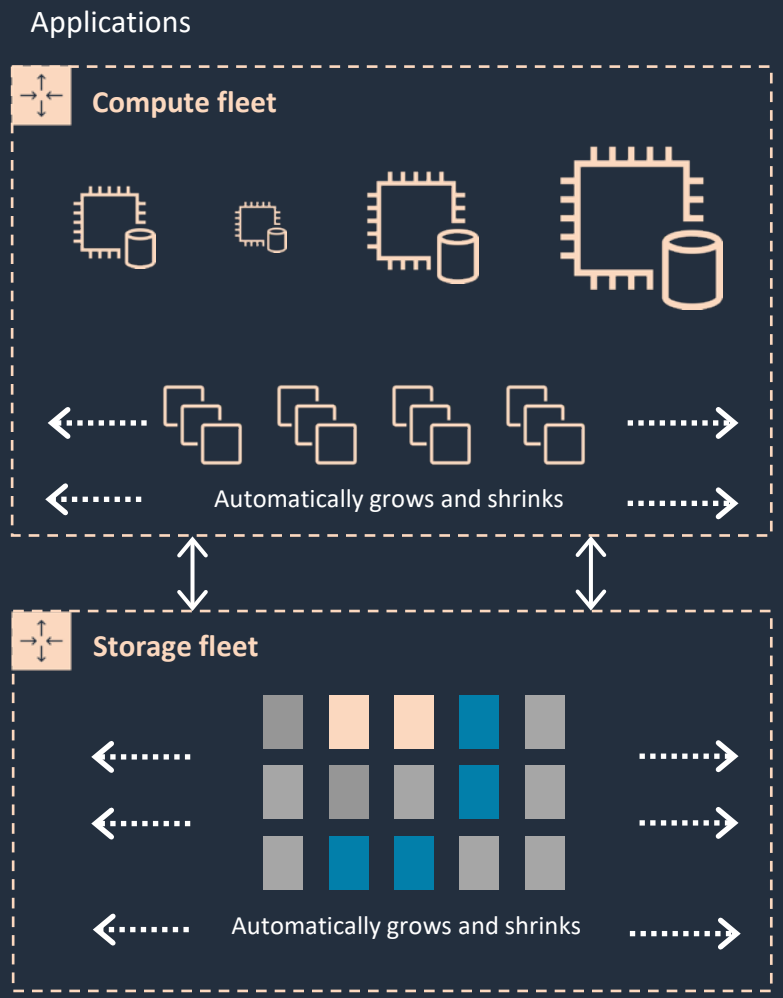


- Store billions of vector embeddings directly in Aurora PostgreSQL-Compatible Edition and RDS for PostgreSQL
- High-performance native indexing for accelerating vector similarity search
- Drop-in solution for existing apps to store Gen AI data
- Integrate with Retrieval Augmented Generation (RAG) systems for enriched search accuracy
- Plugins available for frameworks like LangChain to simplify application development
- Use cases: product recommendations, sentiment analysis, chatbot applications, fraud detection, and more

Aurora I/O-Optimized: Improved price performance and price predictability

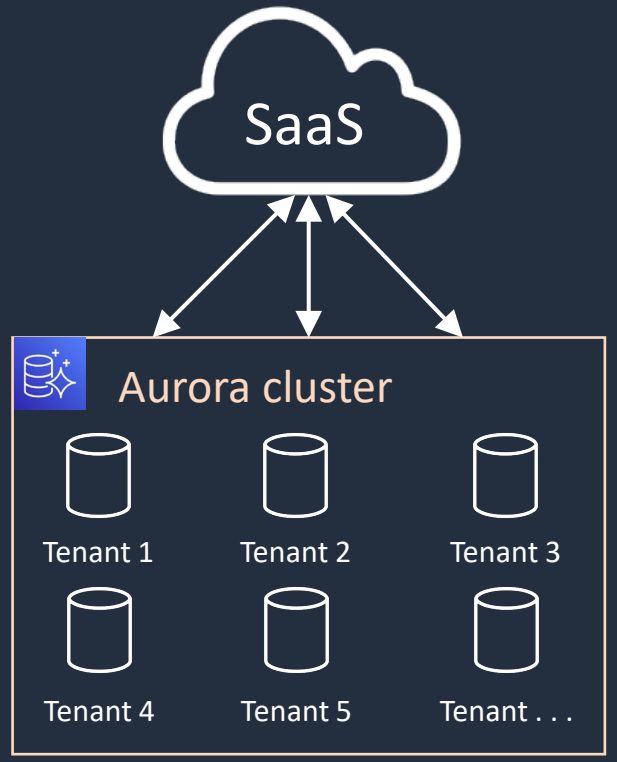
- Aurora cluster configuration with the option to pay for compute and storage only with no charges for read and write I/O operations
- Price predictability: no pay-per-request I/O charges making it easy to estimate database spend upfront
- For customers whose I/O spend exceeds 25% of total Aurora database spend, customers can save up to 40% cost savings
- Improved performance: increasing throughput and reducing latency for I/O-intensive applications
- Available for Aurora PostgreSQL-Compatible Edition and Aurora MySQL-Compatible Edition
- Supported on Aurora Serverless v2 and provisioned (on-demand and reserved) instances

Amazon Aurora Serverless v2: Instant scaling in fine grained increments while reducing costs

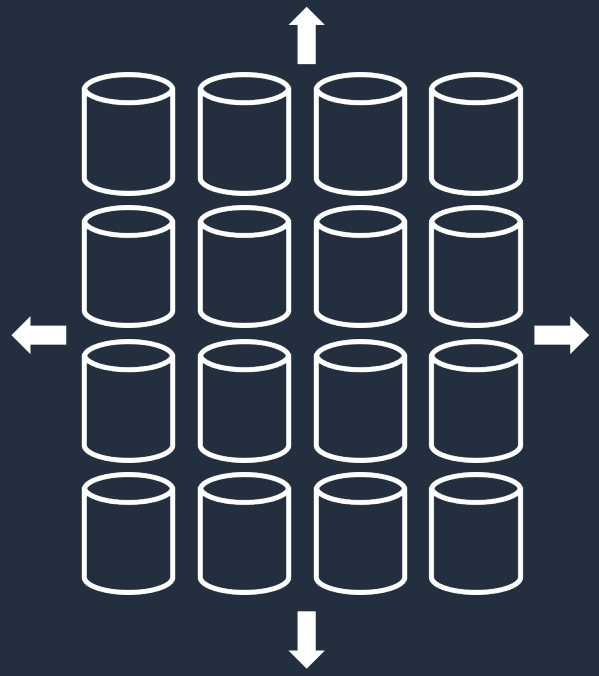


- Scales in fine-grained increments to provide just the right amount of database capacity in response to the demands of your application's events
- Scales instantly in a fraction of a second even for the most demanding applications
- Up to 90% cost savings when compared to provisioning for peak load
- Full breadth of Aurora capabilities, including Parallel Query, Global Database, read replicas, and multi-AZ support

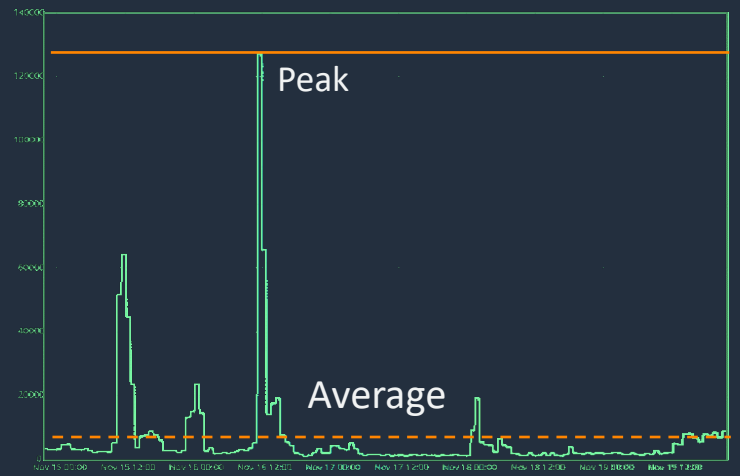
Use cases for Amazon Aurora Serverless v2



SaaS Multi-Tenant Applications

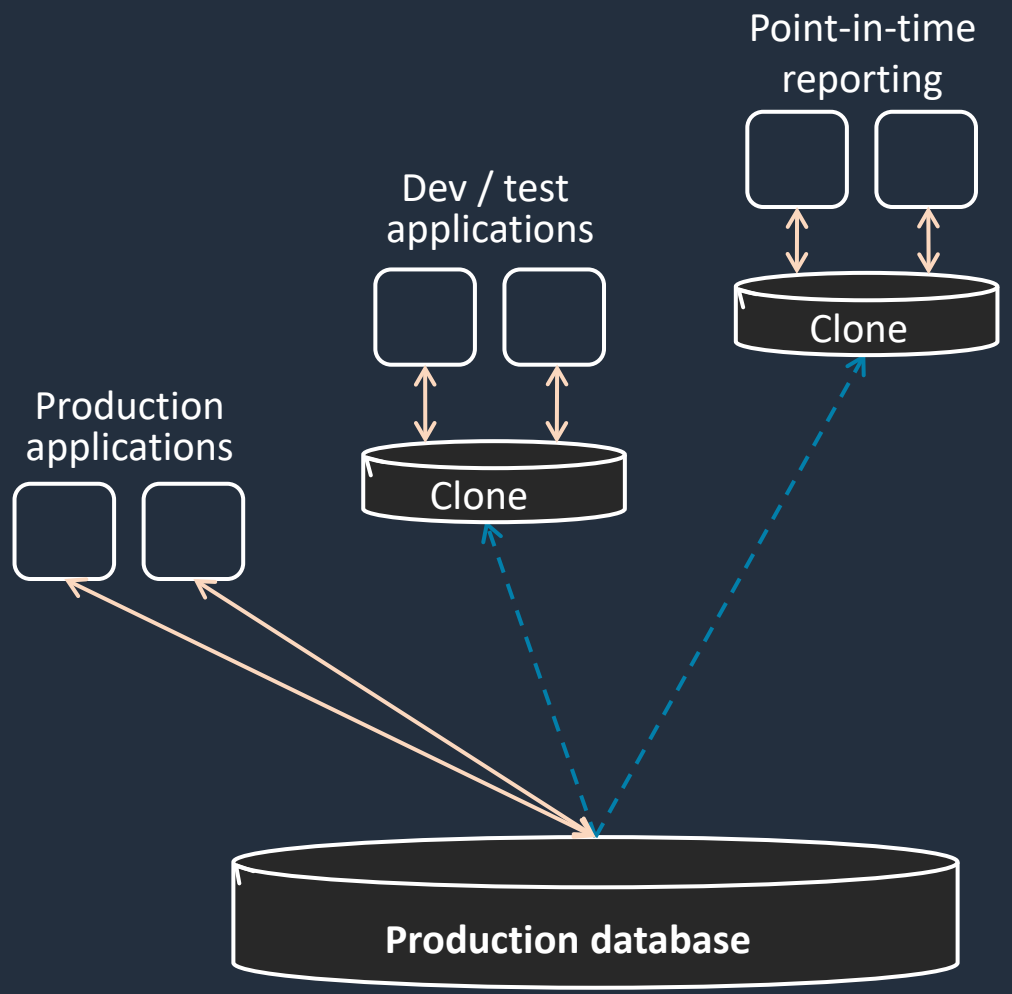


Scale to hundreds or thousands of databases



Variable and unpredictable workloads

Cross-account database cloning



Create a copy of a database without duplicate storage costs

- Creation of a clone is nearly instantaneous – we don't copy data
- Data copy happens only on write – when original and cloned volume data differ

Typical use cases

- Clone a production DB to run tests
- Reorganize a database
- Run point-in-time reporting
- Save a point-in-time snapshot for analysis without impacting production system

Migrate from Microsoft SQL Server to Amazon Aurora with Babelfish for Aurora PostgreSQL

Run SQL Server applications on PostgreSQL with little to no code changes

Keep existing queries

Translation capability that enables Amazon Aurora PostgreSQL-Compatible Edition to understand Microsoft SQL Server's proprietary T-SQL

Accelerate migrations

Lower risk and complete migrations faster, saving you months to years of work

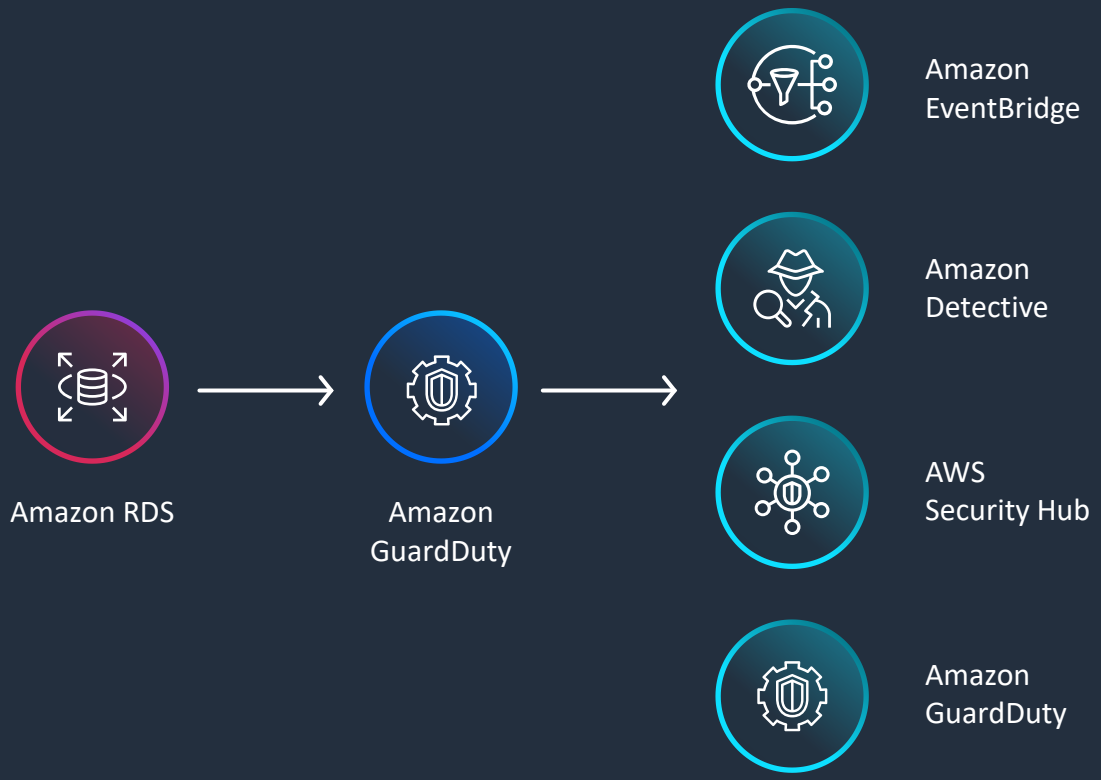
Freedom to innovate

Run T-SQL code side by side with new open-source functionality and continue developing with familiar tools

Improve application availability with ML-powered cloud operations service Amazon DevOps Guru

- ML-powered service
- Easy for developers and database operators to automatically detect operational issues to improve application availability
- Get recommendations for remediation for performance issues
- Receive ML powered performance tuning advice to reduce expensive downtime
- No ML experience required

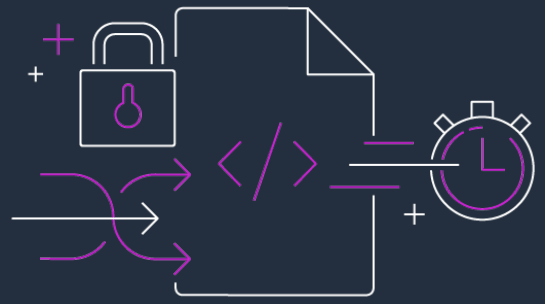
Intelligent threat detection for Amazon Aurora databases with Amazon GuardDuty RDS Protection



- Identify potential threats to data stored in your Amazon Aurora databases using machine learning
- Continuously monitor suspicious logins in existing and new Amazon Aurora databases in your organization
- Designed to have no impact on database performance or require modifications to your database
- Actionable findings available in Amazon GuardDuty console and in your existing security tools

Additional NEW innovations

Trusted Language Extensions for PostgreSQL



- Development kit and open source project that allows you to quickly build and safely run high performance PostgreSQL extensions in production
- Use popular trusted languages like JavaScript, PL/pgSQL, Perl, and SQL
- Fine grained control over who runs and installs extensions
- Available for Aurora PostgreSQL-Compatible Edition

Amazon RDS Blue/Green Deployments

- Safer, simpler, and faster database updates with zero data loss in as fast as a minute
- Creates a staging environment (green) that mirrors the production environment (blue) and keeps the two environments in sync using logical replication.
- Use built-in switchover guardrails when promoting staging environments to production
- Available for Aurora MySQL-Compatible Edition

Verizon

A global leader delivering innovative communications and technology solutions

Challenge

As Verizon moves its enterprise applications to the cloud, database performance and reliability are the key considerations. The company wanted to move away from expensive, legacy commercial database solutions to more efficient and cost-effective options.

Solution

Verizon moved on-premises databases to **Amazon Aurora PostgreSQL-Compatible Edition** using **AWS Data Migration Service (AWS DMS)** and **AWS Schema Conversion Tool (AWS SCT).**

Result

- AWS DMS and AWS SCT were helpful during migration.
- Aurora PostgreSQL-Compatible use 40% less time to run compared to databases on premises.

Amazon Aurora

AWS Database Migration Service

AWS Schema Conversion Tool

Expedia

A leading online travel company, providing leisure and business travel to customers worldwide

Challenge

As part of a corporate-wide initiative to focus its engineering teams on innovation rather than hardware procurement and datacenter management, Expedia continues to move its 20 years' worth of core-business workloads, digital properties, mobile applications, and legacy platforms largely from owned data centers to AWS.

Solution

Expedia chose **Amazon Aurora** and used **AWS Database Migration Service (AWS DMS)** to move from SQL Server to the cloud.

Result

- DMS simplified the migration to Aurora with monitoring and logging capabilities.
- With Aurora, Expedia is now able to handle more than 300 million updates per day at a rate of more than 20,000 writes per second.

Amazon Aurora

AWS Database Migration Service

AWS Schema Conversion Tool

Autodesk

A leader in 3D design, engineering, and entertainment software, Autodesk makes software for people who make things

Challenge

Their Access Control Management (ACM) app connected to a single Amazon RDS MySQL database instance, limiting the available scaling options.

Solution

Autodesk chose **Amazon RDS** for MySQL first, and migrated to **Amazon Aurora** for improved scalability, availability, and performance.

Result

- 10x reduction in CPU utilization on a similar-sized database instance leaving headroom for database to grow
- 20x improvement in application scalability
- Application response time was improved by 2x

Amazon RDS

Amazon Aurora

Flexible ways to migrate

Get started with

Self-service migration

tools, including AWS SCT, AWS DMS, and AWS DMS Fleet Advisor, to enable a quick, secure migration

Get help from

Specialized database programs

for advice and migration support; additionally, Amazon DMA brings together tools and experts to help migrate at fixed prices

Get assistance with

AWS Professional Services

and certified AWS Partner Network (APN) who can help enterprises migrate applications and legacy infrastructure to AWS securely

Aurora Getting Started Resources

- Website: https://aws.amazon.com/rds/aurora/
- Technical Documentation: https://docs.aws.amazon.com/AmazonRDS/latest/AuroraUserGuide/CHAP_AuroraOverview.html
- Customer Stories: https://aws.amazon.com/rds/aurora/customers/
- Developer Forum: https://repost.aws/tags/TAHP9u4JJYQ5qM52pnS0dB2A/amazon-aurora
- AWS Databases & Analytics on LinkedIn: linkedin.com/showcase/aws-databases

Thank you!

Speaker name (pronouns)
Speaker contact info (email or socials)