



Modernize your application development with cloud-native databases

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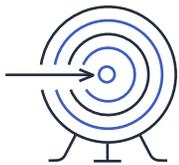
Introduction

In order to be more competitive, companies must create better products, and to do that, they must increase agility and innovate faster. Modern application development is an approach to designing, building, and managing applications that enables faster innovation and accelerates time-to-market for new features. By modernizing their applications, companies can deliver better service to customers, and keep pace in a competitive landscape. In many cases, AWS has helped companies modernize by implementing cloud-native databases. In this eBook, we discuss best practices for building modern applications and how you can get started today with Amazon Aurora on AWS.

Build better products faster

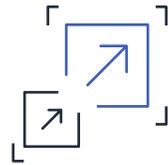
Companies of all sizes are finding new ways to leverage technology to innovate faster and better respond to customer demands. This is fueled by the need to maintain a competitive edge in a fast changing environment. Across nearly every industry segment, you can find examples of cloud-native companies disrupting industries while leaving legacy businesses in the dust.

For many companies, an important step toward building better products faster is modernizing their applications and taking advantage of AWS' cloud-native service offerings. Modernization empowers companies with:



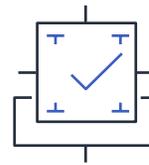
Agility

Modern application architecture enables you to quickly fix a problem or deploy new features and services your customers want.



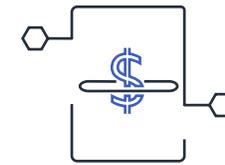
Scalability

On-demand infrastructure and pay-as-you-go pricing enable you to rapidly scale your applications to meet customer demand in a highly available and cost-efficient manner.



Availability

Serve customers' requests wherever and whenever with availability and durability across multiple data centers and global regions.



Lower Costs

Modernize your applications with fully-managed AWS infrastructure and pay-as-you-go pricing models to retire legacy infrastructure.

Architecting for the future on AWS

AWS has defined a set of best practices around modern application development that arose from our experience serving millions of customers and building applications for Amazon.com. We observed common approaches that enable our customers to increase agility, and build better applications that support the success of their business. Many organizations have found success adopting modern microservices architectures that make applications easier to scale and faster to develop, enabling innovation and accelerating time-to-market for new features.

Our customers are increasingly using modern application development building blocks, such as containers and serverless technology, to build applications as they move away from monolithic architectures in favor of a microservices architecture. However, many have yet to take advantage of AWS' managed, cloud-native database offerings that offer superior performance, integration, and lower Total Cost of Ownership (TCO) compared to self-managing a database or using commercial databases. Organizations can support their microservices architectures with cloud-native database services to accelerate development cycles, foster innovation, and improve software scalability.



Mitel is a global market leader in business communications.

“At Mitel, we’re reinventing our products using cloud-based, microservice applications to give our customers more specialized and innovative ways to communicate and collaborate. We’re using Amazon Aurora at the core of our Cloudlink platform and our Officelink product. We’re excited about the new Aurora Serverless offering, which allows us to further focus on delivering applications at scale without having to think about infrastructure.”

Tim Olson
Vice President, Cloud Engineering
Mitel

The next evolution: cloud-native databases

Cloud-native means you can focus on your applications and your data, not on managing databases. Additionally, you can expect availability and durability across multiple data centers and global regions, as well as performance that exceeds commercial databases without expensive licensing costs. You will also benefit from native integration across the AWS portfolio like integrated AWS Lambda functions, native read/write to Amazon S3, and customer-friendly features like Amazon Aurora Serverless, when you build modern applications on AWS' managed, cloud-native database offerings.

Why Amazon Aurora for modern application development?

To address a new and rapidly-evolving set of customer requirements, you must architect your applications for the future. Amazon Aurora is a MySQL and PostgreSQL-compatible relational database built for the cloud, that provides the security, availability, and reliability of commercial databases at 1/10th the cost. Amazon Aurora is the right cloud-native database foundation for building modern applications, for several reasons:



Superior performance

Amazon Aurora outperforms self-managed and commercial databases. Amazon Aurora provides fast, hyperscale, cloud-native databases to store terabytes and petabytes of data, provide access to data with millisecond latency, process millions of requests per second, and scale to support millions of users anywhere in the world.



Lower TCO

Save money by building modern applications on Amazon Aurora open source database engines instead of commercial databases with expensive licensing fees. Significantly reduce TCO with Amazon Aurora's operational automation and free up resources to focus on your business instead of managing databases.



Built for cloud

Amazon Aurora combines the performance and availability of commercial databases with the simplicity and cost-effectiveness of open source databases. Features like Global Databases and Aurora Serverless, plus AWS Lambda and Amazon S3 integration, let you build better and faster, always with pay-as-you-go pricing.



Fully managed

With fully-managed resource provisioning, maintenance, and backups, you no longer have to worry about operational database management and can focus on driving greater business value for you and your customers.

Customer success story

intuit.

Intuit, maker of TurboTax, QuickBooks, Mint, and Turbo, provides financial management solutions to approximately 50 million consumers and small businesses around the world.

Challenge

Facing increased global demand for its software, Intuit needed a solution that enabled better performance, scalability, and disaster recovery for the commerce platform powering the direct purchase of their software.

Solution

Intuit migrated their commerce platform to Amazon Aurora MySQL using Aurora Global Database for low-latency access to data from coast to coast.

Result

- Amazon Aurora enables low latency and global data access without performance or latency constraints.
- Aurora Global Database enables a strong disaster recovery posture by distributing data across AWS regions with failover typically taking under a minute to complete.

Intuit recently migrated their commerce platform to Amazon Aurora MySQL to support increasing global demand. All direct purchases of Intuit's software will go through Intuit's commerce platform running on Aurora, with TurboTax already live to meet traffic demands during tax season. A large portion of our workload involves low-latency, read-only access to data. An example is pricing information, which is infrequently updated but needs to be readily available for reads from coast to coast. Aurora Global Database, with sub-second global replication, enables us to address this business requirement without performance or latency constraints. As a financial services company, we also care deeply about business continuity even in the face of large-scale events. Aurora Global Database allows us to maintain a strong disaster recovery posture by distributing data across AWS regions with failover typically taking under a minute to complete.

Krishna Vaishnav
Engineering Manager - E-commerce and Cloud Platform Engineering
Intuit

Accelerate your modernization journey with APN Partners

Leverage AWS' on-demand infrastructure and broad set of cloud services to develop new functionality in response to customer feedback, and stay competitive by building modern applications with the help of the AWS Partner Network (APN). APN Partners can support development of your AWS architecture to align with your business goals, AWS best practices, and modern architectural frameworks such as microservices. Our APN Partners can help you implement the right cloud-native database foundation for your application so you can realize the full benefits of modern application development.

Percona helps you build modern applications on Amazon Aurora

Percona is an Advanced APN Consulting Partner that helps companies operate and innovate in the cloud. As an Amazon Aurora Service Delivery Partner, they are uniquely positioned to provide support at all stages of your migration to Amazon Aurora to ensure a successful migration:

- **Planning:** Percona analyzes your current database environment and application to provide guidance on changes that can be made to your application to best leverage Amazon Aurora's capabilities. Percona also recommends database schema and query changes that will optimize the performance of your database on Amazon Aurora.
- **Migration:** Percona has managed numerous migrations for a huge range of businesses, so you can feel secure that your migration to Amazon Aurora will appear seamless to your users. Percona documents the steps needed, develops test plans for each of those steps, and works closely with you to ensure your migration is pain-free.
- **Enhancement:** Moving to Amazon Aurora provides continuous availability in an optimized environment, improving your user experience. Percona enables the best response times through ongoing optimizations of data, queries, and application design. As changes are made to your application, Percona works with you to make sure that your users continue to experience the excellent performance and response times that they have come to expect.

Whether you use MySQL or PostgreSQL, Percona can ease your migration to Amazon Aurora using the tools, skills, and experience required to help customers build modern applications on AWS.

Learn More: [Percona Support for Amazon Cloud MySQL Databases >>](#)

Percona case study: Madwire

Madwire Marketing 360[®] speeds up production of ad hoc reports by 83%

Challenge

Madwire's client databases hold upwards of 10 years of marketing data, and Madwire tried to support ad hoc report requests by performing updates to their existing application. Although the updated code was functioning, the reports were taking more than 30 seconds to produce. It was clear that this would not provide acceptable performance in production.

Solution

Percona helped Madwire complete a database and application audit which determined that an application redesign was not needed. Instead, Percona helped Madwire optimize their method for gathering statistics and executing queries, using Amazon Aurora to handle a large number of records. Modifying Amazon Aurora parameters that determine when new statistics are generated enabled the ad hoc report requests to use more optimal execution plans. Working with Percona, Madwire was able to deliver the revised application in a matter of weeks.

Outcomes

Once all the recommendations were implemented, the customizable reports were executing 83% faster - in under five seconds on average, compared to the 30 seconds or longer they had previously taken. This much-improved performance helped reinforce Madwire Marketing 360[®] as a strong contender in a competitive marketplace.

The performance improvements in Marketing 360[®] gained through working with Percona definitely provide added value to the application for our customers.

Jeremy Gerik
Head of Application Development
Madwire



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