

# Solution Brief: Superior Fintech Applications with MySQL HeatWave



Accelerate time-to-market, boost performance,  
reduce costs, and improve customer  
experience

Copyright © 2024, Oracle and/or its affiliates  
Public

## Introduction

The rise of financial technology, commonly known as fintech, has been a transformative force in the financial industry, reshaping the landscape of how financial services are delivered and consumed. Over the past decade, fintech has experienced an unprecedented surge, fueled by advancements in technology, changing consumer preferences, and a growing demand for more accessible and efficient financial solutions.

According to a [report](#) from Boston Consulting Group (BCG) and QED Investors, fintech revenues are projected to grow sixfold from \$245 billion to \$1.5 trillion by 2030, with banking fintech expected to constitute almost 25% of all banking valuations worldwide.

Traditionally, the financial sector was characterized by established institutions and lengthy, often bureaucratic processes. Fintech emerged as a disruptive influence, leveraging innovations such as mobile applications, artificial intelligence, blockchain, and data analytics to streamline financial services. This shift has democratized access to financial tools, making them more inclusive and adaptable to the needs of a diverse and globalized population.

From online payments and credit solutions to digital wallets, robo-advisors, and peer-to-peer lending, the Fintech ecosystem has spawned a myriad of solutions that offer speed, convenience, and often reduced costs. Startups and established tech companies alike have entered the space, challenging traditional financial institutions and prompting them to innovate to stay competitive.

Many governments and regulatory bodies recognize the potential benefits of fintech and have introduced policies to foster innovation and competition in the financial sector. This has created a more favorable environment for fintech companies to operate and expand.

To succeed, fintech companies tend to serve an underserved segment of the population and/or to deliver a cost-effective service faster and with greater convenience than what customers are accustomed to from traditional financial institutions. As a result, the technology they rely on is paramount as it often determines their ability to deliver an innovative solution exhibiting the performance, scalability, security, reliability, and cost-efficiency that will sway customers.

MySQL HeatWave has become a very popular choice among fintechs. MySQL HeatWave is a fully managed database service, powered by the HeatWave in-memory query accelerator. It's the only cloud service that combines transactions, real-time analytics across data warehouses and data lakes, and machine learning in one MySQL Database—without the complexity, latency, risks, and cost of ETL duplication. It's available on OCI, AWS, and Azure.

In this brief, we will review how MySQL HeatWave enables fintech companies to succeed and provide an overview of the solution.

## Fintechs improve results and reduce costs with MySQL HeatWave

Let's consider why 4 fintech startups migrated to MySQL HeatWave, and the results they achieved:

### **Exchange Speed migrated from Amazon RDS and Redshift to MySQL HeatWave to deliver its high-performance trading platform**

[Exchange Speed](#) needed a database powerful enough to process all the trading activity on the Australian Securities Exchange (ASX) in real time to create rapid and accurate alerts for its subscribers—providing an enterprise transaction notification service to retail investors. The company initially implemented Amazon RDS and Redshift,

but these did not have the processing power to handle the high volume of orders and trades coming in from its ASX data feed, resulting in dropped trades. Exchange Speed needed to improve data processing efficiency with a robust, low-cost, reliable, scalable, and more secure database. In their search for a suitable database cloud provider, Exchange Speed assessed various solutions from AWS, Google, and Oracle. The company selected Oracle's MySQL HeatWave and achieved the following results:

- Gained the power to seamlessly monitor all activities, which average 1.7 million trades and 15 million orders per day.
- Executes its queries significantly faster than before and can send message alerts to its clients in real-time, enabling them to compete on the same playing field as institutional investors.
- Reduced TCO; would have needed to spend 5X as much with AWS to achieve comparable levels of database performance.
- Uses the native analytics capabilities of MySQL HeatWave to provide insights into key operational performance indicators.
- Greatly enhanced its data security and ensured regulatory compliance.

“Our business model is contingent on getting very fast query times from the database to reduce our latency between the exchange and the subscriber. We chose MySQL HeatWave on OCI. Compared to Amazon RDS and Redshift, it has pretty much everything. It's faster, it's cheaper, and it's more reliable.”

—**Grant Peace**, Business Founder, Exchange Speed Pty Ltd

### **Aicoll improved loan default prediction using machine learning in MySQL HeatWave**

[Aicoll](#) - Artificial Intelligence Collection System - provides AI solutions for managing the risk of customers defaulting on loans. In Colombia, 60% of institutions providing loans in the retail, microservices, or cooperative finance sectors are not equipped with this technology. Aicoll needed an automated way to massage all the data into machine learning (ML) models that would allow its customers to create predictions covering the credit life cycle from loan origination to debt default. The company migrated from MySQL on-premises to MySQL HeatWave—with the built-in MySQL HeatWave AutoML—and obtained the following results:

- Reduced the time to build ML models from three months to one week.
- Accelerated data preparation from one day to minutes.
- Executes ML-generated default predictions for millions of users in real-time, without having to extract data outside of the MySQL database.
- Empowered their operations team to independently create new ML models.
- Improved liquidity by 20% across their client portfolios.

“Without a doubt, Oracle has helped us sell our loan default solutions to credit institutions throughout Colombia and beyond thanks to the automated machine learning engine within MySQL HeatWave, and to the high availability and scalability of Oracle Cloud Infrastructure.”

—**Yelitza Romero**, CEO, Artificial Intelligence Collection System S.A.S

### **Credify experienced 4X faster time to market for its instant loan application with MySQL HeatWave**

To meet their financial needs, 77% of India's workforce relies on personal loans. By offering Creditt, an instant loan application that uses non-traditional credit scoring and artificial intelligence, [Credify Technologies](#) has become a key player in driving financial inclusion. The company's applications and MySQL databases were hosted on HostGator. The management team recognized the need to upgrade the company's technology platform to scale to

demand, strengthen compliance processes, and accelerate decision-making. Credify evaluated Amazon RDS, Aurora, and MySQL HeatWave, and selected MySQL HeatWave as the most technically and commercially viable solution. For example, application performance was 4X higher with MySQL HeatWave vs. Amazon RDS. Credify achieved the following:

- Migrated its applications and data to MySQL HeatWave on OCI in only 8 days.
- Accelerated time-to-market by 4X, being able to focus on core development.
- Saved 25% of the time needed to prepare data for Lines of Business owners.
- Increased its ability to scale to demand, with a threefold increase in loan origination capacity.
- Established end-to-end data security. As a result, Credify enjoys stronger compliance with the Reserve Bank of India's data regulations and protection laws.

**“Oracle’s MySQL HeatWave Database Service is truly a game changer. It delivers faster performance than other MySQL cloud services while eliminating data copies and ETLs. And the cost of Oracle MySQL HeatWave Database Service is a fraction of other cloud providers.”**

—**Namra Parikh**, Cofounder and CTO, Credify Technologies

### **Tamara cut costs and improved the performance of its “buy now, pay later” solution with MySQL HeatWave**

[Tamara](#) is a leading fintech in the Middle East and North Africa with a “buy now, pay later” solution. As a startup, Tamara needed to find a platform for application development and data management that was cost-effective, easy to use, and scalable. The company was growing fast and quickly adding data sources. Demand for its detailed, segmented business analysis was increasing from business users and merchants. Tamara migrated to MySQL HeatWave from another cloud provider and obtained the following results:

- The IT staff no longer needs ETL tools to move data from the MySQL Database.
- With real-time intelligence, Tamara can better analyze and understand customer behavior to continuously improve its application with rapid development.
- Reduced costs by more than 60%.
- 3X performance improvement.

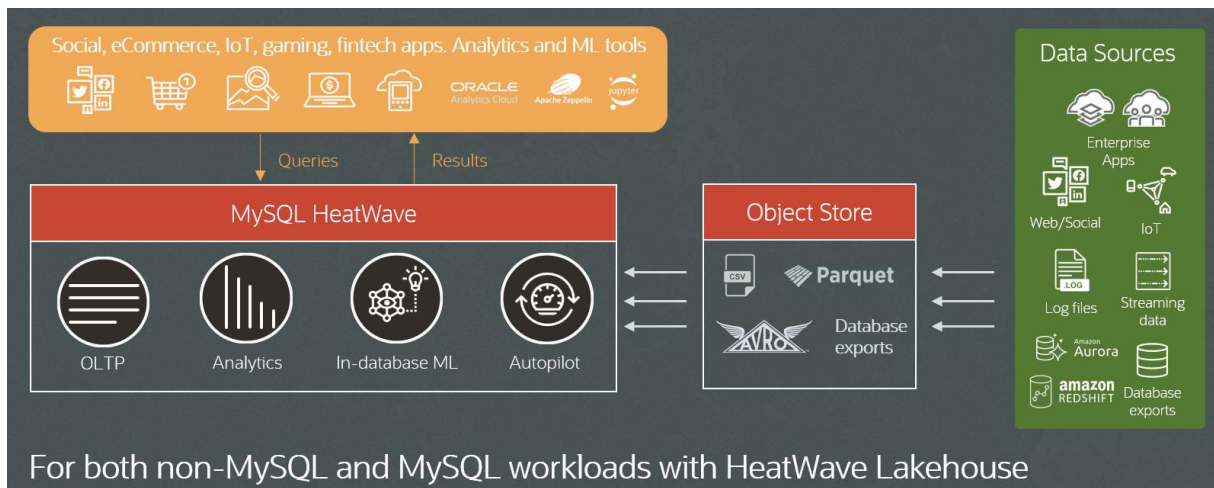
**“We migrated our production workload from another cloud solution to MySQL HeatWave. Doing so reduced our costs by 60% and tripled the speed for many of our complex queries, which were not executing in a reasonable amount of time before Oracle Cloud. The real-time intelligence helps us better understand customer behavior to continuously enhance our application.”**

—**Chien Hoang**, Director of Engineering, Tamara

### **MySQL HeatWave overview**

MySQL HeatWave customers benefit from 3 major advantages over alternative solutions:

- 1. The simplicity of transactions, real-time analytics across data warehouses and data lakes, and ML in one cloud database service**



- You can run real-time analytics on data stored in MySQL. You neither need a separate analytics database, nor complex and time-consuming ETL processes to move data from your transactional database to a separate analytics database. You get faster insights, reduce costs, energy consumption, and avoid the security risks of data movement between data stores.
- With **HeatWave Lakehouse**, you can query data in object storage in a variety of file formats, such as CSV, Parquet, Avro, and exports from other databases and, optionally, combine it with transactional data in MySQL databases. Data in object storage is not copied to the MySQL database since query processing is done entirely within the HeatWave engine, so you can take advantage of MySQL HeatWave Lakehouse for non-MySQL workloads as well as MySQL-compatible workloads.
- With **HeatWave AutoML**, you can use data in object storage, the database, or both to build, train, deploy, and explain ML models. You don't need to move the data to a separate ML cloud service, or be an ML expert. HeatWave AutoML automates the machine learning pipeline, including algorithm selection, intelligent data sampling for model training, feature selection, and hyperparameter optimization—saving data analysts significant time and effort. HeatWave AutoML supports anomaly detection, forecasting, classification, regression, and recommender system tasks, even on text columns. You can use HeatWave AutoML at no additional cost.
- MySQL HeatWave also includes **MySQL Autopilot**, which provides workload-aware, machine learning-powered automation. It improves performance and scalability without requiring database tuning expertise, increases the productivity of developers and DBAs, and helps eliminate human errors. MySQL Autopilot automates many of the most important and often challenging aspects of achieving high query performance at scale—including provisioning, data loading, query execution, and failure handling. MySQL Autopilot is available at no additional charge for MySQL HeatWave customers.

“MySQL HeatWave represents the fiscally responsible approach to cloud databases while AWS Redshift and Snowflake represent the fiscally reckless approach. From my perspective, the question for developers is: “Are you looking to be more productive, or spend time haggling with ETL tools and shuffling data back and forth?”

—Ron Westfall, Senior Analyst and Research Director, Futurum

## 2. Unmatched performance and price-performance

MySQL HeatWave is 4X faster than Amazon Redshift with 10X better price-performance, 4X faster than Snowflake with 15X better price-performance, and 1,400X faster than Amazon Aurora with 2,200X better price-performance.

As demonstrated by a [500 TB TPC-H benchmark](#), HeatWave Lakehouse is:

- 15X faster than Amazon Redshift, delivering 11X better price-performance.
- 18X faster than Databricks, delivering 15X better price-performance.
- 18X faster than Snowflake, delivering 19X better price-performance.
- 35X faster than Google BigQuery, delivering 22X better price-performance.

“You can spend \$80K on HeatWave and that would cost you \$420K to run on Snowflake. It’s a no brainer...”

—Patrick Moorhead, Founder and President, Moor Insights & Strategy

### 3. Availability in multiple public clouds

You can run MySQL HeatWave on OCI, AWS, and Azure.

MySQL HeatWave runs natively on AWS. With the addition of the Lakehouse capability in MySQL HeatWave (currently in limited availability on AWS), AWS customers can replace five AWS services with one. They can continue to run applications on AWS with no changes and without incurring unreasonably high AWS data egress fees.

MySQL HeatWave is available to Azure customers via the [Oracle Database Service for Azure](#). Azure customers can use MySQL HeatWave running on OCI as if it were an Azure resource.

You can also use MySQL HeatWave in your data center with [OCI Dedicated Region](#).

“For cost-conscious IT teams and developers, MySQL HeatWave on AWS represents a whole new TCO calculation with zero cost for what are add-on services on AWS and no data egress fees.”

—Marc Staimer, Senior Analyst, Wikibon

## Conclusion

The fintech landscape is highly competitive, and making the right technology choices can allow you to obtain a competitive edge. As demonstrated by multiple examples in this brief, MySQL HeatWave can help you deliver a better customer experience. It can help you boost the performance and scalability of your applications, accelerate time-to-market, increase productivity, enhance security, and reduce costs. Whether you’re an early-stage fintech or an established company, we would be happy to help you evaluate how you could benefit from MySQL HeatWave. Don’t hesitate to contact an [Oracle representative](#) or an [Oracle partner](#).

## MySQL HeatWave resources

- [Learn more about MySQL HeatWave](#)
- [MySQL HeatWave migration program](#)
- [MySQL HeatWave hands-on workshops](#)
- [Request a free MySQL HeatWave workshop](#)
- [Try MySQL HeatWave for free](#)

---

## Connect with us

Call **+1.800.ORACLE1** or visit **oracle.com**. Outside North America, find your local office at: **oracle.com/contact**.

 [blogs.oracle.com](https://blogs.oracle.com)

 [facebook.com/oracle](https://facebook.com/oracle)

 [twitter.com/oracle](https://twitter.com/oracle)

---

Copyright © 2024, Oracle and/or its affiliates. All rights reserved. This document is provided for information purposes only, and the contents hereof are subject to change without notice. This document is not warranted to be error-free, nor subject to any other warranties or conditions, whether expressed orally or implied in law, including implied warranties and conditions of merchantability or fitness for a particular purpose. We specifically disclaim any liability with respect to this document, and no contractual obligations are formed either directly or indirectly by this document. This document may not be reproduced or transmitted in any form or by any means, electronic or mechanical, for any purpose, without our prior written permission.

This device has not been authorized as required by the rules of the Federal Communications Commission. This device is not, and may not be, offered for sale or lease, or sold or leased, until authorization is obtained.

---

Oracle, Java, and MySQL are registered trademarks of Oracle and/or its affiliates. Other names may be trademarks of their respective owners. Benchmark queries are derived from the TPC-H benchmark, but results are not comparable to published TPC-H benchmark results since they do not comply with the TPC-H specification.