

Bank Mandiri rapidly delivers innovative digital banking to millions with Red Hat



Software and services

Red Hat® OpenShift®

Red Hat Support

Bank Mandiri, Indonesia's largest bank by assets, sought to continue enhancing its customer experience after introducing Livin' by Mandiri, a retail mobile application that provides all-in-one service. To achieve the responsiveness and stability necessary to support this digital experience, the bank adopted Red Hat OpenShift to build a container-based foundation for microservices-based development and delivery approach. Now, Bank Mandiri can deliver new features to more than 13 million users in less than 1 hour and maintain 99.95% uptime—even during peak demand—for multiple services across 11 subsidiaries.



Financial services

More than **35,000** employees

Benefits

- ▶ Improved customer experience with convenient online processes and delivery of new features in just 1 hour
- ▶ Enhanced request processing throughput with autoscaling to achieve average microservice response time of 150ms
- ▶ Maintained 99.95% uptime with modular architecture and expert support

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Senior Vice President, Digital Banking Delivery,
Bank Mandiri

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Leading digital disruption in Indonesia’s banking industry

Established in 1998 to combine the share capital of four state-owned banks, Bank Mandiri is one of the largest retail banks in Indonesia. It provides a range of financial products and services to millions of customers, including small and medium-sized enterprises (SMEs), large corporations, and government entities.

The bank’s retail mobile application, Livin’ by Mandiri, lets customers open accounts, transfer funds, pay bills, add funds to e-wallets, and more in an integrated digital experience. To deliver innovative enhancements to more than 13 million Livin’ users and other customers faster, Bank Mandiri adopted a new infrastructure model based on microservices and open banking application programming interfaces (APIs).

“As Indonesia’s biggest bank in terms of assets, we have the opportunity to pioneer digital disruption in the industry through embracing new technology, but we need the right foundation,” said Victor Erico Korompis, Senior Vice President, Digital Banking Delivery, Bank Mandiri. “To deliver innovation as fast as possible, we needed a new, more efficient approach. Every process should be finished within two seconds, from mobile to host.”

Building a responsive, automated mobile banking foundation

After several proofs of concept (POCs) and workshops, Bank Mandiri decided to use Red Hat OpenShift as its new service infrastructure for the Livin’ app.

Red Hat OpenShift is an enterprise Kubernetes container platform that provides a modular, security-focused, and automated foundation for efficiently building microservices- and API-based applications. It provides automated installation, upgrades, and life cycle management for every part of the container stack: the operating system, Kubernetes and cluster services, and applications.

“We chose a container platform because of the flexible support for auto-healing and auto-scaling,” said Korompis.

Delivering a modern, digital banking experience at the speed of demand

Improved user experience with faster processes and feature delivery

Bank Mandiri has enhanced the unified, integrated experience for Livin’ app users with responsive performance and easy yet secure access to account information and services—including offerings from third-party partners. For example, opening a new account now takes only 5 minutes, rather than an hour-long visit to a bank branch.

Additionally, when a new feature or update is created by the bank’s DevSecOps teams, Bank Mandiri can take advantage of its intelligent, automated pipeline to deliver the latest Livin’ code to mobile app stores within 1 hour.

“In the longer term, we will see if there is any potential to simplify or actually further divide the microservice to make it even faster,” said Korompis.

Enhanced service availability at scale with high request throughput

In addition to feature and user experience enhancements, Bank Mandiri has achieved greater availability and stability for Livin' services with autoscaling capabilities provided by Red Hat OpenShift. More than 1,000 microservices composing the Livin' mobile app—supported by thousands of APIs—now perform around 6,000 requests per second—and up to 12,000 requests per second during seasonal traffic peaks, including at Eid Mubarak, Christmas, or other holidays.

"We now have relatively high throughput to deliver the rapid response times expected by our customers," said Korompis. "With an average microservice response time of 150 milliseconds, we can easily handle twice the workload of our previous approach at twice the speed."

Maintained 99.95% uptime with modular architecture and expert support

By running microservices on an enterprise container platform, Bank Mandiri can quickly and proactively resolve any issues with its production environment—before they affect customer-facing services.

"In a competitive market, we cannot afford disruptions. If there is a problem, it is contained to the affected microservice only, and we can fix it quickly without affecting the other microservices or entire application," said Korompis. "With this new approach and the timely response from Red Hat's support team to any potential bugs or other issues, we can maintain our 99.95% uptime, even as we scale our services and expand the platform to new business needs."

The bank's DevSecOps practices also support increased stability for end users. Developers first deploy code into a testing environment to be inspected using pipeline automation tools. If code issues are identified, such as not meeting security rules, the code is automatically returned to the coding stage.

"Our chief information security officer is very happy because our security and operations teams have set rules into our automation tools to roll projects out correctly from the beginning," said Korompis.

Expanding container foundation to support future growth

Bank Mandiri's teams are evaluating expanding its Red Hat OpenShift container environment to support new features for wealth management, digital lending, lifestyle experiences, and more. New capabilities, such as monitoring, will help the bank support its goal of continuous improvement to its service features and customer experience.

"The Livin' app is just the beginning. Any future customer application we build will use containerization and microservices, as we aim to deliver even more value from our digital services," said Korompis.

About Bank Mandiri

Bank Mandiri was established and acquired ownership of the share capital of four state-owned banks on October 2, 1998. The four state-owned banks legally merged on July 31, 1999 and Bank Mandiri commenced commercial operations in August 1999. The Bank serves millions of customers, making it one of the largest retail banks in Indonesia. It offers a broad range of banking products and services to its customers ranging from individuals and small and medium-sized enterprises (SMEs) to large corporations and government entities. The Bank works with several subsidiaries to support its main business, including Mandiri Sekuritas and Mandiri Investment Management (capital market services), Bank Syariah Indonesia (Islamic banking), Bank Mandiri Taspen (Mantap)(SME loans), AXA - Mandiri Financial Services (life insurance), Mandiri InHealth (health insurance), Mandiri AXA General Insurance, Mandiri Tunas Finance, Mandiri Utama Finance, Mandiri International Remittance, Mandiri Europe (treasury and financial services), and Mandiri Capital Indonesia (venture capital financing).




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About Red Hat

Red Hat is the world's leading provider of enterprise open source software solutions, using a community-powered approach to deliver reliable and high-performing Linux, hybrid cloud, container, and Kubernetes technologies. Red Hat helps customers develop cloud-native applications, integrate existing and new IT applications, and automate and manage complex environments. [A trusted adviser to the Fortune 500](#), Red Hat provides [award-winning](#) support, training, and consulting services that bring the benefits of open innovation to any industry. Red Hat is a connective hub in a global network of enterprises, partners, and communities, helping organizations grow, transform, and prepare for the digital future.

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