

Indonesia's treasury unites IT systems to meet rapidly growing demand with Red Hat



Software and services

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Indonesia's Directorate General (DG) of Treasury created SAKTI, a central system that consolidates all of the government's financial applications to improve data quality and integrity. With a rapidly growing user base expected to reach 384,000 users nationwide, the organization sought to migrate to a scalable, supported infrastructure solution. By adopting Red Hat JBoss Enterprise Application Platform (EAP) running on Red Hat OpenShift, the DG of Treasury gained a scalable yet stable container environment for microservices-based development. Now, the DG of Treasury can deliver new services and features in 50% less time and scale quickly to meet growing demand.



Public sector

8,000 employees

Benefits

- ▶ Reduced application development time by 50%
- ▶ Simplified scaling to support 384,000 users
- ▶ Improved IT talent attraction and retention by adopting enterprise open source technology

"With Red Hat OpenShift's built-in automation and self-service provisioning capabilities, we can deliver a better experience to SAKTI users by creating and launching improvements 50% faster than before."

Novan Andre Valen

Senior IT Hardware Specialist, IT Infrastructure Management,
 Indonesia Directorate General of Treasury

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—
Eko Sulistijo

Deputy Director, External Information
Systems Management, Republic of
Indonesia Directorate General of Treasury

Building a unified, scalable government financial IT system

Part of the Republic of Indonesia Ministry of Finance, the Directorate General (DG) of Treasury creates and implements the country’s treasury policies and technical standardizations. It also manages expenses and revenue for all of the government’s financial institutions.

In 2004, Indonesia enacted a law that required state finance management to align with the latest technology developments to maintain efficient, economical, effective, transparent, and accountable operations and deliver high-quality services.

To replace its distributed IT architecture for finance management—with separate systems for budgeting, fund disbursement, accounts, reporting, and more—the DG Treasury built SAKTI in 2017. This central, highly integrated system for national budgeting and treasury functions consolidates data to improve its quality and integrity across the government’s many organizations.

However, with the number of users of SAKTI expected to grow to as many as 384,000 people within just a few years, the DG of Treasury sought to replace its community-developed Java™ Enterprise Edition (EE) server with a supported enterprise platform and microservices-based development approach.

“We want to improve our scalability and deliver application updates faster,” said Novan Andre Valen, Senior IT Hardware Specialist, IT Infrastructure Management, Indonesia DG of Treasury. “With independently deployable microservices, we can make changes to enhance our service development and delivery at scale, without affecting our other services or systems.”

Building a responsive yet reliable application platform with enterprise open source

The organization evaluated four enterprise open source vendors offering a microservices platform before deciding to deploy Red Hat JBoss Enterprise Application Platform (EAP), running on Red Hat OpenShift.

“Open source technology has more longevity and reliability than proprietary competitors, but as a public sector financial services provider we need reliable support as well,” said Valen. “Red Hat offers efficient technology and a modern approach, and Red Hat OpenShift meets the sustainability, availability, and stability requirements of our core system.”

Red Hat JBoss EAP is a Java and Jakarta EE-compliant application server that supports deploying and managing critical applications as microservices across environments. It complements DevOps practices and integrates with popular continuous integration and delivery tools. Red Hat JBoss EAP is tightly integrated with Red Hat OpenShift, an enterprise Kubernetes container platform for efficient, modular application development.

The DG of Treasury worked closely with Red Hat Consulting to complete a proof of concept (POC), then install the new infrastructure, migrate SAKTI and related applications to Red Hat JBoss EAP, and begin transitioning to a DevOps work approach. The organization also purchased Red Hat Learning Subscription, an all-access pass to Red Hat Training courses, videos, documentation, and more.

“Red Hat Training helped our teams quickly learn about Red Hat OpenShift administration and development,” said Eko Sulistijo, Deputy Director, External Information Systems Management, Indonesia DG of Treasury. “The experience not only boosted our developer and operations teams’ knowledge, but also their confidence with the new technology.”

Delivering new government-facing services at the scale and speed of demand

Reduced application development time by 50%

The DG of Treasury has reduced the application creation process—including coding, testing, and production deployment—from 1 week to just 3 days by automating provisioning and other manual tasks. In particular, provisioning times have improved from days to minutes. Continuous integration and continuous delivery (CI/CD) and DevOps approaches supported this technology shift with more agile, efficient workflows.

Instead of waiting for infrastructure or resources, the DG of Treasury’s teams can now focus on responding to changing user demand – such as the urgent need to shift to digital services during the COVID-19 pandemic.

“With Red Hat OpenShift’s built-in automation and self-service provisioning capabilities, development has now shifted from being a slower, predominantly manual process to a highly efficient, automated workflow,” said Valen. “We can deliver a better experience to SAKTI users by creating and launching improvements 50% faster than before.”

Simplified scaling to support rapidly growing user base

Running Red Hat JBoss EAP on four Red Hat OpenShift clusters with built-in autoscaling capabilities, the DG of Treasury has achieved the responsive scalability needed to support the expected 384,000 SAKTI users nationwide. Previously, the organization’s IT team had to manually adjust infrastructure capacity to support higher traffic without downtime or outages.

“As a government agency focused on financial services, a stable system built on reliable infrastructure is mandatory for us,” said Saiful Islam, Director, Directorate of Treasury Information System and Technology, Indonesia DG of Treasury. “The scalability provided by our Red Hat technology helped us easily and rapidly increase our capacity to support flexible working and provide more remote services during the pandemic.”

Improved talent attraction and retention

Adopting modern, innovative technology and work approaches has also helped the DG of Treasury stay competitive with private sector companies to attract IT talent from across the country.

“When our people see the technology SAKTI uses, they are excited and interested,” said Satiwiko Adhiwido, Senior Solutions Architect, External Information Systems Management, Indonesia DG of Treasury. “People will want to collaborate with us, to join our team to develop SAKTI together with us.”

Continuing modernization journey with AI, data science, and more

After its success with migrating SAKTI to Red Hat software, the DG of Treasury is planning to expand its use of Red Hat OpenShift and Red Hat JBoss EAP to more of its divisions’ core systems.

The organization also plans to evaluate future implementation of artificial intelligence and machine learning (AI/ML), big data, and data science to continue transforming its processes for creating and delivering digital services.

“As we explore how we can use the latest technology to deliver new services, we see Red Hat as a critical part of achieving our mission,” said Islam.

About DG Treasury

The Directorate General of Treasury (DG Treasury) is a government entity in Indonesia responsible for formulating and implementing the state’s treasury policies and technical standardizations. It has more than 8,000 staff and annual revenue exceeding US\$180 billion, with a critical remit to oversee all government financial institutions in the country.



About Red Hat Innovators in the Open

Innovation is the core of open source. Red Hat customers use open source technologies to change not only their own organizations, but also entire industries and markets. Red Hat Innovators in the Open proudly showcases how our customers use enterprise open source solutions to solve their toughest business challenges. Want to share your story? [Learn more.](#)



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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