

National ITMX builds resilient infrastructure for payment innovation



Industry

Financial Services

Headquarters

Bangkok, Thailand

Size

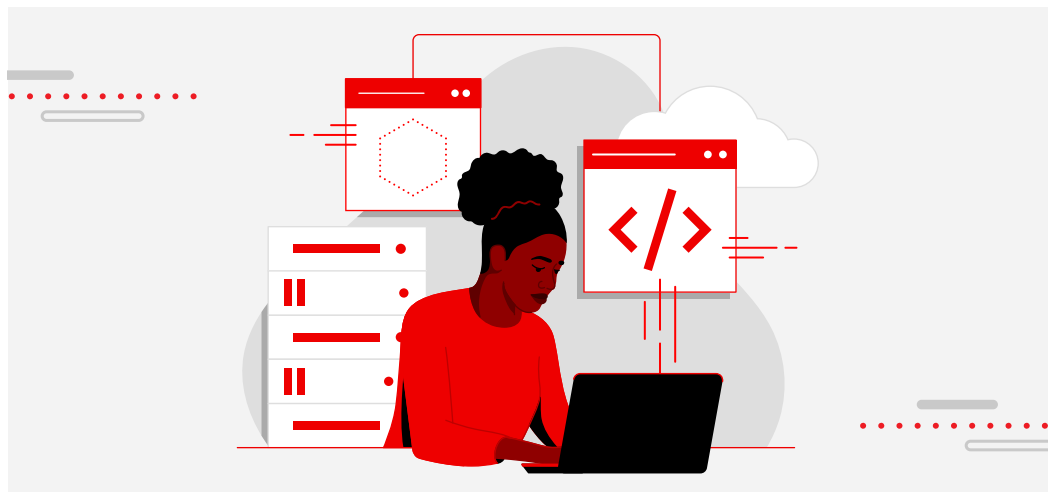
300+ employees

"With Red Hat, we were able to modernize a critical part of Thailand's payment infrastructure quickly and without any disruption."

Niwat Kanwaset

Senior Assistant Managing
Director, Platform Operations
Business Unit, National ITMX

An expanding volume and variety of payment transactions required Thailand's National Interbank Transaction Management and Exchange (National ITMX) to scale up, update existing services, launch new services quickly, and improve the resilience of its infrastructure. Red Hat OpenShift and Red Hat Ansible provided the answer. The payments services provider now supports overall 15,000 transactions per second at peak times, builds new environments in days rather than weeks, and deploys updates and new services in 50% less time –and without downtime. Upgrading National ITMX's infrastructure was a crucial step in maintaining Thailand's robust and future-ready payment infrastructure.



Software and services

Red Hat® OpenShift®

Red Hat Ansible®

Red Hat Technical
Account Manager

Benefits

- ▶ Allowed on-demand scaling as service use grows
- ▶ Reduced deployment times by 50% without downtime
- ▶ Improved resilience while avoiding outages
- ▶ Implemented a forward-looking vision of payments in Thailand

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.](#)

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Providing a national infrastructure for payments

Established by the Thai Bankers' Association under direction of the Payment System Committee (PSC) governed by the Bank of Thailand (BOT), the National Interbank Transaction Management and Exchange (National ITMX) develops and provides services for Thailand's electronic payments infrastructure. As the country's national provider, National ITMX supports a diversity of electronic payments and fund transfers from various channels, including automated teller machines (ATMs), electronic data capture (EDC), over-the-counter (OTC) transactions, internet and mobile.

"We provide the backbone system for real-time funds movement through services, such as bulk payments, cross-border and QR payments, and ATM withdrawals," said Niwat Kanwaset, Senior Assistant Managing Director, Platform Ops Business Unit, National ITMX. "Our clients span more than 37 member institutions, including banks, government agencies, and payment service providers."

BOT designed its National e-Payment Roadmap to create a cashless, inclusive, and efficient digital economy. National ITMX built and operates the roadmap's foundational systems, including PromptPay, Thailand's real-time funds transfer and payment service.

"PromptPay allows individuals, small businesses, and even government agencies to send and receive money instantly using just a phone number, national ID, company tax ID, or QR code," said Niwat. Typical use cases include transferring money to a friend, shopping, or receiving a government refund.

Launched in 2017 as a convenient way to send money, use of PromptPay grew significantly during the pandemic when new features, such as QR payments, QR cross-border payments, and government disbursements, were added. By 2024, use of PromptPay had grown by 3,000%. "We faced three big challenges with PromptPay: scaling up, moving faster, and staying reliable," said Niwat. "We needed to launch new services faster without risking downtime."

Turning to a proven Red Hat solution for future growth and innovation

National ITMX chose to partner with Red Hat when searching for a new foundation for PromptPay. "Red Hat offers enterprise-grade solutions that are proven, scalable, and resilient to support critical services like PromptPay," said Niwat.

National ITMX now uses Red Hat OpenShift for scalable application deployment on the PromptPay service and Red Hat Ansible Automation Platform to automate infrastructure tasks, such as scaling, patching, improving the performance of incident handling, and routine operations.

"Ansible Automation Platform is driving innovation at National ITMX," said Niwat. "It's also made the team more motivated because it can see visible results from the automations it builds."

A Red Hat Technical Account Manager (TAM) helped National ITMX learn how to monitor and maintain its new Red Hat OpenShift clusters. The TAM also helped resolve project issues, meeting with the team at National ITMX regularly, to ensure that Red Hat technologies operate optimally and to address new technical requirements.

Building on the success of the new foundation, the service provider launched an API Hub in 2024 to help Thailand's banks and fintech companies collaborate and work with efficiency. The new OpenAI platform supports critical services, including transaction verification, mobile validation, data exchange, and even cross-border transfers, accommodating both new and legacy systems.

Growing payment innovation on a reliable platform

Allowed on-demand scaling as service use grows

PromptPay can be required to handle over 15,000 transactions every second, so even minor delays matter. As the number of users and transactions on PromptPay continues to grow, Red Hat OpenShift and Ansible ensure scalability.

“Red Hat OpenShift and Red Hat Ansible also allow us to scale on demand so we can support modern services, like our OpenAPI, much more easily,” said Niwat. Red Hat technologies also provide a robust infrastructure that can accommodate growing demand and transaction volumes, which is essential to maintaining service quality and performance.

Reduced deployment times by 50% without downtime

With Red Hat OpenShift and Red Hat Ansible, National ITMX’s infrastructure team has shortened the time to deliver new environments to the application team from weeks to days, and also dramatically reduced application deployment times.

“With Red Hat, we were able to modernize a critical part of Thailand’s payment infrastructure quickly and without any disruption,” said Niwat. “That’s not easy, especially with real-time systems that millions of people depend on every day.”

Services such as PromptPay must also comply with relevant regulatory requirements and standards governing electronic payments, data protection, and financial services. The ability to evolve services quickly is essential both for ensuring compliance within a changing regulatory environment, and adapting to new customer requirements.

Improved resilience while avoiding outages

Red Hat technologies have reduced risk and improved reliability. “Red Hat OpenShift and Red Hat Ansible have given us significant improvements in system resilience, mitigating the risk of outages,” said Niwat. “Having a stable and future-ready platform gives us the confidence to grow and adapt with the market.”

As National ITMX brings more innovations to market, this flexibility will only grow in importance. Red Hat technologies ensure that services are available, performant, and resilient, helping banks and businesses to continue to offer trusted experiences to millions of users as their requirements evolve.

Implemented a forward-looking vision of payments in Thailand

Upgrading National ITMX’s infrastructure extended beyond a technical change: it was a critical step in keeping Thailand’s payment infrastructure strong and ready for the future. The project also created a solid foundation for new innovations, demonstrating that Thailand can lead in building real-time, inclusive, and robust payment systems.

“Upgrading our infrastructure with Red Hat technologies has had a big impact across the whole of Thailand’s payment industry, helping banks and service providers deliver responsive, more reliable services to customers,” said Niwat. “I’m proud that our work is shaping the future of payments in Thailand—and maybe even inspiring others in the region.”

A strong foundation meets present and future needs with confidence

Today, PromptPay has over 81 million registered users, supports more than 15,000 transactions per second, and processes over 2 billion transactions every month, making it one of the most trusted and widely used payment services in Thailand. This reflects not only the technical strength of the system, but also the deep public trust earned by PromptPay. Red Hat OpenShift and Red Hat Ansible have played essential roles in gaining that trust for National ITMX.

Looking ahead, National ITMX sees Red Hat technology as a strong foundation that it can continue to build on. “Red Hat stands for reliable, enterprise-grade open source, striking the right balance between innovation and stability,” said Niwat. “Red Hat doesn’t just provide software: it brings us the partnership, deep expertise, and confidence we need to run mission-critical systems at scale.”

Working with Red Hat wasn’t just about upgrading the technology infrastructure at National ITMX, however. It was also about changing how its teams think, build, and deliver. Red Hat has helped them to become more responsive, more resilient, and more confident in taking on what’s next.

“We see Red Hat as a long-term strategic partner,” said Niwat. “As we move forward with Open Finance, AI-driven fraud detection, and ISO 20022, Red Hat’s support will be crucial in helping us maintain our leadership in digital payment infrastructure across the region.”

About National Interbank Transaction Management and Exchange

National ITMX is a key player in Thailand’s financial technology landscape, specifically in electronic payments and fund transfers. It’s a private company established by the Thai Bankers’ Association and governed by the Bank of Thailand.



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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