

Emirates NBD builds cloud platform for digital transformation with Red Hat



Software and services

Red Hat® OpenShift®
Container Platform

Red Hat 3scale API
Management

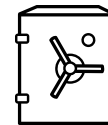
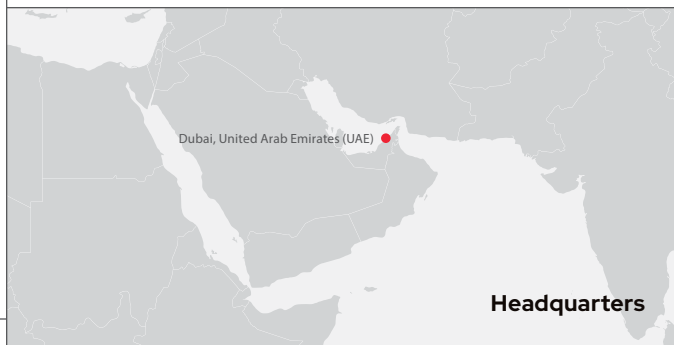
Red Hat Enterprise Linux®

Red Hat Technical Account
Management (TAM)

Red Hat Consulting

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Emirates NBD provides retail, wholesale, and corporate financial services across the UAE and international markets. To increase the speed and flexibility of IT delivery while controlling costs, it began an ambitious multimillion-dollar initiative to transform its end-to-end technology infrastructure and practices. With a centralized private cloud platform built with Red Hat container, integration, and application programming interface (API) technologies, Emirates NBD has simplified collaboration with third-party partners, cut development cycles by months, and launched innovative digital engagement capabilities to compete with cloud-native companies. Now, it can take advantage of emerging technology to offer the services modern consumers in key markets demand.



Financial services

9,000+ employees
230 branches

“Our private cloud is a first for the Middle East’s banking sector. As a critical pillar of our four-year transformation, it helps us deliver significant, innovative benefits to our customers.”

Miguel Rio Tinto
Group CIO, Emirates NBD

Benefits

- Simplified collaboration between internal teams and with partners using APIs
- Reduced app launch and update cycles from 6-18 months to hours
- Established flexible yet stable foundation for private cloud today and hybrid cloud tomorrow



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Group CIO, Emirates NBD

Market leader sets ambitious digital banking goal

One of the largest banks in the United Arab Emirates (UAE), the Emirates NBD Group, provides retail, wholesale, and corporate financial services to customers in the UAE and international markets, including Egypt, Saudi Arabia, India, the United Kingdom, and Singapore. Like any large financial institution, Emirates NBD’s competitive landscape has changed significantly with the emergence of local and international nontraditional competitors.

“It’s no longer about competition from other banks but from new companies that are entering the financial services market with much more flexible, less expensive cloud-native IT platforms,” said Miguel Rio Tinto, Group CIO of Emirates NBD.

One of Emirates NBD’s strategies to meet customer expectations for convenient, real-time banking was the launch of Liv., an award-winning digital bank targeted to millennial customers who prefer to manage accounts, financial goals, and services digitally.¹ The bank partners with third-party providers to offer personalized lifestyle content and deals. Liv. is now the fastest-growing bank in the UAE. To continue this growth, Emirates NBD needed a scalable, resilient foundation for rapid, digital-native innovation.

“We had limited capacity in our servers, so every time we grew quickly, we needed to add more hardware. We couldn’t easily plug in with partners to get their services to our customers quickly and cheaply,” said Jayash Patel, Head of Liv. at Emirates NBD.

The bank embarked on a US\$270 million digital transformation to enhance its end-to-end technology platform over a four-year period.

“The aim of our transformation is to increase the speed and flexibility of IT delivery with best practices—for architecture, security, data, and everything in between—while reducing long-term operational costs,” said Rio Tinto. “Our transformation to become an innovative, always-available bank is ambitious in timeframe, budget, and scope. There is no system that is not affected.”

Enterprise open source solutions provide innovative cloud capabilities

Emirates NBD looked for a private cloud computing solution that would not only provide the cloud-native functions—such as auto-scaling—that nontraditional competitors used through in-house data capabilities, but would also provide the flexibility to accommodate a future hybrid cloud model. An enterprise open source solution would offer rapid access to community innovation without stability or security risks. Emirates NBD selected Red Hat to support its transformation with enterprise cloud and container platforms.

“We needed the flexibility and efficiency of cloud-native stacks from Amazon Web Services or Google Cloud, but in-house,” said Rio Tinto. “If we really wanted to align with open source and the best of what’s out there in cloud-native stacks, with Kubernetes and containers, it was evident that Red Hat OpenShift was the right choice.”

Using Red Hat OpenShift Container Platform for container orchestration, integration, and management, the bank created Sahab, the first private cloud run by a bank at scale in the Middle East, using technology similar to cloud-native companies.² Sahab provides applications, systems, and other

¹ “Liv. wins international accolades in first year of operations.” Emirates NBD Media Centre. April 2018. https://www.emiratesnbd.com/en/media-centre/media-centre-info/?mclid_en=604.

² “Emirates NBD Group launches private cloud as regional first in banking sector.” Emirates NBD Media Centre. 17 April 2018. https://emiratesnbd.com/en/media-centre/media-centre-info/?mclid_en=601.

resources for end-to-end development—from provisioning to production—through an as-a-Service model. It also has consolidated data storage and access across the bank for real-time customer insight. More internal applications are now being hosted on Sahab, as well as an increasing number of customer-facing applications. OpenShift runs Red Hat Fuse, a unified integration platform, as well as Apache Kafka, a stream-processing platform, to support real-time banking and partner interactions.

The bank supports its APIs on Sahab using Red Hat 3scale API Management. This gateway solution makes APIs available to Emirates NBD's partners and other third parties while mitigating security risks and protecting sensitive data—a critical capability for moving to a container- and microservices-based architecture. Finally, Red Hat Enterprise Linux provides a stable, standardized operating system for Emirates NBD's physical servers, virtual machines (VMs), and containers.

The solution was conceptualized, designed, built, and deployed with assistance from Red Hat Consulting in just 12 months. It uses what the bank calls a dual active-zone architecture. Instead of a production site and a disaster recovery site, Emirates NBD now runs its two datacenters independently for uninterrupted service across geographically diverse sites. Red Hat Training was engaged to help the bank's teams learn best practices for using and managing these new Red Hat technologies.

Emirates NBD now runs more than 1,200 containers and more than 500 APIs on Sahab, with average adoption increasing 20-30% per month. The banking group's innovative cloud platform and its adoption of collaborative, DevOps approaches led to recognition as a 2019 Red Hat Innovation Award winner.

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New cloud platform simplifies collaborative development while protecting sensitive data

Innovative, agile collaboration

With container- and microservices-based infrastructure, support for more secure API sharing through Red Hat 3scale API Management, and Kafka support through OpenShift Container Platform, Emirates NBD can more easily integrate and collaborate with internal developers and third-party partners. As a result, the bank can more quickly offer new, innovative services through its online and mobile banking applications, Liv., and other customer channels.

"We've externalized many APIs with our event-driven microservices architecture and open banking approach, allowing us to offer new services like WhatsApp banking and account updates via Amazon Alexa," said Rio Tinto. "We can also integrate with fintechs and other nonbanking partners to offer new innovation to our customers, including content through wearable fitness devices."

This shift to a cloud-native, microservices-based architecture has also improved collaboration between internal teams by supporting a shift from traditional, waterfall methods to agile and DevOps approaches.

"To completely change our infrastructure and evolve toward microservices and APIs, we had to create a new organizational structure. We now have agile teams with product owners and business owners working together," said Rio Tinto. "Developers are working according to a backlog that is decided and prioritized collaboratively with our bank stakeholders."

With these capabilities, Emirates NBD can rapidly take advantage of the best digital innovation in financial services—whether from employees, fintech partners, or even customers.

Faster, iterative development

With Emirates NBD's traditional IT systems, creating and updating applications took months. Setting up a server could take two months while making changes to large, monolithic applications took over six months.

Now, iterative, agile development practices—supported by containers, microservices, and APIs through Red Hat's platforms—let Emirates NBD's developers provision and allocate resources in hours, rather than months. A continuous integration and delivery (CI/CD) pipeline, supported by automated testing, compiling, and transfer of code and containers, means faster development innovation—without affecting availability for partners or customers.

"We did a proof of concept for WhatsApp banking in three days," said Rio Tinto. "Previously it would have taken six months to get the infrastructure, set up connections and programs, then test and launch. Instead of operational tasks, we can focus on how to enhance Sahab and provide new technology—while making sure customers can always rely on us, even at the busiest times."

More secure, stable cloud access

Emirates NBD sought to take advantage of cloud development capabilities while complying with government data regulations for the financial industry. "Auditing, compliance, and risk prevention are extremely important for banks," said Rio Tinto. "But we wanted to take advantage of data technology innovation now, instead of waiting to use a public cloud."

Red Hat OpenShift Container Platform gives the bank the flexibility to use private cloud resources while preparing for a hybrid cloud future that includes public cloud computing. Supported by Red Hat Enterprise Linux, the bank created a stable, reliable foundation to support use of Sahab across environments.

As a result, the bank can use its private cloud to offer similar experiences to nontraditional, less-regulated competitors—such as rapid launch of new applications and features, personalized interactions, and 24x7x365 service availability at scale.

Initial project successes build path to meet ambitious deadlines

Emirates NBD plans to transition 95% of its more than 300 applications to Sahab by 2020. These efforts include supporting Liv. in its expansion to new markets to achieve its goal of serving more than 1 million customers in three countries in the next three years.

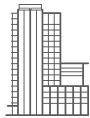
"It's paramount that we move along with our customers," said Patel. "That's been the focus of our transformation project: making sure we can adapt to all of the changes in the market and still offer the same service quality."

To continue its successful transformation, Emirates NBD is considering adding Red Hat AMQ to enhance integration in its workflow infrastructure. "We've seen our relationship with Red Hat mature from a supplier interaction to a close partnership," said Rio Tinto. "They understand where our business is going, and we want to continue to work with them to enhance our use of their products as we expand to public cloud and beyond."

About Emirates NBD

Emirates NBD is a leading banking Group in the region. As at 31st March 2019, total assets were AED 525.8 Billion, (equivalent to approx. USD 143 Billion). The Group has a significant retail banking franchise in the UAE and is a key participant in the global digital banking industry, with over 90 per cent of all financial transactions and requests conducted outside of its branches. The bank was declared the Most Innovative Financial Services Organization of the Year at the 2017 BAI Global Innovation Awards.

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 integrate new and existing IT applications, develop cloud-native applications, standardize on our industry-leading operating system, and automate, secure, and manage complex environments. Award-winning support, training, and consulting services make Red Hat a trusted adviser to the Fortune 500. As a strategic partner to cloud providers, system integrators, application vendors, customers, and open source communities, Red Hat can help organizations prepare for the digital future.



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North America
1 888 REDHAT1
www.redhat.com

**Europe, Middle East,
and Africa**
00800 7334 2835
europe@redhat.com

Asia Pacific
+65 6490 4200
apac@redhat.com

Latin America
+54 11 4329 7300
info-latam@redhat.com