Red Hat

Türk Telekom delivers digital services with a responsive container foundation

Türk Telekom
Değerli Hissettirir

Software and services

Red Hat® OpenShift®

Red Hat Runtimes

Red Hat Consulting

Türk Telekom, Turkey's first integrated telecommunications operator, has responded to market change for more than 180 years. With the market shift to digital services creating new competition, the company sought to improve delivery times with the support of a modern, responsive IT infrastructure. By rebuilding its applications and services as modular microservices hosted in Red Hat's enterprise container platform, Red Hat OpenShift, Türk Telekom has improved processes, increasing customer satisfaction. Now, the company can take advantage of self-service provisioning and automatic scaling to quickly deliver innovative, reliable services to customers.

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Mehmet Fatih Bekin
Data Center and Cloud Services Director, Türk Telekom

Telecommunications

More than **34,000** employees

Benefits

- Cut feature delivery time from several days to 90 seconds
- Enhanced customer experience with responsive scalability
- Simplified application and container management with integrated tools

Delivering telecommunications service updates at the speed of demand

Founded more than 180 years ago, Türk Telekom is Turkey's first integrated telecommunications operator. The group's network coverage spans the entire country, supporting 16.7 million fixed-access lines, 14.1 million broadband connections, 3 million television subscriptions, and 23.9 million mobile subscriptions as of September 30, 2021.

To support its vision to accelerate Turkey's digital transformation with new technologies, Türk Telekom's IT teams sought to improve their project delivery times. Previously, the group required 2-3 weeks to launch a new feature, and software updates could only be completed once a week. Additionally, the group wanted to standardize its IT infrastructure on a single platform to offer self-service capabilities to its development and operations teams.

"Meeting customer demands was challenging," said Mehmet Fatih Bekin, Data Center and Cloud Services Director, Türk Telekom. To deliver new features and updates to customers faster, Türk Telekom sought to shift to a more responsive, microservices-based architecture that could support adoption of innovative open source technology, such as service mesh and messaging queues.

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Standardizing on an enterprise Kubernetes platform from Red Hat

While several teams were already running applications using community versions of Kubernetes technology, Türk Telekom sought to adopt a standard solution that would align with best practices. The group chose Red Hat OpenShift to take advantage of the open source community's innovation with responsive enterprise support.

Red Hat OpenShift provides comprehensive automation and application capabilities for cloud deployments, with a focus on improving developer productivity. It builds on a Kubernetes approach of being extensible by design with components and operators that help organizations customize their container environments.

"Red Hat OpenShift Container Platform comes with a lot of additional open source tools, including Red Hat OpenShift Service Mesh, software-defined networking, and an Elasticsearch operator," said Bekin. "Having all these tools integrated into our Red Hat technology makes managing everything so much easier."

To optimize its new container deployment, Türk Telekom worked closely with Red Hat Consulting to design a cloud-native architecture—including participating in a Pathfinder engagement. This program assessed all of the applications, from containerized microservices to monolithic Java™ Enterprise Edition (Java EE) applications, and determined which applications can be containerized, the effort involved, and any potential challenges.

With guidance from development partners Etiya, Inomera, and DefineX, Türk Telekom then began refactoring specified applications using Red Hat Runtimes, a set of lightweight runtimes and frameworks—including the Red Hat supported version of Spring Boot—for highly distributed architectures, such as microservices. The Red Hat OpenShift Virtualization feature also supports this transition with the ability to run virtual machines (VMs) inside containers.

"We are migrating several artificial intelligence applications, including those that monitor customer use and requirements, then suggests an optimal package, as well as one that manages automation for our virtualization and platform layers. It uses AI insight to decide which cluster should host each workload

for those layers," said Bekin. "We're also running several customer-facing applications in Red Hat OpenShift now, such as the Playstore.com game distribution platform, a promotional gift app, and the muud music distribution app."

Building and delivering competitive digital services faster

Cut application delivery time from days to seconds with self-service

Türk Telekom's teams can now deploy applications to production in as little as 90 seconds—whenever needed—using the self-service development and deployment capabilities provided by Red Hat OpenShift. Additionally, when developers put their code into a Git solution, Red Hat OpenShift manages the image source tasks. Previously, delivery of new applications or feature updates would have taken days and was restricted to one day per week.

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Enhanced customer experience

In addition to providing on-demand resources to developers, Türk Telekom can also add or remove compute resources to its applications to meet changing traffic volume and user demand.

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As a result, Playstore application performance increased by 30%—even when faced with peak traffic during marketing campaign periods.

Simplified application and container management

By taking advantage of the built-in management features and open source tool integration included in Red Hat OpenShift and Red Hat Runtimes, Türk Telekom can now more easily manage its application environments and services.

"We've used Red Hat OpenShift Service Mesh to establish a multitenant container environment, where our developers can deploy any microservices or related resources they need without affecting others' work," said Bekin.

Integrated monitoring then helps developers and other IT staff check the platform's logs and workloads through a graphical interface to quickly identify and resolve potential application performance issues.

Building an open source future with Red Hat

Türk Telekom is now using Red Hat OpenShift to create new solutions for both customers and internal teams. The company has begun offering Red Hat OpenShift as a managed service to other groups, with plans to expand the offering with a managed cloud service and make it available to banks and other enterprise customers in 2022. For example, Türk Telekom's networking team will use a Red Hat OpenShift cluster for network intelligence, and another team will be using a cluster to collect and analyze energy consumption data.

The company is also adopting new Red Hat products and services to enhance its service creation and delivery, including:

- Red Hat OpenShift Data Foundation for unified cluster management and storage.
- Red Hat AMQ for microservices event stream processing in microservices, with distributed tracing for application logging.
- Red Hat 3scale API Management.
- Red Hat OpenStack® Platform for flexible autoscaling capabilities.
- Red Hat Virtualization.
- Red Hat's single sign-on (SSO) technology.
- Red Hat Training focused on adapting to digital transformation cultural changes, including cloud-native development and DevOps.

"Red Hat is more than just a solution provider to us," said Bekin. "We've only just begun, but we expect to continue seeing great results from our collaboration."

About Türk Telekom

Türk Telekom Group is Turkey's first integrated telecommunications operator with a long history of 180 years. With a wide range of services and rich product diversity in the field of individual and corporate services, it has brought together mobile, internet, telephone, and TV products and services. Türk Telekom Group companies are carrying out their activities with more than 34,000 employees in 81 provinces with the vision of bringing Turkey together with new technologies and accelerating the process of transforming into the information society.

Red Hat Innovators in the Open

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.

facebook.com/redhatinc
@RedHat
linkedin.com/company/red-hat

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

redhat.com
#F30776_0222