

Turkcell builds resilient telco cloud with Red Hat



Industry

Telecommunications

Headquarters

Istanbul, Türkiye

Size

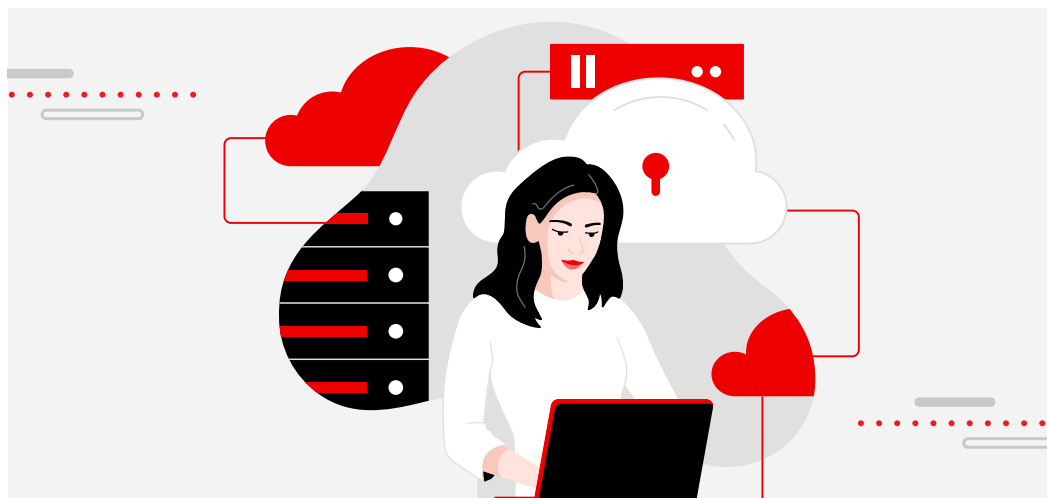
22,000 employees

"With Red Hat solutions underpinning our telco cloud, we can help make telecom services more available to our customers when they need them most. Increased service uptime protects customer satisfaction and Turkcell's reputation for high-quality services."

Elif Yenihan Kaya

Network Capabilities
Director, Turkcell

To maintain service availability and performance amid growing subscriber demands and external challenges, Turkcell needs a highly agile, resilient, and scalable environment. The company works with Red Hat to build and operate a telco cloud underpinned by Red Hat OpenStack Services, and uses Red Hat OpenShift to develop and integrate cloud-native functions for its 5G network. Red Hat Ansible Automation Platform, zero-touch provisioning, and Red Hat Enhanced Solution Support have allowed Turkcell to achieve telco-grade service-level agreements, up to 90% faster deployments, 50% greater management efficiency, and increased service uptime. With an effective cloud-native environment, Turkcell is now well positioned to keep pace with rapid advances in the telecommunications industry.



Software and services

Red Hat® OpenStack Services
Red Hat OpenShift®
Red Hat Advanced Cluster Management for Kubernetes
Red Hat Enhanced Solution Support
Red Hat Ansible® Automation Platform
Red Hat Technical Account Management

Benefits

- ▶ Reduced time to market with 90% faster deployments
- ▶ Optimized service performance and availability
- ▶ Increased business agility and innovation

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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Safeguarding telecommunications services for subscribers

As one of Türkiye's largest converged telecommunications and technology service providers, Turkcell is committed to continuously launching new digital services, enhancing quality, and expanding its subscriber base.

To protect both customer satisfaction and its brand reputation, service availability and performance are critical. Headquartered in Istanbul, Turkcell must ensure that its infrastructure can withstand challenges such as earthquakes and wildfires. This demands a highly agile and resilient environment that can minimize disruption during incidents and quickly shift workloads when needed.

In addition to ensuring maximum uptime, Turkcell's position as a digital leader means it must be able to rapidly launch new services, integrate emerging technologies quickly, and scale operations to meet evolving demands.

"Telecom environments must adapt more rapidly to evolving technologies, shifting customer dynamics, and competitive pressures," said Elif Yenihan Kaya, Network Capabilities Director, Turkcell. "Our role is to design digital solutions and services that are simple, reliable, and sustainable. To do this, we need a resilient cloud-native environment."

Building a resilient telco cloud on Red Hat solutions

To meet its requirements for agility and resilience, Turkcell built its telco cloud on Red Hat OpenStack Services and Red Hat OpenShift, offering a cloud computing solution that virtualizes resources from industry-standard hardware, organizes them into clouds, and manages them so users can access what they need, when they need it.

Deployed 8 years ago in collaboration with a Red Hat Advanced Business Partner, Turkcell's telco cloud is a software-defined and virtualized environment that supports more than 24 million customers. The common platform hosts a variety of vendor applications and allows the rapid movement of workloads between locations, supporting flexibility and reliability.

Building on its success with OpenStack Services, Turkcell adopted Red Hat OpenShift to support development for its emerging 5G environment. Turkcell worked closely with Red Hat teams to deploy the solution.

"With Red Hat, we benefit from rapid open source innovation, along with carrier-grade stability and support," said Yenihan Kaya. "It also makes it straightforward to integrate technologies from multiple vendors."

Turkcell's telco cloud is growing continually. It currently includes more than 12,000 virtual machines (VMs) and supports around 20TB per second in virtual network capacity. More than 30 core network services run on OpenStack Services, while Red Hat OpenShift supports the integration of cloud-native functions and virtualized Internet Protocol Multimedia Subsystem (IMS) voice services for Turkcell subscribers.

Simplifying management and maximizing availability

Today, Turkcell also uses Red Hat Advanced Cluster Management for Kubernetes to simplify management and automate tasks such as zero-touch provisioning.

To further increase performance and resilience, Turkcell recently adopted Red Hat Enhanced Solution Support. The service provides 24x7 engineering-level assistance and lifecycle management features such as compliance updates. Turkcell also works with Red Hat Technical Account Managers (TAMs) for both Red Hat OpenShift and OpenStack, benefiting from their specialist expertise to continually optimize its Red Hat environments.

“We used Red Hat Enhanced Solution Support to assist with an OpenStack Services upgrade,” said Yenihan Kaya. “With proactive monitoring and faster issue resolution, we can minimize downtime for our essential applications and have seen an increase in availability.”

Enhanced Solution Support provides fast response and telecommunications-grade service level agreements that include initial response times, restorations, and resolutions. It helps Turkcell to increase service uptime and availability, and confidently maintain infrastructure with engineering-level support from senior Red Hat engineers who know the Turkcell environment and act as extensions to the internal team.

Increasing efficiency, availability, and business agility

Reduced time to market with 90% faster deployments

With Red Hat’s unified platform, Turkcell can decrease time to market and launch more frequent releases of network cloud functions. In particular, zero-touch provisioning has significantly reduced deployment times.

“With Advanced Cluster Management for Kubernetes, we can now create a new workload environment in just a few hours, compared to a week previously,” said Yenihan Kaya. “Initial setup times were 50% faster, but now that we have defined the templates, we have achieved a 90% reduction in deployment times.”

Automating provisioning processes with Red Hat solutions also reduces errors and decreases time spent on troubleshooting. Overall, automation has increased management efficiency by up to 50%.

Optimized service performance and availability

With standardized and automated processes, Turkcell has also increased service availability and performance. In the event of an incident such as an earthquake or wildfire affecting infrastructure in one area, Turkcell can move workloads to an alternative site with minimal disruption to customers.

“With Red Hat’s unified platform underpinning our telco cloud, we can help make telecom services more available to our customers when they need them most,” said Yenihan Kaya. “Increased service uptime protects customer satisfaction and Turkcell’s reputation for high-quality services.”

Increased business agility and innovation

Turkcell’s ability to integrate new technologies quickly supports faster service launches and keeps pace with evolving customer demands. The frequent onboarding of new services is also more efficient, with built-in features in OpenStack Services and Red Hat OpenShift helping to mitigate risk.

“Our agile cloud-native telco cloud supports innovation,” said Yenihan Kaya. “We have also been able to decrease capital expenditure and reduce costs by increasing vendor choice and flexibility.”

Keeping pace with rapid advances in the industry

Turkcell is continuing to migrate more services to its telco cloud while optimizing its wider environment. The Turkcell team has attended a number of Red Hat training courses, including Multicloud Management with Red Hat OpenShift Platform Plus, Developing Advanced Automation with Red Hat Ansible Automation Platform, Securing Kubernetes Clusters with Red Hat Advanced Cluster Security, and Red Hat DevOps Pipelines and Processes: CI/CD with Jenkins, Git, and Test-driven Development.

“The training courses were highly beneficial to the team, covering both theoretical and hands-on lab work,” said Yenihan Kaya. “They helped us gain a clear understanding of containers and other concepts that are directly applicable to our work in establishing and managing the telco cloud.”

Following the training on Ansible Automation Platform, the team plans to use the solution to increase automation and further simplify management. Together, it is also looking at adding AI capabilities with Red Hat OpenShift AI to build solutions for monitoring, disaster-recovery scenarios, and cloud assurance.

With Red Hat technologies, Turkcell has a stable and supported environment to keep pace with rapid advances in the telecommunications industry. “With a resilient and agile telco cloud based on Red Hat solutions, we have the foundations we need to provide our customers with the next-generation services they demand, and launch new digital capabilities rapidly,” said Yenihan Kaya.

About Turkcell

Turkcell is a converged telecommunication and technology services provider, founded and headquartered in Türkiye. It serves its customers with voice, data, TV, and value-added consumer and enterprise services on mobile and fixed networks.



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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