

# O2 builds resilient, scalable 5G SA network with Red Hat

# O<sub>2</sub>

## Industry

Telecommunications

## Headquarters

Prague, Czech Republic

## Size

5,000 employees

*"Red Hat OpenShift provides a repeatable, scalable blueprint for deployment, so we can work efficiently with our application vendors to deploy updates overnight, rather than over several weeks."*

## Jakub Votava

Network Director,  
O2 Czech Republic

To support its 5G Standalone (SA) network, O2 Czech Republic needed a modern, dependable, and scalable cloud-native platform that could handle carrier-grade workloads and meet strict regulatory requirements. The company deployed Red Hat OpenShift Platform Plus as an open source cloud-native platform for its 5G core.

With support from Red Hat Consulting, O2 created a highly available, fully redundant architecture across 2 data centers, hosting critical 5G functions for millions of subscribers. The solution increases efficiency with automation and zero-touch provisioning, reducing time to deploy from weeks to days, while strengthening its focus on security and simplifying compliance.



## Software and services

Red Hat® OpenShift®  
Platform Plus

Red Hat Consulting

Red Hat Enhanced  
Solution Support

Red Hat OpenStack®

## Benefits

- ▶ Safeguarded availability and response times
- ▶ Increased efficiency through automation and standardization
- ▶ Strengthened compliance and scalability

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## 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.](#)

*“With Red Hat OpenShift, we can move from idea to production in days rather than months. We can quickly deploy new workloads or tools without delays or disruption.”*

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**Jakub Votava**

Network Director,  
O2 Czech Republic

### **Supporting O2’s new 5G Standalone network**

With millions of subscribers, O2 is a major telecommunications service provider in the Czech Republic. The company’s strategic priorities included expanding and retaining its customer base by delivering high-quality, reliable connectivity across its converged offering, which includes mobile, internet, landline, and television services.

O2 Czech Republic has consistently led the market in innovation, as both the first service provider in the country and the first to launch 4G services. It now aims to be the first to roll out a 5G Standalone (SA) network. To support the new offering, O2 Czech Republic needed to modernize its core network to meet the performance demands of 5G SA at scale.

The company decided to take a cloud-native approach, with an open source platform that would support partnerships with multiple application vendors, standardize operations, and allow automation. One of O2’s main priorities was security. As a service provider, the company is exposed to high levels of risk. As it supports critical information services, such as emergency calls, it must also comply with strict regulatory requirements, for example, the European NIS2 directive.

“To deliver advanced 5G services to our customers, we needed a platform that offered flexibility and control, with telecommunications-grade reliability, automation, and efficient integration so we can work with our diverse ecosystem of partners,” said Jakub Votava, Network Director, O2 Czech Republic.

### **Standardizing and strengthening 5G workloads**

To support its modern 5G SA network, O2 Czech Republic deployed Red Hat OpenShift Platform Plus, a unified cloud-native platform designed to build, modernize, and run applications at scale. The move builds on O2’s earlier success with Red Hat OpenStack, which has supported its telecommunications cloud in the Czech Republic since 2023 by virtualizing infrastructure and delivering flexible, on-demand resources.

O2 selected Red Hat OpenShift for its ability to support a Network as Code model, its alignment with O2’s GitOps approach for DevOps best practices, and its high levels of support. The service provider started working with Red Hat Consulting early in the project.

“Red Hat Consulting helped shape the architecture and fine-tune our requirements before deploying and optimizing the platform,” said Votava. “It also provided ongoing knowledge transfer and training so the internal team can operate the solution independently going forward.”

The production environment runs across 2 fully redundant data centers, each capable of operating independently. With approximately 50 production servers per site, and the ability to scale to 300, the platform hosts 7 critical 5G network functions and delivers services to millions of mobile subscribers.

O2 uses Red Hat Advanced Cluster Security for Kubernetes to maintain full visibility and enforce strict privilege controls for workloads with elevated access, which is essential in meeting stringent compliance standards. To manage scale and maximize efficiency, O2 uses Red Hat Advanced Cluster Management for Kubernetes for multicluster deployment and zero-touch provisioning. Red Hat Quay is used as a registry for applications, while Red Hat Data Foundation ensures reliable, software-defined storage across the environment.

To maintain high availability and performance, O2 added Red Hat Enhanced Solution Support, which provides 24x7x365 access to Red Hat engineers who understand the architecture, ensuring rapid responses to issues.

### **Delivering resilience, efficiency, and stability at scale**

#### **Safeguarded availability and response times**

With architecture built for resilience and rapid recovery, O2 is well-positioned to achieve its goal of 99.999% availability. With Enhanced Solution Support, O2 can immediately escalate to experts who understand the environment, supporting fast, effective troubleshooting with no onboarding delays.

O2 has also strengthened its disaster-recovery capabilities. “We can rebuild entire environments in hours rather than weeks, thanks to the automation and consistent configuration practices powered by Red Hat OpenShift and Red Hat Advanced Cluster Management,” said Votava.

#### **Increased efficiency through automation and standardization**

Automated processes also help O2 increase both operational efficiency and service reliability. For example, zero-touch provisioning reduces the risk of human error and ensures that deployments follow a consistent standard.

“Red Hat OpenShift provides a repeatable, scalable blueprint for deployment, so we can work efficiently with our application vendors to deploy updates overnight, rather than over several weeks,” said Votava. “With Red Hat as a standard solution within the telecom industry, it is also easier to source the right skills, and we have access to support from the wider Red Hat community.”

#### **Strengthened compliance and scalability**

With Red Hat Advanced Cluster Security, O2 has greater visibility and control over its compliance posture. It can comply more easily with strict regulatory requirements, with built-in consistency that ensures best-practice configurations.

Red Hat OpenShift’s scalability and observability support complex workloads, while its agility allows faster innovation. “With Red Hat OpenShift, we can move from idea to production in days rather than months,” said Votava. “We can quickly deploy new workloads or tools without delays or disruption.”

### About O2 Czech Republic

As the country's leading integrated telecommunications service provider, [O2 Czech Republic](#) delivers a comprehensive suite of voice, internet, and data services to residential customers, small to medium-size enterprises (SMEs), corporations, and government entities.

It is currently building a fifth generation (5G) network, which it was the first to launch in a real environment. O2 is also the largest internet provider for households and businesses, offering 99% of addresses.

The company is owned by investment company PPF.



### 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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