

Telefónica optimizes applications development and accelerates time to market



Telefónica is a leading international telecommunications services provider in Europe and Latin America, with 100 years of history at the forefront of innovation. To launch innovative services on the market, Telefónica has been working closely with Red Hat to install Red Hat OpenShift and container technology to improve its infrastructure and enable the containerization and modernization of its obsolete applications, as well as driving the creation of new applications and their deployment in record time.

Headquarters

Madrid (Spain)

Industry

Telecommunications

Size

more than 20,000 employees

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Alberto Varadé

Head of Service Oriented Architecture (SOA),
Telefónica Spain



Software and services

Red Hat® OpenShift®

Red Hat Advanced Cluster Management for Kubernetes

Red Hat JBoss Web Server

Red Hat Technical Account Management (TAM)

Benefits

- ▶ Improved visibility and maintenance in all clusters
- ▶ Generated confidence in the optimized development of applications to satisfy demands for scalability
- ▶ Reduced deployment times and incidents
- ▶ Created a more stable, secure innovative solution based on open source software

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 and containerization, we are starting to achieve flexibility in the deployment of applications and an improvement in supervision and optimal use of resources, among other advantages."

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Head of SOA Systems,
Telefónica Spain

Exploring the advantages of containers

Service providers are under more pressure than ever. For companies to remain competitive, they must satisfy the growing demands of a consumer with an expert profile in technology to offer dynamic 5G services and time-saving internet solutions for intelligent items and applications. If they want to keep up with the pace of innovation in the development of applications, providing them more quickly to their clients, service providers must find a way to migrate these applications to a cloud-based environment to benefit from all the advantages that this new environment offers. To update the company's critical processes on obsolete applications, the Telefónica team embarked on Telco 3.0., a vital project in the transformation of the company's most critical applications, to a containerized environment and 100% cloud-based.

"Today's Telefónica is the result of the union of many Telefónicas, such as Telefónica Móviles, Telefónica Data, Telefónica I+D, Terra and others," said Alberto Varadé, Head of SOA Systems, Telefónica. "We got to a point where we decided to merge all the systems that had been supporting each one of these companies to design a new application, developed with Java technology based on a standard SOA architecture on application servers, to manage client services and relations. This new application is Telco 3.0."

After the birth of Telco 3.0. Telefónica decided to launch container technology for business intelligence applications, and therefore it was initially decided to install a Red Hat OpenShift v3 cluster within its data centers.

First, Telefónica's impression of the efficiency of the original cluster installation was huge. New applications could be installed quickly and simply, with great ease of scalability. As a result, Telefónica then saw the need to increase the presence of Red Hat OpenShift and apply it to other parts of its business. Conversely, over time and with the growth in functionality, Telco 3.0., which was then outside of OpenShift, started to experience serious difficulties with the infrastructure in which it was housed. The inefficient use of resources such as memory, cables, or CPU, deployment time, and start-up or shutdown of the servers. "It is possible that we had more than 25 services on the same server, some taking over the resources that the others needed. New functionalities were added to existing developments which increased the use of resources, with the difficulty of their isolation and scalability in a traditional system," said Varadé.

Because of the problems we were having and the successful deployment of BI in OpenShift, in 2019 we decided to migrate the core applications of Telco 3.0. to Red Hat OpenShift 4.

Utilizing the new applications and the hybrid cloud

To solve these problems, the Telefónica team first adopted measures centered around modernizing its applications and working with microservices to develop everything related to containers. "Migrating from virtual machinery to containers is quite simple, and although we did it ourselves, we always had the valuable collaboration of Red Hat Technical Account Management," said Varadé. "With Red Hat OpenShift, we are gaining flexibility in the deployment of applications, making optimal use of resources and furthermore, we are improving the scalability and supervision of our most critical systems."

After this phase, Telefónica started to install new applications in new independent clusters in Red Hat OpenShift, since the platform enables complete management of the life cycle of applications, including the development, installation, operations, and maintenance.

“At the moment we have 75% of Telco 3.0. deployed in Red Hat OpenShift. We are currently managing more than 10 clusters of OpenShift in which a multitude of applications have been deployed which are very important for our company. So, for example, we have application deployments for identity management of our television platform, a blockchain network for order tracking for our logistics, and applications for analyzing large volumes of data and fraud,” said Varadé.

The knowledge and experience acquired by the team have enabled Telefónica to start projects with Red Hat. Through Red Hat JBoss Web Server, Telefónica is migrating the Apache software to the more scalable and stable environment of Red Hat OpenShift, to offer lightweight web applications and sites that can manage large quantities of traffic without the need to provide new virtual machinery and SW installations, simply increasing the number of pods.

Now, Telefónica is gradually and steadily starting to capitalize on the flexibility of Red Hat OpenShift, together with the flexibility provided by the cloud. Now there are hundreds of local applications, including Telco 3.0. Application, which is compatible with Red Hat OpenShift. The disaster recovery cluster has been installed in Google Cloud, as well as the tools cluster that can have variable use.

Telefónica uses Red Hat Advanced Cluster Management for Kubernetes to manage and automate the configuration, installation and maintenance in a single unified platform. Red Hat OpenShift offers a ready-to-use applications platform, managed in the main public cloud providers and with a unique user experience irrespective of where it is installed.

“Telefónica has agreements with various cloud providers, which will lead us to a multi-cloud environment. We have seen that Red Hat OpenShift allows us to transfer our applications to any public cloud from the local infrastructure, adapting and adjusting to what best suits our needs,” said Varadé.

Any initial doubts about the containerization process were quickly dispelled when the team saw how Red Hat OpenShift offered a simplified and automated experience of installing, supplying, and managing applications. “By working in both the private and the public cloud, Red Hat OpenShift enables greater control of workloads and facilitates the administration and management of everything related to its applications,” said Varadé.

“A key aspect for its acceptance here at Telefónica has been the fact that it has been created based on industry standards and 100% open source, as a result of its automation capabilities, the ease of collaboration, automated provisioning and scalability that it offers.”

Major benefits for both clients and users

Improved visibility and maintenance in all clusters

Although Red Hat Advanced Cluster Management for Kubernetes offers visibility on multiple clusters and enables optimization of operations and maintenance tasks, with the use of GitOps it has been possible to centralize configuration management, standardizing all configurations to have environments that are always updated and with minimal team effort required to maintain this configuration.

“With RHACM, we can manage all our clusters as if they were just one,” said Varadé. “We have started collaborating with our providers who are carrying out operations and maintenance so that many of the changes and validations made can be automated using the GitOps philosophy.”

Generated confidence in the optimized development of applications to satisfy demands for scalability

With Red Hat OpenShift, Telefónica quickly provides the necessary infrastructure to develop applications in an optimized manner, in addition to its high scalability. Red Hat OpenShift can be installed locally or in the cloud, which enables Telefónica to develop container-based applications all at once by using the same processes and tools to manage and implement them in any environment.

“Now we know that what we are installing is what we have brought from another environment and that we have tried it before. The libraries are the same, and if it worked before, then it works now. We are moving containers from one environment to another, which has allowed us to save a lot of time internally in all our teams,” said Varadé.

Reduced deployment times and incidents

With Red Hat, Telefónica has seen reduced application deployment times from a window of 8 hours at the weekend to barely 90 minutes in certain situations.

“Before, with the size of the application servers, especially for memory, there were applications that we had to restart, and this often took us more than 50 minutes. For a company that operates 24 hours a day, imagine what a deterioration of service and image could mean. Now, in the worst-case scenario, a container with a lot of memory takes us seconds, and always less than a few minutes,” said Varadé.

Created a more stable, secure innovative solution based on open source software

Red Hat OpenShift and open source technologies offer a development model that enables the creation of more stable, secure, and innovative technologies. Red Hat OpenShift encourages open forums where ideas are exchanged to resolve problems and develop technologies, which is a common point with Telefónica.

“At Telefónica, we have a young, highly motivated team who continuously have new ideas and are willing to use new tools. And it is the fact that Red Hat and OpenShift technology encourages and facilitates working with various specialized solutions that improve our work from start to finish,” said Varadé. “It opens the door to new ideas and helps us to be innovative.”

Planning a strong and dynamic future

Telefónica’s success with Red Hat is due to its proposal for a unified platform. The adoption of Red Hat OpenShift partly symbolizes its synergistic perspective in favor of ideas, technology, and innovation.

“We are delighted with Red Hat. The philosophy of the company and its products, its way of working, and always supporting us, is particularly important to us. It has never said no to any of our requests, it has always been very positive and has endeavored to find solutions and alternatives,” said Varadé.

“Working alongside Red Hat Technical Account Managers (TAM) also helps us to plan and implement Red Hat solutions, to anticipate problems and reduce interruptions, and make the most of the solutions that we have employed.”

About Telefónica

Telefónica, S.A. and its subsidiary companies and investees are an integrated and diversified group in telecommunications, operating primarily in Europe and Latin America. Its activity focuses on the service provision of landlines and mobiles, broadband, internet, data, pay television, and other digital services.



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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