Red Hat

Etat du Valais cuts time for digital services provision in three

CANTON DU VALAIS
KANTON WALLIS

Software and services

Red Hat®
Application Foundations

Red Hat OpenShift®

The cantonal administration Etat du Valais serves the 345,000 inhabitants of the canton of Valais in southwestern Switzerland. As digitization climbed its agenda, IT wanted to deliver more value to the business faster. When more frequent releases put pressure on the IT operations team, developers switched to a container approach, initially with Docker and later with Red Hat OpenShift. With support from Adesso, the cantonal administration Etat du Valais discovered the Red Hat build of Quarkus at the Red Hat Summit. Subsequent adoption has allowed developers to focus on delivering business value and test faster, cutting development time by one mthird.

"We have cut development time by three with the Red Hat build of Quarkus."

Steve Favez
Web Architect and Head of Internet Capability Center, Etat du Valais

Government

40 business units;
3,500 employees

Benefits

- Saved cost thanks to low memory and CPU consumption
- Reduced cluster usage by 40%, making room for new workloads
- Increased developer productivity threefold
- Ensured an easy transition from Spring and J2EE for Java developers

Delivering advanced digital services for the citizens of Valais

Situated in southwestern Switzerland, the Valais is one of the 26 cantons forming the Swiss Confederation. Its population of around 350,000 inhabitants lives across 67 square kilometers of land, which includes Monte Rosa and Lake Geneva. Etat du Valais, the Valais' cantonal administration, has around 40 business units (departments), which cover everything from finance and energy to security, institutions, and sport.

"We've cut our application computing resource usage in three because the Knative mode of Red Hat Quarkus is so fast and so light."

Steve Favez
Web Architect and Head of Internet Capability Center, Etat du Valais

The cantonal administration is eager to provide its citizens with modern services to meet their needs and, at the same time, offer the best value. With digitization high on its agenda, IT wanted to provide value to the business faster. "Our development team adopted an Agile approach and began delivering new functionality every couple of weeks," said Steve Favez, Web Architect and Head of Internet Capability Center at Etat du Valais. However, the more frequent releases put a lot of pressure on the operations team.

Moving to using containers with Docker empowered the development team to deploy its applications to production without relying on the operations team. "We started to have more and more applications deployed on Docker and so began thinking about orchestrating all those applications," said Favez. "We moved to Red Hat OpenShift to give us better security and a better ecosystem, further improving our ability to deliver more and more value to the business."

Favez and his small team of ten saw that Red Hat OpenShift offered more opportunities to allow them to deliver more value to the business – and cost-efficiency. "We realized we could save CPU and memory resources and thus reduce costs by stopping some applications," said Favez. "We could switch off applications that are only used for a few months of the year and switch off our testing and quality control environments if we had nothing under development."

Restarting an application based on Spring Boot or even the legacy J2EE (Java 2 Enterprise Edition) framework could take ten or even 20 seconds. This slow startup was wasting time, not only for the operations team managing the applications but also for the development team updating them. "When our developers came to test the new functionality they had just written, they were wasting a lot of time waiting for their application to start running," said Favez.

Adopting a Kubernetes-native Java framework for containerized applications

Favez discovered the perfect solution while attending Red Hat Summit. Full of enthusiasm, on his return, he presented the Red Hat build of Quarkus—part of Red Hat Application Foundations—to his team. The administration was already running applications on Red Hat OpenShift, applications were developed with support from its strategic technology partner Adesso.

The Red Hat Premier Partner suggested implementing Red Hat Quarkus, an open source, container-first and Kubernetes-native Java framework that allows developers to optimize container-native applications. "The Red Hat build of Quarkus had exactly the capabilities we needed," said Favez. "It would give us elasticity. It would allow us to switch applications on and off to save resources. And I wouldn't need to teach my Java developers a new language."

To prove the concept, Favez wrote a small service to scan a file for viruses in just one day. When he had previously written the service—a RESTful Web API—in Spring Boot, it took one week. "We'd had some issues with the Spring Boot version," said Favez. "It didn't manage large files well. But the Quarkus version worked perfectly."

With the success of this first proof of concept, which went to production after one week, the team started using the Red Hat build of Quarkus on larger projects. "The result was exactly the same," said Favez. "People developed faster. It was easy, and it worked. We now use the Red Hat build of Quarkus for every new application we write. And we are migrating applications from legacy frameworks to Quarkus when we have the time."

Accelerating time-to-market while optimizing costs

Saved operational costs thanks to a smaller footprint

The Red Hat build of Quarkus allows developers to optimize container-native applications for peak performance. Its small computing resource footprint ensures low memory and CPU consumption, reducing overall costs.

"We've cut our application computing resource usage in three," said Favez, "because the native mode of Quarkus is so fast and so light." In one instance, an application the team had written using Spring Boot required 500 megabytes of memory—but just 50 megabytes with the Red Hat build of Quarkus.

In 2024, the team is planning to take advantage of Knative to become more elastic. Knative eliminates provisioning and server management tasks, so developers can focus on building business value. They will be able to create a service by packaging code as a container image and deploying it on Red Hat OpenShift, and it will only run when its needed; Knative automatically starts and stops instances. This will ensure computing resources aren't consumed unless the code needs to do something.

Existing Quarkus applications have been built in native mode, making them Knative-ready and easy to deploy on the platform in the future.

Reduced cluster usage by 40%, making room for new workloads

With those applications having a significantly smaller footprint using the framework of Red Hat's build of Quarkus, operations can now run additional meaningful workloads on their existing Red Hat OpenShift cluster. Spring Boot would require a cluster up to 40% larger than Red Hat's build of Quarkus.

"Quarkus has brought a big improvement to our Red Hat OpenShift cluster," said Favez. "Operations don't have to add new nodes when we deploy more applications. We are deploying more and more applications, and we are not using our entire cluster. We can continue to deliver things without having to increase the size of our Red Hat OpenShift cluster."

Increased developer productivity threefold

The fast startup times of Red Hat's build of Quarkus' have helped Etat du Valais significantly reduce development time. "With Red Hat Quarkus, we've cut development time by three compared to using our old J2EE server eight years ago," said Favez. "Our developers can write their code faster, and they can test it faster too."

Developers no longer have to wait for their applications to restart each time they test it – they can now code and test it straight away.

Favez also commented that developers can now focus on creating business value because Red Hat's build of Quarkus natively provides technical functionality. "Quarkus gives developers the code needed to invoke a web service, for instance," said Favez. "They can really focus on the business functionality because they don't have to write the low-level code."

Ensured an easy transition from Spring and J2EE for Java developers

Switching from the Spring Boot and J2EE frameworks to Red Hat's build of Quarkus was really easy for Etat du Valais' developers. "Red Hat Quarkus is still Java," said Favez. "It uses a language that my team was already familiar with. So, it was no big deal to move from J2EE or Spring Boot to Red Hat Quarkus. It was really easy. There is nothing new for them."

Despite not having any previous experience with Quarkus, Favez rewrote an API that had taken a week to write in Spring Boot in just one day. "The documentation of Quarkus is just perfect and really easy to understand. This API was working better than the one we wrote in Spring Boot," said Favez. "We had it in production within a week."

Expanding success to business units and partners

Etat du Valais' central development team is so happy with the Red Hat build of Quarkus that Favez doesn't need to mandate that they use it, even though he has stipulated that any new application will be written using the Quarkus framework. He is instead encouraging developers within the business units and third-party providers to use it.

"Not every provider is using Quarkus; most are still using Spring Boot or J2EE frameworks," said Favez. "We are telling them, 'please use frameworks that use less memory. Quarkus is a good solution.' We say that we are really gaining a lot from it, and they will gain something too if they use it to develop applications for us."

In its effort to do more with less, the administration plans to also adopt Red Hat Ansible® Automation Platform for automatically provisioning and changing systems. "Automation with Ansible Automation Platform will be really important for Etat du Valais," said Favez.

With integration high on the agenda, the administration also has Red Hat AMQ Streams to its roadmap. Red Hat AMQ streams is Red Hat's implementation of the Apache Kafka project and, like the Red Hat build of Quarkus, is part of Red Hat Application Foundations and includes the Apache Camel and Camel on Quarkus integration frameworks, among other technologies for connecting applications and data. "Red Hat has made it easy for us to install and use these important integration tools on our Red Hat OpenShift clusters," said Favez.

The open source solutions provided by Red Hat meet the many needs of today's organizations: "Red Hat really understands development and operational teams' requirements," said Favez. "Doing more with less' is a requirement for every team, every company. And Red Hat provides all the tools that we need to do that, and they do it well."

adesso

About Adesso

Business success is the result of innovative ideas, forward-looking strategies and perfectly tailored IT solutions that provide optimal support to companies as they face their own particular challenges. Adesso is one of the leading IT service providers in the German-speaking area.

About Etat du Valais

The Valais cantonal administration (Etat du Valais) is one of the largest employers in Valais and offers jobs in 40 different departments and in around 150 different professions. Every day, employees use their diverse skills to help shape the high quality of life and the future of the canton.

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
#0000000_0021