

Rhätische Bahn accelerates service integration with Red Hat OpenShift



Rhätische Bahn (RhB) is a Swiss provider of leisure, commuter, and freight transport services. To prepare for the future, the company decided to adopt a more flexible, responsive service integration approach based on container and microservices technology. With help from Red Hat partner Esentri, RhB migrated its existing service bus environment to Red Hat OpenShift Container Platform, supported by Red Hat Fuse. With this new environment, RhB can create integrations more rapidly and scale resources to address new business needs and improve its driver and passenger experience.

Software

Red Hat® OpenShift®
Container Platform

Red Hat Fuse

Logistics and transportation

1,500 employees



Benefits

- Improved integration interface deployment times by 20% with container- and microservices-based approach
- Increased scalability with flexible resource access and support for future hybrid cloud
- Simplified partner collaboration with better application isolation

“Using Red Hat OpenShift means we can now scale our implementations more easily than before.”

Michael Forrer
Systems Engineer,
Rhätische Bahn



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Meeting demand for broader system integration

Swiss railway operator Rhätische Bahn (RhB) has run its rail service for more than 125 years and now owns the largest private railway network in Switzerland. Close to 12 million passengers travel on the railway each year through the region of Graubünden, taking advantage of RhB’s freight, commuter, and leisure services. More than 100 kilometers of its network has been selected for UNESCO World Heritage status as an area deemed culturally, historically, scientifically, or otherwise significant to humanity by the United Nations Educational, Scientific, and Cultural Organization (UNESCO).

RhB prides itself on being customer-friendly, safe, punctual, and environmentally sound. To uphold this mission, the company began its Strategy 2020 initiative to become “the most versatile, attractive, and high-performance Alpine railway.”¹ A key part of this strategy is encouraging innovation and a digital-focused business approach, leading RhB to evaluate how to best integrate its core digital systems to support innovation.

The company had established an agile integration strategy in 2010, using a centralized enterprise service bus (ESB) to integrate and synchronize accounting data between its two enterprise resource planning (ERP) systems. However, rising demand for new integrations quickly revealed that this monolithic solution was not sufficiently stable or flexible enough to support future development.

“With the growing number of new system interfaces, we needed a faster approach to development based on new ideas and a new architecture,” said Michael Forrer, Systems Engineer at Rhätische Bahn.

Adopting container-based integration and automation

Its search for a new approach to integration led RhB to container and microservices technology. After a proof of concept of Apache ServiceMix, the railway operator decided to adopt Red Hat Fuse, an enterprise version of the integration platform. RhB also decided to deploy Red Hat OpenShift Container Platform, a solution highly recommended by industry peers, as a microservices-based foundation for development.

“Through discussions with Red Hat and our technology partner Esentri we could see that this technology was based on a new architectural approach, which was exactly what we were looking for,” said Aldo Conrad, Head of Systems Engineering at RhB.

OpenShift Container Platform serves as the standard container platform for RhB’s private cloud environment. Its support for continuous integration and delivery (CI/CD) lets teams deploy integrated services where required, with automated cloud management operations. Deployed on OpenShift, Red Hat Fuse provides simplified IT infrastructure with containers that are automatically provisioned and managed. With Red Hat Fuse, RhB and Esentri can deploy container-native integrations and scale rapidly.

Esentri now develops all new interfaces for RhB on OpenShift Container Platform and transfers legacy interfaces as needed from the old integration platform to Red Hat Fuse. In 18 months, Esentri has developed close to 20 interfaces based on Red Hat Fuse for RhB. These interfaces let RhB share accounting metadata between its two ERP systems quickly and safely, as well as supporting

¹ <http://rhb.ch/en/company/portrait/vision-and-strategy>



communications with the company's new accounting system, Oracle databases, and web services based on RESTful (Representational State Transfer) and SOAP (Simple Object Access Protocol) application programming interfaces (APIs).

Improving productivity and scalability

Achieved faster, more efficient development

Esentri's developers have used OpenShift Container Platform to increase their productivity by rapidly create new interfaces for RhB as containerized microservices with flexible application run-times, configurations, and resources.

"With a container microservices integration strategy based on Red Hat OpenShift and testing automation provided by Red Hat Fuse we are implementing interfaces around 20% faster than with our previous monolithic approach," said Michael Krebs, CEO of Esentri. "We can create complex integrations and interfaces in less time with better stability and scalability, as well as centralized monitoring. The combination of Red Hat's integration and container technology with our best practices provides a high level of automation for the entire testing and deployment process."

Improved scalability to meet increasing demand

With a flexible IT architecture, RhB can take advantage of its microservices-based approach to gradually scale resources to meet business demands. Part of this flexibility includes support for future hybrid cloud adoption to further expand resource access.

"With Red Hat OpenShift, we can now scale our applications more easily than before," said Forrer. "We currently only deploy in our datacenter, but if we decide we want to access additional resources through public cloud in the future, OpenShift will allow us to do that."

These improvements help RhB shift focus from computing resource limitations to creating innovative enhancements to driver and passenger experiences, such as new train steering and online ticketing projects.

Optimized resource access

As a company that primarily relies on third-party partners for development, RhB requires abstraction between its operating system and applications to protect its data and IT systems.

In coordination with OpenShift Container Platform, the API-centric, container-based architecture of Red Hat Fuse decouples services so they can be created and deployed independently. The microservices-based isolation approach within OpenShift Container Platform also prevents misbehaving applications from affecting others.

"It's now easier for our third-party suppliers to be responsible for an application, without needing to worry about the operating system or virtualization below," said Forrer. "For example, we can tell them we need a containerized application image, and we can use that image and run it on our systems without having to install anything."

Expanding microservices approach to core systems

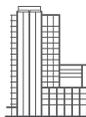
After successfully integrating its legacy systems using Red Hat technology, RhB plans to continue improving performance by replacing its legacy and third-party systems with solutions based on microservices and container technology.

"The biggest advantages we have seen with our new integration strategy – implementing interfaces faster and more transparently – are improvements we expect to continue to see as we connect more of our core systems and even migrate them onto the platform," said Forrer. "Red Hat OpenShift is critical to our long-term strategy."

About Rhätische Bahn

Rhätische Bahn, the Rhaetian Railway, is a leading provider of leisure, commuter, and freight transport services. With its unique mountain routes, UNESCO World Heritage status, and Glacier Express and Bernina Express lines, it has been providing fascinating rail travel experiences throughout the Swiss canton of Graubünden for more than 125 years.

About Red Hat



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