

Provinzial Insurance Transforms Application Landscape with Red Hat OpenShift and Nutanix Cloud Platform

About Provinzial

Industry: Financial services

Employees: 12,500

Turnover: 6.4 billion euros

Region: Germany / Europe

Website: <https://www.provinzial.de>

Applications:

- Red Hat OpenShift
- KubeFlow

Products:

- AHV Virtualization
- Files Storage
- Nutanix Cloud Infrastructure (NCI)
- Prism

Ready to get Hands-On?

[Take a Test Drive](#)

When it comes to modernizing and developing new business applications, the Provinzial insurance group consistently relies on container technology. With solutions from Nutanix and Red Hat, the company has built a cloud-native infrastructure to deploy Kubernetes clusters and containerized applications in a reliable, scalable, and largely automated manner.

Key Results

Simple scalability

Provinzial is able to provide the necessary resources for the rapidly growing container environment in a very flexible manner and manage them automatically to a large extent

Strong resilience

Nutanix and Red Hat technologies ensure reliable operation of containerized applications and comprehensive protection against outages and cyber risks

World-class vendor support

Nutanix and Red Hat work closely together to quickly resolve all support requests and optimize the interoperability of certified products

“Nutanix and Red Hat have paved the way for us to enter the container world. Today, we run containerized applications with the reliability and performance our customers and partners expect. And because we can manage workloads in the datacenter and across multiple clouds from a single platform, we have all the options open for the future.”

– Daniel Benden,

Head of Server & Storage Management at Provinzial Rheinland AG

Challenge

The Provinzial insurance group, headquartered in Münster, Germany, is the second-largest public insurance company in Germany. The group was formed in mid-2020 from the merger of Provinzial Rheinland and Provinzial NordWest Versicherungsgruppe and today has more than five million private and corporate customers.

Approximately 12,000 people work for Provinzial in the office and in the field, plus almost 1,000 trainees. High-quality customer service is guaranteed by sales partners in more than 1,300 Provinzial agencies, as well as 107 branches of “Sparkasse”, a German retail bank, and through cooperation with brokers.

Provinzial has grown faster than the market in recent years, particularly in indemnity and accident insurance, and generated more than four billion euros in premiums for the first time in 2022. To maintain its strong position in the German insurance market, the group has launched numerous digitalization projects. An important pillar of this is the modernization of the application landscape.

"We started developing new container-based software years ago to accelerate innovation and deliver new features to customers and partners faster," Dominik Heßmann, System Administrator at Provinzial, explains. "At the same time, we are working to gradually bring existing applications, such as our core sales application, into the container world."

As a result, it is planned that more and more of Provinzial's enterprise applications will no longer run on mainframes, but rather on Kubernetes clusters. This requires, however, a cloud-native infrastructure stack that meets Provinzial's stringent standards in terms of security, availability, and scalability. This is the only way to ensure the reliable delivery of innovative applications to thousands of sales partners and millions of customers.

Solution

"After gaining initial experience in the container environment with Docker and Docker Swarm, we quickly realized that we needed a truly enterprise-ready solution for operating and orchestrating our containerized applications," says Daniel Benden, Head of Server & Storage Management at Provinzial. "That's why the combination of Red Hat OpenShift and the Nutanix Cloud Platform was the right choice for us." Red Hat OpenShift is recognized as the industry's leading Kubernetes-based hybrid cloud application platform. The solution provides companies with a comprehensive set of services for the development, deployment, and management of containerized applications. In addition to the advanced features and enterprise support provided by Red Hat, the security aspects of the platform played an important role for Provinzial's decision makers: "OpenShift enables end-to-end infrastructure auditability and role-based access control. This allows us to comprehensively protect our containerized applications against potential risks from development to production," says Heßmann.

Provinzial also quickly decided to run the new container infrastructure on the Nutanix Cloud Platform. Red Hat and Nutanix have been strategic solution partners for cloud-native applications for several years. Red Hat recommends Nutanix Cloud Platform as the preferred hyperconverged infrastructure (HCI) for Red Hat OpenShift and has certified Nutanix AHV as a hypervisor for containerized and virtualized workloads. The two vendors ensure a high level of interoperability between their solutions through joint development roadmaps.

"It was clear to us that we could not build our rapidly growing containerized landscape on a traditional 3-tier infrastructure," says Heßmann. "The Nutanix HCI solution gives us the agility and scalability to deliver the resources we need for our containerized applications on demand."

After the successful installation of the first Nutanix cluster in Provinzial's data center in Düsseldorf, the environment was extended very quickly. The company now operates multiple clusters with a total of approximately 80 nodes to run its OpenShift infrastructure in Düsseldorf, Nuremberg, and four other locations. Critical services for Provinzial's core sales application are also already running as containerized applications on the Nutanix platform.

Results

More agility through automation

On a daily basis, the IT team benefits from the interoperability between Nutanix and Red Hat technologies—and from largely automated operations: "Adding new nodes to a Kubernetes cluster, for example, is now handled entirely via Ansible playbooks," Heßmann explains. "All

we have to do is define the target cluster in the script—and all the other steps, such as adjusting CPU performance and memory size, are controlled directly through the Nutanix Prism REST API."

Provinzial is now even able to deploy entire Kubernetes clusters virtually at the touch of a button. If a cluster experiences technical problems or malware compromises a node, the cluster can be completely recovered within two to three hours. "This high level of automation also made it easier for us to move from OpenShift 3 to OpenShift 4, as we were able to eliminate a lot of manual steps during the migration," said Heßmann.

Providing persistent storage for containers is also very convenient with the Nutanix CSI Driver for Kubernetes. This allows stateful applications, such as management applications, to get directly allocated the memory they need. With the integration of Nutanix Files Storage, applications on different pods can also access the same storage. Provinzial no longer needs to run a separate NFS server—the file service is built directly into the Nutanix platform and can be easily scaled as needed.

A single view of performance and availability

Using the Nutanix Prism management interface, the IT team always has visibility into the utilization of each cluster and node. Provinzial sees huge increases in traffic at peak times, such as at the end of the year. During these times, it's possible that the containerized applications may have to process as many as 30 requests per second.

"With the Nutanix dashboard, we can see early when bottlenecks are coming and add resources in a timely manner before application performance degrades," Benden explains. "Short response times are particularly important for our digital business: if it takes too long to access, e.g., an insurance quote via an online comparison portal, we may not appear in the comparison at all."

The architecture of the Nutanix Cloud Platform also ensures that even individual software or hardware component failures do not impact the availability of the Kubernetes clusters. The hyperconverged infrastructure has self-healing capabilities that can instantly compensate for a node failure, for example. In addition, updates can be performed on the fly with no interruption in service. Failover between clusters is also possible: For this, Provinzial has implemented two clusters in different data center rooms at each of its main locations, which could take over the other cluster's functions in the event of a disaster.

Innovation acceleration and scalable performance for AI applications

The reliable and highly automated operation of the container infrastructure also makes it easier for Provinzial to develop innovative applications—for example in the field of artificial intelligence. For instance, the insurance company now uses deep learning models to classify incoming text documents and neural networks in image recognition to determine the value of buildings. Provinzial is also exploring the many applications of large language models such as ChatGPT.

To develop and run machine learning applications, the company uses Kubeflow, an open source platform that is also based on Kubernetes. But training complex models and processing large amounts of data also requires powerful hardware. As a result, Provinzial has started upgrading individual Nutanix clusters with high-performance NVIDIA graphics cards. "Nutanix and Red Hat provided us with excellent support during implementation," Heßmann reports. "We can use GPU power to accelerate machine learning workflows on Kubernetes, and this opens up a whole new world of possibilities for our business."

Currently, the GPUs are still assigned to specific clusters using pass-through technology. In the future, Provinzial plans to use NVIDIA vGPU to virtualize the graphics performance and make it flexibly available for different machine learning workflows. The Nutanix platform's AHV hypervisor also supports this option.

NUTANIX

T. 855.NUTANIX (855.688.2649) | F. 408.916.4039

info@nutanix.com | www.nutanix.com | [@nutanix](https://twitter.com/nutanix)