



Business challenge

Hall AG provides vital heat, power and communications services to citizens in Hall, Austria. With data flooding in from digital systems and services, how could the company protect service reliability?

Transformation

To support Hall AG's services, Citynet deployed a high-availability platform based on IBM® FlashSystem® storage and VMware ESX Hypervisor with help from IBM Lab Services and IBM Business Partner Axians.

Business benefits:

40%

power reduction saves significant costs

50%

less management effort frees up resources for innovation

3x

capacity increase enhances citizen services

Hall AG and Citynet Keeping water, electricity, connectivity and innovation flowing even as data volumes explode

Hall AG ([external link](#)) is the central municipal service provider for the town of Hall, Austria. The organization is responsible for electricity, water, and heating for over 13,000 people. Its internal IT service provider [Citynet](#) ([external link](#)) supports all essential municipal services and also offers leading communications technology services including fast internet connectivity and commercial cloud services for businesses across the region.

"We could only achieve the outstanding outcomes for Hall AG with help from our team at Citynet and our partners IBM and Axians. Supported by IBM Storage, we're giving the citizens of Hall the services they need to thrive."

Manuel Kofler
Head of IT
Hall AG

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Setting the scene for digitalization

The 13,000 people living in the town of Hall, Austria, rely on Hall AG to provide electricity, heating and communications services – without which the town would grind to a halt.

Many regional businesses rely on Hall AG's technology and cloud service provider Citynet for IT and telecommunications. Ensuring consistent service continuity is key to keeping customers happy and in business. Citynet and Hall AG continually seek to enhance all services with innovations such as sustainable energy sources, modern distribution networks and cutting-edge cloud services for business customers.

A consequence of innovation is that digitalization of its operations is vastly increasing the organization's data volumes.

Manuel Kofler, Head of IT at Hall AG, explains, "When operating critical infrastructure such as power plants and energy networks, business continuity is the top priority. At the same time, we want to keep pushing the boundaries to deliver reliable services cost-efficiently with modern infrastructure fit for today's and tomorrow's challenges. How could we rise to the challenge of growing data volumes?"

Christian Vojak, Project Lead at Hall AG, adds, "Through our IT division Citynet,



we are a cloud service provider and we've built up knowledge around running networks over the years; it's part of our core business. At Citynet, we wanted to reduce complexity by standardizing on a single network technology that we can use across our entire IT landscape to support the full range of Hall AG's services. The main challenge for us was attaining the redundancy, availability and performance we needed, while at the same time streamlining our IT operations."

"Using IBM FlashSystem built with IBM Spectrum Virtualize, we can run critical infrastructure services including power plant control systems reliably with unmatched performance and availability."

Christian Vojak, Project Lead, Hall AG

Clearing the way to innovation

To help balance the pressure to maintain business continuity and clear the path to innovation, Hall AG's technology team at Citynet deployed two [IBM FlashSystem 7200](#) storage arrays featuring IBM Spectrum® Virtualize software. Specifically, the organization selected hybrid enterprise flash arrays, featuring IBM FlashCore® technology for high performance. Together with IBM Platinum Business Partner Axians ICT Austria and [IBM Storage Lab Services](#), Citynet deployed the new storage environment.

Maximilian Schiffner, Deputy Head of IT at Hall AG, remarks, "IBM FlashSystem storage was the only system that could satisfy our demanding requirements.

It was a team effort to set up the IBM FlashSystem cluster. With support from IBM Storage Lab Services and Axians, we were able to combine our high-performance Cisco networking equipment with VMware tools to enable live migration of server workloads, avoiding disruption to operations."

Citynet decided to use IBM Spectrum Virtualize HyperSwap® to create synchronous mirrored datastores, using the existing Ethernet network to transmit traffic. To achieve the required performance, replication between the FlashSystem 7200 arrays is via the iWARP protocol, a lossless iSCSI extension for the RDMA protocol. The configuration enables Hall AG to run a highly available, low-latency active-active storage cluster across two data centers with automated switchover in the event of a system failure or datacenter outage.

By utilizing Ethernet networking for storage connectivity the company eliminated Fibre Channel technology, contributing to the company's drive to simplify its IT environment.

Christian Vojak notes, "It was great to work so closely with the IBM Storage Lab Services team. By pooling our in-depth networking knowledge with the expertise of our partner Axians and the IBM Storage team, we've enabled IBM Flash Storage to perform to its full potential over standard, Ethernet-based IP networks, without the need for complicated, expensive and proprietary SAN equipment."

The team implemented [IBM Storage Insights Pro](#) and [IBM Spectrum Control](#) for advanced monitoring and management of the IBM FlashSystem platform. During the implementation, the geographically dispersed teams used the cloud-based IBM Storage Insights Pro software to fine-tune the configuration and optimize specific VMware ESX settings for maximum performance and reliability. Since going live with the new storage solution, IBM Storage Insights Pro provides AI-enhanced analytics to predict and help prevent problems before they affect business operations.

Manuel Kofler says, "A key success for Citynet, IBM, and Axians is the Proof of Concept and subsequent certification for this redundant, high-performance configuration with Cisco Ethernet switches. By working together using cloud-based



IBM Storage Insights Pro software across companies and continents, we have paved the way for many future IBM customers to deploy this innovative combination of cutting-edge technologies."

Finding new efficiencies

Thanks to the new IBM Storage platform deployed and operated by Citynet, Hall AG has the room to accommodate its massively growing data volumes, helping it serve the citizens of Hall with no interruptions. The organization can also activate additional compression and deduplication features to boost capacity even further.

Manuel Kofler explains, "By deploying IBM FlashSystem storage, Citynet cut energy consumption for our data storage by 40 percent while increasing capacity three-fold. This has had a substantial impact on our IT expenditure. On top of that, we can reuse our existing networking knowledge to manage the modernized and simplified storage solution with 50 percent less time and effort, another great saving for the team."

With more time to focus on innovation, Hall AG and Citynet are capitalizing on the newly simplified IT architecture to deliver service improvements to users at home and in the office. For example, Citynet can now onboard customers onto its cloud platform faster, and is offering new self-service tools that increase client satisfaction. The organization was

also able to handle extreme peaks in demand with ease for its cloud-based telephony services during the height of the COVID-19 pandemic in Austria.

Christian Vojak explains, "Using IBM FlashSystem built with IBM Spectrum Virtualize, we can run critical infrastructure services including power plant control systems reliably with unmatched performance and availability. We are currently running 300 virtual machines on our VMware environment and are increasingly deploying containerized workloads running in a Kubernetes container environment. With FlashSystem, we've got the flexibility to explore new technologies and configurations, including hybrid and multicloud deployments if we want."

The detailed performance monitoring capabilities of Storage Insights Pro help Citynet and Hall AG preserve exceptional service continuity. The team is using its new visibility to provide insight to its cloud service customers.

Maximilian Schiffner adds, "As a regional cloud service provider, we at Citynet can provide full transparency over data storage locations to our clients. With data protection playing an important role for many clients, being able to provide flexible cloud services powered by a reliable storage solution is important for our business success. This scalable, high-performance foundation also allows us to go to market rapidly with new offerings, such as our new Hosted Exchange cloud service."

Looking to the future, the organization has the option to use data at rest encryption where appropriate to meet the highest security requirements. Beyond storage, Citynet plans to standardize its Linux server operating systems and expand its use of Red Hat Enterprise Linux across the organization for business applications and client workloads. Building on the modernized IT environment, the team is also evaluating more comprehensive systems automation and patching using the Red Hat Ansible Automation Platform.

Manuel Kofler concludes, "We could only achieve the outstanding outcomes for Hall AG with help from our team at Citynet and our partners IBM and Axians. Supported by IBM storage, we're giving the citizens of Hall the services they need to thrive."



Solution components

- IBM® Spectrum® Virtualize
- IBM Spectrum Control
- IBM Storage Insights Pro
- IBM FlashSystem® 7200H
- IBM Storage Lab Services

Take the next step

To learn more about the IBM Storage, please contact your IBM representative or IBM Business Partner, or visit: ibm.com/it-infrastructure/storage

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