

Fachhochschule Nordwestschweiz gets ready for digital transformation

HPE Synergy enables flexible service provisioning including cloud delivery

Industry

Education

Objective

Modernization of the IT infrastructure to facilitate digitization

Approach

Public tender and proof of concept

IT matters

- Improved system performance by 25–50%
- Reduced IT workload thanks to high automation level and central monitoring
- Lowered operating costs through predictive analytics
- Paved the way for transforming the IT department into a service provider

Business matters

- Supports FHNW's digitization strategy
- Ensures fast, automated provisioning of IT resources and services
- Delivers straightforward, flexible cloud service integration
- Enables high data security and availability of all systems



Fachhochschule Nordwestschweiz (FHNW) is paving the way for complete digitization. To achieve its objectives, it needs a highly available, high-performance, and scalable IT infrastructure. That is why, it has now installed an HPE Composable Infrastructure that can provide IT resources automatically and at cloud-like speeds.

Challenge

One IT infrastructure for nine colleges

FHNW is one of the leading universities of applied sciences in Switzerland and, with its nine colleges of teaching, research, further education, and service provision, it places a strong emphasis on innovation and vocational experience. FHNW's IT department is responsible for providing the infrastructure and applications to support the university's body of 12,200 matriculated students and more than 2,000 staff. No easy task when you consider that the nine colleges are spread across 10 locations within the four cantons of Aargau, Basel-Landschaft, Basel-Stadt, and Solothurn.

"The individual colleges work very differently to one another and consequently have very different IT requirements. The IT infrastructure, therefore, has to be able to cater for an equally large spectrum of requirements," explains Patrick Zumstein, Head of IT Infrastructure at FHNW. The nine colleges previously had their own IT infrastructures, which were gradually consolidated into two data centers situated approximately 100 kilometers apart. For a number of years, these two data centers had been based on two HPE 3PAR StoreServ Storage systems but due to growth in data volumes, they were reaching their capacity limits.



“With HPE Synergy and HPE 3PAR, we are now fully equipped to roll out our university digitization strategy.”

– Patrick Zumstein, Head of IT Infrastructure, Fachhochschule Nordwestschweiz

HPE Composable Infrastructure boosts system speeds by 25–50% for FHNW.



Solution

HPE Synergy combined with HPE 3PAR and HPE StoreOnce 6500 Backup Systems

Following a public tender, intensive workshops took place with various providers, along with a 6-week proof of concept. During this, performance and scalability were put to the test and the IT experts at FHNW eventually opted for the solution offered by HPE and its partner, LAKE Solutions. The team decided on four HPE Synergy systems with a total of 22 HPE Synergy 480 server modules. It was based on a powerful Intel® Xeon® Scalable processor with up to 28 cores for the administration of all of its computing, storage, and network resources, alongside two HPE 3PAR StoreServ 20850 Systems.

As Zumstein recalls, “Beside the price, what particularly impressed us about the HPE offering was the high performance of the HPE 3PAR with block storage. And HPE Synergy offers, in particular, the automation and staging that we need.”

“We are in the process of transitioning to a hybrid service broker. That’s the next big step for us. For this, we need a new, extremely flexible IT infrastructure that supports the largely automated provision of applications and IT resources to the colleges. In future, we want to integrate more cloud services,” Zumstein continues.

“For us, HPE Synergy is the perfect solution because, in the future, it will allow us to provide applications and services to the colleges at a speed and scale almost equivalent to the cloud,” Zumstein adds.

“The preparations are underway at FHNW.”

Benefits

Colleges are now ready for digital transformation

FHNW’s private cloud is currently running on the new HPE infrastructure in a classic environment with central storage and blade technology. The resources for this are already being provided to the college end-users through a self-service portal. Zumstein says, “With HPE Synergy, the automated provisioning of IT resources (including the necessary network components) is much easier because all the required interfaces are already in place, whether from us as an internal provider or from external cloud providers.”

Zumstein is confident about the benefits, “In the future, the new IT infrastructure will enable us to develop a hybrid cloud strategy and position ourselves as an internal service provider that can easily compete with the speed of a cloud solution.”

The HPE Composable Infrastructure approach is key in this. Computing, storage, and network resources, whether physical, virtual, or container-based, can now be abstracted from their physical locations and combined dynamically to meet workload requirements. The infrastructure can be allocated on the fly, with its software-defined intelligence ensuring optimal application performance. FHNW has, therefore, been able to further expand its IT service catalog with standardized services.

HPE OneView acts as FHNW’s central software for providing end-users with new resources, which they can order quickly and with a high level of automation via the IT service catalog. With its uniform API, HPE OneView even integrates



“With the HPE Synergy composable infrastructure, we can provide the schools with applications and services at cloud-like speeds.”

– Patrick Zumstein, Head of IT Infrastructure, Fachhochschule Nordwestschweiz

software from third-party providers from the HPE Composable Infrastructure Partner Program, which means that end users can order hardware, software, and applications as one comprehensive package. The provision is then automatic via HPE OneView, with no intervention from the administrators necessary.

Zumstein sees benefits in using HPE OneView as the central software for managing the entire HPE IT infrastructure, “Central monitoring with HPE OneView will greatly simplify management.”

The new IT infrastructure opens up the option for FHNW to migrate easily to a hyperconverged environment in future. The IT department is thus planning to provide more centralized, virtualized services in the future. FHNW is particularly keen to expand the virtual desktop infrastructure (VDI) in order to provide the end users with applications on virtual desktops on a platform-independent basis. According to Zumstein, “this will be a massive leap forward given the many different desktop operating systems that we are required to support today.”

Sophisticated backup concept

In addition, the two data centers are designed to allow automatic failover at both storage and server levels. Zumstein is particularly happy about the fact that “this has further increased the availability of our data and applications.”

The HPE 3PAR Remote Copy Software plays a key role in data availability because it efficiently mirrors the data in the VMware® vSphere Metro Storage Cluster between the two data centers using thin copy technology. It enables the university to replicate multiple locations in multiple modes with mid-range and high-end arrays and reduces its need to bring in professional services. Many times a day, the IT team uses the Veeam Availability Suite to create local snapshots of the data

on each of the two HPE 3PAR StoreServ 20850 Systems individually.

The comprehensive backup concept also includes two HPE StoreOnce 6500 Backup Systems, onto which all of the data from the HPE 3PAR StoreServ 20850 Systems is stored alternately on a daily basis using the Veeam Availability Suite. This creates two independent backup chains. “If one backup chain fails, all of the data is still right there in the other,” explains Zumstein.

The backup systems also give FHNW a very high degree of flexibility, as the data is transferred in a deduplicated format. This improves the restoration process in the event of a disaster and reduces network bandwidth costs. The deduplication feature enables the FHNW to hold the data on the HPE StoreOnce 6500 Backup Systems for six months. For additional security, all of the data is also backed up to tape once a month and stored in a Spectralogic T950 tape library in a third data center.

Zumstein says, “We were able to integrate the new infrastructure into our existing backup environment very easily. The automatic replication of the data means that we now feel less pressured with regard to backups. Today, we know that we can quickly make the data available, whatever happens.”

He also praises the good performance of both the storage and servers of the new IT infrastructure with system speeds improved by 25–50%.

“What’s more, with HPE Synergy and HPE 3PAR, we are now fully equipped to roll out our university digitization strategy,” Zumstein adds. The options currently being discussed at FHNW are many and varied, covering everything from a universal login process for software clients to establishing eLearning facilities and providing online lectures for students.



Case study

Fachhochschule
Nordwestschweiz

Industry

Education

Customer at a glance

Hardware

- HPE Synergy 12000 Frame
- HPE Synergy 480c Gen10 Compute Module
- HPE 3PAR StoreServ 20850 Systems
- HPE StoreOnce 6500 Backup Systems
- HPE StoreFabric SN6500B Fibre Channel Switch
- HPE StoreFabric SN6000B Fibre Channel Switch

Software

- HPE OneView
- HPE InfoSight
- HPE 3PAR Remote Copy Software

HPE Pointnext Services

- HPE Datacenter Care

HPE Pointnext Services increase data availability

FHNW's digital transformation is also being supported by HPE Pointnext Services: "Operations at the colleges will increasingly depend on the availability of digital services," Zumstein explains. "This is why it is so important for us to be able to rely on such a competent partner as HPE, who has an overview of the entire chain, including connected systems, and who continually monitors them and gives us advance warning of any faults."

In addition to providing 24x7 support, HPE Datacenter Care also covers proactive services for the entire infrastructure stack. LAKE Solutions provides a similar service for the software used by FHNW and implements new versions. In this respect, HPE and LAKE Solutions are working hand in hand.

HPE has assigned an account support manager, a technical account manager and two technical consultants to FHNW,

with whom it can plan and implement all of its support activities. Some of the work is carried out remotely and some on-site at FHNW. Once a quarter, the entire team comes together at the university to discuss past and future activities.

"HPE proactive support is critical to maintaining the high availability of our entire data center environment, particularly with regards to the expansion of the virtual desktop infrastructure. If the VDI fails, our staff and students are unable to work and we simply cannot allow that to happen," says Zumstein. "HPE and LAKE Solutions carry out continuous health checks on all of our systems to ensure that our IT infrastructure, and, therefore, all of our business applications, run smoothly."

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