



Emergency shutdown of university IT systems

Hochschule Düsseldorf, University of Applied Sciences relies on Microsoft Azure while servers are down

Immediately after its successful move to a new facility in Düsseldorf-Derendorf, [Hochschule Düsseldorf, University of Applied Sciences \(HSD\)](#) was faced with a tricky challenge – maintenance work on the building’s power supply required a complete shutdown. Campus IT Services run a hybrid solution at the new site, with two data centers and Microsoft’s Azure cloud platform: During the power cut, Campus IT Services made use of the continuous availability of the cloud – a best-case example of the perfect interplay between [Microsoft Azure](#) and on-premises servers. When it comes to collaboration, the university now relies entirely on the cloud. The whole staff as well as its roughly 11,000 students work with cloud-based [Office 365](#) and [Microsoft Teams](#).

The challenge:

A day without electricity for the university’s IT infrastructure

For Campus IT Services, the new facility built for Hochschule Düsseldorf, University of Applied Sciences (HSD) was like a blank canvas for a painter. “We had the opportunity to plan everything from scratch, from the technical infrastructure – the network, firewall, and servers – all the way through to the software,” says Henning Mohren, CIO and Head of Campus IT. The move to the Düsseldorf neighborhood of Derendorf was one of the most ambitious and extensive projects in the history of the university – with a multi-year planning phase. “In the last few

years at the old site, we stopped investing in the IT there. Some of the technology was 15 years old – and that ramped up expectations for the new building all the higher,” Mohren recalls. “We wanted to prove that we could meet those expectations.” Mohren wanted to win over even the skeptics. Together with his team of almost 30 professionals, he calmly and methodically planned the new IT structures and the move to the new campus. Moreover, he did so with transparent communication. He provided regular updates about the move, explained the plans for the new building, and offered every individual professor the chance to express their requirements for the new workplace.

Even with the old infrastructure, HSD had already been working with a hybrid Microsoft solution. Staff used SharePoint, [Exchange](#), and [Skype for Business](#) – hosted locally in the university’s own data center. The cloud-based Office 365, with all its advantages such as the [Microsoft Teams](#) collaboration tool, was reserved for students at the university. “Data protection rules demand that we make this twofold division. In the university sector, for example, there’s currently a ban on the export of research data – so at the moment we can’t put everything in the cloud, although hopefully we’ll be able to increase the amount incrementally,” Mohren says. “Because Microsoft offers



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its products in both on-premises and cloud versions, users don't notice the media disruption at all."

This hybrid solution was also implemented for the new site in Düsseldorf-Derendorf, with servers in two local data centers and the cloud-based [Office 365](#). At the same time, however, two pilot projects were launched with the aim of helping Campus IT Services further exploit the cloud for the university. In the first of these, professors collaborate with students via Teams as part of an exception permit. The second project saw Campus IT Services putting Microsoft's [Azure](#) cloud platform to the test: the local servers had to be switched off for a whole day – and Azure ensured that everything went off smoothly.

The solution:
In a single day, from on-premises to the cloud – and back again

In the fall of 2019, it was already time for the first round of maintenance of the new building's power supply – after five years, as legally required for all new public buildings in the German state of North Rhine-Westphalia. "We hadn't ever rehearsed that kind of scenario before," Mohren recalls. "Getting our power from a backup generator was not an option, as the power lines had to be dead; in other words, all systems had to be shut down completely. To solve this problem, Campus IT Services relied very strongly on the cloud."

November 1, 2019 was chosen as the date for the maintenance work – a public holiday that fell on a Friday, with enough time to respond to issues over the weekend, so that the services would be back online on the Monday at the latest. Initial preparations began in late summer. As before with

the move to a new campus, efficient communication was a particular priority for Mohren. His team set up its own website in [Azure](#), with the aim of keeping people informed about the current status while the power was down. For the staff of HSD, their own Office 365 email address was created, which could be used independently of the local data center. And the shutdown of the systems was coordinated via Microsoft Teams, which was provided on tablet computers with LTE cards. "Before the power shutdown, the DNS entry [hs-duesseldorf.de](#) was switched over to our domain in Azure, so that the site no longer ran on our servers, but directly on Azure. My team then spread out over the two data centers and communicated via Microsoft Teams while switching off the systems."

They started out with non-critical systems such as backup and recovery, before moving on to communication-relevant components like Skype and Exchange. At the very end, they switched off the building management system and the power supply for the network and the local data centers. The maintenance work ran from 7 a.m. to 4 p.m. As soon as it finished, Mohren and his team began getting the systems up and running again.

"Most services were already back up again by evening. In the end, we didn't need the buffer we'd given ourselves with the weekend," Mohren says. Following a load test on Monday, the website's DNS entry was switched back, and the local data centers and all services were available again as normal. "I was really impressed by how reliable cloud operation is. When we run Exchange or Skype locally, we always have something to do – there are regular updates and patches that we have to install, and then



"It was the first time we'd used Azure in this way. What impressed me was that running in the cloud is a lot less complicated than running on-premises. In our data centers, there's always something new to update or to patch. On Azure, we don't have to maintain anything ourselves – everything is up to date and functional."

Henning Mohren, CIO and Head of Campus IT
at Hochschule Düsseldorf,
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we check the interfaces. So on-premises is in fact considerably more time-consuming than the cloud.”

Campus IT Services garnered a lot of praise for its calm and level-headed management during the power shutdown. And the positive experience with Microsoft Azure is inspiring Mohren to do more: “It would be clever to actually run services in the cloud that we want to deliver with a high degree of reliability. With my staff of just under 30, I can’t guarantee 24/7 operation – but the requirements of users are 24/7. The cloud would meet these needs.”

Due to current developments regarding Covid-19, Henning Mohren was able to technically implement his second pilot project even more extensively than initially planned. To ensure that the entire university remains viable, the decision was made to roll out Office 365 and Microsoft Teams to the entire university. „The current situation simply required us to turn a pilot project that only included a handful of professors into a holistic solution,“ says Henning Mohren. „The entire university management reacted really quickly.“ The full integration of Azure Active Directory offers an optimal solution due to the multi-stage authentication

process and the targeted control of access rights – independent of location, simple and, above all, compliant with data protection. This means that everyone at the university without any exception can use Office 365 with Microsoft Teams – from students and professors to administrative staff. And, of course, Henning Mohren’s team in IT too, so that they can stay connected with each other even in these times.



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