



# Agile IT deployment

TH Köln relies on a hyperconverged infrastructure for its IT environment. With Cisco HyperFlex, the school benefits from higher performance and scalability.

TH Köln has 1,850 employees, 430 of which are professors. With a total of approximately 26,000 students, it is one of the largest universities in Germany. Patric Rotscheroth is the team leader of a 12-person team that takes care of server and network services, as well as telephony, at the TH Köln. Three people on his team are responsible for the virtual server and storage infrastructure.

## Overview

**Industry**  
Education and Training

**Country**  
Cologne/Germany

**Employees**  
1,850

## Historically grown infrastructure

About 10 years ago, the IT team began building a virtual server infrastructure. The 40 blade servers were approaching "end-of-life", and the systems were being utilized to almost full capacity. Upgrades to the latest software were no longer possible, and the risk of failure had risen steadily. The systems were no longer suitable for future needs, and the desired I/O performance, including backups, was no longer achieved.

## Compelling performance

The solution used so far had to be replaced urgently, so the IT team researched the market and came across the hyperconverged approach.

Patric Rotscheroth:

"It's important to us to deploy an innovative solution that has its storage and CPU located close to each other, and provides good scalability and high I/O performance with up-to-date hardware."

In the end, a Cisco HyperFlex system was chosen because the IT department had been operating a Cisco UCS Blade system for the last three years, which is used to map the system management and voice infrastructure. The UCS system has been particularly convincing in its performance and ease of management. In addition, the team knew Cisco from the network sector and had good experiences with the solutions used in that context.

## Migration during running operations

The latest generation of Cisco HyperFlex M5 is in service at the TH Köln. Before it was put into operation, a workshop was held with the partner T-Systems, during which a Cisco HyperFlex cluster was installed and prepared for operation. After this, the new HyperFlex system was set up parallel to the existing systems and a total of 650 VMs were migrated to the new hyperconverged environment during ongoing operations – with minimal downtime. VMware 6.5 was selected as the hypervisor. The Linux systems are running on a 10-node HyperFlex cluster, and the 8-node cluster is used for the Microsoft Windows systems. Additionally, a smaller 4-node cluster for mixed systems is operated in Gummersbach. On the VSI infrastructure there are different Enterprise Applications running like MSSQL, Exchange and Active Directory.

Patric Rotscheroth:

"For us, this separation of clusters into Linux and Windows makes sense, on the one hand, because of licensing, and also because the systems should be similar, as we wanted to achieve good duplication rates."

The experience has been positive throughout, and performance has been improved dramatically. System response times decreased from an average of 20–25 milliseconds to approximately one millisecond. In particular, there was a noticeable difference for the rest of the VMs in the load during backups: since Cisco HyperFlex went on line, there is no discernible impact. Users in particular feel the benefits of the new solution, as the system has become faster.

## Higher Performance and Scalability

The IT team is very happy with the new hyperconverged solution.

Patric Rotscheroth:

"With Cisco HyperFlex, we're on the safe side, because we have a system that's ready for the future, provides good vendor support, and can be scaled up as the requirements increase."

To learn more about Cisco HyperFlex, visit: [www.cisco.com/go/hyperflex](http://www.cisco.com/go/hyperflex).

## Solution

- 3 HyperFlex clusters in two locations
- based on VMware 6.5 with a total of 650 VMs
- Enterprise Applications (MSSQL, Exchange, Active Directory, IT Applications)