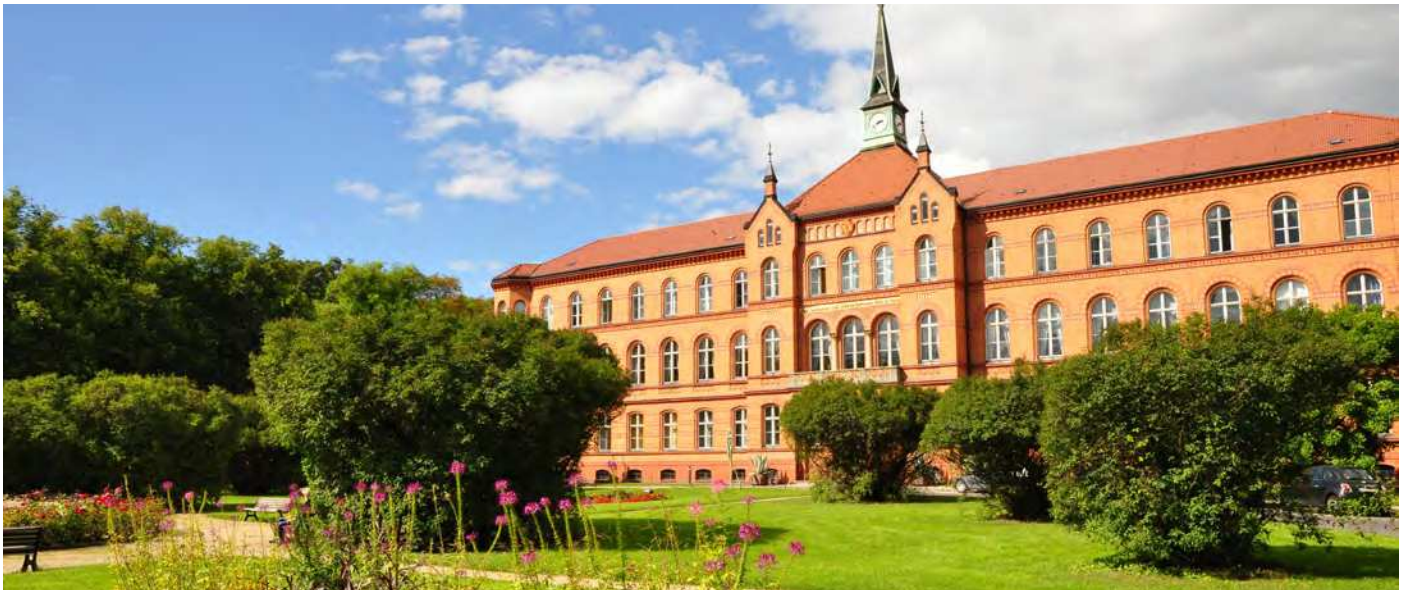
German Hospital Improves Network Availability

Customer Case Study



Cisco UCS platform helps hospital achieve 80 percent faster server provisioning and 50 percent overhead reduction

EXECUTIVE SUMMARY

Customer Name: Evangelisches Krankenhaus Königin Elisabeth Herzberge

Industry: Healthcare

Location: Germany

Number of Employees: Over 800

Challenge

- Improve reliability of patient care
- Enhance business continuity planning
- Reduce IT maintenance requirements

Solution

- Cisco Unified Data Center architecture based on Cisco Unified Computing System servers and Nexus switching

Results

- 100 percent data center uptime since Cisco implementation
- Server provisioning times cut by 80 to 90 percent
- Server management overheads reduced by 50 percent

Challenge

The Evangelisches Krankenhaus Königin Elisabeth Herzberge (KEH) is a general hospital in Berlin with 120 qualified doctors and 600 beds, offering optimal diagnosis and treatment for a wide variety of diseases. It is the biggest non-public hospital in the Berlin-Brandenburg Metropolitan Region, with 10 specialized departments and two psychiatric day clinics, and an emphasis on holistic treatments addressing somatic and psychological issues.

KEH, which is also the academic teaching hospital of Charité Berlin, had relied on a range of different data center server architectures. Some servers had run into interconnection problems with storage arrays, and, in addition, the range of machines involved caused administrative challenges.

"We were concerned that delays in server support could lead to unacceptable downtime of critical clinical IT systems," says Mr. Ralf Korzendorfer, head of IT at Königin Elisabeth Herzberge. "We also wanted to improve our disaster recovery capabilities, and introduce a platform that could serve as a foundation for a virtual desktop infrastructure rollout to simplify endpoint administration."

To accomplish these goals, KEH sought advice from Systema GmbH, which introduced the potential of the Cisco Unified Computing System™ (UCS®).

Solution

The hospital was well aware of Cisco and had been running its voice-over-IP system on a unified telephony, data, and video network built on Cisco Catalyst® 6500 Series Switches.

"With UCS we saw the opportunity to unify network, memory, and servers in a private cloud," says Mr. Stefan Sieg, IT systems engineer at Königin Elisabeth Herzberge. "The main reasons were to reduce complexity in the IT landscape, increase manageability and reliability, and provide data security with continuous automatic backup."

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Head of IT
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KEH decided to upgrade its existing data center to Cisco® UCS, while building a second data center for full redundancy. The two data centers are connected in an active-active configuration with data mirroring via Ethernet links; if one site fails, the other could take over immediately. Four Cisco UCS B230 M2 Blade Servers within each of the twin data centers now support around 60 virtual machines per site.

The Cisco UCS B230 M2 Blade Servers use the Intel® Xeon® E7-2860 processors with 2.26 GHz cores and 192GB of RAM for optimum scalability. Two further blades are dedicated to Cisco Unified Communications Manager for session management, voice, video, messaging, mobility, and web conferencing.

"We chose UCS because it gave us a secure way to consolidate our server landscape," says Mr. Thomas Schulz, IT systems engineer at Königin Elisabeth Herzberge.

Data center switching, meanwhile, uses two Cisco Nexus® 5548UP Series Switches at each site, linked to the Cisco Catalyst 6500 network core with dedicated 10Gbps fiber channel connections. KEH also uses VMware hypervisor for virtualization and EMC arrays for storage. The company has achieved 100 percent virtualization.

The virtualized data center infrastructure supports the German hospital inventory and patient records system (Krankenhausinformationssystem), Nexus Medicare for patient data and electronic medical records, SAP R/3, finance software, a scanning and documentation system, domain controllers to manage Microsoft Windows machines, and a Microsoft Exchange cluster.

Says Mr. Korzendorfer: "We value the way UCS reduces the complexity of the machines and simplifies load balancing."

Although the virtual machines are effectively configured as a private cloud, KEH is wary of extending that beyond its own data centers because of concerns about the security of confidential patient information. "Our idea of private cloud computing is a bunch of virtual machines providing services for our different products and healthcare management, while keeping the data safely in our own hands," says Mr. Sieg.

Systema GmbH managed a flawless implementation. "A good indicator that nothing went wrong is that users didn't experience a single problem," says Mr. Schulz. "Systema is an approved Cisco partner. That was important, because we have a lot of Cisco switches so it would be disastrous if one failed and we didn't have a certified partner to turn to."

Results

Cisco UCS has contributed to much higher server availability. "Since deployment we have seen 100 percent uptime," says Mr. Korzendorfer. "Application performance has also improved, although this has not yet been benchmarked."

Another area of clear improvement is software maintenance. The high level of virtualization on UCS provides KEH with a benign test environment. "The most important point is the patch management of products we use to keep our medical systems up-to-date," says Mr. Korzendorfer.

Adds Mr. Sieg: "We test the patches beforehand, and if this works, we take snapshots using VMware technologies. If there's a problem, we can roll the process back a step using that snapshot. That's a principal advantage of virtualization."

UCS virtualization has also greatly reduced hardware and administration costs. "We expect to reduce energy and cooling system costs," says Mr. Korzendorfer, "and I think we can reach a 25 percent reduction."

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In addition, because KEH can now create virtual machines using UCS service profile templates, server deployment time has been reduced by between 80 and 90 percent, which means IT staff can focus more on mission critical or value added tasks.

Overall, the hospital estimates that UCS has helped reduce system maintenance overheads by around 50 percent. This reduction will be improved further as KEH deploys Cisco UCS Manager to help enable central management of all its UCS clusters. Last, but not least, disaster recovery capabilities have improved thanks to the second data center.

Next Steps

Having solved its data center challenges, KEH is now planning further Cisco-based projects. For example, it plans to replace its existing Cisco voice-over-IP and wireless infrastructure and is piloting a solution powered by next-generation Cisco hardware. Within the data center, meanwhile, KEH is hoping to use UCS as the basis for a VDI project in the next two or three years.

For More Information

To learn more about the Cisco architectures and solutions featured in this case study please go to:

www.cisco.com/go/datacenter
www.cisco.com/go/ucs
www.cisco.com/go/nexus

Product List

Data Center Solutions

- Cisco Unified Computing System (UCS)
  - Cisco UCS B230 M2 Blade Servers with Intel® Xeon® E7 Family chips
  - Cisco UCS Manager

Routing and Switching

- Cisco Nexus 5548UP Series Switches
- Cisco Catalyst 6500 Series Switches

Storage

- EMC

Applications

- Cisco Unified Communications Manager
- SAP R/3
- Microsoft Exchange
- Krankenhausinformationssystem
- Nexus Medicare
- VMware
- Microsoft Windows

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