

Service Provider Builds Secure Private Cloud for Banking



Cisco technologies help Finanz Informatik Technologie Service create DataCenter Infrastructure for always-on data center services

EXECUTIVE SUMMARY

Customer Name: Finanz Informatik Technologie Service

Industry: Financial services

Location: Germany

Number of Employees: 1000

Challenge

- Keep existing customers loyal, while generating new business
- Launch cloud-based computing service designed to match security and compliance levels required by finance industry
- Reduce IT production costs and optimize team working

Solution

- DataCenter Infrastructure, based on Cisco Nexus 6000 Series Switches, Nexus 2000 Series Fabric Extenders, Cisco FabricPath, and Cisco Unified Computing System servers

Results

- Achieved almost 100 percent improvement in administration time for server deployment
- Reduced server provisioning time from 10 or more days to hours
- Delivered 100 percent uptime through novel use of virtual PortChannels

Challenge

Finanz Informatik Technologie Service (FI-TS) is an information services provider for the financial services sector in Germany. Its primary customers are federal savings banks in Germany and across Europe including Bank of Scotland, DekaBank, Landesbank Baden-Württemberg, BayernLB, Helaba, Deutsche Kreditbank, ING DiBa, and Quirin Bank. With revenues of around €177 million a year, the company provides LAN and WAN connectivity along with a growing focus on data center services.

Historically FI-TS created dedicated data center resources based on each customer's specifications but, in recent years, the company has begun to move into cloud services provision, starting with a hosted SAP cloud service.

Nevertheless, the bulk of the company's data center business is in the delivery of infrastructure as a service (IaaS), where it relied on legacy servers that were costly and time consuming to deploy. Whenever a customer wanted additional infrastructure capacity, up to four FI-TS teams had to assign IP addresses and VLANs, then configure and deploy a physical server in a rack. That process could take 10 to 15 days.

Gerhard Schwegler, vice president of networking at Finanz Informatik, says: "This was frustrating for our customers, who were aware of cloud computing offers from other providers in the market that could be quickly and cost effectively deployed."

So, FI-TS decided to set up its own IaaS offering, called DataCenter Infrastructure, combining the speed and cost benefits of a commodity cloud service but designed to meet the higher security and compliance needs of the financial services sector. "We want to give our customers the best possible network service end-to-end from the desktop to the data center," adds Schwegler.

Solution

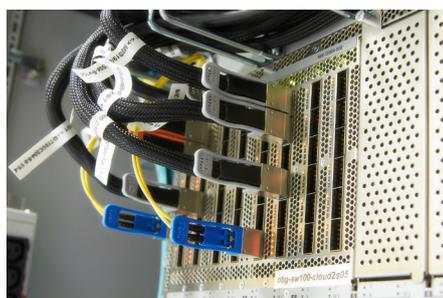
FI-TS had always relied on Cisco® equipment such as Cisco Catalyst® 3750 and 6500 Series Switches for its LAN and WAN infrastructure. More recently, the company had installed Cisco Nexus® 5000 and 7000 Series Switches. On the server side, FI-TS had also deployed Cisco Unified Computing System™ (UCS®) blade servers for its SAP cloud. This experience gave the company the confidence to rely on Cisco again for the DataCenter Infrastructure project.

FI-TS planned to build its new DataCenter Infrastructure system across its two Nuernberg data centers, which were located 4.5km apart. The prime cloud requirements were for high scalability and availability, plus an architecture that would enable leading levels of automation, uptime, and security. Thus an active-active configuration was chosen.



“We needed the higher speeds available with Cisco for cloud scalability. The Nexus 6000 is perfect for our architecture and very price effective. It is the ideal building block for server farms.”

Gerhard Schwegler
Vice President of Networking
Finanz Informatik Technologie Service



Initially the company considered using Nexus 7000 or 5000 Series Switches. Ultimately, however, FI-TS settled on the then newly-launched Cisco Nexus 6000 Series Switch because of its ability to deliver high-density 10Gbps Ethernet and 40Gbps interconnects in an energy-efficient, compact form factor. “We needed the higher speeds available with Cisco for cloud scalability,” Schwegler says. “The Nexus 6000 is perfect for our architecture and very price effective. It is the ideal building block for server farms.”

As well as delivering the best price per port, the Cisco Nexus 6000 Series Switch offered the chance to deploy Cisco FabricPath, a Cisco NX-OS software innovation combining the plug-and-play simplicity of Ethernet with the reliability and scalability of Layer 3 routing. In testing, FI-TS recognized FabricPath could offer significant advantages over Spanning Tree Protocol in terms of handling Network Address Translation address availability.

As part of the final DataCenter Infrastructure design, each FI-TS data center has two Cisco Nexus 6004 Series Switches, providing four fully redundant 40Gbps connections between the sites with FabricPath for data center integration. Each site has two computing blocks made up of eight UCS B200 M3 Series Blade Servers apiece, mounted on UCS 5108 blade chassis and connected via Cisco UCS 6248XP Series Fabric Interconnects.

Cisco UCS Virtual Interface Card 1240 adapters provide acceleration for the various operational modes available with server virtualization. Furthermore, the DataCenter Infrastructure design is unusual in that firewalls and storage (provided by NetApp FAS6290 arrays) are separated from the main server and switching infrastructure by four top-of-rack Cisco Nexus 2232PP 10GE Fabric Extenders.

Connections across the fabric extenders are via virtual PortChannel, which allows FI-TS to shut down parts of the DataCenter Infrastructure without affecting customer operations running on the DataCenter Infrastructure as a whole. “We wanted a cloud that’s always on, so if we shut down one system for maintenance, the apps continue running,” says Schwegler.

The DataCenter Infrastructure is configured to provide up to 2000 virtual servers and 1000 VLAN connections. The VLANs have been preconfigured with existing IP ranges, so the cloud orchestration tool can simply hand out the next available IP address when needed, without any need for human intervention. In the first version of the cloud supports a Linux Kernel-based Virtual Machine solution upon which customers can deploy their own applications. The equipment was procured through the German Cisco partner Controlware and installed by FI-TS.

Results

The prime benefit of DataCenter Infrastructure is that customers can buy new virtual servers and new services at a lower price, confident in the knowledge that the infrastructure conforms to the security and quality standards required of an in-house banking system designed to provide 100 percent uptime.

For the FI-TS IT team, maintenance is much easier than with a traditional infrastructure, because DataCenter Infrastructure uses a single configuration for each VLAN on each port, which means switches and VLANs do not have to be provisioned separately. “We have only one installation, and rarely need to troubleshoot if there’s a problem,” Schwegler says.

Thanks to this, the IT team has seen an almost 100 percent time saving in terms of server deployment. This saving should allow FI-TS to reduce its former 10-to-15-day server provisioning time to hours. “We can automatically provision server capacity,” says Schwegler. “Nothing needs to be done manually.”

Although DataCenter Infrastructure has been configured to scale to 1000 VLANs, if more are needed FI-TS can easily pre-assign them along with the corresponding IP addresses, and allow the orchestrator to continue provisioning them on an automated basis. Another benefit of having a single configuration across the infrastructure is that the chance of mis-configuration incidents is virtually eliminated. Meanwhile, having just four device types to manage and configure makes compliance easier, particularly since the devices are from the same vendor and belong to just two product families.

“We can automatically provision server capacity. Nothing needs to be done manually.”

Gerhard Schwegler
Vice President of Networking
Finanz Informatik Technologie Service

The architecture also makes it possible for FI-TS to provide physically separate infrastructures if customers need it, again using a simple-to-deploy standard configuration. In the future, FI-TS could potentially use its DataCenter Infrastructure platform to provide new customer offerings, such as SAP as a service. A final potential benefit is that the end-to-end data center architecture might help silo-based FI-TS network and server teams work more closely together for greater efficiency.

Next Steps

The cloud is initially being used for new customers, with existing customers being migrated on a phased basis. Further ahead, FI-TS is planning to create a new data center in Stuttgart and should be able to replicate its DataCenter Infrastructure architecture there to simplify deployment. “All components are in five racks,” says Schwegler. “It works as a single unit.”

For More Information

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

www.cisco.com/go/nexus

www.cisco.com/go/cloud

Product List

Data Center Solutions

- Cisco Unified Computing System (UCS)
 - Cisco UCS B200 M3 Series Blade Servers
 - Cisco UCS 5108 Blade Chassis
 - Cisco UCS Virtual Interface Card 1240 Adapters

Routing and Switching

- Cisco Nexus 7000 Series Switches
- Cisco Nexus 6000 Series Switch
- Cisco Nexus 5000 Series Switches
- Cisco Nexus 2232PP Fabric Extenders
- Cisco Catalyst 6500 Series Switches
- Cisco Catalyst 3750 Series Switches

Fabric Interconnects

- Cisco UCS 6248XP Fabric Interconnects

Applications

- Linux Kernel-based Virtual Machine
- SAP

Storage

- NetApp FAS6290



Americas Headquarters
Cisco Systems, Inc.
San Jose, CA

Asia Pacific Headquarters
Cisco Systems (USA) Pte. Ltd.
Singapore

Europe Headquarters
Cisco Systems International BV Amsterdam,
The Netherlands

Cisco has more than 200 offices worldwide. Addresses, phone numbers, and fax numbers are listed on the Cisco Website at www.cisco.com/go/offices.

Cisco and the Cisco logo are trademarks or registered trademarks of Cisco and/or its affiliates in the U.S. and other countries. To view a list of Cisco trademarks, go to this URL: www.cisco.com/go/trademarks. Third party trademarks mentioned are the property of their respective owners. The use of the word partner does not imply a partnership relationship between Cisco and any other company. (1110R)