Enabling Government with More Uptime and Speed

BRZ becomes the first data center in Austria to transform service delivery and IT operations with the Cisco Nexus Platform.

EXECUTIVE SUMMARY

Customer Name: Bundesrechenzentrum (BRZ), Federal Computing Center

Industry: Service provider

Location: Austria

Company size: 1200 employees

Challenge

- Improve application performance and end user experience
- Respond to pressure on Public Sector budgets "to do more, with less"
- Create a more flexible, business-oriented architecture

Solution

- Cisco Data Center Business Advantage architecture, and technologies
- Cisco Nexus platform, end-to-end

Results

- Always on infrastructure increases business agility and availability
- Lower total cost of ownership from improved efficiency of IT management and network consolidation
- Expected savings on staff overtime, power usage and space, and carbon footprint

Challenge

The Bundesrechenzentrum GmbH (BRZ) www.brz.gv.at, Federal Computing Centre of Austria, is a limited company, with its own management team, and 100% owned by the Austrian government, represented by the Austrian Federal Ministry of Finance. With over 1,000 experts, BRZ plans, implements, and runs a broad range of applications. From its Standard and Individual Application Departments, to its E-Government Solution Center, BRZ offers holistic, technology-independent, end-to-end solutions that enable efficient and service-oriented interactions between public authorities and their customers: the citizens and businesses.

With a turnover of €221 Million (2009), BRZ is the leading IT service provider for public authorities in its target market of federal government. It is a position earned through its outstanding IT expertise and extensive, in-depth understanding of the special needs of public administration. The BRZ runs Austria's largest computing center for public administration, has its own parallel computing center, and provides one of the most reliable infrastructures available to public departments. BRZ supports around 56,000 users, 1200 sites and more than 320 IT processes, and is expected to provide complete transparency, for example, by regularly reporting back to its customers on service level performance and investment decisions. Its major customers are the Austrian Federal Ministry of Finance (Tax and Customs) and the Austrian Federal Ministry of Justice.

> **"The Public Sector is under constant pressure 'to do more, with less'. Our vision was to create an 'always on' infrastructure that would serve us well over the next five to ten years."**
>
> **–Thomas Kasa, Head of Network Development, Operation and Client-Services, BRZ**

Like many data centers, BRZ faces a changing set of business demands. They include the need to simplify operations, make better use of assets, and reduce costs, while also improving application performance and end user experience through increased availability, speed, and agility of services.

"The Public Sector is under constant pressure 'to do more, with less'," says Thomas Kasa, head of development, operations, and client services for BRZ. "Our vision was to create an 'always on' infrastructure that would serve us well over the next five to ten years. We needed a very consistent architecture, from the top down; from the center of the network, to the edge. One that understood the different requirements of the different layers of the data center; from physical issues such as racks and servers, and the need for integrated services."

Solution

BRZ's existing infrastructure had served it well for over five years, but was beginning to be challenged by the need to provide more bandwidth for applications while meeting the need to physically separate traffic for some clients, such as the Ministry of Justice.

Three pairs of core switches formed three separate IP backbones. Links to servers were limited to 1 Gbps and some users had begun to experience poor application response times on occasions. Within the data center, bundling links to increase bandwidth was a complicated operation demanding a lot of extra cabling. Overall business agility was constrained by a shortage of maintenance windows. User demand meant that there were only two weekend-long maintenance windows each year for major upgrades, and these had to be shared with other teams, such as those managing servers.

BRZ investigated the technology options. While it was possible to upgrade the existing infrastructure it became clear that a far better choice was to redesign the network using advanced Cisco™ Nexus Series Switches. This new platform has been specifically designed for data centers and is a major step forward in increasing availability, speed, and ease of operations.

The Cisco Nexus platform is a technology foundation and key enabler of Cisco® Data Center Business Advantage, an architectural approach that provides tighter integration of servers, networks, and storage systems, which in turn helps to deliver new improvements in performance and cost efficiency.

Given the criticality of the Federal Computing Center's network operations, Cisco arranged a pilot to help BRZ technical teams to test and familiarize themselves with the Nexus solution. Finally, a phased migration plan helped to minimize disruption for end users.

The new solution has enabled two pairs of core switches to be consolidated onto one pair of Nexus 7000 Series Switches. The second pair is dedicated to providing services to the Ministry of Justice. Each pair of Nexus 7000 Series Switches, one active and one redundant, enables traffic to be securely partitioned.

This is achieved by using Cisco Virtual Device Context technology to create four logical switches on each Nexus 7000, each with its own configuration, administration and policy management settings. This IP backbone connects to four Cisco Nexus 5000 Series Switches and four Cisco Nexus 2000 Series Fabric Extenders, which share network intelligence across the access network, while also unifying fabric, rack, and blade server environments.

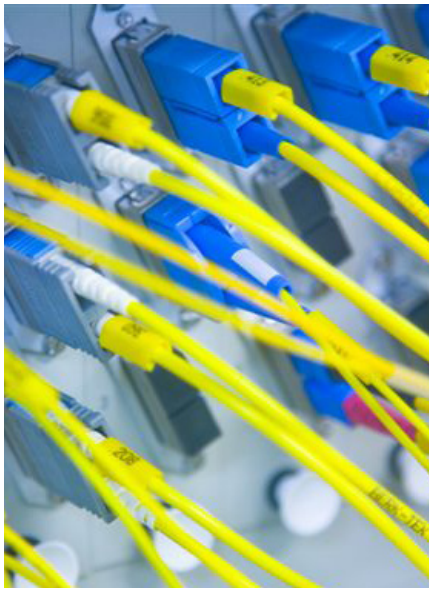
> **"Now, we don't need to wait for a service window. Upgrades can be completed much faster and remain completely invisible to our customers."**
>
> **–Martin Krautschneider, Team Leader, Network Development and Architecture, BRZ**

Results

The Federal Computing Center is the first data center in Austria to implement an end-to-end Cisco Nexus solution. This forward-looking strategy is bringing many benefits.

"The Cisco Nexus will help to contain future network costs, while also providing Gigabit Ethernet networking performance. This innovation means that we can offer capacity on a faster, more secure, and more cost-effective basis. And, for our customers, we believe it demonstrates a better use of public funding that will lead to even more consistent fulfillment of service level agreements," says Kasa.

Business agility has also improved. BRZ can now carry out maintenance tasks at short notice, and at anytime during the day because the servers are always connected to at least one Nexus switch. "Now, we don't need to wait for a service window. Upgrades can be completed much faster and remain completely invisible to our customers," says Martin Krautschneider, team leader, network development and architecture for BRZ.



Applications are now far more responsive. Many servers benefit from speeds of 10 Gbps in the core, and a minimum of 2 Gbps in the access network. Up to 512 ports of 10 Gigabit Ethernet can be supported in a single system in the 18-slot chassis, which will also enable BRZ to easily meet future requirements for 10 Gbps uplinks to servers.

Eliminating the need for maintenance downtime, has enabled BRZ to improve internal network availability well beyond the currently guaranteed 99.5 percent, and to reduce operating costs. "Removing the need for engineer overtime is a quick win that will deliver significant OpEx savings," says Krautschneider. "To this, you can add power and space savings, which we anticipate will each be around 15 percent. Consolidation of network devices means that there is better utilization of fiber. For the replaced network elements, we would hope to reduce carbon footprint by as much as 20 percent."

The Nexus platform has transformed the simplicity of network operations. For BRZ, this means fewer points of management, better use of IT resources, and greater service assurance. "In the past, we would have to carry out software upgrades to each switch in the access network. Now, we only have to do it once. The intelligence within the FEXlink architecture automatically updates the Cisco Nexus 2000 Series Fabric Extenders attached to the Nexus 5000. That's a big time saving, plus it's a safer and more consistent way of managing version control," says Krautschneider.

Responsive support and continuity is also something BRZ values highly. "Cisco has retained the same account team for some time. When we need something done quickly they are excellent at helping us to trouble-shoot and fast track processes. They also have a good in-depth knowledge of our network and a strong understanding of new technology evolutions," says Kasa.

Next Steps

The Cisco architecture has provided BRZ with a path towards achieving even greater improvements in data center efficiency. For example, the provider has the option of introducing a Unified Fabric at the server access layer. This will allow both Ethernet and Fiber Channel traffic to travel through the same cable, resulting in even less cabling, components, and points of management. BRZ also intends to carry out a review of Unified Computing to better understand the operational advantages and synergies of such an approach.

PRODUCT LIST

Switching

- Cisco Nexus platform, comprising Cisco Nexus 7000 and Cisco Nexus 5000 Series Switches, and Cisco Nexus 2000 Series Fabric Extenders

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