

Application Performance Monitoring Keeps Business Going Strong



EXECUTIVE SUMMARY

Challenge

Increase application performance and improve customers' services with application performance monitoring

Solution

- Brocade Analytics Monitoring Platform for measuring and analyzing SAN traffic
- Brocade DCX 8510 Backbones for SAN switching
- Brocade X6 Directors with Brocade Fabric Vision technology for future-proofing the flash SAN
- Brocade Network Advisor for easier manageability

Results

- Reduced time to resolution by approximately 90 percent
- Reduced application latency by 40 times
- Identified hidden storage utilization problems within 10 minutes of deploying the Analytics Monitoring Platform
- Exceeded customer SLA requirements by delivering daily customer-specific latency and performance reports

Swisscom AG

Swisscom is the largest telecommunications service provider in Switzerland. It serves residential, small business, enterprise, and wholesale customers with a diverse range of products and services. The company is also pioneering new technologies and innovative offerings, such as cloud and Internet of Things network services.

Large banking, railway, and other enterprise customers rely on Swisscom for hosting mission-critical applications. If the Swisscom network goes down, they will lose their ability to serve customers and generate revenue. For example, if the railway ticketing application experiences delay, it impacts every ticketing machine on the railway's network, which in turn could potentially leave thousands of railway passengers without timely transportation. Swisscom is committed to keeping business ongoing at all times, as well as providing outstanding customer service. To deliver both, it had to enhance its storage networking environment.

Enhancing Mission-Critical Application Performance

Swisscom supports customers' business-critical operations through a large, complex storage environment, from which it supports customers' business-critical operations. Over time, the infrastructure has grown to encompass thousands of physical and virtual servers, more than 11,000 virtual instances, 27,000 storage networking ports, and 20 fabrics across seven locations. With more than nine million gigabytes of storage provisioned, the infrastructure's size and legacy storage

architecture had trouble keeping up with high volumes of on-demand application traffic. The storage team knew that some applications experienced high latency during peak periods—up to 10 seconds for large database processing queries. Long response times affected application performance, added latency, and often required data retransmission.

It could take days or weeks working with network, server, and storage



vendors to identify the root cause of a problem and resolve it. The Swisscom team also had set internal Service Level Agreement (SLA) goals to improve service performance, but were struggling to achieve them consistently. Improving performance was going to be difficult without granular visibility into the paths and devices that data traversed. Swisscom needed actionable intelligence and faster “time-to-insight” in order to improve SAN performance for customer applications.

WHY BROCADE

“The enhancement was substantial. We reduced peak latency from 10 seconds at its worst to 250 milliseconds. The Brocade Analytics Monitoring Platform is helping us ensure nonstop application performance for critical applications and greatly simplifies troubleshooting at the same time.”

— Jean-Luc Tarik Aslan, Datacenter Architect, Swisscom

Analyzing Flows to Maximize Performance

Swisscom turned to the Brocade® Analytics Monitoring Platform for deeper visibility into end-to-end application behavior, all the way from the server through storage. The Brocade Analytics Monitoring Platform is a purpose-built storage network appliance that measures application- and device-level I/O performance and analyzes traffic behavior across the storage fabric. It operates within Swisscom’s Brocade Gen 5 and Gen 6 DCX 8510 Backbones and Brocade X6 Directors with Brocade Fabric Vision technology. When Swisscom is ready to



migrate to 32 Gbps/128 Gbps storage networking, Brocade X6 Directors enable it to benefit from an NVM Express (NVMe) over Fabrics architecture and leading-edge VMware technologies, and continue using the Brocade Analytics Monitoring Platform for in-depth visibility across the infrastructure.

Swisscom deployed the Brocade Analytics Monitoring Platform appliances connected to multiple Brocade DCX 8510 Backbones using Analytic Switch Links (ASLs). Non-invasive virtual taps at the edge of the storage and server path send data to the appliances for application performance monitoring. This architecture provides flexibility and scalability, enabling Swisscom to quickly ramp up real-time monitoring of 60,000 flows.

Using the Brocade Fabric Vision technology Monitoring and Alerting Policy Suite (MAPS), Swisscom implemented policies for proactive application performance monitoring on the storage

network. Fabric Vision technology’s Fabric Performance Impact monitoring detects slow-draining devices and alerts the team when congestion or latency exceeds thresholds. Fabric Vision technology’s Slow Drain Device Quarantine (SDDQ) isolates slow-draining devices from the network to eliminate the impact of latency on other traffic flows. Fabric Vision technology information is presented clearly and elegantly in Brocade Network Advisor dashboards, giving the team immediate visibility into everything on the storage network.

Instant Insight

Within 10 minutes, the Brocade Analytics Monitoring Platform highlighted high levels of pending I/Os on storage ports and quickly identified that many were significantly oversubscribed. Oversubscription was causing major latency problems, and this insight gave Swisscom the data they needed to resolve the issue.



With application performance monitoring data from the Brocade Analytics Monitoring Platform, the data center team redistributed server-to-storage traffic to maximize performance. By moving and rezoning traffic, the multiple storage arrays are better able to process data and share workloads.

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nonstop application performance for critical applications and greatly simplifies troubleshooting at the same time.”

In the past, it could have taken up to 30 days to identify and resolve the root cause of an application performance problem. With Brocade application performance monitoring, Swisscom reduced time to resolution by approximately 90 percent. In addition, they have been able to identify issues that they had never seen before, but that had lurked in the infrastructure, adding latency and complicating traffic flows. With these resolved, the Swisscom team was able to meet their SLA performance reporting goals, which had seemed unreachable in the past.

Better Reporting Visibility

With the deep visibility provided by the Brocade Analytics Monitoring Platform, Swisscom can now manage the network even more proactively. For example, application performance monitoring captures the data that the Swisscom data center team needs to spot trends, establish baselines, and determine behavioral threshold settings.

“Our server and storage teams want to see their latency reports daily,” said Mr. Aslan. “If the network team doesn’t send them, they get calls looking for them. The reports are invaluable to assuring service performance.”

Reports are specific to each customer, showing granular latency and performance data. Now, Swisscom can report to customers regularly and provide proof of SLA compliance, increasing customer satisfaction with the service.

Preserving Existing Investments

Swisscom’s application performance monitoring helped it increase customer satisfaction without replacing its servers or storage systems. In addition to preserving its SAN investment, the company also gained not only the ability to obtain valuable data for planning and decision-making, but also the ability to pinpoint the location and cause of latency or other problems. Together, the vendors are able to deliver faster resolution and a higher level of satisfaction to Swisscom.

Next Steps

Swisscom plans to expand its current deployment and add Brocade Analytics Monitoring Platform appliances to its other SAN environments. With unprecedented, end-to-end visibility into its storage environment, Swisscom has more ways than ever to deliver transparent, high-performing services and uncompromising reliability to customers.

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