CASE STUDY

Highest Degree of Availability Six Relies on the Application Delivery Controller by A10

Industry | Financial

In the IT infrastructure industry, SIX considers availability, stability and rapid response times to be essential, which is why the company uses the high-performance Thunder Series application delivery controller (ADC) by A10 Networks in its data centers.

SIX provides centralized infrastructure services for the financial community in Switzerland in the fields of securities trading, settlement and safe custody of securities, financial information and cashless payment transactions.

The infrastructure provided by SIX processes millions of financial transactions each day: securities are traded, and cleared and settled, and cashless payments are enabled and processed as well. It also creates, prepares and distributes information about financial instruments.

> *The Thunder Series application delivery controller by A10 Networks certainly lives up to our expectations. It meets every requirement as far as performance, functionality, architecture, scalability and value are concerned."*
>
> – Thomas Siegenthaler
> Systems Engineer & Project Manager
> SIX Group

Network Solution

A10 Thunder® ADC
aGalaxy

Critical Issues

- Maintain, ensure and improve transparent online transactions
- Preserve high availability and performance of approximately 400 applications
- Oversee geographically dispersed data centers with security policies

Results

- Improved availability for business-critical applications
- Comprehensive support for SIX's virtualized, zone-based environment
- Improved cybersecurity with additional security functions including WAF, DNS application firewall, and protection against multi-layered DDoS attacks
- Reduced load on application servers and network infrastructures by reduced data traffic including HTTP protocol compression, traffic caching, and TCP connection reuse or consolidation of several HTTP connection into a single TCP session

In cashless payment traffic alone, an average of eight million transactions are processed per day. Over 1.7 million transfers are made via internet banking each day. Thus, it is extremely important to ensure that the infrastructure responsible for processing these transactions is available at all times. If, for example, validation and clearing systems experienced a malfunction, this would mean that people could no longer withdraw money from cash machines, purchase food and other goods from retailers or buy products online. To prevent such a situation from occurring, as well as guaranteeing efficient operation at all times and ensuring that the infrastructure can withstand major traffic at peak times, SIX relies on high-performance systems, the implementation of far-reaching security policies, and the operation of geographically dispersed and redundantly configured data centers.

From Load Balancers to ADCs

Load balancers are an important component in this model. They facilitate dynamic distribution of traffic to the server most able to cope with it, as well as ensuring continued operations with no impaired performance even if one or more individual systems or a whole data center suffers a malfunction. Fritz Steinmann, Head of Network & Security Engineering, elaborates, "Load balancers, or application delivery controllers (ADC), are an essential component for ensuring high availability and performance of the approximately 400 applications operated by SIX. This is irrespective of whether data, applications and other services are made available internally or on the perimeter via extranet or internet."

As Thomas Siegenthaler, system engineer and project manager at SIX, adds, the company previously used ACE series load balancers by Cisco due to their excellent performance. "However, they were discontinued by Cisco at the beginning of 2014, which led to the expiration of the support contracts as they could not be renewed. As a result, new functions that we urgently needed — such as global load balancing — were not developed or implemented. With this in mind, we conducted an assessment to find a new, innovative and high-performance ADC solution that would meet our current requirements as well as those in the future."

> *"The Thunder Series application delivery controller by A10 Networks certainly lives up to our expectations. It meets every requirement as far as performance, functionality, architecture, scalability and value are concerned."*
>
> *Thomas Siegenthaler*
> *Systems Engineer & Project Manager*
> *SIX Group*

Siegenthaler also adds, "We completed this process — consisting of a requirements analysis, detailed concept description and system evaluation — quickly and efficiently. This meant that we were ready to carry out proofs of concept (PoCs) in the fall of 2014." The Thunder Series application delivery controller by A10 Networks emerged as the clear victor in this round of practical testing." According to Siegenthaler, a combination of technical, producer and partner specific aspects put the Thunder Series ahead of the competition. "The ADCs by A10 Networks were able to meet all of our technical and support requirements—functionality and scalability scored just as highly as performance and handling. Furthermore, A10 and our local partner eb-Qual have demonstrated excellent commitment, expertise, experience and customer relations since the start. As such, we are able to benefit from a comprehensive ADC package that meets all of our expectations."

Numerous Advantages

The ADC model selected by SIX, namely the A10 Thunder® 3030S by A10 Networks, distributes incoming requests in a dynamic or policy-based manner to the most suitable server, thereby ensuring that the relevant applications can be accessed securely and without delay. The ADCs are installed as active/active clusters with automatic fail-over in the two data centers in Switzerland and include many key features in addition to their standard SLB and ADC functions.

According to Siegenthaler, these features include Source NAT and web application firewalls for security purposes as well as an array of global server load balancing functions that enable data centers abroad to be integrated seamlessly into the existing infrastructure.

> *"The same level of support is also provided for protocols IPv4 and IPv6, thereby ensuring that we are well-positioned for future business operations in this area as well."*

Steinmann adds, "It is also important for the Thunder ADCs by A10 Networks to support our virtualized, zonebased environment without any limitations. This ensures, for example, that the policies defined for the front- and back-end zones (DMZ) segregated by firewalls remain valid. In the future, it will also be important for us to be able to synchronize active sessions across all data centers via Layer 2 connectivity."

Daniel Pfenninger, Branch Manager at eb-Qual in Kloten, lists further criteria that influenced the company's decisionto choose the solution by A10 Networks, including seamless system scalability and guaranteed fixed maintenance and support costs (OpEx) for a period of five years. And he goes on to add, "Many companies that have extremely high standards in terms of the availability and performance of their applications rely on the ADCs by A10 Networks. This didn't escape the attention of the decision-makers at SIX, especially when we're talking about companies such as Microsoft (Xbox), Crédit Agricole, LinkedIn and Evernote." Other features that Pfenninger is quick to highlight include the command line interface (CLI), which is similar to the one provided by Cisco, and WebGUI, which makes it much easier for former ACE users to handle the new ADCs.

ADCS by A10 Networks: High Availability of Applications Critical to Business Operations

The scalable and high-performance Thunder Series server load balancer (SLB) and ADC by A10 Networks are the go-to solution when applications need to be faster, better and more secure. In addition to their core functions, they contribute to database load balancing and load distribution across several firewalls. They also provide additional security functions such as a web application firewall (WAF), DNS application firewall and protection against multi-layered distributed denial-of-service (DDoS) attacks. Other significant features include the ability to terminate encrypted client connections (SSL offloading) and SSL bridging, which can be used to analyze encrypted data for bad or malicious code before it reaches the server.

Carrier-grade NAT (CGNAT), IPv6 migration and application access management (AAM) are also provided. AAM ensures that back-end servers do not receive any undesirable and/or nonauthorized data traffic.

To reduce the load on application servers and network infrastructures, the ADCs by A10 Networks take over the complex tasks and employ intelligent mechanisms to reduce data traffic, such as HTTP protocol compression, traffic caching and TCP connection reuse (the consolidation of several HTTP connections into a single TCP session).

Performance Characteristics

An Excerpt (Depending on Model)

Enterprise class ADC, threat protection system (TPS), and CGNAT solutions can provide:

- High scalability
- 10 Gbps connectivity (or higher) in every hardware appliance
- Supported bandwidth of up to 150 Gbps
- Hardware acceleration (via FPGA)
- Protection against DDoS attacks
- Web and DNS application firewall
- Flexible traffic acceleration (FTA)
- Hardware-accelerated SSL encryption and decryption (termination)
- IPv6 migration
- NAT64 and DNS64
- Hardware and virtual appliances
- Simple license model
- Positioning within Gartner's Leader Quadrant

> *"The ADCs by A10 Networks maximize the availability of data and applications, ensure gateway security and facilitate seamless IPv6 migration."*
>
> *Fritz Steinmann*
> *Head of Network & Security Engineering*
> *SIX Group*

> *"The Thunder Series application delivery controller by A10 Networks certainly lives up to our expectations. It meets every requirement as far as performance, functionality, architecture, scalability and value are concerned."*
>
> *Thomas Siegenthaler*
> *Systems Engineer and Project Manager*
> *SIX Group*

aGalaxy Management Console

The aGalaxy® is an appliance (hardware or software) developed by A10 Networks that enables all integrated Thunder ADCs to be centrally managed. The robust, easy-touse management console supports functions such as centralized monitoring, upgrade installation, individual appliance configuration, SSL certification management, aFleX® TCL script management and and backup and restore functions.

ACOS—For Maximum Performance

The ADCs by A10 Networks are based on the pioneering ACOS® platform (advanced core operating system), which features optimized software architecture for 64-bit multicore processor systems. Thanks to the shared memory between the individual processors, all requisite information is instantaneously available, thereby guaranteeing a high level of performance.

About SIX Group
SIX operates infrastructure for the Swiss financial community and provides comprehensive global services in the fields of securities trading and settlement, financial information and payment traffic. The company is fully owned by its users (approximately 140 banks of various types and sizes) and in 2013 generated operating income of CHF 1.58 billion and a consolidated net profit of CHF 210.2 million. It employs over 3,700 members of staff and has a presence in 24 countries. **www.six-group.com**

About EB-QUAL
Founded in 2002, the ICT service provider eb-Qual AG specializes in consultation, planning, conception and implementation for sophisticated IT security and network solutions. With bases in Fribourg and Zurich (Kloten), the company employs 15 qualified, experienced members of staff and ensures a high standard of quality by relying on products and solutions developed by leading international producers. eb-Qual's customers range from discerning, medium-sized companies to groups operating on a global scale. The owner-run, independent and steadily growing company is one of the leading IT security and network specialists in Switzerland. **www.eb-qual.ch**

App Delivery Needs to Evolve:

The State of Hybrid Cloud Application Delivery

Download eBook

Request a live demo and experience the

A10 Networks Difference

Schedule a Demo

About A10 Networks

A10 Networks (NYSE: ATEN) provides secure application services for on-premises, multi-cloud and edge-cloud environments at hyperscale. Our mission is to enable service providers and enterprises to deliver business-critical applications that are secure, available and efficient for multi-cloud transformation and 5G readiness. We deliver better business outcomes that support investment protection, new business models and help future-proof infrastructures, empowering our customers to provide the most secure and available digital experience. Founded in 2004, A10 Networks is based in San Jose, Calif. and serves customers globally.

For more information, visit A10networks.com and follow us @A10Networks.

Learn More

About A10 Networks

Contact Us

A10networks.com/contact

Part Number: A10-CS-80186-EN-01 JUN 2018