



Industry

Higher Education

Environment

VMware vCenter

Problem

- Hardware load balancer did not meet automation and self-service needs.
- Did not provide any insights about end user interactions with their servers.

Why Avi Load Balancer

- Modern load balancing architecture and “structured configuration” approach that eliminates manual errors
- Visibility and analytics that simplify troubleshooting of application issues

Results

- Removed inefficiencies by avoiding the need to trombone traffic from virtual environment to physical networking appliances and back
- Network team is able to better scale services with greater responsiveness

Leipzig University Innovates Networking Services For Its Future as a Top European University

Background

Leipzig University was founded in 1409 making it one of the oldest universities in Germany. It is an interdisciplinary, international comprehensive university. On its ambitious path to becoming a European top-level university and internationally recognized seat of research and learning for young scholars the university draws on an extensive range of subject areas. The city of Leipzig is a centuries-old trading center as well as a scholarly and cultural center that has a heritage of international relations, cosmopolitan attitudes, tradition, and tolerance.

The Networking Team at Leipzig University

The university’s forward-thinking networking team which is part of the infrastructure department is responsible for the infrastructure that makes applications available to the university’s community of students and faculty. Daniel’s team supports HTTP applications for student enrollments, online assessments, online learning systems, Microsoft Exchange for email, Nextcloud for file sync and store applications and SharePoint as the collaboration platform. All applications require load balancing services to ensure performance and good end-user experiences. The student enrollment application has peak loads in just a few hours during enrollment periods.

The Decision to Switch to Avi

Daniel heard about Avi through a promotional email that his colleague forwarded from Avi Networks. Even from the summary in the email, the networking team felt that Avi’s technology held a lot of promise. Before Avi, they used a hardware load balancing solution which didn’t address many of their upcoming needs. As they prepared for a more automated and self-service driven future, Daniel liked the architectural benefits of the VMware® Avi™ Load Balancer including the analytics and visibility built into it. By contrast, their previous solution was a black box that did not provide any insights into the communications between the end-users and servers.

The Power of Avi's Analytics

Daniel says "Sitting between the clients and server, the load balancer is in a unique position to capture packet information and analyze it to tell what issues we are experiencing. This capability was important for us especially from a security standpoint." He feels that securing applications at the L3/L4 layers is not enough and that he needs to have a closer look at the L7 level. For example, the university has a NATted environment with multiple clients behind one IP address but sometimes they need to block just a single IP without affecting the other clients. Avi's user interface and analytics are so useful for these situations since they provide transactional visibility with all of the details needed to identify the client. Avi's WAF solution is also of interest to Daniel for these reasons.

Sometimes with applications that use the ownCloud platform, the network team hears from application administrators that the network is slow or under-performing. "Avi's analytics have helped us clearly identify the latency issues and analyze the root-causes of issues and understand the health of the application immediately. It is a huge time-saver compared to the trial and error process that we needed to use to troubleshoot", says Daniel.

"Most of the time, system failures are caused by human error with configurations and updates. With Avi's approach to what I call structured configuration, everything is a template. You put the templates together and stamp out a virtual service in a repeatable way, eliminating manual errors. I wish all IT products were like this."

Networking Team at University Of Leipzig

The Benefit of "Structured Configuration"

The network team at Leipzig University realizes a unique benefit of deploying the Avi Load Balancer for their load balancing needs. Daniel says, "Most of the time, system failures are caused by human error with configurations and updates. With Avi's approach to what I call structured configuration, everything is a template. You put the templates together and stamp out a virtual service in a repeatable way, eliminating manual errors. I wish all IT products were like this." When combined with Avi's automation and application insights, these capabilities give the small network team at the university, the ability to scale their services and improve their responsiveness. Since implementing Avi, the network team and the compute team at the university have come together in a way that helps them collaborate better. They no longer have to trombone their traffic from their virtualized VMware compute infrastructure to physical networking appliances and back. With Avi, computing and networking stay in the same environment and traffic doesn't need to leave the cluster.

A Future with Private Cloud, Self-Service, and Micro-segmentation

As part of their plans to deliver a high degree of automation and self-service the network team at Leipzig University is looking forward to implementing a private cloud environment. Daniel and team are looking to deliver an "as-a-service" experience to their application owners and while granularly dividing their tenants into their own environments. They plan to micro-segment their compute environment and prevent unnecessary access across tenant environments. Delivering load balancing services to such a well-partitioned environment would have been impractical with appliance-based solutions but the team is looking to use Avi's ability to deliver per-tenant or even per-app load balancing services to implement this strategy.

With a clear vision and plan for the future of the network services that they need to deliver, Daniel and team are well-positioned to support the ambitious plans at Leipzig University.