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Stefan Suurmeijer, Network Services Manager, CIT, University of Groningen

University of Groningen Ensures Continuity for Critical Applications Using F5 Solutions

The **University of Groningen** (Rijksuniversiteit Groningen) ranks among the top European research universities. In total, 9,000 staff members and 25,000 students are active across nine faculties, divided among approximately 150 buildings in and around the city of Groningen in the north of the Netherlands. The university also maintains strong ties with many of its 60,000 registered alumni. Problems with the university’s IT infrastructure were causing downtime for users and inefficient utilization of server capacity. By implementing F5 BIG-IP® Local Traffic Manager™ in a centralized IT infrastructure, the university has been able to optimize utilization of physical and virtual servers, introduce a powerful new collaboration service, and ensure that users always have access to all of the university’s IT services.

Business Challenge

The Donald Smits Information Technology Centre (Centrum Informatie Technologie, or CIT) is responsible for all IT-related activities for the University of Groningen, including its collaboration environment (email, class scheduling), digital learning environment, and website, as well as the various workstations across the university. CIT manages a total of 9,600 registered workstations, comprising 7,800 Windows and 1,300 Linux PCs and several hundred Apple machines.

The workload on the university’s servers has grown dramatically as the number of people accessing the IT infrastructure has increased; in addition to staff members and students, the university has opened up the network for alumni to access and use certain academic facilities. The variety of devices connecting to the infrastructure has also increased as mobile devices and laptops have become more prevalent. These factors have combined to further add to the server load.

Overview

Industry

Education

Challenges

- Ensure maximum availability of the IT infrastructure and critical applications
- Optimize load balancing for physical and virtual servers
- Prevent downtime related to server maintenance

Solution

- BIG-IP Local Traffic Manager

Benefits

- Uninterrupted user access to IT services
- Ensured business continuity for critical applications
- Optimized server utilization
- No downtime required for server maintenance

"We have been working to centralize all university IT facilities for years now," says Stefan Suurmeijer, Network Services Manager at CIT. "In the past, every department and faculty used its own servers and services, and this created a number of inefficiencies. We used to get outages when staff members logged in simultaneously. At the same time, when students were attending classes, their dedicated server went essentially unused."

After a major outage that rendered all students and staff members unable to log in one morning, CIT recognized the need to find a solution to ensure the availability and performance of its authentication services and applications.

Solution

To prevent future continuity problems, CIT started looking for an application delivery solution. F5 was quickly singled out. "F5 has a solid reputation and is highly rated by Gartner, the information technology research and advisory company," comments Suurmeijer.

The university decided to implement F5 BIG-IP Local Traffic Manager (LTM) to maintain continuous access to its authentication services, and has had the solution in place for nearly two years. "We decided to use BIG-IP Local Traffic Manager to solve the downtime problem," says Suurmeijer. "Using BIG-IP LTM means one data center can take over the activities of the other—without causing disruption to students and staff members."

More recently, the university began using BIG-IP LTM to manage access to and availability of the university's new collaboration service.

The collaboration service, based on Sun Java Communications Suite, consists of two data

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centers in a redundant setup with a third site serving as a snapshot backup. Blackboard, the digital learning environment the university uses to provide approximately half of its courses, also runs centrally from these data centers. The primary data center has two physical and four virtual servers, with the failover site featuring a similar setup. The data centers are both fronted by BIG-IP LTM. A 2-Gbps link to all campus locations enables users to connect with the central infrastructure.

Benefits

"BIG-IP LTM enables us to optimize utilization of our physical as well as virtual servers," says Suurmeijer. "It protects us against downtime, so users enjoy uninterrupted access to our applications."

Application failures eliminated

Using F5 solutions has helped the University of Groningen to maximize the availability of its IT infrastructure and the applications that run on it. Suurmeijer notes, "Previously, we experienced application failures approximately three times a year. By centralizing and rebuilding our IT infrastructure, we have been able to eliminate these failures."

No more maintenance windows

In addition, CIT no longer needs to take any part of the environment offline for

server maintenance. "Our maintenance windows used to be at night or over weekends to minimize the burden on staff members and students," says Suurmeijer. "However, we were unable to completely prevent downtime, since many people, such as researchers and part-time students, work from abroad in different time zones. With BIG-IP LTM, we are now able to switch between servers with ease. We can remove a server from the infrastructure to patch or update it, and it will go completely unnoticed by the users."

Server capacity optimized

BIG-IP LTM has alleviated server capacity issues as well. "We use BIG-IP LTM 6900 series devices to optimize utilization of our physical and virtual servers," comments Suurmeijer. "High throughput is combined with intelligent load balancing so the workload is distributed evenly across the various servers, eliminating inefficiencies."

Improved user satisfaction

Suurmeijer is more than pleased with the benefits BIG-IP LTM has brought the university. "It's not just application availability that has markedly increased, but also flexibility of our infrastructure," Suurmeijer says. "We have an IT usability survey going out to users later this year, and I'm fully confident the results will be very positive."

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