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John Graat, Security Specialist, SIDN

SIDN Improves Custom Application Response Times By Up To 20x with F5 Solutions

The **Stichting Internet Domeinregistratie Nederland** (Netherlands Internet Domain Registration Foundation, or SIDN) is responsible for issuing and registering all Dutch domain names. SIDN currently has more three million customers using .nl domain names. The organization provides its services to the public through 2,000 independent Internet service providers (ISPs). To keep up with customer needs and provide better availability and security, SIDN was looking to upgrade its application delivery technology. Using F5® BIG-IP® Local Traffic Manager™, SIDN reduced the complexity of its IT infrastructure, reduced the cost of system management, and sped up access to request and registration applications via its website.

Business Challenges

Issuing .nl domains in the Netherlands occurs entirely through www.sidn.nl. The central Domein Registratie Systeem (Domain Registration System, or DRS) provides the basis for this process. “Since we are responsible for registering and issuing domain names, our website has to be quick and reliable and offer continuous access to registration and request applications,” explains John Graat, Security Specialist at SIDN. “The demand for .nl domains is consistently high. Sometimes it got so high that the online application servers couldn’t handle all the requests.”

SIDN’s IT environment comprised two data centers in Arnhem and a redundant site in Ede. Each data center required a separate firewall and load balancing layer. “This was an inefficient set-up,” Graat points out. “A lot of hardware in the redundant data center was seldom used. We decided to replace our environment and implement a different architecture so we could make optimum use of the available capacity.”

SIDN had previous-generation solutions from F5 that had worked well for several years, and the organization now saw an opportunity to upgrade its application

Overview

Industry

IT/Non-profit

Challenges

- Reduce application response times and improve uptime
- Decrease IT management complexity and cost
- Ensure optimum use of IT resource capacity

Solution

- BIG-IP Local Traffic Manager

Benefits

- Ability to handle 3x more customer requests
- Up to 20x improvement in custom application response times
- Significant reduction in license and maintenance costs
- Reduced complexity of the IT infrastructure

Partner

Onsight



delivery technology and reduce the costs and complexity of its IT environment.

"With an eye to the future, we wanted to increase the availability of our online applications and the manageability of our IT system," explains Graat. "Our aim is to give our customers quick, 24x7 access to reliable services."

SIDN also needed to implement security for its application traffic in accordance with strict auditing requirements.

"We saw that customers sometimes made a lot of domain requests in one go," Graat adds. "We wanted to build in security to make sure that these multiple domain requests were handled carefully, resulting in valid requests for valid domain names."

Finally, SIDN also needed to find a solution compatible with its anticipated migration to IPv6.

Solution

SIDN, in collaboration with the security team at its technology partner Onsight, selected two F5 BIG-IP Local Traffic Manager (LTM) 3600 devices to meet its objectives. Graat notes, "F5 solutions were not so much a choice as a requirement we had for equipping our new infrastructure.

"We were already running previous-generation BIG-IP LTM devices, and were really satisfied with F5 performance and support," Graat explains. "The great thing about the 3600 series is that its performance and throughput capabilities have meant we have been able to reduce the number of BIG-IP hardware units from 10 to two."

SIDN also knew that BIG-IP LTM would work with the organization's custom software for the authorization, retrieval, and availability of domain names (WHOis), and that Onsight

had a long history of working with both SIDN and F5. "When we discovered Onsight was also an F5 partner, we made the choice for F5 and Onsight quickly," Graat says.

The implementation process went smoothly, and SIDN used iRules™, F5's custom scripting language, to create a whitelisting rule that manages application requests to ensure site availability. The rule determines which type of user is making a request, according to a dynamic list of IP addresses that is uploaded to BIG-IP LTM, and assigns an allowable number of requests per day. For example, external users can make a relatively low number of requests daily while registered members (such as service providers) have a higher number of allowable requests and internal users are not limited.

By ensuring that the site is not inundated with more requests than it can handle, SIDN's use of iRules maintains performance and availability. The implementation of the rule improved the response times of the WHOis application by 10 to 20x.

Benefit

With the F5 solution in place, SIDN has been able to reduce application response times and improve availability and security. The organization has also dramatically improved the efficiency of its infrastructure and reduced IT management costs.

Faster response, 3x more requests

With BIG-IP LTM in place, SIDN can now handle three times more requests from customers than before. In an average day, SIDN receives about 10,000 requests, with peak demand at around 30,000 to 40,000 requests at quarter-end when customers renew domain name subscriptions.

"Our server infrastructure has not gone down since the BIG-IP LTM implementation. Our

applications are now able to handle more requests, thanks to 24x7 availability and increased application speed," Graat says. "We can help more customers without the system grinding to a halt from too many incoming requests. We can channel requests to make better use of our existing capacity."

Airtight security

BIG-IP LTM and iRules also provide security for the custom WHOis application by ensuring that users are authorized to make a request for a domain name according to the dynamic IP address list.

"This is really important to us. Since we are the sole Dutch domain registrar, we are scrutinized closely," Graat explains. "This means that every step of the domain registration process has to be airtight-secure."

Reduced complexity and cost

BIG-IP LTM has simplified system administration for SIDN. Previously, the firewall and load balancing layer had to be configured separately for each device, but with the comprehensive functionality and performance of BIG-IP LTM, administrators only need to configure a single device.

As a result, SIDN has significantly reduced IT costs. The throughput improvements in the BIG-IP 3600 series have enabled SIDN to reduce the amount of physical data center space devoted to application delivery hardware.

Peace of mind for the future

"With the new IT environment, we are prepared for where the business is headed in terms of technical and IPv6 support. F5 offers a standard, seven-year support guarantee," Graat notes. "If something should go wrong, we will always be able to get support from Onsight, which collaborates closely with F5's support organization. From past experience, we know we can count on it."

F5 Networks, Inc. 401 Elliott Avenue West, Seattle, WA 98119 888-882-4447 www.f5.com

F5 Networks, Inc.
Corporate Headquarters
info@f5.com

F5 Networks
Asia-Pacific
info.asia@f5.com

F5 Networks Ltd.
Europe/Middle-East/Africa
emeainfo@f5.com

F5 Networks
Japan K.K.
f5j-info@f5.com

