Cloudy Skies Bring Heavy Traffic to Buienradar's Weather Websites

Company:
- Buienradar

Industry:
- Internet and Web 2.0

Critical Issues:
- Inadequate legacy infrastructure, security vulnerabilities

Selection Criteria:
- IPv6 support, GSLB support

Solution:
- IPv6, GSLB, application level DNS inspection, and high performance surge protection (with DNS caching)

Results:
- On target to have IPv6 sites ready for "World IPv6 Day", enhanced network security, improved network performance

> *Our legacy load balancers had reached end of life and we needed a new solution capable of intelligently load balancing traffic across our two data centers. In evaluating solutions on the market, we were impressed with the A10 ADCs' sophisticated GSLB capabilities. We were pleased to learn that the A10 ADC could provide an additional layer of protection for our DNS infrastructure. The A10 ADCs have helped us improve network response times, and this translates to a better experience for our end users.*
>
> **Stefan Rijkaart**
> Co-founder of Buienradar.nl

Buienradar is a Dutch website that provides real-time, radar- based weather information for the Netherlands and another site for the rest of Europe. The website, www.buienradar.nl, allows weather watchers to monitor rainfall conditions by entering a location, ranging from the Netherlands to Germany to Scotland, and the website generates a rainfall map of the desired region, as shown at left.

The website is among the most popular in the Nether- lands and is the number one site for weather-related information, with users seeking streaming information from their home PCs, smartphones, gas stations, and even hotel kiosks. The website receives approximately 5 million unique visitors per month, with this number spiking to 15 million visitors during times of severe weather. The site receives between 4–5 Gbps of sustained traffic, even during times of relatively mild weather.

The Netherlands are famous for an elaborate system of levees and dams that keep the sea at bay. With the region's low-lying geography, more than 20 percent of the Dutch populace resides on land that is below sea level, so the local fascination with weather reports that Buienradar has been witnessing makes sense.

Buienradar in Search of a More Robust Load Balancer

Buienradar's network is split across a primary and secondary data center. Each data center has a cluster of web servers connected using carrier-grade routers and switches. Network traffic consisting mainly of HTTP is spread across the servers using load balancers. The relatively low performance numbers (i.e. only 5 million concurrent sessions) of the company's legacy load balancers meant that they had to be deployed in Direct Server Return (DSR) mode, as opposed to Routed mode. The DSR mode deployment caused server responses to bypass the load balancer, which, in turn, caused many of the load balancer's advanced features to be disabled. When the legacy load balancers reached end of life, Buienradar sought a more robust replacement.
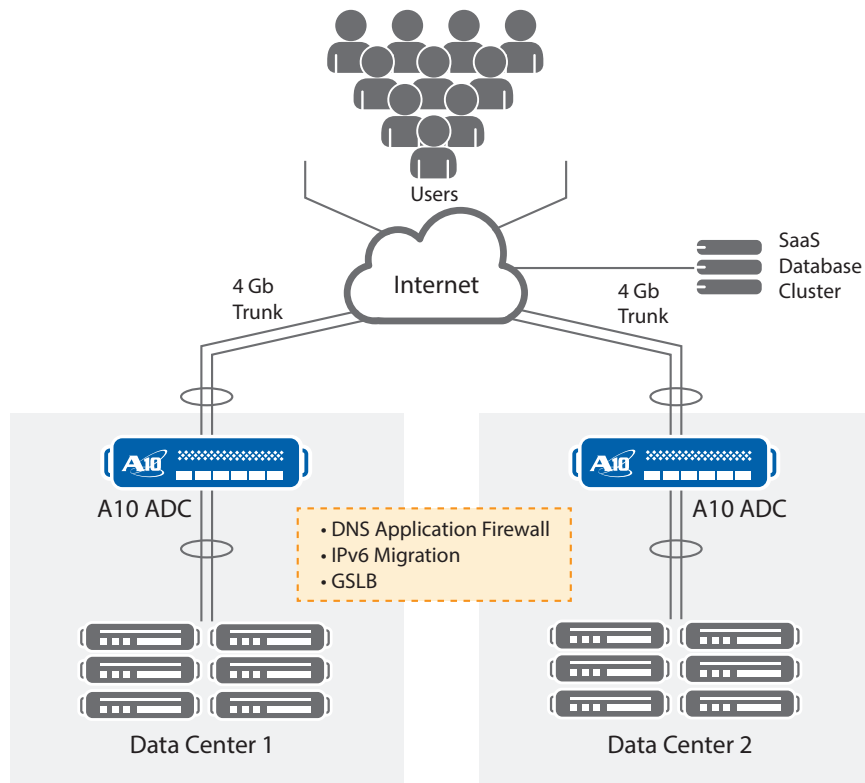
Fig. 1: Buienradar's Logical Network

In considering their distributed network with geographically separate data centers, Buienradar needed a new generation server load balancer capable of providing Global Server Load Balancing (GSLB). The new appliance would also need to offer higher throughput than the legacy load balancers in order to allow Buienradar to install the A10 ADC in Routed mode, as opposed to DSR mode, as was necessary with the predecessors.

Another criterion that would affect the company's purchasing decision was the impending depletion of IPv4 addresses. As more and more end users migrate to the IPv6 protocol, Buienradar's goal was to be ready to meet the needs of this small but growing number of IPv6 clients.

A10 ADC: IPv6 Support, GSLB, and DNS Protection

Buienradar chose to install the A10 Application Delivery Controllers (ADC) for the following reasons:

- **IPv6 Support:** Buienradar had a strategic initiative to have its sites ready for "World IPv6 Day" on June 8th, 2011. By deploying the A10 Networks ADCs, the company is on target to meet this goal. The A10 ADCs can utilize Server Load Balancing–Protocol Translation (SLB-PT), acting as an IPv4/IPv6 gateway. This enables IPv6 clients to access content using the organization's existing IPv4-based web servers. The A10 ADC also supports native IPv6, allowing an end-to-end IPv6 network.

- **GSLB Support:** With two separate data centers, Buienradar needed a load balancer with GSLB support to ensure that client

requests are properly routed to the data center closest to the end users. The A10 ADCs' GSLB feature can direct user requests to the optimal data center, based on response times for ping or DNS requests, or the A10 ADC can integrate with geo-location services using any CSV format.

- **DNS Application Firewall:** This crucial application layer feature ensures the availability of critical DNS infrastructure by allowing legitimate DNS protocol traffic to pass while denying non-DNS traffic. Optionally, traffic can be quarantined for later inspection. By using the DNS Application Firewall feature, organizations can reduce the load on their backend servers by up to 70 percent.

Success: Blue Skies Ahead for Buienradar's Network

After considering a range of options, Buienradar selected A10 Networks' 64-bit ADCs. The A10 ADC offers 10 Gbps throughput capacity, and 64-bit scalability enables support for tens of millions of concurrent sessions. These higher performance numbers enabled Buienradar to deploy the A10 ADCs in Routed mode instead of DSR mode, giving them greater control of the traffic returning to the clients and enabling them to leverage the A10 ADC's advanced features on outbound traffic, such as aFleX inspection and content adjustment.

In addition, the A10 ADC offers enhanced security for web and DNS servers. By leveraging the A10 ADCs' built-in security features, Buienradar was spared the cost and complexity of having to install and manage a separate, dedicated firewall solution.

The A10 ADCs offer an affordable solution with maximum throughput for periods of heavy traffic. Since Buienradar deployed its A10 ADC appliances, the company's website effortlessly handles the peak traffic loads that occur during periods of severe weather. Sophisticated GSLB support helps direct traffic between the company's two data centers, and the GSLB functionality is included at no additional cost. Lastly, the company has benefited from the A10 ADC's IPv6 support and the sites are on track to be ready for "World IPv6 Day" in June, 2011.

About A10 Application Delivery Controllers

A10 ADC is a scalable, high-performance application networking platform that delivers enterprises, web properties and Internet Service Providers (ISPs) with superior reliability and an energy-efficient footprint for low total cost of ownership (TCO). With A10 ADC, customers of all sizes benefit from application availability, scalability and performance, increased infrastructure efficiency and a faster end user experience. The A10 ADC has a comprehensive Layer 4-7 feature set and flexible virtualization technologies such as A10 Networks aVCS™ Virtual Chassis System, multi-tenancy and more for public, private and hybrid cloud environments. In addition, A10 ADC leads in IPv6 migration technologies with many large-scale deployments worldwide.

A10 ADC delivers an industry-leading return on investment (ROI) by leveraging A10's 64-bit Advanced Core Operating System (ACOS), with a scalable shared-memory parallelism architecture that surpasses the competition in scalability and flexibility.

For more information, visit: www.a10networks.com/products/application_delivery_controllers.php

About Buienradar

Buienradar, which translates to "rain radar", is one of the most-visited websites in the Netherlands and is the number one destination for rainfall information in Holland. The website receives up to 15 million unique visitors per month. For more information, please visit: www.buienradar.nl

About A10 Networks

A10 Networks is a leader in application networking, providing a range of high-performance application networking solutions that help organizations ensure that their data center applications and networks remain highly available, accelerated and secure. Founded in 2004, A10 Networks is based in San Jose, California, and serves customers globally with offices worldwide. For more information, visit: **www.a10networks.com**

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To learn more about the A10 Thunder Application Service Gateways and how it can enhance your business, contact A10 Networks at: **www.a10networks.com/contact** or call to talk to an A10 sales representative.