

Carbon₆₀ Networks Delivers a Record-Breaking Website for the Toronto Pan Am and Parapan Am Games Using Akamai Solutions



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— Peter Kelly, Founder and VP of Professional Services, Carbon60

The Situation

Established in 1999 and headquartered in Toronto, Canada, Carbon60 Networks specializes in end-to-end managed cloud hosting solutions and IT services for public and private sector organizations in Canada. In 2015, the company received the highest ranking in the Top 25 Canadian Up and Coming ICT Companies for 2015 by the prestigious Branham300. True to its commitment, Carbon60 believes in exceeding expectations, turning its customers into champions, and includes a vertical focus on hosting special events. Carbon60 is no stranger to large-scale special events, having successfully hosted dozens over the years. Often driving large volumes of peak traffic and continuous threats from hackers, special events are among the most challenging websites to host. Maintaining a high-quality site experience isn't easy due to the popularity of these events and diverse media needs such as streaming video, interactive web, and mobile access.

The Challenge

In 2015, Toronto was the host city of the Pan Am and Parapan Am Games. For the city's organizations, the website was a vital component of bringing this world-class event to spectators around the world. With more web traffic expected than for the winter Olympic games held in Vancouver – which hit a record for Olympic websites at 83 million monthly unique visitors – Toronto's organizers extended invitations for bids to host, manage, and monitor the site. If the site was sluggish or impacted by a cyberattack, the negative publicity would have been a nightmare for the city of Toronto.

The Goal

Carbon60 needed to meet two key requirements to support its objectives:

- **Ensure optimal web performance** - The hosting provider needed to provide site visitors from around the world with fast access to information about events, medal winners, and more.
- Thwart online attackers - Carbon60 needed to prevent online attackers from taking the website offline.

Why Akamai

Partnering for a Win

Carbon60 Networks responded to the request for proposal (RFP), proposing a solution that integrated performance and protection services from Akamai. But Carbon60 had partnered with Akamai for years, enabling it to embrace the entire hosting solution stack and offer an umbrella SLA that included Akamai's services. “Our entire solution is designed around Akamai's services. When we responded to the RFP, we led with Akamai and that, combined with our end-to-end capabilities, sealed the deal,” explains Peter Kelly, Founder and VP of Professional Services for Carbon60.

CARBON₆₀

THE MANAGED CLOUD COMPANY

COMPANY

Carbon60 Networks
Toronto, Canada
<http://www.carbon60.com/>

INDUSTRY

Software & Technology

SOLUTION

- [Akamai Dynamic Site Accelerator](#)
- [Web Application Firewall](#)
- [NetStorage](#)

KEY IMPACTS

- Served over 1 million visitors per day and over 8 billion page requests.
- Supported a peak of 22,000 requests per second.
- Delivered sub-two-second global response times.
- Reduced server load by 87%.
- Significantly reduced infrastructure and data costs.



Carbon60 Networks

Handling High Traffic with Ease

The very first night of the Games, the site peaked at 5 Gbps but did not slow down. "This made the game's organizers very confident and comfortable," says Kelly. While people visited a single URL, the architecture behind the scenes was fairly complex, with full automatic failover to a static version of the site. To keep the TORONTO 2015 Pan Am / Parapan Am Games website running smoothly at all times, Carbon60 ran five different origin data centers, managed and monitored the site around the clock, and used enterprise-grade technologies. "Akamai gave us the ability to run multiple data centers without any issues," continues Kelly.

Thwarting the Effects of Daily Attacks

With such a high profile, the TORONTO 2015 Pan Am/Parapan Am Games website was hit by web attacks every day of the games. As Kelly describes it, these included script kiddies conducting scans along with targeted attacks, such as [SQL injections](#). To foil these, Carbon60 engineered an entire stack of security services into its platform, including Akamai at the front end and deep integrations with Akamai on the back end. "We relied heavily on Akamai's [Web Application Firewall](#) and were successful in thwarting these attacks," explains Kelly.

Delivering a Record-Setting Performance

When all was said and done, Akamai offloaded nearly 87% of site visits for the Pan Am Games and nearly 69% for the Parapan Am Games, serving a peak of over 1.6 million visitors on a single day. The Akamai network served over 10,000 requests per second during each day of the games and supported a peak of 22,000 requests per second. In total, Akamai delivered over 8 billion page requests and supported over 1 million unique visitors a day, all while maintaining an average global response time of under two seconds. "With Akamai by our side, we were able to pull off the games without a hitch, even as the sites were visited by a record number of people. We would have needed 10-50 times the amount of equipment we deployed to achieve anything close," concludes Kelly.

About Carbon60 Networks

Carbon60 Networks specializes in "end-to-end" hosting solutions for public and private sector organizations with business-critical IT workloads. Carbon60 has a "multi-origin" cloud hosting infrastructure which allows websites and applications to be hosted across geographically diverse regions around the world. Carbon60's solutions integrate robust, cost-effective development, quality assurance, staging, production, and disaster recovery services backed by a 99.99% SLA.



As the global leader in Content Delivery Network ([CDN](#)) services, Akamai makes the Internet fast, reliable and secure for its customers. The company's advanced web performance, mobile performance, cloud security and media delivery solutions are revolutionizing how businesses optimize consumer, enterprise and entertainment experiences for any device, anywhere. To learn how Akamai solutions and its team of Internet experts are helping businesses move faster forward, please visit www.akamai.com or blogs.akamai.com, and follow @Akamai on [Twitter](#).

Akamai is headquartered in Cambridge, Massachusetts in the United States with operations in more than 57 offices around the world. Our services and renowned customer care are designed to enable businesses to provide an unparalleled Internet experience for their customers worldwide. Addresses, phone numbers and contact information for all locations are listed on www.akamai.com/locations.