



Betfair

Citrix Application Delivery
for Entertainment

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Rorie Devine
CTO, Betfair

Key benefits

- Rapid response time improves the customer experience
- Instantly reduced broadband costs by one third
- Provided protection against DoS attacks
- Load balancing accommodates usage spikes during major events
- Built-in scalability for future growth
- Horizontal scalability enables 'zero downtime' expansion of network tiers

Betfair finds Web application optimisation a safe bet

Launched in 2000, Betfair is a leading online betting exchange with a unique business model based on the New York Stock Exchange. The UK-based company has pioneered a betting exchange where customers bet against each other, rather than the bookmakers, and can modify their positions during an event. With more than 645,000 registered users and more than 100,000 active monthly users, Betfair has the capability to process more than five million transactions a day, and hundreds of bets a second. The ultimate goal is to ensure that its betting platform is the fastest and most resilient available on the Internet.

Challenge: Improving platform robustness during peak periods

Betfair's popularity has dramatically increased. More than one billion bets were placed on Betfair's exchange in 2005, exceeding the total number of bets placed during its previous four years of trading. Betfair serves more than two billion page impressions per week. The company wanted to ensure its system could handle this growth in transactions and the resulting requirements for greater bandwidth.

Exponential traffic growth, spikes in traffic and user sensitivity to response times made Betfair's infrastructure challenge much more acute than that of other businesses. Rorie Devine, CTO, explained: "The pain points we experienced were on two fronts: growing rapidly to meet increasing popularity; and securing the trading platform from malicious attacks. We needed a solution that could compress HTTP traffic to manage bandwidth demand, and also protect both customers and the Web site from impaired service during rapid surges in traffic."

Implementing the Citrix NetScaler application accelerator

In 2004, Betfair selected the Citrix® NetScaler® System after evaluating a number of solutions. "The success of Citrix NetScaler with some of the largest Internet businesses in the world was a seal of approval," said Devine. "It had the proven scalability, reliability and support that we were looking for. The NetScaler appliance was the only product tested in Betfair's lab whose performance exceeded the manufacturer's claims."

Accelerates response times to match dynamic events

By the nature of its business, response time is a key internal metric at Betfair. "We operate one of the most time-sensitive applications on the Internet — our own betting platform," said Devine. "Where users want to modify their trading position as a horse goes over the last fence in the Grand National,

Networking environment

- Citrix® NetScaler® System (50 appliances)
- 2003 Linux RedHat server operating platform

the largest horse racing event in the UK, for example, a delay of a split second cannot be tolerated because by that point the race will be over.”

Thanks to the Citrix NetScaler capabilities in SSL termination and load balancing, no customer is denied the opportunity to place a bet during peak traffic periods. During the England versus Australia Ashes Test series in 2005 — the most prestigious test cricket series in the world — Betfair could accommodate the anticipated traffic growth as England took the lead and won for the first time since 1987. Citrix NetScaler surge protection capabilities support a smoother user experience. This enables Betfair to handle traffic peaks and ensure that customers receive a consistent level of service, whether they are placing a bet during their lunch break on a weekend football match, or during the last over of the Ashes at the Oval, when potentially thousands of punters are betting on the outcome of the match.

Reduces broadband costs by one third

Thanks to the Citrix NetScaler capabilities in SSL termination, Betfair has saved one third of its former bandwidth costs by deploying Citrix NetScaler. Devine said, “Betfair has succeeded in compressing HTTP traffic to such an extent that it has achieved a bottom-line saving of one third on its bandwidth costs. In a business shipping more than two billion page impressions a week, those savings are significant.”

Betfair has also been able to realistically scale the size of the Web farms, as SSL is offloaded onto the edge NetScaler tier instead of being processed at the Web servers itself. TCP multiplexing, another streamlining feature, means that the NetScaler appliances handle incoming TCP connections with clients on the Internet, resulting in an increase in Web server efficiency at the IP level — again, enabling realistic scaling of the Web and application tier and translating to a hardware cost saving.

Handles spike intensity and counters DoS attacks

Online gambling has a unique characteristic called ‘spike intensity,’ where a high percentage of all activity is concentrated on a single event for a finite period of time. For example, 75 percent of trades made in the same second may be on the same horse and in the same position. Managing these traffic/performance peaks requires leading-edge technology.

Citrix NetScaler provides surge protection to handle these spikes, with additional compression and load balancing to make sure that no one is turned away during peak traffic periods. “Crucially, it means that a user is not served an error message that the servers are unavailable when placing a bet,” said Devine. “These improvements have had a major financial impact.”

Provides faster response for real-time enterprise

Since Betfair’s revenue is directly related to how many bets it processes, response time is the critical internal metric. The benchmark of 99.1 percent of users being able to place their bet within one second was recently increased to 99.9 percent — a shift in performance that has a multimillion-pound impact on the bottom line. Devine said: “Citrix NetScaler is a great fit for the Betfair system. For example, Betfair can experience more than five million bets a day. A half a second decrease in processing time for these bets saves 694 hours, or 28 days, of elapsed time. It also frees up funds for customers to recycle on new bets.”

Managed growth thanks to scalable IT

By increasing its IT capacity, Betfair met its internal metrics of speed of response and availability. The 24x7 operation managed 100 percent growth in transactions and still achieved consistently high levels of availability. Citrix NetScaler helped it remain available and consistently responsive to its users in the face of a surge of popularity.

“Our ability to sustain this level of growth requires strategic planning, continuous innovation and meticulous execution to maintain our IT infrastructure,” concluded Devine. “We partner closely with our suppliers and employ the very best talent in the industry to push the boundaries of what is possible across a range of technologies. This approach has helped us to create an IT platform that delivers the speed and security required by our rapidly expanding customer base. Citrix technology has helped us on our journey to be the unassailable choice of the customer through the best value, service and protection.”

Applications delivered

- Betfair betting platform, an in-house-developed Java application
- Oracle DBMS Web application

About Citrix NetScaler

Citrix® NetScaler® optimizes the delivery of Web applications—increasing security and improving performance and Web server capacity. This approach ensures the best Total Cost of Ownership (TCO), security, availability, and performance for Web applications. The Citrix NetScaler solution is a comprehensive network system that combines high-speed load balancing and content switching with state-of-the-art application acceleration, layer 4-7 traffic management, data compression, dynamic content caching, SSL acceleration, network optimization, and robust application security into a single, tightly integrated solution.

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