



“Without BIG-IP LTM, we wouldn’t have had a business, to be honest.”

Jason Hoffman, CTO and Founder, Joyent

Leading Open Cloud Computing Provider Gets Three-Month Payback from F5 BIG-IP LTM and iRules

As an open cloud computing vendor, Joyent, Inc. has more than 25,000+ customers ranging in size from small developers to Fortune 500 companies. To provide flexible, highly scalable open cloud computing that is application-aware, Joyent chose F5 BIG-IP® Local Traffic Manager™ (LTM) as part of its core architecture at its cloud’s edge.

BIG-IP LTM has helped Joyent cut traffic to its back-end servers as much as 80 percent while offering customers dramatic, on-demand scalability to deliver their applications. Joyent has found that the BIG-IP LTM devices pay for themselves within three to six months and generate two to three times their investment over a two-year period.

Business Challenge

One of Web 2.0’s ultimate web services is cloud computing—super-scalable Infrastructure as a Service (IaaS). Joyent, Inc. has developed a fast-growing business and is especially known for its secure, enterprise-grade IaaS cloud that is application-aware and built on open source code and standards.

Joyent’s compelling value proposition has led to its explosive growth. For as little as \$45 per month, any one of Joyent’s more than 25,000+ customers can, on demand, tap into as many as eight CPU cores at once, 32 GB of RAM, and 10 Gbps throughput.

For little cost, customers get a virtual slice of a multimillion-dollar IT infrastructure, most of which is available to them if their applications need to scale quickly. So, without large capital outlays and any long-term vendor contracts, Joyent customers can host and scale their applications easily and cost-effectively, all with tremendous flexibility and business agility.

Typical of Joyent’s customers is Major League Baseball (MLB), with seasonal, Erlang-based applications that enable hundreds of thousands of fans to chat online at one

Overview

Industry

Information Technology

Challenges

- Scale application delivery on demand
- Provide customizable, application-aware architecture

Solution

- BIG-IP Local Traffic Manager

Benefits

- Up to 80% traffic reduction
- Virtually limitless, on-demand scalability
- Rapid payback in as little as three months

time. In the off-season, MLB.com just closes down the application. Hedge funds, a Joyent customer category all its own, use Joyent's open cloud to serve large-scale, Haskell-based applications. Joyent can also host applications based on Java, PHP, Python, Ruby, and Ruby on Rails, among others.

The customer that best illustrates Joyent's scalability is LinkedIn, which hosts its wildly successful Facebook application Bumpersticker on Joyent's IaaS. The largest Ruby on Rails application ever, Bumpersticker grew to more than one billion page views a month within two months after launch.

Behind this kind of dynamic scale and capability are "Joyent Accelerators," a range of virtualized servers and virtual data center architectures. According to Joyent CTO and founder Jason Hoffman, his company needed much more than load balancing to manage these servers and all the various traffic generated by its many customers. Because customers use Joyent's open cloud to deliver applications, Joyent's architecture needed to be application-aware.

"We needed load balancing," he explained, "but we also needed an application server platform capable of fully abstracting virtual IP addresses (VIPs) from the virtual hardware resources. We also needed some kind of flexible programming to help us architect our network so that it's application-aware and capable of being optimized for specific customer requirements."

Solution

Hoffman evaluated other alternatives before choosing F5 BIG-IP Local Traffic Manager (LTM) Application Delivery Controllers. "I looked at everything in the market and tried everything, and there was nothing like F5 BIG-IP LTM, especially when it comes to deep packet inspection and iRules," said Hoffman.

"BIG-IP LTM is the only Application Delivery Controller capable of scaling to handle the thousands of back-end systems Joyent needs to thrive," he added, noting that Joyent load-balances thousands of instances of web and application servers. "Without BIG-IP LTM, we wouldn't have had a business, to be honest."

Joyent deployed active/passive pairs of F5 BIG-IP LTM devices in front of its Joyent Accelerators, which are built on a custom distribution of OpenSolaris. These operate within a network environment based on Force 10's super-fast and highly reliable core switches and routers.

In addition, Hoffman was impressed with the BIG-IP LTM application-inspection feature through its universal inspection engine. He found that the iRules™ event-driven scripting language added a powerful complement of capabilities. "Application connection inspection like what BIG-IP LTM provides is simply not available anywhere else," he said. "With a simple iRule that might be just five lines long, we can scrub out data like Social Security or credit card numbers with virtually no impact on performance."

Joyent also uses iRules' powerful yet simple scripting capabilities for quickly and easily developing traffic regulations and security policies. "For security, it's better than any hardware-based firewall I can put in front of a customer's accelerator," he said

Benefits

Hoffman noted that BIG-IP LTM and iRules have been the foundation to Joyent's business of providing cost-effective, highly scalable cloud computing to its customers. "There's nothing like BIG-IP LTM," he said.

Up to 80% traffic reduction

iRules' programming flexibility and precise application delivery control have enabled

Joyent to provide a computing cloud that is application-aware. Hoffman noted, "iRules ended up becoming a critical component for scaling the LinkedIn app to the billions of page views it invokes each month...we fired those up and pretty much 80 percent of the traffic diminished immediately."

He explained that the BIG-IP LTM devices processed five short iRules one billion times for each page request that came in and the devices' CPU graph stayed flat. In effect, by sitting on the edge of the Joyent open cloud, BIG-IP LTM takes the load off the application and servers, enabling them to focus on serving non-repetitive requests. This makes it possible to keep applications up and running while giving application developers breathing room to work on enhancing the scalability of their applications.

On-demand scalability

Hoffman said that Joyent's cost-effectiveness is not as much a value to its customers as is the flexibility Joyent's open computing cloud provides, thanks in great part to BIG-IP LTM. "Value emerges in how Joyent can give customers the ability to scale up and down based on business needs," he explained. "You can go from a 2 Mbps application to a 10 Gbps Top 50 website pretty much on-demand, but without a long-term contract or having to rewrite your application for our open cloud." With BIG-IP LTM operating at the edge of its open cloud, Joyent can offer its customers virtually limitless scale.

Rapid payback in as little as 3 months

Determining a specific return on the investment is difficult, according to Hoffman, because the Joyent open cloud has so many components. But he estimated that inside a two-year timeframe, Joyent generates revenues equal to 200 to 300 percent of its BIG-IP LTM investment. "Typically," he said, "in a three-to-six-month period, BIG-IP LTM devices have paid for themselves."

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

