

F5 Networks Builds Resilient, Predictable Network Core with Force10 Networks

Customer PROFILE

Customer
F5 Networks

Industry
Networking Solutions

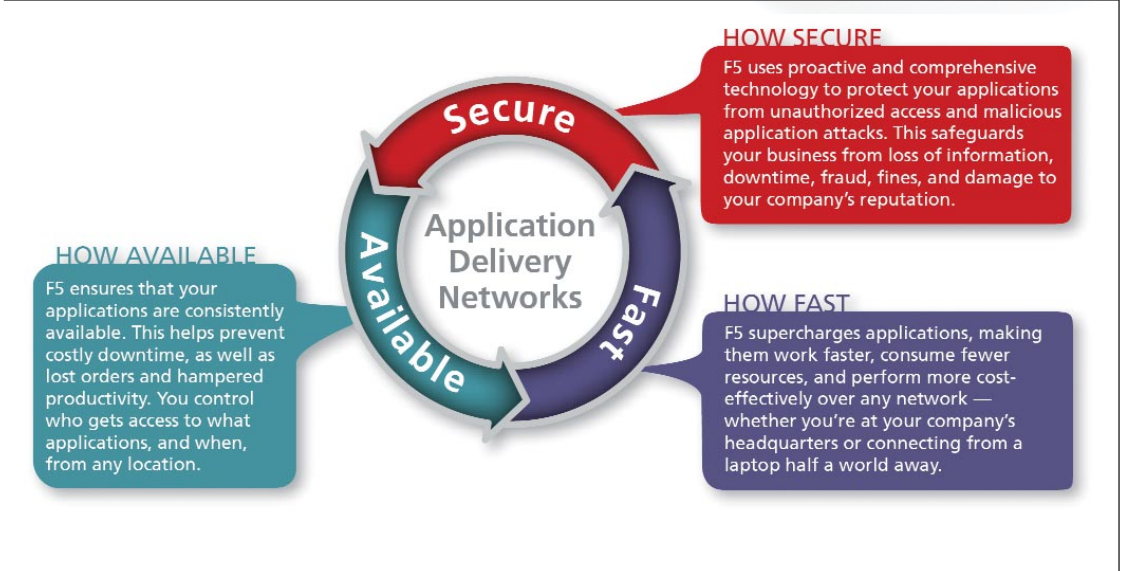


Application
Campus Backbone

Highlights
F5 Networks upgrades its campus network with the Force10 TeraScale E-Series to support a demanding R&D environment while scaling to accommodate sustained growth over the long term.

“With Force10’s TeraScale E-Series, we can count on consistent performance, regardless of how the network is loaded.”

John Matthews
Vice President of
Information Technology,
F5 Networks



If anybody understands the benefits of optimizing IT infrastructure, it's F5 Networks. As the leading provider of application delivery networking solutions, F5 knows that high availability and consistent application performance are crucial to business operations. F5 commands over 50 percent share of the application delivery controller market according to industry analyst group Gartner – success fueled by the company's innovation and strong execution.

As a leading technology firm, F5 needs an IT infrastructure that can support both a demanding research and development environment and rock-solid business processes. To meet these requirements and sustain continued growth in a non-disruptive fashion, F5 knew it needed a stable, scalable network core. So, when it came time to upgrade its campus network, F5 looked for best-of-breed devices and turned to the Force10 Networks TeraScale E-Series family of switch/routers for its ability to reliably and cost effectively support a decade of growth.

"Our business depends on the delivery of top-notch products," says John Matthews, vice president of information technology at F5 Networks. "We need a network that's invisible to users and behaves the same way whether

engineering is testing a new code release or a department is collaborating on a large customer presentation. With Force10's TeraScale E-Series, we can count on consistent performance, regardless of how the network is loaded."

Stability = Performance + Reliability

In revamping its campus network, F5 deployed two Force10 E600s in its core. Each E600 has seven line card slots, which can be configured with a mix of up to 336 line-rate Gigabit or 28 line-rate 10 Gigabit Ethernet ports. F5 is leveraging this high density to connect some 300 servers to the backbone with 10 Gigabit Ethernet uplinks to the wiring closet and distribution switches throughout the campus.

Force10 has optimized the E-Series line cards, switch fabric, backplane, central processor and operating system to process terabits of traffic at line-rate speeds in a reliable, predictable fashion. The E600, for example, features a 900 Gbps non-blocking switch fabric with a forwarding capacity of 500



F5 Networks Builds Resilient, Predictable Network Core with Force10 Networks

Customer PROFILE

“We wanted three things in a core — stability, scalability and manageability. And that’s what Force10 has delivered.”

John Matthews
Vice President of
Information Technology,
F5 Networks

million packets per second. By opting for a non-blocking architecture, F5 has ensured its network is never oversubscribed and performance is consistent regardless of network load or system features.

"We look at network stability across two broad dimensions — predictable performance and reliability," says Matthews. "Oversubscribed ports lead to bottlenecks during spikes in traffic and potential irregularities in application performance, so a non-blocking core and high availability are very important to us. On each of those fronts the Force10 E-Series has delivered."

F5 performed extensive in-house evaluation of core switch/routers from multiple vendors, selecting Force10 for its superior combination of reliability, scalability and overall functionality. To ensure high availability, F5 deployed the Force10 E600s as mirrored systems using the Virtual Router Redundancy Protocol (VRRP), one of many resiliency features of the system.

Designed for carrier class switching and routing, the Force10 E-Series has a combination of redundancy, availability and serviceability features to maximize network uptime. For example, the E-Series has a patented three CPU architecture in which switching, routing and management functions run on distinct processors. This fully distributed, multiprocessor design protects each control plane process, containing a fault in one control plane without impacting other system-level performance. For F5, this translates into greater network efficiency and productivity by eliminating unplanned downtime.

Furthermore, all key systems in the E-Series are redundant, including the route processor modules (RPMs), switch fabric modules and power. Non-stop switching and routing functionalities are guaranteed through hitless failover, providing an additional layer of performance reliability within F5’s network.

System-wide environmental monitoring and persistent configuration synchronization enable FTOS, the Force10 real-time operating system, to detect, report and correct faults with a

minimum of system interruption. Serviceability features include hot swapping of all key components, cable management and front-side access to all cabling and cards to minimize mean time to repair. Collectively, these features simplify network management and maintenance for F5, enabling the company to focus on what it does best – innovating application delivery solutions.

Scaling with Growth

Along with stability, the scalability of the Force10 E-Series was another critical selling point for F5. By leveraging the high density of the E-Series, F5 will be able to extend the life of its network to upwards of seven years, reducing change management and other long-term costs of network ownership.

"We’ve been experiencing incredible growth and could potentially add new campuses over the next five to ten years," notes Matthews. "Ripping out and replacing network gear every few years isn’t an option. With the Force10 E600s, we feel confident we’ve achieved our goal of building a core with a seven-year life cycle."

In addition to sheer port capacity, F5 is taking advantage of other scalability features in the Force10 E600, including 802.3ad Link Aggregation with LACP, which allows IT to increase effective bandwidth by trunking multiple ports together. Likewise, F5 will be using 802.1p/Q VLAN Tagging to make the most efficient use of its bandwidth.

The Force10 E-Series supports simplified management with SNMP and an industry standard command line interface, making the platform easy to configure and manage – another selling point for F5.

"The scalability of the E-Series, coupled with its ease of management, means our total cost of ownership is lower than with other solutions we considered," Matthews says. "We wanted three things in a core – stability, scalability and manageability. And that’s what Force10 has delivered."



Force10 Networks, Inc.
1440 McCarthy Boulevard
Milpitas, CA 95035 USA
www.force10networks.com

408-571-3500 PHONE
408-571-3550 FACSIMILE

© 2006 Force10 Networks, Inc. All rights reserved. Force10 and the Force10 logo are registered trademarks, and EtherScale, FTOS, SFTOS, and TeraScale are trademarks of Force10 Networks, Inc. All other brand and product names are trademarks or registered trademarks of their respective holders. Information in this document is subject to change without notice. Certain features may not yet be generally available. Force10 Networks, Inc. assumes no responsibility for any errors that may appear in this document.

CP29 506 v1.2

[PAGE 2 OF 2]