



## U.S. FEDERAL GOVERNMENT AGENCY

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Lead Architect, Systems Integrator

# Government Enterprise Virtualizes Server Technology and Boosts Performance with F5 Solutions

A systems integrator specializing in major IT projects for the federal sector was asked by a large government customer to create a consolidated, standardized, and centrally-managed server and storage platform in a virtualized environment. To address the customer’s requirements, the systems integrator redesigned and re-engineered the architecture, deploying solutions from a number of hardware and software vendors, including F5.

With F5 BIG-IP Global Traffic Manager, BIG-IP Local Traffic Manager, BIG-IP WebAccelerator, and VIPRION Application Delivery Controllers, the government agency is able to ensure high availability for applications and support a stable and secure virtualized infrastructure.

### Business Challenges

Federal and state government agencies continue to look at server virtualization as a way to standardize and consolidate systems, increase efficiency, and maximize the value of IT investments. F5 works with government clients to meet organizations’ evolving IT needs while support cost-saving initiatives.

The managing partner of a leading government systems integrator has worked within the government IT community since 2000. When one of its large government

agency clients decided to create a virtual server environment, the agency contracted with him to be its lead architect and engineering manager.

The original charter was to virtualize the agency’s infrastructure. The current infrastructure was not supported by standardized architecture components, experienced availability issues, and lacked key requirements to maintain reliable service capabilities—including backup and disaster recovery capabilities.

## Overview

### Industry

U.S. Federal Government Agency

### Challenges

- Standardize and modernize infrastructure
- Stabilize platform and service capability
- Increase system and data availability
- Reduce TCO for IT service and support

### Solution

- BIG-IP® Local Traffic Manager™
- BIG-IP® Global Traffic Manager™
- BIG-IP® WebAccelerator™
- VIPRION®
- F5 Professional Services

### Benefits

- Standardizes infrastructure and centralizes management
- Enhances performance for higher availability
- Increases system and service efficiency and reliability
- Saves resources and costs

The systems integrator's job was to stabilize the current environment, which included multiple worldwide data centers and multiple silos. Optimizing the IT infrastructure and streamlining the business processes used in managing the agency's resources were also important. The analysis resulted in a plan to restructure the previous deployment methodology and develop a consolidated, standardized, and centrally-managed server and storage platform.

Primary objectives of the project were to implement infrastructure technology and processes, and enable enterprise server and storage infrastructure as a service (IaaS) hosting capabilities within the enterprise. To meet the agency's goals, the solution would need to provide a flexible, performance-based infrastructure to meet mission requirements and increase data protection.

"This was not just solution delivery; it was also process development and influencing further organizational change to bring about additional efficiencies," the lead architect explains.

## Solution

The systems integrator team began by partnering with the storage team. The first six to eight months of the project were spent building out the baselines. "We modified the baseline infrastructure in a lab environment to create the engineering lifecycle pipeline," the lead architect explains. "With more effective solution upgrades, we could mitigate risk and increase data center capacity through consolidation."

The project team successfully aligned different vendors in order to manage the customer's expectations and deliverables, working with more than 20 independent hardware/software vendors on the solution. "As lead architect, I try to find ways to integrate technologies—so they can do what they do best—while minimizing any conflicts of interest among vendors," the lead architect says. Among the top vendors for the project was F5, which maintains a

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number of technology partnerships with leading industry players.

For the agency, the systems integrator started with F5 BIG-IP Application Delivery Controllers. Explains the lead architect, "We needed to achieve high availability and reduce our downtime for patch maintenance and other activities for our client. And we needed a disaster recovery capability for active/active and active/passive scenarios at the key facilities."

The systems integrator deployed F5 BIG-IP Local Traffic Manager (LTM) and BIG-IP Global Traffic Manager (GTM) as part of the solution set. BIG-IP LTM is an Application Delivery Networking system that provides intelligent load balancing, high availability, and application health monitoring capabilities for distributed architectures. BIG-IP LTM consolidates security, acceleration, and availability in an easily manageable platform. The solution also takes advantage of F5's TCP compression and SSL offloading features for optimization.

BIG-IP GTM efficiently monitors infrastructure and application health, and it controls a distributed infrastructure according to business needs. BIG-IP GTM provides a more intelligent way to respond to DNS queries than simple load balancing among multiple data centers.

The systems integrator distributed BIG-IP GTM, BIG-IP WebAccelerator, and BIG-IP LTM. "We scale up and down where

necessary, depending on the network bandwidth, and use a pair of F5 VIPRION Application Delivery Controllers in one of our core data centers," says the lead architect.

## Benefits

The systems integrator produced a standardized and commonly certified infrastructure for the government agency. The platform is bundled into one certification package, achieving full certification in the security realm. With F5 technology, the federal agency's infrastructure performance has improved.

To address the agency's needs, the lead architect introduced BIG-IP LTM clusters that consisted of virtual and physical assets, and started to scale those infrastructure components horizontally. "While the solution was not completely virtual, it got us closer, and has eased the transition to complete virtualization over the last three years," he says.

He continued, explaining that time to market has been reduced from months to mere days for deploying and optimizing popular applications, such as Microsoft Exchange and SharePoint. "Our time to market has decreased tenfold thanks to F5's comprehensive lab work and detailed guidance for deploying and optimizing popular applications. "Much of the work is done ahead of time on our behalf."

F5 deployment is generally easy with reduced time to physically install devices. "With the F5 infrastructure, we can take advantage of virtual environments to successfully and efficiently roll out applications and services—it's one appliance set that you drop in and it works." He also appreciates the combination of the F5 hardware and software capabilities for optimization, noting that other product sets that are primarily software-driven are more likely to have capacity issues.

Because the team for the project is small, the systems integrator works with two full-time F5 consultants for the project. "The team pretty much designs, develops, creates, and integrates all of the applications."

According to the systems integrator, other federal agencies are currently looking at ways to merge their environments to create more collaborative enterprises. The lead architect says, "The benefits of collaboration would help eliminate duplicate infrastructure components, eliminate unnecessary IT purchases, and enable efficiency gains through shared resources." With F5 solutions, administrators have the ability to partition resources, making this kind of collaboration possible without sacrificing security or control.

The F5 infrastructure enabled the systems integrator to implement an IaaS approach for virtual server and storage resources, helping its federal client move forward with confidence. "With F5 solutions, we can continue incorporating virtualization technologies into our deployments to consolidate and optimize our clients' IT infrastructures," the lead architect says.

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