Unified Application and Data Delivery

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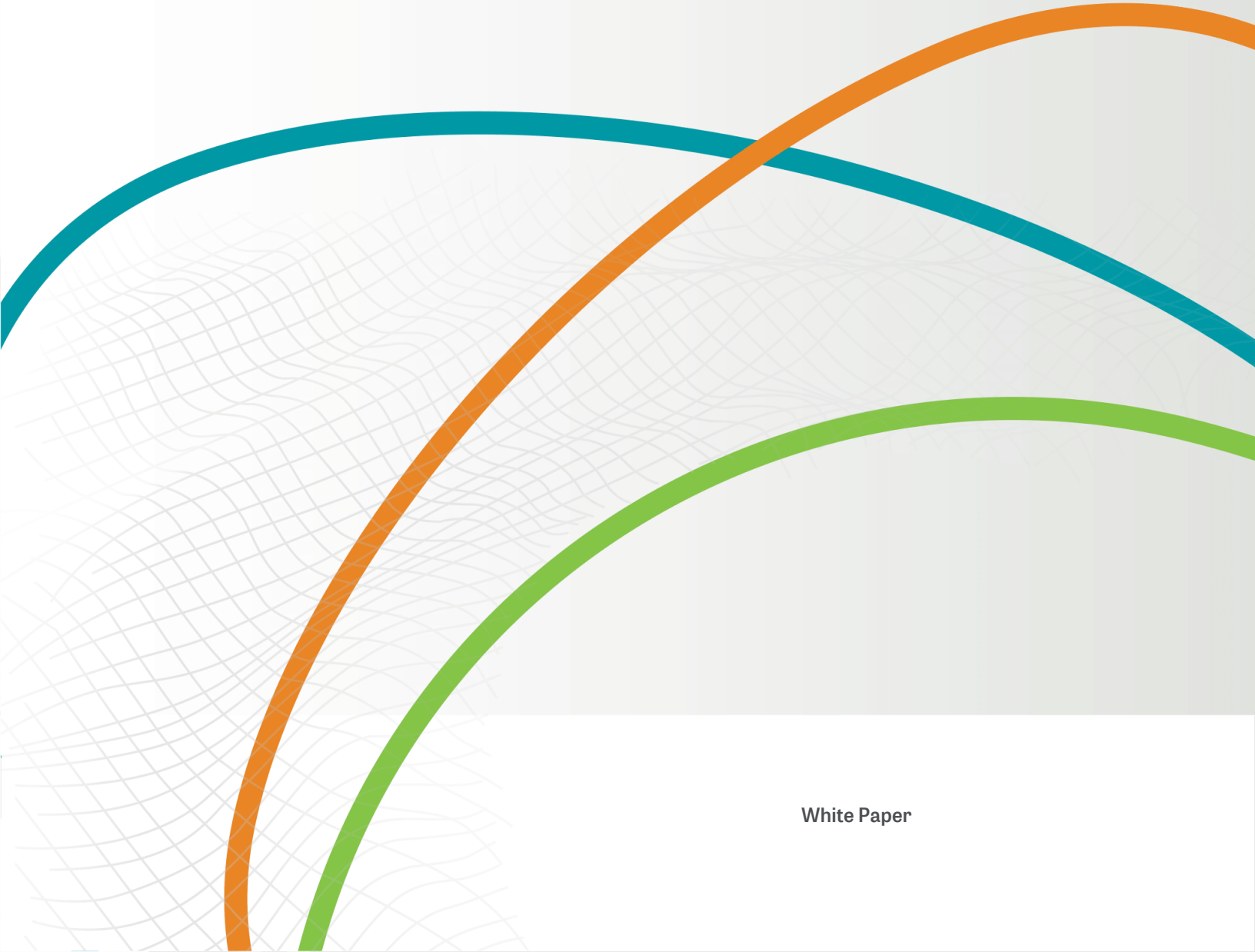


White Paper

The Vision

For every problem that arises out of the dust left behind as new technologies and application deployment models emerge, a new solution is born.It is often the case that these solutions take the form of purpose-built hardware devices that focus on solving some particular problem associated with application delivery.

WAN optimization, for example, was born from a need to improve the delivery of applications over low-speed, high-latency WAN links as opposed to high-speed, low-latency LAN links. An entire industry has grown up focused on improving user experience when accessing applications over very slow, bandwidth constrained connections. Similarly, application acceleration remains a focus of many of today's point solutions, with integrated caching and protocol-specific optimizations designed to improve the performance of ever-increasingly complex web applications.

Making a difficult situation worse is the increase in diversity of clients. No longer is it simply a matter of supporting one browser or three, it is now necessary to understand and support a wide variety of user devices from phones to BlackBerries to game consoles. Today, virtually anything that can be networked will be, and not only will it likely be capable of accessing web applications but its users will almost certainly demand the ability to do so.

It became apparent years ago that the problems being solved all had one thing in common: applications. It also became apparent that if organizations continued to deploy point solutions to address every specific issue arising from new technology, deployment models, and applications that data centers would be heavily weighted with racks of solutions. These point solutions certainly solved the technical problems associated with delivering applications, but introduced complexity, rising costs, and additional management overhead that could not be recovered.

As we stand upon the precipice of yet another major shift in computing models and technology, it is increasingly important to note that our parachutes (budgets) are not nearly as full as they once were. Diving into new technology without the right safety net today, in a constrained economic environment, is certainly suicidal for any business. The right safety net always has been, and continues to be, a unified and adaptable Application Delivery Network: a platform upon which application delivery-focused solutions can be deployed and managed without incurring additional costs that are often inversely proportional to the value realized from deploying each solution.

Unified

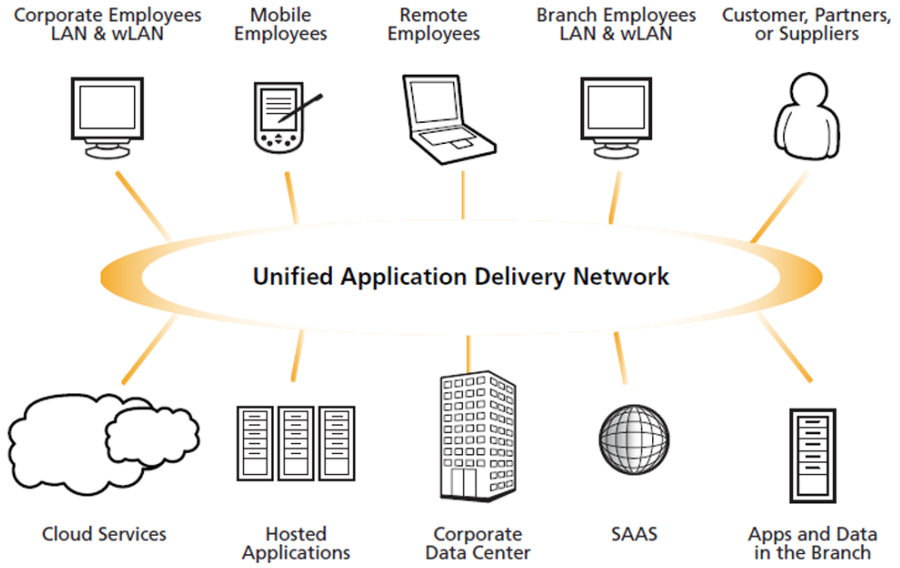
It is often the case that the term “unified” evokes the image of a “god box”; a single device capable of performing myriad functions in one appliance. This is not, however, how F5 has seen and continues to see the unified Application Delivery Controller.

Since the introduction of BIG-IP v9, F5 has been focused on unifying application delivery onto a single platform. This has not necessarily been for the purposes of allowing customers to deploy a “god box” with all application delivery functionality executing on that device, but for the purposes of providing a single platform on which all application delivery functionality can be deployed. The ability to deploy multiple solutions on the same platform—albeit likely on different hardware platforms—simplifies the administration of such solutions because the core platform is the same.

The concept of a unified application delivery platform is not dissimilar to that of an application server platform such as Java EE or .NET. Both platforms provide a common administrative and deployment framework that reduces the costs associated with management. This is because the underlying system is the same even though many different applications will be deployed on that platform, spanning many different hardware servers.

A unified application delivery platform provides a common base on which additional functionality can be deployed in a modular, easy-to-manage way. While it is certainly possible to run multiple functionality modules on the same hardware platform, it is not always feasible or desirable to do so. The flexibility provided by a unified platform enables the organization to determine how best to physically and logically deploy application delivery functionality such that the highest benefits are immediately realized out of the investment.

Through the years F5 has continued to innovate and develop new application delivery modules, all deployable on its core TMOS™ technology. It is the ability to deploy new products and features onto TMOS as a platform that makes it possible to execute on the vision of a unified application delivery platform, and is the very foundation on which BIG-IP v10 is built and delivered.



BIG-IP v10 delivers on the promise of a single, unified application delivery service platform through the integration of application delivery-oriented solutions into its core delivery platform. The BIG-IP system has always been capable of providing a single platform on which acceleration, security, access management, and optimization is unified. BIG-IP v10 takes that unification a step further by introducing WAN Application Delivery Services.

Combining BIG-IP v10 LTM with WAN Application Delivery Services unifies delivery of applications by optimizing, securing, and accelerating them regardless of whether they are delivered via the WAN or LAN. WAN Application Delivery Services takes advantage of new features such as iSessions™ and combines them with extended functionality such as L7 rate shaping and Quality of Service (QoS) as part of a unified Application Delivery Network solution all running on F5's integrated services fabric, TMOS. The unification of application delivery solutions on a common, integrated platform provides consistency in administration and configuration tasks. It also greatly reduces the time and effort required to deploy and maintain the solutions necessary to address the myriad application-focused issues that arise in existing and emerging application architectures.

Adaptable

While a unified platform is appealing in itself, the current trend toward dynamic environments—whether in the public or private cloud—and virtualization require more than just a unified platform. Successful initiatives based on dynamic virtual environments require that the network and application delivery infrastructure be just as dynamic and adaptable as the applications and architectures it is supporting.

Financial pressures are driving businesses to do more with less and consolidation has never been a higher priority than it is today. Consolidating an application delivery infrastructure, however, has often resulted in a loss of flexibility as difficult choices are made on which pieces of infrastructure are truly necessary and which ones incur more overhead and cost than provide value.

BIG-IP v10 addresses the problems associated with consolidation by offering the flexibility to manage and maintain a single, unified platform without introducing the overhead costs associated with managing multiple devices. Its unified management and administration capabilities mean there is no need to learn new device-specific command line interfaces (CLI) or graphical user interfaces (GUI).

Adaptability means more than just management and configuration, however, and BIG-IP v10 delivers on its oath of an adaptable, flexible application delivery infrastructure. BIG-IP v10 does this through its ability to be integrated and automated via a standards-based, service-enabled control plane API—F5 iControl® —and new features providing increased flexibility in configuration of how BIG-IP devices manage resources.

Features such as Resource Provisioning—which enables the administrator to decide how much system resources (RAM and CPU) to dedicate to each product running on the device—and Route Domains—features sometimes called "virtualization" that allow the creation of a hierarchal routing table that enables the use of isolated IP spaces with overlapping IPs—increase the flexibility of F5's Application Delivery Networking platform and improve its ability to adapt to each unique environment.

With the increasing focus on cloud computing and virtualization technologies, the ability of BIG-IP devices to be integrated with the rest of the application ecosystem is paramount for organizations to execute on new initiatives involving these emerging architectures. BIG-IP v10 continues to be the most adaptable Application Delivery Networking platform with its standards-based, service-enabled API, iControl. In addition to providing organizations with the ability to orchestrate and automate BIG-IP devices using iControl to realize their own consolidation efforts, F5 continues to expand on its strategic partnerships with application-focused vendors such as VMWare and Microsoft to provide turn-key solutions that enable an easier and less costly transition from a physical to a virtual infrastructure.

Intelligent

One of the hallmarks of Application Delivery Networking is the application intelligence of its solutions. Because Application Delivery Networking solutions are necessarily focused on delivering applications, such solutions must be application-aware. With an increased focus on application security and performance due to increasing demands by mobile customers and users, it is imperative that application delivery platforms be as application and data aware as possible. In addition, the deployment of new applications and new functionality must be as painless and cost-effective as possible.

As the complexity of applications has increased with the advent of new application development and deployment models such as Web 2.0, virtualization, and cloud computing, the delivery of those applications has also increased in complexity. F5 BIG-IP v10 simplifies the process of securing and optimizing common applications such as Microsoft Outlook Web Access, Microsoft SharePoint, SAP ERP, and Oracle by codifying its application expertise into templates, simplifying the configuration of BIG-IP v10 for specific applications. Templates encode application intelligence into pre-configured policies spanning a variety of F5 application delivery modules such as BIG-IP WebAccelerator and BIG-IP ASM as well as the core solution, BIG-IP® Local Traffic Manager™ (LTM), requiring very little guidance from administrators in order to optimize BIG-IP v10 for the secure, reliable delivery of these applications.

BIG-IP v10 continues to improve on F5's flexible, intelligent network-side scripting technology, iRules™, in order to provide an adaptable, programmable method of extending the intelligence of the unified platform for custom solutions. There is no single prescriptive architecture followed by every organization, which necessarily means that every organizational environment is unique. No single Application Delivery Networking solution could hope to address all the issues that might arise from such diversity, requiring instead that a flexible, intelligent method of extending the security and optimization features be available. iRules fulfills that role and realizes the vision of an adaptable application delivery infrastructure by providing the means by which the core application delivery platform can adapt to any environment and changes in that environment over time.

This adaptability is extended with support for new protocols like SIP (Session Initiation Protocol) and an increased awareness of traditional web applications that provides additional capabilities to manipulate, transform, and secure applications at the edge of the network. The ability to inspect and manipulate application data at the edge of the network is paramount to centralizing security and implementing agile solutions that deal with unanticipated changes in the environment, applications, users, and network.

Summary

With trends pointing toward consolidation and cloud computing, the need for an adaptable, efficient application delivery infrastructure is more important than it has ever been. F5 recognizes the benefits to a unified, consolidated Application Delivery Networking solution and continues its push toward providing a single, integrated platform with BIG-IP v10. The introduction of WAN Application Delivery Services onto the core BIG-IP platform unifies system management as well as traffic management and reduces the number of devices and management touch-points required to ensure the fast, secure, reliable delivery of applications across multiple network environments.

The enhancements and new features available in BIG-IP v10 continue to deliver on F5's vision of a unified Application Delivery Networking solution. The move toward an adaptable dynamic infrastructure being driven by financial and emerging technology pressures cannot be achieved without many of the innovative new features available in BIG-IP v10.

By providing a unified Application Delivery Networking platform, F5 BIG-IP offers the ability for organizations to adopt a single platform for all its application delivery needs. Adopting an organizational standard for application delivery can reduce management and administrative costs and improve the ability of the organization to migrate smoothly from traditional to emerging application architectures, and address the unforeseen issues that always arise in the wake of the introduction of new initiatives.

When the dust settles from the latest explosion two things will be very clear: a plethora of new problems have arisen along with the technology, and BIG-IP v10 has what it takes to solve them.

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