



F5 White Paper

F5 BIG-IP v10

The unified, adaptable, manageable Application Delivery Controller has arrived...and it's a "Perfect Ten."

by Lori MacVittie

Technical Marketing Manager, Application Services



Contents

Introduction	3
<hr/>	
Unified	4
Symmetric adaptive compression	5
iSessions	5
<hr/>	
Adaptable	5
Resource Provisioning	6
Route Domains	6
Pre-Parsed Classes	6
<hr/>	
Manageable	6
Remote Authentication	7
Dashboard	7
Templates	8
Centralized Request Logging	8
<hr/>	
Summary	9



Introduction

Looking back over the evolution of application delivery from its roots in load balancing to its current status as half-network, half-application infrastructure, it is, like hindsight, easy to understand how and why the evolution occurred. Application-specific problems that could be addressed by an intermediary eventually were, leading to a more application-aware device than its load balancing forbearers. When more flexibility and intelligence was introduced into the application delivery platforms of yesteryear, the more value these platforms provided for both IT and the business alike.

As applications have increasingly moved to web-based delivery systems, it became apparent that traditional network-oriented problems such as latency, bandwidth, and transport-layer protocol management were not so easily separated from the applications themselves, which were being delivered over the network. The behavior of an application and the protocols over which it was delivered—the size and type of data, even the operating system and environment in which the applications were deployed—had an impact on the network, and vice versa.

Solutions appeared quickly to deal with the flood of emerging problems; bandwidth management, bandwidth reduction, caches, web acceleration, security, and storage solutions all became necessary components to a successful web application deployment.

But as is the case with treating any illness, the cure was almost worse than the disease. Every additional solution added to the infrastructure increased the complexity, the cost of management, the time to deploy, and the potential security risks involved in deploying and delivering applications over a network. Latency increased, available bandwidth seemed to decrease, and meanwhile applications grew more complex as the web environment edged toward the apex of being as rich as its client-server ancestors.

Just as IT was beginning to figure it all out, along came new models and trends and a new financial environment. Consolidation, cloud computing, and virtualization are having a major impact on the face of the data center—reducing options in some areas and opening new doors in others. The face of IT is about to change yet again if it is to survive the chaotic environment in which we currently deploy applications, which means so must the network and application delivery infrastructure.



The timing could not be better, then, to introduce F5's newest and most innovative application delivery solution yet—the most adaptable, unified, and manageable application delivery solution to date: F5® BIG-IP® version 10.

Unified

Web applications were, at one time, confined to the web. The complexity involved in delivering applications over the web was confined to difficulties in supporting differences between the major browsers.

Today, the explosion of possible clients combined with user profiles and transport mediums is overwhelming. The need to manage access and delivery policies based on type of user (contractor, customer, and employee), medium of access (DSL, LAN, wireless), and device (laptop, BlackBerry, iPhone, mobile, desktop) makes what was once a simple process a complex interconnection of flowcharts and spreadsheets.

The number of point solutions in both data centers and wiring closets is rapidly expanding in an attempt to manage the increasingly complex combinations of how to connect a user to the best resource given the conditions and factors that exist **right now**. Yet distributing the responsibility for optimizing and securing applications defeats the very important goals of consolidation and reduction in overall costs to deploy and manage applications.

BIG-IP v10 offers a platform for unified application delivery services that understands the context of the user, network conditions, and resources available at the time the request is made. It brings the end-to-end intelligence necessary to extend the data center out into the cloud and the branches, enabling secure, accelerated delivery of applications with regard to the specific context in which the application must be delivered.

BIG-IP v10 delivers on the promise of a single, unified application delivery services through the integration of application delivery-oriented solutions into its core delivery platform. BIG-IP devices have always been capable of providing a single platform on which acceleration, security, access management, and optimization is unified, but BIG-IP v10 takes that unification a step further by introducing WAN Application Delivery Services comprising L7 Quality of Service (QoS), adaptive compression, and F5 iSessions™—all on a single, unified application delivery solution.



Symmetric adaptive compression

Symmetric adaptive compression provides optimization, acceleration, and data reduction for any TCP traffic through symmetric compression between BIG-IP devices. Additionally, compression levels increase and decrease based on changing network conditions and CPU utilization to ensure appropriate compression levels for maximum application performance.

iSessions

Any two BIG-IP devices can be deployed symmetrically to enable data to be optimized, encrypted, and optionally tunneled. iSessions can be combined with symmetric data de-duplication, CIFS acceleration, or other functionalities to create a traditional WAN optimization deployment such as hub and spoke, fully meshed, bridged, one-armed, or WCCP. Only BIG-IP devices offer the flexibility to combine WAN and LAN application delivery services in a unified solution.

Adaptable

While a unified platform is appealing in itself, the current trend toward dynamic environments—whether in the public or private cloud—and virtualization requires 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.

Since the introduction of BIG-IP v9, F5's view of the application delivery infrastructure has expanded to include flexibility and the ability to adapt to the unique environment of each organization's data center and application ecosystem. BIG-IP v10 continues to improve upon previous implementations by adding new functionality designed to enhance its existing capabilities related to network and application-oriented adaptability.

Resource provisioning, route domains, and pre-parsed classes all expand the existing flexibility of the BIG-IP system, providing the means by which each implementation can be adapted to meet the unique needs of the IT and business environment.



Resource Provisioning

BIG-IP v10 enables the user to decide how many system resources (RAM and CPU) to dedicate to each product running on the device. For each provisioned product module, the user can select how to allocate resources: dedicated, nominal, minimum, or none. This enables granular control of the resources to better tune BIG-IP devices to meet each customer's specific needs.

Route Domains

Route domains is a group of features sometimes called "virtualization." Route domains create a hierarchal routing table that generates segmented routing tables that can be managed as "parent" and "child." Within these you can have isolated IP spaces with overlapping IPs. A single BIG-IP device can support multiple customers, applications, or segments without conflicts.

Pre-Parsed Classes

F5 iRules™ are capable of maintaining and manipulating tables and lists for a variety of uses, including access rights and session persistence. The ability to pre-parse and pre-load these tables and lists enables BIG-IP v10 to perform lookups in iRules more efficiently and improves the performance of iRules that require large tables and lists. "Pre-parsed classes" provide the ability to take advantage of the flexibility of iRules for a wider array of solutions, without sacrificing efficiency or speed of processing.

Manageable

IT has always been budget conscious, but with the current strain on the economy IT is being pushed to consolidate not only technology but all types of resources. This requires technology to be more manageable and provide the means to enhance productivity rather than inhibit it.

BIG-IP v10 is full of enhancements and new features designed to improve its manageability and the productivity of those tasked with managing BIG-IP devices. These include integration with existing authentication systems, at-a-glance dashboard monitoring capabilities, and a lengthy list of F5 Application Ready Solution templates designed to make deployment of popular applications such as Microsoft Outlook Web Access, SharePoint, SAP ERP, and VMware VDI a simple task. These



enhancements and features are designed specifically to reduce the time required to deploy, while ensuring the secure, reliable, and fast delivery of applications.

The improvements to BIG-IP v10 that support manageability extend into the application delivery process. BIG-IP v10 provides new monitoring capabilities like inband monitoring. Inband monitoring helps reduce the volume of traffic on the network and the burden on servers imposed by using valuable resources to respond to health checks. By passively monitoring application exchanges, such as data flows, through the BIG-IP system to determine status, capacity, and data pertinent to load balancing decisions on performance and availability, BIG-IP v10 improves server efficiency, capacity, and performance.

Remote Authentication

BIG-IP v10 can be integrated with existing external LDAP, RADIUS, or TACAS authentication systems. This integration removes the need to manage a BIG-IP device as a separate system, and can improve productivity by streamlining the business processes required to provision and de-provision access rights to BIG-IP devices.

Remote authentication system integration also reduces the effort involved in deploying new BIG-IP systems, as identity and access management is provided by an existing identity management system. This leads to reduced errors, decreased administration time, and improved accounting and auditing processes as access to the BIG-IP system is managed from a centralized source.

Dashboard

BIG-IP v10 includes a new graphical reporting engine accessible from the BIG-IP GUI to display real-time historical stats by the hour, day, week, or month. The dashboard reports statistics on CPU and memory usage, connections, and throughput in an easy-to-read graphical view.

Additional module-specific performance statistics are also available. In addition to real-time stats, historical trending reports can be viewed by hour, day, week, or month.



Templates

In the past, a vast library of application-specific knowledge regarding the configuration of BIG-IP devices has existed in Application Ready Solution guides. While these guides have enabled customers to rapidly configure BIG-IP for specific applications to achieve the highest levels of optimization, performance, reliability, and security, this has been a manual process, consuming time and resources.

In BIG-IP v10, the configuration expertise contained in the Application Ready Solution guides have been included as templates, greatly simplifying the process of creating virtual servers, pools, profiles, monitors, iRules, BIG-IP WebAccelerator™, and BIG-IP Application Security Manager™ (ASM) policies germane to a specific application.

These templates require minimum information from an administrator in order to rapidly and easily configure BIG-IP devices with the appropriate parameters needed to optimize a BIG-IP deployment for specific applications. In BIG-IP v10, the following templates will be available:

- Oracle WebLogic 5.1 and 8.1
- Outlook Web Access 2007
- IIS 7.0, SharePoint 2007
- Oracle Application Server 10g
- SAP ERP 6.0 and ERP 2006
- VMware VDI

Centralized Request Logging

BIG-IP v10 introduces the ability to configure all BIG-IP systems to log URL requests to an external logging server. A simple iRule provides the functionality, and its use across multiple BIG-IP deployments enables the creation of a centralized, accurate log for all traffic.

Centralized request logging further reduces the administrative effort involved in analyzing logs, as all pertinent information can now be accessed within one single log.

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. The unification of WAN and LAN in a single device is paramount to reducing costs associated with application delivery.

The enhancements and new features available in BIG-IP v10 make this one of the most exciting new releases of an Application Delivery Controller in many years. The move toward a unified, adaptable dynamic infrastructure cannot be achieved without many of the innovative new features available in the new version of the BIG-IP system and the enhancements to its manageability make BIG-IP v10 more efficient than ever.

There are many more exciting new features and improvements in BIG-IP v10 than can be detailed here. For more information on BIG-IP v10 and a complete list of all its new features and enhancements, visit F5's website: www.f5.com.

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

