



I D C V E N D O R S P O T L I G H T

A 'Swiss Army Knife' Approach to Optimizing Application Performance

October 2011

By Adeline Phua, Adrian Ho, Naveen Hedge, and Surjyadeb Goswami

Sponsored by F5 Networks

An application-centric world is emerging and as more organizations get onto the cloud, IDC believes that the use of applications will only increase. The focus on driving productivity, efficiency and security across the enterprise has pushed application delivery and performance to the forefront of priorities. Enterprises and service providers will need to adopt solutions to roll out and manage applications with ease, as well as look into ways to defend against potential security attacks. This IDC Vendor Spotlight examines how enterprises and service providers can tap on next-generation application delivery solutions to increase the availability of applications to end users. We also take a closer look at the latest software version of the F5 BIG-IP product family and how the new technology advancements meet the requirements of CIOs and LoBs in the Asia/Pacific region.

Trends Driving a Rethink of Application Delivery

Organizations today depend on a slew of application software to run their business — from email, office productivity suites and database management, to financial accounting and other enterprise software such as enterprise resource planning and customer relationship management. For CIOs and their teams, their ongoing challenge is to ensure that applications are delivered to users wherever they are and whenever they need it, with the best user experience. Ensuring application delivery and performance is, therefore, a key business issue and priority.

Below are several trends that are driving the need for a rethink of current approaches to application delivery:

Say Hello to an Application-Centric World

IT departments face a host of challenges as they deliver applications to remote or regional offices as well as extend these applications to employees on a variety of devices, including smartphones and media tablets. According to IDC's Asia/Pacific Communication Study 2010, the top two issues experienced by branch offices with regards to applications are a slowdown in data-sensitive business applications and poor performance in Web-based applications. Such issues will continue to be a key concern as more organizations in the region consider moving more applications to the cloud. Almost 50% of the 928 enterprises which were polled in May 2011 for IDC's Asia/Pacific Cloud Computing Study are either using, or have plans to adopt cloud computing by the end of 2011, and largely for the purpose of making business applications accessible online. Enterprises realize that the performance and availability of cloud applications can impact user experience and, in turn, revenue.

Extending the Security Imperative

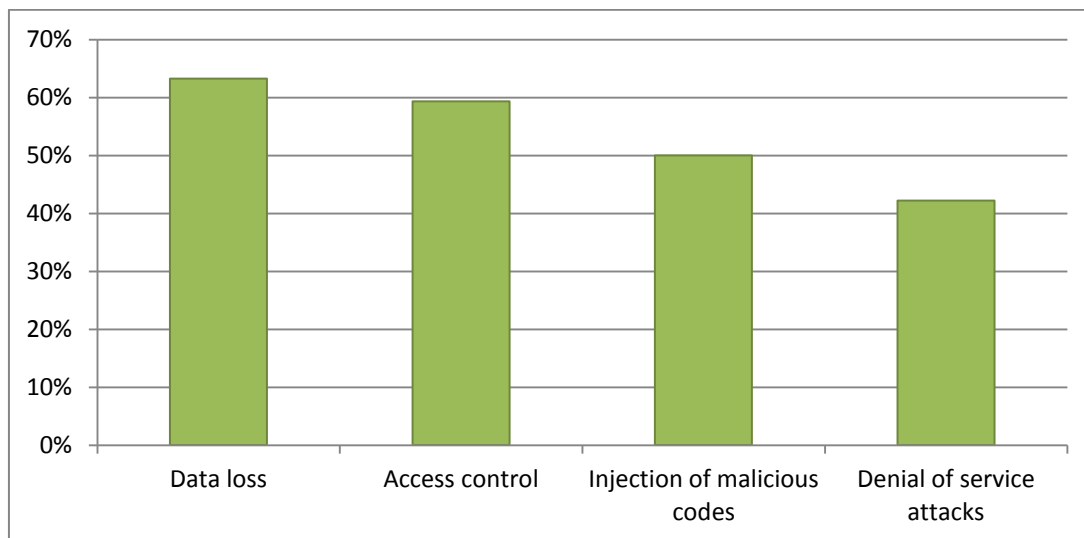
As more applications get rolled out across the enterprise, ensuring the security of data is also part and parcel of the application delivery strategy. Enterprises have to prepare for possible attacks at the application layer, as we were reminded recently. In March 2011, there was news of a high-profile denial-of-service attack (DDoS) which struck several Web sites in South Korea, including the country's financial regulator, the Financial Services Commission. Such attacks are

increasingly becoming a norm in Asia/Pacific, with financial institutions and government organizations the preferred target. The nature of the attacks is also changing from being network-centric to targeting enterprise applications and online business sites. This reinforces the need to look at new ways to manage security in an increasingly application-centric world.

According to a recent IDC Asia/Pacific Security Survey, more companies are implementing a formal, documented security policy and taking steps to establish a more sustainable approach to address the risks posed by the growing number and complexity of security threats. Data loss and access control are among the key threats that organizations expect to face in the next 12 to 18 months, as shown in Figure 1.

Figure 1

Top Security Threats in the Next 12 to 18 months in APEJ



(% of Respondents)

Source: IDC, 2011

Enter the Gen Y and Z Mobile Workforce

Workplaces across the Asia/Pacific region are waking up to the needs of their Gen Y and Z employees. The key characteristics of this breed of workers are their high propensity to be connected to the Internet, their level of comfort with technology, their global thinking, and need for instant gratification. According to an April 2011 report by the Economic Intelligence Unit, most of the countries in the Asia/Pacific region which reported high single-digit percentage GDP growth rates, such as India, Vietnam, Indonesia, Philippines and Malaysia, have over 50% of the population belonging to this group. The remaining countries in the region, which includes PRC and Australia, have over 30% of Gen Y and Z comprising the total population but are set to grow to the 50% range by 2020. As this group enters the workforce, they introduce a new culture which organizations will need to adapt to:

- Organizations need to create an environment where employees are able to access confidential information via personal devices.
- IT managers need to put in place a new layer of security as employees bring and use personal devices behind the firewall.

- With an increasingly mobile and decentralized workforce, organizations need to rethink their IT strategy and consider tools like access management to meet the needs of the global worker.

Desperately Seeking IT Agility

According to IDC's APEJ C-suite Barometer Survey conducted in February 2011, close to 60% of the 506 CIOs and 505 LoBs who were surveyed plan to invest 10%-30% more this year in information and communications technology (ICT) compared to 2010. In line with continued technology investments, IT departments will need a flexible, adaptable infrastructure that is able to support staff, applications and data to meet the demands of today's fast-changing business environment. The need for IT agility becomes more critical if it directly impacts a company's top and bottom line. IDC believes that as business analytics moves up the corporate agenda and as enterprises understand how such tools can help them gain a competitive advantage, a foundation which supports efficient and stable delivery of applications will take centerstage.

Impact of Virtualization and Cloud

IDC's research shows that virtualization and cloud technologies continue to be hot investment areas, as organizations in today's fast-changing business environment strive for greater business agility, scale and cost-efficiency. However, these technologies are both a boon and a bane, because they place higher bandwidth demands on the WAN. This puts IT departments under pressure to overcome bandwidth limitations and maintain application performance and user productivity without compromising security, risking packet loss or suffering latency. Both service providers and enterprises alike will have to address new challenges such as effective application management, bandwidth hogs, and interoperability of applications with their operating systems, and security.

Confronting the Rising Application Performance Challenge

Until networks are designed to be more application-centric, management of applications will continue to be a challenge for most organizations. As outlined in the trends section, the time has come for network designs that can respond to change and support the needs of the organization.

With the multiple features that application delivery technology brings to the table, it is not surprising that some organizations compare the new generation of application delivery solutions, particularly the application delivery controller (ADC), to the multi-purposed "Swiss Army Knife," but only better as it can utilize all functionalities in a single instance.

IDC believes that the new generation of application delivery solutions can be leveraged to align with the new market terrain to help enterprises gain efficiencies and a competitive edge.

Application Delivery Answers Call for Control and Intelligence

As we move into an application-centric world, where more applications are being relied on as essential, everyday tools and as content gets more decentralized, the role of application delivery solutions to optimize performance and efficiency becomes clearer. Application delivery enables enterprises to support the surge in the number of applications and meet growing bandwidth demands with ease.

Application delivery technology today goes beyond traditional load balancing; users benefit from the richer feature set which allow for effective application delivery through application intelligence and agility in the enterprise and service provider environment. Solutions today include features which enable deep packet inspection, compression, caching, connection pooling and persistence, application layer security, SSL offload, and content switching on top of traditional server load balancing.

Application delivery technology offers several key benefits which meet the needs and challenges of today's organizations:

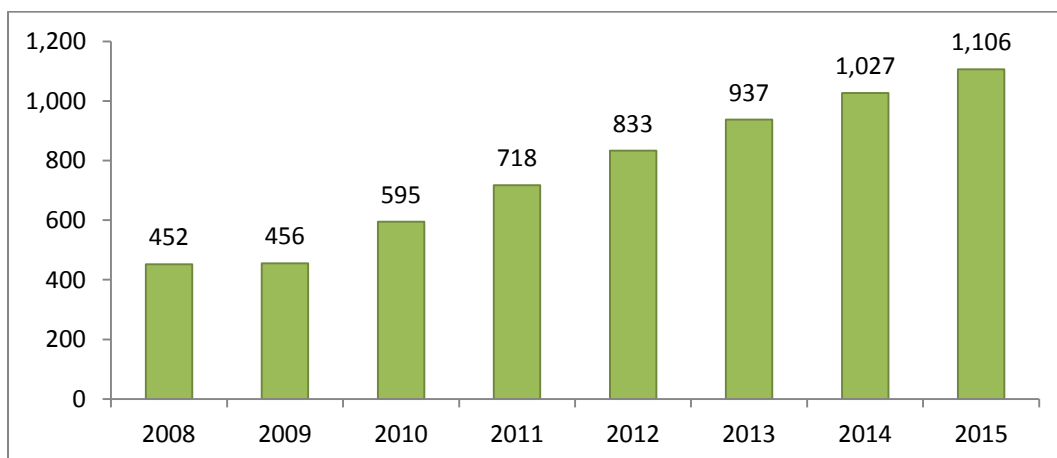
- **Enhanced performance through high availability:** An application delivery controller can be architected and configured to ensure high availability, whether it is between application delivery controllers, or through management of traffic to servers.
- **Improved efficiency by leveraging the right technology:** Benefit from increased efficiency as traffic gets routed to the server that is optimized to perform the selected service. In addition, caching and compression capabilities allow for more effective use of bandwidth.
- **Increased flexibility in content management:** By adopting application delivery solutions, enterprises have the flexibility to offer differentiated services and bandwidth management. Enterprises also gain the flexibility on the content's physical location; there is no need to centralize content on a single server or in a single datacenter.
- **Added management capabilities to improve operational efficiency:** Efficient use of resources by having a single point of control to manage SSL certificates, and for basic security such as policy management, mitigating DOS attacks, and filtering out attack signatures. It is not a one-size-fits-all solution; it might be more efficient to run the application directly on the server in some cases, and the ADC can be managed to allow for such instances.
- **Improved ease of use through added intelligence:** With connection persistence, users will find usage of the application, which might drag over multiple transactions, more user-friendly as the application retains the "memory of the previous interaction." Content-based server health checks can be performed.

Application Networking on a Growth Path

Application networking technology is on a growth trajectory in APEJ, driven by the WAN application delivery and datacenter switch demand in the market, as shown in Figure 2. The investments today mainly stem from countries such as Australia, China, Korea, Singapore and India. The potential for further growth is strong as more enterprises are consolidating data centers, engaging in cloud computing, and utilizing applications. The first adopters are typically service providers, finance, government or education, although enterprises in other verticals are also beginning to explore such solutions.

Figure 2

APEJ Application Networking Market Forecast (End-User Revenue in US\$M)



Source: IDC's Application Networking Tracker, 2H2010

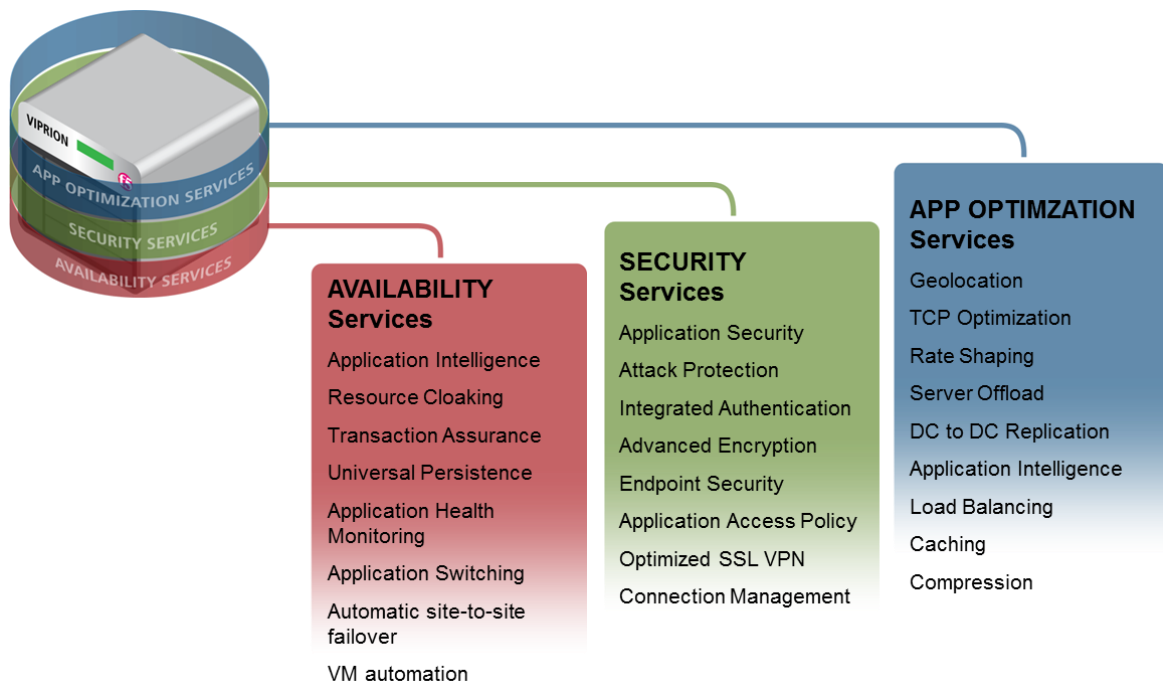
Role of F5 Networks

F5 Networks (F5) is an IT infrastructure vendor that specializes in application delivery, and continues to lead the application delivery controller space with 44% market share, according to IDC's APEJ Switch and Router Tracker, 2Q11. Governed by its vision that agility is the key to success for any business, F5 focuses on helping organizations create a flexible, adaptable and scalable infrastructure that is fluid enough to adapt to the changing business environments.

The BIG-IP product family offers a variety of application delivery services ranging from the traditional load balancing, SSL offload, Web acceleration with dynamic caching, to application security, and access control (see Figure 3).

Figure 3

F5 Application Service Delivery



Source: F5 Networks, 2011

Understanding BIG-IP v11

The BIG-IP system is built on TMOS, the same software platform on which the family of F5 application delivery networking products are built. Catering to the user's need for scalability and customization, with focus on managing application services instead of objects and devices, the latest release, F5 BIG-IP software version 11, has several advancements:

No need to jump through hoops – easy, speedy deployment

iApp, introduced with the BIG IP v11 software release, acts as a platform that drives automation and provisioning as well as application-level visibility and reporting. Sitting on top of the iApp platform are templates which are the "pot of gold" behind the platform. As of October 2011, F5 has over 20 iApp templates designed for users to deploy common enterprise application from vendors such as Microsoft, Oracle, and SAP with ease. These templates act as a wizard guiding administrators through configuration, management, and policy control of enterprise applications in a language that not only a dedicated application administrator would understand, making it much easier for any IT personnel to manage deployment of new applications within the organization. In addition to the templates, iApp Analytics, an integral component of the iApp functionality provides detailed visibility and reporting on application performance and end-user experience.

Collective application management

A feature within iApp allows for collective application management, where resources associated with the application get grouped for the administrator to apply traffic management with ease, reducing deployment time, minimizing human errors with centralized management of workflows. By managing application services instead of objects and devices, users can easily configure their network for application fluency when there are changes in their application configuration over time.

Informed decisions with visibility at your fingertips

There can be multiple points of failure in the network, be it the entire device, blade, or application service. F5 introduced iApp Analytics, another integral component of the iApp functionality to provide detailed visibility and reporting on application performance. iApp Analytics help organizations monitor the performance of applications by presenting various types of data collected at the application level via an intuitive user interface. Administrators can use the information collected to automate provisioning systems to ensure applications are always available and to pre-empt possible failures by sharing the load between F5 device groups. In addition, the iApp Analytics module will allow customers enhanced visibility into their network and application behavior. This level of visibility enables informed decision-making possible when it comes to additional IT investments, return on investment (ROI) as well as capacity planning and trouble-shooting.

Growing beyond the power of one

The F5 vision is to create a platform that encourages enterprises to create templates and share them with other users through its DevCentral community portal, creating an ecosystem of iApp configurations. Enterprises can also engage the F5 partner ecosystem to develop new iApp templates, creating services opportunities for F5 partners. If done successfully, this will be a strong differentiator for F5 in the application networking controller market.

Setting and owning the pace

It is increasingly challenging for organizations to get budgets approved; therefore, there must be a business case linked to ROI, and over-provisioning is not an option. IT managers need to be mindful to ensure that any network architecture must be designed to scale with ease. IT managers will appreciate the ease of virtual and physical scaling of F5 equipment with the Virtualized Clustered Multiprocessing (vCMP) solution and the ScaleN technology. F5's ScaleN technology brings a new level of innovation to the application delivery industry by enabling application services to failover between physical or virtual ADCs, thus helping customers to maximize their investments while providing maximum availability. CIOs will welcome the move to an opex-friendly model with the new offerings. Moreover, with iApp policies being portable between F5 devices, organizations can set their own pace as scaling up is straightforward and quick.

Security across layers

Organizations can never be too prepared for cyber-attacks, whether on the network, data or application. As attacks become more sophisticated, organizations need to progress beyond point solutions such as network firewalls, intrusion detection/prevention systems, as a counter measure. F5's enhanced security solutions will be welcomed by enterprises as they can address multilayer attacks through combined network security, application security and access control which are appropriate in physical, virtual or cloud environments. It also provides protection against complex multilayer attacks by integrating security services from Layer 2 through Layer 7, and by using intelligence and context to apply the appropriate set of security measures for each threat. Keeping to the design philosophy of the F5 BIG IP software version 11, that there must be ease of manageability, iApp also allows security policy configuration to be shared across multiple sites and devices. In addition to the multilayered network and application security, F5 solutions

can also help protect against DDoS attacks by offloading DNS services to the BIG-IP platform. This not only helps increase the performance and scalability of the enterprise DNS infrastructure, but also helps in consolidating DNS servers for cost savings.

Opportunities and Challenges

Growing the menu of iApp Templates

As of October 2011, the pool of over 20 initial iApp templates is limiting. To increase the draw even further, F5 needs to continuously grow this pool of iApp templates, whether through tapping on enterprises, or investing in developing more templates in-house. This is particularly important for applications which are rising in popularity. The onus is also on F5 to test templates to ensure the end user's experience with the templates remains positive.

Showing the BIG-IP V11 value to new users of F5

F5 must demonstrate the benefits of BIG-IP v11, particularly to non-F5 users. It will be easy to convince C-level executives of the technology benefits, such as the pay-as-you-grow approach to win them over; however, F5 also needs to put in effort to secure the buy-in of another important group. These would be network managers who have to deal with the increased complications, at least in the short term, especially if it is a point replacement and not a network refresh or upgrade. Nonetheless F5 generally has a good working relationship with network managers using F5 gear, and F5 just needs to change the minds of network managers to consider the long-term benefits such as manageability and portability of workflows that can be reaped with the migration to F5 products.

The opponent is the stack in the cloud game

Large networking players are building their stack to create a compelling story for cloud adopters. From the end user's point of view, there are generally two schools of thought. The first is the inclination to work with a vendor to provide an end-to-end solution. This helps cut down the number of suppliers and is an efficient way to get into the cloud, and more importantly, there is interoperability between equipment across the stack. The second school of thought is where end users actively choose to work with specific vendors for the various pieces to build a cloud, giving them the freedom to work with the best in class in each category from servers, storage, to application networking. F5 is only a chapter in this story, and if end users choose to go with the second school of thought highlighted above, it is to their benefit. However, to reach customers who prefer the option of an end-to-end solution provider, F5 need to focus on building partnerships not only with the software players but other vendors building the stack, if it wants to get into the datacenter and cloud game.

Conclusion

The mood across the Asia/Pacific region, where much growth opportunities lie, remains upbeat but cautious amidst the global economic uncertainties. Budgets will get approved if the business case for the technology investment can be justified. IDC believes application delivery ranks up there along with other next-generation technology investments as it rides on the datacenter and cloud wave.

With the rise in the number of applications in organizations and the increased bandwidth demands on the network, application deployment, management and availability will no doubt grow in importance with time. IT departments will need a flexible, adaptable infrastructure that is able to support staff, applications and data to meet the demands of today's fast-changing business environment. F5's application delivery solutions are a welcome solution that is well-placed to address today's business requirements for seamless access to information and applications with greater control and flexibility.

A B O U T T H I S P U B L I C A T I O N

This publication was produced by IDC Go-to-Market Services. The opinion, analysis, and research results presented herein are drawn from more detailed research and analysis independently conducted and published by IDC, unless specific vendor sponsorship is noted. IDC Go-to-Market Services makes IDC content available in a wide range of formats for distribution by various companies. A license to distribute IDC content does not imply endorsement of nor opinion on the licensee.

C O P Y R I G H T A N D R E S T R I C T I O N S

Any IDC information or reference to IDC that is to be used in advertising, press releases, or promotional materials requires prior written approval from IDC. For permission requests, contact the GMS Asia/Pacific team at +65.6829.7757 or gmsap@idc.com. Translation and/or localization of this document requires an additional license from IDC. For more information on IDC, visit www.idc.com.sg. For more information on IDC GMS, visit www.idc.com.sg/gms

IDC Asia/Pacific, 80 Anson Road, #38-00, Singapore 079970 P.65.6226.0330 F.65.6220.6116 www.idc.com.

Copyright 2011 IDC. Reproduction without written permission is completely forbidden.