An Application-Centric Approach to Digital Transformation

March 2016

Adapted from Market Analysis Perspective: Worldwide Datacenter Trends, 2015 by Richard L. Villars, Matthew Eastwood, Jennifer Cooke, and Kelly Quinn, IDC #258853

Sponsored by F5 Networks

As enterprises evolve to the 3rd Platform of IT, they will reap many benefits and face many challenges. Meeting the rapid pace of business and taking control of the customer experience must be balanced with keeping assets secure as the enterprise perimeter expands or dissolves altogether. This Technology Spotlight describes the digital transformation to the 3rd Platform, how cloud computing is the cornerstone of this evolution, and the overall impact of cloud on enterprise IT. It also discusses the benefits of IT integration through application-centric services that ensures consistency in the delivery of services from both on-premises and cloud datacenters. In addition, the document provides a description of F5 Networks’ application delivery networking solutions and offers some advice to enterprises looking to work with application services providers.

Introduction

In just a few short decades, IT has embedded itself into nearly every aspect of people’s business and personal lives, fueled by 3rd Platform technologies including mobile, social business, cloud, and big data and analytics. Enterprises continue to adopt technologies and processes that are so tightly linked to their customers and markets that the boundary between the internal operations of the enterprise and its external ecosystem is rapidly disappearing. Business leaders are challenged to evolve their enterprises via digital business transformation, which employs digital technologies coupled with organizational, operational, and business model innovation to create new ways of operating and growing the enterprise.

Adoption of the 3rd Platform of IT is critically important. Thanks to technology and the use of mobile devices and social networks for business, the pace of change has reached hyperspeed levels. To stay in the game, enterprises need to respond to changing markets quickly. In addition, businesses need to take charge of the customer experience. Thus digital transformation to the 3rd Platform is imperative because it not only quickens the pace of innovation but also improves the collection, analysis, and exploitation of data so that enterprises can better meet market needs. IDC believes that enterprises will either become adept at digital transformation and thrive or fail to master the disciplines and struggle to survive.

The Critical Role of Cloud in Digital Transformation

The heart of digital transformation is cloud computing, in both internal and third-party datacenters. Cloud provides the platform for efficient IT operations by changing the business model for technology-led transformation. Public and hosted private clouds enable companies to innovate without the huge expense of new infrastructure and the risk of having redundant technology in the face of failure.
As enterprises look to deploy more applications in the cloud, they must evaluate the best model for each application’s needs. For example, while private clouds do not dramatically reduce computing costs, they provide the most security and control and the operational efficiencies of public cloud. Private cloud is a great fit for data-intensive applications in heavily regulated industries where companies must conform to standard practices, such as healthcare and pharmaceuticals.

On the other hand, public cloud is suited for applications that have variable resource needs, such as E-commerce, new gaming apps and test/dev environments. Most importantly, these applications are utilized by many users either inside or outside the organization. These applications often are standardized for many people or used for collaborative projects. In addition, enterprises are deploying more SaaS applications, which typically use the public cloud.

With hybrid cloud, organizations can take advantage of securing critical applications and data over private infrastructure while enjoying the economies of scale and accessibility for public-facing applications. Hybrid cloud enables companies to use applications that are tailored for different markets; enterprises can deploy based on regulatory compliance or public accessibility needs. Similarly, organizations can interact with clients over a public cloud but secure critical data over a private cloud. With hybrid cloud, applications are serviced via an outside provider or in-house accordingly.

The future state of IT will combine the use of IT resources that are deployed in the company datacenter with resources that are deployed through the cloud. By 2017, about 26% of all new business software purchases will be of service-enabled software, and SaaS delivery will constitute about 18% of all software spending and nearly 20% of application spending. But IDC believes that even with the rapid transition to public cloud software services, 80% of the G2000 will still have 75% of IT resources running onsite by 2017, which supports IDC’s belief that hybrid clouds in particular will play a major role in digital transformation.

**Impact of Cloud on the Enterprise and Its IT Environment**

The use of cloud computing as a business-critical technology is impacting how companies and institutions evaluate, procure, and deploy IT assets. However, the transition to cloud computing requires change throughout the organization — in people, process, and technology. IT departments will operate in an environment that is based on service delivery and more predictable expenditures, and organizations will gain ready access to IT resources at defined service levels and cost. Cloud computing will help many organizations meet many challenges as enterprises move to the 3rd Platform, including managing the unprecedented growth in data and related analytics efforts and meeting the pace of business change. In addition, enterprises can buy IT resources in a pay-as-you-go model, enabling fast deployment and technology/knowledge transfer through rapid application and service development.

While the benefits of cloud and related services are significant, so too are the challenges. Enterprises will need to readjust priorities as they adopt a more cloud-based IT model. Governance issues such as compliance still need to be sorted out. Budgets will need to be rethought as longer-term, expensive IT projects will be replaced by focused, iterative projects driven by business units with high demands for rapid return on investment.

For a growing number of IT organizations, hybrid cloud is a good description of the consequences of past and current cloud investments; however, it doesn’t describe the strategy they want to adopt going forward. IT organizations have a diversified portfolio of cloud services (on-premises and off-premises, SaaS and IaaS) on which their companies increasingly depend. They need to manage a growing range of assets in multiple internal and third-party datacenters. They are implementing a hybrid IT operations model with their own staff and their managed services providers. And there always will be the essential question of whether to use cloud and cloud services as a resource to patch “holes” in an IT portfolio or as a long-term sourcing philosophy.
But perhaps the greatest challenge for enterprises moving to a cloud- and SaaS-based IT environment is the integration of networks, applications, data, and other resources to establish consistent security across all systems and applications that enterprises create and use. Today, a typical enterprise runs a lot of its business workloads conventionally, on-premises, with known data integration requirements, endpoints, use cases, and data warehousing structures. As dependence on cloud increases and organizations are able to add more applications more easily, enterprises will struggle with how to sync their data, how to make sure the data is accurate, and how to ensure that they are following regulations and requirements. Further, they will need to prepare for internal and external audits.

In particular, security becomes an even greater challenge as traditional datacenter perimeters dissolve. Public cloud providers will deliver the basic infrastructure building blocks, but the availability and security service-level agreements (SLAs) they provide will be limited to the infrastructure or very basic application layer services with few assurances for applications. This shared responsibility model leaves securing the operating system and applications to the organization, so enterprise security will become even more of a priority for in-house IT.

The Benefits of IT Integration Through Consistent Application Services

With the growth in hybrid cloud deployments, organizations will demand that responsibility for delivering, integrating, and managing applications be shared between enterprise and service provider. Even when a problem is the service provider’s fault, the enterprise IT team still has accountability for maintaining services because that’s the reality. By deploying consistent application services and standard security policies across hybrid environments, IT can confidently deliver applications to users with the availability, performance, and security users expect.

But what does this entail? Consistency in application services enables all applications to work so enterprises can conduct business efficiently. From a big-picture view, this consistency is the epicenter of change in enterprise IT. It is the nexus of supporting functionality for big data, cloud migration, and real-time integration and will support critical transformations in the years ahead while enabling consistent security policies.

The goal of a consistent application services approach is to integrate all applications and associated data, networks, storage, and management — especially in software-defined datacenters and software-defined networks. These services can be delivered in multiple ways, depending on enterprise needs, including on-premises appliances or software or through cloud-based services. And there is a growing need for the consistent delivery of application services across all environments to match the rapidly diversifying set of cloud networks.

The benefits of cross-cloud consistent application services are significant:

- First is the availability of applications and associated resources across all enterprise platforms and networks.
- Second is performance. Application services, when applied in a centralized, consistent manner, ensure that users receive the performance and speed they need to conduct business.
- Third, and perhaps most important to enterprises adopting the 3rd Platform, is security.

A consistent, policy-based approach to application services enables enterprises to ensure a level of security (including centralized identity and access management) that matches their business and compliance needs.

As organizations deploy and migrate more applications to multicloud environments and increasingly deploy SaaS applications, consistent application services become more critical. IT departments can reduce complexity and increase operational efficiency by utilizing existing tools and skills across their
hybrid environments rather than managing a disparate set of tools and services from multiple cloud vendors. Furthermore, enterprises can avoid vendor lock-in and migrate applications across cloud environments as needed.

**Considering F5 Solutions**

F5 Networks is an international provider of application delivery networking solutions, based in Seattle, WA. The company’s hardware, software and virtual offerings are designed to help organizations meet the application and related infrastructure demands as they move to the 3rd Platform of computing. The company takes an application-centric approach to helping businesses manage cloud computing and keeping their assets secure. For many enterprises embracing mobile, social, legacy and cloud, the only consistency in IT is the applications used.

The heart of F5’s application-centric approach is the F5 BIG-IP platform based on the full proxy TMOS architecture, which provides enterprises with global applications services for DNS, federated identity, security, SSL management, optimization and application health and availability. BIG-IP solutions are delivered via hardware, software, as a service or a combination of all three. Hardware includes BIG-IP appliances or the F5 VIPRION modular chassis and blade system designed specifically for application delivery, security, and high performance. BIG-IP virtual edition software runs on a range of hypervisors and provides agility and fast deployment of services in cloud environments. And to meet the requirements of a broad range of enterprise needs, F5 offers three types of solution licensing: bring-your-own that follows an application’s use, on-demand utility billing, and subscription based.

F5 provides a breadth of applications services to meet hybrid cloud needs across private, public and SaaS environments. Enterprises can extend F5’s application services into private cloud deployments easily through integration with OpenStack (via LBaaS plug-in or Heat templates) and VMware technologies. F5 has also certified integrations with leading OpenStack providers, including Mirantis and Red Hat, to speed and simplify deployments.

F5 application services can also be deployed in leading public cloud environments including Amazon Web Services (AWS), Microsoft Azure, BlueLock, and Rackspace. Organizations can ensure the security, performance, and availability of cloud applications by deploying F5 BIG-IP with any F5 Ready cloud provider. The F5 Ready program makes sure that F5 BIG-IP virtual editions are compatible with cloud providers via an F5-driven verification process and flexible licensing and usage models.

With F5, enterprises can easily deploy the application services they depend on in the datacenter in the cloud. For example, customers can deploy new applications quickly in the public cloud with the same security policies of on-premises applications to meet business needs while mitigating risk. Enterprises can also take advantage of F5 security application services for SaaS applications. F5’s identity federation solution enables secure access to all applications including on-premises, cloud, and SaaS.

Enterprises can also drive greater agility and speed to market with F5 programmability solutions. F5 eases application deployment with templates allowing organizations to simplify, automate, and customize application services and traffic quickly and predictably. Organizations can also benefit from DevOps orchestration workflows via open standards APIs and integration with automation tools like Puppet, Chef, and Ansible.

**Challenges**

As a company that made its name in hardware appliances, F5 has made a strong commitment to deliver the same functionality/features in its cloud-based offerings. It has done so, but in such a
fast-changing market, F5 must constantly evaluate, update, and expand its portfolio of as-a-service products. To meet this level of commitment, F5 must continue to create partnerships and ecosystems with leading and emerging IaaS, PaaS, and SaaS providers.

F5 must also develop relationships with an emerging group of cloud facilitators. These organizations aren’t simply providers of hardware, software, or managed services. They enable their customers to fully leverage multiple cloud/datacenter options, assist with the network rationalization triggered by a shift to cloud, and ensure that organizations have data security and control practices. These companies will be critical adopters and accelerators of F5 solutions.

**Conclusion**

The advent of the 3rd Platform, especially cloud computing, has disrupted the enterprise in a good way. Traditional datacenter perimeters are dissolving as users access applications from a multitude of environments on a variety of corporate and personal devices. This digital transformation is enabling greater business agility and responsiveness to customer and market needs. To succeed, enterprises must offer comprehensive application services that can meet organizational requirements in hybrid environments spanning legacy infrastructure as well as private and public cloud. By doing so, enterprises can integrate resources to better manage the pace and complexity of technology needs.

But to meet changing needs in a 3rd Platform world, enterprises often must work with application services partners. As organizations look for solutions and services, IDC recommends they conduct an audit of resources to determine needs and desired approaches and then establish a set of core policies for application delivery, use, and security. As enterprises review product and service providers, they should ask the following questions:

- Does the vendor provide multiple approaches to application services to meet the needs of all aspects of a hybrid environment?
- Does the vendor offer both products and services to provide a full portfolio of application services?
- Does the vendor provide necessary security components to protect company assets appropriately?
- Does the vendor have relationships with multiple partners to accommodate a broad range of application needs?
- Does the vendor have a history of rapid adaptation to meet the fast pace of change in a 3rd Platform world?

The goal is to provide applications and associated resources across the enterprise — from the central office to branches to mobile workers — in an integrated, secure manner. Secure, centralized application management throughout the hybrid cloud network will give an enterprise greater ability to succeed in today’s digital world. To the extent that F5 Networks can overcome the challenges discussed in this document, the company has a significant opportunity with enterprises looking for a standard, consistent set of application services.

---

**ABOUT THIS PUBLICATION**

This publication was produced by IDC Custom Solutions. 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 Custom Solutions 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 or opinion about the licensee.
COPYRIGHT AND RESTRICTIONS

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 IDC Custom Solutions information line at 508-988-7610 or gms@idc.com. Translation and/or localization of this document require an additional license from IDC.

For more information on IDC, visit www.idc.com. For more information on IDC Custom Solutions, visit http://www.idc.com/prodserv/custom_solutions/index.jsp.

Global Headquarters: 5 Speen Street Framingham, MA 01701 USA P.508.872.8200 F.508.935.4015 www.idc.com