Doyle Research

Per Application Delivery Drives Multi-Cloud Migration

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Executive Summary

Organizations rely on the agility of their information systems to deliver high quality customer service and to provide appropriate tools to maximize employee and partner productivity. The typical IT environment has rapidly evolved towards a multi-cloud world where applications, data, and services are hosted in a variety of environments, including on premises data centers, service provider ecosystems and hyper-scale clouds such as Azure, AWS and Google. This has made it easier to take advantage of new platform delivery models such as infrastructure-as-a-service (IaaS), platform-as-a-service (PaaS) and software-as-a-service (SaaS). Despite the accessibility, IT leaders are still faced with the challenge of ensuring reliable performance and security of their workloads across multiple clouds while meeting bottom line cost requirements.

Application Delivery Controllers (ADCs) provide the intelligence to securely manage and route traffic to ensure an optimal user experience. In a hybrid or multi-cloud world, ADCs must evolve to support the deployment, visibility and security requirements across a highly-distributed application environment. ADCs need to be deployed across multiple cloud platforms with unified control and visibility to ensure that business intent and logic is being applied in a consistent way.

Evolving Data Center Requirements

The increased use of cloud-based applications has changed the way IT teams manage data center operations. IT must work with its business unit leaders to develop new applications (and maintain existing ones) on the "correct" platform for each critical workload. The best platform may be on-premises, a leading public IaaS provider or outsourced as part of a managed cloud hosting service. Each approach to the cloud has its own unique strengths and weaknesses as it relates to performance, security, application development, management tools,

and of course, costs. Many applications (legacy and some new) will never move off premises due to compliance/security, performance or cost concerns. Cloud use cases often center around shortening time to market of new services, just in time delivery and enabling applications to be brought into existence on demand. The traffic patterns associated with these business requirements vary from intermittent bursts in the case of eCommerce, continuous growth for traditional enterprise application deployments and on-demand availability for DevOps usage patterns. With this flexibility and agility comes the challenge of maintaining stability and delivering consistent application performance.

The challenge for IT is to efficiently manage this diversity of applications across each unique cloud environment, while continuing to provide application development and DevOps team with the necessary autonomy to keep the business growing. This might involve customized connectivity, automation and security profiles for each selected cloud implementation, or for each specific app workload. Technological advances in networking software, including ADCs, now enables IT to allocate data center and cloud resources to deliver the required performance and to be quickly reallocated to meet changing application requirements.

Per-Application ADC Functionality

ADC functionality has evolved to meet the challenges of the multi-cloud world. ADC features now can be flexibly delivered where and when they are needed. Application delivery resources are right-sized for the workload and can be dynamically adjusted to meet changing demands (e.g. seasonal variations). Per-application or per-workload ADC deployment means that each environment can be scripted, automated and secured in a customized manner for optimal operationally efficiency.

In a per-app environment, automation tools are critical to ease deployment challenges and to help adjust traffic flows as application characteristics change. New applications created on containers can be isolated from existing stable applications – supporting the "fail-fast" style of DevOp teams. New software ADC functionality removes many licensing restrictions inherent in traditional hardware-based platforms – providing flexibility for infrastructure operations teams to deliver ADC functions where and when they are needed with the appropriate capacity.

To ensure continuous application availability and performance customized workloads, the ADC must be delivered with elastic capacity. To support new multi-cloud applications, ADCs must be aligned with per-application deployment with new licensing and consumption model. Flexible licensing enables ADC functionality to be delivered with the agility associated with a just-in-time service model based on cloud operating principles.

Automation is also a core requirement to help improve operational efficiency. Simplicity of deployment and configuration management are critical across multi-cloud environments. ADCs are a central point of ingress and egress for application service flows and thus are a critical factor in the identification and the resolution of application performance issues.

The Kemp Per Application ADC Model

Kemp, based in New York City, is a leading global supplier of ADC software and hardware. Kemp provides its innovative application delivery solutions to a range of enterprise and service provider customers globally with the majority of the business focused on NAM and EMEA, and recent growth in APJ. The company has developed what it refers to as its application experience (AX) fabric under the name Kemp 360. This provides customers with a centralized management and application visibility framework that interconnects ADCs in multiple cloud and on-

premises environments. Kemp 360 is unique in the market by offering ADC visibility and analytics for third-party ADC products from F5, Nginx, AWS, and HAproxy. See Figure 1.

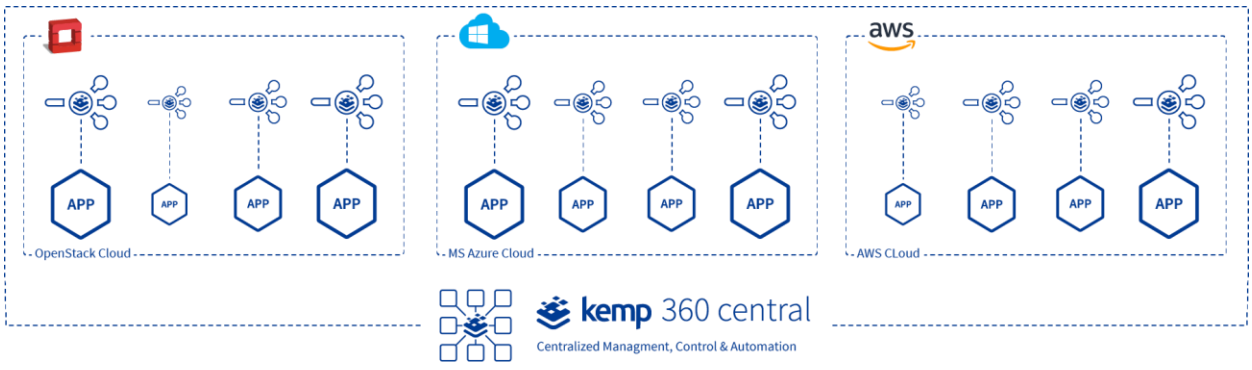
Kemp has coupled its innovations on the product side with a metered licensing model that provides capacity-based subscription pricing for its virtualized LoadMaster application delivery products. With metered licensing, the aggregate consumption across instances is the billing metric with no restriction on the number of instances deployed. With this approach, customers get charged for what's actually used as opposed to what's provisioned.

The benefits that Kemp claims of their AX solution include:

- Agility, with the ability to quickly deploy and scale on demand without the traditional cost implications
- Strong visibility and management better understand traffic flows and performance as well as pinpoint the root cause of application experience issues
- Automated deployment and customization via open APIs

Figure 1

Kemp Multi-Cloud ADC Architecture



Recommendations for IT Leaders

Business transformation is driving the mandate for data center transformation with the requirement for agile operations, improved quality of user experience for critical applications, and reduced costs. IT organizations require the ability to implement a multi-cloud strategy in which workloads (applications) can be deployed on (or migrated to) any cloud platform. The network to link this multi-cloud environment must to be highly reliable, secure, operationally intuitive, and cost effective.

ADCs provide the intelligence to securely route traffic to optimize application performance. In a multi-cloud environment, ADCs must provide the agility to rapidly (instantly) provision new workloads and adjust the network to new application requirements. ADC software must deliver improved automation and analytics as well as be customizable via open APIs and links to popular development tools.

Per-application ADC functionality provides infrastructure operations and DevOps teams the flexibility to optimize application delivery and ensure app security on a per-workload basis. This approach improves both performance and agility, while reducing costs through a metered licensing structure. Individual applications can be designed with the "right-sized" ADC functionality and capacity, eliminating under or over-provisioning of ADC resources. Varying levels of automation can streamline the deployment of load balancing and can facilitate the adjustment of capacity as application requirements change.

Meet the Author

Lee Doyle is Principal Analyst at Doyle Research, *providing client focused targeted analysis on the Evolution of Intelligent Networks. He has over 25 years' experience analyzing the IT, network, and telecom markets. Lee has written extensively on such topics as SDN, NFV, enterprise adoption of networking technologies, and IT-Telecom convergence. Before founding Doyle Research, Lee was Group VP for Network, Telecom, and Security research at IDC. Lee contributes to such industry periodicals as Network World, Fierce, and Tech Target. Lee holds a B.A. in Economics from Williams College.*

