How Multi-Cloud Application Delivery is Impacting e-Commerce Technologies

Trends, Priorities, and Plans for e-Commerce Providers
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As e-Commerce technology leaders face an exceptionally wide range of challenges. As digital transformation accelerates, they need to make complex technical decisions about application hosting, cloud resources, and form factors for their multi-cloud environment. In an intensifying threat landscape, it is essential to strengthen web application security and protect the organization against threats ranging from DDoS attacks to malware. With market trends and demand changing constantly—and rapidly—ensuring customer satisfaction must be balanced with cost control and operational efficiency.

To gain insight into the current state of multi-cloud environments in e-Commerce and their future directions, A10 Networks and Gatepoint Research conducted a survey asking senior technology decision-makers from various e-Commerce industries about current challenges, strategies, and practices.

Key takeaways include:

- **Growing pains in the cloud** – As e-Commerce businesses move to the cloud, top challenges include maintaining security and management consistency in multi-cloud environments.

- **Second thoughts (for some)** – A small but surprising number of organizations are repatriating some applications from the cloud to on-premises environments.

- **Reputational concerns** – While security threats come in many forms, e-Commerce businesses are especially focused on those with a potential to damage their public image, including defacement, hacking, and phishing.

- **Rising network traffic** – A large majority of e-Commerce businesses reported annual growth in network traffic—with spikes in demand emerging as a major issue.

As they look to the future, e-Commerce IT leaders continue to seek better ways to ensure simple, consistent, and efficient management across their multi-cloud environment.
TODAY’S E-COMMERCE TECHNOLOGY LANDSCAPE

The survey found e-Commerce businesses rely on a mix of environments to handle steadily increasing traffic.

Healthy Traffic Growth for Most Organizations

The number of devices in use continues to grow rapidly, as does the amount of traffic they generate. Eighty-six percent of respondents are seeing up to a 20 percent to 100 percent increase in traffic year-over-year, with 39 percent experiencing between a 21 percent to 100 percent increase.

Perhaps reflecting the impact of the COVID-19 pandemic, the vast majority of respondents reported rising network traffic. Forty-seven percent saw respectable growth of up to 20 percent. This is not surprising given the current climate with more people working and shopping online from home. Only 14 percent of respondents saw no change in network traffic.

A Dominant Role for Software

Almost all respondents (90 percent) reported using cloud-based provider instances for hosting applications, making it the most widely used platform for application delivery. Also, of note, nearly half (48 percent) stated they were using virtual instances, which is expected given its maturity and widespread use. Taken together, this demonstrates widespread adoption and acceptance of software in e-Commerce.

Physical devices are still significant but lower than some of the software-driven options. Newer options such as bare metal and containerization, which has become increasingly popular in the past few years, are showing significant, if not dominant, adoption as well. Cloud-based third-party instances are also popular, perhaps due to the one-size-fits-all approach of cloud operators.
Most e-Commerce providers face both external and internal threats of all kinds. The linearity of their responses is a clear indication that even the lesser concerns are on the minds of approximately one-third of respondents and are therefore serious considerations. Respondents were highly concerned about threats to their reputation and brand, with 62 percent citing hacking or cyber defacement, and 49 percent worried about brand damage or loss of customer confidence.

Given the volume of consumer financial information flowing through e-Commerce networks, it is no surprise that threats to this data ranked highly as well. In addition to concerns about hacking, 59 percent cited phishing or fake sites, which are popular threat vectors. In addition, 52 percent named user data theft while 38 percent cited credit card theft as top concerns. This is not surprising as both are connected to end users. Of course, data breaches also pose a serious threat to company reputation, brand image, and confidence, underscoring these as a key focus for e-Commerce businesses.

The number of respondents who cited DDoS attacks is interesting because the Mirai botnet and code brought about a substantial increase in DDoS defenses back in 2016. However, it is still cited by over one-third of respondents as being a critical issue today. Application delivery controllers (ADCs) and dedicated solutions can be used to help mitigate DDoS attacks individually or as part of a defense-in-depth solution.
CURRENT ISSUES AROUND UTILIZATION, SECURITY, AND SERVICE QUALITY

Network and application availability are essential to the success of every e-Commerce organization. Downtime caused by traffic spikes, network attacks, and outages can lead to organizations going out of business.

The majority of e-Commerce businesses have always had to deal with traffic spikes – from shopping during the holiday season to spikes in traffic during holidays such as Mother’s Day. So, it is intriguing that this was the top encountered issue over the last year. However, with increasing performance requirements from new technology standards, for example, demanding encryption standards such as Perfect Forward Secrecy (PFS), and updated protocols and software operating environments, older challenges can still be top of mind.

Security Undermines Performance and Availability —Especially in a Public Cloud

Meeting customer demand becomes even more difficult when security or technology lapses interrupt operations. More than a quarter of respondents (27 percent) reported web security issues, malware, ransomware, or malicious code. Twelve percent saw traffic slowed by security threat prevention or remediation work, and nine percent lost availability due to DDoS attacks, which can stop revenue generation. This is a relatively high number given the threat is well known and specific. Web application firewalls (WAFs) help with web security and can prevent web application attacks such as those in the OWASP Top-10.

Earlier we noted that 90 percent of respondents reported using the cloud for application delivery. However, here we see that only 21 percent reported experiencing service outages. Thus, hybrid cloud or multi-cloud deployments provide a strong platform, akin to a dual-vendor strategy. Global server load balancing (GSLB) can help make this a reality among disparate cloud providers and regions, just as it can help with multi-cloud interconnection or failover issues.
A MULTI-CLOUD AND SOFTWARE-BASED FUTURE

Shifts in e-Commerce technology and strategy tend to focus on moving from on-premises and hardware-based approaches to public cloud and software-based technologies. Based on the responses, e-Commerce businesses clearly believe that during the next three years moving application delivery to the cloud will offer them a competitive advantage.

As more e-Commerce organizations move to the cloud, some are leveraging a multi-cloud strategy to deliver their services. The use of multiple clouds offers efficiency and availability gains. However, it also introduces management complexity and traffic visibility challenges. Survey respondents indicated the need to implement technologies such as automation that enable them to tame the complexities associated with adopting a multi-cloud or hybrid cloud architecture.

While some e-Commerce businesses may not be suited for the cloud, perhaps due to certain requirements a cloud provider can’t provide or because of specific costs, there’s still room to make the move. On the other side of the spectrum, five percent of respondents indicated they have repatriated applications from a public cloud back to private data centers. This is a small number. However, it serves as a reminder to consider all your application and line of business requirements before making a decision.

Defending Against DDoS—and Still Working on TLS

It is significant, and reassuring, to see a continued focus on security with DDoS protection and TLS encryption. The Mirai botnet attack and Edward Snowden case highlighted the need for increased online privacy and the universal implementation of encryption. These trends are still ongoing, with upgrades and defenses being increased.
While e-Commerce technology leaders mentioned a variety of business factors as considerations in new investments, by far the most cited top-of-mind benefits during the COVID-19 era were cost savings (81 percent) and improving operations (70 percent). It’s not just the switch from CAPEX to OPEX behind the increase in savings, however. Automation, as well as advancements in AI, DevOps, and multi-cloud infrastructures, are helping e-Commerce businesses drive efficiencies and cost savings. This focus on cost reduction may change in the next 12-24 months post COVID-19.

Prior to the pandemic, the main drivers behind funding new technology were the business advantages gained from the technology (51 percent), the ability to accelerate development speed (46 percent), and the revenue it helped generate. Together with improving customer satisfaction due to a lower total cost of ownership (48 percent), this shows that technology continues to be seen as a key enabler of business success.
HELP WANTED: POLYNIMBUS MANAGEMENT FOR MULTI-CLOUD

The diversity of multi-cloud environments poses a wide range of challenges for e-Commerce IT leaders. Management complexity and cross-cloud security were each named by 51 percent of respondents as top challenges, with centralized visibility across cloud data centers cited as an issue by 44 percent. In each of these areas, the difficulties named point to the need for a Polynimbus approach with management as a centralized point of security and control to ensure that policies, features, and services are consistent across multiple cloud environments. To reduce complexity and strengthen security, e-Commerce organizations need to think beyond deploying a cloud, and focus on how they can master and operationalize multi-cloud and hybrid cloud environment realities.

In addition to challenges around management complexity, security, and visibility, respondents also listed more traditional concerns including difficulties in managing compliance and governance (41 percent) and controlling costs (41 percent). What e-Commerce organizations need to do is look beyond single cloud providers, as the tools they offer may be specific to only one cloud. Adopting a Polynimbus operational model will help solve the complexities of a multi-cloud world.
MANAGEMENT SIMPLICITY AND CONSISTENCY OVERTAKE TRADITIONAL PRIORITIES

The complexity of multi-cloud IT—and the challenges it presents—has reshaped the priorities of IT leaders. Management simplicity and application delivery consistency are now paramount.

As they consider the requirements to more effectively manage their multi-cloud environments, respondents named a variety of core capabilities that a Polynimbus Secure Application Services model with a Polynimbus ADC can deliver. At 60 percent of respondents, centralized management and analytics were the most commonly cited, followed by consistent application delivery and security (53 percent) and efficient automation (46 percent).

Traditional e-Commerce IT priorities such as disaster recovery (44 percent) and elastic scaling to meet seasonal or variable demands (42 percent) remain important, as do flexible licensing and pricing, which were also highly valued at 42 percent. Comprehensive application security was named by only 30 percent.
METHODOLOGY

Between March and May 2020, Gatepoint Research invited selected IT executives to participate in a survey themed e-Commerce Technology and Multi-cloud Application Delivery Trends. Candidates were invited via email and 81 executives have participated to date. Management levels represented are all senior decision-makers, including 7 percent holding the title CxO, 6 percent VPs, 48 percent directors, and 39 percent managers.

Survey participants represent firms practicing e-Commerce in a wide variety of industries including business services, financial services, healthcare, manufacturing (general and high tech), mining, retail trade, wholesale trade, and others. Responders work for firms with a wide range of revenue levels:

- 42 percent work in Fortune 1,000 companies with revenues over $1.5 billion;
- 19 percent work in large firms whose revenues are between $500 million and $1.5 billion;
- 9 percent work in mid-market firms with $250 million to $500 million in revenues;
- 30 percent work in small companies with less than $250 million in revenues.

About A10 Networks

A10 Networks (NYSE: ATEN) provides secure application services for on-premises, multi-cloud and edge-cloud environments at hyperscale. Our mission is to enable service providers and enterprises to deliver business-critical applications that are secure, available and efficient for multi-cloud transformation and 5G readiness. We deliver better business outcomes that support investment protection, new business models and help future-proof infrastructures, empowering our customers to provide the most secure and available digital experience. Founded in 2004, A10 Networks is based in San Jose, Calif. and serves customers globally.

For more information, visit www.a10networks.com and follow us @A10Networks.