



WHITE PAPER

Conquering Next-Generation Application Performance

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IDC OPINION

The performance of application workloads is more critical to business success now than at any prior time in the history of IT. In the new hybrid enterprise era – in which mobility proliferates – data is generated in torrents, applications are increasingly virtualized, and cloud computing is ascendant. Ensuring the performance of application workloads is a daunting challenge. How are organizations meeting the challenge? Astute prioritization, assessment, and a robust application performance infrastructure are key requirements for success:

- Prioritize the importance of application workloads
- Determine how best to run the workloads (physical or virtual) and where to run them (in the private or public cloud)
- Deploy a robust application performance infrastructure to enable:
 - Collaboration between IT operations teams, including DevOps with requisite visibility into application and network performance
 - Seamless, optimized delivery of all application workloads, including private and public cloud and software as a service (SaaS)
 - Improved end-user experience with greater satisfaction and predictability for enterprise employees and customers across all networks and endpoints, including the branch where virtualization and infrastructure consolidation can be implemented

Successfully addressing next-generation application performance can result in significant benefits, including increased enterprise productivity, enhanced customer experience, simplified application delivery, and cost savings that accrue from lower opex and capex and greater IT efficiency.

SITUATION OVERVIEW

The Complexity of Application Delivery Intensifies

Beyond doubt, the 3rd Platform has become the technological foundation for organizations seeking improvement in both business processes and business outcomes. Cloud and mobility have been key pillars of the 3rd Platform and have pushed datacenter infrastructure to the forefront.

Although much emphasis has been placed on the datacenter implications of virtualization and cloud, the consequences for the WAN are equally profound – WAN performance becomes absolutely critical for latency-sensitive workloads and inter-datacenter business continuity. Accordingly, as hybrid enterprises plan and implement comprehensive cloud strategies, WAN architectures need to be considered alongside and in conjunction with datacenter infrastructure.

Typically, enterprises lack visibility into WAN public cloud and SaaS usage. The move of their mission-critical workloads and business processes to the cloud has prompted a greater need to fully integrate cloud-sourced services into WAN environments to ensure workload/application performance, availability, and security.

Moreover, many enterprises still depend on MPLS to carry business-critical application traffic across the WAN. While MPLS will be a mainstay WAN technology for many client/server and legacy applications, enterprises are seeking to use less costly broadband Internet connections where possible, particularly in the context of their hybrid cloud strategies.

To do so, these hybrid enterprises will require more than just security through encrypted connections and other measures. They will also require WAN visibility, control, and optimization. With all these capabilities deployed, hybrid enterprises will have the freedom to run their application workloads wherever they wish – whether in the private or public cloud – or consume them as SaaS, confident that their application infrastructure can provide a cost-effective, reliable, and secure delivery conduit.

Redefining Application Infrastructure for the Hybrid Enterprise

As enterprises consider their journey to cloud, they're reassessing and redefining their application delivery models within an entirely new context. Some workloads are better suited to a private cloud, whereas others can benefit from the public cloud. The ultimate goal for many enterprises is a hybrid model in which an IT-as-a-service model is extended across the network to ensure application delivery to wherever applications and data are needed. This obviously includes branch offices where there is an acute need for infrastructure convergence to ensure application delivery and provide branch office backup, recovery, and business continuity. There is also an implicit requirement to achieve these objectives as cost effectively as possible.

In a recent IDC *CloudTrack Survey*, IT leaders who indicated that their organizations are using or would be using cloud computing within the next 12 months were asked to cite the most important drivers for moving to private and public cloud.

With regard to the most important drivers prompting the move to private cloud, 40-42% of respondents cited the following:

- Simplify and standardize their IT infrastructure and applications platform
- Improve IT staff productivity or reduce the IT staff head count
- Reduce the overall size of their IT budget
- Shift from a capital-intensive structure to an opex model
- Improve resource utilization
- Improve internal service delivery and business agility

For the most important drivers motivating the move to public cloud, 39-41% of respondents cited the following:

- Gain access to new functionality faster
- Increase revenue by expediting the creation of new products and services
- Increase resource utilization and achieve the objective of a reduced IT budget
- Give business units more direct control over sourcing of IT solutions
- Improve IT staff productivity (and lower the IT head count)

Across both public and private clouds, motivating factors are similar – themes of cost reduction, improved productivity/utilization, and speed/agility prevail. IDC also notes a desire on the part of enterprises to fashion hybrid cloud strategies that provide business agility and technological flexibility as well as the latitude to deploy applications and services when and where they can provide optimal business outcomes. Therefore, it's critical that a next-generation application performance infrastructure support both private and public cloud agendas with features that deliver visibility, optimization, and control for both applications and networks.

Application Performance Infrastructure Requirements for the Hybrid Enterprise

Given enterprises' desire to adopt hybrid cloud, an application performance infrastructure must meet the specifications of hybrid cloud workloads while securely serving the needs of application users spanning a number of connectivity options. This challenge demands that certain capabilities be provided. Near the top of the list is the need for comprehensive end-to-end visibility with end-user experience monitoring. Similarly, there's a need for simple templates that define business-oriented application policies governing application security profiles and intelligent path selection across the WAN. These features need to be delivered within a framework that provides optimization for applications wherever they reside – whether on-premises, at an infrastructure-as-a-service (IaaS) cloud provider, or as a SaaS application.

Finally, these requirements imply that hybrid enterprises will need an application performance infrastructure that leverages not only legacy MPLS networks but also Internet broadband connections with intelligent path selection, ensuring that secure and cost-effective delivery options are provided for all application workloads.

A More Holistic View Is Warranted

In light of these developments and requirements, the market has become increasingly cognizant that in the hybrid enterprise era, improved application performance is contingent on better visibility, optimization, and control. This translates into a need for an application performance infrastructure that encompasses a more holistic array of solutions, including:

- **Integrated application and network visibility and performance management** that provides a valuable feedback loop for the delivery of applications from the datacenter to stakeholders across the network and allows collaborative IT teams to troubleshoot problems and continually improve delivery of hybrid cloud workloads
- **WAN optimization** that accelerates applications across hybrid networks and encompasses and accommodates private and public cloud services, including SaaS
- **Branch convergence** that integrates servers, storage, and networking specifically for the needs of branch offices where users need applications to perform well to remain productive
- A **hybrid enterprise application performance infrastructure** that provides comprehensive application visibility, optimization, and control over workload and data delivery from the datacenter to the cloud as well as to branch offices and mobile users

There's a growing recognition in the marketplace that these capabilities and solutions are not merely discrete elements to be used independently or in various combinations; rather, they also should integrate and cohere holistically to better align application performance with business results. For enterprise customers, application visibility, optimization, and control should translate directly into competitive advantage and business value.

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