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Improve the Agility of VMware Cloud on AWS with Amazon FSx for NetApp ONTAP

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Abstract: Public cloud services such as AWS offer truly transformational benefits in agility for both operations and infrastructure. With Amazon FSx for NetApp ONTAP, AWS, VMware, and NetApp are delivering a jointly engineered storage option for VMware that expands AWS's agility benefits even further, reducing the cost and complexity of scaling VMware Cloud on AWS.

Overview – The Problem

The speed and quality of digital operations now determine a business's success. Digital initiatives fuel revenue opportunities, boost operational efficiency, and bolster customer engagement. According to research by TechTarget's Enterprise Strategy Group, 91% of IT organizations have had to accelerate their digital operations over the last three years.¹

The use of public cloud services, including cloud storage, represents a way to reduce overall operational expenses while increasing efficiency and improving the simplicity and pace at which application environments can scale. Virtualization is also ubiquitous, and VMware is everywhere. VMs need to move to the cloud, but there hasn't been a strong justification to do so from a monetary standpoint.

With the capabilities of the cloud in mind, AWS, VMware, and NetApp have announced a jointly engineered supplemental storage option for vSphere workloads that provides organizations with access to the popular features, performance, and APIs of ONTAP file systems—combined with the agility, scalability, security, and resiliency of AWS.

On-premises storage options typically offer only a couple of capacity options for VMware Cloud, and they require the scaling of compute resources with storage capacity. Unlike those other storage options for VMware on AWS, Amazon FSx for NetApp ONTAP can scale storage capacity independently from compute resources, significantly reducing costs and complexity when scaling VMware environments on AWS. In addition, Amazon FSx for NetApp ONTAP is a fully integrated AWS storage solution with access to high-value native AWS services for compute, database and analytics, Internet of Things (IoT), security, as well as artificial intelligence (AI).

In this manner, Amazon FSx for NetApp ONTAP provides substantial improvements to increase an organization's ability to scale its infrastructure resources faster and more cost-effectively to meet cloud-related goals. Each Amazon FSx for NetApp ONTAP file system can scale to petabytes in size, allowing storage of virtually unlimited data in a single namespace.

With Amazon FSx for NetApp ONTAP, businesses can also recapture those expenses and then reallocate the savings to fuel further growth.

¹ Source: Enterprise Strategy Group Survey Results, [2021 Data Infrastructure Trends](#), September 2021.

Given the widespread adoption of both AWS and VMware—plus the need for easier management, cost control, multi-protocol accessibility, performance, scalability, security, and more—every organization needs to add Amazon FSx for NetApp to their purchasing consideration list.

Cloud Agility Is a Strategic Necessity

Today, 98% of organizations surveyed by TechTarget’s Enterprise Strategy Group report that they are engaged in some form of digital transformation, with 46% of those respondents identifying that they are actively engaged in re-designing their processes for the cloud as part of their digital transformation.²

When Enterprise Strategy Group asked IT decision makers to identify the strategies that they have underway for their existing application environments, the most common response centered on migrating those environments to the public cloud (cited by 62%).³

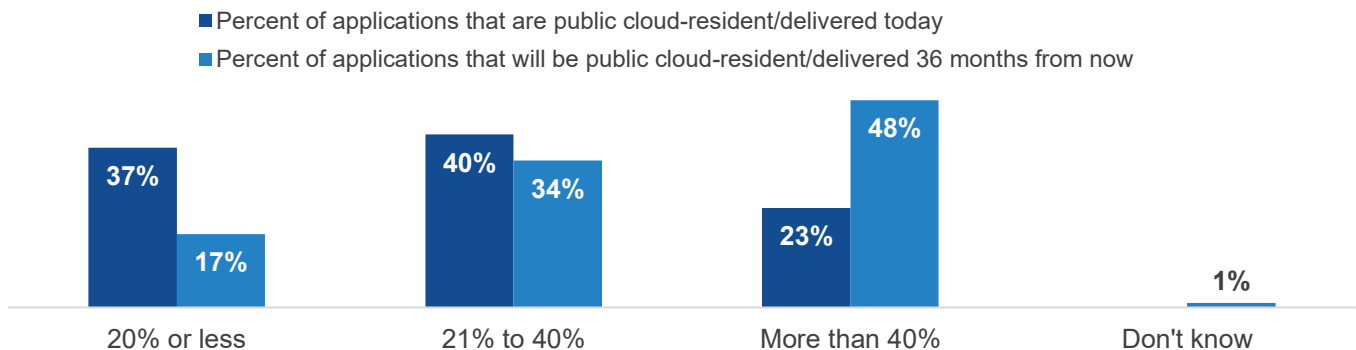
Enterprise Strategy Group has also found that the three most common drivers when selecting a public cloud service relate to increasing flexibility and scalability (cited by 43%), improving security (42%), and increasing agility (37%).⁴

Harnessing the scalability and agility benefits of public cloud services is an essential element of nearly every organization’s cloud and IT strategy for both new and existing application environments. And in times of financial uncertainty, the appetite for the agility and cost benefits of cloud operations grows even stronger. In a separate recent survey of IT decision makers, Enterprise Strategy Group found that 30% of IT decision makers identified the increased use of public cloud services as a likely part of their organization’s approach to contain IT costs in 2023.⁵

As a result, on average, organizations have identified 76% of their existing on-premises applications (both bare-metal apps and VMs) as being candidates for migration to public cloud services over the next five years.⁶ Figure 1 highlights how massive this shift will be, even over just the next three years.

Figure 1. Application Environments Shifting to Public Cloud

**Of all the business applications used by your organization, approximately what percentage is currently public cloud-resident? How do you expect this to change – if at all – over the next 36 months?
(Percent of respondents, N=742)**



Source: Enterprise Strategy Group, a division of TechTarget, Inc.

² Source: Enterprise Strategy Group Research Report, [Application Infrastructure Modernization Trends Across Distributed Cloud Environments](#), March 2022.

³ Ibid.

⁴ Source: Enterprise Strategy Group Research Report, [Application Infrastructure Modernization Trends Across Distributed Cloud Environments](#), March 2022.

⁵ Source: Enterprise Strategy Group Complete Survey Results, [2023 Technology Spending Intentions Survey](#), November 2022.

⁶ Ibid.

The introduction of FSx for NetApp ONTAP increases the benefits of using the cloud for VMware environments and is therefore poised to accelerate these data migration initiatives further.

With the ability to decouple storage capacity scaling from compute resources, FSx for NetApp ONTAP offers the potential for tremendous savings as the VMware environment scales within AWS.

Amazon FSx for NetApp ONTAP Transforms VMware Environments with Greater Agility

With FSx for NetApp ONTAP, AWS, VMware, and NetApp have partnered to offer organizations greater choice, more flexibility, and additional cost-effective options for VMware Cloud on AWS. For example, VMware Cloud can now scale storage capacity independently from compute using FSx for NetApp ONTAP. This capability reduces the cost of supporting VMware on AWS while increasing the simplicity and agility with which organizations can scale those environments.

Improved agility and cost-effectiveness give organizations increased freedom to accelerate cloud migration initiatives for their on-premises VMware environments. The cost savings represented by FSx for NetApp ONTAP will likely accelerate workload migration roadmaps for a substantial number of organizations.

Additionally, the ability to decouple storage scaling from the scaling of compute resources is just one of the multiple benefits that running VMware Cloud on FSx for NetApp ONTAP offers. FSx for NetApp ONTAP also delivers the benefits of NetApp enterprise storage functionality along with the benefits of being a fully integrated AWS storage service. For example, with integrated access to AWS's database and analytics services, such as Amazon Aurora, RedShift, or Dynamo DB, users can more easily and more quickly run queries, gain insights, and support application development. In addition, integrated access to Amazon Lambda can further accelerate developer velocity with AWS's serverless capabilities. Other examples include leveraging AWS's security services (such as AWS Shield), or IoT with AWS IoT Core, or AI capabilities with AWS SageMaker.

The breadth and power presented by the larger AWS ecosystem of services creates a variety of potential use case opportunities for VMware Cloud on AWS with FSx for NetApp ONTAP, including VDI environments, general file services, and file server consolidation, as well as support for application development, modernization, and DevOps initiatives. By running in AWS's data centers, FSx for NetApp ONTAP also presents the opportunity to be leveraged as an offsite target for disaster recovery or to provide disaster recovery as-a-service (DRaaS) capabilities.

As a result, with Amazon FSx for NetApp ONTAP, business can expect:

- **Granular, independent scalability of compute separate from storage** to reduce the cost of cloud infrastructure services.
- **Simpler and more agile scaling of storage resources** in VMware Cloud on AWS environments to reduce operational costs.
- **Enterprise storage capabilities**, including support for NetApp Snapshots, SnapMirror, SnapCenter, and FlexClone.
- **Data access over multiple storage protocols**, such as NFS, SMB, and iSCSI for increased simplicity and easier consolidation.
- **A storage service that is fully integrated into the AWS portfolio**, where data can be accessed and leveraged by other AWS services in its portfolio, improving the business value of the data residing within FSx for NetApp ONTAP.
- **Opportunities to simplify hybrid cloud usage and accelerate/simplify cloud migrations of VMware environments**. Organizations will now benefit from common management across hybrid cloud environments as they proceed with their efforts to migrate workloads to the cloud.

Conclusion

The benefits organizations achieve from the adoption of cloud services are transformational. With Amazon FSx for NetApp ONTAP, the agility and cost benefits for VMware environments only increase. Organizations now have greater freedom to scale, with the ability to right-size their compute and storage to achieve savings benefits; they don't have to purchase as many nodes. But those organizations also get additional enterprise features, thanks to AWS's jointly engineered service with NetApp ONTAP. Because Amazon FSx for NetApp ONTAP is built on the NetApp ONTAP operating system, cutting-edge data protection and data management features are included.

Because FSx for NetApp ONTAP is delivered as an integrated AWS service, data residing within FSx for NetApp ONTAP is not isolated in an inaccessible silo. Rather, users have the option to make the data accessible to the larger portfolio of AWS services, creating greater business value. Thanks to the potential for saving costs and reducing risks, combined with advanced functionality, organizations can more easily move or extend their existing applications to VMware Cloud on AWS and achieve greater value from those environments after they are deployed in AWS.

The differentiators of this service are compelling on their own. But at the end of the day—even if there weren't a single differentiator that competitors couldn't also offer—AWS, VMware, and NetApp are differentiated because of their years of joint engineering, the halo of their brands, and the great reach that each one of them possesses.

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