ESG SHOWCASE

NetApp Is Transforming Hybrid and Multi-clouds into 'the Any Cloud'

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ABSTRACT: Modern businesses are massively increasing their rates of public cloud adoption, but some of them are encountering issues. Their higher-tier applications often require advanced storage functionality, and differences in on-versus off-premises technologies add complexity and hinder deployment flexibility. But moving those tier-1 workloads to the cloud is still necessary for businesses that want to innovate, reduce TCO, increase ROI, and digitally transform. That's why NetApp has been partnering with AWS to augment cloud storage capabilities to create a consistent, simple, enterprise-caliber hybrid cloud storage environment that meets the needs of modern, mission-critical workloads.

Overview

Today's IT organizations are feeling intensely pressured by the digital demands that the rest of the business places upon them. The heightened demands reflect a key difference between traditional and modern IT. Historically, IT groups were assessed mainly on how well they maintained application availability. Today, they are still judged on uptime, but they are also judged on how *fast* they deliver services and transformative improvements that support the rest of the business.

IT organizations are trying to meet rising demands and expedite operations while dealing with rampant skill shortages as well, especially in the area of IT architectural planning. Thus, they have been looking to the cloud for help. A lot of innovation happens in the cloud these days. Getting an organization's enterprise-grade storage closer to a cloud computing environment can be the "holy grail" for competitive advantage.

Sixty-seven percent of IT managers surveyed by ESG said their businesses now leverage public cloud infrastructure as a service (IaaS). Among digitally mature organizations, the percentage increases to 88%. Some businesses began by using the cloud to hold secondary data for BC/DR, and then moved production workloads offsite as well. This year, 38% of surveyed IT decision makers identified their organizations as being "cloud-first"—four times more than the percentage of respondents who said their organizations are "on-premises first" (9%). Among digitally mature organizations, the "cloud-first" percentage increased to 47%.[1]

But some IT organizations have a long way to go when it comes to meeting the digital demands of the rest of the business. ESG found that only 6% of the line-of-business (LOB) executives surveyed view IT as a competitive differentiator, while 25% actually regard their IT organization as a business inhibitor. Among the LOB executives who think their company's IT organization inhibits business success, 43% of them said it's because IT processes take too long.[2]

Clearly, as organizations increase their use of public cloud resources to house higher-tier applications, they will require more advanced storage capabilities in the areas of performance, resiliency, data optimization, and data protection.

[1] Source: ESG Master Survey Results, *2020 Technology Spending Intentions Survey*, January 2020. All ESG research references and charts in this showcase have been taken from this master survey results set unless otherwise noted.
[2] Source: ESG Master Survey Results, *2019 Technology Spending Intentions Survey*, March 2019.

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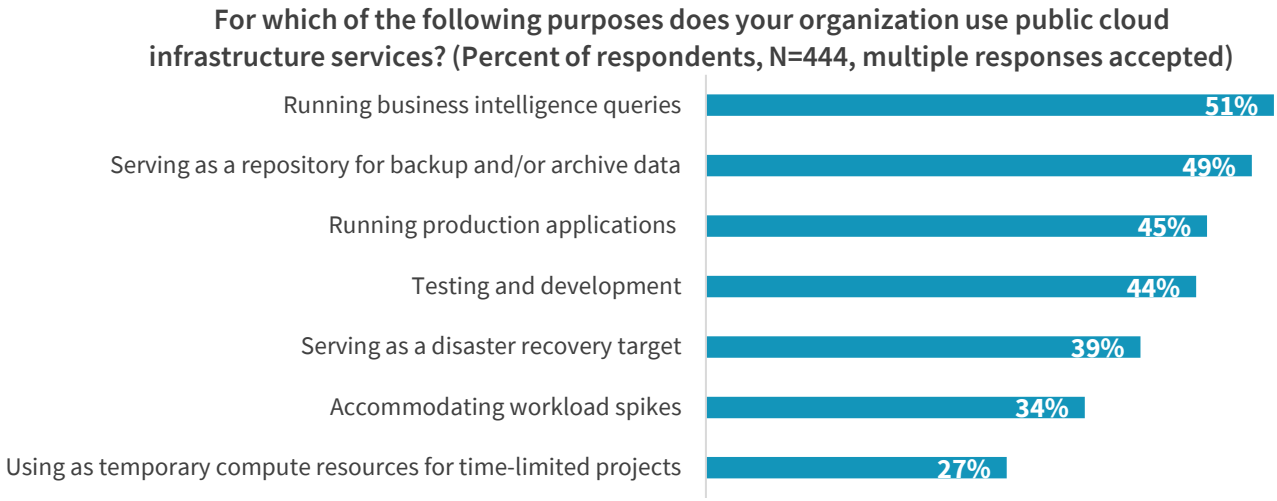
One solution they could consider is NetApp Cloud Volumes for AWS, which offers advanced storage capabilities for public and hybrid cloud AWS environments. Those capabilities ease cloud-integration projects, expedite operations, and optimize costs while improving the reliability and flexibility of business-critical primary applications. Similar NetApp Cloud Volumes storage management services are available for two other large cloud services—Microsoft Azure and Google Cloud—as well.

Public Cloud Services Are the Foundation of Modern Business

ESG has conducted extensive research into public cloud adoption, including investigating the applications and workloads that companies are deploying on cloud infrastructure. As Figure 1 shows, organizations are leveraging public cloud services for production applications, but there is significant room for greater adoption.

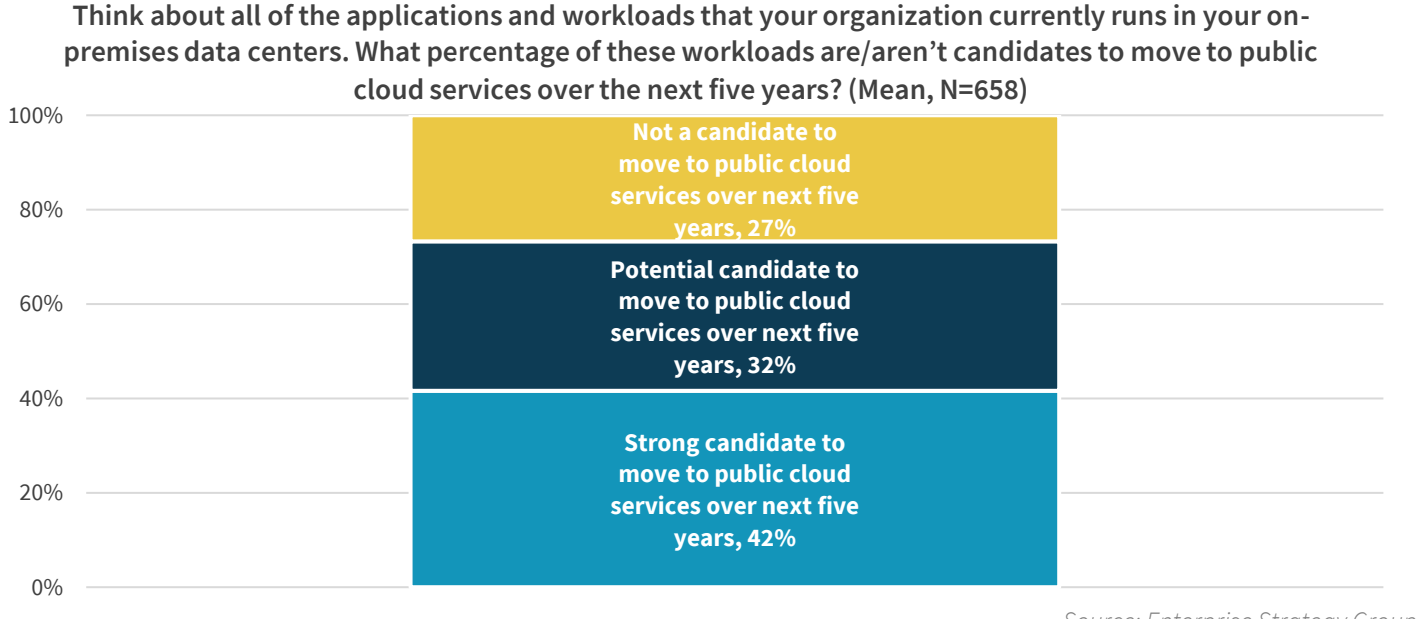
Figure 1. Use Cases for Public Cloud Infrastructure Services



Source: Enterprise Strategy Group

Among organizations surveyed by ESG, on average, 73% of the applications still residing in their on-premises data centers are considered to be candidates for transitioning to the cloud (see Figure 2).

Figure 2. Average Percentage of On-premises Workloads that Are Candidates for the Cloud



Source: Enterprise Strategy Group

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Notably, respondents on average did not consider 27% of their workloads to be good cloud candidates. (For example, SAP HANA and similar databases were often restricted to on-prem because they were deemed too important to trust in a cloud.) That 27% is an interesting finding that may stem from people's unfounded conclusions about perceived cloud weaknesses and complexities.

If those companies found some way to achieve a "ubiquitous cloud experience"—i.e., when it is just as easy and safe to run an application in the cloud as on-prem—they'd be likely to expand their cloud usage. That's why the NetApp Cloud Volumes solution is really worth a good look. It provides the same file system experience onsite and offsite. No refactoring is required. There would be no need to hire an additional AWS-specialist storage administrator, either. One storage admin can manage ONTAP everywhere.

Achieving an identical experience on-prem and off-prem would offer organizations true hybrid cloud flexibility, with the IT team deploying workloads in a cloud service or on-prem *based on what's best for the business*. To make the leap, though, IT needs to have a consistent storage infrastructure featuring uniform capabilities, uniform management interfaces, and uniform levels of performance and availability.

NetApp Cloud Volumes for AWS

Today, NetApp ONTAP storage management software works on the AWS, Azure, and Google cloud services, but it all began about seven years ago with AWS, when NetApp decoupled ONTAP from bare metal and installed it inside an instance of an Amazon Elastic Block Store (EBS). Doing so eliminated the challenges of having to refactor applications: NetApp's storage solutions support both block and file data. Organizations could now store block data, file data, and multi-protocol workloads inside EBS—consuming those services and Amazon Elastic Compute Cloud (EC2) services, all with NetApp's management software nestled inside.

NetApp's enterprise-grade storage not only supports NAS and SAN protocols (NFS, SMB, and iSCSI) for business-critical workloads, but it also comes with advanced storage optimization, management, and protection features to streamline infrastructure costs while providing guaranteed SLAs for performance, durability, and availability.

NetApp's design as a whole is "cloud-agnostic." But, in regard to Cloud Volumes for AWS specifically, NetApp and Amazon collaborated closely to deliver a simple-to-manage, simple-to-use, enterprise-caliber cloud data storage service. Cloud Volumes for AWS is available in two forms:

- Cloud Volumes ONTAP for AWS: This option provides a great level of storage management and control. Cloud Volumes ONTAP integrates natively with cloud infrastructure, providing cost savings and easy access to data. It is great for organizations that like to "roll their own" when it comes to IT projects, with on-staff storage architects overseeing the process.
- Cloud Volumes Service for AWS: For IT organizations that want to consume storage as a service or have limited storage experts on staff, NetApp offers an enterprise-grade managed storage service. The IT organization simply chooses a protocol and service level, and then selects "create" to establish a mount-point path. Once mounted, the data-write operations to the cloud begin.

Cloud Volumes for AWS Simplifies and Expedites Hybrid Cloud Operations

Both forms of Cloud Volumes for AWS offer capabilities that provide business benefits:

- Enterprise-grade storage for the public cloud: Cloud Volumes for AWS features high performance (more than 460K IOPS, according to NetApp), high throughput, and low latency. Both forms also come with multi-protocol support,

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namely, NFS and SMB. (And it doesn't have to be "either or"; NetApp can do both.) Thin provisioning and data compaction provide data efficiency to save money. Snapshots and instant clones mean that IT can quickly spin up data for developers to use. Data replication and portability features (provided through SnapMirror) allow IT to move data on- or off-premises easily with support for both cross-region and cross-cloud replication, essential to ensuring enterprise-grade resiliency in cloud environments.

- A flexible storage ecosystem that can adapt on demand: Cloud Volumes for AWS enables IT to change SLAs on the fly, which can reduce the risks and guesswork associated with having to rely on upfront planning alone, as well as cut down on configuration and architecting time. The offering automates resource allocation dynamically and allows IT to move workloads as needed (optimizing everything for performance and capacity) to reduce a storage footprint.
- A single experience across hybrid cloud environments: Both forms of the offering minimize or eliminate the need to refactor applications. That is a benefit that will reduce the cost, time, risk, and personnel needed to support a cloud initiative. Common RESTful API calls allow for the automation and orchestration of cloud storage operations. That eases the lift-and-shift process because the storage is the same.

Consumption options include a pay-as-you-go hourly subscription—which is great for work related to DevOps or any other immediate/short-term need—as well as longer term subscriptions with increased discounts. Cloud Volumes is also available on the AWS Marketplace (Cloud Volumes ONTAP and Cloud Volumes Service), allowing for immediate consumption and a frictionless setup.

Workloads that Cloud Volumes for AWS can support include Microsoft workloads, DevOps workloads, databases, and basically any enterprise workload. According to NetApp, one of its customers, Genomics Medical Ireland, is doing genomics modeling in the cloud, with no need whatsoever for on-prem storage. Daily, that organization moves more than a ½ petabyte of data from its file servers directly to the cloud, so the performance required obviously exists.

The Bigger Truth

Having the same storage at work everywhere reduces refactoring requirements. The advanced performance and capabilities of this solution reduce the risk that applications might not perform to expectations. The solution's impressive flexibility ensures that if performance characteristics or anything else needs to change, it can be done on the fly. And Cloud Volumes for AWS greatly minimizes the amount of upfront planning required for successful cloud deployments and initiatives. We are reaching a tipping point at which IT needs to show the rest of the business that running primary workloads in the cloud truly will make the whole organization more innovative and productive.

How can you move those foundational enterprise applications to the cloud, yet still take advantage of the good old on-prem storage you already know and love? Well, it's now in the cloud available to you. One size does not fit all. But NetApp can size its technology to be the right fit for your business.

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