Enterprise Strategy Group™

Pure Storage Cloud Azure Native for Azure VMware Solution

Decreasing the Complexity and Cost of Running Virtualized Workloads in Microsoft Azure

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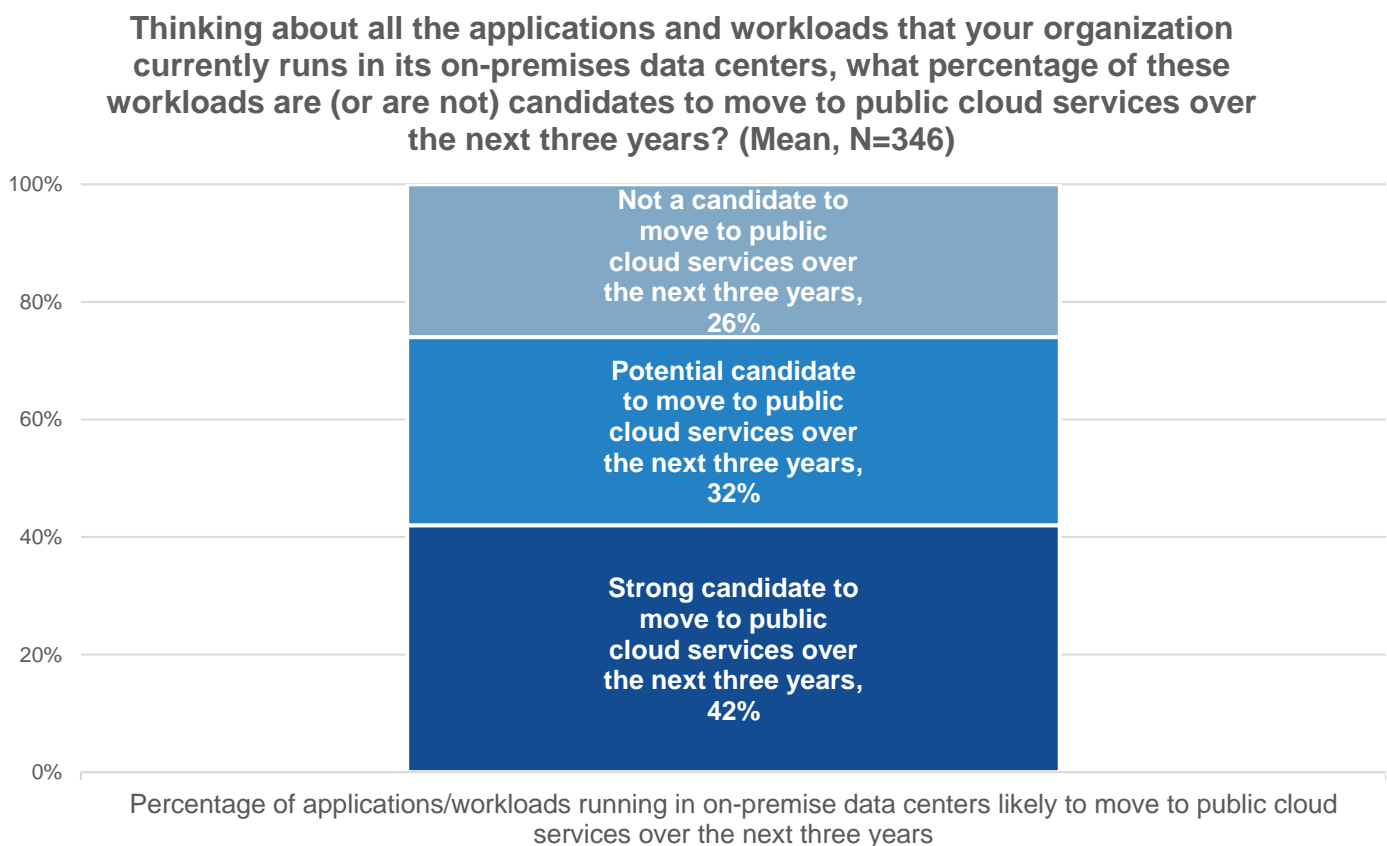Enterprise Strategy Group

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Contents

Introduction

This Technical Validation from Enterprise Strategy Group documents our evaluation of the Pure Storage Cloud Azure Native for Azure VMware Solution. We review how the solution enables organizations to easily migrate on-premises VMware workloads to Microsoft Azure without the cost, complexity, and time typically encountered when moving these workloads to a public cloud.

Background

Organizations continue to explore public cloud-based solutions for running and managing a range of new and existing applications (e.g., databases, VMware workloads, disaster recovery). According to Enterprise Strategy Group research, organizations considered 42% of their existing workloads to be strong candidates to move to public cloud services and 32% to be potential candidates (see Figure 1).[1]

Figure 1. Percentage of Applications as Candidates to Move to Public Cloud Services

Thinking about all the applications and workloads that your organization currently runs in its on-premises data centers, what percentage of these workloads are (or are not) candidates to move to public cloud services over the next three years? (Mean, N=346)

Not a candidate to move to public cloud services over the next three years, 26%

Potential candidate to move to public cloud services over the next three years, 32%

Strong candidate to move to public cloud services over the next three years, 42%

Percentage of applications/workloads running in on-premise data centers likely to move to public cloud services over the next three years

Source: Enterprise Strategy Group, now part of Omdia

Drivers for migrating existing applications to the public cloud here vary but typically include some combination of the following:

- Gaining access to the innovations, particularly those related to AI, offered by public cloud providers.

- Leveraging the scale/agility and subscription-based consumption model of public cloud infrastructure services.

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[1] Source: Enterprise Strategy Group Research Report, *Cloud Application Deployment and Migration Decision-making*, August 2024.

- Following a corporate mandate to migrate to the public cloud so that organizations can reduce or even eliminate their on-premises data centers or IT infrastructure.

Recent changes in the virtualization supplier landscape have prompted many to re-evaluate or accelerate these plans, as they are faced with potentially significant changes to their infrastructure costs. However, migrating applications to the public cloud can be costly. In fact, Enterprise Strategy Group uncovered that 43% of organizations considered budget impact or costs as a top requirement to carefully examine before deciding to migrate an existing on-premises application to the cloud.[2] Organizations are also wary of application migrations since they can be complex to execute and pose unwanted business risk, especially when those applications are critical to the business (e.g., databases supporting e-commerce applications).

Although many organizations want to re-platform their applications to support cloud-native frameworks (such as containers and Kubernetes to enable greater agility) and access the public cloud's technology innovations, particularly with respect to AI, replatforming is a complex process and cannot be done completely and successfully in a single step. An easier first step is to migrate virtualized on-premises applications to a similar virtualized environment in the public cloud that runs the same hypervisor. This approach enables organizations to use the same skill sets and tools that deliver the same consistent experience while still having the flexibility to scale resources more easily. For business- and mission-critical applications, organizations need to know they can migrate the application's data to the public cloud without compromising the data protection and resiliency capabilities they expect with on-premises storage.

Pure Storage Cloud Azure Native for Azure VMware Solution

A native Azure independent software vendor service, Pure Storage Cloud Azure Native for Azure VMware Solution (AVS) has been designed to help organizations deploy the Pure Storage Cloud service directly using the Microsoft Azure Portal. With this service, organizations can connect Pure Storage Cloud as external block datastores for VMware hosts/workloads running in AVS (see Figure 2).

Figure 2. Pure Storage Cloud Azure Native for AVS
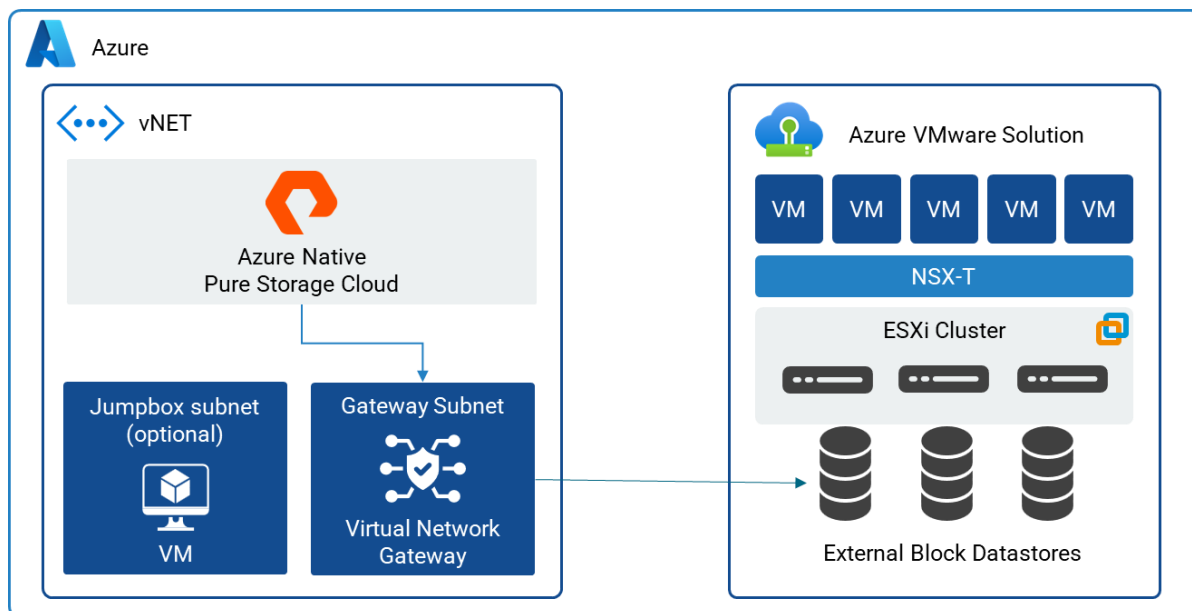
Source: Pure Storage and Enterprise Strategy Group, now part of Omdia

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[2] Ibid.

For VMware-based workloads that organizations observe consuming large and/or growing amounts of data, this service enables independent scaling of compute and storage so that costs are not incurred by consuming additional compute nodes to accommodate larger storage requirements (i.e., exceeding that of local storage capacity) for the supported workloads.

This fully managed service is directly available using the Microsoft Azure Portal. Organizations do not need to configure and manage Pure Storage Cloud using a separate interface. Instead, this storage is configured using the Azure portal and can be seamlessly integrated with existing VMware tools.

Pure Storage Cloud for AVS is powered by the Purity OS, the same OS that is used across the Pure Storage portfolio. Organizations can then be assured that feature parity will exist, regardless of whether Pure Storage is consumed on premises or in the public cloud. For example, Pure Storage Cloud for AVS customers benefit from the same data protection and availability as those using Pure Storage for on-premises VMware-based workloads. And as new features are rolled out, all Pure Storage customers receive them with no additional cost.

To further support organizations in migrating applications to Microsoft Azure, Pure Storage Cloud for AVS offers tight integrations with VMware with the vSphere plugin, providing the same user experience as those working with on-premises VMware deployments. In addition, organizations have a similar end-user experience with Pure Storage Cloud for AVS as they have had when working with Pure Storage on premises. By providing familiar end-user experiences, organizations can utilize the same skills and tool sets even after VMware workloads have migrated to Microsoft Azure. No additional training is needed, helping to increase the success of migrating VMware workloads.

Purchasing and billing of storage for VMware workloads running on AVS is also simplified with the Azure Native Integration. Pure Storage Cloud for AVS can be purchased directly from the Azure portal. Organizations are billed directly for Pure Storage services through Microsoft as part of the monthly Azure invoice. Purchases of Pure Storage Cloud for AVS can also apply to an organization's Microsoft Azure Consumption Commitment (MACC) credits.

Enterprise Strategy Group Technical Validation

Throughout our review, from briefings and online demonstrations, Enterprise Strategy Group validated how Pure Storage Cloud for AVS can help organizations reduce complexity, simplify operations, and reduce overall total cost of ownership (TCO).

Decreasing Complexity in Migrating On-premises VMware Workloads to Microsoft Azure

Migrating on-premises virtualized applications to the public cloud can be complicated, as organizations need to decide if refactoring the application, along with using existing public cloud storage services, is worth the time and cost. For applications optimized to run in an on-premises environment, such a migration may not be easy. Refactoring and replatforming storage-heavy environments involves building out a new architecture using public cloud infrastructure services.

To ease this migration journey, organizations can instead use Pure Storage Cloud for AVS. As this is a fully managed service, the complexity of provisioning and configuring storage for VMware workloads running in Azure decreases, thus enabling a smoother migration.
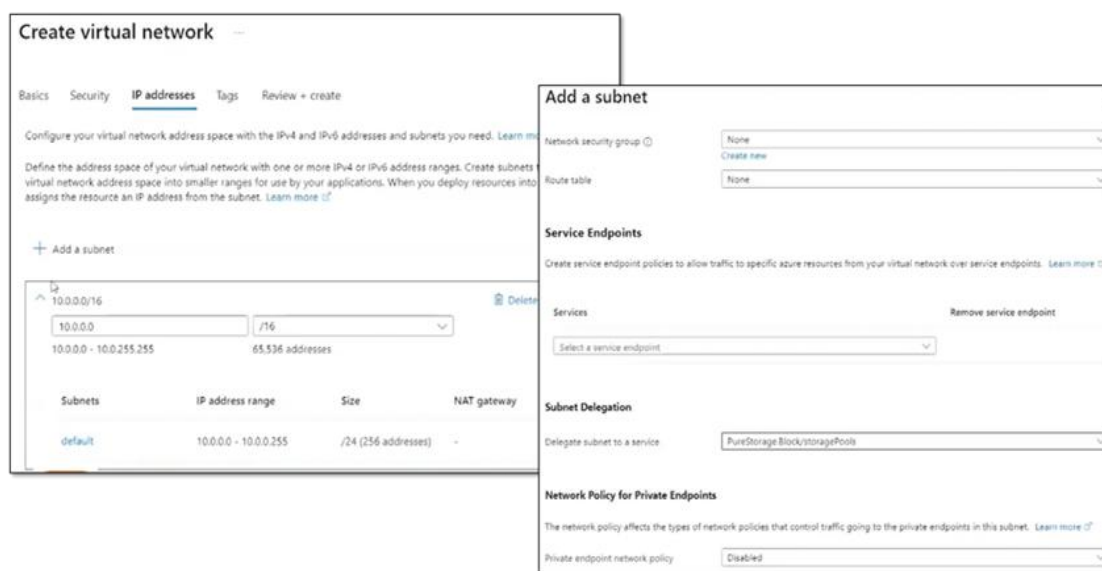
Enterprise Strategy Group Analysis

To examine the simplicity of using Pure Storage Cloud for AVS, Enterprise Strategy Group navigated to the Azure portal and selected the link named "Azure Native Pure Storage Cloud Service."

To deploy a Pure Storage pool for an existing AVS deployment, we first created a parent resource, which was deployed in less than a minute (see Figure 3).

Figure 3. Creating a Pure Storage Cloud for Existing AVS Deployments
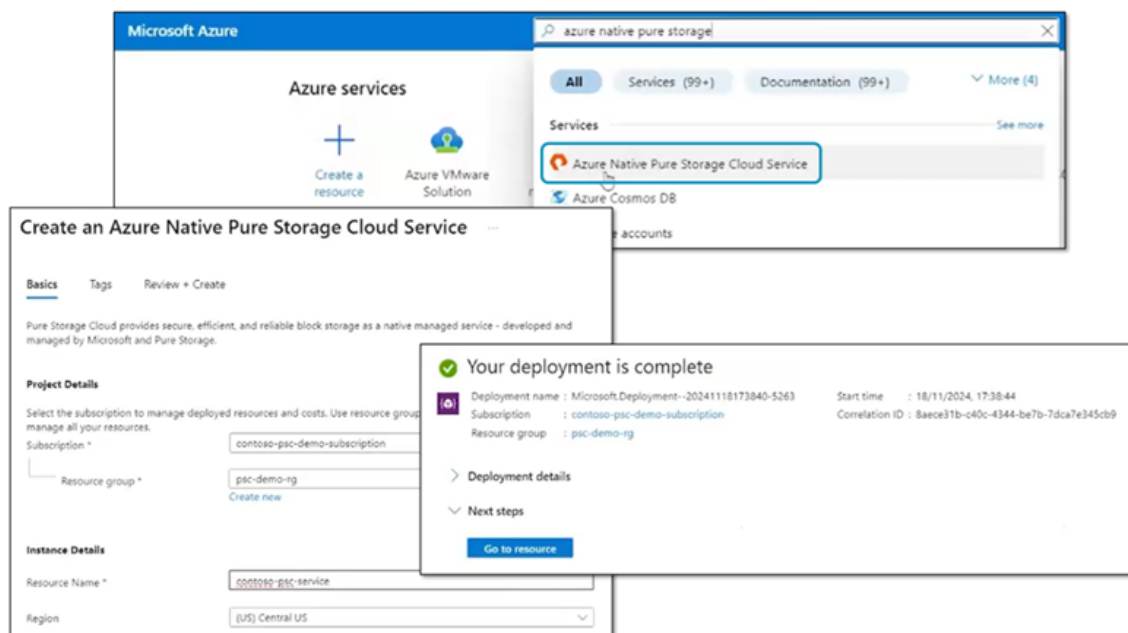
Source: Enterprise Strategy Group, now part of Omdia

We proceeded to create a virtual network (Vnet) and subnet in which the parent resource would reside (see Figure 4). Block datastores of the VMware nodes access the storage resources in the Vnet using an Azure ExpressRoute circuit (as shown in Figure 2).

Figure 4. Deploying a Vnet for the Storage Pool

Source: Enterprise Strategy Group, now part of Omdia

Enterprise Strategy Group then configured the pool according to the desired performance requirements and assigned it to the previously created subnet (see top of Figure 5). Performance requirements were set by "sliding" the cursor on the bar to the desired level. Should performance requirements change, they can be edited directly from the Azure portal by moving the cursor on the "slider bar" to the desired level (see bottom of Figure 5).

The estimated maximum capacity available for this pool is set according to the amount and type of data stored. (While capacity is billed according to the organization's usage consumption, we should note that the service will charge for a minimum of 30TiB storage capacity as a starting point.)

Figure 5. Creating the Storage Pool

Source: Enterprise Strategy Group, now part of Omdia

Finally, we connected our newly created storage pool to our AVS resource (see Figure 6).

Figure 6. Connecting the Storage Pool to the AVS Resource

Source: Enterprise Strategy Group, now part of Omdia

If configuring storage for AVS using existing Azure resources, organizations would need to access three services (AVS, storage, networking) for designing and building the underlying cloud-based storage architecture from scratch. Such skill sets and expertise might not be readily available to deploy the storage that AVS workloads need (e.g., due to time for training and practice). Also, if using Azure's storage services for the underlying storage architecture, the desired application performance might not be delivered. Should organizations need to provision and configure storage when migrating every VMware workload migrating to AVS (e.g., as part of an overall migration initiative), this approach would cause unnecessary delays and downtime. Unfortunately, organizations would experience unwanted costs.

On the other hand, the tasks observed to deploy and connect storage for AVS workloads were accomplished using the Azure portal. We saw no need to use a separate Pure Storage interface.

Since Pure Cloud Storage for AVS is a fully managed service, Enterprise Strategy Group observed how IT operations can be significantly simplified. All work related to provisioning, deployment, and testing was completed by simply following the Pure Storage Cloud prompts to enter the basic configuration details. Given this lack of operational complexity, organizations can simplify migrations of VMware workloads to the cloud while decreasing operational costs.

Enterprise Strategy Group also noted that Pure's Azure native service enables organizations to configure storage performance dynamically. If performance requirements change, the need to rearchitect and reconfigure storage to accommodate these changes would be eliminated. Organizations can modify these requirements at any given time as business needs evolve with the simple "slider bar" (e.g., a database workload is experiencing peaks in read requests and needs storage with higher performance). Simultaneously, Pure Storage Cloud for AVS would deploy the capacity to support the desired performance.

Why This Matters

Migrating on-premises applications to the public cloud is not without its challenges. Unfortunately, these migrations can easily be stalled if the process is too complicated and time-consuming. Such challenges hinder migration initiatives to move forward, while preventing organizations from taking advantage of the scalability and consumption-based models that public cloud infrastructure services provide.

Enterprise Strategy Group validated that the Pure Storage Cloud for AVS simplifies how organizations can migrate existing on-premises VMware workloads to Microsoft Azure. We observed how organizations can deploy storage for AVS workloads using this Azure Native Integration service with less time and operational complexity. By inputting storage and networking configuration details when prompted by the service, storage pools can be created and connected with AVS workloads that meet specific performance requirements with little to no manual intervention. Deploying storage using Pure Storage Cloud can be accomplished in less time than building and testing a cloud storage architecture from the ground up. With Azure Native Pure Storage Cloud for AVS, organizations can decrease operational overhead.

Simplifying Daily Operations

If an organization migrates an existing application to the public cloud, new tool sets and workflows would need to be learned and/or created that might not mimic normal operations closely. Imposing the need to learn new skills can hinder the success of migration.

With Azure Native Pure Storage Cloud for AVS, organizations can use existing VMware tool sets and workflows to manage storage for AVS workloads. Providing this level of familiarity helps in simplifying overall operations and related costs.

Enterprise Strategy Group Analysis

Enterprise Strategy Group observed how storage-related operations can be performed with AVS workloads using VMware vCenter. From the vSphere Client, we navigated to the "Host and Clusters" tab. After selecting the Pure Storage Cloud option, we were prompted to enter configuration details for creating a datastore, named "PSC-StoragePool-Datastore," for a specified cluster, such as the storage pool supporting the datastore, the size (in TB), and associated policies (see top of Figure 7). After creating the datastore, we verified that it was configured and deployed by cross-referencing the same resource in the Azure portal (see bottom of Figure 7).

Figure 7. Using Existing VMware Tools to Create a Datastore in Microsoft Azure
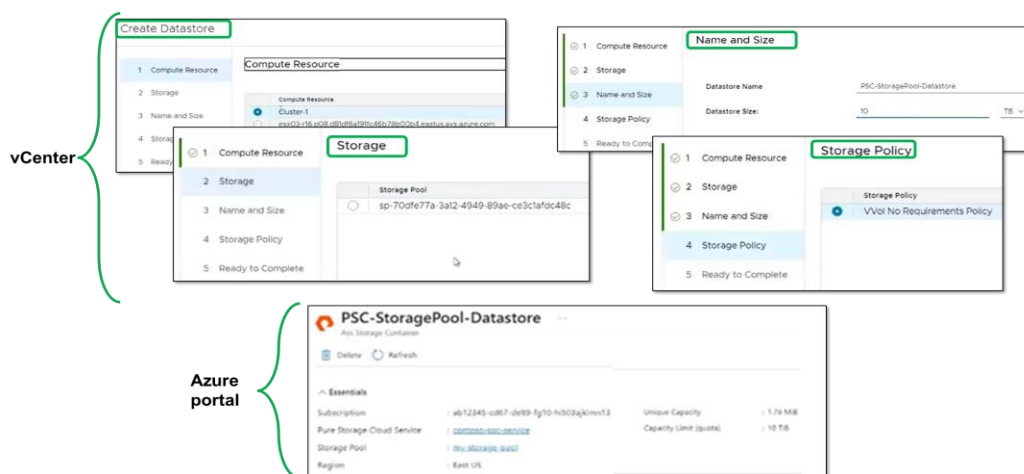
Source: Enterprise Strategy Group, now part of Omdia

From vCenter, we also created a new VM, named "demo-VM," and added 4GB of external storage from the datastore "PSC-StoragePool-Datastore" (see Figure 8). To verify that this action was completed, we cross-referenced the Azure portal and saw that the new storage resource appeared as part of "PSC-StoragePool-Datastore."

Figure 8. Creating a New VM and Adding the Existing Datastore

Source: Enterprise Strategy Group, now part of Omdia
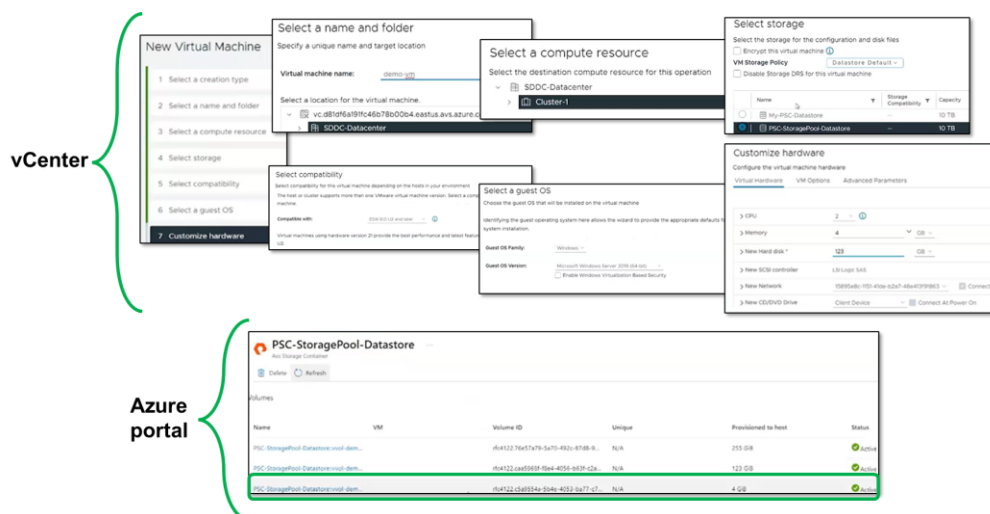
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As we reviewed these workflows, the integrations that Pure Storage achieved with AVS can simplify IT operations when deploying new VMs and storage. Organizations can still use existing VMware tools, reducing the need to learn new tools and workflows. Subsequently, organizations face fewer barriers to migration, as the same VMware tools can be used as before.

Why This Matters

Migrating applications successfully to the public cloud depends heavily on minimizing the effect on existing operations. However, organizations might not have the time or resources should new tools and workflows need to be learned and adopted. This can easily disrupt normal operations, incurring unwanted downtime, unnecessary resource overhead, and business risk.

Enterprise Strategy Group validated that Pure Storage Cloud for AVS simplifies operations when working with VMware. Organizations can continue to use existing tools, specifically vCenter, to deploy and manage both compute and Pure Storage Cloud for VM workloads. By enabling organizations to continue using familiar VMware tools, the chances for successful migrations increase, as everyday operations are not significantly modified to accommodate new toolsets.

## Reducing Overall TCO of AVS-based Workloads

Organizations no longer need to rely only on the storage of VMware nodes for storing all data associated with an application. Instead of leasing additional server nodes for more storage capacity, organizations can scale compute and storage independently using Pure Storage Cloud for AVS. Overall TCO decreases, as additional nodes do not need to be purchased to access additional storage, removing a significant barrier to VMware workload migration.

Enterprise Strategy Group Analysis

To examine how Pure Storage Cloud for AVS can decrease overall TCO, Enterprise Strategy Group considered the workloads of an existing customer to determine an estimated average amount of money saved. An "average" workload requires 72 CPU cores, 3,840GB of memory, and 206TB of storage.

Figure 9 compares the number of AVS nodes purchased to satisfy these requirements against the number of AVS nodes and amount of storage provided by Pure Storage Cloud. If unable to decouple the purchase of compute and storage, the customer would need to purchase 15 nodes. However, with Pure Storage Cloud for AVS, the customer would only need to purchase five AVS nodes to satisfy the compute requirements. Storage would be provisioned separately. The savings in compute costs were estimated to be $500,000.

Figure 9. Reduced Compute Costs With Pure Storage Cloud
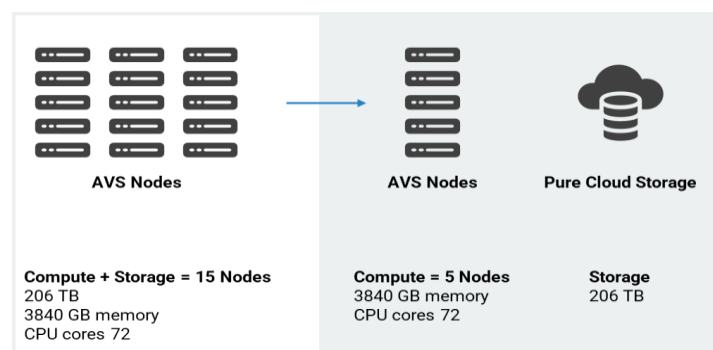
Source: Enterprise Strategy Group, now part of Omdia

Organizations no longer need to consume additional VMware nodes to increase storage capacity. Pure Storage Cloud for AVS is a more cost-effective option for storage, especially since price is based on actual amount and type of data stored.

Why This Matters

Relying solely on AVS nodes for satisfying storage requirements can become costly, especially as the ratio of compute to storage capacity becomes smaller. Organizations then risk incurring additional compute costs unnecessarily. For these cases, the ability to scale compute and storage separately can help in better managing costs when running VM workloads on AVS.

Enterprise Strategy Group validated that Pure Storage Cloud for AVS can help organizations control compute costs when using AVS for their cloud-based VM workloads, thus reducing overall TCO. Because Pure's service enables organizations to scale compute and storage independently, organizations no longer need to purchase additional AVS nodes to obtain additional storage, especially when compute requirements remain the same.

Conclusion

Many factors can drive organizations to migrate existing on-premises applications to the public cloud: the desire to access innovations (e.g., AI) for achieving short- and long-term business objectives, the opportunity to leverage the scale and agility offered by public cloud infrastructure services, and the opportunity to reduce or eliminate on-premises IT infrastructure. Currently, the recent changes in the virtualizations market have given organizations another reason to migrate on-premises applications, as these changes might not align with long-term financial objectives or application strategy.

Yet, migrating on-premises applications to the public cloud can present significant challenges. Replatforming and refactoring these applications can be too costly and complex to accomplish. Also, the available models for scaling compute and storage to meet a virtualized application's requirements could inadvertently result in cloud overspending.

To address these challenges, Pure Storage Cloud for AVS can help organizations begin their migration journey. With this solution, organizations can migrate their virtualized applications to Microsoft Azure while using the same skill sets, thus delivering the same end-user experience. To help control public cloud spending, organizations can scale compute and storage independently for VMware-based workloads. By removing cost and complexity barriers, the chances of successful migrations of virtualized applications to Azure increase.

As Enterprise Strategy Group evaluated the Pure Storage Cloud for AVS, we validated that this solution can help organizations to:

- Decrease the complexity in migrating on-premises VMware workloads to Microsoft Azure, as the solution is a fully managed service.
- Simplify the daily operations associated with AVS-based workloads, as the same tools and skill sets used for on-premises VMware workloads can be employed.
- Reduce overall TCO of AVS-based workloads, as the solution can lower compute cost.

Should your organization desire to increase its chances of success in migrating on-premises VMware workloads to the public cloud, Enterprise Strategy Group urges you to give Pure Storage Cloud for AVS closer consideration.

About Enterprise Strategy Group
Enterprise Strategy Group, now part of Omdia, provides focused and actionable market intelligence, demand-side research, analyst advisory services, GTM strategy guidance, solution validations, and custom content supporting enterprise technology buying and selling.

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