



Simplify and Automate Data Protection for VMware

As organizations move along the path of digital transformation, enterprise cloud usage continues to evolve as well. This year, [ESG reports](#) 49 percent of enterprises surveyed now run production applications as their primary public cloud use case, rather than backup, archival, or disaster recovery as in years past.¹ However, while those cloud-born applications still need the same data protection workflows as when they were on-premises, the native protection services offered by public cloud providers often can't deliver application-consistent restores or meet stringent service level agreements (SLAs).

This white paper looks at the evolution of in-cloud infrastructure adoption with an eye towards the additional challenges presented by adopting a hybrid, multi-cloud infrastructure approach to enterprise IT, and what organizations should do today to ensure all their workloads—whether on-premises or in the cloud—are being properly protected.

Cloud Adoption Evolves

What's the best use case for public cloud infrastructure? As recently as two years ago, most businesses put data protection at the top of that list, and [just over one in four](#) said they were utilizing the public cloud for running production workloads.² That has changed rapidly, as this year ESG reported that production application workloads were now the number one public cloud use case, closely followed by business intelligence queries and test/dev. Data protection fell to the number four spot in this survey, with just 40 percent of respondents saying they were currently using the cloud for backup or archival.

This change is not a sign of a reduction in the number of firms using cloud backup; it points to a dramatic increase in the use of the cloud as an application workload destination. And, as enterprises become more familiar with the different attributes of public cloud providers like Amazon AWS, Microsoft Azure, and Google Cloud Platform, they often end up with a multi-cloud strategy, designed to get the best price-performance from each workload. Today, a hybrid, multi-cloud IT environment is the norm, not the exception.

Workload Migration and Data Protection

As pricing models for cloud providers change and costs for on-premises infrastructure shifts to better align with subscription pricing models, IT may find it to their advantage to move workloads from one cloud (or on-premises location) to another. Similarly, spikes in demand may cause a business to spin up additional instances of customer-facing applications during peak shopping seasons. The result is an increasingly dynamic IT environment, that is not only hybrid but continually evolving to meet changing business needs. This flexibility is increasingly important for a business' digital transformation strategy, enabling development and test teams to create applications in the cloud, deploy them anywhere, and develop a mobile-first, cloud-ready, multi-device approach towards meeting customer's and employee's demands for a better user experience.

A multi-cloud hybrid strategy can cause unique data protection challenges. Most traditional cloud provider data protection programs can't meet the stringent requirements of today's cloud-borne applications. For example, each cloud provider has their own proprietary data protection tools, which differ from those already used for on-premises backup, replication, and archival.

But since organizations need to run the same data protection workflows to support the same business applications they run on-premises, they also need application-aware backups that provide for application-consistent restores to support disaster recovery, business continuity, and other development and test functions. Businesses that rely solely on a given cloud provider's native backup tools may be unable to support the SLAs users demand and may not deliver the recovery point and recovery time objectives (RPO/RTO) to sustain business functionality when an outage or data loss occurs.

Thus, cloud provider data protection strategies can have an influence on when migration occurs, as well as to which provider a given workload is migrated. Ensuring that the backup strategy dovetails with each cloud provider is critical; backup failure is not an option, since failing to meet SLAs or restore data properly can lead to unplanned downtime and the ensuing frustrations for employees and customers. Downtime can also bring the risk of data loss or exfiltration, with the ensuing regulatory issues and possible penalties, and any outage opens the door to customer defection, whether for a single instance or permanently.

Cloud Workload Protection Considerations

What then must enterprises consider when deciding on data protection for cloud workloads?

Number one is ubiquity: the support for every major public cloud provider as well as for on-premises workloads is essential. A single, comprehensive solution is preferred for simplicity's sake; eliminating the need for multiple point products makes both backup admins and line of business users more efficient.

Next is efficiency. Data protection utilizes three public cloud consumables: CPU resources, block storage, and object storage. An analysis of different multi-cloud offerings should consider how each candidate utilizes these resources not only at current usage levels, but as the number of workloads and projected storage utilization scale over time with changing business demands.

As the data deluge accelerates, deduplication becomes increasingly important. Consider solutions that perform deduplication first at the application or client level, and then also offer a deduplicated path from backup application or device to the storage repository. At its core, efficient deduplication reduces the amount of data moved from site to site and reduces resources needed to store that data. In a multi-cloud world, less data means lower costs and faster replications or restores.

Data growth combined with today's "app for that" mentality means that both the number of workloads AND amount of storage are constantly growing. For that matter, enterprises must ensure the chosen solution provides the scalability that supports tens or hundreds of terabytes—or more—without breaking the budget.

While simplicity begins with deploying a single solution, that single, comprehensive solution must offer additional functionality and features. From a cost saving perspective, a data protection solution should enable the elimination of secondary or tertiary on-premises disaster recovery sites, which could be replaced by a cloud repository. No more real estate, infrastructure, power, and cooling just to secure data and workloads translates into bottom line savings.

Since pricing for cloud storage—both object and file—varies by provider over time, data protection solutions should offer a tiered architecture that enables data and workloads to move to one or more clouds for archival or disaster recovery and should easily (and cost effectively) be migrated back to on-premises when desired.

For point-in-time backups, the solution must offer in-cloud backup solutions that support a cloud snapshot manager compatible with Amazon AWS, Microsoft Azure, and other hosted workloads.

Finally, a comprehensive data protection solution should offer near real-time replication to help decrease RPO and RTO, yielding maximum uptime and minimum data loss across the enterprise.

Introducing Dell EMC Cloud Data Protection

All of these desired capabilities and more can be found in Dell EMC's Cloud Data Protection Solutions. Dell EMC has architected a cloud protection strategy from the ground up to ensure data and workload protection for the hybrid, multi-cloud infrastructures that are increasingly common.

According to a [recent ESG study](#), adopting the Dell EMC solution offers a host of benefits for organizations of all sizes. Most notably were cost savings of up to 66 percent for AWS S3 object storage with DDVE and NVE versus two major competitive solutions, as well as a total infrastructure cost saving of up to 47 percent considering compute and storage in AWS (EC2, EBS, and S3) as compared to competitive offerings. This software reduces the overall cost by distributing data movement across the client virtual machines, reducing the need to provision dedicated data mover VMs and their associated virtual infrastructure.

These advantages, including an up to 55x deduplication rate with Dell EMC data protection software add up to a comprehensive, one-stop solution for protection of all cloud-borne (and on-premises) workloads that scales along with the business, whether protecting five terabytes or five hundred, delivering performance and economy.

The Dell EMC software also simplifies portability of both data and workloads, which can ease migration fears and simplify decision-making as to which cloud provider to utilize as pricing models change or new functionality becomes available. This also enables storage tiering so enterprises can leverage inexpensive archival repositories for infrequently accessed data.

For even greater flexibility, Dell EMC offers, the Integrated Data Protection Appliance (IDPA), a purpose-built backup appliance that can simplify deployment, management, and enablement in a multi-cloud, hybrid environment and enables instant recovery of VMs and their data. The appliance can also be procured as a software-only solution that can be deployed on existing infrastructure.

Thanks to Dell EMC's close relationship with VMware, enterprises can also rely on the Dell EMC Cloud Protection Solution to integrate seamlessly, further simplifying deployment and management of VMware workloads on-premises or in one or more public clouds. And with a solution that can cut cloud protection costs by two-thirds, the Dell EMC solution is the logical choice for today's—and tomorrow's—multi-cloud, hybrid IT environments.

Summary

As organizations increasingly rely on more than one cloud provider to take advantages of specific features or pricing, the need to adopt a multi-cloud, hybrid data protection strategy will continue to grow as well.

Since each individual cloud provider has their own unique set of data protection tools, no cloud provider can offer a comprehensive data protection tool that will support competitive cloud offerings, and most will not provide protection for on-premises workloads and their associated data either. Thus, the onus of cloud backup falls on the consumer. There is a need for a single, comprehensive data protection solution that can support workloads on any platform—whether on-premises, private cloud, or public cloud—and offer a cost-effective, multi-tiered solution that ensures every workload is properly protected. Since multi-cloud, hybrid IT is increasingly the future, and since business application workloads are increasingly cloud-borne, choosing the best in-cloud data protection architecture available becomes critically important.

To meet these needs, Dell EMC has brought together leading software and hardware components to craft a **single, comprehensive solution** that delivers industry-leading performance and deduplication for enterprises of all sizes, providing a substantial savings in cloud protection expenditures, and supporting workloads running on most public cloud providers.

Dell EMC offers an entire range of **additional cloud solutions**, including Dell Boomi data integration, Dell Security, Pivotal PCF/PKS and the world's broadest cloud provider ecosystem.

As one of the world's leading technology companies, Dell EMC also offers a broad array of **consulting services** that can help enterprises design, deploy, and maintain their multi-cloud data protection, including on-premises workloads. Organizations of all sizes can rely on Dell EMC to offload data protection and enable IT and LOB leaders to focus on the bottom line.

Finally, Dell EMC offers **financing solutions** that can simplify acquisition of all your enterprise computing needs.

Next Steps

Whether born in the cloud or migrating to take advantage of cloud economics, every business will eventually adopt a multi-cloud IT environment. To ensure yours will be fully protected, click here to learn more about how Dell EMC ensures your data—and workloads—are always protected. www.dell EMC.com/cloudprotection.

1. <https://research.esg-global.com/reportaction/2019technologyspendingintentions/Marketing>
2. <https://research.esg-global.com/reportaction/PublicCloudTrendsApr2017/Marketing>