



► Solution Brief: Commvault HyperScale Software

ENTERPRISE IT SHIFTS

Enterprise IT is being transformed with the maturing of public cloud providers that offer compute, storage and application services with unprecedented elasticity, scale, resiliency and availability, on a consumption based economic model. However, the choice between public cloud and on-premises infrastructure is not a binary one.

As some workloads shift to the cloud, enterprises are also looking to transform their internal data centers and service offerings for cloud-like scale, flexibility, resiliency and operational methods leading to similar economic outcomes. To this end, architects are augmenting or replacing traditional, proprietary and single purpose IT infrastructure and applications with software defined services, distributed processing, big-data applications and hyperconverged architectures running on general purpose, easily replaceable hardware.

Transforming mission critical applications and workloads could be difficult and disruptive, not so for secondary infrastructure. By some estimates 50-70%¹ of infrastructure capacity is used for secondary workloads and storage. Businesses can accelerate their transformation initiatives with less disruption by targeting this secondary infrastructure. Commvault HyperScale Software enables this shift for secondary storage and workloads, driving cloud-like economics and critical services using secondary data, while extending these services into the public cloud.

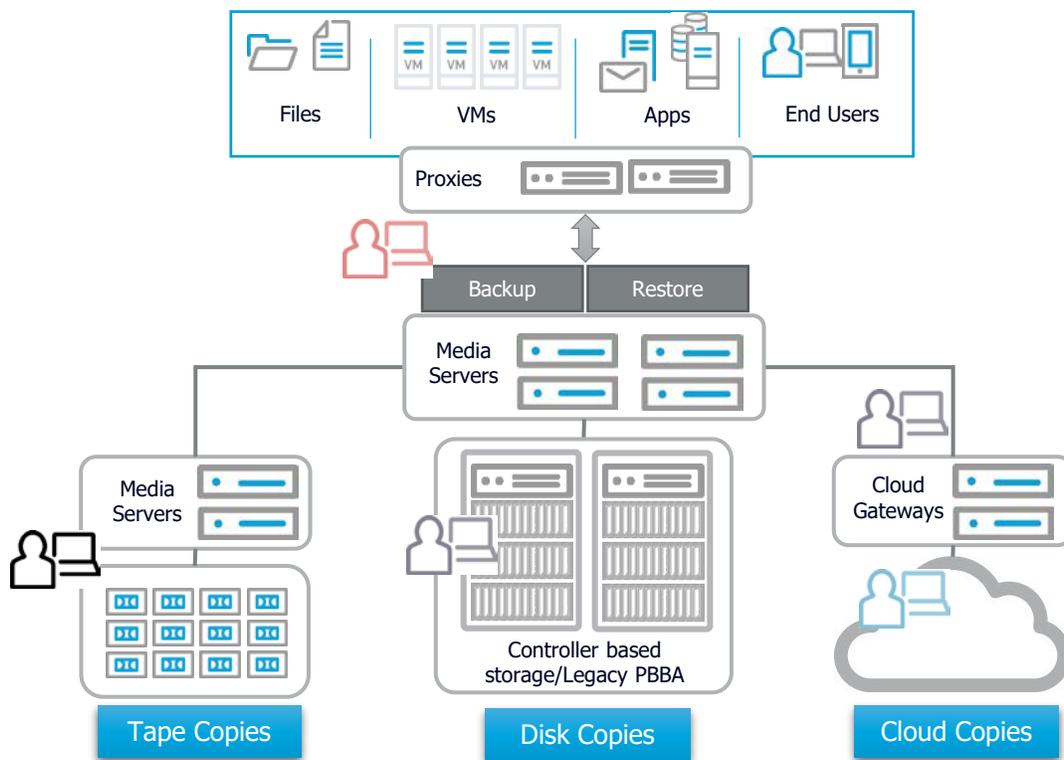


► Commvault provides a single data management platform for any converged environment, enabling high-speed backup and recovery, granular indexing, smart snapshots, effortless orchestration, intelligent retention and more.

¹ Commvault customer profile indicates 2-3 times secondary storage footprint compared to primary data copies. Statistics from Cloud.commvault.com > Worldwide Dashboard > Storage Data Retention as of July 2017 <https://cloud.commvault.com/webconsole/survey/reports/dashboard.jsp>

▶ TRADITIONAL BACKUP ARCHITECTURE AND CHALLENGES

While backup processes are mature, traditional architectures are not suited to adapt to new cloud centric infrastructure and operations. Traditional enterprise backup centers around controller based, proprietary, single purpose disk storage devices or appliances. Dedicated, powerful and expensive media servers run the backup software and many of the storage management services like deduplication and encryption. Separate media servers handle creation of secondary copies to disk arrays or tape, depending on data retention need. As enterprises seek to adopt public cloud storage, these legacy architectures require dedicated cloud gateways or more media servers to handle the additional burden of pushing data copies to public cloud. While this architecture worked for several years and continues to be useful in traditional IT enterprises, it has several limitations that inhibit cloud oriented transformations for better service offerings and economics.



High Infrastructure Costs: Proprietary storage devices or appliances, dedicated proxy servers and single purpose media servers with redundant components increase costs. Frequent forklift upgrades and repurchases tied to life of hardware.

Complex Management and Operations: Every component is configured, upgraded and managed separately increasing operating burden. Aligning policies and rules to meet desired service levels across the disparate elements can be challenging.

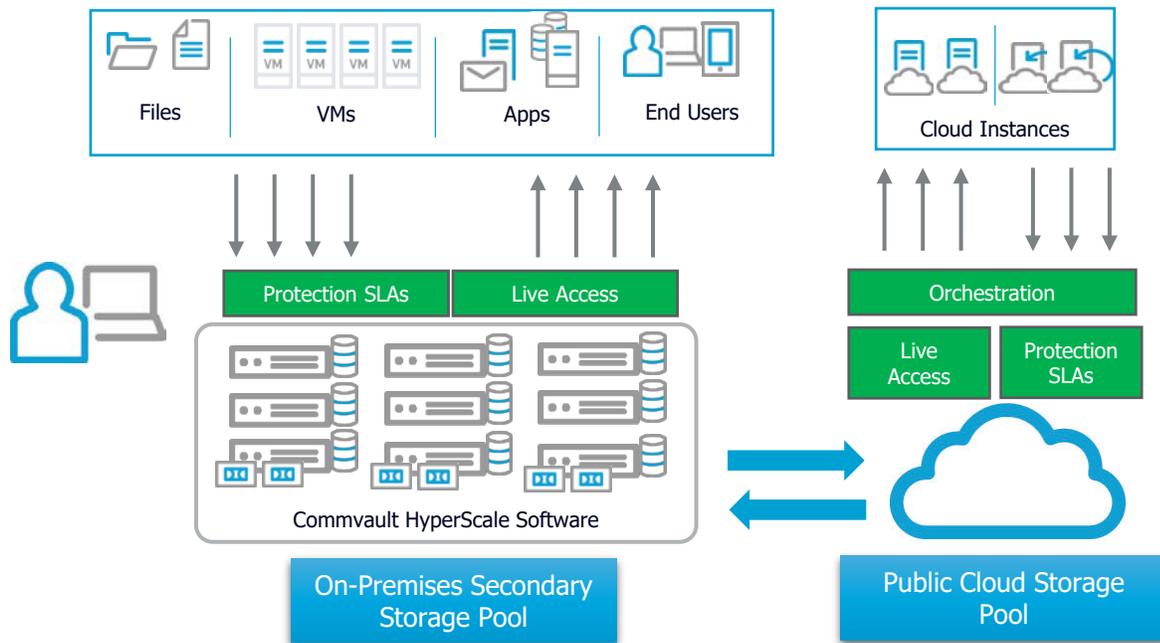
Limited Resiliency and Availability: Controller based architecture provides limited resiliency and in many cases necessitates doubling the infrastructure for availability, increasing costs and complexity.

Limited Service Offerings: Single purpose media servers and storage constrain performance and access capabilities, offering only nightly backup and long restore services, limiting the use of these secondary copies.

Poor Cloud Integration: The legacy approaches often use public cloud simply as a long-term retention tier with no option to reuse the data, thus minimizing the potential of cloud to accelerate business operations. In many cases this data copy to public cloud requires expensive, dedicated gateway devices, negating any potential cost savings from the cloud.

▶ COMMVAULT HYPERSCALE SOFTWARE

The Commvault HyperScale Software consolidates all the roles performed by discrete servers in the traditional data protection architecture into a single software defined stack. The software spans multiple storage nodes running on general purpose servers, creating a massively addressable storage pool with built-in enterprise class data management capabilities. This eliminates the need for dedicated media servers, proprietary controller based storage devices and cloud gateways, reducing infrastructure costs dramatically.



All data management and storage optimization operations are distributed across the nodes, with each node capable of taking on multiple roles on demand, including moving data to cloud. Software defined resiliency and availability allows enterprises to fix failed components or nodes, mix and match different types of nodes as needed and replace or upgrade nodes seamlessly without disrupting operations or data availability.

Commvault Disaster Recovery Module for Architecture Design

Replace multiple point products with a single solution for backup and DR across physical and virtual servers, disk, tape, and private/public/hybrid clouds.

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CLOUD READY DATA MANAGEMENT FOR THE COST OF REPLACING LEGACY PURPOSE BUILT BACKUP APPLIANCE (PBBA)

By shifting the secondary storage and data management infrastructure to this architecture, enterprises can go a long way in transforming their data centers to be as operationally efficient, resilient and scalable as public cloud infrastructure. Lower hardware costs, operational efficiencies and simplified support allows the replacement of limited and legacy backup tools with a modern cloud enabled data management solution at the cost of replacing legacy PBBA. More importantly, this architecture, which extends into public cloud, allows enterprises to offer consistent sets of services to all workloads running on-premises or in public cloud, independent of the underlying infrastructure for true cloud based data management.

Key Benefits of Commvault HyperScale Software

BENEFIT	DETAILS
Simplicity	Deploy and expand a hyperconverged pool in as little as 30 minutes. Simplified user interfaces for tenant admin and end-user self-service. No catalog management required.
Lower Infrastructure Costs	Runs on general purpose server based storage nodes without the need for expensive storage controllers. Eliminates dedicated media servers further reducing hardware costs. Replace legacy backup tools for the cost of replacing a Purpose Built Backup Appliance.
Resiliency and Availability	Erasur encoding ensures data is available through multiple drive or node failures. Partitioned deduplication and Gridstor enable data management operations to run uninterrupted. WAN optimized replication and geo-dispersed clustering options for DR.
Active Copy Management	Active Copy Management for all critical enterprise applications on a variety of physical and virtual platforms for very low RPO/RT0. Tight integration with all major primary storage vendors for snapshot based copy management including new flash based devices.
High Performance Deduplication	Large deduplication pools with distributed process across multiple nodes for performance to meet the most demanding RPO/RT0 needs.
Operational Efficiency	No fork lift upgrades needed. Evergreen storage pool with nodes that can be upgraded/replaced/fixed without disruption of services.
Scale and Flexibility	Storage pool can start small and expand dynamically as needed to 10s of PB of usable capacity. Mix multiple generations of hardware in a single pool to rapidly benefit from newer architectures and drive densities.
Proactive Monitoring and Central Policy Management	Proactive monitoring of key operational parameters for detecting issues that could risk SLAs even before they occur. Central policy management for managing entire infrastructure distributed across multiple locations from a central management framework.
Instant Data Access	Restore-less access to data copies by users and applications using standard interfaces from all managed copies including cloud copies. Scaleout compute nodes can handle the most demanding read requests across several users or applications.
Integrated Find and Search	Locate files quickly using the self-protected distributed indexing layer. Catalog management not required. Keyword and content based search available.
Fully Integrated with Public Cloud	Tier to all major public cloud storage providers for offsite copies and long term retention. Transform on-premises workloads into public cloud instances, protect cloud-native workloads and replicate data back to on-premises. Provisioning policies to spin-up/spin down cloud resources on demand.

BENEFIT	DETAILS
Multiple Service Levels	Pre-defined SLAs and plans offer a variety of RPO/RTO SLAs to which workloads opt-in with ease, depending on the business need. Scale out compute and converged storage architecture ensures resources are available to meet the most demanding SLAs.
Automation and APIs	Programmable workflow engine to automate the most complex tasks involving the usage of secondary storage copies, and create custom portals to suit the unique needs of an organization. Commandline tools and REST API available to be used with multiple programming tools including C#, Python and Ruby.
Coverage for All Enterprise Workloads	Enterprise class data protection and recovery for all enterprise applications across physical, virtual and cloud platforms. Years of global expertise to address all data management needs for the smallest organization to the largest global data centers.
Validated Reference Architectures	Validated reference architectures from most popular server vendors ensures simple management experience and no lock-in into limited "appliance" form factor.
Simplified Support	Commvault responsible for supporting all elements of the software stack including the operating system for the storage pool nodes.
Flexible Pricing Options	Simple, flexible and consumption based pricing models for cloud like economics and quicker ROI.

► SUMMARY

Commvault HyperScale Software is a cloud ready data management solution that transforms a significant portion of enterprise infrastructure to provide cloud-like simplicity, elasticity, resiliency, flexibility and scale for secondary use cases. With Active Copy Management, hardware snapshot integration, support for all enterprise applications and physical, virtual and cloud platforms and SLA based policies and plans, Commvault software can meet the most demanding RPO/RTO and instant data access needs. Software defined services running on general purpose server based nodes, eliminate the need for dedicated media servers and expensive controller based storage, reducing infrastructure costs significantly. A sophisticated orchestration engine, programmable API and direct data access through standard interfaces allow enterprises to embed these data management services, seamlessly into a broader cloud framework. With low hardware costs and simplified operations, enterprises can build a true cloud based data management service for the modern hybrid datacenter at the cost of replacing legacy PBBA.

► Commvault HyperScale Software integrates with storage arrays, hypervisors, applications and the full range of cloud provider solutions to support the most diverse and dynamic environments. Read more at commvault.com/hyperscale.

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