A New Era for Backup – Time to Replace Traditional (Dying) Methods

Legacy Backup and Recovery Approaches Clearly Can't Keep Up with Ever-Growing Storage Demands. It's Time to Modernize with a New Strategy.

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Executive Summary

It's no secret that today's unrelenting data growth, datacenter consolidation and server virtualization are wreaking havoc with conventional approaches to backup and recovery. The rapidly intensifying demand for storage is putting a tight squeeze on enterprise resources—whether your organization is grappling with too much data to protect in operational windows, faster recovery requirements, physical space constraints, or increased adoption of cloud computing, backup and recovery are becoming increasingly complex, cutting into staff time and budgets and slowing operations.

According to ESG research, 27% and 23% of respondents characterized "Unacceptable level of downtime/need to improve RTO" and "Unacceptable level of data loss/need to improve RPO," respectively, as challenges with their organization's current data protection processes and technologies.[1] To add fuel to the fire, according to *InformationWeek Reports'* "State of Storage 2012" report, 70% of respondents indicated that the growth rate for the overall data that they have to store and manage was in the 10-49% range.[2]

Clearly, conventional backup and recovery approaches are not robust enough to meet today's data and information management challenges, let alone those of tomorrow. A new strategy is essential.

According to Gartner, "Organizations worldwide are seeking ways to easily, quickly and cost-effectively ensure that their data is appropriately protected. Organizations are also voicing the opinion that backup needs to improve a lot, not just a little. The rising frustration with backup implies that the data protection approaches of the past may no longer suffice in meeting current, much less future, recovery requirements."[3]

Enter, CommVault®, which has been positioned in the "Leaders" quadrant in Gartner's 2012 "Magic Quadrant for Enterprise Disk-Based Backup/Recovery" report for its Modern Data Protection [4]. Modern Data Protection provides unparalleled advantages with its innovative and holistic approach to data and information management.

CommVault Simpana® software exemplifies this modern strategy: It contains individually licensable modules—all built on a single unifying code base and platform—to analyze, replicate, protect, archive, and search your enterprise data and information. By leveraging the strengths of a single platform, each module, deployed alone or in combination with other modules, delivers unsurpassed feature-for-feature performance against alternative point-level solutions.

What's more, CommVault's Solving Forward® philosophy means Modern Data Protection where Simpana software not only solves your current data management challenges but also builds in technology so you're poised to meet future demands.

Modern Data Protection: The Essentials

Imagine trying to cram all your valuables into a rusty old metal box with a broken lock and no guarantee you can access them again when you need them. If that's how you feel when you attempt to back up your corporate data—the company's crown jewels—with the same old backup software and techniques you've been using for decades, and you're overburdening your IT staff and budget and risking massive data loss, it's time to explore the innovative approach called Modern Data Protection.

As data rapidly becomes one of the enterprise's most valuable assets, determining how to analyze, replicate, protect, archive, search and recover it whenever necessary is quickly becoming more complicated. The key to wrangling today's data chaos under control is to lower the cost of data management, reduce risk of loss and eliminate operational complexity by developing a more complete, more granular understanding of your data. How to accomplish that? By leveraging management techniques designed to achieve efficiencies not previously possible.

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[1] ESG Research Report, *Trends in Data Protection Modernization*, August 2012.
[2] *InformationWeek Reports'* "State of Storage 2012" report, by Kurt Marko. February 2012.
[3] Gartner Inc. "Magic Quadrant for Enterprise Backup/Recovery Software" by Dave Russell, Alan Dayley, Sheila Childs, Pushan Rinnen. 11 June, 2012.
[4] ibid
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Quite a challenge. In addition to the ever-intensifying data growth you're no doubt experiencing, and the pressure to control and manage that data in huge volumes, you're being hit with burgeoning virtual server deployments, applications with enormous data requirements, heightened business demand to reduce downtime, greater regulatory and governance requirements, and emerging "infrastructure as a service" models such as cloud storage. All these factors impact your resources—time, money, and personnel—making current data management circumstances, and the ability to plan for future data management needs, even more critical concerns.

Legacy approaches to data management have fallen behind in the areas of protection and recovery of these massive volumes, or addressed them only in piecemeal fashion. With enterprises in jeopardy of losing invaluable business data, and personnel and budgets stretched to the breaking point, traditional backup and recovery is broken.

Some specifics:

- Most organizations today can't complete full or even incremental backups during their allotted backup windows

- Streaming backup for key applications requires more network and processor power, and more time, than is typically available

- Server virtualization projects and cloud initiatives cannot be fully implemented or started with legacy protection models

- Edge data is not systematically protected

- Managing backup activities is overly difficult because of a myriad of point products that have been cobbled together over time

- Recovery is slow and far from granular—what's more, it's not a sure thing

- The full vision of tiered storage has not been realized.

The upshot: The enterprise needs an innovative, holistic approach to data protection.

CommVault is dedicated to helping you meet this challenge by redefining the backup and recovery market with a single solution that enables you to efficiently capture, move, retain, find and recover data from any storage tier. We call this Modern Data Protection.

The Trouble with Legacy Backup

Legacy, point-level approaches that stream backups directly from production environments are fast losing their effectiveness because they can't solve the problems of massive data overload burdening today's IT environments. Enormous volumes of data lead to long backup windows, which often forces manual or complex snapshot and scripting methodologies that turn into extremely complicated and time-consuming recovery operations—stage older backups, mount, hunt and peck, and wait.

Even more frustrating, legacy backup doesn't globally address the proliferation of redundant data leading to excessive demands on network, storage and management resources. Legacy replication, if you can afford it, is complex, resource – intensive or tied to specific hardware. There is no granularity into the data you are protecting, and no integration with the applications creating that data; this limits your ability and increases the time you need to restore and use protected data. Finally, legacy backup solutions are often dependent on a collection of loosely integrated tools and products that require scripting and individual management consoles. Not a pretty picture.
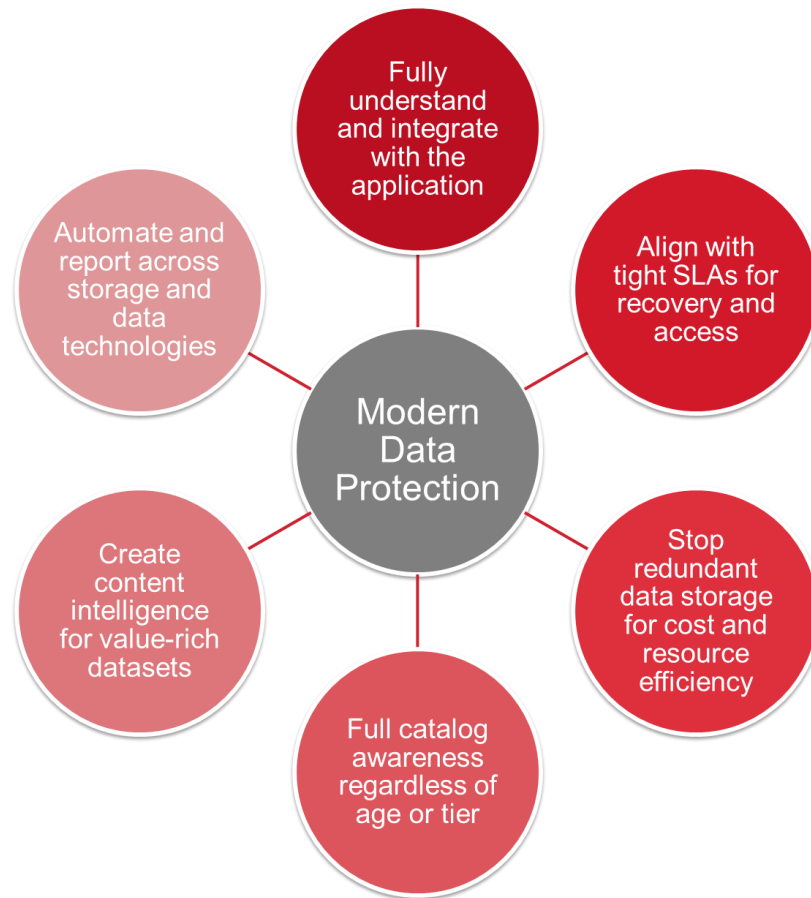
The Solution: Modern Data Protection

Figure 1: CommVault's Vision for Modern Data Protection: An innovative strategy to address current—and future—enterprise data management challenges

CommVault's strategy for meeting the challenges of data management in this new era is to venture beyond the models of the past—beyond the limitations of disconnected legacy solutions—with a single, modern platform that integrates application intelligence with heterogeneous hardware snapshots, indexing, deduplication, search and replication to efficiently capture, move, retain, find and recover data from any storage tier. Making it even more appealing, this powerful, innovative solution is based on a single user interface and common code base that lets you improve recovery times, reduce costs, improve operations and consolidate budget line items.

The ultimate benefit: Modern Data Protection frees you to focus your critical time and resources on your organization's broader business goals, by simplifying the data and information management process so you can "do more with less" and ensure that you're poised to meet future storage demands.

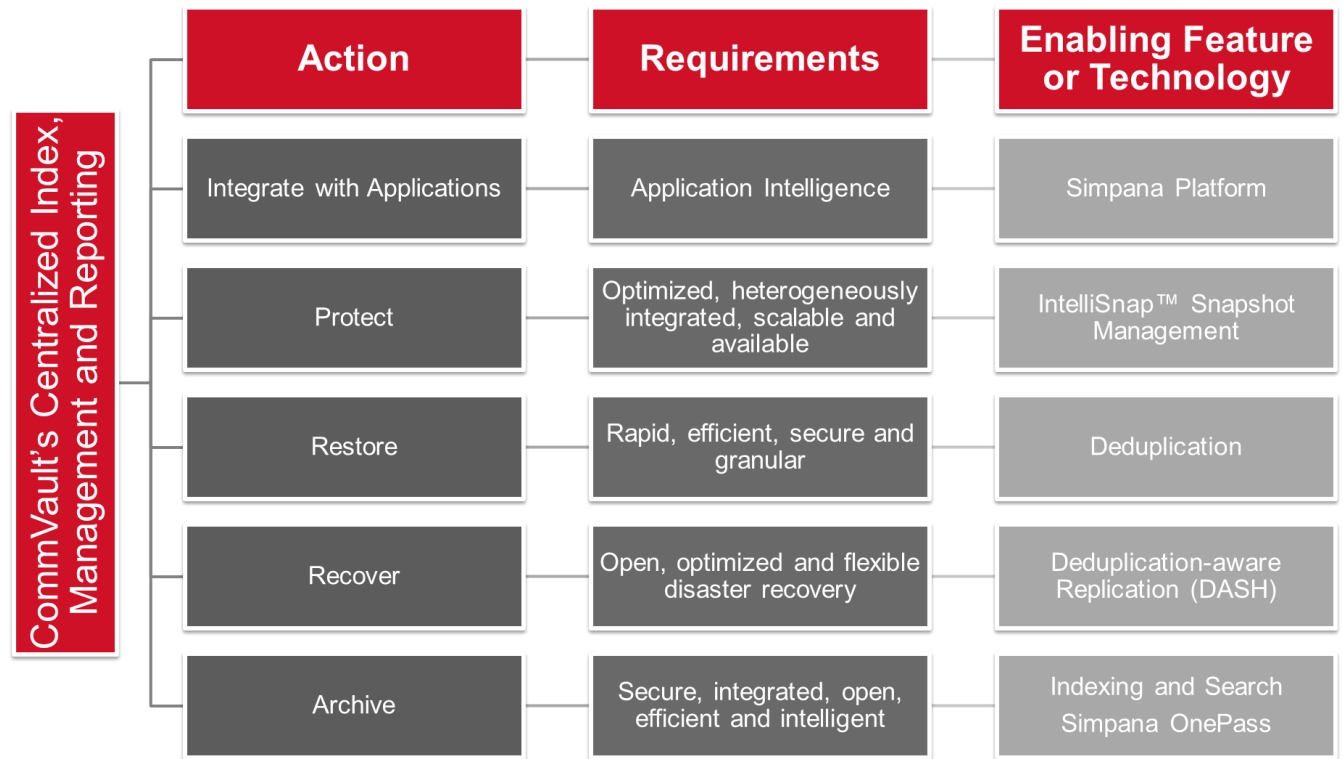| CommVault's Centralized Index, Management and Reporting	Action	Requirements	Enabling Feature or Technology
	Integrate with Applications	Application Intelligence	Simpana Platform
	Protect	Optimized, heterogeneously integrated, scalable and available	IntelliSnap™ Snapshot Management
	Restore	Rapid, efficient, secure and granular	Deduplication
	Recover	Open, optimized and flexible disaster recovery	Deduplication-aware Replication (DASH)
	Archive	Secure, integrated, open, efficient and intelligent	Indexing and Search Simpana OnePass

Figure 2: CommVault's Integration Across Data and Information Management Activities: A centralized index, management and reporting platform eases the burden of data management.

Each aspect of CommVault's Modern Data Protection strategy relates to an action essential to data backup and recovery. Together, these actions form the basis of your approach to data and information management and inform the technologies you'll use.

The process starts with application awareness—CommVault uses its in-depth knowledge of applications and file systems to provide granularity into the data you are protecting, and to enable consistent, rapid copying of that data.

Next, snapshot technology forms the core of the new data protection process. You must be able to create near-instant, application-aware, indexed recovery copies, without complex scripting and manual processes, from heterogeneous hardware snapshots. And you need to be able to safeguard your critical information as you bridge the gap from physical to virtual server environments; rapidly deploy, grow and scale virtual servers; and implement critical applications within those environments. Modern IntelliSnap™ snapshot integration improves recovery time and executes upon stringent data SLAs, while dramatically reducing backup windows by offloading production resources for protection operations and unlocking storage array investments.

Once you have snapshot copies of your data, embedded, global deduplication (a cornerstone to any data reduction strategy) eliminates redundant data to increase network efficiency and reduce storage infrastructure costs. This happens at the source and across the enterprise, without the need for rehydration during restores or off-site, to maximize efficiency. Source-side deduplication can reduce up to 90% of the data moved over the network and as much as 50% of the time required to perform backups.

Next, Modern Data Protection provides the flexibility to maintain copies of your data on different storage tiers to meet different retention and recovery needs, ensure appropriate levels of protection over time, and enhance efficiency overall. It lets you seamlessly and automatically store some snapshots near the original data for quick, full and granular restore; move older

backups off to less costly storage tiers; and preserve some copies as long as you need or are required to keep them. Integrated deduplication and replication is instrumental for keeping additional copies in other locations for cost-effective disaster recovery by efficiently moving only incremental block changes.

With Simpana software, a single, virtual, content-aware repository, called the ContentStore, retains deduplicated backup and archive copies for efficient retention, fast restores and global search. It allows you to use existing or commodity disk, or even cloud storage services, to lower the total cost of ownership for retained backup and archive data, and to increase IT and business agility.

Automation and simplification are also core tenets that factor into your Modern Data Protection strategy. To reduce storage and management costs, for instance, processes should be combined where possible and almost all manual activities should be eliminated through policy-based approaches and centralized administration that automate the movement of backup and archive data to the most cost-effective storage locations. Simpana software can help you further reduce complexity and operational impact by combining backup, archive and reporting for file and email data into a single operation and data scan with Simpana OnePass technology.

Security is paramount, whether you're a Fortune 100 or a small or midsize shop, so a modern data solution must provide not only the means with which to secure data, both in flight and at rest, but the flexibility to let administrators selectively define which data different types of users are authorized to see and manipulate with role-based access.

Finally, intuitive, global reporting is integral to the solution so you can better manage backup and recovery resources, develop insights for a deeper understanding of your environment, and plan appropriately as needs evolve.

Ultimately, of course, it doesn't matter how good your backup process works if you can't recover data fast and efficiently. So the last key element in a Modern Data Protection solution is recovery management. A centralized control that enables granular recovery of files, emails or documents, as well as full application restore, from any storage tier improves recovery time and recovery point objectives.

CommVault Simpana Software Delivers Modern Data Protection
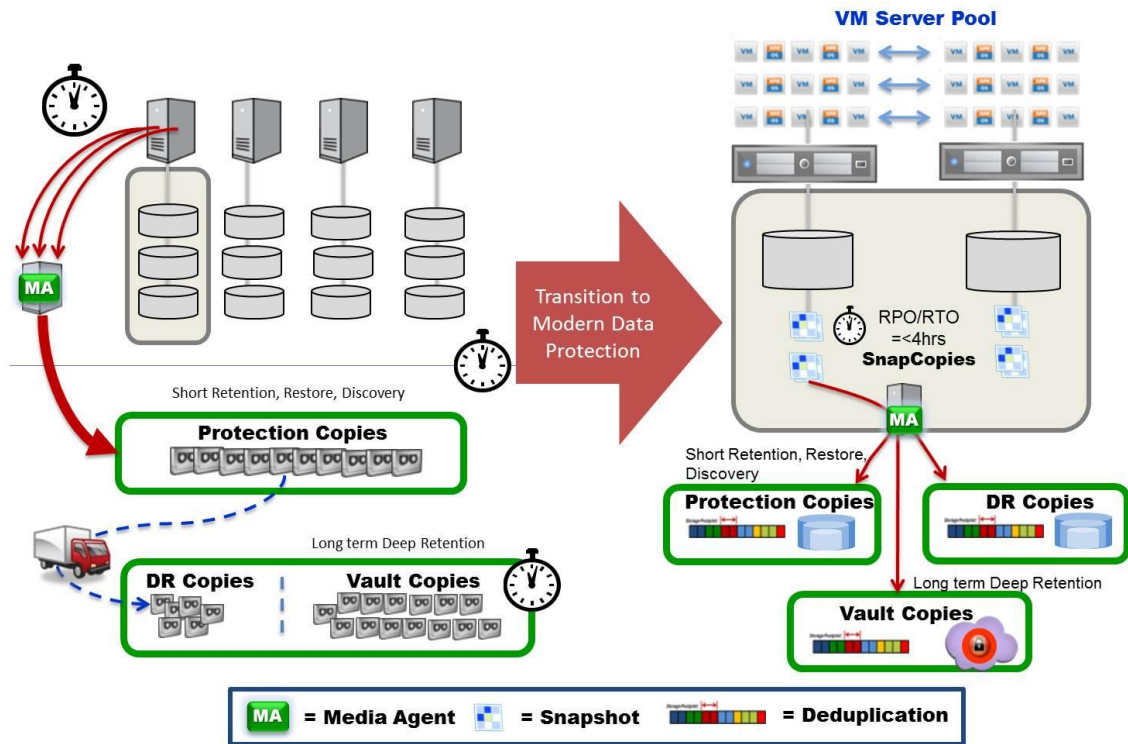
	Source Data	Amount Processed	Amount Transferred	Amount Stored	Handling Multiplier
Legacy Environments at the Limits					DR 2X Cost / Effort
Simpana Modernized Data Protection		Snap / Offload Roll back to hours ago, Reduce data loss gap Reutilize copy for new purposes	Delta Blocks Only	Global Deduplication	Eliminate Handling

Figure 2: Legacy vs. Modern Data Protection: Transitioning to a solution built for forward-moving businesses.

CommVault comes through on its promise to partner with you in meeting the challenges of enterprise backup and recovery in this era of rapidly evolving data and information management. By embracing Modern Data Protection and CommVault, you will be able to:

- Reduce storage and storage management costs by leveraging your existing investments more efficiently, delaying costly storage and network upgrades, and enabling additional storage options, such as more cost-effective DAS, SAN and NAS disk tiers, tape, cloud and object-based storage to meet your needs

- Simplify the complex by eliminating manual scripting and processes; automating tasks that discover, deploy, and protect within your environment; and leveraging policy-based data protection and management

- Manage data protection, recovery, and placement in heterogeneous hardware and heavily virtualized environments easily through application and storage-aware snapshots and persistent, global cataloguing across storage tiers

- Speed protection and recovery through the use of snapshots, global, embedded deduplication, and efficient cataloguing

- Ensure data is protected and managed in the best possible way to meet your corporate, regulatory, and governance requirements as a result of integrated archive, e-discovery, and data protection options in one solution that can seamlessly cover distributed client systems, remote/branch offices, and the central data center.

- Rely on automated alerts, standard and customized search options and security as well as easy-to-use reporting to make your dynamic environment more understandable and your data and information more manageable.

CommVault's Simpana® software eliminates the frustrations caused by poorly integrated legacy data management products, instead providing the benefits of a Modern Data Protection solution built on a single platform that enables you to analyze, replicate, protect, archive, and search data effectively and efficiently from any storage tier. The granularity it offers into your data gives you the clarity that's been so sorely lacking in today's chaotic data management state, enabling you to lower costs, reduce risk of loss and slash operational complexity. CommVault's forward-thinking, holistic approach in Simpana software offers unrivaled advantages over legacy data management systems and ensures that your organization is well poised for the unstoppable data growth still ahead.

Resources

Gartner's 2012 "Magic Quadrant for Enterprise Disk-Based Backup/Recovery" report
Modernize Backup and Recovery
Protect and Manage Virtual Machines
Optimize and Protect Applications
Accelerate Disaster Recovery
Reduce Hardware Spend
Deduplication
Snapshot Integration
Replication
CommVault Professional Services
InformationWeek Reports' "State of Storage 2012" report

About CommVault

A singular vision—a belief in a better way to address current and future data management needs—guides CommVault in the development of Singular Information Management® solutions for high-performance data protection, universal availability and simplified management of data on complex storage networks. CommVault's exclusive single-platform architecture gives companies unprecedented control over data growth, costs and risk. CommVault Simpana® software was designed to work together seamlessly from the ground up, sharing a single code and common function set, to deliver superlative backup and recovery, archive, replication, search and resource management capabilities. More companies every day join those who have discovered the unparalleled efficiency, performance, reliability, and control only CommVault can offer. Information about CommVault is available at www.commvault.com. CommVault's corporate headquarters is located in Oceanport, New Jersey, in the United States.