Take Data Protection to the Next Level

Maximize the value of storage hardware investments and improve IT efficiency. Eliminate scripting and automate application-aware snapshot and recovery operations. Improve disaster recovery readiness, align to more stringent service level agreements (SLAs) and accelerate test and development operations. Improve application availability by reducing backup windows. Working with the features of Hitachi Data Protection Suite, Hitachi Thin Image provides the snapshot and replication capabilities that ensure these achievements for your data center.

Organizations of all sizes have been struggling for some time with legacy approaches to protecting their data, especially critical application data. The volume of data has grown to the point where there isn’t enough time in the day to back it all up. At the same time, business is asking IT to spend less time doing backups to reduce the impact on application and data availability. New approaches are needed to meet these challenges.

Storage-system-based snapshots and replication have become the modern methods for enhancing application availability, as measured by recovery point objectives (RPO), recovery time objectives (RTO) and backup windows. These snapshot and replication capabilities offer a range of advantages over traditional backup methodologies.

Hitachi Thin Image (HTI) software provides industry-leading levels of backup and recovery performance, scalability, reliability and functionality. It is available with Hitachi Virtual Storage Platform (VSP) family and Hitachi Unified Storage VM (HUS VM).
Hitachi Thin Image snapshot capabilities provide logical, change-based, point-in-time data replication within Hitachi storage systems for immediate business use. Business usage can include data backup and rapid recovery operations, as well as decision support, information processing, and software testing and development.

Hitachi ShadowImage Heterogeneous Replication software operates between any storage systems within a virtualized storage pool managed by VSP family, HUS VM or Hitachi Unified Storage 100 family. ShadowImage Heterogeneous Replication creates multiple point-in-time clones that can be used for offline backup and other purposes, without impacting the production environment.

However, native array snapshot tools, such as HTI and ShadowImage Heterogeneous Replication, have varying degrees of automation and application awareness. The IntelliSnap feature of Hitachi Data Protection Suite (HDPS), powered by CommVault, brings more to snapshots. CommVault IntelliSnap combines deep application awareness with tight HTI and ShadowImage Heterogeneous Replication integration. Together, they consolidate, automate and manage snapshot-based protection and rapid recovery of applications, systems, virtual machines (VMs) and data.

IntelliSnap is available as a component of the full Hitachi Data Protection Suite, or can be licensed alone to add application-consistent intelligent snapshot management to your existing data protection infrastructure.

**SOLUTION PROFILE**

**Overview**

Hitachi Data Systems solves this problem with IntelliSnap technology. IntelliSnap streamlines, centralizes and simplifies snapshot management across heterogeneous storage platforms. It automates recovery of objects, applications and databases, and links snapshots to backup processes. The tight coupling of managed snapshots with data protection and recovery operations enables HDPS software to provide a complete view into data across applications, devices, operating systems and locations. This view helps to cut administrative overhead and improve access, availability and IT efficiency.

**Automated Snapshot Management**

IntelliSnap technology enables a modernized approach to data protection by merging storage system hardware snapshots directly into the data protection process. IntelliSnap integrates tightly with both host applications and the system software specific to each storage system.

As the central integration point between the applications and system software, the IntelliSnap feature drives snapshot creation and indexes the contents. It can then push application-consistent backup, archive or disaster recovery copies to secondary storage. IntelliSnap normalizes snapshot operations so they look the same and operate the same way regardless of application or storage platform.

For longer-term retention copies, HDPS software offloads deduplication, backup and encryption to a separate host to minimize impact to production systems. By automatically integrating application intelligence with hardware snapshots, HDPS software is able to reach through the application and file systems into the

**By 2016, at least 20% of large enterprises will abandon backup/recovery solutions using a traditional methodology and adopt those that employ only snapshot and replication techniques, up from less than 7% today.**

Source: Gartner, Magic Quadrant for Enterprise Backup/Recovery Software. Published 5 June 2013. Analysts: Dave Russell, Pushan Rinnen
It discovers volume or disk configurations for the snapshot operations, and coordinates these operations with proper application awareness. Thereby, it minimizes administrative configuration and eliminates any scripting requirements.

**Orchestrated Recovery**

Hitachi Data Protection Suite software’s index spans all snapshot copies under management. It enables intuitive search and granular recovery within and across all snapshots, whether on a single or multiple storage systems, or on storage systems from different vendors. IntelliSnap technology also automates database and application recovery across snapshots and secondary copies. For example, consider the steps to recover a database that is snapped every 6 hours, with log backups every 30 minutes and a backup to secondary storage once daily: You simply select the database and a point in time to recover from. HDPS software either copies back from a secondary copy or reverts to the snapshot. Then, it automatically replays the logs to bring the database back in a consistent state to the selected point in time. HDPS software orchestrates the entire process between hardware and host.

**Streamline Replication, Accelerate Test and Development Operations**

For the Hitachi Virtual Storage Platform family and Hitachi Unified Storage VM, IntelliSnap technology can simplify disaster recovery and test and development operations. It manages storage-system-based replication and the creation of writable snapshot copies. IntelliSnap can manage storage system replication to create more frequent and more current disaster recovery copies with full application awareness and granular recovery capabilities.

The IntelliSnap feature can also create test and development copies at the disaster recovery site. It offloads test and development from the production environment, eliminating the need for manual operations, labor-intensive refreshes and scripts. This capability significantly reduces overhead and accelerates test and development operations.

**Applications and File Systems Supported by IntelliSnap Technology**

- IBM DB2® and Lotus Notes®.
- Linux and UNIX File Systems.
- Oracle.
- SAP.
- VMware.

**Summary**

As discussed earlier, many organizations are transitioning data protection away from the traditional full + incremental backup model. They are also turning from the associated grandfather-father-son tape-cycling and retention process. Instead, they are moving toward a more modern approach, leveraging advanced technologies such as hardware- and software-based snapshots and replication, to achieve improved RPO, RTO, backup window and total cost of ownership (TCO) levels.

Utilizing these technologies can certainly help to improve service levels, reduce costs and mitigate risks. However, it is important to ensure that all applications and data, on all platforms and locations, are adequately protected without compounding the complexity of the environment. A single solution that can manage all types of data, automate processes and provide peace of mind through reporting and auditability is crucial to success.

The Hitachi Data Systems data protection solution, combining Hitachi Thin Image and Hitachi Data Protection Suite with its IntelliSnap feature’s application-aware snapshot management, meets these challenges today. At the same time, it ensures the scalability and reliability needed for tomorrow.
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<th>Features</th>
<th>Benefits</th>
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<tr>
<td>Scalability</td>
<td>Create and manage up to 1024 point-in-time snapshot copies. Reduce recovery time from data corruption or human errors.</td>
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<td>Efficiency</td>
<td>Only changed data blocks are stored for maximum capacity utilization. Maximize Hitachi disk storage capacity.</td>
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<td>Functionality</td>
<td>Version tracking of backups enables easy restores of just the data you need. Achieve frequent and nondisruptive data backup operations while critical applications run unaffected.</td>
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<td>Performance</td>
<td>Near-instantaneous restore reduces downtime and improves recovery objectives. New, greatly improved write performance reduces response time to host, minimizing impact on users and applications. Significantly reduce or eliminate backup window time requirements.</td>
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<td>Automation</td>
<td>Configure, create, retire, mount, mine, dismount, monitor, retain, revert and restore in the same way, regardless of hardware platform. Eliminate the need to script snapshot operations. Automate the creation of writable clones of databases and file sets for test and development. Reduce load on IT administrators and accelerate application testing and deployment with always-available copies of current production information.</td>
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<td>Recovery Management</td>
<td>Provide storage-system-assisted recoveries, database- or volume-level restores, and granular file, message, Microsoft® SharePoint® document or Oracle table recovery from any tier (snapshot, backup, archive or disaster recovery) to any target system. Quickly recover the data you need, when you need it, and where you need it.</td>
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<td>Security and Reporting</td>
<td>Initiate backup operations from hardware-based snapshots with rich job and storage-system-specific reports and analytics, with integrated auditing and security controls. Validate system and data integrity; ensure security controls are functioning correctly.</td>
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<td>Hardware-Agnostic</td>
<td>Align independent retention policies and provide application-consistent recovery copies across different storage types and tiers. Leverage this solution across virtualized and nonvirtualized storage systems.</td>
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