



What's New

Exciting New Features in SANsymphony™-V Release 9.0.3 (R9)

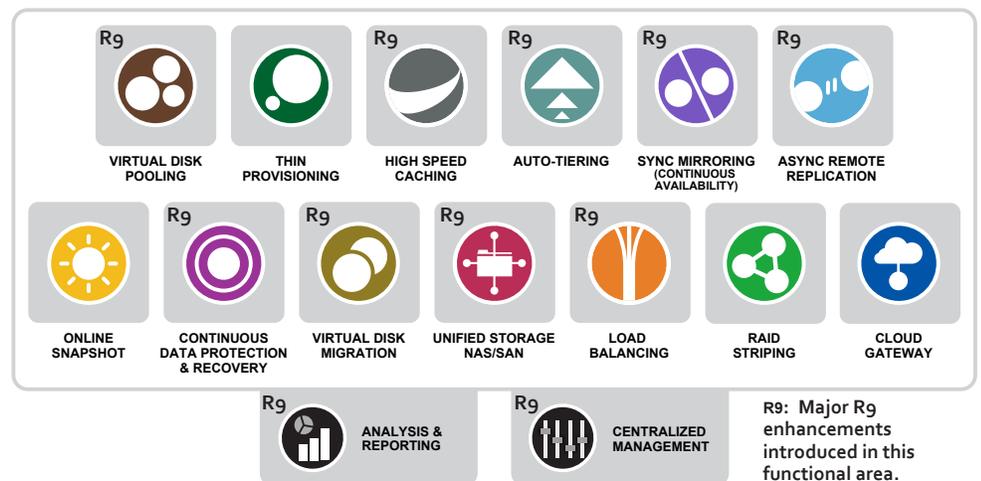
Introduction

SANsymphony-V R9 introduces far-reaching innovations designed to assist larger IT organizations tackle enterprise-wide storage management challenges, while helping others quickly roll out agile, scalable cloud storage infrastructures. Many of the new storage virtualization capabilities also benefit smaller data centers.

As you can see from the diagram, the enhancements cover several areas. The development was strongly influenced by the recommendations of DataCore customers and partners across the globe, and the forward-looking vision of the R&D team, eager to take storage to the next level. The new capabilities add superior flexibility, powerful automation and exceptional value to an already rich feature set. More details on each major enhancement to the SANsymphony-V storage hypervisor follow below.

Areas Enhanced:

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Note: Some features are available as separately-priced options. Please consult with your DataCore-authorized solution provider for more details on how to put the new capabilities to work for you.

WHAT'S NEW

Infrastructure as a Service (IaaS) Enhancements

"Flexibility and responsiveness"

Many of the architectural advances included in R9 are specially designed for companies eager to apply the principles of Infrastructure as a Service (IaaS) in order to realize new flexibility and responsiveness in their IT environments. DataCore places particular emphasis in 3 areas:

- Resource abstraction and control
- Provisioning and configuration
- Portability and interoperability

Among the innovations most visible in the new release are:

- Adaptive techniques for addressing growth
- Automating the dynamic allocation of tiered resources to meet different service levels
- Coordinating actions across related objects in unison
- Ensuring resiliency in the face of frequent changes, equipment obsolescence / failures and facility outages

Scalability Enhancements

"Adapting to expansion and growth"

- The maximum number of nodes supported in a centrally-managed DataCore server group may be extended from 2 to 8 nodes
- The 3rd through 8th nodes may be added at any time
- All nodes are managed from a common console and their collective resources may be rolled up into top level views

Benefits

SANsymphony-V R9 can expand to fulfill larger I/O requirements that exceed the power and/or port connectivity possible with 2 nodes.

You can grow into these larger configurations over time as the need to scale out arises; yet plan for them at the outset. Scaling out the configuration across more nodes enables you to better distribute the workloads and spread out the physical disk capacity. It also enhances the overall resiliency of the infrastructure as discussed below.

Continuous Availability Enhancements

"Avoiding downtime"

- N+1 redundant grid using 3 or more nodes
- Remove active disks non-disruptively from a pool

Benefits

N+1 redundancy enables IT organizations to architect their storage infrastructure with spare I/O bandwidth to absorb the loss of a node and its resources without compromising throughput. If you need "N" number nodes to meet I/O requirements, add an additional node for redundancy. For example, a configuration that requires 2 nodes (N=2) to meet the peak I/O requirements would be configured with 3 nodes (2+1). In the event that one of the nodes is taken out of service for planned or unplanned reasons, the remaining 2 nodes can adequately handle the workloads. The financial benefits are very significant and result in substantial savings. N+1 configurations better amortize the cost of redundancy over 2N redundant systems when N>1.

Decommissioning an aging disk or evacuating a disk in order to shrink the size of the physical disk pool becomes trivial. You simply designate which disk is to be removed. Its contents will be distributed in the background among the remaining disks in the pool so you can safely remove it without interrupting applications.

Asynchronous Replication Enhancements

"Leveraging distant sites"

- Replicate virtual disks from one DataCore node to several other DataCore nodes (1-to-many)
- Replicate virtual disks from multiple DataCore nodes to a central DataCore node (Many-to-1)
- Test disaster recovery using replicated virtual disks at a secondary site without impacting the live production site
- Group co-dependent virtual disks that should be replicated together
- Set priorities (Critical, High, Normal, Low, Archive) for which virtual disks should be allocated more of the replication link's bandwidth based on their storage profiles

Benefits

These new replication enhancements, taken together with existing capabilities provide several important capabilities:

- Consolidate backups and provide disaster recovery for many smaller data centers or branch offices using a common central data center. Especially useful for public and private Cloud Service Providers
- Spread the backup of different parts of a large data center across multiple smaller data centers instead of relying on another large backup site
- Build strong, verifiable disaster recovery practices that you can confide in
- Meet shorter Recovery Time Objectives (RTO)
- Address more current Recovery Point Objectives (RPO)
- Keep remote site up to date with modest inter-site WAN connections through compressed, multi-stream transfers
- Enable sites to back each other up using bi-directional replication

- Speed up the initial synchronization between two sites by creating a copy of the virtual disks at the primary site on transportable media and shipping it to the remote site. SANsymphony-V software will then transmit the changes to the remote site that occurred after the initial local copy was generated.

Continuous Data Protection (CDP)

"The undo button"

- Logging and recovery period extended from 48 hours to 14 days

Benefits

The longer CDP window helps IT rapidly restore virtual volumes to a point in time before malware, logic errors or user mistakes occurred, even if detected several days later. System administrators may also rewind a virtual disk image to any point within the 14 day rolling window.

Group Operations

"Combining related elements"

- Virtual disks may be organized into groups to operate on them in unison
- Hosts may be grouped as well
- Perform Snapshots and CDP operations on all members of the group at once
- Organize individual asynchronous replication partnerships into groups to synchronize activation/deactivation, pause/resume transfer, and checkpoint markers.
- Consolidate performance charts and event displays for members of the group
- The user interface expands or collapses the members of the group to simplify operations (display and command) on entire groups or on an individual resource
- Use a template to rapidly create many virtual disks with common properties

Benefits

Grouping is particularly valuable when actions need to be synchronized across a collection of co-dependent virtual disks. For example, you can use the grouping feature when scheduling snapshots for a collection of virtual disks at a specific point in time. Grouping is also convenient since one request can be used to cover a group of virtual disks. For example, you can request that a group of disks being asynchronously replicated to a remote site be activated for disaster recovery at the same time, or a group of disks can be served at once to a host.

Performance Enhancements

"Automatic fine tuning"

- 50 percent quicker
- Optimized for flash and SSD
- "Heat maps" lets you visualize hot spots of heavy activity within a physical disk pool
- Automatic rebalancing helps reduce hot spots by moving blocks to less active disks in the pool
- Historical performance charting, recording and exporting for analysis, planning and reporting
- New tuning and troubleshooting options
- Customized control for better prioritization

Benefits

Several enhancements to the adaptive caching algorithms result in close to 20 percent faster IOPS and throughput than earlier versions. These refinements, along with special multi-threaded developments, better leverage processor parallelism to make I/O response approximately 50 percent quicker for transactional workloads. Equally important, the algorithms smooth out spiky behavior sometimes experienced with SSDs to enhance the user experience.

The software works silently in the background to detect potential imbalances within a pool and automatically correct them.

It does this by keeping a "heat map" of relative access frequency among pooled drives within the same tier. The heat maps are also displayed in the management console. Disk blocks from drives that are overly busy are migrated to lightly loaded drives, thereby rebalancing the IO demands to get the best performance from the available resources.

The new release adds the ability to do performance trend analysis over time. The recording feature compiles and displays a running chart of performance metrics gathered from the environment from a wide choice of counters. Peak workload, spikes and potential bottlenecks can then be easily isolated. The historical results may also be exported to Microsoft Excel and other tools via a CSV (comma-separated values) file for further analysis, planning and reporting.

The storage profiles governing the behavior of virtual disks may be customized to set their relative importance when competing for shared resources. This ensures important applications benefit from more valuable resources, such as flash memory and SSDs, while less demanding tasks using lower cost, higher density storage.

Systems Management & Reporting Features

"Visualizing the Big Picture"

- Create reports summarizing or detailing resource allocation and configuration variables
- Export reports in various file formats (HTML, XML, CSV, etc.)

WHAT'S NEW

Automatically generates SNMP v1 (Simple Network Management Protocol) traps and responds to SNMP queries from popular 3rd party system management tools.

Benefits

Use the resource reports to generate billing and calculate cost allocations. Keep permanent records of configuration changes occurring over time to help with capacity planning and troubleshooting. SNMP support allows customers to monitor DataCore services using popular systems management products alongside other components of their IT infrastructure. DataCore will signal any abnormal conditions that it detects, as well as respond to periodic health status queries.

Integration with Major Systems Monitoring Tools

Central oversight of large scale IT operations generally takes place through sophisticated systems monitoring packages capable of synthesizing inputs and state changes from numerous hardware and software components that make up the data center. SANsymphony-V has been instrumented to supply the most popular systems monitoring packages in use today with the relevant inventory, status and event notifications needed to visualize the health of the storage virtualization layer.

- Microsoft System Center Operations Manager (Monitoring Pack)
- VMware vCenter Server (see section below on VMware Integration)
- Hitachi IT Operations Analyzer (Plug-in)

Their intuitive dashboards convey the storage infrastructure alongside

server, applications, facilities and network resources. The consolidated view of these varied facets assists system administrators in readily isolating potential trouble spots.

This helps correlate behaviors across dependent systems to expedite root-cause analysis. Early intervention reduces the chances for preventable outages and increases overall system performance and availability.

VMware Integration

"Collaboration with Server Hypervisor"

- vCenter Plug-in – Initiate, schedule and monitor key SANsymphony-V storage provisioning and data protection services (snapshots) directly from the vSphere Client console.
- Native vCenter integration – The SANsymphony-V management console communicates directly with vCenter Servers to automatically register vSphere hosts, clusters, virtual machines (VMs), and datastores in the host pane. From there you can serve and unserve virtual disks, create VMFS datastores and set the desired path selection policies (round robin, most recently used, etc.). The SANsymphony-V GUI automatically updates when new hosts are added to vCenter.
- Site Recovery Manager (SRM) Storage Replication Adapter (SRA) – Achieve fully automated site recovery and migration under the control of SRM using SANsymphony-V to replicate virtual machines and associated virtual disks.
- VAAI – Offload hosts and SAN from low-level storage operations best performed externally in the storage virtualization layer. These functions include:
 - » Full copy

- » Block zeroing
- » Hardware-assisted locking

Benefits

VMware vSphere system administrators can now harness and control the complementary services of the SANsymphony-V storage hypervisor without leaving their familiar vCenter Server console. Similarly, SANsymphony-V administrators have direct visibility into the vSphere storage consumers.

Leveraging the Power of Microsoft Windows Server 2012

"Richer more robust operating platform"

- SANsymphony-V software now runs on top of the Windows Server 2012 operating system.
- New capabilities to create highly available SAN/NAS configurations



Benefits

New capabilities in Windows Server 2012 enhance the ease, performance and resiliency of the virtualized storage environment. SANsymphony-V can run on dedicated physical servers or co-reside with virtualized applications hosted by Microsoft Hyper-V 3.0 to maximize the performance, availability and utilization of internal and directly attached storage (DAS), as well as external disk arrays.

Taking Advantage of the New Features

You can see from the cross-section of capabilities described above just how extensive the SANsymphony-V software has been enhanced in Release 9.0. For guidance on putting these new features to work for you, please consult with your DataCore-authorized solution provider or your DataCore representative.

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