RAINcloud OS™

RAINcloud OS™ is specifically designed to overcome the unique challenges of managing a high-performance multi-node clustered NAS system. Installed on each SnapScale node, RAINcloud OS combines three layers of traditional storage architectures – file system, volume manager and data protection – into one unified global namespace, creating a single intelligent file system that spans all nodes in a SnapScale cluster.

Scalability

RAINcloud OS allows the SnapScale clustered NAS systems to start as small as 3 nodes and scale to hundreds or thousands of nodes. This allows storage administrators to achieve up to petabytes of raw capacity within a single global namespace, minimizing the complexity of managing a large storage infrastructure. Scale storage by simply adding hard drives or additional nodes, while clients remain online and connected to data.

Efficiency

RAINcloud OS offers automated optimization of performance within the SnapScale clustered NAS environment. Capacity and performance resources are automatically balanced across each node in the system-wide cluster. When adding additional storage to SnapScale, the Data Balancer will ensure that new resources are integrated to provide maximum benefit to the entire cluster.

Thinly Provisioned

All RAINcloud OS storage volumes are thinly provisioned to allow growth to proceed without limitations. All volumes share the available global namespace and can be grown by simply adding hard drives or additional nodes. If necessary administrators can apply volume capacity limits that can be changed at will, or reverted back to limitless volumes.

High Availability and Data Protection

RAINcloud OS protects data globally through a unique data protection algorithm. The redundancy technology is designed for high availability and allows the system to absorb multiple concurrent failures across all levels of the storage system. With options for either 2-way or 3-way file redundancy across a cluster, the SnapScale system can withstand multiple drive or node failures without any data loss or loss of cluster connections.

Unified Storage

RAINcloud OS allows the storage of both block and file-based data on a single SnapScale clustered NAS system. Take advantage of common networking protocols such as SMB, NFS, HTTP or FTP for file sharing, collaboration and backup, and host database storage and virtualized servers on SnapScale iSCSI LUNs. Support your server consolidation and virtualization initiatives with a single SnapScale cluster in your environment.

RapidRebuild™

To insure redundancy in the event of a failure, failed drives are automatically rebuilt using RapidRebuild™ within the system and minimizes the time spent operating in a degraded state. RapidRebuild also reduces the overall system impact of drive failures compared to traditional NAS with RAID. Unlike the performance impact failures can cause in a traditional architecture, RapidRebuild data protection isolates failures minimizing their impact on system performance. With the spare distributer, rebalance hot-spares within your cluster after a drive rebuild to automate the distribution of data protection.

Simple Management

The SnapScale storage system is designed for utilization in quickly growing environments with unstructured data, and allows administrators to completely automate all tasks associated with deployment, provisioning, monitoring and reporting. The RAINcloud OS Alert System also notifies the administrator in the event of an optimization event recommendation to ensure that data and spares are balanced across the entire cluster to maximize performance.

Features

- Infinitely scalable – will grow to thousands of nodes with petabytes of raw storage

- Highly available – with 99.999% uptime due to full system redundancy

- Allows administrators to manage a single global namespace, no matter how much storage is added

- High performance – performance scales linearly as nodes are added

- Simple to configure – Configure a cluster in less than 10 minutes with the easy-to-use RAINcloud OS configuration wizard

- Intelligent Clustering - Optimize data distribution, protection and performance automatically

- Unified Storage - Consolidate your storage by hosting both block and file level data

Specifications

File System Type	Distributed file system with distributed metadata
Management Interface	Web-based Graphical User Interface (GUI), SSH-Based Command Line Interface (CLI)
RAIN Levels	2-way or 3-way file redundancy
Network File Protocols	Microsoft Networks SMB (1.0/2.0/2.1) / CIFS (NTLM), NFS v3, (UDP/TCP), CIFS via Mac OS X, HTTP/HTTPS, FTP/FTPS
Block-level Protocols	iSCSI
Network Transfer Protocols	TCP/IP; UDP/IP
Network Security	Microsoft Active Directory Service (ADS) (member server) UNIX Network Information Service (NIS) File and Folder Access Control List (ACL) Security for Users and Groups Secure Sockets Layer (SSL v2/3) 128-bit Encryption SMTP Authentication and support for email encryption (STARTTLS and TLS/SSL encryption protocols)

	Data Protection	System Management	Utilities
Notable Features	• Automatic failover • RAIN • Snapshots • Flexible Volumes • Replication w/Snap EDR™ (optional*) • Backup to VTL or Tape with supported backup agents • RapidRebuild™	• Multi-system Management with SnapServer Manager™ • Volume-Based Quotas • Home Directories • Command Line Interface • SNMP and Email Alerts • NTP Support • Network Load Balancing • UPS • Supports Automated Update Notification	• Data Import Tool • Network Port Performance Monitoring • Data Balancer • Spare Distributor
Supported Platforms	Microsoft Windows 2000 and later Mac OS X 10.5/10.6/10.7/10.8/10.9 (via CIFS/SMB) UNIX/Linux		

* Sold separately.

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