HALO storage operating system
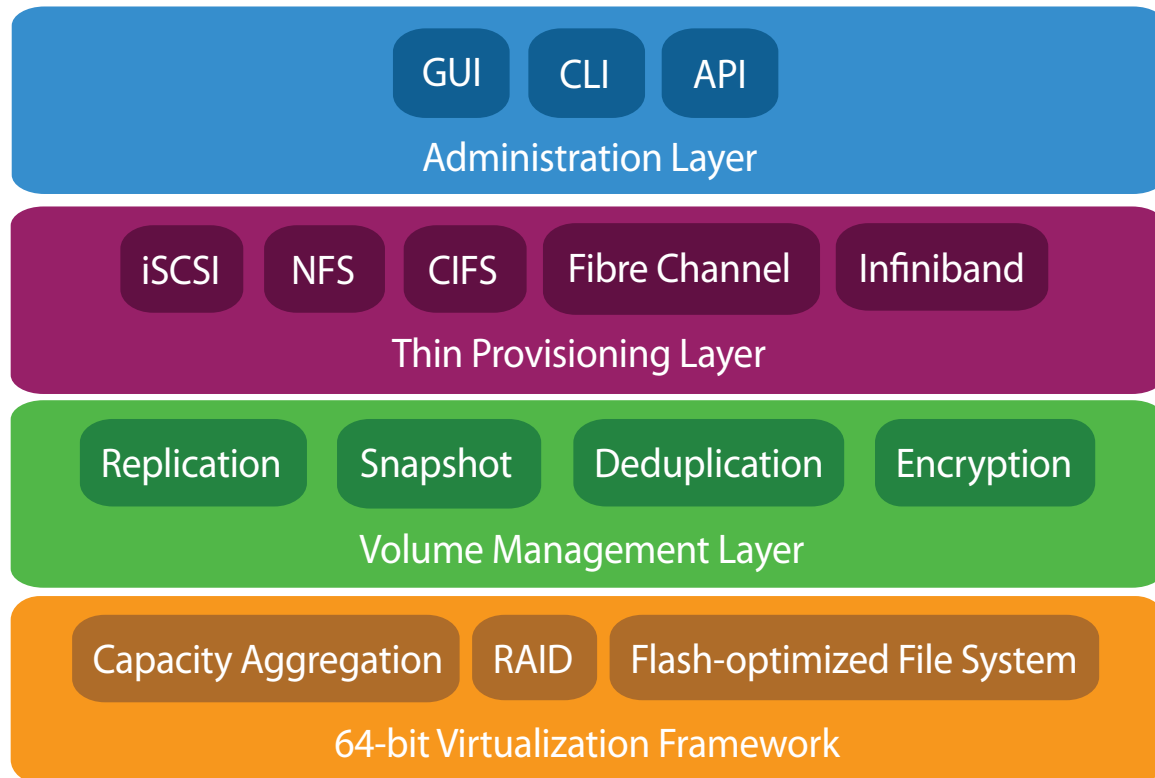
Comprehensive storage management and data protection software for Nimbus flash memory systems

GUI	CLI	API
Administration Layer		

iSCSI	NFS	CIFS	Fibre Channel	Infiniband
Thin Provisioning Layer				

Replication	Snapshot	Deduplication	Encryption
Volume Management Layer			

Capacity Aggregation	RAID	Flash-optimized File System
64-bit Virtualization Framework		

Highlights

- iSCSI, Fibre Channel, and Infiniband SAN
- NFS v2/3/4 for VMware, Citrix, Xen, and UNIX
- CIFS w/ Active Directory for Windows clients
- Capacity aggregation and inline deduplication
- Thin-provisioning and on-demand expansion
- Intuitive Web management and CLI

Protection

- Advanced RAID protection and encryption
- Performance-optimized snapshots
- Synchronous mirroring for high availability
- Asynchronous replication for disaster recovery
- In-depth analytics and proactive notification

Complete Enterprise Storage Management Made Simple

At the heart of Nimbus flash memory systems is storage software engineered over five years and proven at hundreds of customer sites. Nimbus' HALO operating system is a comprehensive software suite that provides end-to-end administration, data protection, data optimization, data security, and detailed monitoring of Nimbus systems, delivering the intelligent storage management essential for mission-critical primary storage. Purpose-built for flash memory, HALO's flash-optimized file system maximizes flash durability and usable capacity, reducing total cost of ownership significantly compared to conventional storage arrays.

Nimbus systems powered by HALO are complete, turn-key solutions from day one. Unlike competing storage arrays that require costly and complex per-feature licenses, HALO includes all features with no upfront licensing fees. With its comprehensive feature set and intuitive user interface, HALO makes enterprise storage administration easier than ever before.

Multiprotocol Unified Storage

HALO provides unified iSCSI, Fibre Channel, Infiniband, NFS, and CIFS support for block and file storage in one system. No need to deploy separate NAS and SAN systems; Nimbus provides multiprotocol storage in a single easy-to-use platform, minimizing hardware costs and simplifying storage management. Administrators can provision up to 500 TB of block and file storage in seconds from one centralized pool, even across multiple expansion shelves, maximizing utilization. Capacity can be added transparently while in operation, essential for 24 x 7 x 365 nonstop environments.

Virtualization and Database Excellence

Advanced features like reserve/release and persistent reservations, prerequi-sites for virtualization, clustering, and SAN file systems, are supported. HALO seamlessly integrates with major virtualization hypervisors, like VMware, Citrix, and Microsoft Hyper-V, as well as virtual desktop infrastructure (VDI) using XenDesktop, VMware View, and more. Mainstay business apps like Oracle, Microsoft SQL Server, Exchange, and SharePoint run better than ever before with Nimbus' combination of fast flash hardware and complete HALO software.

Inline Dedupe and Thin Provisioning

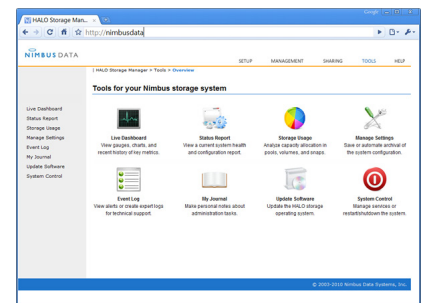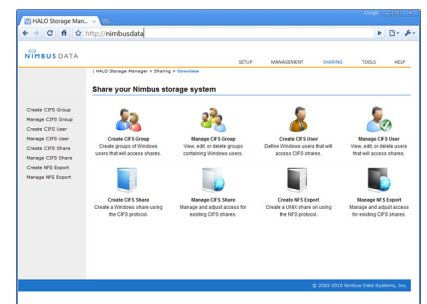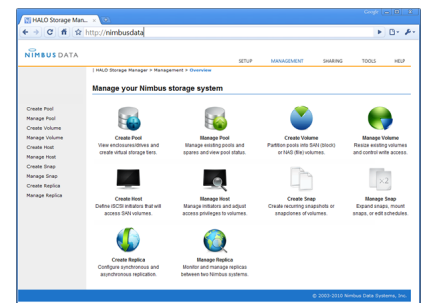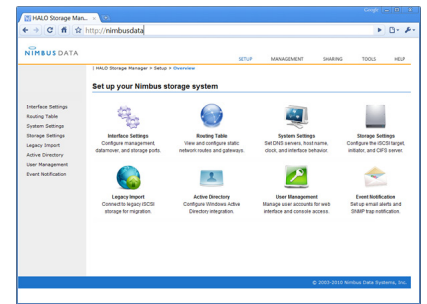Selectable inline deduplication strips out duplicate data in real-time, reducing the amount of actual storage capacity needed by up to 90% in server and desktop virtualization environments. Thin provisioning enables storage administrators to provision ample capacity to servers while minimizing host file system management.

Full Data Protection & Reporting

The powerful snapshot feature creates mountable, point-in-time images of production volumes without impacting performance. Snapshots can be scheduled, and policies can be set to retire them automatically over time. Synchronous and asynchronous continuous mirroring and replication provide disaster recovery using efficient transfers and throttling to minimize WAN bandwidth usage. Automatic system monitoring watches for potential problems and notifies administrators proactively. A graphical dashboard provides insight into real-time and historical system status and performance. A scriptable CLI enables automated administration in large-scale storage environments.

All-inclusive Software, Not Headaches

Nimbus Sustainable Storage systems are complete, turn-key solutions from day one. Unlike competing products that seem to always demand new client packs or separately licensed features, HALO includes all software features free-of-charge and with no upfront licensing fees. With its comprehensive feature set and intuitive user interface, HALO makes enterprise storage administration easier than ever before.

Nimbus Data Systems, Inc.
701 Gateway Blvd, Suite 100
South San Francisco, CA 94080

www.nimbusdata.com
(877) 6-NIMBUS

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