



DATA PROTECTION

FROM THE DESKTOP TO THE DATA CENTER

SPHiNX™ meets the specific needs of the desktop to the data center, providing a holistic data protection solution saving money, time and resources. Offering complete disaster recovery capabilities, SPHiNX also scales easily to grow with your business. As a primary repository for data center backups, SPHiNX can be used as secondary tiered storage for replicated data to meet disaster recovery requirements.



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FROM THE DESKTOP TO THE DATA CENTER

HOLISTIC DATA PROTECTION

Centralize, simplify and consolidate data from your desktops and remote offices to central data centers and disaster recovery sites

SAVE MONEY, TIME AND RESOURCES

Reduce your expenses, improve efficiency and better utilize available resources, consolidating tape, reducing tape media usage and backup management

REDUCES RISK

Minimize human error and mechanical failure, remove tape errors for server backup.

COMPLETE DISASTER RECOVERY

Flexible policy engine for automatic replication of data offsite, optional physical tape migration

SCALES TO MEET BUSINESS GROWTH

Manage multiple host systems, OS types; additional capacity as needed to meet ever-increasing data volumes

SPHiNX™ meets the specific needs of the desktop to the data center, providing a holistic data protection solution saving money, time and resources. Offering complete disaster recovery capabilities for mid-range server, open systems and the desktop host environment, SPHiNX also scales easily to grow with your business. As a primary repository for data center backups, SPHiNX can be used as secondary tiered storage for replicated data to meet disaster recovery requirements.



Disk-based Backups

Flexible deployment as a VTL or NAS device for rapid data recovery

As a disk-based data protection solution, SPHiNX maximizes your reliability and improves backup and restore success rates by eliminating associated drive or media errors. SPHiNX offers flexible functionality either as a network attached storage (NAS) device or virtual tape library (VTL) to ensure rapid, reliable data recovery with reduced data loss and minimal downtime. Delivered via a dedicated appliance with hot swappable drives and redundant power supplies ensures high system availability.

Streamline Backup and Restore Processes

Improved performance, immediate access to stored data

Backups can be streamlined for improved performance, and restores are exponentially faster than using traditional tape drives. Multiple host systems can be secured and connected to SPHiNX as a shared resource for several systems or partitions with multiple backup streams supported from any single system. With immediate access to stored data, SPHiNX drastically reduces your recovery time to meet increasing stringent RTO and RPO requirements. You can reduce capital expenditures and operational expenses by consolidating the number of tape devices and media that must be maintained.

Seamless Backup Application Integration

Leverage your existing assets, no software or agents to install

Crossroads Systems has been successfully integrating with other leading technologies for more than 15 years. SPHiNX embodies this expertise by precisely emulating standard tape drive and library formats to ensure compatibility with your existing backup application to leverage the assets you already have. SPHiNX integrates with most leading backup applications with no disruption to current backup policies and processes. It isn't necessary to install any agents or software on the host system.

Physical Tape Integration

Archive, disaster recovery and capacity offload

SPHiNX virtual tape cartridges can be exported to a physical tape drive as a secondary task and can be processed automatically via schedule or on-demand during idle times outside the normal backup window. With a Stacked Tape Export, multiple virtual cartridges or media pools can be written to a physical tape, thus reducing physical tape media expenses. Using a Native Export format means that the exact data set/format is copied to physical tape just as if the backup application wrote it; therefore, it can be restored direct to the host system as needed. Additionally, SPHiNX can import data from existing physical tape to migrate off non-maintained technology.

Built-in Data Reduction

Capacity optimization and network utilization

Data reduction, up to 12:1 or greater, allows virtual cartridges and data files to be automatically compressed as they are written to disk. SPHiNX identifies duplicate data and only transmits the delta changes, thus optimizing the available network bandwidth during replication. Optionally, data reduction can be disabled for data integrity concerns in legal compliancy requirement situations.

Extensible and Scalable

Growth, capacity and system connectivity

SPHiNX is an appliance dedicated to providing virtual tape protection, affordable platforms and flexible network connectivity (IP, FC or SCSI), allowing you to leverage your existing infrastructure, including your backup application, and transfer data at high speeds. SPHiNX scales well with support for dynamic virtual tape sizing, virtual drives and an unlimited number of virtual cartridges. Additional capacity on demand is supported using any mainstream SAS- or FC-connected disk array. Offsite data can be recalled at any time; therefore, extending the amount and availability of real-time data.

Remote and Branch Office Protection

Offsite data protection, centralized consolidation

The SPHiNX-EX (Entry Edition) provides a powerful and cost-effective solution that protects data on laptops, desktops and virtual machines, allowing end users to initiate a direct restore of data backups or archived files. SPHiNX can be easily installed into a remote office or smaller environment and configured using the existing

Ethernet network without disrupting any of your current backup policies and schedules. Once SPHiNX is installed, it requires no human intervention unless you decide to change the configuration. As an automated data protection solution, SPHiNX is perfect for "lights out" environments.

Data Replication Suite

Eliminate tape handling, empower disaster recovery

SPHiNX provides an option to replicate backups remotely by synchronizing data copies over the WAN between a local SPHiNX and one or more remote SPHiNX systems. Replication can reduce offsite storage or eliminate tape handling altogether while enabling immediate access of data. SPHiNX only transmits the delta changes, thus optimizing performance by better utilizing the available network bandwidth.

Data Encryption Suite

Achieve complete security for compliance

The SPHiNX-CX (Corporate Edition) provides an option to encrypt data, utilizing strong AES-256 encryption and a robust key management infrastructure to satisfy regulatory compliance and company security policies. With SPHiNX, you can encrypt data as it is stored or wait for idle times if faced with short backup windows.

FileStor-CDP

Desktop data protection with user restores

FileStor-CDP provides an option to centralize end-user data at the data center, empowering employees to simply and independently restore their own files without IT intervention. With an average of more than 50 percent of the workforce working remotely, accidental deletions to disasters could paralyze a business unless you have it backed up centrally at your data center.

FileStor-HSM

Server file migration and management

FileStor-HSM provides an option to systematically migrate inactive and rarely-used data on Windows File Servers to SPHiNX. Inactive data is physically migrated but still readily visible and accessible at all times.

IBM Power Systems

- Alternate IPL device
- No software or agents
- Emulates IBM drives & libraries
- ROBOT/Save, BRMS & native i5/OS commands
- Most leading Backup Applications

HP NonStop

- No software or agents
- Emulates HP tape devices
- Load balancing and auto failover
- Backup/Restore, Mediacom or DSM/TC & EMS

Virtual Servers

- Automated VM attachment
- Persistent Connection
- Dedicated VTL instance per VM host
- Secure, isolated data sets
- Most leading Backup Applications

SPHiNX Specifications

SPHiNX Platform	SPHiNX 1U	SPHiNX 2U	SPHiNX 3U	SPHiNX 3U-n
Storage Capacity (Usable)	3TB	3TB, 6TB	6, 12, 18, 24TB	External Only
Software Version	<i>SPHiNX-EX (Entry Edition)</i>	<i>SPHiNX-CX (Corporate Edition)</i>	<i>SPHiNX-CX (Corporate Edition)</i>	
Host Connectivity	IP	SCSI LVD or 4Gb FC	SCSI LVD or 4Gb FC	
Host Interface	NAS (CIFS) or VTL (iSCSI)	VTL (SCSI or FC) or VTD (SCSI or FC)	VTL (SCSI or FC) or VTD (SCSI or FC)	
# of Host Ports	2 Ethernet	Up to 6 SCSI, or 6 FC, or a mix of both	Up to 6 SCSI, or 12 FC, or a mix of both	
# of Host Systems	Up to 300 CIFS; Up to 32 VTL	Up to 32	Up to 32	
Host OS Support	Windows Server 2003/2008, RedHat Linux ES 5.2	i5/OS v5r2, v5r3, v5r4 and IBM i v6.1, AIX 5.3 and 6.1, HP NonStop and Windows 2003/2008	i5/OS v5r2, v5r3, v5r4 and IBM i v6.1, AIX 5.3 and 6.1, HP NonStop and Windows 2003/2008	
External Disk	Any SAS Controller	Any SAS or FC Controller	Any SAS or FC Controller	
Physical Tape	Any LTO3/4 SCSI or SAS Device	Any SCSI, SAS, or FC Device	Any SCSI, SAS, or FC Device	
# of Virtual Tape Devices	Up to 32 VTL and 32 virtual drives	Up to 6 VTL and 32 virtual drives	Up to 12 VTL and 32 virtual drives	
# of Virtual Cartridges	Up to 96 per VTL	Unlimited	Unlimited	
Height x Width x Depth	1.7"(43mm) x 17.2"(437mm) x 25.6"(650mm)	3.5"(89mm) x 17.2"(437mm) x 25.5"(648mm)	5.2"(132mm) x 17.2"(437mm) x 25.5"(648mm)	
Weight	46 lbs (20.9 kg)	55 lbs (24.9 kg)	72 lbs (32.7 kg)	
Operating / Non-Operating Temperature	10° to 35°C / -40° to 70°C	10° to 35°C / -40° to 70°C	10° to 35°C / -40° to 70°C	
Operating / Non-Operating Humidity (NC)	8 to 90% / 5 to 95%	8 to 90% / 5 to 95%	8 to 90% / 5 to 95%	
Power Supply	560W - Single Supply	700W - Redundant (Hot Swappable)	800W - Redundant (Hot Swappable)	
AC Voltage	100 to 240V	100 to 240V	100 to 240V	
Frequency	50 to 60 Hz	50 to 60 Hz	50 to 60 Hz	
Power Consumption (Amps)	+5V (25A), +3.3V (12A), +12V (54A), +5Vsb (3A)	+5V (30A), +3.3V (12A), +12V (57A), +5Vsb (4A)	+5V (30A), +3.3V (12A), +12V (66A), +5Vsb (4A)	
Safety	UL/CAN/CSA/IEC/EN60950-1	UL/CAN/CSA/IEC/EN60950-1	UL/CSA/IEC/EN60950-1	
Emissions	FCC 47 CFR Part 15 Class A	FCC 47 CFR Part 15 Class A	FCC 47 CFR Part 15 Class A	
CE Markings	EN55022, EN55024, EN61000-3, EN61000-4	EN55022, EN55024, EN61000-3, EN61000-4	EN55022, EN55024, EN61000-3, EN61000-4	

	Entry-Edition	Corporate-Edition
	<i>SPHiNX-EX</i>	<i>SPHiNX-CX</i>
Virtual Tape (VTL)	✓	✓
Network Attached Storage (NAS)	✓	
IP Host Connectivity	✓	
SCSI or FC Host Connectivity		✓
Virtual Servers	✓	
External Storage	✓	✓
Integrated Physical Tape	✓	✓
Stacked Export	✓	✓
Native Export		✓
Built-in Data Reduction	✓	✓
Clustering Capability		✓
Data Replication Suite	Option	Option
Data Encryption Suite		Option
FileStor-CDP	Option	
FileStor-HSM	Option	



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ABOUT CROSSROADS

Headquartered in Austin, Texas, Crossroads Systems delivers flexible solutions to connect, protect, secure and restore business-critical data. Crossroads (symbol: CRDS) is currently traded on Pink Sheets and also posts its financial disclosure reports, press releases and other related documentation on the OTCIQ web service of the Pink Sheets website. For more information, please visit www.crossroads.com.

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