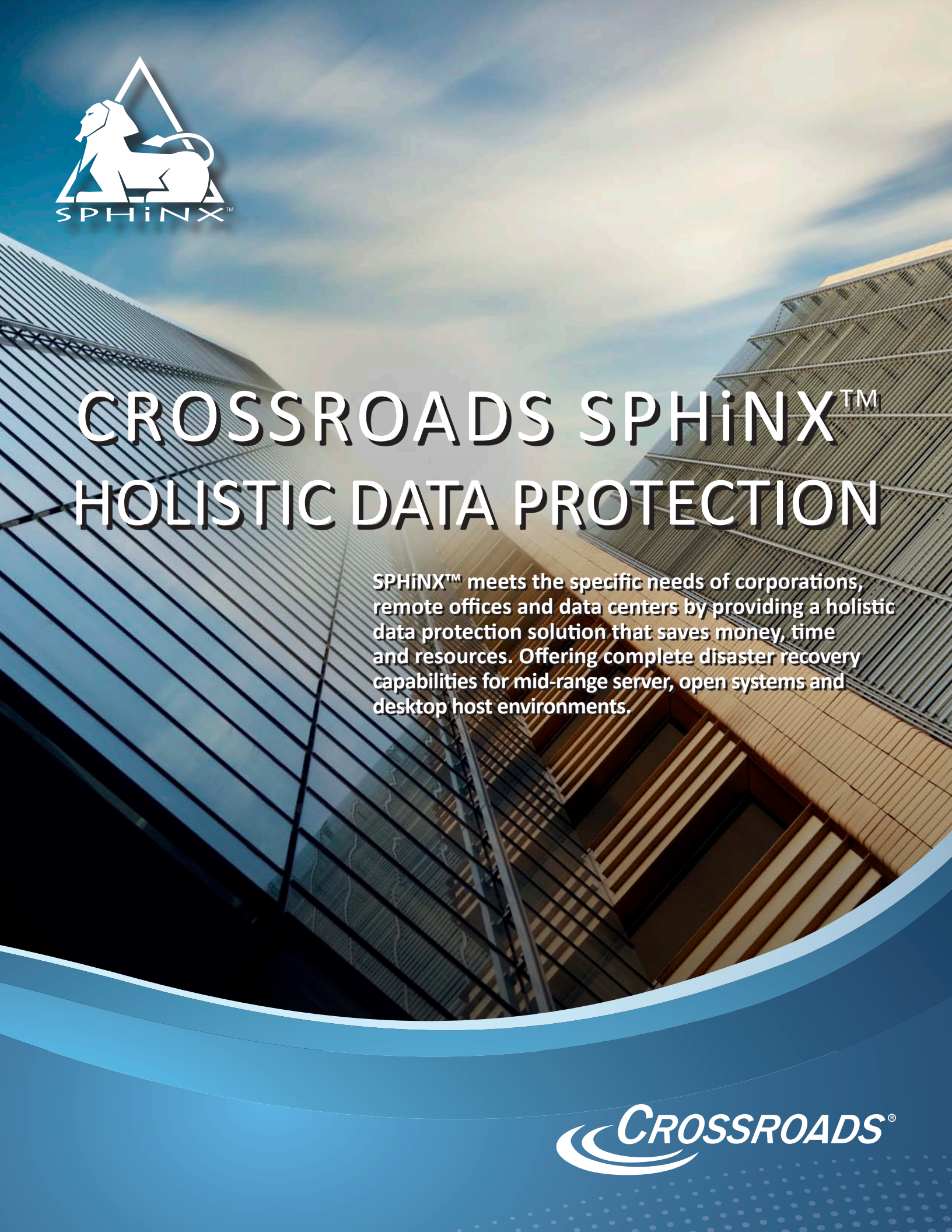

CROSSROADS SPHiNX™ HOLISTIC DATA PROTECTION

SPHiNX™ meets the specific needs of corporations, remote offices and data centers by providing a holistic data protection solution that saves money, time and resources. Offering complete disaster recovery capabilities for mid-range server, open systems and desktop host environments.

SPHiNX: HOLISTIC DATA PROTECTION

HOLISTIC DATA PROTECTION

Centralize, simplify and consolidate data from remote offices, 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

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 RTO and RPO requirements. You can reduce capital expenditures and operational expenses by consolidating the number of tape devices and media that require maintenance.

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 backup application that leverage your existing assets. SPHiNX integrates with most leading backup applications with no disruption to current backup policies and processes. It isn't necessary to install any additional 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 Tape-to-Tape Export in Native 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

Data reduction, up to 12:1 or greater, allows virtual cartridges and data files to be automatically compressed as they are written to disk. Optionally, data reduction can be disabled ensuring data integrity for legal compliance.

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. 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

Eliminate tape handling, empower disaster recovery

SPHiNX provides the ability 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 can be configured to only transmits the delta changes, thus optimizing performance by better utilizing the available network bandwidth.

WAN Acceleration

Maximize end-to-end data transfers between sites

Cloud computing, data center consolidation, hosted disaster recovery, and other IT trends have created a need to move more data remotely, at higher speeds. SPHiNX-CX (Corporate Edition) provides WAN Acceleration options to maximize end-to-end data transfers, ensuring scalability, network efficiency, security, and bandwidth control when replicating between sites and SPHiNX systems.

Data Encryption

Achieve complete security for compliance

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. SPHINX can also completely offload the encryption algorithm processing by passing a generated key to a physical tape device equipped with a hardware encryption chipset.

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

Unisys ClearPath MCP

- No software or agents
- Backup entire disk pack
- Emulates MCP supported tape device
- Tape Integration enables tape stacking for consolidation and media migration
- Supports most MCP Tape Management systems and utilities

SPHiNX Specifications

SPHiNX Platform	SPHiNX 1U	SPHiNX 1U-s	SPHiNX 2U-s	SPHiNX 3U-s	SPHiNX 3U-ns
Storage Capacity (Usable)	3TB	3TB, 6TB	6, 9, 12, 15TB	15, 20, 25, 30, 35TB	External Only
Software Version	SPHiNX-EX (Entry Edition)	SPHiNX-CX (Corporate Edition)	SPHiNX-CX (Corporate Edition)	SPHiNX-CX (Corporate Edition)	
Host Connectivity	IP	SCSI LVD, SAS, or 4Gb FC	SCSI LVD, SAS, or 4Gb FC	SAS, 4Gb or 8Gb FC	
Host Interface	NAS (CIFS) or VTL (iSCSI)	VTL or VTD	VTL or VTD	VTL or VTD	
# of HBA Ports	2 Ethernet	Up to 4 SCSI LVD, 4 SAS, 4 FC, or a mix of each	Up to 6 SCSI, 6 SAS, 6 FC, or a mix of each	Up to 10 SAS, 20 FC, or a mix of each	
Host OS Support	Windows XP, Windows Server 2003/2008/ 2008 R2, RedHat Linux ES 5.2	i5/OS v5r4 and IBM i v6.1, 7.1, AIX 5.3 and 6.1, 7.0, RedHat Linux, HP NonStop, Windows 2003/2008/ 2008 R2 and Unisys ClearPath MCP	i5/OS v5r4 and IBM i v6.1, 7.1, AIX 5.3 and 6.1, 7.0, RedHat Linux, HP NonStop, Windows 2003/2008/ 2008 R2 and Unisys ClearPath MCP	i5/OS v5r4 and IBM i v6.1, 7.1, AIX 5.3 and 6.1, 7.0, RedHat Linux, HP NonStop, Windows 2003/2008/ 2008 R2 and Unisys ClearPath MCP	
External Disk	Any SAS Controller	Any SAS or FC Controller	Any SAS or FC Controller	Any SAS or FC Controller	
Physical Tape	Any LTO3/4 SCSI or SAS Library	Any SCSI LVD, SAS, or FC Device	Any SCSI LVD, SAS, or FC Device	Any SCSI LVD, SAS, or FC Device	
# of Virtual Tape Drives	Up to 32 VTL & 32 Virtual Drives	Up to 4 VTL & 32 Virtual Drives	Up to 6 VTL & 32 Virtual Drives	Up to 20 VTL & 32 Virtual Drives	
# of Virtual Cartridges	Up to 500 per VTL	Unlimited	Unlimited	Unlimited	
Height x Width x Depth	1.7"(43mm) x 17.2"(437mm) x 25.6"(650mm)	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)	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	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%	8 to 90% / 5 to 95%	
Power Supply	560W - Single Supply	560W - Single Supply	700W - Redundant (Hot Swappable)	800W - Redundant (Hot Swappable)	
AC Voltage	100 to 240V	100 to 240V	100 to 240V	100 to 240V	
Frequency	50 to 60 Hz	50 to 60 Hz	50 to 60 Hz	50 to 60 Hz	
Power Consumption (Amps)	+5V (25A), +3.3V (21A), +12V (43.6A), +5Vsb (3A)	+5V (25A), +3.3V (21A), +12V (43.6A), +5Vsb (3A)	+5V (30A), +3.3V (24A), +12V (57A), +5Vsb (4A)	+5V (30A), +3.3V (24A), +12V (66A), +5Vsb (4A)	
Safety	UL/CAN/CSA/IEC/EN60950-1	UL/CAN/CSA/IEC/EN60950-1	UL/CAN/CSA/IEC/EN60950-1	UL/CAN/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	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	EN55022, EN55024, EN61000-3, EN61000-4	

	Entry-Edition	Corporate-Edition
	SPHiNX-EX	*SPHiNX-CX*
Virtual Tape (VTL)	✓	✓
Virtual Tape Drive (VTD)		✓
Network Attached Storage (NAS)	✓	
IP Host Connectivity	✓	
SCSI, SAS or FC Connectivity		✓
External Storage	✓	✓
Integrated Physical Tape	✓	✓
Stacked Export	✓	✓
Tape-to-Tape Export		✓
Built-in Data Reduction	✓	✓
Clustering Capability		✓
Data Replication Suite	Option	✓
WAN Acceleration		Option
Data Encryption Suite		Option
FileStor-CDP	Option	
FileStor-HSM	Option	

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ABOUT CROSSROADS

Crossroads Systems, Inc. (NASDAQ: CRDS), is a global provider of solutions and services that ensure stored data is proactively protected and reliably recovered. Crossroads offers organizations powerful data protection, proactive data security, intelligent storage connectivity, unmatched performance, and significant cost savings. Founded in 1996 and headquartered in Austin, Texas, Crossroads holds more than 100 patents granted and pending and has been honored with numerous industry awards for innovation in data protection and storage. Visit www.crossroads.com.

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