SPHiNX

THE ULTIMATE VIRTUAL TAPE SOLUTION FOR BACKUP & DISASTER RECOVERY

Product Presentation

Agenda

Product Overview

- Various Models
- Functionality & Features

Hardware Overview

- SPHiNX G200, G600
- SPHiNX G400, G800 with optimization engine

Supported Host Environments

- IBM Power Systems (IBM i and AIX)
- Microsoft Windows
- Linux

SPHiNX

5 Things to know about SPHiNX

Optimization Engine
You can add an optimization engine to your SPHiNX to accelerate replication and reduce storage consumption with deduplication technology.

Software Agnostic
SPHiNX emulates tape libraries and tape devices for easy integration with multiple backup application software.

Storage Independent
You can use the built-in disks or add external disks to grow your environment.

Hybrid Architecture
Mix and match legacy SPHiNX and SPHiNX with the optimization engine.

Native Tape Export
SPHiNX can export data to tape directly without the need to go through the host server.

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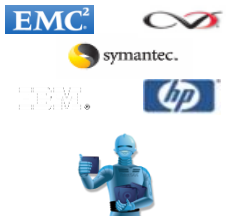
“Purpose-Built Data Protection”

Functionality / Features

Host System Connectivity

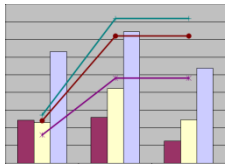
Disk-based Backups



Backup Application Seamless Support

Event based Automation

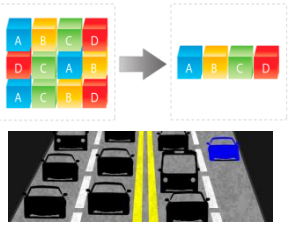
Remote Replication



Streamlined Performance

Physical Tape Integration

Scalable Storage & Capacity Licensing



Data Reduction & WAN Optimization

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Hardware Overview

	BUSINESS EDITION		ENTERPRISE EDITION	
	G200	G400	G600	G800
Storage Capacity*	4TB to 18TB	5TB, 8TB	16TB to 96TB	10TB to 120TB
Max. FC Ports	4x 8Gbps	4x 8Gbps	16x 8Gbps	16x 8Gbps
Max. Cartridges	Unlimited	Unlimited	Unlimited	Unlimited
Max. Tape Devices	4 VTL & 32 VTD	4 VTL & 32 VTD	16 VTL & 32 VTD	16 VTL & 32 VTD
Deduplication	-	YES - in-line	-	YES - in-line
Encryption	-	FIPS 140-2 / AES 256	-	FIPS 140-2 / AES 256
Replication	YES - Enhanced**	YES - Enhanced	YES - Enhanced**	YES - Enhanced
Cloud Support	-	YES	-	YES
Internal Disks	SATA 6Gbps	SAS 12Gbps	SAS 12Gbps	SAS 12Gbps
External Disks	FC, iSCSI, NFS	FC, SAS, iSCSI, NFS	FC, SAS, iSCSI, NFS	FC, SAS, iSCSI, NFS
Rack Units	1U	2U	2U	2x 2U
Warranty	5 Years On Site	5 Years On Site	5 Years On Site	5 Years On Site

* Flexible capacity add-ons
** Enhanced to optimization engine only

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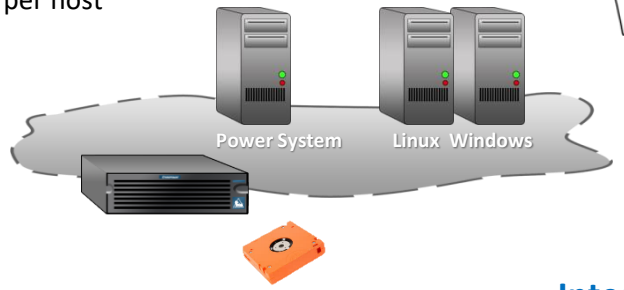
Tape Usage

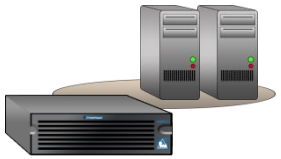
Remote Office Protection
Disk-based backup of local sites that can be remotely managed

Enterprise Data Protection
Data protection for multi-host connected systems providing multiple virtual drives per host



WAN

Disaster Recovery
Optional data replication to second site for automated DR



WAN

Integrated Tape
Leverage existing tape for automated capacity offload and data protection

Consolidated Backup
Automated backup & replication of remote sites to data center

Remote/Branch Office | **Main Site / Data Center** | **Disaster Recovery Site**

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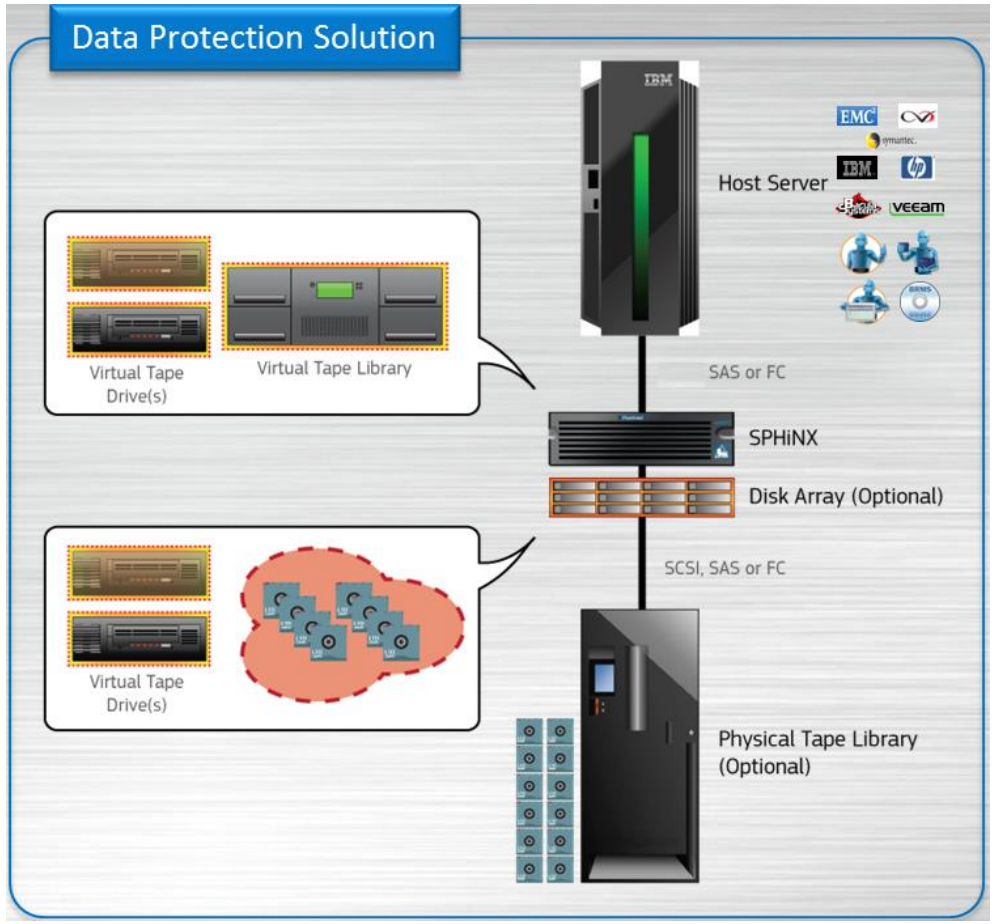
Disk based Backup
for IBM Power Systems

Dedicated Appliance
- Disk storage virtualized as tape library, or direct attach tape drives
- Supports IBM i, AIX, Windows, and Linux
- No software or agents on Power System

Seamless Integration
- Presents FC emulated tape devices to host server
- Emulates IBM drives and libraries
- Integrates with HelpSystems Robot/SAVE
- Supports BRMS and native IBM i Save commands

Improves Uptime / Reduces Risk
- Provides an alternate IPL device
- Immediate restore from disk system
- Optional replication for optimal disaster recovery operation



Seamless Integration

Leverage existing policies and assets

- Supports most leading Backup Management Applications
- Emulates standard IBM/HP tape drives & IBM 3100/3584, HP MSL6000 libraries, etc.

No software agents required

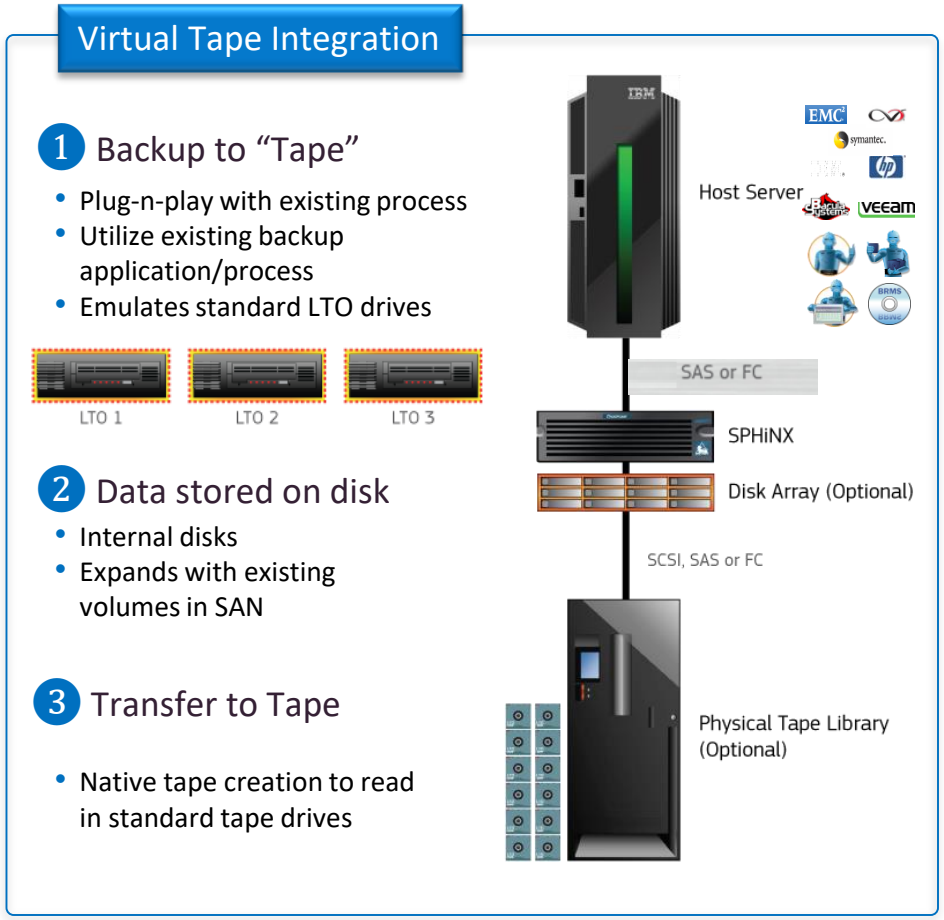
- Appears as physical tape library or drive
- Works with native system commands

Optimized Tape Operations

- Tape-Tape Export: 1 to 1 mapping of virtual cartridge label to physical cartridge label
  - Native Format: exact data set/format
  - Virtual Format: includes metadata

Dynamic Import

- Creates virtual tape image of imported tape
- Can then be mounted in a supported emulation drive type for restore to host



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Microsoft Windows

Flexible Emulation Types

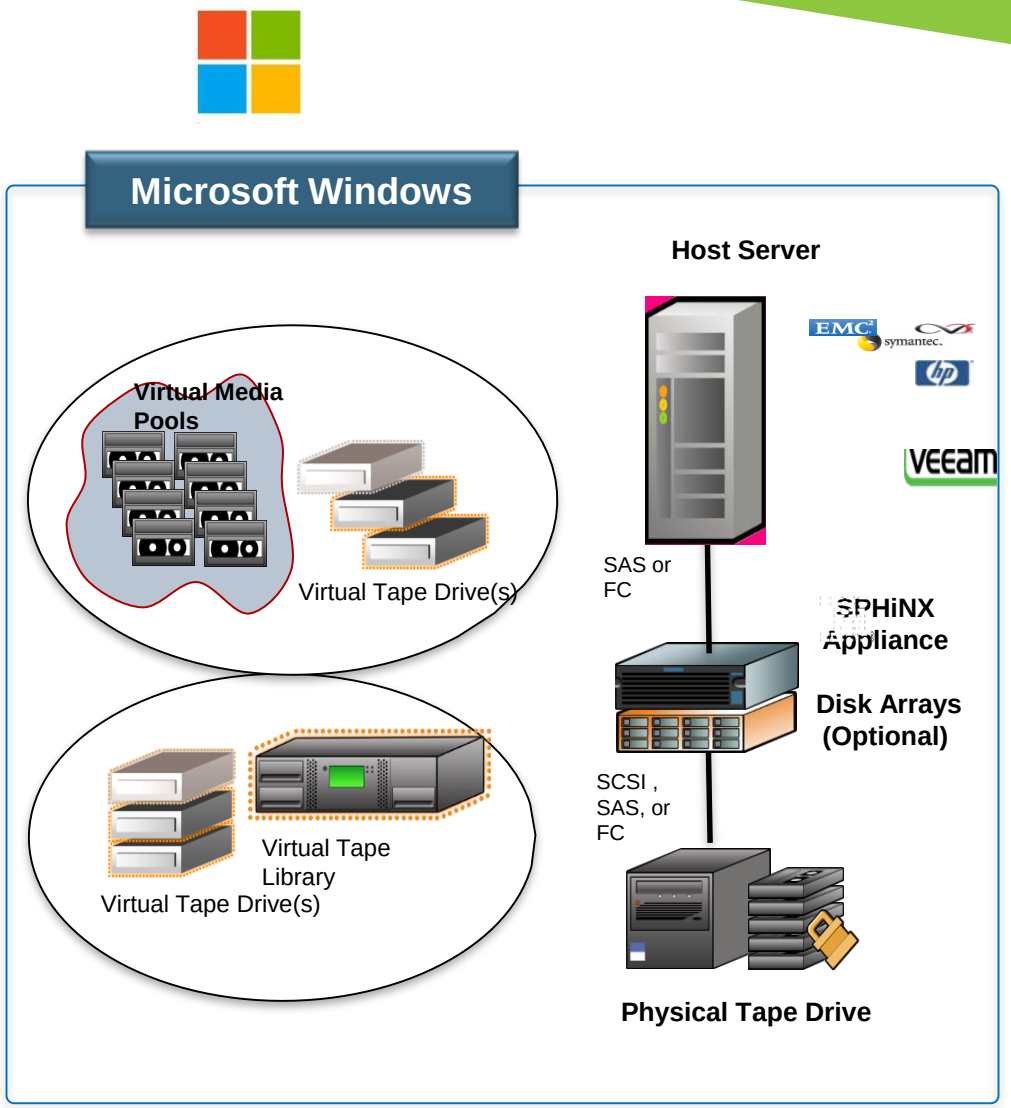
- Virtual Tape Library
- Virtual Tape Drive/Autoloader

Flexible Host Connectivity

- Microsoft Windows
  - Physical Server or Virtualized Server environments

Virtual Tape Library or Drive

- Consolidates the number of tape devices managed for backups
- Virtual tape data is available for immediate restore
- Drastically reduces the amount of experienced downtime



Streamline Backup/Restore Processes

Improved Backup

- Leverages disk for efficient data store
- Multiple virtual drives and backup streams per host system
- Mixed target modes per appliance

Improved Data Restore

- Immediate access to data
- Multi-stream restores

Consolidated Resources

- Multiple host systems per appliance
- Tape device/library consolidation
- More efficient tape usage

Automated processes

- Automates typical physical tape tasks
- Optional offsite Data Replication

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Flexible Data Management

Media Pool(s) Creation

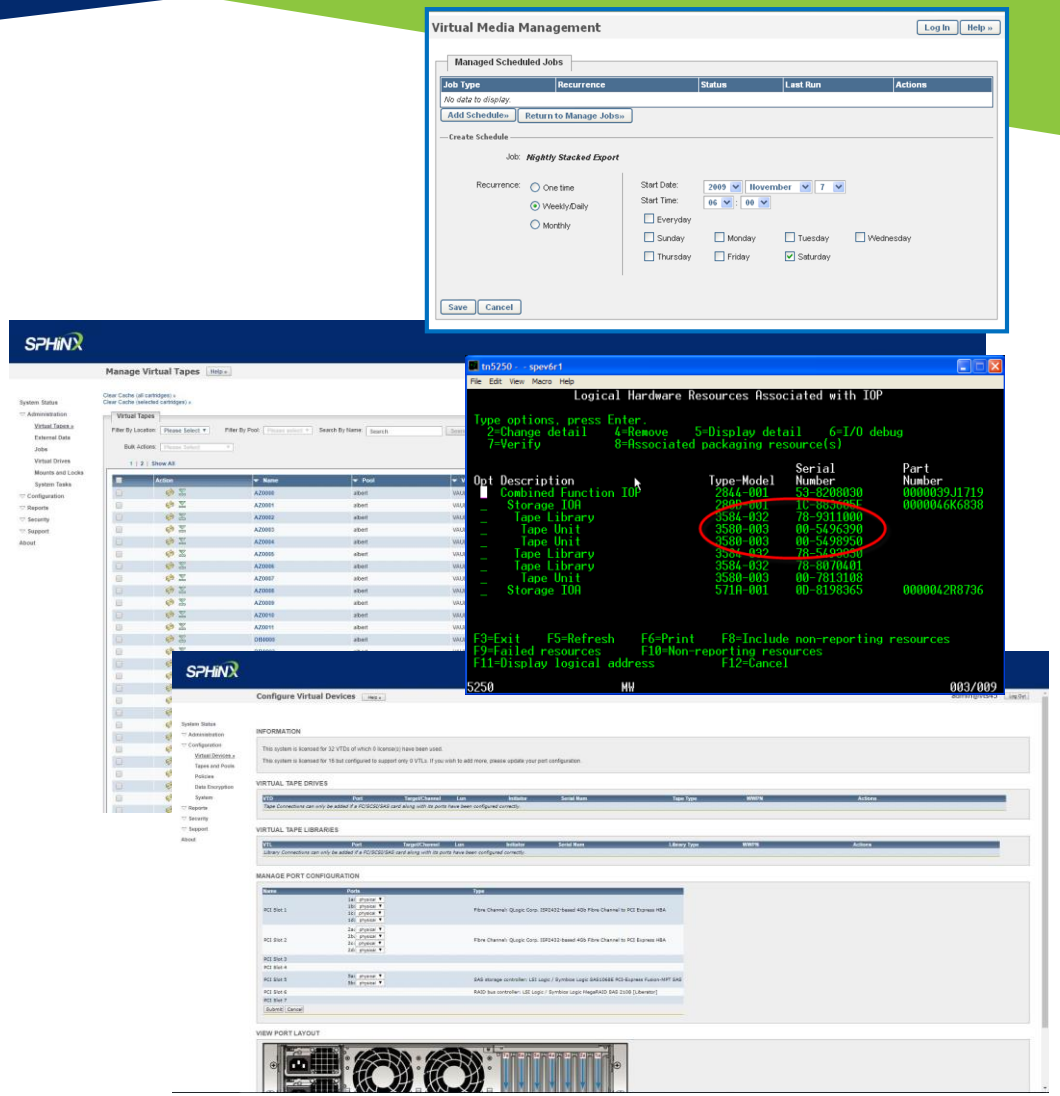
- Virtual cartridges can be assigned to a media pool with retention periods
- Provides IT separation of data to meet compliance requirements
- Pools of virtual cartridges can be exported to physical media

Easy to Use, Secure Interface

- Network accessible using any standard web based browser
- Role-based user privileges and access
- Username and password protected

Audit-friendly Logging, Alerts

- Critical event logging and messages
- Email alert notification



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Extensible and Scalable

Extend System Connectivity

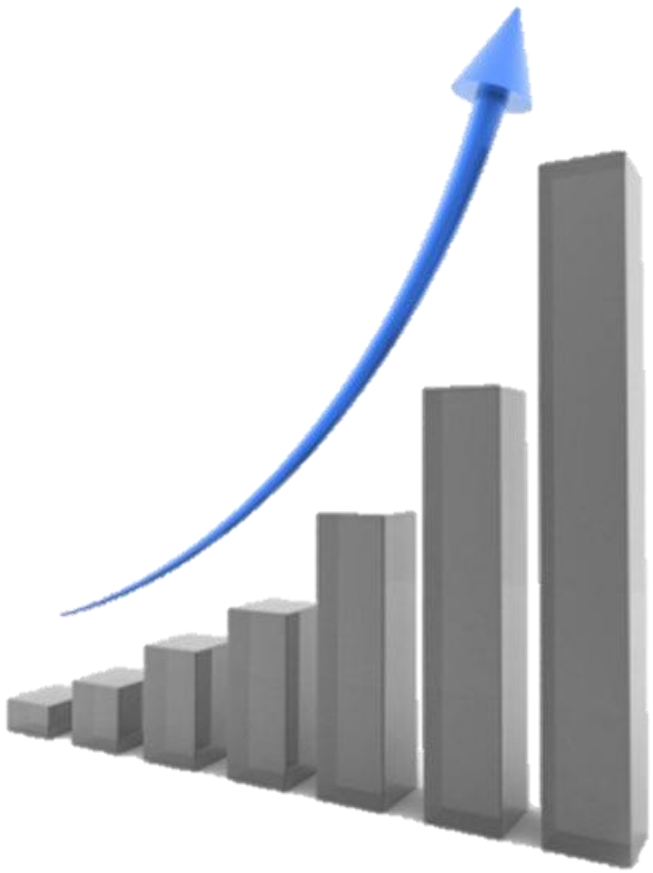
- Supports Multiple host systems with different OS types and multiple partitions

Manage Growth

- Dynamic virtual tape sizing eliminates wasted storage
- Creates an unlimited number of virtual cartridges*
- Single cartridge can virtually be an unlimited length*

Expand Capacity with Multi-options

- License additional managed capacity on demand
- Supports leading SAS or FC disk arrays for external storage from IBM, Dell, HP, EMC, Hitachi, Xyratex, and others



Built-in Data Reduction

Capacity Optimization

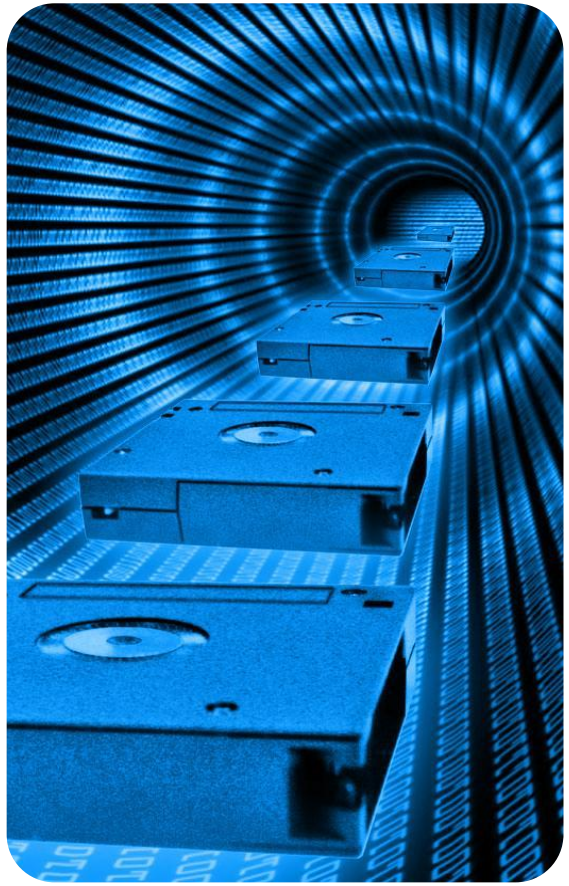
- Built-in data compression expands the effective disk storage
- Functions transparently in-line with transfer to disk
- Automatic detection of data compressibility, shutting off reduction for non-compressible data sets
- Achievable reduction ratios average up to 3:1

Optimization Engine

- Use optimization engine to optimize replication and data storage
- Achievable reduction ratios average up to 6:1

Improved Network Utilization*

- Bandwidth limit settings (% of bandwidth)
- Bandwidth maximization (multi-stream)
- WAN Acceleration (licensed option)



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Built-in Data Replication

Improves Recovery Time

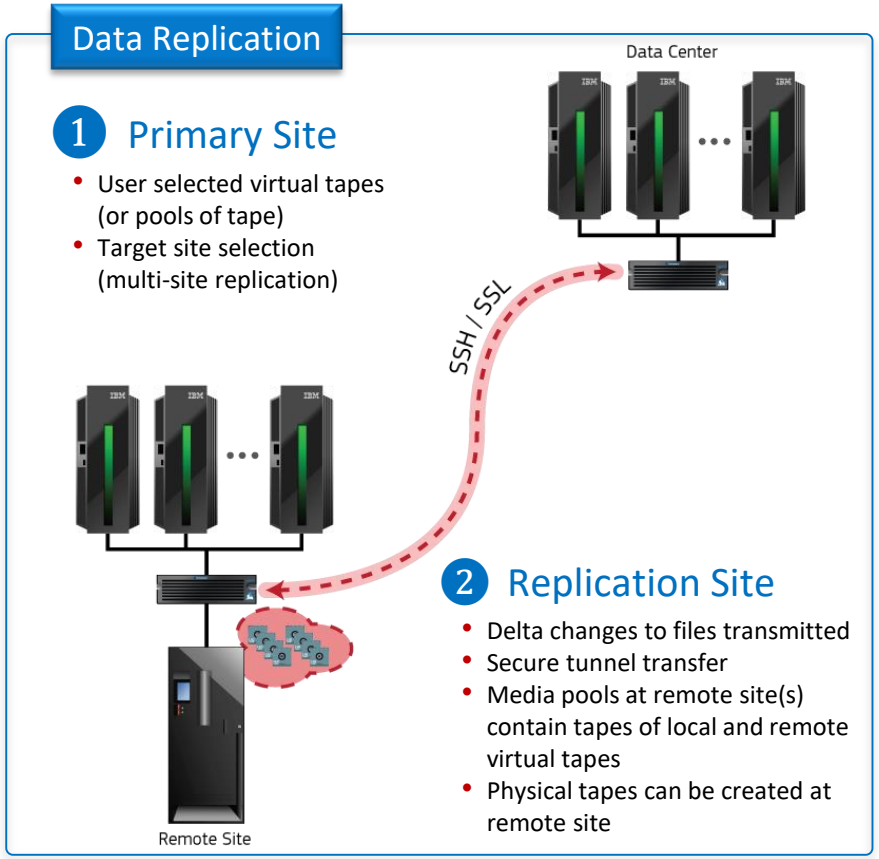
- Remote recovery can begin immediately
- Deploys jointly or independently in the data center, campus or remote site

Optimizes Bandwidth

- Replication calculates and transmits only the changes in to remote site(s)
- Bandwidth limit settings
- Virtual tapes are synchronized to be exact copies of original
- WAN Acceleration (optional)

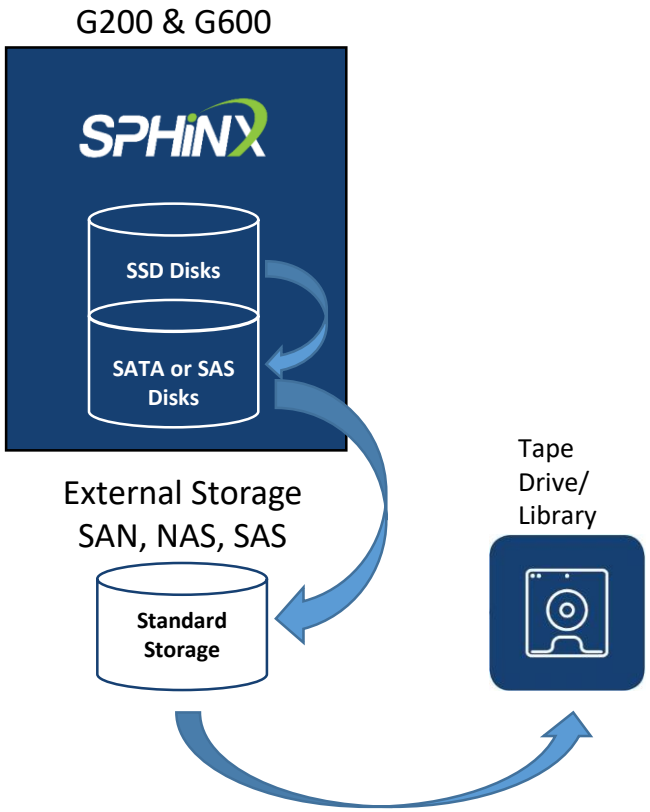
Secure Data Transfer Eliminates Risk

- Transport packets are encrypted to ensure secure transfer to remote site



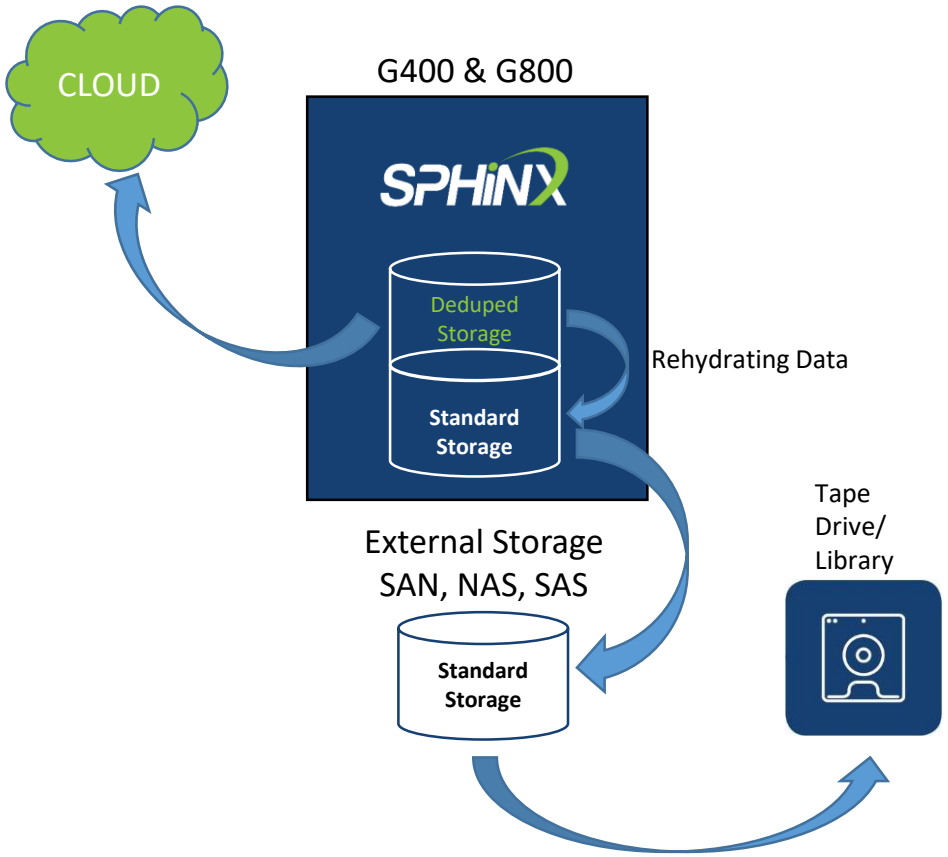
FLEXiBLE TiERiNG

G200 & G600



FLEXiBLE TiERiNG

G400 & G800



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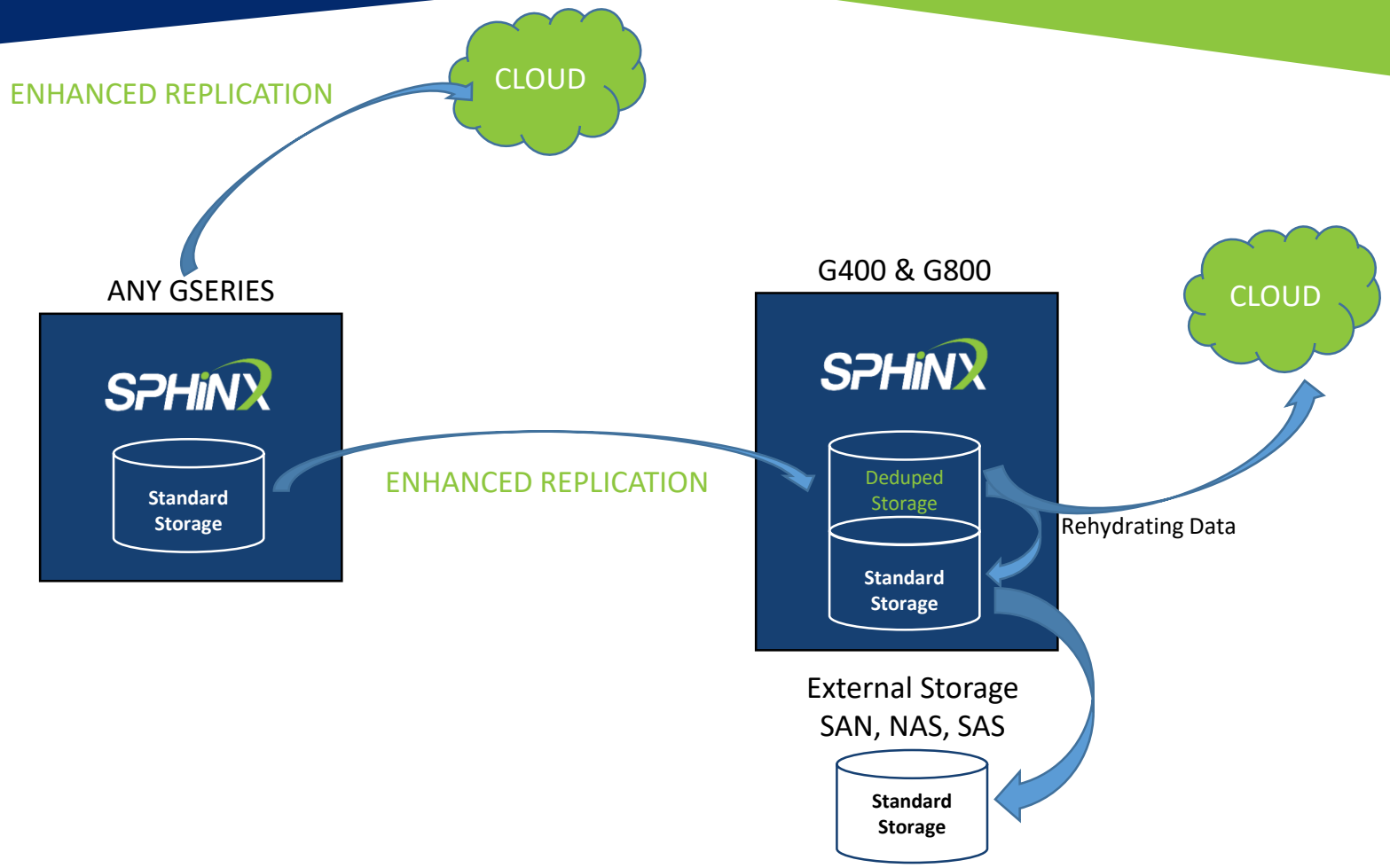

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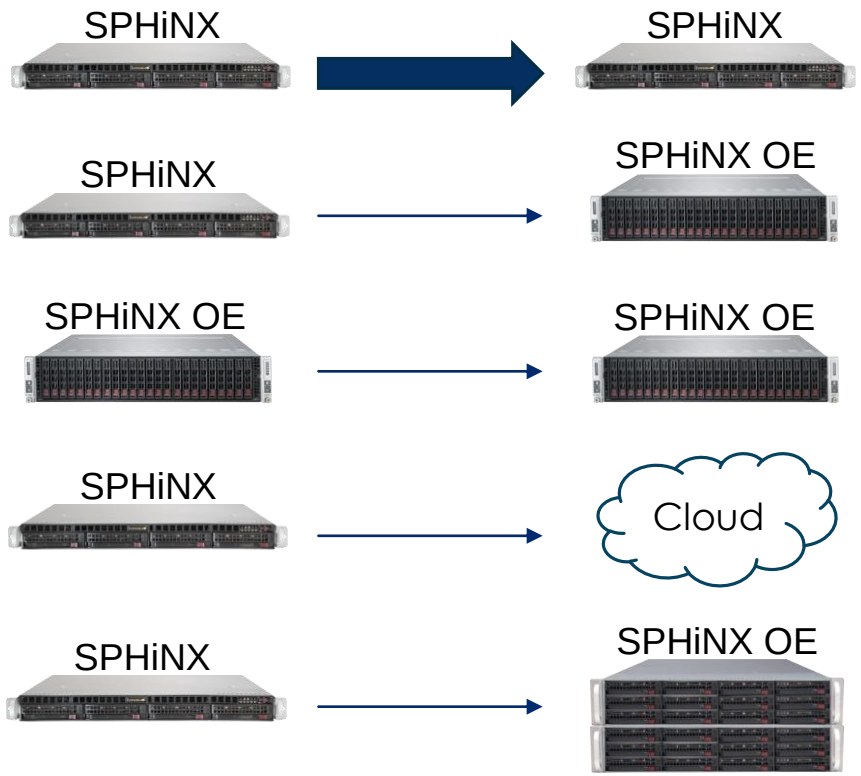
Replication Scenarios



SPHiNX to SPHiNX
Standard replication using compression

SPHiNX to Optimized SPHiNX
Optimized replication using deduplication

Optimized SPHiNX to Optimized SPHiNX
Optimized replication using deduplication

SPHiNX to Cloud
Optimized replication using deduplication

SPHiNX to Optimized SPHiNX
Optimized replication using deduplication

Any **Legacy** SPHiNX will replicate to **Legacy** (no optimization) or **Optimized** SPHiNX (with optimization)
Any **Optimized** SPHiNX will replicate to **Optimized** SPHiNX (with optimization)
Any **Optimized** SPHiNX will replicate to **Legacy** SPHiNX (no optimization)
Any SPHiNX will replicate to cloud. Restoring from the cloud does not use enhanced replication.

Optimized SPHiNX also reduce the storage used by using deduplication

Summary

Why SPHiNX?

Saves Money

- Reduces Capital (CapEx) and Operational expenses (OpEX)
- Consolidates number of tape devices and reduces media usage
- Integrated Data Reduction to improve the economies of disk

Improves Efficiency

- Minimizes mechanical drive and tape media errors
- Reduces human intervention with automated task handling
- Leverages existing backup and network infrastructure
- Works with all leading backup applications with no disruptions to backup processes
- WAN Acceleration option maximizes transfer speed across existing network connection
- Converts old tape formats offline without impact on host server

Reduces Risk

- Reliable disk based data protection from the desktop to the data center
- Data Encryption option helps to secure data and satisfy regulatory compliance
- Data Replication for disaster recovery to an offsite location
- Scales to meet specific data growth within your business

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THANK YOU!

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