HP Virtual TapeServer for NonStop
Product Update
NonStop, Data Protection, and you

Dan Porter Customer Call

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Topics
- NonStop, Data Protection and You
- HP Virtual TapeServer
  - Overview
  - Features
  - Sample Customer Environments
- Q&A
Data Protection
Protecting Vital Information

Some Survey Statistics

• 30% of respondents figured their companies lose significant revenue and productivity after a server failure
• 29% said backups are too time consuming and there aren't enough resources to back up the entire system more often
• Data Recovery following server failures takes time
  – 85% of the respondents, >2 hours
• Two out of Five enterprises that experience a disaster go out of business within 5 years

“You must back it up!”
Data Protection

It’s a Whole New World

- Regulatory Compliance Requirements
  - HIPPA, PCI, Basel II Accord, SOX, GLBA, and more
    - Data must be **where** you need it **when** you need it
    - Data must be **retained** per type and governing law
    - Data must be **destroyed** in an appropriate manner and timely fashion
    - Now in full force with penalties for non-compliance!

- The Bad Guys are Everywhere
  - Not only outside trying to get in

- Everything has to work together
  - Differing environments
  - Networking
  - People

- And you all have to do it perfectly
  - Every time
  - With less people and less funding
Data Protection
Now, much more than just backup

Sensitive Data Growth
- Explosion of sensitive, trusted & regulated data
- Capture sensitive data through automation of business processes

Government Regulations
- Provide regulatory compliance
  - (CA SB1386, FISMA, SOX, HIPAA, PCI)
- Safeguard sensitive client information
  - Privacy regulations
- Promote corporate governance

Security Breaches
- Protect from new attack vectors like backup software, IP telephony, web services
- Prevent loss of critical and sensitive data
- Ensure data integrity and security

Business/IT Trends
- Insider threats
- Outsourcing
- Storage consolidation

Portability
- Prone to unauthorized access
- Easy to steal/misplace
“By year-end 2006, failure to encrypt credit card numbers stored in a database will be considered legal negligence in civil cases of unauthorized disclosures.... By year-end 2007, 80 percent of Fortune 1000 enterprises will encrypt most critical ‘data at rest’ (0.8 probability).”

—Rich Mogull, Gartner Research

“Iron Mountain, therefore, is recommending that companies encrypt backup tapes containing personal information.”

—Richard Reese, Chairman and CEO, Iron Mountain

“Encrypt your backup tapes. It’s smart, it’s easy, it’s cheap, and it’ll keep you out of jail.”

—Steve Duplessie, Founder, Enterprise Strategy Group

“(BJ’s) did not encrypt the information while in transit or when stored on the in-store computer networks.”

—FTC complaint, in re. BJ’s Wholesale Club privacy breach
Virtual Tape Technology
The hot solution for Data Protection, Bus Continuity

• Can be breakthrough for customers who
  ➢ Currently use physical tape for data protection schemes
  ➢ Under pressure to improve operational efficiency
    ◆ Survive reduced windows, increased data
    ◆ Improve restore times
  ➢ reduce costs of operations and tape media

• Virtual Tape emulates physical tape drives, or libraries
  ➢ Uses industry-standard server and storage products
  ➢ Allows reduction or even elimination of physical tape
Virtual Tape Technology
Huge optimizations for Backup & Restore

- High speed backups
- Higher speed recoveries
- Automatic handling of routine tasks
  - Mounts, data export to tape media, etc.
  - Client connections to enterprise BMAs
HP Virtual TapeServer

What is it?

- It’s an electronic, automated tape drive or library
  - Emulates tape DRIVES, not libraries
    - Why does this matter?
    - SDLT, DAT (all), LTO, 3480/90
  - Presents software ABSTRACTIONS on RAID disk
    - Virtual Tape Drives
    - Virtual Cartridges
    - Virtual Libraries

- It is FLEXIBLE in its approach to connectivity
  - Practically all SANs
  - Practically all tape environments for archives
  - Practically all BMA’s

- Many types of hosts supported
HP Virtual TapeServer

**Building Blocks**

- Standard-issue servers
  - HP ProLiant servers
  - Inexpensive HP StorageWorks RAID arrays
    - Internal RAID arrays up to 1.0TB in the server
    - HP MSA 1000 (more to come)
- Enterprise Linux O/S, specially configured for HP VTS
- SCSI and Fibre Channel connectivity components
HP Virtual Tape Server

*Under the hood*

- Linux v3.8 now, v5.0 in 2008
- Wizard’s brew of C++, PERL, etc.
- **EXACTLY SAME CODE** in VT engine for all types of server support
  - “Bottomless” autoloader support for open systems and wintel
HP Virtual TapeServer
The Only, Official HP NonStop Virtual Tape offering

HP VTS is an HP NonStop product
- HP Hardware (ProLiant servers, HP Storage)
- Sold by the HP sales force
- Serviced by HP worldwide field services
- Supported by GCSC
- HP Executive Oversight

NonStop Market Presence
- Over 80 customers
- 220 field systems
- 146 sites
- Nearly 1100 virtual tape drives in use

Continuous operation in mission-critical applications worldwide
HP Virtual TapeServer
Complete support for NonStop Backup and Restore

Cost-Effective Data Protection

- Reduces or eliminates expensive physical tape support costs
- No wasted space- each virtual cartridge fits exact data requirements
- Tape Stacking optimizes physical tape media usage
- Movement of data to alternate site can eliminate off-site tape storage costs
- Scalable (as needs grow)

Fully integrated & tested with all NonStop products & OS

- NonStop Backup Restore
- NonStop Media Catalog
- TMF
- Tape IOP process

No software on NonStop Host
Sure, Backup/Restore is the primary focus

These additional functions provide even greater value

- **Data Compression**
  - Vastly improves HP VTS disk utilization
- **Instant/DR and AutoCopy**
  - Improves RTO and RPO, “removes the truck”
- **Archiving**
  - To physical tape libraries and tape drives
- **Enterprise Software Integration**
  - Full support for major Backup Management Applications
- **Highly Scalable**
  - From entry level to enterprise, for mission critical applications
- **Web-based GUI interface**
  - Accessible from any web location, privilege based access
Data Compression

Since its introduction in 2004, 98% of HP VTS users worldwide has Data Compression installed and working.

Your mileage may vary, but on average:

Actual Storage

Effective Storage
HP Virtual TapeServer
Innovation that delivers value

- Instant/DR
  - Copies only the data that has changed in a file or groups of files to a remote site and synchronizes files to be exact copies

- VTS AutoCopy
  - Automatically replicates virtual cartridges to remote site(s) the moment transfer to VTS is complete
HP Virtual TapeServer
Enables NonStop in the Enterprise Environment

HP NonStop Servers
S-Series, NS-Series

- Sun Solaris
- Unisys ClearPath (MCP)
- Any Intel/AMD based (Windows/Linux)
- IBM p-Series (AIX)
- IBM i-Series
- HP 9000 (HP-UX)
- HP p-Series (AIX)
- Any Intel/AMD based (Windows/Linux)
Physical tape and how it attaches and works

◆ Export/Import
  - Works with ALL types of drives, NonStop-specific and standard
  - Requires manual start or scripting from GUI
  - Can create per NonStop format tape, 1 VT cartridge per physical tape

◆ Migrate
  - Only works with automated tape libraries behind VTS
  - Only supports “standard” tape drives
  - Requires BMA Integration with client or media server on VTS
  - All MAJOR BMAs supported (HPDP, Veritas, Legato, TSM)
  - Customer supplies BMA client or media server

◆ Support for StorageWorks and most other tape libraries and tape drives
New, Improved User Interface

- Easy to Use, web-based Graphic User Interface (GUI)
- Central Management and Administration of HP VTS
  - System Status, Virtual Media Management, and View Logs
- Network accessible from any standard web browser
- Username and Password required for access
- Role-based User Privileges
  - Admin, Supervisor, or Operator
- Event Logging for monitoring of critical alerts and events

HP Virtual TapeServer
Innovation that delivers value
HP Virtual TapeServer

*Innovation that delivers value*

**Enterprise Integration**

- HP VTS allows tight integration with the most popular Enterprise Backup Management Applications
  - NonStop data now stored and catalogued within the enterprise data management processes
Enterprise Backup Management Applications that are supported by both Enterprise Integration and Hierarchical Data Management

- HP Data Protector
- IBM Tivoli Storage Manager
- Symantec (Veritas) Netbackup
- EMC Legato Networker
- More to come…
HP Virtual TapeServer
Innovation that delivers value

Scalability

HP VTS can scale from two virtual tape drives to hundreds without loss of performance, and with no single point of failure.

- Advanced Clustering Technology and File Systems
  - Hardened Linux kernel
  - Global File System
    - Clustering/Failover
  - Key middleware extensions
Need more here as per earlier slide PLUS NonStop context
mendozal, 10/31/2007
SecureVTS

- Embedded software encryption module
  - Compression prior to Encryption
  - AES-256 encryption algorithm
- Configured from within HP VTS GUI
  - Role-based access supported
- Auditable log of encrypted operations
  - Can save or print log files for review

Robust Key Management

- Embedded key management module
  - Public-key encryption and authentication
- Complete Key Lifecycle Management
  - Generation, distribution, storage & recovery
  - Random symmetric key generation
- Complete Key Security
  - Separation of encrypted data from keys
  - Individual authorization per symmetric key

Available Late CY07
HP Virtual TapeServer
Case Study - Swedbank
HP Virtual TapeServer
Case Study - Broadridge

HP NSK Back End 1
- SCSI Virtual 519X
- Fibre Connect
- Super DLT

HP NSK Back End 2
- Super DLT

HP NSK Front End
- Super DLT

IBM P series (30+)
- Virtual DLT
- Fibre Connect

McData Fibre Switches
- IBM Shark
- Fibre Connect
- Super DLT

HP NSK BCS
- Super DLT

Wheat Ridge Data Center

Boulder Data Center

NT Servers

HP NSK Development

Dell Raid
HP Virtual TapeServer

Wrapup

HP VTS is

➤ *The HP Branded* virtual tape solution for HP NonStop
➤ An HP product with HP processes, support, services, sales
➤ Outstanding technology, performance, flexibility, features
➤ The clear choice of customers worldwide

Questions?

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