Advanced APIs for Backup Lifecycle Management

Andrew Hall

VNUG 2013

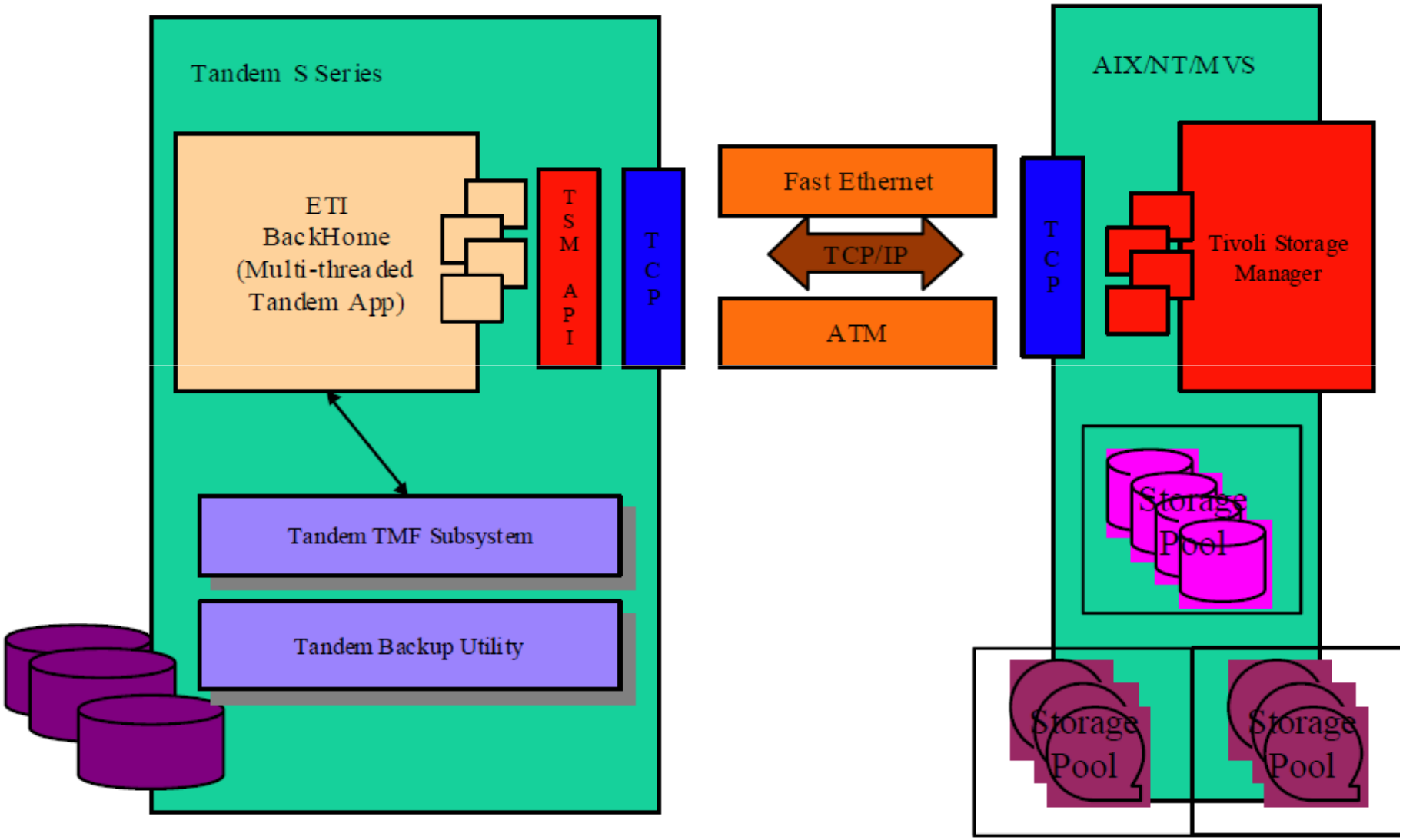
Early Tandem “APIs”

- TIL
  - Tandem Emulates an IBM Tape Drive
- T/RJE
  - Tandem Emulates an IBM Remote Job Entry Terminal (80 Column Card Reader)
- THL
  - Tandem Hyper Channel
- Predates SNA, TCP/IP, FTP, Client/Server

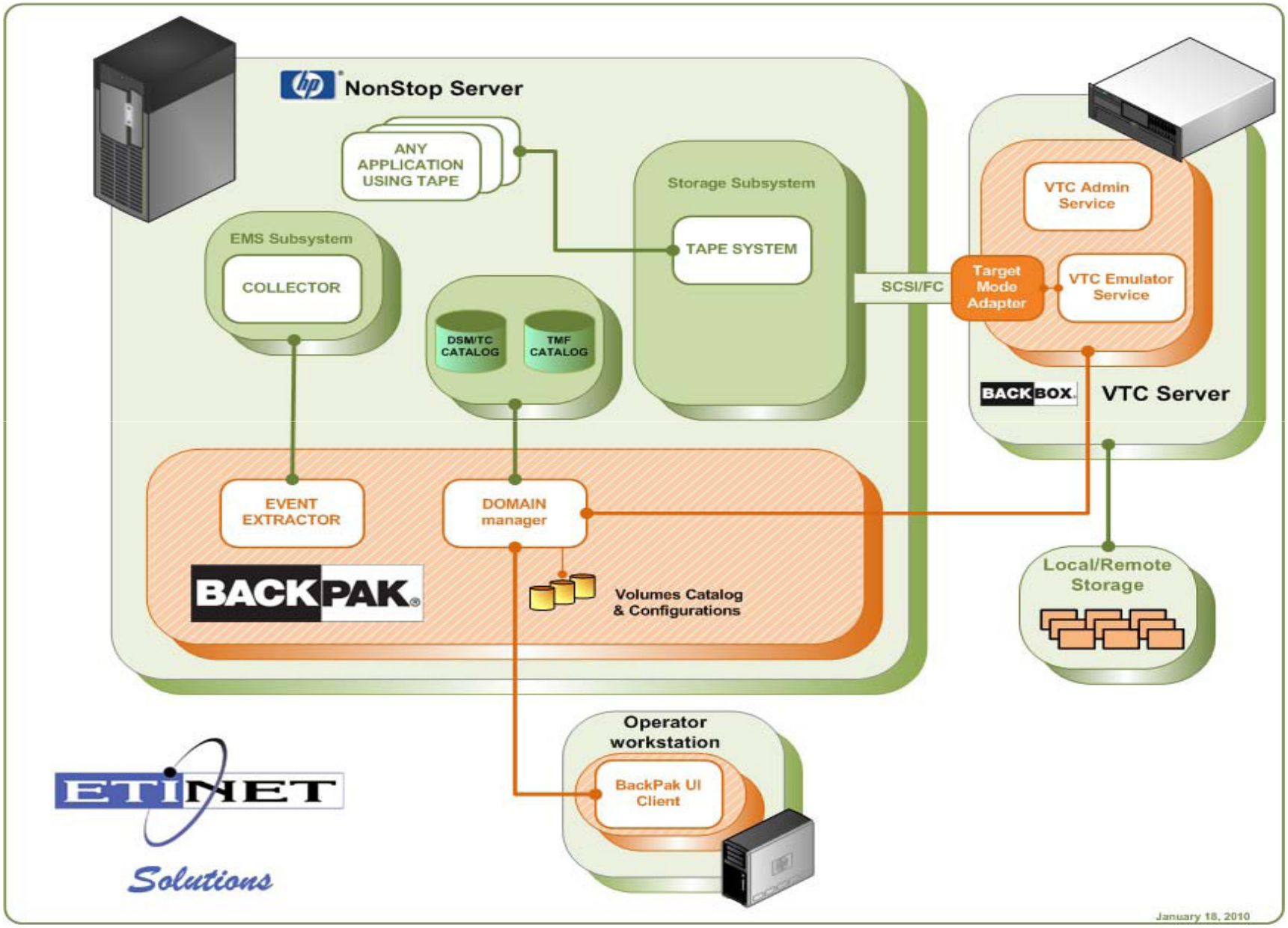
ETI-NET BackPak Product Family

- ETI-NET software development on NonStop since ‘80s
- Evolution toward backup subsystems
  - Initial data transfers to mainframes (**BCOM**)
  - Backup to mainframe storage (**BackHome**)
  - Backup to Tivoli TSM via IP (**BackHome/TSM**)
  - For S-series faster via SCSI & external servers (**BackBox**)
  - Extended to FC & many storage targets
  - Optimized de-duplication with Data Domain, StoreOnce
- Added virtual library media changer - **BackLib**
- Named the overall product family **BackPak**

BackHome® TSM



BackBox® Product Architecture



BackBox® Certified by IBM as "Tivoli Ready"

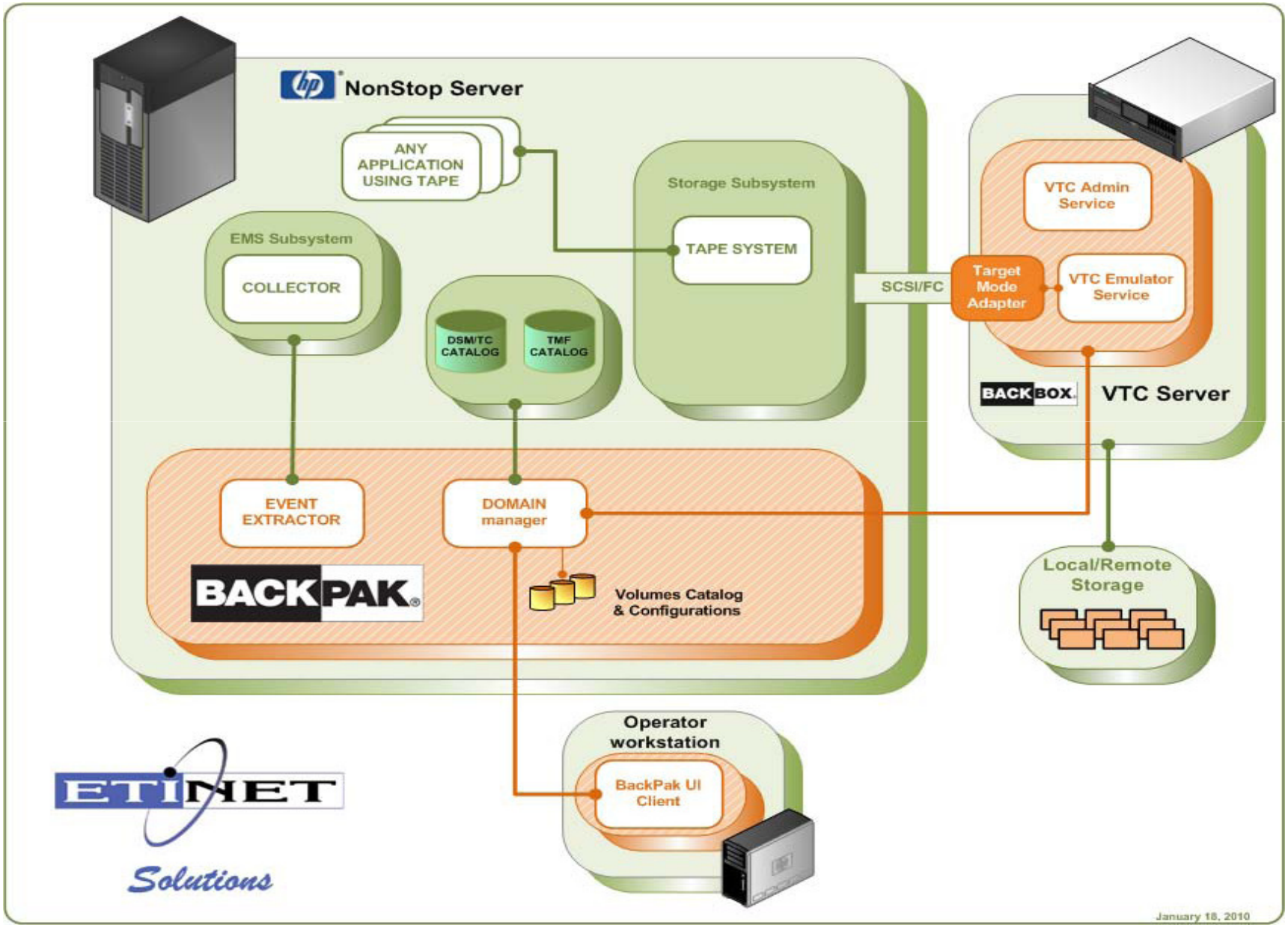
ETI-NET announces that its enterprise integration solution, EZX BackBox®, has been certified by IBM as "**Ready for IBM Tivoli Software**". ETI-NET's BackHome® product was similarly certified in 2003.

When used in conjunction with IBM's Tivoli Storage Manager, EZX BackBox deposits HP NonStop data directly into the Tivoli server, without requiring intermediate storage, thus allowing for a cost effective and robust backup and tape encryption solution.

Because EZX BackBox interfaces to the NonStop System as a collection of virtual tape devices, integration with Tivoli can be implemented quickly, without operational re-engineering.

For more information, contact ETI-NET at information@etinet.com or visit www.etinet.com.

BackBox® Product Architecture



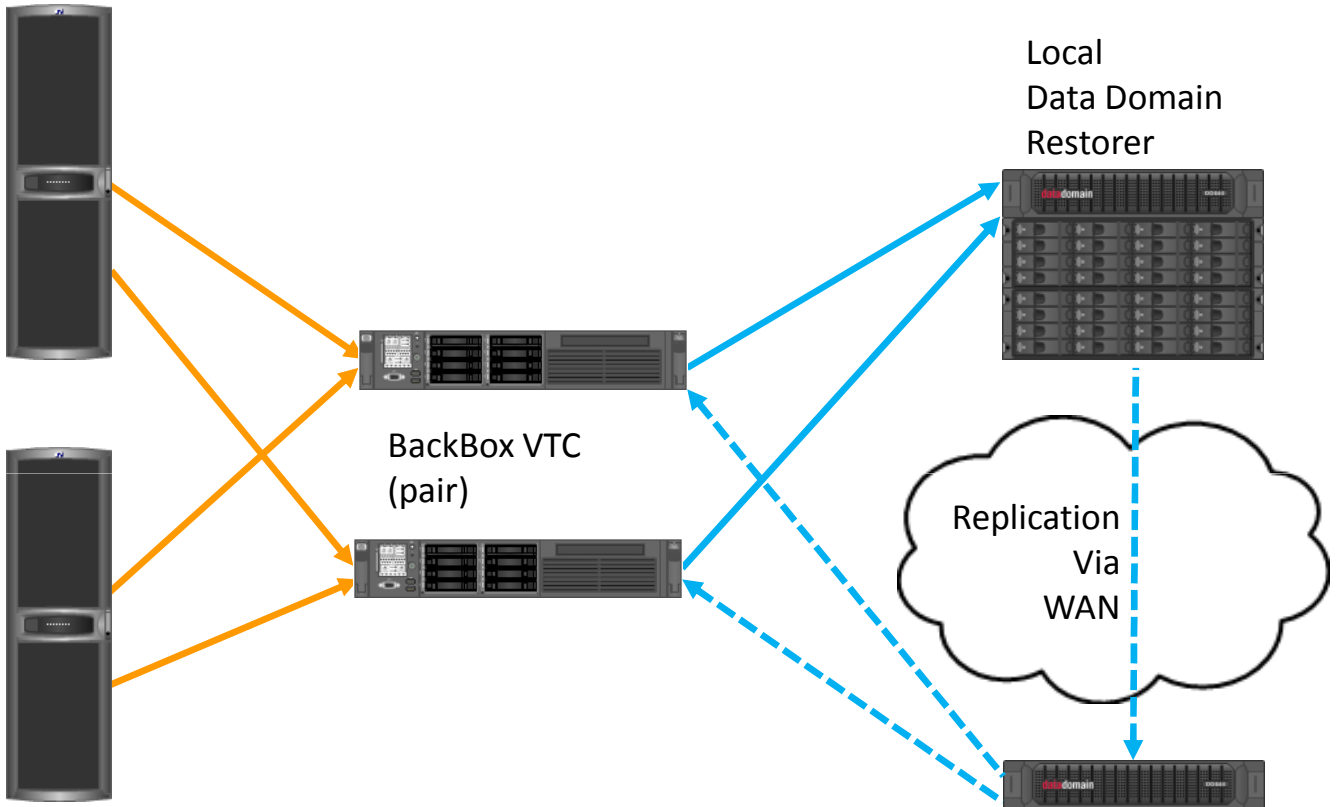
FOR IMMEDIATE RELEASE

ETI-NET and Data Domain Partner to Deliver Advanced Backup Solutions for HP NonStop Systems

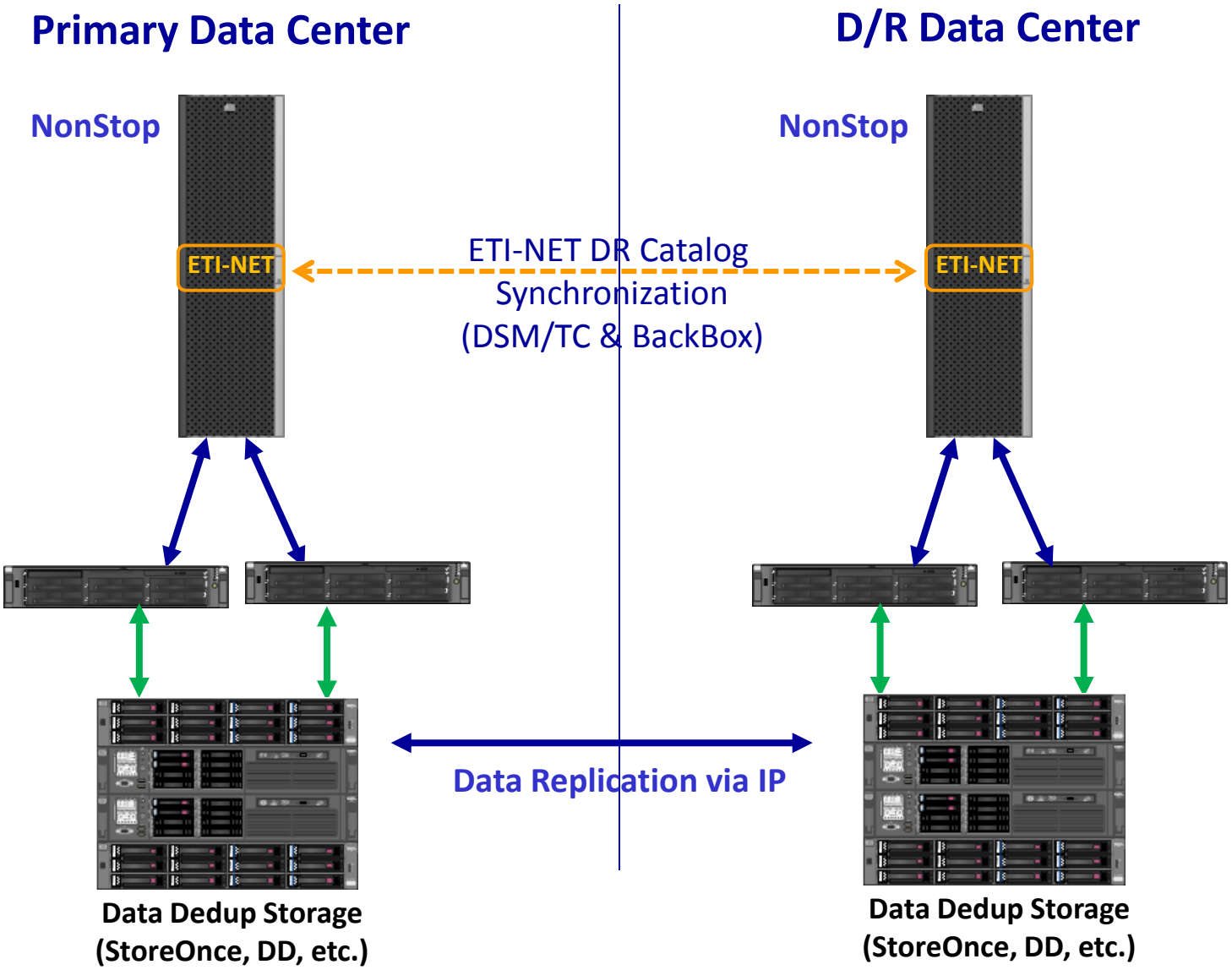
ETI-NET Qualifies Data Domain Products for use with BackBox Virtual Tape

SANTA CLARA, CA— October 13, 2006 — Data Domain, the leading provider of Enterprise Protection Storage systems for disk backup and network-based disaster recovery, and ETI-NET, a specialized developer of storage interfaces for multi-vendor data centers, today announced a partnership to deliver advanced data protection solutions for HP NonStop servers.

BackBox – Designed for Fault Tolerance



Replication for D/R



Deduplication Eliminates Backup Sprawl for Major Financial Institution

Phil Menzies
Vice President
ETI-NET

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ETI-NET and
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North American Bank Overhauls its Magnetic Tape Backup Procedures

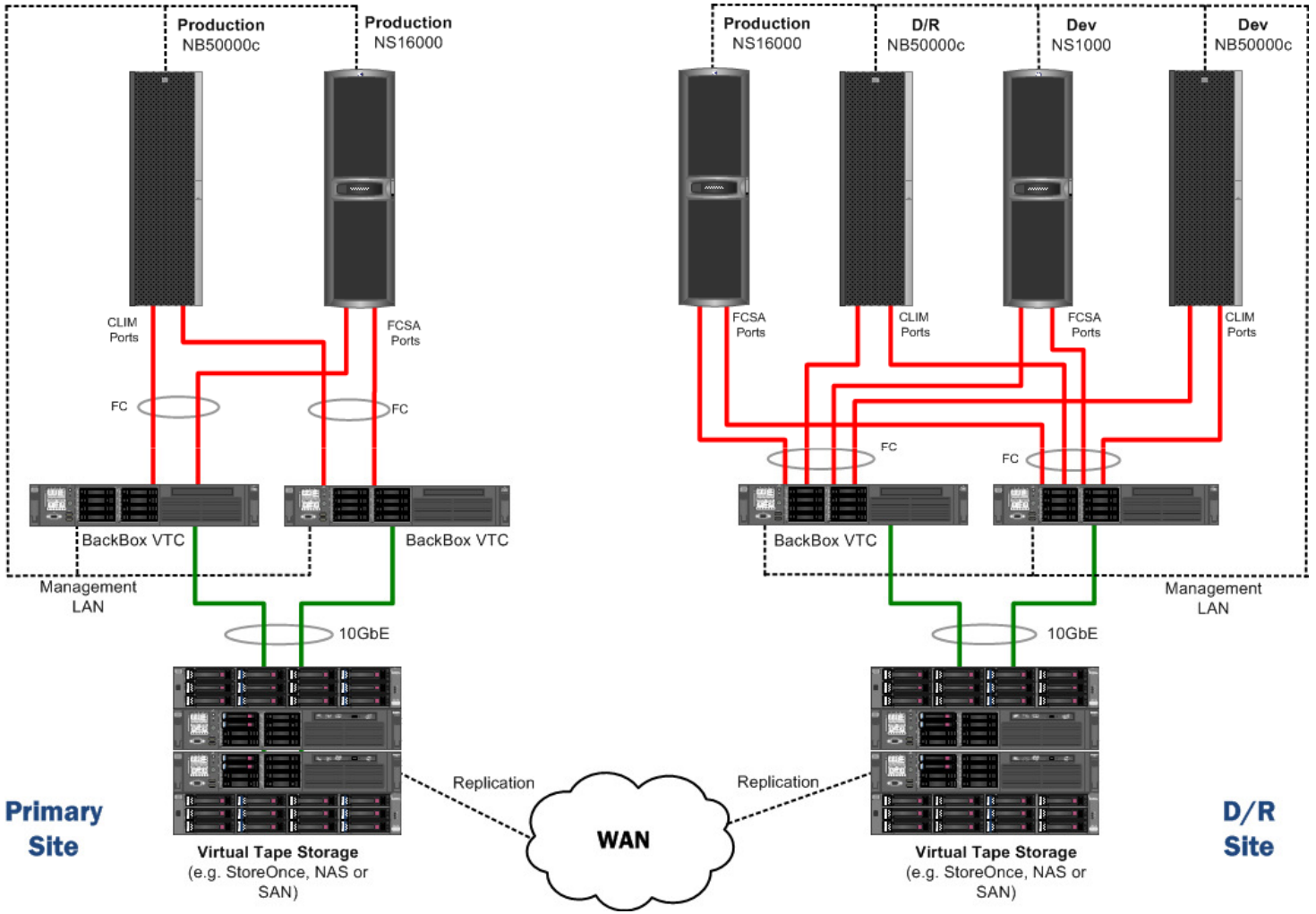
As has been the case with many financial institutions, one of the largest commercial banks in the United States decided to undergo a major overhaul of its magnetic-tape backup procedures. The bank's goals were fourfold:

deduplication, the use of magnetic tape can be greatly reduced and in some cases actually eliminated.

In this article, we review virtual tape and deduplication technologies and describe how the bank eliminated its dependence on magnetic tape by employing these techniques.

Virtual Tape Addresses Magnetic Tape Challenges

Typical Customer BackBox Configuration



Storage Target Optimizations

- EMC Data Domain
- NEC HydraStor
- FalconStor
- HP StoreOnce
- IBM ProtecTier
- Quantum

July 2010

Statement:

HP StorageWorks Division will support the following backup devices installed with an ETI-NET solution in a non-stop environment.

HP StorageWorks D2D Backup Systems

HP StorageWorks Virtual Library Systems

Automigration support for HP StorageWorks physical tape libraries

Notes:

Full details of this support will be reflected in the next release of the *HP StorageWorks Enterprise Backup Solutions (EBS) Hardware/Software Compatibility Matrix* (the EBS Matrix), currently scheduled for mid August, 2010.

GETTING THE MOST OUT OF GIVING WITH THE HP STOREONCE BACKUP SYSTEM AND HP INTEGRITY NONSTOP BLADESYSTEM

SVS augments performance to maximize consumer experience with HP StoreOnce Backup System and HP Integrity NonStop BladeSystem

CERIDIAN
Stored Value Solutions

"With the HP StoreOnce Backup System, we can execute a complete system backup in just a few hours and there's virtually no hands-on required."
—Greg Bohn, Director of Non-Stop Computing, Ceridian Stored Value Solutions

HP StoreOnce Deduplication Protects Historical Data of Large Wholesaler

Phil Menzies
Vice President, ETI-NET
Connect Converge, Fall 2012
September 12, 2012

Major Wholesaler Modernizes Its Tape Backup Procedures

A nationwide U.S. wholesaler realized that its backup windows were being severely stressed by the amount of time required to create tape backups. The company offers hundreds of thousands of items delivered by thousands of drivers from dozens of locations to its commercial customers nationwide, and the data that it generates daily is rapidly growing.

“OST” API Members

- EMC Data Domain
- NEC HydraStor
- FalconStor
- HP StoreOnce
- IBM ProtecTier
- Quantum

Technical white paper

HP StoreOnce Catalyst and Symantec Backup Exec OpenStorage

Protect enterprise data, achieve long-term data retention

HP StoreOnce Catalyst—seamless data movement across the enterprise

HP StoreOnce Catalyst brings the HP StoreOnce vision of a single, integrated enterprise-wide deduplication algorithm a step closer. It allows the seamless movement of deduplicated data across the enterprise to other StoreOnce Catalyst systems without rehydration. This means that you can benefit from:

- **Simplified management of data movement from a single pane of glass:** Tighter integration with your backup application to centrally manage file replication across the enterprise.
- **Seamless control across complex environments:** Supporting a range of flexible configurations that enable the concurrent movement of data from one site to multiple sites, and the ability to cascade data around the enterprise (sometimes referred to as multi-hop).
- **Enhance performance:** Distributed deduplication processing using HP StoreOnce Catalyst stores on the StoreOnce Backup systems and on multiple servers can balance load and utilization of backup hardware, network links, and backup servers for faster deduplication and backup performance.
- **Faster time to backup to meet shrinking backup windows:** Up to 100 TB/hour aggregate throughput, 4x faster than backup to a NAS target.

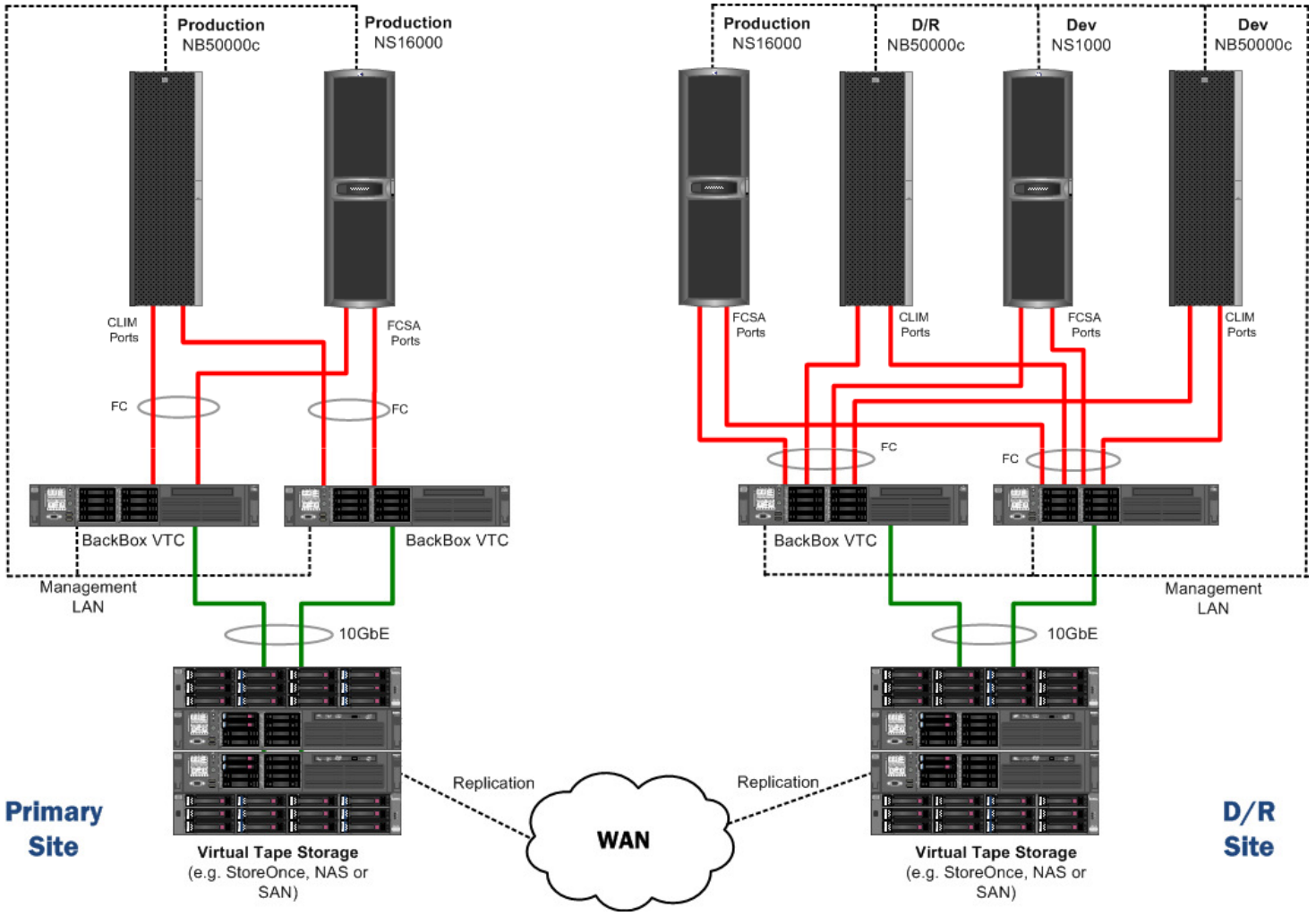
The following are key recommendations for backing up data to an HP StoreOnce Backup system utilizing HP StoreOnce Catalyst software:

- **To improve backup storage utilization:** Backup one server at a time (sequentially) for quickly rising deduplication ratios that are maintained over time.
- **To reduce the end-to-end data size:** If the backup process can accommodate it, use a unique StoreOnce Catalyst store for each data type or same type of operating system.
- **For the trade-off between backup impact and ease of recovery:** Configure a weekly full with daily incremental or initial full with daily incremental backup schedule to reduce the amount of end-to-end data and decrease the time required to run daily backups. StoreOnce Backup systems data deduplication will be utilized for full and incremental backups.
- **For efficient and cost effective movement of backup data offsite:** Use the StoreOnce Catalyst remote copy feature to seamlessly replicate all servers to an appliance in a remote facility for simpler recovery in the event of a disaster.
- **To increase backup speed without affecting deduplication ratios:** Use a larger Backup Exec backup block size for faster backup throughput performance with little or no effect on StoreOnce data deduplication ratios.

Futher Enhancements

- “Stand-in” DataStore
  - Compliments Primary and Shadow DataStores
  - Alternate disk cache if primary storage is down
  - Automatic migration when storage is back online
  - Supports B6200 fail-over
- Stand-alone VTS tape migrations
  - Direct attach utility to avoid BackCopy
  - Project References = Best Practices

Typical Customer BackBox Configuration



Upgrading Your Virtual Tape System: You're Not Married for Life to One Solution

Phil Menzies
Vice President
ETI-NET

Phil Menzies is Vice President of ETI-NET and has over 25 years of experience in the design of products and solutions for HP NonStop. After serving as an architect for Citicorp's Consumer Banking division, including design of a Tandem-based global network, Phil joined Tandem computers in 1980. Roles in software development, product management and marketing were followed by jobs away from NonStop, leading development and manufacturing of point-of-sale and lottery terminals. In 2003 Phil re-entered the NonStop space with ETI-NET, developing and promoting its backup solutions. For further information about this case study, contact information@etinet.com.

The virtual tape backup subsystem used by a large U.S. medical claims processor was approaching end-of-life. An active NonStop user, the company wanted to move to a competing virtual tape solution. While implementation of the new solution could be accomplished easily, the challenge was how to maintain access to the large quantity of backed-up and archived data accumulated over the life of the existing product. The claims processor turned to HP for assistance. What the company learned from HP was that use of one virtual tape solution did not necessarily imply a married-for-life commitment.

As virtual tape grows in popularity for backing up critical application data, companies increasingly face the challenge of moving their backup procedures off aging subsystems to the latest virtual tape appliances. Typically, such an upgrade may involve migration of the content of thousands of tape volumes. While upgrading to a new generation of the same product may be expedient, it is a choice that may be made at the cost of foregoing a move to a superior solution. Companies information. Statistics show that 93% of companies that lost their data for 10 days or more filed for bankruptcy within one year of the loss. For this reason, it has been the practice of IT organizations since the dawn of computing to back up their critical data so that it can be restored following a loss due to disasters, operator errors, or for any other reason.

Magnetic Tape

The traditional method for backup has been magnetic tape. Strategies usually involve some combination of daily, weekly and monthly backups as well as archiving for long-term retention. Best practices call for the backup tapes to be stored offsite in a secure facility so that a disaster that destroys the data center does not also destroy the tapes. If the data is to be restored, backup tapes must be retrieved from offsite storage and loaded into a disaster-recovery system.

Magnetic tape backups present several challenges and frequently take hours. Restoration of a large database can take significantly longer. Sometimes, the restoration may be unsuccessful if one or more magnetic tapes are lost or are unreadable.

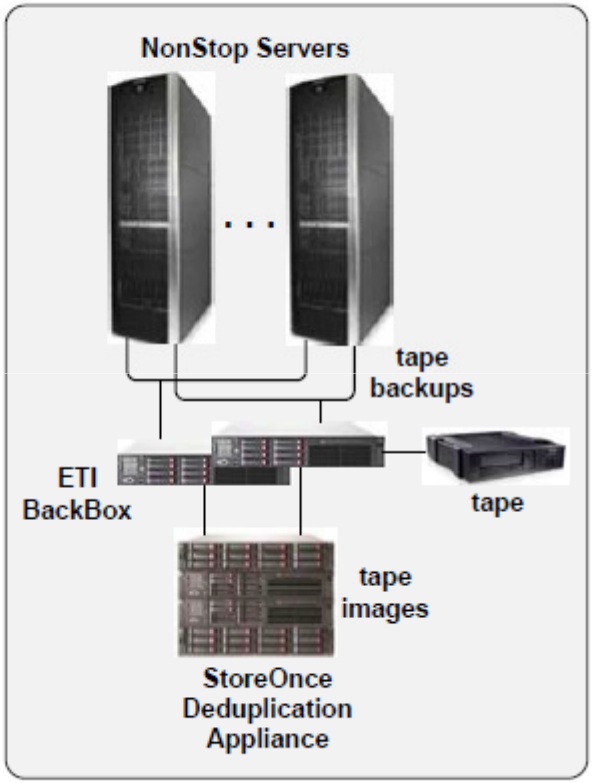
Virtual Tape

Virtual tape mitigates many of the problems with

BackBox Integrates NonStop Servers with a Wide Variety of Storage Solutions

BackBox is a client-side, Windows server-based appliance that interfaces a wide variety of enterprise backup solutions to the standard NonStop backup and recovery utilities, e.g., Backup, Restore, BRCOM, TMF, and FUP. Virtual-tape volumes are managed by standard Guardian media manager software such as DSM/TC or TMFCOM. BackBox can be configured to be fully redundant to match the fault-tolerant capabilities of the NonStop systems that it serves. In order to properly recover specified files on request, BackBox maintains its own virtual-tape media catalog, protected by TMF, on the NonStop system. This catalog links NonStop virtual-tape volumes to their image storage locations.

BackBox can store virtual-tape images on its own internal disk storage, on external enterprise SAN (storage area network), or on NAS (network-attached storage) subsystems. In the wholesaler's case, BackBox employs the StoreOnce appliance as NAS storage. A Windows share is established, and tape images are stored in certain folders according to configuration rules provided to BackBox.



The Wholesaler's Backup Solution

Questions?

Thank You