When failure is not an option
HP NonStop BackBox VTC

Sylvain Tétreault

ETI-NET

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Agenda

- **Data Protection is not optional**

- **HP NonStop BackBox VTC**

- **How HP NonStop BackBox VTC works**

hp

Today's world – data protection is not optional

- Today data protection is simply the requirement of any business to survive

- Failures can result from:
  - human error
  - criminal intent
  - disaster (fire, earthquake)

- You must always be able to retrieve your data

Latest trends in Data Protection

- Improve Efficiency

  - **Are you still hanging tapes?**
  - The industry is moving away from Tape only
  - Data is more quickly recovered from disk
  - Backup automation is easier to perform.
  - Set it and forget it.

- Share resources

  - **Are you still searching for the right tape to mount for data recovery**?

  - Centralize backup storage provides a single easy location where you can retrieve your data. HP StoreOnce can hold data for you whole data center or enterprise

  - Deduplication and other modern technologies allow you to compress massive amounts of data into less disk space, avoiding data space upgrades for years.

Mission Critical NonStop

Solutions for industries that never stop

- You know and depend on NonStop systems already.

- Designed for fault tolerance, scalability, security from day one

- Now NonStop can integrate with your enterprise or data center's data protection infrastructure through HP NonStop's BackBox Virtual Tape Controllers

- NonStop can backup data to virtually any data storage solution you wish to use in your data center.
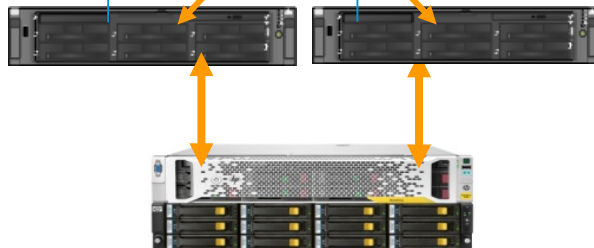
The Architecture

Host-Based Control
with Context-Free Controllers

NonStop

BackBox Host Software

- -Domain Manager
- -Event Extractor
- -Metadata Catalog

Control Path
TCP/IP to NonStop

BackBo
x Host
SW

Native NonStop Tools

- **- Mediacom, DSM/TC**
- **- Backup/Restore**
- **- TMFCOM**
- **- BRCOM**

HP NonStop BackBox VTC

HP StoreOnce

HP NonStop BackBox VTC
How it works

BackBox – NonStop Integration

Integrated with DSM/TC & TMFCOM

- **Virtual tapes are automatically cataloged & labeled**
- **Interlocks prevent accidental media deletion if not SCRATCH**
- **Captures catalog updates for DR**
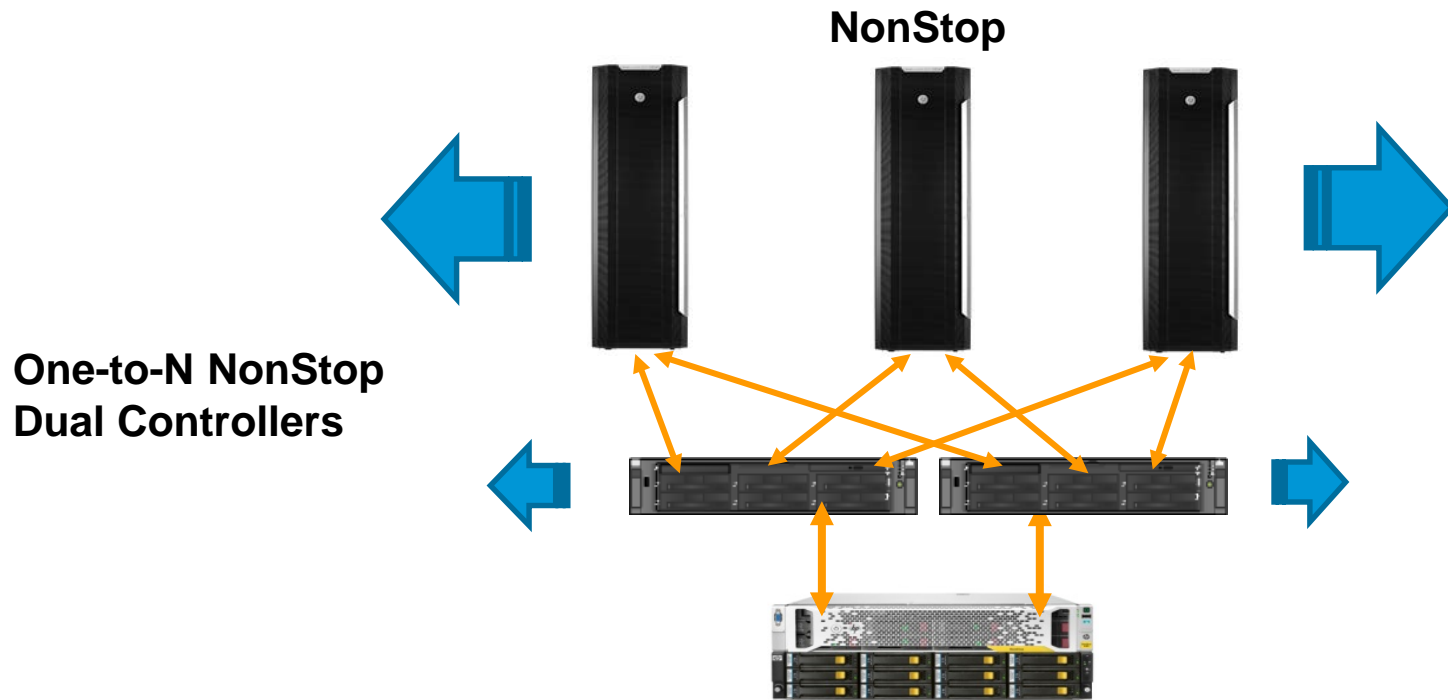- **Knows difference between volumes for TMF Online Dumps vs. Audit Dumps**

Integrated with NonStop EMS

- **All events logged there**
- **Tape mount requests intercepted**
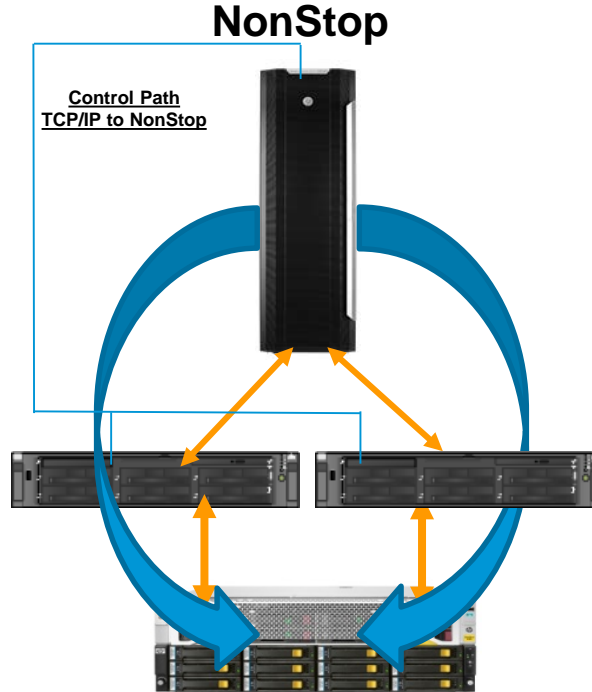- **Checks for missed requests**

Integrated with NonStop I/O subsystem

- **Automatically discovers devices defined in SCF during VTC config**
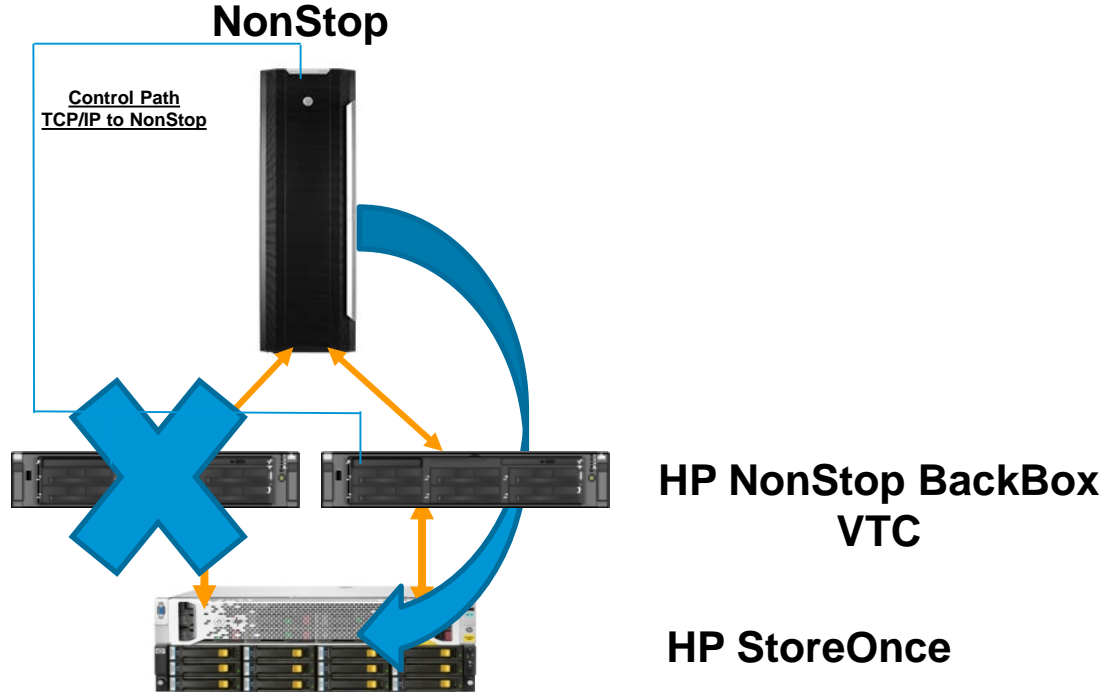
Common Solution for Small to Large configuration

NonStop

**One-to-N NonStop
Dual Controllers**

Parallelism = High Performance

NonStop

**Control Path
TCP/IP to NonStop**

**HP NonStop BackBox
VTC**

HP StoreOnce

Fault-Tolerant without complexity

NonStop

Control Path
TCP/IP to NonStop

HP NonStop BackBox
VTC

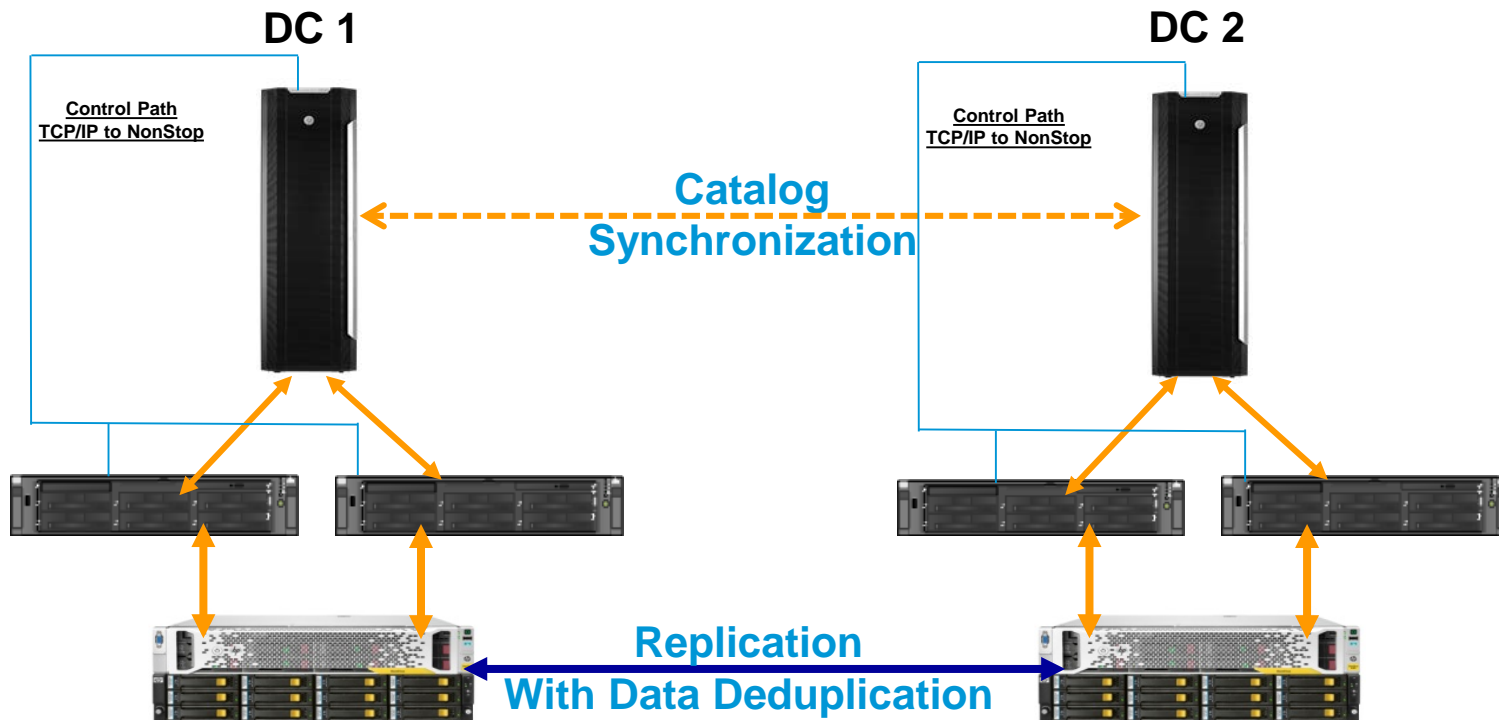**HP StoreOnce**

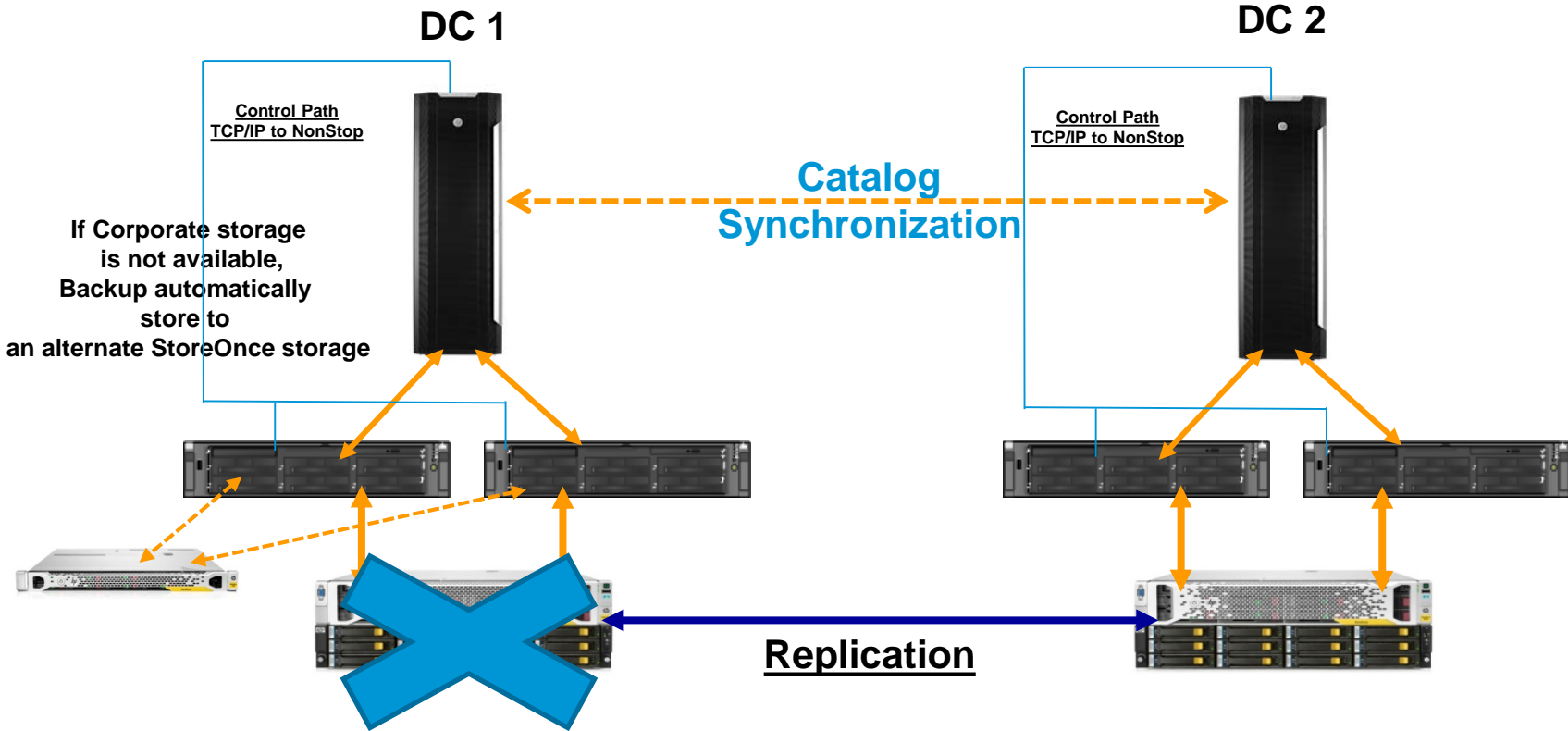# Backup Replication and Catalog Synchronization

Automatic between Primary and Secondary Data Stores
Automatic between DSM/TC instances

Advanced Data Store
Spare Pool - Stand-in storage when main storage is not available

DC 1

DC 2

Control Path
TCP/IP to NonStop

Control Path
TCP/IP to NonStop

Catalog Synchronization

If Corporate storage is not available, Backup automatically store to an alternate StoreOnce storage
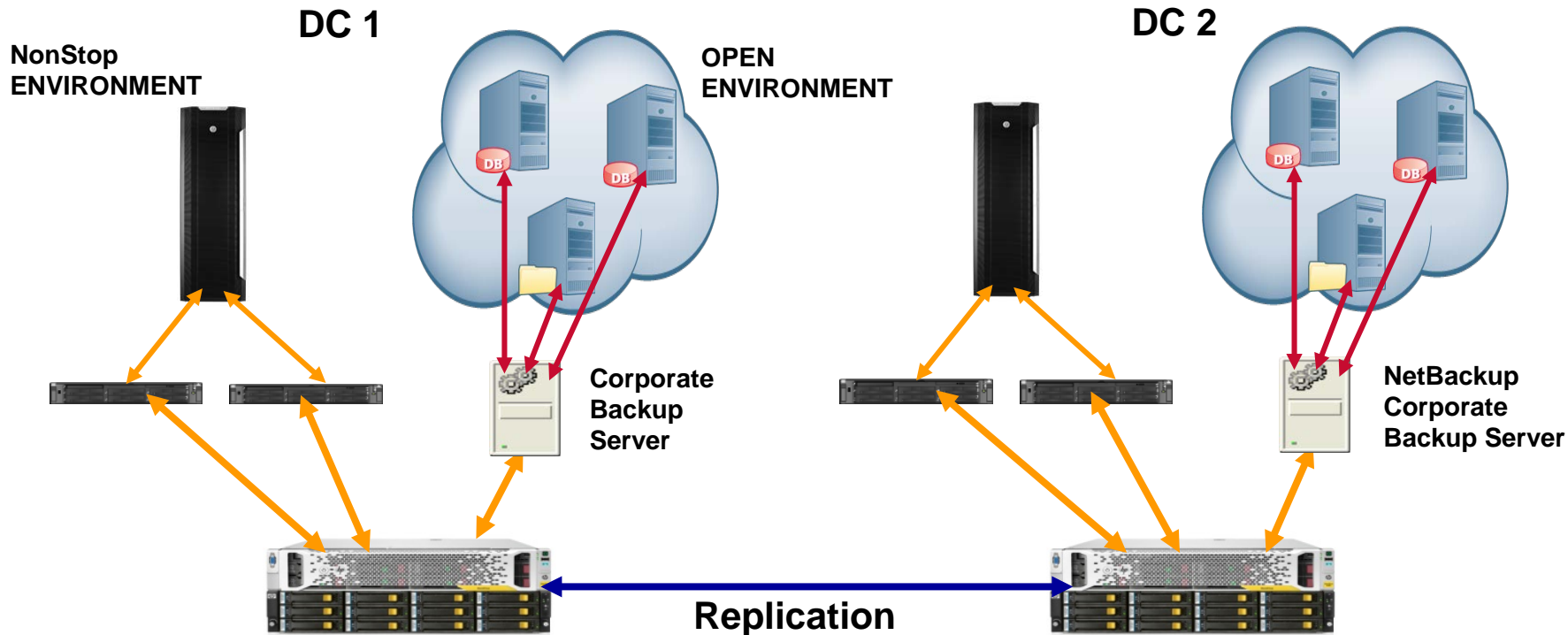
Replication

Advanced Data Store
Copy Pool - Restoring a file from remote storage
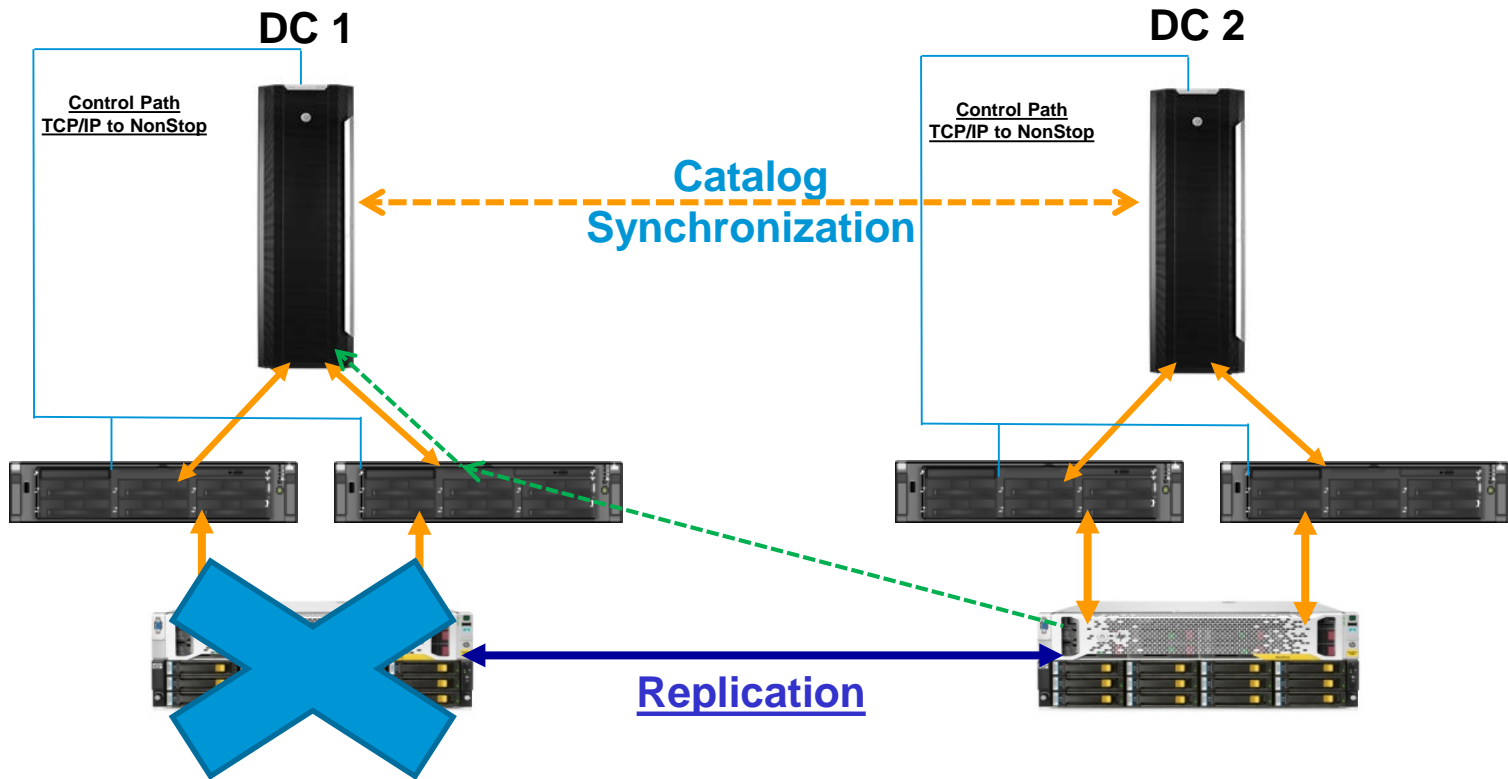
Storage Integration
Integrating NonStop with Corporate HP StoreOnce

DC 1

NonStop ENVIRONMENT

OPEN ENVIRONMENT

DC 2

Corporate Backup Server

NetBackup Corporate Backup Server

Replication

Integration with Corporate Backup
Central archiving, encryption, tape vaulting

NonStop

**Control Path
TCP/IP to NonStop**

Data Protector Client

Data Protector Client

Corporate
Backup
Server
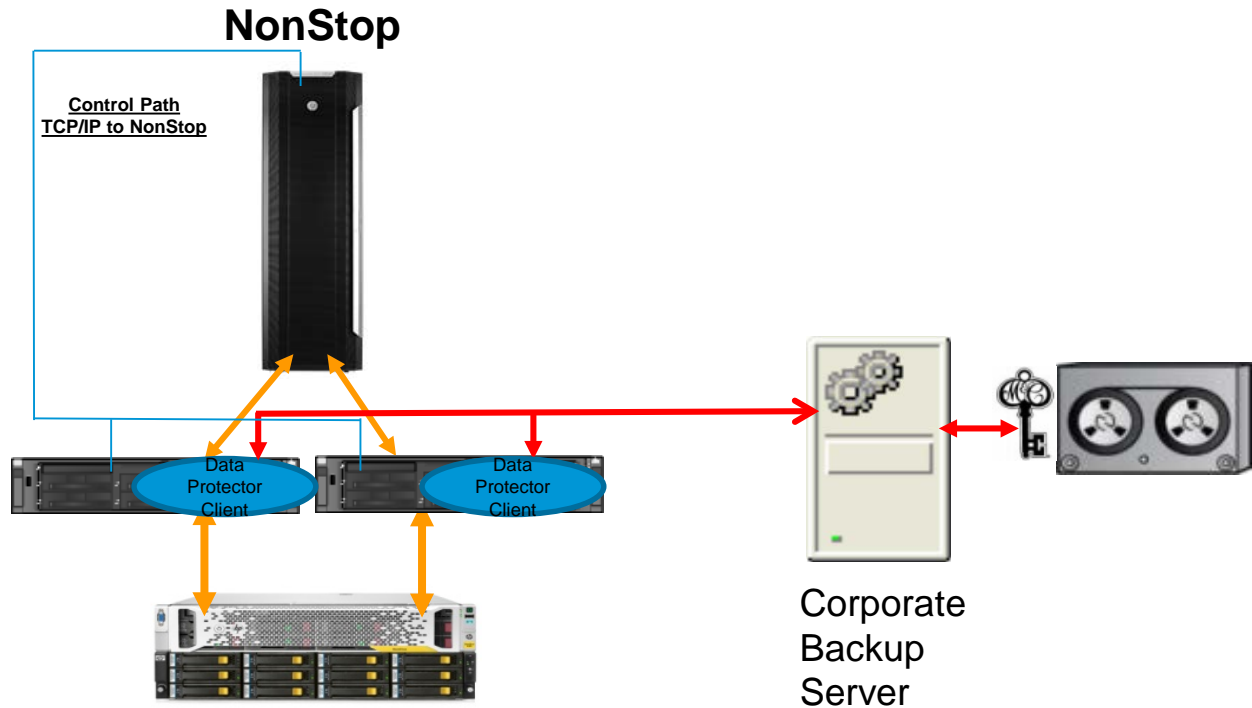
Data Deduplication: A Simple Example

Store more backups in a smaller footprint

Friday Full Backup

A   B   C   D   A   E   F   G

Mon Incr

A   B   H

Tues Incr

C   B   I

Weds Incr

E   G   J

Thurs Incr

A   C   K

Second Friday Full Backup

B   C   D   E   F   L   G   H

A B C D E F G H I J K L
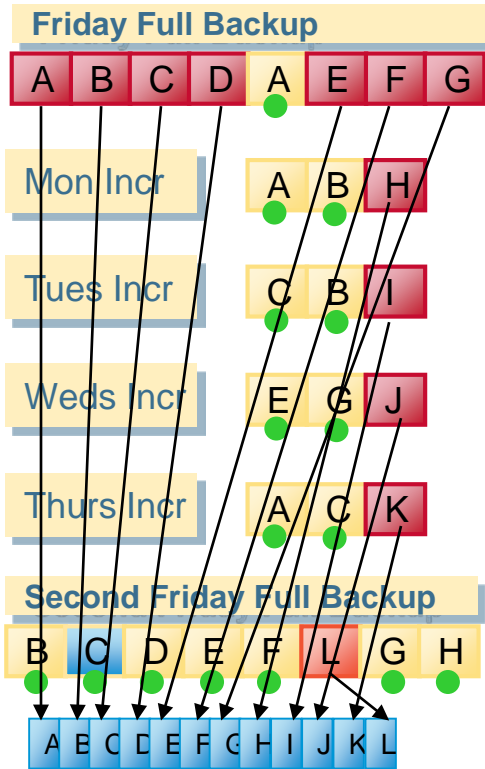
BACKUP DATA	LOGICAL	ESTIMATED REDUCTION	PHYSICAL
FRIDAY FULL	1 TB	2- 4x	250 GB
Monday Incr	100 GB	7-10x	10 GB
Tuesday Incr	100 GB	7-10x	10 GB
Wednesday Inc	100 GB	7-10x	10 GB
Thursday Incr	100 GB	7-10x	10 GB
2nd FRI FULL	1 TB	50-60x	18 GB
TOTAL	**2.4 TB**	**7.8x**	**308 GB**

StoreOnce helps reduce complexity and cost of DR

- **StoreOnce dedupe-enabled replication provides cost-effective disaster recovery**
- **StoreOnce can eliminate off site tape services associated with DR.**
- **StoreOnce provides a flexible solution to restore data either centrally or remotely – depending on the need.**
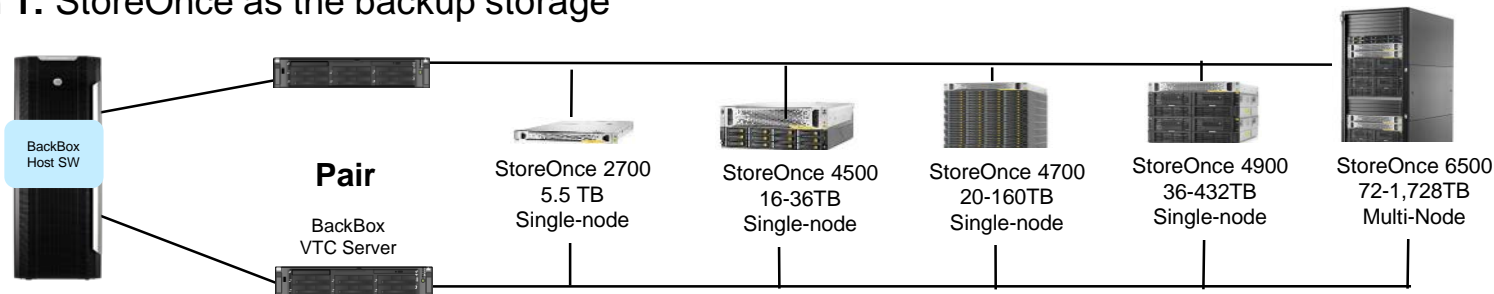- **StoreOnce provides an automated, efficient way to quickly recover from a disaster.**

Data Center

Remote Disaster Recovery Site

WAN Link

Archive to tape for long term retention

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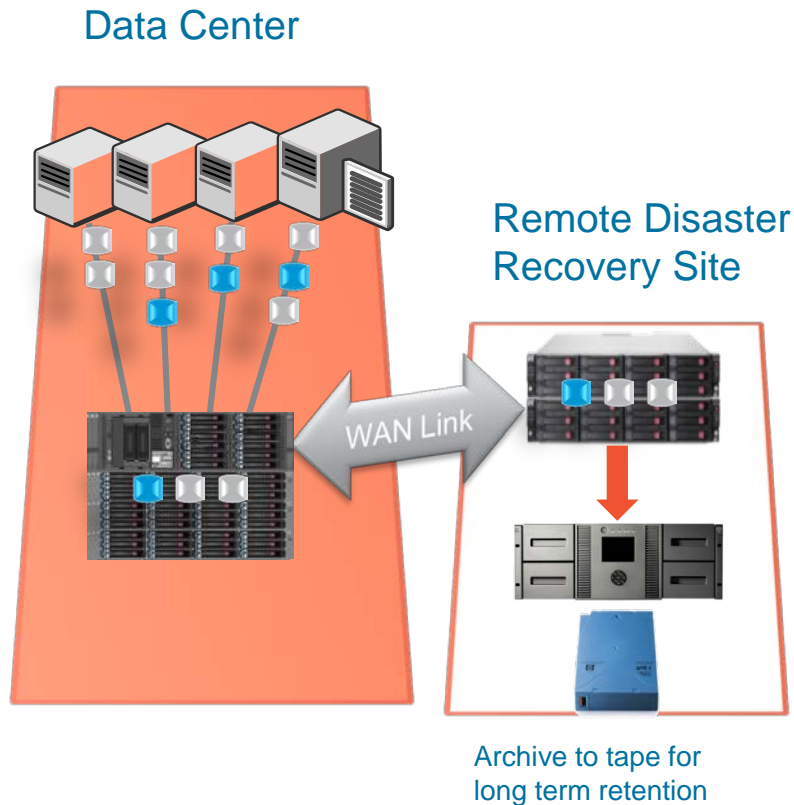
HP NonStop BackBox VTC
Three Configuration Options

NonStop BackBox VTC – 3 Configurations

Option 1: StoreOnce as the backup storage
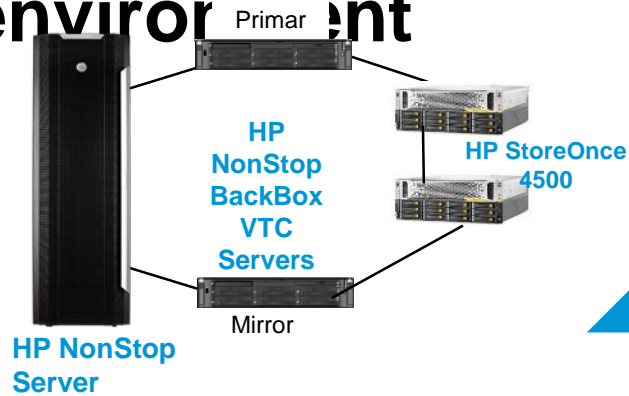
| | | StoreOnce 2700 5.5 TB Single-node | StoreOnce 4500 16-36TB Single-node | StoreOnce 4700 20-160TB Single-node | StoreOnce 4900 36-432TB Single-node | StoreOnce 6500 72-1,728TB Multi-Node |

BackBox Host SW

Pair

BackBox VTC Server

Option 2: Accommodates your preferred storage product

BackBox Host SW

Pair

BackBox VTC Server
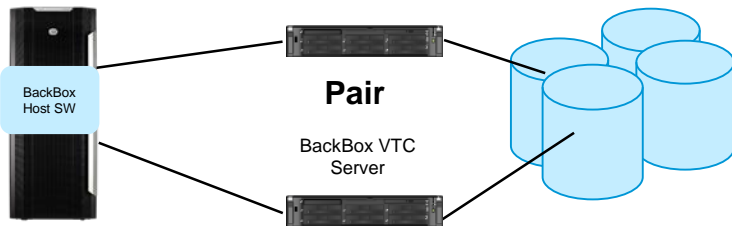
Option 3: BackBox Server with internal storage as part of the VTC

BackBox Host SW

BackBox VTC Server

Storage
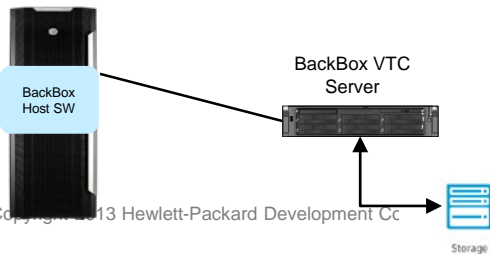
Fault Tolerance in your Virtual Tape environment

Primary

HP NonStop BackBox VTC Servers

HP StoreOnce 4500

Mirror

HP NonStop Server

Highest Level of Fault Tolerance

VS

Less / lowest Fault Tolerance

Configurations with at least two Virtual Tape controllers and a multiple StoreOnce solution

- Data replicated and stored in two locations
- All products from one trusted vendor, HP
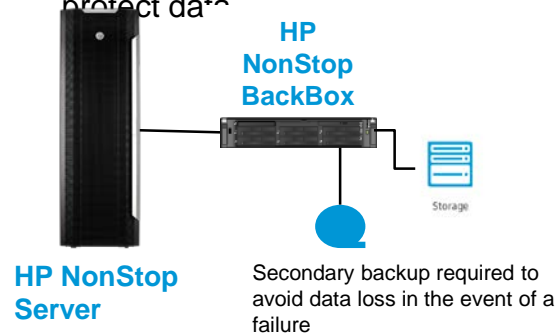- No single point of failure
- Fastest data recovery

Single configurations with internal storage and no replication

- For situations where it's okay if recovery takes days to accomplish
- Secondary backup needed to protect data

HP NonStop BackBox

Storage

HP NonStop Server

Secondary backup required to avoid data loss in the event of a failure

HP NonStop BackBox VTC Models

HP NonStop BackBox VTC Small to Medium Model

1U Proliant DL360p Gen8 server

- Supports 2 NonStop systems
- 1 GbE IP to StoreOnce standard (10 GbE optional)

HP NonStop BackBox VTC Large to Enterprise Model

2U Proliant DL380p Gen8 server

- Supports 4 NonStop systems standard (scales up to 16)
- 10 GbE IP to StoreOnce standard

HP NonStop BackBox VTC Internal Storage Model

2U Proliant DL380e Gen8 server

- Supports 2 NonStop systems standard (scales up to 4)
- Internal RAID 6 disk storage: 10.8TB, 19.5TB or 27.3TB usable

For use with HP StoreOnce for a state of the art data center solution

BackBox - Summary

Designed for fault-tolerance and linear expandability

Scales to the largest NonStop installations

Enables use of StoreOnce data deduplication on NonStop
- Extreme compression = cost-effective disk storage
- Extremely efficient WAN use for DR replication

Integrates with customers' existing storage & EBS systems

Options for physical tape access or production

Encryption with choice of secure key manager use

Field-proven reliability and ease of use

HP NonStop BackBox VTC Backup Review and Design Service

HP NonStop BackBox
NonStop Backup Review and Design Service

NonStop Backup Review Workshop

- Customer meeting:
  - ✓ Review the current NonStop backup environment;
  - ✓ Review existing corporate backup environment;
  - ✓ Identify the customer future backup requirements
  - ✓ Present the HP BackBox solution;
  - ✓ Discuss and review HP BackBox options available for the customer requirements.
  - ✓ Customer selects the preferred option.
- Typically on-site with the customer take around two hours.
- This is part of the Presales process and will not be a paid service.

For more information

ETI-NET/HP Relationship Manager

Sylvain Tetreault

Vice President, ETI-NET

sylvain.tetreault@etinet.com

+1 (561) 948-4035

Thank you

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