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# Protect Your OpenVMS Environment with HP OpenView Storage Data Protector



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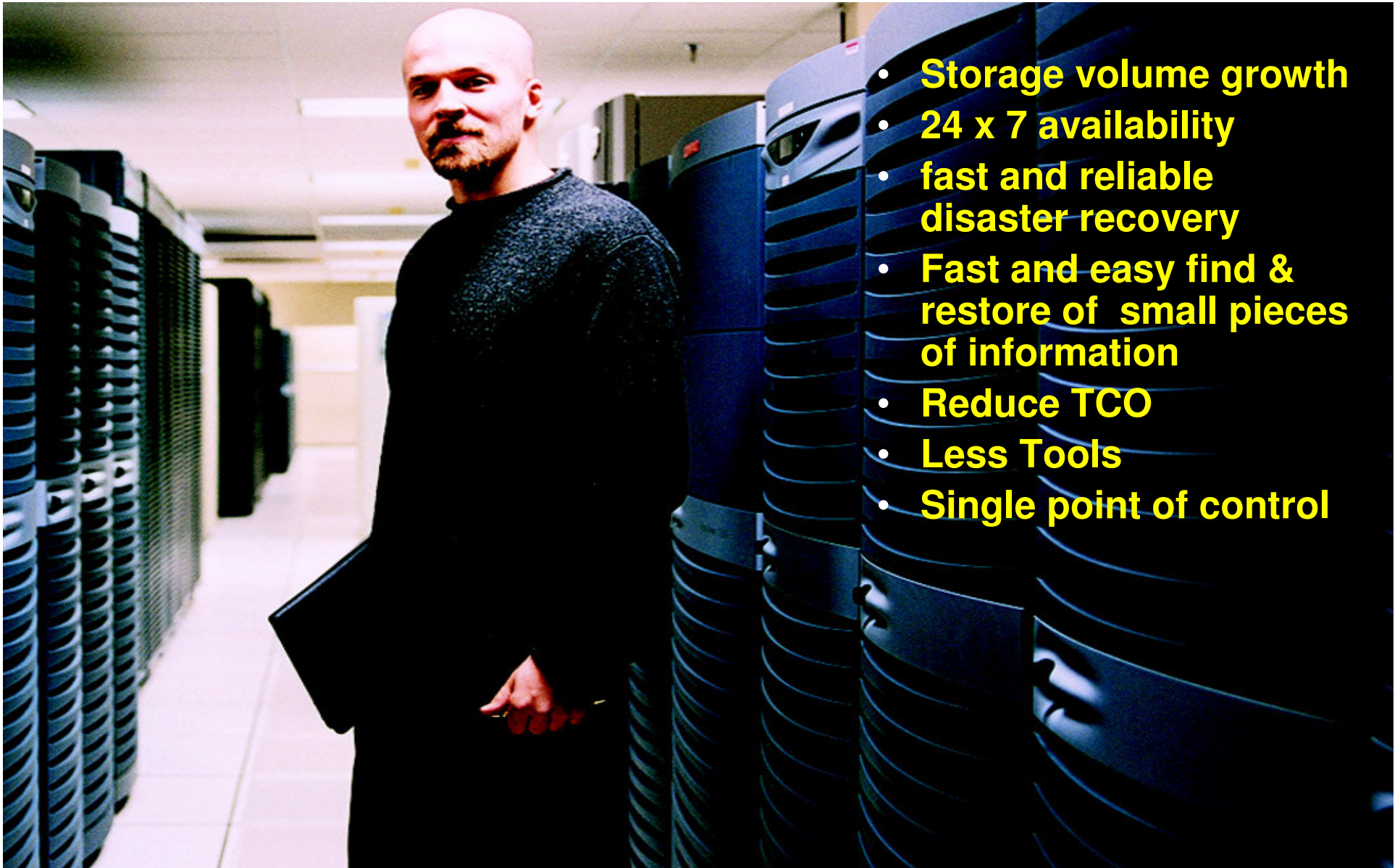


# Agenda



- OpenVMS Storage administrator's pain points
- OpenVMS data backup & recovery
  - Disk Agent
- Infrastructure
  - Media Agent
- What's new
- Future outlook
- Summary

# OpenVMS storage administrator's pain points



- **Storage volume growth**
- **24 x 7 availability**
- **fast and reliable disaster recovery**
- **Fast and easy find & restore of small pieces of information**
- **Reduce TCO**
- **Less Tools**
- **Single point of control**



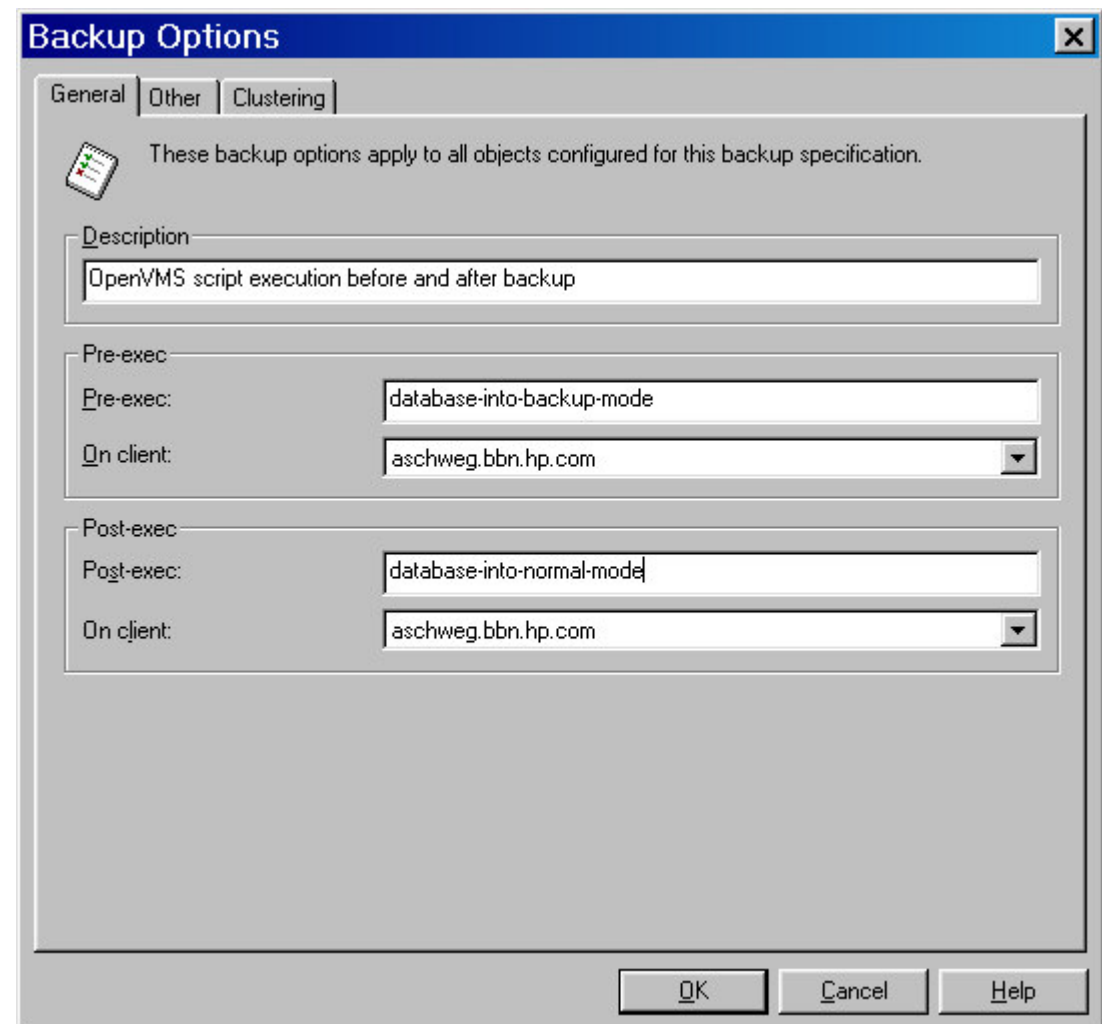
# OpenVMS backup & restore

- Backup & restore of
  - Directory structure
  - Files and all file versions
  - Extended filesystem names  
(other vendors might struggle here)
  - All file & directory attributes and ACLs (Access Control Lists)
- Full system disaster restore
  - OpenVMS system with Disk Agent required
  - OpenVMS WRITEBOOT utility can be used to make the system disk bootable
- Restore to other operating systems possible
  - Some file attributes might be lost, depending on the capabilities of the other OS
- OpenVMS 7.3-1, 7.3-2 on Alpha
- Developed by the HP OpenVMS experts, not 3<sup>rd</sup> party

# OpenVMS backup automation with pre- and post-exec



- Full Data Protector Disk Agent Command Line Interface available on OpenVMS
  - Data Protector Disk Agent commands can automatically be launched as part of automation scripts

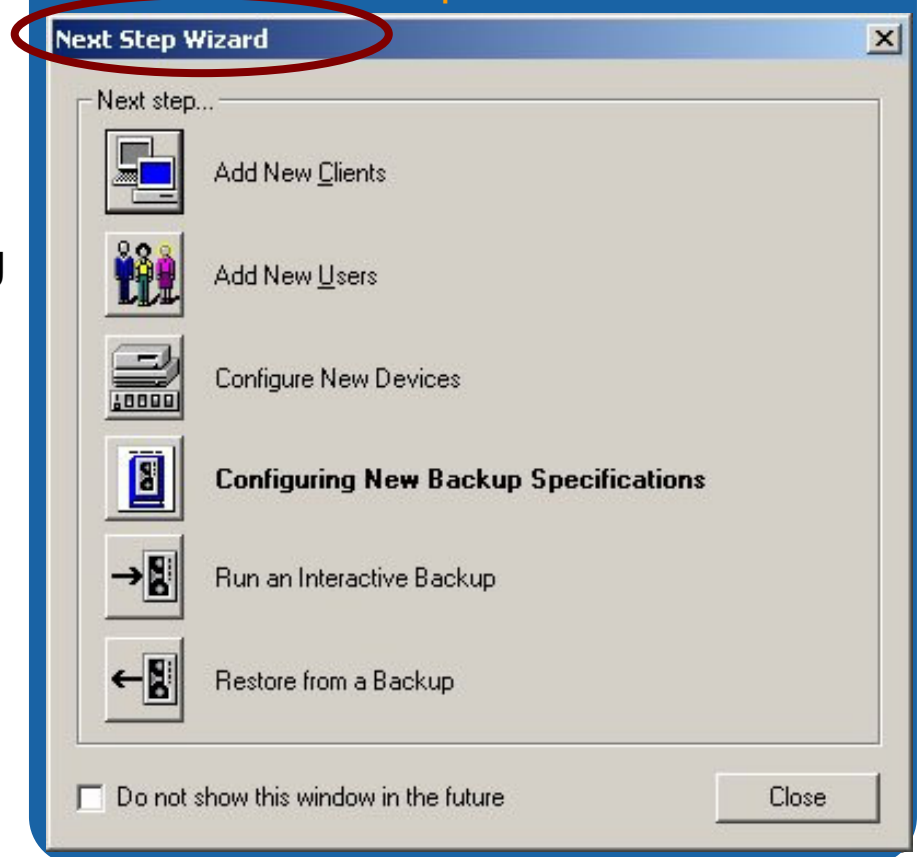


# HP Open View Data Protector increases staff efficiency



- ease of deployment & use
- automates routine tasks:
  - installation
  - software distribution for Windows & UNIX
  - automated & centralized backup management
  - recovery
  - Automated media handling eliminating operator intervention
  - reporting (GUI & via the web)
- single file recovery: easily search for file
- SAN ready: centralized database media management, only one database to maintain and less network traffic

- automatic backup device & library detection and configuration
- consistent look&feel across different operating systems
- wizards & templates

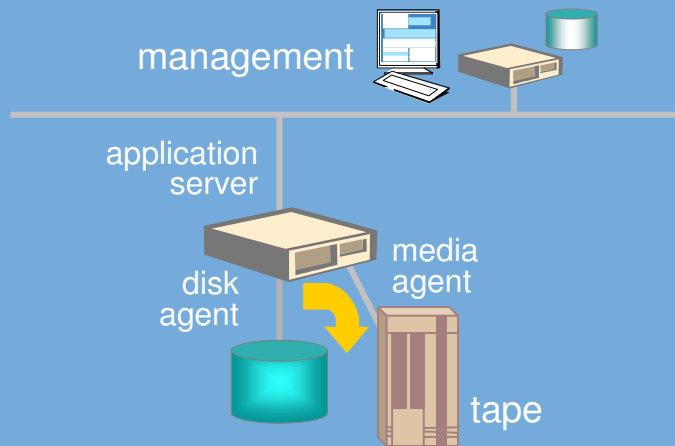


# Infrastructure

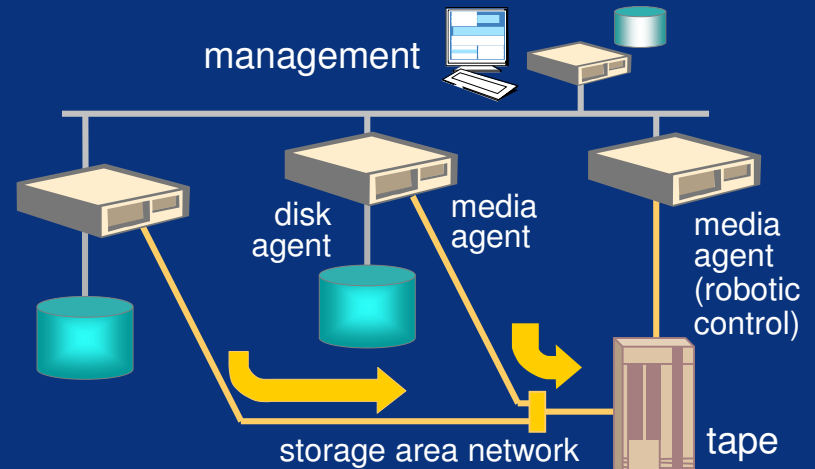




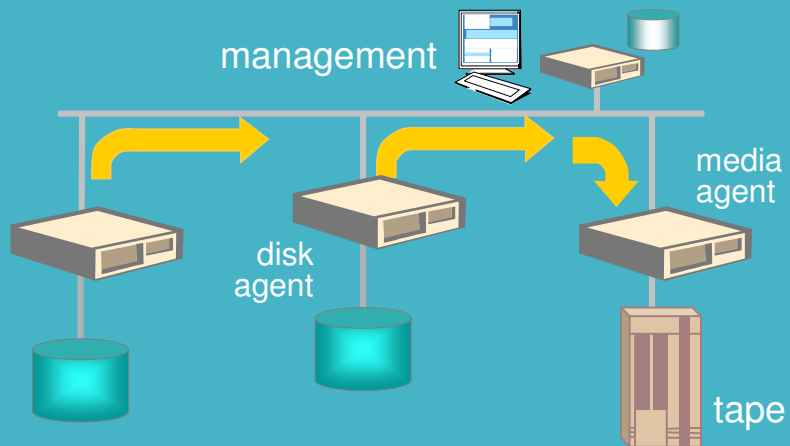
## local protection



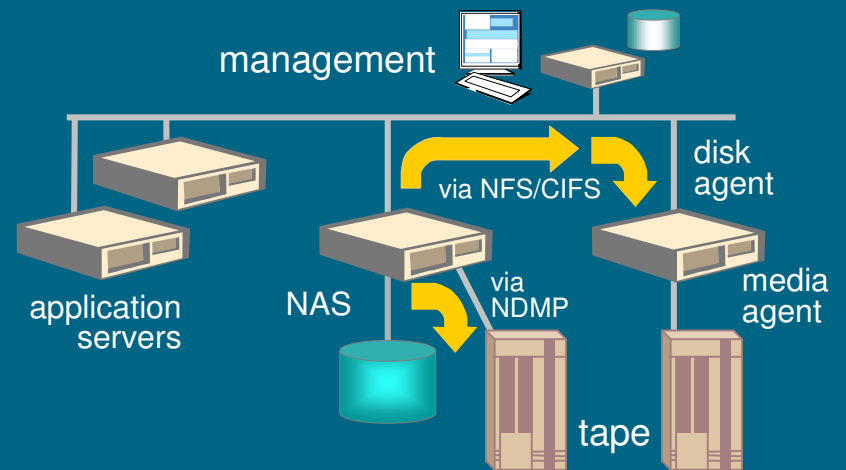
## SAN (LAN-free) protection



## network-based protection



## NAS (NDMP) protection



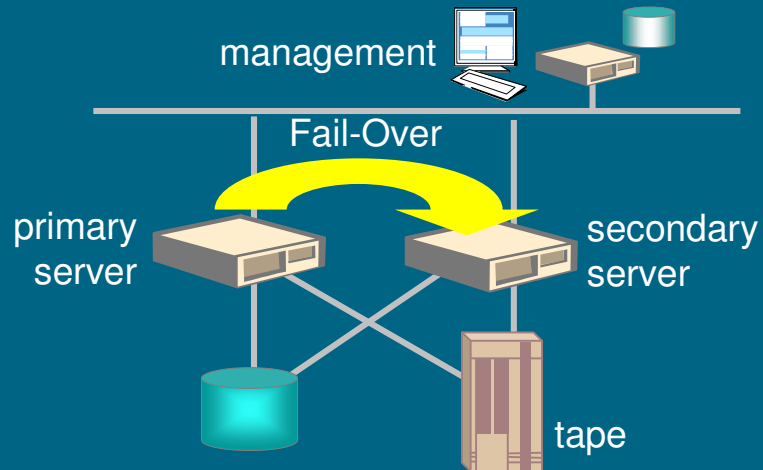


# UNIQUE OpenVMS Media Agent

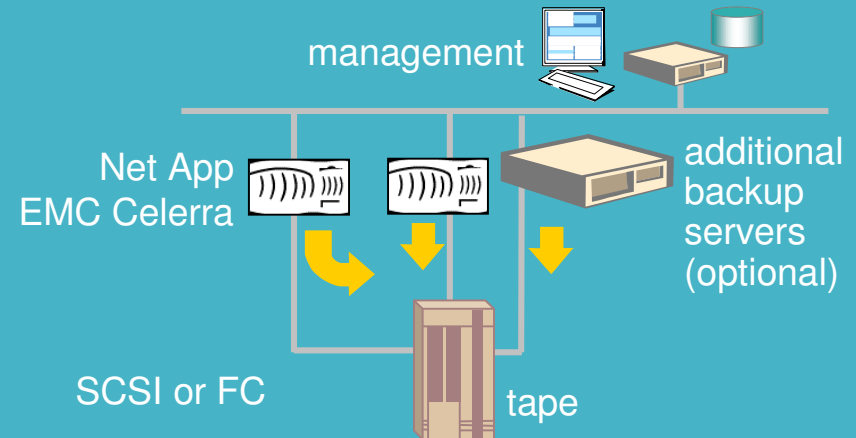


- Backup drives can be attached to OpenVMS with SCSI and Fibre Channel
- Robotic control & unique library sharing cross OS platforms
- Automatic device configuration
- OpenVMS 7.3-1, 7.3-2
- Developed by the HP OpenVMS experts, not 3<sup>rd</sup> party

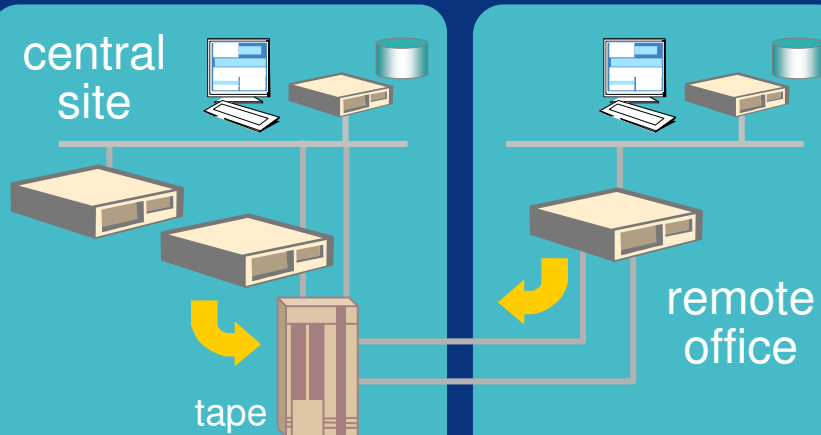
## clustered environments



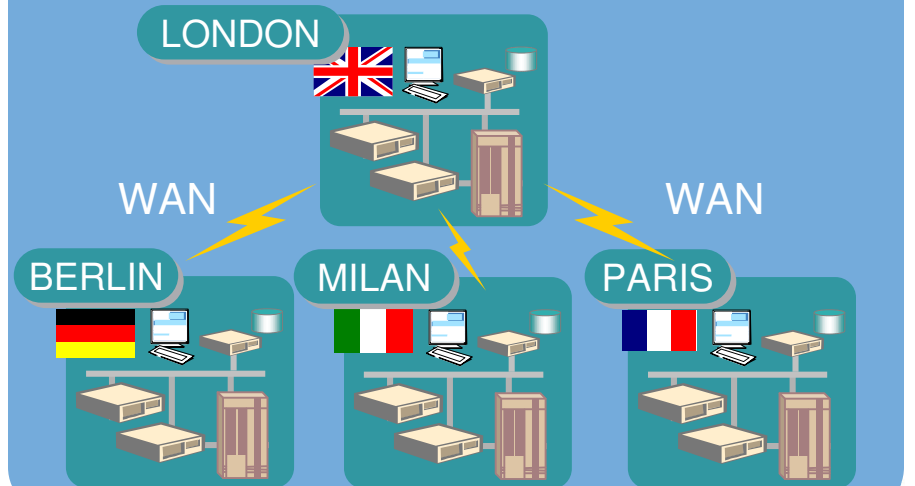
## NDMP environments



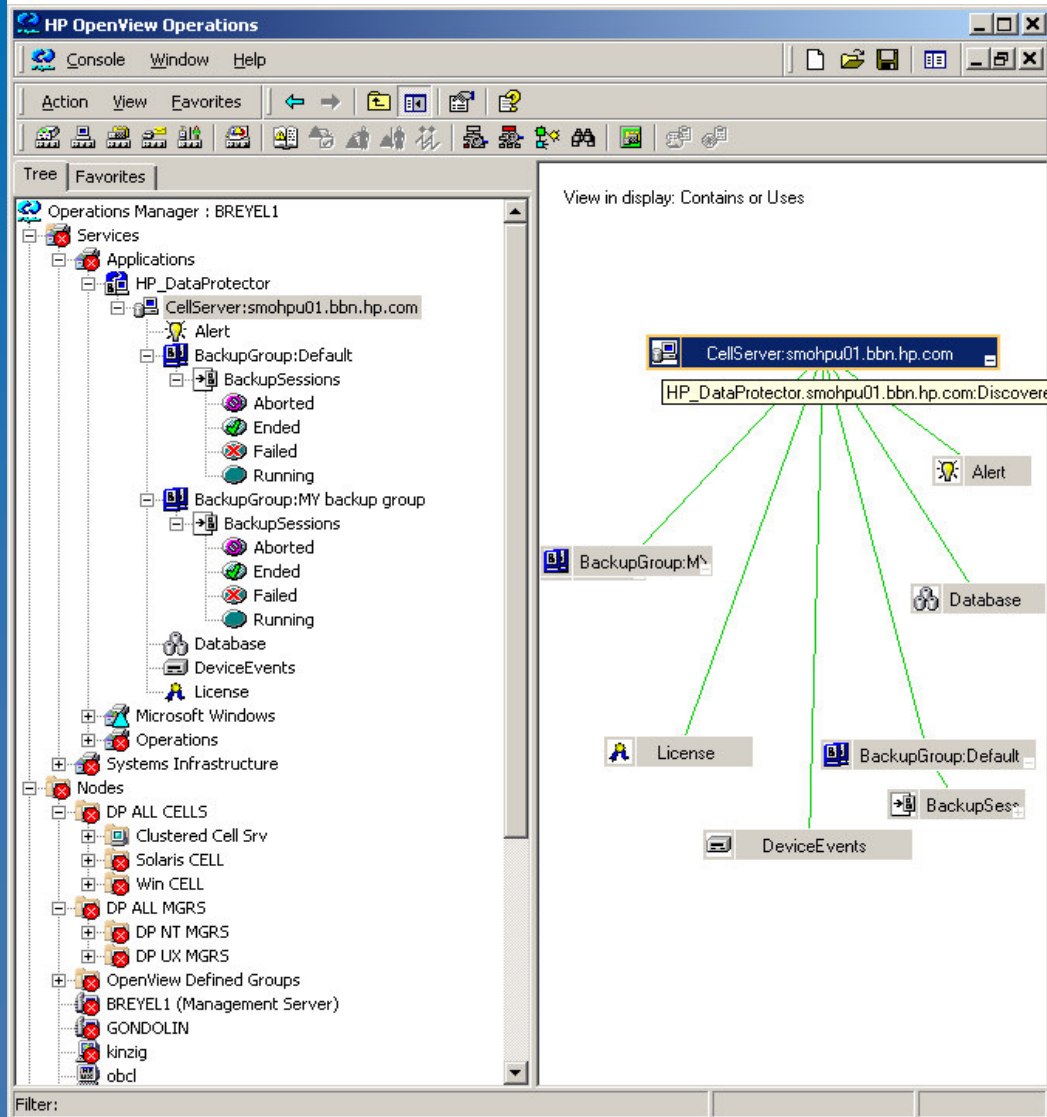
## library sharing



## manager-of-managers



# Single point control with HP OpenView



## Managing data protection using business-oriented service views

- easy-to-understand tree-structured service views
- manages backup as part of overall service
- allows continuous 24x7 operations
- maximum staff efficiency

# Data Protector 5.1

## – supported environments



### user interface:

- Windows
- HP-UX
- Solaris



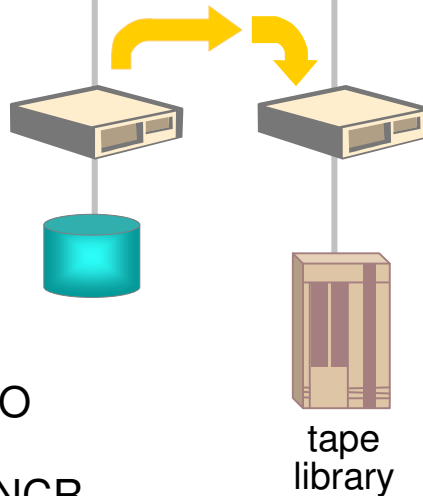
### management station:

- Windows
- HP-UX
- Solaris



### backup agents:

- Windows
- HP-UX
- Linux
- Sun Solaris
- IBM AIX
- HP Tru64 UNIX
- HP MPE/iX
- **HP OpenVMS**
- Novell NetWare
- SCO OpenServer; SCO Unixware
- SNI SINIX; SGI IRIX; NCR MP-RAS
- Additional platforms via NFS, shared disk (CIFS) or NDMP



### backup device server:

- Windows
- HP-UX
- Linux
- Solaris
- AIX
- HP Tru64 UNIX
- HP MPE/iX
- **HP OpenVMS**
- NetWare
- SCO OpenServer, Sinix

### on-line backup:

- Oracle
- MS SQL Server
- MS Exchange
- MS VSS API
- MS Internet Info Server
- SAP R/3, SAP DB
- Informix
- Sybase
- Lotus Notes / Domino
- DB2
- OpenView NNM



complete Data Protector support matrices are available at:

<http://www.hp.com/go/dataprotector>

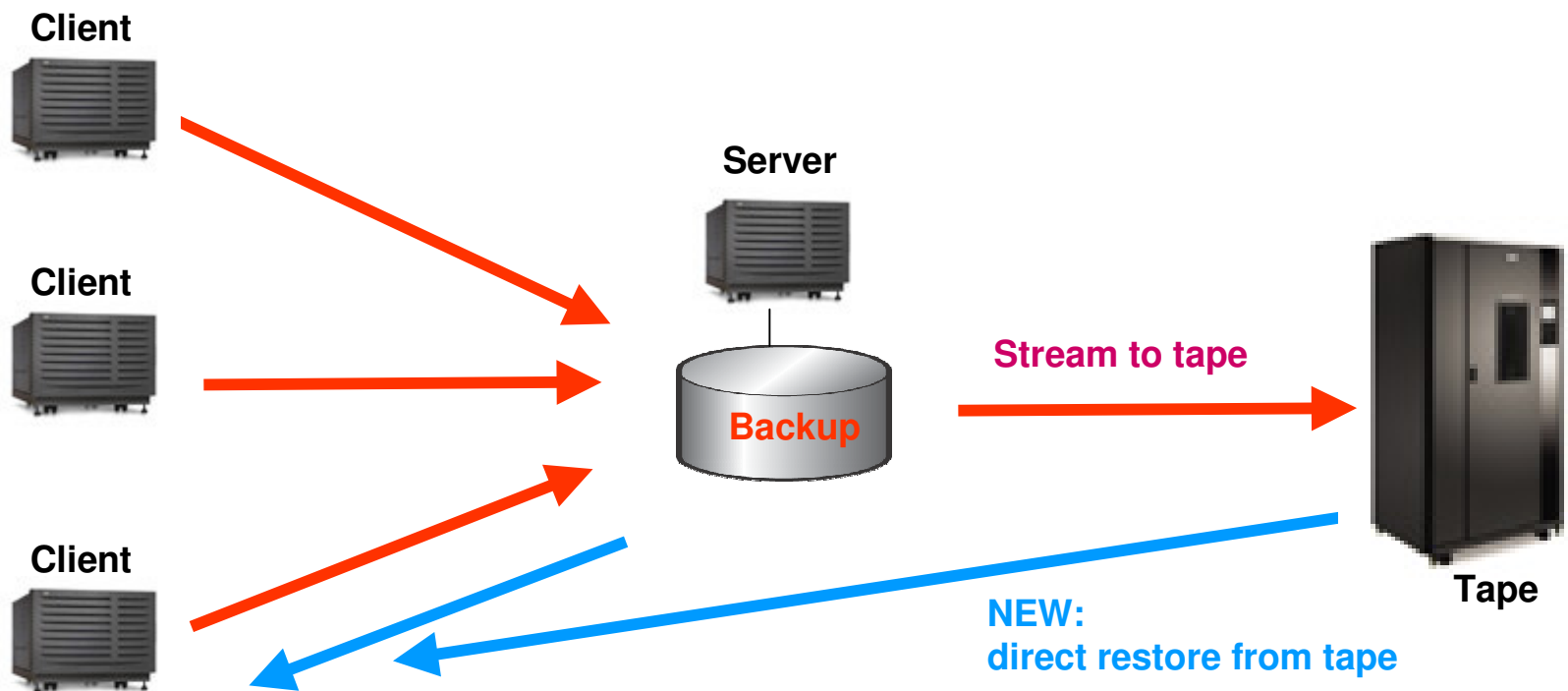
Solutions and Technology Conference & Expo



# What's new



# Advanced Backup to Disk (Virtual Tape) Disk Staging Example



**Restore:**  
Fast restore from disk if  
data still available there

**Backup 1:** Store on disk  
and copy to tape on  
scheduled basis; expire  
backup on disk as disk fills

# Advanced Backup to Disk

## - Disk Staging

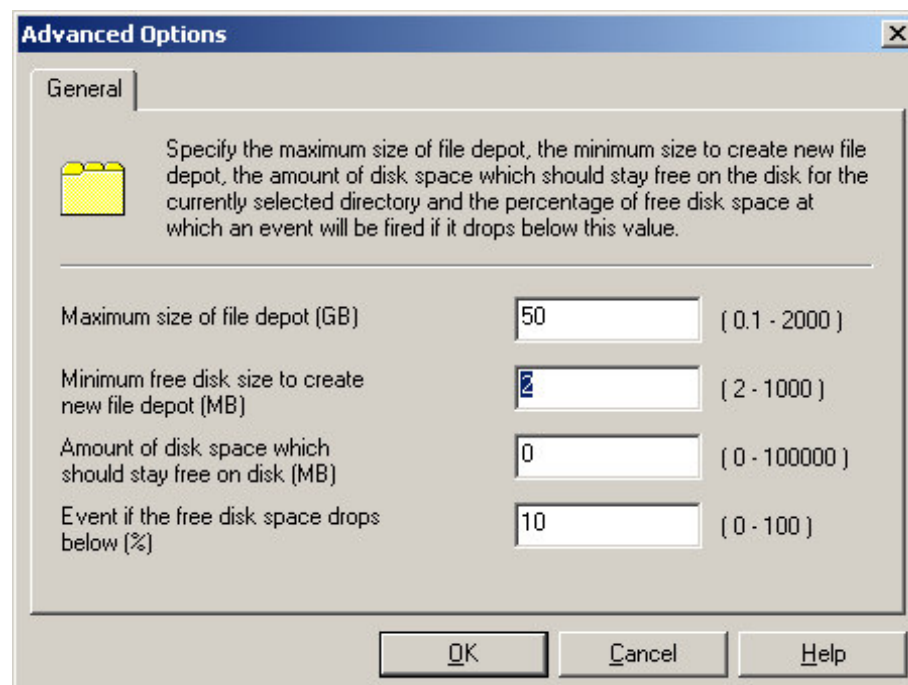


- Features

- Automatically selects file from disk stage, if available
- Single file restore directly from tape, if not on disk
- Automatic space management
  - Space creation
  - Retention management
    - > automatic space re-use
- Restores & backups in parallel
- GUI Wizard for creation
- Disk array independent

- Use cases

- Continuous backup of transaction log files
  - tape drives not in start/stop mode.
- Backup of slow clients without multiplexing
- Resource sharing
- Tape-less branch office backup

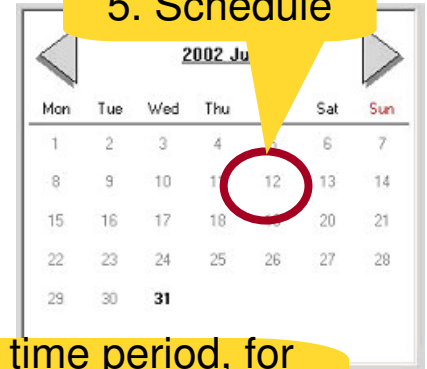


# Advanced Media Management Space Efficient Automated Media Copy

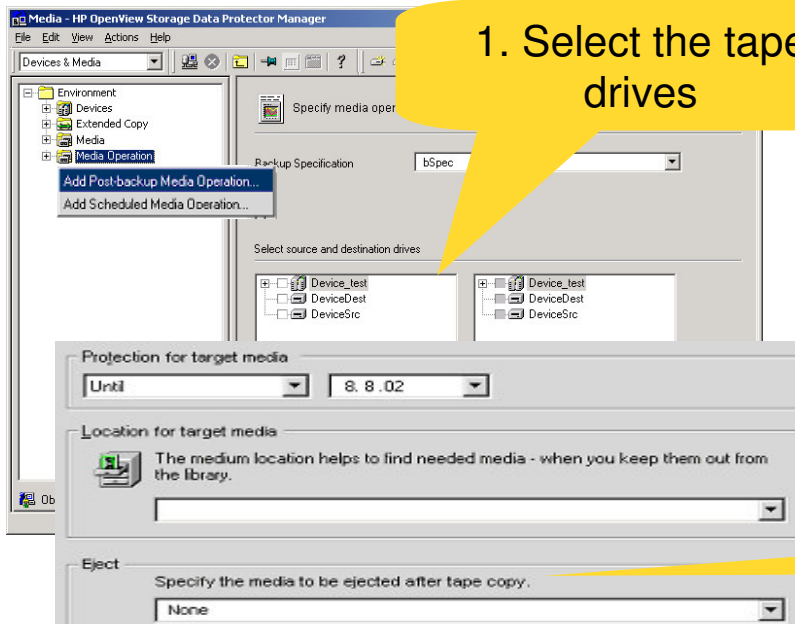


- no need to copy the entire tape / disk
  - copies only portions added during the selected period
- append to the end of an already copied tape / disk

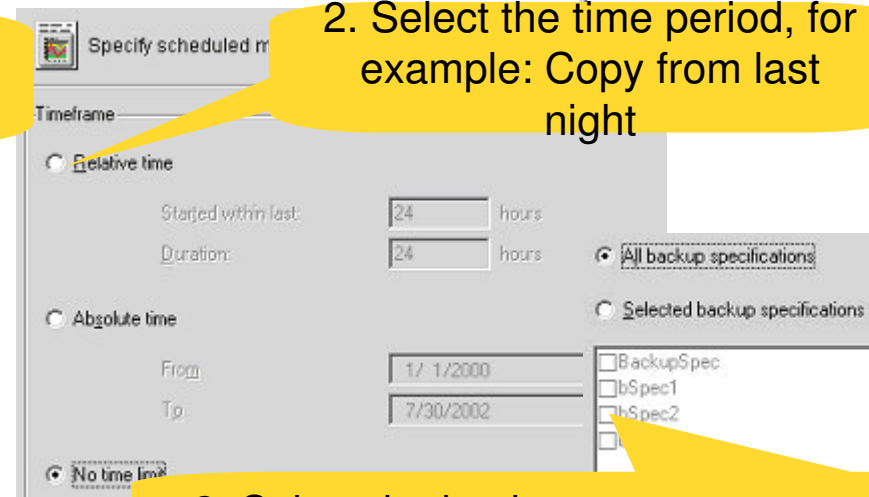
## 5. Schedule



## 1. Select the tape drives



## 2. Select the time period, for example: Copy from last night



## 3. Select the backups you want to copy

## 4. Automatic eject from libraries



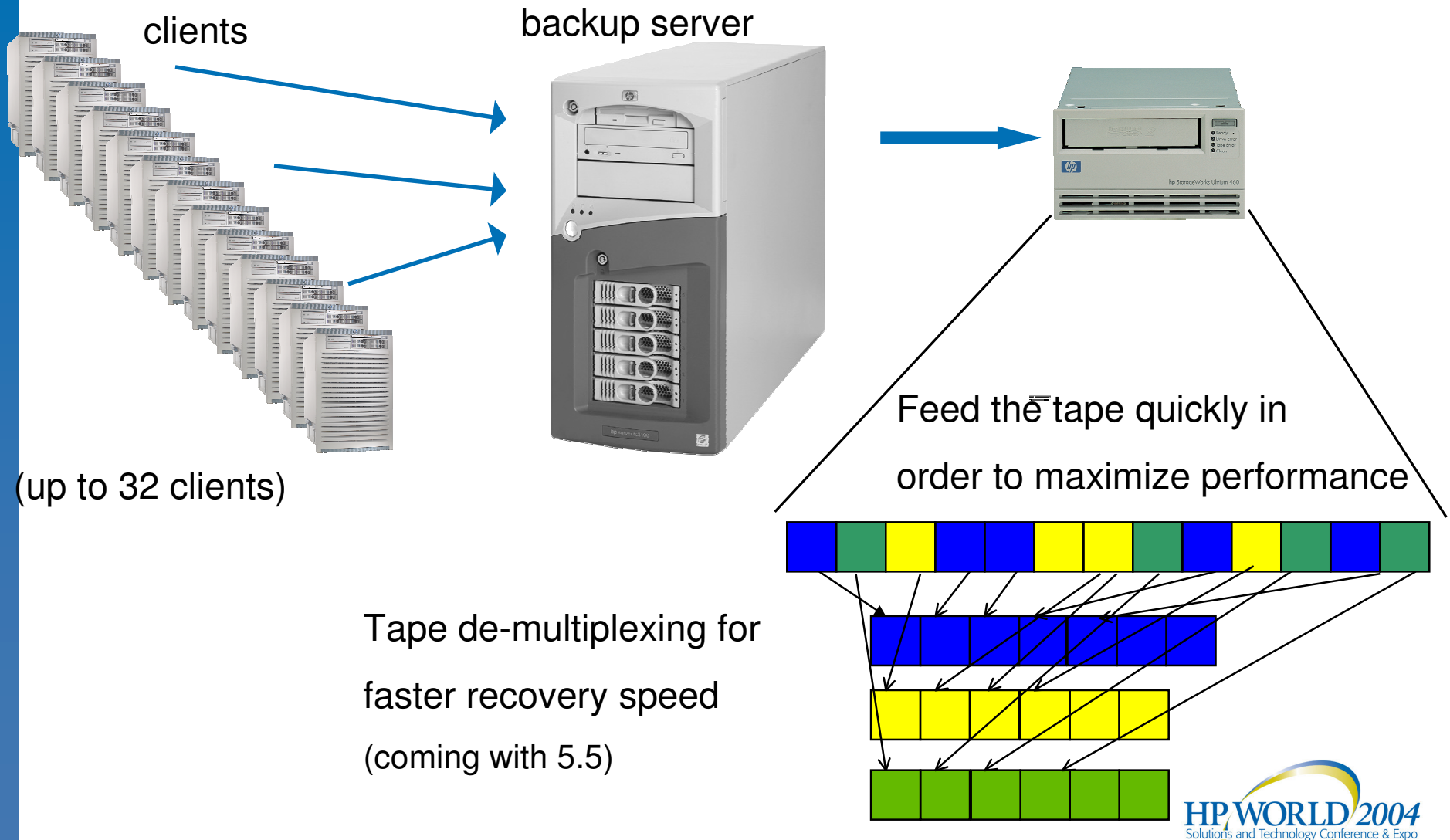


# Advanced Media Management

## - other features

- **tape type migration** & consolidation, for example from DLT to LTO, from disk to tape
- **tape compaction** to eliminate unprotected backups to save tape space
- scheduled **refresh** of long term protected objects
- Tape **collocation / de-multiplexing**
  - for faster recovery
  - creation of system/customer specific **disaster recovery tape(s)** through de-multiplexing and combination of last full with last incremental(s) on one tape
- Supported for all Media Agents

# Multiplexing for maximum backup performance from slow clients





# Advanced Media Management benefits

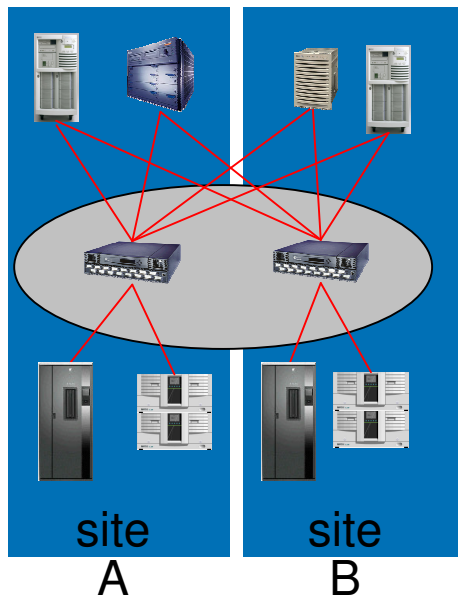


- reduced Total Cost of Ownership
  - reduced tape space consumption
  - reduced tape drive consumption
- flexibility
- performance
  - recovery
  - copy
  - backup
    - Increased backup frequency for backup of small transaction logs
    - slow clients
- archiving



# Data Protector 5.5

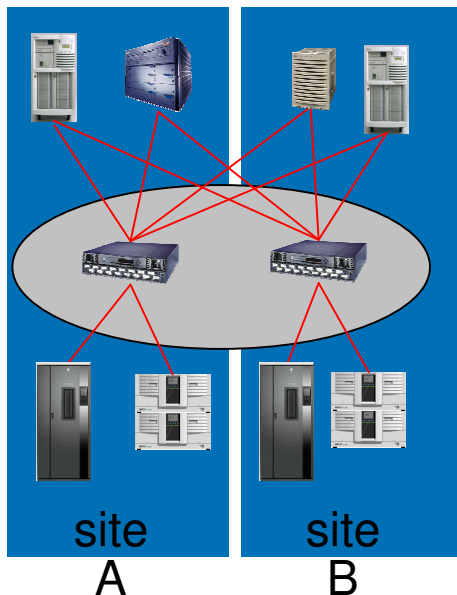
## - Backup Mirroring – features



- **unlimited distance**: SAN & LAN & WAN
  - data stream split at the Media Agent via daisy chain
  - DA -> MA -> MA -> MA
- highest performance via **shared memory** (in case DA & MA or MA & MA reside on the same system)
- backup has higher **priority** than mirroring in case of failures or mount request time out
- **appendable**
- **different** & changeable **protections**, different locations -> unique media identifiers
- **up to 5 mirrors**
- comes **free of charge** & out of the box seamless integrated into GUI and CLI
  - however, a mirror backup drive requires an additional backup drive license

# Data Protector 5.5

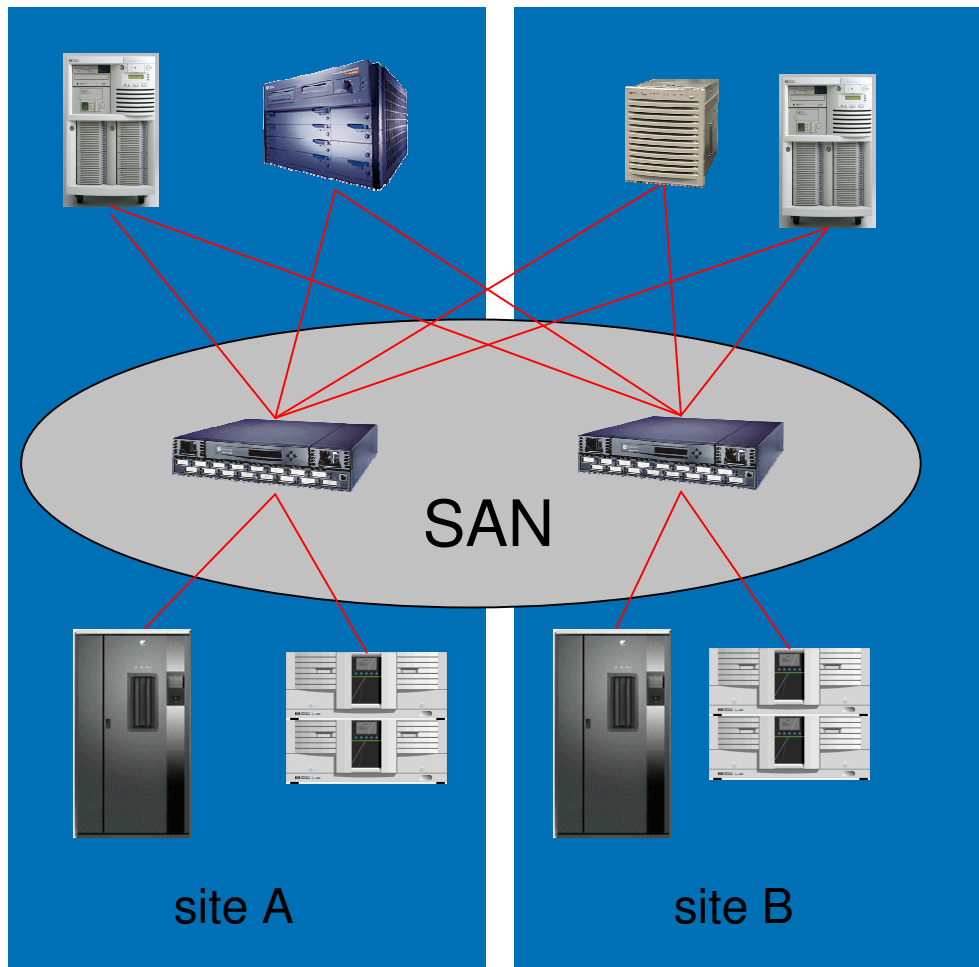
## - Backup Mirroring features



- same concept adoptable for disk & tape
  - mirror tape to tape
  - mirror disk to disk
  - mirror disk to tape
  - multiplexing
- FUTURE: SAN direct backup based on Xcopy

# Data Protector 5.5

## - Backup Mirroring benefits



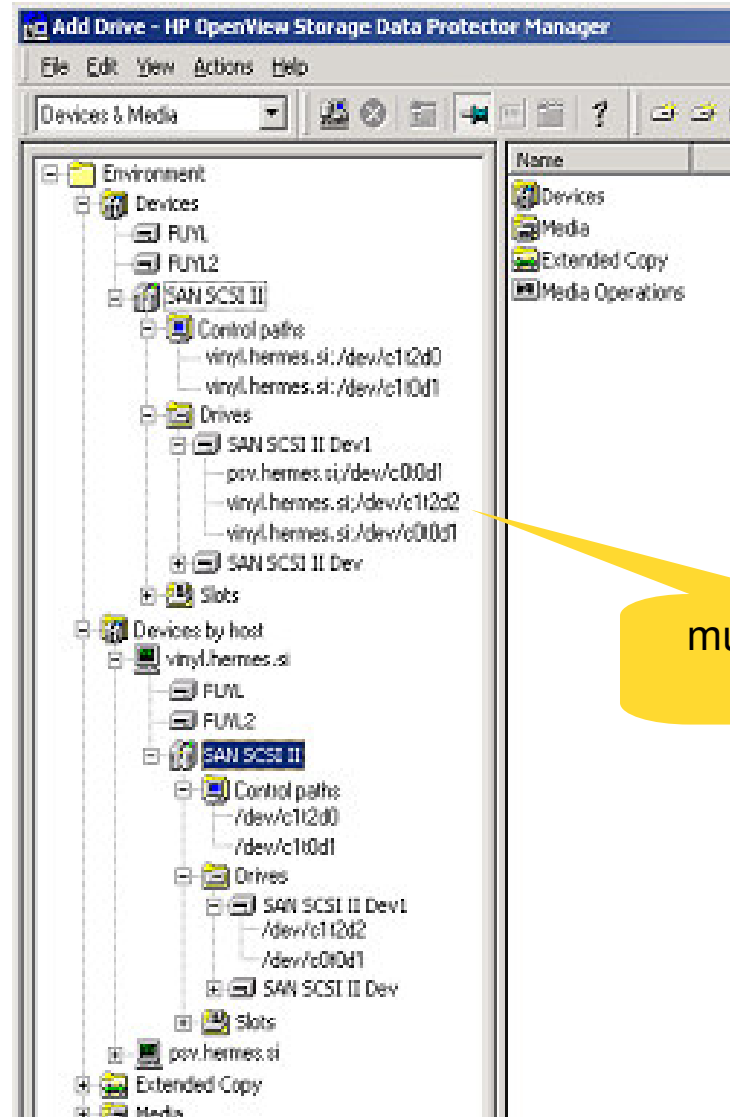
- overcome a local datacenter disaster combined with fast local tape access
- remote long term archiving combined with fast local tape access
- overcome defect tapes

# Flexible SAN device configuration using multiple paths instead of logical devices

Automatic SAN device configuration

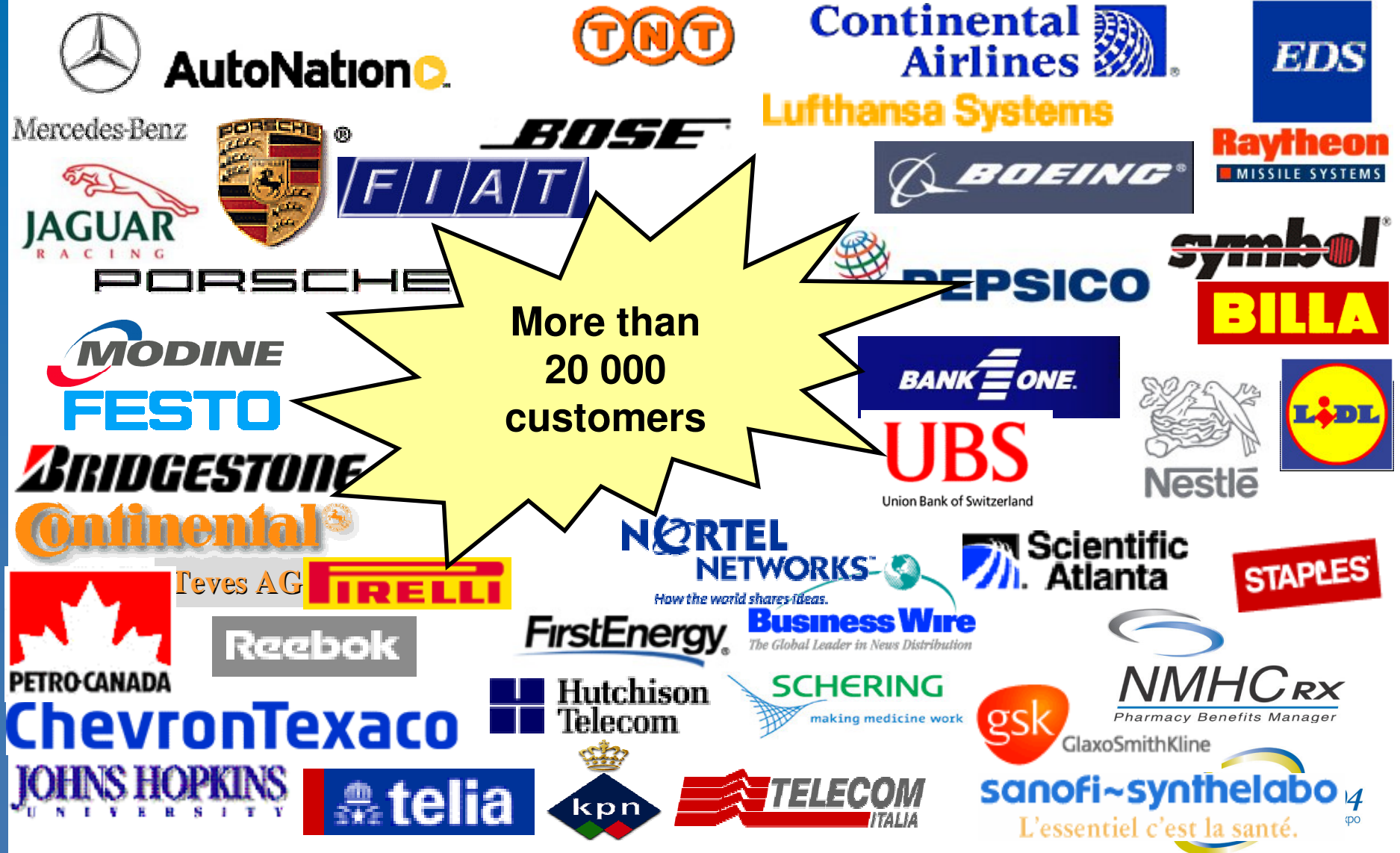
Example of 10 systems sharing 10 tape drives in a SAN require:

- 100 logical devices
- NEW option:  
10 MultiPath devices with up to 10 paths





# Some Data Protector Reference Customers



# Future and roadmap



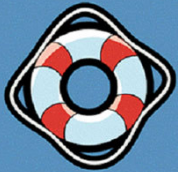
- Oracle 8i/9i/10g on-line backup
  - Dec 04
- Oracle RDB on-line backup
  - Jan 05
- IA64
  - June 05



# Summary

# HP OpenView Storage Data Protector

Seamless integration of disk & tape backup & recovery



## Fast & reliable recovery

- Faster single file recovery from advanced backup to disk
- Faster recovery from de-multiplexed tapes
- Backup mirroring and automated tape copy



## Single point of control

- Consolidated backup & recovery across all platforms
- Unique library sharing across platforms
- Fully automated tasks



## Proven Product

- Installed base of more than 20 000 customers
- Over 1000 features implemented
- Best in class TCO



i n v e n t

## Better Together from HP

- Developed, integrated, and tested with HP servers and storage
- Seamless integration with HP OpenView
- HP support & services for hardware and software

# For More Information

- For More Data Protector Info:
  - <http://www.hp.com/go/dataprotector>
    - Product Info
    - Support Matrices
    - Data Protector Manuals
    - Evaluation Software (60-day Trial)
- See you at the Technology Showcase
- Speak to your HP Storage Specialist





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