

Virtualizacija diskovnih sistemov

IBM SVC in IBM N-series

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COMPAREX



Profile



Independent Systems Integrator



Professional IT Service Provider

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PCWARE Group

Profile



- More than 30 Years Experience in the Data Center
- Absolute Focus on economically efficient Solutions
- Strategic Partnerships with Leading Manufacturers

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Profile

Milestones

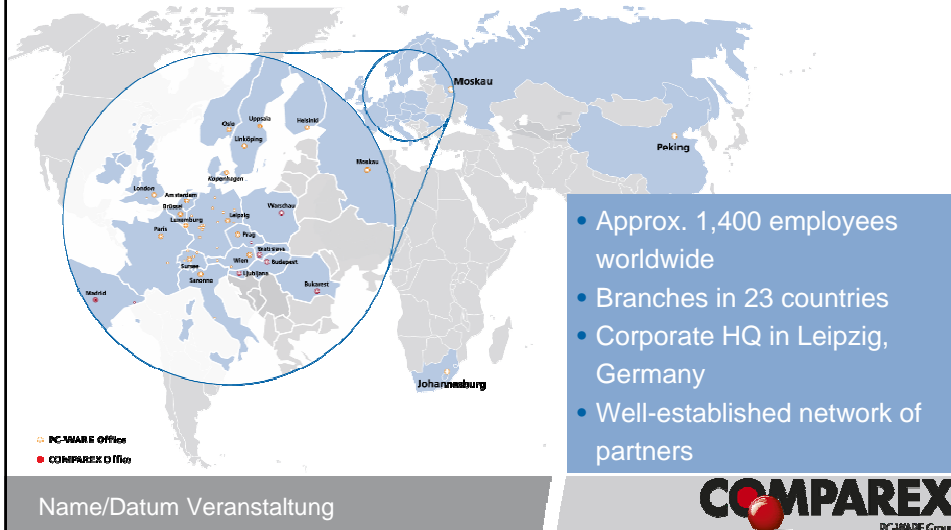
- 1975 BASF – IBM compatible mainframes and storage systems
- 1987 Foundation of COMPAREX Informationssysteme GmbH as a Joint-Venture between BASF and Siemens
- 1991 COMPAREX becomes a 100% BASF subsidiary
- 1996 Persetel acquires 40% of COMPAREX
- 1998 PQ Holdings/Persetel extends its share to 75%,
Re-Naming of PQ Holdings into COMPAREX Holdings
- 1999 COMPAREX Holdings fully takes over COMPAREX
- 2000 New Focus via strategic Partnerships with EMC and Sun
- 2002 Management Buy Out in Europe,
Extension of the strategic Partnerships (IBM and HP) and Positioning as independent
Systems Integrator



2007 - A partnership built for the future **PC-WARE and COMPAREX**



Always at your service - worldwide



We aim to inspire our customers with:

1. Best-in-class expertise covering **software, hardware, IT consulting and IT services**
2. Expert know-how and a truly customer-oriented approach centred around **highly qualified staff with industry certification**
3. In-depth knowledge of **software licensing and software asset management** as well as efficient pricing structures
4. A global presence combined with local proximity to clients
5. Partnerships to market-leading vendors (IBM, EMC, SUN, Symantec, Microsoft EMEA Large Account Reseller)

IBM SAN Volume Controller



SVC Facts

IBM has 40 years experience in virtualization technologies

IBM has shipped over 9900 SVC engines running in more than 3400 SVC systems

There are more than 130 customer references and 24 customer case studies for SAN Volume Controller

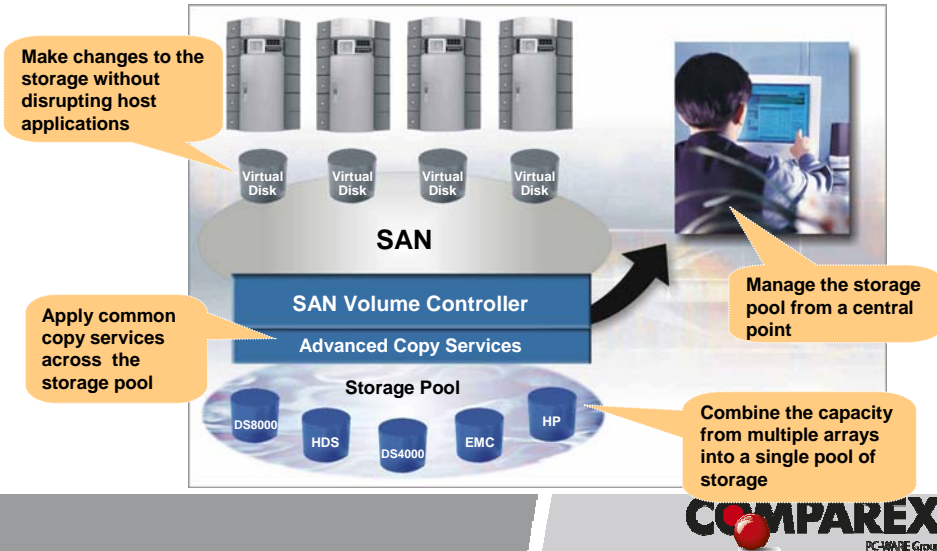
SAN Volume Controller is a proven offering that has been delivering benefits to customers for four years

SAN Volume Controller demonstrates scalability with the fastest Storage Performance Council benchmark results

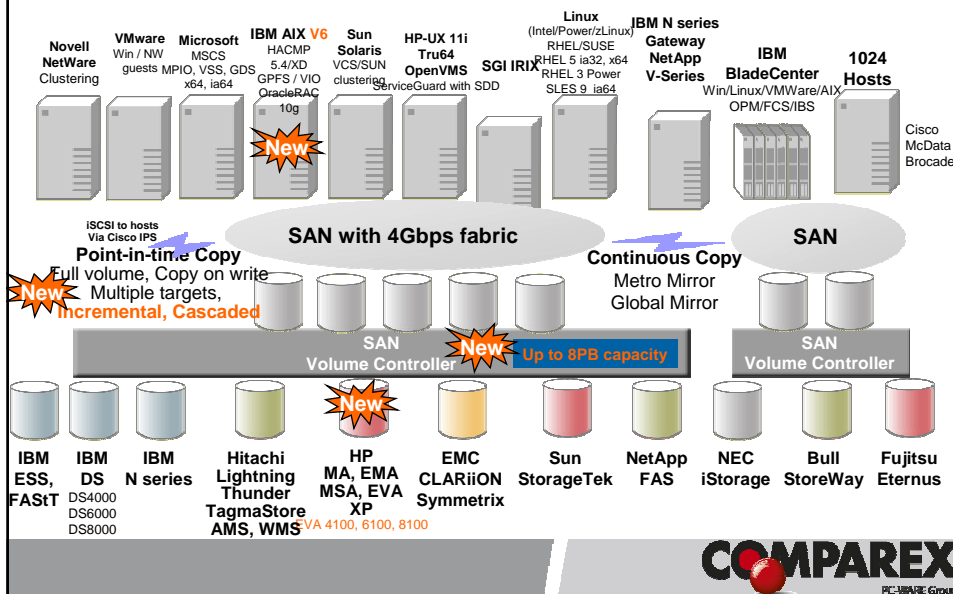
SAN Volume Controller can virtualize IBM and non-IBM storage (over 120 systems from IBM, EMC, HP, HDS, Sun, Dell, NetApp, Fujitsu, NEC, Bull)



Flexible Storage Infrastructure with SAN Volume Controller



SAN Volume Controller Version 4.2.1 Supported Environments



IBM N-series



How customers are buying storage?

Features and capabilities:

- Max. Number and type of disks
- Max. Capacity and performance
- Cache size
- Number of snapshots
- Management?!?

....



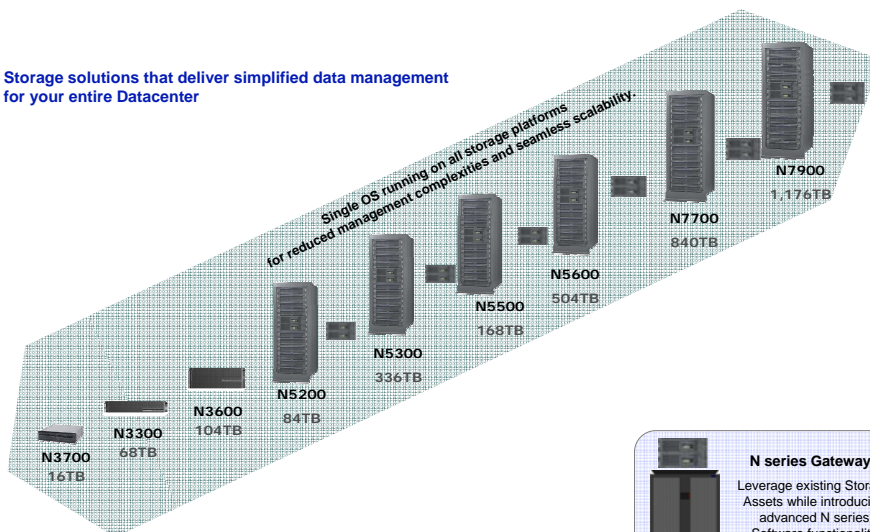
Optimal purchase process

- Management
- Servicability
- Flexibility
- Server and application integration
- Usage of advance functions
-



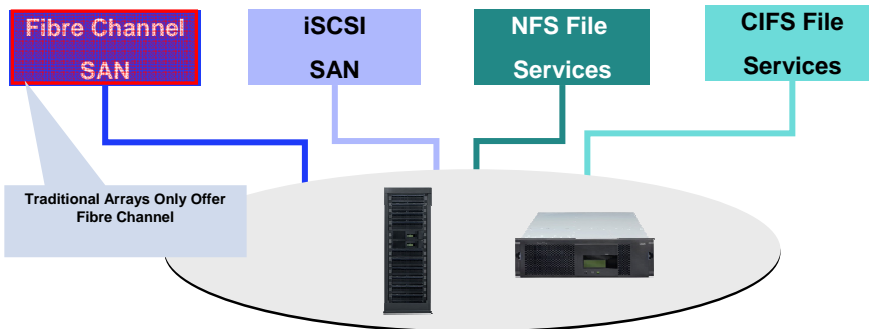
Delivering Value Across the Datacenter

Storage solutions that deliver simplified data management
for your entire Datacenter



Unified Storage Model

Mix File and Block Protocols in the same system



One architecture for SAN and NAS storage

Unique ability to consolidate file and block storage on single system

Can be used for either primary or secondary storage

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IBM System Storage N series Overview

October 23, 2007

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Address the challenge with Double Parity RAID: RAID-DP™

Single-parity RAID protects against any single disk failure

D	D	D	D	P
3	1	2	3	9

Survives any 2-disk-failure scenario

Compared to single-parity RAID, RAID-DP has:

- Better protection (>4,000 MTDL)
- Equal, often better performance

Outperforms any other “double-parity” offering

- Routinely on during benchmarks

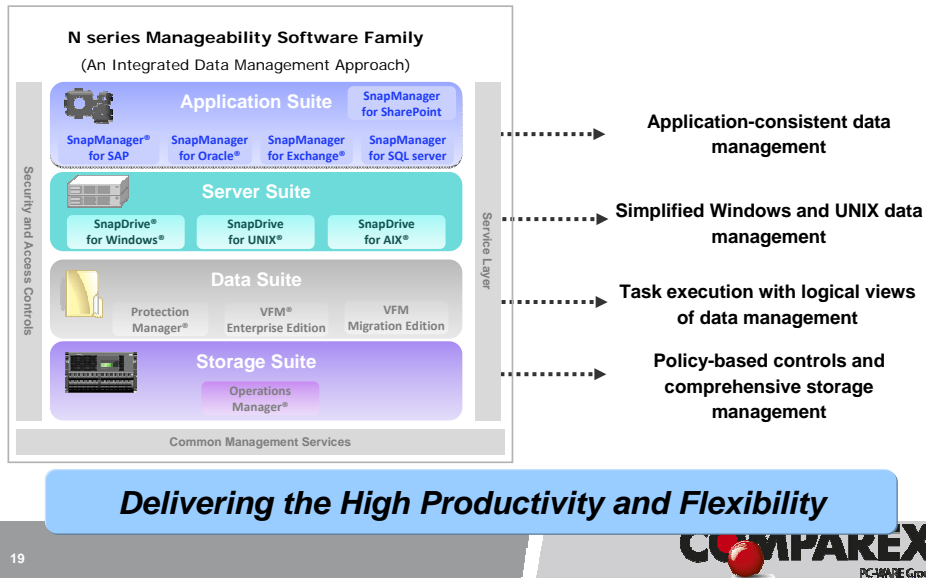
Combined with SyncMirror (RAID1), the nSeries is designed to survive failure of any 4 disks in one disk protection group

RAID-DP protects against any two-disk failure

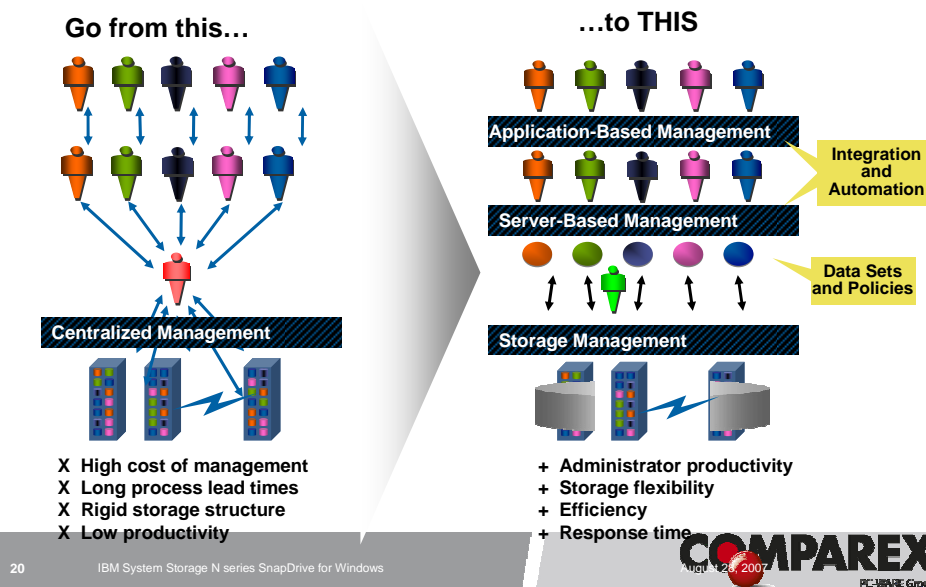
D	D	D	D	P	DP
3	1	2	3	9	7
1	1	2	1	5	12
2	3	1	2	8	12
1	1	3	2	7	11

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N series Manageability Software Family

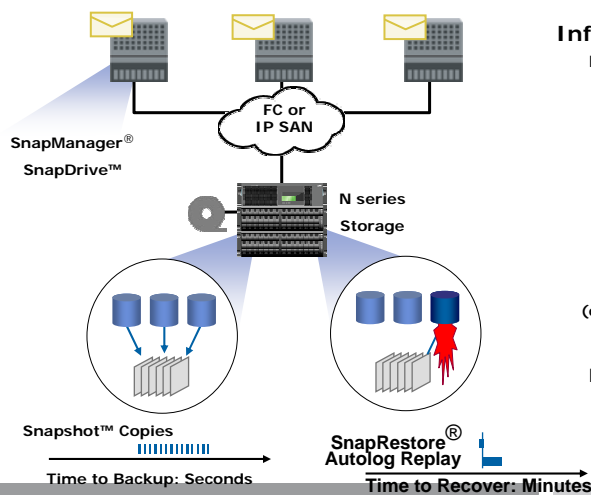


Enables Integrated Data Management for Server Administrators



Application Suite

SnapManager for Exchange: Exchange Server 2007 / 2003 Environment



Backup and Recover in Minutes
SnapManager Exchange
Information Store backup and
recovery with Snapshots

- ▶ Database
- ▶ Whole storage group
- ▶ All storage groups

Supported over iSCSI or FC

Complete in minutes
(duration dependent upon log replay)

Recover to any point in time
Snapshot™ copy

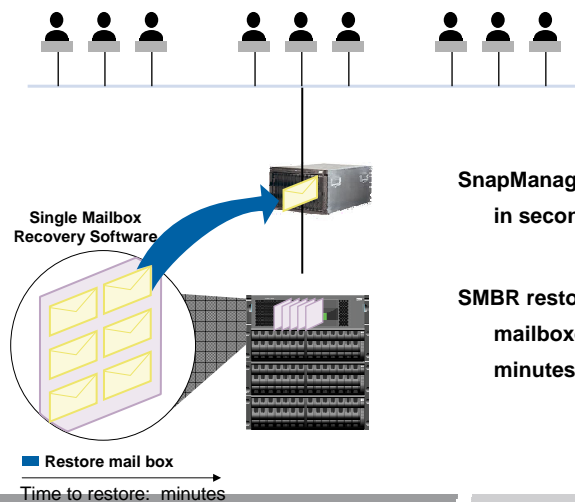
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IBM System Storage N series Overview

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N series solution: SMBR and SnapManager

Primary Data Center



SnapManager backs up Exchange
in seconds with snapshots

SMBR restores individual
mailboxes from snapshots in
minutes

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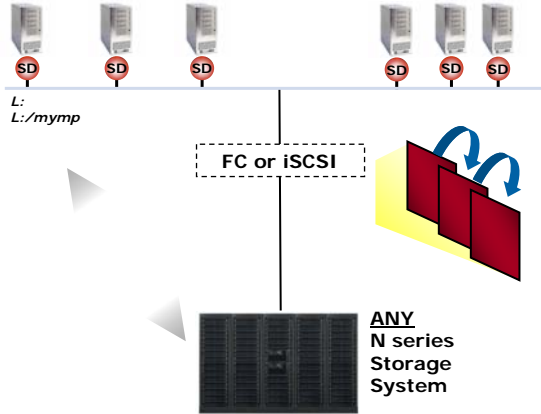
IBM System Storage N series Overview

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Server Suite

Primary Data Center

Windows-based applications and databases



SnapDrive for Windows

- Map file system mount points / drives to newly created or existing LUNs
- Execute automatic snapshot copies of LUNs / volumes
- Create up to 255 snapshot copies

Benefits:

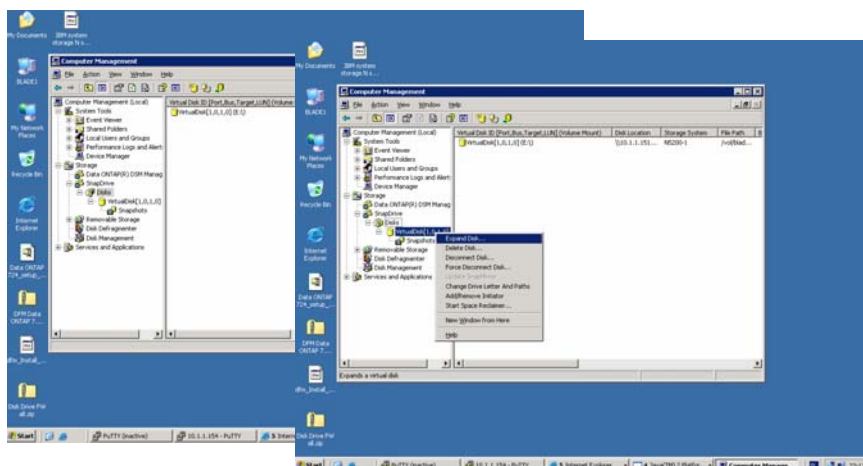
- Extremely fast and accurate data restore and recovery
- Reduce downtime from outages
- Automation saves administrative time

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IBM System Storage N series SnapDrive for Windows

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August 28, 2007
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Storage Server integration



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Usual Snapshot

A point-in-time (PiT) image of a logical drive

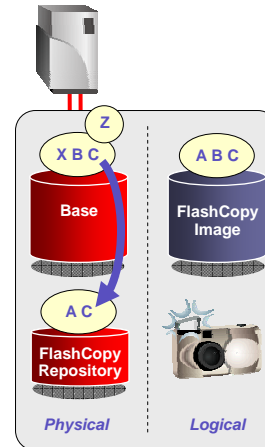
- Logical equivalent of a physical copy

Features:

- Provides an instantaneous copy
- Requires less disk space than a full copy
- Mappable to any host
- Can be read from, or written to

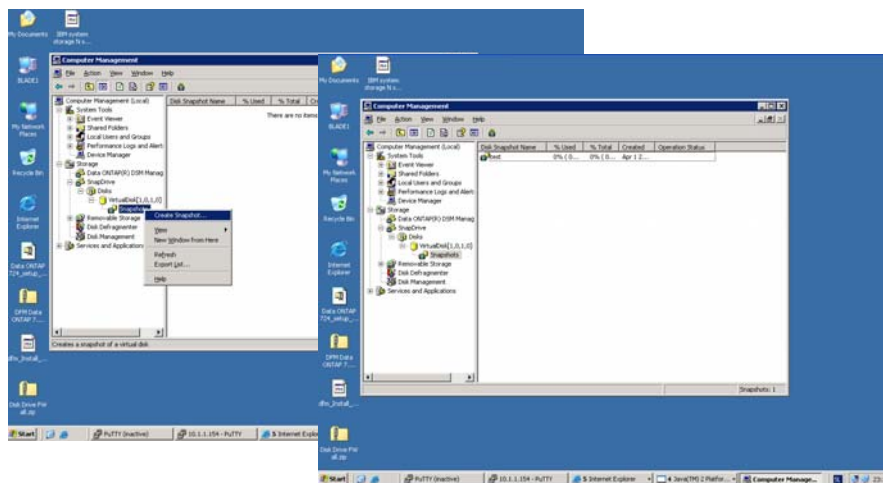
Primary uses:

- PiT backup image
- File / volume restoration source
- Data mining / analysis



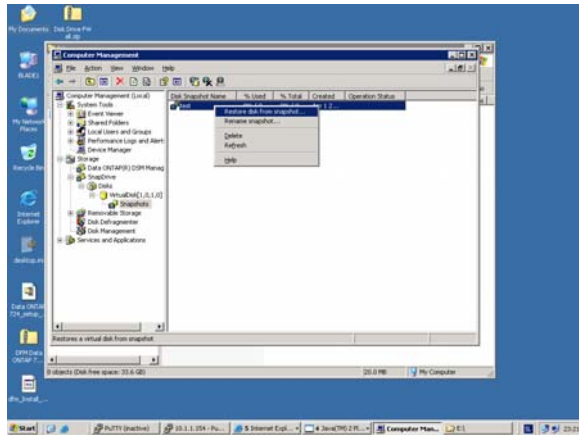
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Storage Server integration



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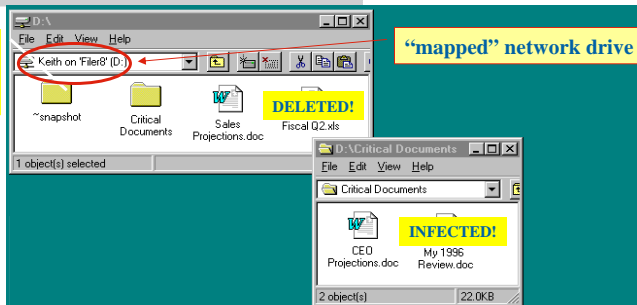
Storage Server integration



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Snapshot-based “self-service” data recovery (1)

Keith is free to
open this
“hidden” folder
at any time



User - Keith's files are stored on Filer8, which appears to Windows as a “mapped” network drive – just as it would when shared from any Windows server.



Snapshot-based “self-service” data recovery (2)

Keith is offered this most recent previous version (up to 255 versions!)

Keith may drag any of these read-only files back into active service

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Why server integration is important

Virtualization is the main driver. For example:

- VMware is owner of storage resources
- VMware can perform snapshots
- VMware is doing migration
-

Data Suite

Many Regulations, Diverse Requirements

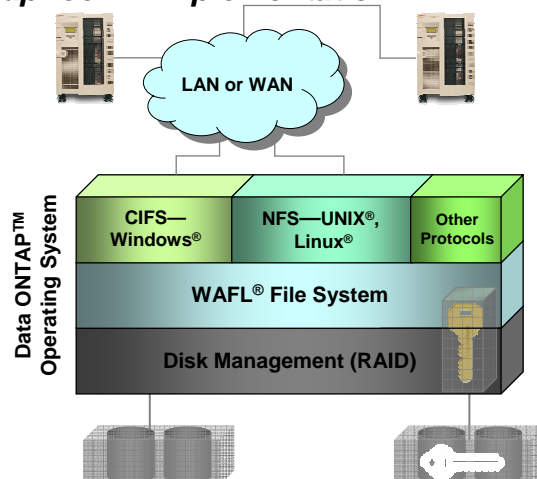


SEC 17a-4
Sarbanes-Oxley
GoBS
SB 1386
Basel II
Check 21
Graham-Leach-Bliley Act
Patriot Act
HIPAA

- ▶ Many regulations affect business operations
- ▶ Some have specific storage requirements
- ▶ Others leverage storage infrastructure

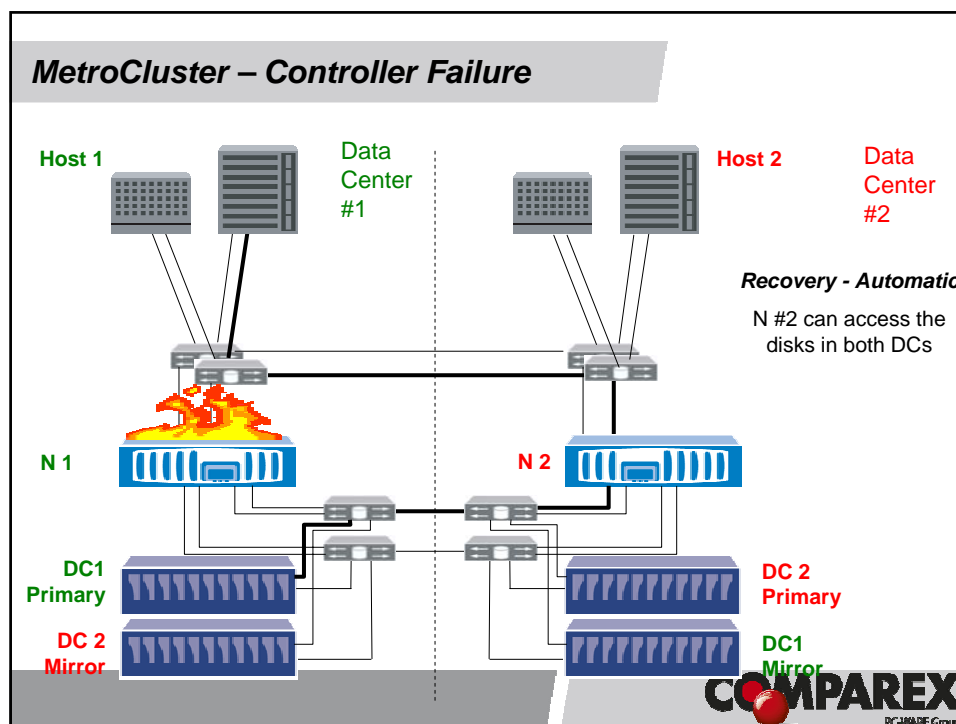


SnapLock™ Implementation



- SnapLock is tightly integrated into Data ONTAP
- Enforcement takes place from the file system to RAID layers— independent of protocol





Autosupport

Event: Subject line of Autosupport email message	Description	Message severity	Frequency of message	Technical support priority
POSSIBLE BAD RAM	Correctable ECC error are masked off. Possible bad or poorly seated memory or faulty motherboard.	Warning	Daily	3
BATTERY_LOW	The NVRAM lithium batteries are low (approximately 2 days supply of power).	Warning	Hourly	2
BMC_EVENT: BUS ERROR	A Baseboard Management Controller event has been detected.	Warning	One Time	3
BMC_EVENT: POST ERROR	A Baseboard Management Controller event has been detected.	Warning	One Time	3
CHASSIS OVER TEMPERATURE SHUTDOWN	This message is issued when the chassis temperature is too hot. This is sent just before shutdown.	Critical	One Time	1
CHASSIS POWER DEGRADED: %s	Degraded power might be caused by bad power supplies, bad wall power, or bad components on the motherboard. If spare power supplies are available, try exchanging them to see if that alleviates the problem. Otherwise contact IBM for further direction.	Notice	Daily	3
CHASSIS POWER SHUTDOWN	This message is issued when one PSU failed. Replacement The voltage sensors for system power read critical values. (more than critical high/less than critical low). PSU may be required. Contact IBM for further direction.	Alert	Daily	3
CHASSIS FAN FRU DEGRADED: %s	This message indicates a chassis Fan is degraded. The fan may need replacing. A motherboard swap may be required. Contact IBM for further direction.	Notice	Daily	3

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What COMPAREX offers

- The best people and the largest number of the people in the industry
- The biggest references
- Independent approach
- Longterm skills and market overview



Vprašanja?

Hvala

Aleš Leskošek, COMPAREX d.o.o.

