



Discover2012

Making technology work for you.

Watch the press event replay:

www.hp.com/go/storage/next_era





Lynn Anderson

Senior Vice President, Business Group
Public Relations and Analyst Relations
Chief Communications Officer Chief of Staff



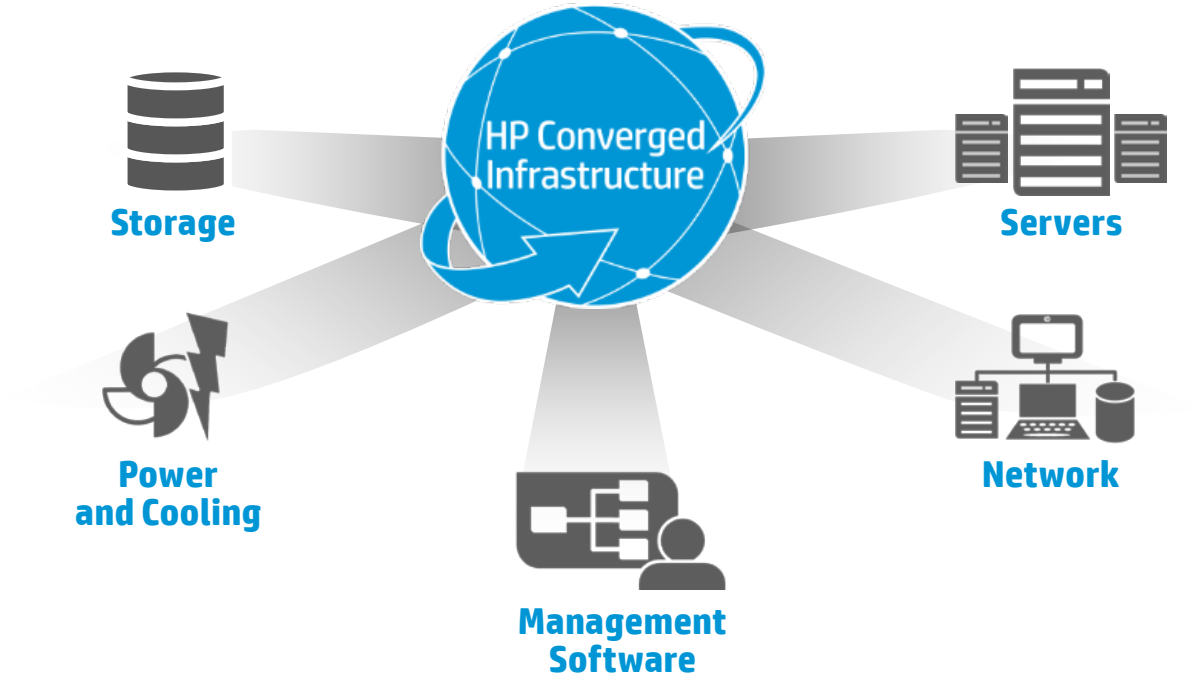
Transforming storage with the power of Convergence

Dave Donatelli

Executive Vice President
and General Manager

HP Enterprise Group

The power of convergence



Transforming the infrastructure industry

HP Servers

Launching new server categories



HP Storage

New vision for the storage industry



HP Networking

Simplifying the network



HP Technology Services

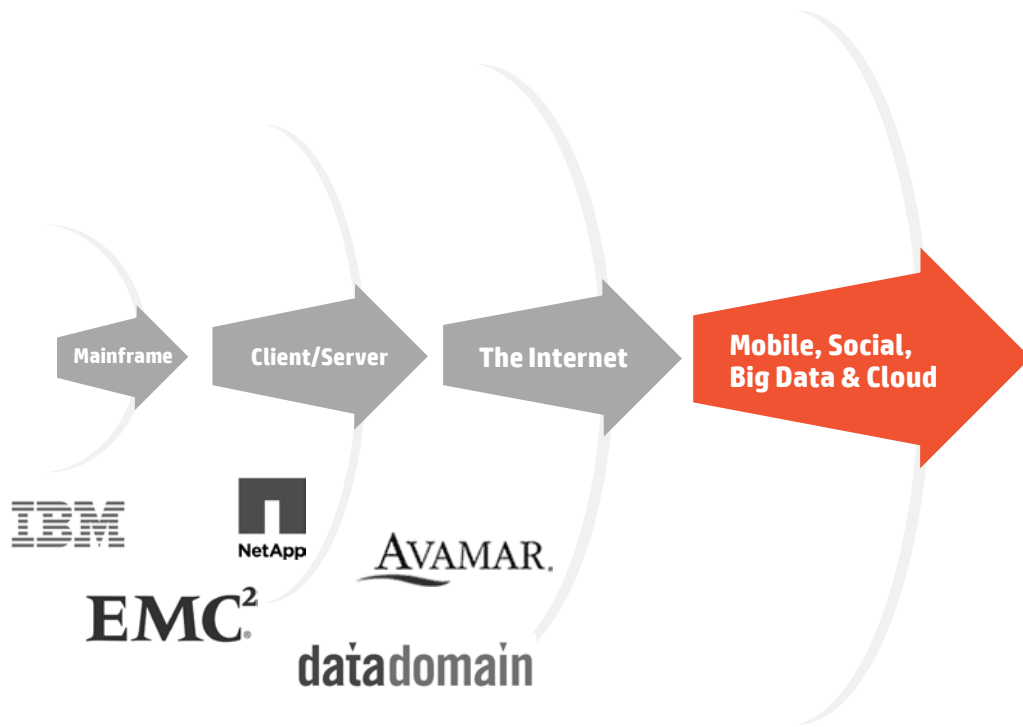
Revolutionizing support service



From servers, storage, networking and services all the way to the cloud



Legacy storage can't meet new demands



Established storage designs from legacy storage vendors are 15 to 25 years old

Impossible to adjust to new trends

- Evolution to delivery of ITaaS/Cloud
- Explosion of Human Information
- Converged Infrastructure
- Software Defined Datacenters

Transforming the industry with HP Converged Storage



Mobile, Social,
Big Data & Cloud



HP
Converged
Storage
2011



HP Converged Storage: Designed for the next era

- Converged Storage portfolio, all HP owned IP, **up 38%** FY12

HP 3PAR StoreServ: HP's largest storage platform

- **Over 75%** growth Y/Y FY12.
- **Gained 2.6%** in market share in the high-end since Q410¹

HP StoreOnce: Record setting performance

- HP StoreOnce **up 45%** FY12.
- **#2 market share** in purpose-built backup appliances CYQ2²

HP StoreVirtual: Software defined storage

- Over 150,000 VSAs distributed worldwide

1. Quarterly Statistics: Disk Array Storage, All Regions, All Countries, 2Q12 Update Gartner August 31, 2012

2. IDC Worldwide Quarterly Purpose Built Backup Appliance Tracker, Sept. 2012



HP Converged Storage delivers higher



Return on Information:

More value for better decisions

Scale with intelligent integration into HP Autonomy and third-party software

Return on Infrastructure:

Lower costs and greater agility

Boost utilization through massive consolidation and federated data mobility

Return on Individuals:

Save time and reduce complexity

Simplify with common services and management from entry-to-enterprise



HP's biggest storage announcement in over a decade with breakthrough innovation in every category

Primary Storage

HP 3PAR StoreServ



Information

Retention & Analytics

HP StoreAll Storage

Information Protection

HP StoreOnce Backup





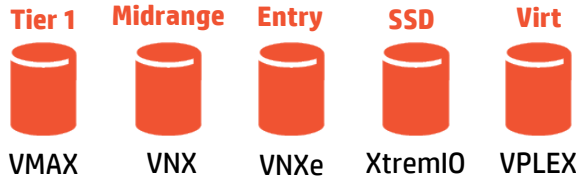
Transforming storage with the power of Convergence

David Scott

Senior Vice President
and General Manager

HP Storage

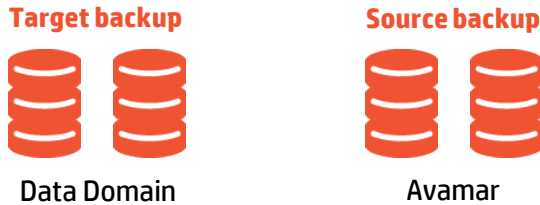
Fragmented storage complexity is unsustainable



Primary
Storage



Information
Retention &
Analytics



Information
Protection

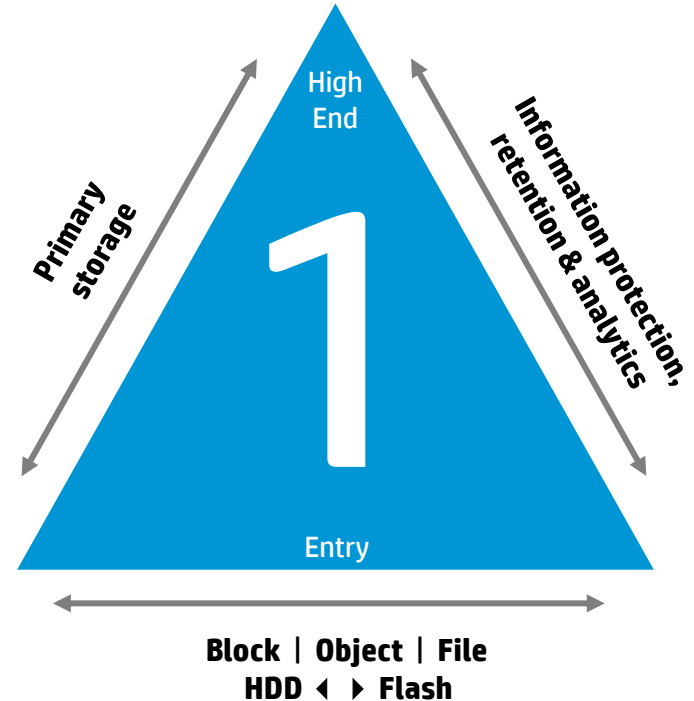
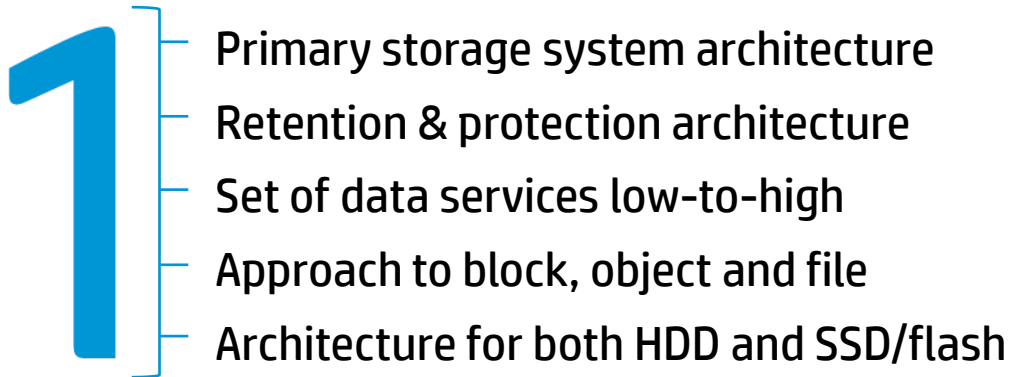
10+
Architectures

- Massive complexity
- Extreme inefficiency
- Rigid infrastructure

HP Converged Storage is designed for the future

HP Converged Storage system vision: Polymorphic Simplicity

Adj. *Existence in several forms, shapes, & sizes*



HP 3PAR StoreServ

Leading tier 1 storage in the high-end



- **3 of the top 4** Global Managed Hosting Vendors¹
- Over **1200** new customers in FY12

Raising the bar again

NEW: HP 3PAR Software for Tier 1 data services



Greater protection of application service levels

- **Persistent Ports** for online upgrades without multipathing dependency
- **Peer Persistence** for transparent server failover over metro distances

Guarantee performance levels for tenants and applications

- **Priority Optimization** for Quality of Service assurance by IOPS and Bandwidth

Reclaim even more time for storage administrators

- **Autonomic Replication Groups** for configuration-less disaster protection





Announcing...



HP 3PAR StoreServ 7000

Industry's first tier 1 storage in the midrange

\$11B

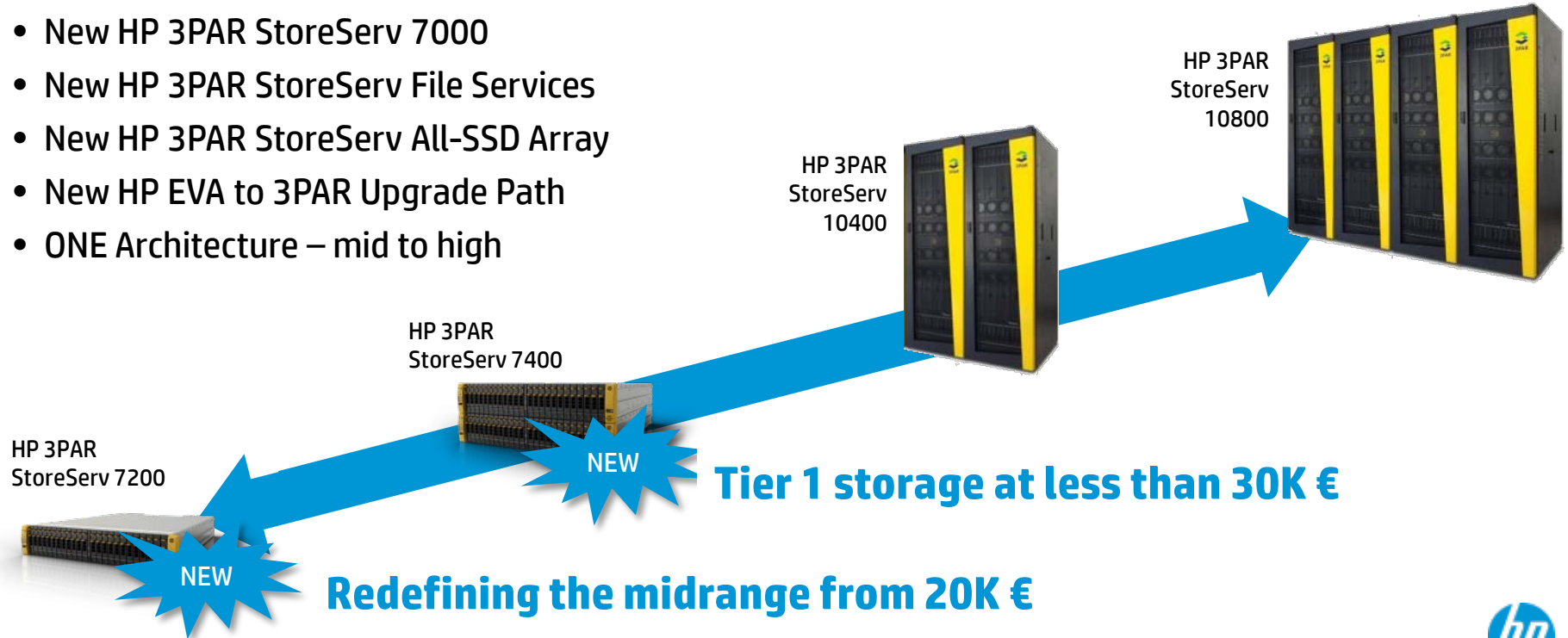
Market Opportunity¹



Eliminating distinctions between Midrange and Tier 1

Polymorphic Simplicity: Storage without boundaries

- New HP 3PAR StoreServ 7000
- New HP 3PAR StoreServ File Services
- New HP 3PAR StoreServ All-SSD Array
- New HP EVA to 3PAR Upgrade Path
- ONE Architecture – mid to high



Tier 1 with midrange affordability

NEW: HP 3PAR StoreServ 7000

Effortless: Reduce time spent managing storage by 90%

Self-configuring, provisioning, and optimizing via autonomic management

Efficient: Reduce capacity requirements 50% - Guaranteed!*

Hardware enabled thin storage, advanced tiering, and thin persistence for both file and block data

Bulletproof: Tier 1 features. Midrange price. 2x VM density – Guaranteed!*

Quad controller resiliency, multi-tenancy, SSD models with QoS, and mixed workload optimization

Futureproof: Grow with freedom in any direction

Scale-out design plus federation with **HP Peer Motion** to for virtually limitless scale



Efficient and bulletproof file services

NEW: HP 3PAR StoreServ File Services

Consolidate user directories and save 50% on capacity

- Compaction: Primary deduplication plus autonomic capacity reclamation
- Policy-based Tiering: Granular block level and file-level classification

Performance and availability for tens of thousands of users

- Performance: Native SMB 3.0 built-in plus mixed block/file workload optimization
- Security: Encryption at rest and in-flight, file-level access control, endpoint protection onboard
- Availability: 8-way clustering plus resiliency over distance with Metro-Cluster failover



Tier 1 with midrange affordability

	EMC VMAX	HP 3PAR StoreServ 7400	EMC VNX
Performance during HW failure	●	●	Integrity issues
Independent online upgrades	●	●	
3-site replication	●	●	



Tier 1 with midrange affordability

	EMC VMAX	HP 3PAR StoreServ 7400	EMC VNX
Performance during HW failure	●	●	Integrity issues
Independent online upgrades	●	●	
3-site replication	●	●	
Performance for mixed workloads		Manual separation	●
Multi-tenant security		●	
Federated from midrange to high-end		●	



Tier 1 with midrange affordability

	EMC VMAX	HP 3PAR StoreServ 7400	EMC VNX
Performance during HW failure	●	●	Integrity issues
Independent online upgrades	●	●	
3-site replication	●	●	
Performance for mixed workloads	Manual separation	●	
Multi-tenant security		●	
Federated from midrange to high-end		●	
Block and file support		●	●
List price < 30K €		●	●



Leadership performance and guaranteed quality of service

NEW: All-SSD HP 3PAR StoreServ 7000

- Up to 240 SSDs
- Up to 320,000 IOPS

NEW: Priority Optimization

- Guaranteed IOPS and bandwidth at the tenant and application level
- Available for any 3PAR StoreServ model

2.4x Performance advantage vs. close priced competitor



Tenant 1 (20,000 IOPS) Over-commits at 150% of assigned IOPS	Application 1 (10,000 IOPS)
	Application 2 (10,000 IOPS)
	Application 3 (10,000 IOPS)
Tenant 2 (100,000 IOPS)	Application 4 (100,000 IOPS)



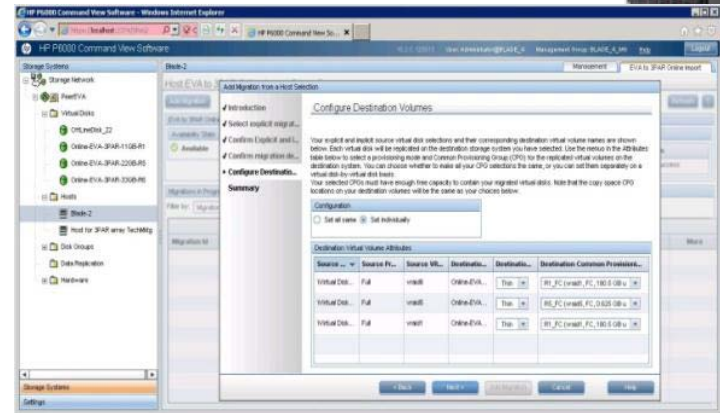
Everything you'd want in a next generation EVA

A pain free and risk free evolution that takes
the best of EVA into the future of storage

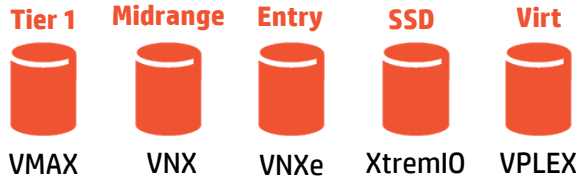


EVA DNA

- **Smart Start** setup tool
- **Online Import** from EVA to 3PAR StoreServ directly from EVA Command View



Fragmented Complexity vs. Polymorphic Simplicity



Primary
Storage



HP 3PAR StoreServ

**5 different
primary storage
designs replaced
with
HP 3PAR
StoreServ**



HP StoreOnce Backup

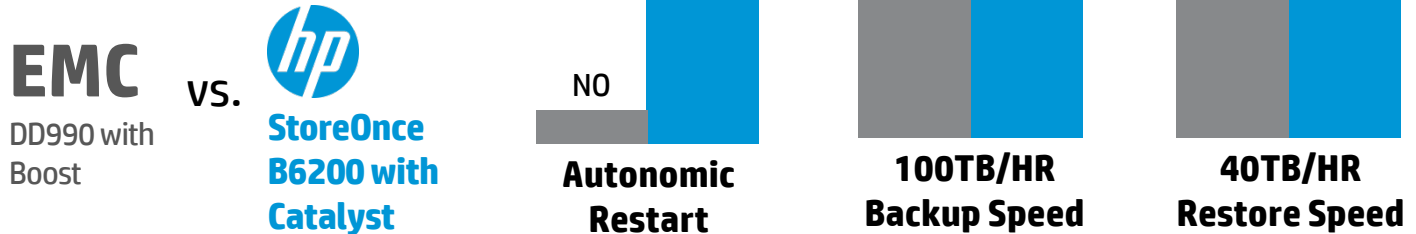
Leading performance and efficiency from SMBs to Service Providers



HP's modern architecture advantage

One of only two companies with **double-digit market share** in disk backup

- Rapid backup and recovery performance
- **Autonomic Restart** with no single point of failure
- Flexible to dedupe and replicate backup anywhere
- Centralized control to eliminate complexity



Information protection leadership from low to high

NEW: HP StoreOnce 2000/4000 Backup Systems now with StoreOnce Catalyst

- **3x faster recovery** than competitors.
HP 4420 than EMC DD640¹
- **3x faster backup** than previous generations²
- **50% to 70% lower \$/TB** per hr.
vs. competitors³

NEW: Enhanced 6000 series multi-tenancy for Enterprises and Service Providers

- Granular reporting to facilitate client billing
- Flexible permissions for admins and users
- Separation of management and data traffic



Polymorphic Simplicity: Software to Scale-Out. Source to Target.



¹ Based on HP comparisons of publicly available data on HP and EMC data sheets. EMC restore performance estimated to be 50 percent of backup performance as cited by the Evaluator Group, June 2012.

² Comparison of performance improvements using StoreOnce Catalyst.

³ Based on US list pricing and publically available performance information from competitors.

Fragmented Complexity vs. Polymorphic Simplicity

Target backup



Data Domain

Source backup



Avamar

Information
Protection



HP StoreOnce

**A single
federated
deduplication
engine for all
backup and
recovery
requirements**

HP StoreAll Storage

Tame and mine object and file data thousands of times faster than ever before



Big Data scale to tame and mine object and file content

NEW: HP StoreAll Storage with StoreAll Express Query from HP Labs

Hyperscale: **Massive object and file scalability for polymorphic simplicity**

Scale to over 1000 nodes, 16PB, and billions of objects and files in a single namespace

Harnessed: **Structure for unstructured data**

Custom metadata tagging, data immutability with retention and WORM, and constant data validation

Instant: **Ultra-fast search and value extraction at petabyte scale**

Discovery, compliance, and analytics with **HP StoreAll Express Query** and Autonomy IDOL

Economic: **Scale down costs of storing data over time**

Policy-based tiering and cost-efficient capacity with a scale-out pay-as-you-grow architecture



Massively scalable cloud storage

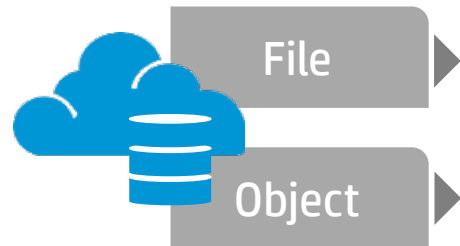
NEW: Object Storage interface for HP StoreAll

Support new enterprise cloud storage applications

Simple REST API allows sync/share application deployments at massive scale

Support object and file requirements without creating another storage silo

HP StoreAll uniquely provides concurrent access of object and file across nodes and shares



16 PB

Single namespace

1000

Concurrent nodes
for Object & File



Instant value extraction and search of big data

NEW: HP StoreAll Express Query from HP Labs

Reduce compute overhead to maximize efficiency

Offload parametric queries to filter data with manual or API interface

Thousands of times faster search to increase business agility

Eliminate slow file system scans to find data when speed matters

Immediate discovery of changing data for information insight

Autonomic indexing and custom tagging to search the freshest data



500M Files

42 hrs.

vs.

1.4 seconds

**100,000 x
Faster**





HP StoreAll Express Query Integration with Autonomy IDOL

Brian Weiss

Vice President of Information Governance

Autonomy

Purpose built for meaning-based computing

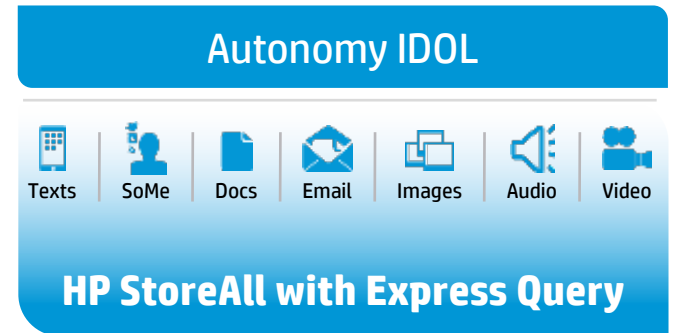
NEW: HP StoreAll Storage integration with Autonomy applications

Filter and find the freshest data with HP StoreAll Express Query integration into Autonomy IDOL

Connector for **HP StoreAll Express Query** enables index offload, metadata tagging, and rapid search

Efficiently scale-out, manage, and search Autonomy Consolidated Archive deployments

Platform integration enables data immutability and autonomic maintenance of massive data sets



Fragmented Complexity vs. Polymorphic Simplicity

Scale-out file



Isilon

Archive



Centera

Object



Atmos

Information
Retention &
Analytics



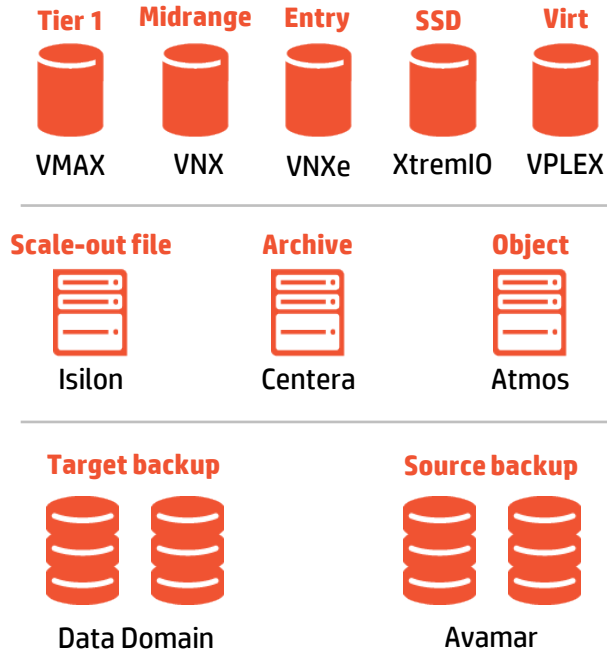
HP StoreAll

A single
massively
scalable object
and file store for
archive and
analytics

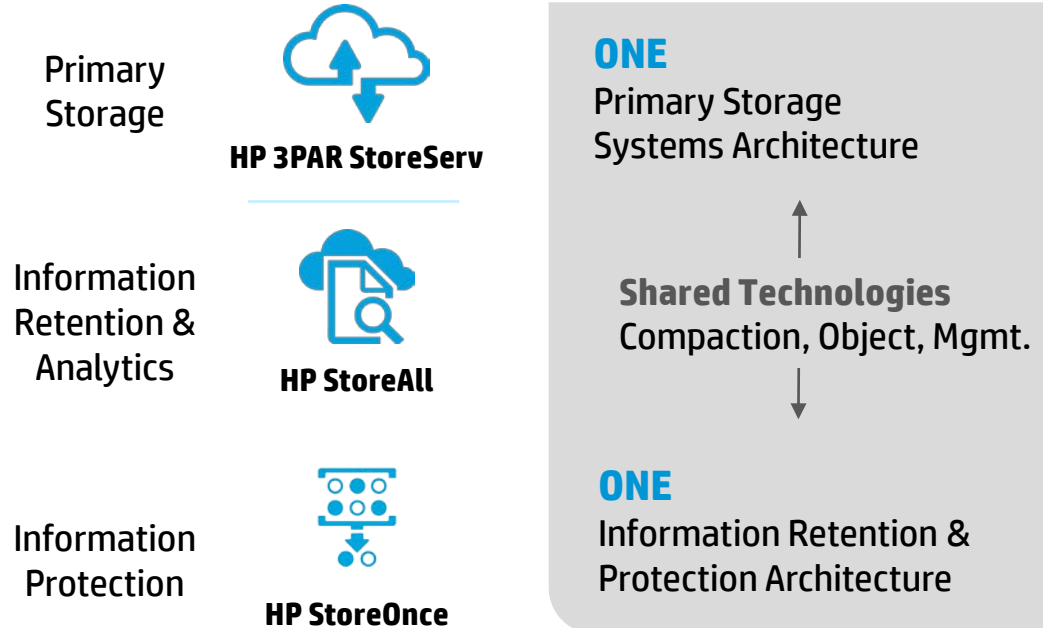


Fragmented Complexity vs. Polymorphic Simplicity

Legacy Storage



HP Converged Storage



Only HP Storage delivers Polymorphic Simplicity

Helping customers achieve 

- **Return on Information:**
More value for better decisions
- **Return on Infrastructure:**
Lower costs and boost agility
- **Return on Individuals:**
Save time and reduce complexity



HP 3PAR StoreServ



HP StoreAll



HP StoreOnce

New Today

- **HP 3PAR StoreServ 7000**
The industry's first Tier 1 midrange storage system
- **HP StoreAll Storage**
Tame and mine object and file data at record speed
- **HP StoreOnce Backup**
Federated Deduplication from SMB to Service Providers





Discover2012

Making technology work for you.

Thank you

