Data Management for today’s Digital Enterprise
Typically we see sticking plasters not Transformation

Fighting conventional wisdom: common challenges and common responses

<table>
<thead>
<tr>
<th>Challenge</th>
<th>Response</th>
<th>Cost</th>
<th>Risk</th>
<th>Complexity</th>
</tr>
</thead>
<tbody>
<tr>
<td>We are running out of capacity</td>
<td>Let's add more disks</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Applications are slowing down</td>
<td>Upgrade infrastructure</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Backup takes longer and longer</td>
<td>Change backup infrastructure</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>We need to be compliant</td>
<td>Implement an Archive, DMS, RMS</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Some information needs to be retained</td>
<td>We keep everything forever</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>We need to retrieve historical information</td>
<td>Search multiple stores &amp; recover</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Why transform now?

- 30% of typical IT budget is spent on data storage
- 60% of all enterprise space is taken by copies
- 85% of storage spend is for managing copies
- 8x more spent on copies as on storage for data and analytics

We want to sell you **LESS** storage and help drive **VALUE** from data

Source: IDC, 2013
Not all data is created equal

Value

Governance data

Business Intelligence

Analyze

Protect

Retain

Comply

Protect

Retain

Remove

Or

‘Dark Data’

Liability
Point solutions have created cost, risk and complexity
How much is your data really costing you?

1 PTB TCO Per Annum Today $3.1M (including Acquisition, Power, cooling)

30% YOY Growth 2.857PTB after 5 years
- Total Cost over 5 years $11.5M

Adding one application requiring 100TB of data means:
- Additional $900K over 5 years
- New Total Cost over 5 years $12.38 M

To what extent is your $12.38M enabling you to drive intelligence from and ensure governance of your data and information?

Numbers are based on actual customer data.
Introducing Active Information Management

- Business intelligence
- Governance data
- Dark Data...

Managed

- Constant
- Frequent
- Rarely

Converged

- Primary
- Backup
- Performance Archive
- Low cost Archive

Transformed

- Reduced Complexity
- Reduced Risk
- Reduced Cost
Three Pillars of Success

Storage Optimization
- Production
- Protection
- HP 3PAR
- HP StoreOnce
- HP DataProtector

Information Optimization
- Classify
- Dispose
- HP ControlPoint

Insight and Analytics
- Unlock
- Monetize
- HP Idol

50% less primary storage
95% less backup storage
Fast recovery
40% less unstructured data
Faster App decommissioning
Classify sensitive data
Provide regulated repository
Extract value from data
Classification and remediation of Big Data

Optimize – Monetize.
“The use of traditional backup software alone as a primary method of data protection has been fading (from 62% in early 2013 to 44% in 2014). At the same time, the use of array-based snapshots and replication– in conjunction with backup software– has increased from 34% to 51% among midsize and large enterprises.”

TheInfoPro, a service of 451 Research
Today’s Customers: Backup Windows are a problem

- Majority of backup jobs last more than 12 hours.
- Almost 1 in 5 had backups running >192 hours!
- Almost two thirds are >12 hours

### Results from HP Ninja Protected Customer Assessments

<table>
<thead>
<tr>
<th>Duration of longest observed Backup Window</th>
<th>Number of customer environments</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>6</td>
<td>231</td>
<td>29%</td>
</tr>
<tr>
<td>12</td>
<td>59</td>
<td>7%</td>
</tr>
<tr>
<td>24</td>
<td>97</td>
<td>12%</td>
</tr>
<tr>
<td>48</td>
<td>90</td>
<td>11%</td>
</tr>
<tr>
<td>96</td>
<td>92</td>
<td>12%</td>
</tr>
<tr>
<td>192</td>
<td>84</td>
<td>11%</td>
</tr>
<tr>
<td>MORE</td>
<td>140</td>
<td>18%</td>
</tr>
</tbody>
</table>
Today’s Customers: Backup Failure Rates

>500PB of data assessed

Almost two thirds (62%) of environments have >5% of backup jobs fail

12% of environments have more than one fifth of their backup jobs fail

Results from HP Ninja Protected Customer Assessments
Top Performers Embed Data in Decision Making

% of respondents by data capabilities

- Make data-driven decisions “very frequently”
  - Top performer: 53%
  - Everyone else: 28%

- Make decisions “much faster” than market peers
  - Top performer: 41%
  - Everyone else: 6%

- Execute decisions as intended “most of the time”
  - Top performer: 47%
  - Everyone else: 15%

Source: Bain research n=409
HP Converged Storage Strategy

One primary storage architecture

File (NAS)  Block (SAN)  Object

Converge

Protect

Retain

Analyze

HP Primary Storage - 3PAR StoreServ
HP Software Defined Storage - StoreVirtual

One BURA Platform

Dedupe To Disk

Archive To Disk

Tape

Unified Services and Support

HP BURA - StoreOnce / StoreAll / StoreEver/ Data Protector/ HP Storage Optimizer

© Copyright 2014 Hewlett-Packard Development Company, L.P. The information contained herein is subject to change without notice.
Why HP StoreOnce?

1. **Single** backup solution from edge to core
2. **Federated** Deduplication with StoreOnce Catalyst for reduced management
3. **Fast cost effective flat backup of your 3PAR arrays** with StoreOnce Recovery Manager Central
4. **StoreOnce VSA** for virtualized environments
5. **StoreOnce Integrity Plus** for highly secure data
6. **Multi-award winning StoreOnce 6500 with:**
   - Massive Scale-Out for minimizing backup windows
   - Failover with Autonomic Restart to ensure your backups work
   - Federated Catalyst for ultimate storage efficiency and future proofing of data
7. **Data Agile Program** for solution assurance
8. **Get Protected Guarantee** with Ninja Protected Assessment
9. **Data Domain Analyser** for improving your EMC backup environment
10. **Industry endorsement** - Gartner Magic Quadrant leadership
HP Backup Federated Approach in Action

Cut Costs
A single scale-out solution, any place, any how.

Reduce Risk
High speed recovery
Data integrity & security.
Compliance.

Eliminate Complexity
Converged storage from edge-to-core
Simplified Management
Complete protection for your applications with 3PAR + StoreOnce

3PAR Snapshot Availability

• No application impact
• Fast recovery time
• Multiple recovery points

StoreOnce Backup Protection

• Cost Effective
• Reliable Recovery
• Application Integration
NEW: HP StoreOnce Recovery Manager Central (RMC)
End-to-end availability and protection for VMware environments

More agility
Snapshot management, backup and recovery from VMWare Vcenter via OneView

More performance
Rapid online recovery of VMs and datastores with consistent, & non-disruptive array snaps

More efficiency
Reduce cost and complexity with Express Protect direct from space efficient 3PAR snaps to StoreOnce

Less risk
Reliable off-system backup and recovery of deduplicated backups with StoreOnce
Why HP “Express Protect” Back-up
Application-Managed end-to-end availability and protection

**Flat Backup**

- **Simplicity:** Enables control of backup and recovery by the application owners
- **Efficiency:** Single point of integration and control from primary to backup, starting with 3PAR StoreServ
- **Performance:** Enables data to flow direct from primary to secondary without the need for a media server or backup application

**Federating Primary & Secondary systems for the next generation of data protection**
Application AND storage integrated data protection

Applications | HP 3PAR StoreServ

Backup Server Software

StoreOnce RMC
Flat Backup

End to End Application Protection

© Copyright 2014 Hewlett-Packard Development Company, L.P. The information contained herein is subject to change without notice.
Protect the best with the best!

**HP 3PAR StoreServ**
- InfoWorld Technology of the Year
  - HP 3PAR StoreServ 7400
- Midrange Array Best-in-Class
  - HP 3PAR StoreServ 7400
- Product of the year in the All-Flash Systems category
  - HP 3PAR StoreServ 7450
- Gartner Critical Systems Capabilities #1 Mid Range Overall
  - HP 3PAR StoreServ 7000

**HP StoreOnce Backup**
- Deduplicating Backup Appliance Best in Class
  - HP StoreOnce 6500
- Deduplicating Backup Appliance Excellent
  - HP StoreOnce 4900
- Product of the year in the Backup Hardware category
  - HP StoreOnce 6500
- 2014 Gartner Magic Quadrant for Deduplication Backup Target Appliances
  - HP StoreOnce a Leader

© Copyright 2014 Hewlett-Packard Development Company, L.P. The information contained herein is subject to change without notice.
Single Backup Platform: HP StoreOnce

**ONE Architecture**
From Small Sites to Enterprise
Backup and Replicate anywhere
Software, Virtual and Hardware Appliances

- **StoreOnce in HP Data Protector**
- **StoreOnce in Recovery Manager Central**
- **VSA Series**
  - 2700 Series, 5.5TB usable
- **1TB, 4TB, 10TB, 50TB**
- **Backup App & Source Dedupe**
- **STOREONCE Catalyst**

- **4500 Series**
  - Scalable to 124TB usable

- **4700 Series**
  - Scalable to 160TB usable

- **4900 Series**
  - Scalable to 432TB usable

- **6500 Series**
  - Scalable to 1.7PB usable

© Copyright 2014 Hewlett-Packard Development Company, L.P. The information contained herein is subject to change without notice.
HP Adaptive Backup and Recovery

Core Capabilities

I. Prioritization
Set policies based on data & application priority & business criticality

II. Prediction
Real-time operational analytics drive optimal resource utilization

III. Recommendation
Actionable suggestions to mitigate potential conflicts & ensure SLAs are met

IV. Automation
Self-learning system enables automated provisioning adjustments
How HP’s Adaptive Backup and Recovery is Delivered

HP Adaptive Backup and Recovery Suite

4 Hypervisors

11+ Critical Applications

10+ Operating Systems

HP Data Protector

Integrated / Aware

Disaster Recovery

Deduplication

Granular Control

Instant Recovery

Encryption

Monitoring

HP Data Protector Management Pack

Analyzing

HP Backup Navigator

Applications
OS
File Systems
Hypervisor
Networking
Compute
Storage
Archive
Cloud

© Copyright 2014 Hewlett-Packard Development Company, L.P. The information contained herein is subject to change without notice.
HP Adaptive Backup & Recovery Comprehensive Solution

Support + Services + Education

Backup Software

Backup Targets

Analytical Reporting

Compressor Encryption

StoreOnce Catalyst

HP StoreOnce

HP Cloud

Primary Storage

Application Integration

Snapshot Integration

Adaptive Policies

Applications

Microsoft

vmware

ORACLE

SAP

SAP HANA

Informix

Sybase

HP StoreAll

HP StoreServ

HP StoreEver

![Diagram showing the integration of various components in an HP Adaptive Backup & Recovery Comprehensive Solution.](image-url)
Integration with leading applications

- Automatically groom transaction logs
- No need to manage application integration
- Common interface for different applications
- Full & incremental backup process
- Diverse secondary storage options
- Easy to manage restore
Unified virtual environment protection

Advanced hypervisor integration

- Single agent for VMware and Hyper-V
- VMware Ready Certified for vSphere 5.x
- Many hypervisors — one console
- Eliminate backup windows, avoid VM backup-driven app performance degradation
- Speed VMware single item recovery
- Licensed per ESX server, not per socket
Data Protector Architecture Strengths

Efficient data movement & utilization of backup infrastructure

• Central deployment & administration
• Small footprint components
• High speed data movement
• Consistent media format across all backup methods and supported platforms
• Wide platform coverage
• Architecture allows data flow from any source to any target
• Scales from SMB to Enterprise
HP Data Protector software

Rethinking backup and recovery for the modern data center

- HP StoreOnce™ Federated Deduplication
- Breakthrough Scalability and Performance
- Enterprise Application Protection
- Comprehensive Virtual Environment Support
- Extensive 3rd party device support
- Enhanced Automated Disaster Recovery
- Excellent protection of HP and heterogeneous environments
For Data Protector customers StoreOnce is the perfect match

Industry Endorsement of the Value of the HP

“Push your messages around the software capabilities and built-in availability – these two features will be the game changers in your dedupe offering.”

- Ben Woo, IDC

“Overall this is a strong announcement – we find HP Data Protector exciting – this news will make EMC nervous. Approach is right on and this is the route to crack EMC.”

- ESG

HP was the joint leader in the Enterprise Backup and Recovery ODM 2014–15…It was one of the top two vendors in technology capability…. HP’s solution was a category-leader in four of 10 technology areas …and the only vendor to score 10 out of 10 in performance and scalability.

- Roy Illsley, Ovum
HP StoreOnce for Backup and Recovery that delivers

Reduced Cost
- 95% less backup capacity – guaranteed!
- Meet SLAs: up to 5x faster restore
- Virtual solutions save 86% of backup cost for remote sites
- Free-up resource: automated, centralized
- Reduce network traffic - shared deduped data

Lower Risk
- Backup up to 17x faster to meet shrinking backup windows
- Restore up to 5x faster to meet recovery SLAs
- Secure from end-to-end: StoreOnce Integrity Plus
- Data encryption: data at rest and in-flight
- Secure erase: data security you can be confident in

Eliminate Complexity
- Centralised management of all data movement
- One solution: ROBO to data center
- Multiple product options based on needs
- Scale-out architecture keeps pace with data growth
- Consolidate multiple backup systems into 1
Before: Logistics Co. existing backup environment

Backup

Primary Datacenter

Disaster Recovery
After: HP Data Protector & StoreOnce & StoreEver

HP StoreEver MSL6480

Replica Datacenter

StoreOnce B6200

Low-bandwidth replication

Primary Datacenter

StoreOnce B6500

Low-bandwidth replication

Centralized management remote deployment

HP Data Protector

HP StoreOnce Catalyst

StoreOnce B6200

HP StoreOnce Catalyst

Catalyst Store. Multiple sites Replicate to one store to create “Cross-site Deduplication”.

© Copyright 2014 Hewlett-Packard Development Company, L.P. The information contained herein is subject to change without notice.
HP’s Free Backup Assessment and Report

How well do you know your backup environment?

HP’s free backup assessment includes a summary report with valuable insights including:

• Backup window details
• Successful vs. failed backup details
• Retention times
• Daily data backed up
• Total capacity used
• Top 10 backup job details
• Opportunities for cost reduction in environment
• Determines if you qualify for the Get Protected Guarantee

• This report contains the data to help build the business case
HP StoreOnce Get Protected Guarantee Program for Data Protector and Symantec

Reduce capacity requirements by 95% with any HP StoreOnce Backup solution… Guaranteed!*

Supported by a FREE backup assessment:
- Backup window details
- Successful vs. failed backup details
- Retention times
- Daily data backed up
- Total capacity used
- Top 10 backup job details
- Opportunities for cost reduction in environment

* As compared to a fully-hydrated backup. Subject to compliance with the Get Protected Guarantee Terms and Conditions, which will be provided to you by your HP Sales or Channel Partner representative.
How it Works

• SIMPLE, POWERFUL AND EFFICIENT
  – Automates the gathering of customer’s existing backup environment data. Assesses overall backup health of the environment. Leverages historical stats from backup servers.

• LIGHTWEIGHT and NON-INVASIVE
  – Ninja Protected is an agent-less non-invasive script tool designed to be run either by a presales consultant. No installation required on customer’s system.
  
  – Same Tool for Get Protected and Ninja Protected
  – Get Protected is the DP and SYMC guarantee
EMC Data Domain Analyzer – Free 20 page assessment

Key content:
• Capacity utilization and Deduplication ratio
• HW configuration, Connectivity, Licenses
• Uptime
• System workload (R/W and replication)
• File distribution by size/age
• NAS, Boost and VTL NAS details
• Proposed StoreOnce configuration
• List price comparison for future growth
DD Analyzer: How does the process work?

Step 2: Forward the “autosupport”, to DD_Assessment@hp.com

Step 3: Few seconds for processing…

– Step 1: Ask your customer to Forward you his DD Autosupport email

READY! You have just received an email with your assessment report (easy to edit Word document)
## Backup Modernization

### Does the customer need/will?

| Based on our discussion, do you agree there is an opportunity to optimize your information/backup environment? | Are you interested in learning more about how you can lower cost, reduce risk and increase information agility? |

### Options

#### Early Discovery or 'Lite' Options

<table>
<thead>
<tr>
<th>Option</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>1a</strong> Backup Efficiency Analysis - (HP TS $ or HPSD SA led)</td>
<td>2 day fact finding, data collect of B/U infrastructure layout</td>
</tr>
<tr>
<td>1a Backup Efficiency Analysis - (HP TS $ or HPSD SA led)</td>
<td>Determine 1-2 examples to lower, cost, reduce risk, increase information agility - <strong>infrastructure based</strong></td>
</tr>
<tr>
<td>1a Backup Efficiency Analysis - (HP TS $ or HPSD SA led)</td>
<td>1-2 page output, recommendations</td>
</tr>
<tr>
<td><strong>1a Data Classification Lite - (HP TS Led)</strong></td>
<td>2 day assessment of information layout/organization</td>
</tr>
<tr>
<td>1a Data Classification Lite - (HP TS Led)</td>
<td>Determine 1-2 examples to lower, cost, reduce risk, increase information agility - <strong>information based</strong></td>
</tr>
<tr>
<td>1a Data Classification Lite - (HP TS Led)</td>
<td>1-2 page output, recommendations</td>
</tr>
<tr>
<td><strong>1a HPSD/BURA SA, HPSW SA led discovery session (only)</strong></td>
<td>High level fact finding mission to understand customer infra and data info layout</td>
</tr>
<tr>
<td><strong>1a HPSD/BURA SA, HPSW SA led discovery session (only)</strong></td>
<td>Less structured, less comprehensive, less sticky</td>
</tr>
<tr>
<td><strong>1a HPSD/BURA SA, HPSW SA led discovery session (only)</strong></td>
<td>Use as fall back option, 'is customer serious?'</td>
</tr>
</tbody>
</table>

#### Deeper Discovery or 'Comprehensive' Options

<table>
<thead>
<tr>
<th>Option</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>1a Impact Assessment (5 days)</strong></td>
<td>Custom aligned, customer service, infrastructure based</td>
</tr>
<tr>
<td><strong>1a Impact Assessment (5 days)</strong></td>
<td>More in-depth understanding, more detailed output</td>
</tr>
<tr>
<td><strong>1a Impact Assessment (5 days)</strong></td>
<td>Detailed recommendations and 'end state' impact</td>
</tr>
<tr>
<td><strong>1a Legacy Data Clean up Assessment (6 weeks)</strong></td>
<td>Packaged, 6 week prof services offering using Control Point</td>
</tr>
<tr>
<td><strong>1a Legacy Data Clean up Assessment (6 weeks)</strong></td>
<td>1TB of data analysis, workshops, questionnaires</td>
</tr>
<tr>
<td><strong>1a Legacy Data Clean up Assessment (6 weeks)</strong></td>
<td>Direct involvement with cust bus and IT staff</td>
</tr>
<tr>
<td><strong>1a Legacy Data Clean up Assessment (6 weeks)</strong></td>
<td>Detailed output on current and future state, recommendations</td>
</tr>
<tr>
<td><strong>1a Legacy Data Clean up Assessment (6 weeks)</strong></td>
<td>Roadmap + plan to information efficiency, agility, insight</td>
</tr>
<tr>
<td><strong>2 Backup SW or Data Classification POC</strong></td>
<td>Must be highly qualified by sales/pres-sales</td>
</tr>
<tr>
<td><strong>2 Backup SW or Data Classification POC</strong></td>
<td>Must have defined action if POC is successful (ie. PO)</td>
</tr>
<tr>
<td><strong>2 Backup SW or Data Classification POC</strong></td>
<td>Costly and time consuming, consider assessment first</td>
</tr>
<tr>
<td><strong>2 Backup SW or Data Classification POC</strong></td>
<td>Can be effective, in the right situations</td>
</tr>
</tbody>
</table>

### Action

**Engage your HP TS lead and/or your HPSW Sales/SA to action these next steps.**
Accelerating your journey to the New Style of Business

Converged Data Center Infrastructure

Transform to a hybrid infrastructure

Protect your digital enterprise

Enable workplace productivity

Empower the data-driven organization

Fast, Simple, and Efficient Solutions

Infrastructure Convergence

Infrastructure Automation

Workload Optimization

Connecting infrastructure and applications
HP is focused on your most important workloads

Workloads
- Transforming to an on-demand IT infrastructure
- Enabling the most productive workplace
- Protecting your digital assets
- Empowering a data-driven enterprise

Software-defined management
- HP OneView
- HP Helion / CloudSystem
- Management extensions

Converged Infrastructure Solutions
- ConvergedSystem 200 - HC / 700
- ConvergedSystem 200 - HC / 700 Helion CloudSystem
- ConvergedSystem 700 Citrix
- ConvergedSystem 300 / Microsoft APS 500 / 900 SAP HANA

HP Verified Reference Architectures
Technology Services
The next wave of convergence will deliver the digital economy through a Software Defined Infrastructure.
What is hyper-converged infrastructure?

**Fast to deploy:** Start up wizards speed setup

**Efficient:** compact form-factors, reduction in footprint, power and cooling

**Modular:** resources are combined into modular building block appliances

**Scalable:** scale-out architecture & highly available platform
### Hyper-Converged defined

#### New Style of IT: Server and storage options

- Natively combine compute and storage elements to form a single integrated solution
- Tightly couple compute and data to minimize or eliminate movement of data to the compute layer and back
- Scale-out architectures which expand via clustering and management federation

<table>
<thead>
<tr>
<th>Traditional IT</th>
<th>Server-based SDS</th>
<th>Hyper-Converged</th>
</tr>
</thead>
<tbody>
<tr>
<td>Servers</td>
<td>Virtualized servers with shared storage array and central management</td>
<td>Appliance with virtualized servers, shared storage array and central management</td>
</tr>
<tr>
<td>Shared storage array</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Management</td>
<td>Virtualized servers with shared storage array and central management</td>
<td></td>
</tr>
</tbody>
</table>

© Copyright 2014 Hewlett-Packard Development Company, L.P. The information contained herein is subject to change without notice.