



Flash Storage Drives a Better Bottom Line

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How can Flash transform your datacenter and business?

Inside the Data Center

Complex storage performance problems typically disappear

- This frees up time which can be put to better more rewarding use

Reduced investment in server CPU upgrades and server scaling

- Reducing application based licensing fees – the gift that keeps on giving!
- *“It’s not just the cheques you write!”* [Sony]

Decreased storage rack space requirements

- Freeing up valuable space on the datacenter floor

Reduced power and cooling costs

- Typically by up to 70%.



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Outside the Data Center

Permanently freed up OPEX funds

- Fund that can be diverted into project investments instead

Improved workforce productivity

- Employees wait less for systems, making them more efficient.

Improved customer satisfaction

- Customers using systems based upon flash storage will typically enjoy a better experience – with less wait time and less frustrating “spinning wheels” – and they will be more likely to return to that business or portal in the future

Reduced *time-to-decision* in analytics apps

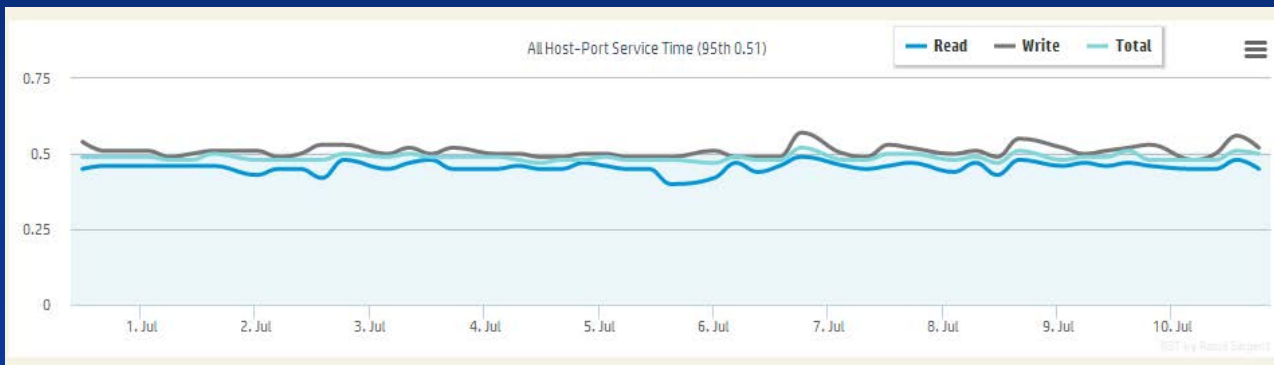
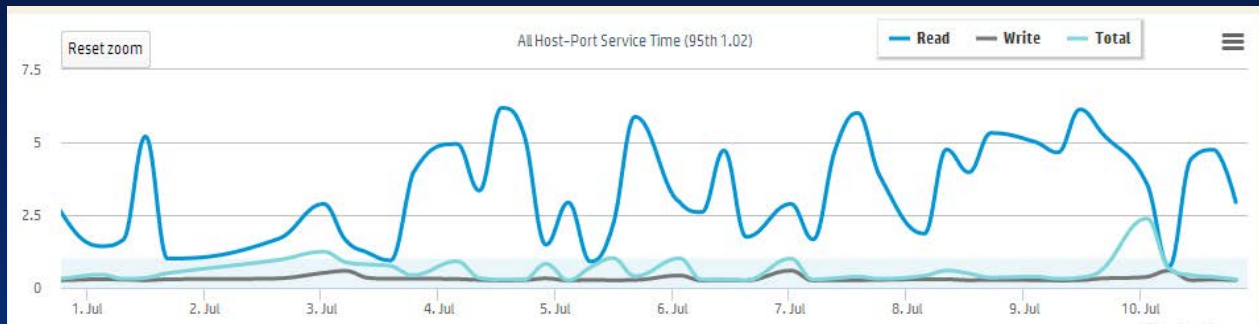
- Time is money! access to data analytics results faster could prove invaluable and be that differentiator between a winner and a loser!

Consistent performance creates trust and builds loyalty

Inconsistent read latency
typical of a spinning media
based array.

→ **Promotes
dissatisfaction**

→ **SLA almost
impossible**



Predictable consistent sub-
millisecond latency of an All
Flash Array.

→ **Improves productivity**
→ **Builds trust and loyalty**
→ **SLA very easy to
enforce**

Overall Savings

Traditional Tier 1

- 250TB usable
- 334TB raw
- 98U rack space (2.33x 42U racks)
- Power: 5800 Watts
- Heat: 30 KBTU/hr
- Cost > \$1.5M



HP 3PAR 7450

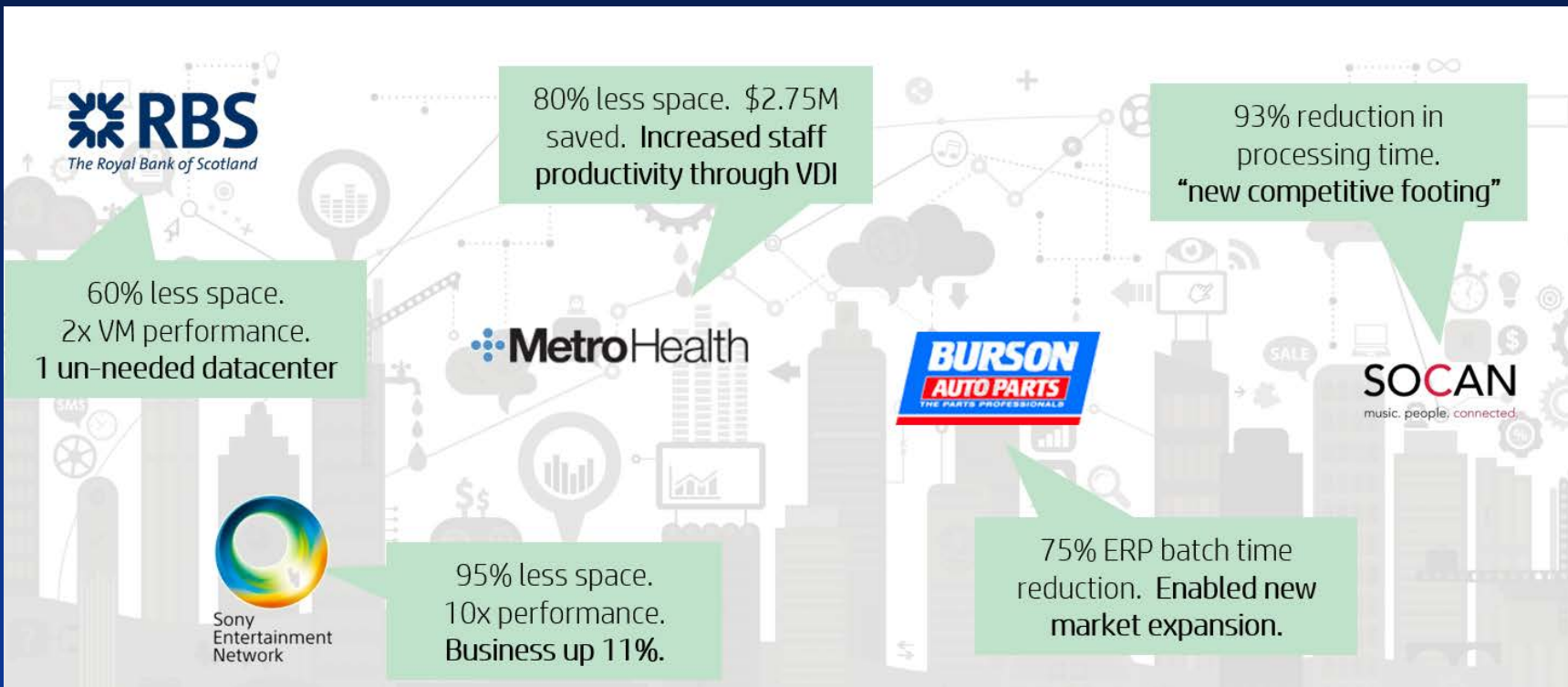
- 253TB usable (4:1 space efficiency)
- 85TB raw
- 4U rack space
- Power: 1252 Watts
- Heat: 3 KBTU/hr
- Cost < \$0.5M

	Delta
Rack Space	< 95%
Power	< 75%
Heat	< 90%
CAPEX	< 55%
OPEX (FTE)	At least 3x lower

Data Reduction

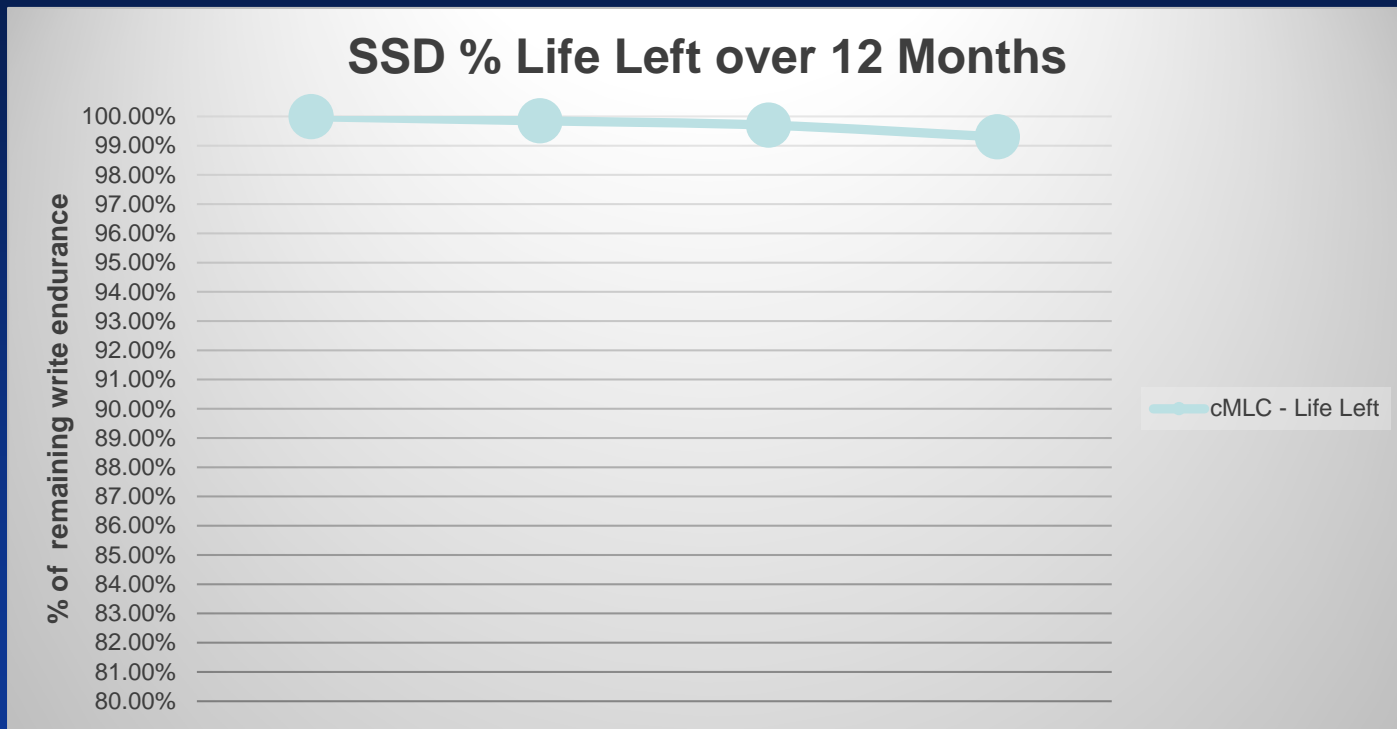
Here are some data points from HP 3PAR telemetry data against All-Flash Arrays:

- Up to **75% reduction** in storage foot print when migrating from **fat storage** to 3PAR thin volumes
- 43% percentage average thin volume utilization across the install base. This translates to about **57% savings** for customers that use thin volumes.
- As per July 2015 the average **deduplication** ratios across all production system is **2.1:1**
 - This is calculated as data written to the volumes by the hosts' vs what the storage array is allocating.
 - Does not include zeroes.
 - Includes production systems (no POC or internal systems) and ratios between and including 1 and 20.
- Over **550 Petabyte** of savings from using 3PAR StoreServ efficient snapshot technology.



Endurance concerns? Not with HP 3PAR

0.7% average wear across the install base over 12 months on cMLC drives



The right architecture

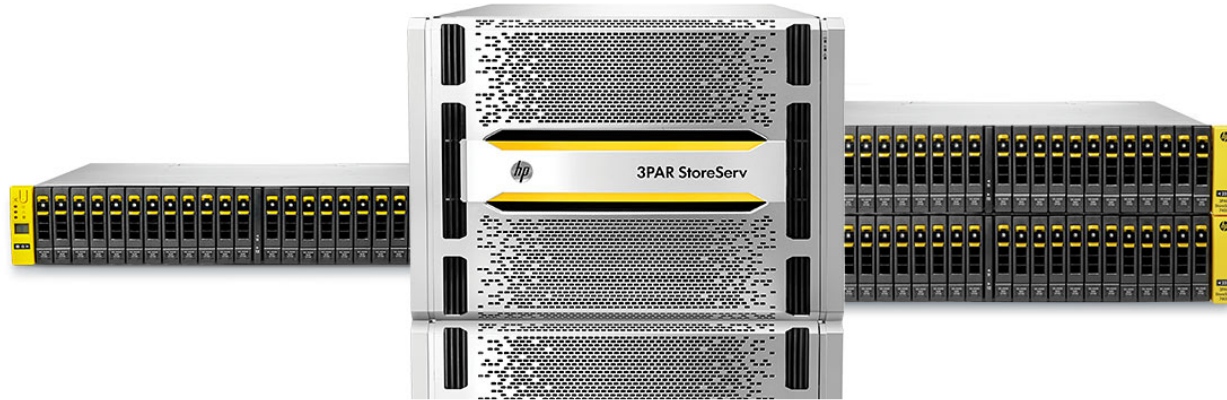
- All-flash is rapidly becoming mainstream
- Cost and reliability are key in fueling this change
- Moving to newer and cost effective media is investable
- An architecture that can take advantage of this is critical

There can be economy only
where there is efficiency
- Benjamin Disraeli



Architecture. Matters

HP 3PAR StoreServ Greatest Competitive Advantage



Architecture Whitepaper : <http://h20195.www2.hp.com/V2/GetPDF.aspx%2F4AA3-3516ENW.pdf>

Flash Optimized Whitepaper : <http://h20195.www2.hp.com/V2/GetPDF.aspx%2F4AA4-7264ENW.pdf>

Thin Technologies Whitepaper: <http://h20195.www2.hp.com/v2/GetPDF.aspx%2F4AA3-8987ENW.pdf>

Priority Optimization (Storage QoS)Whitepaper: <http://h20195.www2.hp.com/V2/GetPDF.aspx%2F4AA4-7604ENW.pdf>