Accelerate and streamline Oracle workloads

Boost transaction speed and reduce licensing costs with HPE 3PAR StoreServ

Hewlett Packard Enterprise
Oracle database environments are often at the heart of the enterprise, running demanding and business-critical applications. Whether using Oracle to power online transaction processing (OLTP) workloads or to run decision support system (DSS) and data warehousing applications, businesses rely on Oracle to keep their businesses up and running. Hewlett Packard Enterprise offers a comprehensive flash storage portfolio, **HPE 3PAR StoreServ**, designed to meet the unique demands of Oracle workloads.

### Boost Oracle transaction speed

HPE 3PAR StoreServ delivers high throughput and low latencies in multi-tenant Oracle environments. Using industry-leading performance of up to 3.8 million IOPS and sub-millisecond (sub-ms) latencies, Oracle DBAs can achieve high transactions-per-second (TPS) and minimal wait times for OLTP.

However, Oracle workloads in an all-flash data center need more than raw throughput. With HPE 3PAR StoreServ, Oracle DBAs can isolate performance and assign IOPS to different application tiers, moving the IOPS to where they are most needed, with granular and automated quality of service (QoS). What’s more, to move data seamlessly and quickly between applications and test/dev, HPE StoreServ includes federation capabilities to shift data in Oracle databases between HPE 3PAR StoreServ arrays—without additional overhead that can slow down OLTP. Finally, HPE 3PAR StoreServ gives Oracle DBAs the flexibility to use deduplication or not, depending on the nature of their data and performance needs.

### Protect Oracle applications and data

HPE 3PAR StoreServ offers a broad set of features, which drive high availability and data protection in Oracle environments. Even as automation and monitoring technologies have streamlined Oracle backup and recovery over the years, many DBAs face the challenge of a growing primary database with a growing number of applications writing to that database. Oracle databases are getting bigger while backup windows and recovery performance objectives (RPOs) are getting smaller.

Given this pressure, enterprises need to meet RPOs during a wide range of scenarios, from human error to natural disaster. To minimize business downtime, one type of data protection for Oracle environments is not enough.

HPE 3PAR StoreServ protection of Oracle starts with business continuity built into the HPE 3PAR StoreServ array itself. Full hardware redundancy is built into the system, mitigating single points of failure. When appropriately configured, HPE 3PAR StoreServ Storage is capable of greater than six nines or 99.9999 percent availability from a hardware perspective. This is reinforced by autonomic and proactive error checking, as well as software features that deliver seamless failover/failback, facilitating complete system resilience, even when the unexpected happens.

For **data protection** that is fully integrated with Oracle Recovery Manager (RMAN), **HPE Recovery Manager Central (RMC)** software and **HPE StoreOnce** provide virtually instant availability for Oracle data. HPE Recovery Manager Central for Oracle (RMC-O) software is included as part of HPE 3PAR StoreServ all-flash at no additional cost. It combines the performance of snapshots with the protection of backups, delivering 23X faster backup and 15X faster restore than traditional ISV-based backups, with no impact on the Oracle application server.

Taken together, this full continuum of data protection helps prevent costly downtime and helps Oracle DBAs keep up with demanding RPOs.

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1. HPE 3PAR Get 6-Nines Guarantee program
2. Based on HPE testing of backup performance comparison between HPE RMC and traditional backup environments.
Consolidate Oracle instances and reduce license costs

In many Oracle environments, overprovisioning the primary database has become a matter of survival. To keep up with increasing service-level agreements (SLAs) and developer demands, DBAs may find themselves outpaced by database instance sprawl, adding compute cores as a way to hit performance demands. Every core that is added creates additional license and support fees. Moving to an all-flash Oracle data center with HPE 3PAR StoreServ all-flash can drive down these Oracle license costs by 20-50%.

This is because the speed of all-flash generates higher TPS and reduces the number of costly cores needed to run Oracle workloads. With higher performance, instances can be consolidated, lowering costs further with a reduced storage footprint.

In addition, Oracle DBAs can use HPE 3PAR Adaptive Data Reduction technologies to reclaim storage capacity further. These technologies come standard with HPE 3PAR StoreServ and include:

• **Zero detect**: First-level, preventative data reduction; runs automatically to help reduce capacity usage without inhibiting performance
• **Deduplication**: Second-level, preventative data reduction, which is unique to Hewlett Packard Enterprise and the HPE 3PAR StoreServ ASIC; can be turned on or off, depending on performance needs
• **Compression**: Complementary, compaction-based data reduction technology; identifies incompressible data and stores it in its uncompressed state, saving CPU resources and reducing latency
• **Data packing**: Complementary, advanced compaction technology unique to HPE 3PAR StoreServ; drives efficiency without compromising performance, even when deduplication and compression are both enabled

Meet the growing needs of developers

In the Oracle all-flash data center, clean database copies matter more than ever as test/dev cycles have accelerated. DBAs must quickly provision and clone copies for use by test/dev teams who need to work with clean tablespaces, views, and indexes. Cloning is often used either to create a new Oracle database instance or to refresh a target instance from a source instance—especially when wanting to test with a copy of real production data. Traditionally, the process of cloning an Oracle database involves using Oracle RMAN backup technology or the clone DB feature of Oracle database. Though requirements can be met via these host-enabled technologies, they often add significant host overhead that would be better utilized in application processing. As a result, many DBAs increasingly struggle with the frequency, volume, overhead, and time needed to copy database files and application binaries.

Using HPE 3PAR StoreServ Virtual Copy, Oracle DBAs can spin up fast clones and snapshots—without sacrificing Oracle performance. This approach offloads the Oracle host overhead to the HPE 3PAR StoreServ so that copies can be generated quickly without impacting primary database throughput.

HPE 3PAR StoreServ also helps developers’ work stay isolated and non-disruptive, with granular QoS and federation, which speeds up data mobility between production and test.
HPE 3PAR Flash-optimized portfolio

Oracle DBA challenges

Performance: Constant tuning needed to drive higher transaction speed and sub-ms latency. Data set keeps growing while performance demands increase.

Availability: Backup windows are shrinking, with many DBAs resorting to unnecessary full restores as a way to manage business continuity.

Cost pressures: License costs comprise large components of database environments. Inefficiency and overprovisioning drive high per-core fees for software and support.

Developer demands: Test/dev teams need constant flow of clean database copies. DBAs must meet their needs without disrupting core Oracle applications.

SPC-1: In March 2016, HPE 3PAR StoreServ 8450 achieved a world-leading result for SPC-1 $/IOPS™—the leading external all-flash array based on SPC-1 Price Performance™ $ per IOPS.

SPC-2: In November 2015, HPE 3PAR StoreServ achieved a world record result for the SPC-2™ benchmark.

Figure 1. HPE 3PAR flash-optimized portfolio

Summary

The all-flash Oracle data center is here. HPE 3PAR StoreServ all-flash storage offers unique features to drive high TPS, high-availability, and data protection for business-critical Oracle workloads, in both dedicated and multi-tenant environments. Moving to an Oracle all-flash data center with Hewlett Packard Enterprise can help reduce core count, lower license costs and consolidate instances—freeing up infrastructure savings to fund innovation and modernization. Taken together, the comprehensive feature set of HPE 3PAR StoreServ can help Oracle DBAs meet service-level and recovery objectives, while addressing the increasing demands of test/dev and business stakeholders.

Learn more at hpe.com/us/en/storage/3par.html