



# **Top 10 Reasons to Choose Pure Storage<sup>®</sup> for Oracle<sup>®</sup> Environments**

PURE STORAGE SOLUTIONS ENABLE ORACLE APPLICATIONS AND DATABASES TO PERFORM AT THEIR BEST, WHILE PROTECTING YOUR DATA AND KEEPING IT READILY AVAILABLE.

# Contents

**3** There Is a Better Way

## **ALWAYS SIMPLE**

**4** No Storage Tuning

**5** Easy Copy/Clone/Refresh

**6** Rapid Deployment for  
Mixed Workloads

## **ALWAYS AVAILABLE**

**7** 99.9999% Measured Availability

**8** Non-disruptive Upgrades

**9** Hybrid-Cloud Ready

## **ALWAYS EFFICIENT**

**11** Industry-Leading Data Reduction

**12** Always-on Encryption

**13** Faster Response Times

**14** Best Ownership  
Experience and Support

**15** Support/Satisfaction (NPS)

# Oracle Application Owners and Database Administrators: There Is a Better Way

The rising cost and complexity of running Oracle environments is stifling enterprises' ability to invest in the future and keep their businesses running at their peak. To stay competitive and maximize the value of their insights, companies need to simplify and extract cost out of Oracle applications and database operations.

## Is Data Management Causing You Trouble?

Limitations in data management can prevent Oracle application owners and database administrators (DBAs) from doing their jobs effectively. Oracle application owners experience challenges at the data-management (storage) layer in multiple ways:

- Slow access to data, usually caused by the database accessing storage, can mean slow application response times for end users and can impact their productivity — and possibly even influence company operations or reputation.
- Problems with data access can mean missing service-level agreements (SLAs) for uptime and performance, exposing the business to risk.

- Support of complex and manual development activities requires getting fresh copies of data for developers to work on. But many processes to get copies and clones of data are lengthy, complicated, or manual, and they can slow down the development process.

Oracle DBAs likewise confront a host of issues that cause them to work in crisis mode rather than acting strategically for the business:

- Unacceptable downtime for users and systems due to lengthy storage installations and upgrades
- Uncertain capacity planning means a DBA must try to predict the future amid unknowns such as peaks in demand, unexpected inefficiencies, and future growth — all without wasting valuable company resources.
- It is difficult to maintain data-protection and business-continuity strategies, but if data cannot be recovered in the event of corrupted files or malfunctioning hardware, severe financial and reputational consequences can occur

Continue reading to find out the top ways that smart Oracle application owners and DBAs drive improved results for their businesses and elevate their careers. How? By relying on Pure Storage to solve their most demanding data-management challenges.

**ALWAYS SIMPLE**

# 1. No Storage Tuning

## Focus on Application Efficiency

Artificial intelligence (AI)-driven storage software constantly optimizes input/output (I/O) performance so users can focus on application efficiency and not on making storage perform optimally. With Pure Storage, there's no need to separate files on different disks to avoid contention, monitor I/O service times, or periodically reorganize the database storage layout to accommodate changes in the I/O workload profile.

## Consolidate on One Array

Pure Storage solutions let you run Oracle databases for development, test, conference room pilot (CRP), user acceptance testing (UAT), and production for online transaction processing (OLTP) and online analytical processing (OLAP) workloads on the same Pure Storage array. You eliminate the need to run mission-critical workloads on separate siloed arrays.

**O ZERO  
TUNING**  
or workload-specific  
setup required



## 2. Easy Copy/ Clone/Refresh

### Save Time Through Automation

Fast and efficient Pure Storage snapshots let you automate the copy, clone, and refresh processes of Oracle applications or Oracle Database environments, reducing the time those processes take by up to 90 percent.<sup>1</sup> The database copy step of the copy, clone, or refresh process will no longer be the bottleneck because the database copy typically takes less than a minute.

### Rely on a Flexible Foundation

Pure Storage snapshot technology provides the foundation for data protection, mobility, and the hybrid cloud by enabling snapshots to be produced and stored in the local Pure Storage array or replicated to other arrays, NFS, servers, or Pure Storage cloud solutions. Using these snapshots, storage volumes can be created or refreshed quickly, typically in just a few seconds, representing the source volumes as they were when the snapshot was taken, which allows for fast Oracle database copying.



**UP TO 90%**  
**LESS TIME**  
to copy and clone<sup>1</sup>

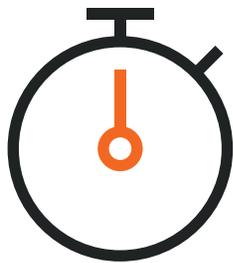


# 3. Rapid Deployment for Mixed Workloads

## Be Up and Running Quickly

Pure delivers storage that is plug-and-play simple. A Pure Storage installation consists of connecting a few cables while glancing at a quick-start guide the size of a business card. There's nothing manual, and nothing extra to buy or install. Just unpack the small shipping box, rack your array, connect to power and to your network, and then start creating volumes and adding them to the hosts.

Run your Oracle databases and applications on the same Pure Storage platform without cross-environment impact. Run your production and non-production OLTP and OLAP environments without having to segregate them on separate arrays. Always-on quality of service (QoS) provides automatic zero-configuration protection for your workloads. Or, if you choose to, you can manage your workloads with individual limits.



You will be up and running in about  
**30 minutes<sup>2</sup>**

**ALWAYS AVAILABLE**

# 4. 99.9999% Measured Availability<sup>3</sup>

## Ensure That Oracle Solutions Are Always on and Protected

Pure Storage provides proven six-nines availability for the FlashArray™ product, and that includes time for maintenance, failures, and generational upgrades.<sup>3</sup> This means that your Oracle databases and applications are always available, always performing, and always protected, with no data loss. Pure Storage all-flash solutions provide the highest levels of availability to protect your Oracle workloads so that you can focus on delivering value to your business. Advanced intelligent storage software — Purity — and built-in component redundancy allow application and database administrators to realize their dream of having a high-performance, highly available storage subsystem that they can take for granted.



**ZERO  
DOWNTIME**



**ZERO  
IMPACT**



**ZERO  
HASSLE**

# 5. Non-disruptive Upgrades

## Eliminate Maintenance-Related Downtime

Most downtime is the result of maintenance rather than an actual failure. With Pure Storage, this downtime is virtually eliminated. By design, hardware and software updates occur without outages or data migration — at all, ever. Years after your initial deployment, your Oracle workloads and your Pure Storage solution will change and might look completely different, but at no time will you have experienced downtime or needed to migrate to new equipment.

Pure Storage no-downtime maintenance is not just keeping the storage services up. It is truly zero-impact, maintaining 100% performance while all the maintenance operations take place, including:

- Capacity expansion
- Controller updates
- Hardware replacement
- Software upgrades

7 YEARS OF NON-DISRUPTIVE  
**EVERGREEN** IMPROVEMENTS<sup>6</sup>

**176X**  
Capacity Increase

**146X**  
Density Increase

**13X**  
I/O Operations per  
Second (IOPS)

**5X**  
Throughput

**7**  
Hardware  
Generations

**\$0**  
Wasted  
Investment

# 6. Hybrid-Cloud Ready

## Benefit from Cloud-Data Mobility

Run your Oracle workloads in the public cloud or on premises and effortlessly migrate them as desired with Pure Storage cloud data services. For example, run your production Oracle E-Business Suite environment on premises and create clones in the public cloud for development or project work activities. You can move environments seamlessly between your on-premises environment and the cloud as needed, making use of bi-directional data mobility provided by Pure Storage software. You can also use the cloud to back up your on-premises Oracle environments, which gives you extra data-protection capabilities enabled by Pure Storage software solutions.

## Take Full Advantage of Hybrid Cloud

Pure Storage believes that the hybrid cloud is the present and future of IT. Data mobility is one of the tenets of the hybrid cloud, and Pure Storage solutions enable it by effortlessly managing data both on premises and in the public cloud. Using snapshot technology, Pure Storage data volumes can be migrated to and from the cloud and used to build other environments. Snapshots can also be used to extend your data protection to the cloud by setting snapshot replication to the cloud just like it can be set to other Pure Storage solutions or third-party NFS services.



The background of the slide features a series of concentric, semi-circular arcs in a light gray color. Small gray dots are scattered along these arcs, creating a sense of depth and movement, similar to a stylized globe or a data visualization. The overall aesthetic is clean and modern.

“With the increased performance for Oracle, we were able to reduce the number of processor cores needed to support our applications. The city now needs licenses for only 16 cores, instead of more than 100, saving millions of dollars annually.”

**JOSH BARTOSH** // SYSTEMS ENGINEER,  
CITY OF GARLAND, TEXAS

ALWAYS EFFICIENT

# 7. Industry-Leading Data Reduction

## Reduce Your Footprint and Costs

Pure Storage's always-on data-reduction capabilities can reduce storage consumption for Oracle Database environments. Users can realize data reductions of 3–5 times for conventional Oracle data types such as number, date, char, and varchar — two times better than the next closest all-flash solution available on the market.<sup>4</sup>

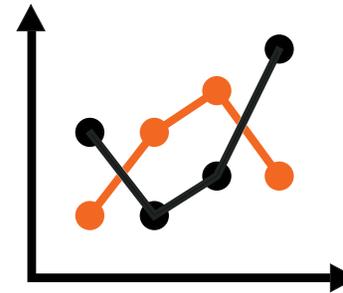
With Pure Storage, not only can you lower your storage footprint, but you can also achieve roughly the same data reduction as you would with the Oracle Advanced Compression database option, without any additional licensing costs. Because the data reduction takes place at the storage level, no database server CPU cycles are consumed for compression, which can present an opportunity to reduce the number of CPU cores, enabling additional savings on high Oracle Database licensing costs.

**3X to 5X**

data reduction for conventional Oracle data types<sup>4</sup>

**2X BETTER**

data reduction than the closest available all-flash solution<sup>4</sup>



# 8. Always-on Encryption

## Ensure Protection for Oracle Data

Oracle data at rest in a Pure Storage solution is protected by always-on encryption. Data is encrypted as it enters the array and decrypted as it leaves. All content is encrypted, including database and E-Business Suite concurrent-request log and output files. If the scope of protection permits, Pure Storage encryption can be used to encrypt the database files, avoiding the Oracle Advanced Security database option license cost and saving CPU cycles on the database server that would otherwise be spent encrypting and decrypting data. If the scope requires higher-level protection, the Oracle Advanced Security database option would complement Pure Storage encryption for complete data-at-rest protection.

## The Highest Standards for Data-at-Rest Encryption

Data security is at the core of all Pure Storage solutions, providing a key data-protection mechanism to enterprises. Pure Storage data-management software continuously encrypts all data in the array via Federal Information Processing Standards (FIPS) 140-2 validated AES-256 encryption and Common Criteria, meeting the U.S. government's highest security standard for data-at-rest encryption. Encryption is built-in, always-on, always in-line, and entails no performance impact and no administrative overhead, in addition to no additional license or fee.



# 9. Faster Response Times

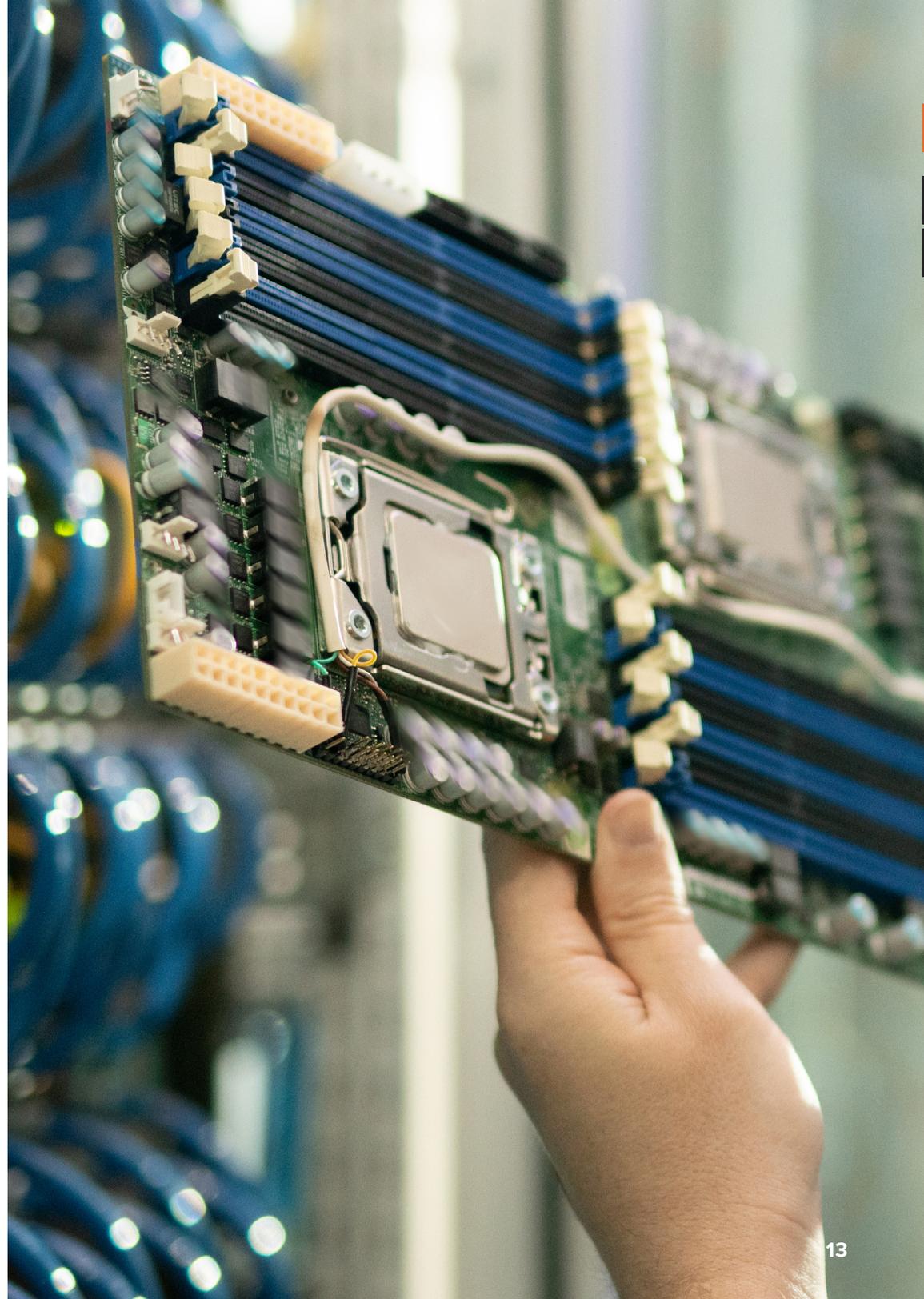
## Dramatically Improve Oracle Users' Experiences

Oracle Database performance can be enhanced with Pure Storage 100% NVM Express® (NVMe™) all-flash solutions that can provide sub-millisecond latency as low as 250  $\mu$ s, in addition to high throughput.<sup>5</sup> This performance allows the database server CPU to wait less for the I/O operations to complete, potentially reducing the number of CPU and associated Oracle Database licenses required.

Pure Storage 100% NVMe all-flash solutions deliver the performance required by mission-critical tier-1 databases to all databases — including mixed workloads. If NVMe over Fabrics (NVMe-oF™) is used, connectivity between servers and the Pure Storage solution is even faster and more efficient with latency that essentially matches that of direct-attached storage (DAS). NVMe-oF also reduces the server workload because the I/O request processing bypasses the operating system kernel, reducing the CPU workload.



Sub-millisecond  
latency as low as  
**250  $\mu$ s,**  
in addition to  
high throughput<sup>5</sup>



# 10. Best Ownership Experience and Support

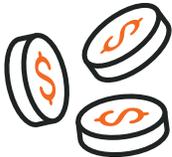
## Realize Higher Return on Investment (ROI) and Lower Costs

Pure Storage solutions create opportunities to reduce Oracle Database licensing costs by potentially reducing the database server CPU workload. They also provide functionality at no additional cost — such as encryption and data reduction — that would otherwise require additional Oracle licenses.

Pure Storage delivers one of the lowest total costs of ownership (TCOs) of any all-flash-array solution with Evergreen™ Storage, an all-inclusive subscription model that lets you deploy your Pure Storage solution once and upgrade when you need for a decade or more. Available with every Pure Storage all-flash solution, with Evergreen Storage you never need to deploy your Oracle environment on an undersized or over-utilized storage infrastructure. You can mix and match components online without performance disruption to keep storage dense, efficient, and modern. Evergreen Storage:

### 33%

savings on capital expenditures (CAPEX) and maintenance and support (M&S) over years<sup>6</sup>



### 50%

savings on power, cooling, and space with data reduction<sup>6</sup>

- Includes the Right-Size Guarantee, which guarantees effective capacity, risk free and in writing, for six months<sup>6</sup>
- Helps reduce power, cooling, management, and space expenses
- Gives you continuous access to the latest storage infrastructure without added costs
- Offers automated built-in backup and restore capabilities through snapshots to reduce the need for added software

With the Evergreen Storage model, Pure Storage solutions pay for themselves. Looking at just storage investment and refresh over six years, Pure Storage solutions save 33%.<sup>6</sup> Factor in additional savings from always-on storage that takes 10 times less space, power, and cooling while offering two times better data reduction and eliminating storage re-buys, and the total savings over six years climbs to nearly 50%.<sup>6</sup>



Deploy once and upgrade as needed for 10 years or more

# Support/Satisfaction (NPS)

## Benefit from a Solution Used by Satisfied Customers Worldwide

Find customer success stories at [www.purestorage.com/customers.html](http://www.purestorage.com/customers.html).

## Pure Storage Establishes B2B Standard for Net Promoter Score® (NPS®)

Pure achieved a certified NPS of 86.6 in 2018, increasing its loyalty metric four years in a row. The score is more than three times the average score of 23 across all industries.<sup>7</sup>



(As measured by Satmetrix® 2018 NPS Global B2B Benchmarks.)



For more information, go to [www.purestorage.com/oracle](http://www.purestorage.com/oracle) to read more about our Oracle solutions.



- 1 "Copy Oracle Database," Pure Storage, [www.purestorage.com/solutions/applications/oracle-cat.html](http://www.purestorage.com/solutions/applications/oracle-cat.html).
- 2 "Why Pure: Effortless," Pure Storage, [www.purestorage.com/why-pure/effortless.html](http://www.purestorage.com/why-pure/effortless.html).
- 3 "Entry-Level Storage," Pure Storage, [www.purestorage.com/products/entry-level-storage.html](http://www.purestorage.com/products/entry-level-storage.html).
- 4 "Oracle Storage," Pure Storage, [www.purestorage.com/solutions/applications/oracle-database.html](http://www.purestorage.com/solutions/applications/oracle-database.html).
- 5 "NVMe, All-Flash Storage Array," Pure Storage, [www.purestorage.com/products/flasharray-x-data.html](http://www.purestorage.com/products/flasharray-x-data.html).
- 6 "Evergreen," Pure Storage, [www.purestorage.com/products/evergreen.html](http://www.purestorage.com/products/evergreen.html).
- 7 "Pure Storage Established B2B Standard with Certified Net Promoter Score (NPS) of 86.6," Cision PR Newswire, [www.prnewswire.com/news-releases/pure-storage-establishes-b2b-standard-with-certified-net-promoter-score-nps-of-86-6--300732541.html](http://www.prnewswire.com/news-releases/pure-storage-establishes-b2b-standard-with-certified-net-promoter-score-nps-of-86-6--300732541.html).

© 2019 Pure Storage, Inc. All rights reserved. Pure Storage, the P Logo, Evergreen, and FlashArray are trademarks or registered trademarks of Pure Storage, Inc. in the U.S. and other countries. All other trademarks are registered marks of their respective owners.

The Pure Storage products and programs described in this documentation are distributed under a license agreement restricting the use, copying, distribution, and decompilation/reverse engineering of the products. No part of this documentation may be reproduced in any form by any means without prior written authorization from Pure Storage, Inc. and its licensors, if any. Pure Storage may make improvements and/or changes in the Pure Storage products and/or the programs described in this documentation at any time without notice.

THIS DOCUMENTATION IS PROVIDED "AS IS" AND ALL EXPRESS OR IMPLIED CONDITIONS, REPRESENTATIONS AND WARRANTIES, INCLUDING ANY IMPLIED WARRANTY OF MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE, OR NON-INFRINGEMENT, ARE DISCLAIMED, EXCEPT TO THE EXTENT THAT SUCH DISCLAIMERS ARE HELD TO BE LEGALLY INVALID. PURE STORAGE SHALL NOT BE LIABLE FOR INCIDENTAL OR CONSEQUENTIAL DAMAGES IN CONNECTION WITH THE FURNISHING, PERFORMANCE, OR USE OF THIS DOCUMENTATION. THE INFORMATION CONTAINED IN THIS DOCUMENTATION IS SUBJECT TO CHANGE WITHOUT NOTICE.

