



**2016 TRENDS** ORACLE APPLICATION BUSINESS AGILITY

# DELIVER BETTER ORACLE APPLICATION PERFORMANCE

Applications owners can now deploy nearly cost-free real-world Oracle database test & QA database environments for their developers by deploying applications on the Pure Storage FlashArray. This prevents problems from entering production environments and unleashes sustainable business agility.

# IT'S THE MOMENT OF TRUTH. THE MOMENT THAT DETERMINES SUCCESS—OR FAILURE.

No matter how many times you've been here, no matter how long you've worked toward this goal, the feeling is undeniable. You know that what happens next will have a major impact on not only you, but your team, your manager and every end-user who touches that code!

In a fast-paced world where change is a constant, these moments of truth occur all the time. Every time you roll out a new application. Every time you change an existing application. Your QA team has already tested to ensure that the application does what it's supposed to do.

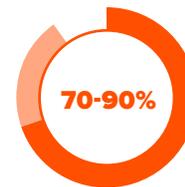
Question is, will it take too long to do what it's supposed to do? And for many enterprise application owners, that's a question that they just can't answer until they flip the switch and turn it on.

**But now you have the power to create a better moment of truth. You have the power to know how your app is going to perform, before it's live.**

How's that? The answer may surprise you. Read on to learn more.

# BAD CODE POOR PERFORMANCE

Every time you roll out new code, you're rolling the dice. Good code? Bad code? Will it work properly? If you're like many application owners, you won't really know how your code will perform until it's fully deployed in a production environment. Sure, your QA team tested the code. But did they do it in a full-scale production environment?



**BAD CODE: SLOW APPS.** It turns out that sub-optimal application code causes some 70-90% of application performance issues, according to experts. This spawns cascading problems in production systems.

Slow performance leads to latency issues. Users can't do their jobs because of slow response time, the system seems to "hang," and reports take too long to generate.

Heavy performance loads lead to corrupt or out-of-synch reports. Systems become overloaded and/or unstable. And all of this leads to declining user satisfaction and lower usage rates.

And of course, while your dev, database and infrastructure teams are fixing these problems, they're not providing new, expanded or enhanced application capabilities to grow and improve your company's business. Thus, SLAs, agility and responsiveness suffer.

## THE BAD NEWS:

many of these problems just aren't apparent until you test the system at scale using production workload and hardware. So moments of truth become moments of uncertainty.

Expert Oracle DBAs can attest that many of these application problems would be solved by testing and QAing new application code using actual production workload and hardware. Testing code with a production workload identifies big problems so that programming can be fixed before deployment, but many organizations don't believe they can justify the expense of a production test environment.

After all, it takes time to procure, set up, and configure databases and storage hardware, and then load all of that production data into test databases. Depending on your business, it could take hours to load data into a test system, which is why many companies do so only during nights and weekends, so as not to slow down production systems.

One enterprise DBA, Chris Hinson, pegged the cost to create simulated test and QA environments capable of production data loads at \$100,000 reflecting the additional hardware, storage and memory resources required to handle the sizable database load.

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*"In my experience, most performance problems can be significantly reduced or eliminated through proper coding."*

TIM MITCHELL, BI CONSULTANT<sup>2</sup>

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## THE IMPACT OF APPLICATION PERFORMANCE ISSUES



USER SATISFACTION



REPORT OUTPUT QUALITY



USAGE RATES



SYSTEM STABILITY



ABILITY TO ENHANCE  
& EXPAND APPLICATIONS



LATENCY



SYSTEM SCALABILITY DEMANDS



40%

TEST BUDGET ALLOCATED TO  
INFRASTRUCTURE AND HARDWARE



AS MANY AS  
250

TEST ENVIRONMENTS REQUIRED



86%

AVERAGE DATA GROWTH



14%

REVENUE LOSS FROM INABILITY  
TO LEVERAGE DATA



TIME TO  
MARKET

A TOP BUSINESS CHALLENGE  
FOR DEVELOPMENT

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*“I have seen many times when a developer writes a process that runs screaming fast on their box, but...falls down when it gets to production...It’s very difficult to predict how the code will run against enterprise-level load and requirements.”*

COLIN STASIUK, BENCHMARK IT CONSULTING<sup>1</sup>

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The problem is only going to get worse as companies store more data each year. A few years ago, Oracle found that 94% of C-level executives’ organizations were collecting and managing more business information than two years earlier, by an average of 86% more.<sup>4</sup>

And that number is only growing today. With numbers like these, it’s no wonder many organizations just can’t afford to deliver production environments. So they take the easy way out, testing against a small database load with a limited number of users and not under load stress.

What’s more, CapGemini finds that right behind the need for more budget, time to market is a top business concern in application development. And that pressure will only increase with agile development, which has been adopted by 54% of respondents in the CapGemini study.<sup>3</sup>

With all of these pressures, it’s easy to see why underperforming code continues to plague applications, creating an endless loop. Application owners push DBAs to prune and optimize the database, while prodding storage admins to add more and more storage, all in an attempt to solve what are actually unsolvable performance issues.

**THE GOOD NEWS:  
THERE IS AN  
ANSWER  
TO THIS PROBLEM.**

You can actually test at scale by deploying production data in your test environment quickly and inexpensively.

# PRODUCTION TEST ENVIRONMENTS THAT ARE ACTUALLY AFFORDABLE

Imagine. Your application is about to go live today. You're actually looking forward to the moment of truth because you're confident that your application will perform as promised.

What if your team could test with production data at scale – without breaking the bank? You'd deliver better applications with fewer performance issues. And you'd approach each moment of truth with greater confidence in the result.

**You can do it—and the answer starts with flash storage. Yes, flash storage.**

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*With flash, suddenly stress-testing new code under actual production data loads is possible without having to procure dedicated storage and servers for a test environment.*

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The primary focus at the enterprise for adopting new flash storage arrays is to speed up intensive data applications, performance for which is constrained by legacy disk storage, growing data loads and advanced business application requirements.

Advanced flash arrays not only speed up applications with faster and more resilient storage, they also give companies the ability to create copies of the production database—without time consuming backup/restores and without slowing down production systems.

For example, advanced de-dupe and compression capabilities from Pure Storage further squeeze compressed data by 2:1 and uncompressed databases by a factor of 4-5:1; even greater reductions (20:1) are produced in virtualized desktop environments allowing even more data on less storage hardware. Incremental backups are quick and complete, taking less storage capacity to create and store.

The combination of advanced software deduplication and compression of the advanced flash storage array frees up significant storage capacity. This extra capacity allows for production workload capable development and QA environments—without the hardware overhead that was previously a requirement.

In this scenario, teams eliminate the need to procure additional hardware budget for testing environment. They also dramatically reduce the staff time required to clone and load production data workloads; this now takes only minutes instead of days with advanced arrays.

When reviewing flash vendors and capabilities, the ability to improve speed and performance created by physical storage limitations should be considered table stakes; application owners should review the advanced capabilities of each array being considered to see how it will further drive application development improvement, not just performance.

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*“Today we have a fully automated server job that initiates a snap copy on the Pure Storage Array of the 5 TB ETL and loads it onto the reporting server in a matter of minutes.”*

**CHRIS HINSON, SENIOR DBA, FORTUNE 500 COMPANY**

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In fact, with economics like these coupled with the pressure for more agile development and release cycles in the enterprise, application owners may discover they can't afford not to test against production volumes or risk both performance issues and such reduced development capacity that they put the enterprise at a business disadvantage.

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*“Pure kind of works out as a free Dev server. One of the cool things I can do in Pure is the full stack of everything goes into the Development environment—and so when our developers test it there, they are testing a real world scenario.”*

**CHRIS HINSON, SENIOR DBA, FORTUNE 500 COMPANY**

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Let's take a look at what's happening here.

If you're an application owner, hardware infrastructure—servers, networking, and storage—matters more than you may think.

Over the last several years, server and networking equipment have advanced at a rapid pace, but traditional spinning disk storage has not kept up. Your application may have all of the server capacity and network bandwidth it needs, but still lack adequate storage horsepower, creating a major bottleneck. We're talking more than disk space. We're talking response time.

Enter flash storage. Flash storage—solid state hard drives similar to those in smartphones—delivers blazing fast response times that improve database performance with, for a example, a 10x reduction in database backup/recovery time and a 3x improvement in the performance of transactional and business intelligence applications.

So when you replace spinning disks with flash arrays with advanced capabilities too, you can actually create copies of the production database in a fraction of the time and then rapidly load these into new environments.

Developers and QA teams can even create multiple copies in near real-time without slowing down production systems. And you can do all of this without having to procure dedicated storage for your test environment.

Now your dev and QA teams can test application code in accurate, simulated production environments. They'll be able to proactively identify and fix load-related problems—before code goes into production. With accurate load-testing, you'll deliver applications that are more stable, scalable and robust.

Now the moment of truth has come and gone. Your new application is up and running. Users are, well, using the application. Business executives are pleased. Your infrastructure team is relieved. And you and your team are proud.

# YOU DID IT!

**Now you're ready to work on the next application so you can move your business forward. Today has been a great day.**

## BETTER TESTING, BETTER APPLICATION PERFORMANCE



USER SATISFACTION



REPORT OUTPUT QUALITY



USAGE RATES



SYSTEM STABILITY



BUSINESS AGILITY



IMPACT ON BUSINESS



LATENCY



SYSTEM DEMANDS

## ABOUT PURE STORAGE, INC.

Pure Storage accelerates possible, transforming businesses in ways previously unimagined. The company's disruptive, software-driven storage technology combined with a customer-friendly business model drives business and IT transformation for customers through dramatic increases in performance and efficiency at lower costs. Pure Storage FlashArray//m is simpler, faster and more elegant than any other technology in the datacenter. FlashArray//m is ideal for the move toward big data and for performance-intensive workloads such as cloud computing, database systems, desktop virtualization, real-time analytics and server virtualization. With Pure's industry leading NPS score of 79, Pure customers are some of the happiest in the world, and include large and mid-size organizations across a range of industries: cloud-based software and service providers, consumer web, education, energy, financial services, governments, healthcare, manufacturing, media, retail and telecommunications. With Pure Storage, companies push the boundaries of what's possible to become faster, smarter and more innovative.

To learn more, visit <http://purefla.sh/Oracle>

### SOURCES

<sup>12</sup> Source: "Hardware or code? SQL Server Performance Examined"  
<http://logicalread.solarwinds.com/sql-server-hardware-or-code-tl01/>

<sup>35</sup> CapGemini World Quality Report 2015-16, Testing and Quality Assurance, Trends and Recommendations  
<https://www.capgemini.com/thought-leadership/world-quality-report-2015-16>

<sup>4</sup> From Overload to Impact: An Industry Scorecard on Big Data Business Challenge  
<http://www.oracle.com/us/industries/industry-scorecard-1683398.html>

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