



## SUCCESS STORIES

# ORACLE IMPLEMENTS NETWORK APPLIANCE™ STORAGE FOR ITS GLOBAL IT INFRASTRUCTURE

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MITCHELL MCGOVERN Vice President, Global Data Center Operations, Oracle



### KEY HIGHLIGHTS

**Location** Redwood Shores, California

**Industry** Enterprise software

#### The Challenge

- Maximize asset utilization
- Increase storage availability
- Decrease management overhead
- Improve storage TCO

#### The Solution

- Storage consolidation
- Backup and recovery
- Database and business applications
- Product development

#### Benefits

- Business flexibility
- High storage availability
- Exceptional support
- Simplified storage management



### THE CUSTOMER

#### Oracle Corporation

Oracle ([www.oracle.com](http://www.oracle.com)) is the world’s largest enterprise software company, specializing in database, middleware, and business applications for managing and automating processes and other critical business infrastructure software. The company delivers software, consulting, outsourcing, and other services to help enterprises solve their most critical information management problems. A Fortune 500 company, Oracle has annual revenues in excess of \$9 billion and over 40,000 employees worldwide. Because of the breadth and data-intensive nature of Oracle’s business operations, it faces extreme storage management challenges.

### THE CHALLENGE

#### Provisioning Storage for a Complex and Rapidly Evolving Business

In recent years Oracle has experienced tremendous growth, resulting in significant IT challenges. Foremost among these is the need to maximize asset utilization for its existing investments in servers, storage, and networks. In addition, there is a strong need for high reliability and availability in critical storage infrastructure to ensure that business data is always accessible. Scalability and performance are also vital to accommodate continued growth.

These challenges have been amplified by the introduction of new products and new services such as Oracle E-Business Suite On Demand (OEBSOD). With OEBSOD, Oracle hosts its industry-leading E-Business Suite software for hundreds of customers from its data center in Austin, Texas. Rapid deployment for new customers and the ability to adapt quickly to the changing needs of existing OEBSOD customers are critical to continued success.

Oracle must simultaneously meet the storage needs of its internal business operations, provide a flexible and scalable storage environment for its Oracle E-Business Suite On Demand business, and provision development environments with thousands of instances of Oracle products running on a multitude of different system platforms. Given this complexity, improving the manageability of storage systems, simplifying and accelerating backup, and reducing total cost of ownership have all become important priorities.

The introduction of Oracle Database 10g™ in the fall of 2003 offered tremendous new capabilities for Oracle to meet its internal business needs as well as the needs of its customers. However, the flexible, distributed grid computing

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**BILL WEILS** Senior Director, Oracle Global IT Services Command Center

environment enabled by Oracle Database 10g puts greater demands on its storage infrastructure to work in new and flexible ways.

#### **THE SOLUTION**

##### **Adoption of Network Appliance Storage Solutions**

Recognizing the limitations of its existing storage configurations, four years ago Oracle began adopting a network storage model using NetApp storage solutions. At the time, some people in the industry questioned whether networked storage could deliver the performance required by demanding Oracle Database applications, but Oracle—and thousands of Oracle customers—discovered that NetApp yields the same or better performance while improving availability, simplifying management, and reducing storage total cost of ownership (TCO).

Today, Oracle has one of the largest deployments of NetApp storage in the world and relies on NetApp to support internal operations, OEBSOD, multiple product development organizations, and other functions.

“We chose Network Appliance as a storage vendor for our mission-critical business solutions because NetApp products deliver high availability with solid, consistent performance and low

management overhead, giving us a much lower total cost of ownership,” says Bill Weils, senior director of the Oracle Global IT Services Command Center. “NetApp has reduced the overhead necessary to perform storage-related management activities by 50%, making our overall environment more available to meet business needs while freeing critical IT staff for other important tasks.”

NetApp solutions also proved to be a great match for OEBSOD, which uses clustered NetApp storage systems for fault tolerance while supporting hundreds of On Demand customers running 1,600 independent database environments and application stacks. According to Mitchell McGovern, vice president of Global Data Center Operations, “Oracle chose NetApp to run OEBSOD because it’s very simple to manage. It integrates well with our platform, and it’s very, very scalable, which allows us to continue to grow. NetApp has allowed the OEBSOD architecture to scale by more than threefold while dramatically decreasing our costs for storage acquisition and management.”

The Oracle Platform Engineering group is the product build and release factory for all Oracle products and services on the multiple platforms that Oracle supports. “We leverage each of the NetApp technologies to meet our storage

needs,” points out Craig Yappert, senior director of IT Operations for Platform Engineering. “We use NetApp high-speed primary storage for our high-transaction environment, NetApp NearStore® products for things such as Oracle E-Business Suite testing, and NetCache® for sharing code from one development center to another efficiently and transparently.

“NetApp gives us the ability to centralize mass storage,” continues Yappert, “so that it’s easy to parcel out storage to a particular development environment when it needs it. Now we can provision systems much more quickly, dramatically reducing the time it takes to prepare an environment for our development and engineering staff. That translates directly into increased productivity in the QA cycle and therefore much faster time to market.”

#### **BUSINESS BENEFITS**

##### **Flexibility, Simplified Backup and Recovery, Massive Scalability**

NetApp storage solutions have allowed Oracle to pioneer new ways of working. For instance, Oracle E-Business Suite demonstrations used to be a time-consuming manual process. Now Oracle hosts its Applications Demonstration Services (ADS) from the Austin Data Center using NetApp storage. A salesperson

<b>ORACLE GROUP</b>	<b>FUNCTIONS</b>
<b>Global IT</b>	Internal business operations Oracle On Demand Oracle ERP Oracle education services Web services
<b>Applications Development</b>	Development and QA for Oracle E-Business Suite
<b>Applications Demonstration Service</b>	Global Web-based Oracle E-Business Suite and Oracle Database demonstration environment
<b>Oracle Collaboration Suite Files Online</b>	Oracle Collaboration Suite Files Online corporate infrastructure, serving over 40,000 employees
<b>Platform Engineering</b>	Product build and release factory for all Oracle products and services on multiple platforms

simply enters a request, and the team configures a complete demonstration environment to the salesperson's specifications. The presentation can be accessed through the Oracle E-Business Suite Web-based interfaces from anywhere in the world.

Oracle also depends on NetApp storage solutions to support Oracle Collaboration Suite Files Online—a document management and collaboration tool available to all 40,000 Oracle employees. In fact, Files Online supports a single database instance on NetApp today of over 5TB and growing.

Backup and recovery are no simple matters when you're managing hundreds of terabytes of mission-critical data for important customers. OEBSOD uses NetApp Snapshot™ and SnapRestore® software to meet these needs. Regular Snapshot copies of all user data protect against application and user errors. Since a Snapshot copy takes only seconds, and hundreds of simultaneous Snapshot copies can be maintained per volume, there is no impact to ongoing operations. If a problem occurs with a running application, the most recent Snapshot copy can be brought back, logs can be

replayed, and the application can be restarted in minutes versus the hours or days it might take for tape recovery.

The breadth and complexity of Oracle E-Business Suite software development efforts create significant data management complexities. "NetApp products really help us streamline our development environment. With SnapMirror®, we reliably replicate complete E-Business Suite environments between systems to meet our ongoing development and testing needs. Previously, we had to do this by hand or through scripts, which was time-consuming and unreliable," says Jerome Labat, vice president of Operations and Infrastructure for E-Business Suite Development.

With engineers in multiple locations spread across the United States, the UK, and India, Platform Engineering found it challenging to store files in a productive way. "One of the key technologies that NetApp gives us is the ability to distribute our NFS infrastructure across those development centers," explains Yappert. "With DNFS and NetCache, file location is completely transparent to the engineering staff. That's a significant benefit."

## **POWERING GRID COMPUTING**

### **Storage When and Where It's Needed**

For Oracle, one of the greatest benefits of the adoption of NetApp technology comes from the vision the two companies share. Oracle is a leader in enterprise grid computing, which pools large numbers of servers and storage into a flexible resource to meet enterprise-computing needs. With unified storage solutions capable of delivering data regardless of access method (NFS, FCP, iSCSI), NetApp is well positioned to meet the storage needs of emerging enterprise grids.

"The Oracle vision of grid computing is about virtualization and dynamic provisioning of resources. Network Appliance has always in my mind had this same notion of virtualizing storage and then dynamically provisioning it as needed," says Benny Souder, vice president of Distributed Database Development. "In my opinion, Network Appliance and Oracle are in direct alignment."

As Oracle moved to a grid architecture for its On Demand operations, the advantages of NetApp for the grid became clear. "Our grid architecture is literally stacks and stacks of Linux®

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boxes utilizing Oracle Applications and Oracle Database technology combined with Network Appliance storage. NetApp is a perfect fit for Linux,” points out McGovern. “The OEBSOD grid has scaled fantastically. We’ve got literally thousands of servers and hundreds of terabytes of NetApp storage. The Austin Data Center is the single largest NetApp installation on the planet.”

#### **NETAPP: A PARTNER FOR STORAGE SUCCESS**

Great hardware and software are nothing without the right people standing behind them. Oracle has been extremely pleased with the support that NetApp provides throughout the company to help ensure continued success.

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to ensure that we achieve the highest possible availability and scalability without sacrificing manageability. They’re just part of the family,” says McGovern.

“Because of our tight partnership, we’ve been able to take full advantage of NetApp storage and service innovations to transform our development infrastructure and become a more efficient, leaner machine,” concludes Jerome Labat, speaking of the Oracle E-Business Suite development environment.

#### **ABOUT NETWORK APPLIANCE**

Network Appliance is a world leader in unified storage solutions for today’s data-intensive enterprise. Since its inception in 1992, Network Appliance has delivered technology, product, and partner firsts that simplify data management. Information about Network Appliance™ solutions and services is available at [www.netapp.com](http://www.netapp.com)

For more information on how Oracle uses NetApp technology, please see a companion white paper titled “Network Appliance Technology Deployment at Oracle.” This paper is available at [www.netapp.com/tech\\_library/3330.html](http://www.netapp.com/tech_library/3330.html).



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