



## Oracle

### Oracle uses EMC solutions to power critical global application environments

For 30 years, Oracle has been a pioneer in the development of leading-edge software for information management. Ranked as the world's second largest independent software company, Oracle software can be found in the data centers of organizations representing nearly every industry and size.

The first to adopt its own progressive software, Oracle fully leverages the benefits of its innovative solutions for greatest business advantage and then passes along this proven technology and implementation expertise to its customers. It further pushes the envelope of its technological breakthroughs by working with industry leaders, such as long-time partner EMC, to create balanced tiered-storage solutions that benefit both companies as well their mutual customer base.

Over the last 12 years, Oracle's collaboration with EMC has led to many competitive advantages for the organization. The primary benefit was the ability to use EMC in support of Oracle's global data center consolidation from 43 data centers worldwide to two based in Austin, Texas, with a disaster recovery site in Colorado. EMC supports three main Oracle environments: EMC tiered storage and software solutions play a key role in optimizing Oracle's database development IT infrastructure to facilitate faster time to market; EMC consolidated enterprise storage brings together vital transactional data from core global IT applications across the enterprise for fast and continuous access to business-critical information; and EMC tiered storage and software delivers operational and cost efficiencies to core back-office operations such as e-mail, business productivity applications, and file storage.

"The reason we've remained with EMC is that their solutions have continued to evolve and grow with us to meet our needs for performance, scalability, and reliability," says Bret Fuller, senior vice president, Oracle Applications Operations. "EMC also has been great to work with in terms of service. Having a vendor relationship where you feel they're in it with you is important. EMC has a partnership mentality and an understanding of the criticality of getting in and resolving issues quickly."

#### **24x7 storage support for non-stop development**

Oracle's Server Technologies division is the largest revenue-generating segment within the company. Backed by a team of 5,000 developers spread across the world in 30 locations, it consists of four different lines of businesses: Oracle® Database, Oracle Application Server, Oracle Enterprise Manager, and Oracle Collaboration Suite.

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The IT infrastructure that supports product development within these different business lines is one of continual growth and change. Over the last several years it has expanded into a dynamic environment with 17 different platforms including those from Linux, which is the base development platform, as well as IBM, HP/UX, and Microsoft Windows. For over a decade, EMC storage technology has been an important part of this business-critical environment.

“Our group provides the IT support development environments for these business lines,” says Steve Huey, senior director, Operations & Server Technologies. “With about 10,000 pieces of hardware in our Austin data center and only four storage administrators onsite, the manageability of our environment is critical. Given our large install, our solutions have to be scalable as well. Since we have developers across the globe we need high performance solutions that will run around the clock.”

“We understand what it takes to run our businesses, and we use each other’s technologies to help us succeed. The fact that EMC and Oracle are actually large mutual customers benefits us all because we can actually go to market with a proven solution—one that’s tested to ensure that it works as promised.”

**Steve Huey, Senior Director, Operations & Server Technologies**

EMC solutions satisfy these criteria on all levels through a consolidated enterprise storage approach that has replaced a disparate, time-consuming to manage, and difficult to scale workgroup storage environment.

“Moving to enterprise storage from our workgroup storage has given us a lot of flexibility,” says Huey. “We can add storage on the fly, quickly provision new servers, take advantage of centralized management, and easily grow these solutions within the same framework.”

Today EMC Symmetrix® DMX storage is used for high-performance computing needs and provides storage support for such mission-critical areas as the production source code server running in a 128-node, Oracle Real Application Clusters environment. It also supports the central home directory server for all 5,000 developers.

“Continued simultaneous code releases are a challenge,” says Huey. “We’re finishing off 11g now and actually starting 12g. EMC’s high-end storage solutions create the kind of storage infrastructure we need to support this environment in terms of performance, scalability, and availability. We are a 24x7 shop and there is no time for downtime in development.”

EMC CLARiiON® storage with EMC Celerra® NS series gateways provide a cost-efficient iSCSI solution within Oracle’s development environment. Other EMC CLARiiON and EMC Celerra NS Series products in place provide general shared storage over NFS and are used to support some clusters, archiving, and other computing needs that require less performance.

EMC ControlCenter® storage management software, in conjunction with Oracle’s Enterprise Manager plug-in, provides the capability to quickly and easily manage roughly 100 different arrays around the world with a staff of four storage administrators.

“With EMC ControlCenter we can get a holistic view across all of our environments, regardless of the performance range of the storage arrays,” says Huey.

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Further simplifying management is the fact that potential problems are handled proactively through EMC's call-home remote monitoring functionality. This helps ensure the highest level of business continuity possible.

"In the past, when we had an outage in our workgroup storage it required us to take the environments down. This was disruptive to development and actually caused delays in our product releases," says Huey. "Today, if we have a disk failure, EMC is automatically notified and an engineer is immediately dispatched to replace the failed component."

In addition to EMC's call-home functionality, EMC Global Services have been used extensively for everything from design and deployment support to securing the engineering resources necessary to quickly solve critical issues.

"Our experiences with EMC Global Services have been positive and have worked out well," says Huey. "EMC is committed to getting the right resources to us whenever we need them."

### **Oracle's largest in-house system entrusted to EMC Symmetrix DMX storage**

Creating a global single instance of the business is part of an Oracle initiative that began in the late 1990s to consolidate applications and infrastructure across the organization for operational excellence as well as cost efficiency.

Growing by a terabyte and a half a year, this massive environment serves all 70,000 Oracle employees, 200,000 customers, tens of thousands of partners, and millions of contacts across the globe, providing them with 24x7 access to the information they need.

"Having a global single instance is really about access to business-critical information," says Fuller. "It enables us to have all of our transactional information and processes in a single system, and allows us to integrate our acquisitions very quickly. With the Siebel acquisition we integrated the whole organization and the transactional processing into our system within four months."

The solution set that makes Oracle's global single instance possible includes 70 Dell servers running Linux along with a database server consisting of a cluster of four Sun 25K systems using Oracle's Real Application Cluster software. This runs over the SAN to EMC Symmetrix DMX™ systems. These advanced EMC storage systems, which are mirrored to an EMC disaster recovery system in Oracle's Colorado Springs data center, provide the capacity, power, and business continuity necessary for timely and consistent information access within Oracle's global single instance environment.

EMC software products including EMC ControlCenter for monitoring disk performance, EMC PowerPath® path management for added reliability, and EMC TimeFinder® for efficient backup are also in place.

"EMC storage was chosen to be a part of this environment for three main reasons: scalability, performance, and reliability—all of which are critical if you're going to be running a corporation the size of Oracle on a single system," says Fuller. "We recently upgraded to the latest generation of EMC systems to provide us with the scalability and growth we'll need for the next few years. We keep current with our own products to remain on the cutting edge and we leverage that with our partner technology as well."

EMC support for the data warehouse within this environment is also extremely critical because even though there is a global single instance for transactional data, an added

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advantage is gained in the ability to turn that data into valuable business information. By consolidating this data within a data warehouse, different sources can be leveraged, summarized, and mined for trends.

“From a cost perspective, the benefits of having the warehouse on a single disk structure alongside the transactional system are significant,” says Fuller. “Just the ability to leverage the EMC technology to consolidate our multiple test systems, along with our DR system, means fewer components and fewer staff resources needed to manage them. Also, the reliability that we’ve experienced means we can really focus on functional projects and not worry about the stability of the technology.”

## **Oracle and EMC revolutionize Oracle’s global e-mail architecture**

An intensely e-mail centric culture, Oracle employees depend heavily on the company’s consolidated, global online messaging system for most communications. Everything from supply-chain activities to administration and customer correspondence is handled through Oracle’s enterprise-wide communications system. Even contract renewals are managed via the organization’s unified messaging application which converts faxes into e-mail messages that are subsequently imported into Oracle’s Order Entry module.

The development of this consolidated global e-mail architecture is the most recent in a series of joint ventures between Oracle and EMC to further Oracle’s consolidation initiatives begun several years ago. When designing the new Oracle e-mail environment with EMC, the goal was to create an infrastructure that was leading-edge. The plan was to integrate a unique mix of components that leveraged new Oracle and EMC technologies to address internal needs, while showcasing solutions that customers could readily adopt.

“We chose to work with EMC on this initiative because it was the proven storage leader at the time, and because of the relationship we had fostered working together on various projects over the years,” says Campbell Webb, vice president, Server Technologies IT. “EMC was familiar with our infrastructure, our goals as a technology leader, and our objectives for this project.”

An integral part of Oracle’s consolidated, global e-mail infrastructure, an EMC CLARiiON CX series-based SAN with Cisco switches provides a reliable, high-performance storage environment capable of meeting the capacity needs of a corporation growing at a rapid rate due to both a rise in acquisitions and day-to-day storage requirements.

Sun servers running Oracle Enterprise Linux are also a part of the e-mail environment and together with EMC storage form a solid foundation from which other advanced Oracle solutions can easily be applied such as: Oracle Real Application Clusters, Oracle Automated Storage Management (ASM), Oracle Secure Backup, and Oracle Data Guard for business continuity.

“One of the key reasons we chose the EMC CLARiiON platform is the capability to quickly expand capacity,” says Webb. “We were growing at about two terabytes a year in just e-mail alone. But with the consolidation of more and more applications within our universal communications framework we expect that to ramp up to five terabytes annually. Add in the challenges of compliance and growth could be exponential.”

Another area where EMC technology is supporting Oracle strategy is in driving cost and complexity out of the infrastructure, and the e-mail environment is no exception. EMC is supporting this initiative in part by providing tiered storage capabilities within the EMC CLARiiON system.

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“At the end of the day, total cost of ownership is much less for the IT operation,” says Webb. “CLARiiON storage is very scalable, it’s reliable, and it’s flexible too. We can mix and match the different types of storage, whether they are less expensive SATA type drives for backup or Fibre Channel drives for mission-critical data that requires high performance, and we can actually do this on the fly to meet our changing business needs. The ability to increase capacity is seamless.”

In addition, EMC Navisphere® storage management software, along with the inherent reliability of EMC CLARiiON storage, is facilitating streamlined administration which helps free up IT resources to focus on more value-added activities surrounding the Oracle product set. EMC Navisphere also facilitates optimization of the environment by providing the ability to drill down to the spindle level and observe the I/O characteristics occurring on a particular drive.

“This feedback is invaluable when dealing with Oracle applications because we can then go back and tune our own stack to meet the needs of the underlying storage infrastructure,” says Webb.

In operation for almost a year, the size of Oracle’s consolidated global e-mail environment is substantial. At 12 terabytes and growing, it accommodates approximately 72,000 live mailboxes.

“The EMC Global Services group was really key to the success of this initiative. They were there from the start, scoping out the project for us, and helping us lay a great foundation from which to build,” says Webb. “With CLARiiON we now have a platform that will enable us to move forward and expand dynamically. We’ve actually sized it that way and we’re very comfortable that we can fully meet growing demands going forward.”

## **A collaborative approach benefits partners and customers alike**

Just as Oracle is a customer of EMC, EMC is also a customer of Oracle and a Certified Advantage Partner in the Oracle PartnerNetwork. It is a partnership that continually derives mutual benefit from the strength of products brought to the table by both companies. Tested and proven, these innovative joint solutions take the guesswork out of the equation and showcase the performance, availability, scalability, and cost advantages that can also be leveraged by the alliance’s 55,000 joint customers.

“We understand what it takes to run our businesses, and we use each other’s technologies to help us succeed,” says Huey. “The fact that EMC and Oracle are actually large mutual customers benefits us all because we can actually go to market with a proven solution—one that’s tested to ensure that it works as promised.”



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Customer Profile  
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