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Consolidating Oracle E-Business Suite on Oracle SuperCluster
Introduction

Modern business applications such as Enterprise Resource Planning (ERP) can bring innumerable benefits for the organizations they serve. Oracle E-Business Suite, ERP application market leader, is the most comprehensive suite of integrated, cross-industry global business applications enabling organizations to make smarter decisions, reduce corporate costs and accelerate workloads. As business demands change over time, the infrastructure for many mission-critical applications can easily become more complex, time-consuming, challenging to scale, and expensive to maintain. For seamless operation, applications, databases, operating systems, servers, networking, storage, and backup software must all be configured correctly. These operational aspects can become even more complex as systems grow, with additional modules and user base driving server sprawl. Globalization, server proliferation, and aging infrastructure all can add additional risk, complexity, and cost to an already challenging process.

Using the Oracle Optimized Solution for Oracle E-Business Suite to consolidate on Oracle SuperCluster provides an attractive alternative that can lower total cost of ownership (TCO), decrease time to deployment, and dramatically reduce risk. Oracle SuperCluster provides both capacity for growth, as well as the fine-grained server virtualization needed to isolate individual Oracle E-Business Suite application components. With multiple layers of Oracle E-Business Suite infrastructure consolidated onto a high-performance, highly available Oracle SuperCluster system, deployment speed, application performance, and availability can all be optimized. In addition, this solution provides in-memory applications and high performance optimization features, that are only available on and leveraged by the architecture of Oracle engineered systems. These exclusive performance features will help organizations complete key process runs faster, driving new efficiencies and increasing agility. Designed as a pre-configured, pre-tested, and ready-to-deploy system, the solution provides a complete and optimized infrastructure for Oracle E-Business Suite, built around robust compute, virtualization, networking, storage, and management resources. The result is a system that is orders of magnitude easier to manage, and up to five times faster to deploy than alternatives, all while occupying considerably less real estate and requiring less power.
Oracle Optimized Solution for Oracle E-Business Suite

Oracle E-Business Suite remains the most comprehensive suite of integrated global business applications, enabling organizations to make better decisions, reduce costs, and increase performance. With literally hundreds of cross-industry capabilities, Oracle E-Business Suite spans enterprise resource planning, customer relationship management, supply chain planning, and other important areas. No matter the size of the organization, Oracle E-Business Suite applications help organizations effectively manage the complexities of global business environments.

Simplifying Infrastructure for Oracle E-Business Suite Deployments

Prior to the availability of Oracle SuperCluster with the no-cost virtualization feature, the best practice was to deploy business suite application infrastructure on separate physical systems, with dedicated database and application servers to serve production, development, and test environments. While having distinct and isolated resources for these functions remains critical, infrastructure based on separate physical servers can be expensive and complex, particularly as application modules and servers are added to meet changing needs. Performance and reliability challenges can easily result if deployed systems are not scaled appropriately to accommodate growth or additional application modules. Aging server and storage infrastructure can also contribute to a lack of performance and reduced agility for application deployment.

Consolidating for Simplicity, Performance, and Scalability

Oracle SuperCluster simplifies and accelerates Oracle E-Business Suite deployment by enabling the consolidation of both application servers and database elements onto a single highly available and scalable platform. A complete factory-assembled enterprise infrastructure, Oracle SuperCluster reduces complexity and cost, while dramatically lowering the time needed to get from concept to service deployment. Running Oracle’s proven and tested application-to-disk infrastructure on the pre-built and pre-tested Oracle SuperCluster eliminates the need for complex, multitier, multivendor hardware configurations. The entire environment is engineered and optimized to work together with predictable, high-performance applications taking advantage of a highly scalable, available, and serviceable platform. This approach eliminates time-consuming troubleshooting, with potential pitfalls, and helps organizations get Oracle E-Business Suite based services up and running faster.

Through this approach, organizations can simplify and reduce complexity, whether they are deploying new Oracle E-Business Suite infrastructure, or consolidating an older existing deployment. The considerable computing, storage, and I/O resources of Oracle SuperCluster provide a high level of performance without requiring large numbers of independent servers. With sophisticated hardware partitioning, resources can be defined with fine granularity as required by application needs. Organizations save time and money in terms of operational and management costs as well, since a single Oracle SuperCluster rack can be updated with a single patch bundle, rather than having to manually update multiple servers individually. Organizations are able to improve their server-to-administrator ratios, and only have to deal with one vendor and one support contract for Oracle E-Business Suite infrastructure.
Extracting Real Business Value from IT

The Oracle Optimized Solution for Oracle E-Business Suite can deliver even greater business value for financial, operational, supply-chain, human resources and customer information teams. Line of business teams will be able to leverage the performance advantage of Oracle SuperCluster to accelerate and improve business flows to deliver greater revenue and profit. From an IT perspective, Oracle E-Business Suite running on Oracle SuperCluster will be simpler to manage, cost less to operate and maintain, and also provide scalability to support required business growth.

- **Simplicity.** Oracle factory engineered pre-integration provides organizations with pre-certified, pre-tested components across the entire stack that are packaged, deployed, and upgraded together. All solution components are managed from a single pane of glass to provide centralized cloning, provisioning, and backup.

- **Extreme Performance.** Oracle software infrastructure is optimized for the Oracle SuperCluster hardware platform with vertically integrated components and in-memory application modules. This pre-tested, pre-certified optimization provides the potential to produce additional business efficiencies through better performance and higher availability.

- **Low Risk.** Oracle E-Business Suite on Oracle SuperCluster provides faster more predictable deployment with high-availability for mission critical applications. Oracle Consulting provides services for the deployment of a pre-built optimized platform to rapidly migrate, upgrade, and implement Oracle E-Business Suite—with very low overall risk.

- **Better Productivity.** Oracle SuperCluster infrastructure enables sub-second interactive queries and responses for database inquiries with extra capacity for additional concurrent users. Faster interactive response provides the potential to increase productivity and reduce manpower.

- **Improved Reporting/Actionable Intelligence.** Better overall performance eliminates reporting and batch processing backlogs to enable near real-time decision making. Faster time-to-insight drives business agility and helps increase revenue and decrease costs.

- **Faster time to Close Reporting Period.** Companies are enabled to perform a complete virtual close and more quickly close out financial reporting periods to meet reporting and compliance requirements. This faster pervasive access to data helps to reduce financial OpEx (Labor) required to close the books.

- **Business Continuity.** Oracle E-Business Suite business-critical applications run with full data protection and rapid recovery time, backed by one-stop hardware and software support through Oracle Platinum Services, with 5 minute fault notification. The highest application availability reduces the risk of business outage and negative impact on revenue streams.

- **Lower TCO.** The Oracle Optimized Solution for Oracle E-Business Suite increases IT efficiency with better visibility and control of the application and its infrastructure. This can deliver significant TCO savings over five years versus both current and older hardware infrastructure.

- **Faster Time to Value.** Upgrading mature infrastructure results in better performance and utilization of business resources. Oracle SuperCluster provides factory engineered infrastructure that reduces IT
complexity to improve the accuracy of information, speed up core business processes, increase uptime, and improve data security, all with the potential to achieve significant ROI.

Driving Simplicity and Scalability

Designed for dramatically faster deployment and lower TCO, the Oracle Optimized Solution for Oracle E-Business Suite provides vast simplification. In doing so, the solution mitigates many of the traditional risks associated with deploying infrastructure for Oracle E-Business Suite. Using Oracle’s proven and tested application-to-disk infrastructure, eliminates the need for complex, multitier, multivendor hardware configurations. Because the entire environment is engineered and optimized to work together, IT organizations can get Oracle E-Business Suite applications up and running faster.

Oracle E-Business Suite on Oracle SuperCluster

Oracle E-Business Suite is keenly focused on bringing customer value with its application strategy by protecting the value of existing investments, extending the value of deployed applications, and evolving the organization to next-generation technology. Offering the most complete and integrated business intelligence portfolio, Oracle E-Business Suite lets organizations achieve an end-to-end view across all of their lines of business, while driving performance with consistent financial and operational information. Every employee gets relevant and complete information that is tailored specifically to their role. As a highly adaptable global business platform, Oracle E-Business Suite lets companies operate globally while complying locally. Extended global business processes are provided with the Oracle Application Integration Architecture. Global operations support is provided on a 24x7 basis.

Oracle SuperCluster represents a complete, pre-engineered, and pre-tested high-performance enterprise infrastructure solution that is faster and easier to deploy than a collection of individual database and application servers. The system combines innovative Oracle technology—the computing power of Oracle’s servers, the performance and scalability of Oracle Solaris, the optimized database performance of Oracle Database 11g accelerated by Oracle Exadata Storage Servers, and a high-bandwidth, low-latency InfiniBand network fabric—into a scalable, engineered system that is optimized and tuned for consolidating mission-critical enterprise applications.

A Complete and Comprehensive Solution

Oracle E-Business Suite running on Oracle SuperCluster provides a complete solution that is engineered to work together and is pre-integrated and pre-tested at every layer. The solution reduces implementation risk and provides extreme performance resulting in faster time to value while driving higher productivity and business efficiency. “Oracle on Oracle” factory integration is easier to scale and manage with one-stop support, which reduces operating expenses and total cost of ownership. Oracle SuperCluster provides consolidation of Oracle E-Business Suite infrastructure in the context of a modern, scalable, and extensible architecture with considerable room to grow. Both database and application components sustain high performance from Oracle’s SPARC servers, high-speed InfiniBand interconnects, and integrated Oracle Exadata Storage Servers. Replication and state-of-the-art virtualization technologies provide essential high availability and reliability. Consolidation of Oracle E-Business Suite on Oracle SuperCluster provides extreme value. (Figure 1)
Out of the box, Oracle Optimized Solution for Oracle E-Business Suite on Oracle SuperCluster delivers a resilient infrastructure for mission-critical applications. Each layer of the technology stack is integrated and optimized to work in conjunction with other components to deliver increased application availability. These software layers in turn run on the rock solid foundation of Oracle SuperCluster to deliver performance, reliability, availability, and serviceability features that promote service continuity.

- **Highly reliable infrastructure for increased availability.** The Oracle SuperCluster system provides full built-in redundancy—from compute nodes to storage, network switches to network interface cards, and power distribution units to power supplies—to support the demands of mission-critical applications. All components (SPARC servers, Oracle ZFS Storage Appliances, and Oracle Exadata Storage Servers) are interconnected over a fully redundant InfiniBand fabric. Every server in the cluster features automatic recovery with instruction retries, ECC protected memory, data path integrity, register protection, and memory mirroring, to ensure systems continue to operate.

- **Highest application availability for resiliency.** Reliability features come standard in the Oracle SuperCluster and by using Oracle Solaris Cluster software, the solution ensures the availability of Oracle E-Business Suite applications by detecting, isolating, and containing failing hardware components. Agents are included software programs that enable Oracle E-Business Suite applications to take full advantage of Oracle Solaris Cluster features by specifying the actions to be taken, should a system or service fail or become unavailable.

- **True isolation for confident consolidation.** System partitioning and electrical isolation ensure issues in one component cannot affect other components in the Oracle SuperCluster. In addition, virtualization technologies built into the operating environment enable application consolidation without fear that services will consume system resources or otherwise impact one another. Together, these built-in technologies minimize disruption and deliver the superior availability required by 24x7x365 Oracle E-Business Suite applications.
- **Database availability for mission criticality.** Oracle Real Application Clusters (Oracle RAC) is the preferred implementation option to ensure database availability for mission-critical workloads. Oracle RAC supports the transparent deployment of the database across all four servers within the Oracle SuperCluster system, providing database fault tolerance in the event of hardware failures or planned outages.

- **Virtual clustering for better scalability and utilization.** Oracle Solaris Cluster supports virtual clustering, allowing virtual environments to function in the same role as physical servers. Applications that run within dedicated virtual clusters are associated with specific cluster management policies. Agent actions can be layered, such as first trying to restart the service in a different virtual environment before attempting to restart it on a different server. This ability helps Oracle E-Business Suite applications achieve the required levels of service.

- **Highly available NFS storage for data availability.** With highly available NFS storage, application servers’ access shared file systems for binaries, configuration files, and log files. Accessed over the high-speed InfiniBand network within the Oracle SuperCluster, Sun ZFS Storage appliances provide a highly available shared file system. Configured for redundancy, these appliances use the built-in self-healing and data integrity features of Oracle Solaris ZFS, with clustered controllers to ensure data availability.

- **Easy serviceability to save costs.** When problems arise they must be able to be resolved quickly. Oracle SuperCluster is designed with serviceability in mind. In-chassis system upgrades, live system board insertion and removal, and well-designed rack architecture ensure IT staff can identify issues and complete upgrades and replacements without impacting running services.

**Solution Overview**

Oracle Optimized Solution for Oracle E-Business Suite uses a two-node Oracle SuperCluster as a basic building block (Figure 2). Each of the two SPARC servers are divided into general-purpose Oracle Solaris domains for applications and database domains for Oracle Database 11g Release 2. Oracle Exadata Storage Servers and Oracle ZFS Storage Appliance are deployed within Oracle SuperCluster for rapid storage access, and are integrated over the internal InfiniBand network for high bandwidth and low latency.
Consolidating multiple Oracle E-Business Suite environments on a single Oracle SuperCluster provides distinct benefits.

- **Performance, scalability, and agility.** The considerable compute resources of the servers in the hardware infrastructure can be divided and allocated where they are needed most, eliminating the need for multiple smaller server upgrades. Hardware partitioning enables dedicated resources to be assigned, and flexibly adjusted as needed. Additional servers and additional racks can be configured for additional capacity.

- **High availability.** High availability is efficiently provided for both application and database tiers. Having redundancy and high availability built into the platform avoids complex scenarios involving multiple physical boxes, redundant networking, and redundant storage. Integral high-speed, low-latency networking and highly available storage avoid the vagaries of having these critical assets scattered around the network, with their possible negative impact on availability.

- **Proven results.** Organizations need proven solutions for critical mission-critical applications. The solution has been tested and tuned with real workloads, helping to eliminate the risk and expense of cobbled together ad-hoc collections of servers, storage, and networking.

- **Simplified management.** Multi-tiered, multivendor solutions can be notoriously complex and expensive to manage, with a collection of disparate tools that individually manage only part of the solution. In contrast, Oracle Enterprise Manager offers a complete and built-in management framework that controls resources for the entire solution. System upgrades and updates can be done once, saving considerable time and effort over maintaining multiple separate systems.

For more information on architectural details, please see the “Consolidating Oracle E-Business Suite on Oracle SuperCluster” technical white paper (oracle.com/technetwork/server-storage/hardware-solutions/o12-042-ebiz-supercluster-1659144.pdf).
Lowering Total Cost of Ownership

To be considered viable, any new infrastructure solution for Oracle E-Business Suite must demonstrate a compelling business case that it can save the organization in terms of TCO.

Accelerating Time to Deploy

Organizations deploying business-critical or mission-critical applications need fast deployment, whether they are merely adding a new Oracle E-Business suite application module or putting an entire new application infrastructure in place. Responding to rapidly changing business conditions with appropriate infrastructure can make the vital difference when exploiting new opportunities or responding to rapidly changing conditions. Those consolidating from more complex and costly existing infrastructure may be financially incentivized to get a new deployment in place as rapidly as possible.

Solutions that are faster to deploy begin returning on investments more quickly. The Oracle Optimized Solution for Oracle E-Business Suite deployed on Oracle SuperCluster is specifically designed to be fast-to-deploy to afford organizations the most rapid return on investment (ROI) in operating costs vs. aging infrastructure. Because the solution is validated, tested, and pre-integrated for Oracle E-Business Suite deployments, it can help organizations get up and running significantly faster than traditional manual methods on traditional infrastructure. Figure 3 provides the results of Oracle testing, comparing the time-to-deploy milestones for Oracle Optimized Solution for Oracle E-Business Suite against manual deployments by those new to Oracle E-Business Suite and even by Oracle E-Business Suite experts. From initial hardware install through software installation, tuning, high availability tuning, and final implementation, the Oracle Optimized Solution can provide as much as a five-fold advantage in time-to-deploy, potentially getting solutions into place months faster than manual alternatives.

Figure 3. Oracle Optimized Solution for Oracle E-Business Suite on Oracle SuperCluster can provide up five times faster deployment advantage.
Consolidation for Cost Savings

In the case of the Oracle SuperCluster, significant cost savings are available in terms of:

- Lower deployment costs
- Lower recurring costs, such as the cost of annual service contracts
- Lower physical infrastructure costs for power, cooling, and floor space

Oracle has conducted a TCO analysis comparing the Oracle SuperCluster configured for Oracle E-Business Suite against a number of alternatives. Depending on the particular comparison, the analysis\(^1\) clearly demonstrates that Oracle SuperCluster can provide significant TCO reductions over five years vs. retaining legacy SPARC and competitive systems. It is essential to note that this TCO calculation includes the cost of a new two-node, half-rack Oracle SuperCluster system.

- Replacing an IBM p595 based system yields a 2.4-fold lower TCO and reduces floor space costs three-fold.
- Replacing an HP Superdome system provides a 2.7-fold lower TCO, and reduces floor space costs three-fold.
- Replacing a Sun SPARC Enterprise 25K based system equipped with EMC storage provides 4.6-fold reduction in TCO and reduces floor space costs three-fold.
- Compared to an IBM Power 7 system, Oracle SuperCluster provides a 4-fold reduction in TCO.

Security at Lower Cost

As security has taken unprecedented importance in all facets of the IT industry, organizations are proactively adopting cryptographic mechanisms to protect their businesses and information from unauthorized access and ensuring data confidentiality and integrity during transit and in storage. Unfortunately, cryptographic operations are heavily compute-intensive, potentially burdening the host system with additional CPU cycles and network bandwidth, and resulting in significant degradation of overall throughput of the system and its hosted applications.

To speed up cryptographic performance, security experts often recommend the use of cryptographic accelerator appliances to offload cryptographic operations to save CPU cycles, resulting in enhanced system throughput and hosted applications performance. While useful, adopting a specialized appliance for offloading cryptographic operations introduces a new set of costs, complexities, and issues. Additional procurement, additional installation, configuration, testing procedures, management, and support significantly increases the power demands and costs of deployment projects.

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\(^1\) Assumptions for the Oracle TCO analysis include the following: Oracle software licenses are under a contract which allows the licenses to be transferred on a core-for-core basis. Requirement to purchase Oracle’s Exadata Storage Server Software license with Oracle SuperCluster acquisition. No discount has been applied to the software service, while hardware and hardware service have no discount assumptions applied. 50% of the resources are allocated to the database (Oracle Database Enterprise Edition) and 50% of the resources are allocated to the applications (Oracle WebLogic Suite)
The use of hardware-assisted cryptographic acceleration for end-to-end security deployments yields tangible, immediate, and cost-efficient results in the form of faster secure transactions and better response times—all without adding any additional security equipment costs, changes in power usage profiles, or elaborate system configurations. The derived performance characteristics will also offload the massive burden un-accelerated cryptographic workloads can have on a server. Oracle’s SPARC T5 processor-based servers used in Oracle SuperCluster have proven high-performance enterprise security with consistent scalability for Oracle E-Business Suite applications and Oracle Database, while also delivering reductions in space, power consumption, and cost.

No-Cost Virtualization

Combining powerful virtualization and unique optimizations, Oracle SuperCluster is ideal for consolidation of Oracle E-Business Suite deployments. With built-in, zero overhead virtualization using Oracle Solaris technology, Oracle E-Business Suite application consolidation is greatly simplified, reducing deployment risk and leveraging available resources for greater IT efficiency. Oracle’s built-in virtualization technologies isolate workloads and enable resource controls, supporting consolidation of Oracle E-Business Suite deployments within a single platform, reducing both complexity and server sprawl expense. Organizations that use Oracle E-Business Suite can consolidate applications securely by using these technologies, while at the same time protecting sensitive data, maintaining application availability, and shifting system resources to where they are needed most, for greater agility.

Oracle provides a built-in firmware-based hypervisor that supports multiple virtual machines, called domains, on a single system. The hypervisor allocates subsets of system resources to each domain, isolating each Oracle E-Business Suite workload to a virtual machine with dedicated resources. Within a single Oracle Solaris instance, boundary separation is provided by a flexible a lightweight virtualization technology that enables the creation of zones, into multiple private execution environments. Oracle E-Business Suite applications running within zones are completely isolated, preventing processes in one zone from affecting processes running in another for protection. Because zones also make it easy to prioritize applications and adjust resource allocations, they are ideal for consolidated Oracle E-Business Suite workloads and permit scaling up or scaling down applications to maximize resource utilization. Zones also support fault isolation, feature extremely fast boot times, and can be configured to instantly restart Oracle E-Business Suite applications if necessary, to mitigate downtime risk.

Reducing Operational Risk

Enterprises face risk from a variety of sources. The Oracle Optimized Solution for Oracle E-Business Suite and related Oracle Optimized Solutions and technologies are designed to help reduce both deployment and operational risk.

Reduced Deployment Risk

Given the mission-critical nature of Oracle E-Business Suite applications, organizations often face very real financial risk if they experience downtime or if the deployment takes longer than expected to move into production. Unfortunately, purchasing, configuring, provisioning, and deploying all of the hardware, software, and networking components needed for Oracle E-Business Suite can be a time-consuming and
complex task. Lengthy and intricate integration and testing processes, combined with the opportunity for human error, can introduce risk into the infrastructure as solutions are built, tested, and deployed.

With the Oracle Optimized Solution for Oracle E-Business Suite deployed on Oracle SuperCluster, the entire environment is engineered and optimized to work together, reducing the time it takes to build and launch new applications and services. Oracle Optimized Solutions are designed to reduce risk throughout the full infrastructure lifecycle, including:

- A fully pre-tested and pre-configured system, including configuration for high availability and disaster recovery planning
- Systems, storage, and networking that is pre-sized to avoid the risk of performance or scalability issues
- A single vendor for entire solution, providing one-stop support

As a result of this pre-configuration and pre-testing, IT staff can eliminate the potential pitfalls and time-consuming troubleshooting associated with complex legacy Oracle E-Business Suite deployment scenarios.

- **Eliminate implementation errors.** Designing, building, and deploying Oracle E-Business Suite can require a significant configuration effort—one that is typically manual and prone to error. Oracle SuperCluster arrives pre-cabled, pre-racked, and ready to start configuring. This integrated approach ensures there are no missing components or erroneous parts. By eliminating the human error that could result in significant troubleshooting and time delays, the solution helps ensure that Oracle E-Business Suite services are up and running quickly, and run right the first time.

- **Simplify application integration.** In the optimized solution, Oracle E-Business-Suite application servers and Oracle Database software are consolidated on the system, eliminating much of the integration effort and deployment time typically associated with clustered solutions.

- **Minimize deployment risk.** Risk is inherent in any service deployment. Having the right platform underneath it all can mean the difference between failure and success. Using a complete package that is designed and tested to work together is the best way to minimize risk and ensure business continuity and Oracle E-Business Suite availability. Documented best practices ensure that components are identified and verified to work together, minimizing the likelihood of errors that can cause unplanned downtime.

- **Simplify management.** Built-in management tools provide out-of-the-box deployment processes that streamline software initial updates and patch rollouts. Patches are installed onto a single system rather than to potentially dozens of individual systems.

### Protecting Data with Backup and Recovery

Oracle SuperCluster delivers extreme compute power, unmatched scalability, accelerated processing, and database optimization with integrated components taken from the tiers in Oracle's technology stack. The next-generation features of Oracle SuperCluster demand comparable functionality in a backup and recovery solution. Oracle Optimized Solution for Oracle SuperCluster Backup and Recovery matches the innovation built into Oracle SuperCluster, and is the most integrated solution, providing higher capacity and performance with greater operational efficiency at less cost. The comprehensive data protection
features of the solution provide complete backup and recovery capabilities for all components including applications data, database, operating system, domains, zones, and the network switching infrastructure. The result is an end-to-end solution that assures the fastest, most reliable backup and recovery for Oracle SuperCluster.

Oracle provides a unique flexible offering that is a clear industry leader in terms of price/performance. With complete end-to-end data protection for Oracle SuperCluster and Oracle E-Business Suite the solution enables IT staff the flexibility to choose the most suitable and cost effective media for the each backup requirement. The solution provides disk only solutions for short-term backup, and tape solutions for long-term backup and meeting regulatory storage compliance. For sites that want to implement tape backup solutions, Oracle Optimized Solution for Backup and Recovery can be four times less expensive than comparable competitive products.

Business Continuity with Disaster Recovery

While the Oracle SuperCluster platform is designed for high availability, mission-critical enterprise deployments need protection from unforeseen disasters and natural calamities. Oracle Optimized Solution for Disaster Recovery employs a complete end-to-end framework of Oracle technologies to provide disaster recovery support for both applications and databases deployed on Oracle engineered systems. Common to virtually all disaster recovery solutions is the establishment of a standby site at a location that is geographically distant from the production site. Natural catastrophes like fire and flood, and other disasters such as sabotage or human error, can render an entire data center site unusable. In these situations, operations can be configured to continue at a geographically distant site that is unaffected by the event. Remote standby sites can also lower TCO when leveraged to perform important necessary mission functions, like development, test, and low-risk patching.

Disaster Recovery (DR) planning and solutions for business applications require careful consideration. Special attention should be given to the Recovery Point Objective (RPO) which is the maximum amount of data that might be unrecovered if a major incident should occur and Recovery Time Objective (RTO) which determines how quickly applications and databases must be made available after a failure. The RPO Data synchronization points must also be specified, to enable data backups to correctly correlate to each other and achieve a fully consistent recovery point. Oracle provides flexible disaster recovery alternatives that consider RPO and RTO, as well as varying software releases, the type of data (both structured and unstructured), and other special needs.

Oracle’s In-Memory Applications

To deal with the challenges of today’s global economy, companies need to transform their supply chains into information and demand-driven value chains. Outdated planning processes and disconnected planning systems are too slow to respond to increased demand volatility; they lack visibility, hide supply chain risk, and cannot react quickly to unexpected supply chain events. Planning processes are all very data and performance intensive. Historically, in designing planning business processes, tradeoffs have been made in the frequency of the planning cycle based on the time required to complete the entire cycle. In order to accelerate this cycle and provide operational visibility against transactional data, Oracle In-Memory Applications are now available exclusively on Oracle engineered systems. Applications processes that could only be imagined as batch processes are now transformed to real time. Only Oracle can
innovate and optimize at every layer of the stack to simplify data center operations, drive down costs, and accelerate business innovation.

- **Oracle In-Memory Performance-Driven Planning.** The pressure increases to plan for more complex value chains, more frequently, to a greater level of detail, and to make more informed decisions. The newest addition to Oracle Value Chain Planning, Oracle In-Memory Performance-Driven Planning, provides the extreme performance needed for planning the demand-driven value chain and enables the next generation of near real time interactive planning, simulation, and analysis. The in-memory optimization capability not only reduces run times of some key batch processes by five times or more, but also totally eliminates many batch processes altogether. Instead of requiring the complete plan to be written out, this new capability can quickly provide just the key incremental changes to let planners complete a “simulate-then-analyze” cycle in seconds instead of hours. This capability is achieved by elevating most of the processing from disk to memory by leveraging the architecture of Oracle engineered systems.

- **Oracle In-Memory Consumption-Driven Planning.** With the increasing availability of Point of Sale and other downstream data over the last decade, companies selling through retail channels have strived to use such data to drive their upstream supply chains. The availability of granular data, down to the item, store, and day level, offers the promise of transforming business processes in areas such as demand, replenishment, promotion, and new product planning. However, limitations in computing power have precluded taking full advantage of the huge amounts of data involved. A new approach is needed to enable planning at a more granular level. Oracle In-Memory Consumption-Driven Planning leverages the latest innovations in hardware and software technology from Oracle to provide a solution with unparalleled performance and scalability. Oracle In-Memory Consumption-Driven Planning uses Oracle’s industry-leading Demantra Demand Management product as a starting point, enhanced to run on a combination of Oracle SuperCluster or Oracle Exadata or optionally on Oracle Exalogic. Leveraging the increased performance made possible by Oracle engineered systems, Oracle In-Memory Consumption-Driven Planning enables comprehensive, time-phased planning capability at the store and day level.

**Oracle Consulting Solutions**

Oracle Consulting provides faster adoption and return on investment across Oracle solutions—from applications and technology solutions to systems. With deep expertise in Oracle products, Oracle Consulting helps organizations succeed with architecture, planning, implementation, upgrade, migration, and expert services across the Oracle stack. Oracle SuperCluster, Oracle Exadata, Oracle Exalogic, Oracle Exalytics, are Oracle engineered systems that provide the high performance and productivity for IT processes, transactions, applications, and workloads critical to the success of business organizations. To help reduce the deployment risk further and take maximum advantage of this technology, Oracle Consulting delivers a suite of services that can help organizations implement and migrate new technology solutions while staying focused on critical business needs. These services help organizations to plan, architect, and implement a solution based on unique business environments to achieve a successful implementation.
Oracle Consulting will provide a pre-built architecture optimized platform to rapidly migrate, upgrade, and implement Oracle E-Business Suite and other Oracle Applications by significantly simplifying the effort to move, upgrade, and implement Oracle Applications on Oracle engineered systems. This process leverages organizations existing investments, skills, and operations, while offering the most cost effective solution—with very low overall risk. The goals of Oracle Consulting are:

- **Rapid Adoption.** Provide a complete, pre-configured, integrated, system deployment with standards-based architecture that is rapidly deployable, scalable, highly available, manageable, and secure without compromising performance.

- **Maximize Value.** Provide upgrade and migration services to drive application and technology re-platform for future state architectures. IT Strategy and Architecture services help maximize the value of IT portfolios and quickly harness new solutions such as Oracle Servers & Storage, Engineered Systems, Big Data and Cloud.

Services from Oracle Consulting help foster rapid adoption and drive higher business efficiencies with improved time-to-value. Who better to advise, architect, assist, and assess with Oracle engineered systems than the experts who built them?

Summary

Oracle E-Business Suite applications represent mission-critical functionality for a wide range of organizations, enabling them to make better and more informed decisions. Oracle E-Business Suite infrastructure is no less important. The factory integrated Oracle Optimized Solution for Oracle E-Business Suite deployed on Oracle SuperCluster represents a tangible step forward in terms of resilient and reliable infrastructure that is simpler, quicker, and less expensive to deploy while saving money and reducing risk for the organization. Organizations can deploy the Oracle Optimized Solution for Oracle E-Business Suite on Oracle SuperCluster up to five times faster than manual approaches, and in up to 92% less physical space than legacy solutions. With years of helping companies deploy Oracle E-Business Suite solutions combined with innovative system engineering expertise, Oracle Consulting can further help take the cost and risk out of Oracle E-Business Suite deployments, lowering TCO, and dramatically accelerating return on investment.
For More Information

For more information on Oracle’s technology stack for Oracle E-Business Suite environments, see the references in Table 1.

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