

Oracle Grid: The Optimal Platform for Siebel Solutions

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Oracle's enterprise grid computing architecture provides the optimal platform for Siebel deployments, allowing customers to significantly increase the availability, scalability, agility and cost efficiency of their CRM environments

Oracle Real Application Clusters (RAC), Oracle Clusterware, Oracle Automatic Storage Management (ASM), and Oracle Enterprise Manager Grid Control provide the foundations for enterprise grid computing

EXECUTIVE OVERVIEW

Enterprises using Oracle's Siebel Customer Relationship Management Solutions are increasingly demanding a higher quality of service and lower total cost of ownership from their CRM systems. They are requiring higher availability to support 24x7 mission critical customer service and sales operations, greater scalability to accommodate growth to tens of thousands of concurrent users, increased flexibility to proactively adapt to changing business priorities, and lower acquisition and ownership costs for software, systems and storage.

Oracle's enterprise grid computing architecture, which includes Oracle Real Application Clusters (RAC), Oracle Clusterware, Oracle Automatic Storage Management (ASM), and Oracle Enterprise Manager Grid Control, provides the optimal platform for Siebel deployments, allowing customers to significantly increase the availability, scalability, agility and cost efficiency of their CRM environments.

INTRODUCTION

This paper will provide an overview of Oracle's Grid technologies and discuss in detail the business benefits of deploying Siebel CRM Solutions on top of Oracle's enterprise grid computing platform. Key benefits include:

- Highest availability for the Siebel database and middle tier
- Seamless scalability to handle Siebel user, transaction and data growth
- Increased manageability for dynamic Siebel workloads
- Lowest total cost of ownership for Siebel CRM systems

Oracle's grid computing architecture delivers the highest quality of service for enterprise applications, such as Siebel CRM, at the lowest possible price

WHAT IS GRID COMPUTING?

Enterprise Grid Computing is a technology architecture that enables physical servers and storage to be pooled together into a “virtual” computing environment where application workloads can be distributed and load balanced and failures can be transparently masked by redundant resources. Servers and storage can be seamlessly added to the grid in response to increased demand, and resources can be dynamically reallocated to proactively adapt to changing workloads. Shared, low-cost, commodity hardware may be used in place of dedicated, monolithic SMP servers and proprietary storage. Oracle's grid computing architecture delivers the highest quality of service for enterprise applications, such as Siebel CRM, at the lowest possible price.

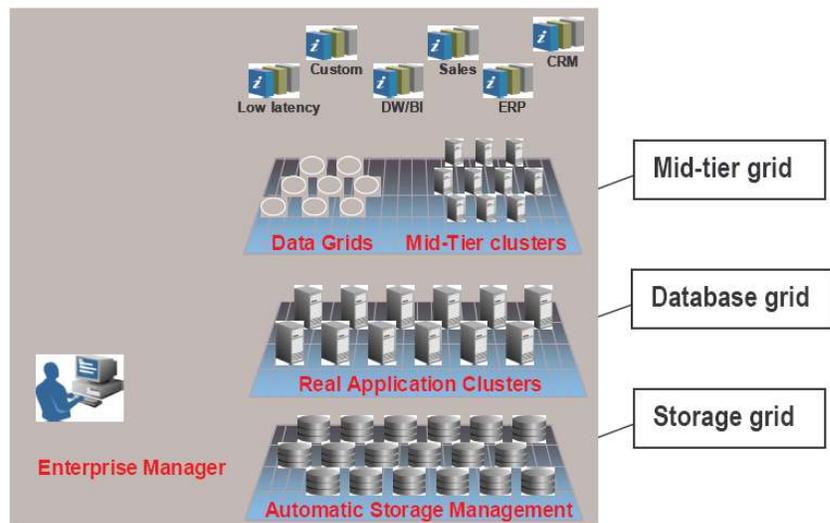


Figure 1: Enterprise Grid

The fundamental components of Oracle's Grid architecture include:

Oracle Real Application Clusters (RAC): Oracle's clustered Database technology that provides a “shared everything”, fault-tolerant, highly scalable database tier for enterprise applications

Oracle Clusterware: Oracle's portable cluster software that manages cluster membership and protects database instances and middle tier servers in the event of system failure

Oracle Automatic Storage Management (ASM): Oracle's easy-to-manage, shared storage technology that provides a fault-tolerant, highly scalable storage tier

Oracle Enterprise Manager Grid Control: Oracle's enterprise management software to administer the entire Grid environment as a “single system image”

Siebel CRM Solutions can derive significant quality of service and cost of ownership benefits by running on top of Oracle's enterprise grid computing platform. Key benefits include:

Highest Availability: Prevent Siebel database and mid-tier failures from causing Siebel application outages and enable the Siebel application to mask component failures in the infrastructure

Seamless Scalability: Incrementally scale the Siebel database to accommodate business growth without incurring costly downtime

Increased Manageability: Enable flexible Siebel application workload management as business requirements change over time

Lowest Total Cost of Ownership: Provide the flexibility to use shared, commodity-priced computing resources or SMP hardware, whichever is the most appropriate for your computing environment

HIGHEST AVAILABILITY

Enterprises rely upon Oracle Siebel CRM Solutions to be available 24x7 to support critical employee-facing and customer-facing business operations. Customer service and sales employees depend upon Siebel CRM applications, such as CallCenter Object Manager and Sales Object Manager, to manage, coordinate and synchronize all customer touch-points, including web, call center, field, retail and distribution channels. Outages of Siebel CRM systems prevent customer service representatives from accessing customer records and providing timely customer support, leading to lost employee productivity, poor quality of service, and ultimately customer dissatisfaction. The failure of telesales representatives to access the CRM system results in missed sales opportunities, resulting in lost revenue for the company. In addition, customers depend upon Siebel CRM applications, such as eTraining, eService, and eBrokerage to provide important self-service functions. Outages of Siebel customer-facing systems cause end-user frustration and dissatisfaction which adversely impacts customer loyalty. Siebel outages can also interrupt EIM batch jobs, such as importing/exporting customer records into and out of the CRM system. During critical period-end business processing, any protracted downtime that adversely affects batch work is unacceptable. To avoid Siebel application outages, Oracle's enterprise grid technologies can be deployed using Siebel Maximum Availability Architecture (MAA) guidelines at the database tier, middle tier, and storage layer, ensuring the highest availability and maximum fault resilience for your CRM environment.

Siebel Maximum Availability Architecture

The Siebel Maximum Availability Architecture (MAA) is Oracle's best practices blueprint for achieving the highest availability for Siebel applications at the lowest cost and complexity. Siebel MAA minimizes or eliminates Siebel application disruptions due to unplanned and planned downtime in the database, middle tier, and storage layer. Application high availability is maintained regardless of the scope of the outage – from hardware failures causing data corruption to natural disasters that impact large geographic areas.

The Siebel Maximum Availability Architecture (MAA) is Oracle's best practices blueprint for achieving the highest availability for Siebel applications at the lowest cost and complexity

The key tenets of the Siebel Maximum Availability Architecture include the following high-level guidelines:

1. Deploy the Siebel database in an Oracle Database MAA configuration
2. Deploy the Siebel middle tier in a Siebel High Availability configuration
3. Establish a secondary standby Siebel site for disaster recovery, testing and other planned maintenance activities.

The Oracle grid architecture provides enabling technologies for critical pieces of the Siebel MAA framework. Oracle RAC and ASM allow the Siebel database to be deployed in an Oracle MAA configuration, and Oracle Clusterware ensures High Availability at the Siebel middle tier¹.

Database Maximum Availability

Siebel application servers are heavily reliant upon the Siebel database, thus any failure in the database tier can be catastrophic for the entire application framework. To avoid having the database be a single point of failure for the whole Siebel suite, you can deploy the Siebel database on an Oracle Database MAA foundation that includes Oracle Real Application Clusters (RAC), Oracle Clusterware and Automatic Storage Management (ASM).

Oracle RAC enables a group of independent database servers to cooperate as a single system and access a clustered database. Redundant hardware components such as servers, interconnects, and disks allow the cluster to provide the highest availability for the Siebel CRM application. ASM is a vertically integrated file system and volume manager built into the Oracle kernel and designed specifically for Oracle database files. ASM provides high availability and fault tolerance at the database storage layer, ensuring that planned storage maintenance and unplanned disk failures do not cause Siebel CRM application outages.

By deploying the Siebel database using Oracle RAC and ASM technologies, Siebel customers will benefit from increased *reliability, recoverability, continuous operations* and *transparent migration* in their CRM environment.

Reliability

Deploying the Siebel database using Oracle RAC ensures the most reliable access to mission critical application data. If one of the nodes in a clustered Siebel database fails, the Siebel CRM application keeps on running. All other surviving Siebel database instances provide the resources to continue processing, keeping the Siebel application alive. Access to mission critical customer service and sales data is preserved. Conversely, if the Siebel database is running on a single SMP server, a

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¹ For a detailed discussion of other components of the Siebel Maximum Availability Architecture, please refer to the Oracle whitepaper entitled “Siebel Maximum Availability Architecture”.

failure of any system component (OS, CPU, etc) will bring the entire system down along with all connected Siebel application users.

With other database products, to protect against node failure, a second SMP machine must be configured as a “cold” standby (in an active/passive configuration). However, this approach is non-optimal from an economic and environmental perspective, since the cold standby system is idle or underutilized the majority of the time. With Oracle RAC’s active/active architecture, Siebel database resources are doing useful work all the time.

Recoverability

If an instance fails in a Siebel RAC database, it is immediately recognized by another instance in the cluster and database recovery automatically occurs. Recovery times of 20 to 30 seconds or less are achievable, minimizing the impact to Siebel application users. With a cold standby database, recovery may take 20 to 30 minutes, or longer. During this time, Siebel Call Center users are unable to process customer service and sales transactions, resulting in lost business and a diminished customer experience.

In addition, Siebel is uniquely integrated with Oracle RAC through an Oracle Net Services feature called Transparent Application Failover (TAF). TAF enables work to move from a failed Siebel database instance to a surviving database instance in such a way that Siebel end users may not be aware if a failure occurs. Siebel automatically resubmits transactions that were in-flight during the failure. End users will only have to resubmit updates in the event that automatic transaction failover is unsuccessful. By pre-creating connections to a backup database instance, failover times can be further reduced to eliminate delays, making failures even more transparent to Siebel end users.

Continuous operations

Oracle RAC provides continuous service during both planned and unplanned outages of the Siebel database, minimizing the downtime for the Siebel CRM application. In an unplanned outage, if a node or instance fails, the surviving instances in the cluster will continue processing, keeping the database open and the Siebel application available for end-users. During planned outages, most database maintenance tasks can be completed without down time and are transparent to Siebel end users. There is no database downtime for the following maintenance activities: operating system and hardware upgrades on the database servers, most Oracle RAC database interim patches, ASM upgrades, and Oracle Clusterware upgrades and patches. Many other maintenance operations can be done in a rolling fashion to minimize downtime. For example, Oracle RAC supports database software upgrades from 10g Release 1 to 11g in a rolling fashion with near-zero downtime using Oracle Data Guard Logical Standby.

If an instance fails in a Siebel RAC database, it is immediately recognized by another instance in the cluster and database recovery automatically occurs

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Oracle Automatic Storage Management (ASM) enables administrators to make planned changes to the storage configuration without causing database and application outages

Oracle Automatic Storage Management (ASM) enables administrators to make planned changes to the storage configuration without causing database and application outages. With ASM, a DBA can dynamically grow the database size by adding additional disks without having to shutdown the database to adjust the storage allocation. As well, ASM can facilitate database storage migration with no downtime. Administrators can seamlessly move Siebel application data from one storage array to another without impacting Siebel end users. To protect against unplanned disk failures and ensure fault tolerance at the storage layer, ASM provides native support for disk mirroring, extending the concept of SAME (Stripe and Mirror Everything) to database files.

Transparent migration

When migrating the Siebel database to RAC, no database redesign or application code changes are required, and no explicit application segmentation or data partitioning is necessary

Siebel databases that have traditionally been run on a large, dedicated SMP server can be migrated to run on clusters of small, shared servers. Migration to Oracle RAC is transparent, unlike cluster database solutions from other vendors. No database redesign or application code changes are required, and no explicit application segmentation or data partitioning is necessary. Other database products that claim to run on clusters require that the database data be partitioned among the nodes of the cluster. However, for real business applications such as Siebel that have complex data structures, this is not a practical possibility.

Middle Tier Maximum Availability

Oracle Clusterware guarantees high availability for Siebel application servers and minimizes user interruptions in case of a failure in the middle tier

To guarantee high availability for the Siebel middle tier and minimize user interruptions in case of a failure, Oracle Clusterware can be used to protect Siebel application servers. Using Oracle Clusterware, multiple Siebel application servers can be clustered together so that if one server fails, resources such as network addresses and Siebel components can be failed over to another server. This is especially important for the Siebel Gateway Server, which is a single point of failure in the Siebel environment. The Siebel Gateway Server acts as the dynamic address registry for all Siebel application servers and components, and there can only be one instance of the Siebel Gateway per enterprise. Since an outage of the Siebel Gateway Server can interrupt critical administrative work for the Siebel administrator, it is important that the Gateway Server be highly available².

This is especially important for the Siebel Gateway Server, which is a single point of failure in the Siebel environment

High Availability Summary

Below is a summary of unplanned outages and planned maintenance activities that may occur in the Siebel environment and the Oracle Grid technology solutions to recover and minimize downtime, ensuring maximum availability for application users. These solutions represent a subset of the overall Siebel Maximum Availability Architecture focused specifically on Oracle's grid technologies, including Oracle RAC, ASM and Oracle Clusterware.

² For details on how to protect Siebel applications using Oracle Clusterware, please refer to the white paper "Siebel CRM Applications protected by Oracle Clusterware".

| Unplanned Outage Type | Oracle Solution | Benefits | Recovery Time |
|--|-----------------|--|---|
| Siebel Node or Component Failure (Gateway, Remote) | Clustering | Automatic failover to surviving node | Seconds to < 2 minutes |
| Database Node or Instance Failure | RAC | Automatic recovery of failed nodes and instances, transparent application and service failover | Users transparently fail over; Updates may need to be resubmitted |
| Disk Failure | ASM | Stripe and Mirror Everything | No downtime |

Table 1: Oracle Grid Solutions for Unplanned Siebel Outages

| Maintenance activity | Oracle Solution | Siebel Outage |
|--|-----------------------------------|--------------------|
| Middle Tier OS or HW upgrade | Clustering | No downtime |
| Database Tier OS or HW upgrade | Oracle RAC | No downtime |
| Oracle Database interim patching | Oracle RAC rolling apply | No downtime |
| Oracle Database 11g online patching | Online patching | No downtime |
| Oracle Clusterware upgrade and patches | Rolling apply/upgrade | No downtime |
| Database storage migration | Oracle ASM | No downtime |
| ASM upgrade | 10g: Data Guard | Seconds to Minutes |
| ASM upgrade | 11g: Rolling Upgrade | No downtime |
| Patch set and DB upgrades | Oracle Data Guard logical standby | Seconds to Minutes |

Table 2: Oracle Grid Solutions for Planned Siebel Outages

SEAMLESS SCALABILITY

Since the operation of Siebel CRM Solutions is highly dependent on the underlying IT infrastructure, the infrastructure must scale as a business grows - Oracle's enterprise grid computing architecture provides this capability

As an enterprise's business grows, it is imperative that its mission critical Siebel CRM system can scale effectively to handle increases in concurrent users, transaction throughout, batch processing, and application data. Startup companies launching new products and services need the flexibility to start small and rapidly scale their CRM environment, as demand may increase at an unpredictable rate. Larger, more established enterprises growing their customer base need to protect their current Siebel CRM investment and scale the system without requiring downtime for existing users. Since the operation of Siebel CRM solutions is highly dependent on the underlying IT infrastructure, the infrastructure must scale as a business grows to enable the Siebel application to handle larger numbers of users and increased transaction rates. Oracle's enterprise grid computing architecture, specifically Oracle RAC, Oracle Clusterware, and ASM, provides this capability.

“Scale Out” rather than “Forklift” Upgrade

As the number of concurrent Siebel users grows or greater transaction throughput is required, additional Siebel application servers can be added to the middle tier to support and maintain performance levels. This results in heavier load on the underlying Siebel database. Deploying the Siebel database using Oracle RAC, Oracle Clusterware, and ASM will ensure that the database can support the required growth so that it does not become a bottleneck limiting the scalability of the overall CRM system.

Oracle RAC, Clusterware and ASM allow you to easily “scale out” your Siebel database by adding additional nodes and disks

With Oracle RAC, Oracle Clusterware, and ASM, if you need additional processing power and storage space for your Siebel database, you can easily “scale out” the system by adding additional nodes and disks. It is simple and requires no downtime. Once the new database instance is started and the disk is added to the appropriate ASM disk group, Siebel can immediately take advantage of the new resources with no changes to the application. Oracle RAC allows you to create clusters out of low-cost, commodity servers or large, powerful SMP systems, giving you maximum flexibility to utilize whatever hardware is available and is most appropriate for your environment. As well, in Oracle RAC 11g Release 2 a new feature called Grid Plug and Play (GPNP) allows customers to easily insert a new system into a cluster and have the database instance auto configure itself, avoiding manual updates. This allows service levels to be easily and efficiently maintained while lowering cost through improved utilization.

Conversely, by running the Siebel database on a single, dedicated system, the only option is to scale up by doing a “forklift” upgrade. When maximum system capacity is reached (in terms of CPU, memory, and I/O ports), you must purchase a new, more powerful server and go through a disruptive and expensive process to load and configure the new system and migrate over the existing workload. Rather than replace existing systems, it is much simpler and more cost-effective to scale out your environment by adding additional nodes and disks.

Pay As You Grow

As your Siebel database requirements grow, Oracle RAC, Clusterware and ASM allow you to add “capacity on demand” without having to take users offline

By deploying the Siebel database using Oracle RAC, it is possible to buy only the server resources that are required today and incrementally grow them over time as demand increases. Likewise, using ASM, administrators can seamlessly add storage and IOPS capacity to the environment by additional disks as needed without having to manually tune I/O. ASM evenly spreads data across all available disks and automatically rebalances the data when additional capacity is added. This “pay as you grow” model for servers and storage gives businesses the flexibility to add “capacity on demand” without having to take users offline.

On the other hand, by running the Siebel database on a single, dedicated system, customers are often forced to “over provision” their server and storage infrastructure to ensure that they have sufficient capacity for peak loads and future business growth. This model is inferior from an economic perspective, as it requires more upfront costs, and it risks that customers either outgrow their

environment prematurely or end up needing a lot less computing resources, in which case their initial capital expenditure was larger than necessary.

In the event that an environment is over provisioned, Oracle Grid technologies provide the ability to reduce computing capacity as well. Nodes can be removed from an Oracle RAC cluster without disrupting application end users, and disks can be taken out of an ASM disk group without requiring administrators to manually tune I/O after data is rebalanced across the remaining storage. ASM provides one of the few ways by which storage can be easily “de-provisioned” from an environment.

Linear Scaling

Oracle RAC provides near-linear scalability as each additional server is added to the Siebel database cluster

Not only does Oracle RAC enable customers to incrementally add computing capacity to their Siebel database environment, but it also delivers near-linear scalability as each additional server is added to the cluster, rivaling and in some cases exceeding the scaling capabilities of comparable SMP systems.

The results of an investigation done jointly by Oracle, Egenera and Network Appliance, Inc. (NetApp), show that scaling from a single Siebel database node to a two-node configuration results in 80% application scaling with minimal change in average response time per transaction. The 4-node configuration delivers the same

| Number of RAC Nodes | Avg. DB Server CPU (%) | Total Number of Users |
|---------------------|------------------------|-----------------------|
| 1 | 65%-70% | 2500 |
| 2 | 65%-70% | 4000 |
| 4 | 65%-70% | 8000 |

80% scaling versus the single node configuration. Based on these results, Oracle RAC provides Siebel customers with a viable alternative to the traditional scale up database strategy. A customer can start with a modest configuration consisting of 1 or 2 nodes and expect good scaling as each node is added³.

Table 3: Total Number of simulated users supported

Adding nodes to the Oracle RAC configuration results in 80% scalability. In other words, 2 Oracle RAC nodes can support 4,000 users and 4 Oracle RAC nodes can support 8,000 users:

2-Node Theoretical Max. = 2 X 2,500 = 5,000 users; 4,000/5,000 = 80%

4-Node Theoretical Max. = 4 X 2,500 = 10,000 users; 8,000/10,000 = 80%

Moreover, based on real-world customer experiences, we expect Siebel on Oracle RAC to comfortably scale up to 8 and 16 node environments in a linear fashion with limited impact on performance.

³ For more detailed information on the Siebel scalability test results, please refer to the white paper “Scaling Siebel CRM Solutions with Oracle RAC 10g”.

INCREASED MANAGEABILITY

Flexible Workload Management

Oracle's enterprise grid computing platform provides flexible workload management facilities to rapidly adapt to changing Siebel application workloads to ensure that business SLAs are maintained and resources are efficiently utilized

Siebel CRM application workloads dynamically fluctuate depending upon the time of day, week, and season. For example, workloads for the Siebel Call Center component may peak during normal business hours, while batch processing for the Siebel EIM component may peak during off-hours. It has been common for many Siebel customers to dedicate fixed servers and storage to each Siebel component, sizing resource allocations for peak load. However, because Siebel components experience peak workloads at different times, this inflexibility means that some components may be struggling to meet their SLAs while other components may have idle or underutilized resources. Unlike the fixed computing architecture, Oracle's enterprise grid computing platform provides flexible workload management facilities to rapidly adapt to changing application workloads to ensure that business SLAs are maintained and resources are efficiently utilized.

Services are an entity defined for an Oracle RAC database that gives administrators flexibility in managing the entire database workload. Each service represents a specific Siebel component workload with common attributes, service level thresholds, and priorities. A service can span one or more instances of an Oracle database and an instance can be allocated to multiple services. Administrators control which instances are allocated to each service during both normal operations and in response to failures. These allocation rules can be modified dynamically to meet changing business needs. For example, if a business anticipates that a new marketing promotion will cause an increase in telesales call volume, the allocation rules can be modified to reassign more processing resources to the Siebel Call Center service. Moreover, rules can be defined so that when instances running critical services fail, the workload will be automatically shifted to instances running less critical workload.

Services are also integrated with the Database Resource Manager, which gives administrators the added ability to limit an application's usage of system resources such as CPU. For example, in a mixed workload environment, to prevent an EIM batch job running during off-peak hours from over-running and impairing the performance of on-line users during normal business hours, an administrator can use the Resource Manager to set resource limits on batch jobs.

Single System Image Management

Oracle Enterprise Manager 11g Grid Control provides a single, integrated interface for the top down administration and monitoring of the complete Siebel CRM system running in an Oracle Grid environment

Oracle Enterprise Manager 11g Grid Control provides a single, integrated interface for the top down administration and monitoring of the complete Siebel CRM system running in an Oracle Grid environment. It dramatically reduces the effort in managing the Siebel application and the grid infrastructure by enabling administrators to manage many resources as if they were a single resource. It also continually monitors resource allocations and utilization and provides alerts and takes corrective action whenever defined service levels are at risk and business performance is compromised from capacity overload or from failure.

Siebel 8.0 has Grid Control plug-ins that tightly integrates application administration and monitoring within the overall enterprise management framework. In addition, Oracle EM Grid Control 11g is cluster-aware and provides a centralized console to manage a clustered Siebel database. Oracle EM Grid Control 11g provides a Cluster Page for viewing the cluster hardware and operating system platform as a whole as well as monitoring system status across multiple nodes. It also enables direct drill down to individual instances when needed.

Simplified Storage Management

Automatic Storage Management eliminates the complexity associated with managing data and disks for the Siebel database. Rather than manage hundreds and possibly thousands of files, DBAs can administer large, logical pools of storage called ASM disk groups. The Oracle kernel will automatically manage the corresponding database files and the placement of those files on disk. Database files are spread evenly across all available storage to optimize performance and resource utilization. If the storage configuration changes, ASM will automatically rebalance files across the disks to maintain optimal performance with no impact to database availability. This eliminates the need for manual and time-consuming I/O tuning tasks, enabling administrators to manage larger databases with increased efficiency. In addition, ASM removes the need for third party file systems and volume managers to manage Oracle files, reducing the overall complexity of the environment.

As of Oracle RAC 11g Release 2, a new feature called the ASM Cluster File System (ACFS) provides a file system on top of ASM that allows *all* data (not just database files) to be stored within ASM. Administrators can now move Siebel File System data into ACFS, and in doing so benefit from all the features of ASM, including automatic rebalancing of files across disks when disks are added or removed to optimize I/O performance, easy provisioning and de-provisioning of disks, and seamless migration to new storage arrays. As well, by using ACFS for Siebel File System data, administrators will be able to take advantage of future file system enhancements to auditing, security, and backups.

LOWEST TOTAL COST OF OWNERSHIP

Low Cost Servers and Storage

Oracle's enterprise grid computing architecture gives you the flexibility to build your Siebel database from standardized, commodity-priced processing, storage and network components or SMP hardware, whichever is most appropriate for your computing environment. If you use commodity hardware, you benefit from low-cost servers and storage. If you utilize proprietary SMP hardware, Oracle's grid technologies allow you to increase capacity by scaling out your environment with additional servers over time rather than replacing existing systems with larger, more expensive SMP machines. This approach allows you to preserve your original hardware investment and avoid "forklift" upgrades. To minimize costly outlays for new server technology, you can even reuse older, less powerful servers by clustering

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If you utilize proprietary SMP hardware, Oracle's Grid technologies allow you to increase capacity by scaling out your environment with additional servers over time rather than replacing existing systems with larger, more expensive SMP machines

them together to build large, scalable, high performance systems. Since you pay as you go, you can start with a small clustered Siebel database and gradually scale up your system as requirements dictate, eliminating the need to “over provision” hardware resources at the outset of a project.

Reduced Downtime

For many businesses, the largest potential cost savings from deploying their Siebel CRM environment on top of Oracle’s grid architecture comes from the avoidance of downtime. Downtime seriously disrupts and, in many cases, halts critical Siebel business operations such as customer service, telesales, and EIM batch processing. The cost of downtime varies from business to business and can be more severe if it occurs during a critical time period such as during end-of-quarter business processing. In many cases, downtime can cost businesses hundreds of thousands or millions of dollars an hour. The value of avoiding these potentially catastrophic costs can dwarf the cost of the entire Siebel CRM system.

A Complete Solution

The Oracle Grid offers all the necessary components to provide Siebel CRM systems with a robust, scalable, flexible, high-performance computing infrastructure. It combines database, clustering, and storage management in one integrated software stack. This reduces costs and complexity of the overall system, because it eliminates the need to source, install, manage and maintain third party elements such as cluster software, file systems, and volume managers. Not only is the software stack fully integrated, but also Oracle does not charge extra for its clusterware and ASM capabilities. As well, Oracle Clusterware is the default method by which Siebel is tested in Oracle’s development environment, ensuring the highest level of product quality and integration. Finally, by deploying Oracle’s complete software stack, customers will have one point of contact for support and can avoid finger pointing between vendors, making issue resolution more cost effective and efficient. By reducing the number of contracts, renewals, and vendor interdependencies, customers can reduce their total cost of ownership.

CONCLUSION

Oracle RAC, Oracle Clusterware, ASM, and Oracle EM Grid Control are the foundations of Oracle’s enterprise grid computing architecture, providing the highest availability, scalability, flexibility, and cost efficiency for your Siebel environment. Oracle’s Grid technologies are key components of the Siebel Maximum Availability Architecture. As such, Oracle’s grid architecture delivers the highest availability and fault resilience at the database tier, middle tier and storage layers, ensuring that critical employee-facing and customer-facing CRM applications are operational 24x7. Oracle’s Grid technologies allow you to seamlessly scale your Siebel database and storage tier to accommodate increased concurrent user load, application throughput and business data, enabling you to add capacity on demand without sacrificing availability. Enhanced management capabilities facilitate increased business agility and ensure that the system can flexibly adapt to changes

By deploying Siebel on Oracle’s Grid Platform, customers can avoid expensive downtime that can potentially dwarf the cost of the entire Siebel system

Oracle offers a complete software stack for Grid computing, reducing the cost and complexity of the overall system, because it eliminates the need to source, install, manage and maintain third party software

in Siebel application workload. By enabling customers to “scale out” their servers and storage over time rather than “over provisioning” their environment at the outset, the Oracle Grid platform reduces the total cost of ownership of the Siebel CRM environment. For all of these reasons, Oracle’s enterprise grid computing architecture is the optimal platform for deploying Siebel CRM Solutions.



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