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SIEBEL
CUSTOMER RELATIONSHIP
MANAGEMENT

ORACLE
ENGINEERED SYSTEMS

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April 2013

Siebel CRM on
Oracle Engineered Systems

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Executive Overview

Today's business requires a high volume of interactions with customers across many touch points. This is especially true for CRM (Customer Relationship Management). One of the key business success criteria is fast and agile communication with customers, such as processing orders, addressing product issues, or participating on the social network through Web sites, social network sites, call centers, and so on. The availability of accurate, pertinent customer data across all touch points and devices is crucial.

Siebel customers must contend with a persistent requirement for growth, scalability, and sustainability while maintaining fast response times and dependable performance. Typically, our customers purchase for their core business one or more Siebel Business Applications modules, such as Siebel Call Center or Customer Order Management. Then, these same customers often later purchase other Siebel modules, such as social, Web, or mobile functionality to complete their 360° view of their own customers. Additionally, businesses must plan for an ever-increasing number of users and peak periods. Due to the wealth of information and functionality captured within each product area, Siebel CRM meets these demands,

Oracle's Engineered Systems—specifically Oracle Exadata Database Machine and Oracle Exadata Elastic Cloud — provide the foundation for such requirements for Siebel CRM applications. Outstanding performance, manageability, flexibility, and ease for growth offer immediate benefits for existing Siebel applications and business processes. Business users benefit from well-performing, stable, and highly available systems. Transformed business processes accelerate the activities that drive business benefits. Technical staff benefits from simplified architecture, tightly integrated and tested components, and agile application deployment.

Introduction

Siebel CRM Overview

Still the world's most complete customer relationship management (CRM) solution, Oracle's Siebel CRM helps organizations differentiate their businesses to achieve maximum top-and bottom-line growth. Siebel delivers a combination of transactional, analytical, and engagement applications to manage partners, employees and all customer-facing operations. With solutions tailored to more than 20 industries, Siebel CRM delivers comprehensive on premise CRM solutions that can also be deployed in the cloud using Oracle's Managed Cloud Services.

Sales Applications

Oracle's Siebel Sales applications maximize sales effectiveness in real time by accelerating the quote-to-cash process, aligning sales channels, increasing pipeline and win rates, and raising average transaction values.

Quote & Order Capture

 Oracle's Siebel Customer Order Management solutions deliver deep customer insight that enables businesses to present the best solutions at the optimal price to the right customers.

Siebel Service and Field Service

 Oracle's Siebel Service and Field Service product family helps businesses deliver quicker, better and more-efficient customer service and provide optimal resource deployment, speedy issue resolution, one-and-done request handling, and powerful analytics capabilities.
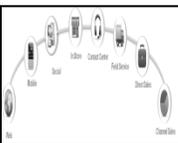
Siebel Multi-Channel Support

Oracle's Siebel solutions enable businesses to market, sell and support their customers across the various touch points they have with their customers, using channels such as web, mobile, social, in store, contact center, field service, direct and indirect sales.

Enterprise Marketing and Loyalty

Oracle's Siebel Enterprise Marketing and Loyalty Suite is a comprehensive closed-loop solution that empowers B2B and B2C organizations across industries to achieve excellence in marketing and build brand loyalty.

Oracle E-Billing

Oracle E-Billing is the industry's only complete solution for allowing your customers to do business with you anytime, anywhere. Oracle's industry-leading customer self-service offerings transform customer relationships, improve profitability, and increase customer loyalty.

Siebel Partner Relationship Management

Siebel PRM is the market leading comprehensive channel management solution that allows brand owners to achieve their channel business objectives with the industry-specific PRM solutions, proven customer successes, and unmatched deployment options—including both on premise and on demand solutions.

Oracle Customer Hub

Oracle Customer Hub (also known as Siebel Universal Customer Master) is Oracle's lead Customer Data Integration (CDI) solution. Oracle Customer Hub (OCH) leverages the unrivalled domain expertise of the Siebel platform to deliver a rich and complete CDI solution with many unique capabilities. OCH's comprehensive functionality enables an enterprise to manage customer data over the full customer lifecycle.

Siebel Tools Siebel Tools provides an integrated development environment that businesses can use to configure Siebel CRM. They can use Siebel Tools to modify business objects and integration objects, extend the data model, modify business logic or customize the user interface and web services to meet their business requirements.

CRM applications are widely deployed for order management, tracking and managing services, and a host of other customer centric activities. The largest banks, financial institutions, telecommunications, pharmaceutical companies and government agencies

use Oracle Siebel to ensure customers are better served by tracking every customer touch point. Siebel deployments have high availability and low latency requirements where downtime or slow response time can result in lost revenue. In addition, there is a need to support elastic growth in customer demand which often cannot be predicted. Siebel applications are typically used by front office users like call center agents to service customer interactions and these interactions result in business processes that span to back office applications. This results in a distributed architecture, with Siebel applications integrating with Finance, Billing and Supply Chain applications in the back office as well as with social networking and front-end application like [ATG](#) and Oracle Real-time Scheduler, which provides a real-time dynamic scheduling solution for companies to optimize the scheduling and cost of their skilled mobile resources. These integrations often need to be in real time, for example a call center order booking applet in Siebel will make a lookup to back office inventory application to check if a product is available to promise.

The need for high availability, low latency, elastic growth, high performance and, interaction with external applications lend Siebel deployments well to Oracle Engineered Systems. Let us examine the Siebel architecture to understand how Siebel components can be deployed on Exalogic and Exadata and the resulting benefits.

Siebel has a multi-tier architecture, with client, web server, Siebel Application Server, and Siebel Database Server tiers.
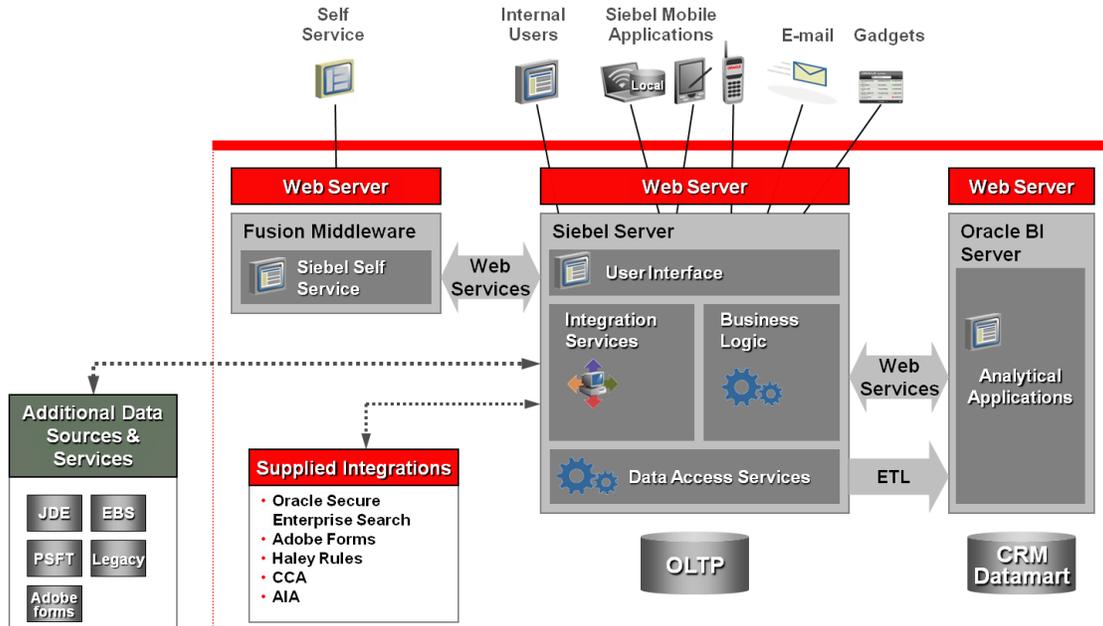
The web server directs the requests to the Siebel Application Server. The Siebel Enterprise Server is the logical grouping of one or more Siebel Application Servers. The business logic resides in the Siebel Application Server tier. Integration with Siebel through web services is achieved with Enterprise Application Integration (EAI) Component shown under Integration Services in the diagram above within Siebel Application Server. Siebel database includes Siebel tables, indexes, Siebel Repository and seed data. At the database tier Siebel supports the following databases - Oracle, DB2, DB2-390 and MS SQL Server RDBMS – with optimal performance on Oracle's Exadata Database Machine.. In addition to the desktop web applications, Siebel also supports mobile and hand-held clients (tablet and Smartphone).

Today, as part of Oracle's comprehensive hardware and software portfolio, Siebel CRM products have never been better. Synergies among Oracle product teams, Oracle's continued investment in Siebel CRM products, and Oracle's overt strategy to create "Hardware and Software Engineered to Work Together" combine to provide Siebel CRM customers with solutions that maintain their traditional value proposition and are poised to transform into the next generation of technology.

Oracle Engineered Systems—specifically Oracle Exadata Database Machine and Oracle Exalogic Elastic Cloud—are the culmination of Oracle's "Engineered to Work Together" strategy. Not only do they provide the generational technology advancements necessary to meet today's business requirements, but they also demonstrate Oracle's ability to optimize the technology stack at each and every layer, from enterprise applications such as Siebel CRM all the way through to the storage of data on disk. Applications, middleware, database, operating systems, virtualization, and hardware all work together as a unified, simplified, and high-performance system. The end result is apparent to IT organizations that spend less time managing farms of servers and troubleshooting issues, and more time providing agile systems and services to accelerate business. The benefits of Engineered Systems extend naturally to the business users themselves, who experience stable, high-performance, and fast responding systems and business processes.

Introduction to Engineered Systems

Oracle's engineered systems combine best-of-breed hardware and software components with game-changing technical innovations. Designed, engineered, and tested to work best together, Oracle's engineered systems can power the cloud or streamline data center operations to make traditional deployments even more efficient. The components of Oracle's engineered systems are preassembled for targeted functionality and then—as a complete system— optimized for extreme performance. By taking the guesswork out of these highly available, purpose-built solutions, Oracle delivers a solution that is integrated across every layer of the technology stack—a simplicity that translates into less risk and lower costs for your business. 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 Exalogic

Oracle Exalogic is an Engineered System on which enterprises deploy Oracle business applications, Oracle Fusion Middleware or third-party software products. Exalogic comes pre-built with compute nodes, memory, flash storage and centralized storage; all connected using InfiniBand in a high redundancy architecture delivering five-nine availability, with fault tolerance and zero-down-time maintenance.

Exalogic dramatically improves performance of Oracle Applications, Fusion Middleware and 3rd party applications without requiring code changes and reduces costs across the application

lifecycle, from initial set-up to on-going maintenance, as compared to conventional hardware platforms. Oracle has made unique optimizations and enhancements in Exalogic firmware, Exalogic software, and in Oracle's middleware and Oracles applications. These include on-chip network virtualization based on near zero latency Infiniband fabric, high-performance Remote Direct Memory Access, workload management in Oracle Weblogic server and optimizations in Oracle Coherence and Oracle Traffic Director. Exalogic includes support for a highly optimized version of the Oracle VM, which significantly outperforms comparable virtualization solutions and is an ideal consolidation platform for Oracle Applications. Templates to simplify install, deployment and configuration of Applications on Exalogic are available.

Oracle Exadata Database Machine

Oracle's Exadata Database Machine is Oracle's database platform delivering extreme performance for database applications including Online Transaction Processing, Data Warehousing, Reporting, Batch Processing, or Consolidation of mixed database workloads. Exadata is a pre-configured, pre-tuned, and pre-tested integrated system of servers, networking and storage all optimized around the Oracle database. Because Exadata is an integrated system, it offers superior price-performance, availability and supportability. Exadata frees users from the need to build, test and maintain systems and allows them to focus on higher value business problems.

Exadata uses a scale out architecture for database servers and storage. This architecture maintains an optimal storage hierarchy from memory to flash to disk. Smart Scan query offload has been added to the storage cells to offload database processing. Exadata implements Smart Flash Cache as part of the storage hierarchy. Exadata software determines how and when to use the Flash storage for reads and write as well as how best to incorporate Flash into the database as part of a coordinated data caching strategy. A high-bandwidth low-latency InfiniBand network running specialized database networking protocols connects all the components inside an Exadata Database Machine. In addition to a high performance architecture and design, Exadata offers the industry's best data compression to provide a dramatic reduction in storage needs.

Exalogic
High Performance
Application and Middle Tier

Exadata
High Performance
Database and Storage Tier
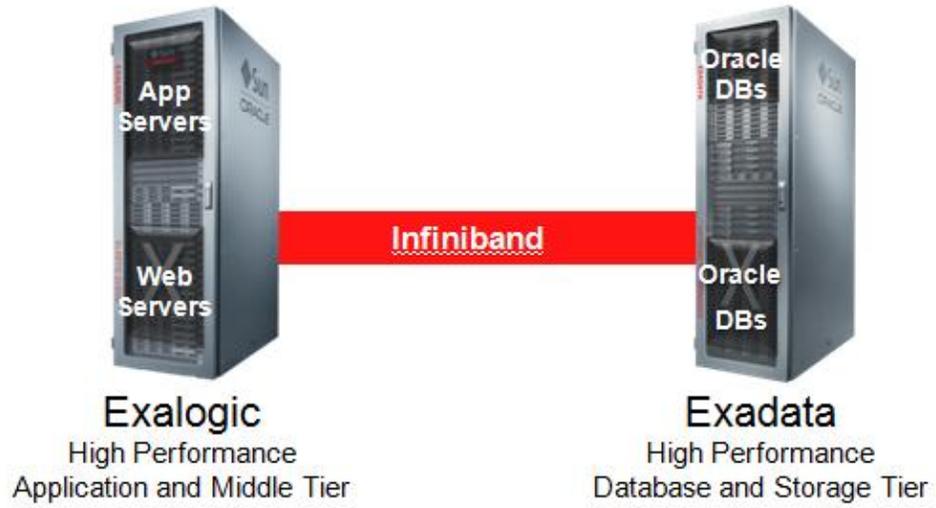
Engineered Systems: Exalogic, Exadata, Applications, and Database.

The fastest, easiest path to unbeatable application performance

Oracle SPARC SuperCluster

Oracle's SPARC SuperCluster is the world's most efficient multi-purpose engineered system, delivering extreme efficiency, cost savings, and performance for consolidating mission critical applications and rapidly deploying cloud services. Oracle's SPARC 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 SPARC servers, the performance and scalability of Oracle Solaris, the Sun ZFS Storage Appliance, the optimized database performance of Oracle Database 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

Oracle's SPARC SuperCluster provides both the capacity for growth, as well as the fine-grained server virtualization needed to isolate individual application components. With multiple layers of enterprise application infrastructure consolidated onto a high-performance, highly available SPARC SuperCluster system, deployment speed, application performance, and availability can all be optimized. Designed as a pre-configured, pre-tested, and ready-to-deploy SPARC SuperCluster engineered system, the solution provides a complete and optimized infrastructure solution for applications, built around robust compute, networking, storage, virtualization, 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 requiring less power. Furthermore, the SPARC SuperCluster system provides full built-in redundancy resulting in a highly reliable infrastructure without single point of failure. An issue with one component will not impact other components of the system offering true isolation. Customers can consolidate multiple environments with minimum disruption, without fear of performance degradation, and the ability to achieve required service levels.

The Business Benefits of Running Siebel CRM on Oracle Engineered Systems

Siebel CRM Order Capture: Faster and Rapid Adjustments When Creating Contact, Quoting and Ordering

The Order Capture process begins with everything required to create contact information, opportunity and selecting products to generating quote and customer order. Often times, all of these transactions need to happen online and rapidly while customer is on the call with the salesperson.

The benefits of using Oracle's Engineered Systems with your Order capture include:

- Faster, more frequent Update Sales process.
- Faster response for sales entry.
- Rapid adjustments for sales spikes, warehouse issues, shipping delays, and anything that might impact a customer's shipment.

Siebel CRM Service Request Handling – Faster Service Request Results in Increased customer Satisfaction and Improved Agent Efficiency Call Centers are one of main customer's touch points and its performance is crucial. The response time becomes critical when customer is online. Additionally, at peak periods the scalability becomes another critical factor and more concurrent agents on the system must not affect its performance.

The benefits of a faster Service Request process include:

- Increased customer satisfaction
- Improved agent's efficiency
- Meeting the response time SLA

Siebel CRM Order and Asset Processing: Faster Product Catalogue and Price List lookup, Creating and Managing Order and Asset increases business volume

One of the most frequently used Siebel modules across many industries is Customer Order Management. A typical agent's flow is to start with creating the customer account and address; then looking up the catalog and price list to create asset and, finally, the order.

The Order Management process is very time sensitive. It is also compute intensive and requires high database access and update rate. At peak periods the number of concurrent users increases significantly. Hence, the system must be extremely responsive and scalable. Any degradation of system's responsiveness would cause customer dissatisfaction and churning and reduction in customer orders.

The benefits of running Siebel Order Management on Engineered Systems:

- Increased customer satisfaction when placing orders

- Increased volume of orders

- Reduced customer churn rate

Siebel Universal Customer Master (UCM) accurately providing customer information across business channels increases significantly the success rate of business transactions

Today, most businesses need a unified and accurate view of the customers across their applications. Siebel Universal Customer Master fulfills this requirement and provides a gold customer record. In case the customer is not found a new customer record is created and synched to the Customer Hub and by using the Insert/Upsert Web Service, a new customer record is published to all the subscribing systems via publish/subscribe mechanism.

There is generally the need to consolidate new/updated customer data from external / operational systems to the UCM system. This requires sending all the new/updated customer data to the Hub in a daily/weekly batch process. UCM batch process is run in parallel Workflow tasks to load the Customer tables. The UCM batch process consolidates the data, de-duplicates the data and creates the golden customer records. New/Updated customer records are published to the subscribing systems.

The performance and response time of UCM and its integration with other systems are vital to businesses. These transactions are high volume and their throughput is always a major concern for IT organizations.

The benefits of running Siebel Universal Customer Master on Engineered Systems:

- UCM on Exalogic and Exadata 7 to 10 time faster response time and throughput is a significant advantage

- The accuracy and availability of customer record across the enterprise on a high-performing Oracle Engineered Systems is a key asset to the company

- High throughput provides a tremendous help to timeliness of batch and background components to meet 24/7 availability of accurate customer records. It is among the most important requirements of many businesses.

Siebel CRM + Oracle Social Network Integration (OSN)

Consumers today like to improve the effectiveness and timeliness of decision making with visibility and insight into business processes. Siebel provides market leading support for companies to manage their business process across the complete life cycle of the customers. OSN provides a secure private network to capture and preserve information flow between people, business processes and applications. The integration will bring together people and processes together for making timely decisions.

Solution Highlights

- Manage real-time conversations between agents to provide resolutions to customer service requests quickly. Create trend analysis with 'service requests like mine, agents like me and customers with same requests

- Through the integration, teams get a single view of the business process bringing together data across different applications and engage in conversations through follow ups and comments

- Engage customers through external social channels by bringing together collective expertise to make informed decisions and drive business forward.
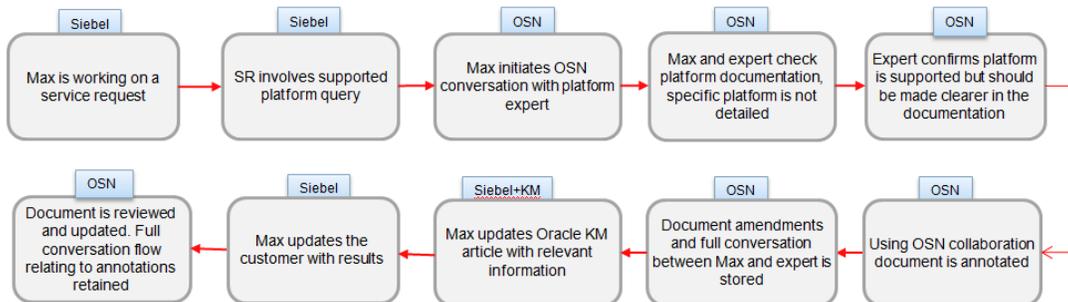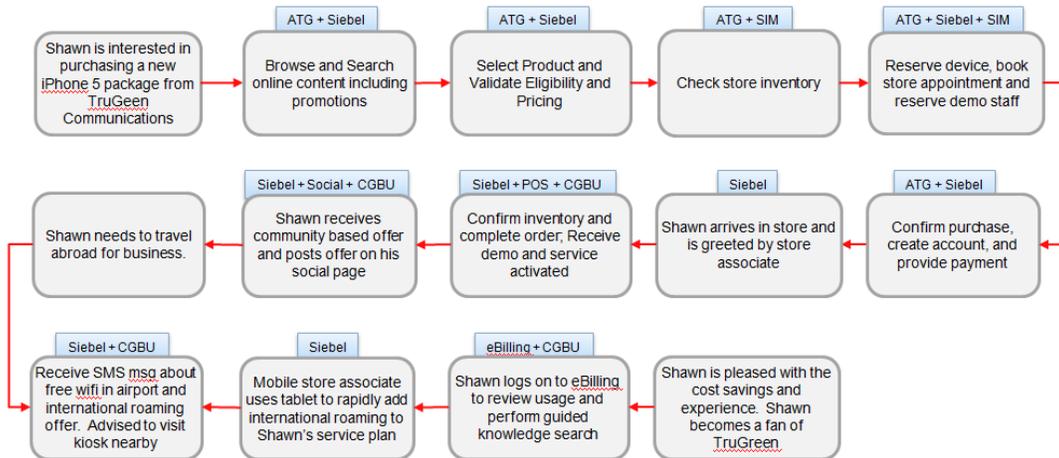

Siebel Customer Order Management + ATG Integration

Consumers today expect to research, shop and purchase products from their preferred brands using multiple channels and devices. Siebel provides market leading support for companies to engage with their customers including direct sales and field service representatives, call center agents, and the partners of these companies. ATG provides market leading support for companies to engage with their customers via a personalized web experience.

Solution Highlights

- Seamlessly create and manage account, contact, and customer information across channels.

- Leverage sales catalog structures, product details, price, promotion and other commerce related rules administered within Siebel as a foundation for building a personalized, rich web experience in ATG. This integration will increase speed on new product introductions and reduce time managing data and sales policies in silos.

- Provide continuous clicks-to-bricks and bricks-to-clicks support by providing customers and employees with a real-time view into in-flight and completed shopping carts and orders including line item details, totals and current status.

The benefits of running Siebel Order Management on Engineered Systems:

- Oracle Engineered Systems are the ideal platform for the time-sensitive and extremely frequent interactions with customer

- This integration when deployed on the same Exalogic and Exadata platform will yield fast performance critical for this type of communication and contact

- During peak periods, the platform scales with flexibility to cope with high number of transactions in simple and agile manner

# The Technical Benefits of Running Siebel CRM on Oracle Engineered Systems

The previous sections of this paper outlined many of the benefits business users can expect from running Siebel CRM applications on Oracle Engineered Systems. Naturally, the direct benefits realized by the business are the most important scorecard. But beneath those business benefits lie solid technology. The IT organizations who support the business also claim a share of the value offered by Oracle Engineered Systems.

Siebel CRM Runs Fast on Oracle Engineered Systems

Oracle Exadata and Oracle Exalogic are engineered to provide extreme performance. Benchmark testing with Siebel CRM shows just how good response time, batch throughput, and scalability can be and how businesses can benefit these advantages to increase their customer satisfaction by promptly processing their requests, decrease the churn rate, and making the system highly available even during the peak business periods.

The Siebel multi-tiered architecture allows horizontal and vertical scalability for large-scale deployments by having number of load-balanced web and Siebel servers using Oracle RAC supporting tens of thousands of interactive users and millions of inbound and outbound transactions.

The following illustration depicts a typical deployment scenario for Siebel CRM on Exalogic and Exadata. Obviously the Exadata provides the database tier for Siebel CRM business data and system control tables. The Siebel CRM Gateway, Siebel Servers - Object Manager, batch components and web servers are served by compute nodes within the Exalogic. Siebel CRM distributed architecture lends itself very well for load-balanced deployment across Exalogic nodes. Siebel servers can be designated, providing scaled-out, parallelized processing at the Siebel Server tier giving the best of both physical isolation as well as consolidated management. The deployment scenario can scale up or down depending on your capacity requirements, typically leaving ample available capacity for other Oracle or third-party applications.
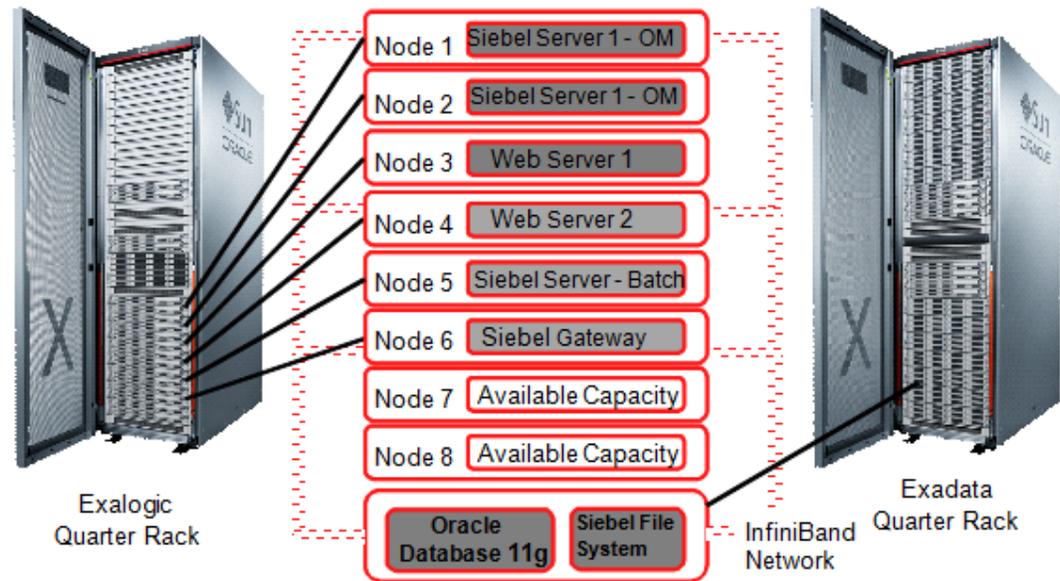
A typical topology for deploying Siebel CRM on Exalogic and Exadata

So, what are the benefits of deploying Siebel on Exalogic and Exadata? The multi-tier, scalable architecture of Siebel Applications maps very well to the engineered, purpose built design of Exalogic system. Siebel Server processes workloads that are both compute intensive (business logic execution) and I/O intensive. Exalogic's high clock speed CPUs in combination with fast on board memory support the compute intensive tasks of the Siebel Application Server.

The Siebel users and Integration Services transactions like web services traverse the Siebel components going from web server to Siebel Server to Siebel database residing on Exadata. The underlying Infiniband fabric with its 40GB transfer rate is ideal for communication between Siebel Servers and the backend database. In addition, when multiple Siebel servers are deployed for scaling, the Infiniband fabric provides a super fast pipe for inter server communication among Siebel Servers across Exalogic compute nodes.

Exalogic and Exadata provide multiple configurations supporting growth in data center needs. It is likely that Exalogic configuration you choose will have spare compute capacity to co-locate other applications in your Siebel ecosystem. Other Oracle applications that commonly interact with Siebel such as Oracle Social Network, ATG, E-Business Suite,

Billing and middleware components such as Oracle Business Intelligence, SOA Suite, WebCenter and AIA make good candidates to consolidate on Exalogic. Fusion Middleware components are certified, supported and tuned for Exalogic. Most of them run on Weblogic server and have been optimized for Exalogic with Exalogic Elastic Cloud Software. It is likely that FMW components are common to multiple applications in your environment. For example SOA Suite provides the integration bus and process layer to integrate Siebel and other applications. Similarly OBIEE (Business Intelligence) is used with Oracle Applications such as Siebel, EBS and 3rd party apps. Deploying these common components co-located with applications in the same Exalogic box, with it's highly performant Infiniband network provides a high degree of performance benefits. With Fusion Applications on the horizon, it is likely that customers will adopt some modules of Fusion applications while continuing to use Siebel. The co-existence scenario between Siebel and Fusion Applications calls for integration between the two, which is delivered using Fusion Middleware. Again co-location using Oracle VM for Exalogic and I/O Manager just simplifies and enhances the performance of the integration between Siebel and Fusion Applications and at the same time provides control over system resources.

Siebel runs fast and scales linearly on Exalogic and Exadata (benchmark Results)

Exalogic & Exadata 10k & 30k Users Call Center Benchmark

Call Centers operating in high call volume environments will accumulate millions of transactional data throughout the day (contacts, opportunities, service requests, activities, agent assignment, and field service engineer) in very short amounts of times. Engineered systems are specifically designed to deal with these challenges

The scalability and performance benchmarks were done with 10,000 and 30,000 call center agents that simulated a large call center usage patterns through the day

- **Sales**: Create Contact and Opportunity, Lookup Account, Associate Contact & Opportunity and Add products and Create Quote and Order.
- **Create Service Request**: Lookup Contact, Create Service Request and activities and add Entitlement, Lookup Account, associate contact & opportunity and Add products and create Quote and Order.
- **Update Service Request**: Lookup Service Request and add activities and Add Solution for the Service Request.

Number of Call Center Users	10000 Users	30000 Users
Siebel App Servers Avg. CPU*	73.66%	73.88%
Siebel App CPU / 1000 Users	7.37%	7.39%
DB Server CPU	6.88%	20.32%
Web Servers Avg. CPU	14.47%	14.20%
Avg RT (sec):	0.035	0.041

*10k Users benchmark 1 Siebel App Server
30k Users benchmark 3 Siebel App Server

- Each Exalogic node can host 10,000 Call Center users

- Siebel App Servers on Exalogic and Siebel DB Server on Exadata demonstrate linear CPU and throughput scalability

- The Response Time is a record compared to all other similar benchmarks

Exalogic & Exadata 11000 Users Siebel Customer Order Management Benchmark

Oracle's Siebel Order Management allows employees such as salespeople and call center agents to create and manage quotes and orders through their entire life cycle. Siebel Order Management can be tightly integrated with back-office applications, allowing users to perform tasks such as checking credit, confirming availability, and monitoring the fulfillment process.

- **Create Order:** Create Account and Address, Lookup Catalog and Price List, and Create Order and Asset

- **Modify Order:** Lookup Account and Asset, Lookup Catalog and Price List, Modify Order and Asset

No. of Users	11000 Exalogic/Exadata
Siebel App Server Avg CPU	69.51%
App CPU / 1000 Users	18.96%
DB Server CPU	12.05%
Web Server Avg CPU	4.87%
Avg RT (sec):	0.182

- 3 Exalogic nodes can host more than 11,000 Order Management users

- Siebel DB Server on Exadata demonstrate 2 times less CPU usage compared to standard HW

- The Response Time is a record

Exalogic & Exadata Siebel Universal Customer Master Benchmark

The objective of the benchmark was to measure the performance and scalability of UCM running on both Oracle Exadata and Oracle Exalogic. The results produced impressive performance and scalability metrics, which highlight the advantages of Oracle's Engineered Systems. The test was performed running UCM on a half rack Exadata machine and a half rack Exalogic machine. All the components of Siebel along with the Web Servers and Gateway Server were installed on Exalogic.

- **Medium Read:** Get Customer details along with the Addresses, Financial Accounts and Assets with the Customer Id from the Operational System (Retrieve up to 25 attributes)

- **Complex Read:** Get Customer details along with the Addresses, Financial Accounts and Assets with the Customer Id from the Operational System (Retrieve up to 150 attributes)
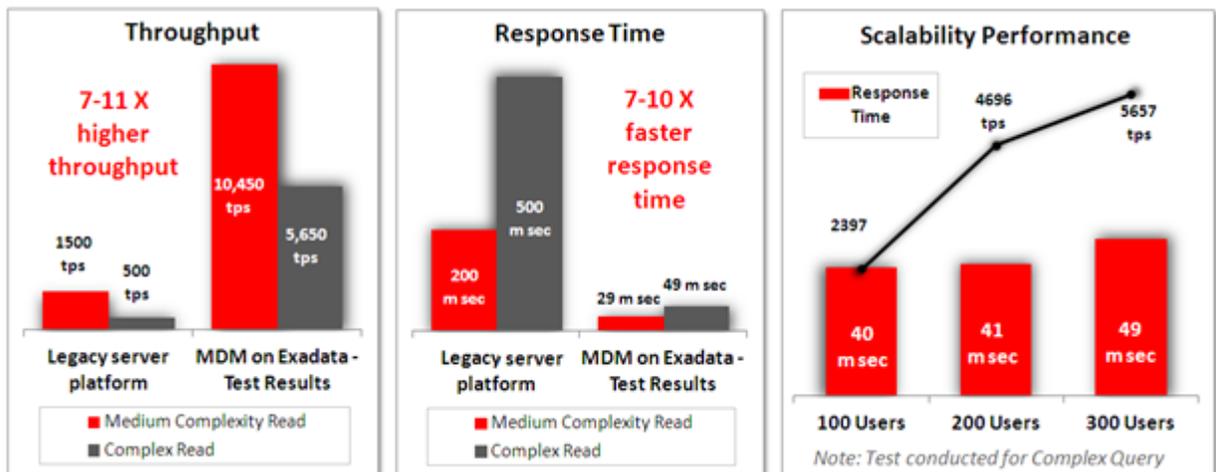
Figure 4: Results of Performance – User Load & Speed Testing using Oracle Engineered Systems

- Scalability performance for MDM on Exadata for user loads scaled up by 3X for complex queries, translated into 2.3X higher throughput performance, with only a 20% increase in response times (see figure above).

- Throughput performance for MDM on Exadata was 11X higher than customer requirements for complex read transactions, and 7X higher than customer requirements for medium complexity read transactions.

- Response times for MDM on Exadata were 10X faster for complex read transactions and 7 X faster for medium complexity read transactions.

- Clearly, the performance of a ½ rack Exadata machine produced impressive results against the initial hypotheses.

A larger configuration would only yield faster response time and throughput figures. Furthermore, relative to other commercially available HW alternatives, Oracle Exadata and Exalogic machines operate at a lower total cost of ownership (TCO), require less space, and consume less energy.

Comparing results for the same tests done on traditional commodity hardware with the same processing power shows that Exadata/Exalogic delivered 4X better throughput and 8X better response times indicating the effectiveness of the "engineered" hardware-software solution.

Siebel CRM Deploys Quickly on Engineered Systems

Oracle VM templates are preconfigured images of Siebel CRM server components, such as the Siebel Servers and Gateway Server, that are built and tested at Oracle, packaged into virtual machine images, and provided to customers for direct deployment—rather than traditional installation—into their Oracle VM systems. This deployment methodology results in a functional Siebel CRM environment deployed on Engineered Systems, conceivably in hours, which is updated with Siebel CRM Application patches, and is a virtual replica of the system built and tested by Oracle engineers.
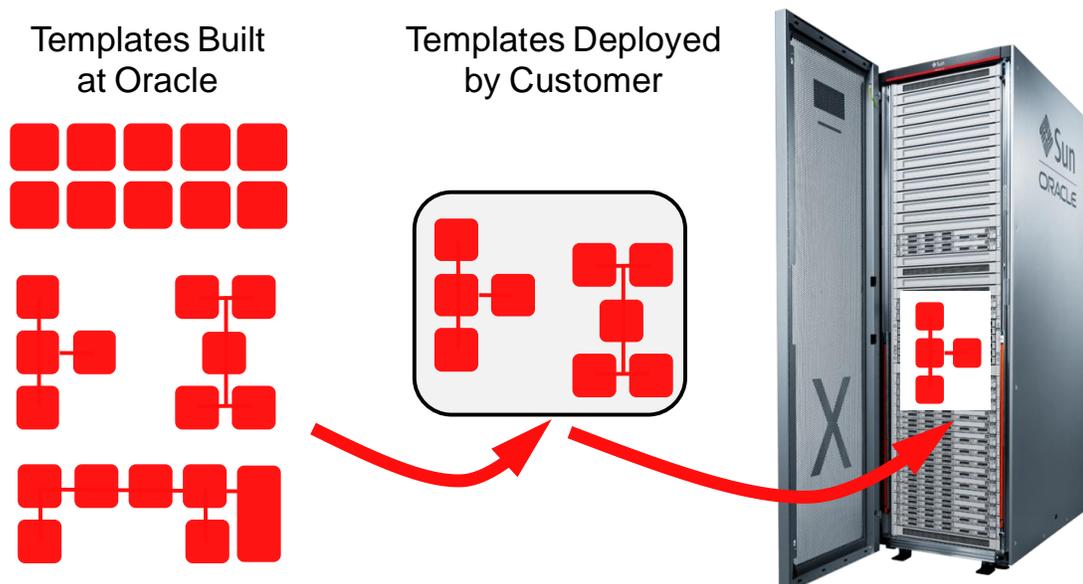
Siebel CRM deploys quickly to Exalogic using Oracle VM Templates

Engineering Advances That Enable Siebel CRM Performance Results

Below is a list of the technical features in Exadata and Exalogic that were key aspects of driving the performance improvements in Siebel CRM stack. It is through these significant engineering advances that the results were achieved in our evaluation:

Exadata

Exadata Smart Flash Cache
Exadata Smart Flash Cache uses Flash memory to dramatically reduce the time to read and write database and log records. The intelligence in Smart Flash Cache transparently moves active database blocks from disk to flash in real time, thus ensuring that "hot" data is in Flash memory when the next access occurs. Blocks that should not be in Flash are similarly recognized, maximizing the amount of space in Flash for active data.

Exadata Smart Scan
Exadata Smart Scan speeds up data-intensive queries by leveraging the processing power of Exadata Storage Servers to scan and filter out results. By moving queries to storage instead of moving the data to the database servers, long-running reports and queries often complete 10x faster than on conventional systems.

InfiniBand
The use of InfiniBand as the networking fabric within Exadata ensures the lowest latency for messages and the highest bandwidth for data transfers. High-speed transactions as well as data-intensive queries and reports reap the benefits.

Exadata Scale-Out Storage
Exadata Scale-Out Storage enables the full performance of Exadata to be realized against large and growing databases, without fear of bottlenecks. As the database size grows and storage capacity is added to Exadata, storage performance and networking bandwidth scale in equal proportion.

I/O Resource Manager (IORM)
IORM allocates I/O bandwidth across different applications and databases, based on a prioritized allocation plan, to ensure that the most important applications get the performance they need when they need it.

Hybrid Columnar Compression (HCC)

Hybrid Columnar Compression dramatically reduces the storage space consumed by the database, while at the same time speeding up queries against the compressed data through reduced I/O. Compression often reduces the data storage by a factor of 10x or more, storing a petabyte scale database in 100TB of disk. Since compressed tables remain compressed in Flash memory as well as on disk, very large databases often fit entirely in Flash memory when compressed.

Exalogic

Exalogic Exabus

Applications running on Exalogic utilize Exabus, the underlying Infiniband fabric, which provides low latency and high throughput eliminating I/O bottlenecks in every application layer. Applications components are typically deployed in more than one server and Exabus provides low latency for I/O across nodes on same Exalogic rack. Access to ZFS storage device over Exabus greatly reduces latency for log file writes and other file access operations. For applications running on Exalogic and accessing database tier on Exadata, Exabus delivers faster I/O, reduces CPU usage on both the mid-tier and DB-tier and provides higher connection pooling efficiency.

Oracle VM for Exalogic

Exalogic Oracle VM can be used to sub-divide a physical compute node into multiple virtual machines to increase application deployment efficiency while maintaining application performance. Oracle VM has been engineered for tight integration with Exalogic Exabus I/O backplane using a technique called Single Root I/O Virtualization (SR-IOV) ensuring Oracle VM significantly outperforms comparable hypervisors from other leading vendors. The benefit of this approach is unmatched application performance. In an Exalogic configuration, the impact of virtualization on application throughput and latency is negligible.

Conclusion

In summary, deployment of Siebel CRM on Oracle Engineered Systems is the best answer to rapidly changing and ever more demanding business and IT requirements. By providing a fast-responding and scalable platform with low maintenance and agile setup and configuration, companies can concentrate their focus on developing their businesses.

There are numerous benefits of running Siebel CRM on Oracle Engineered Systems. Siebel Customer Order Management, Siebel Call Center, Siebel Universal Customer Master, and all other performance-sensitive Siebel Business Applications modules run two to ten times faster on Oracle's Engineered Systems – Exalogic and Exadata. Faster response times significantly improve customer experience satisfaction and improve Call Center efficiency. The linear scalability demonstrated in Siebel Call Center and the linear throughput in UCM benchmarks guaranties future growth and preserves the service level agreements that are often hard to maintain. Siebel CRM is well integrated with an important number of key Oracle products providing businesses with ready-to-deploy integrated solutions. Siebel CRM integration with Social CRM, Oracle Policy Automation, ATG, and Real-Time Scheduler are examples of integrated solutions that also take significant advantage of the Exalogic and Exadata innovative technologies when colocated with Siebel CRM applications.

References

- [Oracle Exadata Database Machine Brochures and Data Sheets](#)

- [Oracle Tech Network Oracle Exadata Database Machine](#)

- [Oracle Exalogic Elastic Cloud Overview](#)

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