Creating Time for Strategic Finance with PeopleSoft Financials on Oracle Engineered Systems
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Executive Overview

Organizations are under increased pressure to control and streamline financial processes in order to improve their bottom line. Senior finance executives continue to focus on reducing time spent on period end close processing while reducing risks, costs and allowing the finance community to spend time on value add analysis of business performance with strategic planning.

Financial Close primarily involves batch oriented processes, and that's where Exadata shines. Oracle’s Exadata Database Machine is Oracle’s database platform delivering extreme performance for database applications including Online Transaction Processing (OLTP), Data Warehousing (DW), Reporting, Batch Processing, or Consolidation of mixed database workloads. Exadata delivers extreme performance to batch processes like PeopleSoft General Ledger Journal Edit, Post and Allocations. The performance boosts realized with Exadata provide the Finance Department faster results, enabling more time to verify and correct any discrepancies. Batch windows are shortened, allowing enhanced access to the system for end users, or other processes. Even database backups performed with Oracle’s Recovery Manager (RMAN) on Exadata have seen dramatic performance improvements, again resulting in higher system availability.

PeopleSoft General Ledger deployed on Oracle Exadata will enable finance organizations to deliver their compliance reports in a fraction of the time, freeing up valuable schedule to deliver management reports with the most up-to-date information. Customers will be able to spend more time actually looking at the data for their period end processing and their business analysis instead of having to wait for the system to complete processing, resulting in better, more accurate results and answers they could never have gotten previously.
Introduction

Financial close is the most critical time for finance departments. It involves collaboration across geographies and financial users who pull together vast amounts of financial data with the aim of getting a clear picture of the company’s performance in a given period. Given the complexity of the process there are few key issues that most companies face today, even with the most evolved systems.

- The biggest issue with Financial close is that it takes too long to complete. According to global best practices, best managed companies take 5 days or less to close their books. However, most companies take longer than this to finish monthly or quarter end close, thereby delaying other critical tasks.

- The Financial close is error prone due to manual adjustments that have to be done in a very short period of time. There are always those last minute changes that have to be made in financial systems – to get those changes in and then accounted for takes careful alignment of processes and people.

The Hackett Group reported in a study only 10 percent companies are able to close their books in 5 days or less\(^1\). Those who do fall in this category have a lot to gain in terms of costs savings and ultimate impact to bottom line.

\(^1\) Hackett Group (http://www.thehackettgroup.com/solutions/docs/collateral/hckt_hyperionFinancial.pdf)
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Figure 1 Financial Close Metrics for a World Class Organization

This whitepaper describes how PeopleSoft Financials will benefit from Oracle Engineered Systems. For more information about these systems, see the section “Overview of Engineered Systems” at the end of this white paper.

Challenges in Period Close

Most organizations strive to close fast and free up their resources for other tasks but face similar challenges.

- The *volume of data* coming into from subsystems and third party systems that has to be interfaced and processed is huge. These subsystems include Payables, Receivables, Billing, Projects, and Assets within the same financial instance or across instances. Companies may have several third party systems which could include these subsystems as well as other sales, CRM, Banking and financial systems. All this data has to be consistent in structure and has to be processed in a short time.

- The *timing of this data* coming from subsystems and third party varies and can be a bottleneck. These systems send data at different times and central GL has to wait for all subsystems to complete their processing. These timing issues to a great extent can be resolved through internal controls and consistent processes.

- The *reconciliation of data* between the subsystems and core GL is also where a much effort is put and time needed. The subsystems roll forward account balances, but those have to be reconciled with what the General Ledger has. This process is iterative and many times done manually through spreadsheets and emails. The best practice with regards to reconciliation is to monitor the process closely, do it on a regular basis and automate it as much as possible to avoid human error.
Financial Close with PeopleSoft Financials on Exadata

Companies may choose to close their books monthly, quarterly and at year end. Some financial sector companies even close their books daily. At each of these times, the process involves a lot of data that needs to go through a lot of processing. The Financial Control and Reporting process consists of 5 distinct phases as outlined in this process flow.

![Financial Close Process Flow](image)

Customers can use techniques to improve the performance of PeopleSoft General Ledger processes – database partitioning, multi threading and set based processing. Exadata architecture adds a whole new level of processing speed and gives tremendous boost to processes that normally take a longer time to complete.

Establishing Controls

The **Control** phase establishes internal controls and standards, manages those controls to account for changing business dynamics and provides compliance certification and reporting to appropriate authorities and stakeholders.

**Exadata Advantage**

Controls rules can be managed much better in a faster, more scalable and consolidated financial system. More and more organizations are moving from multiple instances to a single financial instance. This makes implementing internal controls much more effective. However, a single financial instance also means the need for increased processing power. As businesses scale, more and more financial data has to be collected, processed, reported and analyzed. Exadata can scale easily as the business expands without compromising the speed at which processes are completed. Because internal controls have to be closely watched, companies collect data across subsystems and geographies to ensure processes are being completed per the rules. This data collection and reporting is much faster with Exadata. Also, 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.

Recording Transactions

The **Record** phase captures transactions from all operational and support functions; record edits for accuracy, and posts to the ledger for reporting. The record function is a combination of automated
processes and interfaces, as well as manual entries from a variety of sources, including applications within the PeopleSoft Enterprise application suite and information captured offline in mediums such as spreadsheets or from third-party industry-specific systems.

For this phase to be efficient, it is imperative that customers understand the makeup of their own data. Knowing the size and complexity of the data that is coming into the General Ledger helps in making key decisions with regards to database structure and design. Once the customer is aware of the data and volumes, they can tune their PeopleSoft database instance to optimize performance. For example, let's take a large multinational customer that has 4 business units and is performing journal edit and post during period close. If the customer uses database partitioning, these GL processes would use a dedicated partition for each of the business units, avoiding any contention and finishing the process in the desired time. The set based processing would allow business logic to execute on a group of impacted records, instead of one at a time.

Exadata Advantage

While partitioning and set based processing are already being used by customers for most of these processes, the Exadata advantage here is extremely fast SQL execution. Exadata storage provides database aware storage services, with capabilities such as Smart Scan query offload which offloads database processing from the database server to storage devices. This is done automatically and transparently to the application. Hence, the data requested by the application can be processed much faster than the database server could do on its own. 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.

With a faster database and more efficient storage, Oracle Exadata enables extreme SQL execution, allowing the journal edit, post and other processes to complete in a much shorter window of time. Customer case studies have shown that batch processing that used to take between 7 to 12 hours is now finishing in less than 5 hours.

Transforming Accounting Transactions

The Transform phase encompasses the allocation of balances across organizational lines, calculation of foreign exchange gains or losses for transactions in a foreign currency, and the presentation of a set of financial statements in a common currency. The allocations process is perhaps one of the longest steps within the Financial close. It involves modeling different allocation scenarios, setting up different rules on how expenses and revenue should be allocated. Much time is spent here and a lot can be gained by improving the speed of the process.

Exadata Advantage
Exadata Smart Flash Cache dramatically accelerates Oracle Database processing by speeding I/O operations. Flash provides intelligent caching of database objects to avoid physical I/O operations and speeds database logging. 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. This adds a huge value to processes such as allocations and multicurrency processing that process huge chunks of data. In addition to database partitioning and set based processing, these GL processes can be multithreaded and run in parallel. In the above example, each of the 4 processes would run as its own thread, accessing and updating tables in its own database partition. Additional threads can be created for the business units that have bigger volumes. Customer case studies show that batch process such as allocations showed dramatic improvements and reduced the batch processing window significantly, thereby allowing more analysis and modeling time. Expense allocation queries have shown an average improvement of 70 percent in some cases.

### Closing Financial Books

The Close phase involves elimination of intercompany transactions and investments, posting of period-end adjustments, and consolidation of financial balances. The end result of this phase is a holistic view of your organization.

**Exadata Advantage**

Because these processes need to finish in a given amount of time, there is a need for the system to up and running consistently. Downtimes for backup and maintenance slow things down. Oracle Exadata is a highly available system that reduces the risks associated with system downtime by giving you a system that is up and running during crucial batch processing times. Less downtime equates to more time for analysis and better management of risk. The Journal Post as well as consolidation processes post all period end adjustments and journal entries to the ledger. These updates are accelerated by Exadata’s Write Through and Write Back Flash eCache, reducing the batch processing times significantly. Also, you don’t have to wait till the end of the day to run these batch processes as they can run throughout the day without compromising the efficiency or performance of your system.

### Measuring and Reporting Financial Performance

The **Measure** phase includes creating and distributing financials results, reviewing and analyzing results, and adjusting plans based on results gathered from the earlier tasks in this phase. The measurement function is critical to all organizations, whether it serves an internal or external audience. All public companies have a responsibility to their shareholders to report business performance periodically. When a company closes its financial books, reporting can immediately follow. Faster and accurate management reporting is an indicator of a well managed company and raises shareholder confidence.
PeopleSoft users have a variety of reporting tools including nVision and Query, both very heavily used on a regular and ad-hoc basis. Because users can write their own queries to retrieve key information, these queries can get quite complex and take long time to complete. Improving the performance of these queries and reporting tools also has a huge impact on how the final reports are created for internal and external users.

Once the close process is complete, financial reports have to be generated and submitted to regulatory agencies. Since 2006, the SEC requires companies to file the 10-Q within 40-45 days of period close, depending on the size of their public float. The 10-K has to be filed between 60-90 days of period close. These more stringent regulatory requirements have made it even more important for companies to close on time with accuracy to avoid penalties.

Exadata Advantage

Since reporting is such a critical part of financial close, Exadata helps in dramatically improving the speed at which reports can be generated. 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. Additionally, 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.

Customer case studies show that query speeds have improved as much as 73 percent in some cases allowing reporting to happen very quickly thereby reducing the wait time. This is not only true during the close process, but also in any operational reporting that your finance users do as part of their daily jobs. The time spent on collecting data from transaction systems, typically after batch processing has completed at night, can be reduced significantly. Everything is available and ready to go every morning when finance users run their reports. Customers have reported that the data collection processes for reporting purposes that used to take all night are now completed in less than an hour in some cases.

Benefits of Exalogic

Regardless of the particular application used, customers running PeopleSoft applications on Exalogic enjoy some unique advantages over other hardware platforms. Using Oracle Virtualization capabilities on Exalogic, customers will benefit from the Oracle VM templates provided by PeopleTools.

Faster Deployment

The templates provided by Oracle, contain fully configured web, application and batch servers as well as the operating system on which they run. They enable new environments to be deployed in minutes, vs. the days it could take before. Now when a new environment is needed, the middle tiers are waiting to be booted up. Pre-configured and pre-tested, PeopleSoft middle tier components are always at the right release level with the required patches installed - and are always at your fingertips. No longer do
you need to procure a server, install and patch the operating system, install and patch Tuxedo, install and patch WebLogic Server or configure your application and web servers; the templates do it for you, saving valuable time and effort while providing a fully tested environment.

Easier Patching

Patching your PeopleTools environment on Exalogic just got easier, too. With new VM templates being provided with new PeopleTools patches, updating the PeopleTools middle tiers is as easy as downloading a new template and booting the new virtual machine.

Better Scaling

Scaling your PeopleSoft environment has been simplified as well. When the system gets busy, new application servers or web servers can be brought online and dynamically added to the environment. No configuration or downtime is required. As the spike subsides and the additional resources are no longer needed, the resources are transparently removed and the virtual machine is shut down until the next time. The system resources used by the added VM during the spike can be utilized by other projects instead of just sitting idle. The VM templates provide a great way to respond to usage spikes while ensuring the most efficient use of hardware resources.

Conclusion

Why should your organization care about a faster and more efficient period close? The benefits of achieving a fast close are real, quantifiable and proven. As noted earlier, the Hackett Group reports show that world class companies spend 45 percent less on closing and reporting and on average save $5.5M per $1B in revenue².

In today’s business environment, finance and IT departments are key enablers and differentiators for any company. It makes sense to analyze this process to ensure everything is happening as it should in a well optimized and streamlined environment. PeopleSoft Financials on Oracle Exadata will enable you to reduce transaction processing times, provide relevant and accurate reporting for internal stakeholders and regulatory agencies and enable the business to make well thought out and timely business decisions that improve the bottom line. With PeopleSoft Financials on Exadata you will be well on your way to achieving the goal of closing in 2 days or less and becoming a world class company.

Overview of Oracle 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

² Source: Hackett Group Benchmarking-Solutions Book of Numbers, 2008
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 prebuilt with compute nodes, memory, flash storage, and centralized storage; all connected using InfiniBand in a high redundancy architecture delivering five-nines availability, with fault tolerance and zero-downtime maintenance.

Exalogic dramatically improves performance of Oracle Applications, Fusion Middleware, and third-party applications without requiring code changes and reduces costs across the application life cycle, from initial setup to ongoing 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 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 preconfigured, pretuned, and pretested 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.
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.
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Hardware and Software, Engineered to Work Together