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An Oracle White Paper
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JD Edwards EnterpriseOne Financial Close on Oracle Engineered Systems: The Value of a Faster Process

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Executive Overview

A faster financial close gives finance professionals more time to review and verify financial results. Today's extensive regulatory requirements demand that published financial reports be accurate and meet all deadlines. There are legal ramifications for filing inaccurate or late results that can damage an organization's reputation and cause lasting financial consequences. Along with regulatory reporting, a faster close will give executives and business managers more time to review actual results, customer trends, market trends, and other internal and external information to assist with timely and informed decisions. Faster access to financial results enables businesses to take advantage of market opportunities that may arise with confidence that they can support the decision. When financial results may not support these opportunities, earlier access provides time to make appropriate changes in time to make a difference. The longer the financial close drags out the bigger the chance for lost opportunities and poor decision making due to lack of financial visibility. Completing the financial close quickly will lower the risks associated with unsupported decisions and inaccurate or late regulatory reporting.

JD Edwards EnterpriseOne running on Oracle Engineered Systems is the culmination of Oracle's "Engineered to Work Together" strategy. Customers realize immediate business and technical benefit and set the foundation for the next generation of in-memory business applications. Outstanding performance and manageability offer immediate benefits such as a faster financial close.

For more information on JD Edwards EnterpriseOne and Oracle Engineered Systems, please see the *Benefits of Running JD Edwards EnterpriseOne on Oracle Engineered Systems* white paper.

Introduction

Executives and business managers need to know the state of the business at anytime of the day or night. Opportunities for expansion, acquisition, or significant cost savings can arise that must be acted upon quickly. Without the most current and accurate financial data; executives cannot act with confidence. Also, global businesses must be able to operate across all time zones. CFOs do not have time to wait for a long running batch job to run over night. They need access to current results now. Access to the most current and accurate information is vital. Without it, much risk is placed on the business. Incomplete information regarding the profitability of a product or line of business may lead to decisions that affect cash flow for the entire organization. Business managers need up to date information to ensure their business units are operating at peak efficiency. Decisions regarding the increase or decrease of staffing, production, inventory, and purchases must be made with the most up to date information.

The financial close process results in providing executives and business managers with the financial data they need to make informed business decisions, to plan appropriately and to attest to and be confident of the information published in their financial reports. It is one of the many business processes that organizations must perform in a timely manner. The financial close must be measured in days, not in weeks. When the financial close is delayed the business is at risk of making misinformed decisions and not meeting regulatory reporting deadlines. Performing the financial close process quickly and accurately also helps companies maintain a healthy image in the eyes of shareholders, investors, regulatory agencies, and trade exchanges.

In today's economy, organizations are looking for a competitive advantage and are finding ways to do more with less in the same timeframes to improve their profitability. Efficiency in all aspects of the organization is extremely important. Business processes, such as the financial close, along with IT and ERP systems must be optimized to support the organization's goals rather than causing a bottleneck. Speed is the key. Accuracy is imperative. Simply shortening the timeframe for the close is not the answer. The checks and balances built into the process must remain intact to ensure its accuracy. Without an accurate close, the organization will lose credibility with its shareholders, investors, regulatory agencies, and trade exchanges. It may also be required to perform a costly restatement. Software and hardware that is engineered to work together goes a long way toward performing the financial close quickly without compromising its accuracy. With the performance gains of Oracle Engineered Systems, organizations can now run the process with greater efficiency enabling them to close

their financial period or year in less time giving them more time to take advantage of opportunities, adjust their business plans, and publish their financial reports well within expected timeframes.

This white paper will explore the steps in the financial close process, where bottlenecks may occur that slow the process down, how Oracle Engineered Systems can make the process faster, and the benefits of completing the financial close as quickly as possible without compromising its accuracy.

Introduction to Engineered Systems

Oracle Engineered Systems combine best-of-breed hardware and software components with game-changing technical innovations. Designed, engineered, and tested to work best together, Oracle Engineered Systems can power the cloud or streamline data center operations to make traditional deployments even more efficient. The components of Oracle 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-nines availability, with fault tolerance and zero-down-time maintenance.

Exalogic dramatically improves performance of Oracle Applications, Fusion Middleware, and third-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 Oracle's 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 read 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.

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 JD Edwards EnterpriseOne Financial Close Process

The financial close process involves a series of manual tasks as well as tasks performed by the JD Edwards EnterpriseOne system. Finding ways to ensure that each step is done efficiently, accurately, and quickly enables the business to shorten this process. Here is an example of common tasks that may be necessary to complete the financial close process within JD Edwards EnterpriseOne:

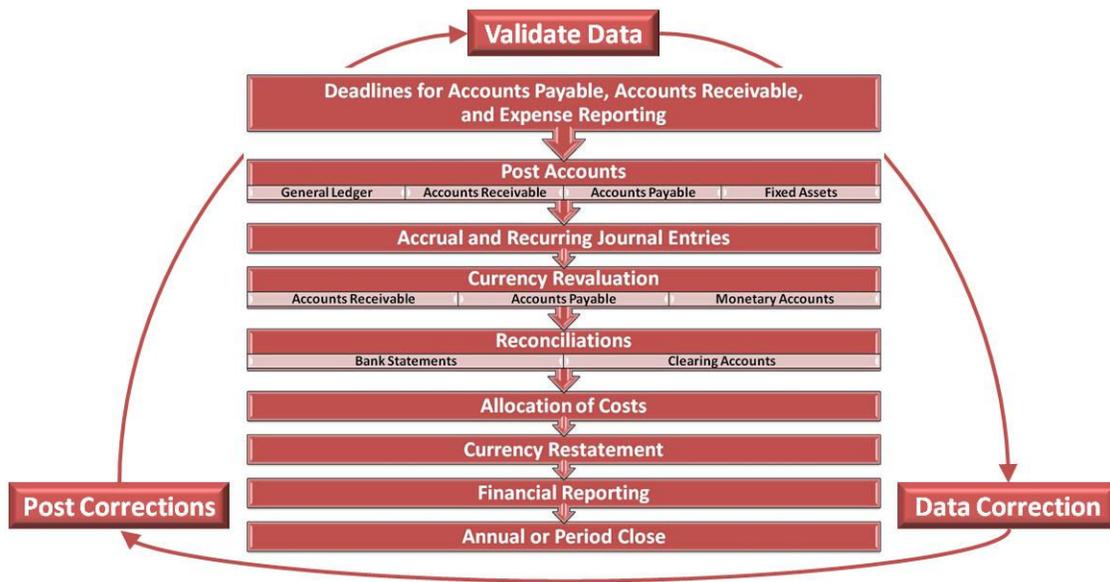


Figure 1. JD Edwards EnterpriseOne Financial Close Process Steps

As you can see from the diagram above, the first step in the process is to establish and enforce deadlines for transactions to be included in the period. Once the deadline has been reached, new transactions may need to wait until specific tasks in the close process have completed before they can be fully processed by the system. This causes an issue with knowing exactly where your business stands. Completing the close process more quickly will limit the amount of time in this state. It will also reduce the chance of omitting information which can lead to a costly restatement.

A financial close is an iterative process where financial information must be validated, corrected, and postings completed until all the data is deemed correct. Depending upon the complexity of your financial reporting needs, this process can take many days to complete with multiple reviews and corrections and adjustments taking place continuously throughout the process. When evaluating your financial close process, it is important to understand where the bottlenecks are that prevent a faster close.

Traditional Financial Close Processing Cycle

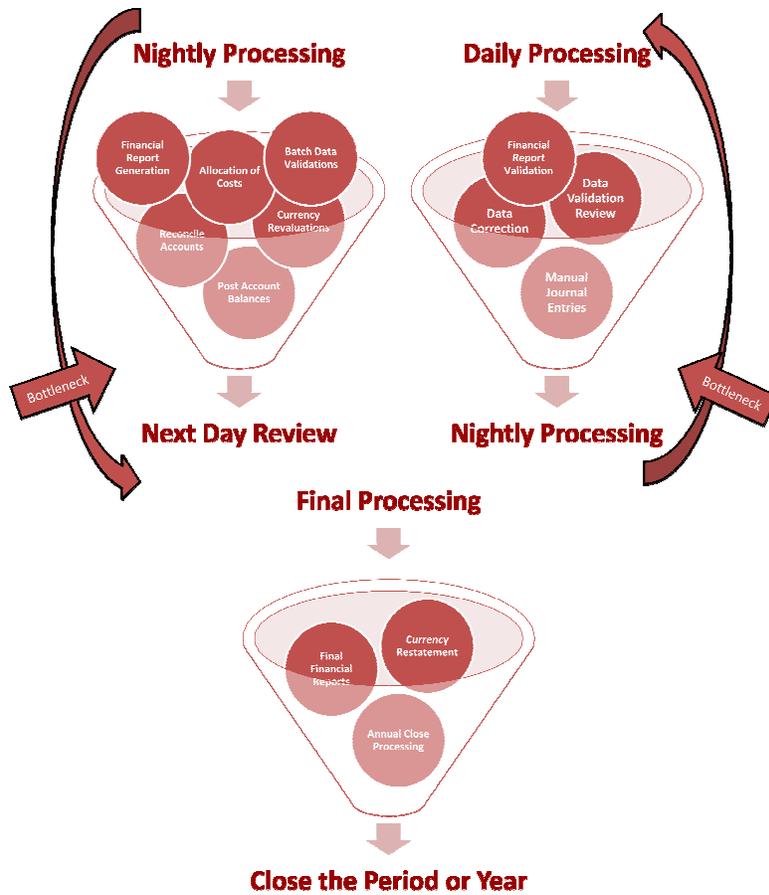


Figure 2. Traditional processing sequence

A traditional close process entails having the batch processes for data validation, G/L posting, reconciliations, currency revaluations, cost allocations, and financial report generation run overnight. The manual processes then occur during your staff's daytime. This is usually done due to the amount of time it takes to process the large amounts of data needed to close the accounting period or year, rather than a requirement of the ERP system. This type of processing cycle can be a bottleneck to completing the process quickly. Processing hundreds of thousands or millions of journal entries during the close process is expected with most organizations. The processing of these data volumes must be supported by your IT infrastructure and ERP systems.

The diagram below shows how a typical timeline for the financial close would be with the traditional infrastructure and process.

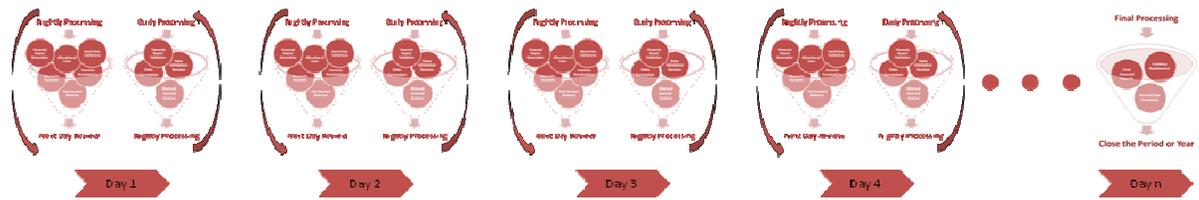


Figure 3. Financial Close Timeline with Traditional Infrastructure

Optimized Financial Close Processing Cycle

If your systems were capable of processing the large amounts of data quickly, your process could change.

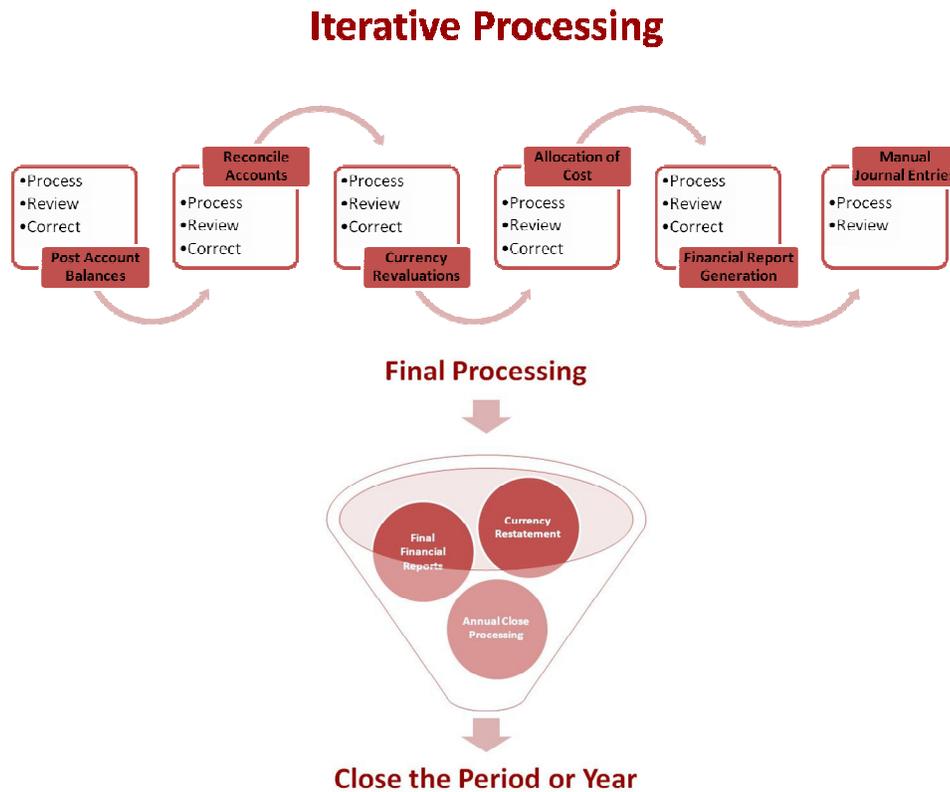


Figure 4. Optimized processing sequence

With the optimized process above, the batch processes can occur as needed throughout the day. The bottleneck of the nightly batch processes has been removed. This will enable your staff to iterate through their review, correct, and process cycle more quickly.

Optimizing your systems and business processes is essential to a fast close process. Business process optimization can be achieved by making a concerted effort to review all aspects of the close process with all stakeholders. Collaboration is the key to improving these processes.

System optimization can be achieved by reviewing all aspects of your ERP systems and the IT infrastructure it runs on. With Oracle Engineered Systems you can easily optimize this aspect of the financial close process.

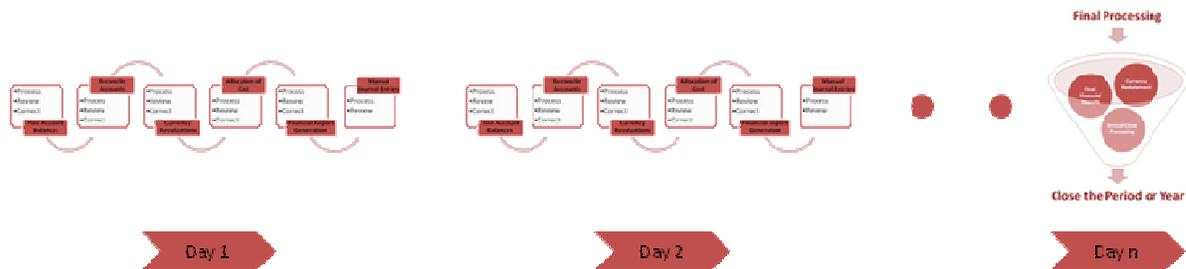


Figure 5. Financial Close Timeline Compressed with Oracle Engineered Systems

As you can see in the above diagram, Oracle Engineered Systems utilizing Exadata and Exalogic will improve the performance of your system dramatically. Performance testing results show significant increase in speed for JD Edwards EnterpriseOne running on Oracle Engineered Systems. For example: In an environment under full ERP load with volume intensive processes in areas such as Financials, Human Capital Management and Supply Chain Management processing simultaneously, the G/L Post processed over 20 million G/L entries in less than 13 minutes with no response time degradation to the 2000 interactive users in the test. With these performance gains, batch processes can run as needed throughout the day without any impact on interactive or other batch processes. The bottleneck of nightly batch runs and daily reaction has been removed allowing your staff to iterate through the financial close process quickly without compromising accuracy.

Why Does JD Edwards EnterpriseOne Financial Close Run Faster on Oracle Engineered Systems?

Skeptics will remind us that benchmark testing described above is conducted in a laboratory “perfect world” environment and that such performance metrics might seem too good to be true. An objective look at some of the innovations engineered into Oracle Exadata and Oracle Exalogic will provide some insight into how and why JD Edwards EnterpriseOne runs so well on these systems enabling the financial close to be completed much quicker.

We'll begin with Oracle Exadata. Oracle Exadata reads, writes, and performs database operations at extreme speeds over extreme data volumes due to the following innovations:

- Exadata Smart Flash Cache transparently caches “hot” reads, and writes data to fast solid-state storage, improving query response times and throughput. In fact, Exadata configurations can often be delivered with enough Flash Cache to contain an entire JD Edwards EnterpriseOne database. The financial close process focuses on key tables with large volumes of data such as the Account Ledger (F0911) and Account Balances (F0902) tables. With these tables being in Exadata Smart Flash Cache, frequently executed batch processes such as data validation, G/L Post, and financial reporting read and write data to solid-state storage which greatly reduces processing times without impacting end users.
- Exadata Smart Scan improves query performance by offloading intensive query processing and data mining scoring to scalable intelligent storage servers. Financial reporting is an iterative process in the financial close which is done for specific data sets. Exadata Smart Scan is leveraged by financial reports when users execute reports for a subset of the financial data such as for a specific financial period, company, or business unit.
- Exabus I/O and InfiniBand networking provide fast, high-bandwidth networking among Exadata database servers and storage cells and between Exadata and Exalogic. The financial close is comprised of I/O and logic intensive processes such as data validation and G/L posting. Exabus I/O and InfiniBand networking allows batch process on the Enterprise Server to retrieve large data sets from the database, process the data and then perform updates back to the database at extreme speeds.
- Advanced Compression reduces the footprint of data on disk. Independent partner testing has shown compression rates of up to 75% for JD Edwards EnterpriseOne data. Exadata systems are designed for high-volume data—hundreds of terabytes of usable disk—plus available expansion units and multi-rack systems. To meet regulatory and business requirements, multiple years of financial data is required to be stored in the transactional database. Advance Compression allows this historical data to be maintained without a negative performance impact on daily, monthly, quarterly or annual financial processes.

Similar innovations in Exalogic provide extreme processing for the JD Edwards EnterpriseOne logic and web tiers.

- Oracle WebLogic Server and the Java virtual machine are optimized for fast processing of Java workloads, such as the JD Edwards EnterpriseOne HTML server and metadata kernel. The Enterprise Server batch processes interact with the metadata kernel (Java process). With the Java optimization, hundreds of batch processes can execute concurrently to complete financial processes without queuing for the metadata kernel.
- The same Exabus I/O and InfiniBand networking provide fast, high-bandwidth networking among JD Edwards EnterpriseOne server components within Exalogic, such as the HTML server and Enterprise server, and between Exalogic and Exadata. Similar to batch processing on the Enterprise server, interactive users on the HTML server retrieve and review large data sets in the close process.

Exabus I/O and InfiniBand networking optimizes the transport of the data sets from the database to the HTML server.

- Single Root I/O Virtualization (SR-IOV) streamlines the I/O of the virtual machines running on the hypervisor, resulting in negligible impact due to virtualization. This allows virtual instances of the Enterprise server to be added to the JD Edwards EnterpriseOne environment during the close process to handle the additional workload without impacting the performance of interactive users and non-close processes.

Benefits of a Faster Financial Close Process

The benefits of optimizing your financial close process are many:

- Batch postings, revaluations, reconciliations, allocations, and financial reporting can all be done as needed throughout the day, with immediate access to the results.
- Performing traditional batch data validation during the day will improve the turnaround time for corrections and adjustments.
- Shorter timeframe of limited access by business users.
- Know the state of your business now, not tomorrow.
- Have more time to verify, be confident of, and publish your financial reports
- Have more time to analyze your financial data and generate accurate forecasts and plans.
- Make more timely business decisions based on the true state of your business.
- Free up your staff sooner to perform other value-added activities.
- Reduce the cost to your business of the financial close.
- Reduce the risk of errors and omissions and a costly financial restatement.
- Meet your regulatory deadlines with ease.

Conclusion

Closing a financial period or year quickly provides many benefits to every organization. The process can be very time consuming for your staff especially when they must wait for the results of a batch process before moving on to their next task. Informed business decisions and planning are at risk whenever access to the timeliest information is delayed by this process. By optimizing your IT infrastructure with Oracle Engineered Systems, these batch processes can be run at any time. These systems significantly decrease the amount of time required to process data. This will give your staff access to the results faster; allowing them to complete their processes sooner while providing accurate information to executives and managers for more timely planning and decision making purposes.

With significant improvements in your IT infrastructure, you will not have to wait until the end of the period to handle all of your data validation requirements; they can be handled throughout the period without impacting your daily business activities. Imagine being able to perform your cost allocations, reconciliations, or currency revaluations on a more frequent basis to support more frequent and accurate financial reporting. You will have greater visibility into your business throughout the period versus having to wait until the end of the period. Knowing the true state of your business on a more frequent basis will allow you to be more agile and adapt to new circumstances more quickly.

Oracle Engineered Systems offer unequalled performance gains and time reduction for processes like the financial close. Companies can re-think their internal expectations and improve their processes. This will result in less disruption to the business and planning and business decisions can be done quickly with up to date and accurate information. Hardware and software designed to work together provides optimization to key processes such as the financial close, which are at the heart of the financial operation for any organization.



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Hardware and Software, Engineered to Work Together