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JD Edwards EnterpriseOne Order to Cash on Oracle Engineered Systems: The Value of a Faster Process

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Table of Contents

Executive Overview

JD Edwards EnterpriseOne comprehensive Order-to-Cash solution enhances customer experiences; increases sales orders processed daily, enables faster time to cash, and improves operational cost savings. In today's dynamic business environment, changes occur frequently: manufacturing lines go down, inventory has sourcing discrepancies, a strategic customer's order supersedes other orders in the system, and your company's Chief Financial Officer requires every sales order to be reflected in the financial books as soon as possible.

Running JD Edwards' EnterpriseOne order to cash applications on Oracle Engineered Systems is the culmination of Oracle's "Engineered to Work Together" strategy. Outstanding performance and manageability offer immediate benefits such as reducing order to cash cycle time. Customers realize immediate business benefits by reducing the time necessary to complete front-office and back-office processes.

What if sales spike and unexpected shipping delays could be acted on within minutes or hours rather than days or weeks? Extremely fast software performance decreases the time needed to enter and process customer orders, minimizes disruptions to daily tasks, reduces the costly ramifications of interrupting manufacturing runs, improves the monitoring and evaluation of customers' creditworthiness, and most importantly, keeping your strategic customers so satisfied they continue to order.

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

Order-to-Cash is among the most important revenue generating process that organizations perform. Whether a customer enters their own sales order, calls in to a company representative, or sends orders electronically via EDI, customers expect to quickly know order details, cost, and delivery dates, regardless if the sales order has one line or thousands. For highly complex orders such as engineer-to-order and configure-to-order products, the manufacturing floor must be notified so they can schedule the manufacturing process. Order fulfillment assigns the appropriate warehouse to source from and allocates the inventory to be picked, packaged, and shipped. JD Edwards' EnterpriseOne credit-to-cash applications complete the order-to-cash process by driving working capital, lowering the DSO ratio, increasing customer satisfaction, and maintaining fiscal discipline.

Speed is key, and optimizing software and hardware is essential for improving the order-to-cash and credit-to-order processes. Enterprises operate in changing environments increasing visibility of the entire order-to-cash process by providing near real-time information enables managers to consider all possible solutions, choose the best option, and execute on that decision. With the performance gains of running JD Edwards order to cash applications on Oracle Engineered Systems, organizations can process more sales orders with greater frequency, minimize disruptions in fulfillment, reduce the costly ramifications of interrupting a manufacturing run, provide near real-time credit and collections information, and most importantly, avoid losing a strategic customer because of missed dates.

This white paper identifies areas in the order to cash process where bottlenecks may occur; discusses methods to make the process faster; and describes the benefits of a faster order to cash process.

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.

JD Edwards EnterpriseOne Order to Cash

The Order to Cash process begins with everything required to manage and process customers' sales orders and finishes with monitoring and collecting money from customers. There are many required steps between entering the sales order and receiving money from the customer, to make transactions work effectively and efficiently.

- Entering a sales order begins with pricing, which could involve complex pricing promotions, free goods, order level discounts, contracts, and so on.
- Fulfillment of the order is accomplished by allocating inventory stock, creating work orders for manufactured goods, drop shipping the product, or triggering a purchase order.
- Picking, packing, and shipping the goods.
- Finish the Order to Cash process with invoicing, collecting, and reconciling the customer's payment.

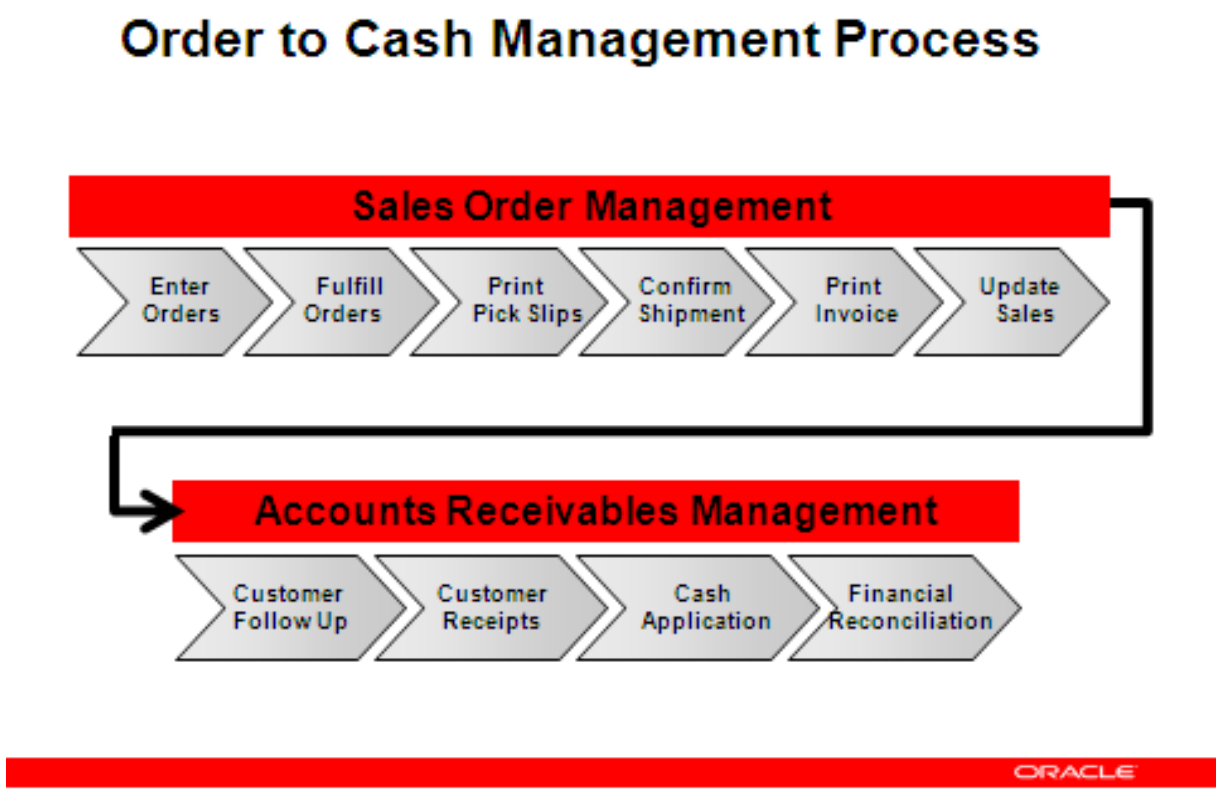

Figure 1.JD Edwards EnterpriseOne Order to Cash Process

Why does this take time? Each step in the JD Edwards EnterpriseOne Order to Cash process is crucial for satisfying your customer's needs. For customers, entering a very large and complex sales order should be as responsive as entering a one-line stock item sales order. Sales order processing automatically calls pricing and fulfillment for each line entered. Advanced pricing uses analytical

formulas to calculate discounts, free goods, contract and final prices. Fulfillment management uses analytics to optimize sourcing and calculate delivery dates. Adding additional lines or changing existing lines on an order requires advance pricing and fulfillment management analytics to be executed to validate and update the order's pricing, sourcing and delivery dates.

Sales orders containing engineer to order or make to order items are sent to Manufacturing for scheduling and completion. For information about optimizing the manufacturing process, refer to *JD Edwards EnterpriseOne Material Requirements Planning on Oracle Engineered Systems: The Value of a Faster Process*. Ensuring customers orders are accurately filled and shipped on time is one part of the order to cash process; the other part is ensuring customers pay their invoices in full and on time. Credit and collections departments use customers' order and payment history to manage requests for additional credit, monitor outstanding invoices, and collect from delinquent accounts.

Update Sales is considered to be the largest batch job of the entire order to cash process. Therefore, many customers schedule this process during the slowest part of the day. Update Sales takes all sales order transactions and creates the corresponding financial transactions. Creating financial transactions from hundreds of thousands of sales order detail lines takes time. Global companies running a 7/24 operation do not have a "slow part" of the day to submit this type of process. Running update sales once daily means your CFO is making decisions based on financial numbers using yesterday's sales information. Credit and collection managers are using the same outdated information to communicate with their customers. In a perfect world, update sales immediately creates the corresponding financial transactions, giving your CFO complete visibility to real time financial numbers. Credit and collections managers also have real-time views of customer accounts. The ideal method for solving the Update Sales batch load window is to eliminate the need for one.

Improving Your Order to Cash Process

Speed is key. What if your systems were capable of processing large amounts of data quickly? In organizations where Update Sales is run only once a day, strategic financial decisions are made based on yesterday's sales data. Sales spikes, unexpected shipping delays, sourcing issues; what if these issues could be acted on within minutes or hours rather than days and weeks? The resulting improved Order to Cash process gives your company faster order entry, improved order fulfillment, increased accuracy in order processing, and near real time updates of financial transactions. Your customers can place large complex orders for products using applications that are incredibly responsive, warehouse managers have immediate visibility to all their fulfillments requests, CFO's can view near real time financial information, and credit and collections managers can manage customers using today's receivable information.

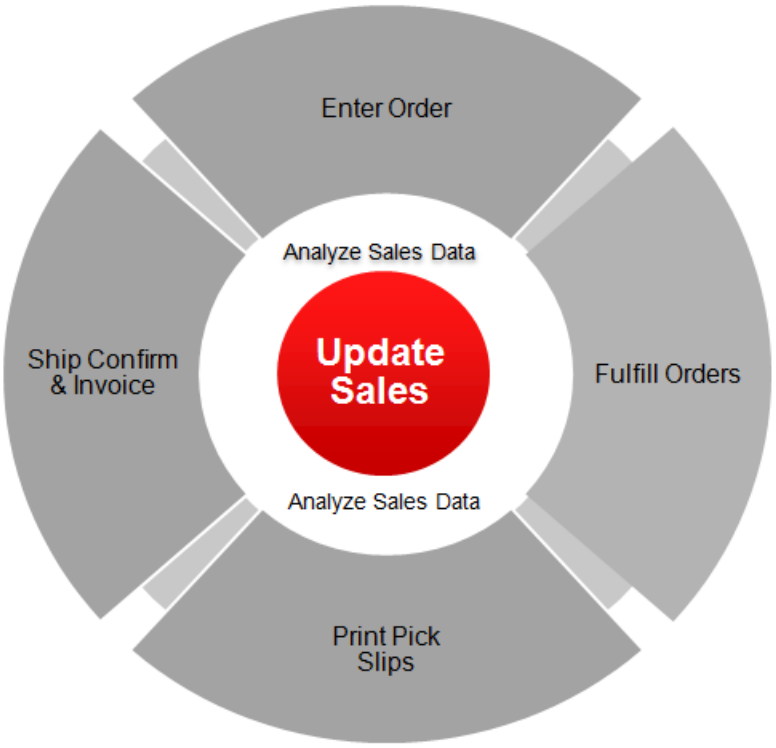

Figure2: Order to Cash Running on Oracle Engineered Systems

With the performance of Oracle Engineered Systems, both batch and interactive processes can be performed concurrently as needed throughout the day. Tests show that while running 600+ batch jobs, interactive response time was still 5 times faster using Oracle Engineered Systems. One of the batch jobs being run in this test was update sates. Update sales processed approximately one million sales order records per hour without any degradation in response time to 2000 interactive users. This enables your staff to quickly analyze, react, and execute on information, generating value. Utilizing Oracle Engineered systems, you can iteratively perform the many batch and interactive tasks for a faster order to cash cycle.

Oracle Engineered Systems improve performance of all your interactive processes, including those using large amounts of data in conjunction with analytical calculations.

Why Does JD Edwards EnterpriseOne Order to Cash 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 order to cash process focuses on key tables with large volumes of data such as the Sales Order (F4201 & F4211), Account Ledger (F0911) and Account Balances (F0902) tables. With these tables being in Exadata Smart Flash Cache, frequently executed batch processes such as sales update, 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. Sales update is an iterative process for order to cash which is done for specific data sets. Exadata Smart Scan is leveraged by sales and financial reports when users execute reports for a subset of the sales and financial data such as for a specific customer, receivables, DSO, 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 order to cash is comprised of I/O and logic intensive processes such as data validation and sales update. 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 sales and 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 the order to cash process.

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 order to cash process 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 order to cash 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 order to cash

process to handle the additional workload without impacting the performance of interactive users and non-order to cash processes.

Benefits of a Faster Order to Cash Process

The benefits of using Oracle Engineered Systems with your Order to Cash process are many, and include:

- Faster response for sales entry, pricing, and fulfillment.
- Rapid adjustments for sales spikes, warehouse issues, shipping delays, and anything impacting a customer's shipment.
- Increased accuracy of shipped orders, reducing customer returns.
- Faster, more frequent runs of the Update Sales process.
- Sales information reflected in financial data in near real time.
- Reduced DSO ratio, because credit and collections managers are using near real time information.
- Increased customer satisfaction and retention.

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Conclusion

In the ultra-competitive business environment that you compete in, timely management of customers, sales, and financial information is vital to the success of your company. Speed is key when managing customer orders, manufacturing changes, sourcing issues, and receivables. You don't want customers perceiving your company as slow because of the length of time it takes to refresh orders with pricing, sales promotions, and deliver dates. In addition, your Chief Financial Officer does not want to wait 24 hours to see how today's sales figures impact the financial ledger, cash flow, and the DSO ratio. Using Oracle Engineered Systems with your Order to Cash process offers tremendous potential to increase customer satisfaction, improve the performance of crucial revenue generating business processes, and positively impact the bottom line.

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