ORACLE VALUE CHAIN PLANNING

IN-MEMORY PERFORMANCE DRIVEN PLANNING

Would you like to dramatically reduce your end-to-end planning cycle time? Are you able run your regional plans within a set time window? Do you have a need to enable larger plan horizons with large-scale data sets? Oracle® In-Memory Performance Driven Planning, optimized to run on Oracle Engineered Systems, offers the extreme performance needed for planning with large data sets and enables high throughput planning and real-time analytics.

EXTREME PERFORMANCE FOR THE DEMAND-DRIVEN VALUE CHAIN

Planning your complex demand-driven value chain has always been challenging, and the degree of difficulty continues to increase. Trends in business and economic conditions as well as emerging technologies have added to the complexity. The pressure increases to plan for more complex value chains, more frequently, to a greater level of detail, and to make more informed decisions. Oracle® Value Chain Planning is a critical opportunity area for many companies as they look to improve the efficiency and reliability of their global supply chains.

Oracle Engineered Systems, which include Oracle Exadata Database Machine and Oracle Exalogic Elastic Cloud, are the preferred platform for deploying Oracle Value Chain Planning when performance and scalability are important because of the extensive tuning, engineering the hardware and software to work together, and innovations that are only available with the stack. To reach the next extreme level of performance and scalability the applications need to be engineered to take full advantage of the technology stack.

Oracle In-Memory Performance Driven Planning takes this to a whole new level by engineering the applications specifically to take full advantage of all the unique features of the Oracle Engineered Systems to enable the next generation of interactive planning, simulation, and analysis to dramatically improve the performance of existing planning processes and enable new processes that were not previously feasible.

Figure 1: In-Memory Performance Driven Planning – Advanced Visualization

KEY FEATURES

- Real Application Cluster (RAC) support for Value Chain Planning applications
- Advanced visualization and graphics for faster plan analysis
- Model increased planning scale for enterprise wide planning across large data sets and a large number of organizations at more granular level
- Faster data snapshot processing through parallelization
- Extreme speed for plan data collection, plan run, and plan archive processing

KEY BENEFITS

- Extreme performance for large scale planning processes
- Strongly reduced end-to-end planning cycle time
- Improved planner productivity and satisfactions through improved visual analysis and better handling of large data sets
- Near real-time analytics through faster plan archive processing
- Lower total cost of ownership
- Faster time to value
EXTREME PERFORMANCE ON ORACLE ENGINEERED SYSTEMS

Oracle In-Memory Performance Driven Planning has been engineered to take full advantage of the capabilities uniquely provided by Exadata. For example, Oracle In-Memory Performance Driven Planning enables Real Application Cluster support for Value Chain Planning to take advantage of increased parallelism and scalability enabling much faster performance for database intensive planning processes like data collection, plan snapshot, and plan flush. This enables much shorter end-to-end planning times for the Value Chain Planning products like Oracle® Rapid Planning, Oracle® Advanced Supply Chain Planning, Oracle® Inventory Optimization, and Oracle® Service Parts Planning.

Another example is re-engineering Oracle® Advanced Planning Command Center to take full advantage of Exadata’s Smart Flash Cache. One key function of Oracle Advanced Planning Command Center is to provide the embedded analytics as well as the analysis layer for all of the Oracle Value Chain Planning products. There is a critical process step between runs of the various planning processes and the analysis, where the plan output is archived and transformed into pre-aggregated business metrics for the dashboards, reports, and ad-hoc queries. Oracle In-Memory Performance Driven Planning reduces run times of some key batch processes by 5x or more, but also totally eliminates many batch processes altogether by taking advantage of the Exadata platform to enable a real time interactive simulation and analysis process.

REDUCE END-TO-END PLANNING CYCLE TIME AND DATA LATENCY

In-Memory Performance Driven Planning builds upon the Oracle® Value Chain Planning platform with new functionality for analysis and for processing high volume planning data across many users and many organizations.

Planning processes are all very data and performance intensive. Historically, in designing planning business processes, tradeoffs have been made in the frequency of the planning cycle based on the time required to complete the entire cycle. By deploying Oracle In-Memory Performance Driven Planning on Oracle Engineered Systems, customers have seen improvement across all aspects of their planning processes, including data collection, plan snapshot times, plan run times, plan flush times, and archival of plan data for analysis. Existing benchmarks show up to 60% reduction in data collection and plan run times.

Oracle In-Memory Performance Driven Planning also totally eliminates many batch processes altogether by taking advantage of the Exadata platform to keep more of the processing directly in memory. 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 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. This improved performance and scalability can translate into tangible business benefits in several ways including moving to more frequent planning cycles, reducing IT batch windows to increase plan availability, expanding the scope of planning processes to incorporate more detail, and enabling new business processes.

More frequent planning cycles

One constant pressure on existing planning processes is to reduce the size of planning cycles and increase the frequency of planning. Examples include moving from a monthly to a weekly...
or daily forecasting cycle, moving from a daily supply planning cycle to every shift or multiple times a day. Oracle In-Memory Performance Driven Planning enables customers to further reduce their planning cycle times and increase the frequency of planning. Increasing the frequency of planning processes means they are based on more timely and relevant information and not based on dated or no longer relevant assumptions, enabling more effective business decisions. In addition to increasing the frequency of existing processes, this can also translate into additional what-if scenarios to be performed and analyzed for any given decision, enabling a more comprehensive analysis.

**Increase plan availability by reducing batch processing time**

Another constant pressure is the ability to complete all planning processes within narrow IT batch-processing windows. This is particularly acute for global companies where there are no time windows where planners are not actively working on plan results. The unprecedented performance and scalability provided by Oracle In-Memory Performance Driven Planning enables all of the planning processes to be completed in a timely manner, and more importantly, means planning information is available to all planners around the world when needed for decision-making.

**Expand the scope of your planning processes**

Improved performance can also enable increasing the scope of planning processes. For example, expanding forecasting and replenishment to daily store level information, or increasing the time horizon and detail of supply chain planning. Other business requirements can drive the value of being able to scale, for example:

- For companies in high growth industries (i.e. mobile or e-commerce) or rapid market expansion (i.e. emerging markets) growth in the volume of transactions associated with growth in a company’s business can mean the need to plan for larger planning footprints
- Growth in the volume of transactions can also result from a specific business event such as an acquisition or restructuring or merger of company divisions.

**Enable new planning processes**

The increase in scalability also enables new business processes that were not previously feasible. One example that is increasing in adoption and importance is enterprise level integrated business planning. Typically, companies have implemented sales and operations planning or integrated business planning processes at the business unit level. The new trend is for large enterprises to implement a broader scale process to coordinate activities and resource loads across business units and optimize performance at the enterprise wide level. This creates a need to consolidate a huge amount of planning data from multiple planning systems and aggregate the information to an enterprise level.

Oracle In-Memory Performance Driven Planning enables consolidating planning data from multiple planning systems or instances to perform cross-instance analytics to support processes like enterprise level integrated business planning.

**INCREASED PLANNING SYSTEM AVAILABILITY**

With In-Memory Performance Driven Planning, customers get full support for Oracle Real Application Clusters (RAC) when running any of the Value Chain Planning applications. Customers will now get the full benefit of horizontal scalability and high reliability of Oracle RAC. All Value Chain Planning processes like collections, snapshot, and so on, will now utilize the full processing power of all the nodes in the cluster (instead of being pinned to one node) and thus will perform that much faster. With this dramatic improvement in performance, customers can schedule their collection runs much more frequently getting
closer to real time visibility and response to execution changes.

With In-Memory Performance Driven Planning you can use a single hardware platform to support a larger volume of transactions and end users. Companies continue to transition from multiple disconnected planning systems to more consolidated corporate planning solutions. Whether this is an upgrade of older planning systems or a rollout of a new planning process across multiple regions or business units, such initiatives drive cost saving in managing infrastructure, alignment of business processes, corporate visibility to the overall supply chain, and synergies across the business units to optimize the global supply chain. Oracle In-Memory Performance Driven Planning is designed to handle the scalability required for such planning systems.

**INCREASED PLANNER PRODUCTIVITY AND SATISFACTION**

Improved performance and scalability not only applies to batch processing, but to overall user experience as well. Planners and business analysts deal with large amounts of data that needs to be transformed into usable information expressed in terms of business impact at appropriate levels of aggregation. Much of the user interaction with planning systems is in the form of complex queries and displays. Examples of this include the complex aggregate worksheets used for demand analysis, queries of filtered demand and supply data for supply analysis, queries of plan recommendations for manipulation and release to execution systems, and business analytics for plan analysis. Oracle In-Memory Performance Driven Planning provides consistently better performance across all the user interactions with large complex queries experiencing 10x or more performance improvement.

**Much faster plan archives and scenario analysis**

One key function of Oracle Advanced Planning Command Center is to provide the embedded analytics as well as the scenario and aggregate planning analysis layer for most of the Oracle Value Chain Planning products. Oracle In-Memory Performance Driven Planning significantly reduces the archival process between the end of a plan or simulation run and the availability for viewing and reporting in the dashboards. Second, one of the most powerful capabilities of Value Chain Planning’s Oracle Advanced Planning Command Center is the configurability and the ease by which users can create their own complex measures and analyses. Often however, as these personalized analyses have not been pre-engineered for optimal performance, the response time is noticeably less than the seeded reports. Besides improving the performance of existing reports and dashboards, this enables users to create even more complex reports that previously would not be rendered with acceptable performance. And finally, it provides dramatically increased performance in the responsiveness of the end user reports and queries with up to 29x improvement seen in complex analyses.

Increasing the productivity of planners and business analysts translates into having your knowledge workers spending more time analyzing and driving business results instead of waiting for planning processes or trying to compile the data required to make informed decisions.

**New visualizations for improved plan analysis**

Oracle In-Memory Performance Driven Planning provides completely new visualization capabilities that eliminate a lot of manual steps in a typical planner's day only available when Oracle Advanced Planning Command Center is used with Oracle In-Memory Performance Driven Planning. For example, users can create reports using the new pivot table heatmap to immediately highlight visually where important areas of concern are with guided navigation to the underlying issues. This enables planners to easily identify variations from plan to plan.
with configurable thresholding and get to the deviations very quickly avoiding all the manual comparison steps. The micro trellis charts would let users spot the outliers in terms of things like inventory trends or demand variations easily. Exadata hardware has proven to execute such complex reports with multiple queries in parallel and fetch results 10x faster.

**Productivity enhancements**

Oracle In-Memory Performance Driven Planning also takes advantage of the newest release of Oracle Business Intelligence Enterprise Edition which provides a number of user interface enhancements to promote interactivity and responsiveness. Features like Google style auto-text complete, cascaded prompts, dynamic user interface refresh and contextual right-click interactions makes it easier for the end user to analyze data and for the first time deliver some of the most commonly used web style interactions to an enterprise software solution.

**LOWER TOTAL COST OF OWNERSHIP, FASTER TIME TO VALUE**

In addition to providing business users new functionality and performance, In-Memory Performance Driven Planning benefits IT staffs. Traditional approaches to large scale planning systems often involve lengthy, complex, and expensive implementations. The initial iterations of loading data, stabilizing batch processes, and tuning the statistical engine may take a very long time with large data volumes. Business processes with large transaction volumes can also be time consuming to configure and finalize. The inherent performance offered by In-Memory Performance Driven Planning can dramatically reduce run times, reduce implementation costs, accelerate user acceptance testing, and speed time to value.

**ORACLE VALUE CHAIN PLANNING – A COMPLETE SOLUTION**

Oracle Value Chain Planning enables companies to efficiently design, plan, and service their value chains from factory to shelf. Its componentized architecture enables you to start with any product, gain immediate benefits, and expand to other areas at any point in time. The Oracle Value Chain Planning architecture leverages the scalability and security of Oracle’s Database and Fusion Middleware technology and can be deployed as a single instance with Oracle E-Business Suite, or integrated with other systems. Whether you implement one module or the entire product solution, Oracle Value Chain Planning enables you to share unified supply chain planning information across the enterprise so you can make informed decisions faster.

**CONTACT US**

For more information about Oracle In-Memory Performance Driven Planning, visit oracle.com or call +1.800.ORACLE1 to speak to an Oracle representative.

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**ORACLE DATA SHEET**

**RELATED PRODUCTS**

- Leverage Oracle® Advanced Planning Command Center to compare scenarios and provide predictive analytics
- Leverage Oracle® Advanced Supply Chain Planning and Oracle® Constraint Based Optimization for comprehensive supply and distribution planning across all your manufacturing and distribution facilities, customers, and suppliers
- Leverage Oracle® Rapid Planning for fast incremental supply planning and event driven simulations