

# Appsperf 2008 Workshop – Thursday April 17, 2008

## 8:30 AM - Keynote by Cliff Godwin



Cliff Godwin is the Senior Vice President of Applications Development at Oracle Corporation. Mr. Godwin is responsible for the E-Business Suite and Higher Education businesses as well as the Fusion Upgrade Program Office. Mr. Godwin has been a member of the senior management team of Oracle's Applications business for most of his 17 years at Oracle.

Prior to his current role, Mr. Godwin led the Applications Technology Group which is responsible for ensuring that the Oracle E-Business Suite effectively leverages Oracle's systems technologies, and for building the common objects and services used throughout the Oracle E-Business Suite. Mr. Godwin holds M.S. degrees in Mathematics and Operations Research from Stanford University, and an M.B.A. from Harvard Business School..

## 9:00 AM – 10:30 AM: Tuning the Application Server and JVM, Ahmed Alomari, Cybernoor Corporation.

This session will provide tuning tips for the Application Server tier including Apache, JServ, Forms, Discoverer, Portal, etc.. In addition, this session will also present methodologies and techniques on how to monitor and optimize the JVMs used by the E-Business Suite. There are many web based modules within the E-Business Suite which leverage the JVM such as Time and Labor, Projects, iProcurement, iStore, Quoting, Configurator, etc.. It is essential that the JVMs powering these modules be configured appropriately in order to maximize availability as well as performance. This session will also provide tips on how to deal with and diagnose JVM crashes and memory leaks as well as how to monitor the various pools within the JVM such as the AOLJ JDBC connection pool and AM Pool.



Ahmed Alomari is well known in the industry for his performance expertise. He has published several books on performance tuning with Prentice Hall. He has also presented on the subject of performance tuning at numerous conferences including Oracle OpenWorld, Oracle User groups, Oracle Applications Users Group (OAUG), VLDB, SANS, and Database and Client Server World. Prior to becoming an independent consultant and starting Cybernoor Corporation, Ahmed worked for Oracle Corporation for over 10 years, and he last held the position of Vice President of the Applications Performance Group in the Applications Development Division.

Ahmed managed the Applications performance group in Applications development and he was responsible for the performance and scalability of the E-Business Suite and the PeopleSoft

Enterprise applications. As part of his role managing the Applications performance group at Oracle, Ahmed led the effort to migrate Oracle Applications to the cost based optimizer (CBO), as well as adopt advanced features in the Applications product lines including partitioning, Materialized Views, OLAP, VPD, parallel execution and many others. Ahmed has also worked with hundreds of customers to adopt Real Application Clusters (RAC) in Applications environments, and he led an effort (inside Oracle) to ensure Oracle Applications is RAC aware. He has close to 15 years of performance tuning expertise with large systems. In 1996, Ahmed was awarded the outstanding achievement award at the VLDB summit for Operational Databases from the Winter Corporation.

### **9:00 AM – 10:30 AM: Managing Your E-Business Suite System Workload, Larry Klein, Sleuth Systems.**

This session will provide insight as to how to effectively manage your E-Business Suite system workload. Just as airplanes can't take off and perform well if there's too much weight on board, computer systems cannot perform well if their business workload outstrips server resources. An early step in the lifecycle of any Oracle E-Business project, is to carefully estimate the server resources required to support the project well. Why is it, then, that workload performance problems can occur in production, or server resources are consumed months earlier than planned?

This session explains how to bring the mainframe performance concept of "workload characterization" to the Oracle E-Business world, and then apply that concept to measure and manage the Oracle E-Business workload. This session will also include real-life case studies in E-Business Suite workload management.



Larry Klein has more than 30 years of IT experience in various technical consulting and management roles, in both the Oracle/Open Systems world as well as the IBM mainframe world. For the last 14 years Larry has had a particular focus helping hundreds of Oracle E-Business customers manage their application and database performance. Larry is President of Sleuth Systems, Inc., and enjoyed successful tenures at both Oracle and Hotsos. Larry has given presentations on performance optimization topics at several Hotsos Symposia, the OAUG national conference, and various regional Oracle User Group meetings since 1999.

### **10:30 AM – 11:00 AM Break**

### **11:00 AM – 12:30 PM: 11g New Optimizer Features, Dr. Mohamed Zait, Oracle Corporation, Server Technologies.**

Oracle 11g is the latest release of the Oracle database server, which shipped in July 2007, and includes significant enhancements to the query optimizer. This presentation will offer an overview of query optimization in general as well as the details of the 11g optimizer enhancements introduced in the area of query optimization such as:

- SQL optimizations
- Feedback optimization
- Optimizer statistics management
- SQL plan management
- SQL diagnosability



Dr. Mohamed Zait received his MS and PhD in Computer Science from the University of Paris 6 in 1990 and 1994 respectively. His research work was in the area of query optimization in parallel execution environments. After graduation, he worked on data mining at IBM Research (San Jose, CA) for 1.5 years, and then joined Oracle Corporation in 1996. Since joining Oracle, Mohamed Zait worked on various areas of the database server including query optimization, parallel execution, memory management, manageability, and diagnosability. He co-authored numerous refereed conference and journal papers in these areas. He currently manages the query optimizer development group.

### **11:00 AM - 12:30 PM: Tuning the Concurrent Manager, Jerry Ireland and Mark Farnham, RIGHTSIZING Inc.**

This session will present a holistic methodology on how to optimally configure and tune Concurrent Manager, including using workshifts and tuning the number of target processes per manager type. In addition, this session will also cover best practices for Parallel Concurrent Processing (PCP).



Mark Farnham is well known for system and database configuration and optimization. Mark has assisted such clients as Burlington Coat Factory, Cisco Systems, Network Applications, and PayPal with database architecture, systems analysis and planning, and implementation and support of application optimization and database performance.

Mark has had great success working with very large databases. Since founding RIGHTSIZING, he has been involved in the configuration and tuning of some of the largest Oracle databases in the U.S. including such businesses as Kmart, Bechtel Corporation, the Latter Day Saints and PayPal. He also was a key member of the Massive Open System Environment Standards (MOSES) group and the Very Large Database (VLDB) group from their inception.



Jerry Ireland, co-founder of RIGHTSIZING, has earned a reputation as a leading architect and developer of high-performance Oracle applications. With almost thirty years of consulting, he has considerable experience with implementation and development of Oracle's E-Business Suite, including complex customizations and extensions using Application Object Library and Workflow. He has designed and developed one of the more advanced "Vendor Managed Replenishment" systems with EDI interfaces to major retail chains such as Wal-Mart, Kmart and Target. He has also designed web store systems interfaced to Oracle's Order Entry.

Jerry has extensive development experience with large databases. He has a thorough knowledge of Oracle development tools. He has also participated in beta testing as far back as CASE 5.0, CASE 5.1 and ReportWriter 2.0. His most recent projects include work with Oracle Streams and BPEL.

Jerry has served on the board of directors of the Oracle Development Tools User Group from its infancy and is a regular speaker and panel member at the ODTUG and OAUG conferences. He has chaired several ODTUG conferences and has been a driving force behind collaboration between OAUG and ODTUG at OAUG conferences.

## **12:30 PM – 1:30 PM: Break for Lunch**

### **1:30 PM – 3:00 PM: SQL Performance Management in Oracle 11g with Automatic SQL Tuning and Real-Time SQL Monitoring; Real Application Testing in Oracle 11g with SQL Performance Analyzer and Database Replay, Dr. Benoit Dagevile, Server Technologies, Oracle Corporation.**

SQL tuning is a critical aspect of database performance tuning. Unfortunately this has traditionally been an inherently complex activity, requiring a high level of expertise in multiple domains. Furthermore, SQL tuning is both time-consuming and repetitive due to the large volume and evolving nature of the SQL workload and the underlying data. Oracle 11g automates this process through the Automatic SQL Tuning feature, wherein SQL Tuning Advisor runs automatically in system maintenance windows, tests its own recommendations, and can implement SQL profiles when they show a large performance improvement.

Real-Time SQL Monitoring, a feature introduced in Oracle 11g, helps DBAs and SQL tuning experts by providing comprehensive and detailed statistics on individual SQL execution. These statistics are fine grain, collected for each step of the execution plan and for each parallel execution server involved when the execution is parallel. Real-time SQL monitoring is enabled out-of-the-box and allows to monitor real-time the execution of long running SQL statements.

SQL Performance Analyzer is the first component of the Real Application Testing option. It offers a comprehensive solution that enables users to forecast and analyze how a system change might impact application SQL execution plans and run time performance. System changes include database upgrade, initialization parameter settings, schema changes, and gathering optimizer statistics.

Database Replay is the other component of the Oracle 11g Real Application Testing option. It makes it possible to subject a test system to a real production system workload, which helps identify all potential problems before implementing the planned changes on the production system. Any interesting workload period of a production database system can be captured with minimal overhead. The captured workload can be used to drive a test system while maintaining the concurrency and load characteristics of the real production workload. Therefore, the test results using database replay can provide very high assurance in determining the impact of changes to a production system before applying these changes.

This session will start with a deep-dive into the above first two features and provide specific examples where they can simplify SQL monitoring and tuning immensely. In particular, it will demonstrate how these features have lowered the barrier to entry for competent SQL tuning, introducing new approaches that are both more scientific and more accessible to the broad base of Oracle customers. This session will then switch to the new Real Application Testing option of Oracle 11g. It will cover the SQL Performance Analyzer and Database Replay features in great

detail including an explanation of the architecture of these features. It will then show how these features can be used to assess the impact of a change. The session will conclude by presenting results which demonstrate the usefulness of the Real Application Testing option.



Benoit Dageville is an architect in the Oracle Database development division at Oracle Corporation in Redwood Shores, California. His main areas of expertise include SQL execution and optimization, parallel query processing, ETL (Extract Transform and Load) and tuning large Data Warehouse benchmarks (e.g. TPC-H). Since 1999, he has been one of the lead architects of the self-managing database initiative at Oracle. Major features resulting from this effort include the Automatic SQL Memory Management (Oracle 9i), the SQL Tuning Advisor (Oracle 10g), the Automatic SQL Tuning (Oracle 11g), the Real-time SQL Monitoring feature (Oracle 11g) and the Real Application Testing option (Oracle 11g). Dr. Benoit Dageville graduated from the University of Paris 6, France, in 1995 with a Ph.D. degree in Computer Science, specializing in Parallel Database Management Systems under the supervision of Dr. Patrick Valduriez. His research and industrial work resulted in several refereed papers in International conferences and journals.

**1:30 PM – 3:00 PM: Customer Success Stories: Optimizing the E-Business Suite with Real Application Clusters (RAC), Ahmed Alomari, Cybernoor Corporation, EMC Technical Team, EMC Corporation.**

This session will be co-presented with the technical team from EMC Corporation. EMC will share their success stories with deploying RAC in their E-Business Suite production environment which supports the EMC Sales force. This session will present tips and techniques to optimize your E-Business Suite environment when using Real Application Clusters (RAC). The session will offer tuning tips as well as Applications RAC best practices. The EMC technical team will also share their experiences with RAC including best practices.



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with hundreds of customers to adopt Real Application Clusters (RAC) in Applications environments, and he led an effort (inside Oracle) to ensure Oracle Applications is RAC aware. He has close to 15 years of performance tuning expertise with large systems. In 1996, Ahmed was awarded the outstanding achievement award at the VLDB summit for Operational Databases from the Winter Corporation.

### **3:00 PM – 3:15 PM: Break**

### **3:15 PM – 4:45 PM: Understanding and Tuning the Shared Pool, Kumar Rajamani, Server Technologies, Oracle Corporation.**

The shared pool is one of the key components of the Oracle database and it is important that the shared pool be optimally configured in order to maximize the performance of the E-Business Suite. This session will start with a deep-dive into the Oracle Shared pool which consists of several caches of complex data structures including shared cursors, PLSQL program units, tables, views, etc.. The performance of the Oracle database greatly depends on the optimal sizing of the shared pool. In order to tune the shared pool, it is important to first understand the Oracle shared pool and its components. This session will describe the various caches within the shared pool, relevant configuration parameters, concurrency mechanisms, and relevant wait events. This session will also provide examples on how to troubleshoot shared pool issues such as library cache latch contention, ORA-4031 errors, etc..

Kumar Rajamani is a Consulting Member of Technical Staff with Oracle Corporation, and he currently manages the SQL cache and the SQL Front-end development group for the Oracle RDBMS. The SQL Cache Group is responsible for caching and management of SQL metadata. It is also responsible for the caching and access of compiled SQL statements, as well as compiled PLSQL program units. Kumar has been with Oracle since 1999, and he has made numerous optimizations to the Oracle RDBMS including the Oracle 10g new feature cursor mutex pinning (KKS mutex), special cursor optimization, shared pool footprint improvements, online patching infrastructure for the near Zero downtime project, and many others.

### **3:15 PM – 4:45 PM: Tuning Oracle Workflow, Karen Brownfield, Solution Beacon.**

Oracle Workflow is one of the most critical components of the E-Business Suite system, hence it is essential that the entire Workflow ecosystem be configured optimally. This presentation will present tips and techniques on how to increase the performance of your Oracle Workflow system including Background Engines, Workflow Mailer, Agent Listeners, and Workflow Purging as well as optimizing the Workflow process definitions.



Karen Brownfield of Solution Beacon has 30+ years experience programming, installing, and managing applications used in various industries including Chemicals, Entertainment, Defense, Recruitment, Telecommunications, and Hospitality. The past 18 years she has focused on Oracle Applications specializing in Financials and Workflow as functional specialist, workflow administrator, trainer, programmer, team lead, and/or project manager. Karen is also a member of the OAUG board of directors, serving in multiple capacities in the last 15 years, including President, Past President, other committee roles, and has presented many

papers and training sessions at the various OAUG and user group conferences locally, regionally, and internationally.

**4:45 PM – 5:00 PM: Break**

**5:00 PM – 6:00 PM: Meet the Applications Performance Experts: Q&A.**

Come and meet the Applications Performance Experts and the AppsPerf 2008 presenters. This session provides attendees with a unique opportunity to ask the panel questions, present comments, as well as share your experiences and best practices in the areas of Applications performance.