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Consulting Technology Outsourcing Industries

Julian Dontcheff, Accenture

Oracle Certified Master & Oracle ACE Director

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Julian Dontcheff



Julian Dontcheff

Senior Manager,
Head of Database
Management



Professional Background

Julian Dontcheff has more than 20 years of database experience. He is the first Oracle Certified Master in Europe (back in 2002) and he is also an Oracle ACE Director.

For almost two decades, Julian has been lecturing around the world on theoretical computer science and databases. Julian is a certified professional in both Oracle database administration and software development. Julian is featured in the 2011 July/August issue of Oracle Magazine.

Julian Dontcheff runs a database blog at <http://juliandontcheff.wordpress.com/>

Julian has experience and knowledge in the retail, banking, telecom and high-tech sector. He holds a global position at Accenture as Head of Database Management.

Areas of Deep Expertise

Database Expertise:

Data migrations, database upgrades, backups, cloning and recovery
Oracle installation, configuration, patching and database tuning
Expert on very large databases and Enterprise Manager Grid Control
HA: Real Application Clusters & Oracle Data Guard
Advanced and materialized view replication, Oracle streams, Golden Gate
Oracle internals, Oracle security, Oracle distributed systems and Oracle Net
Database design, Master data management, Business Intelligence and Data
Warehousing: Teradata and Exadata
ETL data: export/import, SQL*Loader and Oracle datapump
MAA and DR: Maximum Availability Architecture and Disaster Recovery
Years of teaching Oracle and 10.000+ hours of 24x7 on-call Oracle duty

Education and Certifications

- Master of Science: University of Helsinki
- Oracle Certified Master
- Oracle Certified Professional DBA
- Oracle Certified Professional Developer
- Oracle Database Performance Tuning Certified Expert

Examples of Relevant Work Experience

Nokia (2002 – 2011)

- Manager of Nokia's Global Database Technology team and head of the Continual Service Improvement unit in Nokia Computing
- The DBA team took care of about 2300 databases worldwide, mostly Oracle.
- Julian was also the manager of the Systems Management and the Technology Management teams in Nokia Computing

Accenture

223,000 employees worldwide in more than 120 countries

5400+ Oracle projects completed or underway

560 clients served globally

50,680 Oracle-skilled professionals globally

Accenture is the first member of the Oracle Partner Network to achieve Diamond Status - the highest status achievable

One of the largest practices of all Oracle services providers globally

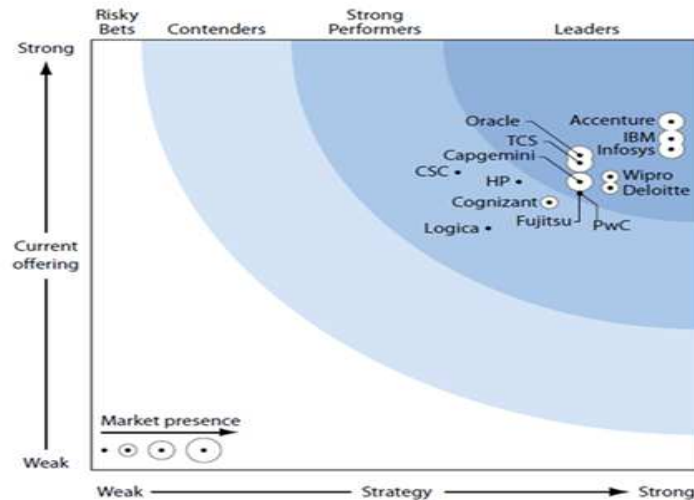
Ranked No. 2 in Information Technology Services category of Fortune magazine's "World's Most Admired Companies" list (2010)

Ranked No. 1 on the International Association of Outsourcing Professionals' (IAOP) for the fourth year in a row (2011)



The Forrester Wave™: Oracle Services Providers, Q2 2011. May 20, 2011

Figure 2 Forrester Wave™: Oracle Services Providers, Q2 '11



"Accenture. A global giant in the Oracle implementation space, Accenture is well suited to the world's largest multinational Oracle rollouts. Accenture has a strong practice across all major Oracle product lines and across a broad range of industries, with particular strength in government, life sciences, communications, and utilities. Accenture has one of the largest global delivery capabilities in the Oracle space, largely leveraging India and the Philippines for resources."

Forrester evaluated 14 leading global services providers in the Oracle applications market to assess strengths, weakness, and differences in strategy. This report will help Oracle application buyers navigate the crowded landscape of service providers that can help with implementation, application support, and hosting.



Case #1: Big Telecom Client – High CPU Usage

- ✓ Service Delivery Platform functioning as an orchestration and activation engine
 - Main purpose is to execute service logic for the delivery of composite services for tens of millions of clients.
- ✓ Very high CPU load is witnessed in an 11.2.0.2 RAC database which makes the system literally unusable
- ✓ All relates to a single SQL statement
- ✓ Developers say the execution plan does show proper index usage
- ✓ Problem was solved using STA (SQL Tuning Advisor) by creating a SQL Profile for the statement

Top 5 Timed Foreground Events

Event	Waits	Time(s)	Avg wait (ms)	% DB time	Wait Class
DB CPU		8,881		79.12	
gc buffer busy acquire	527,580	1,291	2	11.50	Cluster
gc current block 2-way	95,620	180	2	1.61	Cluster
gc cr block 2-way	57,091	144	3	1.28	Cluster
gc current block busy	16,490	130	8	1.16	Cluster

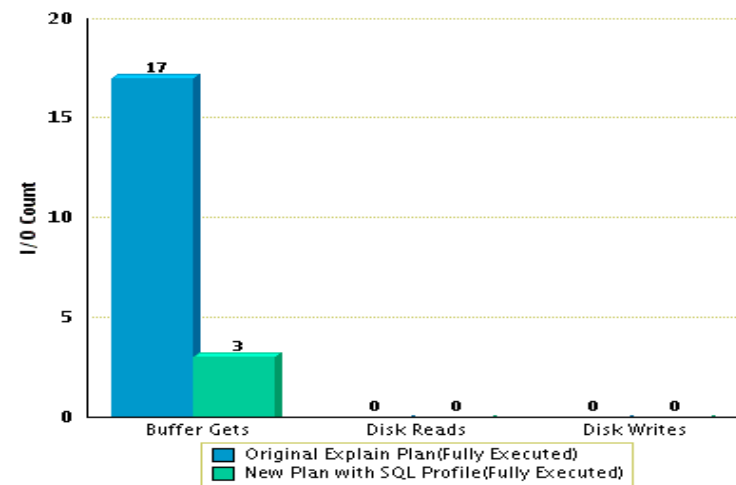
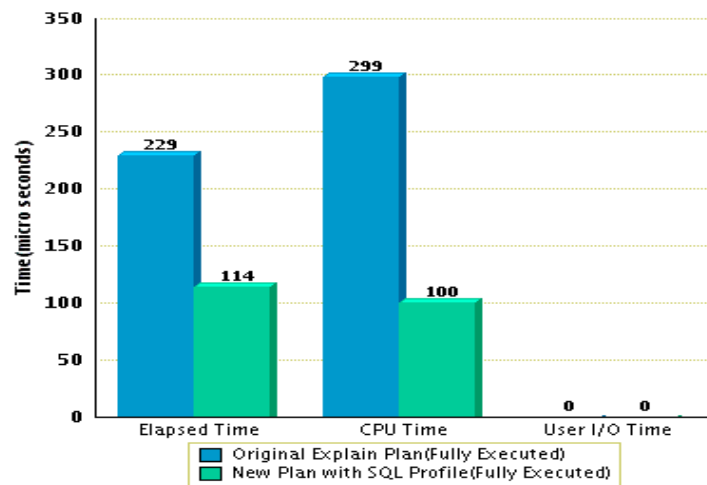
Host CPU (CPUs: 128 Cores: 64 Sockets: 8)

Case #1: SQL Profile Recommendation

✓ You can compare the SQL Profile testing results

Compare Explain Plans

Profile Testing Results



Case #1: SQL Profile Recommendation

✓ Also, you can then compare the execution plans

Original Explain Plan (Annotated)

ⓘ Indicates an adjustment from the original plan by the SQL Tuning Advisor
Plan Hash Value **81012801**

Expand All | Collapse All

Operation	Line ID	Object	Object Type	Order	Rows	Bytes	Cost	Time	CPU Cost	I/O Cost
SELECT STATEMENT	0			3		0.034	3	1	155,955	3
TABLE ACCESS BY INDEX ROWID	1	<u>SDP4_MDS.MDS_PATHS</u>	TABLE	2		0.034	3	1	155,955	3
INDEX RANGE SCAN	2	<u>SDP4_MDS.MDS_PATHS_N5</u>	INDEX	1			3	1	58,764	3

New Explain Plan With SQL Profile

Plan Hash Value **3424988650**

View Graph Table

Expand All | Collapse All

Operation	Line ID	Object	Object Type	Order	Rows	Bytes	Cost	Time	CPU Cost	I/O Cost
SELECT STATEMENT	0			3		0.034	2	1	15,763	2
TABLE ACCESS BY INDEX ROWID	1	<u>SDP4_MDS.MDS_PATHS</u>	TABLE	2		0.034	2	1	15,763	2
INDEX UNIQUE SCAN	2	<u>SDP4_MDS.MDS_PATHS_U1</u>	INDEX (UNIQUE)	1			1	1	8,171	1

Case #2: Client Experiences ORA-600

- ✓ Run the SQL Repair Advisor after a SQL statement fails with ORA-600
- ✓ The advisor analyzes the statement and often recommends a patch to repair the statement
- ✓ After implementing the recommendation, the applied SQL patch makes the query optimizer to choose an alternate execution plan for future executions
- ✓ After you apply a SQL patch with the SQL Repair Advisor, you may want to view it to confirm its presence, disable it or even remove it

Case #2: SQL Repair Advisor for ORA-600

Category Critical ✖ 6 Warning ⚠ 1

Severity	Category	Name	User Impact	Message	Alert Triggered
✖	Incident	Generic Internal Error		Internal error (ORA-600[15261]) detected in /log/PD1CMD/diaq/rdbms/pd1cmd/PD1CMD1/alert/log.xml at time/line number: Wed May 18 13:23:13 2011/74718.	May 18, 2011 1:23:59 PM
✖	Incident	Generic Internal Error		Internal error (ORA-600[15261]) detected in /log/PD1CMD/diaq/rdbms/pd1cmd/PD1CMD1/alert/log.xml at time/line number: Wed May 18 10:32:51 2011/71651.	May 18, 2011 10:35:47 AM

Database Instance: database > Support Workbench > Logged in As SYSTEM
 Problem Details: ORA 600 [13011] Page Refreshed March 20, 2007 9:05:15 PM PDT

Summary

SR# --

Bug# --

Active **Yes**

Packaged **No**

Number of Incidents **1**

Last Incident

Timestamp [March 20, 2007 8:18:05 PM PDT](#)

Incident Source **System Generated**

Impact

Checkers Run **0**

Checker Findings **0**

Investigate and Resolve

Self Service [Oracle Support](#)

Assess Damage

[Run Checkers](#)

[Database Instance Health](#)

Diagnose

[Alert Log](#)

[Related Problems Across Topology](#)

[Diagnostic Dumps for Last Incident](#)

[Go to Metalink and Research](#)

Resolve

[SQL Repair Advisor](#)

Case #3: Change Testing Using SPA

- ✓ Developers claim that optimizer_index_cost_adj should be set to 1
- ✓ Problem solved with SPA component of Real Application of Testing

[View Latest Report](#)

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The SQL Performance Analyzer Task is a container for experimental results of executing a specific SQL Tuning Set under changed environmental conditions and assessing the impact of environmental changes on STS execution performance.

SQL Tuning Set

Name	STS NUMBER FOUR	Description	
Owner	SYS	Number of Statements	734

SQL Trials

A SQL Trial captures the execution performance of the SQL Tuning Set under specific environmental conditions.

[Create SQL Trial](#)

SQL Trial Name	Description	Created	SQL Executed	Status
INITIAL_SQL_TRIAL	parameter optimizer_index_cost_adj set to 100	24.5.2011 20:28	Yes	COMPLETED
SECOND_SQL_TRIAL	parameter optimizer_index_cost_adj set to 1	24.5.2011 20:29	Yes	COMPLETED

SQL Trial Comparisons

Compare SQL Trials to assess change impact of environmental differences on SQL Tuning Set execution costs.

[Run SQL Trial Comparison](#)

Trial 1 Name	Trial 2 Name	Compare Metric	Created	Status	Comparison Report	SQL Tune Report
INITIAL_SQL_TRIAL	SECOND_SQL_TRIAL	Elapsed Time	24.5.2011 20:30	COMPLETED	Report	

Case #3: Change Testing Using SPA

✓ *Will reducing optimizer_index_cost_adj default setting really help?* 😊

SQL Performance Analyzer Task Report: SYS.TASK 1

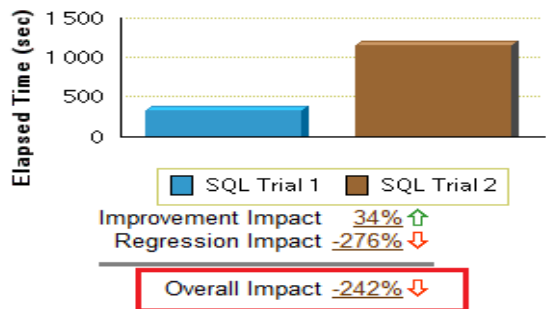
Save Mail

SQL Tuning Set Name **STS_NUMBER_FOUR**
 STS Owner **SYS**
 Total SQL Statements **734**
 SQL Statements With Errors **7**
 SQL Statements Unsupported **48**

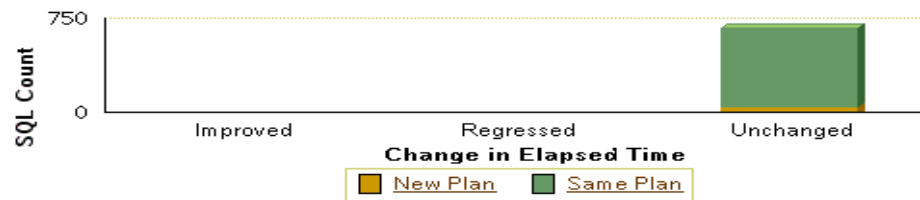
SQL Trial 1 **INITIAL_SQL_TRIAL**
 SQL Trial 2 **SECOND_SQL_TRIAL**
 Comparison Metric **Elapsed Time**
 SQL Statements With Timeout **0**

Global Statistics

Projected Workload Elapsed Time



SQL Statement Count



Recommendations

Oracle offers two options to fix regressed SQL resulting from plan changes:

Use the better execution plan from SQL Trial 1 by creating SQL Plan Baselines.

Create SQL Plan Baselines

Explore alternate execution plans using SQL Tuning Advisor.

Run SQL Tuning Advisor



Conclusions

- ✓ **SQL Tuning Advisor is best tool for tuning complex SQL statements**
- ✓ **Use SPA for validating SQL performance management**
- ✓ **Enable Automatic SQL Tuning**
- ✓ **Use SPA for validate result set caching of select static tables**
- ✓ **Use SQL Repair Advisor to repair SQL failures**
- ✓ **Replace error prone manual tuning with automated SQL Tuning Advisor and SPA**

Julian Dontcheff



Q&A
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