

OracleScene

A UK Oracle User Group publication

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**Business Intelligence
and Performance
Management:
A Necessity in
Tough Economic Times**



Oracle ACE Director's article:
Multi-Predicate Pruning with 11g Release 2

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Welcome to this latest edition of Oracle Scene. In this edition, we have articles ranging from ADF development through to MDM, database tuning through to writing efficient SQL. As usual we have a set of excellent columns from such industry luminaries as Mogens Nørgaard, Pete Finnigan and Grant Ronald, plus Debra Lilley returns with news of how she managed to still get across to Collaborate'10 in Las Vegas whilst Europe was shut down with the ash cloud!

This month's featured article is by Graham Spicer and is on a topic that is dear to my heart. Business Intelligence is one of the key growth areas within the Oracle world, as the insights it provides have proved invaluable during the past turbulent years, and this article by Graham explains why its worth you thinking about this area going into the future.

I'm also pleased to announce a new Oracle ACE / ACE Director column in Oracle Scene, something that we have put together in conjunction with sister publications from IOUG and ODTUG, and the Oracle ACE program run out of Oracle

headquarters in Redwood Shores. We have invited Oracle ACEs and ACE Directors to put forward articles for Oracle Scene in order to bring you the best writing, and news and views, from this expert Oracle community around the world. This month we have an article by Husnu Sensoy, Oracle ACE Director and Oracle Magazine's current Oracle DBA of the Year, on Multipredicate Pruning, and in future editions we hope to run articles from other ACEs on topics ranging from database development through Fusion Middleware, Applications and application development – and who knows, maybe even MySQL and Sun?

Finally, don't forget that we are always looking for new authors and articles, particularly in the area of applications, and business and management. If you fancy yourself as an author and have a story to tell that will interest our readers, please send them in to editor@ukoug.org.uk and we'll be pleased to take a look.



Mark Rittman, Editor





contents

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Oracle Customer Success Self-Assessment

5

By Kate Cumner, Global Software Support

UKOUG Column: The Tools of Fusion: Oracle JDeveloper and Oracle ADF

6

by Grant Ronald

Designing Efficient Sql: A Visual Approach

8

“From Mystery to ‘Master’y of the Universal Truth”

12

- The MDM Philosophy, Science and Art.”

Ways to make a copy of an Oracle table

14

By Matt Canning

Why I shouldn’t go to conferences

16

by Mogens Nørgaard

Multi-Predicate Pruning with 11g Release 2

18

by Husnu Sensoy

MRPO Background Media Recovery terminated with error

22

Extend your enterprise content reach using Oracle ADF Mobile

26

By Padmanabhan A and Ramesh Revuru

Rolling forward very large physical standby databases

29

By Owen Ireland, Northgate Information Solutions Ltd

Panning for Gold.... Oil.... Soil

32

By Pete Finnigan – PeteFinnigan.com Limited

Business Intelligence and Performance Management:

34

A Necessity in Tough Economic Times

An article by Graham Spicer, CEO of SolStonePlus

Reaching out to the world

37

Debra’s Diary

38

UKOUG calendar of events

39

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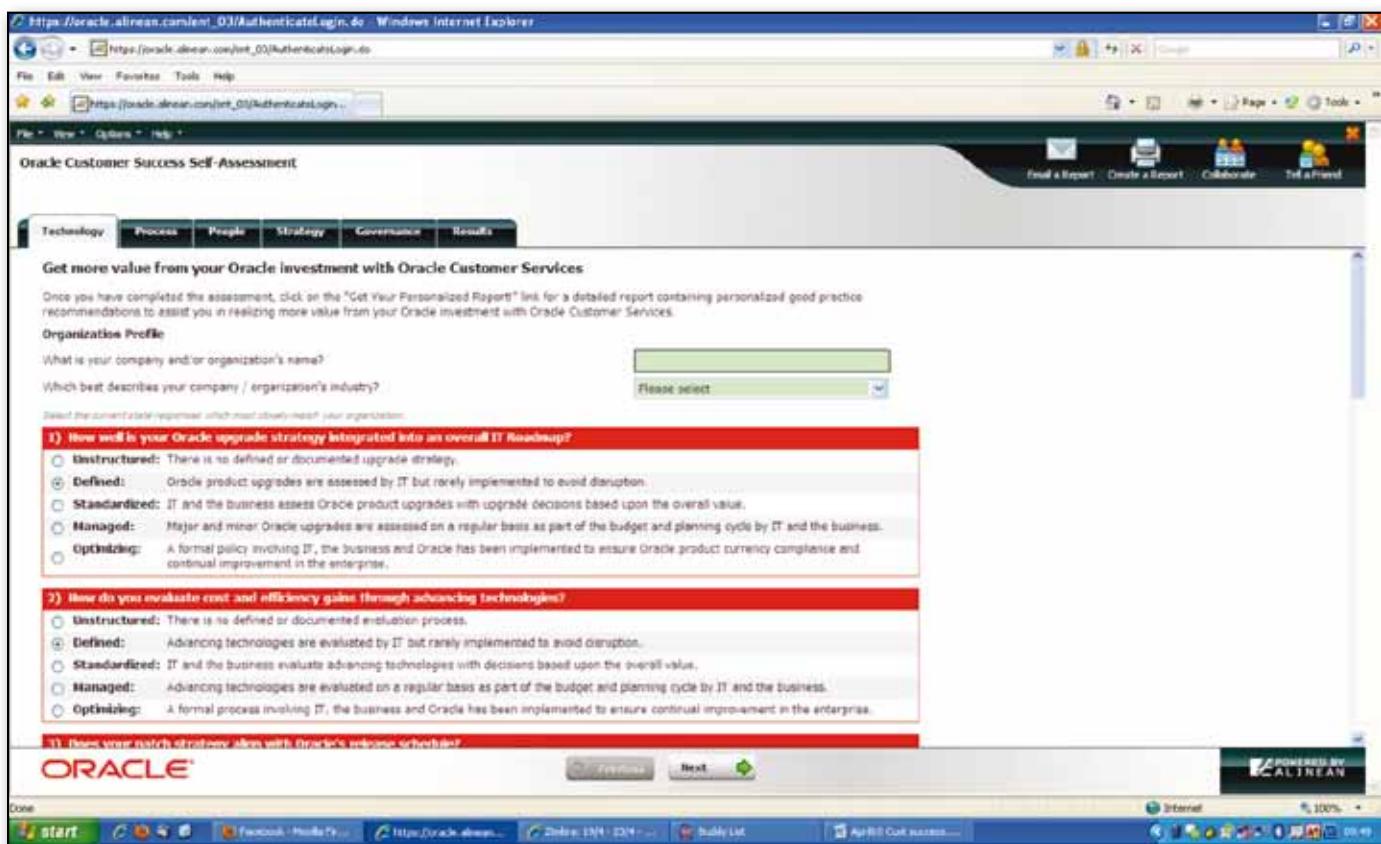
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Oracle Customer Success Self-Assessment

By Kate Cumner, Oracle Software support



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UKOUG Column: The Tools of Fusion: Oracle JDeveloper and Oracle ADF.

Tailor Made For You - Customizing Fusion.

by Grant Ronald

How many of you have had the luxury of a bespoke Saville Row suit? To have an expert tailor measure and take your specific requirements and then produce a made to measure suit. And then to have that tailor on call to make adjustments if you need the trousers adjusted or the lapels on the jacket changed. Well, we can but dream. Instead we buy off the peg and have to live with an ill-fitting suit that's requires a belt to hold up the trousers and a hastily stitched hem on the trousers.

And our software industry is no different. You want applications built to your specific requirements but often you end up customizing an off-the-shelf solution. And the problem doesn't stop there. When have your requirements ever remained unchanged for the lifetime of the application? And what if you want your application deployed to different user or customers, all with their own requirements? Each customer has his own opinion about the right way the application should look and behave: should a table show a specific column or should a specific page be accessible to a regular user. The problem is even more serious if you are developing an application that you are reselling to other companies. In that case you'll find that the demands of each company are in many cases quite different from the other, and while both have an HR organisation, the process flows, rules and data they want to manage can differ significantly.

And these were the challenges we faced with our own Fusion Applications. So, what are the options? Do you just ignore the requests of the customers and force the specific behavior of the system on them or do you can maintain multiple copies of the application each with the slight differences needed for each customer.

Well, with Fusion Applications we had another choice: Oracle MDS (Meta Data Services).

MDS leverages the XML nature of Oracle ADF based application to allow customization to be applied at runtime and so have the application adapt to the specific needs of customers.

XML the Driving Force Behind MDS

If you look under the hood of an Oracle ADF application you'll see that the majority of the application artifacts are actually defined in XML. For example, Oracle ADF Faces Web pages are defined in an XML document describing the components and their attributes. ADF task flows, which control the application flow, are also defined in XML. Even ADF Business Components artifacts define the mapping of columns to the database, their attributes and validation rules in XML. And the usage of XML extends beyond ADF into other parts of the platform: for example SOA BPEL flows are described in XML, WebCenter also heavily relies on XML.

At runtime, Oracle ADF reads those XML definitions and makes the application work accordingly.

So, how does that help in delivering tailored applications to different users? This is where MDS comes into its own. With MDS you can apply additional XML configurations on top of the existing ones. MDS reads those configurations and applies them to the base application modifying the base application behavior.

This type of customization can be split into

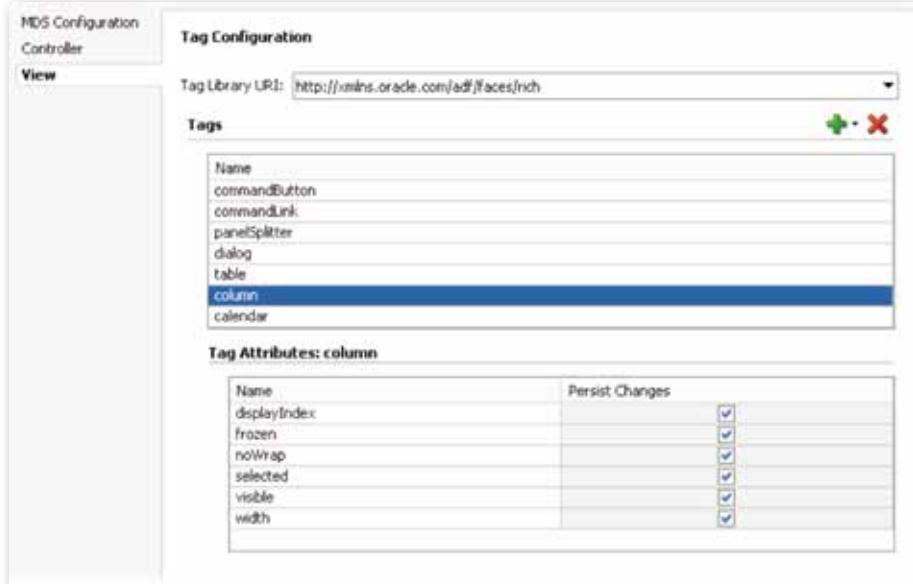
two groups: end user runtime personalization is the first, and design time seeded customization is the second.

Runtime Personalization

In this category we are talking about persisting customizations done by the end user to the user interface to personalize it to their liking. For example, the user might be viewing a table of records in an ADF Faces table component which allows the end user to re-order columns in the components. MDS can persist those changes, so the next time the user access this page the table will already be ordered in the way he prefers. And these changes can be persisted for each user independently; so John sees his table with CustomerName as the first column but Jane views the same page but shows CustomerId as the first column.

And this personalization isn't just for components like tables. MDS can persist changes to other layout containers such as accordions, splitters, tabbed panels, windows, pop-up dialogs and more.

Another area where MDS can persist relates to queries defined with the new Query component available with ADF Faces. The query component in Oracle ADF allows end users to define search criteria across various



Picture 1 – Defining which UI customization to persist for a project



fields to filter records. With MDS enabled, these queries can be saved for future use and the end user doesn't need to redefine the query criteria from scratch each time they access the application.

Design Time Seeded Customization

Whilst the runtime personalization allows users to customize the little details that make the application "your application", MDS also offers a more advanced level of customization that is controlled by the developers building the application.

Seeded customization allows the developer to define various levels of customization on top of their application, and deliver unique versions of customization for each level.

For example, you could have the first level of customization make a distinction between two companies using your Oracle ADF application, the second level of customization can distinguish between managers and non-managers in each company, and the third level of customization can distinguish between power-users and "regular" users.

So, how are these different levels of customization defined? JDeveloper provides a "Customization Developer" role, which allows a developer to open an existing project and start customizing it. In this role the developer can only modify existing artifacts, he can't add functionality. Customization can be almost any modification to the application, from changing the location of UI components (such as moving tabs around, removing specific fields etc), to changing validation conditions on business services. All the changes are done using the regular visual development approach offered by JDeveloper.

The unique thing that MDS does is that



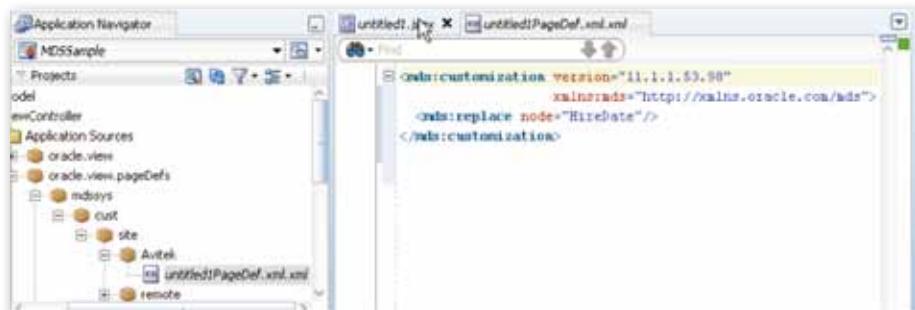
Picture 2 – Choosing the specific customization layer to work on

while it seems that those changes are done on the base files of the application in reality JDeveloper creates additional XML files that contain only the information about the specific changes made to the base document. The base document is not modified at all. When the application is run, the MDS runtime engine applies the changes to the functionality defined in the base document and as a result the customized application is delivered in the correct way.

still work. In situations where an item that was customized is no longer there in the base document, the customization would just be ignored. This makes the upgrade process much smoother.

Tailor-made

So, with MDS, Fusion applications have the ability to define customizations that can be applied on top of existing applications without changing the base application. This is a capability that is important not only for



Picture 3 – A sample customization file showing modification of a single element in the source page.

The Upgrade Advantage

One key aspect of application lifecycle that MDS simplifies is upgrading to a new version. In the past, organizations faced a difficult situation when they customized specific features in an off-the-shelf application. Namely, when they got a new version of the core application all their customization needed to be done again on top of the new base code since that replaced their previous code that contained the customizations.

With the MDS approach the picture is drastically different, since the customizations are actually kept in separate files. Once the base files have been upgraded, the customizations are not lost. The existing customization can be applied to the new version of the base document and they will

Oracle's own Fusion Applications but for any application being developer by a software house. It's like bespoke off-the-peg.

To see a demo of MDS visit: http://download.oracle.com/otn_hosted_doc/jdeveloper/111_demos/mds/mds.html

About the Author



Grant Ronald is a Senior Group Product Manager working for Oracle's Application Development Tools group responsible for Forms and JDeveloper where he has a

focus on opening up the Java platform to Oracle's current install base. Grant joined Oracle in 1997, working in Oracle support, where he headed up the Forms/Reports/Discoverer team responsible for the support of the local Oracle Support Centres throughout Europe, Middle East and Africa. Prior to Oracle, Grant worked in various development roles at EDS Defence. Grant has a BSc. in computing science and has been working in the IT Industry since 1989.

Designing Efficient Sql: A Visual Approach

People often say of SQL that since it's a declarative language you don't have to tell it how to get the data you want; you just describe the data you're after. This is true: describe what you want and you'll get what you asked for, although there's no guarantee that you'll get it at the speed or cost you were hoping. It's a bit like getting into a taxi-cab in a strange city. You can tell the driver where you want to go and hope that he will take the best route to get you there, but sometimes the journey takes longer and costs more than you expect, unless you give the driver some help with the route you expect him to take.

It doesn't matter how good the Optimizer gets, there are bound to be cases when its algorithms don't cope well with your requirements. It may be that the available statistics are misleading, or that the Optimizer has to make some assumptions about your data that simply aren't true. If this happens, you need to find a way to give the Optimizer some guidance.

This article describes a visual approach to designing SQL queries, especially complex queries, which should allow you to work out appropriate execution plans. As well as being a useful method for creating new queries this approach is especially useful for "debugging" and re-engineering queries where the optimizer is not behaving well and needs some help.

Know your data

Before you can optimize a query, you first need to know:

- How much data you expect to handle (data volume)
- Where that data is (data scatter)

Volume and scatter are equally important when assessing how much work has to be done to return the required results, and how much time it will take.

If you need to acquire a large volume of data that is scattered over a wide area of the database, your query is unlikely to operate very quickly. However, you could still manage to acquire a large volume of data very quickly if you have taken advantage of (say) an IOT (index organized table) to ensure that it's all packed it into a relatively small space. So, the

first two questions you always have to address are: "How much data?" and "Where is the data?"

You then have a further problem to address: how to get to that data. Let's say you want to pick up 50 rows from a table based on a certain condition; it sounds straightforward, but what is the most efficient way of picking up just those 50 rows? You might have a choice between:

1. A "perfectly precise" index
2. A reasonably precise index that identifies 100 rows of which you will have to discard 50
3. A fairly "wasteful" index that identifies 500 rows of which you have to discard 450

Here's an important idea: if you had to choose between the second and third indexes can you tell, from what I've written so far, which one is going to be more efficient?

The correct answer to that question is "no". Picking up just 100 rows and discarding 50 clearly sounds more efficient than picking up 500 and discarding 450, but remember clustering (the way the data is physically grouped or scattered) matters a lot.

Suppose you have one index that identifies 10 rows from each of 10 blocks with the 50 rows you want grouped in just 5 of those 10 blocks, while the other index identifies 100 rows from each of 5 blocks. Is it better to visit 10 different blocks and discard 50 rows, or visit just 5 blocks and discard 450 rows? Visiting the smaller number of blocks may well be the better bet.

Remember that you can understand your application and your data better than the Optimizer; sometimes the Optimizer chooses a bad execution plan because it doesn't **know** the data, or how your application handles that data, as well as you do.

If a picture paints a thousand words...

...why not draw your query? If you've got a complex SQL statement with many tables, you have a real need to collect and present a lot of information in a way that can be easily grasped.

Drawing a picture is a good idea, especially if you're trying to debug someone else's SQL.

My approach is simple:

- Read through the SQL statement and draw a box for each table and a line between boxes for every join condition
- If you are aware of the cardinality of the join (one-to-one, one-to-many, many-to-many), then put a "crow's foot" at the "many" end(s) of the line
- If you have a filter predicate on a table, draw an arrow coming into the box and write the predicate by it
- If a "table" is actually an in-line view, or sub-query including multiple tables, draw a light outline around the entire group of tables

For example, say you have a schema which defines a fairly simple order-processing system: customers place orders, orders can have multiple order lines, an order line is for a product, and products come from suppliers; some products can be substituted by other products. One day you are asked to report on *"orders placed over the last week by customers based in London, for products supplied by producers based in Leeds that could have been supplied from an alternative location"*.

Assuming we only want the details from each order for the specific product line this might turn into a query like that shown in Listing 1.



```

select
  {list of columns}
from
  customers      cus,
  orders         ord,
  order_lines    orl,
  products       prdl,
  suppliers      sup1
where
  cus.location   = 'LONDON'
and ord.id_customer = cus.id
and ord.date_placed > sysdate - 7
and orl.id_order   = ord.id
and prdl.id       = orl.id_product
and sup1.id       = prdl.id_supplier
and sup1.location = 'LEEDS'
and exists (
  select
    null
  from
    alternatives      alt,
    products          prd2,
    suppliers         sup2
  where
    alt.id_product  = prdl.id
)

```

Listing 1

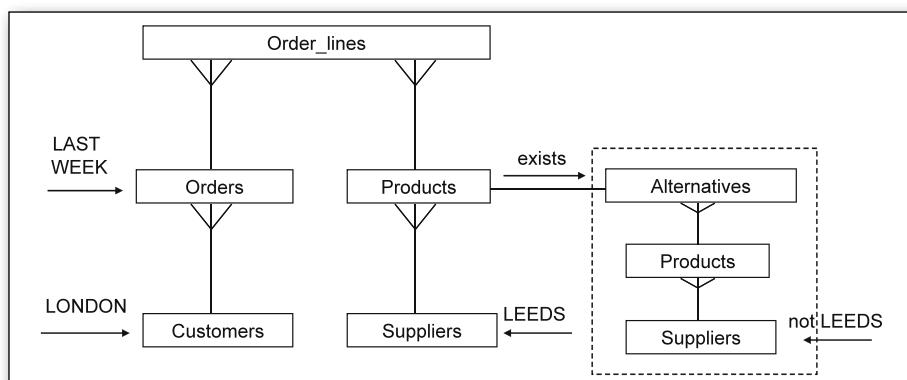


Figure 1

It's possible that my verbal description of the schema is not immediately visible in the SQL, but applying the steps of the visual approach leads to a picture of the query that looks as shown in Figure 1. (Don't be surprised if it takes two or three attempts to draw a clear, tidy picture – especially if you're reverse engineering someone else's SQL; my first drafts often end up with all the tables crammed into one corner of the page.)

Based on this diagram we can start to fill in some of the numeric information that we need. The level of detail will depend on how familiar we are with all the tables involved, and how well we know the basic application. In this case, I'll use the Orders table to demonstrate the principles of the information we may want to include. Some of this information will come from the data dictionary, some may have to

come from querying the data, but ideally most of it will be stuff we know because we are familiar with how the application works and the nature of our data:

Note that I would normally draw the relevant indexes as arrows between the boxes and label them with their statistics, and I would also write the table statistics into the boxes; long lists of text under the diagram aren't helpful. However it takes a lot of space on the paper to get the sketch right, and getting the artwork right and readable on the printed page is difficult.

The “*starting cardinality*” and “*final cardinality*” need some explanation. The starting cardinality is the number of rows I expect to get from this table if this is the first table visited in the query; in other words, it's the number of rows that match any constant predicates I have on the table. (The original query is about “orders last week”, and I might simply know that we typically get about 2,400 order per week – alternatively I might have to run a query which does a ‘*select week, count(*) from orders group by week*’ to get an estimate.)

The final cardinality is the number of rows from this table that will ultimately appear in the output – and it can be much harder to estimate this type of figure without help from someone who knows the business well – nevertheless, for the purposes of this exercise, I have given a number that represents my best estimate. In this case, there is a significant difference between the starting and final cardinalities, which means that at some stage I may have to do a lot of work to get rid of the excess rows, and you can appreciate that the volume of “*throwaway*” may be the thing that I need to minimize.

Having collected all the information about what's in the tables, what I want from the tables, how I can reach it, and how much work it will take, I just have to pick a starting table in the diagram and then keep repeating the questions: which table shall I visit next? how

Rows:	250,000
Blocks:	8,000
Starting cardinality:	2,400
Final cardinality:	20
Current (relevant) indexes into Orders:	
• (date_placed)	very good clustering_factor with ca. 400 rows per day
• (id_customer)	very poor clustering_factor with 10 to 150 rows per customer
Current (relevant) indexes leading out of Orders:	
• order_lines (id_order, line_no)	very good clustering_factor with 1 to 15 rows per order
• customers (id)	primary key

will I get there? Each time I do this, I'll be thinking about four things, in loose order of precedence:

1. Can I aggregate the current result set to reduce the volume (significantly) before I go to the next table.
2. Is there a table I can go to next that will eliminate data (cheaply)
3. Is there a table which will only extend the row size (slightly) without increasing the row count
4. Which table increases the row count by the smallest amount (cheaply)

If you allow these questions to bias your choice of “the next table” to visit, it will tend to keep the intermediate data volume small and the workload low. Inevitably, there are compromises between a choice that (for example) increases row lengths dramatically (option 3) and one that increases row counts slightly (option 4), and so on. However, if you take these options as a weak, rather than rigid, guideline, and keep thinking a couple of steps ahead, you won't go far wrong.

In a data warehouse or DSS you might find that you could pick virtually any table as the starting table in your analysis and work through several paths before you find the most appropriate one, but the general principle would be to start by picking a table that returned a small amount of data at relatively low cost.

In an OLTP system there are more likely to be just one or two “obvious” places to start. In my example I can decide fairly swiftly (because I happen to know the business) that the obvious starting points are the *Orders* table and the *Customers* table: after all, the report is about orders for a few customers over a short time period, so starting at the customer/order end of the picture feels as if it's going to give me a small starting data set. However, for the purposes of demonstration, I'm going to be awkward and see what happens if I pick the *Suppliers* table as my starting point.

From the *Suppliers* table (which returns only a few rows for “Leeds”), the only sensible choice is to go to the *Products* table by way of the “foreign key” index which you can assume would be there. Of course, technically, I could go to any table provided I didn't feel threatened by the resulting Cartesian merge join.

From the *Products* table, I could go to the *Order_lines* table or the *Alternatives* table. The *Order_lines* table will introduce a massive increase in the number of rows, and I'd be picking rows which were scattered across the entire length of a very large table, so I'd be using an expensive index in a nested loop join, or doing a table scan with a hash join. On the other hand, if I go to the *Alternatives* table, with the expectation of following through to the *Products* and *Suppliers* table in the subquery (coming back to address the *order_lines* table later) then I may find that there are lots of products that don't have alternative suppliers, and so the number of rows could decrease, making that the better choice, and decrease again when I get to suppliers who were not from Leeds.

But, eventually, I will have to come back to (what's left of) the products table and join into *Order_lines* and my prior knowledge of what goes into a table like *Order_lines* tells me that this will be a large data set, generated very inefficiently. (A single product is likely to appear in a lot of order lines, scattered over a wide range of the table – and that type of data pattern is not nice.)

So the only sensible options for the starting point are *Orders* or *Customers* and, after visiting those two, the sequence of tables is going to be: *Order_lines*, *Products*, *Suppliers*, (*Alternatives*, *Products*, *Suppliers*).

So, should we start *Customers*–*Orders* or *Orders*–*Customers*? This is where indexing and clustering becomes really important.

As it stands (and looking back at my current list of indexes that relate to the *Orders* table),

if we pick up customers for London we then have to use the (*id_customer*) index into the *Orders* table to collect all the orders for those customers, and then discard any orders outside the one week date range. Looking back at the statistics, we have 250,000 orders and about 2,400 per week – which means our data covers a total range of two years (104 weeks). So if we pick a customer, then pick up all the orders for that customer we would then discard about 99% of the orders we have collected. Given the volume of data, and the way the orders are scattered over time, this is going to do a lot of work to collect a lot of data; most of which we will then discard.

The alternative, then, is to start at the *orders* table, pick up the 2,400 orders for the one week range, using the (*date_placed*) index, and join to the *Customers* table on its primary key index to discard all the customers not from London. Orders are likely to be very well clustered by time, and since recent orders are the ones that are most likely to be subject to ongoing processing they will probably be cached and stay cached, so even though we pick up a lot of orders to start with, we can probably do so very efficiently.

In a worst case scenario we may then have to visit about 2,400 customer rows and they are likely to be scattered randomly through the *Customers* table and that might be a bit of a performance (I/O) threat. However, a reference table such as *Customers* is likely to benefit from a reasonable amount of caching when compared with a transactional table such as *Orders*, so that threat may be one that we are prepared to ignore. This leads us to the sketch shown in Figure 2.

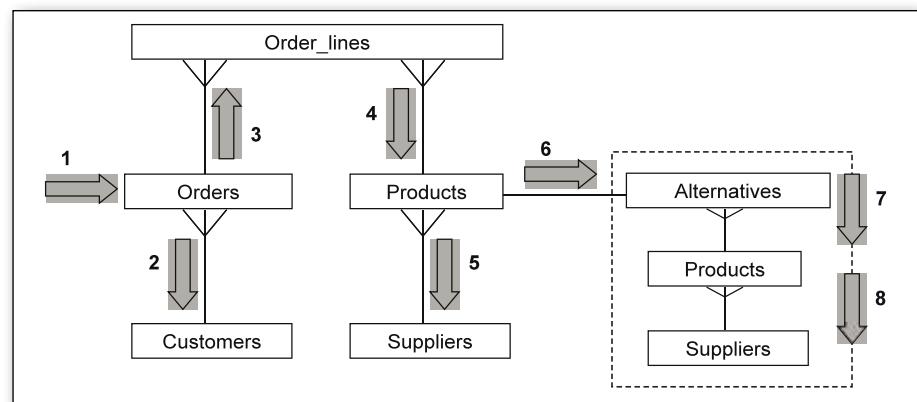


Figure 2



Once we've decided that this is the appropriate path through the query, we can take steps to see that it happens. (Possibly through the simple expedient of `no_unnest()` and `push_subq()` hints for the subquery and a couple of `leading()` hints for the resulting two query blocks)

On the other hand, if this query is sufficiently important, and if we are early on in the design stages of the system, there are some structural features we might want to consider.

Choosing indexes

It might be appropriate to create the `Customers` table as an IOT (index organized table), but if we have to stick to a simple heap table we could consider adding the `Location` column to the index that supports the primary key so that we can avoid visiting the table to check the location. This arrangement, i.e. a small primary key with included column, may give us much better caching than creating the table as an IOT.

Alternatively, if we created an index on the `Orders` table, on `(id_customer, date_placed)` we could consider starting our query at the

`Customers` table because we could use this new index to get very quickly into the `Orders` table for each customer we pick from the `Customers` table: This index might be quite large, though, with little caching benefit for this particular query: so maybe `(date_placed, id_customer)` would be a better index.

Ideally, of course, this type of question should be addressed very early in the design stages of the system, and the most appropriate answer depends on whether (and how often, and how urgently) we expect to query the table by customer, by date, or (as here) by a combination of the two.

Ultimately, of course, there is always a level of risk involved with changing the indexing strategy on a live system – and we hope that we can solve problems of badly performing SQL by addressing the code, adjusting statistics, or using hints to enforce the optimum execution plan, but drawing the right pictures makes it easier to see and understand the choices available to you – and gives you firmer grounds for making difficult decisions.

Conclusion

To write an efficient query, you need to know how much data you have to acquire and where it's going to be. You also need to know what options you have for acquiring the data and how much effort you are going to waste visiting data that you don't need so that you can decide the best order for visiting tables.

For complex queries the best way to present this information and design the query is to start by drawing a diagram of all the tables involved, showing the joins between the tables, indicating the volume of data involved, and describing the indexes that allow you to get from one table to the next. A diagram of this sort will make it much easier to understand the efficiency of the possible paths that your query could take through the tables.

This article was originally written for Red Gate for publication at their website
<http://www.simple-talk.com>

“From Mystery to ‘Master’y of the Universal Truth”

- The MDM Philosophy, Science and Art.”

The Philosophy

The advent of technology in its different manifestation like SOA, Enterprise Integration, Data quality, created impeccable value to the business world. However the dawn of Master Data Management (MDM), facelift's this business value, with a package that promises the much needed single view of the truth – a clean and crystal clear Master Data.

Customer Information sits in disparate data bases and applications and is hard to assimilate to gain meaningful insights. Encouraging the philosophy of “Let the data speak” The Master Data Management assures a creation of a meaningful Master data as a single view of truth.

Few Examples:

Why Customer MASTER Data is so critical to meaningful insight into business.

- In the banking and financial industry, lack of clear customer master data could result in credit card division of the bank offering a platinum credit card to a customer who has defaulted money in their loans division.
- In the telecom industry, lack of clear customer data could result in wrong monthly statement being sent to the customer or monthly statement not reaching the customer, as his address is not stored correctly.

While MDM existed in various forms for close to 10 years now, it is only in the last few years we have seen MDM products evolve into full fledged offerings covering data quality management, integration & data models. We explore in this article how coming together of SOA (Service Oriented Architecture), BI (Business Intelligence) and MDM can help customers get better view of their customers, thus accomplishing the ultimate goal, the service... a better service and eventually a delightful customer.

The limitation lies only in thought, but if we really think beyond and extrapolate, imagine a situation what an incorrect master data can give birth to, in the most life critical industry - the health care industry. Nothing costs costlier

than life. A wrong diagnosis, a mistaken identity, a wrong treatment can create monstrous blunders. In today’s world where data, or rather correct data and related data is so very crucial, it’s important that a symbiotic relation ship exists between all, namely SOA, BI and MDM solutions and propositions.

The Oracle SOA suite ensures simplified development and deployment process, a comprehensive activity services and monitoring system, a business process management system that is multi – dimensional and a very important powerful application grid for performance and reliability. While the Oracle SOA suite ensures that data is consistent across all the enterprise with the promise of reliability and high performance. Who ensures that the data is right or correct and free from anomalies?

The oracle BI enterprise suite offers a leading BI platform, for various analysis and indicators eventually assisting the top management and the decision makers to help nail critical decisions. But who ensures that the data that is being premised upon is right or correct?

Well while these questions do raise eyebrows, **Oracle MDM Suite** provides that promise and assurance of ensuring the right data being communicated across the business enterprise. The mystery that starts

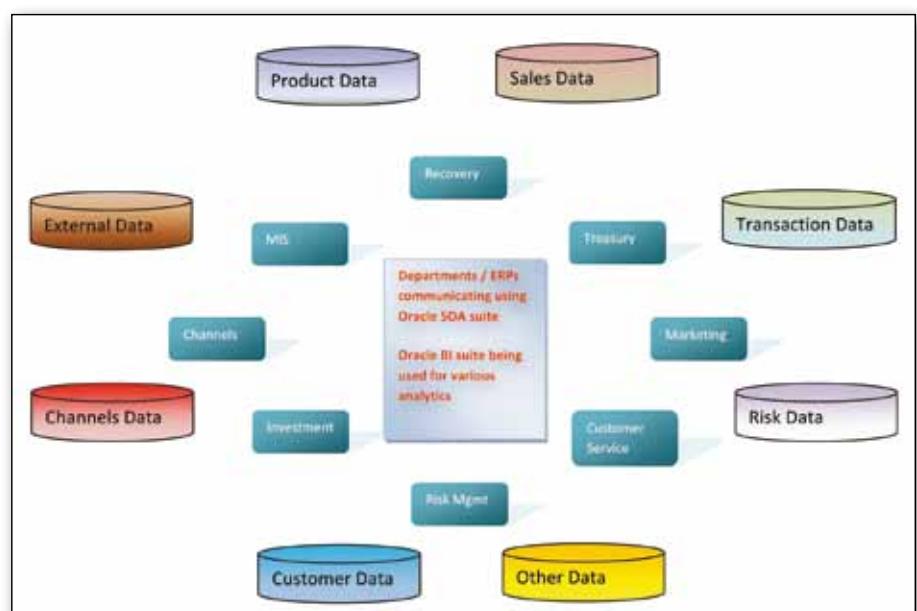
from the Master ends here, and science and technology takes over.

MDM solutions need not be generic; they have to be well tailored addressing the targeted business pain points, now that we have the essential technology backing up, it's important for the solution designers to come up with cost-effective, valued added, high performance techno-business solutions, that explore the technology stretching to the maximum and assist the product owners with such crispy feedback on a case to case basis allowing to develop a pattern based product or components that can be plugged in to situations that appear more similar in terms technology and business.

The Science

Oracle SOA suite, Oracle BI enterprise Suite and the Oracle MDM together in a symbiotic relation ship provide a futuristic technology support and assists the solution designers of the IT services industry in coming with propositions that suit the business across various verticals.

Let's have a macro understanding of simple banking industry, which has various data repositories that could reside physically at various locations geographically and/or distributed logically, the below picture shows the different data silos. Similarly, this



Some Components of Banking Industry



“Customer Information sits in disparate data bases and applications and is hard to assimilate to gain meaningful insights.”

data helps assimilate information to various departments, such as treasury, marketing, investment, risk management etc. In a practical situation, these various departments may use different specialized ERP applications for various operations/transactions and / or for various business analytics and intelligence. It is imperative to have all this well integrated in an enterprise that serves customers in different locations geographically.

Oracle SOA suite ensures this effective A2A integration with, developed and deployed Business processes and Application Integration Packs.

The Oracle MDM suite ensures the all important Data Quality by providing solutions in the form of Customer Hub, Product Hub, Site Hub with their data steward and data quality servers.

Data Relation Management for getting hold on the financial data and hierarchy management, the Oracle Data Watch and Repair promise overall data profiling and data governance and the Oracle Data Integrator and Enterprise Edition offers highly reliable ETL architecture.

With such highly sophisticated technology support, the limitation rests only with the solution designers who can leverage these to create a robust, scalable, and most important a reliable enterprise system. Science and Art are like tools and masterpieces built using sophisticated tools, both need to complement each other and more importantly keep evolving.

The Art

The art starts with a gamut of activities involved in the process of designing a Master Data Management Solution. The figure gives a snapshot of activities and approaches that together assist in understanding the business problem and designing a

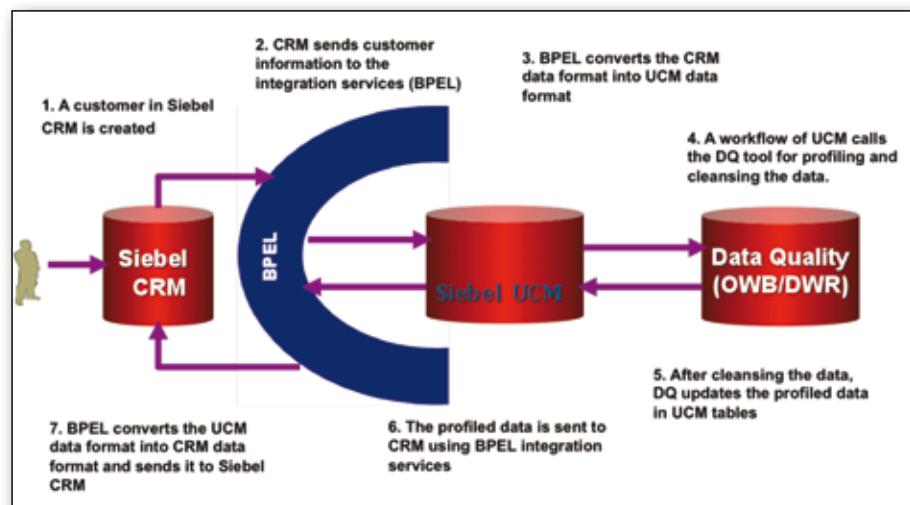


commensurate solution, ensuring the much needed single view of truth.

One such art form is having the Master data created and cleansed real-time, with the support of the technology, mentioned earlier. The figure below helps in quickly grasping the essence of having the customer data cleansed and sent back to the CRM real-time, the customer data traveling from a CRM enters the Customer Master via the Oracle SOA Suite, the Data Quality (watch and repair) rules are administered on the

data using a deployed process or a service, that is triggered in the workflow developed in the Customer Master Application.

The ‘Master’y of maintaining the master data not in isolation but in real-time by manifesting the symbiotic relationship between the Oracle SOA Suite, Oracle BI Enterprise Suite and the Oracle MDM Suite holds the answer to the key business problem, that is customer service and key differentiator in any business – The Customer Delight.



About the Author



Siva Rachakonda, Manager – MDM Center of Excellence and member of the Solutions Technology Group at Sierra Atlantic Software Services.

Over 10 years of industry experience in leading and mentoring teams in diverse technologies, ranging from developing database applications to more complex applications in the field of EAI, Mobile Applications and venturing beyond, into Leaning Systems.

Ways to make a copy of an Oracle table

By Matt Canning

Summary

This article provides a high-level overview of the main methods used to create copies of an Oracle database table within local or remote databases. Example commands are provided for some of the methods for an Oracle 10.2.0.4 Enterprise edition database, running on the Solaris 10 operating system.

The Scenario

Whilst testing code that runs during an overnight batch, we are asked to make a copy of a table before any data changes are made. The data in this table will then be compared with data in the table at the end of the batch. We wish to investigate methods to create local and remote copies of the data. Our local database name is ORCL and our remote database is ORCL2. Both databases are running in archivelog mode. Within a local database, a table copy will need to have a different name from the original.

Other solutions to this scenario include third-party tools; Oracle GUI tools; partitioned tables; materialized views; streams; replication; standby databases; change data capture; triggers; flashback options; DBMS_STREAMS_TABLESPACE_ADMIN; logminer; transportable tablespaces; database backups and clones. These solutions are beyond the scope of this article.

Disclaimers

Backup the database and environment before using these notes. The author cannot be held responsible for any data loss resulting from following these procedures. Refer to the Oracle documentation before using these methods in a formal environment. The author cannot guarantee that the procedures listed will work as intended, if the order of this document is not followed.

Creating an Example Table

We'll begin by creating a basic table with no constraints, indexes or triggers. The table uses the default storage options for the tablespace. (Some of the methods discussed later may need to be adjusted if copying more than one table).

- (i) As SYSTEM, we create a test tablespace and user:

```
CREATE TABLESPACE OBJECT_COPY DATAFILE
'/u01/oradata/ORCL/datafiles/object_copy01.dbf' size 10M
autoextend on maxsize 500M;

CREATE USER COPY_TEST IDENTIFIED BY t1test DEFAULT
TABLESPACE OBJECT_COPY TEMPORARY TABLESPACE TEMP;

GRANT CREATE SESSION, CREATE TABLE TO COPY_TEST;

ALTER USER COPY_TEST QUOTA UNLIMITED ON OBJECT_COPY;
```

- (ii) Then we create a test table and insert some data:

```
CREATE TABLE COPY_TEST.T1 (C1 NUMBER(10), C2
VARCHAR2(10)) TABLESPACE OBJECT_COPY;

INSERT INTO COPY_TEST.T1 VALUES (1,'TESTROW1');

INSERT INTO COPY_TEST.T1 VALUES (2,'TESTROW2');

COMMIT;
```

Method 1: DDL Methods

We can extract the DDL (Data Definition Language) commands to create a copy of our table with the same structure as the original table, but without any data. (The DDL can be edited if required).

There are four main ways to extract DDL:

- (i) Dynamic SQL/DBMS_SQL or manual SQL commands against views such as DBA_TAB_COLS. (see Oracle Support notes 123851.1, 123852.1)
- (ii) DBMS_METADATA.

```
SET LONG 2000000 PAGES 0

EXECUTE DBMS_METADATA.SET_TRANSFORM_
PARAM(DBMS_METADATA.SESSION_TRANSFORM,
-'SQLTERMINATOR',TRUE);

SELECT DBMS_METADATA.GET_DDL('TABLE','T1','COPY_
TEST') FROM DUAL;
```
- (iii) Export/Import with the INDEXFILE parameter.

```
exp system tables=COPY_TEST.T1 file=Exp_T1.dmp log=Exp_
T1.log

imp system file= Exp_T1.dmp log=Imp_T1.log
indexfile=tabdesc.sql FULL=y
```

These commands don't import the data. They just send DDL commands to the file tabdesc.sql.

- (iv) Datapump with the SQLFILE parameter.

For simplicity, we'll use the DATA_PUMP_DIR directory for any Datapump work. (To check this for your database query DBA_DIRECTORIES). Enter the commands below on a continuous line.

```
expdp system dumpfile=data_pump_dir:DExp_T1.dmp
content=metadata_only tables=COPY_TEST.T1 job_name=T1
export logfile=DExp_T1.log

impdp system dumpfile=data_pump_dir:DExp_T1.dmp full=y
sqlfile=tabdesc.sql job_name=T1_import logfile=DImp_T1.log
```

These commands don't import the data. They just send DDL commands to the file tabdesc.sql within the DATA_PUMP_DIR. Once we have run the DDL to create our copy, we could load the data into the copy by running: INSERT INTO COPY_TEST.T2 (SELECT * FROM COPY_TEST.T1); Alternatively we could spool the contents of the first table out to a CSV file and then load the data into our copy using SQLLOADER, or just access the data as an external table. (Oracle support note 123852.1)

Method 2: The SQL COPY Command

We can use the COPY command to create clone tables within the same database, or within a remote database. (This command was really designed for copying data between Oracle and non-Oracle databases).

- (i) Local copy:

We have to specify either the TO or FROM clause and then



reference the listener service name for the database as shown below. Either of these commands will create copies of the table T1. Run the commands below as SYSTEM and enter the password for the COPY_TEST account when prompted.

```
COPY TO COPY_TEST@ORCL CREATE T2 USING SELECT *
FROM COPY_TEST.T1;
```

```
COPY FROM COPY_TEST@ORCL CREATE COPY_TEST.T3
USING SELECT * FROM COPY_TEST.T1;
```

(ii) Remote copy.

Before we can create a copy of the table in the remote database, we must first create the COPY_TEST account in the database. Set the environment for the remote database and then create a test tablespace:

```
CREATE TABLESPACE OBJECT_COPY DATAFILE
'/u01/oradata/ORCL2/datafiles/object_copy01.dbf' size 10M
autoextend on maxsize 500M;
```

Create a test account that will own the table.

```
CREATE USER COPY_TEST IDENTIFIED BY t1test DEFAULT
TABLESPACE OBJECT_COPY TEMPORARY TABLESPACE TEMP;
GRANT CREATE SESSION, CREATE TABLE TO COPY_TEST;
ALTER USER COPY_TEST QUOTA UNLIMITED ON OBJECT_
COPY;
```

Then login to the local database and create a copy in the remote database as follows:

```
COPY FROM COPY_TEST@ORCL TO COPY_TEST@ORCL2 -
CREATE T1 USING SELECT * FROM COPY_TEST.T1;
```

We will be prompted for the COPY_TEST account passwords in both databases.

Method 3: EXPORT/IMPORT and DATAPUMP table copies

We can obviously use these tools to take a full export of our data and then import this into the same or another database.

(i) Export/Import:

```
exp system tables=COPY_TEST.T1 file=ExpTab_T1.dmp
log=ExpTab_T1.log

imp system file= ExpTab_T1.dmp log=ImpTab_T1.log FULL=y
```

(ii) Datapump: (Ensure that the lines below are entered on one line).

```
expdp system dumpfile=data_pump_dir:DExpTab_T1.dmp
tables=COPY_TEST.T1 job_name=T1_Tabexport
logfile=DExpTab_T1.log
```

```
impdp system dumpfile=data_pump_dir:DExpTab_T1.dmp
tables=COPY_TEST.T1 job_name=T1_Tabimport
logfile=DImpTab_T1.log
```

Note: If we tried importing data into a database where the table existed already, no changes would be made to the table and we would just receive an error message.

If we decided that we wanted to re-name the table as part of the import there are various options available to us. We could use the FROMUSER/TOUSER import parameters, or the REMAP_

SCHEMA datapump import parameters to import the table into a different schema. If we wanted to just rename the table but keep it in the same schema, then unfortunately there is no "REMAP_NAME" command at present. To get round this, we can choose one of the three solutions below:

- Temporarily rename the source table. Take the export and then rename the table back to its original name. Now run the import and our clone table will be created automatically.
- Export the data and then import it into another schema. Rename the table in the other schema and then export and import it back into the original schema again.
- If the table doesn't already exist in the same schema within a remote database –

Temporarily create a synonym T1 for the T2 table. Run the import and the data exported from T1 will be loaded into the T2 table. (Drop the synonym afterwards, or this could cause confusion). This last method only works if using the export/import utilities.

Method 4: Create Table as Select (CTAS) Commands

This would usually be the preferred method of creating a copy of a table, as it is the most straightforward. Create a local copy of the table:

```
Create table COPY_TEST.T4 as select * from COPY_TEST.T1;
```

Notes: We can also create a table in a remote database by selecting from the local database across a database link. It's not possible to do this the other way around and create a remote copy of a local table.

Conclusion

The CTAS option should be suitable for most situations. Before deciding on a method, you should always check that the table definition, dependent objects, storage parameters and the actual data itself will be the same as it was in the original.

References

- Oracle documentation <http://www.oracle.com/technology/documentation/database.html>
- Oracle Support Notes: 342314.1 Import DataPump: How to Import Table Data into a Table that has Different Name, 123852.1 How to Get Data from an Existing Table to Flat File Usable by SQL*Loader, 35275.1 Script to Unload a table into SQL*Loader Format, 123851.1 How to Generate 'CREATE TABLE' Scripts from Existing Tables.

About the Author



Matt is an independent consultant and Oracle Certified DBA at 8.0, 8i, 9i and 10G. He has also authored various white papers and writes a blog for <http://www.oraclecontractors.com>. You can contact Matt at mattcanning@btinternet.com.

Why I shouldn't go to conferences

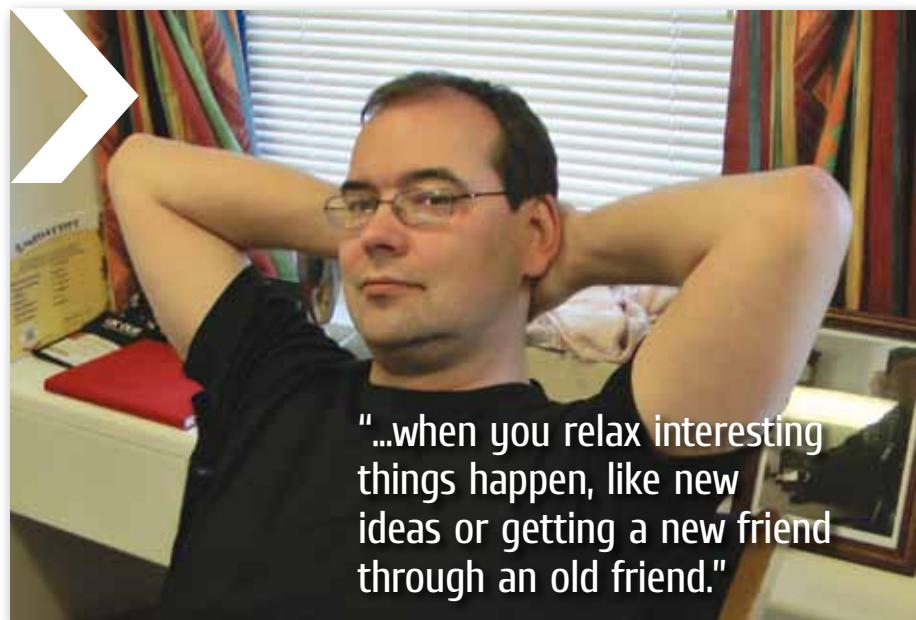
by Mogens Nørgaard

There's one Kentucky Fried Chicken left in the Kingdom of Denmark. It's in the town of Roedovre, which loosely translates into a meaningless 'Red Over' in case any reader needs to GoTo KFC while in Denmark.

About once a year I go in there, and as soon as I take my first bite I remember why I haven't been in there for a whole year. A year later I repeat.

That's how it is with conferences. As soon as you enter YAC (Yet Another Conference) you remember why you were tired when you left the previous one:

- If you had a booth in the City of the Dead Eyes (a.k.a. the Exhibition Hall) you only felt awkward and out of place for 99% of the time, thank God. Especially regarding the part about the visitors to the CDE trying desperately to avoid eye contact.
- If you had the usual vision of coming home with numerous business cards from potential customers, who all showed great interest in your revolutionizing concept or product. And then came back to the office with three business cards, all of them from people participating in your draw for Apple product iX.
- If you went to Yet Another Presentation from a Big Name TM and afterwards realized that you had been entertained well during the presentation, but that you weren't able to recall a single bit of information that you could relay to your friends.
- If you went to a couple of presentations with fantastic, almost dream-like, titles that turned out to be Yet Another Same Old (YASO) by someone who knew how to trigger the conference program committee with state-of-the-art words and expressions.
- If you had looked forward to dozens of deep and thoughtful debates with the likes of yourself plus the power executives of the vendor company, yet as always ended up talking about the usual things in the bars surrounding the conference or – SO much worse – went to the Big Event, complete with so much



"...when you relax interesting things happen, like new ideas or getting a new friend through an old friend."

noise that you couldn't hear anything the others said.

- Ah, and the conference lunch arrangements. The conference bags. The walk to the hotel...

I could go on for one reason only: I've been there, I've done that (and more), and I'm a perpetual victim of the KFC conference syndrome.

Theoretically, I could have known better since sometimes around the mid or late 90's. I was working in Oracle Support then, and our EMEA chief Andre Bakker wrote an email to all EMEA support personnel regarding participation in Oracle-related conferences.

In the message he said that most conferences would be a waste of time, since most of the information they could get there was already freely available, as either technical bulletins inside Oracle or as documents you could download from the net.

Since then I've been looking for any excuses (good or bad, I'm not picky) to go to conferences. I've concluded there's only one: To meet friends.

As soon as you recognize that as your sole purpose of going, you can relax. And when you relax interesting things happen, like new ideas or getting a new friend through an old friend.

You can even relax in the City of the Dead Eyes, whether you're on booth duty or just strolling around.

You can go to presentations just to watch friends perform.

Life, in short, becomes worth living again.

Cynics argue that going to conferences is equivalent to company-paid vacation, and they're absolutely right. Which is why people are allowed to go in good times and not allowed to go in bad times.

I think it makes perfect sense: Let's enjoy good times and work harder and more in bad times.

So here I am, sitting by my oak table, slowly filling up my house with guests from strange countries like the US and the UK, in preparation for our annual Miracle Open World conference at the Legoland Conference Center.

Guess what? We have a record showing this year, which is a very bad year for the Danish economy indeed. So there goes my theory about conference attendance.

Maybe it's time for me to have a meal again at KFC. I can almost taste it... mmm.

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Multi-Predicate Pruning with 11g Release 2

by Husnu Sensoy



Without any doubt, partitioning (in conjunction with parallel query option) is the most commonly used option among all other tools for data warehousing. Besides its numerous benefits for ETL performance (partition exchange option) or ILM (partition level compression, drop, truncate), proper partitioning in data warehouses significantly improve query performance by the well known feature partition pruning.

Oracle has significantly improved partition pruning capability by putting more intelligence into it allowing query engine to prune more and more partitions (static, dynamic, and multi-predicate) with every new release (Table 1).

	Pruning Enhancement
Oracle 8	Static Partition Pruning
Oracle 8i	Dynamic Partition Pruning
Oracle 10g Release 2	Multi-dimensional Pruning
Oracle 11g Release 2	Multi-predicate Pruning

Table 1 History of Oracle Partition Pruning

Multi-Predicate Pruning is the final step in exploiting all possible pruning options in a query in return decreasing the number of partitions to be accessed. In this article you will find how this new and totally transparent feature will let you decrease your logical and physical I/O numbers over partitioned tables without any application level change.

Basics: Static Pruning

Static Partition Pruning is a kind of pruning performed in compile (query parsing) time. That elimination is possible only if Oracle can verify what partitions to access by just looking the query and system catalog information. In other words it is based on static information given to Oracle by data structures' metadata (tables, indices, etc).

Query 1 is a simple candidate query for static pruning. Before starting query execution (somewhere in execution plan generation phase), Oracle verifies that date range (01 January 1998 – 01 January 2001) given in the query can only be satisfied by [5-17] partitions of SALES table (You can obtain the same information by querying *_tab_partitions for partition_position column with appropriate high_value filtering)

```
select /*+ FULL(s) FULL(t) */ count(*)
  from sh.sales s, sh.times t
 where s.time_id = t.time_id
   and s.time_id between TO_DATE('01-JAN-1998', 'DD-MON-YYYY') and
                     TO_DATE('01-JAN-2001', 'DD-MON-YYYY');
```

Query 1 Example Of Static Pruning

```
Execution Plan
-----
Plan hash value: 68236240

| Id | Operation          | Name | Rows | Bytes | Cost (%CPU)| Time     | Pstart| Pstop |
| 0  | SELECT STATEMENT  |      | 1    | 16   | 217  (11)| 00:00:03 |        |        |
| 1  |  SORT AGGREGATE   |      | 1    | 16   |       | 00:00:03 |        |        |
|* 2 |  HASH JOIN         |      | 537K| 8404K| 217  (11)| 00:00:03 |        |        |
|* 3 |  TABLE ACCESS FULL | TIMES | 1098 | 8784 | 9    (0) | 00:00:01 |        |        |
| 4  |  PARTITION RANGE ITERATOR |      | 684K| 5344K| 202  (9) | 00:00:03 | 5    | 17   |
|* 5 |  TABLE ACCESS FULL | SALES | 684K| 5344K| 202  (9) | 00:00:03 | 5    | 17   |

Predicate Information (identified by operation id):
-----
2 - access("S"."TIME_ID"=<T"."TIME_ID")
3 - filter("T"."TIME_ID"><=TO_DATE(' 2001-01-01 00:00:00', 'syyyy-mm-dd hh24:mi:ss') AND
           "T"."TIME_ID">>=TO_DATE(' 1998-01-01 00:00:00', 'syyyy-mm-dd hh24:mi:ss'))
5 - filter("S"."TIME_ID"><=TO_DATE(' 2001-01-01 00:00:00', 'syyyy-mm-dd hh24:mi:ss'))
```

Execution Plan 1 Static Pruning Execution Plan

About the Author



Hüsnü Sensoy held various positions in different companies as a PL/SQL, SQL developer, development team manager, and VLDB

expert in Turkey's largest BI environment with 200 TB active data size. Recently he has formed up his own company *Global Maksimum Data & Information Technologies*. He is an OracleACED in BI field and awarded as "DBA of the Year" in 2009 by Oracle Magazine. He is the youngest member of the community taking those nominations at the age of 26. He is also a formal member of *Oracle DWH Customer Advisory Board* and a blogger at <http://husnusensoy.wordpress.com>.



As a result Oracle accesses only those necessary partitions by eliminating ~50% of 28 partitions.

Basics: Dynamic Pruning

Unfortunately, for a range of queries it is not possible for Oracle to figure out the partitions to be accessed in compile time. But it is still possible Oracle to prune partitions as the query runs with Dynamic Partition Pruning option.

Query 2 is an example query for which Oracle utilizes dynamic partition pruning. At run time Oracle first filter on TIMES dimension by fiscal_month_name column and prune SALES table by using time_id values returned from filtered TIMES dimension.

```
select /*+ FULL(s) FULL(t) */ count(*)
  from sh.sales s, sh.times t
 where s.time_id = t.time_id
   and t.fiscal_month_name in ('February');
```

Query 2 Example Of Dynamic Pruning

Identifying partitions pruned by dynamic pruning is not as simple as static pruning. Pstart and Pstop columns in execution plan will not help that much this time. It just indicates that Oracle has done dynamic partition pruning by using a subquery (SQ)

Execution Plan									
Plan hash value: 138185855									
Id	Operation	Name	Rows	Bytes	Cost (%CPU)	Time	Pstart	Pstop	Other
0	SELECT STATEMENT		1	24	265 (9)	00:00:03			
1	SORT AGGREGATE		1	24					
*	HASH JOIN		99240	2325K	265 (9)	00:00:03			
*	TABLE ACCESS FULL	TIMES	152	2432	9 (0)	00:00:01			
4	PARTITION RANGE SUBQUERY		910K	7112K	248 (7)	00:00:03	KEY(SQ)	KEY(SQ)	
5	TABLE ACCESS FULL	SALES	910K	7112K	248 (7)	00:00:03	KEY(SQ)	KEY(SQ)	

Predicate Information (identified by operation id):									
2 - access("S"."TIME_ID"="T"."TIME_ID") 3 - filter("T"."FISCAL_MONTH_NAME"='February')									

Execution Plan 2 Dynamic Pruning Execution Plan

However it is still possible to get pruned partitions by using 10128 event:

```
alter session set tracefile_identifier='dynamicPruning';
alter session set events '10128 trace name context forever, level 2';

select /*+ FULL(s) FULL(t) */ count(*)
  from sh.sales s, sh.times t
 where s.time_id = t.time_id
   and t.fiscal_month_name in ('February');

alter session set sql_trace=false;
```

Query 3 Generating 10128 event for dynamic pruning

This will generate a trace file in user_dump_dest (grep file names for dynamicPruning).

```
Partition Iterator Information:
partition level = PARTITION
call time = RUN
order = ASCENDING
Partition iterator for level 1:
iterator = ARRAY [count= 5, max = 28] = { 4 8 12 16 20 }
```

Trace 1 10128 Event trace for dynamic pruning

As it is logged in Trace 1, dynamic pruning aids in accessing only 5th, 9th, 13th, 17th, and 21st partitions (partition indexes starting from 0 in trace file) of SALES table. Those are SALES_Q1_1998, SALES_Q1_1999, SALES_Q1_2000, SALES_Q1_2001, and SALES_Q1_2002

partitions. One question might be why SALES_1995, SALES_1996, and SALES_H1_1997 partitions are not in the list. This is simply because minimum date defined to be in fiscal month February is 26th January 1998 which is in 1st quarter of 1998 (Query 4).

```
SQL> select min(time_id) min_time_id
  2      from sh.times t
  3     where t.fiscal_month_name in ('February');

MIN_TIME_ID
-----
26/01/1998
```

Query 4 Minimum time_id in times dimension

Dynamic pruning can figure out such facts on the fly and prune appropriately.

```
select /*+ FULL(s) FULL(t) */
count(*)
  from sh.sales s, sh.times t
 where s.time_id = t.time_id
   and t.fiscal_month_name in ('February')
   and s.time_id between TO_DATE('01-JAN-1998', 'DD-MON-YYYY') and
                      TO_DATE('01-JAN-2001', 'DD-MON-YYYY');
```

Query 5 Example of multi-predicate pruning

Then what is Multi-Predicate Pruning?

Now assume that we have combined the predicates of Query 1 and Query 2 in Query 5

For humans, possible combinations of pruning options are as follows:

1. **Use both static and dynamic pruning:** This will cause Oracle to prune only 1st quarters of year 1998, 1999, and 2000 (3 partitions in total)
2. **Use only dynamic pruning:** As we see previously this will cause Oracle to prune down to 5 partitions.
3. **Use only static pruning:** As we see previously, this will lead Oracle to prune down to 13 partitions.

Prior to 11g Release 2, Oracle was acting in a lazy way and choose only to utilize static (compile time) pruning opportunity as it is illustrated in Execution Plan 3

Execution Plan										
Plan hash value: 68236240										
Id	Operation	Name	Rows	Bytes	Cost (%CPU)	Time	Pstartl	Pstopl		
0	SELECT STATEMENT		1	24	217 (11)	00:00:03				
1	SORT AGGREGATE		1	24						
2	HASH JOIN		41164	964K	217 (11)	00:00:03				
3	TABLE ACCESS FULL	TIMES	84	1344	9 (0)	00:00:01				
4	PARTITION RANGE ITERATOR		684K	5344K	202 (9)	00:00:03	5	17		
5	TABLE ACCESS FULL	SALES	684K	5344K	202 (9)	00:00:03	5	17		

Predicate Information (identified by operation id):

```

2 - access("S"."TIME_ID"="T"."TIME_ID")
3 - filter("T"."FISCAL_MONTH_NAME"='February' AND "T"."TIME_ID" <= TO_DATE(' 2001-01-01
00:00:00', 'yyyy-mm-dd hh24:mi:ss') AND "T"."TIME_ID" >= TO_DATE(' 1998-01-01 00:00:00',
'syyyy-mm-dd hh24:mi:ss'))
5 - filter("S"."TIME_ID" <= TO_DATE(' 2001-01-01 00:00:00', 'yyyy-mm-dd hh24:mi:ss'))
```

Statistics

```

0 recursive calls
0 db block gets
764 consistent gets
0 physical reads
0 redo size
229 bytes sent via SQL*Net to client
248 bytes received via SQL*Net from client
2 SQL*Net roundtrips to/from client
0 sorts (memory)
0 sorts (disk)
1 rows processed
```

Execution Plan 3 No multi-predicate pruning capability before 11g Release 2



However by Oracle 11g Release 2, Oracle is now capable of combining multiple pruning opportunities.

```
set autot trace exp stat
alter session set tracefile_identifier='multiPredicatePruning';
alter session set events '10128 trace name context forever, level 2';

select /*+ FULL(s) FULL(t) */
  count(*)
  from sh.sales s, sh.times t
 where s.time_id = t.time_id
   and t.fiscal_month_name in ('February')
   and s.time_id between TO_DATE('01-JAN-1998', 'DD-MON-YYYY') and
                     TO_DATE('01-JAN-2001', 'DD-MON-YYYY');

alter session set sql_trace=false;
```

Query 6 Generating 10128 event for multi-predicate pruning

Execution Plan									
Plan hash value: 3278936322									
Id	Operation	Name	Rows	Bytes	Cost (\$CPU)	Time	Pstart	Pstop	
0	SELECT STATEMENT		1	24	322 (8)	00:00:05			
1	SORT AGGREGATE		1	24					
* 2	HASH JOIN		43252	1013K	322 (8)	00:00:05			
3	PARTITION JOIN FILTER CREATE	:BF0000	91	1456	13 (0)	00:00:01			
* 4	TABLE ACCESS FULL	TIMES	91	1456	13 (0)	00:00:01			
5	PARTITION RANGE AND		690K	5393K	303 (7)	00:00:05	KEY(AP)	KEY(AP)	
* 6	TABLE ACCESS FULL	SALES	690K	5393K	303 (7)	00:00:05	KEY(AP)	KEY(AP)	

Predicate Information (identified by operation id):

```

2 - access("S"."TIME_ID"="T"."TIME_ID")
4 - filter("T"."FISCAL_MONTH_NAME"='February' AND "T"."TIME_ID"><=TO_DATE(' 2001-01-01
00:00:00', 'yyyy-mm-dd hh24:mi:ss') AND "T"."TIME_ID">>=TO_DATE(' 1998-01-01 00:00:00',
'syyyy-mm-dd hh24:mi:ss'))
6 - filter("S"."TIME_ID"><=TO_DATE(' 2001-01-01 00:00:00', 'yyyy-mm-dd hh24:mi:ss'))
```

Statistics

```

0 recursive calls
0 db block gets
200 consistent gets
0 physical reads
0 redo size
344 bytes sent via SQL*Net to client
411 bytes received via SQL*Net from client
2 SQL*Net roundtrips to/from client
0 sorts (memory)
0 sorts (disk)
1 rows processed
```

Execution Plan 4 Multi-predicate pruning is possible by 11g Release 2

When 10128 event is checked, we notice that Oracle now performs double pruning, one in compile time and other in run time for our sample query. Performing multi level pruning brings about a drop from 13 to 3 in total number of partitions accessed. This means 4 times less partition access with compared to early releases.

```
Partition Iterator Information:
partition level = PARTITION
call time = RUN
order = ASCENDING
Partition iterator for level 1:
iterator = ARRAY [count= 3, max = 28] = { 4 8 12 }
```

Trace 2 10128 Event trace for multi-predicate pruning

Result of this finer granularity in pruning is reducing consistent gets from 764 to 200 for this small example.

Conclusion

As being one of the most commonly used data warehousing option, any optimization on partitioning has a great impact on large data warehouse sites. By the introduction of new multi-predicate pruning capability, intuitive pruning opportunities for humans are now doable by Oracle query engine also. Without any changes on your applications, migration to 11g Release 2 will allow you to exploit this feature causing dramatic drops in the number of logical and physical I/O numbers.



MRPO Background Media Recovery terminated with error

Situation

Bear in mind that Oracle references files with the file#, the names are completely irrelevant.
All you need is a controlfile that know where the file is located-check v\$datafile.

The following happened on the standby when resizing data07.dbf on the primary

```
Media Recovery Log /u03/oradata/prod/arch/l_37459_548600535.dbf
Errors with log /u03/oradata/prod/arch/l_37459_548600535.dbf
MRPO: Background Media Recovery terminated with error 1237
Sat Jun 20 07:38:33 2009
Errors in file /u01/app/oracle/admin/prod/bdump/prod1_mrp0_31415.trc:
ORA-01237: cannot extend datafile 243
ORA-01110: data file 243: '/u02/oradata/prod/data7.dbf'
ORA-27059: could not reduce file size
Linux Error: 28: No space left on device
Additional information: 2
Some recovered datafiles maybe left media fuzzy
Media recovery may continue but open resetlogs may fail
Sat Jun 20 07:38:35 2009
Errors in file /u01/app/oracle/admin/prod/bdump/prod1_mrp0_31415.trc:
ORA-01237: cannot extend datafile 243
ORA-01110: data file 243: '/u02/oradata/prod/data7.dbf'
ORA-27059: could not reduce file size
Linux Error: 28: No space left on device
Additional information: 2
Sat Jun 20 07:38:35 2009
MRPO: Background Media Recovery process shutdown (prod1)
```

Solution

Media recovery is aborted at this stage - so we should be able use a combination of operating system utilities and SQL commands to rectify the situation. See below for a test case:

Test case

Note:

- we use Oracle Managed Files
- 10.2.0.4 but that worked with 9.2.0.4 for me so it's not version dependent

We are resizing the data07.dbf on the primary

```
SQL> alter database datafile '/u01/oradata/ORA10204A/datafile/data07.dbf' resize 250M;
Database altered.
SQL> alter system switch logfile;
System altered.
```

Checking the standby alert log short that managed recovery aborts due to a full file system (pretty much the same as with OCFS fragmentation which I can't simulate), the error reported by MRPO is the same though: 1237:



```

Sun Jun 21 11:26:08 2009
Media Recovery Log
/u01/flash_recovery_area/ORA10204B/archivelog/2009_06_21/o1_mf_1_149_53w213tw_.arc
Errors with log
/u01/flash_recovery_area/ORA10204B/archivelog/2009_06_21/o1_mf_1_149_53w213tw_.arc
MRP0: Background Media Recovery terminated with error 1237
Sun Jun 21 11:26:09 2009
Errors in file /u01/app/oracle/product/10.2.0/db_1/admin/ora10204/bdump/ora10204_mrp0_2425.trc:
ORA-01237: cannot extend datafile 8
ORA-01110: data file 8: '/u01/oradata/ORA10204B/datafile/o1_mf_data_53w2gyjc_.dbf'
ORA-19502: write error on file "/u01/oradata/ORA10204B/datafile/o1_mf_data_53w2gyjc_.dbf",
blockno 62720 (blocksize=4096)
ORA-27072: File I/O error
Linux Error: 9: Bad file descriptor
Additional information: 4
Additional information: 62720
Additional information: 544768
Some recovered datafiles maybe left media fuzzy
Media recovery may continue but open resetlogs may fail
Sun Jun 21 11:26:10 2009
Errors in file /u01/app/oracle/product/10.2.0/db_1/admin/ora10204/bdump/ora10204_mrp0_2425.trc:
ORA-01237: cannot extend datafile 8
ORA-01110: data file 8: '/u01/oradata/ORA10204B/datafile/o1_mf_data_53w2gyjc_.dbf'
ORA-19502: write error on file "/u01/oradata/ORA10204B/datafile/o1_mf_data_53w2gyjc_.dbf",
blockno 62720 (blocksize=4096)
ORA-27072: File I/O error
Linux Error: 9: Bad file descriptor
Additional information: 4
Additional information: 62720
Additional information: 544768
Sun Jun 21 11:26:10 2009
MRP0: Background Media Recovery process shutdown (ora10204)

```

The last line is the one telling us that media recovery failed. Let's check the status of the file on the primary:

```

SQL> select bytes/power(1024,2) from v$logfile where file#=8
2 /
-----+
BYTES/POWER(1024,2)
-----+
250

```

The standby most likely will report something different:

```

SQL> r
-----+
1  select bytes/power(1024,2) from v$logfile
2* where file#=8
-----+
BYTES/POWER(1024,2)
-----+
200
SQL> select name from v$logfile where file#=8;
NAME
-----
/u01/oradata/ORA10204B/datafile/o1_mf_data_53w2gyjc_.dbf

```

The fix is to move the file to a different location on the standby, please abstract from the fact that it was created as an OMF. We now

- check the current location of data file 8
- stop the standby
- Use cp (there is a special version of cp that can deal with O_DIRECT for OCFS as well!) to copy the file to a different location
- Update the control file
- Reenable managed recovery

```

SQL> conn / as sysdba
Connected.
SQL> select name from v$logfile where file#=8;
NAME
-----
/u01/oradata/ORA10204B/datafile/o1_mf_data_53w2gyjc_.dbf
SQL> shutdown immediate
ORA-01109: database not open

Database dismounted.
ORACLE instance shut down.
SQL> exit
Disconnected from Oracle Database 10g Enterprise Edition Release 10.2.0.4.0 - Production
With the Partitioning, OLAP, Data Mining and Real Application Testing options

```



The /u01 file system was full:

```
[oracle@ora10dg2 ~]$ df -h
Filesystem           Size  Used Avail Use% Mounted on
/dev/mapper/VolGroup00-LogVol00
                      3.3G  2.0G  1.2G  64% /
/dev/xvda1            99M  8.4M   86M   9% /boot
none                 385M     0  385M   0% /dev/shm
/dev/mapper/oracle_vg-oracle_lv
                      7.9G  7.5G   46M 100% /u01
[oracle@ora10dg2 ~]$ cp /u01/oradata/ORA10204B/datafile/ol_mf_data_53w2gyjc_.dbf
/u02/oradata/ora10204/-iv
`/u01/oradata/ORA10204B/datafile/ol_mf_data_53w2gyjc_.dbf' ->
`/u02/oradata/ora10204/ol_mf_data_53w2gyjc_.dbf'
[oracle@ora10dg2 ~]$ sqlplus / as sysdba
SQL*Plus: Release 10.2.0.4.0 - Production on Sun Jun 21 11:33:27 2009
Copyright (c) 1982, 2007, Oracle. All Rights Reserved.

Connected to:
Oracle Database 10g Enterprise Edition Release 10.2.0.4.0 - Production
With the Partitioning, OLAP, Data Mining and Real Application Testing options
```

```
SQL> connected to an idle instance
SQL> startup mount
Total System Global Area  264241152 bytes
Fixed Size                  1266920 bytes
Variable Size                83888920 bytes
Database Buffers            171966464 bytes
Redo Buffers                  7118848 bytes
Database mounted.
```

We need to temporarily set standby_file_management to manual or we get an error moving the file:

```
SQL> alter database rename file '/u01/oradata/ORA10204B/datafile/ol_mf_data_53w2gyjc_.dbf'
  2  to '/u02/oradata/ora10204/ol_mf_data_53w2gyjc_.dbf'
  3 /
alter database rename file '/u01/oradata/ORA10204B/datafile/ol_mf_data_53w2gyjc_.dbf'
*
ERROR at line 1:
ORA-01511: error in renaming log/data files
ORA-01275: Operation RENAME is not allowed if standby file management is
automatic.

SQL> alter system set standby_file_mangement=manual;
alter system set standby_file_magement=manual
*
ERROR at line 1:
ORA-02065: illegal option for ALTER SYSTEM

SQL> alter system set standby_file_management=manual;
System altered.

SQL> alter database rename file '/u01/oradata/ORA10204B/datafile/ol_mf_data_53w2gyjc_.dbf'
  2  to '/u02/oradata/ora10204/ol_mf_data_53w2gyjc_.dbf';
Database altered.

SQL> alter system set standby_file_management=auto;
System altered.

SQL> alter database recover managed standby database disconnect from session;
Database altered.
```



Now check the alert.log:

```

Sun Jun 21 11:33:57 2009
MRPO: Background Managed Standby Recovery process started (ora10204)
Managed Standby Recovery not using Real Time Apply
parallel recovery started with 3 processes
Sun Jun 21 11:34:02 2009
Waiting for all non-current ORLs to be archived...
Media Recovery Log
/u01/flash_recovery_area/ORA10204B/archivelog/2009_06_21/o1_mf_1_149_53w2l3tw_.arc
Media Recovery Waiting for thread 1 sequence 150
Sun Jun 21 11:34:03 2009
Completed: alter database recover managed standby database disconnect from session
Sun Jun 21 11:34:48 2009
Using STANDBY_ARCHIVE_DEST parameter default value as USE_DB_RECOVERY_FILE_DEST
Sun Jun 21 11:34:48 2009
Using STANDBY_ARCHIVE_DEST parameter default value as USE_DB_RECOVERY_FILE_DEST
Sun Jun 21 11:34:48 2009
Redo Shipping Client Connected as PUBLIC
-- Connected User is Valid
RFS[1]: Assigned to RFS process 2688

```

The log has been applied - check:

```

RFS[1]: Identified database type as 'physical standby'
Sun Jun 21 11:34:48 2009
RFS LogMiner: Client disabled from further notification
RFS[1]: Archived Log:
'/u01/flash_recovery_area/ORA10204B/archivelog/2009_06_21/o1_mf_1_151_53w368o1_.arc'
Sun Jun 21 11:34:48 2009
Redo Shipping Client Connected as PUBLIC
-- Connected User is Valid
RFS[2]: Assigned to RFS process 2688
RFS[2]: Identified database type as 'physical standby'
Primary database is in MAXIMUM PERFORMANCE mode
Primary database is in MAXIMUM PERFORMANCE mode
Sun Jun 21 11:34:52 2009
Fetching gap sequence in thread 1, gap sequence 150-150
Sun Jun 21 11:34:53 2009
RFS[1]: Archived Log:
'/u01/flash_recovery_area/ORA10204B/archivelog/2009_06_21/o1_mf_1_150_53w36f03_.arc'
Sun Jun 21 11:35:22 2009
Media Recovery Log
/u01/flash_recovery_area/ORA10204B/archivelog/2009_06_21/o1_mf_1_150_53w36f03_.arc
Media Recovery Log
/u01/flash_recovery_area/ORA10204B/archivelog/2009_06_21/o1_mf_1_151_53w368o1_.arc
Media Recovery Waiting for thread 1 sequence 152 (in transit)

```

Problem solved. I also tested opening of the standby read-only which worked but I don't have the output for it.

```

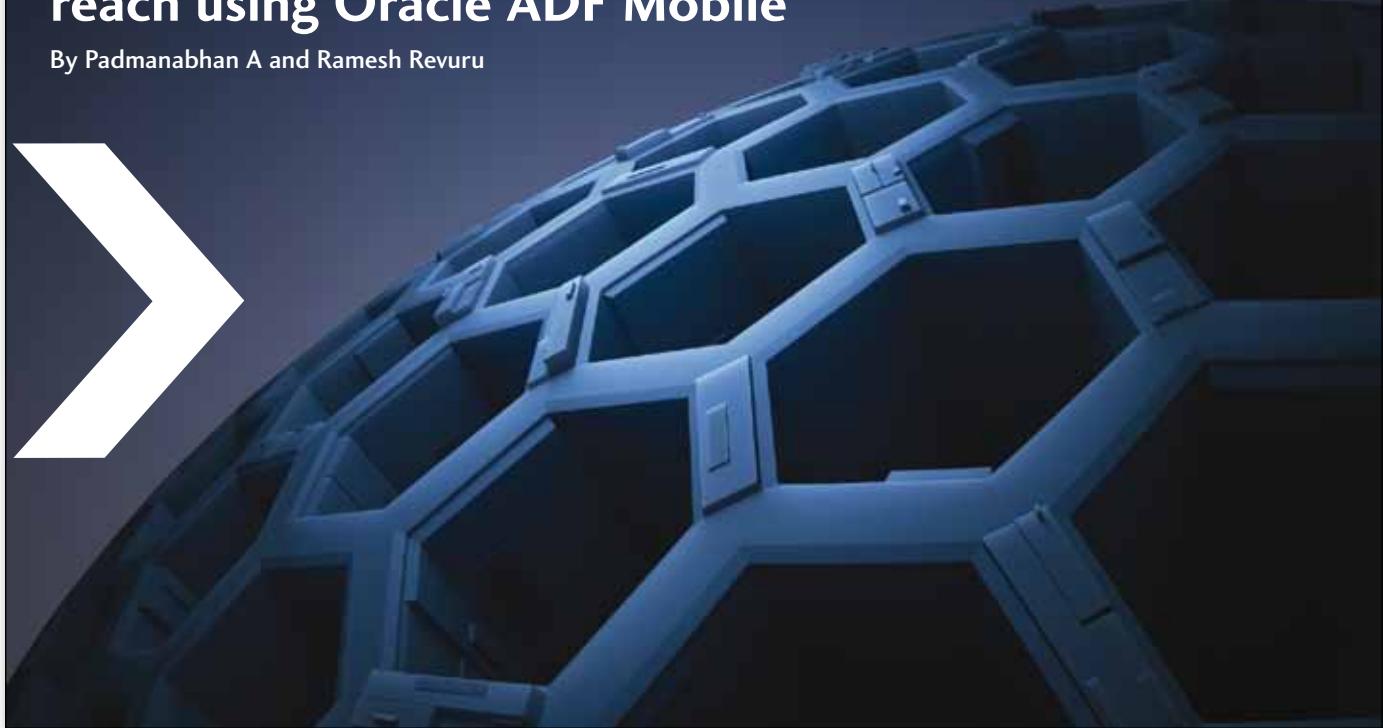
SQL> select bytes/power(1024,2) from v$logfile where file#=8;
      BYTES/POWER(1024,2)
-----
          250

SQL> select name from v$logfile where file#=8;
      NAME
-----
/u02/oradata/ORA10204/o1_mf_data_53w2gyjc_.dbf

```

Extend your enterprise content reach using Oracle ADF Mobile

By Padmanabhan A and Ramesh Revuru



The key driver for enterprise mobility is the need for seamless access to information anywhere, anytime and from any device. A combination of advanced technologies such as Oracle ADF Mobile (JSR 227 and J2ME) and an innovative approach helps enterprises build the optimal mobility solution.

Abstract

Are your customer service agents able to access key customer, product and service request data, are they able to respond to last minute changes in plans? Is your executive management able to review key business indicators like financial trends, sales performance, customer satisfaction issues while on the move? Are you able to reduce the delay by capturing the transaction data at the point of use? We explore in this article how Oracle ADF Mobile platform can help us easily extend the existing application functionality faster and economically.

Scope

The scope of this article is to present an overview of mobile computing. It takes you through the issues which make mobility a prerequisite for business cases and a solution in the form of Oracle ADF. The article provides a snapshot of Oracle ADF concepts, its functional and technical benefits.

Overview

We live in a rapid world. You may be working at your desk today but with a plan to attend a conference in a different part of the world tomorrow. Be it a senior executive on the road or a field technician meeting different customers in a day. The underlying need is that

'your ability to access job related functions should not be suspended while you are away from your desk'.

Today, we see many organizations leveraging a mobile enablement strategy which does not require employees to be present at their desks to continue with their work. Although emergent, there is a great deal of interest in Mobile business intelligence. Mobile dash boarding is today invariably the first choice within initiatives that organizations consider when enabling mobility for the organisation.

Perspective

A typical flexible manufacturing line at a fully automated hi-tech unit generates large volumes of data which requires "monitoring". At the current stage of evolution the monitoring systems are all wired and data visualization is usually presented on desktops to the plant managers and executives. The challenge is to create mobile monitoring solution that can provide real time data with analytics "on the move".

Similarly, we have several critical requirements in the Business Intelligence scenario that affects the day to day functioning of an organisation. To mention a few - Availability of access to key business information such as financial trends, sales performance and more importantly customer satisfaction issues to a CIOs or executive managers when they are out on the road, snapshot of key customer data to a customer service agent on the move, approval access to a manager to ensure smooth workflow remotely. All of these affect organizational productivity significantly.

Solution

Enterprise mobility initiatives seek to leverage the emergent mobility landscape in making critical business applications' data accessible



'anytime, anywhere' to enhance productivity, shorten response time, and increase customer satisfaction. From a technology perspective, its goals signal a shift from 'fragmented and disconnected technology landscape' towards a 'consolidated and converged' mobile ecosystem.

There sure are several challenges in choosing the right mobility solution for an organisation. Oracle ADF (Application Development Framework) provides a solution to these challenges with its simplified yet robust framework to extend the organisation's applications reach to their mobile devices in an easier and a cost effective way.

With Oracle ADF Mobile, the applications can be developed once and deployed to multiple devices. One single framework works for both mobile and regular applications. Another key feature of Oracle ADF Mobile is that the employees can now continue with their tasks in their applications even when they are not connected to network.

Let us take an example of an employee working for a dispatch or courier firm whose day to day work involves receiving digital signatures from the recipients after delivering the packages. The employee has to stay disconnected many times. With Oracle ADF Mobile, he can still continue to collect the signatures and push the data to the server next time when he gets connected.

Developers can now create mobile applications that would aid mobile users to access critical business information from their devices.

What is Oracle ADF?

Oracle ADF is a mature J2EE development framework (Java2 Enterprise Edition) that helps in building enterprise applications. It is enabled by JDeveloper, which is the IDE from Oracle. The interesting fact is that Oracle ADF is extended to support Mobile Application Development too. Hence, existing business logic and services (ADF Business Components & ADF Task Flows) developed using ADF can easily be exposed to mobile devices as well.

Organizations develop robust and efficient applications to suit their business needs. During this process, developers tend to spend a significant amount of time in writing the complex infrastructure code. Oracle ADF simplifies the development effort by providing a user friendly framework to develop code.

Oracle ADF uses Model-View-Controller (MVC) architecture. Fig 1 explains the layers of Oracle ADF.

ADF Mobile

ADF Mobile extends the development framework to mobile users. Developers can now create mobile applications that would aid mobile users to access critical business information from their devices.

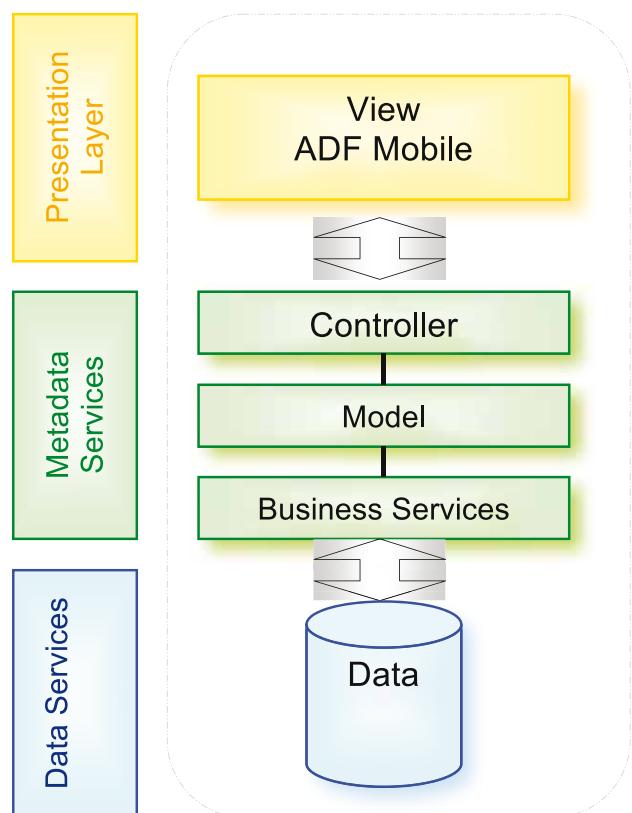


Fig 1: Oracle ADF Mobile Layers

There are two parts to Mobile ADF.

ADF Mobile Browser:

Oracle ADF supports connected Web applications running on the browser of the mobile device. Developers use Java Server Faces (JSF) components to create pages. ADF's binding layers aids in easier interaction with their business services. This facilitates in providing rich mobile browser applications. It works with browsers supporting HTML/XHTML MP1 and WAP 2.0

ADF Mobile Client

Launched recently around Oracle Open World, this new feature can be used when the mobile users want to work in a disconnected mode. A subset of application would be running on the mobile device applying all the features of the application. It integrates with the mobile's native menus and provides complete control over both the native menus and the application. Oracle Database Lite Mobile server which runs on the mobile devices provides application access even in disconnected mode. Once the mobile device is back to the connected mode, the Mobile Transaction Replay Service (MTRS) replays the client side transactions and commits to the server.

The two options of browser and mobile resident client increases the application usage as the employees can perform their work when they are not connected.



ADF Mobile Adaptability

This section covers the opportunities of Oracle ADF Mobile from a business' perspective. Some of the key opportunities are:

- ✓ Oracle ADF is built on industry standards and can be run on any J2EE application server.
- ✓ Oracle ADF facilitates Web 2.0 based applications.
- ✓ Oracle ADF is free when an organisation already owns Oracle Application Server (OAS).
- ✓ Oracle ADF provides single framework for both browser and mobile applications.

Limitations of Oracle ADF Mobile

- ✗ Currently Oracle ADF Mobile Client is supported only for BlackBerry and Windows Mobile devices. Current support for other platforms (such as Android, Symbian and iPhone) is provided through Oracle ADF Mobile browser.
- ✗ A subset of Trinidad components are supported on mobile devices. There are certain limitations in few Trinidad components.
- ✗ Only unbounded Task Flows are supported as page flows

Benefits with Scenarios

Consider the scenario of a health care organisation which has Oracle Applications. They would like to enable specific application and workflow elements such as access to doctor's appointments, patient records on Blackberry devices. In addition, they would like to manage demand and capacity on a real time basis by providing nurses with a mobile solution to request or provision/manage hospital resources such as Beds, MRI equipment etc.

In this scenario, since the applications and backend workflows are already built on J2EE; the Model and Controller layers for the required components are readily available and reusable. The mobile IT solution provider can easily construct the "View" layer using Oracle ADF Mobile and mobilize the entire solution.

Consider again, the operation of a Call Center, which does not have Oracle Enterprise Application but does have a custom J2EE application on OAS. They wanted to mobilize a manager tracking their MPI and efficiency.

In this scenario too, they can use Oracle ADF and quickly develop mobile server applications running on OAS accessing the enterprise data and provide real time manager dashboard to mobile users.

Challenges of mobility in industry

Although there is a huge demand for real time information availability and various technologies available for mobility, commercial enterprise applications lack the motivation to deliver mobile interfaces out of the box.

This is because the enterprise application developers cannot keep pace with the rapid development in mobile technologies.

Here is where the specialist mobility companies can analyze the customer's requirement and architect a precisely customized solution to mobilize.

Conclusion

Extension of Oracle ADF to Mobile yields benefits to different user groups right from developers to end users. Combining the advanced architecture of Oracle ADF mobile with JDeveloper provides a perfect solution for many enterprise applications which need Mobility.

References

- Oracle ADF Mobile product page (www.oracle.com)
- Sierra Atlantic technical knowledge base
- Endeavour Software Technologies knowledge base.

About Sierra Atlantic

Sierra Atlantic is the leader in off shoring enterprise applications and outsourced product development. With expertise derived from deep R&D relationships with enterprise software leaders such as Oracle and Microsoft, we provide product development and IT services including implementation, integration, development, upgrade, testing and support. Sierra Atlantic is headquartered in Fremont, California and maintains operations in 16 countries across North America, Europe and Asia Pacific. For more information, please visit: <http://www.sierraatlantic.com>

About Endeavour – The Mobility Company™

Endeavour is a specialist Mobility company since 2002. Endeavour has been providing strategic consulting and product development for Mobile enabling businesses in the Manufacturing, Media, Print, Healthcare, Consumer solutions, Telecom and Business Intelligence verticals. Endeavour develops mobile solutions on all mobile platforms in the market today, including, RIM, Apple, Symbian, Android, Windows Mobile, Palm Pre, micro Linux, Brew. Endeavour is based out of Austin, Texas, Bangalore India and London, UK. Please visit us at: www.techendeavour.com



Rolling forward very large physical standby databases

By Owen Ireland, Northgate Information Solutions Ltd

Many sites rely on Oracle Data Guard for their disaster recovery strategy and some even use it as an alternative to taking regular backups of their primary database. However, few sites have monitoring in place to ensure that their standby database is kept in synchronisation with their primary database. We are sometimes asked to assist customers who have discovered that their standby database is weeks or even months behind the primary database.

This article looks at techniques for monitoring and rolling forward physical standby databases on 10g and should also be relevant to 9i and 11g except where noted. From this point onwards, standby database will refer to a physical standby and not to a logical standby database.

Monitoring Standby Lag

There are many metrics you can monitor on a standby database but above all you need to know if your physical standby database is synchronised with the primary database. Although the monitoring chapter of the Oracle Data Guard Concepts and Admin Guide has some excellent queries, we find these are often too slow on very large databases. For our managed services customers we pro-actively deploy monitoring scripts which alert us if the apply lag (i.e. the number of redo logs that haven't yet been applied on the standby) is above an agreed threshold. The script in figure 1 works for both single instance and RAC databases and should be run on the standby.

Figure 1

```
select sum(greatest((max(a.sequence#)-max(b.sequence#)),0))
apply_lag_logs
from v$archived_log a, v$archived_log b
where a.thread#=b.thread#
and a.applied='NO' and b.applied='YES'
group by a.thread#;

APPLY_LAG_LOGS
-----
3
```

However, this query doesn't report the number of redo logs which have yet to be shipped to the standby, so we also query the SEQUENCE# column on V\$STANDBY_LOG to check we are receiving redo from the primary.

Figure 2

```
select sum(sequence#)
from v$standby_log;

SUM (SEQUENCE#)
-----
0
```

A value of zero for all threads indicates that there is a network failure or the primary database is down. The combination of checking for an apply lag and non-receipt of redo is sufficient for most of our customers.

Rolling Forward

Although prevention is better than cure, there may be some unfortunate circumstances where the standby has fallen significantly behind the primary database, for example if the standby site has suffered a power outage. In those circumstances we need to know roughly how far behind we are in terms of calendar days by running the query in figure 3 on the standby.

Figure 3

```
select thread#, sysdate-max(first_time) apply_lag_days
from v$archived_log
where applied='YES'
group by thread# ;

THREAD# APPLY_LAG_DAYS
-----
1 4.578
```

Rolling forward the standby may be as simple as restarting the Managed Recovery Process (MRP). First we need to check to see if MRP is running by running the query in Figure 4 on the standby.

Figure 4

```
SQL> select process, status, thread#, block# from v$managed_standby;

PROCESS STATUS THREAD# BLOCK#
-----
ARCH CONNECTED 0
RFS IDLE 1
MRPO APPLYING_LOG 1 8978
```

Sometimes MRP may appear to be running and applying a log but is actually hung. If the BLOCK# is not increasing after repeating the query then you can attempt to stop the MRP process but in some cases it will be necessary to kill it at the O/S level if you are running Unix or use the "orakill" utility on Windows. It can be restarted using the real-time apply option as per figure 5.

Figure 5

```
SQL> recover managed standby database using current logfile
disconnect;
SQL> select process, status, thread# from v$managed_standby;

PROCESS STATUS THREAD#
-----
ARCH CONNECTED 0
MRPO WAIT_FOR_LOG 1
RFS IDLE 1
```



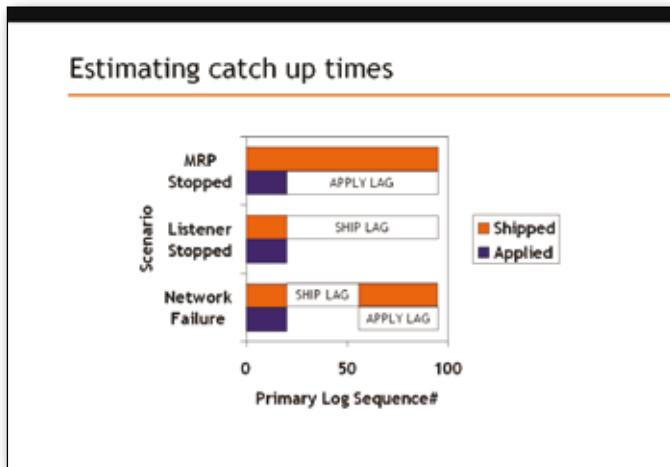
Estimating Catch-up Times

Having resolved the issue which caused the standby to fall behind in the first place, we then need to know how long it will take to resynchronize the standby database with the primary database.

Attempts to estimate catch up time based on timestamps in the redo logs are likely to be inaccurate. Any one redo log could contain transactions for a one hour period or a 4 hour period because the rate of redo generation will vary. Instead the number of redo logs is a better indicator as generally each log file will take approximately the same amount of time to apply (assuming equal sized logs).

First we need to know if the archived redo logs have been received at the standby site and are just waiting to be applied (an apply lag) or whether they still need to be shipped to the standby site. Typical scenarios are shown in Figure 6.

Figure 6



- 1) If the MRP process has been stopped, then we have still been receiving archived redo logs from the primary site, so we only have an apply lag.
- 2) If the standby listener has been stopped, or there has been a power outage at the standby site, then no logs have been received and we only have a shipping lag.
- 3) If there was a network failure which was later resolved then we have a shipping lag for the time that the network was down. Once the network was re-established, the current logs would have started to ship ahead of the older logs. The current logs can't be applied until the older logs are shipped so we have an apply lag as well as a shipping lag!

For each type of lag we have a different technique for estimating catch up times, but generally a shipping lag will take longer to clear than an apply lag if the standby database is at a remote location.

Estimating Shipping Catch Up Times

To identify a shipping lag, we need to connect to the primary database and get a count of how many logs have been archived locally and how many have been shipped to the standby since the standby fell out of synch, as seen in Figure 7.

Figure 7

```
select dest_id, count(*)
from v$archived_log
where first_time > ( sysdate - &apply_lag_days)
group by dest_id;

DEST_ID      COUNT (*)
-----      -----
1           1200  <-local destination
2           200   <-remote destination (standby)
```

In this example we have 1200 logs archived locally but only 200 of those have been shipped therefore we have a shipping lag of 1000 logs. If the log count is the same for both archive destinations then we do not have a shipping lag.

By allowing the logs to ship for an hour or so and querying the time the logs were archived on the standby site, we can get an estimate of how many logs are being shipped per hour.

Figure 8

```
select count(*) from v$archived_log where completion_time >
sysdate - 1/24;

COUNT (*)
-----
100
```

So if our backlog is 1000 logs then it will take $1000/100=10$ hours to clear the backlog. However, the primary database is a moving target still generating more redo so you need to make some adjustments to allow for the redo that is being generated while we're shipping logs.

Estimating Apply Catch Up Times

If on the other hand, all the archived redo logs we need are already at the standby site then we need to monitor the apply rate. On the standby we can check the number of logs that have been applied after an hour or so and extrapolate from that figure. V\$LOG_HISTORY unfortunately doesn't have a completion_time column so we need to directly query the underlying view to get this information.

Figure 9

```
select count(*)
from (select to_date(lhtsm,'MM/DD/RR HH24:MI:SS')
applied_time from x$kcclh)
where applied_time > sysdate - 1/24;

COUNT (*)
-----
588
```

With an apply lag of 1000 logs it will take $1000/588 = 1.7$ hours approximately to catch up. Again, you need to adjust this estimate to allow for redo generation on the primary database while logs are being applied.



Reducing Catch Up Times

What if the estimates are in months, or the effective catch up rate is zero, i.e. we're shipping, receiving and applying no faster than the primary database is generating the redo? The standby will never be synchronized with the primary database!

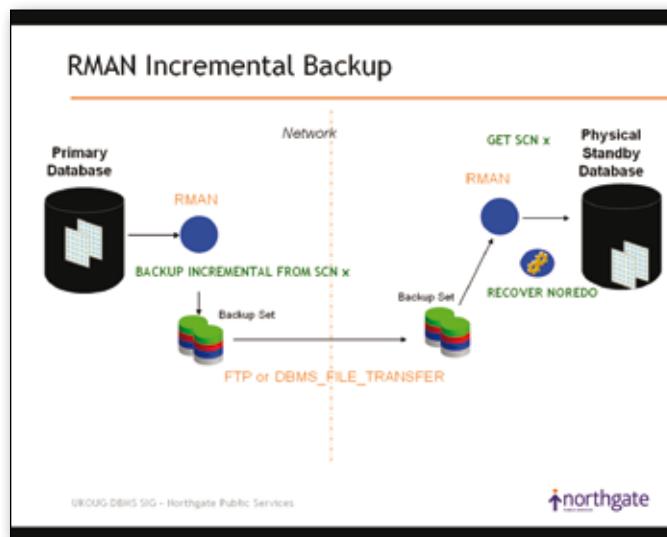
If we have a shipping lag, we can enable turbo-charged gap resolution on 10g, otherwise known as multi-threaded gap resolution. This allows each archived redo log to be shipped by more than one archiver process when resolving gaps thereby speeding up the log transport. For this you should modify your remote standby LOG_ARCHIVE_DEST_n database parameter(s) on the primary database to include MAX_CONNECTIONS=5 and add 5 to your current value of LOG_ARCHIVE_MAX_PROCESSES for each standby destination you have, up to a maximum of 30. If you leave this feature enabled then you should additionally configure the same parameters on the standby database to allow for role reversal.

Alternatively on 11g, you can enable redo compression if you are licensed for the Advanced Compression option.

On both 10g and 11g another option is to take a compressed RMAN incremental backup of the primary database, ship the backup set across to the standby site and then recover the standby database. In general this will be quicker than shipping uncompressed redo logs where there is a significant gap.

Figure 10 illustrates how the RMAN "incremental from scn" backup works. First, we get the SCN of the standby, take that across to the primary and issue a "backup incremental from SCN x". This captures all the blocks that have changed since the standby fell behind into a backup set. We then ship the backup set across to the standby site and recover the standby database "noredo". The "incremental from scn" backup was a new feature in 10g but there is a workaround for 9i using the traditional "level 1" incremental backup which is documented in Support Article 290817.1.

Figure 10



The RMAN incremental technique is well documented in the Data Guard Scenarios chapter of the Data Guard Concepts and Administration manual although it is worth noting:-

- You need sufficient disk space on both the primary site and the standby site to store the backup set, either in ASM or on the file system. If you create the backup set in ASM you will need to use DBMS_FILE_TRANSFER to ship the backup set across the network and a temporary database instance to receive it.
- You can only start to transfer the backup set pieces when they have completed.
- A new standby controlfile must be created which is problematic where OMF is used (this is the default for tablespaces created in ASM).
- If new datafiles have been created on the primary and archived redo logs are not available from their creation time a second RMAN recovery will have to be performed once the control file has been recreated.
- Estimating the completion time of the backup is difficult unless you have a good handle on how much new data is added to your database each day.
- Be sure to allocate more than 1 channel to the RMAN backup/restore to parallelise the operations.

Now what if we only retain one days worth of archived redo logs at both primary and standby sites and we have a lag of 7 days? In that situation we really only have two options, either to completely rebuild the standby database from the primary database or to use the RMAN incremental approach. For very large databases rebuilding is typically not an option due to network bandwidth and insufficient space to store a full backup (although 11g no longer requires a backup of the database). We typically work with databases larger than 10TB and find it takes weeks to build a new standby database!

In conclusion, rolling forward physical standby databases can be a time consuming task especially if archived redo logs have been lost. Prevention is better than cure and pro-actively putting in place the correct type of monitoring and alerting mechanisms will keep your DBAs engaged in live database issues instead of recovering standby databases.

About the Author

Owen Ireland is a member of the Customer Support Services Technical Operations team in Northgate Public Services. The team are all security cleared, OCP qualified and specialise in high availability and very large databases, providing managed services and consultancy to their customers across the Northgate Public Services application portfolio. They can be contacted at css.dba@northgate-is.com.



Panning for Gold.... or.... Soil

By Pete Finnigan – PeteFinnigan.com Limited

One of the real core problems I see in day to day activities in my job helping people secure their data is that I often see a lack of direction and a lack of focus. If you don't know exactly what you are securing then you have no hope of securing "it" before the next ice age is upon us.

This is my third Oracle security column; Welcome!

I am sure you are wondering about that strange title above, well that strange title is the essence of this column – see if you can figure out why!

I wanted to try and sum up the problem I want to talk about in a title; that is a lot to ask but bear with me as I explain.

Complexity

Oracle databases are a complex piece of software and the main design thrust of the database software as far as I can see is that it is generic, open and ready for anything Oracle's customers wish to use it for; that is likely to be storage of data by the way.

A relational database is designed to store any data and the software allows this through creation of database objects such as views and tables, users to access that data and all sorts of other features that allow applications such as Oracle Forms, Apex or indeed any other application framework to access that data. All of this means the focus is on free and easy access to any data; this is not good for security practitioners such as me.

On the flip side of this Oracle has provided a great deal of security features within the database software; there are many additional features added to the Oracle database software just for security purposes, things like Transparent Database Encryption (TDE) are a great solution for securing your data at rest without re-writing your applications or database code.

The database also provides a seemingly infinite number of native security settings and options for all sorts of features and options. All objects such as tables or views or even things like DIRECTORY objects have lots of security settings such as ALTER, SELECT, EXECUTE and many more. There are also a lot of global settings that can control security such as initialisation parameters like O7_DICTIONARY_ACCESSIBILITY or AUDIT_TRAIL. Oracle in summary probably has more security options than any other software available.

So What Is the Problem?

Because the database software is designed to be generic in terms of what it stores and how it stores it and where it stores it is not designed to be secure "out-of-the-box", that is an impossible hope – That is if you were hoping for it – Oracle has made great strides in the last few years to produce nice Oracle security advice, documentation, features and help securing Oracle. There has been secure coding guide, help in preventing SQL Injection and also hardening guides / recommendations.

A good indication of why the Oracle software will never be secure by default is shown by looking at the Oracle hardening documentation (available here: http://www.oracle.com/technology/deploy/security/database-security/pdf/twp_security_checklist_database.pdf) you will see a lot of really good advice on securing an Oracle database. But like the product itself its generic and not focused. If you look at the section about PUBLIC PRIVILEGES you will see that there is a recommendation to revoke the EXECUTE privileges on UTL_FILE from PUBLIC, this is a fine requirement but often hard to do because of legacy applications, lack of documentation of what privileges are actually required and the biggest issue is that often applications are not static so that analysis of required privileges is very hard. The good indication I mentioned above; well that is that Oracle tell us to do this in the hardening guide but do not do it by default for us when we build a database presumably for some of the reasons I put forward.

Hardening by Guide

Hardening using a checklist, whether the list is Oracle's own list or one of the few (it is interesting that there are not that many security checklists available for the Oracle database) others that are available such as the Center For Internet Security (CIS) Benchmark (available here - http://www.cisecurity.org/bench_oracle.html) is in my opinion a sort of futile approach.

OK, that sounds extreme; it is meant to sound that way to get your attention. There are a number of reasons for this view:

- Each checklist is different in some ways (size, content...); do we need to work through all of them?
- Some checklists offer advice for corrections; the advice will not work in all cases (or is simply incorrect) as applications have different requirements, operating systems are different, database versions are different...
- A huge amount of effort would be required to, say, implement all of the recommendations of the CIS Benchmark on one database it would take a lot of time to develop tests to check, fixes to correct and processes to apply and test those fixes even for one database. If we have hundreds or even thousands of databases its not practical

The biggest issue of all is that there is no focus on “your data”, each of these checklists are tip based. They are a worldly collection of tips and suggestions from many people over many years. There is no true structure in each of the available lists. But worst of all these lists do not say anything about your data – your HR data, your credit card details or your AIDS and HIV data or....

Imagine we follow the CIS's hundreds of checks in say 500 databases maybe a total of some $400 * 500 = 200,000$ checks. For each of these checks we must scan each database and see if it's vulnerable, we must develop a fix and push it out to each database, we must scan and test again to make sure it is fixed and we must finally continually monitor to see if it remains fixed. We could make a simple assumption that there are 4 stages and not count the fact that some must be done multiple times, the total fix accesses for all databases is heading towards 1 Million in this example. This is a huge amount of work and effort for anyone to undertake BUT doing all of this does not cover your credit card details or your HIV data.

In simple terms a checklists should not be the focus for securing Oracle; the data should be the focus. You must start with the data and understand the data in terms of how it “flows” into and out of the database and also in terms of “people” – real people. It is necessary to map real people to jobs, processes and programs so that database accounts can be assessed for suitability with some idea of what they are used for.

The data must be assessed in a similar fashion to locate where it is and who can access it and how. In this way a complete model of people – jobs – purpose – data access can be made.

Develop a Methodology

The only way to secure Oracle; scratch that; the data; held in an Oracle database is to focus on the data not the software. As I just described a process that simply follows a checklist will increase the security of the database because it is basic hardening but it will not protect the actual data that is key to the businesses operations. A methodology must be used that focuses on people and data. The following broad strokes must be included:

Checklists still have value in that they do clearly raise the level of security in a database if followed BUT they will not secure the key data on their own. A checklist is good for hardening but not good for securing data.

In this article I want to focus on “the focus”. How do you secure Oracle, or rather how do you secure the data that is held in the Oracle database.

The main message therefore is:

What Is The Focus?

OK, the title of this section should have been “what should be the focus” otherwise I am preaching to you but let us see where this goes.

The subject of the correct way to secure Oracle has been my hobby-horse for many years now; in fact my main focus with clients and also in presentations at conferences and also in my teachings. I have been vocal about having the correct focus. If there is no focus or method to security of data then your data is never going to be secure.

- Identify what you are securing
- Understand where that data is, how it “flows” into and out of the database
- Understand where all the data resides both inside and outside of the database
- Understand the access models created to access the data
- Access the people and map people to accounts in the database and to their “job” or “purpose”. Include schemas and processes.
- Assess the access and privileges assigned with knowledge of what the person does and what they “should do”

At this point you will have developed a model of what exists in the database in terms of key data and also in terms of people who can access that data.

The next step is to develop a solution that is most likely an over-arching solution to secure

the data from the people who should not access that data. This means there is method. There is focus. We have a target, the data, we have a measure, and the people who need to access the data. When we have a solution and have implemented it we have completed the job. The data is secure.

This contrasts very effectively with the approach of simply following a checklist. Following a checklist is open ended.

Over-arching solutions – A good example would be implementing network security to prevent 98% of the user domain from attempting to directly access the data. The issues that otherwise allow them, to do just that (privileges, weak passwords and more) are lowered in terms of risk exposure but they are not fixed. This is a designed approach rather than a rote approach.

Conclusions

Oracle security is complex because the software is complex – it has to be to allow generic uses so that any customer can build their own application and store their data. The security built into the Oracle software is also complex and often insecure. That is not Oracle's fault; it is simply your job to include security as part of any project and to design it properly to allow access to only those who need it.

Starting a database security project from the focal point of deciding to secure the data and not the actual software is I believe the right approach.

I am going to continue this topic next time and get a little more technical and go into some more detail with some examples so please watch out for that.

About the Author

Pete is a world renowned expert in the area of Oracle security providing consultancy, design, security audits and trainings all in the area of Oracle Security. Pete is a member of the Oak table, he has spoken regularly all over the world at various conferences such as UKOUG, PSOUG, BlackHat and Risk. Pete is a published author on Oracle security and researches and writes about the subject regularly. Pete also runs his website www.petefinnigan.com dedicated to Oracle security.



Business Intelligence and Performance Management: A Necessity in Tough Economic Times

An article by Graham Spicer, CEO of SolStonePlus

Graham Spicer, CEO of SolStonePlus shares his thoughts on why organisations must implement new performance management systems and establish capable business intelligence (BI) programmes to ensure financial stability in the current economic climate. Graham offers his view on how organisations can emerge from today's economic challenges in a more favourable and competitive position. Graham also discusses how BI solutions can provide that all-important competitive edge and deliver an immediate return.

Question: The current doom and gloom surrounding the economy has been very well publicised but what, in your opinion, are the key factors that are influencing customers' decisions when they consider implementing new and more effective performance management systems?

Spicer: Like most organisations, our customers are willing to consider any initiative that will help ease the pressure at the moment. We have found that one of the main factors influencing our customers' decisions is the desire to identify and implement short-term gains, including process automation and budget process efficiencies. Whilst we are seeing some organisations looking to reduce the scope of their BI projects by going back to basics, many of our customers are continuing with their pre-recession activities.

It is a fact that customers are looking for an immediate return on any investment, now more than ever, which can sometimes have a potentially adverse effect on their long-term strategy. This may be completely understandable at the moment, but we always try to ensure that we can deliver value in both the short and long term as we believe that neglecting the long-term vision is a dangerous path to follow for any organisation.

Through our work with various public sector organisations, we understand that the tighter restrictions placed upon their budgets is a key influencing factor when it comes to implementing new performance management systems. Whilst they are trying to deal with these budgetary challenges, they are, at same time, having to maintain and deliver best value to their citizens, achieve higher levels of service and streamline back office processes, which makes a very strong case for a new or updated performance management system.

The most effective organisations are also looking at how they will be positioned within their markets when we start to see an economic recovery and how business intelligence can enhance their business opportunities when this inevitably happens.

Question: You talked about companies being able to see the "immediate return" on their investments, how can this return be delivered most effectively?

Spicer: Unfortunately there is no "one size fits all" solution. I am working on that one and intend to retire on the proceeds!!

Where we have been able to ensure short-term gain most effectively is by taking advantage of existing IT infrastructure and data streams, improving or changing business processes, replacing spreadsheets with a more effective suite of reporting tools, and helping to make sure that information is made readily available to those who need it most. However, the nature and complexity of the client's business often contributes to the scale and speed of the return.



Question: So, how are business intelligence and performance management solutions helping your customers gain that all important competitive edge?

Spicer: As I alluded to earlier, it is still important to plan for the long term whilst

guiding your business through the current challenging climate. We believe failing to prepare for the upturn is as much of a risk to an organisation as failing to make the immediate decisions required to safeguard the future.

Using business intelligence effectively can lay the foundations for improvements in all aspects of an organisation's performance from sales to operations to simply improving the day-to-day lives of employees..

We have worked closely with clients who have seen real benefits in adopting this approach and, in turn, reaped the benefits from gaining a deep understanding of key performance indicators (KPIs) and other performance metrics that make decision making far more effective.

Anticipating and managing risk is of prime importance in today's market. How many businesses would still be here today had they properly planned and prepared? I am not suggesting for a second that business intelligence is some kind of technological crystal ball; but I do believe, and the evidence supports the assertion, that it can and does really help organisations prepare for a wide range of economic eventualities.

Even within the higher education sector, we have worked with a number of colleges and universities who are now having to take a much more commercial view of their particular organisations and market. We are helping our clients improve long-term planning, use institutional funds more effectively, enhance proactive decision making and make radical improvements to student retention and graduation rates. I am sure if you ask any of the colleges and universities we have worked with, they will testify to the effectiveness of business intelligence as an essential tool in helping them achieve a strong market position.

However, in order to sustain this competitive edge, organisations must also strive for management excellence by harvesting the maximum return from their data. This, in turn, will enable forecast accuracy, resource efficiency and generally increased agility and responsiveness to ongoing market conditions.

This is an especially important consideration as BI applications become more widely available on mobile technologies such as blackberries, PDAs and iPhones. Businesses should really seek to take advantage of the widespread use of these technologies and the advancements in BI application availability to increase opportunities and efficiencies.

Question: How are organisations currently able to justify the spend on business intelligence and performance management systems?

Spicer: In my opinion it is a "no-brainer" but I readily admit that I may be slightly biased when it comes to this. Successfully justifying a BI project requires skill and a detailed understanding of the value it can provide.

To me, the rewards which are realised as a result of an effective business intelligence or performance management strategy are both financial and operational. It is important though to stress the word "effective." If the planning phase, for example, is not handled correctly or there isn't sufficient buy-in from the organisation's stakeholders, then the real benefits can be quickly lost.

The operational wins that often result from implementing an effective BI solution cover a wide range of organisational disciplines and tasks including a reduction in errors often caused by the use of spreadsheets and massive time and cost savings when collecting, analysing and using data to provide valuable information to key personnel.

As soon as organisations can leverage these operational wins, they will undoubtedly see a real difference to their bottom line, not only from a better use of human resources but also from the increases in revenue and/or cost savings as a direct result of improved understanding and responsiveness to market conditions.

Question: What are the main challenges associated with effective BI implementations?

Spicer: For us, the biggest challenge comes from ensuring that any BI solution provides the level of return which the investment of both time and money necessitates.

This is quite often complicated by the fact that an organisation's business users have a very different way of measuring a successful return than their IT counterparts.

Like most projects of any type, scale or complexity, if you fail to get the plan right, fail to involve the right people or fail to anticipate the pitfalls, then you run a high risk of facing a series of problems from the outset. Gaining buy-in from the key project stakeholders or sponsors makes life much easier and the chances of success much greater.

► Question: What are the factors that contribute to a successful BI implementation?

Spicer: Adopting a truly collaborative approach is the cornerstone of any successful implementation. Ensuring that the project is not carried out in isolation and includes real involvement from the organisation's IT team really lays the foundation for success.

The IT teams are key enablers when it comes to successful implementations as they are ideally placed to be the link between a vendor or consultancy and the management decision makers behind the project. They are also crucial when it comes to ensuring that any additions or new BI solutions are included within the organisation's wider business intelligence or performance management landscape.

It is also really important that the entire organisation has bought in to the decision to implement a new BI system as it will have potential implications for the way people are used to working. Even though these implications should be positive, if the employees do not understand the project goals or how these will be achieved, then there is a real potential for problems or even failure.



About the Author



Graham Spicer has been with SolStonePlus, an independent business intelligence consulting and solutions company since its foundation in 1983. During this time, Graham has undertaken a variety of roles from technical consultant, pre-sales consultant, project manager and sales manager. As CEO for SolStonePlus, Graham is a strong believer in a hands-on management approach and is especially keen on being involved in business development and the closing of large complex sales involving leading-edge business intelligence technologies and multi-skilled delivery teams.

With strong personal and communication skills, Graham also takes pride in his ability to generate staff loyalty and strong, long-lasting customer relationships. He has a commercial approach to business with strong entrepreneurial instincts and would like to believe that he has made an impact in some very challenging and high profile roles. Today, Graham specialises in business planning, business development and business intelligence and is highly regarded within the wider based business intelligence community. He may be contacted by email at graham.spicer@solstoneplus.com.



Reaching out to the world

As UK Oracle User Group marks its 27th year, this article takes a look at how the organisation has achieved global reach.

A lone voice in the crowd is a whisper - but when the crowd works together it can generate a shout that echoes around the world.

It was this basic insight which prompted the creation of UK Oracle User Group 27 years ago and which has driven the organisation to develop ever closer contacts ever since. Not only between its members within the UK and Ireland but also with other user groups around the world, and with Oracle itself.

Recognising that Oracle solutions were rapidly becoming established as mission-critical enterprise tools, UKOUG brought users together with the aspiration to create a range of genuinely useful member services, build a voice that would help shape Oracle, maintain its independence and financial viability and provide a resource for the inspiration, motivation and career development of all its members. Although we started with users we quickly recognised the other players in the eco-system such as partners and also Oracle as more than the just the supplier.

Pursuing this agenda with determination has seen UKOUG grow to 10,000 member contacts who enjoy a programme of tailored events throughout the year to network, share knowledge, and interact with key opinion formers and industry leaders.

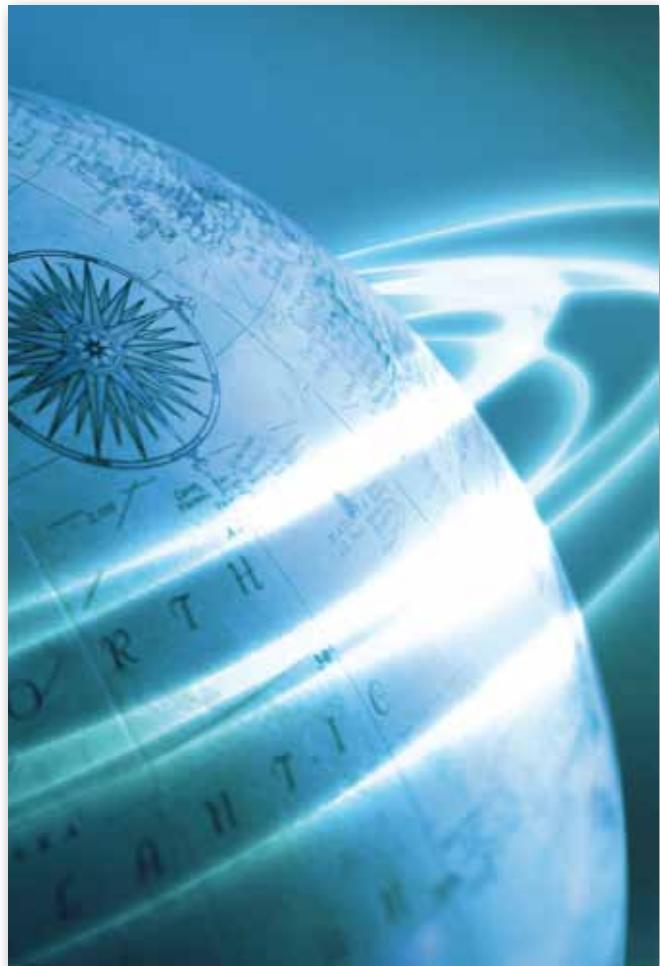
Its influence grows as the organisation continually incorporates new stakeholders within its community including Partners and most Oracle acquisitions.

Expect to see services launched for Primavera and Sun during the course of 2010.

In fact, the Sun acquisition is an interesting example of how UKOUG can make a difference. The group provided significant input in helping Oracle get the green light from the EU for its \$7.4 billion deal with Sun Microsystems. Alongside commenting to the media, UKOUG wrote to the EU Competition Commissioner and ultimately attended the EU hearing to provide expert testimony.

Appearing on the EU stage typifies how the group's activities are now no longer confined to the UK and Ireland – a position which was recently summarised by Ronan Miles, UKOUG Chairman:

"UKOUG is a trend setter amongst the world Oracle user groups. We work closely with these other groups to ensure our members have access to the best content and gain the greatest influence into Oracle. Our aim is to ensure that all Oracle customers globally can obtain the best ROI."



It's a position that seems to please members as 98% say they would recommend UKOUG to another Oracle user. (SOURCE: UKOUG membership survey).

Looking to the future, UKOUG will continue to support its members and keep them linked in with other user groups around the world so they can gain maximum benefit from Oracle solutions.

The exciting possibilities represented by Fusion Applications are a case in point, as UKOUG Deputy Chairman Debra Lilley highlights:

"Fusion Applications is not just the next product out of Redwood. It is the next generation of applications and is changing the way all applications are written. Oracle took the best of their existing processes, enhanced them, and using next generation technology they have created Fusion Applications. They could not have done it without us. UKOUG takes this opportunity very seriously and quickly set up a Fusion Council of 40 from the UKOUG membership representing Oracle, PeopleSoft & JD Edwards users to give their input in the original analysis. UKOUG's involvement with this project is constant. Since Fusion Apps started, I, on behalf of UKOUG, have led the single channel into Oracle for all user groups globally, which includes quarterly question times with Oracle, with the Q&A placed in the members' library on our website. At our last conference series event of 2009 we delivered a dedicated day on Fusion Applications and their technology, which was the envy of all other user groups."

And the next 27 years?

UKOUG is looking forward to them!

Debra's Diary



In preparation for each of these columns I read back what I wrote last time. I normally finish the article with the things I am looking forward to, so I can start the next one with how they went.



January started with lots of snow, and I am starting this article in April having only just got my power on after heavy snow on March 30th, so cold is a central theme for me currently.

I spoke at the Danish OUG which was being revitalised, not only was I able to present on Next Generation Applications but also try and share some best practice from UKOUG about some of the things they can do for themselves. What I learnt from them was that they deal much better with snow.

Each January there is an International Oracle Usergroup Community summit in Oracle HQ and I was very pleased that this year in the President's meeting the representation was proportional to their revenue. There were a large number from EMEA and a very large contingent from Latin America, and a good showing from Asia Pacific as well as those from North America.



Timing for this summit coincided with the SUN launch and we were invited as VIPs. This sounds very glamorous and I was pleased to be there in person but there were 4 hours of very polished and informative presentations with no comfort break. Heli Helskyaho, President of the Finnish User Group and the joint spokesperson for the

EMEA Oracle User Group Community stood up and said, 'we as user groups made the decision to support you on Sun, please don't let us down.'

February I spoke at the Rocky Mountains Oracle User Group conference in Denver. This conference attracts some of the world's best speakers and I get a chance to not only learn about Oracle from them, but learn about presenting. The sad thing is, these speakers present at UKOUG as well, I simply don't have enough time during our own conference to attend their sessions.

I also spoke at the Financials and Government SIG, and shared the profile of Apps users over the next 10 years that Ronan and I have been working on as part of Strategy planning. The whole community is changing fast, the products that Oracle sells, the technology we use in our own lives, the economy around us. If UKOUG stands still we will die, we need to spend much more time on strategy and where we are going.

The first few months are also busy times for the board, we have an election and I would like to welcome David Kurtz and Graham Spicer to the board, and thank Jonathon Lewis and Tracey Bleakley who stood down this year. Every year more people vote which just shows how important the makeup of the board is to our members. We have had planning meetings for most of the conference events and a couple of board meetings.

In March we had our first conference series event – Ireland. It is important to have content for geographical groups and this needs a good SIG presence. If you want to help with the SIGs you attend please contact the committees or the office. The very next day I was

honoured to be the closing keynote at the German or DOAG Applications Conference.

April was again busy, but much busier than I ever expected. I was presenting twice at the Norwegian conference OUGN, which took place on a boat sailing between Oslo and

Kiel, during the return leg we heard about the eruption of Eyjafjallajokull and the travel close down that came with it. I was on my way to Collaborate in Vegas, via Copenhagen where I was meeting up with friends. I managed to get a lift with Oracle Support to Copenhagen which was an 8 hour car drive, and was then stranded for 3 days, however it was no hardship. I was giving my first Collaborate presentation via Skype when SAS airlines announced online that my flight booking was entitled to a special flight going from Oslo! So this time a 9 hour coach ride and a very assertive conversation with a check-in person who said 'you are not booked on this flight' when we arrived and it was off to Vegas. Unfortunately although I could conquer a volcano I could not manage United who delayed my luggage, but it was great to be at the conference and I was able to give my other presentations.



Next month there is an EMEA Oracle Usergroups Community presidents meeting in Budapest and the EMEA Harmony conference in Tallinn Estonia. I will also be speaking at the Scotland event of our conference series which I am looking forward to. Then in June it is ODTUG in Washington. I am very proud of being an Oracle ACE Director and the contact requires me to commit to presenting whenever I can and in return they help with funding. This enables me to also represent UKOUG in a lot more conferences and I am always really proud of what we achieve.

About the Author

Debra Lilley is a Principal Business Consultant with Fujitsu Services. She is both an Oracle Certified Professional (Applications) and Oracle Master (IT Professional). Debra has been a UKOUG director since 2004 and is currently Deputy Chairman. She is also responsible for the Product Development Committees at both EMEA and International Oracle User Community.



UKOUG calendar of events

JUNE

- 1st Irish BI SIG meeting, Dublin
8th Application Development Framework Special Event, London
9th Oracle Financials, Supply Chain & Management & Oracle Projects day, Midlands
10th RAC & HA SIG meeting, London
16-17th UKOUG Conference Series Hyperion 2010, Twickenham
22-23rd UKOUG Conference Series PeopleSoft 2010, Middlesex
30th UKOUG Conference Series Siebel 2010, Reading

JULY

- 27-1st ODTUG, USA
1st DBMS SIG meeting, London
6th UKOUG Volunteers meeting, Midlands
13th Stellent / Oracle UCM SIG meeting, London
14th JD Edwards Combined SIG meeting, London
15th UKOUG Partner Forum, London
20th APEX SIG meeting, London

AUGUST

No SIGs running

SEPTEMBER

- 1st .NET on Windows (NOW) SIG meeting, London
2nd App Server & Middleware SIG meeting, London
8th UNIX SIG meeting, Reading
9th Irish HCM SIG meeting, Dublin
9th Irish BI SIG meeting, Dublin
14th Scotland BI SIG meeting, Edinburgh
15th Apps DBA for OEBS SIG meeting, London
16th Business Intelligence & Reporting Tools SIG meeting, London
19-22nd Oracle OpenWorld
23rd Management & Infrastructure SIG meeting, London
23rd Public Sector HCM Customer Forum, Midlands
28th Oracle Spatial SIG meeting, Midlands
28th Supply Chain & Manufacturing SIG meeting, Midlands
29th HCM SIG meeting, Midlands
30th Oracle Projects SIG meeting, Midlands
30th RAC & HA SIG meeting, Midlands

OCTOBER

- 5th Development SIG meeting, Reading
6th Public Sector Combined event, London
6th Scotland Development SIG meeting, Edinburgh
7th Oracle Financials SIG meeting, London
7th Education & Research SIG meeting, Midlands
7th Siebel & CRM on Demand OpenWorld Highlights, Reading
7th UKOUG Partner of the Year Awards
13th DBMS SIG meeting, Midlands
19th Hyperion Essbase meeting, London
19th Hyperion Planning meeting, London
20th Local Government CRM Customer Forum, Midlands
21st Hyperion HFM meeting, London
21st Hyperion Enterprise meeting, London

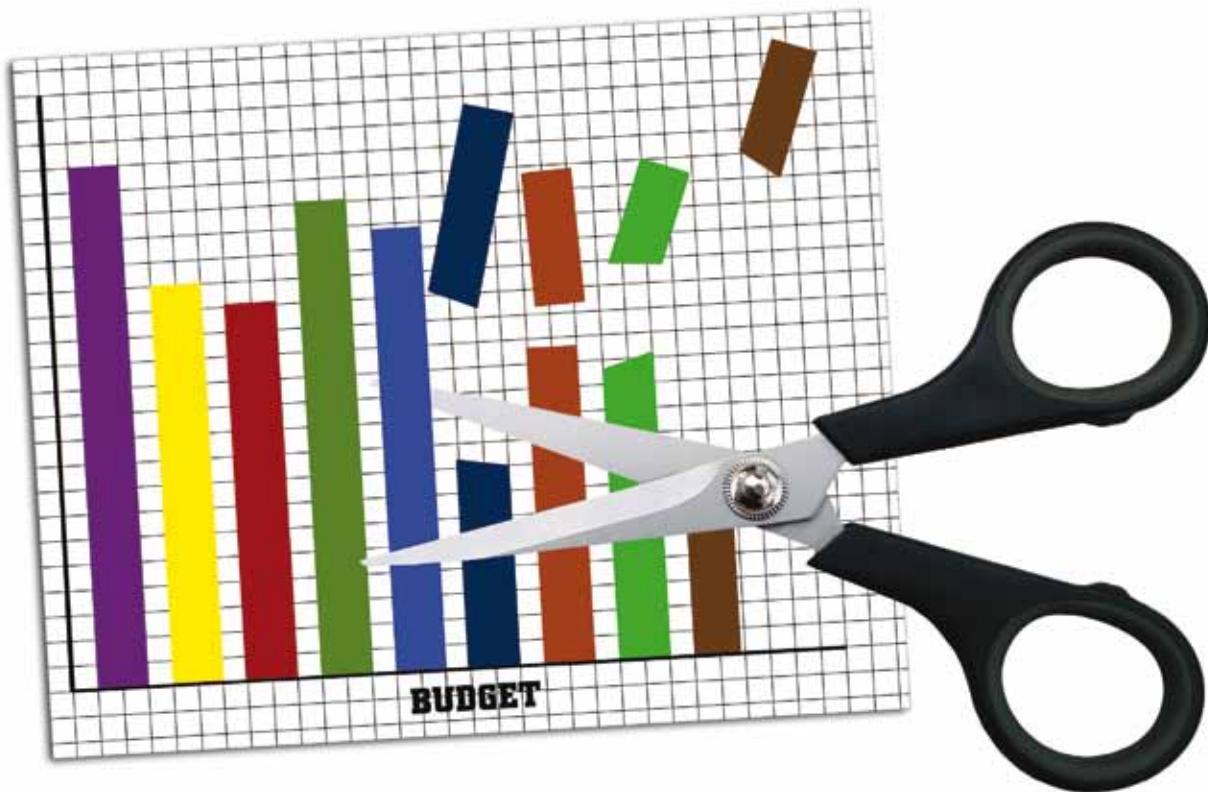
NOVEMBER

- 2nd Irish BI SIG meeting, Dublin
3rd APEX SIG meeting, London
10-11th UKOUG Conference Series JD Edwards 2010, Twickenham
23rd PeopleSoft Combined Event, Slough
29th UKOUG Partner Forum, Birmingham
29th-1st UKOUG Conference Series Technology & E-Business Suite 2010, Birmingham

DECEMBER

- 1st UKOUG Conference Series Technology & E-Business Suite 2010, Birmingham

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