OracleScene

A UK ORACLE USER GROUP PUBLICATION

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Tech this out!

Exclusive interviews with Tom Kyte and Jonathan Lewis on Oracle 11gR2

What does Fusion Applications really mean for Oracle Customers?

Plus Mogens Nørgaard faces his nemesis once more:

> "But just as things looked really grim, and we – the chosen, the few – were gathering around Database Hill to fight to the very end of days, a few miracles happened."

Other highlighted articles

To Infinity and Beyond: Getting Serious Traction with BI Publisher

A closer look at Oracle Real Application Cluster 11.2.0.2

Oracle ACE article: Indexes are Tables

Issue 43 • £10.00 • www.ukoug.org
AN INDEPENDENT PUBLICATION NOT AFFILIATED WITH ORACLE CORPORATION

OracleScene Editorial Team

Editor:
Neil Jarvis, editor@ukouk.org.uk

Deputy Editor, Applications
Geoff Swaffer, deputy_apps@ukoug.org.uk

Advertising & Subscriptions
Marisha Arthur
Advertising Sales Representative
07772 308 565
marisha.arthur@headlines.uk.com

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UKOUG Office
UK Oracle User Group, User Group House,
591-593 Kingston Road, Wimbledon
London, SW20 8SA

Tel: +44 (0)20 8545 9670
Fax: +44 (0) 870 9000 335
Email: info@ukoug.org
Web: www.ukoug.org

Produced by
Headlines Corporate Communications
Tel: +44 (0)1908 393303
Web: www.headlines.uk.com

Contents

Welcome

Welcome to the first edition of Oracle Scene 2011 and to my first edition as editor. I'll start by mentioning a few changes within UKOUG. A big thanks goes to the outgoing editor Mark Rittman for the time and commitment he has given during his role as editor. Another big thanks goes out to Ronan Miles who is stepping down as Chairman at UKOUG after 11 years. Voting in the UKOUG Director elections has now closed, and UKOUG look forward to announcing the new Board members via e-bulletin in mid March, and on the UKOUG website. Plus welcome to Geoff Swaffer who has taken the post of deputy editor.

Technology & E-Business Suite conference, which took place in November 2010, was a great success. Well done to all the staff at UKOUG, the volunteers and the speakers who put in a great deal of effort to ensure that everything ran smoothly on the day, despite the snow. At the conference Oracle Scene were very grateful to both Tom Kyte and Jonathan Lewis for giving up their valuable time to allow us to interview them. You can read both interviews in this issue.

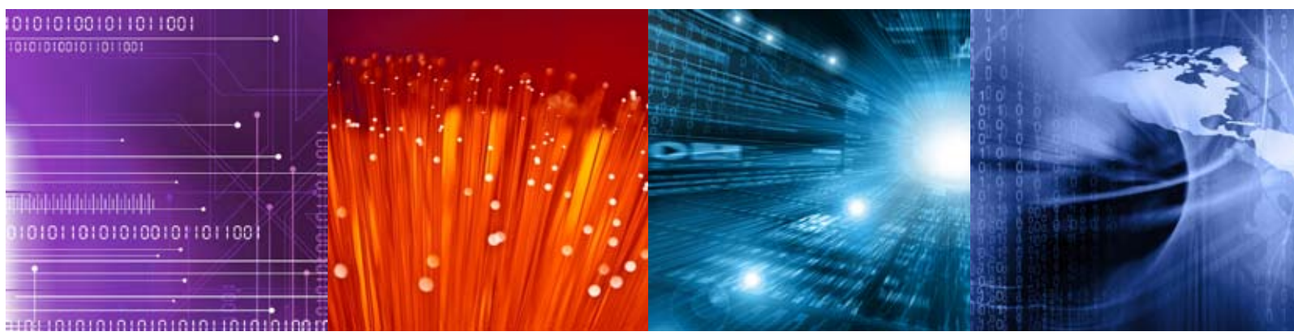
Also in this issue for those interested in technology we have RDBMS articles on database links and Oracle RAC 11.2.0.2., in Applications we have Credit Card data security, Globalization (redesigning your chart of accounts) and To infinity and beyond. For those interested in business and management we have an article on a study of enterprise resource planning system outsourcing.

Our Oracle ACE article comes from Jonathan Lewis and is titled 'Indexes and Tables'

We also have articles from our regular columnists Debra Lilley and Mogens Nørgaard.

As usual, at Oracle Scene we're always on the lookout for new and interesting articles. If you have a technical, applications or business and management paper you'd like to be considered for the next issue please send them to articles@ukoug.org.uk by Tuesday 5th April 2011.

Neil Jarvis
CHIEF TECHNICAL SPECIALIST
HSBC BANK PLC HBEU



The Tools of Fusion: Oracle JDeveloper and Oracle ADF.

ADF Mobile – Fusion on the go

by Grant Ronald, Senior Group Project Manager

Welcome back to this series on the tools and techniques used to build Fusion applications. For those of you have been following this column you might have noticed an undercurrent running throughout each of the articles: change.

We are living in exciting times where our interaction with IT is no longer shackled to green screens confined within the walls of our office. Each day millions of us interact with friends and colleagues through social networks such as Facebook or LinkedIn. From the comfort of our own homes we can carry out a weekly shop with only a few clicks of a mouse; and even music and movies are a mere click away. But what makes this even more exciting is all of this can be done on the move. Pretty much every one of us has a mobile phone. However, these mobile devices are no longer just a way of making voice calls. Now they are gateways to applications and services we could only have dreamed of ten years ago.

As you might expect, the ability for Oracle's Fusion applications to exploit mobile devices is a key requirement. For example, sales reps in the field could have mobile access to critical account information, or a warehouse inventory system could be accessed via a ruggedised mobile device with built in scanner to track stock as it comes in, or leaves, the warehouse.

The Mobile Challenge

So, you have the Nirvana of unfettered access to your business applications on the move, however, there is a challenge. Does developing for the mobile platform mean another new development paradigm? Will you have to learn specific languages and APIs for each of the different devices? Hold on, maybe this is starting to look like it might be complex.

Well just as Oracle JDeveloper and Oracle ADF provide a development environment and framework to abstract the complexities of "regular" web application development, they also provide the same facilities for mobile development.

As a Fusion developer you can build business services that can be shared between web and mobile applications, and when it comes to building the user interface, the same style of data binding and UI components can be used as well – albeit you have to work within the limits of the device screen real estate.

There are two distinct types of mobile application you can build with Oracle ADF

- **Oracle ADF Mobile Browser** – where the application is accessible through a browser on a mobile device.
- **Oracle ADF Mobile Client** – where the application runs locally on the mobile device and can also work in a disconnected mode.

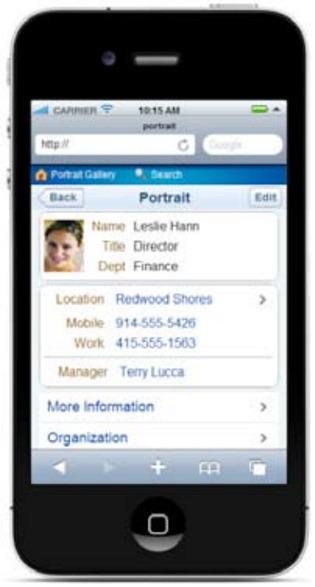
ADF Mobile Browser

With a mobile device you have the ability to fire up a browser, input a URL and view a web page; so how is this any different from building web based UIs with any other technology? Well, for mobile browser applications there are two primary challenges that have to be taken into account. The first, alluded to earlier, is that you simply have less screen space in which to display your application page. To address this challenge, the JDeveloper visual editor can mimic the screen size of the device you are targeting. This means you can at least design pages in a WYSIWYG mode. Furthermore, because the UI components use relative positioning, the application layout can "flow" and scale to compensate for any differences in real estate on the end device.

The more serious challenge is coping with the varying capabilities of potential mobile devices. While modern smart phones such as iPhone and BlackBerry offer a fully-fledged browser that supports HTML and JavaScript capabilities, some of the simpler devices may only offer HTML rendering capabilities. With ADF Mobile Browser applications, the UI components (Trinidad JSF components) can gracefully "degrade" the UI to the capabilities of the device being used to access the application. For example, the DVT graph components, demonstrated in the previous issue of this magazine, would be rendered as png images rather than the more interactive Flash option.

> "Mobile devices are now gateways to applications and services we could only have dreamed of ten years ago."

So for the developer, the experience of building an ADF Mobile browser application is pretty much the same as building a regular web application. You can build your business service, possibly using web services, ADF Business Components or some other persistence technology such as EJB. You have a palette of UI controls that you can drag and drop onto the application pages, and these components can be bound to the UI using the ADF Model – just like the way you currently develop. The final trick to your ADF Mobile Browser development is look and feel. Each mobile device has its own distinctive application look and feel. Using pre-built skins and the skinning capabilities of Oracle ADF, it is relatively straightforward to have your application adopt the native look and feel of the target device.



An Oracle ADF Mobile Browser application using an iPhone skin

ADF Mobile Client

However, a mobile device can be much more than simply a phone with a browser bolted on. These devices themselves are powerful client platforms on which applications can run in a connected or disconnected mode. Furthermore, these applications should be able to integrate with the device's onboard features such as telephony, GPS location services, cameras and calendars.

As with mobile browser applications, mobile client applications have many of the same challenges, with a few more added for good measure. So how does Oracle ADF help us build Fusion applications to run on client mobile devices?

As is the theme of Oracle ADF, the framework provides a common level of abstraction of the underlying technology. This means that the developer can build a mobile client application in the same way as a fully blown Fusion web application.

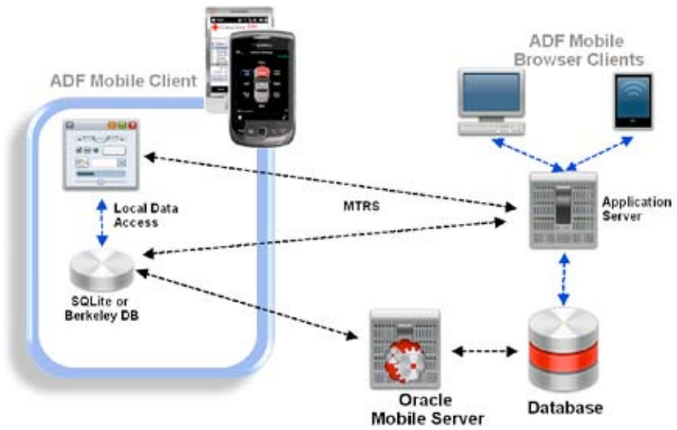
However, instead of deploying the full Oracle ADF runtime to the mobile client device, a lighter version of the stack is deployed. The developer can also choose to "lighten" the business service application as well. So, while the core business service may be manipulating hundreds of attributes, the developer could choose to "override" the mobile client instance of the business service and remove some attributes that are not really required when accessing via a mobile client application.

UI development for the mobile client application is the same drag and drop experience developers are already used to with Oracle ADF applications. The only difference is that because the UI is not rendered in HTML through a browser, Oracle ADF takes care of "automagically" translating the UI components used to design the application, to native device components at runtime. This ensures, for example, that a client application running on a BlackBerry looks like a native BlackBerry application.

Of course, there is one other major factor to consider when building ADF Mobile Client applications: they can work in a disconnected mode. So, there is a requirement for the client application to be used in an off line mode, and then synced with the "mothership" at a later point.

To achieve this off line behavior, the ADF Mobile Client architecture includes a SQLite database, allowing transactions to be made against this local database, which can then be automatically synchronised with the mothership database using Oracle Mobile Server. Alternatively, a feature called Oracle ADF Mobile Transaction Replay Services (MTRS) can be used to automatically replay client side application transactions against the business service on a mothership application server.

With smart mobile devices pervasive for business and social users, the ability to access applications on the go is ever more important. However, just because mobile devices present an alternative channel of deployment to your web application, shouldn't mean your developers have to acquire a new set of skills. The advantage to the Fusion developer is that Oracle ADF provides the same common development paradigm regardless of how your users access your application. So your developer can get moving, and get your applications on the road.



ADF Mobile architecture

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 for 7 years in various development roles at EDS Defence.

Grant is author of the "Quick Start Guide to Oracle Fusion Development: JDeveloper and Oracle ADF", published by McGraw-Hill

To Infinity and Beyond:

Getting Serious Traction with BI Publisher

by Simon Tomey, Chartered Accountant

This is the sequel to a story in Oracle Scene where our fictional hero saves the day by introducing BI Publisher to his organisation. The sequel picks up two years later. I hope that you enjoy this story and are inspired to:

1. Never give up
2. Start using data templates and "bursting" to solve some of the reporting problems in your organisation (e.g. to replace FSG's and discover reports and to emulate drill down).

Introduction

Simon kicked the snow off his shoes with poorly veiled frustration as he changed into his cold weather gear and walking boots. It was childish and irrational but he couldn't help feeling angry and his good friend Peter who had invited him on the walking holiday to the lake district. Nine times he had tried to get the car up the hill but he just could not get traction and each time got a teasingly close ten feet from the summit. Now it looked like they were snowed in for the week and he would have to abandon the car to be recovered later. His high performance car, a wonder of German engineering was useless on the un-gritted road. All of his advanced driving experience was pointless as the back wheels spun wildly as the car glided gently backwards to rest in the bank of snow. It was something they hadn't predicted – such a sudden fall of snow in November. All would have been fine if the gritters could get over the pass, but they couldn't and in any case were busy dealing with higher priority carriageways. All the more frustrating as we had had such a wonderful day's walking in the mountains yesterday.

Just like work at the moment he thought pensively. I've got a great team, we've done some great things with technology, but none of us saw the recession and the cut backs coming. Nobody's fault, although we'd like to find someone to blame. Without traction on any of the cost saving initiatives, the team is as useless as my car was currently on the ice – it would have to be abandoned to possible destruction and no hope of recovery.

"Everything is against me", Simon thought. "I've just run out of ideas and energy." Simon parked off the road, to make way for the queue of cars. He lifted his eyes to the majestic beauty of the serene mountains of Buttermere now capped in snow. "There's got to be a way, there must be something I haven't thought about, there's always a solution, it's just that we thrash about doing and don't spend enough time thinking and reflecting", he thought. His thoughts drifted off to his friend David who he hadn't seen for many months. Simon met David at the UKOUG SIG when he was presenting on BI Publisher (entitled "Seven small steps for a consultant, One giant leap for user kind "). They enjoyed each others' company immensely and had kept in touch ever since.

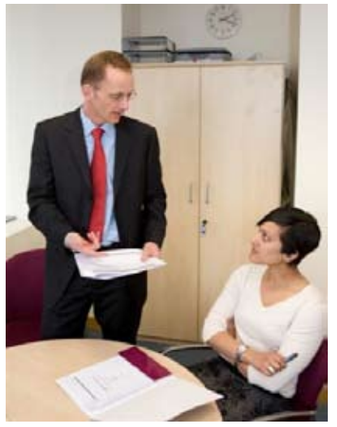
> "There's got to be a way, there must be something I haven't thought about, there's always a solution, it's just that we thrash about doing and don't spend enough time thinking and reflecting"

Simon's thoughts were soon interrupted by the heavy grind of an agricultural diesel. The stranded vehicles blocked the road, so the approaching tractor merely climbed over the burrows and made its appearance jumping over the bank and into the car park with the proud arrival of a cavalry at full charge.

"Well it's the young lad I was talking to on the quad bike – he's only gone home to get a tractor – good fellow." Minutes later, Simon's car was attached by one of his tow ropes (yes he had planned that much, boots, jump leads, shovel, and three tow ropes) and the enormous wheels of the tractor sedately but defiantly crunched through the thick ice and towed the car steadily up and over the hill.

"I love you little tractor" Simon thought to himself. He didn't imagine he could have ever felt so emotional about a little aging agricultural implement, but as it chugged up the road with it's huge wheels showing no inclination to lose their grip he felt like he had been delivered from wearying despair.

Simon gets into the office on Monday morning. He goes into his boss Rachael to tell her about some ideas he has about reporting.



> "David, I just feel so in despair with the situation at the moment. We are being called on to do so much more with our reporting. We need to generate much more meaningful output, but with fewer people. Implementing BI Publisher was a huge step forward, but we have to do something more and bigger."

"Hi Simon, hope you had a good weekend ... no tell me about it later. I've heard that we've all got to reapply for our jobs. Are you OK for interviews next week? We've got a professional actor coming in for the interviews to make them more realistic".

"That's great", Simon replied "Can I have Jennifer Anniston and can we do a love scene?"

Rachael just glared back and made a mark in her notebook with a black pen.

Later that morning Simon telephones David, apologising for not being in touch for so long.

"David, I just feel so in despair with the situation at the moment. We are being called on to do so much more with our reporting. We need to generate much more meaningful output, but with fewer people. Implementing BI Publisher was a huge step forward, but we have to do something more and bigger.
In the old days when budgets were not such an issue, we would have started a big reporting project. I'm always suspicious of big projects, but I know this would have delivered some value and the efficiencies would have enabled us to not need to replace the three vacancies I'm currently carrying. However, the money just isn't there anymore. We need to submit any projects over £10k to the Cabinet Office for approval. Even if they do approve it, it can take months to do so.

David prompts Simon. "Tell me again about your experience at the weekend with the ice. What was the critical point there".

"Well it was very interesting, because what saved the day was the application of some very simple inexpensive technology (the tractor) to some very efficient powerful and expensive technology (my Mercedes SLK). I was a totally out of my area of knowledge and ability. In fact it was only because I was talking to the young farmer on his quad bike, that he was prompted to go and get the tractor. The interesting thing is that it led to the rescue not just of my vehicle, but of ten others. I told everyone to give him a tenner, so everyone won and the young lad was delighted."

"It was the right solution to the problem at the right time, prompted by a chance encounter."

> "It was the right solution to the problem at the right time, prompted by a chance encounter."

"When we first met at the SIG, David, BI Publisher was a bit like the tractor for us – inexpensive but powerful technology that got us out of the mire. However, our work has been limited to existing reports and we've now harvested the benefit from that. You know the real benefit for us would to be able to work on Discoverer reports and/or FSG reports. To get some FSG's but with the same functionality as BIP has would be really handy (especially since the demise of client ADI with R12). We've also got loads of Discoverer reports which are only subtle variations on a theme. I know a fair part of my team's time is engaged in maintaining these reports and training new users. I suspect a number of users don't actually even know how to use the reports, but daren't admit it, so the information is going to waste."

"We get a lot of ad hoc queries from users to run SQL against Oracle so they can download information into Excel these are very time consuming for the development team." Simon concluded.

"Simon, you're just not using BI Publisher to its full. What you are doing is a bit like buying a Mars bar, throwing away the chocolate and just keeping the wrapper", David challenged. "I'll tell you what, check out a presentation one of my team is doing at the next UKOUG conference. After you've been to that, I can drop in for a couple of days and we can implement some new reports. I think you'll be pleased. There loads you can do with BIP – what you have done so far is really just scratching the surface. One of the most exciting things we have come across is the ability to automatically send emails to report users with hyperlinks. Users then click on these to open PDF reports, which have imbedded hyperlinks enabling them to drill down for more detail. All this just from email and they don't even have to login to another application.

It cuts down on so much training and maintenance. Anyway I don't want to spoil the treat. Have a look at the presentation and let me know what you think, then we can discuss more detail."

Simon attends the presentation and takes some notes of the key aspects. It's entitled "Transforming your FSG or Discoverer reports", but as the presenter explains, that is just the context in which he wants to introduce more powerful BIP functionality (i.e. data templates and bursting) and the principles can be applied to any reporting issues.

Steps to producing a data template (to replace an FSG or Discoverer report):

Step 1 &2: Run the FSG or Discoverer report to obtain the SQL (use the FSG log file or the Discoverer enquirer).

Step 3: Copy the SQL into your pro-forma data template

A data template has three main components:

1. Parameters – these link to the concurrent request (see step 5) to allow users to select report parameters (could be anything but "month" is a good example).

2. SQL query – any SQL query at all can go in here (but licensing restrictions limit you to the standard schema).

3. XML structure – this is where you structure and group your output.

Step 4: Edit the SQL
Include run time parameters (as in step 3 above), which will be passed from the concurrent request (step 5). Revise the SQL to make it more efficient and useful (because the SQL generated by FGS's or Discover queries may not be very efficient and as useful for generic reporting).

Step 5 & 6: Create the concurrent request and add run time parameters. This is the standard request screen from which your users will run the new report.

Step 7 & 8: Create the data definition and upload the data template.
This is as per normal for BIP reports, but in this case you are also uploading the "data template". The data template is the XML file which will tells BIP what data to extract.

Step 9, 10 & 11: Get the XML sample to develop and upload the presentation template.
This is as per normal for creating a BIP presentation template (as per previous "7 steps to transforming your reports", presentation).

The presenter concludes: "This will now give you a report over which you have total control that to which you can apply the full functionality of BIP (cross tab reports, output as Excel, conditional formatting, multiple templates and summary calculations). Moreover users can run the reports as and when they wish to. The next step
is to include a bursting control file to distribute the reports automatically."

Steps to bursting reports

The presenter continued. "Bursting is powerful functionality included in the EBS integrated version of BIP which allows you to distribute reports to different locations (e.g. email addresses, file locations), in different formats, with different content. In theory one burst BIP report could replace hundreds of Discoverer reports. As you could imagine, this has huge advantages on maintenance, configuration management and server loading. The best way to write a bursting control file is to start with an example and substitute the specific parameters for your circumstances."

Simon continues with his notes as follows:
A bursting control file is an XML file which tells BIP at run time how to distribute the information. These components can be hard coded or dynamically populated from the items in the data template (e.g. if you want to email a different report to each cost centre manager, the data template has to generate XML which will have the cost centres and the email address of each cost centre manager). This means that the bursting control file is intimately linked to the data template, because it is the data template which will contain the dynamic instructions which will be used by the bursting control file (e.g. individual recipient email addresses).

There three key components of a bursting control file are:

1. The "burst on" group – this is the item that you want to differentiate the reports on e.g. cost centres could be the distinguishing item for different reports to be sent to cost centre managers

2. The delivery channel – how you want the reports to be sent (file system, FTP/SFTP, email, printer, or fax). Depending upon the delivery channel you use, you will have a number of other parameters available. These too can be hard coded or dynamically populated. (Examples for email are "to", "subject" "from", "attach doc", "cc", "format", and "reply").

3. Document formats – this includes which output format (PDF, Excel, HTML, RTF, etc.), presentation template (hence you can have a different report style for each recipient, based on the same data) and filter. The filter will allow you to limit this output format to just some recipients e.g. only valid email addresses get a report emailed; all others go to a control report sent to the administrator.

The results

David visits Simon and within a couple of days they have built two new reports and Simon has sufficiently grasped the key concepts to continue with all the other reports.

Simon explains to his team what he thinks they could do. The next week he meets Rachael in the corridor.

"Simon, I've heard from James in operations. Apparently you have set something up so that they can run their own SQL queries whenever they want. They are very pleased."

"Yes", Simon responded, "we set up some data templates to run the SQL and a presentation template to produce directly into Excel. Not only does it mean they can run the reports whenever they want, but it frees my team up from having to run them. I'll tell you what, Rachael", Simon continued "we're about to have a team meeting to review progress over the last week since we have been using data templates and bursting. Why don't you come along?"

The team each recounted what they had done and the benefits it was delivering.

"We used use third party software to distribute our external documents. We've set these up on Oracle using bursting. We used to get charged £1,000 per change, but we can do these ourselves now, so we're saving a small but not insignificant amount.", enthused Amy.

"Since we've been emailing PDF's (with graphs!), Budget holders are now reading their reports. One budget holder noticed a payment for a support contract which was no longer being used. The support company had to have someone on standby to support the software, even though they were never called out. They were delighted to reduce the price of the support contract and transfer it to a system which needed support.", said Sarah.

John reports: "Gritting purchase orders and economic order points could be calculated and sent by email directly to the salt suppliers. Sending by email rather than by the post saved days in delayed information and meant the salt suppliers could plan their stock levels much better. There were now plans to email stock reports directly to the suppliers so the suppliers would know as soon as the council did which areas would need replenishing."

"Bursting reports with drill down are used for bus services. It transpires that many of the buses are running empty and the fleet managers never admitted to not running their Discoverer reports so weren't using the information. They were scared of admitting that they didn't know how to run them, as they thought it would put them on the redeployment register. The fleet managers have identified routes that are empty and are able to allocate smaller buses and to retire some of the more expensive fleet. Customers are delighted with the smaller buses which are warmer in the winter and can navigate the smaller roads more easily. Some of the larger buses can be redeployed on the busier routes which has delighted commuters on overcrowded routes", concluded Lisa.

Rachael saw Simon a week later. "Simon's I've been talking to the CEO and we've got an initiative with some other councils. We want to form a team comprised of the Oracle teams from two other councils to build a suite of standard reports which can be used in all three councils and made available for the use of others. Would you be interested in building and leading this team? It will mean more responsibility, but it won't be without its rewards"

The end. Or is it just the beginning? I love you little tractor!

To get a copy of the slides from this year's conference click here:
http://blog.belife.co.uk/2010/12/01/converting-disco-and-fsg%e2%80%99sto-bip/

ABOUT THE AUTHOR

■ Simon Tomey is a Chartered Accountant and an Oracle Functional Consultant. Simon has significant experience with Oracle BI Publisher and is an enthusiastic advocate of its practical application. At this year's UKOUG conference he was awarded "Inspiring presentation for 2010 UK (Apps)". Simon would be delighted to hear from anyone with questions. Simon.Tomey@BeLife.co.uk

Indexes are Tables

by Jonathan Lewis, Freelance Consultant

Oracle's optimizer has many strategies for acquiring the data you want with the minimum of work. Some of these strategies are really quite subtle and sophisticated – think of the Star Transformation for example which uses a two-phase approach to dimension tables, or the Index Join which does hash joins between indexes to avoid visiting tables.

Despite all the clever things that it can do, the optimizer is still only a program, and human ingenuity can still find useful execution paths that are not currently coded into the optimizer. This article describes one such generic path.

The requirement

I'm going to take a highly simplified order-processing query to demonstrate an important principle. Imagine I work for the HMV store and want to report all orders placed for classical CDs. It might look something like this:

```
select
        ord.*
from
        orders          ord,
        products                prd
where
        ord.date_placed > sysdate - 1
and     prd.id = ord.id_product
and     prd.product_group = 'CLASSICAL CD'
```

Conveniently there is an index on the orders table that starts with the date_placed column so we have an method of accessing recent orders fairly efficiently, and we get the following execution plan.

```
-------------------------------------------
| Id | Operation                   | Name |
-------------------------------------------
--
| 0 | SELECT STATEMENT |           |
| 1 | NESTED LOOPS |              |
| 2 | NESTED LOOPS |              |
| 3 | TABLE ACCESS BY INDEX ROWID  |ORDERS |
|* 4 | INDEX RANGE SCAN            |ORD_DAT_
PRD
|* 5 | INDEX UNIQUE SCAN           |PRD_PK |
|* 6 | TABLE ACCESS BY INDEX ROWID |PRODUCTS
-------------------------------------------

Predicate Information (identified by
operation id):
```

```
-------------------------------------------
 4 - access("ORD"."DATE_PLACED">SYSDATE@!-1)
 5 - access("ORD"."ID_PRODUCT"="PRD"."ID")
 6 - filter("PRD"."PRODUCT_GROUP"='CLASSICAL
CD')
```

(You may recognise, from the "doubled" nested loop operation that I'm using 11g for this example.)

This plan seems to be as efficient as anything we could do, but there is a bit of a problem here – we're after a fairly small fraction of the orders, but we have to visit the table for every single order for the 24 hours before joining to the products table to identify the classical CDs.

Now, as you might guess from the name of the index I've used to get to the orders table, the product ID which we use to join to the products table is already part of the index so, in principle, I could get to the products table without first visiting the orders table – but my select list includes all the columns from the orders table, which is why the optimizer will force me to visit the orders table before going to the product table. This query is actually one I met in a product system very recently – the number of orders per day was in the millions, the number of orders for the "interesting" product groups was typically a couple of thousand. Oracle was picking a sub-optimal path (not hugely suboptimal, but there was a fair percentage of redundant work being done).

First Enhancement

I can make the query more efficient by making Oracle visit the orders table twice; or rather, I can write some SQL that looks as if it will visit the table twice but take advantage of the fact that an index may hold all the information you need to allow you to avoid visiting the table. Here's my query:

```
select
        ord2.*
from    (
        select
                ord.rowid
        from
                orders          ord,
                products        prd
        where
                ord.date_placed > sysdate -
1
        and     prd.id = ord.id_product
        and     prd.product_group =
'CLASSICAL CD'
        )               ordv,
        orders  ord2
where
        ord2.rowid = ordv.rowid
;
```

In an inline view I've requested the rowids of all the orders for the date range where the product group is classical CDs. Since all the columns (including the rowid) I want can be found in the ord_dat_prd index Oracle can produce this result set with a query that doesn't visit the table – avoiding (for my client) a few million buffer gets. But once the inline view has produced exactly the rowids I need, I can then join back to the orders table to collect the small number of rows I really want. Here's the plan:

```
-------------------------------------------
| Id | Operation                | Name |
-------------------------------------------
| 0 | SELECT STATEMENT |        |
| 1 | NESTED LOOPS |            |
| 2 | NESTED LOOPS |            |
|* 3 | INDEX RANGE SCAN         |ORD_DAT_
PRD |
|* 4 | TABLE ACCESS BY INDEX ROWID |PRODUCTS |
|* 5 | INDEX UNIQUE SCAN        | PRD_PK |
| 6 | TABLE ACCESS BY USER ROWID | ORDERS |
-------------------------------------------

Predicate Information (identified by
operation id):

-------------------------------------------
```

```
 3 - access("ORD"."DATE_PLACED">SYSDATE@!-1)
 4 - filter("PRD"."PRODUCT_
GROUP"='CLASSICAL CD')
 5 - access("ORD"."ID_PRODUCT"="PRD"."ID")
```

At line 3 I do a range scan of the ord_dat_prd index getting the product ids and rowids for all the orders in the relevant time period. The nested loop at line 2 is how I discard rowids for the products I don't want – by joining on product id to the products table and returning only classical CDs. Finally I access the orders table by "user" rowid (rather than "index" rowid).

Of course, I have made my query more complex, and you should only take this approach if you decide that the performance benefit merits the increased complexity (hence future maintenance threat) of the query. In this case, for example, you might decide against making the change since all you are saving is some buffer gets and CPU (it's likely, after all, that orders place in the last 24 hours will stay in the buffer cache for the next two or three days). In another case you may be able to determine that by postponing visits to the table, and then visiting only the blocks you really need, you are eliminating buffer gets that would turn into disk reads.

Second Enhancement

There is a common mantra that if a table doesn't appear in the select list it shouldn't appear in the from clause. There's a lot to be said for this idea – but it can lead to SQL that is a little hard to comprehend. Nevertheless we might want to look at it in this case if the efficiency of the query is really important.

Although we no longer visit the orders table unless we really want the row, we still have to visit the products table for every order in the date range. Of course, as a trivial efficiency aid we might make the products table an IOT (index organized table), or add the product_group to the index we use to support the primary key – but we still make the visit once for every relevant order. Can we reduce that workload ? The answer is "maybe". Here's a third version of the query:

```
select
        ord2.*
from    (
        select
                ord.rowid
        from
                orders          ord
        where
                ord.date_placed > sysdate - 1
        and     exists (
                        select
                                /*+ no_unnest */
                                null
                        from
                                products
prd
                        where
                                prd.id = ord.
id_product
                        and     prd.product_group
= 'CLASSICAL CD'
                )
        )               ordv,
        orders  ord2
where
        ord2.rowid = ordv.rowid
```

What I've done here is change the inline view to execute an existence subquery after picking an entry from the ord_dat_prd index. I've explicitly stated that I do not want Oracle to unnest this subquery because I want it to operate as a "filter" subquery with the following plan:

```
-----------------------------------------------
| Id | Operation                 | Name       |
-----------------------------------------------
| 0 | SELECT STATEMENT           |            |
| 1 | NESTED LOOPS               |            |
|* 2 | INDEX RANGE SCAN          |ORD_DAT_PRD |
|* 3 | TABLE ACCESS BY INDEX ROWID| PRODUCTS   |
|* 4 | INDEX UNIQUE SCAN         | PRD_PK     |
| 5 | TABLE ACCESS BY USER ROWID | ORDERS     |
-----------------------------------------------

Predicate Information (identified by operation
id):
---------------------------------------------
-----
 2 - access("ORD"."DATE_PLACED">SYSDATE@!-1)
 filter( EXISTS (SELECT /*+ NO_UNNEST */ 0
FROM "PRODUCTS" "PRD"
 WHERE "PRD"."ID"=:B1 AND "PRD"."PRODUCT_
GROUP"='CLASSICAL CD'))
 3 - filter("PRD"."PRODUCT_GROUP"='CLASSICAL
CD')
 4 - access("PRD"."ID"=:B1)
```

In this plan we see the same index range scan at line 2 – but the filter predicate on line 2 is a call to the subquery. If we are lucky (and if we don't have many different products – which is unlikely in this case) we may find that our subquery benefits from "scalar subquery caching", which means that under perfect conditions we will run the subquery just once per product sold in the date range, rather than once per row. (Of course, in newer versions of oracle we may be able to take advantage of the "result cache" technology – but I haven't yet put that to any brutal testing.)

This version of the query is potentially even harder for the next programmer to understand – so it's very important to think carefully before you do a rewrite of this kind – especially when there are more than two tables involved. Nevertheless once you adopt the idea that an index can be used as a "skinny table", and then move on to the idea that you can "visit a table twice" first by visiting just the index and then by explicit use of rowids, it becomes easier to find more efficient ways of avoiding redundant visits to data.

Footnote

In 11g Oracle Corp. introduced an interesting "doubled" nested loop join; all I've done is separate the two steps of the loop to make the table access explicitly dependent on a "user rowid" rather than an "index rowid". Before rushing off to rewrite lots of your SQL in this form, you might like to wait for Oracle 12 – you never know, the process I've just described might just be the next step in the evolution of the nested loop.

ABOUT THE AUTHOR

■ Jonathan Lewis is a freelance consultant whose experience with Oracle goes back just over 23 years to version 5.1a (though he does try to forget that when dealing with modern systems). He specialises in physical database design, the strategic use of the Oracle database engine and solving performance issues.

Jonathan is the author of 'Cost Based Oracle – Fundamentals' published by Apress, and 'Practical Oracle 8i – Designing Efficient Databases' published by Addison-Wesley, and has contributed to three other books about Oracle.

He is one of the best-known speakers on the UK Oracle circuit, as well as being very popular on the international scene, and further details of his published papers, presentations and tutorials can be found through his blog at http://jonathanlewis.wordpress.com and at his older web site at http://www.jlcomp.demon.co.uk.

A Study of Enterprise Resource Planning System Outsourcing:

The Motivations and Risks to Outsource and how it Increases Accessibility

by Michael Sheard, Chartered Management Accountant

An Enterprise Resource Planning (ERP) system integrates internal and external resources of an organisation such as finance, HR and logistics. The modules are built around a single database and a common software platform that enable information to flow freely and automatically around an organisation. This integration avoids the need for interfaces to be built between software products from different vendors.

The largest ERP systems such as SAP, Oracle e-Business Suite and PeopleSoft are amongst the largest and longest standing in the market and offer the greatest functionality. These benefits come at a substantial cost that includes software licences, implementation costs and ongoing running costs. The costs do not fall proportionately to the size of the company using the system so, below a certain size, a large ERP system is not cost effective.

It is possible to outsource the hosting and operation of an ERP system. This activity has increased in prominence as the past reticence to outsource information systems has subsided.

This article presents part of the findings of a masters degree dissertation. The research included a literature review, ERP consultant interviews and a questionnaire for system managers / administrators. The scope was restricted to three large ERP systems – Oracle e-Business Suite, Peoplesoft and SAP. The wide range of smaller scale ERP systems that serve the mid-market were beyond the scope of this project.

Motivators to outsource

IT systems have been outsourced for a long time. In the early days of outsourcing it was mainly the physical side of IT such as servers and data centres that were outsourced. Advances in telecommunications and the development of the Internet have enabled outsourcing services to be provided remotely. This has greatly increased the market for hardware and software outsourcing.

Information systems such as ERP systems were traditionally considered to be a bad candidate for outsourcing but this is not so much the case due to changing attitudes and the increasing complexity of applications that are available and, in some cases, necessary to compete.

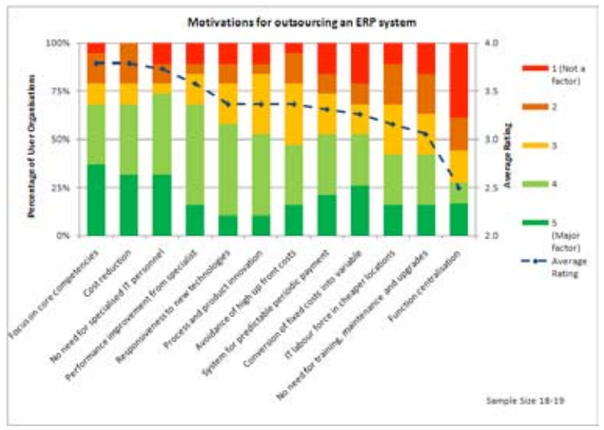
The motivations for outsourcing IT in general and ERP systems in particular are well documented and understood. The motivations are widely listed in articles and literature but the relative importance of these factors in the process of deciding whether to outsource was not found in literature. A problem area in this project that was selected to be an area of original research was to identify motivations to outsource during a review of literature and then ask the systems administrators and managers of ERP system user organisations to rate the relative importance of each motivator to outsource. These questions were asked of organisations who either outsource their ERP system or who do not but considered doing so (on the basis that they would also have evaluated outsourcing).

12 motivators to outsource an ERP were identified in the literature review of the project. The user organisations were asked to rate these motivators on a 1 to 5 scale, with 5 being a major factor to 1 not being a factor in order to assess heir relative significance.

The results of this research are presented in figure 1 below. The ratings of each motivator have been displayed in a stacked bar chart that shows how the participants responded on the 5 point scale. Average ratings have also been calculated with a major factor response being allocated a score of 5 to a score of 1 for a not a factor response. The average rating has been plotted with a dashed blue line on a secondary y-axis on the right of the graph. It is not generally considered to be best practice to have a line graph between unrelated points but it has been done in this case for enhanced visibility due to the bar chart being on the same graph. For presentational purposes the twelve motivators have been ordered on the chart with the highest average rating on the left to the lowest on the right.

These results were analysed and interpreted to show that the motivators can be grouped into three high level categories in the below level of priority:

Figure 1



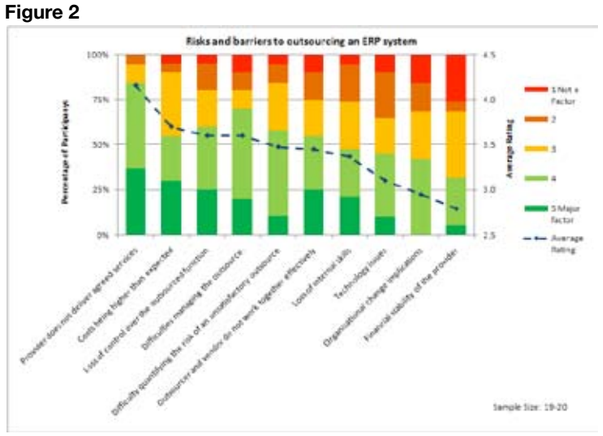
1. Mitigating the cost and managerial effort of hosting a large ERP system internally.
2. The quality and specialisation of service that a specialist provider can deliver.
3. Other, especially related to pricing and contract arrangements.

Risks and Barriers to Outsourcing

There are major risks and barriers to outsourcing that need to be considered in the decision to outsource an ERP system. The research method was the same as that employed to research the motivators – 10 risks and barriers to outsourcing were identified during the project literature review and then user organisations were asked to rate them in order of importance to their decision making process.

The rating of each risk or barrier to outsourcing is displayed in the same way as the motivators in figure 2 below:

Figure 2

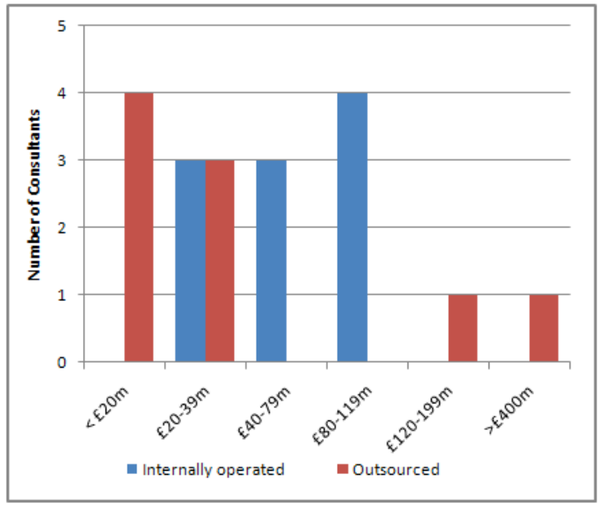


The concerns felt most strongly, in the top four above, can be summarised as being related to cost and ensuring that the services are properly managed and delivered after the outsource.

Increased Accessibility of ERP Systems by Outsourcing

The extent to which ERP systems are made more accessible by outsourcing was researched by interviewing ERP consultants. They were asked to rate what they consider to be the minimum size of organisation for a large ERP system to be cost effective if it is internally operated and if its operation is outsourced. They were asked to rate this minimum size by both financial turnover and employee number. Between 9 and 11 consultants contributed to this area of research. The minimum cost effectiveness ratings by financial turnover and employee numbers are displayed in figures 3 and 4 respectively.

Figure 3

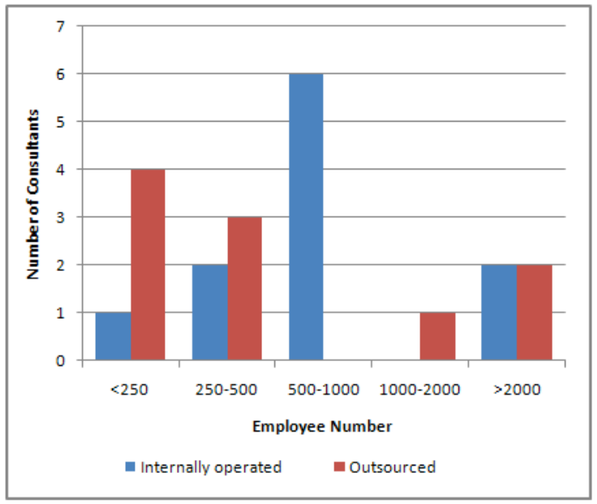


The results show that all of the consultants responded that turnover in the £20-119m range (with more towards the top of this range) is necessary to justify a large ERP system if it is operated internally (blue bars in the chart). When asked what the minimum size is if the system is outsourced, most said that outsourcing reduces the minimum size to the <£20m and £20-39m categories (red bars in the chart). 2 consultants felt that the minimum is higher. The reason for this was stated to be that it takes increased size to justify outsourcing.

Figure 4

The research by employee number produced stronger results. When the system is operated internally, this research resulted in a concentration of the responses in the 500-1000 employees category, with the remainder being split between lower and higher categories. The consultants were also asked to consider the minimum size if the system is outsourced. The result was that most stated a lower minimum size in the <250 and 250-500 categories but this was not universally the case because some felt that a large size was still required.

The more clear results in the analysis by employee number may suggest that this is a stronger basis for deciding whether to implement a large ERP system than financial turnover. The preponderance of the responses in this area of research shows that outsourcing the operation of a large ERP system does increase the accessibility of such systems, especially to less large organisations. Some consultants said that the outsourcing of ERP system application is a relatively recent phenomenon so the market and offerings by vendors is not yet mature. There was a wide expectation that the ERP outsourcing will develop further in the coming years so it will become more practical and wide spread. The development of software as a service (SaaS) was also predicted by some consultants to be a major driver in the coming years.



ABOUT THE AUTHOR

■ Michael Sheard is a chartered management accountant with over 10 years experience that has included financial systems focussed work. During 2009/10 he studied an MSc in Business Systems Analysis and Design at the City University London School of Informatics. In partial fulfilment of this degree he researched and wrote a dissertation about the cost effectiveness of large ERP systems and their outsourcing. This article reports some of the findings from this research. A fuller version of the findings of the dissertation is available on the OUG website in the Library.

Mogens Nørgaard

Ha-ha-hahhhhh!

by Mogens Nørgaard, Miracle AS

Mogens, picture courtesy of Omar Ingerslev

As I told you in my last column, we (that's me and my trusted database experts in Miracle) were readying ourselves for our last – and finest – stand against Lasse's hordes of young programmers and ERP/BI-implementors and worse.

Lasse, who used to be my friend, could barely hide his grin when we met in the corridors or outside my barricaded office. "How are things in the pre-historic department?", he would ask. Or: "You wouldn't happen to have a process consultant on your team, would you?".

But just as things looked really grim, and we – the chosen, the few – were gathering around Database Hill to fight to the very end of days, a few miracles happened. As they do, when you need them.

The first miracle we witnessed was a slight increase in demand for the real folks – the trouble-shooters, techies, DBA's, SysOp's, SysAdmin's, you name it.

Some of the demand came from shops that are insourcing from the big guys (with three-letter abbreviations) like mad men in order to save time, money, and bureaucracy with their IT. They suddenly needed help to setup things again, or just as temporary help while they searched the market for available techies they could hire in.

They can't just hire in the ones they fired when they oursourced. They have either been hired by other companies to do the same job, or they have retired early, or they have gone to the SAP World (and are never seen again). When you outsource a mainframe team to Transsylvania, and then insource the stuff in desperation again, the mainframe guys have gone places, and no young folks have the will or ability to step in.

So do they call Lasse's suit-clad process consultants, or any other white-shirt theory-based, report writing, tight-skinned person from the ERP/BI-department?

Yes, they do. Because they have a new IT manager, who thinks that's the way to do things.

But then, after the 42 meetings with vendors, they realise that this is going to be VERY costly, and THEN they call us, the real ones, the heroes, the saviours of the Earth (and the stored procedure).

So that's the first miracle that has happened.

The second miracle is that some of Lasse's projects have run into trouble. Turns out, if you implement a new ERP system, all the admins hate it and the rest of the house really hate it. No matter if it's better, worse, or the same in functionality, performance, and availability.

I'm pretty sure that if you announced that you were shutting down the system for the weekend, and Monday morning there would be a brand-new, and better, system available – and THEN just left the existing system in place ... everybody would still either hate it or really hate it on Monday morning, when they came in and opened it.

Such is the World of ERP. Heh-heh. Good for me. But Lasse is suddenly very busy with conference calls (that's old-fashioned phone calls, just MUCH longer).

Oh, and various projects have been MUCH slower in gathering speed than he expected. Customers will come up with all sorts of wonderful delaying tactics, which initially sound weird – until we find out, that the real problem is money.

Ah, I almost feel sorry for Lasse now. Heh-heh. Poor chap. Dirt on the dance shoes, you know?

Meanwhile, we have started up a new business called Miracle Housing, where those insourcing folks can place all their servers. The more powerful servers have become, the more computing power customers seem to need. The more "green" the technology is labelled, the more power they seem to consume over-all. It's fantastic.

Then, when Lasse's whiteshirts are asked by the customers to do something useless on their systems… who will they need to ask for permission to get access? Huh?

2011 will be a very good year.

I SINCERELY hope I'll have time now and then for my old friend Lasse. I do.

DB Links.

Dangerous DB_LINKs

by Eter Pani, Oracle DBA at Rutherford Appleton Laboratory

I would like to start this article by thanking Joel Goodman for his presentations about Database Links. It reminds me about some problems that I had a few years ago. I spent some time refreshing my mind and found out that Oracle made some improvements since that time. That is great news but let's go back to the original issue.

When we speak about coordination between two databases, we find out that there are two main instruments that can be used for such collaboration. The first one is some sort of replication, presumably Streams replication is the most flexible one. The second one is Database Links which is old and reliable. Below you will find some comparisons between these two methods.

	Streams	DB Links
Synchronism	Asynchronous	Synchronous
Remote site failure tolerance	Complicated recovery	Straight forward recovery
Network failure tolerance	Straight forward recovery	Complicated recovery
Parallel operations	Yes	Problems with in-doubt transactions locks
Calling PL/SQL naming blocks on remote site	No	Yes

Would you say the best solution is one that takes the best parts from both? Let's imagine such a situation. We have two departments: Service and Finance. Each department has a separate database. The Service database is less protected. Users from WAN can access it after authorisation and apply for services. Before service can be provided however, the request has to be checked by the finance system. Sometimes it can be done asynchronously but let's imagine that it is an online service like phone call or stock exchange operation. At this point you actually could not rely on asynchronous operations because of delay in propagation.

For example the panel on the right describes a very simple database structure. In a "Service" database we have SERVICES table

```
CREATE TABLE SERVICES (
 ACCOUNT_NUMBER NUMBER NOT NULL,
 SERVICENAME VARCHAR2(30 BYTE) NOT NULL,
 AVAILABLE CHAR(1 CHAR) DEFAULT 'N' NOT
NULL
)
/
ALTER TABLE SERVICES ADD (
 CONSTRAINT SERVICES_PK PRIMARY KEY
(ACCOUNT, SERVICENAME))
/
CREATE TABLE PRICELIST
(
 SERVICENAME VARCHAR2(30) NOT NULL,
 PRICE NUMBER DEFAULT 0 NOT NULL
)
/
ALTER TABLE PRICELIST ADD (
 CONSTRAINT PRICELIST_PK PRIMARY KEY
(SERVICENAME))
```

And in "Finance" database we have

```
CREATE TABLE ACCOUNTS (
 ACCOUNT_NUMBER NUMBER NOT NULL,
 CURRENT_AMOUNT NUMBER DEFAULT 0 NOT NULL,
 BLOCKED_AMOUNT NUMBER DEFAULT 0 NOT NULL
)
ALTER TABLE ACCOUNTS ADD ( CONSTRAINT
ACCOUNTS_PK PRIMARY KEY (ACCOUNT_NUMBER))
/
Prompt Application Logic Constraint
ALTER TABLE HR.ACCOUNTS ADD CONSTRAINT
BLOCK_AMOUNT_LIMIT_CK CHECK (BLOCKED_
AMOUNT<=CURRENT_AMOUNT) ENABLE VALIDATE
//
```

All tables have been pre populated by appropriate data (schema creation and population scripts can be downloaded from http://lcgwww.gridpp.rl.ac.uk/dbblog/). The Service manipulation operation includes checking the service exists in the "Service" database to start with; then getting the price from "Finance" database; updating the finance record in "Finance" database and finally updating the service status. The resulting procedure should looks like the panel below.

```
CREATE OR REPLACE PROCEDURE
UpdateService (
 p_ACCOUNT_NUMBER SERVICES.ACCOUNT_
NUMBER%TYPE
 ,p_SERVICENAME SERVICES.
SERVICENAME%TYPE
 ,p_AVAILABLE SERVICES.AVAILABLE%TYPE
 )
IS
 v_PRICE NUMBER;
BEGIN
 -- Update Local table
 UPDATE SERVICES SET AVAILABLE=p_
AVAILABLE
 WHERE ACCOUNT_NUMBER=p_ACCOUNT_NUMBER
 AND SERVICENAME=p_SERVICENAME
 AND AVAILABLE<>p_AVAILABLE;
 IF SQL%ROWCOUNT>0 THEN
 -- Read Remote Table
 SELECT PRICE INTO v_PRICE FROM
PRICELIST WHERE SERVICENAME=p_
SERVICENAME;
 -- Update Remote Table
 UPDATE ACCOUNTS@FINANCE SET BLOCKED_
AMOUNT=BLOCKED_AMOUNT+DECODE(p_
AVAILABLE,'N',-1*v_PRICE,v_PRICE)
 WHERE ACCOUNT_NUMBER=p_ACCOUNT_NUMBER;
 END IF;
END;
/
show errors
```

So far nothing special and moreover nothing dangerous. Let's run this procedure and check what locks would be created on both databases. We can check it by running the query below.

```
SELECT ao.OBJECT_NAME, lo.LOCKED_MODE
 FROM V$LOCKED_OBJECT lo, ALL_OBJECTS ao
 WHERE lo.OBJECT_ID=ao.OBJECT_ID
/
```

On "Service" Database the output

OBJECT_NAME	LOCK_MODE
SERVICES	3 - Row-X (SX)

On "Finance" Database the output

OBJECT_NAME	LOCK_MODE
ACCOUNTS	3 - Row-X (SX)

Again, everything looks as expected. The database protects changed rows from changing by other sessions. This is usually after data modification COMMIT or ROLLBACK operation requested. In our case it should be a Two-Phase Commit. Don't be fooled the phrase Two Phase Commit, in reality Two Phase Commit has three phases: "Prepare", "Commit", "Forget".

During preparation the remote site would normally

1) Replies "READ ONLY" if no changes has been done on the instance
2) Lock all tables in the transaction for both READ and WRIGHT
3) Flush Redo to disk
4) Exchange SCN with all involved sites and open a Global transaction.

During "Commit" stage data actually commits:

1) Initially commit happens on local instance. All locks released and transaction removed from the database dictionary.
2) Then commit happens on remote sites. All locks released and transaction removed from the database dictionary.

During "Forget stage" Global transaction is cleared from the local site.

Ooops. There we see the first danger, locking tables for read and write. Let's crash the finance database with shutdown abort after data modifications but before commit.

```
BEGIN
 UpdateService(1235445715,'INTERNET','
Y');
END;
```

When you will try to commit you will see the following error stack

```
ORA-02054: transaction 18.12.784315 in-
doubt
ORA-03113: end-of-file on communication
channel
ORA-02063: preceding line from FINANCE
```


Ugly message isn't it? But now I'll frighten you even more. If you try to request

```
(
SELECT ACCOUNT_NUMBER, SERVICENAME,
AVAILABLE FROM SERVICES
) data from SERVICES tables on "Service" database
```

you will get the following message:

```
ORA-01591: lock held by in-doubt
distributed transaction 18.12.784315
```

If we make our query more precise to avoid accessing the transaction affected blocks, e.g.

```
SELECT ACCOUNT_NUMBER, SERVICENAME,
AVAILABLE FROM SERVICES WHERE ACCOUNT_
NUMBER='1235446440'
```

Such a query works fine. This means that any request for SERVICE table could fail and would fail for specific data until RECO process will cleanup or user manually (In worst case please read Note **401302.1**) resolve this In-Doubt transaction. RECO process resolves the failure in minutes after actual system restoration, but if the failure of connection to the Finance database is more or less permanent, you have to manually ROLLBACK the In-Doubt transaction. This is not my favourite thing to do during the night, especially if the finance database SLA is not 24x7.

But this is an exceptional case but normally you can have network blips that will be automatically resolved. If such operations are irregular and mainly came from the single session it looks relatively fine. We will try to move our modelling efforts to a real OLTP.

Firstly call the UpdateService procedure in a cycle throw not very reliable network.

```
set Timing on
set serveroutput on size unlimited
DECLARE
 v_availability CHAR(1):='N';
 v_servicename VARCHAR2(30 BYTE);
 TYPE t_ACCOUNTS IS TABLE OF VARCHAR2(30
BYTE);
 v_accounts t_ACCOUNTS;
 CURSOR v_acc_cur IS SELECT ACCOUNT_
NUMBER FROM ACCOUNTS@FINANCE;
BEGIN
 OPEN v_acc_cur;
 FETCH v_acc_cur BULK COLLECT INTO v_
accounts;
 CLOSE v_acc_cur;
 FOR i in 1..10 LOOP
 IF MOD(i,2)=1 THEN
 v_availability:='Y';
 ELSE
 v_availability:='N';
 END IF;
 IF MOD(i,4) in (1,4) THEN
 v_servicename:='LANDLINE';
 ELSE
 v_servicename:='PHONE';
 END IF;
 FOR j in v_accounts.FIRST .. v_accounts.
LAST LOOP
 UpdateService(v_accounts(j),v_
servicename,v_availability);
 COMMIT;
 END LOOP;
 DBMS_OUTPUT.PUT_LINE('Iteration='||i);
 END LOOP;
END;
/
Iteration=1
Iteration=2
Iteration=3
DECLARE
*
ERROR at line 1:
ORA-02053: transaction 6.33.730509
committed, some remote DBs may be in-
doubt
ORA-03135: connection lost contact
ORA-02063: preceding line from MINERVA
ORA-06512: at line 24
Elapsed: 00:01:02.11
SQL> /
```

But let's take the example where network environment is reliable. You are running the previous script in 8 separate threads using different accounts in each thread. Also you call a separate session that reads data from the SERVICES table. Usually you are not expecting a significant effect on a small query. But during the two-phase commit the SERVICES tables actually blocks for reading. As a result you will get the following picture.

```
SQL ID: 6htbrwzdskp2v
Plan Hash: 3979072533
SELECT MAX(AVAILABLE)
FROM
 SERVICES

 call     count       cpu    elapsed       disk      query    current        rows
 ------- ------  -------- ---------- ---------- ----------  ----------  ----------
 Parse        1      0.00       0.00          0          0           0           0
 Execute  10000      0.58       0.63          0          0           0           0
 Fetch    10000      2.51       5.85          0     203364         213       10000
 ------- ------  -------- ---------- ---------- ----------  ----------
 total    20001      3.10       6.49          0     203364         213       10000
Misses in library cache during parse: 0
Optimizer mode: ALL_ROWS
Parsing user id: 86 (SESVICES) (recursive depth: 1)

Rows Row Source Operation
------- ---------------------------------------------------
 1 SORT AGGREGATE (cr=11 pr=0 pw=0 time=0 us)
 64 TABLE ACCESS FULL SERVICES (cr=11 pr=0 pw=0 time=0 us cost=3 size=160 card=32)


Elapsed times include waiting on following events:
Event waited on                       Times     Max. Wait   Total Waited
------------------------------------ Waited ---------- ------------
buffer busy waits                       56           0.03         0.12
enq: TX - contention                                211          0.04
2.33
latch: cache buffers chains             38           0.01         0.07
resmgr:cpu quantum                      13           0.01         0.09
latch: undo global data                  1           0.00         0.00
global enqueue expand wait               1           0.01         0.01
latch: session allocation                1           0.00         0.00
********************************************************************************
```

Only 8 concurrent dblink users can degrade performance 1,5 times and in a real OLTP system the number of such DBLINK users can grow until hundreds and thousands.

Initially when we see such problems we start thinking about opportunities to improve the network to reduce latency and other stuff. Although at some stage you realize that it does not have the effect that you would expect. The commit statement waits on “log file sync” on local or remote database. At this stage you can start thinking about solutions that do not include two-phase commit. In our case we have used java.

```
-- As SYSDBA grant connection permissions from
SERVICES DATABASE
exec dbms_java.grant_permission(
 'SERVICES', -- for user
 'SYS:java.net.SocketPermission', -- permission type
 'finance.gridpp.rl.ac.uk', -- permission name
 'connect,resolve' );
```

As superclass for our implementation we choose SQLData, because this class offer opportunity to call java member functions. It is very crucial because we do not need to reopen connection each time we call remote procedure.

```
create Java class SqlStmt
import java.sql.Connection;
import java.sql.DriverManager;
import java.sql.PreparedStatement;
import java.sql.SQLData;
import java.sql.SQLException;
import java.sql.SQLInput;
import java.sql.SQLOutput;
import java.util.Random;
import java.util.logging.Logger;
import oracle.jdbc.*;
import oracle.jdbc.driver.*;
/**
 * Connects
 *
 * @author kusanagi
 *
 */
public class SqlStmt implements SQLData {

        // Define a formal parameter
signature variable.
        /** ??? */
        private String instanceName;
        // Define a private schema
qualified name value.
        /** Database schema name */
        private String qualifiedName;
        // Define a class instance variable
to support SQLData Interface.
        /** Driver class name */
        private String sql_type;
        static Connection conn; // = null;
        private static final Logger log =
Logger.getLogger(SqlStmt.class.getName());
        /**
         * Creates a class instance
         **/
        public SqlStmt() {
                Random r = new Random();
                // Call a method of the inner
class.
                String user = Long.
toString(Math.abs(r.nextLong()), 12);
                qualifiedName = user + “.” +
this.getClass().getName();
        } // End of default constructor.
        /**
         * Writes this object to the given
SQL data stream, converting it back to its SQL
value in the data source.
         * @param the SQLOutput object to
which to write the data for the value that was
custom mapped
         * @throws SQLException if there is a
database access error
         * @see {@link SQLData}
         **/
        public void writeSQL(SQLOutput stream)
throws SQLException {
        }
        /**
         * Populates this object with data
read from the database.

         * @param stream the output stream
         * @throws SQLException if there is a
database access error
         * @see {@link SQLData}
         **/
        public void readSQL(SQLInput stream,
String typeName) throws SQLException {
        }
        /**
         * Returns the fully-qualified name
of the SQL user-defined type that this object
represents.
         * @throws SQLException if there is a
database access error
         * @return the type name that was
passed to the method readSQL when this object
was constructed and populated
         * @see {@link SQLData}
         **/
        public String getSQLTypeName() throws
SQLException {
                return sql_type;
        }
        /**
         * Defines a method to return a
qualified name.
         * @return a qualified name
         **/
        public String getQualifiedName()
throws SQLException {
                return this.qualifiedName +
“.” + instanceName;
        }
        /**
         * Initialized a connection to the DB
         * @param connstr the connection
string
         * @param the username
         * @param the user password
         * @throws SQLException if there is a
database access error
         **/
        public int init(String connstr,
String usr, String pwd) throws SQLException {
                try {
                 DriverManager.
registerDriver(new oracle.jdbc.
OracleDriver());
                 conn = DriverManager.
getConnection(connstr, usr, pwd);
                 conn.setAutoCommit(false);
// Disable auto-commit mode
 return 0;
                } catch (SQLException e) {
                        log.severe(e.
getMessage());
```

Cont

```
                                conn.close();
                        throw e;
                }
        }/**
         * Executes a query to the connection
initialized by {@link #init(String, String,
String)}
         * @param connstr the connection
string

 * @param the username
         * @param the user password
         * @throws SQLException if there is a
database access error
         **/
        public int run(String stmnt) throws
SQLException {  try {
                 String sql = stmnt;
                 PreparedStatement pstmt =
conn.prepareStatement(stmnt);
                 pstmt.setQueryTimeout(30);
                 pstmt.executeUpdate();
                 pstmt.close();
 return 0;
                } catch (SQLException e) {
                 log.severe(e.getMessage());
                 throw e;
                }
        }
        /**
         * Commits the last execute SQL

operations
         * @throws SQLException if errors
occur
         **/
        public int commit() throws
SQLException {
                try {
                        conn.commit();
 return 0;
                } catch (SQLException e) {
                        log.severe(e.
getMessage());
                        conn.rollback();
                        conn.close();
                        throw e;
                }
        }
        /**
         * Undos the last execute SQL
operations
         * @throws SQLException if errors
occur
         **/
        public int rollback() throws
SQLException {
                try {
                        conn.rollback();
 return 0;
                } catch (SQLException e) {
                        conn.rollback();
                        conn.close();
                        throw e;
                }
        }
        /**
         * Close the remote connection
         * @throws SQLException if errors
occur
         **/
        public int close() throws SQLException
{
                try {
                        conn.close();
 return 0;
                } catch (SQLException e) {
                        conn.rollback();
                        conn.close();
                        throw e;
                }
        }
}
// compile it and load to database
$ javac -cp .:$ORACLE_HOME/oui/jlib/
classes12.jar SqlStmt.java
$ loadjava -user SERVICES/*@SERVICES -oci8
-resolve -force SqlStmt.class
```

In this implementation we use a very simple but flexible variant with transferring the whole statement. In a real situation where the calling remote database interface is quite limited the bind variables will give another penny into performance gains.

```
-- Publicate interfaces throw pl/sql type
-- Create a PL/SQL wrapper package to a
Java class file.
CREATE OR REPLACE TYPE SqlStmt AS OBJECT
EXTERNAL NAME 'SqlStmt' LANGUAGE JAVA
USING SQLData
( instanceName VARCHAR2(100) EXTERNAL NAME
'java.lang.String'
, CONSTRUCTOR FUNCTION SqlStmt

RETURN SELF AS RESULT
, MEMBER FUNCTION init(addr Varchar2,usr
Varchar2, pwd VARCHAR2)
 RETURN NUMBER AS LANGUAGE JAVA
 NAME 'SqlStmt.init(java.lang.String,java.
lang.String,java.lang.String) return int'
, MEMBER FUNCTION run(Param1 VARCHAR2)
 RETURN NUMBER AS LANGUAGE JAVA
 NAME 'SqlStmt.run(java.lang.String) return
int'
-- In this example we are not using BIND
variables but it does not have matter for
article purposes
, MEMBER FUNCTION commit
 RETURN NUMBER AS LANGUAGE JAVA
 NAME 'SqlStmt.commit() return int'
, MEMBER FUNCTION rollback
 RETURN NUMBER AS LANGUAGE JAVA
 NAME 'SqlStmt.rollback() return int'
, MEMBER FUNCTION close
 RETURN NUMBER AS LANGUAGE JAVA
 NAME 'SqlStmt.close() return int'
 )
INSTANTIABLE FINAL;
/
show errors

-- Slightly change the update procedure
CREATE OR REPLACE PROCEDURE
HR.UpdateServiceJAVA (
 p_ACCOUNT_NUMBER SERVICES.ACCOUNT_NUMBER%TYPE
 ,p_SERVICENAME SERVICES.SERVICENAME%TYPE
 ,p_AVAILABLE SERVICES.AVAILABLE%TYPE
 ,p_DBLINK IN OUT NOCOPY SqlStmt
 )
IS
 v_result PLS_INTEGER;
 v_PRICE PLS_INTEGER;
BEGIN
 -- Update Local table
 UPDATE SERVICES SET AVAILABLE=p_AVAILABLE
 WHERE ACCOUNT_NUMBER=p_ACCOUNT_NUMBER
 AND SERVICENAME=p_SERVICENAME
 AND AVAILABLE<>p_AVAILABLE;
 IF SQL%ROWCOUNT>0 THEN
 SELECT PRICE INTO v_PRICE FROM PRICELIST
 WHERE SERVICENAME=p_SERVICENAME;
 -- Update Remote Table
 IF p_AVAILABLE='N' THEN
 v_price:=-1*v_PRICE;
 END IF;
 v_result:= p_dblink.run('UPDATE ACCOUNTS SET
BLOCKED_AMOUNT=BLOCKED_AMOUNT+'||TO_CHAR(v_
PRICE)||'WHERE ACCOUNT_NUMBER='||TO_CHAR(p_
ACCOUNT_NUMBER));
 if v_result<>0 then
 RAISE_APPLICATION_ERROR (-20001, 'Error on
remote
operation!');
 end if;
 END IF;
END;
/
show errors
-- And change the calling script that call
updates
spool &1
set Timing on
set serveroutput on size unlimited
ALTER SESSION SET EVENTS '10046 trace name
context
forever, level 8';
/
```

```
DECLARE
 v_dblink SqlStmt;
 v_result PLS_INTEGER;
 v_availability CHAR(1):='N';
 v_servicename VARCHAR2(30 BYTE);
 TYPE t_ACCOUNTS IS TABLE OF VARCHAR2(30
BYTE);
 v_accounts t_ACCOUNTS;
 CURSOR v_acc_cur IS SELECT ACCOUNT_NUMBER
FROM ACCOUNTS@FINANCE WHERE MOD(ACCOUNT_
NUMBER,8)=TO_NUMBER(&1);
BEGIN
 OPEN v_acc_cur;
 FETCH v_acc_cur BULK COLLECT INTO v_
accounts;
 CLOSE v_acc_cur;
 IF v_accounts.COUNT>0 THEN
 v_dblink := SqlStmt('*');
 v_result:=v_dblink.
init('jdbc:oracle:thin:@finance.gridpp.
rl.ac.uk:
2121:raltag2','Finance','*');
 FOR i in 1..1000 LOOP
 IF MOD(i,2)=1 THEN
 v_availability:='Y';
 ELSE
 v_availability:='N';
 END IF;
 IF MOD(i/2,8) in (1) THEN
 v_servicename:='TV';
 ELSIF MOD(i/2,8) in (2) THEN
 v_servicename:='INTERNET';
 ELSIF MOD(i/2,8) in (3) THEN
 v_servicename:='LANDLINE';
 ELSIF MOD(i/2,8) in (4) THEN
 v_servicename:='MOBILE';
 ELSIF MOD(i/2,8) in (5) THEN
 v_servicename:='MOBILE_INTERNET';
 ELSIF MOD(i/2,8) in (6) THEN
 v_servicename:='GPS';
 ELSIF MOD(i/2,8) in (7) THEN
 v_servicename:='INSURANCE';
 ELSE
 v_servicename:='PHONE';
 END IF;
 FOR j in v_accounts.FIRST .. v_accounts.
LAST LOOP
 UpdateServiceJava(v_accounts(j),v_
servicename,v_availability,v_dblink);
 -- UpdateServiceLocal(v_accounts(j),v_
servicename,v_availability);
 -- UpdateService(v_accounts(j),v_
servicename,v_availability);
 begin
 v_result:= v_dblink.commit;
 COMMIT;
 exception
 WHEN OTHERS THEN
 BEGIN
 v_result:= v_dblink.rollback;
```

Cont

```
 ROLLBACK;
END;
 end;
 END LOOP;
 END LOOP;
 v_result:=v_dblink.close;
-- EXECUTE IMMEDIATE 'ALTER SESSION
CLOSE DATABASE LINK FINANCE';
 END IF;
END;
/
Exit
```

As a result, the "enq: TX - contention" is gone and the effect on a regular session almost disappears.

```
SQL ID: 6htbrwzdskp2v
Plan Hash: 3979072533
SELECT MAX(AVAILABLE)
FROM
 SERVICES

call     count       cpu    elapsed       disk      query    current        rows
------- ------  -------- ---------- ---------- ---------- ----------  ----------
Parse        1      0.00       0.00          0          0          0           0
Execute  10000      0.42       0.63          0          0          0           0
Fetch    10000      1.05       3.55          0      75596          0       10000
------- ------  -------- ---------- ---------- ---------- ----------  ----------
total    20001      1.48       4.19          0      75596          0       10000

Misses in library cache during parse: 0
Optimizer mode: ALL_ROWS
Parsing user id: 86 (HR) (recursive depth: 1)

Rows Row Source Operation
------- ---------------------------------------------------
 1 SORT AGGREGATE (cr=11 pr=0 pw=0 time=0 us)
 64 TABLE ACCESS FULL SERVICES (cr=11 pr=0 pw=0 time=0 us cost=3 size=160 card=32)

Rows Execution Plan
------- ---------------------------------------------------
 0 SELECT STATEMENT MODE: ALL_ROWS
 1 SORT (AGGREGATE)
 64 TABLE ACCESS MODE: ANALYZED (FULL) OF 'SERVICES' (TABLE)

Elapsed times include waiting on following events:
 Event waited on                             Times   Max. Wait     Total Waited
 ----------------------------------------   Waited  ----------     ------------
 latch: cache buffers chains                   18         0.00             0.00
 buffer busy waits                             40         0.05             0.05
 latch: undo global data                        1         0.76             0.76
 latch: session allocation                      1         0.00             0.00
********************************************************************************
```

The performance of DB-Link sessions is going up too. If previously 1000 updates of Service status take 16-17 seconds with Java implementation it takes 10-12 seconds.

But this effectiveness is works best in an OLTP environment where transferring big result sets between databases is not a requirement. For CDC and OLAP databases DBLINKs is the unbeatable champion.

ABOUT THE AUTHOR

■ Eter Pani has been working with Oracle since version 7. His main focus is high performance OLTP solutions; High Availability; VLDB and ETL processes. Currently Eter holds a position as Oracle DBA at Rutherford Appleton Laboratory working on the Large Hadron Collider project. He Strongly believes that understanding the internal architecture provides much more than knowing a million sample cases. This is why he is so fond of Oracle internals.

Jonathan Lewis Interview

by Phillip Cogger, UKOUG

At November's UKOUG's conference in Birmingham, Oracle Scene interviewed some of the top named speakers in the Oracle circuit. One such interview was with Jonathan Lewis. Jonathan has been an exponent of the Oracle database for over 21 years and is one of the leading speakers on the cost based optimizer. . He is author of many books, including 'Cost Based Oracle - Fundamentals'. In this interview Jonathan, not only expresses his involvement in the UK oracle user group but also shares his views on Oracle 11g and the optimizer.

Why do you support the UKOUG so much?

I have to admit to a certain selfish aspect on this one. I actually like teaching people; I genuinely get a big buzz out of standing in front of a crowd and doing the presentations. It's an enjoyable experience to see people thinking "That's a good idea, I know how I can use that", and to take what I say and run with it and do something new and different and exciting with it Having spent several years doing this type of presentation I got drawn into being a chair of one of the SIGs I then progressed then into being on the Board of Directors for a few years - and then left the board so I could spend more time presenting.

If you could give one bit of advice to a beginner, what would it be?

Read a few key Oracle manuals carefully to get started, and then do some experiments with each little bit of learning that you acquire. You need some idea of how the key mechanisms in Oracle hang together and you need to know how to measure what is going on.

Familiarise yourself with some of the best known dynamic performance views, like v$sesstat and v$session_event and v$sess_time_model so that you can find out what work your code has done and where it spent its time, and then look at how to enable tracing and interpret the results so that you can see in detail everything that has happened. And as you work, make sure you take notes about what you've done, what happened, what surprises you got, and how things didn't behave the way you expected.

Could you pick one new feature of 11g R2 as the one you like best.

If I had to stick to just one that could make most difference to the largest number of people (or systems) it's probably the whole "extended statistics / virtual columns" feature, which allows you to supply the optimizer with better information about the data distribution in your system and could allow you to get better execution plans from your system without changing any code.

If you want a couple more - there's the improvements in the (expensive) options for backup and standby databases, and the technology that Oracle has got to make the whole standby process more robust, and even to make physical standbys available for query so that you can offload some of your workload.

Can you tell me about some of the more interesting features of 11g release2 related to optimisation?

If you have time trouble collecting statistics there's a potentially huge benefit in the new "Approximate NDV" mechanism - Oracle has implemented a very efficient mechanism for getting an accurate figure for the number of distinct values in a column. This is enormously helpful in terms of better accuracy of figures and therefore better plans. This also leads to an improved way of collecting stats on partitioned tables because the new mechanism allows Oracle to combine statistics from inidividual partitions to generate meaningful statistics for the whole table. The penalty you pay for this is that Oracle has to store something like a "bit mapped" image (called a synopsis) of your number of distinct values of every column of every partition of every table, and this can take up quite a lot of space in the sysaux tablespace.

One of the helpful diagnostics when you're looking at performance of course, is actually getting information of how a query has really run. And if you're a DBA who's actually got the licences and got the hardware to run Oracle Enterprise Manager, one of the really wonderful little additions to Enterprise Manager, and the Performance Pack, is SQL Monitoring. From the "Top Activity" you can click through to a statement which suddenly seems to be consuming more resources than usual and if the thing has run, or Oracle predicted that the thing was going to run, for more than about six seconds you will find it in the (near) real-time monitoring display, with an update every few seconds showing you how much work is being done by which step of the execution plan. If the query has finished, the information is kept there for quite some time, so even if you just miss a nasty query, you're quite likely to be able to go back and view it in memory.

SQL Baselines may be a real help. If you're familiar with Stored Outlines, you're already familiar with the concept of SQL baselines. A stored outlines records an SQL statement with something that is effectively an execution plan for that statement then ensures the statement uses the same execution plan from that point onwards. SQL Baselines are the same, but they make it much easier than Stored Outlines to construct and impose good execution plans. If you find a statement which is performing very badly and you can find a way to hint it to make it perform efficiency then there is a documented mechanism that allows you to record the original SQL (as generated by the application) with the better execution plan from your hacked SQL - which means you can "tune" the application SQL without changing the application code.

Of course there are always new transformations and optimisation strategies in every release, but I was particularly impressed to see that Oracle can now decide that it is, in some cases, better to aggregate earlier rather than join several tables together and then do an aggregation from a massive result. This has reduced the number of times I've had to rewrite a query to use an inline view and no_merge hint to do the work in the most efficient way.

Are there any features that you think are still missing from the 11g optimizer ?

One thing I think is still missing from the optimiser is a mechanism that allows well-informed DBAs and well-informed developers to tell the optimiser that its default artihmetic model isn't going to come up with the right numbers.So I want a method for embedding in the database or in the code a clue as to how much data will appear at certain points in a query. Historically we had the cardinality() hint - which was documented on Metalink on one occasion but that documentation has disappeared and now it is only known "unofficially" through various bug reports where it has been suggested as a workaround to a problem. We also have unofficial information on opt_estimate() and other hints used by the (expensive) Performance Pack.

What we need us an official tool (that doesn't require us to use the Performance Pack.) I want to able to say explicitly - without even having to use the Performance Pack, let alone license it: , things like "when you look at this table then your cardinality prediction will be wrong by a factor of 20", or even something as simple as: "this collection operator will supply about 15 items".

Which hidden features, such as the optimizer features, would you enable in 11g R2?

If you're asking me which hidden parameters to fiddle with in 11gR2 to switch on or switch off particular optimiser capabilities my default advice would be, "none of them". In fact, when it comes down to things like optimiser parameters, the general advice I'd give to people with 11g is delete every single parameter relating to the optimiser and optimisation from your parameter files, and run a test suite through it to see what happens, because a lot of the little fiddles and tweaks that people used to put in historically could well be things which cause problems as you go up to the next release.

Of course you do have to fiddle sometimes - and I would seriously consider upgrading the software while leaving the optimizer_features_enable at a lower version. I would also consider switching off a new feature if it seemed to be a particular problem for a given system. If the problem arose in just a couple of queries I'd see about disabling it through the opt_param() hint; if it appeared very commonly I'd find the most precise parameter to disable it - in either case I'd only do it for something that was either documented or had been approved by Oracle support.

Under what circumstances if any are you currently advising your clients to adopt Exadata?

I think, as with all things relating to Oracle, it's a question of making a change only if you really need to make a change, or if you see the need to make a change coming quite soon, and prefer to give yourself some time to anticipate it.

In the long term, of course, I can see Oracle's marketing strategy supplying Exadata as the only solution. Everyone in the world will have the same closed box, it's just a question of whether they will have half a rack, a whole rack, or eight racks; but for the present there is no great rush for most people.

Exadata is capable of processing large amounts of data very efficiently - but ultimately it's a collection of carefully balanced hardware combined with well-written software. So I'd advise a customer to move to it only if implementing it got them to where they needed to be sooner, at lower cost, and at lower risk compared to constructing an alternative solution in house.

I suppose the critical feature is that if you find that one part of your setup is a bottleneck that you can't get rid of, Exadata might be the solution to relieve that bottleneck.

How do I acquire and develop the same level of expertise to then deliver the kind of presentations at the quality that you do?

As far as presenting goes I do have the advantage that I used to be a school teacher, so I've had a lot of practice in how to explain things. But as far as content goes it's important to remember that I don't do anything which is rocket science.

My advice for beginners was to read the manuals and then start working with little experiments, making sure that you know how to measure what's going on. That's all you need to do to become an expert. Every time you see some sort of problem you try and strip it back to the bare minimum and understand what is actually happening - create an example that's similar, but simpler, and watch very carefully to see what happens.

All it takes is a little bit of work (maybe half hour or an hour) each evening of the week to run up one more example, or think about a couple more pages, do a little bit of research on the internet for ideas about a particular parameter or dynamic performance view (but don't believe everything you read - test it). If you look very carefully at what's going on, and document what you've learned you'll find that your ability to identify, interpret and understand new observations will improve remarkably rapidly. Understanding how Oracle works is a cumulative process - and the more you learn the faster you can learn.

ABOUT JONATHAN LEWIS

■ Jonathan Lewis is a freelance consultant whose experience with Oracle goes back just over 23 years to version 5.1a (though he does try to forget that when dealing with modern systems). He specialises in physical database design, the strategic use of the Oracle database engine and solving performance issues.

Jonathan is the author of 'Cost Based Oracle – Fundamentals' published by Apress, and 'Practical Oracle 8i – Designing Efficient Databases' published by Addison-Wesley, and has contributed to three other books about Oracle.

He is one of the best-known speakers on the UK Oracle circuit, as well as being very popular on the international scene, and further details of his published papers, presentations and tutorials can be found through his blog at http://jonathanlewis.wordpress.com and at his older web site at http://www.jlcomp.demon.co.uk.

A closer look at:

Oracle Real Application Cluster 11.2.0.

by Martin Bach, Oracle consultant

Earlier this year Oracle released the long awaited first patchset on top of 11g Release 2. At the time of this writing, the patchset is out for these platforms:

- **Windows (32/64bit)**
- **Linux (32/64bit)**
- **Solaris x86-64**
- **Solaris SPARC 64bit**
- **AIX on Power 64bit**
- **HP-UX Itanium 64bit**

The patch set for Solaris SPARC 32bit, AIX 32bit and HP-UX 32bit contains the client software only. Remember that Oracle has removed the 32bit libraries from the 64bit software-your $ORACLE_HOME no longer features a lib32 directory (see Bug 9383606: LIB32 DIRECTORY IS NO LONGER EXIST ON 11GR2.). Additionally to the base patch set, the first Patch Set Update has been released in January-see note 1263374.1 for more information.

This article is going to look at some of the more interesting features of Grid Infrastructure, deliberately omitting the ASM and especially ACFS to keep this article in scope. There is good news for users of platforms for which ACFS wasn't previously available: ACFS and ADVM are now available on Solaris and AIX as well, and this includes Solaris x86-64. SLES 10 update 3 has ACFS support now, but SLES 11 still lacks it.

Upgrading and 11.2.0.2

Oracle has come up with a fundamentally different approach to patching with this patchset. The long version of this can be found in MOS document 1189783.1 "Important Changes to Oracle Database Patch Sets Starting With 11.2.0.2". The short version is that new patches will be supplied as full releases. This is a great improvement, and it prompts the question why it wasn't always the case. Consider the following 10g example. To get to the latest version in Oracle 10g Release 2, you had to:

- **Install the base release for Clusterware, ASM and at least one RDBMS home**
- **Install the latest patchset on Clusterware, ASM and the RDBMS home**
- **Apply the latest PSU for Clusterware/RDBMS, ASM and RDBMS**

Applying the PSUs for Clusterware was very labour intensive, and when the author last performed such an operation there was no "opatch auto" option. In fact, for a fresh install it was usually easier to install and patch everything on the master RAC node, followed by an addNode.sh command to extend the software to the remaining nodes.

With the new patchset the situation changed. It is no longer necessary to apply any of the interim releases-the patch contains everything you need, already on the correct version. The above process is shortened to:

- **Install Grid Infrastructure 11.2.0.2 and upgrade from the previous release**
- **Install RDBMS home 11.2.0.2 and migrate the database**

Optionally, apply PSUs or other patches when they become available. As of December 2010, MOS note 756671.1 doesn't list any patch as recommended on top of 11.2.0.2.

Interestingly upgrading from 11.2.0.1 to 11.2.0.2 is more painful than from an earlier release, at least on the Linux platform. When executing rootupgrade.sh, it tests if PSU 11.2.0.1.2 has been applied, and refuses to upgrade the older version. This is bad as OUI hasn't performed the test when it checked for prerequisistes-don't be caught off-guard! More information about this problem can be found in Patch : Bug 10036834 - Linux Platforms: Patches not found upgrading Grid Infrastructure from 11.2.0.1 to 11.2.0.2.

Grid Infrastructure will always be an out-of-place upgrade which means you have to manage your local disk space more carefully from now on. Of personal experience the author would not use anything less than 30G for his Grid Infrastructure mount point. If you were not yet convinced to use an LVM for storage management of the Oracle binaries, this is the right time to start using it! The above mentioned storage requirement takes the new cluster health monitor facility (see below) into account, as well as the fact that Oracle performs log rotation for most logs in $GRID_HOME/log.

The RDBMS binaries can be patched either in-place or out-of-place unlike the Grid Infrastructure binaries. The out-of-place upgrade for RDBMS binaries is wholeheartedly recommended as it makes backing out a change so much easier.

Note: before upgrading to 11.2.0.2 you have to ensure that your interconnect allows UDP multicast, or the rootupgrade.sh script will fail on the last node. This is documented in MOS note 1212703.1 "11.2.0.2 Grid Infrastructure Install or Upgrade may fail due to Multicasting Requirement". Oracle attached a small script to the MOS note which should allow users to test whether the multicasting is enabled on the switch level or not. A number of patches are now available helping administrators fix multicast related problems.

Changes to Grid Infrastructure

After the successful upgrade you will find new resources in Grid Infrastructure. The following listing shows the lower stack of a 11.2.0.2 Grid Infrastructure:

```
[grid@node1] $ crsctl stat res -t -init
--------------------------------------------
NAME TARGET STATE SERVER STATE_DETAILS
--------------------------------------------
Cluster Resources
--------------------------------------------
ora.asm
 1 ONLINE ONLINE       node1 Started
ora.cluster_interconnect.haip
 1 ONLINE ONLINE       node1
ora.crf
 1 ONLINE ONLINE       node1a
ora.crsd
 1 ONLINE ONLINE       node1
ora.cssd
 1 ONLINE ONLINE       node1
ora.cssdmonitor
 1 ONLINE ONLINE       node1
ora.ctssd
 1 ONLINE ONLINE       node1 OBSERVER
ora.diskmon
 1 ONLINE ONLINE       node1
ora.drivers.acfs
 1 ONLINE ONLINE       node1
ora.evmd
 1 ONLINE ONLINE       node1
ora.gipcd
 1 ONLINE ONLINE       node1
ora.gpnpd
 1 ONLINE ONLINE       node1
ora.mdnsd
 1 ONLINE ONLINE       node1
```

The cluster_interconnect.haip resource is yet another step towards the self contained system. The Grid Infrastructure installation guide for Linux states:

"With Redundant Interconnect Usage, you can identify multiple interfaces to use for the cluster private network, without the need of using bonding or other technologies. This functionality is available starting with Oracle Database 11g Release 2 (11.2.0.2)."

This is good news for anyone who has to rely on third party software like for example HP ServiceGuard for network bonding. Linux has always supported NIC bonding out of the box, even in the times of the 2.4 kernel. Linux network bonding is actually quite simple to set up as well, compared for example to IPMP probe-based failure detection.

The documentation states that it is not necessary to bond your NICs for the private interconnect anymore, it is sufficient to leave the ethx (or whatever name you NICs have on your OS) as they are, complete with IP address. During the installation you indicate those you like to use for the private interconnect as private during the installation.

After a successful installation, the Grid Plug And Play Profile shows them (the below is an excerpt from the profile):

```
<gpnp:Network-Profile>
 <gpnp:HostNetwork id="gen" HostName="*">
 <gpnp:Network id="net1" IP="10.129.52.0"
Adapter="eth2" Use="public" />
 <gpnp:Network id="net2" IP="192.168.0.0"
 Adapter="eth3" Use="cluster_interconnect" />
 <gpnp:Network id="net3" IP="192.168.0.0"
 Adapter="eth5" Use="cluster_interconnect" />
 </gpnp:HostNetwork>
</gpnp:Network-Profile>
```

You can also see it in the output of the ifconfig command, as in this shortened example. Note that the alias address is entirely different from the statically address. eth3 and eth5 are the private interconnect interfaces in this cluster:

```
eth3 Link encap:Ethernet HWaddr
0A:00:00:00:04:16
 inet addr:192.168.0.1 Bcast:192.168.0.255
Mask:255.255.255.0
[...]
 UP BROADCAST RUNNING MULTICAST MTU:1500
Metric:1
[...]
eth3:1 Link encap:Ethernet HWaddr
0A:00:00:00:04:16
 inet addr:169.254.91.57
Bcast:169.254.127.255
Mask:255.255.128.0
 UP BROADCAST RUNNING MULTICAST MTU:1500
Metric:1

[...]
eth5 Link encap:Ethernet HWaddr
0A:00:00:00:04:26
 inet addr:192.168.0.2 Bcast:192.168.0.
255 Mask:255.255.255.0
 UP BROADCAST RUNNING MULTICAST MTU:1500
Metric:1
[...]
eth5:1 Link encap:Ethernet HWaddr
0A:00:00:00:04:26 inet addr:169.254.226.
204 Bcast:169.254.255.255
 Mask:255.255.128.0
 UP BROADCAST RUNNING MULTICAST MTU:1500
Metric:1
```

If you decide to add an additional NIC to the cluster for use with the private interconnect later, use oifcfg as root to add the new interface to the cluster configuration.

Oracle states that if one of the private interconnects fails, it will transparently use another one. Additionally to the high availability benefit, Oracle apparently also performs load balancing across the configured interconnects.

Oracle CRF resources

Another interesting new feature is the CRF resource, which seems to be an implementation of IPD/OS Cluster Health Monitor on the servers. Although it seems a really useful feature, it does not seem to work with 11.2.0.2.0:

```
[grid@node1] $ oclumon showobjects

 Following nodes are attached to the
loggerd
[grid@node1] $
```

An alternative error message is this one:

```
[grid@node1] $ oclumon showobjects
CRS-9011-Error showobjects: Failed to
initialize connection to the Cluster
Logger Service
```

You will see some additional background processes now, namely ologgerd and osysmond.bin, which are started by the CRF resource. The resource profile suggests that this resource is started through OHASD's ORAROOTAGENT and can take custom logging levels. So unlike the pre-11.2.0.2 the IPD/OS stack doesn't have to be started by SysV init system.

An investigation of orarootagent_root.log actually confirmed that the rootagent indeed starts the CRF resource. This resource will start the ologgerd and oysmond processes, which then write their log files into $GRID_HOME/log/`hostname -s`/crf{logd,mond}.

Configuration of the daemons can be found in $GRID_HOME/ologgerd/init and $GRID_HOME/osysmond/init. Except for the PID file for the daemons there didn't seem to be anything of value in the directory.

The command line of the ologgerd process shows it's configuration options: right

The files in the directory specified by the "-d" flag denote where the process stores its logging information. The files are in BDB format, or Berkeley DB. The oclumon tool should be able to read these files in theory, but it doesn't in the real world.

```
root 13984 1 0 Oct15 ? 00:04:00 /u01/
crs/11.2.0.2/bin/ologgerd -M -d /u01/
crs/11.2.0.2/crf/db/node1
```

CVU

Unlike the previous CRF resource, the cvu resource is actually cluster aware, so to display the status simply omit the "-init" flag to "crsctl status resource -t". It's the Cluster Verification Utility we all know from installing RAC. Going by the shortened profile (shown right), you can see that the utility is run through the grid software owner's scriptagent and has exactly one incarnation on the cluster. It is only executed every six hours and restarted if it fails:

The action script $GRID_HOME/bin/cvures implements the usual callbacks required by scriptagent: start(), stop(), check(), clean(), abort(). All log information goes into $GRID_HOME/log/`hostname -s`/cvu. The actual check performed is this one: $GRID_HOME/bin/cluvfy comp health -_format & > /dev/null 2>&1. Checks are performed every 21600 seconds = 6 hours.

```
[root@node1 tmp]# crsctl stat res ora.cvu
-p
NAME=ora.cvu
TYPE=ora.cvu.type
ACL=owner:grid:rwx,pgrp:oinstall:rwx,othe
r::r--
ACTION_SCRIPT=%CRS_HOME%/bin/cvures%CRS_
SCRIPT_SUFFIX%
AGENT_FILENAME=%CRS_HOME%/bin/scriptagent
AUTO_START=restore
CARDINALITY=1
DEGREE=1
DESCRIPTION=Oracle CVU resource
LOAD=1
LOGGING_LEVEL=1
VERSION=11.2.0.2.0
```

Summary

Oracle 11.2.0.2 is quite different from previous patchsets. The observation made is that the time it takes Oracle to produce patchsets increases. In the meantime, the waiting time is sweetened by Patch Set Updates ("PSUs"), fixing problems, but not introducing new functionality. With 11gR2 patchset 1 a lot of new functionality has been introduced: the new features guide has been updated for 11.2.0.2, and it is strongly recommended to have a look at chapter 2 of the New Features Guide.

Another article is planned detailing the changes in ACFS.

ABOUT THE AUTHOR

■ Martin is founder of Martin Bach Consulting Ltd and works as an Oracle consultant in the UK and Europe. He co-authored Pro Oracle Database 11g RAC on Linux (Apress 2010) and focuses his research and work around high availability and disaster recovery solutions for Oracle. He is an Oracle Certified Master, Oracle ACE and Oak Table network member. In addition to printed publications he blogs at http://martincarstenbach.wordpress.com/ and regularly presents at user group meetings.

Globalization
Redesigning Your Chart of Accounts

by Sachin Chitlange, Lead Consultant with Infosys and Sowmya Trikkur, Solution Architect/ Principal Functional consultant

> “During this era of Rapid Globalization, the Business and IT teams need to be agile and demonstrate adaptability by designing effective solutions to handle various components of the Business change and corresponding system changes
>
> This paper illustrates how organizations can effectively “Restructure their Chart of Accounts in an ERP environment”
>
> **Sachin Chitlange and Sowmya Trikkur**

Background

Globalization has become inevitable in the current economic scenario. Organizations need to expand their horizons and establish footprints in multiple geographies to cope up with the changes in the market and retain a competitive edge.
This trend has been compelling organizations to revisit their Business Models and strategies to sustain growth and profitability.

As part of Globalization, organizations need to meet the business requirements of the countries in which market penetration/ expansion is planned and also need to follow the local regulatory requirements for accounting and reporting. For example, most organizations with foreign subsidiaries would need to report in International Accounting Standard as well as the Local country GAAP.

Oracle E-Business Suite and Globalization

Oracle E-Business Suite has been designed to support Globalization and capitalize on the benefits from the same. Oracle E-Business Suite helps sustain globalization by allowing companies to manage business processes globally while providing the capability to address country specific needs.

About this article

Chart of Accounts is the heart of every financial system and this article focuses on Chart of Account (COA) restructuring necessitated by Globalization or other business needs within Oracle Applications (Financials Suite) This article elaborates various approaches for restructuring the Chart of Accounts within Oracle ERP and also provides evaluation of each of the approaches.

What is COA Restructuring?

Chart of Accounts is the structure/ listing of the accounts and its components. It involves a coding scheme (numeric, alphabetic or alpha-numeric) to suit business needs and provides the framework for transaction recording, classification, aggregation, summarization and reporting of financial information.

It is common for business entities to change their Chart of Accounts. Restructuring of Chart of Accounts (COA) includes but is not limited to:

- Addition of new account components / segments (Ex: Add product, or Future segment)
- Extending the size of the already existing accounts/ segments
- Removal of an account component/ segment that may not be required
- Changing the order in which the COA is represented

Business Need to Change the Chart of Accounts

There are various business drivers apart from globalization that need COA restructuring

- Business expansion due to Mergers and Acquisitions
- Statutory requirements for segment-wise reporting (Ex: Geographical, product)
- Other changes in Statutory and Financial reporting requirements (E.g. IFRS)
- Increased need for management reporting to facilitate better/ informed decision making
- Need to roll out Global Chart of Accounts to multiple countries
- Change in Business model, Organization Structure
- Incorrect COA design
- Urge to Leverage new features/ functionality provided by the Application

Chart of Accounts in Oracle

Oracle provides the flexibility to add new values to the existing segments within the accounting structure or create new combinations of segment values within the existing accounting structure and create / re create Parent Child hierarchies within the segment values.

However, it does not provide the flexibility to change the accounting structure itself. Once you have set up and used your Accounting Flexfield, you can no longer change it; at least, this is what Oracle Corporation claims. The Oracle supported path to change the Accounting Structure (i.e. Chart of Accounts) practically requires re-implementation of Oracle Applications.

Options to Restructure Chart of Accounts within Oracle Applications

The following table provides details of the various approaches to changing the Chart of Accounts within Oracle Applications and the pros and cons of each approach:

Approaches	Pros	Cons
1) Reimplementation by creating a new COA and hence new ledgers and sub ledgers	• Fully Supported by oracle • Fresh and Clean approach • Additional new functionalities could be leveraged in the implementation	• Higher Cost on development, data conversion and data migration • Would affect other systems like Hyperion, Data warehouse etc that would need to be modified to accommodate the new COA
2) New COA and new ledger/ sub-ledger for prospective transactions only Keep the existing ledger and sub ledger AS IS to maintain the historical transactions and create new set of ledgers / subledgers for prospective transactions	• Fully Supported by oracle • Additional new functionalities could be leveraged • Low Cost on Data Migration and Conversion	• Would affect other system like Hyperion, Data warehouse etc • There would be two sub ledgers for each organization (one historical and other prospective) • Open transactions need to be migrated to the new sub ledger • Master Data migration need to be done from old to new sub ledgers / operating unit
3) Modify the existing COA structure and retain the old ledgers/ sub-ledgers The approach requires changing the existing Chart of Accounts structure and performing back end hammers on all the code combinations	• Cost Effective • Has been implemented successfully in the past	• Not supported by oracle • High effort on testing • Would affect other systems to the extent of managing the change in the COA segments

Approach Analysis and Evaluation

Organizations have different risk appetite based on multiple factors such as the urgency of the requirement, statutory compliance, stability of the application environment, availability of in-house expertise etc.

An organization would ordinarily consider following factors while choosing amongst the options suggested such as:

- Risk: Approach must be less risky
- Support from Oracle: Approach must be supported by Oracle
- Budget: Effort spent and cost incurred should be within the Budget

Following is the Risk-Effort Evaluation matrix that enables better understanding of the risk/effort associated with each of the options suggested above:

Approaches	Risk	Effort
1) Reimplementation	Very Low	• Very high on data migration and data conversion • High testing Efforts • Medium to high effort in migrating customisations • High efforts to re-create all Application set ups / configuration
2) Creating new COA and new ledger/ sub-ledger for prospective transactions only	Low	• Low Effort on Testing for historical data • Medium Effort on Data Migration /Conversion since only master data and Open balances may be migrated • Medium to high effort in migrating customizations • High efforts to re-create all Application set ups / configuration
3) Changing the existing COA and retaining the old ledgers/ sub-ledgers by back end hammers	Very High	• Low effort on Data Migration and Data conversion • High effort on Testing • Medium to High effort on migrating customisations • Very low Effort on setups since only minor changes would be required to existing configuration and set ups

Solution Option 3 would require a change in the existing Chart of Accounts and updating all the code combinations, changing programs and other software components that refer to code combinations within and outside of Oracle Applications. This option would require lesser efforts as compared to the others, but would be risky and unsupported by Oracle.

Conclusion

Accounting flex field provided by Oracle can indeed be made flexible and it is possible to restructure the Chart of Accounts to meet various Business needs

However, no one approach can be considered to be better than the other in a generic sense. What works for one organization may not work for the other.

Organizations have to choose the appropriate approach considering the budget and time constraints, risk mitigation strategies such as additional rounds of testing, thorough impact analysis etc

ABOUT THE AUTHORS

■ Sachin Chitlange works as a Lead Consultant with Infosys providing financial consulting for package implementation, business transformation and process re-engineering within OracleApps. He is a chartered accountant and has more than 11 years of IT experience including implementation of Enterprise Resource Planning (ERP), Management Information Systems (MIS) and Financial Management. Sachin has a unique combination of strong domain knowledge of finance processes and statutory laws, accompanied with good understanding of the Oracle product. This enables him to understand the business requirements and accordingly design right solutions to client delight

■ Sowmya Trikkur has over 12.5 years experience in the industry with 3.5 years in the Finance domain and about 9 years experience as a Solution Architect/ Principal Functional consultant on Oracle Applications with Infosys. She provides process, domain and package consulting and has extensive experience in business processes analysis, process assessment and reengineering, solution design, set up, implementation, Upgrade and support of Oracle Applications (R12 , 11i and 11.0.3) with particular emphasis on the functional area of Finance. She has worked in the Accounting, Financial Planning and Analysis departments with Multi-National Companies as well as Public Limited companies. She has several degrees under her belt with Masters in Commerce , CPA from US and India, CISA certified and PMP.

Credit Card Data Security

by Kartik Subbaraman, Lead Consultant in the Enterprise Solutions Group at Infosys Technologies Limited

Abstract:

Credit Cards have become ubiquitous as a payment mechanism in today's world. However, dealing with credit cards also leads to a host of security challenges in maintaining and securing card holder data. Oracle provides many security features in I-Payments (R11i)/ Payments (R12) module for securing card holder information. Typically implementation teams associate credit card security in Oracle as encryption of card holder data in the database. However, there are other critical components of data security which merit equal attention. This paper highlights these components and outlines a four step approach which will be helpful to the program management teams to ensure that customer credit card data is safeguarded in a reliable manner.

Introduction

From the early 1920's when credit cards were first introduced in the United Sates for selling fuel to automobile owners, credit cards today have come a long way. In 2009, Credit cards and charge cards were used to make close to 2 billion purchases in the UK totaling up to £139.0 billion in value.

As technology has proceeded in providing convenience of use for consumers and corporations, most organisations have been struggling to catch up to the ever increasing threats of data security. Innovative hackers have been able to find loopholes in several vulnerable areas across widely inter-connected networks and use it to their advantage, leading not only to sizable revenue losses to the organisation but also to customer dissatisfaction and loss of trust, both of which are very difficult to regain.

As per recent estimates, losses on cards due to fraud in 2009 totaled £440 million in the UK alone.

Oracle Functionality

Credit Card transactions in Oracle can originate from Oracle Order Management, Receivables, i-receivables or i-store modules. The business user/customer keys in the credit card number and relevant details for authorization and settlement. Oracle I-payments (R11i) and Oracle Payments (R12) essentially acts as an integrator with a payment processor for sending/ receiving information. The payment processor further integrates with the credit card issuing bank to validate, authorise and settle transactions. In this data flow, security vulnerabilities can occur in the form of:

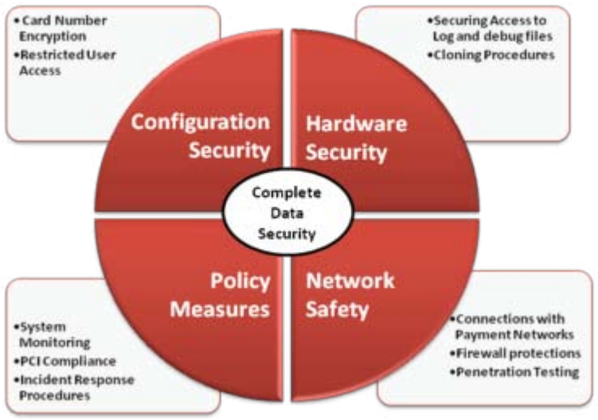
1) Storage of Card Numbers: Where inadequate procedures have been adopted to encrypt card numbers or to secure access to databases/files where card numbers are stored.

2) Inadequate Usage Restrictions: Where proper policies have not been put in place to restrict only the authorised users to have access to card holder information.

3) Unsecured Areas in the Network: Where all aspects of network security have not been adequately examined and protected on a continuing basis.

Approach

With a view of minimising the security risks in the areas highlighted above and to enable organisations to form a holistic view of their data security paradigm, the various facets of data security and their mitigation procedures have been classified into a **FOUR** step methodology depicted in the diagram below:



Security Methodology

1) Configuration Security

Configuration security implies "Set Up" functions which are needed for ensuring a minimum level of data safety within the Oracle Applications framework. Data encryption and securing user access are the two areas of Configuration security.

a. Data Encryption

Credit Card Numbers have to be masked in the front end and encrypted in the database. Standard Oracle offers the security key and the wallet functionality to store and maintain encryption keys used for encrypting credit card numbers. Generally it is advisable to change the security keys once a year, so as to prevent chances of fraud. The access to change security keys should be restricted to one or two members of the internal IT security team only.

Certain payment processors also offer "Token Number" functionality. In this credit card numbers are not stored in organisation's Oracle Applications system, but are sent to the payment processors who send back Token Number associated with the credit card number. This token number gets stored and referenced in Oracle for all future transactions. Organisation can make use of this service based on volumes and enterprise procedures.

b. Restricted User Access

Standard Oracle offers a form function to view unencrypted credit card data. Ideally only select internal IT security team members should have access to the responsibility (which has this function attached). For other users who want to have access to unencrypted customer credit card number a proper framework must be put in place to ensure that any such requests have a valid business reason and are well documented.

2) Hardware Security

Hardware security covers securing access vulnerabilities in the files and folder structures in the Oracle Database system. This can be achieved by:

a. Securing Access to Logs/Files

Debug logs and settlement/ acknowledgement files are two areas which could potentially have an impact on data security. In certain cases, when debug is enabled for order management/receivables/ payment applications, unencrypted credit card numbers could be stored in the debug log files. Access to the folders containing such log files should be restricted. Any log files that needs to be provided to any IT support personnel must be cleansed of all such credit card numbers.

In a processor based model (FDC North etc.) settlement files are sent to the payment processors and acknowledgement files received from them. These files could contain unencrypted credit card numbers. The directories in which these files are stored should be secured and these files must be password protected and archived in a regular manner.

b. Cloning Procedures

One area that data security is often overlooked is security of a cloned instance. Instances are cloned for a variety of needs and made available to employees, contractors and support personnel for their daily activities. The cloned instance contains the same data as that of a production instance. It is extremely critical that a full sanity check be done of the cloned instance. This would involve updating all tables with Dummy credit card numbers and removing any logs/ files (mentioned above) that could potentially have credit card numbers. Typically access control on a cloned instance is far more lenient than a production instance and hence the risk of data pilferage from a cloned instance is higher.

3) Network Safety

Appropriate firewalls should be in place restricting access to the Oracle Applications database server and all internal application servers. External communications can be handled by using a proxy server in the DMZ (de-militarized zone) that limits connections to only approved sites.

Credit card authorisation and settlement requests communicate with an external payment system. This is outside of the organisations network. It is important to ensure that all such communication is secured by following an HTTPS or SFTP protocol.

If there are instances where organisation data is being accessed by external parties like customers/suppliers (i-receivables/i-store/i-supplier) it is advisable to get a PEN (Penetration) Testing done by a qualified professional on a regular basis. This will ensure that any vulnerable points in the network are identified and corrected.

4) Policy Measures

Procedures must be put in place for Continuous Monitoring and Tracking access to networks and cardholder data. Audit trails, tracking on invalid logon attempts, Use of identification and authentication mechanisms are some of the ways in which tracking can be done.

The Payment Card Industry (PCI) has released a broad list of PCI Compliance procedures, which must be adopted by organisations dealing with payment cards. It is advisable to conduct a periodic audit to ensure that the organisation is in compliance with the relevant compliance procedures. Oracle releases critical Security Patch Updates on a regular basis. Organisations must prioritize these patches and devote the necessary resources to test and apply the patches in the required timeframe.

In reality, in spite of the best efforts of organisations security breaches do occur. Hence it is important to have Well Documented Mitigation Procedures covering all aspects of the business in case such an event occurs. This will help an organisation to respond quickly and effectively to any such challenges in a calm and organised manner.

Conclusion

Reliable organisation security is a system and a continuous process. As the old adage goes "A chain is only as strong as its weakest link", organisations today have to concentrate on giving a complete systemic thought to their data security requirements. A comprehensive use of the features provided by Oracle along with regular due diligence and monitoring procedures will go a long way in preventing data theft and safeguarding an organisation's image in today's challenging environment.

References:

1) UK Card Association Press Releases

2) Oracle I-payments/Payments User guide.

ABOUT THE AUTHOR

■ Kartik Subbaraman (kartik_subbaraman@infosys.com) is a Lead Consultant in the Enterprise Solutions Group at Infosys Technologies Limited. He has overall 8 years of experience post his MBA, which includes 7 years of experience in the Oracle Applications space. In this span, he has worked and successfully delivered multiple end to end Oracle Implementations for Retail, Manufacturing and Hi-Tech vertical clients. He has worked on multiple Oracle i-payment implementations for various clients.

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by Kate Cumner, Oracle

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My Oracle Support - Why Use Configuration Manager **(NEW)**	All products	English	**Play**
My Oracle Support - Configuration manager	All products (Spanish)	English	**Play**
My Oracle Support - Using the knowledge Tab	All products	English	**Play**
My Oracle Support - Using Projects	All products	English	**Play**
How to Escalate a Service Request (SR)	All products (Spanish German Italian)	English	**Play**
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My Oracle Support - Communities - New features **(NEW)**	All products	English	**Play**
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Customer Support Education Team: Training our Customers on Support Processes and Tools

Managed Solution for Staffing Industry

by Anil Bhatia, Senior Practice Engagement Manager with Infosys

Staffing companies are entering the perfect storm with regard to technology solutions and services. They are looking for innovative options and models to reduce their back office costs to improve their profitability.

The model that would benefit the Staffing industry in an effort to reduce their cost would include a Bundled offering by the SI's for the following components.

a) Application Layer: Base Modules: This could include procuring licenses and implementing the complete stack of a global instance of

- PeopleSoft Front Office solution (from Job Order to Candidate Management),
- PeopleSoft Middle Office solution (from Contracting to Pay Bill Processes) – This would include components like Pay Bill, Contracts, Project Costing, Time and Labor, Payroll, HR, Billing
- PeopleSoft Back office Solution (Collections, Revenue Recognition, Payments, GL)

Pre-built Integrations: The stack can further offer pre-built integration with defined VMS providers which is a key need of Staffing industry to manage the contingent work force.

Custom Integrations: Given the investment staffing industries have already made in different staffing Front Office solutions globally, consolidation, standardization and agreement to a single FO instance isn't easy. In such cases the application scope may be limited to consolidating the Back Office solutions.

The key would be the ability to integrate various FO solutions to the Back office via the Pay Bill module implementation. Also integration with various VMS providers outside the defined ones would be another important factor to be considered.

SI's would typically do a due diligence of a couple of weeks (depending upon on the global landscape) to scope and cost this in their bundled offering.

b) Application Layer: Self Service and Portal Layer: This would involve procuring and implementing licenses for following Self Service Applications on the Pay and Bill side as follows:

Employee Portal (ePay): This would provide online access to payroll information to all employees.

End Customer Portal (eBill Payment): Customers can monitor their account status, view recent transactions and invoices and make payments over the internet

Partner/Vendor Portal (eSupplier/ eSettlement): Suppliers can view the payment status on their invoices which pulls data from the Account Payables database.

This layer will reduce the cycle time of transactions and also administrative paper work which will help in reducing the Back Office costs.

c) Application Layer: Analytics Layer: Intelligent Decision making can be facilitated by using an Analytics Platform across all the Front Office, Middle Office and Back Office.

The analytics platform in the back office for Staffing industry would consist of the creation of a HR Warehouse on the pay side and a Finance Warehouse on the bill side. Also products like RTD (Real Time Decision Making) can help staffing customers use real time intelligence of previous orders on signing new orders with prospect customers and/ or suppliers.

Analytics Platform like OBIEE (Oracle Business Intelligence) are best suited as they can provide all the various kinds of reports needed for staffing industry be it Ongoing reports (through Dashboards) or Periodic reports through Oracle Delivers. Moreover this platform is very easy for user adoption.

The Back office ERP would provide standard pre-defined reports but the key is to identify the ad-hoc reporting requirements for your back office that directly affect the client satisfaction levels.

For example: On the HR side, most of the Back Office reporting could be based on branches or business units as implemented in the HCM Application and you might need to do reporting by say your suppliers or customers. You might want to see the Payroll Register for temporary employees serving particular customers on the HR side and Oracle Answers of the OBIEE suite can help you achieve the same.

d) Infrastructure Layer: The architecture beneath the implementation and delivery would be internet based and would be reliable, secure and scalable.

Customers, sSuppliers, eEmployees should be able to access the self-service modules viz ebill payment, supplier and epay modules on this architecture and also the infrastructure should be capable of handling any transactions with these stakeholders. For example: the VMS data that needs to be interfaced with AP module for invoices and vouchers.

Based on the BPO layer design the access to the applications will be accordingly controlled.

This layer should have disaster recovery capability as well irrespective of whether the data resides internally or in SI's data center and should also meet the agreed upon Service Levels.

e) BPO Layer: This layer will decide the access to the applications depending upon how the business process is being managed by the client.

If the bBack office transactions are being completely handled by the SI, the SI users will log on to the applications from a Global and/ or Regional processing centers.

In cases where the applications have been agreed to be delivered in a SaaS (Software as a Service) mode; staffing companies would be using regional shared service centers which serve as Collection (AR) and Payment (AP) Centers to process back office operations. The access to these applications will then be given to the users of regional shared service centers.

Pricing: In this model the SI is fully responsible for delivering the process and could be accountable for, application layer (implementation and support), the infrastructure and business processes. The support would include upgrade of the software for an agreed frequency based on the release of new functionality by the pProduct vendors. The integrated price typically consists of a Onetime on boarding fee and recurring fee that is usage based, which in the case of Staffing Back office would be based on number of invoices generated on the bill side and number of vouchers raised on the supplier side and/or number of pay slips generated on the pay side.

The exact percentage of savings would need to be derived through a business case study by comparing the AS-IS costs (as customers are in various points of recovering their capital expenditure investments in software and data centers) to the TO-BE costs for the right scenario (in case customer wants this to be externally hosted) using the Discounted Cash Flow / Present Value Method.

In summary, this paper presents an innovative managed solution service offering for customers who are looking at a non-linear pricing model to convert their capital expenditure to operating expenditure. Also, it lends to a full services platform on the 'Cloud' where the system integrator has the complete accountability for end to end SLA's on infrastructure, hosting, implementation and Support services.

ABOUT THE AUTHOR

■ Anil Bhatia has over 14 years of management consulting experience and lead large global ERP programs in areas of Finance, HCM and Manufacturing. He is a Senior Practice Engagement Manager with Infosys in the Oracle economy for Services vertical in North America and has been with Infosys for the last 11 years. Anil is Certified in Production and Inventory Management has published papers in forums like OAUG, Erpassist.com etc.

Tom Kyte Interview

by Phillip Cogger, UKOUG

> “The killer feature to me is edition based redefinition – I did a series of three articles on Oracle Magazine on that one. The ability to have multiple versions of your application in a single schema in Oracle Database 11g Release 2 is ground breaking.”
>
> **Tom Kyte**

To begin: What do you want readers of Oracle Scene to know about you?
First of all – I’m a pretty average person – anyone could eventually do what I do. It takes a long time. That is the important part. I worked in the industry for a good ten years before I even started to become a ‘little bit known’. I’ve been working with Oracle for over 23 years now. That is the only way I know to get to really ‘know’ something.

For those that are interested in the day to day things of my life here are some titbits. I work at home for a week and travel for a week (then back home, then on the road again). I spent about ten and a half work weeks in the air last year flying about 225,000 miles (that’s about 362,000km). The week I work at home I spend working on asktom.oracle.com, customer issues, education (my own many times, it is still a learning process) and recharging of my internal batteries. The week I’m on the road I spend at conferences, user group meetings, marketing events tand customer visits.

My dream would be for someone to invent either the transporter – like in Star Trek, or a device that allows one to ‘appear’ in person without appearing in person. Either of those inventions would make my work life a lot better!

Q1. How did your career in Oracle Technology take off?
It all started in 1994 when I started answering questions on the usenet newsgroups (comp.databases.oracle.*). That is how I learned a lot – from other posters such as Jonathan Lewis – and from the questions being asked. I would look for questions I could not necessarily answer straight off and research them. It got my brain moving in the morning – some people do crossword puzzles to get started, I did “Oracle”. That also formed the basis for the manner in which I answer my questions. In order to confidently post “this is how it works”, I posted supporting information – evidence you might call it – that could be used to demonstrate that what I was saying was probably true. The nice thing about that was others could reproduce it (or not) and discuss it. It wasn’t just me saying “this is true”, it was me saying “This is the way it works as you can see by this example – under these circumstances”. That allows others to also say “yeah, but what if I change the circumstances in this way – then the results are different” – and we could have a discussion about what just happened.

So, I guess it was a factor of the way I answered questions (with supporting evidence that what I said was probably true) and the fact that I answered so many questions over time.

Q2. What one piece of advice would you give to beginners who are new to working with Oracle Technology?
Be prepared to spend time. Period. You will not become an expert in six months, not in a year, not in two years.

Some people say it takes 10,000 hours to become an expert on something – others state 10 years. Whatever it is – it is not overnight. It is a lot more than a year. It takes a long time and a lot of mistakes and a lot of changing your mind.

Q3. You are famous for your ‘New Features’ presentations and helping users get the most out of the Oracle Database. What, for you, are the hot new features of 11gR2?
That is easy – the killer feature to me is edition based redefinition – I did a series of three articles on Oracle Magazine on that one. The ability to have multiple versions of your application in a single schema in Oracle Database 11g Release 2 is ground breaking.

Other features include things like DBMS_PARALLEL_EXECUTE – the ability to have a single SQL statement executed “bit by bit” – broken up for you into multiple small transactions, something we used to do procedurally by ourselves but is now taken care of for us.

Tiny things like an external table being able to have a “preprocessor” – so that we can read the output of gunzip instead of just reading a flat file. That allows us to effectively query a program – so we directly load a compressed file without having to decompress it to disk first.

Q4. Which 11g features need most care? I suppose password case-sensitivity would be the big one, but are there any other examples you can give of 11g features that need care?
There are few features that need “care” since most all of them are optional and hence you would have developed code to use them, tested them and then deployed them. It is things that are introduced by default – like case sensitive passwords – that catch us by surprise.

The only other feature in 11g that I can think of that is like the passwords would be deferred segment creation. In 11g – by default, when you issue a CREATE TABLE – the database doesn’t create an initial extent, doesn’t create a segment. This can confuse some things in rare cases. Say you have an install script that creates a series of tables and indexes and then queries DBA_SEGMENTS to verify everything got installed. Well, in 11g it would not see much in DBA_SEGMENTS since we don’t create the segment until someone inserts data. That could break some install scripts.

Fortunately – for all of these sorts of “default changes” there is a solution. You can disable them at the system level (init.ora settings) and many times at the session level (as with deferred segment creation) and many times at the statement level, with deferred segment creation you can add a segment creation immediate to your create statement if you like.

Q5. Is there anything you think is missing, and what would like to see in the next release?
I’d like the ability to open a cursor in session 1 – fetch rows from it, and then reconnect with that cursor in session 2. The reason – connection pools and paging through result sets. It would make pagination so much easier.

Q6. You have spent a lot of time over the years working on your AskTom website, writing books and giving presentations. Is there any aspect of your work that you enjoy more than the others?
I like working with people the most. Writing a book is a painful, somewhat lonely process. Interacting with people, exchanging ideas and solving problems is much more fun than writing a book.

Q7. What has been your most interesting experience as a result of your travels abroad?
It would definitely be learning about the different cultures and the way people work. When I joined Oracle in 1993 – I didn’t have a passport. I got one almost right away, one of my first assignments was in the UK. Over time, I’ve filled quite a few passports – with extra pages added. I haven’t been to most countries yet (and I really don’t think I will!) but I’ve been to a lot. There are lots of similarities – and many differences.

All in all though – there is a lot of interest everywhere in learning – that seems universal.

Oracle Fusion Applications

What does this really mean for Oracle customers…

by Mark Albon, Executive Consultant with Capgemini

At Open World, Larry Ellison officially unveiled Fusion Applications Version 1.

So what does all of this really mean, what is Fusion Version 1, what are the different availability options, who will be using it and what is Oracle's strategy for Fusion going forward?

What is Oracle Fusion Applications version 1?

Oracle Fusion Applications version 1 is the first release of the new generation of applications that bring together the best of Oracle EBusiness Suite, JD Edwards, Siebel and Peoplesoft.

The data model is primarily Oracle EBusiness Suite with various features taken from the other technologies however the underlying code has been re-written from the ground up. Version 1 is a horizontal product that covers Financials, Projects, HCM, Payroll, Supply Chain and CRM. Oracle have also incorporated Business Intelligence (BI) and Essbase into each main function, e.g. Financials will have an embedded BI reporting capability and the ability to use Essbase and tools such as SmartView to perform analysis. These don't replace the BI and EPM solutions Oracle offer but instead enhance Fusion Applications.

Version 1 also includes a new module called Distributed Order Orchestration (DOO) which allows organisations to take sales orders from multiple systems and funnel these through to different distribution solutions.

What isn't included in Fusion is;

- Industry solutions - e.g. Oracle Public Sector Financials
- Manufacturing - no manufacturing features are included
- CRM Service - CRM in version 1 covers the Sales and Marketing functions only
- Primavera – this still only integrates with Oracle Fusion

In summary, Fusion Applications Version 1 will support all back-office functions and sales functions with the functionality that it provides.

What is the current availability?

It is currently under Controlled Availability, which is where a client has agreed to become an early adopter and will receive additional support from Oracle and access to Oracle Development during the implementation.

The following organisations are official early adopters of Oracle Fusion:

- Siemens – Sales Force Automation and Territory Management
- Principle Financial – Financials
- Eaton (Electrical division) – Distributed Order Orchestration

The official communication is that General Availability will be from Q1 2011 and until then the only option is to become an early adopter.

What is Oracle's strategy for Fusion Applications going forward?

Although Fusion Applications has been launched, Oracle are continuing to develop Peoplesoft, Siebel, JDE and EBusiness Suite. Oracle have also committed to EBS R12.2, which will provide additional features and functions.

This approach to the existing product set supports the overall strategy of "Continue, Adopt or Embrace".

- Continue on your current path – upgrade to the latest release of your existing Oracle applications portfolio
- Adopt a Co-Existence Strategy – add new Fusion Application modules/pillars to your existing Oracle applications portfolio
- Embrace the Complete Suite – deploy the comprehensive suite of Fusion Applications products

By communicating this overall approach, Oracle have not closed off the current application solutions and the investment clients have made in these and are therefore allowing a variety of different approaches in moving to Fusion Applications.

To understand what this means to clients, we need to look at each option in turn;

Continue on your current path – Oracle are keen for clients to move onto the latest releases of the products, e.g. EBusiness Suite R12.1, Peoplesoft Enterprise 9.1, Siebel CRM 8.2 etc.

This has two advantages, (a) it moves clients away from end of life support and potential 'burning platform' issues (b) it moves clients onto a later release where it is easier for Oracle to support the next strand, adoption of a co-existence strategy

Adopt a Co-Existence Strategy – this links Fusion Applications back to the current Applications version. From an EBusiness Suite perspective, Oracle are supporting both v11.5.10 and R12, however the co-existence integration points will be developed on a demand basis and so may not be in existence for all requirements.

The general feedback I have received is that with the added hardware and integration required, the benefits of extending the solution by adding Fusion applications would be a hard business case to justify especially if the same could be achieved in the current version.

However, Oracle have targeted Fusion Version 1 against the SaaS players and are strongly pushing the Sales Force Automation (Salesforce.com); Talent Management (Success Factors and Workday) and Distributed Order Orchestration modules and therefore in these areas Fusion might be worth considering.

Embrace the complete suite – this option is less likely for the existing client base because of the current product maturity and based on the R12 uptake, we can assume that it will be at least 12 months after general availability that existing customers will look to move as this should provide the level of comfort that any early problems have been ironed out.

Oracle also understand that the take up will be gradual and therefore they recommend the following action plan which brings together all of the strands above.

Upgrade – move to the latest release to take advantage of new features which will also enable an easier transition to Fusion Applications. The integrations developed between Fusion Applications and current Oracle EBS are likely to be developed to R12 before 11.5.10 and Oracle are keen to move people away from additional extended support costs and potential burning platform issues.

Adopt Standards-Based Technology – Fusion Applications requires Oracle Fusion Middleware and therefore as part of any applications strategy, adopting the Fusion Middleware and latest technology will also make the transition to Fusion Applications easier.

Extend Business Value – as the Fusion Application suite and integrations get developed over time, the co-existence approach will become easier to implement and justify in a business case. At present, the main option is the either the new DOO module or the ability to use Oracle where the client may have looked at a SaaS application provider.

What does this mean for Oracle Customers and existing users?

We can draw some conclusions from the current Oracle strategy and the messages around upgrade, adopt and extend.

Oracle is keen to move people onto the latest release and have stated they will continue development of these current Applications to support businesses enhancing their solutions. This prevents people from moving away from Oracle and also lessens the load on development and support.

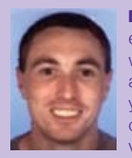
Oracle are also pushing Fusion as a product that will address certain business requirements, but not a complete replacement, and are marketing this heavily against the SaaS providers. This is to make sure that Fusion Applications in the future is seen as an Applications product that, tied in with other technologies (Exadata, Exalogic), enables multiple clients on a single environment and therefore can be deployed and offered as a SaaS implementation.

Oracle also understand that the move to Fusion Applications will be gradual because (a) the current economic environment means less spend in IT (there is currently a save to spend culture in most IT projects) and (b) there will be some nervousness in the market in moving wholesale to a brand new applications technology.

The general feedback from Open World is that 80% of customers are still on Oracle 11.5.10 and we are now seeing a move in clients looking at R12, however, this is not driven by a positive business case identifying large savings, but from a stay current/support justification.

As such, the migrations to R12 will typically be viewed as more of a technical project where certain enhancements maybe included but more importantly customisations can be reduced and will provide a current platform to optimise the system further in the future.

ABOUT THE AUTHOR



■ Mark Albon is an executive consultant with Capgemini and has over 15 year's experience of implementing various Oracle solutions across a range of clients and industries. He leads the Oracle EBS Application team for Capgemini and is involved in the partner Fusion programme with Oracle and is also one of the architects responsible for Capgemini's award-winning t-Gov proposition.

Events calendar

MARCH

1st
JD Edwards SIG meeting
Location: Blythe Valley Park

1st
UKOUG HCM SIG meeting
Location: Hilton Reading hotel

2nd
Application Server & Middleware SIG meeting
Location: Oracle City Office

2nd
Application Server & Middleware SIG meeting
Location: Fujitsu, Warrington

8th
UKOUG DBMS SIG Meeting
Location: Oracle, Thames Valley Park

15th
Supply Chain & Manufacturing (SCM) SIG meeting
Location: Blythe Valley Park

16th
LOSUG - UKOUG Solaris and Open Solaris SIG
Location: Oracle City Office

17th
Hyperion Planning & Essbase SIG
Location: Oracle City Office

22nd
Primavera Conference 2011
Location: Mercedes-Benz World

23rd
Hyperion HFM SIG meeting
Location: Oracle City Office

24th
Back to Basics
Location: Oracle City Office

The concept behind the Back to Basics events is to deliver a full day of content which is specifically aimed at Newbies and covers a variety of topics.

30th
OUG Ireland Conference 2011
Location: Dublin

31st
Apps DBA for Oracle E-Business Suite
Location: Oracle City Office

31st
RAC & HA SIG
Location: Oracle, Thames Valley Park

APRIL

6th
Oracle Spatial SIG meeting
Location: Oracle City Office

7th
Education & Research SIG meeting
Location: Oracle City Office

7th
Northern Server Technology Day
Location: Manchester

20th
LOSUG - UKOUG Solaris and Open Solaris SIG
Location: Oracle City Office

28th
Local Government CRM Customer Forum
Location: Blythe Valley Park

MAY

11th
Quick Start Masterclass for Fusion Development with JDeveloper and Oracle ADF
Location: Oracle, Thames Valley Park

12th
UNIX SIG meeting
Location: Blythe Valley Park

18th
LOSUG - UKOUG Solaris and Open Solaris SIG
Location: Oracle City Office

19th
CM Customer Forum
Location: Blythe Valley Park

24th
Oracle Financials SIG Meeting
Location: Manchester

25th
Application Server & Middleware SIG meeting
Location: Blythe Valley Park

JUNE

8th
OUG Scotland Conference 2011
Location: Sun Microsystems, Linlithgow

8th
RAC & HA SIG Meeting
Location: Oracle, Thames Valley Park

9th
UKOUG HCM SIG Meeting
Location: Royal Institute of British Architects (RIBA)

9th
OUG Irish BI SIG Meeting
Location: Oracle - Dublin

14th
UKOUG Conference Series EPM & Hyperion
Location: London

15th
LOSUG - UKOUG Solaris and Open Solaris SIG
Location: Oracle City Office

15th
UKOUG Conference Series EPM & Hyperion
Location: London

16th
UKOUG APEX SIG Meeting
Location: Blythe Valley Park

22nd
UKOUG Conference Series PeopleSoft 2011
Location: Park Inn Heathrow, London

22nd
UKOUG Development SIG Meeting
Location: Oracle City Office

23rd
UKOUG Conference Series PeopleSoft 2011
Location: Park Inn Heathrow, London

28th
UKOUG Supply Chain & Manufacturing (SCM) SIG
Location: Blythe Valley Park

28th
JD Edwards SIG meeting
Location: Oracle City Office

30th
UKOUG Conference Series Siebel & CRM on Demand 2011
Location: Hilton Reading hotel

Look out for special events on Exadata and Security coming soon.

For information on all upcoming dates please see: www.ukoug.org/events/

UKOUG news

In 2010 we welcomed two new communities, Primavera and Sun. The Primavera conference was the first of its kind and took place in May 2010. See below for news of our next Primavera event.

Following Oracle's acquisition of Sun Microsystems UKOUG is now hosting monthly Solaris and Open Solaris user group events. The popularity of these events has been outstanding. Keep an eye on the UKOUG calendar of events for 2011: www.oug.org/calendar.

Other successes in 2010

For the third year running the UKOUG Partner of the Year Awards presented over 40 Partners with recognition for the services they provide to Oracle users. Nominations for PYA 2011 will open in spring.

We also ran seven Conference Series events which attracted over 2,500 delegates throughout the year, and drew some of the biggest names in Oracle to present on the latest advances in Oracle Server Technology, E-Business Suite, Fusion Applications and MySQL. This year the format of the Irish and Scottish conferences has changed. These will take place in new venues and will offer delegates with many new ways to gain knowledge about their Oracle products and interact with other users.

Important dates for your diary

Primavera Conference 2011 – 22nd March – Mercedes-Benz World, Weybridge

2010 saw the first conference for Primavera Users since the Oracle acquisition. Following attendee support, UKOUG are proud to announce Primavera Conference 2011. This event will commence with an opening keynote from Oracle's Senior Vice President, Primavera Business Unit, Dick Faris, covering a review of Primavera current solutions and a taster for possible future direction. This will be followed by product highlights (with an emphasis this year on best practice) and user experiences and a guest speaker. Attendees will have time to network with each other and view the latest offerings from key Primavera Partners throughout the day and at the drinks reception at the end of the day.

OUG Ireland Conference 2011 – 30th March – Aviva Stadium, Dublin

This event first started in 2003, and since then has gone from strength to strength, delivering first class local knowledge, world leading speakers, and outstanding content to Irish Oracle users. 2011 is shaping up to be the main highlight on the Irish calendar, and promises an agenda packed with user stories and demonstrations on Fusion Applications and Middleware, Business Intelligence, E-Business Suite Applications and Server Technology. As well as being the first time we've used this venue, this year promises a packed agenda featuring Oracle keynote presentations from Paul O'Riordan, Managing Director, Oracle Ireland and a Fusion Applications demonstration from Liam Nolan, Applications Development, as well as numerous presentations from renowned Oracle ACEs. Keep an eye out for full event news as it happens: www.oug.org/ireland.

Call for papers

Call for papers has now opened for OUG Scotland Conference 2011, UKOUG Conference Series EPM & Hyperion and UKOUG Conference Series PeopleSoft 2011.

Call for papers for UKOUG Conference Series Technology & E-Business Suite 2011 will open in April.

Debra's Diary

By Debra Lilley, Deputy Chairman UKOUG

How are your resolutions for 2011 going? Or are they a distant memory? Due to print deadlines it is still mid January as I write this article and so mine both personal and professional are still intact. UKOUG ended 2010 with another successful Technology and E Business Suite conference, the last in a series of successful events delivered to you. So I am happy with what we delivered but doing so is more and more difficult, you the community are changing, Oracle is changing and the way we interact is changing. As *Heraclitus* Said "The Only Thing That Is Constant Is Change".

We need to be innovative in what we deliver but maintain the services you benefit from today and balance this against the economic pressures that we are all up against. Although UKOUG has a healthy bank balance from a sound fiscal strategy in the past, we cannot be complacent and we cannot simply employ more people in the office. We need to continuously review our products, our stakeholders and our processes. We started a major project on this last summer where the board stepped up to a strategy review but we could only go so far, we had a lot of research needed and the 'business as usual' got in the way, so we have been making changes in the UKOUG office.

It is very dynamic and at the moment embryonic and we need your help. Talk to your community leaders, the SIG committees about what you want and any ideas you have that we can consider. We are here to 'Serve the Oracle Community' and we need to

know what you think. We have two new email accounts for you; feedback@ukoug.org and ideas@ukoug.org please use them. The feedback is very important, we collect feedback from events but this is for more general feedback, an issue with the website for instance, but also for positive feedback. A few years back we had a lot of feedback about a social event at conference being too loud with live music, so we listened and stopped it; that year all the feedback was about how much it was missed. Human nature says we give more negative feedback than positive, but we need both.

So enough about the hard work, what about the fun? I get so much pride out of being a UKOUG director and really enjoy the opportunities that it gives me and how I can combine this with my ACE Director role and my role within Fujitsu.

My last diary entry was written just before Oracle Open World, which for me was a very special event; the big launch of Fusion Applications, my main area of interest. I was a bit disappointed with the actual headline launch (you can read about what I really thought on my blog , but there was so much content for people to see and I was very honoured to be asked to introduce Steve Miranda the SVP responsible for Fusion Applications Development when he gave his presentation on the product. I have to thank you, the members of UKOUG for this, our strategy of being involved, and actually leading all users groups globally. The input from our focus groups and the reaction from Oracle set this up. In our TEBS conference we again had a great Fusion stream.

Open World was not just about Fusion Applications and in fact they were a long way behind Exadata and the cloud. For Ronan and I, Open World is as much about meeting up and swapping ideas with Oracle executives, other user group leaders and the people we need to influence on your behalf. This was the first time Java One was co-located with Oracle Open World and it was a great success, although like us, there will be feedback to consider and tweaks to be made.

Closer to home we had our Partner Awards which again proved very popular and a great night out for our partner community. This year I have seen partners using our awards logo in both the US and Australia which just shows the value they place on these.

Ronan and I travelled to Brussels to the EMEA Presidents meeting, we learnt a lot from Java leaders and again from swapping best practice and experience from other groups. Annually there is a Global Presidents meeting at the end of January, any user group can take part but it is at their expense. UKOUG is fortunate to be able to fund our attendance but the smaller groups cannot. For the past few years Oracle has funded spokespeople from EMEA to attend but that funding is no longer available. In Brussels it was decided that this is an important role and so the usergroups agreed to make contributions to a fund and elect those who should attend on their behalf. UKOUG led the way with our donation which of course is only fair. Whilst we can afford to be there, we need Oracle Corporate to be constantly aware that 30% of their business is in EMEA and that can only be done by having good EMEA representation.

Our JD Edwards Conference was another success and I was again honoured to host the executives who keep coming over to support you. UKOUG is so important to Oracle executives we had one present at TEBS which is not normally his community and he was there because he submitted a paper through the open process. At the JDE conference Ronan spoke to the press and Mark Hurd the new President of Oracle emailed UKOUG to thank us for the comments and gave us his personal vote of support.

Ronan and I were invited along with Thomas Presslie the Scotland SIG Chairman, to David Callaghan's Oracle UK & Ireland Board Meeting Dinner in Edinburgh; again recognition of our influence.

The TEBS conference is where I started this entry and we did a lot of things different this year. No big budget for lots of social events but we maximised the networking without compromising on the content. I hope you agree it worked. We can plan for a lot of things but we couldn't have foreseen the atrocious weather which did bring us more issues and loss of both delegates and speakers, but we pulled it off. Including our inaugural Inspiring Presentation Awards to thank our voted best speakers and encourage new people to step up and present, and let me publically thank OTN again for their sponsorship of these awards. Lisa Dobson was the original idea behind not only these awards but our UKOUG pantomime. I can't describe that in words but search for it on YouTube and enjoy Ronan in his nurses' outfit.

And just as I began, 2011 has started with much planning for the next round of events. The Irish and Scottish Conferences committees are full of enthusiasm and look forward to great events. The SIG volunteers are busy with their programs and the Conference Series is also taking shape.

Next week the board has its first meeting of the year in Manchester at the site of a possible alternative for TEBS for 2012, what do you think of that idea?

ABOUT THE AUTHOR

■ Debra Liley is an Oracle Alliance Director 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.

http://debrasoracle.blogspot.com/

Rate card

Oracle Scene is UKOUG's flagship publication, distributed three times a year, providing exposure to a highly targeted and captive market. It has proven to be one of the most effective ways to reach customers and users of the complete Oracle product set.

The publication features user stories, product and technical articles, case studies, hints and tips, book reviews, conference summaries, news on product enhancements, news and updates from Oracle, and proves a popular reference source.

Readership & circulation

Oracle Scene has a print run of 4,000 and digital copies are emailed to 10,000 subscribers upon publication. In addition, it is distributed to Oracle reception areas in the UK and Ireland, and is used as promotional material for UKOUG.

The target audience is broad. UKOUG are predominantly here to serve our membership, which itself is diverse as a result of all Oracle's acquisitions. Increasingly, we are reaching the wider Oracle user communities overseas as awareness of our publication increases. Our readership is broken down as follows:

Circulation breakdown

UKOUG Members 41%
Prospects 25%
Oracle 33%
Subscribers 1%

Readership by job function

Director 13%
Manager 44%
Technician 25%
Consultant 13%
Other 5% (inc. Marketing, Training etc)

A Member survey, carried out in December 2010, revealed that Oracle Scene is read by 96% of UKOUG's members.

Advertising options

Insert size and placement	Price per edition
Back cover	£2,100
Inside front cover	£1,890
Inside back cover	£1,890
Full page	£1,575
Half page	£1,050
Third page	£840
Quarter page	£525
Loose insert (excluding insertion cost)	£2,100
Fixed insert (excluding cost of fixing)	£3,150

2011 Editorial calendar

Issue No	Deadline	Publish month
44	Tues 12 April	June
45	Fri 9 September	November

Interested?
Contact us at: opportunities@ukoug.org
or 0208 545 9685 to discuss your requirements.

UK OUG
UK ORACLE USER GROUP

Get involved

"I've been a UKOUG volunteer for over 10 years now, and a UKOUG member for even longer. Why? Because I enjoy it! I've made many friends and useful business contacts at UKOUG events over the years."

Jeremy Duggan, JemKa Consulting

UKOUG relies on the commitment, hard work and enthusiasm of our volunteers who offer their time and knowledge in a variety of ways. Our volunteers are the vital ingredient in ensuring that all of our members come together and share insights as one community.

If you would like to find out about the volunteering opportunities currently available visit:

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