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A Hard Act to Follow

The Human Side of the ERP Market in 2008

Introduction to Oracle User Productivity Kit (UPK)

Oracle Data Integrator Enabling the Transition to SOA

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Welcome

Welcome to the first edition of 2008.

Ophelia Dodds, Editor
editor@ukoug.org.uk

I hope that you are all keeping to your New Year resolutions? Having made a resolution to do no more than 1 hour of overtime per day, I am struggling to get my work done, but feeling happier and healthier. I do find it strange that we are all having to work longer hours in order to feel that we are just "doing our jobs". One of my project managers was routinely booking in working evening and weekends, just to meet the business deadline, and it made me think about how we could find ourselves in a situation where that is considered the norm rather than an unusual aberration. Clearly a sea change is required from all the Senior Management out there (darn, does that include me??)

What's on in OS?

As ever, we kick off with an update from Satnam from Maximus about the ERP market in 2008. We follow up with an introduction to UPK, taking us through this training product and how it can save you time during the training stages of any implementation or upgrade project. A look at CRM for the Tourism industry follows, taking us through a major implementation (especially of interest since we are all planning our summer holidays!).

This is followed by an overview of Oracle Workflow, a product which has been around for some time but still offers great flexibility for customisation within processes – I remember happy days customising Purchasing workflows to an increasingly complex set of user requirements for a well known cable provider!

Our blogspot keeps us up to date with a Release 12 go-live – straight from the horse's mouth! Then a very interesting architecture article (something a bit new for us) covering ODI, and it's relation to SOA which is still a hot topic for most companies (anyone who has actually managed to implement a full SOA architectures, please email me as I've not yet heard of anyone completing this!!)We then have an article on invoice processing – still the most paper-heavy process for any financial department. The technical section kicks off with a look at ANSI SQL join syntax, from Tony Hasler, followed by an overview look at the EVA 6000 storage array.

I can highly recommend the Oracle Development Tool road test review, which includes star ratings for components such as scalability and price, as well as useful comments and tips from the reviewers. Again, if our readers have any comments on the reviews, please do let us know.

In our end pages, we have some more Top Tips from Tim as well as some Oracle Software Configuration Manager information from our colleagues at Oracle. Lots of UKOUG news, with Conference and the Apps Server SIG, as well as a special treat with Debra's Diary from Debra Lilley, our Deputy Chairman. Last, but not least, another update from our own deputy directors, with Neil filling us in on 11g and O_2 (oxygen, not the stadium formerly known as the Dome) while Gio asks us about how to achieve a robust technical architecture, decent reporting and data security.

Letters

I was very pleased to receive the following email from Jagdev Panesar about Issue 32:

> "Just to say that the latest issue is jolly good – I have marked most of the articles for further reading, which given that we all specialise a lot these days, says a lot about their quality."

Any more comments are always welcome from our readership! We do try our very best to provide you with interesting and useful content, but we do need to hear from you with comments and suggestions.

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A Hard Act to Follow

The Human Side of the ERP Market in 2008

By Satnam Brar, Maximus

Every year The Economist magazine produces a guide to the year ahead, which includes predictions on the movement of key economies, developments in the international political scene and innovations in technology. Given the daunting scope of the task and the capacity of fate to wrong-foot even the most seasoned and intelligent futurologist, it's amazing just how often their predictions become fact. So, inspired by their example we have decided to follow in their footsteps in 2008 and try to provide a guide to the human resource aspect of ERP in the year ahead.

The aim of this guide is to identify what will be the 'hot' areas of ERP in some of the key markets around the world and what opportunities these will create for Oracle specialists and their employers in the coming months. We'll also look at what skill-sets are likely to be most in demand and how this will impact on pay and benefits. Whether our predictions will turn out to be quite as accurate as those of The Economist remains to be seen, but with more years of ERP recruitment experience between us than we'd like to admit to, we think we've very likely got a better chance than most of getting it right.

However, there's an old adage which says that you can't tell where you are going until you know where you are, so let's begin with a quick look through the rear view mirror at 2007.

Across continental Europe, the market for Oracle specialists in 2007 was generally more healthy than it had been in 2006, as a raft of business wins led to new projects and contracts. In Western Europe, both contractors and permanent staff benefited from this upturn, particularly in such mature markets as France, Italy, Switzerland and the Netherlands. However, it was in Eastern Europe that a really visible 'boom' came about as the environment moved from its early hesitancy to an enthusiastic embrace of ERP technology in both the private and public sectors.

Unfortunately, here in the UK the overall picture was somewhat less rosy. The surge of implementations and roll-outs in the public arena, which had kept many ERP contractors in well-paid work for several years, finally slowed and the emphasis shifted from new projects to maintenance and support. As a result, the employment market moved in emphasis from contract to permanent roles, as organisations sought the (possibly illusory) security and financial savings of payroll-based staff. There was a definite feeling throughout the year that organisations considering new projects had adopted a 'wait and see' approach, gathering information on developments and products and services but showing a marked reluctance to take the plunge and actually commission them. The lack of clarity as to exactly what Oracle was planning for PeopleSoft and JD Edwards obviously didn't help resolve this and neither did the sub-prime fiasco which put paid to any plans that large investment banks might have had for large scale projects.

2007 was also a year when the UK government ramped up its long-standing commitment to making life for self-employed contractors ever more difficult and unpleasant. Many of those who had taken refuge in 'umbrella' companies in the wake of IR35 found themselves under fire in the first half of the year as HMRC launched an overhaul of these vehicles, whilst husband and wife companies which had been sharing dividends for maximum tax benefit had an uncomfortable wait for final victory in the seemingly endless Arctic Systems case.

So where do we go from here? The good news for everyone involved in the Oracle arena is that there are signs that the 'wait and see' period discussed earlier is coming to an end. There are, for example, continuing reports of new licence purchases and consultancy wins which will translate into more project work as 2008 develops. Consequently, whilst the current concentration on permanent positions is likely to dominate up until the mid point of the year, expect the number of contract positions at all levels to rise steadily in the second half. In continental Europe we expect a steady flow of work within the public sector as several European governments become more Oracle focused. In the UK, however, this is most unlikely to be mirrored as major projects in areas such as the MOD and the NHS grind to a halt and the whole of the ERP industry will consequently need to come to terms with the fact that its now definitely time to find new, if decidedly more challenging markets. This acceptance that the private sector may hold the key to the future seems to have now been expected by all

the major players. Therefore expect an increasing focus on this area and intensive competition for new work throughout 2008 and into 2009.

2008 is also likely to be the year when emerging markets take on ever growing importance to both contractors and permanent employees. The new economic powerhouses of China and India are obvious examples, but also expect to see more activity in Russia, Turkey and several of the states of the Middle East, particularly the UAE.

ERP specialists with an eye to the future will already have spotted the accelerating trend towards service oriented architecture in a wide range of organisations. No longer content to simply buy a whole package from one supplier, customers are now more interested in cherry-picking the best features from competing providers, resulting in initiatives such as Oracle's Integration Architecture for SAP, launched at last autumn's OpenWorld Conference. Look out for a whole new generation of contractors as a result of such initiatives as businesses and public bodies look for individuals with experience of successfully bolting these bespoke systems together and increasing charge-out rates to match this demand.

Forward thinking ERP professionals will also be taking a strategic approach to skills development and, in 2008 will start to think seriously about an event that is still likely to be several years away – the launch of Oracle Fusion. When this is actually going to happen is still up for debate and, given the roll-back of the dates for closure on JD Edwards and PeopleSoft is likely to remain so for some time to come. At the same time there are plenty of doom-sayers about forecasting that the whole thing could end up being a damp squib. However, our own sources tend to suggest that Fusion could be very big indeed and those ERP specialists who have already managed to gain access to its development have been extremely impressed. The lesson seems to be a simple one – if you can find some way to get experience of Fusion, even in its most embryonic form, then grab the opportunity with both hands.

The ability to sell yourself, to network, both in person and virtually, and to build ongoing relationships with past and potential clients and recruitment consultants will grow in importance. And, perhaps most important of all, savvy ERP specialists will get the message that technical knowledge is only one part of their toolbag. What clients will increasingly look for in coming years will be individuals who can communicate effectively with non-IT managers and professionals and who instinctively understand the context in which systems and packages operate and how they can make an organisation more profitable or more cost effective.

> "...good people with a consistent record of delivery will continue to be in demand, both in the UK and across all other key markets."

So, will 2008 really be much different to 2007 for the average Oracle specialist? If your skill set is light or you have specialised narrowly in a sector, such as investment banking that is more exposed than others to the effects of the 'credit crunch' then, yes, 2008 could be more challenging than its predecessor. Or for that matter if the whole UK economy falls off a cliff – as one of our clients, Paul Gillott of HRMS consultancy, Symatrix neatly puts it, "It's all down to the confidence of the man and woman in the street." But otherwise, for the majority of professionals within the arena the answer is very likely no. The whole ERP sector will continue to feature in the much touted 'war for talent' and good people with a consistent record of delivery will continue to be in demand, both in the UK and across all other key markets. In the UK itself, the pressure engendered by staff shortages may be alleviated slightly by the new points system for non-EU migrants, but it is unlikely to produce queues of unemployed Oracle specialists at Jobcentres anytime soon. What will continue to change in 2008, however, is the way that they find and remain in work.

About the Author

Satnam Brar is the founder and managing director of specialist Oracle recruitment consultancy and Oracle partner, Maximus.
The firm works with individuals and organisations on permanent and contract assignments, both across UK and in key markets around the globe such as the Middle East and continental Europe.

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Introduction to Oracle User Productivity Kit (UPK)

By Peter McClintock, Larmer Brown Consulting

Oracle's User Productivity Kit is perhaps one of the less well known of the Software Products on the price list, however just a brief consideration of its name indicates that it may be of considerable value to organisations. We invest significant money and resources in the purchase and implementation of software applications but do we realise, in practice, the levels of productivity that we would like to have and that will bring the full return on our investment?

Information from the industry analysts tells us that most of the problems relating to application implementations are, in fact, user related. Butler Group recently reported that 70 percent of CRM implementations fail, and a Gartner study also found that approximately 55 percent of all CRM projects fail to meet software customers' expectations.

In his article on why CRM projects fail, Rajiv Chaudhry, a leading analyst, quotes: "You can design the best process in the world, and back it with the latest and greatest technology, but if your people don't buy into the project, it won't work."

User acceptance isn't the only problem affecting project success; there is also the very basic problem of user competence to use and get the best out of the system. According to Meta Group, 76 percent of Users have a failing or substandard understanding of new systems software.

Well here we have UPK, something that claims to be a productivity kit for our users. Does it do what it says on the tin? Will it help us address these user productivity issues? If so, it is something that we should give attention to? Let's open the kit and see what is inside and how it can help us.

UPK is a software tool that can capture all the steps in a system process. It records every keystroke, every click of the mouse, each menu option chosen and each button pressed. All this is done in the UPK Recorder by going through the transaction and pressing "printscreen" after every user action. From this, without any further effort from the developer, UPK builds a number of valuable outputs.

The most significant of these is the UPK Player Package. This is an HTML based simulation of the application process that operates in 4 modes.

See-It Mode is an automated simulation of the process that can act as a demonstration of the system. It is valuable in the change and communication activity, to demonstrate the system. Usually the final system is not available and access to it is not practical at roadshows and other events. The See-It mode simulation can be played from a USB stick on any laptop with Internet Explorer running. It can, therefore, be easily taken on the road to demonstrate the system in its most favourable light.

Figure 1: See It Screen Capture

Because UPK uses a discrete recorder, it only captures the intended and necessary user actions and therefore can play back the transaction with absolute precision and no user errors, mouse jitters or other extraneous elements that can detract from the demonstration. Presenting the application in a clear and uncomplicated way, in a demonstration that can be repeated with absolute certainty every time, is important to the users first view of the new system. You do not get a second chance to make a first impression (see Figure 1).

Try-It Mode is also a simulation of the application, but this time the user must interact with the simulation, completing all the actions required rather than watching it run unattended. This mode is most valuable in training; in the classroom or in a self-service learning context. Try-It Mode guides the users through the process, telling them what action to take and highlighting the area on screen where the action is to be performed, at every step through the transaction.

Using Try-It Mode is of great benefit for training, as the same exercise can be trained over and over without the risk of altering the data in the system and causing subsequent operations to fail. It can make the classroom training much more efficient, as when the users are doing the exercises the system is helping them with guidance, freeing the instructor and making the whole exercise more efficient. In addition, it is not necessary to cover every transaction that the user will need during the classroom course, as once users have become familiar with the concept of using UPK for learning, they will be happy to learn further transactions on their own.

The system has usage tracking as standard so it is possible to see which users are making use of the system, in which modes and, if they are using Know-it mode, what their scores were.

The fourth mode of the UPK Player Package is Do-It Mode. This is for Performance Support rather than training. In this mode the user is working on the live application and UPK is hovering in the lower right of their screen, providing visual instruction, in the form of a small video simulation, and written instructions guiding them step by step as they perform their work on the live system.

This Do-It mode performance support is instantly accessible from the application help menu or a Smart-Help button on the browser. It is context sensitive and, by recognising the screen that the user is on, will offer only the appropriate help for that step of the process (see Figure 2: Do It Screen Capture).

When users are shown Do-it Mode as part of a Change and Communication event, or in the classroom, it significantly increases confidence in their ability to use the system and, as a consequence, they are much more positive about the introduction of the new system.

It is, of course, important to provide users with more information than just how to follow the steps of the transaction. UPK provides many facilities to include a wealth of other information in the simulations. Information and explanations can be included at every step of the process. This can be achieved by incorporating additional material or by linking to pre-existing material. For example, on an i-Expenses screen it may be useful to link to the organisation's travel policy or to some relevant section of it.

Incorporating this information is the work of a UPK development team. UPK content development is a skilled job where, in addition to recording the process flow, the best and most relevant support information is linked in at every step.

From the above you can see how the UPK Player Package can improve user productivity and reduce project risk significantly, if used in an experienced and intelligent way. However, UPK does more than it says on the tin. As well as improving user productivity, it can significantly improve project team productivity. This is because all the information recorded and linked in is extremely valuable across the project lifecycle when output in other appropriate forms (see Figure 3, opposite page).

> "Using Try-It Mode is of great benefit for training, as the same exercise can be trained over and over without the risk of altering the data in the system."

One of the difficulties with large training rollouts is that there may be a time gap between the classroom training session and the users' first time to use the processes after go-live. When UPK is readily available on the system, this ceases to be a problem because they can refresh their knowledge using Try-It mode in UPK.

But how do we know if our users are really learning the system? This is where the third mode of the UPK Player Package comes in. Know-It mode allows the user to go through the process without the on screen guidance. Instead, the system tracks their actions, warning when they stray off course (the system is smart enough to allow alternative ways of navigating the system, such as using the mouse to negotiate the menus or the keyboard shortcut). If the user makes further incorrect attempts, Know-It mode will give more remediation, eventually completing the step for the user. The rub for the user is that at every incorrect action their score is reduced, potentially causing them to fail the test.

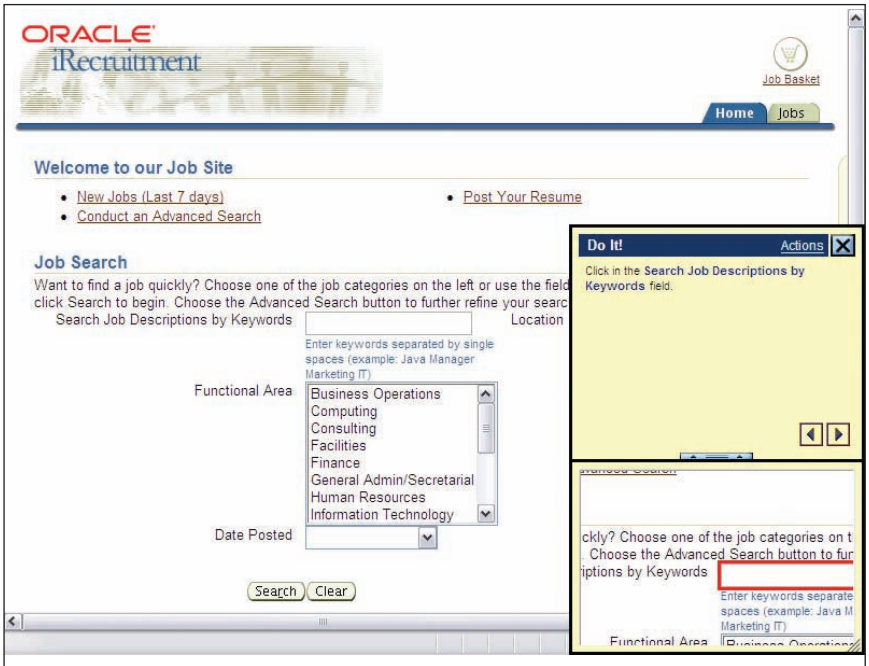

Figure 2: Do It Screen Capture

UPK can directly output Business Process Documents, which are a specification of the transaction. These can, in many cases, be a requirement for compliance and a critical part of the system specification that is often overlooked in a busy project implementation, or created retrospectively as an after thought.

UPK can also output Test Scripts, either to support UAT or the System testing activity. It can generate scripts ready to be input directly to HP Quality Centre.

Finally, UPK can output Instructor manuals, student guides and quick reference cards directly from the same single recording exercise. The efficiency that can be gained across the project is obvious in terms of a single recording and development exercise supporting so many project activities. UPK could be financially justified on the generation of test scripts alone for a medium to large implementation.

I have sought to show that UPK not only does what is promised, but in fact brings many more benefits if used early in the project, and across the project lifecycle. It addresses the most critical, and often neglected, areas of user acceptance and user competence (see Figure 4 below right, Project Lifecycle).

Like all powerful software tools, it is best used by experienced developers who know how to set up and manage a content development project and how to create good quality UPK content. In subsequent articles I will cover aspects of how to approach a UPK development project. I will also discuss key considerations when planning the implementation of a UPK development project such as how many developers will you need? When should you start development? The establishment of UPK development standards and other important activities.

If you have any questions about UPK, or any aspects of its adoption, please direct them to the Editor, editor@ukoug.org.uk and we will aim to answer them for you in future issues of the magazine.

Figure 3: Single Authoring Session

> "The efficiency that can be gained across the project is obvious in terms of a single recording and development exercise supporting so many project activities."

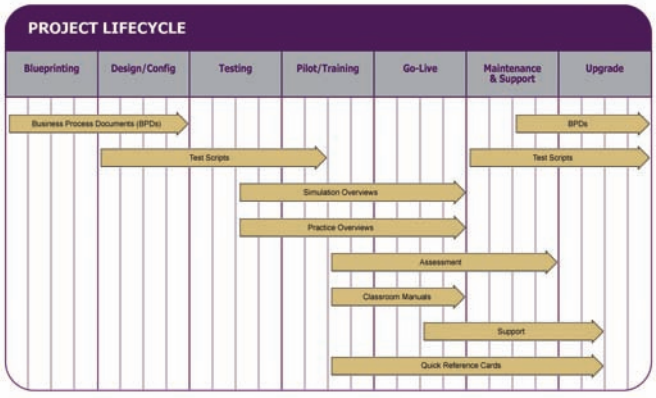

Figure 4: Project Lifecycle

About the Author

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Oracle Customer Relationship Management for Tourism Industry

By Shery George & Vijay Kumar, Inatech Solutions Limited

Oracle Customer Relationship Management (CRM) is built on an open, standard-based architecture which streamlines business processes, improves data quality, and allows all key divisions to draw from the same source of data. This article explains how Inatech simplified one of its customer's highly complex data structure into readily usable value added information using Oracle CRM.

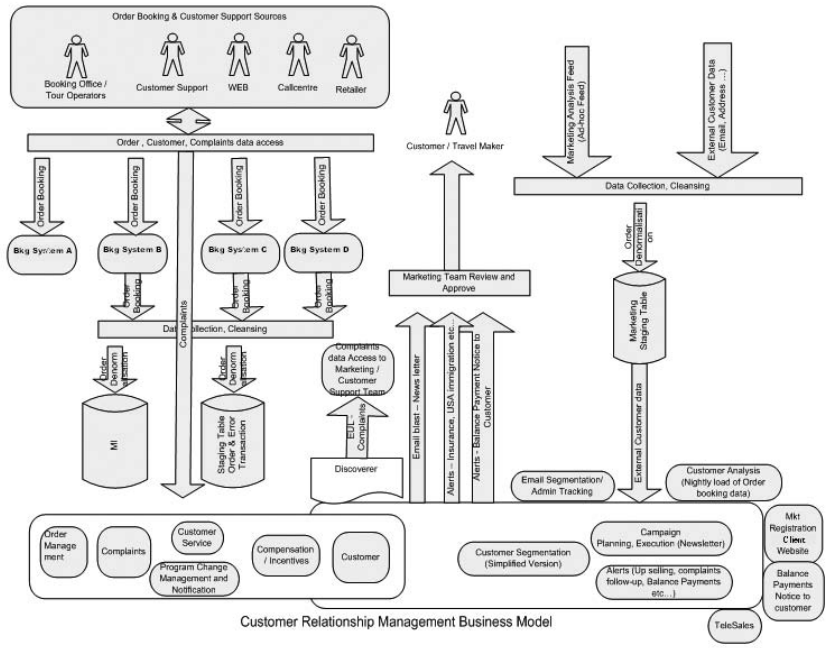

Figure 1: shows the Customer Relationship Management Business Model

The Client

The Client is a leading global tour and travel operator, operating throughout the world providing diversified services such as airlines, cruises, travel insurance and hotels as part of their tour packages. The client was using a very complex IT System, and the complexity was compounded by the fact that the different brands (acquired by the customer during its high speed growth) used different systems to capture travel bookings and enquiries.

Figure 1, above, shows the Customer Relationship Management Business Model for this customer.

The main systems used at the start of the project were:

MI:	Financial Analysis System.
Bkg System A:	Booking System for 3 Brands (Different divisions geography wise within Customer group).
Bkg System B:	Bookings System for 9 Brands.
Bkg System C:	Bookings and Enquiry system for 2 Brands.
Bkg System D:	Travel Booking Management systems used by resorts.

Prior to this project, Oracle CRM had been implemented to cater for the following functional activities:

Handling of Customer complaints about travel

– Capture
– Communication
– Resolution
– Compensation

Management of changes to travel programme

– Programme Change
– Communication
– Interface to Source System for Customer Response
– Compensation

The Oracle CRM system was maintained by a CRM Team at the client site. However, the CRM Team lacked knowledge of the Marketing Application which would allow them to expand the CRM horizon. Inatech's challenge was to undertake various CRM initiatives to provide better business value from their investment in the Oracle CRM product.

Key Initiatives undertaken were:

- Ancillary Marketing using Oracle Marketing Online
- Interface to and from a front end sales support system
- Customer Classification Module for rating of customers
- Interface from an additional booking system to Oracle CRM

Key Issues & Inatech Solutions

The client was using Oracle Marketing Online as an automated email blast tool for newsletters and balance payment reminders. The involvement of the business in Oracle Marketing was limited to as little as 1% of the Oracle Marketing functionality.

Inatech conducted workshops with the business users on various elements of Marketing as a core part of the business, as well as on usage of Oracle Marketing Online. After two months of investigation, Inatech proposed, designed and implemented an ancillary Marketing

solution via Oracle Marketing Online, using Customer and Transactional Information captured in CRM.

The stages we followed were:

- Data Flattening Exercise

  Customer Booking Details in CRM were loaded into Oracle Order Management on a nightly basis from a variety of source systems with varying structures. The customer travel booking contained multiple lines of information, including accommodation details, transport details, passenger details and a travel plan. This made it difficult for the business to analyse and segment customer and bookings data. Data flattening was undertaken to summarize the data and to provide a uniform single row view for customer travel details.

- End User Layer for Target Group Research

  Using Oracle Discoverer, an End User Layer was created to provide the client's customers with easily comprehensible and accessible views of their bookings. The EUL provided the business with a tool to run analytical reports to determine trends of customers and holiday package sales. Importantly, it provided the client with a user friendly tool to assist in identifying customer segmentation rules for campaigns.

- Automated Email and Direct Mail Campaigns

  Inatech designed, planned and implemented campaigns, using the Campaign WorkBench module, set up to be specific to each brand of the Client. This client is the only Oracle Site in UK where direct mail print campaigns are run. Direct mail campaigns are run via Oracle Fulfillment Server and Oracle Pasta Server for Printing. These campaigns have resulted in significant revenue increases

- Tool for Measuring Effectiveness of Marketing Campaigns

  The client was using the Oracle Marketing Metrics module, which did not cater to the required functionality as Sales were made external to the Oracle System. The reports provided key information such as revenue generated, margin and ROI. In order to analyse the revenue generated as a direct result of a campaign, the mapping engine is run every night and it identifies bookings (Holiday and Ancillary Sales) which are a result of campaigns. This engine also captures the key attributes of campaigns such as customers targeted, contacted and who have responded.

- Interface to Front End Sales Support System

  A Front End Sales System was designed, developed and implemented, by the Client's IT team, with assistance from Inatech Team, as a light framework on the thin client for easy accessibility of modules for agents, shops and call centers. The requirement for the module arose from the fact that Oracle CRM is a single data hub for customers, and there was a risk in bookings being exposed to above mentioned users as the users had low end pc's and low performance processors and were outside the intranet. The System was designed to mitigate these constraints.

  The Front End Sales System provides a comprehensive view of customers, holiday bookings and their ancillaries, but in a format which is easily readable for agents, shops, and call centres. In addition, System provides a simple tool for capturing customer enquiries about holidays. Users could potentially also update their customer information in the System.

  Inatech was involved as CRM Expert in providing an Interface between Oracle CRM systems and the Front End Sales System.

- Customer Classification Module

  The Customer Classification module was proposed to the client during the initial stages of the project as a key module to assist in providing better service to customers and also for highly targeted marketing campaigns. The business requirement for this was quickly accepted and the module was implemented towards the end of March 2007. This module allows the client to categorise customers with different ratings, such as Gold/Silver for each brand.

Benefits to Client

- Inatech simplified the highly complex client's data structure in to readily usable value added information.
- The client can now segment its customers based on the number and types of trips or the holiday destination preferences of the customers and can more intelligently advertise and launch specific marketing campaigns.
- The client is now able to respond quickly to evolving customer attitudes and ensure they provide the relevant product/ package to the customer.
- The client now has full control and flexibility for directional selling thus reducing the reliance on third parties.

About the Authors

Shery George works as a Senior Consultant with Inatech and has more than 9 years of aggregate experience in implementing solutions around enterprise applications. He is also the Solution Architect for Enterprise Application implementations and has worked on various projects across the globe.

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Vijaya Kumar works with Inatech as a Senior Project Architect. He is an Oracle Certified Professional (OCP) with more than 7 years of cumulative work experience. He has relevant expertise in E-Business Suite modules like Sales, Marketing, Service, Contracts, iStore, Order Management, Advanced Pricing, Inventory, CDH, DBI and Trading Community Architecture Model (TCA).

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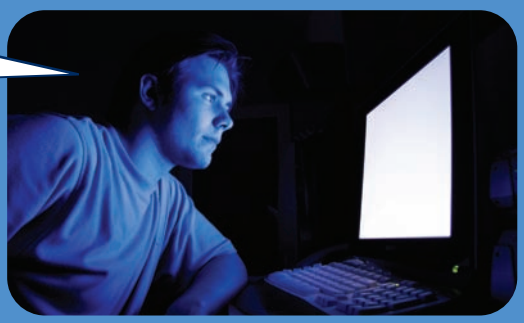

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Attaining approval for a Services Oriented Architecture Project

The promise of Services Oriented Architecture and the associated benefits of web services integration and process automation using the BPEL standards has the potential to deliver a great deal for an organisation. However, the hardest part, as we all well know, is achieving any sort of backing for a project to deliver these benefits. To many of us this is a "no brainer", but to many executives, including General Managers and CIO's, the term SOA is still a mysterious black hole and unknown to many.

As Oracle and other vendors propose, SOA is a journey. It is a journey that must be undertaken one step at a time. Oracle's SOA maturity model suggests that the first step is on quick win projects and then the organisation progresses onwards along the maturity path until it becomes a fully integrated part of the culture of an organisation. Further, the SOA implementation model also suggests a cyclical approach to implementation including the following steps:

- Model and Capture
- Integrate and Orchestrate
- Develop
- Deploy and Manage
- Govern
- Monitor

Each of the above process steps presents its own challenges for the organisation. Does the first project for quick wins really need to address all of the above steps?

Having recently undertaken a project to implement a SOA proof of concept, I'd like to share some of our learnings for others who may be contemplating a similar journey.

- Create a vision through the business case – spend time educating the Management team of the benefits that can be attributed from the implementation of a SOA based solution and the fact that it's a journey not just a single project.
- Identify a quick win pain point – select a process that is not too visible to the business but will prove all the elements of a SOA solution. We selected an automated form for application access to Oracle Financials with integration into Oracle, Active Directory and HP Openview.
- Cover off the develop and deploy and manage parts first – focus on delivering a working solution rather than implementing the entire cycle.
- Position the first project as a proof of concept – allow funding for an R & D type of delivery for experimentation and to manage the expectations that more projects will need to follow.
- Don't make it too complex – a simple and effective process will provide the concept of web services, BPEL and ESB more easily than something that is highly technical and will take more time to deliver.
- Architect the solution to suit the organisation – a combination of Microsoft, Oracle and IBM technologies is entirely possible and can be used effectively to their advantages.

Above everything else, no matter what people tell you, the implmentation of a SOA solution is not easy and requires lots of initial pain to change the mind set of a number of people including executives, managers and IT staff. However, the benefits will outweigh the pain.

Mark Jermolenko has over 10 years of Project Management and consulting experience in the area of Oracle E-Business, Oracle Middleware including SOA and other related technologies spanning government, financial services, manufacturing and retail sectors.

Oracle Workflow with Oracle Applications

By Steve Gaffney, iTrain

This article examines the interaction between Workflow and Oracle Applications. It gives a brief description of what Workflow is and its many component parts; and then examines how it sits within an environment using the E-Business Suite. This article is aimed at a non-technical audience, even though some of the subjects can be very technical in nature; anyone using Applications should find something of interest here.

Oracle Workflow is a complete management tool, used to define and automate your business processes. Workflow is used to route information and ensure the right people receive the relevant information. It can provide each person with all the information needed to take actions, to send and respond to notifications through a browser or standard e-mail systems and include customers, suppliers and prospects in your process flows.

This functionality is very useful within Oracle Applications. It is embedded throughout every module, automating thousands of everyday tasks and allowing these, and the decision making process that goes with them, to be effectively monitored and maintained – without necessarily having strong technical skills.

However, what occurs when the out-of-the-box result is not what you actually need? What happens when you require messages to be sent to a different person, or your needs change when different situations occur? This article examines some of the issues arising when customising seeded workflows, looking at some of the strategies available, and also what you can and cannot do.

Concepts of a Workflow

A Workflow consists of numerous processes. Workflow processes represent business process flows and information routing. Process rules are defined by Oracle Workflow and each process contains a set of activities, which can be PL/SQL stored procedures, Notifications or other sub processes. If business information is not routed to the appropriate individual or group of people, then business processes are obviously less efficient.

Flows within the Business Process can take various paths, using the following:

- Parallel Flows – Allow business processes to flow simultaneously. Determine which, if any, process flows must be competed before moving onto the next step.
- Decision Points – Choices are made and the flow branches off accordingly
- Loops – A Process flows back to an activity completed earlier

Oracle Workflow Components

Oracle Workflow should not be viewed as a single entity application. It consists of several key components, which the user requires knowledge of to implement and use Workflow effectively. The main Workflow components will be detailed below.

The diagram below shows how the main components fit together in the Workflow architecture (see Figure 1).

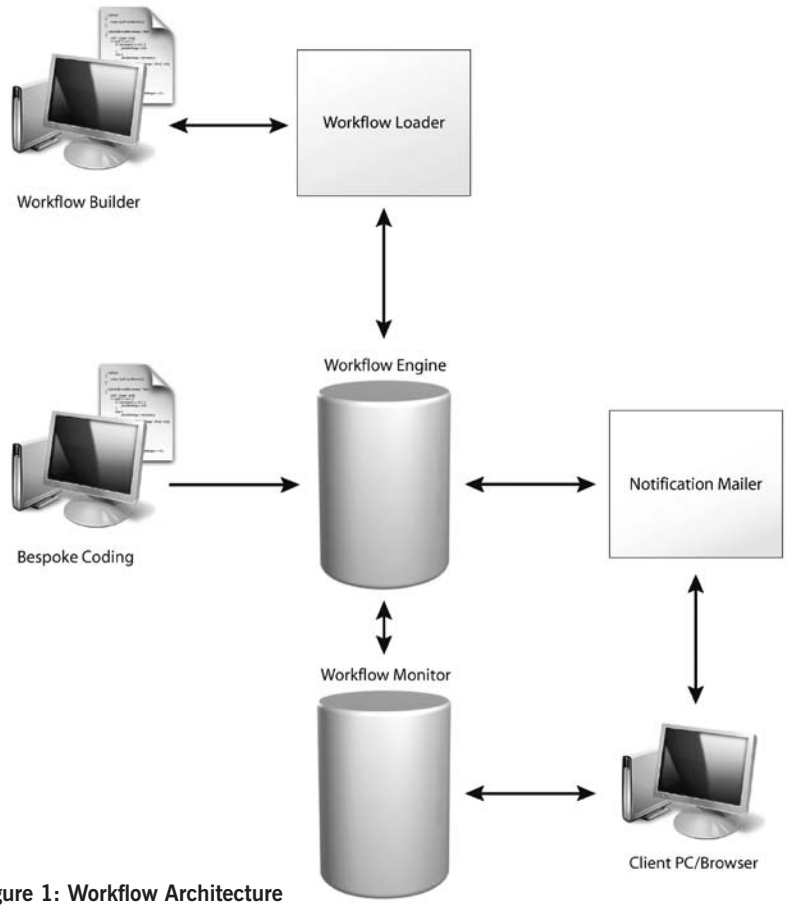

Figure 1: Workflow Architecture

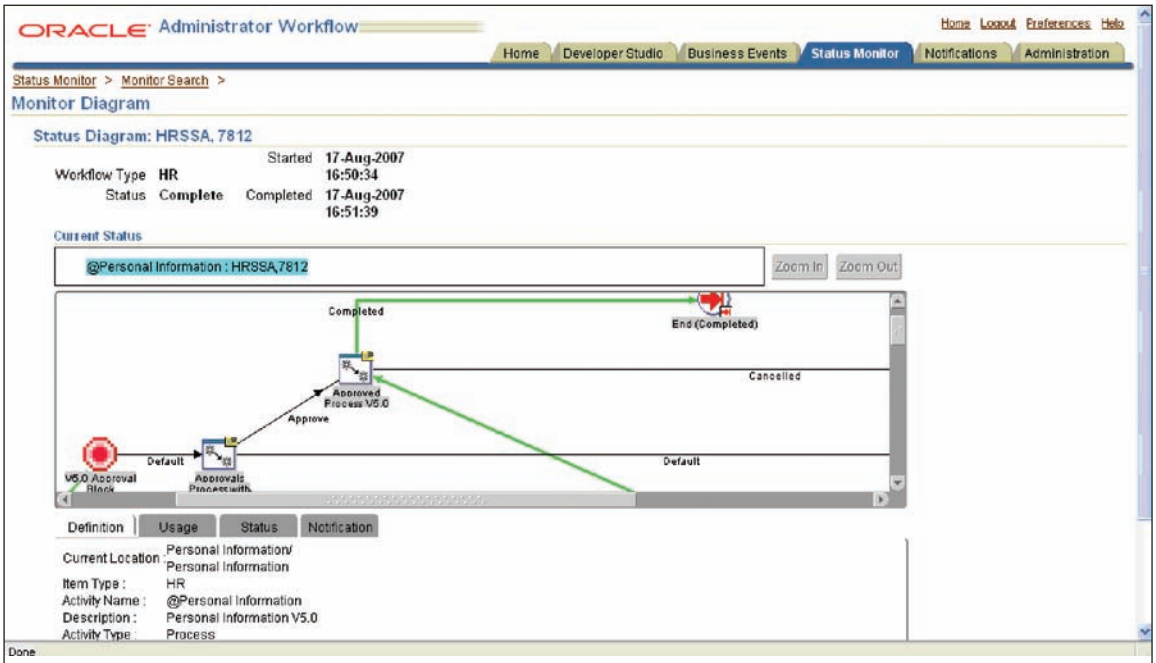

Figure 2: The status monitor under the Workflow Administrator responsibility.

Monitoring the Workflow

As the workflow process moves through the activities, it is likely that the user will wish to check its progress. All this information is held in tables in the database and can be accessed in several ways. The main method of viewing this progress is to use Oracle's Workflow Monitoring application, which is a web tool that can be accessed through a browser. This is used by Oracle Applications and can be accessed using any Workflow responsibility through the 'Status Monitor' link. However, as information is being extracted from database tables, it is also possible to design a custom built monitoring process using Oracle Developer or a HTML/JavaScript type application (see Figure 2 above).

Oracle Workflow Builder

Workflow Builder is the most visible of the Workflow components, as it appears as an application icon when Workflow is installed. This is a separate install from Oracle Applications, and is required to modify or create any workflows. It is a graphical tool that allows workflow processes to be created, altered and viewed. The builder will save the created workflow structures as either flat files or as database entities.

The application itself contains very little intelligence as the workflow can be designed without any coding structure being put in place. The builder can therefore be used as a method of top down design for business processes, just designing the flow without any actually performing tasks.

Workflow Loader

To be able to use a workflow designed in Workflow Builder, the flat file must be loaded into the database using the Workflow Loader program. This is a standalone application, although in most cases it will be launched from the Workflow Builder.

Workflow Engine

The Workflow Engine is an application embedded in the Oracle database, and is installed with Oracle Applications. It is a rule-based program that consists of several types of database objects including:

- PL/SQL Packages
- Tables
- Views

Using defined workflow rules, the engine co-ordinates and controls the activities in a workflow, for example if the result of a check is false, send a message to user1. The processes through a workflow use a set of PL/SQL or JAVA API's; these are libraries of supplied code that are used by the Workflow Engine.

Extending the Coding

Most customised, or stand-alone, workflows will require coding to be provided by the developer for the activities defined; for example, a procedure to check if the value for an expense claim entered is greater than £20. This code can consist of procedures, functions or packages developed in PL/SQL, or functions created externally from the Oracle database and imported. Oracle Applications contain many APIs that perform these tasks, some of which can be edited.

The actual activities that constitute an individual workflow are described below.

Item Types

This is the name provided to a grouping of all of the workflow components. It is a key component of the workflow and is used as a reference in the Workflow Engine. These are the top level workflows that come shipped, and it is these that are launched when something occurs – for example – raising a purchase order.

"To be able to use a workflow designed in Workflow Builder, the flat file must be loaded into the database using the Workflow Loader program."

Processes

A process is the name given to a group of related activities within an item type. This is where the diagram of the workflow is created. The item type can consist of several processes that may be sub processes of a master process.

Functions

A function is a call to either a stored PL/SQL procedure or external program code. Hundreds of these are shipped with Oracle Applications, but they can also be written stand-alone by a developer. There are standard templates to create this code that come shipped with Oracle Applications, but quite in-depth PL/SQL knowledge will be required in order to use these.

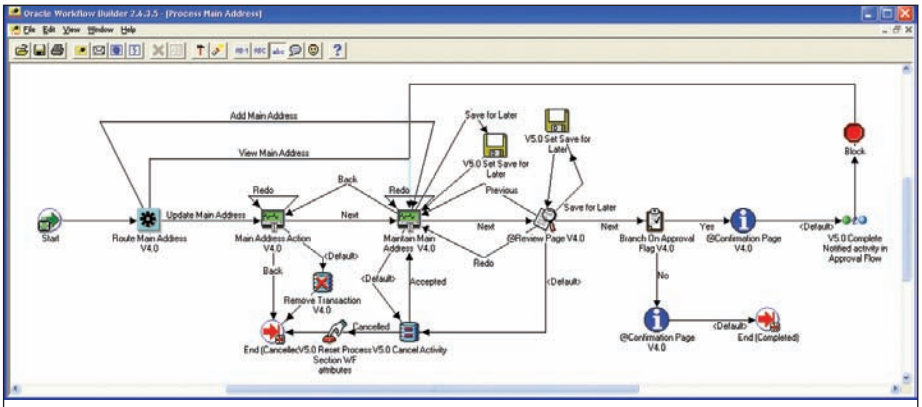

Figure 4: The process diagram within Workflow builder. This is just one of the many sub-processes that make up the HR workflow.

Notifications and Messages

A notification is the act of sending a message. This can either be set up to use standard email, or the functionality within Applications can be used, with the messages arriving as objects in the user's worklist. These are the most common things to be customised within Applications.

Attributes

These are items that hold either static or dynamic values that can be referenced in both code as well as other items in the Workflow Builder; they are similar in nature to variables within PL/SQL. They are very versatile and are very important within workflow; for example an attribute could be created to hold a purchase order number, a user name or even a web page.

Lookup Types

These are items that contain static lists of values, for example True and False or Yes and No etc. These lookups can be used by activities and messages to allow the transition to the next activity. A function may need to return either true or false, therefore the result will be associated to a defined lookup type. These can also be used to determine the direction the process will take.

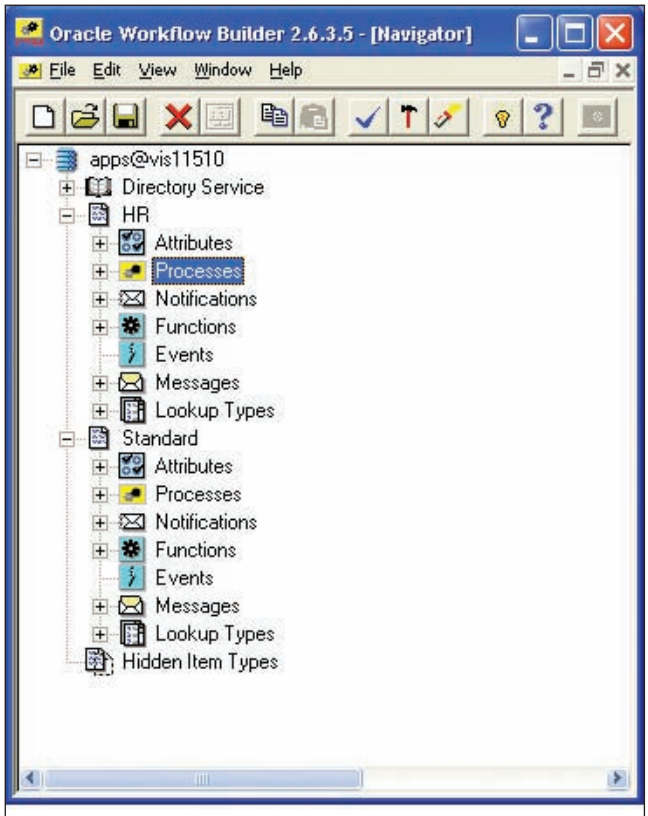

Figure 3: The Workflow Navigator, showing The Main HR Item Type.

Standard Activities

Many activities (functions, notifications and lookup types) are shipped with the Standard item type. These are heavily used within all processes and can be very useful to the workflow developer (see Figure 3, left).

Applications Integration

When Applications is installed the workflow cartridge is shipped with it, including everything required for the workflow engine as well as hundreds of seeded workflows, PL/SQL APIs and various users and responsibilities. These are not only stored on the database, but they also come as flat files stored on the server.

All of the Oracle modules will use workflow in some way; some processes are as simple as a

Start -> perform task -> end

but others are incredibly complicated, interacting with various item types with many processes spawning various sub-processes in different circumstances. However, whether simple or complex, they *should* run in the background with little or no interaction with any user, except that of responding to notifications (see Figure 4, above).

> "...the required changes can be found on Metalink, but they are often not intuitive, so careful testing will have to be done ..."

Strategies for Customisations

Firstly, what can you customise?

This is an interesting question; since there are so many different components to workflow and it interacts with many other products, there are various possibilities here. Let's first look at Workflow builder.

All objects within an item type have an Access Level. This is in place to protect objects against customisation. There are various levels available, but basically, if the Access level is set to 1000 then the object is public and may be customised by anyone. If your access level is greater than that of the object then you will see a small lock on the icon for the object in the Navigator; this denotes that it is read only. There are ways around this, as objects set to other Access levels *are* customisable, but this will not be supported.

Another component that can be customised is the PL/SQL APIs. Obviously this is something for an experienced PL/SQL developer to deal with as, although most of the actual code is relatively straightforward, there is an awful lot of it and it can become very difficult to keep on top of. Again, there are different types of APIs and, thankfully, they are named in a helpful way. A good example is for the Self Service HR workflows; there are three main packages:

HR_APPROVAL_WF
HR_TRANSACTION_SS
HR_APPROVAL_CUSTOM

Unsurprisingly, the package with CUSTOM in the name is the one that is customisable. You will find within these packages sections saying:

--Insert your Custom Code Here

This gives you a good idea of where to put your code! I'm not suggesting that this is by any means an easy option when customising workflow, but it may be required. This is obviously a job for an experienced PL/SQL and Workflow developer.

A third component that could be customised is within the application itself. This would require experience in System Administration, as the function that the forms call references specific item types and processes. If you had your own customised process that you wanted to call instead of the seeded workflow, you would have to specify it here. This can also be required in other situations as there are different versions released of certain item types that return different results, and so this method has to be applied in order to launch the correct one.

Each of the above methods requires some level of technical knowledge. There are also ways to customise processes that Oracle suggests that need very little technical experience (although they still require Workflow Builder to be installed). The key to this is a good understanding of workflow attributes. I have already stated that they are similar to standard PL/SQL variables, but they are also much more versatile. Not only do the attributes hold various pieces of information, they also have values that can be changed in different circumstances.

As an example, below is the property screen from one of the attributes in the HR Self Service workflow that deals with changes to the employee's basic details. This specifies how many levels of approval the workflow will travel through before the result becomes approved. The "Value" is the key here. If set to 1, then the workflow will only require approval from the employee's immediate supervisor; if this is approved, then it will continue on with a successful result. However, if left at 0 (the default setting) then the notification will be sent to the employee's immediate supervisor and then, after approval, it will then go on to the next supervisor in the hierarchy and so on until the very top level is reached (see Figure 5 below).

These small details will have a large effect on the running of any system. For each module, the required changes can be found on Metalink, but they are often not intuitive, so careful testing will have to be done in order to ensure the correct results will occur.

In summary, customising the seeded workflows within Oracle Applications is a very complex area and great care must be taken when starting on a project such as this. The above is only a very brief insight into some of the possibilities available, and a great deal of knowledge is required in order to successfully change the outcomes that come as default. However, it is not impossible, and since Workflow does run through Oracle Applications in its entirety, I believe it is a subject well worth getting involved with.

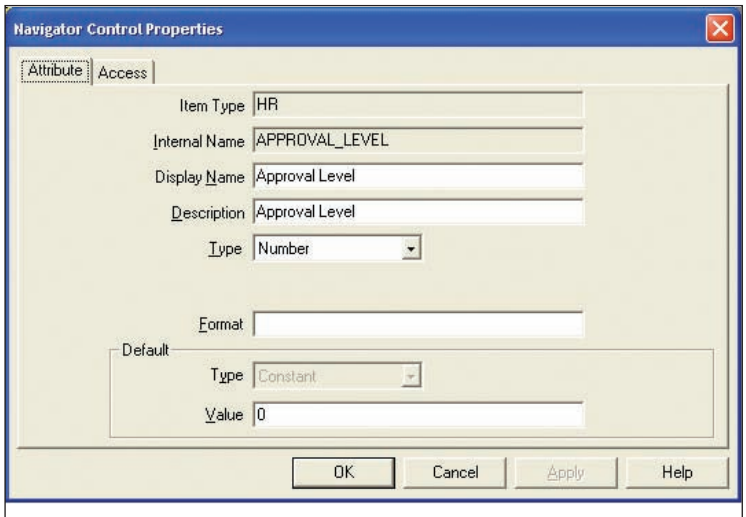

Figure 5: HR Self Service workflow

About the Author

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Live on Release 12!

December 3rd, 2007 by David Kelly

It's been a while since I last posted an entry on this blog but I have an excuse! Over the past 2 months I have been frantically managing Release 12 UAT, logging issues and service requests, documenting training materials, delivering end user training, and finally releasing the system to the users for the first time today! Yes – we are now LIVE on Release 12!!

For anyone that has gone beyond reading about the new features and have actually tried to use the Financials modules in a real working environment, you will already be aware that not everything is rosy in the R12 garden. Although we are officially live, the next 2-3 months will be spent sorting through the remaining issues in an attempt to bring the applications up to the standard demanded by the user and management communities. As with any new implementation, a lot of effort will also go into reducing anxiety levels around the company as people come to terms with using Oracle for the first time.

Although the entire project life cycle was completed within 9 months – which is quite a big achievement – we are perhaps only 80-90% operational. In our internal issue tracking system we managed to log approximately 250 issues across the various modules – 50% of which are still open. Out of those remaining open issues, 40% are critical, 28% are major, and 32% are medium or low priority.

On a project of this scale, it is certainly unusual to go live with so many open issues – especially with many of them classed as 'critical'or 'major'. The project management team has argued that certain issues are not as serious as first reported and took the decision to focus resources on core areas that are fundamental to the business, such as generating sales invoices and making payments. There were also major business and financial reasons why we had to go live on this date and the executive committee made it clear that not going live wasn't an option.

While it's very easy to criticise the failings of Release 12, the success that has been achieved in such a short space of time is remarkable. In summary, we have managed to implement Payables, Assets, Purchasing/iProcurement, iExpenses, Receivables, General Ledger, Cash Management, and HRMS across 3 countries.We have 4 ledgers, 6 operating units, and a whole load of new functionality that everyone has had to dissect and understand very quickly. In total, 1100 users across the Asia Pacific region now have access to the applications. Every employee will use HR Self Service to apply for annual leave; every employee will have the ability to submit an expense report, and every employee has the ability to submit a requisition or purchase order (yes you read correctly!).

The next step is to repeat this all over again for another 6 countries. Yes, the job is only part completed but there are plenty of lessons to be learned from this experience that can be applied to future phases of the project. It's certainly been an amazing journey for me and if anyone is interested to know more about the experience, I am more than happy to take discussions offline.

Dave Kelly

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David Kelly has over 10 years of Oracle E-Business implementation experience spanning financial services, manufacturing and retail industries across Europe, Middle East and Africa (EMEA), North America, and Asia Pacific.

Oracle Data Integrator: Enabling the Transition to SOA

By Douglas Stevenson, Eclectic

Oracle Data Integrator (ODI) is a recent addition to the Oracle Business Intelligence product set (subsequent to the acquisition of Sunopsis in 2006), and represents a powerful tool that will form the cornerstone of the Oracle Fusion data integration strategy. This article will review the web service features of ODI and discuss how they can be used to develop and deploy a 'data service' layer that will prove critical within a Service Oriented Architecture (SOA).

In this article, we will use the example of an organisation actively involved in the transition to SOA. This will allow us to demonstrate how an existing data integration environment can be built upon to create the SOA data service layer. This layer provides all data integration functionality, including transformational, bulk data processing and transactional services that will constitute a solid foundation for the entire SOA initiative.

What is SOA?

SOA is a design approach that accommodates the free exchange of data between 'loosely coupled' applications. This is achieved through the creation of a number of services, each of which exposes key application functionality. Whilst SOA is not intrinsically linked to a single technological approach, web services based on industry standard communication protocols have emerged as a key enabler. Web services are comprised of a number of well established technologies including Extensible Markup Language (XML), Web Services Description Language (WSDL) and Simple Object Access Protocol (SOAP).

The above standards provide a layer of abstraction, negating the need for deep technical linkage hard coded within each application. This allows services to be rapidly combined to create composite business applications, providing the responsiveness to adapt to market opportunities and changing business requirements.

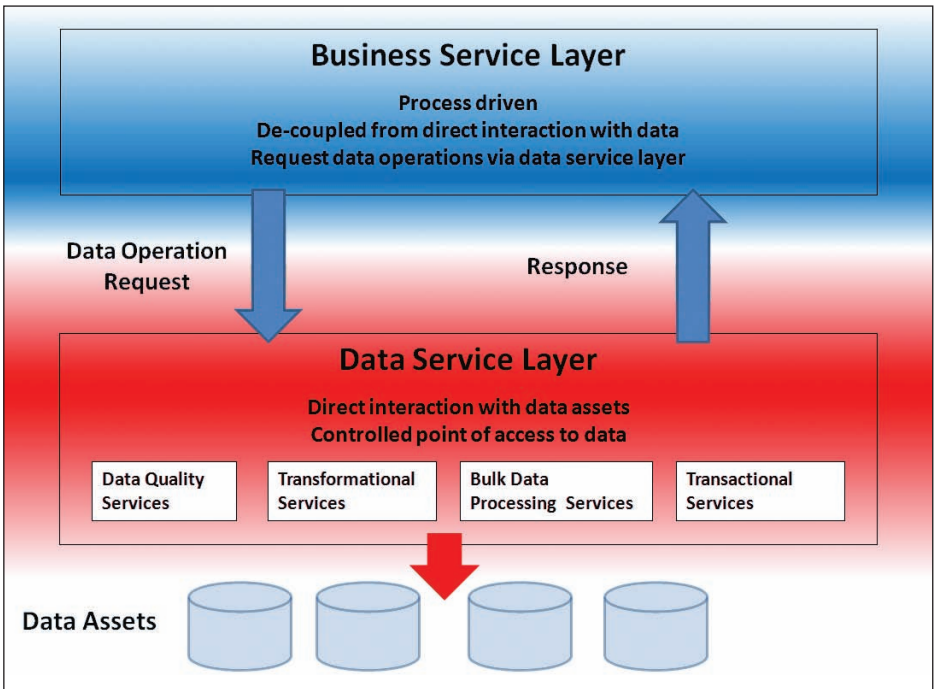

Figure 1: An overview of a Service Oriented Architecture containing a Data Service layer that facilitates all direct interaction with organisational data assets.

The modular nature of services also maximises the return on investment as development time and maintenance costs are dramatically reduced due to the re-use of services across multiple applications.

SOA and Data Integration

SOA has emerged as a potential solution to the architectural challenges facing many organisations, providing the flexibility required by the modern enterprise. However, there is an obvious worry as to how data access and usage will be controlled in such a flexible and abstract environment.

SOA increases the requirement for a coherent and well developed data integration strategy, as opposed to negating it. Data access, manipulation and usage may well be hidden deep within the application code of each service, making governance and administration enormously complex. Data objects can be utilised differently across applications, increasing the potential for inconsistency, misunderstanding and misinterpretation of results. These are exactly the challenges that are addressed by data integration. Therefore, it is of critical importance to understand how data integration principles can be incorporated within SOA.

Data integration encapsulates a range of techniques and methodologies to integrate, standardise and re-model data to meet the information demands of the enterprise. This ensures the consistent use of data objects across the organisation, providing a single version of the 'truth'. There is clear concern as to how this can be incorporated within a web service based architecture that is markedly different to traditional data integration environments.

An elegant solution to this challenge is the introduction of a 'data service' layer that de-couples business services from the underlying data, as shown in Figure 1 (left). In this model business services do not directly interact with the underlying data assets. Rather, business services make requests for data operations via a data service layer. The data service layer is a well controlled and highly visible access point to organisational data assets, incorporating all the data integration functionality required within the SOA. This should include

transformational services, bulk data processing services and more general transactional services.

This concept is enormously appealing, as it places mature and well established data integration principles firmly at the core of SOA. A well formed data service layer can ensure that data objects are accessed and used in a consistent manner by all business services. Data services effectively provide a means for 'service enabling' the data assets within an organisation. This represents an ideal point for the convergence of data governance and SOA governance. Data governance ensures data access, correctness and security, while SOA governance manages the full lifecycle of services and composite business applications. By embedding a data service layer within the SOA these two critical areas of governance are brought together.

The key question then becomes how can data integration functionality be exposed and incorporated within the data service layer. This article will demonstrate how an organisation actively involved in the transition to SOA can build upon their data integration expertise with ODI to develop and deploy the SOA data service layer.

The SOA features of ODI that will be explored are: ODI Public Webservices, OdiInvokeWebService function and ODI Data Services.

ODI Public Webservices

A genuine data service layer must incorporate transformational services, bulk data processing services and data quality services. This functionality is critical to many business processes yet is not easily accommodated by the web service technology that supports SOA. Hence, it is important to understand how this functionality can be incorporated within the web service architecture. ODI Public Webservices provide a simple solution to this challenge by exposing the full functionality of ODI via a single web service, OdiInvoke.

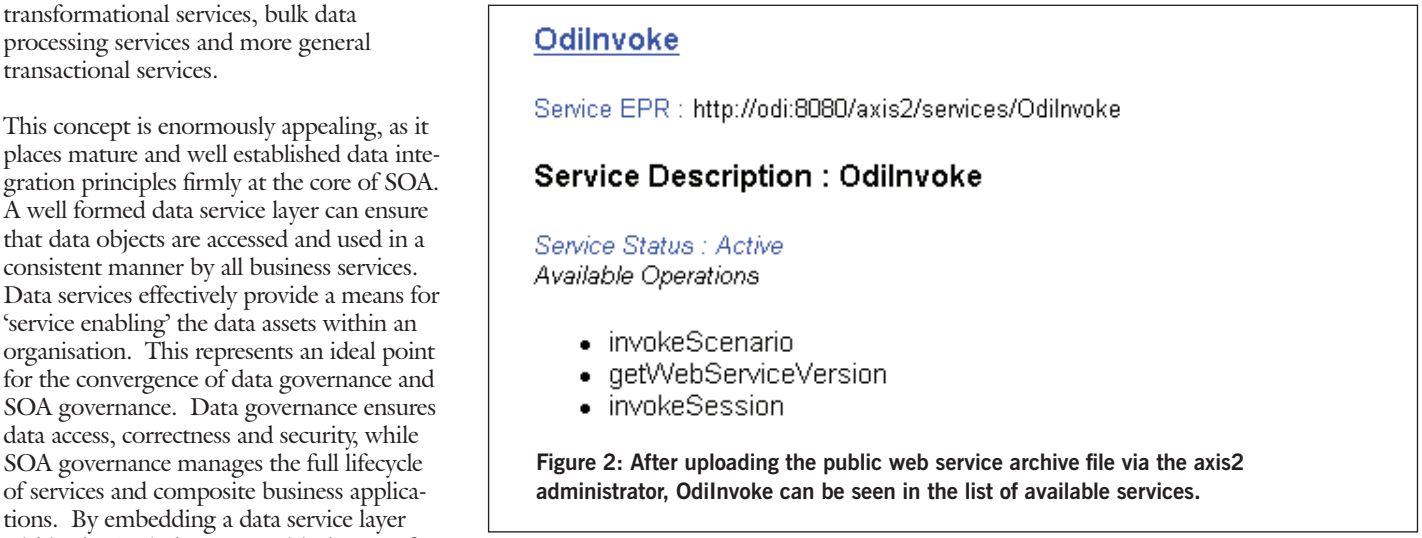

Figure 2: After uploading the public web service archive file via the axis2 administrator, OdiInvoke can be seen in the list of available services.

To demonstrate the power of ODI Public Webservices let us use our example of an organisation actively involved in the transition to SOA. Using the Oracle SOA suite, they have developed a BPEL (Business Process Execution Language) workflow that models their order management process. Whenever orders are placed, a well defined series of steps must be performed, perfectly suited to web service messaging technology. However, they also run a bulk data processing ODI scenario that periodically synchronises disparate parts of the order tracking system. They would now like to incorporate this within the BPEL workflow to ensure that all functionality can be accessed and controlled from a single place.

> "OdiInvoke is an incredibly powerful service, which allows ANY ODI scenario to be invoked as a web service."

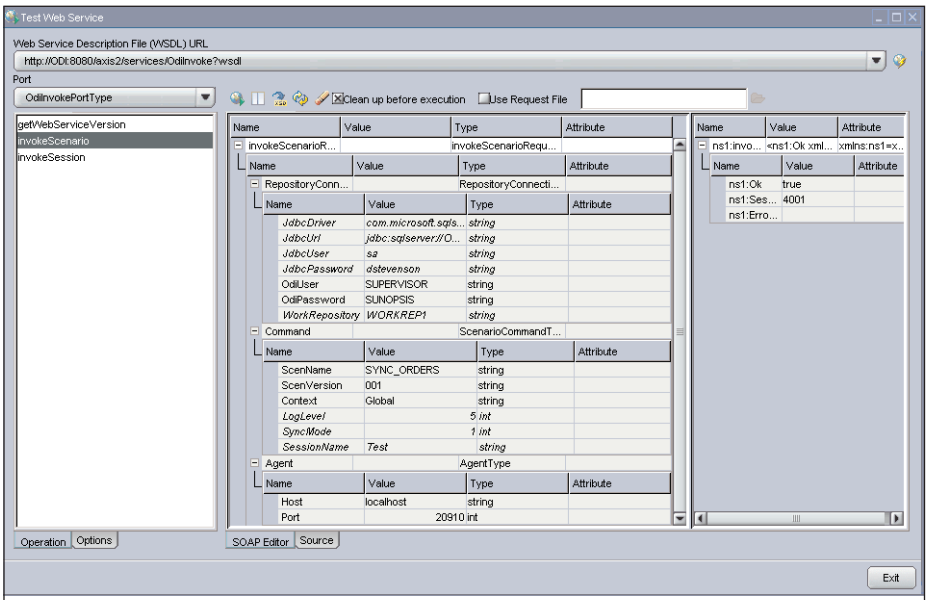

Figure 3: The ODI Test Web Service utility can be used to generate SOAP requests, aided by the display of all available elements. The request can be tested and the results verified before deployment.

Effectively, we have to take an existing ODI scenario and somehow expose it as an invokable web service. The first step to be performed is to ensure that ODI Public Webservices have been installed within a web services container, such as axis2. This is a relatively simple matter of loading the odi-public-ws.aar, found within the ODI_HOME\oracledi\tools\web_services folder. The success of this step can then be confirmed by viewing the list of available services. It can be seen that there is now an OdiInvoke service, as shown in Figure 2, (above).

OdiInvoke is very powerful and allows ANY ODI scenario to be invoked as a web service. Essentially, OdiInvoke acts as a single access point to the extensive cleansing, transformational and bulk processing functionality of ODI. The next step is to generate the message that will let this service know which particular scenario should be invoked. This is greatly simplified by the 'Test Web Service' utility within ODI, which allows us to select a web service and the particular operation we would like to test. For this service, we have three

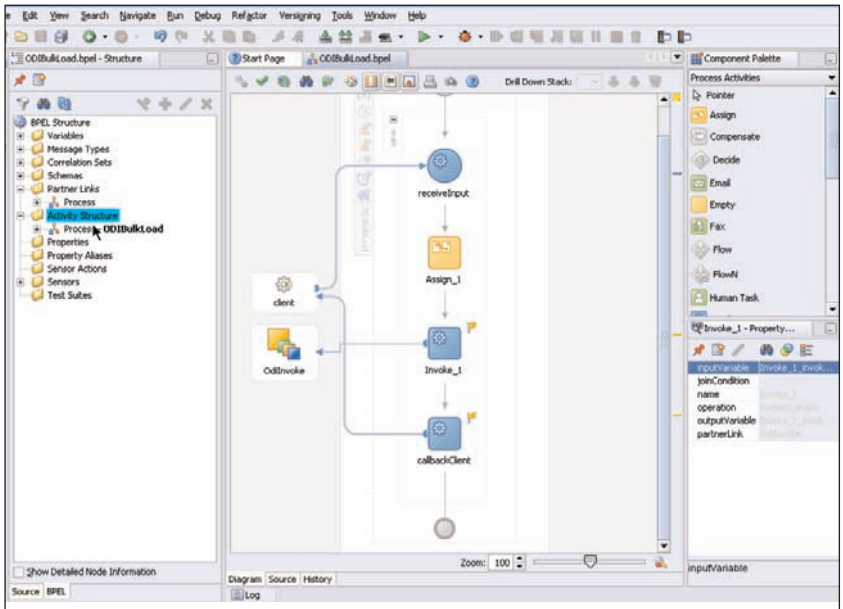

Figure 4: ODI scenarios can be invoked as part of a BPEL workflow, becoming part of a composite business application.

operations available; one to return the web service version, another to invoke a scenario and another to re-start a session. In this case, we wish to invoke the order synchronisation scenario.

The utility is particularly helpful as it visually displays all the available elements for the operation that has been selected, as shown in Figure 3, (previous page). The values for each relevant element can then be added and the SOAP request is automatically generated. This is significantly easier than hand-coding the request – especially for those unfamiliar with SOAP and XML. The request can then be tested by invoking the service and the success confirmed by the return message displayed on the right panel of the utility.

At this stage we now have the potential to execute any ODI scenario via Public Webservices. In addition, the SOAP request to invoke the specific scenario has also been built and tested. The next step is to introduce this request within an order processing workflow. This can be achieved very easily by incorporating the OdiInvoke request within the BPEL workflow, an example of which is shown in Figure 4, (above).

This simple example has demonstrated how OdiInvoke allows us to build upon our existing skill base and expertise to create bulk data processing services. All the functionality of ODI can be exposed as a web service and utilised by the Oracle SOA suite. This is an exceptional feature that has enormous potential.

For example, the profiling, cleansing and conforming capabilities of ODI could easily be exposed as data quality services while the Extract, Load and Transform architecture of ODI could be utilised to create transformational services. At present, there is a question mark over the ability of a web service based infrastructure to handle large data volumes. The underlying web service technology is particularly well suited to message-centric integration, but may struggle with bulk data processing. ODI can compensate for this weakness by providing the 'horsepower' within SOA by exposing bulk data processing as a web service.

From an administrative perspective, ODI Public Webservices also represent an excellent option. OdiInvoke acts as a single point of entry for all transformational and bulk processing services, removing the need for a large number of individual services that serve separate functions. Additionally, all the scenarios remain within the confines of the ODI repository, for which there is strong metadata support.

OdiInvokeWebService

The ability to expose the functionality of ODI is critical to the development of an effective data service layer. However, this only allows ODI to respond to execution requests from the SOA infrastructure.

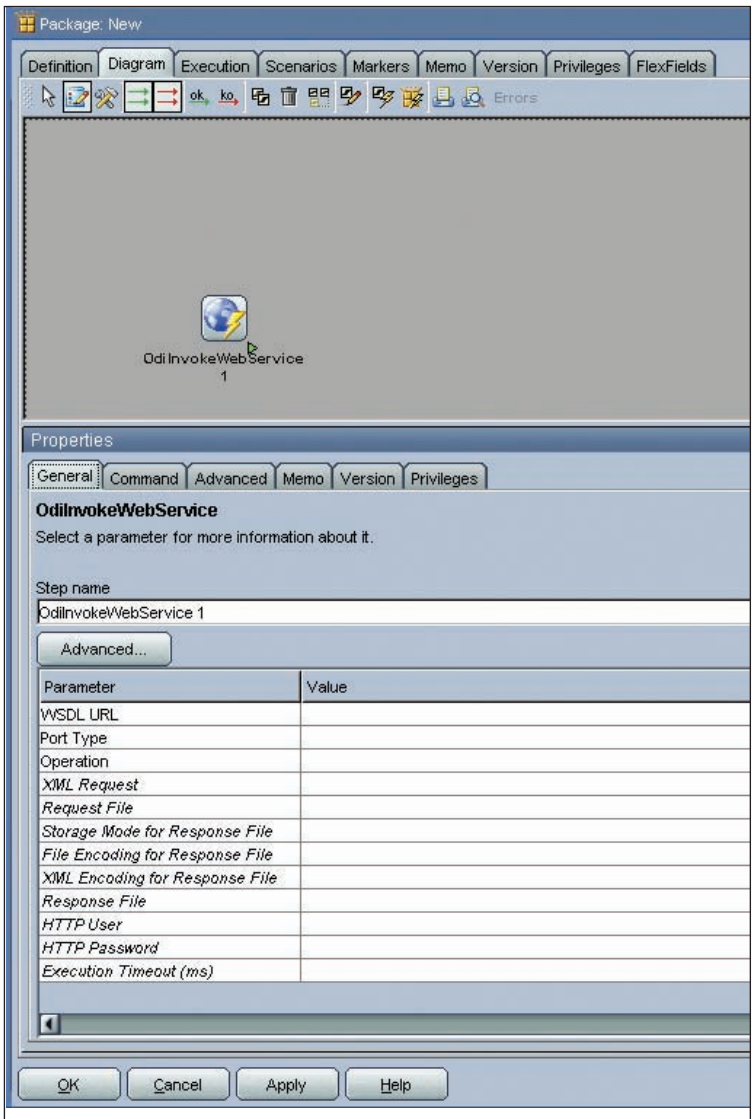

Figure 5: The OdiInvokeWebService function can be incorporated within any ODI package, allowing ODI to adopt a dynamic role within the SOA.

Ideally, we would like ODI to adopt a dynamic role within the architecture by directly invoking web services as part of the processing logic, which is provided by the OdiInvokeWebService feature.

OdiInvokeWebService is a standard ODI feature that can be incorporated within any package, as shown in Figure 5, (opposite page, below left). The OdiInvokeWebService function accepts a number of parameters, including WSDL location, SOAP request and location of response file.

In order to demonstrate a potential use case, we will return to our example of an organisation making the transition to SOA. As described above, they have utilised ODI Public Webservices to deploy a scenario as a bulk data processing service. This has also been incorporated within a BPEL workflow. While this is very useful, it only allows ODI to respond to execution commands from the SOA infrastructure. The aim is to extend the functionality beyond this by allowing ODI to directly invoke web services.

In our example, the specific need that has been identified involves the handling of complex errors. In particular, the organisation would like complex errors to be handled by a BPEL process with human workflow. This would provide a degree of human interaction to fix the error and recommence the flow. This requirement can be easily accommodated by the combined error handling of ODI and the ability to invoke a web service via OdiInvokeWebService.

This would provide a clear business benefit, as failed records can often become lost within error tables that are never analysed and corrected. A principal concern for many executives is ensuring that emerging technologies, such as SOA, improve the accuracy and credibility of the data upon which business decisions are based. If data permanently resides within error tables this can adversely impact the accuracy of reports and analyses conducted on the target datastore. Therefore, it of critical importance to correct and re-cycle such errors to ensure the accuracy of the data set within each system.

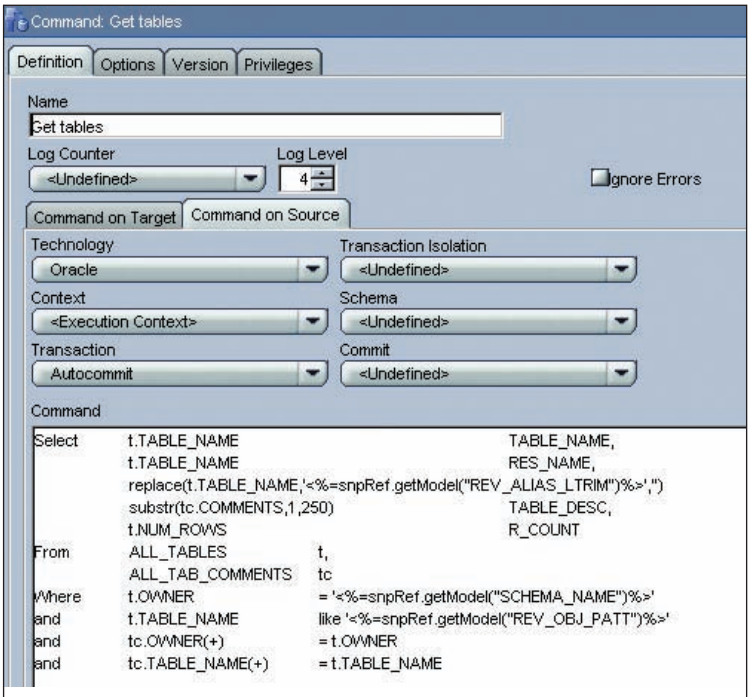

Figure 7: The Oracle RKM gathers metadata from the underlying database. This figure shows one component of the RKM that extracts Oracle table metadata.

A stand-out feature of ODI is the manner in which errors are handled. ODI uses Check Knowledge Modules (CKMs) to determine whether data meets certain predefined criteria, including referential constraints and user defined limits. Data that fails these checks is loaded to an error table where it can be re-cycled, corrected and loaded to the target. This is an excellent feature that prevents an entire load failing because of a few suspect records.

A number of such checks are performed as part of the SYNC_ORDERS scenario. Ideally, we wish to introduce a step that will determine if any such errors have been encountered, by counting the number of records that have been added to the error table on a particular execution of the scenario. If there are any such records then a BPEL process with human workflow will be invoked, the error will be rectified and the data re-cycled.

As shown in Figure 6, (below), this logic can be easily added to the existing package. Firstly we need to add steps to refresh and evaluate a variable that will hold a count of the number of errors encountered during the scenario execution.
This is easily achieved by using the odiref.getPrevStepLog function, which can return the error count from the previous step by passing in the "ERROR_COUNT" parameter. If there are any errors then the BPEL process is invoked, if not then the successful completion of the process is logged. Once the human workflow has been invoked and the error rectified, the scenario can be re-started via ODI Public Webservices.

This simple example demonstrates the dynamic role that ODI can adopt within a web service based SOA. The combined use of ODI Public Webservices and OdiInvokeWebService allows ODI to play a valuable role that extends far beyond simple scenario execution. This has enormous potential to ease the transition to SOA, providing not only data integration services but also the capability to invoke services based on the outcome of steps in the processing logic.

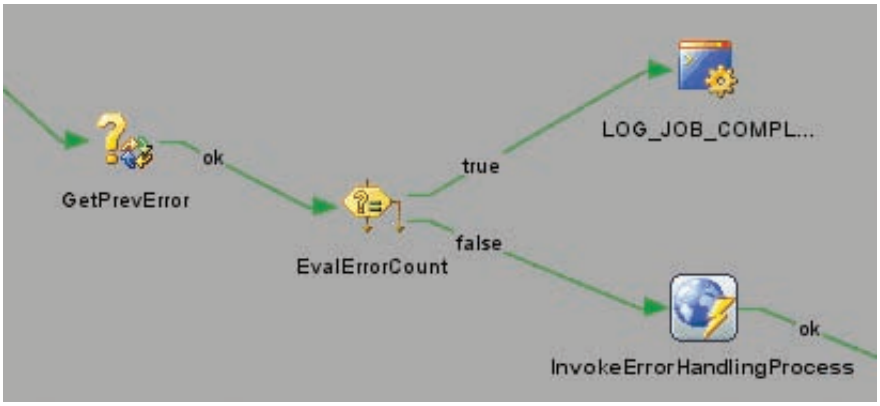

Figure 6: The OdiInvokeWebService function allows ODI to invoke web services as part of the complex processing logic within a package.

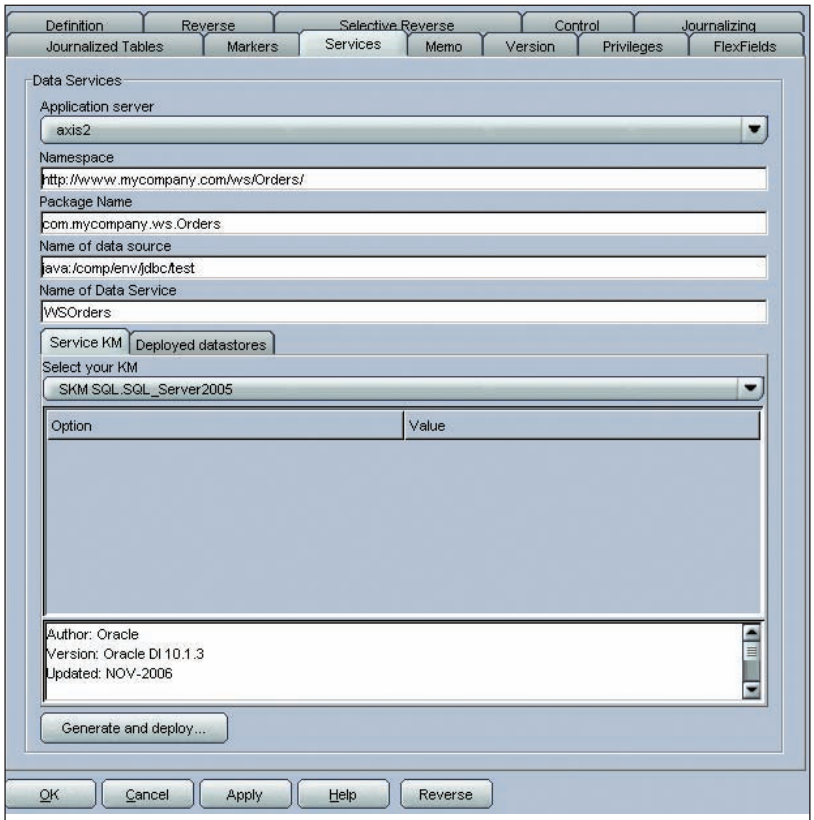

Figure 8: The services tab allows the user to define the parameters that will be used to create Data Services.

Data Services – Exploiting the potential of Metadata

The above sections have demonstrated how ODI scenarios can be exposed as a web service. This brings powerful transformational and bulk data processing capabilities to the SOA. However, this functionality only allows **pre-built** scenarios which perform a specific task to be executed. Hence, there is little flexibility as the scenario must exist before the specific data operation can be performed.

It is clear that a genuine data service layer must provide a greater degree of flexibility via services that allow a range of common data operations (such as simple inserts, updates and deletes) to be performed at will. This functionality is provided by ODI Data Services, specialised web services that allow direct access to the underlying data.

The key to understanding ODI Data Services is to appreciate how ODI gathers and utilises metadata. ODI generates metadata via Reverse Engineering Knowledge Modules (RKMs), re-usable code modules encapsulating all the logic required to gather pertinent information on the underlying datastore, as shown in Figure 7, (previous page).

Once the RKM has been executed, ODI has a thorough understanding of the datastore structure, including column names, data types and constraints. ODI now has a sufficient understanding of the datastore to generate SQL statements when a scenario is executed. We now wish to take this ability to construct SQL statements from the available metadata and utilise it to create dynamic web services that can support a range of common data operations.

Such services are generated by Service Knowledge Modules (SKM), which encapsulate all the steps required to build web services based upon the metadata gathered from RKMs. The first step in this process is to define the parameters that will be used to access these ODI Data Services, as shown in Figure 8, (left).

The SKM generates an archive file that can be loaded to a web services container, such as axis2. The success of this step can then be confirmed by viewing the list of available services. It can be seen that there are now additional services, one for each datastore (table) that has been deployed. Figure 9 shows the service that has been generated based on the Salesorderdetail table.

Each ODI Data Service allows a range of operations to be performed on the underlying datastore, including inserts, updates and deletes (shown in available operation list in Figure 9, below). Note that additional operations are also available if Change Data Capture is enabled on the model and datastore. It is very important to appreciate how the functionality of ODI Data Services differs from ODI Public Webservices. ODI Public Webservices allow us to execute any scenario, which must be pre-built and extracts data from specified tables. In contrast, ODI Data Services are not limited in this way and a single service can accept any valid input request no matter where the data originated.

Figure 9: Once the SKM has been executed and the archive file deployed, a service per deployed datastore will be seen in the list of available services along with the available operations.

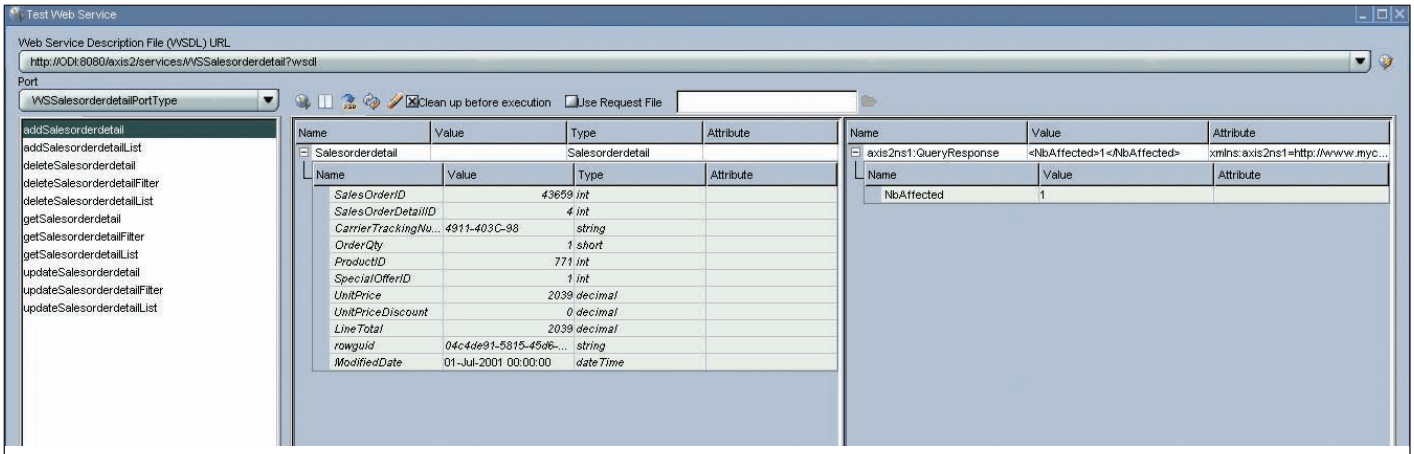

Figure 10: The ODI Test Web Service utility can be used to demonstrate and test the ODI Data Services that have been deployed. In this case WSSalesorderdetail has been used and the available operations and elements are graphically displayed.

To demonstrate this functionality let us return to our example that has charted the progress of an organisation actively involved in the transition to SOA. They have developed a BPEL order processing workflow that utilises ODI Public Webservices to perform a key bulk data processing step. However, many of the business services within their order processing BPEL workflow still access data directly. The aim is to ensure that all data access occurs via a data service layer where it can be well controlled.

To begin with, they would like to create a single web service that allows all transactions to be performed on a single table, Salesorderdetail. Records are frequently added and updated within this table as part of the overall order management process. As shown in Figure 9, they have already deployed this datastore and a WSSalesorderdetail service is available.

This service acts as an entry point for a whole range of transactional operations. We can use the ODI Test Web Service utility to demonstrate this, as shown in Figure 10, (above). We select the appropriate operation; in this case we would like to perform an insert statement so we select **addSalesorderdetail**. This utility then graphically displays all available elements for this operation, which as we can see correspond to all the column names within this table.

Of critical importance, this service can accept any valid request – no matter where it originated. This is unlike a scenario which performs a series of pre-defined operations on a **specific** datastore. For example, the ODI Data Service above can be re-used by **every** business service that requires an insert statement on this particular table, regardless of the details of the individual transaction.

ODI Data Services have enormous potential to be incorporated within the SOA data service layer. They can accommodate a range of transactional operations that are likely to be required. This would remove data access from business services, placing it within a well controlled and highly visible data service layer. By utilising ODI, this also ensures that services are based on consistent metadata, accessible through the ODI repository. Overall, this provides a level of control and standardisation that would otherwise be difficult to achieve.

Conclusion

SOA is rapidly emerging as the answer to many of the architectural challenges facing the modern enterprise. For many organisations, the transition to SOA is inevitable, yet also a major cause for concern. A common pitfall is failing to develop a sound data integration strategy that incorporates data-centric services within the SOA.

This article has demonstrated how effectively ODI can provide the data integration features required to develop the SOA data service layer. ODI Public Webservices provide the transformational and bulk data processing capabilities, while ODI Data Services accommodate a range of transactional operations. In addition, OdiInvokeWebService allows ODI to adopt a dynamic role by providing the capability to invoke web services as part of the complex processing logic.

In conclusion, ODI is a key enabler of the transition to SOA providing the data-centric features that will form a solid platform for business services to access and use data in a controlled manner.

> "SOA is rapidly emerging as the answer to many of the architectural challenges facing the modern enterprise."

About the Author

Douglas Stevenson is a principal consultant for Eclectic, a specialist Business Intelligence consultancy firm delivering full lifecycle BI projects. He specialises in data integration, with a particular focus on ETL and data warehousing. Douglas has worked on a wide range of projects in both the public and private sector, and has deployed warehousing solutions using products from many of the major software suppliers.

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Solid Foundations for Alfred McAlpine's Invoice Processing

By Alison Mason

Alfred McAlpine is a leading support services business with over 9,000 employees. Through the range of services they offer, they aim to be their clients' partner of choice in the built environment. They can design, finance, build, manage and maintain buildings and infrastructure, or apply their expertise in one or several of these areas to deliver solutions that meet their clients' specific requirements.

Challenge

In 2004, Alfred McAlpine were finding that processing approximately 120,000 supplier invoices per year was causing several problems for their Accounts Payable (AP) department including:

- Time consuming manual data entry.
- High cost of data entry.
- Delays caused by finding paper invoices.
- Problems matching invoices to purchase orders.
- Invoices being lost or misplaced.
- High invoice processing costs.
- The need to employ more staff to handle growing invoice volumes.
- Lack of control over the process.
- Managing two financial solutions, Axapta and Intellect.

They initiated a project to implement a document management and workflow solution that could solve these problems. A primary driver was to increase efficiency and also to provide the ability to absorb more work without the AP headcount increasing. An extensive search for a supplier resulted in Documation's Invoice Management Solution (IMS) with EMC Captiva's solution for data capture being chosen.

- The solution scans all incoming supplier invoices and using the EMC Captiva data capture technology Alfred McAlpine now retrieve key header and line item data. This speeds up the delivery of data into IMS seamlessly, reduces manual data entry errors and frees up data entry staff for knowledge roles. By automating this process Alfred McAlpine were able to eliminate manual data.
- The solution integrates seamlessly with both financial systems and ensures that the correct details are passed to each system.
- Workflow is used to assist with problem invoices, for example by checking to see if there are duplicate invoices, making sure there is a valid order number, etc., to minimise the manual effort required from the AP team. The invoice details are then automatically updated to the finance system so the invoices can be matched and paid.
- All invoices and associated documents can then be retrieved directly from the IMS solution with full status information and a full audit trail.

Strategic project – change of finance system

Alfred McAlpine is experiencing a period of considerable expansion currently, with considerable further growth projected over the next few years. A strategic review has been undertaken across the organisation to ensure that the infrastructure and IT systems are in place now to support this future growth. The decision was made to change the finance solution, moving from two separate systems to centralised use of Oracle E-Business. Alfred McAlpine wanted to ensure that they could still receive all the benefits from their Documation IMS system, whilst extending its use to tightly integrate with Oracle E-Business Suite and further automate the processing where possible, Phil Simpson, Operations Manager at Alfred McAlpine, explains:

"The real excellence of the IMS and EMC Captiva solution comes with its ability to support the accounting function through the business growth. Its also been very beneficial having Documation involved at the same time as changing our financial solution, ensuring that we maximise the benefits of both systems."

Oracle EBusiness and Documation IMS

Documation are an established Oracle partner and the IMS solution integrates tightly with the E-Business Suite. The new solution still includes all the original functionality but Alfred McAlpine took advantage of this relationship, expanding the IMS solution alongside the Oracle E-Business Suite to offer additional business performance improvements. This is outlined below.

"The real excellence of the IMS and EMC Captiva solution comes with its ability to support the accounting function through the business growth."

Integration with Oracle Electronic Invoice Processing (eIP)

Certain invoices, such as utility bills, do not have purchase orders so with no order to match to, these still need to be approved for payment. After capturing the data with EMC Captiva, IMS posts these invoices directly to the Oracle eIP (electronic invoice processing) module which routes the invoice details to the correct individual in the business for authorisation. IMS integrates closely with eIP to allow an image of the invoice to be viewed by the

authoriser. This is an important benefit for Alfred McAlpine as Phil Simpson explains:

"Being able to view the image when approving invoices is critical to our users, it gives them all the information they might need and removes the requirement for them to contact the AP team with enquiries."

Auto pre match with Oracle

Invoices with a Purchase Order number must be matched by AP staff against the order and receipts in Oracle, the system then automatically performs a match overnight to ensure that there are no invoice lines without an order and therefore that the invoice can be paid.

Alfred McAlpine wanted to use IMS to automate as much of this process as possible, whilst still retaining the standard matching functionality within Oracle. On investigation, it was discovered that up to 40% of their purchase order invoices would match directly to a single order. It is possible to fast track these invoices by IMS carrying out the pre-match rather than the user. This entirely removes the manual user intervention, as Oracle will automatically approve the match so that the invoice can be paid. A range of tolerances provide control over the process, so that, for example, very high value invoices can still be seen by the user rather than being fast tracked. Phil Simpson describes the outcome of the automation:

"Using this solution means that up to 40% of purchase order related invoices are posted and paid automatically without any intervention by AP staff, this has provided considerable savings in time and effort."

Integrated retrieval

It is now possible for documents to be retrieved directly from within the Oracle E-Business system. Employees from 200 remote locations use this facility, with users searching for purchase orders or invoices and viewing the image instantly within the familiar Oracle environment.

Oracle on Demand Solution

Rather than being housed at Alfred McAlpine's offices, their Oracle solution is hosted by Oracle on servers situated in Austin, Texas in the United States! The integration with IMS is unaffected by the location difference and appears seamless from the user's perspective.

Solution implementation

A major advantage during the implementation was that the two project teams from Documation and Alfred McAlpine had worked successfully together in the past on the original IMS project. In the Oracle E-Business project, Oracle Consulting were also involved, providing implementation skills and the provision of the eIP module. The three companies worked seamlessly together creating a strong, skilled team. Phil Simpson explained how important this was:

> "The result was a project completed on time and within budget – quite an accomplishment in today's IT world."

"The project had a real buzz about it, mainly as it involved innovative new functionality, but also because it was such a tightly defined and planned project, with a very disciplined team. The result was a project completed on time and within budget – quite an accomplishment in today's IT world."

Key benefits of IMS

Minimise future overheads

The project was not intended to reduce the number of staff in the AP team but rather as a cost avoidance measure. Initially resource freed up is being reallocated to more value added tasks, such as a project to rationalise suppliers. As the organisation grows, the solution will remove the requirement to increase the size of the team.

Removal of manual data entry

Manual data entry has now been entirely eliminated; this speeds up the process considerably and is more accurate. It is also a major cost avoidance measure as costly additional resource is not required to enter the data. The automated matching has reduced the requirement to handle 40% of the invoices manually, also resulting in time savings.

Improved control

Alfred McAlpine now have total control over the supplier invoice processing, with instant retrieval it is possible to see the exact status of every invoice instantly. This includes invoices that have been paid as Oracle passes this information back to IMS upon payment to ensure a complete history exists.

Elimination of manual retrieval of paper documents

Invoices are now available to business users online. This has not only improved the service offered, but also dramatically reduced the phone calls from the rest of the business to AP about the status of invoices.

Increased accuracy in business decision making

The new IMS solution has enabled Alfred McAlpine to run more statistics regarding the accuracy of supplier invoices, this information is invaluable to assist with a driver to rationalise the number of suppliers from 14,000 to 2,000.

Reduced training requirement

The integration with Oracle E-Business is especially beneficial because it minimises user training as users only need to be familiar with the Oracle interface to retrieve invoice images.

Conclusion

Not only does the solution meet Alfred McAlpine's needs from a functional perspective, but the relationship with Documation has made the process of implementing and managing the solution an easy one. Alfred McAlpine are now investigating other paper intensive processes across their organisation where it could be possible to extend the functionality of their solution.

About the Author

Alison Mason has worked for Documation for over 5 years. The company is a leading provider of bespoke document management and workflow solutions with over 17 years experience. Documation works with private and public sector organisations across the UK and in key markets around the globe. It is one of just 12 ISV's with Oracle Certified Partner status in the UK, and can be found exhibiting at many of the UKOUG exhibitions.

Why I Like ANSI SQL Join Syntax

By Tony Hasler, Anvil Computer Services Ltd

It has always been possible to construct a join using the comma operator in SQL. However, in release 9i Oracle introduced an alternative ANSI compliant syntax characterised by the JOIN keyword instead of the comma operator. Despite its numerous advantages most programmers, DBAs and respected authors of Oracle literature continue to use the comma based syntax in most cases. In this article I suggest reasons why this might be and try to explain why I am more enthusiastic about this "new" syntax than most.

Cartesian products and generalised Inner Joins

Let us begin with some simple examples based on the famous EMPLOYEES and DEPARTMENTS tables that you will find in the HR schema of a database with example schemas installed. (See Figure 1.)

As you can see the comma syntax for cartesian products and inner joins is more concise than the ANSI equivalent and perfectly clear to understand. Furthermore, in the case of inner joins there are alternative ANSI syntax constructs that create the opportunity for inconsistency. The two different ANSI constructs reflect the fact that SQL supports both **join conditions** and **selection conditions**. In an inner join, however, they are equivalent.

Figure 1

```
ALTER SESSION SET current_schema=hr;
--
-- Cartesian product example (returning 2889)
--
```

ANSI syntax	Comma syntax
SELECT COUNT (*) FROM employees CROSS JOIN departments;	SELECT COUNT (*) FROM employees, departments;

```
--
-- Inner join examples (returning 2782)
--
```

ANSI syntax	Comma syntax
SELECT COUNT (*) FROM employees JOIN departments d ON d.department_id <> 40;	SELECT COUNT (*) FROM employees, departments d WHERE d.department_id <> 40;
SELECT COUNT (*) FROM employees JOIN departments d WHERE department_id <> 40;	

The cartesian product creates a row for every possible combination of rows in the EMPLOYEES table with rows in the DEPARTMENTS table. Since there are 107 rows in the EMPLOYEES table and 27 rows in the DEPARTMENTS table then there are 2889 (107 x 27) rows in the result set. The inner join that I have shown eliminates the 107 rows associated with the Human Resources department.

SQL constructs of this type represent a significant portion of all SQL statements written and so the reluctance to switch to the new syntax is easy to understand. However, the majority of joins can be constructed using simplified ANSI syntax as you will soon see.

Equijoins on identically named columns

Joins of the type I have shown above do arise but by far the most common type of join is the **equijoin**. The equijoin requires the value of one column in one table to be identical to the value of another column, usually in the other table making up the join. Frequently these columns have the same name. In these conditions you could use the constructs shown above or you could use the abbreviated syntax in Figure 2, opposite.

As you can see the ANSI abbreviated syntax is now more concise than its comma syntax equivalent. The abbreviated syntax does change the number of columns returned; the department_id column only appears once in the result set when the ANSI syntax is used rather than twice as would be the case in the comma syntax variant.

Natural joins

ANSI syntax allows for one further abbreviation that I have learned from bitter experience is best avoided most of the time. Nevertheless, you should learn how to read it. See Figure 3 (opposite) for an example of how this syntax can work well.

What happens here is that the column or columns to be equijoined are selected automatically because they have the same name. Since the only column with the same name in both tables is STATISTIC# that column is used to perform the equijoin to create the desired result. Note that as with the USING construct the equijoined column only appears once in the result set.

This construct does look mighty useful and I used to think that it could be used in a substantial proportion of all the joins that I was ever likely to write. However, one day I wrote a query somewhat similar to the following, see Figure 4 (opposite).

You can see what I was trying to do. I wanted a list of tablespace names and the number of datafiles associated with each one. I knew that there was a column TS# that could be used to effect the join. However, what I forgot was that the column NAME was shared by the two views as well. These two columns were then equijoined in addition to the TS# columns. Since no datafile has the same

Figure 2

ANSI syntax	Comma syntax
SELECT first_name, last_name, department_name FROM employees JOIN departments USING (department_id);	SELECT first_name, last_name, department_name FROM employees e, departments d WHERE d.department_id = e.department_id;

Figure 3

```
SELECT *
  FROM v$mystat NATURAL JOIN v$statname;
```

Figure 4

```
SELECT   NAME, COUNT (*)
   FROM v$tablespace NATURAL JOIN v$datafile
GROUP BY NAME;
```

Figure 5

```
SELECT   t.NAME, COUNT (*)
   FROM v$tablespace t JOIN v$datafile USING (ts#)
GROUP BY t.NAME;
```

name as the tablespace to which it belongs no rows were returned. When I explicitly specified the column I wanted all was well. (See Figure 5, above.)

In fact if I were to take the example in the previous section showing a join of the EMPLOYEES and DEPARTMENTS tables and change it to a natural join then the result set would change because an equijoin of the manager_id columns would be added to the one on the department_id columns. Even if your query works today then it may break tomorrow when somebody adds a new column to one of your tables.

The only time it is really safe to use a natural join is when all the columns are specified in the query. (See Figure 6, below.)

However, this is usually more trouble than it is worth and I would certainly not code this particular query this way.

And to rub salt in the wound there is also bug 5031632 which causes the wrong set of rows to be returned even for "safe" queries.

"The only time it is really safe to use a natural join is when all the columns are specified in the query."

Outer joins

There are three types of outer join. Logically all outer joins begin with an inner join. In a left outer join the first operand of the join is then examined to determine how many copies of each row appear in the result set. When that number is zero a row is added to the result set with NULL values (or NULL non-values if you

Figure 6

```
SELECT   first_name, last_name, department_name
   FROM (SELECT first_name, last_name, department_id
           FROM employees)
         NATURAL JOIN
         (SELECT department_id, department_name
           FROM departments)
ORDER BY 2, 1;
```

prefer) for each of the columns in the result set that correspond to the second argument to the join. With a right outer join it is the right operand that is examined. In a full outer join it is both operands.

A couple of examples may help, see Figure 7, right.

The first example returns only 106 rows despite the fact that there are 107 employees. That is because Kimberley Grant has no assigned department and doesn't match any rows in the DEPARTMENTS table. The second example picks up poor Kimberley. The keywords INNER and OUTER are optional. Personally I never specify INNER but always specify OUTER. But that's just me.

When you start to code outer joins then the ANSI syntax really comes into its own. I simply cannot imagine why anybody would ever use the comma syntax for databases running 9i and beyond.

Figure 8, opposite shows one of many queries that *cannot be coded* using comma syntax. Well, you could create inline views and/or factored subqueries but that would be cheating. And if you think the cheat is simple just try it.

The join in this query begins by performing an inner join on the two tables and then adding a row for Kimberley Grant who has no assigned department. Rows are also added for the various departments that do not have any employees. *After the join has completed* the selection conditions in the where clause are applied. In this case I just want to see the rows that were added by the outer join. As you can see, in an outer join there is a big difference between a join condition and a selection condition. Consider the following query in Figure 9 above.

Figure 7

```
SELECT   employee_id, first_name, last_name, department_id, department_name
   FROM employees INNER JOIN departments USING (department_id)
ORDER BY 3, 2;

SELECT   employee_id, first_name, last_name, department_id, department_name
   FROM employees LEFT OUTER JOIN departments USING (department_id)
ORDER BY 3, 2;
```

Figure 8

```
SELECT employee_id, first_name, last_name, department_id, department_name
  FROM employees FULL OUTER JOIN departments USING (department_id)
 WHERE department_id IS NULL OR employee_id IS NULL;
```

Figure 9

```
SELECT employee_id, first_name, last_name, d.department_id, department_name
  FROM employees e FULL OUTER JOIN departments d
      ON department_id = d.department_id AND (d.department_id IS NULL
OR e.employee_id IS NULL);
```

Figure 10

```
ALTER SESSION SET current_schema=sh;

SELECT   TO_CHAR (TRUNC (time_id, 'MONTH'), 'MONTH YYYY') MONTH, cust_first_name,
cust_last_name, SUM (amount_sold)
   FROM sales RIGHT OUTER JOIN customers USING (cust_id)
       JOIN countries USING (country_id)
  WHERE country_name LIKE 'Argentina'
GROUP BY TRUNC (time_id, 'MONTH'), cust_first_name, cust_last_name
ORDER BY TRUNC (time_id, 'MONTH') NULLS FIRST, 3, 2;
```

At first glance this query may look similar to the previous one. However, 134 rows are returned. This is because for the join to find a match *all* the *join* conditions must be satisfied. Since this never happens no matches are made. Since this is a full join, however, rows are added for each of the 107 employees and all 27 departments. And since there is no where clause all of these 134 rows are returned.

Partitioned outer joins

ANSI join syntax was introduced in Oracle 9i and new features were added that were only available using the ANSI syntax. In 10gR1 further new functionality was added but again only to the ANSI syntax.

> "...for the join to find a match *all* the *join* conditions must be satisfied."

In the outer joins examined so far a row from a join operand may appear in the result set multiple times only if it matches multiple rows from the other operand.

Consider the following contrived examples from the SH example schema, see Figure 10, above.

This query looks at how much revenue was generated each month by customers from Argentina. The outer join ensures that Argentinean customers who never bought anything are added to the result set. But only once. What if we want to see the list of all customers each month? In 10gR1 we can do this, see Figure 11, opposite.

First of all we create a table of the 26 Argentinean customers that ever bought anything. We then create a table that summarises the monthly sales to each customer. These table creations are just to set the scene.

Figure 11

```
CREATE TABLE argentina_customers AS
    SELECT DISTINCT cust_id, cust_last_name, cust_first_name
            FROM sales JOIN customers USING (cust_id)
                JOIN countries USING (country_id)
            WHERE country_name = 'Argentina';

CREATE TABLE sales_months AS
    SELECT   TRUNC (time_id, 'MONTH') MONTH, cust_id, SUM
(amount_sold) amount_sold
        FROM sales JOIN customers USING (cust_id)
     GROUP BY TRUNC (time_id, 'MONTH'), cust_id;


SELECT   MONTH, cust_first_name, cust_last_name, cust_id, amount_sold
   FROM sales_months  PARTITION BY (month)
               RIGHT OUTER JOIN argentina_customers USING (cust_id)
ORDER BY 1, 3, 2;
```

Figure 12

a CROSS JOIN b RIGHT OUTER JOIN c USING (c1)

This example can be interpreted in either of the following ways:

a CROSS JOIN (b RIGHT OUTER JOIN c USING (c1))

or

(a CROSS JOIN b) RIGHT OUTER JOIN c USING (c1)

Figure 13

```
SELECT index_name, table_name
  FROM user_tables t JOIN user_indexes USING (table_name)
      JOIN user_tab_columns c ON (table_name = c.column_name)
```

Figure 14

```
SELECT index_name, table_name
  FROM user_tables t JOIN user_indexes USING (table_name)
      JOIN user_tab_columns c ON (t.table_name = c.column_name)
```

The final query lists the total sales made each month to each Argentinean customer. And each customer is listed *every month* whether they bought anything *that month* or not.

There are a few restrictions. You can only partition one operand of the join and you cannot specify a full join. You also cannot specify a sub-query in any ON condition. But I, for one, can live with that.

Ambiguities

There are one or two gotchas with the new syntax that I haven't mentioned so far.

On occasion, the table pairings in natural or cross joins may be ambiguous. For example, consider Figure 12, above.

To avoid this ambiguity, you can use parentheses to specify the pairings of joined tables. In the absence of such parentheses, the database uses left associativity, pairing the tables from left to right.

There are other occasions when you need to alias a table but cannot. Let's take a silly example. Suppose I want to list the names of all of my indexes that are associated with tables that have a name equal to one of my column names. So if I have a table called ABC and a column called ABC in a table DEF I would like to see the names of all of the indexes of table ABC. Let's try this, see Figure 13, above.

This generates ORA-00918: column ambiguously defined.

That is because user_tab_columns also has a column named table_name. Unfortunately the query in Figure 14 below left generates the error: ORA-25154: column part of USING clause cannot have qualifier. Well, I want to have a qualifier! I do not see any way around this other than to revert to the ON syntax!

Conclusions

The new ANSI syntax does seem to offer many advantages over the comma syntax but it is not without its issues. Not the least of which is that it doesn't work on Oracle 8i! This problem, at least, should go away shortly but the sheer preponderance of examples both in Oracle documentation and elsewhere that use the comma syntax means that the latter won't go away anytime soon. However, the only real downside to the ANSI syntax, in my experience, is the natural join which is probably a little too dangerous for day-to-day use.

On the other hand outer joins should, in my opinion, always be coded using the ANSI syntax unless you need your code to run on 8i.

About the Author

Tony Hasler is an independent software consultant specialising in helping companies improve Oracle related services. During his thirty years of experience Tony has led operating systems development teams, represented the British Standards Institute internationally, and filed a patent relating to optimisations of distributed transactions.

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EVA 6000 Storage Array Configuration for Cluster Database

By Jimmy David, Inatech Solutions Limited

This article gives an overview on how to configure servers with Enterprise Virtual Array (EVA) EVA6000 for data storage. Though there are various data storage devices across the industry, Inatech uses the popular EVA 6000 from HP.

Storage Area Network (SAN) is a network of storage devices that are connected to each other and to a server or cluster of servers, which act as an access point to the SAN. Storage area network management is gaining momentum in the SME segment. Many SMEs have deployed or are in the process of deploying packaged enterprise applications.

Building a storage area network, involves centralised disks and tapes. They are connected to the servers on a separate fiber channel network, which helps to consolidate storage resources at block level, thus reducing the load on the production network. SAN's use special switches as a mechanism to connect the devices. These switches, which look a lot like a normal Ethernet networking switch, act as the connectivity point for SAN's making it possible for devices to communicate with each other on a separate network. SAN requires careful planning and design due to its reliance on connectivity.

A typical SAN Architecture is as below:

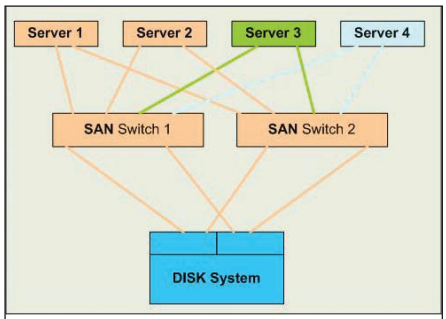


Figure 1: Architecture and Physical Layout of EVA 6000

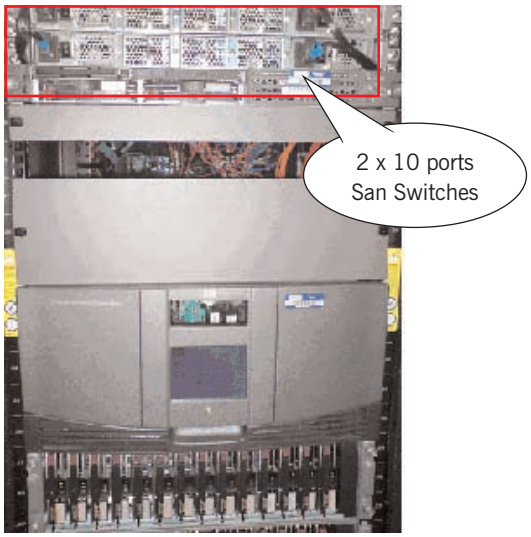


Figure 2: Upper half of EVA 6000

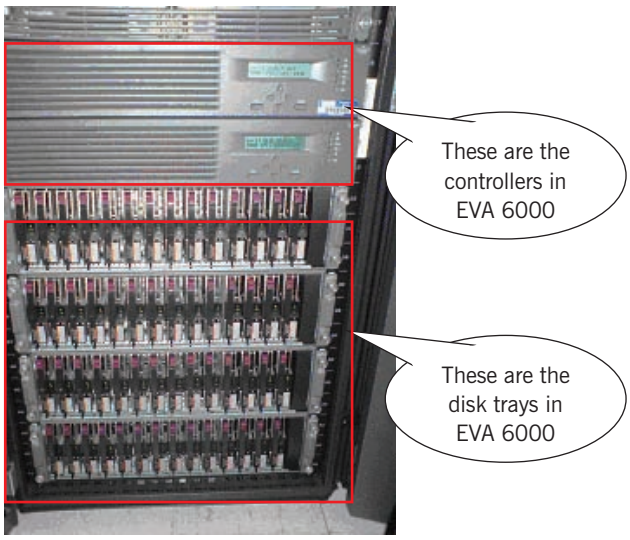


Figure 3: Lower half of EVA 6000

Architecture and Physical Layout of EVA 6000

Enterprise Virtual Array (EVA) 6000 belongs to HP array family. HP introduced with EVA 4000, EVA 6000 and EVA 8000 back in 2003. It is one of the robust and efficient storage arrays that can be used as multi database and application storage.

In the diagrams above, there are 2 x 16-port brocade SAN Switches, 2 x Array Controllers and 4 x Disk Bays. Each disk bay having 13 disks. HP EVA systems are configured, managed, and monitored through a Storage Management Appliance. The Storage Management Appliance is a PC server that runs a software agent called Command View EVA. The software agent is accessed using a user interface that is

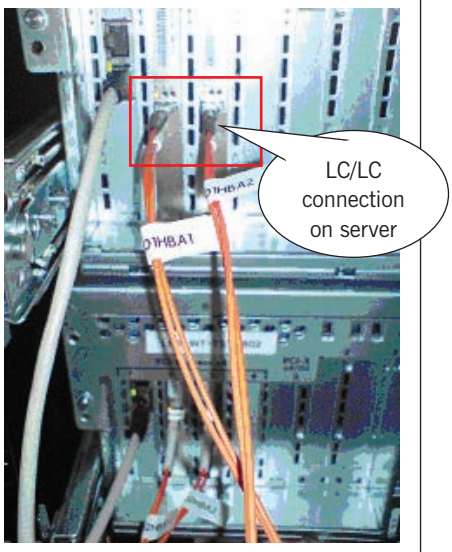


Figure 4: Fiber Channel Connection on Server

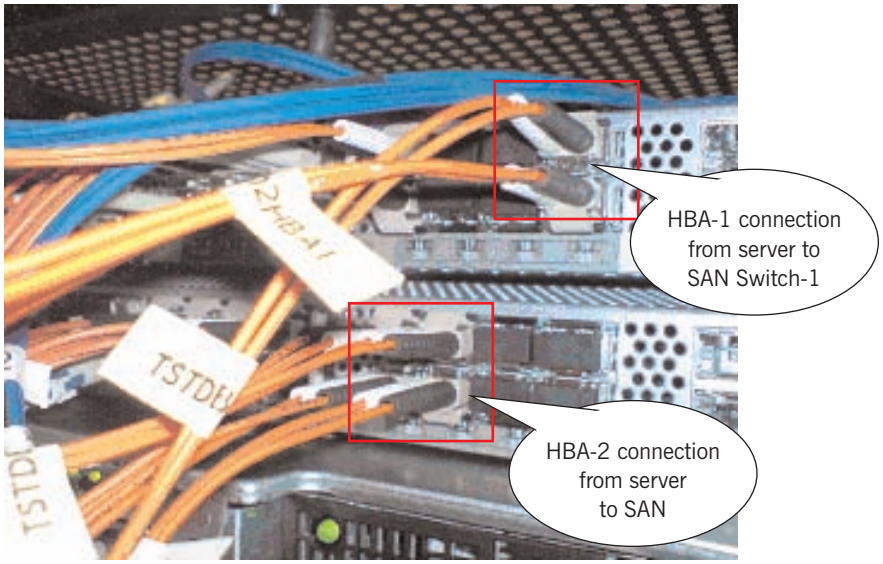


Figure 5: Fiber Channel connection on Switches

provided by a standard Web browser. Command View EVA communicates in-band with the HSV controllers. The HP EVA controller can be shared between a host and a SAN Volume Controller. A host must not be connected to both a SAN Volume Controller and an HP EVA subsystem at the same time. LUs and RAID arrays must not be shared between a host and a SAN Volume Controller.

SAN – Server Configuration

i. Configure Host Bus Adapter

While installing the operating system, HBA are not configured in Redhat Linux. Hence the system administrator needs to install drivers for the HBA. The steps are as below:

- Identify the HBA make and serial number from server.
- Apply QLogic HBA Drivers hp_qla2x00src 8.01.06.01-8 to enable HBA.

ii. Physical Connection

The connectivity to the storage array from the servers is established via fiber channel cables. Fiber channel cables are faster than the scsii cables. The technical term for fiber channel cables is LC/LC cables.

In our scenario, we used 15 metres of LC/LC cables per connection. It is very important to analyse the location of the server and the SAN switches in the data centre. You could need a 5m, 10m or 15m length, depending on the distance between server and SAN switches.

The host bus adapters (HBA) are required in every server to connect to SAN switches. It is recommended to have 2 x HBA per servers. This is to enable multipath. Multipath in SAN connectivity is for providing high availability from server to SAN connection. The connection to server and to the SAN switches is as above (see Figures 4 and 5).

Immediately after the LC/LC cable connection, if the server is identified by SAN switches, there will be a 'green' LED from the switch port.

iii. Fabric Zoning

The SAN Volume Controller switch zone must include at least one target port from each HSV controller in order to have no single point of failure.

- Start switch management and Click on 'zone' button. It will prompt for the switch login screen.
- Expand 'ports & attaching devices'. It will show the HBA that is there in the server. Select the respective card and check the button, 'Add FA Host'. At the end of this operation, SAN switch will commit the task.
- Browse to zone menu tab and create ZONE. While clicking on 'create' button, it will prompt to give the name of zone.
- The next step is to add the new zone into the SAN switch configuration. Select 'Config' menu tab. It will list the Zone which have been created and ready to add to the zone. Select respective zone to add. In our case, it is FB_PRODDB02_ZONE. Check 'Add Member'. To enable the config, it will prompt for the name of zone. Once the zone has been selected, it will come up with a pop-up window for confirmation.

iv. Host Settings for HP EVA

Once the zoning activity is completed, we can add a host to EVA. Enter Hostname and drop down 'Port WW Name'. The HBA address needs to be available as it is identified by the fiber channel connection.

v. Logical Unit Configuration on EVA 6000

An EVA logical unit is referred to as a virtual disk (VDisk). An EVA subsystem can support up to 512 VDisks. VDisks are created within a set of physical disk drives, referred to as a disk group. A VDisk is striped across all the drives in the group. The minimum size of a disk group is eight physical drives and maximum size is all available disk drives. EVA VDisks are created and deleted using the Command View EVA utility.

vi. Logical Unit Presentation

A virtual disk (VDisk) must be explicitly presented to a host before it can be used for I/O operations. The SAN Volume Controller supports LUN masking on an HP EVA controller. When presenting a VDisk, the LUN can be specified or allowed to default to the next available value. The SAN Volume Controller supports LUN virtualization on an HP EVA controller. The LUN-host relationship is set on a per-host basis.

If the 'operational status' is 'good' for the given VDisk, we can add vdisk to a host. Select 'presentation' menu and check 'present' button to present the vdisk to respective host and save the configuration (see Figure 6, next page).

Once the vdisks are presented, we need to finish the task by 'add a host port'. To add a host port, we need to again select the HBA address that is already present in the system. Adding host port needs to be done for all individual servers that are attached to SAN. This will enable a stable and consistent connection from server to SAN.

Now SAN is ready for use with the servers that need storage space in SAN. While looking from the server, the respective disks will be viewable and we can partition, format and make file system as per the need of the cluster and application requirements.

Conclusion

This article gives a better understanding of the architecture and usage of EVA and how to connect a HP Proliant Server 580/380 GL server to an HP EVA 4000/6000/8000. Using this article, a DBA or system engineer will be able to connect a server to SAN, establish fabric zoning, creating and presenting logical units to cluster servers. For an extensive reference to EVA, I would recommend HP EVA guides.

About the Author

Jimmy David is Sr. Oracle Apps DBA at Inatech with more than 8 years of professional experience. He is an expert in Database Administration and in Oracle Apps E-Business Suite DBA activities. His expertise includes various activities like Installation, Cloning, Patching, Performance Tuning Activities and various Backup and Recovery Processes. He is well versed in DBA Activities and Administration of Oracle Applications and has led various teams successfully across multiple projects globally.

Jimmy can be contacted at jimmy.david@inatech.com

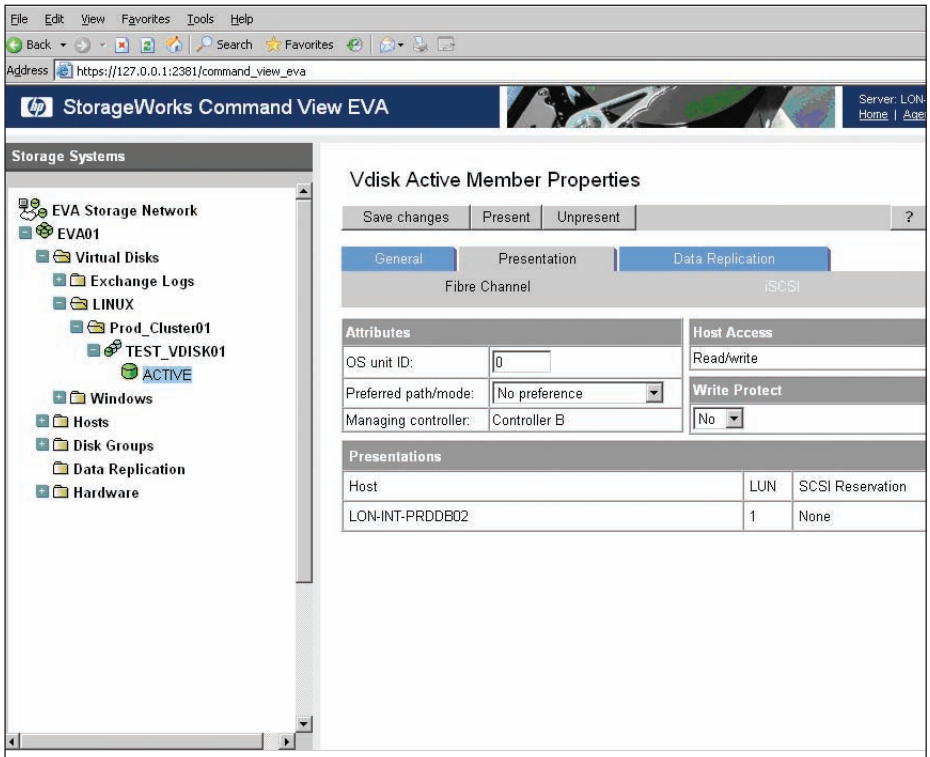


Figure 6: Presentation of Vdisk

Top Tip: Easy method to convert filenames to lowercase in Unix/Linux

I have just been informed that there is still about half a page left to fill so (now) for something a little different. If you move from a Windows environment to a Unix/Linux one (about which I have written before) then one of the things that will really get you frustrated is the fact that Windows does not care about the case of filenames but Unix/Linux most certainly does – everybody knows about it but it still hurts when it happens. So a simple thing like running a script can become a minor nightmare – was it TableSpaceFreeSpace.Sql, TablespaceFreeSpace.Sql, TableSpaceFreeSpace.SQL or some other combination of mixed case characters? The obvious thing to do – well at least to me – is to convert all your Windows files to have completely lowercase names. The zip/unzip commands can help you here. Simply zip up all your files using a zip *.* command on Unix/Linux, move the originals to somewhere safe (i.e. back them up) and then unpack the zip file using unzip -LL <zip-file>. The -LL option will convert the files names to lower case during the extraction process. Bingo – no more mixed case worries. As with Unix there are undoubtedly other methods, maybe even a single dedicated command to do this – therefore, I offer up a challenge: send in your own alternative method of converting filenames to lower (or upper, if you like) case. The best will be mentioned in the next thrilling (?) instalment of Oracle Scene – Top Tips!

Tim Onions is an independent database consultant with over 15 years' experience with Oracle databases. Tim specialises in the application and database design of high performance systems, as well as tuning and optimisation techniques and can be reached at Tim.Onions@TOdC.co.uk

Oracle Development Tool Review

The Full Verdict

By Penny Cookson, Wilfred van der Deijl, Chris Muir and John Stegeman

Probably the most keenly debated, and often, heatedly discussed topic amongst Oracle's development community is: "Which development tool is the best?" While newbies look for guidance, zealots vehemently defend their tool of choice. However, the reality is maybe slightly mundane. Like debating the "best car" in world, there are numerous choices, each have their plus and minus points, and let's face it, they all in the end do a very similar job.

So, regardless if you are a hot headed Lamborghini lover or family of five with a people carrier, this article gives you the low down on some of Oracle's latest and best loved development tools (with not a cup-holder in sight) from Oracle experts in the Oracle development community.

"Like choosing a car or selecting a tool for some DIY at home, the choice is driven not so much by the tool, and more by the job you need to do" says Grant Ronald, Product Manager in Oracle's Application Development Tools division. "The What, Who and Where are the questions you need to be asking. This way, you tend to find your choice drawn to a specific tool, or you may decide to use a combination of tools for building your application. The key point is, you do have a choice with each tool having its own sweet spot." Grant continues "This article picks just a few of the criteria you should be considering, and with input from recognised experts commenting on their area of expertise, it gives a balanced and measured insight into the tools".

Oracle Application Express

Target Price: $FREE! *
Overall Rating: ★★★★☆
Coolness Factor: ★★★★☆

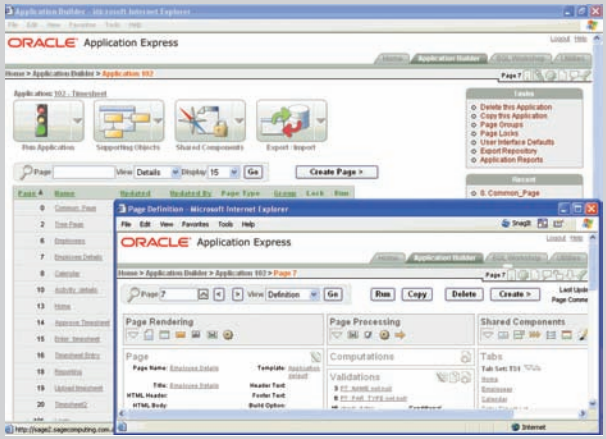
Development

Learning Curve: ★★★★★

For programmers with existing SQL and PL/SQL skills, Oracle Application Express (Oracle Apex) is easy to pick up as it is focused on these technologies. The creation of a basic application for data retrieval and reporting requires a very low level of technical skills, in fact using the wizard approach, your first page will require only 7 clicks. This is only half the story however, as more experienced developers will be able to build more serious applications using the product. The skills required for this fall into two main areas, SQL and PL/SQL skills for implementing complex business rules, and HTML and JavaScript skills for developing more functional and attractive user interfaces. A free development environment, complete with examples, documentation, and links to the forum, is available at http://apex.oracle.com.

Rapid Application Development: ★★★★★

You can build so fast that it won't matter that the user requirements change. As with any tool of this type, the idea is to go along with the wizard based approach as far as possible, and then extend the functionality with custom code only where required. It is also worth spending some time up front on the templates for a good consistent look and feel.

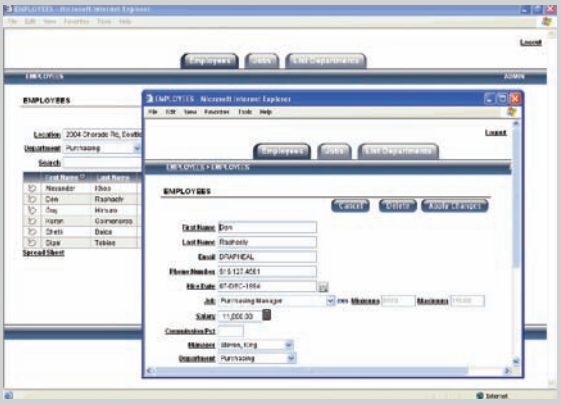


The productivity of this product would be hard to beat for a small development team. Larger development teams working on complex applications may find the limited support for versioning, and lack of documentation facilities a problem.

Debugging: ★★★☆☆

The debug mode, which displays all page rendering and processing steps, and the ability to view the values in session state provide some limited assistance in debugging. Because some of the SQL is generated by the application, it is not always easy to see exactly what is being executed. If you have taken the correct approach to implementing more complex business rules, you will have written anything really complicated, in a stored procedure and called it from your Oracle Apex application. You can then use the sophisticated debugger in tools such as Oracle's SQL Developer, rather than trying to debug these in Oracle Apex. Use a tool like SQL Developer to write and debug your packages.

Applications



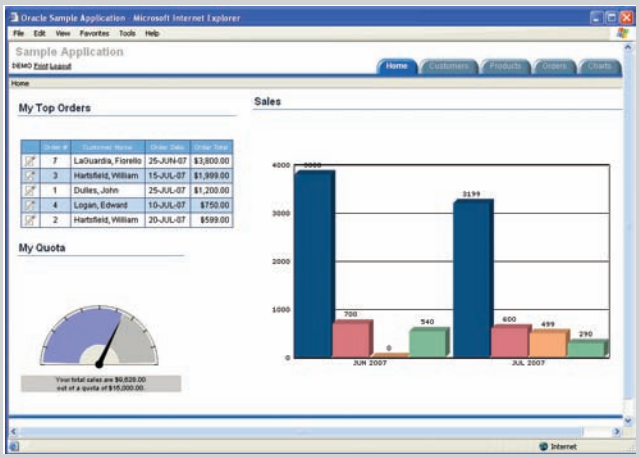
Data Entry: ★★★☆☆

The fairly traditional HTML web application interface that Oracle Apex produces can be significantly enhanced with the addition of AJAX components. However don't expect the rich GUI achievable with Oracle Forms, or a Java Swing application. In any case, why assume that data entry requires a whole load of cute widgets. Some of the fastest, most efficient data entry screens were provided by character mode applications. Data entry is about keyboard operations, not clicking around with the mouse, and Oracle Apex does this just fine.

AJAX Web Applications: ★★★★☆

From version 2.0, Oracle Apex provides templates that support partial page refresh for reports, and an inbuilt framework for making AJAX calls from Oracle Apex pages. You will need to write your own AJAX code, which you then call using the htmldb_get object provided with the product. AJAX code written using third party products can also be integrated into Oracle Apex, but you will need to understand the code, as it is not a simple process of dragging AJAX components into the page. The product allows you to define on-demand processes that can be invoked using AJAX, and can access the current session state. If your JavaScript programming skills are weak, you can easily find examples of features such as cascading lists of values, hierarchical trees, dynamic menus, and optional report row detail, and with a little effort incorporate them into your own applications.

Reporting: ★★★★☆



If you want to produce reports with really sophisticated layouts from Oracle Apex, you can use the Advanced Report configuration option that utilises the product's integration with BI Publisher and allows you to import RTF based report layouts. However if you don't already own the BI Publisher product you will be hit with a license fee. The Standard Report configuration option can utilise Apache FOP or other standard XSL-FO processing engine to produce PDF reports in which many of the page layout attributes can be controlled. So without putting your hands in your pockets, Oracle Apex can still produce well-formatted tabular style reports. Oracle Apex also supports HTML, Scalable Vector Graphics (SVG), and Flash charts.

Production

Supported Platforms: ★★★★☆

The fact that Oracle Apex is basically a PL/SQL application should be enough to tell you that it supports any database as long as it's Oracle. If you are trying to build a portable application then Oracle Apex is not for you. Consider though, that application front ends come and go, but why would you want to use any other database anyway?

Scalability: ★★★★☆

This is probably the area that generates most discussion when considering building large-scale applications with Oracle Apex. J2EE aficionados will tell you that because you cannot load balance the processing across a number of cheap application server boxes, systems built in Oracle Apex will not scale. Oracle Apex lovers will insist applications are all about processing data, and the best place to do that is in the database. Considering that all but a tiny part of an Oracle Apex application is running in the database, why would it not be capable of supporting a significant transaction load, after all the database is a highly sophisticated piece of software. Oracle Apex uses the standard mod_plsql pooling mechanism for database sessions, so that multiple users are utilising the same set of database connections.

If you add to this the fact that once you consider RAC, the database also becomes highly scalable by adding additional boxes, there is no real reason why an Oracle Apex application should not scale to large numbers of users. If you need further proof, there are client stories on the forums that describe applications with thousands of users, and after all, both Metalink and the askTom site, which are written in Oracle Apex, could hardly be considered as small applications in terms of load.

* Price: ★★★★★

Oracle Apex is built into Oracle Express Edition, a free version of the Oracle database, but which has some limitations on resource use and size of storage, so it is possible to build and deploy a small application with no associated cost for database or tools. If you are using any other Oracle database (from version 9i) you can install the Oracle Apex product into your database at no cost. So, as long as you are an Oracle database user, the product is free.

Penny Cookson has 20 years experience of Oracle products and was Oracle Educator of the Year 2004. Penny provides training and consulting for the database and tools.

Oracle Forms

Target Price: US$5,000 (per developer)
Overall Rating: ★★★☆☆
Coolness Factor: ★☆☆☆☆

Development

Learning Curve: ★★★★☆

Oracle Forms is relatively easy to learn. A typical Forms application is very database centric. If you've already created your database tables, it's only a matter of completing the wizard to get you first fully functional Form. You can enhance your Form using visual editors and by dragging and dropping components from a palette onto your Form's canvases.
Each component has a large number of properties to determine its behaviour.

You can also enhance your Form by adding PL/SQL code to any of the triggers that fire before, instead of, in addition to, or after certain predefined events. This event driven model is simple to understand and use, yet powerful. The visual component-based development combined with the PL/SQL language familiar to Oracle database developers, makes Forms a relatively easy programming environment to learn. Having the same programming language as the database server and the application drastically cuts down on your learning curve. There's no need to read thick books on complex programming languages or frameworks to get going with Oracle Forms if you're already familiair with the Oracle database.

Rapid Application Development: ★★★★☆

It's very easy to create a first draft of a data entry Form using the wizards. This generates a Form with all of the basic CRUD (Create, Retrieve, Update, and Delete) functionality. Things like pop-lists and feature rich list of values are easy to add. But there is a certain point in the development where you have to dive into the PL/SQL triggers and enhance the standard functionality of the product.

Debugging: ★★★★☆

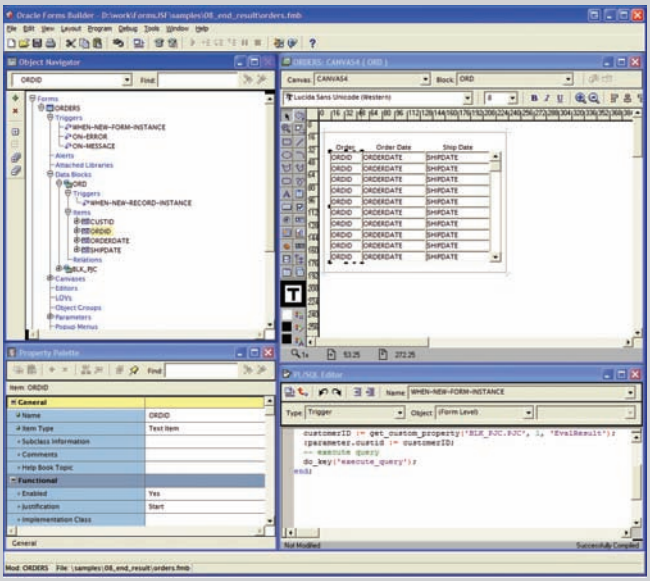
Oracle Forms contains a fully-fledged debugger with breakpoints, variables to watch, etcetera. Since the triggers in Oracle Forms and your stored procedures in the database are coded using PL/SQL, the Forms debugger can seamlessly debug both. So you can step through the Forms side PL/SQL code and the server side PL/SQL code in a single debugging session and environment.

There's also a tracing feature that writes all the internal workings of a running Form to a file. This trace file contains timing information for each and every action, so it's quite easy to pinpoint any performance issues and see what's going on in your Form without stepping through an entire session in the debugger.

Applications

Data Entry: ★★★★☆

This is where Oracle Forms beats almost any other development product. As the name already implies, the product is intended to build Forms for data entry. By design, each Form can contain one or more data blocks that are directly related to database tables, views or queries. The data block can be used to query, update, delete and insert records. Forms applications



work well for those with a need for fast, professional data access application, and data entry is certainly one of the best features of Forms, but also one of its limitations. The whole programming model in Forms is geared towards writing database centric applications. If you want to write a totally different type of application (for example running on a mobile phone, or a lightweight self service "Amazon.com" application, Forms is not the product for you.

AJAX Web Applications: ★☆☆☆☆

AJAX is just a way to compensate for the absence of feature rich user interface components from the HTML standard. It's a (sometimes cumbersome) way to build feature rich components based on the simple HTML elements. Oracle Forms doesn't need all this trickery. It runs as a Java applet in a client browser. This gives Forms the rich GUI look-and-feel users are accustomed to from desktop client/server applications of the past. The Forms applet uses Java Swing-like components in the user interface. Forms comes with a whole range of compoments, but the sky is the limit with custom built or commercially available Swing components , which can be dropped into the Forms user interface.

Reporting: ★☆☆☆☆

Forms is a product for developing screens that are mostly used for data-retrieval and entry. It has never been, and will never be a product for reporting. Oracle Forms used to rely on its cousin Oracle Reports to handle reporting. Forms and Reports still integrate very well, but you could just as well use any other web based reporting products. Since the user is already using a web browser to run Oracle Forms, it's easy to open a new browser window showing reports from BI Publisher, Application Express, Reports or any other reporting product.

Production

Supported Platforms: ★★★☆☆

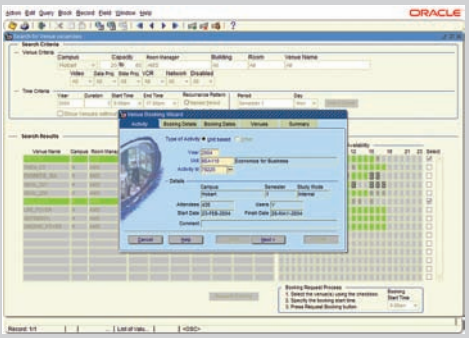
The Forms server is an Oracle Application Server component and is thus available for Linux, Unix and Windows. So, the platform support for the server side seems well covered. The client requires a Java Virtual Machine, but that's also available for virtually all platforms. The last tier in the architecture is the database. Oracle Forms can be used to connect to a variety of databases but in practice you're likely to use it in combination with an Oracle database.

Scalability: ★★★★☆

Most installations of Oracle Forms will be intended for internal use only, or at least for a well-defined group of external users. Most of the time you don't have to cope with the spiking traffic of a public web site, since Oracle Forms is just not cut out for this "general public" type of applications. But even for a closed user group you want a scalable platform.

OTN has a white paper http://www.oracle.com/wocportal/page/wocprod/ver-31/ocom/technology/products/forms/pdf/10g/forms904capacityplanning.pdf on capacity planning an Oracle Forms installation. This paper explains that the scalability of Forms is very linear. This means that doubling the hardware will double the maximum number of users you can accommodate. Rather than performance slowly degrading as more users are added, the response times remain reasonably constant until the machine is saturated and performance degrades drastically. If this happens you have the option to add more hardware to push the point of saturation or to add more application servers to your installation to share the load.

Price: ★☆☆☆☆



There seems to be an ever increasing pool of free-of-charge development products. Unfortunately, Forms isn't one of them. You require both a license for the development product (US$ 5,000 per developer) and a license for the runtime platform. The runtime platform can be a standalone Forms/ Reports server for US$ 20,000 or there is also a per user option as well. You can also go all the way and buy the Oracle Application Server Enterprise Edition, which includes Forms and a whole bunch of other great components.

> "Oracle Forms can be used to connect to a variety of databases but in practice you're likely to use it in combination with an Oracle database."

Wilfred van der Deijl has over 12 years of experience with Oracle Tools. He is the systems architect for a Forms development team of 10 at Eurotransplant.

Oracle JDeveloper with ADF

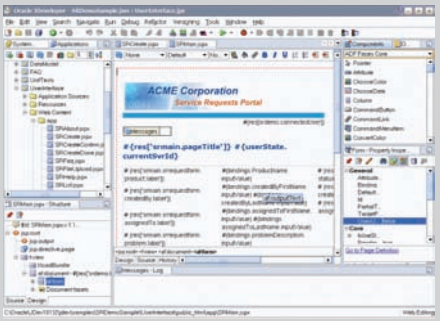
Target Price: $ FREE! *
Overall Rating: ★★★★☆
Coolness Factor: ★★★★★

Development

Learning Curve: ★★☆☆☆

For developers new to Java and J2EE (now known as Java EE), learning both a new language (Java) and a series of specification for building applications (JEE) can be a steep mountain to climb. Fortunately, JDeveloper comes with its own Application Development Framework (ADF) that can enable developers, even those with no Java or J2EE experience, to quickly create web-based database applications. The wizards, editors, property inspectors, and drag-and-drop facilities make application development a breeze. Your first database bound web page can be created with only a few drags and mouse clicks without a single line of code. Your second page in as little 12 clicks with still no code – now that's productivity!

Of course, any serious application is going to require more than just clicking through the wizards. Developers can use the "check for updates" function within JDeveloper to download a fully functional sample application, known as "SRDemo", that demonstrates more advanced techniques. The 600+ page



Application Developer's Guides explain the techniques used to build SRDemo. Because ADF is such a rich and deep framework, be prepared to invest time to gain a deep understanding.

Rapid Application Development: ★★★★☆

As JDeveloper supports drag-and-drop creation of database bound web pages in just a few mouse clicks, new development ideas can become web pages in short time. Also, JDeveloper's ADF wizards support re-entry, meaning that you can add and remove columns and change datatypes, as your application changes, and JDeveloper will keep your code in sync. JDeveloper also has support for creating standard UML diagrams that can then be used to generate database tables, ADF objects, and web pages, much like the older Oracle Designer product. The hardest thing is actually getting the requirements from the users and assisting them to understand what you can build. Some things never change!

Debugging: ★★★★★

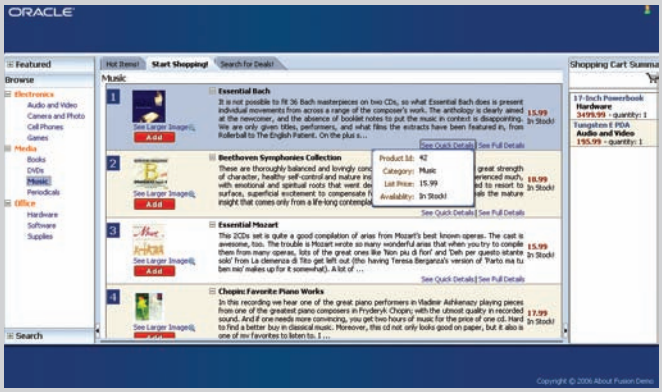
If you're used to using DBMS_OUTPUT.PUT_LINE to debug your code, JDeveloper's debugger will bring a smile to your face. In addition to providing a sophisticated Java debugger that lets you inspect variables, set breakpoints, break on exceptions, trace code, and more, JDeveloper also supports debugging PL/SQL code running in the Oracle database! Imagine being able to trace through both Java and PL/SQL code in the same debugger. Even if your programs are bug-free (unlike ours), using the debugger to step through code as it executes is a good tool for learning how the pieces of Oracle ADF fit together.

Applications

Data Entry: ★★☆☆☆

JDeveloper through its support of Java's Swing and JavaServer Faces GUI toolkits can create both desktop rich client applications and web applications respectively. Swing is particularly suited to data entry applications providing a rich desktop GUI programming environment where the developer can provide user interfaces that cater to the data entry operator's needs. Traditional web applications aren't as suited to heavy data entry, though this has changed with the introduction of AJAX. Since JDeveloper 10.1.3, and even more so in JDeveloper 11g, the ADF Faces components support AJAX controls and have enhanced the ability of developers to create rich web applications to suit the data entry operators tastes.

AJAX Web Applications: ★★★★☆



AJAX like support has been available for Web Applications since JDeveloper 9, with the ability to partially refresh web pages for fast internet responses. JDeveloper 10g and 11g include a large range of AJAX facilities beyond this such as components supporting drag and drop, cascading list of values, re-orderable table columns, hierarchical trees and menus, and much more. In the 11g release the new ADF Faces *Rich Client* component set takes the AJAX experience to a new level with a huge array of rich client-side AJAX components such as accordian menus, graphs, sliders and more.

Reporting: ★☆☆☆☆

Up until JDeveloper 11g, creating web based database-bound reports were limited to simple table structures without a lot of coding. In 11g reporting is somewhat more sophisticated with the introduction of graphs and gauges. Without a doubt tools like Oracle Reports and XML/BI Publisher do a better job of reporting. JDeveloper includes APIs to specifically interface with XML/BI Publisher to harness its reporting features.

Production

Supported Platforms: ★★★★★

JDeveloper supports any SQL compliant database with JDBC, including MySQL and MS SQL Server, as long as a JDBC driver is available. This provides flexibility in an environment where the database technology may be dictated to the developer and not necessarily an Oracle database. JDeveloper also supports any standard J2EE application server such as Tomcat, JBoss and Oracle's OAS OC4J. As long as you're creating a standard J2EE archive file for your ADF BC/Faces application, the J2EE standards allows you to deploy that application to any equivalent J2EE application (see the caveat about cost below).

> "Imagine being able to trace through both Java and PL/SQL code in the same debugger."

Scalability: ★★★★★

Specifically considering ADF Business Components (ADF BC) it uses a *connection pooling* mechanism to optimise database connections, activating and passivating the sessions as users make requests. This allows more users than actual database connections via the connection pool sessions to connect to the database, decreasing the resources allocated by the mid-tier and database backend. In turn user state, the saving of ADF BC values over a user's session is facilitated by *application module pooling*. Both pooling mechanisms are implicit in the ADF BC framework, require little intervention by the programmer, and optimise the speed and memory consumed by the mid-tier. Ultimately this is all about scalability and built in by default.

* Price: ★★★★☆

The JDeveloper IDE is free for Java application development, which puts it on a par with, and in some cases ahead of, other Java development IDEs. That's right, another free tool from Oracle. The JDeveloper ADF libraries that are coupled with JDeveloper are free to use with one caveat, that in a production environment they are deployed to an existing Oracle Application Server. ADF may run on alternative J2EE servers (eg. Tomcat) but Oracle licensing costs apply in this case.

Chris Muir and **John Stegeman** specialise and blog on JDeveloper and Oracle's J2EE tools. They are both Oracle ACE Directors.

Top Tips: Something old, something new(-ish)

By Tim Onions TOdC Limited

Like many a seasoned Oracle professional, (a term I like to use about myself – professional that is, not the seasoned part) I have a custom login script for SQL*Plus to set up my environment, configure NLS settings and change the SQL> prompt – so I can see at a glance on which database I am working. However, in recent weeks I found that the information I was gathering had one important item missing – it did not tell me on which host server the database resided. As the work I am currently involved in uses a lot of external files, directories and the like, it requires frequent switching from PC client development environment tools to a UNIX shell on the database server. To add to the mix a rigorous, thorough and seemingly ceaseless exercise in server moves, rationalizations and virtualisations it was becoming tedious to constantly have to interrogate the database to find out where to pitch my putty.

Coming from a DBA background my first instinct was to select HOST_NAME from V$INSTANCE – simple enough and after a few times even my desperate typing could get it right 9 times out of 10 and in what I felt was a pretty impressive speed.

```
SQL> SELECT host_name
FROM v$instance;

HOST_NAME
----------------------------------------
todclnxdb01
```

Pride goes before a fall, as they say (who are ***they*** exactly anyway?). A recent move from DBA work to design and development work scuppered this – developers do not get access to V$ tables by default and have to put up a pretty strong case (and wade through levels of red-tape) to get access even to the most benign of such data. Having been through the DBA end of SOX, any indignation at not letting little ole ME have access to a V$ table was short lived and so rather than fight for the right to party with V$ tables I went hunting for something more universal.

When I stumbled across the user environment variable *SERVER_HOST* I thought I had cracked it. A simple SYS_CONTEXT call will get the name of the host of the database you are connected to e.g.:

```
SQL> SELECT SYS_CONTEXT('USERENV','SERVER_HOST')
FROM dual;

SYS_CONTEXT('USERENV','SERVER_HOST')
----------------------------------------
todclnxdb01
```

Beautiful, simple and consistent with my existing login.sql code to get database name (via SYS_CONTEXT('USERENV', 'DB_NAME') or SYS_CONTEXT('USERENV', 'INSTANCE_NAME') if using RAC). However, my pride was about to get a second fall. Yes, it works wonderfully – but only from 10g and beyond. The "SERVER_HOST" context was not introduced until then.

Then, out of the ark came an unexpected answer. Since Oracle7 when webDB/HTML DB existed (or whatever it was called in those days) there have been a set of utility packages used, primarily, for helping the programmer to work around the dynamic generation web pages [Aside: anybody remember owa_pattern – the much under-used precursor to REGEX built-ins in the database?]. One of these has a call to get the host server name – utl_inaddr.get_host_name – and it is still there in 10g. So, to get the host server name of the database instance you are currently connected to, simply use the following (or similar) query:

```
SQL> SELECT utl_inaddr.get_host_name
FROM dual;

GET_HOST_NAME
----------------------------------------
todclnxdb01
```

It was not necessary for me to have this shown in the SQL> prompt (which would have become a bit cluttered as a result in any case) so my LOGIN.SQL simply selects the server host name into a SQL*Plus variable and anytime I need to see the name of the host server of the database I am connected to I just type DEF (even those three letters I can get in the right order most of the time).

Quick UNIX/LINUX bonus tip

For those of you who are not already shell scripting experts – ever wanted to turn on spooled output from a UNIX shell script but from within the script as opposed to kicking off the script with output redirected via the *>/filename* pipe? Easily done with the EXEC command. e.g.

```
exec > /logs/myshellscript.log
exec 2>&1
…
```

Add this to the start of your script and you never have to kick it off with redirection again if you always want a log file. Add this to a script run by your application but which you have no means to access/change whatever it is that starts the script in the first place and you will be able to gather "debug" information.

Want to know what each line was doing in the script as part of the output – set debug mode (via set –x) and change the prompt seen in debug mode (PS4) to '$0.$LINENO+ ' so that your spooled output includes the script name and script line number that each line of output came from. So add the following to your script, at the start:

```
export PS4='$0.$LINENO+ '
exec > /tmp/script.log
exec 2>&1
set –x
..
```

Just bursting to tell you this

What still more room to fill? Oh, well, if I must. If you are an Oracle Developer developer (yes, I did mean to type developer twice there), and more specifically an Oracle Reports Developer developer (hang on, I did not need to type developer twice that time – or did I?) then this is probably old hat to you. However, I was so impressed recently when I had a request to write a report, using Oracle Developer for the first time in a very long time that I feel it is worth mentioning in brief here. The request was a little different to what I usually get. Produce a set of reports, one for each department in the company (of which there are dozens) each showing the same basic data (clearly filtered to the work done by each specific area). Each report to be printed, automatically, to the appropriate departmental printer but with a copy of each department's report file kept on the server (in case a re-print is required) in a department specific directory. Optionally, email a copy of the report to department head – assuming the department head has "subscribed" to this facility.

Remember, it had been a while since I had had to write any Oracle Developer report let alone one requiring a file per department, printed on specific (and different) printers and with the option of emailing too. Initial "funky" designs in my head centered around somehow generating multiple report requests for each department – one for the hard-copy print, one for the file and one for email as required. Then having some shell script to interrogate a set of control tables to work out what to run and where to send it, the script then issuing a distinct reports "run" command for each.

All totally unnecessary as it turns out. Oracle Reports (definitely in 10g AS and possibly some if not all of what I wanted in 6i) can do all of this for you with pretty much minimal effort. The terms used in the manuals are *bursting* and *distribution*. Bursting is what allows you to create separate reports from a single report query/group – rather than report on a repeating frame in the main section report on a group instead. Distribution is what allows you to print, create a file and email a single report all at the same time (as it were). Somewhere in between is the cream – all of this can be dynamic. When you set-up a distribution, (again defined in the layout's main section), you can define the filename (if a file distribution), define the print queue (if printing) or define the email address (if emailing) at run-time based on the data your report returns. So, for my specific case I set it to burst on change of department then set-up distributions to:

- build the file destination and name from data returned by my query (use use the standard syntax of &<columnname>)
- print to the printer queue which is held on my "departments" table (and again returned by my query)
- email to the department head if required.

I was so impressed I almost wrote a whole article on this – only stopping short of doing so as there is a strong possibility that if you are an Oracle Developer developer (there I go again again) you will already know all about this (and a whole lot more). If, however, anybody out there does think it worth more detail then I would be more than willing to submit a full article on the subject (or better still an expert Oracle Developer(*2) could write it up instead of me).

Tim Onions is an independent database consultant with over 15 years' experience with Oracle databases. Tim specialises in the application and database design of high performance systems, as well as tuning and optimisation techniques and can be reached at Tim.Onions@TOdC.co.uk

Debra's diary

At the last Volunteer's Meeting, I promised that I would try to write a column for each Oracle Scene – a sort of non-technical blog to let you know what the board, the International User Communities and myself have been up to since the last edition. I appreciate that this will have a strong applications focus, however, if we get positive feedback, perhaps we can persuade Ronan to write a more technical column.

November was Oracle Open World where for the first time, user groups outside America were recognised at the User Group Pavilion, where the EMEA and ASIA Pacific User Group Councils manned a booth throughout the conference. This had the positive impact of allowing visitors from these regions to get feedback on their area and to engage with them on new initiatives.

As Ronan and I have both noted, Oracle are currently in favour of user groups and at Open World Charles Phillips had a private question time with user group leaders from the IOUC, which was very much appreciated.

The big news at Open World for me was the demonstration of the first Fusion Applications: the Social CRM Suite. After the event I emailed Steve Miranda and Jesper Andersen to request some screen shots to use at our events, which they happily forwarded for me. During our own conference it became apparent that Oracle themselves were not yet ready to demonstrate more about the applications, so it was nice to see the influence that we at the UKOUG have within Oracle.

The week after Open World I presented at the DOAG conference in Germany, which was an honour. This is the second conference at which I have given a keynote presentation on Fusion and User Groups, having spoken at the Quest Asia conference in Singapore back in September.

Then came our own conference, which was a great success but as ever we took away many learning points, and our first planning meeting for 2008 took place on 8th January. Tom Kyte was our technical keynote speaker, giving a review of Oracle technology throughout its history, which even I found fascinating. Jesper Andersen, the SVP responsible for Applications Strategy, was our applications keynote speaker and aside from this he also chaired a lively panel session as well as meeting later with our Applications SIG chairs. Oracle had asked us to find some customers for him to meet but our feeling was that we are here for the collective, and I think this was much appreciated.

My focus on Fusion and the future is important but equally the current use of Oracle is important. I gave a presentation at conference on good old Discoverer and it was one of the best attended sessions I have ever had. Getting this balance between the old and the new is my objective within the user group and thank you to all those who voted for my re-election

Ronan and I have just been to Redwood for the IOUC summit and in my next column I will talk about this year's initiatives.

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

Oracle Software Configuration Manager (SCM)

By Harald Strohschneider of
Oracle Global Customer Support

Just a few months ago, Oracle Open World 2008 took place in San Francisco with thousands of customers attending sessions about Oracle's products and services, as well as other topics common in the IT landscape.

Amongst all the sessions, one of the most attractive was about "Software Configuration Manager'. Oracle provided its product positioning and representatives of our customers shared their findings on the advantages of using it.

What is Software Configuration Manager?

What makes it so attractive to the audience?

Some may remember it was previously known as "Configuration Support Manager" before – a support framework for better and faster co-operation between our customers and Oracle Global Customer Support – simplifying and speeding up the information transfer needed to resolve your product issues.

This included both the technical information required (configuration data), as well as information about your current initiatives and tasks (projects), enabling us to provide a better understanding of your time lines and critical milestones, thus further improving the response on your Service Requests.

Software Configuration Manager is about to provide better and faster support and increase your overall satisfaction. And last but not least, it was, it is and will continue to be a support offering available in MetaLink, free of charge within a valid Support contract.

Aside from the change of name to Software Configuration Manager, it also now features a completely new Dashboard type of user interface to allow for more of the following to show you what you need to know and do:

Personalisation/ Customisation
- by user – based on roles and preferences,
- by configuration – based on environment and server type,
- by problem – based on product and context
- by specifying favourites and applying filters to regions

In addition – Inventory and usage reporting; Health Check and Patch Alerts allowing you to change the game from reactive to truly proactive support – avoiding issues before they occur and thus reducing your day by day efforts and IT costs.

As with any other tool or product – further enhanced versions with additional features are planned on regularly basis. So far, several thousand of our customers have already successfully used it and here are some of their findings and perception of benefits gained:

"This is exactly what I need, a customer definable view, rather than today's Oracle-centric view"

"With OSCM's personalized dashboard, I like the fact that I can quickly drill into my service requests, patch advice, system health checks, or knowledgebase solutions and immediately get the information I am looking for."

"The new interface for MetaLink OSCM is refined and personalized. It allows me to quickly understand what I need to do."

"We like the tighter integration with Oracle Enterprise Manager for Health Checks and Patch Advice"

Overall, in summary

- 40% Faster Issue Resolution
- 25% Problem Avoidance with Patch Alerts and Health Checks
- Up to 70% Time Savings in Managing Service Requests using a Personalised Dashboard

Finally – how can you get more information ?

How can you participate and benefit ?

Simply click the Software Configuration Manager main tab in MetaLink. There, you will easily find the "getting started" section which has more detailed documents and the schedule for Advisor Webcasts related to SCM, provided by Global Customer Support on a regularly basis.

Feel free to make yourself familiar with Software Configuration Manager and benefit from taking the next step.

UKOUG CALENDAR OF EVENTS 2008

MARCH 2008

05 **Local Government Applications**, SIG Meeting, London
05 **PeopleSoft Enterprise on SQL Server**, Reading
11 **OUG Ireland Conference & Exhibition**, Dublin, Ireland
18 **Business Intelligence & Performance Management Special Event**, London
20 **Management & Infrastructure** SIG Meeting, Slough
20 **DBMS** SIG Meeting, Slough

APRIL 2008

22 **Stellent** SIG Meeting, Reading
22 **CRM** SIG Meeting, London
23 **PeopleSoft Combined** SIG Event, TBC
23 **JD Edwards** Community Meeting, Reading
24 **Oracle and .NET** SIG Meeting, London
24 **Northern Server Technology Day**, Newcastle upon Tyne
29 **OGUG** SIG Meeting, London
30 **OUG Scotland** SIG Meeting, Edinburgh

MAY 2008

07 **Oracle Financials** SIG Meeting, Birmingham
13 **Stellent** SIG Meeting, London
13 **Oracle on Windows** SIG Meeting, Reading
14 **Criminal Justice** SIG Meeting, London
14 **Oracle Spatial** SIG Meeting, London
15 **Education & Research** SIG Meeting, West Midlands
15 **RAC & HA** SIG Meeting, London
20 **Acquire to Retire Process** SIG Meeting, London
20 **Public Sector HCM** Customer Forum, West Midlands
20 **UNIX** SIG Meeting, Midlands
21 **Local Authority Shared Services** Customer Forum, London
22 **HCM** SIG Meeting, London

JUNE 2008

03 **Siebel** SIG Meeting, Reading
03 **App Server** SIG Meeting, London
04 **Document Management & Workflow Special Event**, Windsor
05 **SIG Volunteers Meeting**, Midlands
10 **Apps DBA for OEBS** SIG Meeting, North
10 **Business Intelligence & Reporting Tools**, SIG Meeting, London
11 **Irish Applications** SIG Meeting, Dublin, Ireland
12 **Irish HCM** SIG Meeting, Dublin, Ireland
12 **Call to Resolution Process** SIG Meeting, Midlands
17 **Local Government CRM** Customer Forum, West Midlands
17 **Management & Infrastructure** SIG Meeting, London
24 **OUG Scotland** SIG Meeting, Edinburgh
25 **Modelling Analysis & Design** SIG Meeting, Midlands
26 **Statutory Compliance Sub Group,** West Midlands

JULY 2008

01 **JD Edwards** Community Meeting, London
03 **Public Sector Combined** SIG Event, London
08 **DBMS** SIG Meeting, London
10 **Development Engineering** SIG Meeting, West Midlands

SEPTEMBER 2008

09 **Oracle Financials** SIG Meeting, London
10 **PeopleSoft Combined** SIG Event, London
11 **Siebel** SIG Meeting, London
11 **UNIX** SIG Meeting, Slough
16 **Oracle Spatial** SIG Meeting, Reading
16 **Stellent** SIG Meeting, Slough
17 **Prospect to Order Process** SIG Meeting, London
17 **Oracle on Windows** SIG Meeting, Sheffield
18 **HCM** SIG Meeting, Warwickshire
18 **Oracle Projects** SIG Meeting, Reading
23 **JD Edwards** Community Meeting, West Midlands
24 **Irish HCM** SIG Meeting, Dublin, Ireland
24 **Irish Technology** SIG Meeting, Dublin, Ireland
25 **Irish Applications** SIG Meeting, Dublin, Ireland
25 **Public Sector HCM** Customer Forum, West Midlands
30 **Modelling Analysis & Design** SIG Meeting, London

OCTOBER 2008

01 **Oracle and .NET** SIG Meeting, London
01 **App Server** SIG Meeting, West Midlands
02 **Supply Chain & Manufacturing** SIG Meeting, West Midlands
07 **Apps DBA for OEBS** SIG Meeting, Bristol
08 **OUG Scotland** Conference & Exhibition 2008, Glasgow
08 **Business Intelligence & Reporting Tools** SIG Meeting, London
08 **Local Authority Shared Services** Customer Forum, London
09 **Local Government CRM** Customer Forum, West Midlands
09 **OGUG** SIG Meeting, (Formerly known as OFGUG), London
14 **Development Engineering** SIG Meeting, London
16 **Management & Infrastructure** SIG Meeting, London
23 **Statutory Compliance** Sub Group, West Midlands

NOVEMBER 2008

04 **Education & Research** SIG Meeting, West Midlands
04 **Procure to Pay Process** SIG Meeting, London
05 **Local Government Applications** SIG Meeting, London
06 **Criminal Justice** SIG Meeting, London
06 **DBMS** SIG Meeting, Midlands

DECEMBER 2008

01 **UKOUG Conference & Exhibition 2008**, Birmingham

All event dates are subject to change

UK OUG
UK ORACLE USER GROUP
25th
25 years of serving the Oracle Community

UKOUG 2007

More than 3,000 delegates registered to attend the 19th annual UK Oracle User Group Conference and Exhibition at the ICC in December 2007.

The event was a huge success with Conference streams for the Oracle Technology, E-Business Suite, PeopleSoft, JD Edwards, Siebel, Stellent and Hyperion communities across the four days.

UKOUG Chairman Ronan Miles and Ian Smith Regional Senior Vice President, Oracle UK, Ireland and Israel

Our largest Conference to date served the community with over 400 educational presentations, facilitated Roundtable sessions, panel sessions, 11 indepth Masterclasses and several high level Oracle keynotes including Tom Kyte, Ian Smith and Jesper Andersen.

The Agenda proved yet again that UKOUG can serve the Oracle community and provide outstanding content across all streams that attracts delegates from all over UK, Ireland & Scotland as well as international attendees and presenters alike. Our Conference inspires comments such as, "this is one of those conferences where you can actually get a flavour and appreciation for the issues and concerns on a global scale. Organised by an independent User Group, there is a great sense of community bringing Users, Partners and Oracle together for four great days of learning, discussion and networking."

Presentations are available to download from the conference agenda page: www.ukoug.org/2007

UKOUG – Save the Date

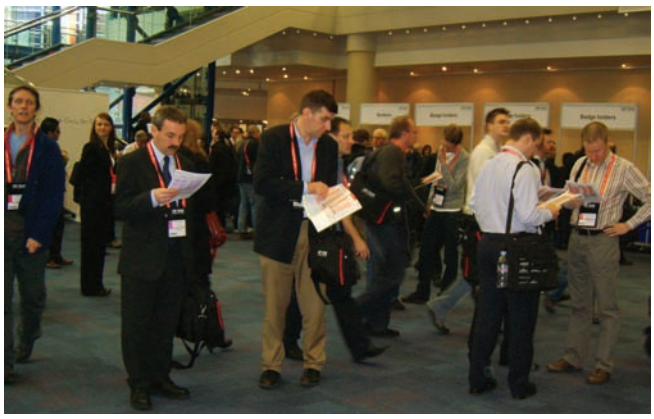
Mark your diaries now. The annual UKOUG Conference & Exhibition 2008 will take place on 1-5 December at the ICC in Birmingham. To celebrate 25 years of serving the Oracle Community we're planning the biggest and best event to date. Don't miss your opportunity to be a part of it. Contact opportunities@ukoug.org to find out more.

Call for Papers

Opens March. This is when we ask the Oracle community and speakers alike to submit abstracts for review. UKOUG 2008 agenda will cover topics within Technology, Applications, Business Intelligence, Fusion and Business & Strategy. Look out for further information coming soon on how to submit your abstract.

Call for Exhibitors

Opens March. Stands vary in size to meet the needs and the budgets of the diverse range of companies we attract from within the Oracle communities. If your company would be interested in exhibiting at UKOUG 2008, contact Karen Colton for further details: mailto:k.colton@ukoug.org



App Server SIG

We had a full conference room at Oracle's Blythe Valley Park office, near Solihull, for last October's Application Server SIG.

The SIG opened with Martin Morris from Oracle giving us a run-down of the latest versions and patchsets along with a useful description of the release lifecycle (it's not random apparently!). This provoked some lively debate about the ease (or not) of applying CPUs and Oracle are following up on this.

Alec Cartwright, original founder of the AS SIG, then talked about Identity Federation in BT and described a brave new world where customers and suppliers all managed their own identity. Colin Brown, an old time friend of the SIG and member of Oracle's specialist BDE team in Denmark, being on holiday in UK had kindly offered to talk about Single-Sign On design, interaction with OID and troubleshooting, as well as giving an overview of Oracle's new IM products.

Philippe Roberts from Atradius gave a very well-received talk about how his organisation had migrated from Forms 6i to Forms 10g on Linux (probably a common path these days) and finally I spoke about my experiences of using Oracle Clusterware to create an Application Server cold failover cluster.

> "...the most useful SIG in ages."

Overall I think we all learnt something new and, in the post-event critiques, someone very kindly said that this had been "the most useful SIG in ages."

The App Server SIG is dedicated to help us all to get the most out of the wide range of products under the Fusion Middleware umbrella. We're trying to meet the needs of administrators of Forms/Reports (still very popular products), OID/SSO, increasingly common Java deployments and newer products like BPEL. If you have a subject you'd like to see discussed, or would like to present your own experiences, please contact myself or one of the committee. Likewise if you're hoping to present at next year's UKOUG annual conference, the AS SIG provides an excellent testing ground in front of a smaller, but perfectly-formed, audience!

Our next App Server SIG will be on 3rd June where we are planning to run a "from here to there" day with content designed for Forms/Reports administrators looking for a comfortable journey into the Java ADF BC/BI Publisher world. I hope to see you then.

Simon Haslam
Application Server SIG Chair

Community Update

We are very proud of our 25 year relationship with the Oracle user community, one that continues to receive much acclaim from Oracle Corporate and other user groups globally.

Over the past four years, as Oracle has developed its product set through acquisitions, the UKOUG has embraced the challenge to serve an expanded Oracle community. In addition to serving our more established Oracle Technology and E-Business Suite communities, we have widened our membership to include JD Edwards, PeopleSoft, Siebel and Stellent.

This has been an interesting challenge for us on many levels, from implementing the 60% increase to the annual Conference agenda, to the challenges encountered when integrating new and existing communities into our membership.

As we celebrate our 25th anniversary, UKOUG are responding to the need to develop more of a community focus, dedicating more time and resource to enhancing the value of membership to all communities. We have assigned a dedicated 'champion' to drive each of the communities, which we see as a positive step in the right direction and one that we hope will ensure that our products and services meet or even exceed your expectations.

With this community focus in mind, we are already planning many changes in 2008. Things to look out for are; community specific ebulletins; a wider variety of Oracle Scene content as we move to an online version; dedicated community web pages; listservers to increase information exchange after events; more targeted emails to reduce the overall amount of communications from UKOUG. Community colours were introduced at UKOUG 2007 to help members easily identify relevant sessions, content and networking opportunities. During 2008 we will be rolling out the community colours across all our products and services.

If you have any questions or suggestions regarding our focus on communities and the changes UKOUG are making, please contact Rachel Newton rachel@ukoug.org

Anniversary

UKOUG 25th
UK ORACLE USER GROUP
25 years of serving the Oracle Community

As you are probably aware, this year is our 25th year of serving the Oracle community. We have many plans in the pipeline to celebrate this anniversary, like the monthly competitions on our website, so keep an eye on future editions, the ebulletin and our website over the coming months to see how you can get involved.

In the Summer edition we plan to look back at the changes and key milestones of the last 25 years, giving some of you the chance to relive some of your past UKOUG experiences and the rest of you some insight into how your UKOUG has evolved over the years.

The anniversary year will culminate in our biggest and best annual conference and exhibition in December. Not only will this be the best yet, but it will also be your opportunity to celebrate this milestone with us, as well as giving us the chance to say a BIG thank you to all of you, without whom none of this would be possible.

Happy Anniversary

Oracle Projects Enhancement Requests

Oracle Projects

The Oracle Projects application has grown over the last 10 years from a financial recording tool for costing and billing to an integrated product family. This growth has seen the introduction of Oracle Project Management to provide the planning and control elements of a project including work breakdown structures, project plans, deliverable control and issues management. Integrating with Oracle HR, Oracle Project Resource Management provides the mechanism to manage and control resources. Oracle Project Collaboration adds the communications mechanism to project teams.

The operational level functionality has been augmented by Project Portfolio Analysis which aims to provide a decision making tool to ensure organisations are delivering the appropriate projects in line with business objectives.

Whilst there has been significant development of the Oracle Projects product family, there is still an ongoing need to learn how to use the product in a better way or look for Oracle to enhance future versions

Oracle Projects Special Interest Group (SIG)

The Oracle Projects SIG provides all users with a mechanism to share experiences with other users and provide a communication mechanism to Oracle.

The SIG members consist of users, consultants and vendors with a wide range of experience from new to Oracle Projects to many years of involvement with the product. Members cover many industry sectors including public sector bodies; UK companies as well international organisations. Once of the key strengths of this variety of mix of people is everyone has the opportunity to gain experience and contribute to the SIG.

Oracle is active supporters of the SIG, with Oracle Ambassadors Julie Mulkern and Barry Savage regularly contributing key information to the members. More recently Debbie Parish, European Support Manager, has enhanced this contribution by assisting in a new initiative that gives the SIG a direct link to the Oracle product enhancement process.

Oracle Projects Enhancement Requests

At the Projects SIG meeting on 27th September 2007, a session was held to identify enhancements to Oracle Projects which users would like to see. During the meeting SIG members identified their top five enhancement requests to forward to Oracle. The intention is to continue this process and move requests up the list as Oracle Development considers them. This is being supplemented by a Projects SIG list server that will record request from members.

Oracle Projects Enhancements – the Top 5

No 1 – Project Reporting

Whilst the Projects application family has developed significantly over the last 10 years, the reporting mechanisms have continued as a weak area. Within the applications Projects Status Inquiry (PSI) and Projects Performance in newer releases, provide good summary data capabilities, but lack some of the detail required by many organizations. Whilst Oracle will outline that Discoverer and Projects Intelligence provide an effective reporting mechanism, these are dependent upon developing an effective End User Layer for Discoverer, as well as a dependency on how often refreshes take place.

The weakness identified provoked much discussion by SIG members and resulted in enhancements to project reporting being the number one request.

Enhancement request

A Standard Reporting Toolset (possibly using RXi functionality) and improved standard reports with a standard output source to Excel be provided within the application suite.

No 2 – Reconciliation to General Ledger

The reconciliation of the projects sub-ledger has been a constant challenge for many organizations. Whilst the Revenue Audit and Cost Audit reports provide some information, other reports are required, and it is still difficult to identify project related costs in the General Ledger. Accounts Payable project related transactions for example are having a journal source of Payables and have no project ID flag on that transaction.

The requirement for users identified was a mechanism to flag all Project related transactions within GL with an associated reconciliation mechanism.

Enhancement request

A PA to GL Reconciliation report which details project related balances and transactions

No 3 – Ability to adjust transactions for all seeded transactions

The adjustment functionality in Oracle projects is based up selecting the appropriate source. However, not all sources are available for selection, for example inventory. The consequence of this is adjustments then need to be made in the source system, or workarounds performed in Oracle Projects.

Enhancement request

Ability to adjust transactions for all seeded transactions

No 4 – Contingent Workers cannot be allocated against Projects in a single timesheet

Contingent Workers are external contractors to a project. Their record can be held in Oracle HR, therefore their skills and competencies are available for Oracle Project Resource Management, whilst functionality within Procure to Pay process matches invoices to timesheets. There is a limitation as a timesheet is required per project; therefore a contingent worker on multiple projects will require multiple timesheets.

Enhancement request

Contingent Workers can book time to multiple projects on a single timesheet.

No 5 – Posting to GL of Revenue / Cost in details

Currently Oracle Projects posts both cost and revenue transactions to the General Ledger in summary form. This

has in the past made it very difficult to reconcile Projects to the General Ledger. Payables and Receivables both have the option to post in either detail or in summary to the General Ledger.

Enhancement request

Oracle Projects to be able to post in detail and in summary to the General Ledger.

Oracle Projects Enhancement – Your Contribution

Meeting user needs has driven the development we have seen in of Oracle Projects over the last 10 years. The Projects SIG is now contributing to this process that provides all of us with a mechanism to shape the future mechanism of Oracle Projects.

So how do I become part of the process?

The first step is to join the Projects SIG by downloading a membership form from the UK Oracle User Group website http://www.ukoug.co.uk/membership/ or by contacting Ieva Satkute on 020 8545 9678 or ieva@ukoug.org

Membership will allow you to raise issues and requests on the Projects SIG list server. During the Project SIG meetings which are currently held three times a year, members will debate what they feel are the priority requests, and these will be formally passed on the Oracle via the UK Oracle User Group.

As users of Oracle Projects we all have ideas on how the application could be enhanced – you now have the opportunity to do so.

UKOUG Director Awarded Oracle ACE Status

Congratulations to Debra Lilley on recently becoming an Oracle ACE. Debra was chosen due to her significant contribution and activity in the Oracle technical community. Like her fellow Oracle ACEs, Debra has demonstrated proficiency in Oracle, as well as a willingness to share her knowledge and experiences with the community. The ACE program was only expanded to include Applications at Open World last November and Debra was one of the first to be recognised.

The Oracle ACE Program recognises and rewards members of the Oracle Technology and Applications Communities for their contributions to these communities. More information about the Progam can be found at http://www.oracle.com/technology/community/oracle_ace

UKOUG Welcomes a New Director

At the AGM last December in Birmingham, Tracey Bleakley, Change Management Practice Manager, Edenbrook, was successfully elected to the UKOUG Board. Tracey is an Oracle consultant with eleven years of experience, specialising in programme and project management of large-scale business transformation, technology and operational improvement projects.

Tracey's work in consulting has involved working with the boards and staff of a wide range of clients both nationally and globally and across sectors spanning utilities, retail, government, technology, media and telecommunications and financial services. She works with large multinationals helping them transform their businesses through designing and implementing strategic programmes of change enabled by Oracle technology, focused around finance transformation, strategic human resourcing and supply chain, technology and operations, improving their performance and reducing costs. Tracey's experience spans both the management consultancy sector (including PWC and Accenture, Sysao and Edenbrook), and working as an in-house Oracle strategy advisor and programme manager to ITV.

In addition to her day-to-day tasks, Tracey has also been a regular attendee at numerous UKOUG events during the last six years, and presented several sessions at UKOUG 2007. Over the past 11 years, she has also attended many Oracle events (UK and Europe), promoted Oracle products and improvements, attended Oracle customer forums and councils, and worked in collaboration with Oracle on a number of marketing initiatives.

Message from Tracey:

"I believe I will bring to the UKOUG an appreciation of the challenges and opportunities of implementing and living with Oracle from both a consultancy and an end-user perspective. My current role has a heavy bias towards Oracle thought leadership, competitor and market analysis, and strategic marketing – knowledge that I am happy to share, progress and discuss with the UKOUG."

We look forward to working with you over the coming months.

and finally...

"We learn more by looking for the answer to a question and not finding it than we do from learning the answer itself."

Lloyd Alexander, American writer of fantasy novels.

Giovanni D'Alessio
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In the past few months, while working with different clients, I had to address the following questions:

- **"Is our technical architecture robust?"**
- **"What is the best reporting toolset that Oracle has to offer?"**
- **"How safe is our Oracle Application and data?"**

And the immediate literal answer was not always the one sought by the client.

A robust technical architecture

The first concern expressed by the client was the response time of the Oracle system being implemented. However, when I started investigating on all the other aspects that should drive the definition of a robust architecture (other performance requirements, hardware scalability, availability, recoverability, reliability, extensibility, manageability, usability), it was clear that the company had not reached consensus on what where the most critical Non Functional Requirements (NFR's). We discussed at length some of the above factors and I know that they are now approaching the question from a much wider perspective.

Reporting toolset

The answer here could have been as simple as: OBIEE (Oracle Business Intelligence Enterprise Edition) the latest and greatest of Oracle offering in the BI arena (after a couple of sales presentations, I have attended a training session on OBIEE and it is really a powerful tool for your management reporting). But if you have not clearly decided what type of reports you need, how frequently, in what format, at what cost, etc. why discard the "old" Discoverer, FSGs, Oracle 6i reports, or other apps such Hyperion, Cognos, NoetixViews, Business Objects. Again, the opportunity for the client to discuss and review some of the above BI applications allowed for a better identification of reporting goals and requirements that will in turn drive the BI implementation.

Security of Oracle Application

There is always great emphasis on how to secure the application and database layers (Metalink and Oracle websites are full of white papers on this subject) but often the presentation and storage layers attract less interest and attention. Yet the next time you are in an open space office, look around and count how many terminals have been left unlocked and nobody is around to supervise them – I'm sure you get my point. Some of the biggest security threats a company has to face are the ones from "inside the firewall" and in reviewing the security of your application and data, you should have a wide angle approach including technology aspects, internal processes but more importantly people (employees, contractors and other third parties allowed on your premises).

We could spend days talking about security (and hopefully we will receive more articles on this subject) but I'm afraid I am running out of space so, before I leave, I would like to wish all our readers a good and exciting 2008.

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In this "And finally" I am going to talk about the release of 11g database and some of its new features, and to end with, a few facts about Oxygen!

Now that 11g is now being rolled out it is time to assess its impact on businesses and technical staff. 11g has over 400 new features so to summaries them all would be difficult. To answer the question which features are significant for your business depends on how you use the database now. If you are running OLTP then there are features for OLTP. If you are a Data warehouse then there are new features for here. However, two of the most significant features are in change management and workload capture and replay.

For change management, a new feature with standby databases is the ability to test future changes to your production database with the standby. Your standby can be an up to date copy of your production database. At some point you can switch your standby to be a test environment. Here you can test any changes and assess their impact, at the end of which, possibly a few hours, you can flashback your standby back to the state it was at the start and re-establish the database as the standby once again. The potential for this is enormous. Not only can you test in your "production" environment, if the underlying system is identical to your production i.e. RAC, but setting up and shutting down your test environment is much simplified.

A second feature I would like to describe is Workload capture and replay. With this, at some point in time you can begin recording activity on a database. This recording can then be played back on another database to see what impact any changes in the database environment may make on the activity of the database. Such changes may be init variable changes, statistic changes or a change to indexes. Not only can you record activity in an 11g database but also 10gR2; these activities can then be played back on an 11g database. This has enormous potential when the business plans an upgrade to 11g.

These two new features are just two among over 400 new features available in the new 11g database. A read of, the now, numerous documentations of the new features will reveal many more useful features that have been introduced.

"...too much O_2 is not good for you..."

As a diver, air and in particular oxygen (O_2) is quite important. One of the most important things I teach in my lectures as a diving instructor is to always monitor your air. One rule to follow is to set aside the air in your cylinder as follows: one third of your supply to descend from the surface to half way through your dive (return point), one third for the second half of your dive and the final third for ascent and reserve. It is very important to keep to this as the consequences can otherwise be deadly. However, you can also dive on an air mix called Nitrox which has a higher percentage of oxygen, air as approximately 20% O_2. Oxygen (O_2) has the potential of being very toxic in itself. This is due to an effect called partial pressure. O_2 with a partial pressure greater than 1.4 is poisonous. Under normal air this is reached at 60 metres (you have 7X atmospheric pressure on your body at this depth), but if you are diving on Nitrox this depth is much reduced. So, remember, too much O_2 is not good for you and is potentially deadly, even more so being colourless, odourless and tasteless.

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