Oracle Scene

A UK Oracle User Group publication

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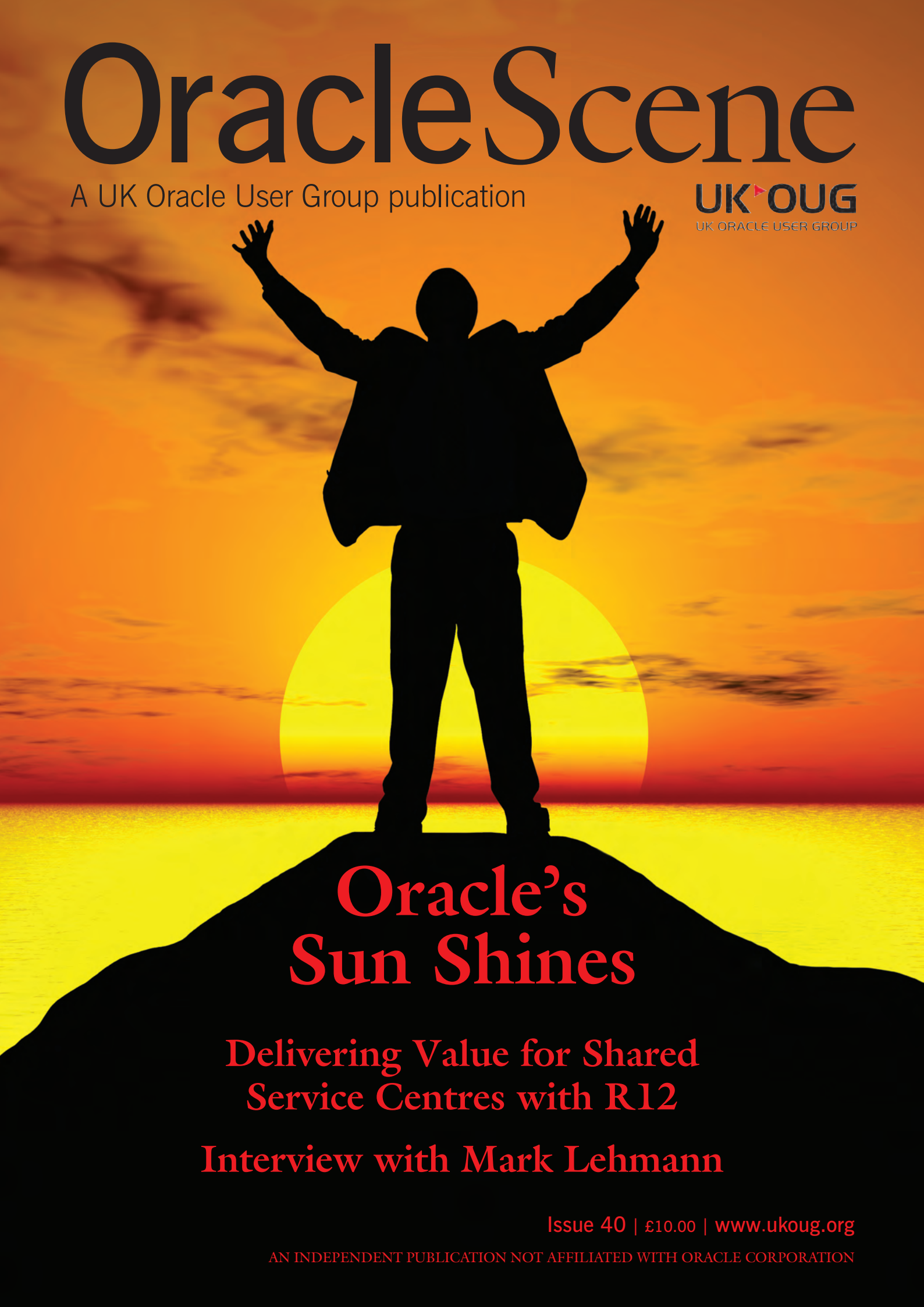

Oracle's Sun Shines

Delivering Value for Shared Service Centres with R12

Interview with Mark Lehmann

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UKOUG Office

UK Oracle User Group, User Group House,
591-593 Kingston Road, Wimbledon,
London, SW20 8SA.
Tel: +44 (0) 20 8545 9670
Fax: +44 (0) 870 9000 335
Email: info@ukoug.org
Web: www.ukoug.org

Production

Designed and produced by Anne Kotan
Tel: +44 (0) 1273 833 923
Email: anne_kotan@hotmail.com
Web: www.anne-kotan.moonfruit.com
Printed by Woking Print & Publicity
Tel: +44 (0) 1483 884 884
Web: www.wokingprint.com

Welcome

Mark Rittman
editor@ukoug.org.uk

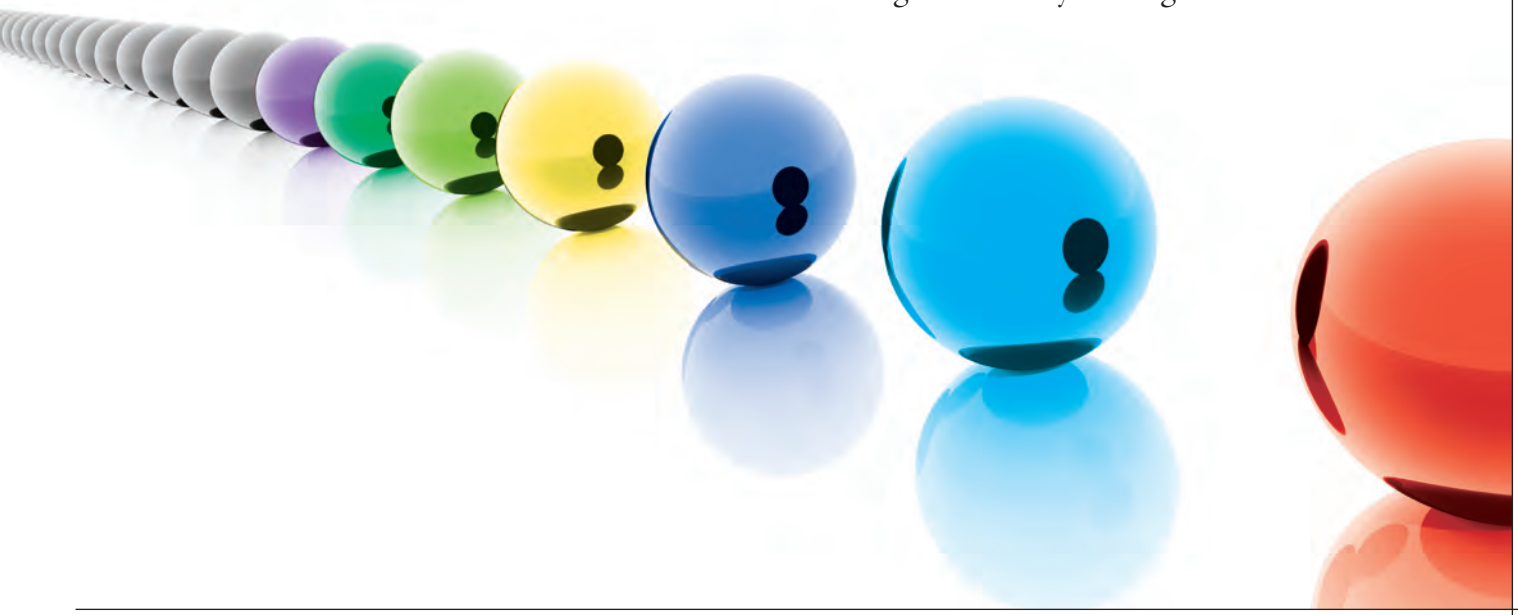
Welcome to the first Oracle Scene of 2010, and in this packed edition we've got articles, interviews and tips that cover the complete range of Oracle technology and applications.

Starting with E-Business Suite and PeopleSoft, Duncan Davies gives us an introduction to the Google Charts API and how it can be used with PeopleSoft and the PeopleTools. From the E-Business Suite angle, Rebecca Bragg tells us about Oracle Mobile Supply Chain applications, whilst the interview with Cliff Godwin gives us a valuable insight into the forthcoming Fusion Applications and what this means to existing E-Business Suite customers.

Those of you with an interest in technology will be interested to read Martin Bach's thoughts on how changes to the Oracle Database in version 11gR2 may well lead to "DBA 3.0", whilst Jonathan Lewis's article "Fast Now, Fast Later" asks whether our technical trouble-shooting solutions will still be appropriate when the database has grown in volume and has more users.

We're particularly proud of our range of regular columnists at Oracle Scene, and those of you interested in tools and development will be keen to read Grant Ronald's thoughts on how social networking and collaborative processes can be included in the Fusion Technology stack. Pete Finnigan returns with his second Oracle Security column and talks about best practices with basic database audit, and we're very pleased to have Mogens Norgard back who this issue talks about "How Apps Finally Got To Me".

Thanks to all of the authors and contributors who helped put this edition of Oracle Scene, and thanks also to the team at the UKOUG who made it all happen. I hope you enjoy this issue, and don't forget that if you'd like to put an article together for a future edition, contact me at editor@ukoug.org.uk and I'd be pleased to offer any advice. Other than that, enjoy your reading and I'll see you all again in the summer!



Oracle E-Business Suite General Manager

At the Technology and E-Business Suite Conference Series event we were very honoured to have Cliff Godwin, SVP Oracle Development and General Manager for Oracle E-Business Suite (EBS) as our keynote speaker. Afterwards Cliff met with our Applications SIG leaders and then joined them at an Open question time, where he helped to answer open questions from the floor for two hours.

The panel was called the Willow Table, named after the Oak Table (www.oaktable.net), which has for many years challenged users to ask any technical Oracle-related question to be answered by OakTable members. The idea was to give the same opportunity for apps users to ask any questions of a group of experts.

The Willow Table was made up of Nadia Bendjedou, Oracle Applications Technology Group; Helle Hennings, Oracle EBS Financials; Ann Power, UKOUG Director; Colin Terry, SIG Chair Financials; Simon Thompson, SIG Chair Supply Chain Management and of course Cliff Godwin.

So here is a selection of the questions Cliff, and then the panel, was asked through the day. The full set of questions can be found in the UKOUG library, simply search under 'Cliff Godwin'.

What about Fusion Applications?

Cliff Godwin: If you are existing EBS customer, Release 1 of Fusion Apps will be available some time in 2010, it will have financials and HR capabilities but not really industry specialisation, for example no Public Sector. It is targeted at a broad horizontal audience. It is important that you also look at both the User Interface and Technical stacks, what training is required and if it is an attractive proposition to you. A number of people will want to go to Release 1, and some early adopters have already started.

But remember there are some Fusion Application modules available already such as Governance Risk & Compliance, and Social CRM.

Should I stay on EBS 11i and wait for Fusion Applications?

Cliff Godwin: This is the most asked question I get and the answer is always it depends on your circumstances.

If you have a complex footprint, look first at EBS release 12.1, get the Sub Ledger Accounting which is an important part of Fusion Applications, and start to digest some of those features. There will be a migration plan from 11.i.10 but you will still need to go through all these changes.

11.i.10 is very stable, how do you attract people to move to 12?

Cliff Godwin: New features and functionality.

Are the additional support costs for 11i what you expect to make people move to R12?

Cliff Godwin: Not really, it is more about the development investment in R12/12.1.

What will the cost be after the first year waiver of extended support costs?

Cliff Godwin: These have not yet been decided but remember this is not "Premier Support".

Support for 11i10 ends in 2013, does that need to fixed?

Cliff Godwin: Fusion Applications will be a mainstream reality, but if you are still on 11i now you are not really an early adopter. In HCM there was not enough new functionality in R12 to make it attractive enough to go through the pain of an upgrade but a lot of people did just for the UI improvements for the end user. EBS was looking dated compared to other ERP products.

So what can we expect for the rest of Release 12?

Cliff Godwin: There is significant functionality already and we will be concentrating on some industry specifics that have a wider appeal. E.g. Contract and Lifecycle Management (the old government procurement was bespoke), we are working with Government and their suppliers and their IPR to build a new module to replace what is there, but this will also have great appeal to other industries.

These and other ideas are a long way off in Fusion Applications but are valid for EBS now.

R12.1.2 this is expected before May, should we wait for that?

Helle: I suggest rephrasing the question to "Should we wait with upgrading/ implementing on future R12.1.2?

Cliff Godwin: No, always go with the latest, if you wait for the next release you will never do anything.

Helle: Note: R12.1.2 has now been released and information can be found on My Oracle Support.

Most customers have a lack of desire to upgrade to R12, are you disappointed?

Cliff Godwin: R12 was a slower uptake than some. The value proposition was around just one area, e.g. Financials. We were slow to give people the detail they needed to plan it, then Fusion was unclear and then the global economic situation was the biggest influence.

R12.1 has a wider appeal; the economy is improving slowly so uptake will be better. Also when Oracle moved to R12 momentum was created in the client base. We have already moved to R12.1.

One problem that we always face is a lack of sizing information from Oracle and the need to go to hardware vendors for information.

Cliff Godwin: Oracle made the decision to create benchmark packs and then to leave it to the hardware vendors to prove it on their specific kit. They made improvements all the time in what you can buy and it would be very difficult for Oracle to keep up with all the different permutations. Most vendors have Oracle competency centres that include Oracle employees permanently involved.

"Congratulations on organising a successful conference. I was pleased with the meetings I had and the opportunity for the extensive Q&A interaction with customers."

spends a day with UKOUG

There has also been slow adoption of the technology like Oracle Enterprise Manager, has this technology penetrated the Apps DBA yet?

Cliff Godwin: In 11i it really was optional, and when people first went to 11i there wasn't a lot offered and not a very compelling option, you can monitor your applications on your own, OEM can do it better. Change Management came out in May 2009 and that is a really big offering.

What is the timeframe for Oracle moving to Fusion Applications?

Cliff Godwin: We will start with adopting some peripheral areas. E.g. Distributed Order Management, the taking of orders from multiple different systems, the glue between Siebel and EBS.

So it will not be a quick move for everything?

Cliff Godwin: No, unfortunately all the functionality Oracle needs will not be in release 1. Localisations and some payrolls will not be available.

Companies like Balfour Beatty in the UK are working with Oracle on a programme to move all localisations into the main application, we need some more companies to step up and tell us what is needed.

So if there is all this new functional richness in R12, how does that get into Fusion Applications?

Cliff Godwin: As we plan our products we socialise the strategy across all areas to ensure we do not reinvent the wheel.

Another example is around PeopleSoft. EBS has stopped developing their students solution and the product of choice is PeopleSoft Campus Solutions, so there are projects on to move some existing functionality from EBS into Fusion.

Oracle is winning Higher Education business in North America and growing business in Latin America and Asia.

I am very interested in using the R12.1 features without upgrading from 11i, but how can you do that?

Cliff Godwin: It is a separate install of EBS with a new technology stack with only what you want configured and then integrated. We are not saying you are upgrading one module at a time. This is where data naturally moves from one module to another across platforms.

Nadia has a great presentation on using R12.1 with 11i and this is available in the UKOUG library.

If I go down the R12.1 with 11i route, when I decide to upgrade everything, will I have to keep two installs?

Cliff Godwin: Yes initially, although some areas will lend themselves better to coming together with a bit of work.

I have heard conflicting information about the route map for Discoverer, can you help?

Cliff Godwin: Oracle will continue to support Discoverer with EBS but do go and look at the new BI tools, they are a valuable investment.

Multi Org support, is this being phased out?

Cliff Godwin: The new functionality includes Multi Org but gives you more options.

How can we understand Lifetime Support?

Cliff Godwin: Look at http://www.oracle.com/support/lifetime-support-policy.html

Cash Management and Reconciliations, will this be improved?

Cliff Godwin: We see this as a weak area, there is auto reconciliation, fuzzy matching and split screen functionality but not as good as it could be. Payments auto reconcile perfectly but receipts almost always fail. One customer said as much as 50% had to be manual.

The audience all agreed and Colin offered to collect information from his SIG and pass it to Oracle.

What are the top enhancements Oracle are looking at?

Cliff Godwin: Patches for legislation and Certification against technology improvements.

Please note enhancements are for future releases only, often people ask why can't you add it to 11i10 or even earlier? Always look at the New Features documents found on MyOracleSupport.

So if you are comfortable at 11i, there will be no enhancements for you. Staying is not the wrong answer as long as you have considered it properly.

- Information about the new products and features included in R12.1.2 release can be found in My Oracle Support Document 561580.1 *Release Content Documents for E-Business Suite Release 12.1 and Associated Release Update Packs.*
- Documentation, Transfer of Information (TOI) online training, and additional information can be found in My Oracle Support Document 806593.1 *Release 12.1 Information Center.*

Compliance Patches are critical so will they be backported, e.g. the VAT compliance, or made available on extended support?

Cliff Godwin: No, in the same way we don't backport or give the HR patches for extended support.

Critical patches are available to extended support through to 2013.

Feedback for the panel session was very positive, people found it really useful and great to have definitive answers. The panel will definitely rerun again, with a wider coverage of experts, perhaps it could be rerun in a combined SCM, FIN, and PROC.

About the Interviewee

I have worked for 20 years at Oracle, always with E-Business Suite starting at Release 8. Remember that prior to 2005, EBS was our only application. Immediately after acquisitions started I was responsible for the Applications Tools Group across all applications. They stayed together for a year or so and then once Applications Unlimited was announced they went back into the product families. I now report into Strategy and Development as General Manager for EBS. I also have responsibility for Higher Education which includes PeopleSoft Campus.

Maximum Availability Architecture (MAA) with NetApp Filer and Oracle 10G

by Jimmy David, Inatech Solutions Ltd

This article gives an overview on how to implement a maximum availability architecture for an Oracle environment that comprises of Oracle E-Business Suite (R12), Service Oriented Architecture (SOA 10g), Oracle Business Intelligence Enterprise Edition (OBIEE) and Discoverer 10g.

This architecture has been successfully implemented for an automotive leasing company in the UK. Though there are various data storage devices available today, we have used the industry popular NetApp Filer FAS3070 and HP Blade BL460c servers. This article gives CTOs, Technical Architects, DBAs, and Storage & System Engineers an insight into how to configure the maximum availability architecture (MAA) with the NetApp Filer and Oracle Technologies.

In the architecture shown below there are three nodes of Real Application Cluster (RAC) for databases while the middle tier is clustered with Oracle technologies. The SOA, OBIEE and Discoverer are part of the middle tier and are configured in a two node cluster while the E-Business Suite middle tier is configured into a three node cluster. The RAC databases are configured on the NetApp volumes where the NFS file systems are used for the shared and non-shared files. The Oracle Homes and binaries are deployed on the NetApp non-shared volumes while the database files are configured on the NetApp shared volumes. With three nodes each on the database tier and the application tier, this architecture provides redundancy, stability, high availability, load balancing and better performance on the primary site. For backups we have used the NetApp snapshots that completes the backup in a fraction of a second.

Figure 1: MAA Logical Architecture

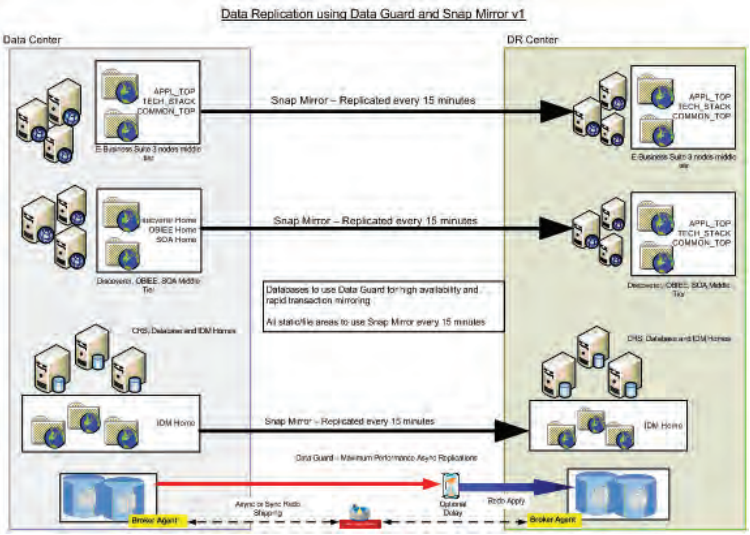
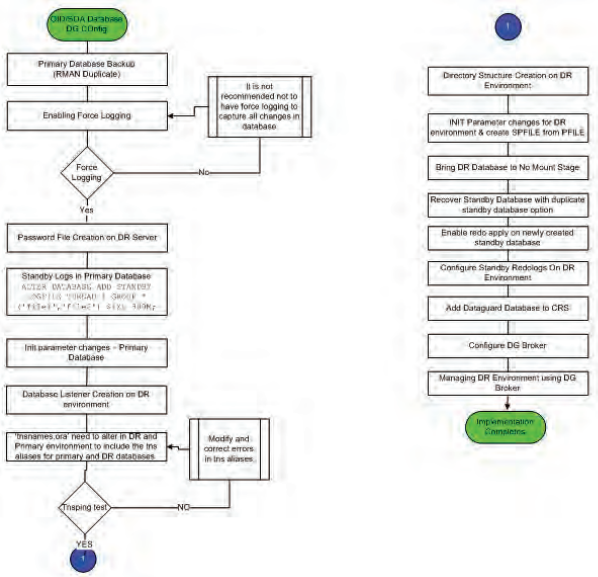


Figure 2: Data Guard Configuration Process Flow



Data Guard Configuration

The Data Guard configurations for the databases are followed as below, in the given process flow.

Once the Data Guard has been configured for a database, the Data Guard broker is configured and interfaced with the OEM grid control. Data Guard broker will simplify the DBA effort for daily monitoring and maintenance.

To configure the Data Guard broker the following steps need to be followed for it to perform both in the primary and in the DR environment. It is also important that the metadata for the broker should be available in a shared disk that is accessible by all the instances in the RAC environment, see Figure 3.

As the changes are made, you should navigate through the OEM Grid Control, primary database -> maintenance -> dataguard -> setup and manage.
This section will allow you to configure the Data Guard broker for primary databases.

Once the configuration is completed, you can verify the Data Guard broker configuration via the OEM grid control given in Figure 4.

SnapMirror Configuration

For the middle tier application binaries we use the SnapMirror technology to replicate the binaries from the primary environment to the DR environment. SnapMirror will mirror the volumes of the primary storage array to the DR storage array. Through SnapMirror the complete volume will be mirrored. It is not possible to mirror selected files or folders to snap mirror. Hence all the application binaries should be deployed on NFS volumes. In our architecture we have deployed all the application binaries on the NFS volumes. In the first instance SnapMirror, will take a longer period of time but the subsequent mirrorings will be very short as the changed blocks are only copied from the primary volumes to DR volumes. For a typical SnapMirror operation the mirroring is scheduled every 15 minutes. This will minimise the loss of data during disaster to 15 minutes.

Mirror volumes are read only volumes. To enable it as read-write volume you need to break the mirror. In a failover/switchover scenario the administrator can break the mirror. As the volume becomes read-write mode, we can configure the application tier. When the primary site is ready, we can then re-enable SnapMirror. For a volume that is enabled with SnapMirror, it will show state as 'snap mirrored'. For any volume with SnapMirror option, it will have following 'Status' and 'State'.

Status:

a. Pending – Subject to SnapMirror
b. Transferring – SnapMirror in progress
c. Idle – SnapMirror is completed

State:

a. Snap mirrored –SnapMirror operation is pending, transferring or idle
b. Broken-Off – SnapMirror operation is manually stopped

Performing Switchover/Failover

As mentioned in the above section, during the switchover/failover you can break snap mirror for the application tier but for the database you need to perform the Data Guard switchover/failover operation.

The switchover operation with Data Guard broker is as given on the next page.

Figure 3

```
SQL> show parameter dg;
NAME                                 TYPE        VALUE
------------------------------------ ----------- ------------------------------
dg_broker_config_file1               string      /u01/oracle/test1/dr1uat.dat
dg_broker_config_file2               string      /u02/oracle/test1/dr2uat.dat
dg_broker_start                      boolean     FALSE

SQL> show parameter dg;
NAME                                 TYPE        VALUE
------------------------------------ ----------- ------------------------------
dg_broker_config_file1               string      /u01/oracle/test1/pri1uat.dat
dg_broker_config_file2               string      /u01/oracle/test1/pri2uat.dat
dg_broker_start                      boolean     FALSE

SQL> ALTER SYSTEM SET DG_BROKER_START=TRUE

SQL> show parameter dg;
NAME                                 TYPE        VALUE
------------------------------------ ----------- ------------------------------
dg_broker_config_file1               string      /u01/oracle/test1/pri1uat.dat
dg_broker_config_file2               string      /u01/oracle/test1/pri2uat.dat
dg_broker_start                      boolean     TRUE

SQL> show parameter dg;
NAME                                 TYPE        VALUE
------------------------------------ ----------- ------------------------------
dg_broker_config_file1               string      /u01/oracle/test1/dr1uat.dat
dg_broker_config_file2               string      /u02/oracle/test1/dr2uat.dat
dg_broker_start                      boolean     TRUE
```

Figure 4: Dataguard Broker Verification Operation

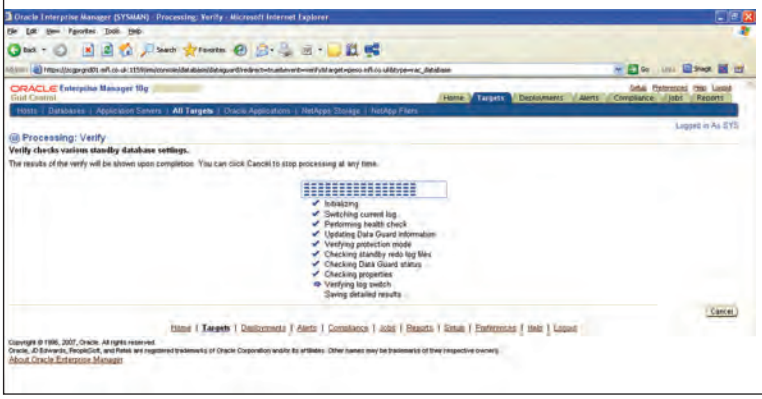
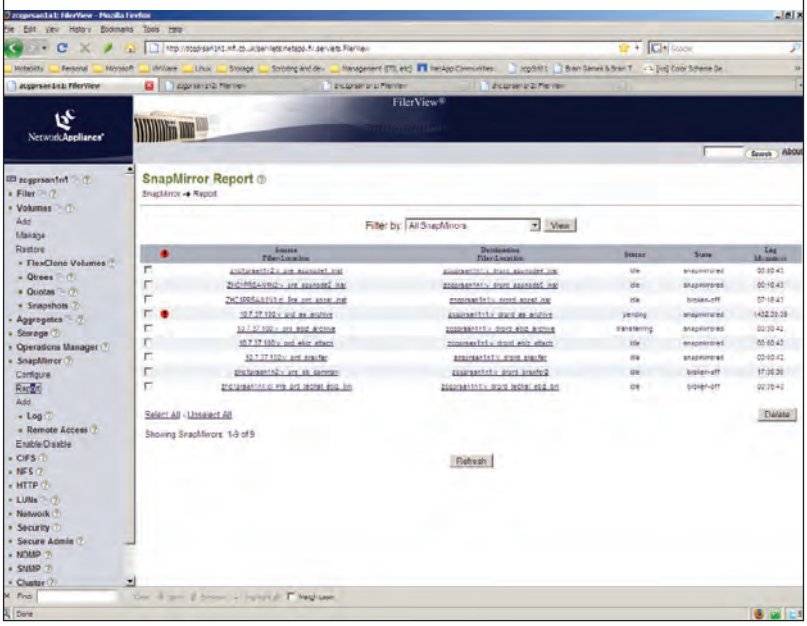


Figure 5: SnapMirror Operation



- **Stop Application Services in Primary Environment**
  First the node with Internal Manger – Then rest

- Connect to DG Broker command line on Primary Environment
  $ dgmgrl sys/xxxxx@uatpr

- **Show Configuration/Database/Instance. The value to return for all the command should be 'SUCCESS'. If any error, solve it then only proceed for SwitchOver.**
  DGMGRL> SHOW CONFIGURATION;
  DGMGRL> show database verbose 'uatpr';
  DGMGRL> show database verbose uatdr;
  DGMGRL> show instance verbose 'uatpr1';
  DGMGRL> show instance verbose 'uatpr2';

- **To modify any DG Broker parameter. For e.g.**
  DGMGRL> edit instance 'uatpr1' on database 'UATPR' set property 'StandbyArchiveLocation'='/u03/oracle/uatpr/';

  Property "StandbyArchiveLocation" updated

- **The above given to be executed from both the primary and DR sites**

- **Create a restore point in primary and standby databases**
  SQL> create restore point switchover_peeb guarantee flashback database;

- **Execute Switchover command from DG Broker**
  DGMGRL> switchover to 'uatdr';

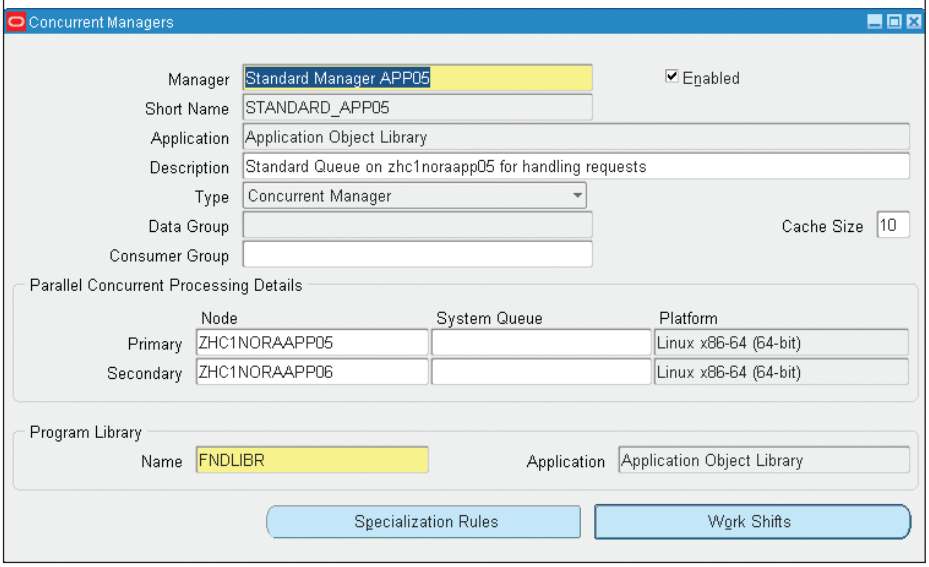
If the switchover is to be performed for E-business Suite database, perform the following

- **Clean FND Concurrent Nodes**
  SQL> EXEC FND_CONC_CLONE.SETUP_CLEAN;
  PL/SQL procedure successfully completed.
  SQL> commit;
  Commit complete.

- **Execute autoconfig in new primary environment (On all cluster nodes)**

- **Changing the Custom Concurrent Managers**

Figure 6: Changes for Primary & Secondary nodes of a defined Manager



- **Reconfigure workflow mailer, ICSM, fulfilment, printers**

Conclusion

This article gives a better understanding of implementing maximum availability architecture with NetApp and Oracle technologies. Using this article a Technical Architect or a Senior DBA will be able to design and implement MAA.

About the Author

Jimmy David is a Technical Architect at Inatech with more than ten years of cumulative work experience. He is an expert in Oracle Database, SSO, OBIEE, SOA and E-Business Suite implementations. His expertise includes various activities like architect and design High Availability Solutions, Installation, Cloning, Patching and Performance Tuning.

Usability Labs at UKOUG Yield Rich Feedback for Oracle Applications User Experience Team

by Aylin Uysal, Oracle Applications User Experience

Traditionally, the Oracle Applications User Experience (Apps UX) team has conducted usability activities on its software applications at one of Oracle's six permanent lab locations around the globe, at the customer's workplace, or remotely with customers using Web conferencing.

But more recently, the Apps UX team has also conducted customer feedback sessions in temporary usability labs at various conferences, such as UKOUG in December 2009. Since 2007, we have set up temporary usability labs at various end-user conferences in an attempt to meet customers on neutral ground. At these labs, Oracle UX experts, product managers and strategists conduct sessions in which customers and partners can provide direct feedback on next-generation Oracle applications.

Constructing temporary usability labs at a conference is an immense undertaking, but it's also extremely rewarding. Apps UX team members were very excited to set up labs at the Birmingham, England, UKOUG conference for the third straight year in December 2009. We tested eight business flows with users during a two-day period. A total of 51 participants from customer and partner companies provided feedback on next-generation Oracle Applications. Our research included customer feedback sessions, an eye-tracking study and mobile device design pattern validations. We collected an incredible amount of data from participants, all of which helps Oracle improve software designs. Users in the studies said they appreciated being involved in this part of the development cycle, and seeing their feedback being taken into consideration was satisfying. We always protect the identity of our session participants, but here's a sample of their responses:

"Feedback was taken constructively and seriously. Very pleased to be invited to provide rapid feedback on the new product. Impeccable hosts!"

"Overall, the activity was very good, and the people performing the tasks were very interested in comments and obviously want to create the best product."

Conducting Customer Feedback Sessions

A customer feedback session (CFS) helps the UX team validate user interface design, functional and business requirements, and even technical requirements, depending on participants involved. One person moderates the session and another takes notes. It is a task-based activity, which gives participants the opportunity to interact with software application prototypes. When all tasks are completed, each participant is asked to answer some final questions and complete a survey.

A CFS answers the following questions:

- Can users navigate? How do they naturally navigate? Do they get lost anywhere?
- Do users understand where to start and how to complete tasks?
- Do users understand the terminology?
- Can users discover features?
- Do users interpret features/content/widgets in the way we intended?
- Are we giving users the right content they need on a page? Is there too much or too little information?
- Does our task flow fit the way they work now and/or would like to work?
- What do they like about the prototype? What are their pain points?
- What is their overall impression of the layout, number of steps, amount and type of information?

After the session, individual reports are compiled to outline the issues across all of the flows that were tested. The consolidated report helps the UX team determine whether to revisit any existing guidelines, patterns, or standards.

The Eye-Tracking Study

The UX team also conducted an eye-tracking study with the latest equipment, a Tobii Systems T60 eye tracker. Eye-tracking is a research methodology that measures where users look when they are interacting with applications. The study provides valuable input to usability evaluations, and is conducted using specialised hardware and software.
The system requires no connection to the user, and works by sensing infrared light being reflected from the eyes.
See Figure 1.

With a Tobii Systems T60 eye tracker, a user sits in front of the screen and follows instructions from the session moderator, such as reading the text or searching for a particular icon.

Figure 1: Tobii Systems T60 eye tracker

Figure 2: The user's scanning path

The green circles and lines show a user's scanning path as he looks across a page. The larger the dot, the more time the user spent looking at that spot on the page. See Figure 2.

What can eye movements tell us about usability? Think of a user's eye movement pattern as a record of visual attention while interacting with an application. Drawing one's attention may be very desirable (e.g., branding or navigation icons) or non-desirable (e.g., confusing or distracting elements). Issues such as visibility, navigation clarity, search strategy and efficiency can be assessed quickly with eye-tracking.

Common questions that an eye-tracking study can address:

- Was the most efficient scanning path used?
- Is it faster to compare the data horizontally or vertically?
- How similar are the scanning strategies between multiple users?

Mobile Design Pattern Tests

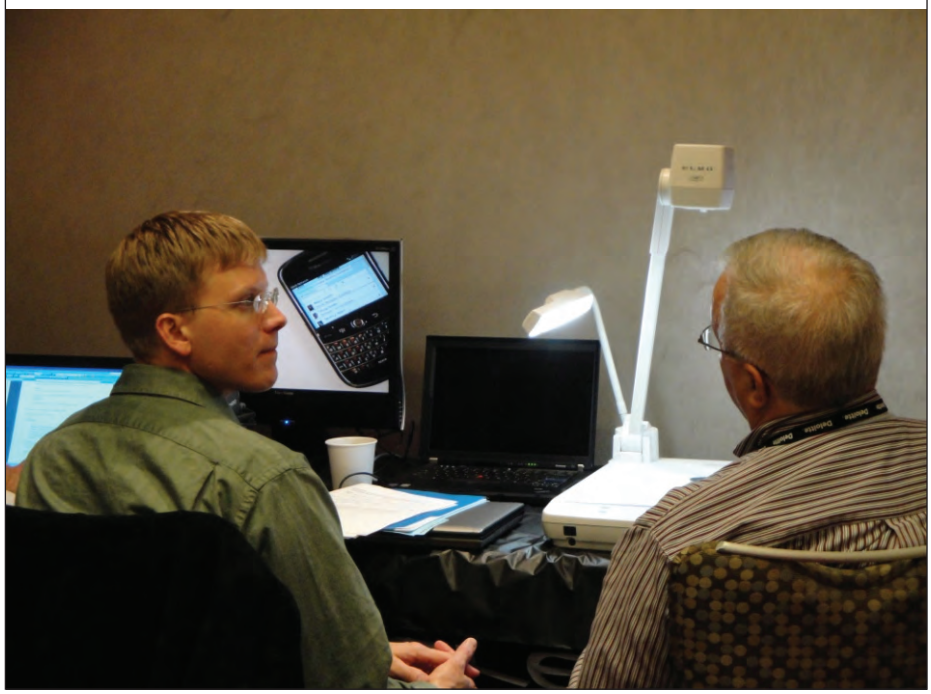
In Birmingham, the UX team also conducted validation tests on mobile design patterns, which are used to build software applications for mobile devices. Participants provided insight on future design patterns as they interacted with a mobile application that set up a human resources work flow, in which users searched for people in a company and connected with them using collaboration tools such as a company network. See Figure 3.

When the UX team conducts usability research, we work hard to make sure the right users are included in the study.

The Oracle Applications User Experience Team recruits UKOUG conference attendees prior to the conference, and examines each user profile to be sure that they can perform the tasks in the business flows we plan to test. Continued support from UKOUG conference board members and enthusiastic customers and partners improves the feedback we collect, which leads to a better user experience in the designs we test.

You can find more on the Oracle Applications UX team, and the software your feedback has helped us improve, at usableapps.oracle.com

Figure 3: Test participants look at design patterns for mobile device applications.



About the Author

Aylin Uysal is a senior manager for the Oracle Applications User Experience team. Her team is responsible for the user experience in Human Capital Management (HCM) applications. She has been with Oracle since 1999. She has a bachelor's degree in industrial design and a master's degree in computer graphics.

She can be contacted at aylin.uysal@oracle.com

PeopleSoft and the Google Charts API

by Duncan Davies, Succeed Consultancy

The Google Chart API lets you dynamically generate impressive looking charts simply by calling a URL. The URL contains the parameters the API needs to generate your graph, displaying a nicely-rendered PNG image in response. Google's servers do most of the hard work, and they're very, very quick.

To see the Chart API in action, open up a browser window and copy the following URL into the address bar:
http://chart.apis.google.com/chart?cht=p3&chd=t:60,40&chs=250x100&chl=Hello|World

You should see the following image, (Figure 1):

Figure 1

There are a plethora of chart types, and each is customisable with a host of parameters (size, colours, labels etc). I believe that the flexibility that it offers exceeds what is available in PeopleSoft (at least without using OBI EE) and it's remarkably simple to use.

Although the following examples are using the latest version of PeopleSoft, you don't need to be on PeopleTools 8.50 to use the Google Charts API. You can make great use of it on pre-Tools 8.50 PIA pages, or even in Portal Pagelets. In fact you don't even need to be using PeopleSoft, much of what's written here could be used with E-Business Suite etc.

Homepage Pagelet

Starting off with a couple of simple examples, many portal dashboards have a 'company news' pagelet of some kind and/or a basic Bar Graph showing something like Absence Taken versus Entitlement. The Charts API has a number of options for making your pagelets more striking, including the 'Sticky Note' and bar chart (showing Oracle Workforce Scheduler data) in Figure 2.

Figure 2: The Charts API

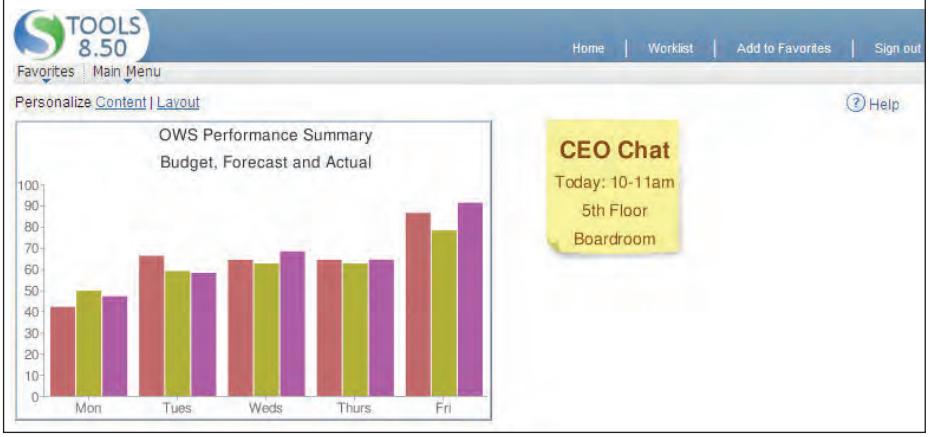


Figure 3

```
<html><body>
  <img src="http://chart.apis.google.com/chart?chst=d_fnote_title&
       chld=sticky_y|1|884400|h|CEO Chat|Today: 10-11am|5th Floor|Boardroom" />
</body></html>
```

For a Homepage pagelet you can't reference PNG images directly, you must wrap them in HTML tags. So the Sticky Note comes from the following HTML code, (Figure 3).

The above HTML was generated by an iScript and published as a Homepage Pagelet (with the titlebar and borders removed).

The Bar Graph pulls data from the database and inserts the values into the URL string. The coding is performed in an iScript which is published to a Homepage Pagelet (with just the titlebar removed). The URL is constructed as follows, (see Figure 4, next page).

> "... the flexibility that it offers exceeds what is available in PeopleSoft (at least without using OBI EE) and it's remarkably simple to use."

URL Component	Value
Base URL	http://chart.apis.google.com/chart?
Chart Type (Vertical Bar – Grouped)	&cht=bvg
Data Series	&chd=t:505,794,771,771,1037|596,708,751,751,938|565,697,819,772,1095
Chart Dimensions	&chs=400x250
Show X & Y Axis, and the X Axis labels	&chxt=x,y
&chxl=0:|Mon|Tues|Weds|Thurs|Fri|	
Bar Colours (RGB notation)	&chco=bf696a,afae35,b75aba
Chart Title	&chtt=OWS+Performance+Summary|Budget,+Forecast+and+Actual
Bar Spacing (1 pixel between bars, 10 between groups)	&chbh=a,1,10
Max and min values for each data set (to ensure correct scaling)	&chds=0,1200,0,1200

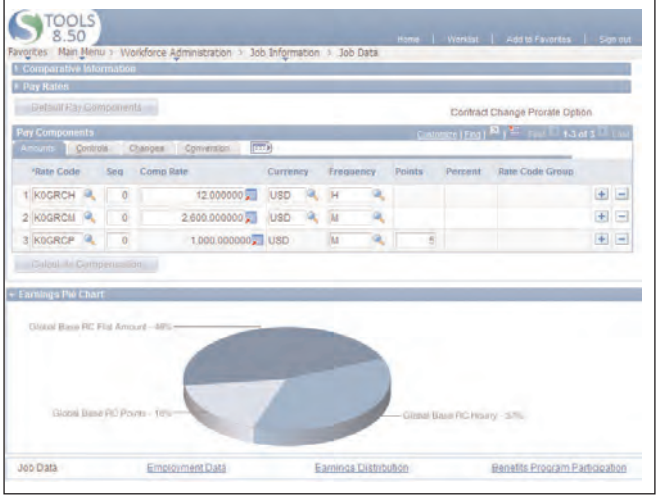
Figure 4

Compensation Pie Chart

The following example, (see Figure 5), uses PeopleCode to populate an HTML Area with similar HTML to the previous example. A little more effort is required to construct the URL however as values have to be drawn from both the Component Buffer (the data values) and the Database (Rate Code descriptions), therefore using Component/ Record PeopleCode was more appropriate than an iScript here.

The URL for the Pie Chart was constructed as follows, see Figure 6.

Figure 5



Related Content and Maps

Also part of the Google Visualization API family is the Google Maps API.
The PeopleTools 8.50 Related Content example opposite, (Figure 7), shows the geographic location of the current training facility's postcode on a Google Map.

The map is not static, it can be dragged to pan around and zoomed in and out in the same way that a map on the Google Maps website functions.

The Related Content service passes the key field (Facility) to the iScript. The iScript looks up the Postcode for the Training Facility and passes it to the HTML Object. The HTML Object contains the template HTML for the Related Content page, including the calls to the Google Maps API and the Google AJAX Search API. The latter is needed as the Maps API Geocoding (mapping from Postcode to the latitude/longitude that is required to accurately plot a point on the map) doesn't take into account the final two letters of the postcode, meaning that the marker is frequently up to a mile out.

The more accurate Geocoding technique I used was discovered by Tim Anthony and is detailed here:
http://www.tomanthony.co.uk/blog/geocoding-uk-postcodes-with-google-map-api/
Function IScript_Postcode_Lookup()

No customisation is required to the delivered page to achieve the functionality. (Figure 8.)

URL Component	Value
Base URL	http://chart.apis.google.com/chart?
Chart Type (3D Pie Chart)	cht=p3
Pie Segment Sizes	&chd=t:18,46,37
Chart Dimensions	&chs=650x180
Segment Labels (all '%20's replaced by spaces for legibility)	&chl=Global Base RC Points – 18% |Global Base RC Flat Amount – 46% |Global Base RC Hourly – 37%
Segment Colours (RGB notation)	&chco=d4dce8,5c7995,8bafc7
Chart Rotation	&chp=1.9

Figure 6

Figure 7: PeopleTools 8.50 Related Content example

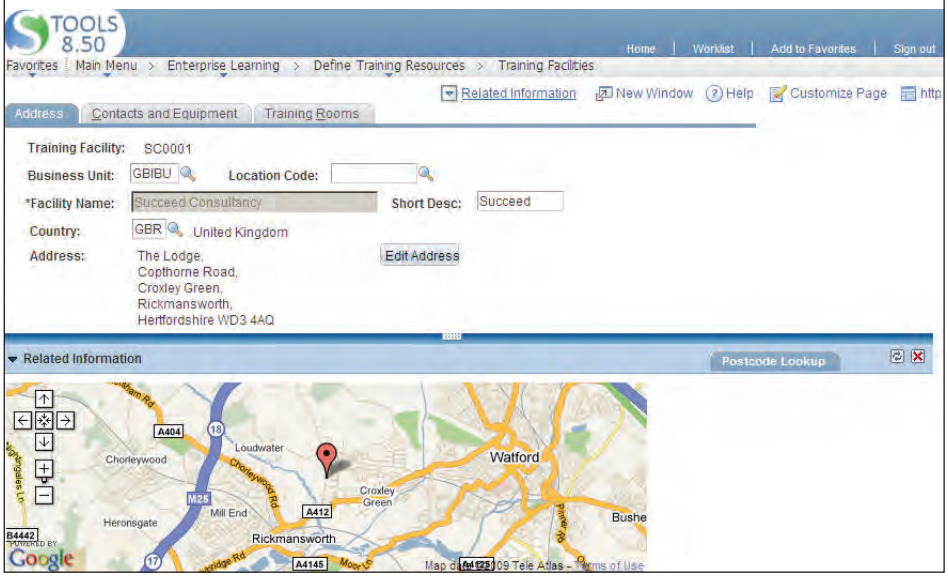


Figure 8

```
Function IScript_Postcode_Lookup()
  &Facility = Unencode(%Request.GetParameter("FACILITY"));
  If None(&Facility) Then
    Error MsgGetExplainText(0, 0, "Error: There is no Facility found in the Service URL.");
  End-If;
  &SQL = "SELECT POSTAL FROM PS_TRN_FACIL_TBL WHERE FACILITY = :1";
  SQLExec(&SQL, &Facility, &Postcode);
  &HTML = GetHTMLText(HTML.SC_GOOGLE_MAP, &Postcode);
  %Response.Write(&HTML);
End-Function;
```

Conclusion

Hopefully some of the above examples have shown how straightforward it is to create visually striking pagelets and page elements that your users will love.

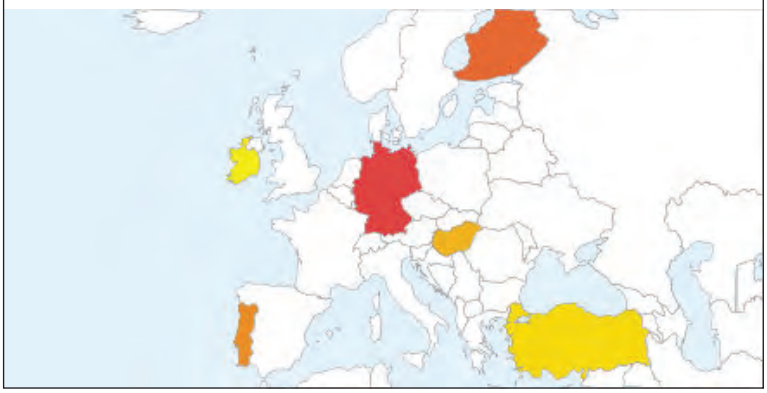
What other chart types can be used?

- A line graph or 'Google-o-meter' could show the system performance on the sign-in page (how many active sessions etc) or the employee absence rate for a manager's department in an MSS dashboard. (Figure 9.)
- Heat maps (where more than one country can be shaded) could show where marketing budget is spent, or the sales performance in each country. (Figure 10.)

There are a wide range of visualisations (both JavaScript and Flash based) that can be added to PeopleSoft. To see more have a look at the Gallery here: http://code.google.com/apis/visualization/documentation/gallery.html

Figure 9: Google-o-meter

Figure 10: - Heat maps



About the Author

Duncan Davies is a Technical Consultant who has been working on PeopleSoft for nine years and the ERP market as a whole for much longer. Duncan works for Succeed, a specialist UK based PeopleSoft consultancy and also runs the PeopleSoftTipster.com blog.

He can be contacted at Duncan.Davies@SucceedConsultancy.com

Further information

If you run PeopleSoft in an environment where there is no internet access there are implementations of the Chart API that you can run on your own servers (i.e. offline). The Charts work over HTTPS, so there are no security warning popups if your application uses SSL.

Google Charts is free to use, and no registration or Google Account is necessary. More info for the Google Charts API can be found here: http://code.google.com/apis/chart/

The Google Maps API has slightly stricter licensing restrictions. See here for more details: http://code.google.com/apis/maps/

Delivering Value for Shared Service Centres with R12

by Amrito Chaube

When times are tough, the tough get going, and they get going by extracting maximum value from existing assets. The Shared Services Centre is an ideal way of achieving this and Oracle's EBS R12 is the perfect tool for that.

R12 has provided a lot of features for operational efficiency and security like Multi Organisation Access Control (MOAC), enhanced workbenches etc, which focus on the core functions like General Accounting or Procurement; however there are some other, lesser appreciated features that can be harnessed for improving productivity, especially in an SSC Environment. This article illustrates how the Oracle Customer Relationship Management (CRM) module can be utilised to maximise the return from existing Oracle EBusiness Suite (EBS) Release12 (R12) investments.

A Shared Service Centre (SSC) can be defined as provisioning of services by one part of the organisation and its shared use by the rest, who fund this service. The most common service shared is back office transaction processing, usually in Procurement, HR, Finance and IT functions, and the corresponding modules of Oracle EBS R12 are especially adept at automating and recording the transactions.

> "... setting up and using an SSC is a Transformation exercise and needs careful management beyond management of transaction processing..."

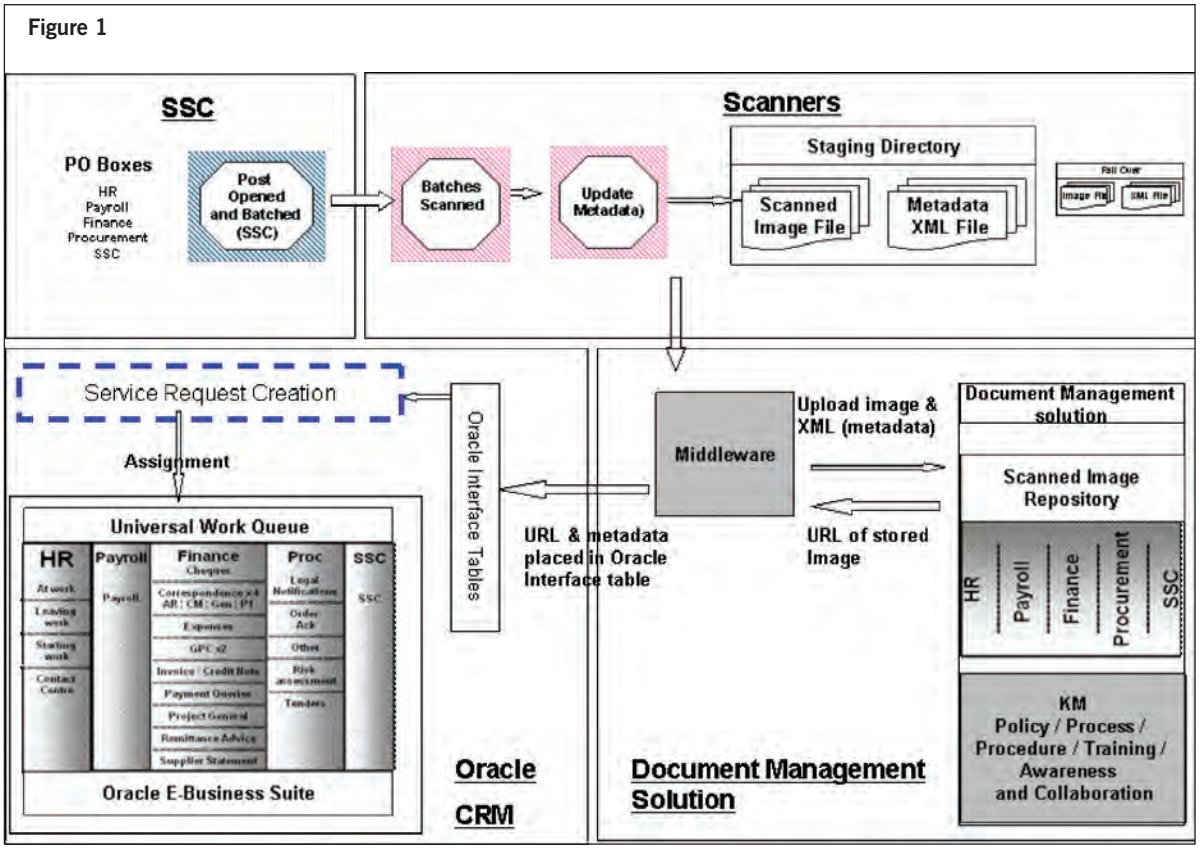
However setting up and using an SSC is a Transformation exercise and needs careful management beyond management of transaction processing, and this is where Oracle CRM can be effectively used.

Challenges for Work Management in the SSC

The SSC is an office like any other and office work needs to be managed. Work management tends to be left to individual managers of each functional area to organise. The key difference between a traditional organisation and a SSC is that transaction processing is not just a support or staff function, but is the main revenue generator, i.e. the main (line) function. Therefore the focus on work management has to be much greater.

The other main distinction is Service Level Agreements. In traditional back office functions informal SLAs, would exist, for example General Accounting functions needed to be completed by period close and payroll functions by pay-run(s). In a SSC mode SLAs are well defined, and as a SSC gets commercialised, may vary from each customer organisation to another. Most modern IT (Enterprise

Figure 1



Resource Planning (ERP)/Customer Relationship Management (CRM)) systems have provided queues to manage work, in the traditional setup. However it would be extremely challenging to use these traditional methods, in isolation, or with manual processes, to manage work in a SSC.

The final challenge is managing various channels. Work comes in for transaction processing either electronically, i.e. orders, or through communication which can be on paper, but even that is increasingly electronic like email, web-forms etc. Management of electronic work is simpler, like the Order Management module for managing orders. Managing communication is not as easy, especially when the communication is not just customer pleasantries but transactions, e.g. a letter to the HR Department applying for extension to maternity leave by the husband.

The solution is Work Management

Organisations are increasingly spending money to track and manage ALL WORK, and this article is about using existing R12 infrastructure to put together an elegant and cost effective solution. Some of the benefits are listed below:

Queue management with Skill based allocation

The solution enables the SSC to manage all communication effectively in one queue through the Oracle Universal Work Queue, a component of Oracle CRM. Automated queue management ensures the right person is doing the right job without the need for sorting, work allocation etc. Even emails are routed intelligently to appropriate queues, based on keywords a R12 feature. Integration with partner solutions allows the solution to capture and route faxes as well. Web-forms/ Self service requests will also end up in the same queue and the SSC benefits by making cost savings from process efficiencies derived from the automatic routing to appropriate teams and reduced time spent in answering follow-up calls.

Workflow

The solution provides for SSCs to setup workflows to track and manage work, if the base Oracle modules do not provide adequate details. A workflow to manage a detailed formal disciplinary proceeding, with strict audit requirements is one example of such an application.

Service Levels and escalation management

The most significant benefit is that work is assigned to Operators based on the agreed SLAs with each of the SSCs Customers. Therefore an order of a platinum end customer would automatically be placed higher in the queue. These rules would ensure that any deviations would be flagged up-to the SSCs operational managers before they became critical issues.

Integrated solution with detailed Audit

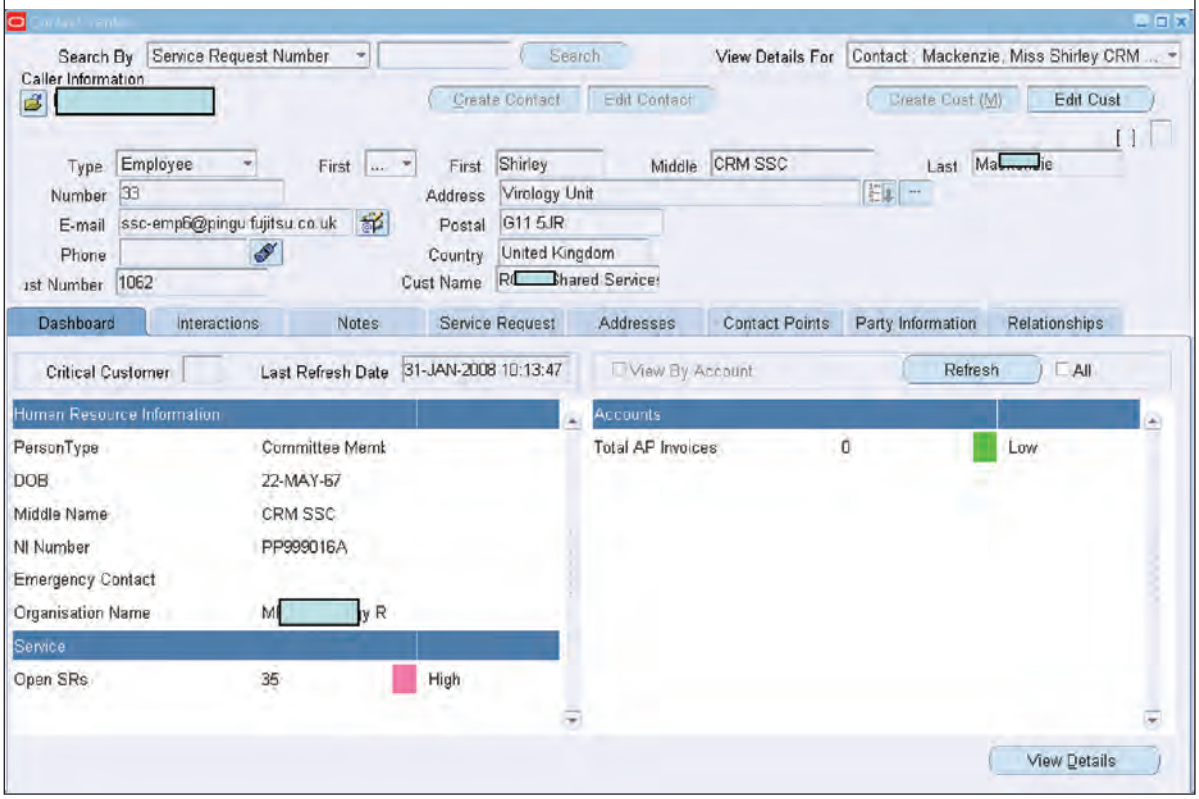
The solution provides for an integrated 360 degree view of the contact, providing the SSC operator with all information required to process the transaction in one place. It also provides for, if desired, detailed recording with time stamps, of every action taken, to resolve or complete each piece of work.

Other Benefits

Knowledge Management, for both people accessing Self Service and SSC Agents, provides easy access to common FAQs, as well as SSC policies and procedures for operators. By tracking the first point resolution in the contact centre, we create a closed loop system where targeted change management exercises can be planned to encourage the use of self service, driving down the cost of contact handling.

"Knowledge Management, for both people accessing Self Service and SSC Agents, provides easy access to common FAQs, as well as SSC policies and procedures for operators."

Figure 2



> "SSCs have evolved from being a cost centre to a Profit centre, competing among themselves for businesses..."

Managing non Financial Post (Scanning)

The traditional use of scanning technologies has been to handle Accounts Payable Invoices but there are few solutions which handle all post, e.g. those pertaining to the Human Resource function or general mail. Is post treated in the same manner as electronic communication with SLAs? Can automatic work assignment and workflow be defined for inbound post?

The solution

Each scan creates an image, as well as a XML based metadata file, which captures the characteristics of the image based on PO Box or key words. The scanned image can be read manually while sorting, or parsed after conversion into text, to identify key words for the XML file. The image gets stored in the Document Management system, with the XML file providing the Tags to identify the documents during searches. Each scan would create a corresponding Service Request, and put into appropriate queues as for the attention of the best equipped teams to work on. The image is linked to a Service Request, and to any transaction created in EBS as a result of processing, and can be retrieved either within EBS or the document management solution.

Benefits

Achieved through SOA based integrations, the solution leverages the Oracle CRM suite and integrates with various document management solutions, to provide for all the above mentioned benefits of Work Management. Transaction processing can be tracked at the activity level or at a global level for each type of transaction and throughput time measured to provide performance measures.

Enhancements to paperless Invoice processing system

Accounts Payable Invoices can often go on hold requiring additional effort to ensure payment. This can be a burden for some, like the Public Sector, who may not earn any interest on the unpaid money or SSCs whose costs go up. The SSC has the additional burden of ensuring that this does not affect their SLAs, and need to track ownership.

Accounts Payable Invoices can take time to be paid due to the lack of co-ordination between the SSC and the retained functions and Suppliers. Extending the work management concept to Accounts Payable, we suggest and track the steps needed to resolve the hold on invoices, and provide the TRUE cost of Invoice processing. Our solution, built on the lines of Oracle Advanced Collections, manages unpaid liabilities by assigning owners on the basis of Hold reasons. The owner could be a requisitioner who did not record the receipt of goods, or the supplier who invoiced the wrong quantity. Workflow is triggered to suggest actions required in each scenario, and communication with all affected parties is recorded in the Service Request providing everyone with an accurate history as well as current state of the invoice. The whole process is tracked against agreed SLAs, and delays can be accounted for, be it at the SSC or elsewhere and therefore reduced.

Contact Centre and Helpdesk

The solution also leverages the traditional contact centre solution to provide focussed Helpdesk functionality for each SSC function, e.g. HR Helpdesk for employees of an organisation which buys HR functions from the SSC, or a Finance and Procurement helpdesk for Suppliers, Customers and even employees.

Inbuilt integration of Oracle CRM with back office functions like Oracle HRMS provides agents with real-time and accurate information about an employee's record. This allows agents to initiate cases and automate the workflow to ensure that the case is resolved to everyone's satisfaction. Every piece of communication, email, post or any other can be referenced to the case as well as the actual transaction, providing complete audit and traceability.

Similarly Finance and procurement helpdesks can answer questions from both employees, be they from a requisitioner or Project Managers as well as actual Suppliers or Customers.

Other Benefits

There are many other opportunities to leverage Oracle CRM to enhance productivity and we have highlighted some of the scenarios below.

- A facility for 'Buyers' to record qualitative information regarding Suppliers, like a Supplier blog, providing a method to capture qualitative information and inferences which provided buyers with valuable insight for future negotiations, driving down procurement costs.

- A simplistic user Management Solution, outside of the CRM solution, to manage provisioning of users centrally with appropriate access privileges to various system used by the councils.

Conclusion

SSCs have evolved from being a cost centre to a Profit centre, competing among themselves for businesses, and a prime example is the Public Sector in the UK, where as a part of the Governments' efficiency drive, prompted by the Gershon Review, a variety of competing SSCs have mushroomed. Moving to the SSC is a huge transformation exercise and careful monitoring and corrections are required to successfully reap benefits and build trust between partners. This solution helps customers track every piece of work from the moment it enters the SSC, till it is completed, including any period where the SSC operators were waiting on information from retained functions. The key differentiator of this solution is not just providing a reactive audit and tracking of performance levels to ensure compliance to agreed Service Levels, but an insight into TRUE bottlenecks providing customers of an SSC real tools to participate in further cost saving.

About the Author

Amrito Chaube has worked for over 12 years as a Management Consultant and solution architect, across Financials, Supply chain and CRM, on Oracle E-Business Suite and Siebel CRM. He has extensive experience of Public sector, setting up Shared Service Centres and Telecom, and currently works as a Principal Consultant for Fujitsu Services.

Amrito can be contacted at: amrito.chaube@uk.fujitsu.com

MSCA/MWA Framework in Oracle Apps EBS

by Senthilkumar Shanmugam

Oracle Mobile Supply Chain applications(MSCA) enable users to perform many common warehouse and shop floor transactions through hand-held radio frequency devices, personal digital assistants and truck-mounted radio frequency scanners.

Oracle Mobile Supply Chain is part of the Oracle E-Business Suite, an integrated set of business applications that delivers complete process automation and complete information.

Using Mobile Applications we can have the following advantages:

- Improve operational productivity and reduce costs through process automation.
- Ensure accurate, up to date inventory information by using barcode scanning for data entry.
- Increase customer satisfaction by improving inventory accuracy, shipment confirmation and quality tracking.

In this article I will explain the fundamentals of Mobile Applications, Technical Architecture and a sample 'Hello World' programme using MSCA Framework.

Introduction

Mobile Supply Chain Applications (MSCA) enables automated mobile user operations. This is performed using hand held radio frequency (RF) devices, PDA's, and lift truck mounted RF scanners. Oracle has leveraged standard Internet technologies such as Java, XML, TCP/IP and Telnet to create a device independent technology platform to support these types of applications. In general, these mobile devices will be connected to the network using the radio frequency (RF) standard of 802.11b and will communicate using TCP/IP. Figure 1 below explains the communication flow using Mobile Devices.

Functional Areas Covered by Mobile Applications

- Manufacturing: Moves, Issues, Returns, Scrap, Completions etc
- Receiving: Direct, Standard, Inspect, Cross-Dock, Print etc
- Inventory: Transactions, Transfers, Counts, Labeling etc
- Shipping: Pick confirm, Ship Confirm etc

Technical Overview of MSCA/MWA Framework

Oracle has built MSCA/MWA framework in order to develop Mobile Applications. MSCA/MWA Framework is based on existing Java Event-Listener Model. Now, we will create a Hello World page which gets the name from the user and prints it with the string "Hello World"

Please note that basic Java knowledge is needed in order to understand this framework.

We have to create three Java Classes:

CustomTestFunction.java: This Class is for Application level initialisation and is registered as the Function in AOL. This extends the base class MenuItemBean.

CustomTestPage.java: This Class is for Page initialisation and creates the layout and adds the beans to the page. It extends PageBean Class.

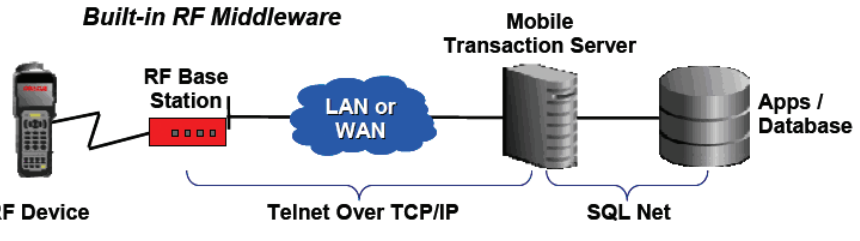
CustomTestFListener.java: This Class is the event listener class which listens to the events on each bean on the page and calls appropriate method to handle the event.

1) A **MenuItemBean** is needed to attach the mobile application to the Oracle Desktop ERP. It contains no page layout information on its own but is a necessary conduit to connect the Desktop ERP to mobile transactions. At the leaf node of the FND menu structure lays an FND Form Function that points to the MenuItemBean. The MenuItemBean in itself points to the first page in the application, which is represented by a Page Bean.

2) A **PageBean** represents the unit of display (i.e. a single screen on a mobile client). To define a new page, the developer must extend the PageBean, and make a new page bean class. Within this new class, the developer must use the new PageBean's constructor to instantiate FieldBeans (graphical components), and add them to the page.

3) The **FieldBean** is a super class for all data collection/display graphical components that the developer can use in their pages. When the mobile server loads a new page, it calls the user defined PageBean's constructor, which in turn creates all of the graphical components on that page. Examples of FieldBeans are TextFieldBean, ButtonFieldBean, LOVFieldBean, MultiListFieldBean, ListFieldBean, HeadingFieldBean and SeparatorFieldBean.

Figure 1



1. CustomTestFunction.java

```
/* Function class – this links the page with FND Function in AOL */
package xxx.custom.server;
import oracle.apps.fnd.common.VersionInfo;
import oracle.apps.inv.utilities.server.UtilFns;
import oracle.apps.mwa.beans.MenuItemBean;
import oracle.apps.mwa.eventmodel.MWAAppListener;
import oracle.apps.mwa.eventmodel.MWAEvent;
public class CustomTestFunction extends MenuItemBean implements MWAAppListener
{
public CustomTestFunction()
{
//Link the page with the function
setFirstPageName("xxx.custom.server.CustomTestPage");
addListener(this);
}
public void appEntered(MWAEvent mwaevent)
{
// Code here to initialise Application Level
}
public void appExited(MWAEvent mwaevent)
{
// Code to be executed when the user exits the application
}
}
```

2. CustomTestPage.java

```
//Page Listener Class
public class CustomTestPage extends PageBean {

/**
* Default constructor which just initialises the layout.
*/
public CustomTestPage() {
//Method to initialize the layout
initLayout();
}

/**
* Does the initialization of all the fields. Creates new instances
* and calls the method to set the prompts which may have to be later
* moved to the page enter event if we were using AK prompts as we
* require the session for the same.
*/
private void initLayout() {
//Create a Text Filed and Set an ID
mHelloWorld = new TextFieldBean();
mHelloWorld.setName("TEST.HELLO");
// Create a Submit Button and set an ID
mSubmit = new ButtonFieldBean();
mSubmit.setName("TEST.SUBMIT");
//add the fields
addFieldBean(mHelloWorld);
addFieldBean(mSubmit);
//add field listener to all necessary fields
CustomTestFListener fieldListener = new CustomTestFListener();
mHelloWorld.addListener(fieldListener);
mSubmit.addListener(fieldListener);
//call this method to initialize the prompts
this.initPrompts();
}

/**
* Method that sets all the prompts up.
*/
private void initPrompts() {
```

```
// sets the page title
this.setPrompt("Test Custom Page");
// set the prompts for all the remaining fields
mHelloWorld.setPrompt("Enter Your Name");
mSubmit.setPrompt("Submit");
}

// This method is called when the user clicks the submit button
public void print(MWAEvent mwaevent, TextFieldBean mTextBean) throws
AbortHandlerException
{
UtilFns.trace(" Custom Page - print ");
// Get the value from Text bean and append hello world and display it to user on the
same field
String s = mTextBean.getValue();
mTextBean.setValue(s+" Hello World");
}

// Method to get handle of TextBean
public TextFieldBean getHelloWorld() {
return mHelloWorld;
}

//Method called when the page is entered
public void pageEntered(MWAEvent e) throws AbortHandlerException,
InterruptedHandlerException, DefaultOnlyHandlerException {
//Code here page level entry actions
}

//Method called when the page is exited
public void pageExited(MWAEvent e) throws AbortHandlerException,
InterruptedHandlerException, DefaultOnlyHandlerException {
//Code here page level exit actions
}

// Create the Bean Variables
TextFieldBean mHelloWorld;
protected ButtonFieldBean mSubmit;

}
```

3. CustomTestFListener.java

```
/* Listener Class - Handles all events */
package xxx.custom.server;
import oracle.apps.inv.utilities.server.UtilFns;
import oracle.apps.mwa.beans.FieldBean;
import oracle.apps.mwa.container.Session;
import oracle.apps.mwa.eventmodel.AbortHandlerException;
import oracle.apps.mwa.eventmodel.DefaultOnlyHandlerException;
import oracle.apps.mwa.eventmodel.InterruptedHandlerException;
import oracle.apps.mwa.eventmodel.MWAEvent;
import oracle.apps.mwa.eventmodel.MWAFieldListener;
public class CustomTestFListener implements MWAFieldListener {
public CustomTestFListener() {
}

public void fieldEntered(MWAEvent mwaevent) throws
AbortHandlerException,InterruptedHandlerException, DefaultOnlyHandlerException {
ses = mwaevent.getSession();
String s = UtilFns.fieldEnterSource(ses);
}

public void fieldExited(MWAEvent mwaevent) throws AbortHandlerException,
InterruptedHandlerException, DefaultOnlyHandlerException {
String s = ((FieldBean)mwaevent.getSource()).getName();
```

```
// Get handle to session and page
Session ses = mwaevent.getSession();
pg = (CustomTestPage)ses.getCurrentPage();

// when the user clicks the Submit button call the method to print
// Hello world with the text entered in text box
if (s.equals("TEST.SUBMIT")) {
pg.print(mwaevent,pg.getHelloWorld());
return;
}
}
// Varibale declaration
CustomTestPage pg;
Session ses;
}
}
```

About the Author

Senthilkumar Shanmugam is an independent Oracle Apps consultant with 7 + years of experience in Oracle Applications. Senthil has worked on various R12 projects and has good knowledge of OA Framework, MSCA, ADF, BPEL, SOA, and Web Services.

Once you have built these Java classes without any errors, you can deploy them into the Oracle Apps Instance under $CUSTOM_TOP and link it to the Functions and Menus in AOL. When you open the page, you will get the MSCA pages which look like the screens below.

Figure 2: Enter your name

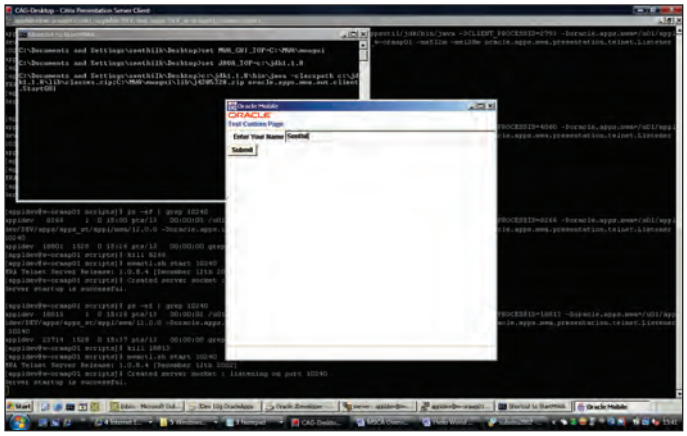
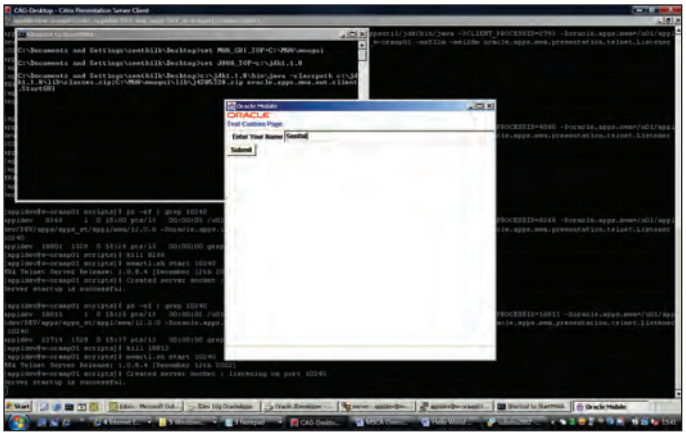
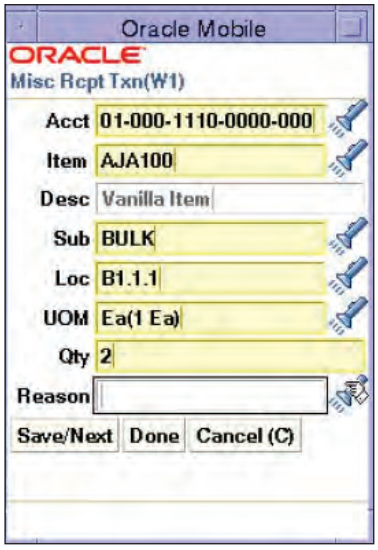


Figure 3: Click on Submit button

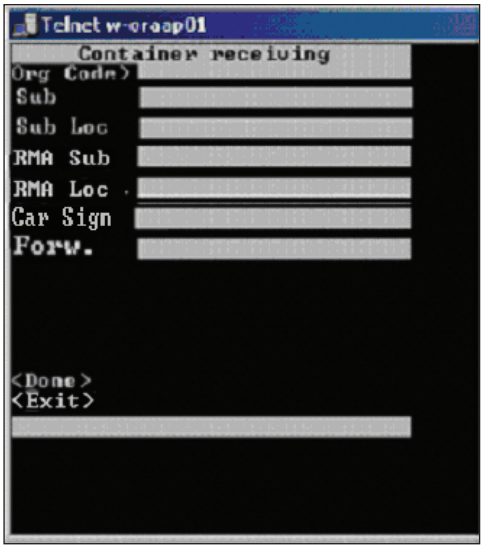


There are two versions of Mobile applications provided by Oracle.

GUI Version:
This can be used by Mobile devices which support GUI.



Telnet Version: This can be used by Mobile devices which don't support GUI.



I hope this article was helpful in understanding the basics of MSCA architecture.

Losing the Sound and the Fury

by Alastair McCullough, Logica

Macbeth's famous phrase in soliloquy has informed many a strategist's thinking: "full of sound and fury, signifying nothing." One of the strange things about Business Intelligence is that the "BI solution" requires a greater degree of face-to-face support than might be suggested at first sight and that fact can cause a range of sound and fury in corporate wars where it is not understood. It can also leave a project achieving nothing without a correctly-focused resource investment.

Alastair McCullough of Logica's Business Optimisation team looks at an essential component in achieving success that lies on the resource side of the investment: the BI Business Champion.

Technically, the introduction or upgrade of business intelligence should be a straightforward affair: a series of fairly easy concepts surrounding a systems integration assignment that combines a solution including, typically, some form of database, some form of data moving tool to take data from a source system to a reporting system (though not always) and some form of front end software set that our valued users see and touch in order to create reports that in theory should derive new knowledge about their business and drive innovation, efficiency and effectiveness to take the company into a new place in relation to its future. The problem is that BI isn't about the technology. It's about the people. Arguably IT is only about people anyway, but nowhere is it truer than in the realm of Business Intelligence.

What can go wrong with a BI implementation lies frequently around the way that the business has been bought-in to the solution and the way in which the technical and business proponents of the solution engage with the rest of the business and promote the new solution set; the way in which the introduction of the solution has been managed in order to minimise problems and focus the solution around the most important people in the delivery. Where there is a mismatch between senior or technical level BI concepts or roadmaps and the business, friction can be caused and the sorts of corporate storm that can lead to failed projects, programmes and adoption with the ultimate failure of the delivery itself.

The critical part of BI, over and above the technology of course, lies in ensuring two things: adoption by the target audience and integration with the target audience and their daily work.

Adoption is the target of all systems integration projects that have an end user face: we want our end users actually to use the solution over which we've sweated blood and spilled tears. Surely this is our only goal, though? Business Intelligence mirrors other deliveries: adoption alone is insufficient. At a personal level, BI is about providing either a new level of empowerment for the individual in terms of their working contribution, or about enhancing and promoting that empowerment. I often write about "slice, dice, drill, collapse, pivot and represent" as being cornerstone capabilities in the BI solution's front end component set. The power to play with data and to discover new knowledge from them, not just run repetitive reports and produce lists – about which many people, by the way, still think business intelligence is only a snazzy tool for delivering. BI is also about giving sophisticated and intelligent access to data, but in doing so, also providing users with a new set of abilities to generate new and compelling insights that enable them to change the organisation for the better. We want our users actually to drive our metaphorical "BI Ferrari", not just ogle a supercar or merely start the engine: this powerful IT vehicle should take them somewhere new and farther than the end of the road or a quick rev of the engine: it's supposed to support them in traversing a map of their new knowledge and allow them to find new places to go, new destinations to consider, new solutions and new information. The best solutions do achieve these things; the worst slide into desuetude. We want, therefore, to integrate the BI solution with our end users. We want them to live and breathe corporate air by using the solution to help them to flourish.

The key component in taking our solution from adoption to integration lies in that very integration with the target user population themselves. The people for whom the solution has been created

"The key individual is the BI Business Champion..."

must see it as being a core part of the work they do; they must have bought-in to the solution in a personal way in order for it to succeed. To assist in achieving this goal, the corporate citizens to whom our solution is addressed need someone to champion their cause (not management's cause), but they also need someone who understands their needs at a fundamental level and who will explain business intelligence to them and help them on their journey. The BI paradigm is still, even today after over fifteen years actively differentiated in the IT marketplace, too new for most users to be happy on first meeting Cognos, Business Objects, Hyperion, Oracle BI, SAS, Pentaho or whatever their company's favourite tool, vendor or technical solution set may be.

The key individual is the "BI Business Champion", or sometimes "BI Champion". BI Business Champions are chosen directly from the target user base with the role of "carrying the torch" of BI into the organisation from the standpoints of having greater knowledge and insight than their peers. They assist both the business and the technical teams directly. These "super users" are critical to the success of the BI enterprise in achieving its goals and targets within the customer organisation and in driving it forwards proactively. Choosing them from the user cohort can be difficult, though. BI Business Champions need to combine deep business knowledge with technical curiosity: they need to be people who are not satisfied that they know enough about the technology or, necessarily, the business. The choice of champion needs to be made in close conjunction with the business, too, not just from the standpoint of the technical implementation team.

BI Champions work with the business by acting as a focal point of expertise about BI. Typically they provide "floor-walking" end-user level technical expertise in the BI software solution and support colleagues with ad hoc educational support and direction and sometimes by arranging and presenting education events. Sitting side by side with end user colleagues, they provide a friendly and immediately supportive link to the BI world and help to channel support by resolving a range of immediate concerns and issues. They also work directly with the BI technical team, both following and prior to implementation, to assist in that team's technical support tasks; sometimes to promote and to focus technical effort or to re-phrase and assist business colleagues in formulating complex technical enquiries or working in more sophisticated ways with the BI query solution.

> "BI Champions will usually sit side by side with members of the BI technical team to support them in rapid applications development."

Prior to completion of implementation, BI Champions will usually sit side by side with members of the BI technical team to support them in rapid applications development (also known as "Agile" development). This role involves careful discussion of formal requirements with developers, walking through meanings and understanding, amplifying and clarifying business subtleties; explaining and defining complex or opaque terminology in the formal requirements. During requirements definition, indeed, BI Champions will support business analysts in working with the business to generate the requirements and assist in promoting BI concepts that will shape the ultimate solution.

The agile approach to development means that a developer can change and enhance the software they develop based upon direct interaction with a qualified business user: a user that also bears the authority to interpret or re-interpret definitions and requirements within the scope of the BI engagement. In real terms, this can be straightforward: a developer may lack the necessary understanding of a commonly-used calculation formula from the business, a jargon term; or need to know more about how a report or component will be used. Issues such as the definition of time units, currencies, even colours of output fields or graphics can be resolved easily and quickly if a business expert is sitting at your elbow.

As the role is a complex one, typically, BI Champions will take some weeks or months to identify, followed by some weeks' education and training in the BI solution set, either with the BI technical team or with accredited training providers. The role is primarily about aptitude, not about seniority, grade or years' experience. Therein, naturally, can lie its uncertainties from the organisation's perspective.

Many organisations even today are unfamiliar with the idea of an individual who can cut across cultural or departmental boundaries in a way that really benefits BI users and the BI effort, because they are often focused around either hierarchical or purely subject matter-based structures. Such conflicts are often in the essence of different pragmatic BI resolutions. Older organisations, too, can struggle with the concept of someone who can be either senior within the company or junior in years or experience because their expertise lies in being a BI Business Champion in this context, rather than fulfilling classic traditional organisational career or goal models. Understandably, resolving this area can take time and needs to be addressed carefully and with cultural, corporate and interpersonal sensitivity for all concerned, not least ultimately to avoid "orphaned champions", those who are perceived by the organisation as no longer fitting within its structures.

> "Issues can be resolved easily and quickly if a business expert is sitting at your elbow."

> "Examples include specialist area team leaders who become super users or Champions for their teams, or junior members of a team to whom new knowledge is delegated and who can grow their corporate expertise by helping colleagues."

Sometimes the solution approach here lies in following the hierarchical or cultural boundaries and appointing a BI Champion from within the structure rather than finding someone who may be perceived as being set "at odds" with the structure. This approach can work very well. Examples include accounting or other specialist area team leaders who become super users or Champions for their teams, or sometimes junior members of a team to whom new knowledge is delegated and who can grow their corporate expertise by helping colleagues.

Typical skills and abilities of BI Champions will include some or all of the following:

- Deep knowledge and experience of the organisation's operational systems, data, validation techniques, data issues, people and roles, processes within their business unit with an understanding of issues affecting related external organisations;
- Experience of working with and resolving business problems and issues from identification through to completion of resolution;
- Aptitude for – and interest in – highly detailed, focused problem-solving work within a business environment;
- Thorough awareness of commercial and typical business operations;
- Interpersonal and analytical skills appropriate to BI development in the business environment;
- Good documentation and report writing skills.

Advantageous abilities in potential BI Business Champions will include having experience of the full software development lifecycle, including within formally configured environments, for business software systems and experience of the development and delivery of commercial training courses.

In addition, typically, BI Champions have a range of defined responsibilities that will be likely to include:

- "Carrying the torch" of business intelligence enthusiastically and energetically within their business unit and the wider business;
- Acting as the focal point for answering questions, resolving issues and promulgating and promoting information and ideas about BI;
- Becoming the Super User within their business unit, to lead others in the business in their use of the BI Solution set;
- Taking ownership of and resolving business issues that arise in relation to technical problems and assisting the BI development team directly in their day-to-day work;
- Taking ownership of (not, not managing) testing for the business and working directly with BI technical colleagues to create test scripts, identify and working directly with testers from within the business and test work stream;
- Performing appropriate business systems and functional analysis work with the business;
- Representing the BI team and solution to stakeholders and senior managers;
- Contributing to the creation of additional documentation and review and feedback materials to the project.

The criticality of the BI Business Champion role needs to be communicated clearly and succinctly by the BI team and promoted to senior programme-level and often Board level.

Gaining the commitment of an organisation's key people is central to success with the business intelligence venture, but recruiting and retaining hands-on champions is critical to resolving the issues that cause a "Sound and Fury" situation in the first place.

About the Author

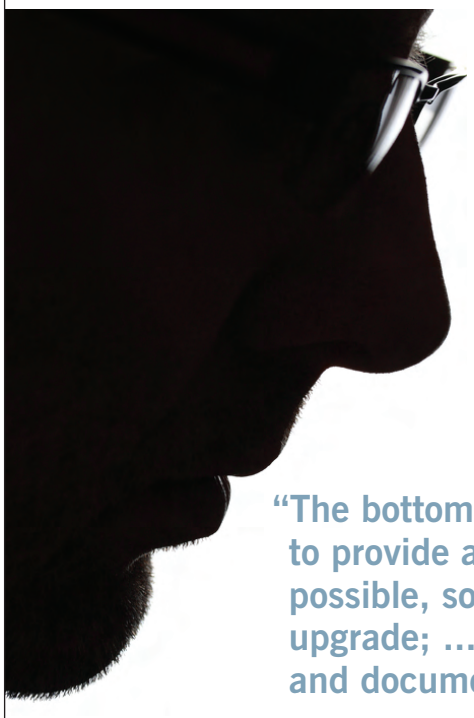
Alastair McCullough is a management consultant with Logica who specialises in enterprise business optimisation solutions. Alastair has worked since 1997 across a range of customers, sectors and technical environments, typically with senior managers and directors to identify business issues, priorities and vision to deliver enhanced corporate performance management.
He can be contacted at alastair.mccullough@logica.com

Interview with Mike Lehmann

Interviewed by Simon Haslam, chair of the Application Server & Middleware SIG, at UKOUG Technology and E-Business Suite Conference 2009.

Simon: Of course this year has been a monumental one for Oracle's middleware products, and many of our user group members are interested in upgrading. Firstly, let's get it out of the way, can you talk a little about licensing and whether existing Application Server customers can move to WebLogic?

Mike: Sure, that's a good question Simon. So first thing is, like you say, it has been a huge year for Oracle – we put out Fusion Middleware 11g, the entire product portfolio, as certified on WebLogic Server, so that was a huge engineering effort and, of course, now we're going to market around that. One of the things that was important was that we wanted to provide a roadmap not only for the WebLogic install base, which obviously just carry forward as is and can take the new release, but also for Oracle Application Server customers – we have a huge community there and we want them to uptake Fusion Middleware 11g as well. One of the things we really encourage our customers to look and evaluate in Fusion Middleware is what we call WebLogic Suite 11g: this is a combination of WebLogic Server, Coherence and JRockit Server premier runtime infrastructure, and then all of the IAS infrastructure – Forms, Reports, Discoverer, Oracle HTTP Server, Web Cache etc, all certified and working on WebLogic Server. So that's a key place to point our customers towards.



Of course there can be situations where the customer simply wants to get their existing licences, say iAS Enterprise Edition, over onto WebLogic Server; we do have a path for those customers as well, they don't necessarily have to go to WebLogic Suite – although we do recommend it – something called WebLogic Server Basic, which gives them equivalent functionality to what they had in the iAS world and provides a roadmap for them to then incrementally go to WebLogic Server Suite when they {want to} get the full use of WebLogic Server.

Simon: OK, so do you think WebLogic {Server} Basic is going to give people a fair feel for what's possible in WebLogic {Server} Suite, for example, some of the features like JRockit and WebLogic scripting?

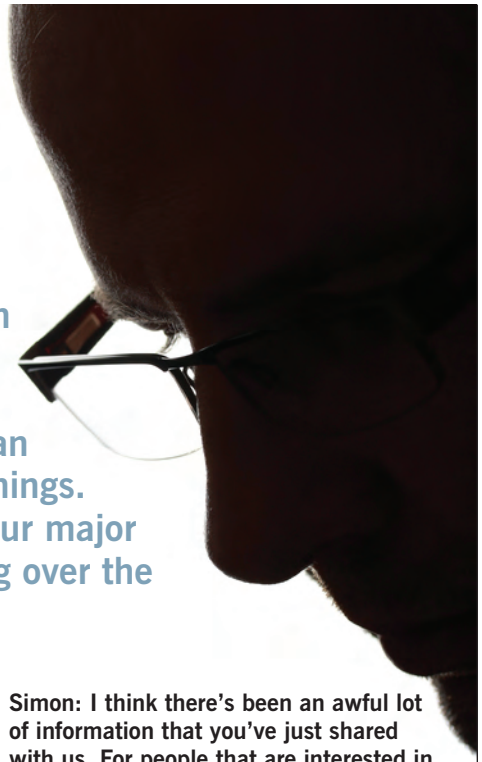
Mike: Sure. So what we've done is made sure that the core features like WebLogic Scripting Tool (WLST) are fundamentally there, so you can do effectively the same administrative things that you would do in Oracle Application Server. With all of our {WebLogic} server products we have included a licence to JRockit, to answer that specific question. What we've done though is restricted some of the higher-end features of JRockit, like the real-time capabilities and so forth, but in the core iAS licence you get the basic runtime infrastructure with WebLogic Server, {plus} you also get the common administrative operations things. What we've restricted more generically is the higher-end capabilities: some of the side-by-side deployment {and} the whole server migration capabilities have been restricted because they simply weren't there in the iAS world. But the basic functionality, the same capabilities that you had in iAS, is matched.

Simon: Well, that's interesting. Do you think that, whether customers choose to go to WebLogic {Server} Basic or WebLogic {Server} Suite, you see it as a quite a big transition for people?

Mike: We've invested quite heavily over the last year, actually continuing even right now, in terms of making the technical upgrade as straight forward as possible. There are two parts to it: there's the layered products in iAS – Forms, Reports, Discoverer, Portal, OHS etc – where we've built a set of upgrade assistants to make that upgrade much more seamless – it's not something you manually have to do and figure out the configuration {as} the upgrade assistant walks you through it. There's quite a rich set of documentation supporting that. And then there's the J2EE side, where you have custom Java applications, and we've built a tool called WebLogic Smart Upgrade. What this tool does is basically helps you, first analyse your applications and reports on what functionality needs to be moved over, and then actually technically does the migration of a number of components. Right now it moves web applications, and web services, and you'll see over the next 6-12 months increasing functionality around JMS, JCA and some of the higher-end capabilities of OC4J as well. {The} bottom line is that we're trying to provide as much automation as possible, so that you have a seamless upgrade; it's not something to be undertaken lightly but we have invested in tooling and documentation to support you.

Simon: OK. How about we have a slight change of tack here? One question I'm often asked, when out and about, is why should people be considering WebLogic instead of some of the Open Source products, say GlassFish and the like? What sort of things do you think are WebLogic's real strengths?

"The bottom line is that we're trying to provide as much automation as possible, so that you have a seamless upgrade; ... we have invested in tooling and documentation to support you."



Mike: Sure. WebLogic has been a premier Java EE server for quite a number of years now. Where it started was really aimed around the development community where it was very popular, very aggressively following the Java EE standards and then, as it has matured, a lot of the investment has gone into the operations and administrative sides – we have huge customers now running literally thousands of instances, thousands of domains of WebLogic Server and a lot of our tooling and administrative capabilities have catered to that kind of infrastructure. So if you were to pin me to the table and say what is the thing that is differentiating WebLogic today, I'd really say it's the operations and administrative side of things. When you compare in particular against Open Source where they tend to be aiming much more at the developer market and then leave the ops side more to their own devices. The developers' side is something that we also now have started re-investing now that BEA has come into Oracle. You might have noticed that in {WebLogic} 10gR3 we introduced a lightweight installer that lets you get down to a smaller footprint of about 170MB, and that's an area that we really think is going to be invested in going forward getting into a lot of the very common development environments like Maven, Ivy, CruiseControl, Hudson to help automate your build environment – we think that's where the next big investment you'll see coming on the developer side of WebLogic Server.

Simon: While we're speaking about where things are heading, if you had your application server crystal ball out, where would you see things happening within the next few years?

Mike: Since BEA has come to Oracle, we've combined the Oracle App Server team with the WebLogic team – it's been a pretty exciting time because together we can do some pretty interesting things. I'd say there are probably four major areas that you'll see evolving over the next few years.

"Since BEA has come to Oracle, we've combined the Oracle App Server team with the WebLogic team – it's been a pretty exciting time because together we can do some pretty interesting things. I'd say there are probably four major areas that you'll see evolving over the next few years."

One of them we like to call "Just Enough Application Server": this is very much aimed at what I talked about a moment ago, really aiming at the developer-centric view of the world and answering concerns about lightweight development, continuous integration and so forth.

Another major area of investment is what I call enterprise runtime services. This is where we're integrating key advantages that Oracle brings to the table like RAC, Coherence, as areas that we think are pretty unique to Oracle and we can do some pretty tight integration between the app server and these backend technologies to get higher scalability, better performance, more and more reliability out of the entire environment.

Thirdly, the area that has got a lot of investment is {cloud computing, e.g.} virtualisation. We're going to be working in things like WebLogic Server Virtual Edition, {that} you heard me talk about earlier today, running on a native hypervisor without an OS – {so} high performance, virtualised environments.

Then the last area is really a consistent operational environment, with patching, install and upgrade. You'll see the common Oracle Universal Installer patch infrastructure carried forward. {There's} a lot of innovation coming; a lot of interesting things coming.

Simon: I think there's been an awful lot of information that you've just shared with us. For people that are interested in taking the next step and looking further into WebLogic and possible upgrade paths, where's the best place for them to look?

Mike: We've put a lot of work into the OTN site, so Oracle Technology Network is definitely a key place to go. For upgrades specifically we've built out an upgrade site and it talks about, not only the J2EE side of iAS, but also Forms, Reports, Discoverer – all the basic steps you have to do there and points you to all the resources: recordings, documentation {and} tooling. We also have material on WebLogic upgrades, of course, {for} people going from 8.1, 9.2, 10gR3 to 11 as well. So that Upgrade Centre is a huge resource. And then of course OTN is where we've consolidated all the user forums, all the white papers and collateral that we have about WebLogic Server. So OTN is your "go to" place and we really hope you take a look at it.

Simon: Well, thanks again Mike and thanks once again for coming over from Canada to speak at the UKOUG Conference.

About the Interviewee

I run the product management team for WebLogic Server and the OC4J infrastructure as well. Our team works with the engineers to define what the product is and set the roadmap for it, as well as trains the field {staff} and participates in conferences, such as UKOUG.

Approaching the Next Frontier

by Martin Bach, Markit

Joel Goodman and Harald van der Brederode released a joint paper aptly titled DBA 2.0 last year. In this paper the authors discussed the new set of roles of the "post Oracle-9i" DBA. With the introduction of Oracle Clusterware and Automatic Storage Management in Database 10g (to name only the most prominent changes) the classical division of responsibilities in the Oracle world have became blurred, or should I say, less cleanly cut.

Admittedly, many of these challenges are as a result of Oracle's push towards Real Application Cluster deployments – stay with single instance and the traditional separation of roles and duties still works well. However on second thoughts, everybody's manager seems to jump on the available bandwagons these days, most likely some virtualisation and/or other High Availability option so you are likely to get some involvement regardless. It's ironic how on the one hand the database itself tries to make the administrator's life easier by being more and more self-managed (at least they want us to believe that!) while on the other hand the DBA needs to have much more knowledge of the peripheral technologies...

In my experience, some of the challenges the modern-day DBA is facing are the following. These are listed with a specific focus on RAC, but not necessarily on RAC 11g Release 2:

- The Oracle Database Administrator is the most knowledgeable player during the installation and operation of a RAC system.

I have worked with very few IT co-workers from other departments that actually understood concepts behind RAC such as virtual IPs, shared-everything access to the data, client connections etc. So, if anything happens the blame goes to the DBA, most often for lack of better knowledge.

- The advent of Clusterware turns third party clustering layers into optional components.

The immediate impact is that the DBAs have to at least partly look after it, because it has the Oracle label on it. So, all of a sudden a DBA is tasked with finding out why a node has been evicted, read and, correctly(!), interpret the relevant logs and also assist the system admin in finding the root cause of the eviction.

- The introduction of Automatic Storage Management allows the Oracle software owner to have control over storage.

This can be a blessing and curse. In my experience ASM works best with smaller deployments. Sometimes even a 4U quad core Xeon box can have enough fast spinning internal SAS disks to host a department's database server. So to cut down on the overhead of LVM and file systems you can deploy ASM quite efficiently. A multi node IBM system beautifully kitted out with GPFS and a high end SAN might not benefit as much from an ASM deployment (but that of course depends). And I haven't even mentioned Storage Cells here...

Also, on larger SANs we DBAs are often tasked writing scripts to provide snapclone/split mirror copy functionality for providing fast copies of the production system. There are a number of vendors who have specialised in this kind of business such as NetApp with their filers and clever internal handling of data.

All of this used to be the situation until Oracle decided to release Oracle 11.2 to the public in September. I haven't been able to participate in the beta program so I was in for a bit of a surprise: Oracle 11.2 introduces a whole new additional layer of complexity with Grid Plug and Play and Single Client Access Name addresses.

> "It's ironic how on the one hand the database itself tries to make the administrator's life easier by being more and more self-managed ... while on the other hand the DBA needs to have much more knowledge of the peripheral technologies..."

So, you thought it's been a bit of a burden, (there is always the production support as well!), the question is "what's next now"? The answer seems quite straight forward after reading up on the RAC new features: name resolution! The "DBA 3.0", if he should be called this, will have a closer relationship with the DNS administrators. Now where does the DBA touch DNS in 11.2? The two major subjects we will deal with in the future are the Single Client Access Name and maybe Grid Naming Service (Grid Plug And Play)which I'll explore in the following sections.

Single Client Access Name

The biggest revelation for me until now was the introduction of the SCAN address in Grid Infrastructure. For now it is an optional way to connect to the database. But you don't have to give up the current naming schema – nothing prevents you from using the virtual IPs as in previous releases.

So what does this mean for the DBA? First of all, what is this mysterious SCAN anyway?

In the documentation (section D.1.3.5 of the Grid Infrastructure installation guide for Linux) we find the following:

- The SCAN is a stable name for clients to connect to the database regardless of the number of nodes in the cluster.

- It's a virtual address, but it's associated with the Cluster rather than the individual host (unlike the pre 11.2 "virtual IP" which still exists).

- The SCAN is resolved either by DNS (requires manual addition) or Grid Naming Service. (GNS, see below.)

I tried very hard to put the new connection handling into my own words but failed to bring it to the point better than the documentation which I'll quote verbally here:

"When a client submits a request, the SCAN listener listening on a SCAN IP address and the SCAN port is contacted on a client's behalf. Because all services on the cluster are registered with the SCAN listener, the SCAN listener replies with the address of the local listener on the least-loaded node where the service is currently being offered. Finally, the client establishes connection to the service through the listener on the node where service is offered. All of these actions take place transparently to the client without any explicit configuration required in the client."

Figure 1

```
ORCL =
 (DESCRIPTION =
  (ADDRESS =
   (PROTOCOL = TCP)
   (HOST = rac-scan.rac.the-playground.de)
   (PORT = 1521))
  (CONNECT_DATA =
   (SERVER = DEDICATED)
   (SERVICE_NAME = orcl.the-playground.de)
  )
 )
```

Now that sounds good. But how will that translate into "time it takes to connect"? Time, (and hopefully sufficient testing), will tell – it's additional work so clients that often create and destroy connections, (anyone not using connection pooling basically), might suffer a latency. Individual testing should ensure that this doesn't impact the overall application's performance.

After so much theory, let's get a bit more practical. What does a connection string to the SCAN address look like? Here's the example that dbca created for an 11.2 database. Please note that I am using GNS here which is why you can see a subdomain "rac" in my address, see Figure 1.

So, instead of having three VIPs referenced in the address_list for a three node cluster, all you need to do is to define the SCAN. The SCAN listeners will then hand off the connection requests to the database listeners from which the connection is created as in previous releases, (sorry for the repetition).

If you have your naming methods defined using an address list with multiple addresses pointing to the cluster node's virtual IPs – basically the pre 11.2 way – then you don't have to change that unless you like to. I personally like the use of SCANs – I am currently extending a two node to a 3 node cluster – unfortunately it's 10.2.0.4, but the SCAN naming could have made the change in tnsnames.ora an unnecessary task.

Grid Naming Service (GNS)

GNS is another 11.2 feature that requires you to look at DNS in a bit more detail. It's been designed to allow nodes to be dynamically added and removed from the cluster without having to make any changes to your DNS setup. Assume that you intended to add two nodes to a cluster, (I have to admit that this doesn't really happen that often for me but maybe the Amazons and Googles of this world do this frequently). Then you have to provision two new private, two new public and finally two virtual IP addresses in DNS. With GNS this is no longer necessary.

GNS requires subdomain delegation in named, in other words you instruct your DNS server to delegate name resolution to GNS. Here is where your DNS knowledge comes into play and mark my words: you will look at punctuation very closely! Subdomain delegation turned out to be a bit more complex than I wanted it to be, mainly because of the said punctuation in the zone files. I ended up copying every single line from an example, to get it to work (see my blog at http://martincarstenbach.wordpress.com)

Once you have configured DNS properly, details for which you can find on the blog at martincarstenbach.wordpress.com, you can think of installing GNS. "Think of," because GNS can't rely on DNS alone, it needs the dynamic host configuration protocol to get hold of free IP addresses which it then automatically registers internally. So here's the next challenge, but don't despair – the central config file, /etc/dhcpd.conf doesn't require too much knowledge.

I personally consider these as some of the highlights of the new release. Some other areas you'd be interested in include:

- Network Time Protocol.

Network Time Protocol

As you already know, Oracle likes to use NTP to keep the cluster clocks in sync eventhough it hasn't been a requirement in 11.1. Configuration of NTP can quite easily be managed by using system-config-time in RHEL, but it requires an Internet connection to a time server. Alternatively, RAC can have its own time service in 11.2 known as, called ctss (cluster time synchronisation service), if NTP is not available,

Intelligent Platform Management Interface (IPMI)

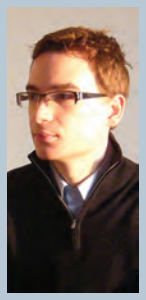
Intelligent Platform Management Interface (IPMI) is a common interface to computer hardware not specific to Oracle. System administrators around the world use it to monitor and manage hardware. The support of IPMI reminded me of the Polyserve chapter Kevin Closson wrote in Julian Dyke's excellent RAC book. Sometimes a cluster node doesn't react to software resets, probably when the system calls (%sy column in sar) eat up all the CPU cycles. In that case more robust fencing has to kick in, and a solution implemented in hardware might just do the trick.

Conclusion

This list seems long already, but I've not even touched on topics such as Direct NFS and other advanced topics a true DBA 3.0 has to deal with. Who knows, maybe one day Oracle will come in a packaged format that can be installed on bare metal and communicates on very specific (hopefully open!) channels with the outside world. Their Linux offering, possibly paired with a bit of virtualisation here and there seems to be a hint to where the journey goes to.

In the future we might see the ultra-versatile DBA, although I don't think there will be many, or a subdivision of the DBA role into ASM, Grid Infrastructure and Net*8 specialists. Anyway, the journey will be an interesting one.

About the Author



Martin Bach has six years of experience as a DBA and is Oracle Certified Master for Database 10g Release 2. Martin's experience covers many market sectors, gained in a number of European countries. His main focus is on mission critical RAC systems, high availability and disaster recovery.

Martin can be contacted at: martin.bach@markit.com

Business Knowledge and Soft Skills Combat Ageism for Techies

by John McGhee

As a former Oracle Apps and systems DBA I am bemused by all the recent coverage in the press regarding ageism. A sizeable proportion of this seems to have emanated from the IT profession with complaints that a lifetime of experience is considered worthless amidst the ever-advancing world of technology.

Well, what a surprise! Ageism has always been present in IT because it is still a developing industry, needing radical and innovative ideas from minds unfettered by traditional concepts. Survival in the industry through middle-age or beyond requires letting go of the technical reins and accepting that someone younger and less experienced might be more conversant with state-of-the-art technology and better able to incorporate it into existing infra-structures refined over the years by their now-aging predecessors.

Like it or not, technology has always developed like this, with experts making way for younger people whilst they themselves move on and utilise the soft skills which they will have learned over the years – negotiation, presentation, persuasion, advice and general wisdom. These skills are an asset to almost any role and coupled with IT experience the scope is wide. Most jobs now include some involvement with computers so real techies will soon become the local 'expert', even if it seems trivial stuff compared with past achievements. Thankfully, the career-span of the average IT techie is much longer than that of the average sportsman, model, fireman or pop star – all of whom expect to have a career change in mid-life.

Before the ageism police come to get me I should mention that my career goes back to the days when the IT industry rocked and still carried an aura of mystery. Since home PCs became the norm it is often perceived that having good computer skills merely means being good at PC games and using Microsoft products so it is a distinct advantage to be able to offer companies more than just that. I have illustrated this below in relation to my own experiences as a former techie.

My first encounter with ageism in IT was at the end of the sixties in British Rail's new computer centre in Reading when discovering that I was among fifty or so applicants who had passed a logic test which apparently was an indicator of one's potential to become a computer guru. We were all in our late teens or early twenties in a working environment that included only a handful of people aged over thirty, mainly administrative staff. The operation was run by two high-grade managers in their fifties who saw us as their young protégés.

> "Computer workers were highly-paid and considered avant-garde ... so could turn up for work dressed like Hendrix without anyone batting an eyelid..."

Keeping the systems running 24 x 7 involved shift-working, often starting at midnight following an evening's revelling which built a tolerance for staying awake for up to forty hours at a stretch. This was honed during weekends spent at rock festivals watching the top bands of the day such as The Who, Rolling Stones, Dylan and Clapton – still in their prime then, (and still unfazed by ageism today). Computer workers were highly-paid and considered avant-garde and as such were exempt from the standard dress-code of suit and tie so could turn up for work dressed like Hendrix without anyone batting an eyelid so long as the work was done. Computer programming back then often meant tapping in hundreds of lines of code in octal and any mistakes could seriously impact the railway system, but things just seemed to merrily muddle along.

There has always been pressure in the IT industry for technical employees to concentrate on management when reaching 40. I personally held out as long as possible, partly because middle-management jobs always seemed to be the first to go in cost-cutting exercises but mainly because I've always enjoyed technical work. Any Oracle DBA will testify to the immense satisfaction that can be gleaned by juggling databases around,

> "when the go-live weekend dawned everything depended upon me, working alone in an empty building with their Sun Solaris system..."

> "Computer programming often meant tapping in hundreds of lines of code in octal and any mistakes could seriously impact the railway system, but things just seemed to merrily muddle along..."

defragmenting tables and tuning SQL scripts – occasionally slashing runtime by amazing factors – in the quest for optimum system performance. It is hard to accept that someone else might be able to improve on one's own complex SQL scripts and that they might not after all be superior to the sophisticated user-friendly front-end management tools produced by Oracle Corporation.

With middle-age beckoning and a couple of decades in the private sector under my belt in both contractor and permanent positions I found myself working in Paris as a multi-national company's solitary DBA on a project co-managed by a well-known Paris-based management consultancy. Most of my colleagues were fresh out of University and had been hand-picked as future high-fliers but I learned from them that business knowledge is just as important as technical expertise in modern organisations. Despite this, when the go-live weekend dawned everything depended upon me, working alone in an empty building with their Sun Solaris system, upgrading to the latest version of RDBMS (6.0.37) followed by an installation of Oracle Financials 9.3.6 with a bundle of French localisation add-ons. Having already done a fair number of system/apps upgrades in various European locations this was not an unfamiliar situation and I was fortunate that the French had chosen their Bastille Day holiday weekend for the upgrade to gain an extra day. So, when my work was done I was able to join the revellers in the streets of Paris, celebrating until the early hours and flattering myself that there are worse ways to earn a living.

When finally discarding my techie boots to concentrate on management I found that technical knowledge was invaluable when drawing up SLAs and business proposals, especially when negotiating the finer details with the service providers' technical staff who would often be surprised that I actually understood what they were talking about. The job provided a great opportunity to improve my presentation skills and I was once invited to an IT company's opening ceremony as co-guest speaker alongside Trevor Baylis – TV presenter and inventor of the clockwork radio. I entered my fifties as a technical services manager for an American multi-national, later becoming European IT manager before eventually taking an early retirement package aged 53.

So, what about all that stuff referred to earlier about using one's experience and those hard-earned soft skills to enter new horizons in the workplace? Well, I learned this the hard way after spending the next couple of years using up most of my lump sum on enjoyable but unprofitable ventures. It was only then that I understood the true value of my computer experience, so I applied for a 6-month temporary job as a trainer of Oracle-based applications to get my foot back into the job market. I had no idea if I could do classroom training as it is quite different to giving presentations, but it turned out that the inter-personal skills needed in both areas are very similar. Also, my Oracle knowledge was useful when application problems occurred as I recognised many of the error messages and could describe them to technical staff in jargon they understood.

At the end of the temporary job I rejoined the contracting market as an independent trainer and for the past four years I have worked in London and the southern counties on a variety of public sector contracts involving Oracle-based social care applications which are being implemented nationwide to help protect children from abuse. My business knowledge of this sector has increased tremendously and I am delighted to be able to use my technical experience in an area which benefits the community. I was even fortunate enough to win a medal at an IT Industry awards ceremony last year for training achievements and hope that this might encourage others that a career with Oracle products can provide a solid foundation which transcends age boundaries.

> "I entered my fifties as a technical services manager for an American multinational, later becoming European IT manager before eventually taking an early retirement package aged 53."

About the Author

John McGhee has been in the IT industry for over 30 years, working mainly with Oracle systems as a technical specialist and Oracle Financials DBA.

Following his retirement as European IT Manager for an American multi-national he has worked freelance as an independent trainer, designing and delivering training courses for a variety of Oracle-based social care applications currently being implemented nationwide to help protect children from abuse.

Fast Now, Fast Later

by Jonathan Lewis, JL Computer Consultancy

The title of this piece came from a presentation by Cary Millsap and captures an important point about trouble-shooting as a very memorable aphorism. Your solution to a problem may look good for you right now, but is it a solution that will still be appropriate when the database has grown in volume and has more users.

I was actually prompted to write by a question on the OTN database forum that demonstrated the need for the basic combination of problem solving and forward planning. Someone had a problem with a fairly sudden change in performance of his system from November to December, and he had some samples from trace files and Statspack of a particular query that demonstrated the problem.

The query was very simple: see Figure 1.

Figure 1

```
select      *
from        tph
where       pol_num = :b0
order by
            pm_dt, snum
```

When the query was running fast enough the trace file from a sample run showed the following (edited) ***tkprof*** output, with an the optimizer taking advantage of the primary key of (pol_num, pm_dt, snum) on table TPH to avoid a sort for the ***order by*** clause. (Note that the heading on the plan is "Row Source Operation" – which means it's the execution plan that really was used.) (See Figure 2.)

When the query was running less efficiently the change in the trace didn't immediately suggest any fundamental problems – see Figure 3.

The plan is the same, the number of rows returned is roughly the same, and the number of disc reads and buffer gets has hardly changed. Clearly the overall change in performance comes from the slower average disk read times (a total of 0.21 seconds with a maximum of one hundredth of a second, compared to a total of 0.58 seconds with a maximum of 3 hundredths), but why has the disk I/O time changed?

Figure 2

call	count	cpu	elapsed	disk	query	current	rows
Parse	1	0.01	0.13	0	106	0	0
Execute	1	0.03	0.03	0	0	0	0
Fetch	4	0.01	0.22	46	49	0	43
total	6	0.06	0.39	46	155	0	43

```
Rows  Row Source Operation
-------  ---------------------------------------------------
     43  TABLE ACCESS BY INDEX ROWID TPH (cr=49 pr=46 pw=0 time=226115 us)
     43  INDEX RANGE SCAN TPH_PK (cr=6 pr=3 pw=0 time=20079 us)(object id 152978)
```

Elapsed times include waiting on following events:

Event waited on	Times Waited	Max. Wait	Total Waited
db file sequential read	46	0.01	0.21

Figure 3

call	count	cpu	elapsed	disk	query	current	rows
Parse	1	0.00	0.00	0	51	0	0
Execute	1	0.01	0.01	0	0	0	0
Fetch	4	0.00	0.59	47	51	0	45
total	6	0.01	0.61	47	102	0	45

```
Rows  Row Source Operation
-------  ---------------------------------------------------
     45  TABLE ACCESS BY INDEX ROWID TPH (cr=51 pr=47 pw=0 time=593441 us)
     45  INDEX RANGE SCAN TPH_PK (cr=6 pr=2 pw=0 time=33470 us)(object id 152978)
```

Event waited on	Times Waited	Max. Wait	Total Waited
db file sequential read	47	0.03	0.58

"Clearly the overall change in performance comes from the slower average disk read times ... but why has the disk I/O time changed?"

The figures give us a couple of preliminary ideas. An average read time of 4.5 milliseconds (0.21 seconds / 46 reads) is pretty good for a "small" random read of a reasonably loaded disc subject to a degree of concurrent access, so the waits for *"db file sequential read"* in the first *tkprof* output are probably getting some help from a cache somewhere – possibly a SAN cache at the end of a fibre link or maybe from a local file system buffer (we might get a better idea if we could see the complete list of individual read times).

In the second case, an average of 12.3 milliseconds (0.58 seconds / 45 reads) looks much more like a reasonable amount of genuine disc I/O is taking place – and the maximum of 30 milliseconds tells us that the disc(s) in question are subject to an undesirable level of concurrency: our session is spending some of its time queueing. Again, it would be nice to see the wait times for all the reads, but at this point it's not really necessary.

There are couple more clues about what's going on – one is the text of the query itself (and I'll be coming back to that later) and the other is in the detail of the disk I/Os. If you check the "row source operation" details, you'll see that in the first case the sample query selected 43 rows from the table and needed 43 (46 – 3) physical reads (pr) of the table to do so. In the second case it was 45 rows and 45 (47 – 2) physical reads. Is this simply a case of the same query needing a little more data and having to do a little more work as time passes?

So now we come to the Statspack data. Based on my observations (or guesses) about the nature of the query and the work going on, I asked if we could see some summary information for a couple of comparative intervals, and also to see if this particular query appeared in the ***"SQL order by reads"*** section of the Statspack reports. For the results, first for a snapshot taken in October, see Figure 4.

You might notice that the critical query is actually a *'select for update'* rather than the simple select that we had originally been told about; this doesn't affect the execution plan, but is going to have some significance as far as undo and redo are concerned.

Now look at the corresponding figures for an interval in December – see Figure 5.

Figure 4

Top 5 Timed Events

Event	Waits	Time (s)	Avg wait (ms)	%Total Call Time
db file sequential read	3,816,939	58,549	15	79.4
CPU time		7,789		10.6
db file parallel write	371,865	2,005	5	2.7
log file parallel write	75,554	1,552	21	2.1
log file sync	17,198	1,228	71	1.7

Physical Reads	Executions	Reads per Exec	%Total	CPU Time (s)	Elapsd Time (s)	Old Hash Value
775,166	43,228	17.9	24.3	212.58	12449.98	1505833981

Module: javaw.exe

```
SELECT * FROM TPH WHERE POL_NUM = :B1 ORDER BY PM_DT ,SNUM FOR UPDATE NOWAIT
```

You'll see in both cases that a huge fraction of the total database time is spent in single block reads (the "db file sequential read" time), but in December the number of reads has gone up by about 3.2 million. You can also see that about 1.7 million of the "extra" reads could be attributed to the critical query even though the number of executions of that query has hardly changed. The average number of reads per execution has gone up from 18 to 56. (I did ask if I could see the section of Statspack titled *"SQL ordered by executions"*, as this includes the average number of rows per execution and it would have been nice to know whether this average had gone up just a little bit, or whether it had gone up in line with the average reads per execution. Unfortunately the request was ignored, so I am going to proceed as if the change in the average result set was small.)

This, perhaps, tells us exactly what the problem is (and even if it doesn't, the figures are symptomatic of one of the common examples of non-scalable queries).

Look at the query again – are we reporting all the rows for a "policy number", ordered by "payment date"? If so, the number of payments recorded is bound to increase with time, and inevitably there will be lots of payments by other people between each pair of payments I make – which would put each of my payments in a different table block (if I use a normal heap table).

Initially the payments table may be sufficiently small that a significant fraction of it stays in Oracle's data cache, or even in the file-system or SAN cache; but as time passes and the table grows, the probability of me finding most of my blocks cached decreases – moreover, as time passes I want increasing numbers of blocks which means that as I read my blocks I'm more likely to knock your blocks out of the cache. Given the constantly increasing numbers of competing reads, it is also no surprise that eventually the average read time also increases.

In scenarios like this, it is inevitable that performance will degrade over time; in fact it is reasonably likely that the performance profile will degrade slowly to start with and then show an increasingly dramatic plunge. The only question really is how much damage limitation you can do.

One strategy, of course, is to increase the memory available for the critical object(s). This may mean assigning the table to a generously sized KEEP cache. (The cache need not be the same size as the table to improve things, but the bigger the better – for this query, at least). But such a strategy is only postponing the inevitable – you really need to find an approach which is less susceptible to the passage of time.

"...you really need to find an approach which is less susceptible to the passage of time."

Figure 5

Top 5 Timed Events

Event	Waits	Time (s)	Avg wait (ms)	%Total Call Time
db file sequential read	7,000,428	92,970	13	89.8
CPU time		6,780		6.5
db file parallel write	549,286	1,450	3	1.4
db file scattered read	84,127	720	9	.7
log file parallel write	41,197	439	11	.4

Physical Reads	Executions	Reads per Exec	%Total	CPU Time (s)	Elapsd Time (s)	Old Hash Value
2,444,437	43,363	56.4	25.2	221.31	23376.07	1505833981

Module: javaw.exe

```
SELECT * FROM TPH WHERE POL_NUM = :B1 ORDER BY PM_DT ,SNUM FOR UPDATE NOWAIT
```

In this case, there are a few options to consider. First – note that we are selecting all the rows for a policy: do we really need to, or could we select the rows within a given date range, thus setting an upper limit on the average volume of data we need to acquire for any one policy. If we do that, we may want to think about strategies for summarizing and deleting older data, or using partitioning to isolate older data in separate segments.

If we can't deal with the problem by changing the code (and, in this case, the apparent business requirement) can we avoid the need to visit so many data blocks for single policy? There are two obvious options to consider here – we could create the table as an "index cluster" clustered on the policy number; in this way we pay a penalty as we insert each new row for a policy because we have to find the correct block in the cluster, but when we run a query against that policy we will only need to read one or two blocks (probably) to get all the data. Alternatively we could consider setting up the table as an index-organized table (IOT) – again we do more work inserting data into the correct leaf block in the index, but again we reap the benefit as we query the data because all the rows we want are in the same two or three leafs (and stored in the order we want them).

Of course, we are still subject to the same basic problem of the result set increasing in size as time passes, but at least we have managed to reduce (dramatically) the number of blocks we have to visit, thereby improving the scalability of the queries dramatically.

Introducing new structures to an existing system is difficult, of course, and we may have to work out variations on this theme (like creating an index that includes all the table columns if we can't switch to an IOT!). The key point is this, though: sometimes we can look at our data and the critical queries and recognize that the volume of data we have to process (even if we don't return it, as we did in this example) is always going to increase over time, then we need to consider ways of minimizing the volume of data, or improving the packing of data so that the work we do doesn't change (much) over time. Don't just think 'fast now', think 'will it still be fast later?'

About the Author

Jonathan Lewis is a freelance consultant whose experience with Oracle goes back just over 21 years to version 5.1a (though he does try to forget that when dealing with modern systems). He specialises in physical database design, the strategic use of the Oracle database engine and solving performance issues.

Jonathan is the author of 'Cost Based Oracle – Fundamentals' published by Apress, and 'Practical Oracle 8i – Designing Efficient Databases' published by Addison-Wesley, has contributed to three other books about Oracle, and is one of the best-known speakers on the UK Oracle circuit, as well as being very popular on the international scene.

Further details of his published papers, presentations, tutorials and seminars can be found at http://www.jlcomp.demon.co.uk and his blog is at http://jonathanlewis.wordpress.com

"Don't just think 'fast now', think 'will it still be fast later?'"

Mogens' World

How Apps Finally Got To Me

I am a database guy. Touched Version 4 before diving into Version 5 in 1987, and never lost my love for it. I even managed (with help from some good friends, I must confess) to teach the five-day class on 11gR2 Database New Features last summer even though I haven't touched a database since 2001. I love the database.

I was in Oracle Support when Oracle Applications ("Apps") was introduced, and I managed to completely ignore all of it, and not even the renaming of it to "Oracle E-Business Suite" or EBS or OEBS (back in the days when everything had to have a red 'E' in its name) made me think the slightest of it.

It was perhaps easier to ignore OEBS in Denmark than in the UK. I can think of two reasons for this:

- For some reason the sales force in Oracle Denmark was never very focused on selling it, and why should they, since the other products sold like hot naga chilies at Marks & Spencer?

- LEGO (a Danish brick producer) decided to switch from SAP to OEBS via Oracle's Fast Track or Accelerator or whatever it was called, which should only take nine months in total. After many, many, and still more, good people and money had been spent (!), LEGO decided to give up OEBS and switch back to SAP. That was their right as a customer and they behaved nicely. The response from the then CEO of Oracle Denmark was less so: He blamed the customer for not being professional in various media.

Since the LEGO incident in the late 90's very few new OEBS installations have been done in Denmark. Perhaps Danish customers don't want to be blamed publicly for spending fantasillions of Kroner on a hopeless project. Perhaps SAP has mentioned the behavior of Oracle Denmark to a few prospective customers since then. Who knows?

So here I am, happily managing Miracle A/S, a database company, and doing very nicely, thank you.

Then, out of the blue, OEBS strikes from the one angle I didn't cover: my back.

You see, my back is covered by my long-term friend Lasse, who is the co-CEO of Miracle A/S, and the one that suggested we make a company together back in 2000. He is an economist by training, worked as a speech-writer and economist for our Liberal party, became CFO of a multi-national Danish company – and then founded Miracle with me. No Oracle in his life. None whatsoever.

He's NOT into Oracle. He has taken care of the financial stuff, the contracts, the bills, wages, and all that boring stuff. I'm the one taking care of the Oracle stuff. I'm the OakTable guy, the Oracle ACE Director, the fanatic who can tell him (over beer) all sorts of things he cannot possibly understand or care about.

Then suddenly he starts talking about OEBS and Oracle Business Accelerator (OBA) as if he's seen The Light. As I write this a few days into January he's just lead his first OBA-implementation on-time (21 days, I think), under-budget (800K Kroner instead of 1.4 million), and he's got two other companies lined up for it.

He is now telling me all sorts of things I've been able to ignore since I started in Oracle Support in 1990. Words like Set of Books, Standard Implementation, and Modifications.

Worst of all, he's now also babbling about Fusion Middleware. I can clearly see the end of our friendship.

He's talking like the worst white-shirt, oily-haired, dance-shoes & suit dressed, sales guy from hell you'll ever have nightmares about:

- The future is OBA. Forget all those monster implementations with modifications that took very many years and very many women & men.

- Modifications will nearly always be required, but they will be done outside of the OEBS standard implementation and then interfaced to it. There will be no modifications inside the OEBS stuff.

- The Usual Big Ones that have been making billions of, say, Icelandic Kroner or US Dollars on traditional implementations (modifying OEBS and then living well for decades after) are not particularly happy about the prospects of OBA, but Lasse says we don't care, since it's new money for us that we never thought we'd be making. Man, is he right there.

- Oracle has bought more companies that anyone else on the planet in recent years. So they must become fantastic at interfacing all sorts of things in the future (Fusion again, again).

- It's WAY smarter technologically speaking than SAP, but to compensate for that, it's cheaper and faster.

That's part of what my former friend Lasse talks about every time I call him to have a nice talk about some new feature in 11gR2. When I called to wish him Happy New Year (with a beer in my hand) he asked: "So, what do we know about BPEL?".

Please let me know if anyone out there needs a rusty, but enthusiastic database supporter. I have a reference from Lasse and will work for free (beer).

View a video version of the blog at:
http://www.miraclechannel.dk/video/567567/how-apps-finally-got-to-me

I worked in Oracle Support from 1990 to 2000. Started Miracle A/S in Denmark in 2000 together with an old friend, Lasse. Co-founded The OakTable Network in 2002. Started Miracle Breweries, a micro brewery in Denmark, in 2004 with Lasse. I keep goats illegally in my garden. I can be contacted 25/8/370 (like everyone else in Miracle) either on my mobile +45 25277100 or email **mno@MiracleAS.dk** about anything with anybody anywhere.

The Tools of Fusion: Oracle JDeveloper and Oracle ADF

Fusion Goes Social

Welcome back to this column on the tools of Fusion. For those who attended the annual UKOUG Technology and Business Conference in Birmingham at the end of 2009, you would have had the chance to see the first public demonstration of Oracle's Fusion Applications in Europe. One of the key challenges we have with the Fusion development effort is to reduce the complexity of finding and presenting business information to end-users.

We've all experienced the frustration of knowing that the piece of information we need to complete a task is in a document "somewhere", but where is it? Or, knowing that you need to speak to "someone" in development about a proposal you are putting together but you just can't track down the right subject matter expert.

This is coupled with the fact that today's users are already used to a much more collaborative and social aspect to their online experience. Whether it is posting about your latest job promotion on LinkedIn, blogging about new product features, tweeting about the conference you are attending, discussing technical problems on forums or even referencing and contributing to Wikipedia. Not to mention, while on the train back from a hard day's work you log onto Facebook to catch up on your own social circle. This is a very different world from our applications of yesteryear.

So, how can you gel the day-to-day collaborative expectations of today's "social networking and instant messenger" – savvy users with the complex "Enterprise" processes and applications required by the business?

Fusion and Enterprise 2.0

One of the most significant changes with Oracle's next generation Fusion applications when compared to the previous incarnation – the nuts and bolts of the technology aside – is the style of user interaction. We've moved away from the transactional/CRUD "data-in, data-out" flow of an application to one that is more process and collaboratively oriented: the idea being that all of the information, and even the people, required for a particular business task are right there, only a click away.

For example, a manager might be reviewing an expense submission in the expenses system and wants to click and have a quick chat on an instant messenger or VOIP to confirm if that taxi to the sales meeting was really required. For a CRM system, a team might really benefit from a discussion forum and a workspace to upload documents for a geographically disparate virtual team who is working together on a large sales opportunity. Or, it could be that you want to keep on top of the market's view of your latest product release and as a result want to pull an RSS feed of related news items right into your application. This is Enterprise 2.0.

> "Enterprise 2.0 is the use of emergent social software platforms within companies, or between companies and their partners or customers."
>
> Andrew McAfee,
> Principal Research Scientist,
> Center for Digital Business –
> MIT Sloan School of Management

Introducing Oracle WebCenter

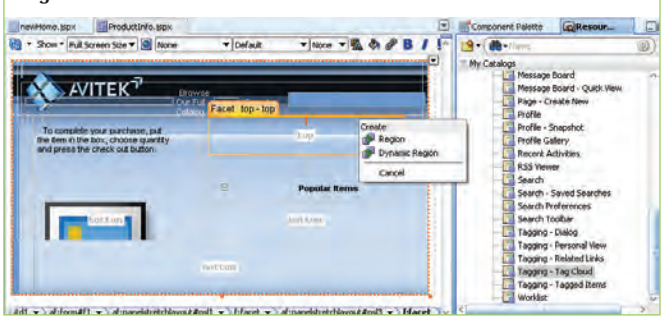
So, how does a business evolve to "Enterprise 2.0"? Well, Oracle has built this right into the Fusion technology stack. Oracle WebCenter delivers all this functionality and more, to Fusion Applications allowing users to easily collaborate, categorise, share, personalise and mash-up information and applications in a way that maximises their productivity.

At its core, Oracle WebCenter is built on a standards-based open, declarative framework, providing the tools and environment for building multi-channel portals and a whole host of pre-built collaborative Web 2.0 services such as tagging, RSS feeds and discussion forums. In addition to providing the framework and these pre-build features, Oracle WebCenter also comes with a "ready to use out-of-the-box" application called WebCenter Spaces.

But, how does the Fusion developer build and hook these services in to a Fusion application? Well, Oracle WebCenter is built on top of, and uses the features of, Oracle ADF to deliver this functionality. Each of the WebCenter building blocks are themselves ADF artefacts like task flows and ADF Faces rich UI components. And, the tool you use: Oracle JDeveloper!

The first step to utilising WebCenter within JDeveloper is to "switch on" the WebCenter design time. Oracle JDeveloper has an update feature (found using Help –> Check for updates) that will automatically download, install and configure the WebCenter extension for JDeveloper. The WebCenter runtime already comes as a feature of Fusion Middleware and it is this runtime that provides the framework and pre-build services. Each of these pre-built WebCenter services appear in JDeveloper as a task flow in the Resource Catalogue and can be dropped on to a page and then hooked up to the back-end service as required. See Figure 1.

Figure 1



by Grant Ronald, Oracle

About the Author

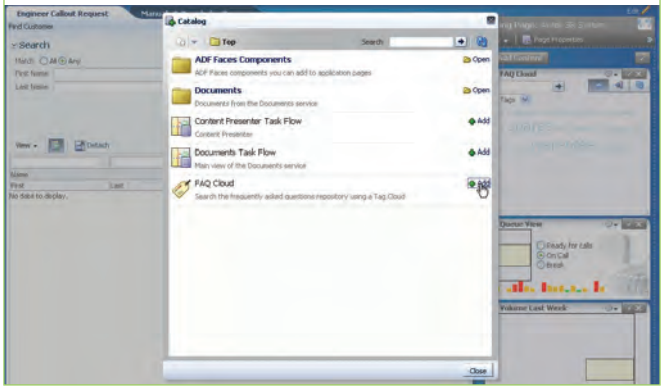
Grant Ronald is a Senior Group Product Manager working for Oracle's Application Development Tools group responsible for Forms and JDeveloper where he has a focus on opening up the Java platform to Oracle's current install base. Grant joined Oracle in 1997, working in Oracle support, where he headed up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

In this example, we have an application that allows the tagging of content to aid searching, and the developer has been tasked with displaying a tag cloud that will allow the end user to quickly visualise which tag terms are used and how popular they are. Figure 1 shows JDeveloper with the visual page editor in the centre of the screen, and a list of WebCenter services (shown as task flows) in the Resource Catalogue on the right. The developer can peruse the list of pre-defined WebCenter services and choose the tag cloud and drop it onto the top facet of a page as a region. Having dropped this tag cloud task flow onto the page, JDeveloper prompts the developer for information to hook up that new region to the back end service.

Design-time at runtime

So, that's fine if you want to hook in WebCenter services as you are developing your application. But, what if you don't want the final construction of the page to be down to the IT department? Why should IT be the bottleneck for customising the end user's application? Maybe you want to leave it to the end user to decide if they want a tag cloud or an RSS feed. In this case, WebCenter provides a feature called WebCenter Composer that allows end users to customise their application "desktop" at runtime, a concept known as "design-time at runtime". See Figure 2.

Figure 2



For a Fusion Application page, the developer can define that a particular region or panel can be customisable by the end user. The developer does this by dropping on WebCenter ADF UI components like layoutCustomisable and changeModeButton to define a customisable area of a page and a button that will invoke the WebCenter Composer. Figure 2 shows a running application where this has happened, and the end user is presented with a catalogue of services. Some of these services might be the pre-built WebCenter services touched on earlier, or some may be hand-crafted by a developer as ADF task flows to meet a very specific business need. For example, a summary of the top sales opportunities this month. In this case the user selects the FAQ cloud, adds it to the application, and it appears at the top of the right hand panel. The user is now free to reposition that FAQ cloud, for example, move it to the middle of the stack of panels.

Figure 3

Figure 3 shows the newly added FAQ cloud service in the application having exited WebCenter Composer. And, of course, this personalisation – the fact that this user alone has added a new panel that appears in the middle of the list of "default" panels – is saved so that when the user logs back into the application, it picks up his personalised changes.

And, of course, customisation is not only at the personal level. A privileged user could customise an application in the same way for a group of users or a particular application: all done using the features of WebCenter and Oracle ADF.

So, with a framework supporting pre-build collaborative services, your own developed services, customisation and personalisation, these are just some of the examples of how Oracle WebCenter works with Oracle ADF to add Enterprise 2.0 features to Fusion, and your own, applications.

Considering Security

Pete Finnigan, PeteFinnigan.com Limited

BASIC AUDIT

Welcome to the second Oracle security column from me. In this article we are going to talk about audit trail design and some good simple basic ideas for you to think about.

One of the major issues with the security of any Oracle database I see in my day-to-day experience of working with clients is that often there is no accountability enabled at the database level. What I mean by this is simple auditing enabled in the database, to capture what each person who accesses the database directly is actually doing. This lack of audit or accountability often also extends to the operating system, but quite interestingly there is often audit trails built into the application that the databases support and often implemented using database features – more on this funny side to this in a minute.

Why No Audit?

Others have performed studies to look at the coverage of audit at the database level across various sectors of industry. We don't need to see the detail of these studies to know that the people who do enable audit at the database level are in the minority.

Why is this the case? Often the reasons are twofold. The first is the age old concern that enabling audit will kill the performance of the database – poppycock! If you were really stupid and enabled audit on all data access, inserts, updates and deletes then the performance impact would clearly be directly related to the amount of transactions taking place. Believe me I have seen some sites where this has been attempted to prove to management that audit is a bad idea. With this sort of audit design there certainly would be performance issues; it is logical to assume so. The second reason is cost; both in terms of time and money. Implementing audit is not just about turning on some settings in the database. It is also about acting upon the data collected by those settings or audit actions. It is also about management and security of the audit trail. Implementing useful audit is not a simple task, unfortunately and therefore not cheap. Doing it properly needs considered design.

Oracle has sort of come to the rescue by enabling some audit settings for us; more on what they are in a moment. On the surface this is good but it could be much better; as I said more in a moment.

> "The audit trail must be designed from a 'what do I want to know' point of view rather than, 'what technical settings can I safely enable'."

Application Audit Seems Crazy?

If we believed the performance issues cited then application level audit implemented in the database – such as with triggers – often to capture *before and after images* of data at the point of change of that data would seem crazy, right? There must be a performance issue. Well, lots of sites I work with who do not have audit at the database level for the purpose of capturing "who" does what and when in the database do have audit implemented in the database for the application.

Is the so called performance issue a red herring or not? No it is not a red herring. There is a performance issue but only if you implement silly settings for audit. If audit design is sensible such as capturing login/logoff and also the use of powerful privileges such as altering user passwords or even creating users then there is no performance impact.

Even audit of data can be done effectively providing some thought is applied. If, like the example earlier you turn on audit on data access with no thought there will be performance problems.

In fact the use of application audit in the database seems like an oxymoron but in fact it usually emphasises the point that effective audit design in the database can work and not impact users. This is because some design thought most likely has been applied in this case.

Application audit in the database actually turns out often to be a good advertisement for audit implementation within the database; you should take heed and think about extending accountability to a layer below the application – In the database.

Commercial options

There are plenty of commercial products on the "after-market" that can be used to audit an Oracle database, in most cases in a more detailed manner than the core audit features of the database can handle. This is often because they monitor the database from outside of the database. There is a cost element in terms of license fees and also implementation costs.

For this article I simply want you to recognise that commercial options exist but I am going to talk about the free options because I want to focus on the process not the technical solution.

The ideas I present here can be applied to commercial audit products as well of course.

Free Audit Options

To be honest, considering that a lot of sites do not implement any audit settings in the database anyway, the rich set of available options do not really match most sites current implementations.

The audit trail must be designed from a "what do I want to know" point of view rather than, "what technical settings can I safely enable". This is logical and sensible, but it is surprising how many people take the opposite approach – turn on settings and then work out what reports can be created. This is the wrong way around.

The actual technical options should be considered based on the "question" we raised. The options available are:

- **Core audit** – capture connections to the database, use of system privileges and access to data.
- **Fine Grained Audit** – add policies to allow audit to be applied in very specific or reasonably general circumstances. Audit capture can be made on a user basis, time basis, location basis, data basis and more.
- **System Triggers** – These can be used to capture database level events such as start-up or shutdown of the database, or logon and logoff. They can also be used to capture server errors or use of DDL on specific objects such as users. System triggers can also be designed at the schema level rather than the database level.
- **Database Triggers** – These are the standard triggers provided and used for business activities and often used for audit at the application level BUT in the database. The best example is the creation of "before and after" triggers that save an image of data before its changed and also after it has changed for later comparison and to understand who changed what.

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

- **Custom Audit Solutions** – If portions of your application are written in a database language such as PL/SQL then there are possibilities to utilise the language to implement logging function calls that can enhance any audit design.

- **Esoteric Solutions** – There are also unusual audit solutions that can be used to enhance your audit designs. These could include technology such as redo/archive logs that can be read either locally or remotely using tools such as LogMiner or PL/SQL code utilising Change Data Capture. The redo/archive logs hold all changes in the database so represent a superb audit trail.

A great plan for implementing audit within your database is to *start simple*. Did I say plan? Yes, you need a plan/a design. I will discuss this shortly.

The plan or design should come first, the solution should come second.

Correlation; One great aspect of all the disparate audit solutions offered by Oracle is that it is fairly easy to correlate between all the solutions using various fixed fields in the audit trails such as XID and AUDITID in SYS.AUD$ or SYS.FGA_LOG$ and also using functions such as SYS_CONTEXT('USERENV','ENTRYID') in other solutions such as triggers.

To emphasise; start simple but include security of the audit trail itself. Design your audit trail so that it is secure; so that it cannot be accessed outside of the audit authority and also so that the audit trail itself has accountability against access.

This brings about an important point. Because Oracle provides disparate solutions it is possible to combine them where it makes sense but also to use audit to audit the audit trail.

What Oracle has given us

Up until Oracle Database 11g Release 1, no audit is turned on by default in any Oracle database. It may seem altruistic that Oracle has turned on some audit settings by default from Oracle 11g R1, but there is a reason. Audit Vault requires these settings for its core database audit adaptor so it would seem that Oracle want as many databases as possible to be standard and ready for Audit Vault as they can.

This doesn't need to be a downside for your database. It says something; that is Oracle say it is fine and good to turn on these settings. I would go further, there are settings that seem to be missing, (if I base settings on what's there already), but I advocate a different approach. A proper design is needed that is suited to your own organisation; remember these settings Oracle turns on are their settings designed for their product not for your database accountability.

Although Oracle does turn on these basic core audit settings, it doesn't provide other audit functionality by default. There are no other core features enabled and there are not standard features to manage the audit trail; reports, escalation, management, purge, archive and more.

OK, there is a package DBMS_AUDIT_MGMT that provides some functionality for selective management of the core audit trail stored in SYS.AUD$ but it's limited and most likely again provided to specifically handle Audit Vault.

What audit settings are turned on by default? See Figure 1 for details.

Figure 1: Core audit settings

```
SQL> sho parameter aud
NAME                                 TYPE        VALUE
------------------------------------ ----------- ----------
audit_file_dest                      string
/oracle/admin/ORA11G/adump
audit_sys_operations                 boolean     FALSE
audit_syslog_level                   string
audit_trail                          string      DB
SQL>
```

Core audit is turned on by default to write its trail to the database. This is not ideal, because the audit trail is not safe from DBA (or anyone with direct database access) but as a starting point it is a good approach as it means the audit is all stored in a consistent format (in SYS.AUD$, rather than many disparate trace files if the audit is sent to the operating system for instance.

All said and done; Oracle have given everyone a "starting point" to work with. Oracle has also enabled the settings highlighted in Figure 2 shown next:

Figure 2: Core Audit Settings Enabled in Oracle 11g

```
SQL> select privilege typ, success, failure from dba_priv_audit_opts
  2  union
  3  select audit_option typ, success,failure
from dba_stmt_audit_opts;
TYP                                              SUCCESS         FAILURE
------------------------------------------------ --------------- ---------------
ALTER ANY PROCEDURE                              BY ACCESS       BY ACCESS
ALTER ANY TABLE                                  BY ACCESS       BY ACCESS
ALTER DATABASE                                   BY ACCESS       BY ACCESS
ALTER PROFILE                                    BY ACCESS       BY ACCESS
ALTER SYSTEM                                     BY ACCESS       BY ACCESS
ALTER USER                                       BY ACCESS       BY ACCESS
AUDIT SYSTEM                                     BY ACCESS       BY ACCESS
CREATE ANY JOB                                   BY ACCESS       BY ACCESS
CREATE ANY LIBRARY                               BY ACCESS       BY ACCESS
CREATE ANY PROCEDURE                             BY ACCESS       BY ACCESS
CREATE ANY TABLE                                 BY ACCESS       BY ACCESS
CREATE EXTERNAL JOB                              BY ACCESS       BY ACCESS
CREATE PUBLIC DATABASE LINK                      BY ACCESS       BY ACCESS
CREATE SESSION                                   BY ACCESS       BY ACCESS
CREATE USER                                      BY ACCESS       BY ACCESS
DROP ANY PROCEDURE                               BY ACCESS       BY ACCESS
DROP ANY TABLE                                   BY ACCESS       BY ACCESS
DROP PROFILE                                     BY ACCESS       BY ACCESS
DROP USER                                        BY ACCESS       BY ACCESS
EXEMPT ACCESS POLICY                             BY ACCESS       BY ACCESS
GRANT ANY OBJECT PRIVILEGE                       BY ACCESS       BY ACCESS
GRANT ANY PRIVILEGE                              BY ACCESS       BY ACCESS
GRANT ANY ROLE                                   BY ACCESS       BY ACCESS
ROLE                                             BY ACCESS       BY ACCESS
SYSTEM AUDIT                                     BY ACCESS       BY ACCESS
25 rows selected.
SQL>
```

Considering Security

BASIC AUDIT

Simple set up

Let's face it, my experience has shown that most sites I work with and also a lot of people I talk to, do not have audit enabled in the database so I would like to start with the basics of audit and for me the basics means create a plan or design, (it really doesn't matter what you call it), that lays out the steps required to create a successful audit setup. I will discuss the outlines of such a plan in a moment.

First as discussed already, if you have no audit enabled then it is best to start simple. Following Oracle's example and utilising the core audit stored in the database is a good approach, as reports are easy to create as are purge and archive procedures.

Create a plan

The plan should be simple and should also start from one basic question; **what do I want to know?** Not what audit settings shall I turn on and then what can I do with it! So the basic steps are:

What do I want to know: Start with a basic list of what you (or more likely security and management) want to know? This could be things like "who logs in out of hours", "who is sharing database accounts", "who is connecting as an administrator where the connection is made from a non-DBA terminal". You get the idea.

Escalation: This is the most important step. What do I, (again more likely to be security or management), want to do with breaches discovered? Do I want to email a report daily, and to whom? Do I want to respond in real time? How do I respond, do is suspend employees? Do I lock accounts? The solutions to these questions are realised in the design stage.

Configuration: Decide what audit solutions work best. In the first instance this is likely to be core audit as it is the simplest to implement and work out which core audit settings are required. For the simple examples above turning on audit with

```
audit_trail=db
```

will turn on audit. Adding

```
audit create session
```

will capture all connections to the database.

Note: *There are clear security risks with using core audit; it is stored with the data it is auditing and it is virtually impossible to properly protect but taking this into account creating an audit design properly from scratch it is better to work with easier to use tools (SQL) and then when the technical solution and more importantly the business processes are in place migrate to a more secure solution.*

Also remember to turn on:

```
audit_sys_operations=TRUE
```

In the initialisation file to ensure that any further actions taken as SYSDBA will be captured. Remember that connections as SYSDBA are always captured to trace files in the audit_file_dest location. The actual design you implement will depend on what you have decided to know!

> "...my experience has shown that most sites I work with ... do not have audit enabled in the database..."

Design: Next design the technical and business processes. This will include reports that are needed to filter out breaches from the raw data that you have configured to be captured. These will be simple SQL statements against views such as DBA_AUDIT_TRAIL. These reports can be scheduled to be run and the results counted. If there are issues, (rows returned), then the escalation process needs to be implemented. As stated this could simply be an email to the relevant supervisors to start a business process running. The solutions can be process based and technical.

Management: It is important to manage the audit trail. The data should be archived and purged as soon as is practical to avoid the risk of the audit trail being deleted or altered. The package DBMS_AUDIT_MGTM can usefully be used to help with some of this as its purpose is to manage the SYS.AUD$ audit trail.

Security: One of the most important aspects of the audit trail design is to include security and traceability into the design. This sounds like a recursive process and it is. It is important to try and prevent changes to the audit trail itself and also access to it. Therefore a two pronged approach is valid. This is to add access privilege restrictions on the trail, views and also all interfaces used such as DBMS_AUDIT_MGMT and also to add audit on the audit. For the simple example of using core audit written to SYS.AUD$ then the audit part of the solution is as simple as enabling:

```
Audit all on SYS.AUD$
```

This will capture all changes and access to the core audit trail. If you remember I mentioned about that sometimes combination designs work well; well this is where audit on audit comes to the fore. If you had used database triggers to capture before and after images on a certain table (maybe the credit card details) then adding core audit on the same table used to capture the images is a good idea for Update, Select and Delete. Insert would be a bad idea as that's the normal operation. This is a good example of avoiding performance issues as reading, updating and deleting this audit trail are not common activities.

Conclusions

What I wanted to cover in this short column is twofold. First recognise that audit must be implemented at all layers of the application: operating system, database layer and also the application layers. Hackers are devious and do not follow the manuals so may access data via non-standard routes.

The second idea I wanted to cover is to not make the mistake of adding technical audit settings first, and then dreaming up reports that may work with that data.

A much more structured approach is to decide what you want to know and then what you are going to do with that knowledge, and only at that stage start to think how about technical solutions can realise these plans.

Debra's diary

Time to write the next entry in Debra's Diary, I think Oracle Scene should be more frequent but the deadlines come round quick enough each time.

The intent is to let you know what I and the other directors get up to on your behalf. In my last entry I talked about getting ready for our later Conference Series Events and for Oracle Open World, and the Partner Awards so a good place to start will be a quick recap on how they went.

The UKOUG Partner Awards were another great success and you can read about all the winners at: www.oug.org/pya. I get to look after the guest speaker and this year we had Carol Thatcher. She was hysterical and made the point of speaking to everyone after the awards and was very happy to have her photo taken with attendees.

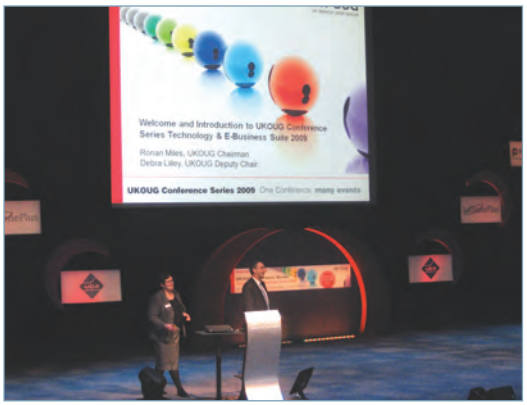
Oracle Open World was excellent but very busy. The numbers were down, Oracle says 38,000 from 43,000, but actually I was quite pleased, it meant if you met someone you knew you could stop and talk to them without being crushed in the rush. Ronan and James were there to represent UKOUG and helped to man the EOUC stand in the User Group Pavilion. Ronan and I met with lots of Oracle executives, taking every opportunity to make sure they listen to the needs of the users outside the US. This is an ongoing task but does mean that we have the profile and as long as we keep it up, they do listen to us. Carl Dudley, Jonathan Lewis and I also gave presentations at Oracle Open World.

I gave presentations on Fusion Middleware and Fujitsu's use of new technology for customers, I demonstrated the Oracle Applications Planning Tool which has been created to help you discuss within your organisation how you can use the technology now available, and once Larry Ellison showcased Fusion Applications I was able to give an *unconference* session on those.

In November we had the Conference Series JDE event, and I spoke about using Fusion Middleware with JDE. I have talked about this before but under Oracle's ACE Director Programme. I have had a lot of help and training around the integration of Applications and Fusion Middleware and it is equally relevant to all communities. The JDE event was held at Twickenham and as well as being a great setting we were privileged to have a motivational talk from a member of the Red Arrows.

The Technology and E-Business Suite Conference Series event, now known as TEBS, was upon us all too soon. For me this was a very special event as Fusion Applications had been showcased at OOW we were able to have a very special stream at TEBS, as well as excellent E-Business Suite content. I have written about how proud I am of this in my blog http://debra-soracle.blogspot.com/2009/12/how-proud-am-i.html

When I first joined the board, the economy was booming and it was easy to be part of UKOUG, it was quite easy for the office to sell exhibition space and attract sponsors and the user group audience was quite straight forward. Now with the non stop acquisition process from Oracle and the global economic crisis it is much harder to arrange and fund everything we want to do. So being a director now is as much about the finances as anything else. Everyone has done their bit to keep costs down, the staff, the volunteers and the directors. One of the things that has been very successful is the events team negotiating new contracts with our suppliers including the production company for the ICC. I have to admit I was nervous there may be some issues with new people taking over but when Ronan and I walked into hall 1 for the rehearsal we were really impressed.



January is time for the annual User Group Summit at Redwood and Ronan and I will be there to represent you and to lead from the front. We are currently arranging a number of off-piste meetings to ensure we get the most from the visit.

I am lucky enough to speak at User Group meetings around the globe, which in turn keeps the UKOUG profile alive. This year I am speaking at the newly revived Danish User Group (sponsored by Miracle AS), RMOUG, a new Applications Conference with the DOAG, Collaborate, OOW and a few others. Funding is always difficult but I am lucky enough to get help from Oracle direct, from the ACE programme, airmiles and some user groups direct, and a fantastic employer who recognises the value of user groups.

2010 to me is the year that Fusion Applications will be delivered and I hope I am successful in the UKOUG elections and am still here to represent you.

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

Working Effectively with Oracle Support

by Richard Bingham, Oracle Support

Working with Oracle Support has changed, and changed a lot. Years ago it was based around a transactional Service Request (or TAR as they were known then), where most problems required phoning-in, raising the Service Request with a Support Engineer, and beginning the to-and-fro of research into the issue.

The evolution of Oracle's Support Service has empowered companies to resolve more problems themselves, without the need for a Support Engineer, and when extra help is needed the research and resolution paths are now much more streamlined and clear.

Like most evolution, this has been incremental, and therefore some of the improvements may have passed unnoticed. This article aims to help you get the most out of your Support Service by looking at the research tools within MyOracleSupport, together with some general best-practice techniques, to get more issues resolved faster.

MyOracleSupport

MyOracleSupport provides the underlying platform for the Support Service, and has many embedded tools that provide quick and easy access to solutions and answers. This section doesn't cover the basics of using MyOracleSupport (see References for that), but instead focuses on some methods that can be used to get the most out of it.

To be able to find accurate and relevant information in the huge knowledgebase upon which MyOracleSupport sits 7 million documents there are some simple techniques that can be followed. Incidentally, these are the same techniques that Oracle Support Engineers use.

In order to perform good searches the following should be clearly understood:

- How To Search – understanding how the right keywords make a big difference.
- Why You Are Searching – using the right parts of the knowledge base.
- Where To Search – what tools and features to use within search.

How To Search

The clearer the problem is, the more effective the research will be. It's a scientific fact that when our thinking is focused around one subject our brains are quicker to spot evidence of it. As such, each and every problem or (requirement must first be clearly defined. This is also the first step in Oracle Supports' own resolution process, known as the Oracle Diagnostic Methodology (ODM).

The following points can be used to help create a good problem definition. When this kind of information is gathered first, subsequent research results are much more accurate and relevant.

- **Location.** The navigation steps and the physical location of the problem or requirement (form, page or process). Since all information and solutions are associated with a feature category of some kind, this helps narrow the search extent. An example might be defining a problem as simply "Purchase Order Creation", compared to "(1) Open Purchase Order form POXPOEPO (2) Complete fields A and B with values 10 and 15 (3) Press the Approve button". Clearly in the second definition the search possibilities would be much more specific.
- **Messages.** For failures it's critical to capture the exact wording of any error or warning messages. Using the precise text is important since messages are pulled from standard repositories and knowledge articles include either all or sections of these standard messages. A good example case is in Oracle E-Business Suite, where some warning messages may not have the unique identifiers that are common for technology product messages (e.g. ORA-06512).
- **Name.** Using the official (i.e. Oracle) name of the problem area or feature. Many companies leverage features in Oracle products (Applications especially) to use within business processes that have their own internal nomenclature. Obviously knowledge articles will only ever use the Oracle names for these. The Oracle name can normally be confirmed by checking the respective Oracle User Guide documentation.
- **Version.** It's important to know the precise version of all the related components in a problem environment. Most knowledge articles have a version field associated with them, and so it's very easy to be able to remove large chunks of irrelevant search results by filtering by version number.
- **Log.** Where possible, capturing system output whenever a problem occurs is very helpful for getting more detailed information. With the help of a System Administrator it should be fairly easy to get the log from a particular activity. The log collection methods are well documented in knowledge articles, and are often quite simple to complete (such as the FND log for E-Business Suite). It's often worth this early effort, especially for complex or poorly understood problems. It is something Oracle Support Engineers will ask for and often includes specific information that helps identify which solutions are most relevant.
- **Changes.** When did the feature in question last work, and what changes where made to the system since then. It sounds common sense, however this small bit of research regularly brings out key information for matching to solutions. Common examples are patches that have been applied and configuration changes that were done.
- **Impact.** Why is it a problem? Its helpful to be clear on the negative effect of the problem, or why the requirement important. Being clear about how an issue affects the business is important, since knowledge articles often include details on the consequences to users, processes or product features. This is especially helpful for problems that are defined in mostly technical terms.
- **Data.** Is there any data related to a problem that seems to be having an affect? Where issues are specific to sub-sets of data (such as users or transactions) or specific processes, then its helpful to see if any patterns can be determined by comparing values between those showing and not showing the problem. Where a value is identified as having an affect, performing knowledgebase searches using specific parame-

ter names can provide a very precise resultset of either actual solutions or more investigative hints (e.g. setups to check).

It's worth noting that the extra time spent collecting this information is often much less than the time spent going through many unrelated search results shown when using broad terms. The more detailed the information available the more likely that it will help find direct matches, and avoid pages and pages of 'similar' content that needs laborious checking.

Where To Search

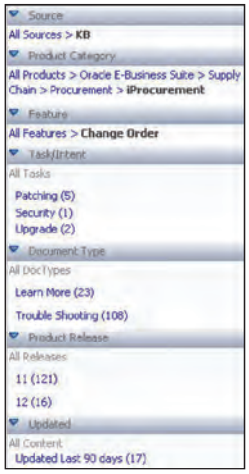
MyOracleSupport continues to improve its search tools and features all the time. Many useful features are actually just enhanced versions of those that existed for many years, but were not often used effectively.

Blind searches, using the generic search field, are rarely specific enough to bring about results that are relevant to one problem or issue. They can make a good starting point when very little information is known, but as mentioned before, the time it takes to read through the results returned that can often be better spent refining the problem itself. The Knowledge Browser navigation feature shows all knowledge under one specific area, although without additional sub-categorisation or in-context keyword searching the list of results can be hundreds of articles long.

Once there is a good problem definition, the following selection of features can be used to get much more relevant results.

- **Advanced Search.** This allows several specific words and phrases (or combination of both) to be used, against one specific product, to return much more focused results. (See Figure 1.)

Figure 1: Advanced Search



- **Browse Product Articles.** MyOracleSupport has a sidebar feature with lots of helpful ways to select sub-categories of information, so that it displays more relevant results. As shown in the screenshot below this includes; knowledge Sources, Products and Product Category, Features within products, the Task/Intent of the article, the Document Type of the content available, the Product Release versions, and the content Update date.

Figure 2: Browse Product Articles

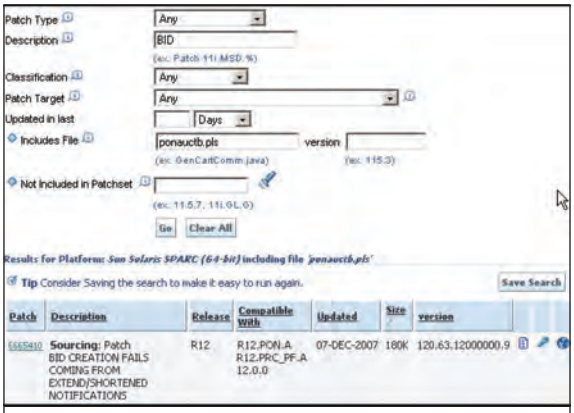


Figure 3: Patch Search

- **Patch Search.** In addition to the recommended patch advice for each product, there is patch-specific search tool that can produce helpful results. This looks for specific versions of related product code files. The advanced search under the Patches-and-Updates tab can be used to interrogate all patches (one-off releases and release update patches) using custom keywords, as well as code file names. The code files related to a problem can be easily spotted using the log output, or in other diagnostic methods such the 'About this Page' feature in E-Business Suite. (See Figure 2.)

Whilst not specific to MyOracleSupport, it's important to understand how to use keywords effectively. Again the trick is to be as specific as possible. Don't include common words or phrases (such as product names) but be specific to detailed facts. Examples include;

- Page, Form and Program names.
- Where names are not known, the (Oracle) titles of affected pages, forms or processes.
- Unique errors or warning messages, using the same precise text.
- The precise name of the specific functional task being performed.
- Relevant words from the log output (e.g. code, data or parameter names)

In Conclusion

By using the new tools available (Configuration Manager, Maintenance Wizard, RDA etc.) together with some best practice techniques described, it should be possible for any organisation to get more issues resolved faster. This will only increase in importance, since Oracle Support's own focus is around providing more proactive tools and services that are backed-up by a knowledgebase that grows richer every hour of every day.

If you would like some free training on these support tools or processes, please see the schedule of live, instructor led sessions provided each month via web conference here – http://www.oracle.com/support/seminars.html

Some Useful References

MyOracleSupport (https://support.oracle.com)
- Overview: Login > Dashboard > Getting Started
- Getting Started Guide (Doc ID: 735496.1) and Webcasts (Doc ID: 398877.1)
- Advanced Metalink Seminars and Webcast (Doc ID: 418297.1)

Oracle Diagnostic Methodology (ODM)
- What is the Oracle Diagnostic Methodology (Doc ID: 312789.1)

Oracle Processes and Practices
- Working Effectively With Support (Doc ID: 418294.1)
- Policies: http://www.oracle.com/support/policies.html
- Release Update Packs (Doc ID: 423541.1)

Oracle's Sun Shines

Oracle gains green light from EU for the Sun acquisition after asking for User Group assistance.

Oracle Corporation has finally won its battle with European antitrust officials in its bid to takeover Sun Microsystems in a deal worth a $7.4 billion US. Sun had been struggling for some time and faced the real possibility of bankruptcy. This would be a sad end to a company that had brought so much innovation to the IT industry. A buy out needed to be arranged.

When IBM made its initial offer for Sun and Oracle counter bid, the view of the industry was that ownership of Java was the main motivation. It was therefore quite a surprise that the argument with the EU should be around MySQL which represented a very small item on the Sun balance sheet.

The action by the EU antitrust regulators lead by Competition Commissioner Neelie Kroes caused great frustration to Oracle, especially as the US regulators had approved the deal in August 2009 and as the US Justice Department had judged the merger as "unlikely to be anticompetitive".

"Essentially, the EU believed that Oracle had a strong presence in the small to medium business market and that MySQL was seen as a strong competitor to Oracle..."

Essentially, the EU believed that Oracle had a strong presence in the small to medium business market and that MySQL was seen as a strong competitor to Oracle which, if removed, would allow Oracle to increase pricing. Additionally, the EU believed that MySQL in other hands could be developed into a more effective competitor to Oracle in the high end corporate customer space.

UKOUG was watching progress with great interest and had already made some comments to journalists when asked. It was to our surprise that we, along with a large number of customers and some other User Groups, were asked to write to the EU Competition Commissioner in support of the deal. This was a first with Oracle asking for assistance in this way – and was very much a first for UKOUG to address a governmental body, let alone EU.

After much debate by the board, a letter was written based on the fact that UKOUG's job is to champion the success of members' use of Oracle and that a part of this is ensuring that changes to the industry themselves support that. Oracle did supply a very basic template and UKOUG reused the address line. We made our points clearly, which were that a safe future for Java was vitally important to protect all members' investments, and that those members with Sun hardware needed to know that their investment would continue to hold value. We also noted that we did not see MySQL as 'an issue'. A copy of the letter can be found at:
http://www.ukoug.org/news/show_news.jsp?id=12483

It was thus even more of a surprise when Oracle followed up later with a request at the main TEBS conference for UKOUG to actually physically attend the EU hearing on 10th December – the very next week.

All of which explains the background why I had an 02:30 alarm call to get to London Heathrow for the first flight to Brussels on 9th December. I don't remember much about the trip up other than to say there was not much traffic. The plane was one where you have a seat which is both window and aisle, but shame about the headroom, and the border security guy was amused that I wanted my passport stamped to prove to the Americans that I do go to other countries.

On arrival in Brussels, Oracle took over and a car was waiting to take me into the city. At this point, I was joined by one of the customers, a chap from Vodafone. This was invaluable as he had been in front of the EU competition commission before and was able to give me a feeling for what it would be like.

I then checked into the hotel – very nice, but the room was not ready. Not that it mattered; I needed to get to the Oracle solicitors for a check on what the UKOUG statement would be. At this point, I met up with Ian Abramson from the IOUG who was going to be the other User Group President giving a statement to the EU. At that point we both learned that where we thought we had 15 minute slots each – we would now have to share a 10 minute slot. The next six hours were spent blending our two presentations together. In the end, I must say it was six hours well spent. We turned two good presentations into one great presentation.

That evening, it was quick dash to a reception hosted by Loic le Guisquet, who heads Oracle EMEA. This gave me the opportunity to meet other customers who would be giving statements in to the EU including Ericsson and Sabre, as well as the AWE from the UK. First time I have ever had a three course meal where every course was fish! But it was pleasant and very useful to present the User Group value proposition to both Oracle EMEA and a range of senior customer representatives.

"We made our points clearly, which were that a safe future for Java was vitally important to protect all members' investments, and that those members with Sun hardware needed to know that their investment would continue to hold value."

Next day was an early checkout and travel to the Sofitel next to the EU Commission's convention centre. The Sofitel would be a base for us for final preparation, lunch and my return journey to the airport that evening.

by Ronan Miles, Chairman of UKOUG

After meeting Safra Catz, one of the Oracle Presidents, and walking with her to the EU (another chance to put the UKOUG value proposition forwards), it was time to enter the domain of the EU. Airport style security and queues were the order of the day before moving forwards into a large, bland reception/registration area. From here, we moved into our hearing room (one of four of various sizes). This 'closed session' would be heard in front of about 300 people assembled in eight long lines of desks, four facing the other four plus a 'top table' running across the eight lines which held the chairman, his supporters and the presentation podium. It was very confrontational with each 'side' facing the other and with each side having its own legal and other logistical support. Given each country also sends a competition representative and there are represented parties, lawyers (never seen so many in my life), accountants, economists, etc. in the room, you can easily see how it would build to 300.

"Oracle has made some offers that will ensure the successful growth of MySQL..."

Surrounding the room were translators who would cover English, Spanish, French and German. Apparently hearings are heard in French but can be in English by prior arrangement. All I can say is that 99% of the day was in English and the translators did not have much to do. The one exception was a presentation in Spanish – and I could tell more from the acronyms in the slides than from the translation.

Now, I cannot say much about what others said during the session although one day a full transcript will be published. However, what I can say is that the EU presented its case strongly and the rebuttal from Oracle was equally strong – almost worthy of television. Yet the fundamentals did not change and when Ian and I presented, this is what we concentrated on.

- That both our memberships show a strong bias towards corporate users rather than SME users.
- That neither group sees MySQL being competitive to the use of Oracle – though many of our members do use MySQL alongside Oracle.
- That when UKOUG published the headline of 'JD Edwards – the honeymoon is over', Oracle reacted by investing in responding to that comment positively and that the JDE community in the UK continues to thrive and now has new customers/members.
- That when Oracle bought RDB, Infoworld predicted the end of the database market – but that has not happened.
- That Oracle has a pedigree of not only supporting the acquired customer base but also using the people it acquires to grow the success and capability of the Oracle product to the benefit of its customers.

Plus many other points. The presentation powerpoint as given can be found here:
http://www.ukoug.org/lib/show_document.jsp?id=11211

I had to leave before the end of proceedings, but my understanding is that the hearing closed with no decision having been made. However, history shows that the EU did listen to what users and customers (300+ of which wrote to the EU) said at that meeting and that they have withdrawn objections to the merger.

In parallel, Oracle has made some offers that will ensure the successful growth of MySQL and will guarantee the input of customers into their product direction.

Only history will show the real success of this acquisition. Will Java continue to develop and extend the Oracle Enterprise product set? Will Fusion, which depends so heavily upon Java, be the success Oracle needs it to be? Where will Sun hardware customers find themselves over time? Will MySQL be developed, as Oracle hints, to be a competitor eating away SQL Server from the bottom in the way SQL Server eats into the bottom of Oracle?

But what history will show is that Oracle recognised that the voice of users has power – that the voice can help to shape EU opinion and that voice should shape Oracle opinion more than it does. History will show that Oracle User Groups stepped out from the shadow of Oracle and started to shape the industry we are in. Whatever the detail, history will show that Oracle User Groups stand taller than they have ever done before. This is now a great challenge to the Oracle user community to stand together and provide that voice which ensures that Oracle is successful because its customers are successful. We will rely upon you to ensure that.

"History will show that Oracle User Groups stepped out from the shadow of Oracle and started to shape the industry we are in."

A New SIG from the Ashes of Two Older SIGs

A new SIG has been created from the merger of Modelling, Analysis and Design SIG with Developer Engineering (Tools) SIG. The new Development SIG will cover any topics which are of interest to UKOUG member organisations engaged in any aspect of modelling, developing or supporting Oracle-based systems.

The SIG committee consists of Jeremy Duggan and Andrew Davies, chairs of the MAD SIG prior to the merger. Andrew Clarke, chair of the DE SIG for many years, and Graham Hill (MAD SIG co-chair) stepped down and will be sorely missed.

The inaugural event on October 27th took place at the Oracle City office and was a sellout. It was themed, the theme being "Skills Modernisation" with all presentations touching on this theme in some way. Presentations were from seasoned presenters Grant Ronald, Susan Duncan, John Cobb and Phil McLaughlin (all Oracle), Andrejus Baranovskis (Red Samurai Consulting) and Mark Waite (Griffiths Waite). The event was rounded off with an open forum where questions could be put to the speakers.

Delegate feedback both from the day and from the critique was very positive and both Chairs would like to thank everyone involved for helping make the event such a success.

Check the UKOUG website for the 2010 event calendar and the Communities pages for the updated community information, Aims and Objectives as well as details of the committee.

Irish BI SIG arrives…

The Irish BI SIG was formed in 2009, holding its first event on 1st July 2009 and two subsequent events in the 2009 calendar, the membership uptake emphasised the interest in Ireland around Oracle BI/EPM and the turnout was good at each event. A happy balance has been achieved on the membership from customers and practitioners who work with Oracle's range of BI, Data warehousing and Enterprise Performance Management, so fulfilling a key intention of the SIG.

At these initial events the SIG council took a component based approach, the 1st event related to ODI, second on OBIEE and BI Apps, third on Essbase leading into Financial Planning. The speaker's to date being from both Ireland and UK, with a mix of customers, practitioners and Oracle. This approach was to ensure the majority of all interested parties had a forum within the group and that the main Oracle BI Offerings were covered, with the intention being that the SIGs membership will feed their own presentations and assist on the future agendas ongoing.

Thanks to the members and presenters for your attendance at the 2009 events, also Oracle for hosting the events to date and collectively making this new SIG a success and we look forward to seeing you again at the 2010 events…and welcome any interest from new members!

Tony Cassidy, Chair and Uli Bethke, Deputy Chair

So if you wish to join or even provide a presentation at the Irish BI SIG, please contact aimee@ukoug.org

Future Meetings:

- Tuesday, 24 March 2010 (BI Stream of the 'UKOUG Conference Series Ireland 2010' http://ireland.ukoug.org/)
- Tuesday, 1 June 2010 – Agenda: Data Integration and how – ODI 11g, GoldenGate, OWB.
- Thursday, 9 September 2010 – Agenda tbc
- Tuesday, 2 November 2010 – Agenda tbc

Location: Oracle Offices, East point, Dublin.

More Detail:

http://www.ukoug.org/communities/show_community.jsp?parent=758&id=1176

Become an adjudicator for UKOUG Partner of the Year Awards 2010/11

Nominations for the UKOUG Partner of the Year Awards will take place much earlier than last year, so to get started with the award process we/UKOUG are looking for adjudicators to shortlist entries in each of the 20 award categories. If you are an end-user and would like to assist in the process, then we would like to hear from you.

We're looking for:

UKOUG members who have not worked for an Oracle Partner in the last 5 years and who have some time available over two weeks in April/May 2010 to take part in assessing the Partner of the Year Award submissions.

Contact: angela@ukoug.org on: +44(0)20 3051 0591 to get involved.

You can see details of last year's event at: www.oug.org/pya09

UKOUG PARTNER OF THE YEAR AWARD WINNER 2010/2011

Conference Series JD Edwards Review

The second UKOUG Conference dedicated to the JD Edwards community (UKOUG Conference Series JD Edwards 2009) successfully took place at Twickenham on 11th – 12th November 2009.

The theme of the 2009 conference was 'standing together through difficult times' and focused on making the most of JDE and looking at extending the system's functionality through integration with "edge" products that now available from the Oracle stable.

Over 300 members of the JD Edwards community attended the event and the conference provided good opportunities for engaging debate and innovative learning, as well as excellent networking and social event.

The opening keynote speech from Oracle entitled: 'JD Edwards Product Philosophy and Your Innovative Future' turned into a bit of a "double-act" with Lyle Ekdahl* and John Schiff** playing off each other to deliver the highlights from Oracle's OpenWorld 2009 conference (as was held in San Francisco during October) for the JDE community. They stated that over that last year 40% of the new wins by Oracle in Western Europe have been for JDEdwards. They discussed the roadmaps for both E1 and World software and were pleased to report that (world-wide) over 70% of the JDE install base was now on a new release, but still only 18% of JDE World customers were on either A9.1 or A9.2 releases. It was also reassuring to see Oracle's continued commitment to the JDEdwards product lines from the number of new features and enhancements to the new releases of both product streams.

The exhibition hall was the focus of most activity whilst the sessions themselves were spread across four main conference rooms, with the additional roundtable sessions being held in a separate, open seating area outside the main expo hall.

The overwhelming consensus of those attending the conference was that the venue and facilities at Twickenham were superb, and a great improvement from last year at Ascot.

Please see the UKOUG web-site for access to copies of presentations from the conference. Information on how to access presentations from the agenda and keynotes can be found through the following link:
http://jdedwards.ukoug.org/default.asp?p=3487

NB: In order to access the document you will need the password, which was available to delegates who attended and UKOUG members. To gain the password, please email: lavinia@ukoug.org

Overall, the majority of conference attendees agreed that the conference had been a success especially when considering the gloomy economic situation and forecasts, but all hoped for further improvement next year'.

Conference Series Technology & E-Business Suite review

After an entire year of hard work, planning and budgeting, Conference Series Technology & E-Business Suite 2009 is for most of the UKOUG staff a hazy memory of registration queries, UKOUG stand competitions, evening socials, exhibition stands twitter comments and tannoy announcements. So rather than giving you the usual conference review written by a member of the marketing department, have a look at some of the twitter comments and blog links below from the conference delegates themselves.

MGralike: Seen great sessions on day one of #ukoug_tebs. James Morle, Julian Sands, John King, Mark Drake. All very insightful and fun 2 days ago from TweetDeck

stenvesterli: Off to "meet the speaker" at #ukoug_tebs wearing my red ACE vest. Find me if you have a question. 2 days ago from Echofon

morlej: It's time for beer and sausage at the German Christmas Market in Brum! #ukoug_tebs 2 days ago from Tweetie

phw198: 3 great seminars all going to be on at the same time now! What to do? #ukoug_tebs 2 days ago from Snaptu

vishalgupta77: Interesting discussions at #ukoug_tebs RAC roundtable 2 days ago from Echofon

tpresslie: very interesting slot on virtualisation by James Morle. I missed the free booze at the beginning tho :-(#ukoug_tebs 2 days ago from mobile web

Andrew's Blog: Conference Series Technology & E-Business Suite 2009
Andrew's Blog – http://oaktree45.blogspot.com/ by Andrew Davies

UKOUG 2009 – Tuesday « jarneil
Jason's blog – http://jarneil.wordpress.com/ by Jason Arneil

My UKOUG Agenda – Doug's Oracle Blog
Doug's Oracle Blog - http://oracledoug.com/serendipity/ by Doug Burns

Friday Philosophy – Statistically Significant « Martin Widlake's ...
Martin Widlake's Yet Another Oracle Blog
http://mwidlake.wordpress.com/ by Martin Widlake

... and finally

Geoff Swaffer Deputy Editor
deputy_tech@ukoug.org.uk

I'm sure that most of you are aware of the supposed latest industry trend – Cloud Computing and if you were at Open World there were numerous sessions to attend on the subject.

The 2009 Gartner Hype Cycle in August 2009 said that Cloud Computing was then at Stage 2, the Peak of Inflated Expectations, which is defined as "a frenzy of publicity typically generates over-enthusiasm and unrealistic expectations. There may be some successful applications of a technology, but there are typically more failures."

Cloud Computing has become one of the latest things that everyone wants to talk about but what actually is it?

If you can remember DEC's VAX and PDP then you'll know that in many ways Cloud Computing is a flash back to 30 years ago where people were logging into sessions to do their work and access processing. Since then the centre of where the power exists has shifted back and forth between the client side and the server side many times.

Cloud Computing simply means that you don't have to own, house and maintain the hardware, to access the computing you need and it hides the actual technology from people who don't need to know, worry or care about it. Cloud Computing allows someone with negligible hardware knowledge to build and run a system and it's actually just a general term for anything that involves delivering hosted services over the Internet.

Clouds can be either Private or Public where Amazon Web Services is currently the largest Public cloud provider and Private is a proprietary network or data centre that supplies hosted services to a limited number of people (sounds remarkably like renaming what we already have to me).

If you listen to some of the hype then in a very short time company data centres will cease to exist and all the customer will supposedly need will be a personal computer and access to the internet and this elastic service, where they can have as much or as little computing power as they want at any given time, will be fully managed by the provider. However I can remember the pundits saying 30 years ago that Cobol was dead, so I won't hold my breath.

The problem with "Cloud Computing" is that it is currently so inclusive of everything and anything that's Internet delivered that its genuine innovative value is diluted. There are many significant innovations and infrastructure and platform technologies that we shouldn't dismiss but be seeking to understand how best to take advantage of them in our own situations.

After several editions of OS without my contribution I thought it was high time I put a few words together.

It has been many years since I obtained my degree and last year I decided it was time to pursue my interest in astronomy to a degree level.

Neil Jarvis Deputy Editor – Technical
deputy_tech@ukoug.org.uk

Like many people, as a youngster, I was fascinated by the stars at night; to watch the progression throughout the night of the stars and to see the changing phases of the moon during the month. These days it is more difficult to get clear enough skies to see faint stars, let alone the long silvery trails of the Milky Way. Although there are still places where you can go to see it; parts of the Lake District for one.

So, last year I enrolled with the Open University. To obtain a degree with them you need to obtain at least 300 points. The points are accumulated by enrolling onto courses, which give you 10, 30 or 60 points, depending on the course duration and level. There are three levels. Level 1 are short courses, usually 12 weeks, and they give you 10 points, Level 2 and Level 3 courses usually are 9 months and are progressively more difficult. The Level 3 courses involve more course assignments.

The great news about the Open University is that there is usually no time limit for obtaining the 300 points, which is a good thing considering if you did only Level 2 courses back to back (30 points) it would take 10 years.

My first course for the degree was called S282 Astronomy. This was quite in-depth, covering subject matter from the evolution of stars and galaxies to the latest theories of cosmology and the evolution of the Universe.

Whilst the assignments were difficult and took some time to complete, the hardest part was the written exam at the end. As with all exams my advice is not to get carried away with the first couple of questions. If you do you'll find you'll quickly run out of time and then find you will not have enough time to finish all the questions. As it was I managed to scrape through with a pass but made up the rest of the marks with the assignment work.

I am about to undertake and looking forward to, the next course in the degree shortly. I feel taking a degree refreshes the mind and gives you a new way at looking at existing situations. It as certainly helped me in my work as a DBA. So, if you have the time and feel you need a mental boost I strongly recommend you attempt an OU degree.

If you are interested please feel free to contact me and I'll try to answer any questions.

UKOUG calendar of events 2010

March

9th **JD Edwards Combined SIG Meeting**, Manchester
9th **Scotland DBA SIG Meeting**, Edinburgh
10th **DBMS SIG Meeting**, Reading
11th **APEX SIG Meeting**, London
16th **Hyperion Essbase Meeting**, London
16th **Hyperion Planning Meeting**, London
17th **Apps DBA for OEBS SIG Meeting**, London
17th **Hyperion HFM Meeting**, London
17th **Hyperion Enterprise Meeting**, London
24th **UKOUG Conference Series Ireland 2010**, Dublin
25th **Application Server & Middleware SIG Meeting**, Midlands
30th **Management & Infrastructure SIG Meeting**, London
31st **UKOUG Partner Forum**, London

April

18th – 22nd **Collaborate '10**, Las Vegas
20th **Education & Research SIG Meeting**, London
21st **Oracle Spatial SIG Meeting**, London
28th **Local Government CRM Customer Forum**, Midlands
29th **Northern Server Technology Day**, Leeds

May

12th **Stellent SIG Meeting**, London
13th **Local Goverment Applications & Government SIG Meetings**, London
20th **Public Sector HCM Customer Forum**, Midlands
25th **UNIX SIG Meeting**, Midlands
25th **.Net on Windows (NOW) SIG Meeting**, Reading
27th **HCM SIG Meeting**, London
27th **UKOUG Conference Series Scotland 2010**, Glasgow

June

1st **Irish BI SIG Meeting**, Dublin
8th **Development SIG Meeting**, London
9th **Combined Oracle Financials, Supply Chain & Management & Oracle Projects Day**, Midlands
10th **RAC & HA SIG Meeting**, London
16th – 17th **UKOUG Conference Series Hyperion 2010**, Twickenham
22nd – 23rd **UKOUG Conference Series PeopleSoft 2010**, Middlesex
30th **UKOUG Conference Series Siebel 2010**, Reading

July

27th – 1st **ODTUG**, USA
1st **DBMS SIG Meeting**, London
8th **UKOUG Volunteers Meeting**, Midlands
14th **JD Edwards Combined SIG Meeting**, Slough
15th **UKOUG Partner Forum**, London
20th **APEX SIG Meeting**, London

August

no SIGs in August

September

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

October

5th **Development SIG Meeting**, Reading
6th **Public Sector Combined Event**, London
6th **Scotland Development SIG Meeting**, Edinburgh
7th **Education & Research SIG Meeting**, Midlands
7th **Siebel SIG Meeting**, Reading
12th **Stellent SIG Meeting**, London
13th **DBMS SIG Meeting**, Midlands
13th **Oracle Financials SIG Meeting**, London
19th **Hyperion Essbase Meeting**, London
19th **Hyperion Planning Meeting**, London
20th **Local Government CRM Customer Forum**, Midlands
21st **Hyperion HFM Meeting**, London
21st **Hyperion Enterprise Meeting**, London

November

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

December

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

All event dates are subject to change

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