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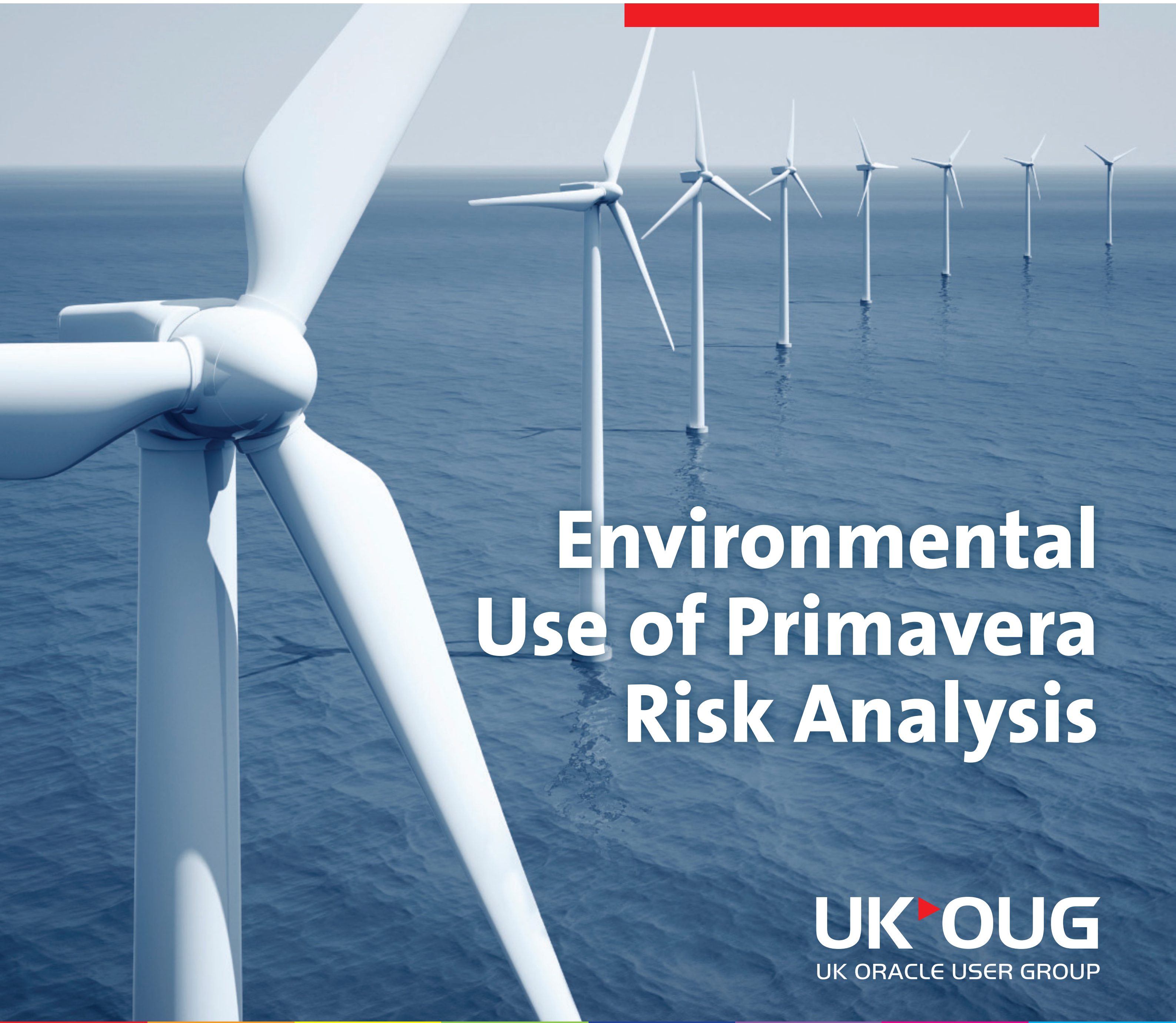
The Tools of Fusion
Grant Ronald gets groovy with Groovy script!

WebLogic Interview
Will Lyons & Frances Zhao on the latest release of WebLogic

Focus on OUG Ireland
Find out what's on offer for our members in the Emerald Isle

OracleScene

▶ Serving the Oracle Community



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Oracle Scene Editorial Team

Editor
Geoff Swaffer
Email: editor@ukoug.org.uk

Deputy editors
Brendan Tierney
Neil Jarvis
Email: deputy@ukoug.org.uk

UKOUG contact
Brigit Wells
Email: brigit@ukoug.org

Sales
Isabella Grantham
Email: isabella@ukoug.org

UKOUG Leaders

Debra Lilley
President, Council & Board member
Email: debra.lilley@ukoug.org.uk

Lisa Dobson
Vice President, Council & Board member
Email: lisa.dobson@ukoug.org.uk

A full listing of Council, Executive and Board members, along with details of how the user group is governed, can be found at: **www.ukoug.org/about-us/governance**

UKOUG Office

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

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

Produced and designed by

Why Creative
Tel: +44 (0)7900 246400
Web: www.whycreative.co.uk

First word

Welcome to this edition of Oracle Scene and to my first edition as the Editor.

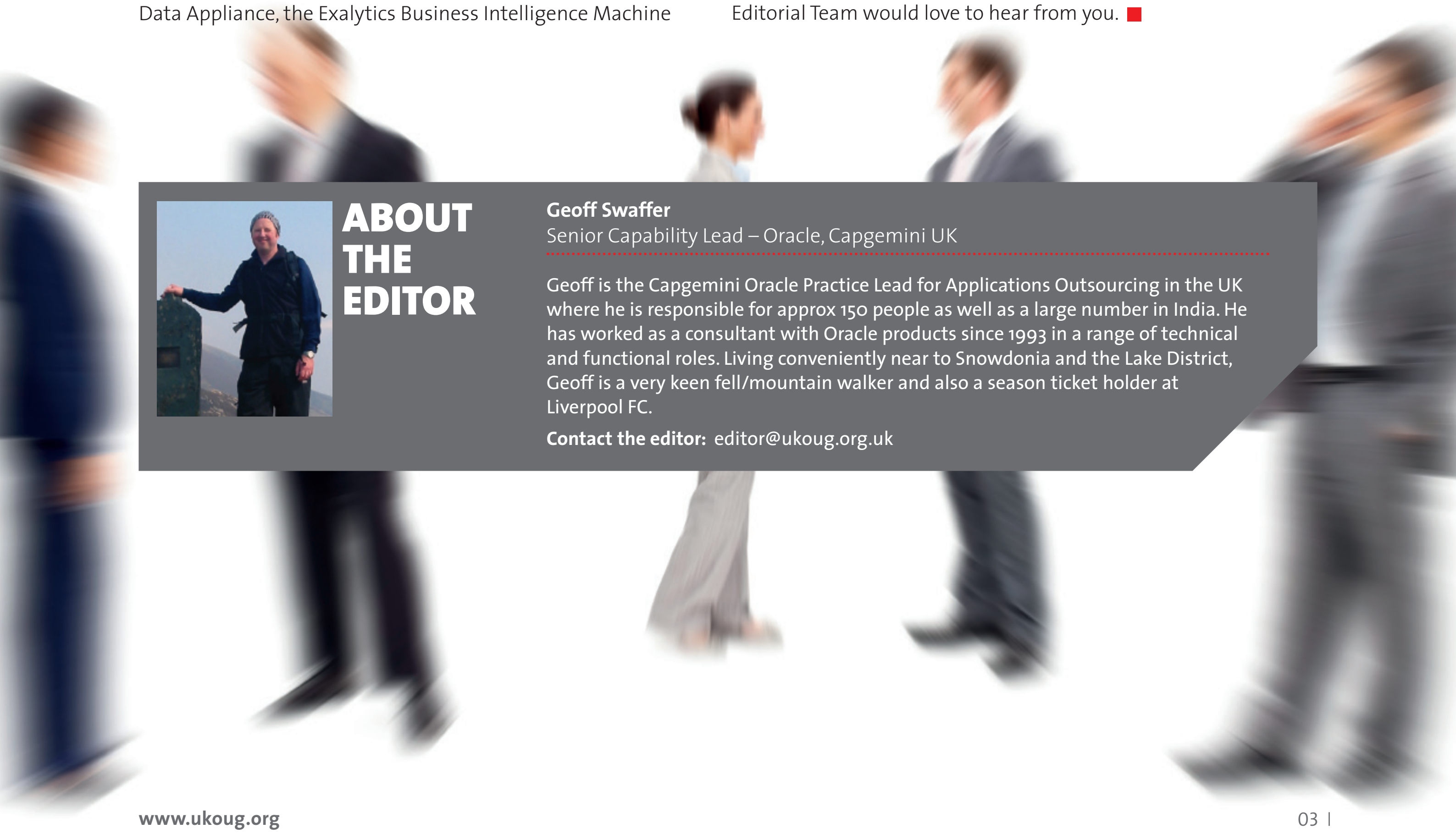
If you've been around the IT industry long enough (31 years in my case) you'll have heard many buzz words and latest trends come along. If you've attended Oracle Open World for the last two years, or streamed many of the key notes, you could be forgiven for thinking that Oracle have moved totally into being a Hardware company as so much of the emphasis throughout has been about "Oracle Hardware and Software Engineered to Work Together".

I have to confess to having a cynical little chuckle to myself when they started talking first about Big Data and then the Big Data Appliance. Until then I thought big data was just structured databases in terabytes or petabytes. Well to the unenlightened, Big Data is data that is too big, that moves too fast, that doesn't fit the structure of your database and that requires cost effective alternate ways of processing it.

Big data can originate from a wide variety of sources such as social networks, web page contents, web server logs, financial market data etc. and the list is endless I expect. With the Big Data Appliance, the Exalytics Business Intelligence Machine and it's portfolio of software products, the latest being Endeca, Oracle are moving heavily into this space, so check it out because it's actually really interesting.

You'll find some articles on Fusion Applications again in this edition but if this is a subject of interest to you and you want to find out a lot more about how the Apps are built and the implications of making a move to them, then I can really recommend a book that was promoted at last year's Conference and at Open World, "Managing Oracle Fusion Applications" by Richard Bingham. It's a great read and packed full of information that you would have to go to many sources to find out. If you were assuming that your Apps DBAs could just install Fusion Apps in a similar way to the other Applications Unlimited products then you need to read this book and understand the different skills requirement and implications.

So in closing I hope you enjoy this edition and once again please don't be shy in writing submitting ideas for articles (see page 46) and committing to writing content for future editions. The Editorial Team would love to hear from you. ■



ABOUT THE EDITOR

Geoff Swaffer
Senior Capability Lead – Oracle, Capgemini UK

Geoff is the Capgemini Oracle Practice Lead for Applications Outsourcing in the UK where he is responsible for approx 150 people as well as a large number in India. He has worked as a consultant with Oracle products since 1993 in a range of technical and functional roles. Living conveniently near to Snowdonia and the Lake District, Geoff is a very keen fell/mountain walker and also a season ticket holder at Liverpool FC.

Contact the editor: editor@ukoug.org.uk

CRM community makeover

We, at UKOUG, have embraced changes in the market place and are proud to introduce our 'new and improved' UKOUG CRM community. The new community is both a business and a product community, incorporating Siebel & CRM On Demand, Fusion CRM, ODM, and all associated Oracle CRM products. Oracle Scene caught up with James Trinder, UKOUG CRM Oracle Liaison, to find out why the change was necessary.

"UKOUG inherited a thriving Siebel user community when Oracle acquired Siebel in early 2006. A few years ago it was expanded to include Oracle CRM On Demand (SaaS), with the rather unwieldy name of 'Siebel and CRM On Demand'," explains James.

"Recently, however, Oracle has made several further acquisitions in quick succession to broaden out its CRM portfolio. Complementary products from Hayley (Oracle Policy Automation), ATG, InQuira (Oracle Knowledge) and most recently, RightNow all fall within the CRM discipline. We also saw the launch of Fusion CRM at Oracle OpenWorld 2011.

To better align the UKOUG community with the rapid pace of change at Oracle in the CRM domain, the committee has decided to rebrand this community simply to be called 'CRM'. We hope this will attract new members with a common interest in CRM regardless of which Oracle product(s) they have deployed. We do expect, however, that Siebel will remain the mainstay of the CRM community."

The CRM community's conference this year will cover all of Oracle's CRM offerings. We will be looking at Fusion CRM which is now ready to go and ready to show, how ATG can be used to add e-commerce to Siebel – or any other CRM system, all-new mobile CRM solutions to use as a front end to Siebel, CRM On Demand or Fusion CRM – or all three, and why Oracle has acquired RightNow and what it can do to enhance your Customer experience.

Find out more about the community, its goals and how you can get involved at: **www.ukoug.org/our-communities**

ALL CHANGE FOR TECHNOLOGY SIGS

The Management & Infrastructure SIG and RAC & HA SIG have now merged to form the UKOUG Availability Infrastructure & Management SIG, covering high availability database configurations, the infrastructure required to support such configurations, and the management of the technology supporting such deployments.

The DBMS SIG, UNIX SIG and Northern Server Tech Day have all merged to become the UKOUG Database Server SIG, aimed at those responsible for the administration of Oracle Database Servers.

For more information about these groups, visit the UKOUG AIM SIG and that UKOUG Database Server SIG community pages at: **www.ukoug.org**

UPGRADE EVENTS

Oracle Application Upgrade workshop for E-Business Suite, 17th April, TVP

Oracle Application Upgrade workshop for Siebel CRM, 24th April, TVP

Oracle Application Upgrade workshop for JD Edwards, 1st May, TVP

Oracle Application Upgrade workshop for PeopleSoft, 15th May, OCO

For more information visit www.ukoug.org/events

NEWS IN BRIEF NEWS IN BRIEF NEWS IN BRIEF

UKOUG TOM KYTE SEMINAR – 18th April, Ambassadors Bloomsbury, London
Covering many of Tom's sessions from Oracle OpenWorld. UKOUG members: £100 + VAT, non-members: £150 + VAT

UKOUG SECURITY SPECIAL EVENT – 19th April, Oracle City Office, London
In collaboration with Enline and Oracle

UKOUG EXA... SPECIAL EVENT – 23rd April, One Drummond Gate, London
A one day, multi-streamed event on Exa... Presentations on Exadata, Exalytics and Exalogic included. UKOUG members: £100 + VAT, non-members: £150 + VAT

2011 Inspiring Presenter Award winners

UKOUG would like to take this opportunity to congratulate all our 2011 Inspiring Presenter Award winners;

Oracle Speakers:

- **Maria Colgan** – The Optimizer – what you can expect after upgrading to Oracle Database 11g
- **Zoe Read** – Fusion Applications Finance and Project Demos

UK Speakers:

- **Simon Tomey** – Converting FSG's and Discoverer reports to run in Oracle BI Publisher
- **Jonathan Lewis** – Co-operating with the database

Overseas Speakers:

- **Dimitri Gielis** – Debugging with Oracle Application Express and Oracle SQL Developer
- **Will Kelty** – Attracting the Best: Save time & money, and increase efficiencies by extending Oracle iRec to achieve recruiting excellence

First Time Presenters:

- **Keertikar Mishra** – Synergizing Oracle capabilities in export compliance screening process using Trade Collaborator
- **Alex Nuijten** – Analytic Functions Revisited

2011 Judging Scores:

- **Jonathan Lewis** – Redo
- **Mark Nott** – New improved 3-in-1 iExpenses with Multiple Assignments and Payroll!
- **Oli Sennhauser** – MySQL Architectures for Oracle DBAs

UKOUG 2011 presentations can be downloaded at: http://2011.ukoug.org

Alex Nuijten receiving his Inspiring Presentation Award from Lisa Dobson, VP, UKOUG

IOUC Summit 2012

Back in January, Debra Lilley, UKOUG President, and James Haslam, UKOUG General Manager, attended the annual International Oracle Usergroup Community (IOUC) Presidents' Summit at Oracle HQ in Redwood Shores, USA. The IOUC and Oracle umbrella is effectively a user group for user group leaders.

This year's summit saw an increase of 20% on 2011, with 151 attendees from around the world. Over half were from outside North America, 53 had never attended before, and over 30 Oracle executives and product managers came to talk and share information with these leaders, and answer many questions. User group members look to their communities for information and comment which can only be provided when Oracle share like this.

Read more about the IOUC and UKOUG's summit experience at: **www.ukoug.org/what-we-offer/news/user-groups-and-oracle**

10 of the Best

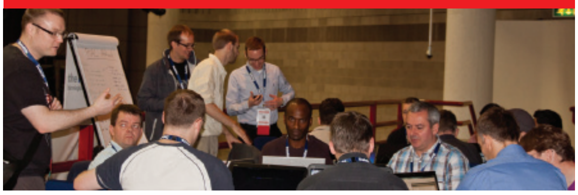
SPRING/SUMMER EVENTS 2012

Oracle Scene brings you some of the best community gatherings on offer this spring and summer. More information about all these events and more can be found on the UKOUG website at www.ukoug.org/events.

01 DATABASE SERVER SPECIAL INTEREST GROUP

27th MARCH, MANCHESTER CITY STADIUM

Why is redo so important? How does recovery actually work? Jonathan Lewis answers these questions and shares strategies for Beating the Oracle Optimizer during this jam-packed day.



02 TOM KYTE SEMINAR

18th APRIL, AMBASSADORS BLOOMSBURY, LONDON

Tom will share the latest on SQL, PL/SQL, metadata, Oracle Application Development AND Oracle database security... it really doesn't get better than this!

03 SECURITY SPECIAL EVENT

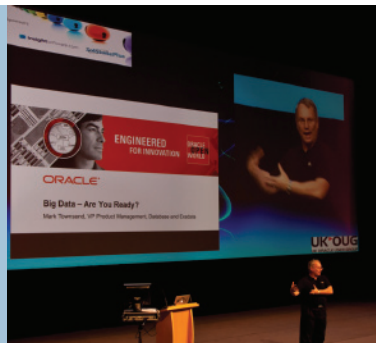
19th APRIL, ORACLE CITY OFFICE, LONDON

The agenda will cover trends in identity management, mobile and cloud security, assurance management and more.

04 EXA... SPECIAL EVENT

23rd APRIL, ONE DRUMMOND GATE, LONDON

Following last year's successful Exadata Special Event and the popular Exa... stream at UKOUG 2011, we will be running a one-day, multi-stream event on Exa... The agenda will include presentations on Exadata, Exalytics and Exalogic, no doubt along with some big names as usual. Keep checking the website for event updates, more information will be released soon.



05 HYPERION RELEASE DAY

2nd MAY, HERITAGE MOTOR CENTRE

Oracle Finance Executive Conference 2nd May 2012: Please contact julie.h.harris@oracle.com to express your interest in this important event for all organisations interested in delivering world class Enterprise Performance Management to drive business excellence.

06 OUG IRELAND BI & EPM SIG AND APPLICATION SIG JOINT EVENT

26th JUNE, ORACLE OFFICES, DUBLIN

Building on the success of the Ireland BI & EPM SIGs, the Ireland Application SIG has been sat alongside to create multi-purpose, dual aspect events to maximise the information available to delegates who attend.

07 LOCAL GOVERNMENT COMBINED (APPS & CRM) SPECIAL INTEREST GROUP

11th JULY, ORACLE BVP, BIRMINGHAM

The Local Government Combined SIG aims to take all the focus of Government and Public Services into one event to maximise the information available to delegates.

08 OUG SCOTLAND CONFERENCE 2012

13th JUNE,
ORACLE LINLITHGOW

This year's event promises to bring even more agenda content, including a keynote from Oracle's Vice President and Senior Technology Architect, Tom Kyte. UKOUG invites members, non-members and members of other user groups to come to this fantastic free event. Delegates said last year was the best OUG Scotland Conference yet. This year will be even better!

09 UKOUG CRM CONFERENCE 2012

28th JUNE, MADEJSKI STADIUM, READING

The new CRM community will be invited to attend a whole host of new topics and highlights from the CRM forum. Call for papers is open and the agenda is looking to cover – Fusion CRM, Siebel, CRM on Demand, Other Oracle CRM products, e-commerce in Siebel, mobile CRM solutions, RightNow, Upgrading, Project implementation, Product Selection, Roadmap Strategy, Project Management – deployment/ implementation, Change Management, Best Practise and User adoption issues, CRM market and megatrends – Cloud, Mobile and Customer Experience Management.

10 UKOUG 2012 CALL FOR PAPERS

APRIL/MAY

Not exactly an event we know, but it's coming soon and is definitely something you don't want to miss! Planning is underway, see page 29 for more information.

From the regions...
OUG Ireland

We're here to serve and support the user community in Ireland

OUG Ireland is a vibrant and committed Oracle user community that enjoys great engagement with and support from Oracle and Partners.

A blooming community
Collectively organised by a lively bunch of volunteers, with support from the UKOUG office, OUG Ireland is committed to delivering an extremely high quality and valuable service for the user community in Ireland.
"We're continually proactively searching out and connecting users and partners to participate in community activities," says Faye Wood, UKOUG, "We know from our own experiences that the value gained from getting involved in a user community far outweighs the cost, time and effort of attending and taking part in community events. Outside the user community it can be hard for users to identify and connect with others users and to access exactly the right and trustworthy information they need. We're proud of the fact that we provide the opportunity for users to come together and share knowledge and information for the benefit of everyone involved."

"We're continually proactively searching out and connecting users and partners to participate in community activities"

Fresh focus for events in Ireland
The Ireland SIGs have undergone a major makeover recently and with a new structure and new committees in place, the future looks promising. Building on the success of the Ireland BI & EPM SIGs, the Ireland Technology, Application and HCM SIGs have been sat alongside them to create multi-purpose, dual-aspect events to maximise the information available to delegates.

Application SIG – With a focus on knowledge sharing of Oracle products and keeping up to speed with the latest technologies there is definitely lots to talk about at the Ireland Application SIGs.

Technology SIG – With a totally new committee the Ireland Technology community have some exciting things to look forward to. Simon Holt, SIG Chair, has been working closely with Oracle in Ireland to ensure the best agenda and speakers. With rumours of Special Events being planned for the year to come there are lots of reasons to be getting involved.

HCM SIG – With a new Oracle Liaison and a newly returned SIG Chair the Ireland HCM SIGs are made up of presentations, workshops and discussion groups. With a flexible format and the agenda, the SIGs are tailored to the needs of the members and are an excellent forum for networking.

BI & EPM SIG – When it was created, the Ireland BI Special Interest Group (SIG) was intended to cover both BI & EPM, old and new, in the Oracle Stack. Following a rename the Irish BI & EPM SIG aims to re-emphasise and further our original intention of the BI SIG.

"We've held some really successful EPM focused events in the past and are planning more now we see that product roadmaps indicate we will be seeing heightened integration moving forward"

"On behalf of the OUG Ireland committee, I would like to take this opportunity to thank all of our contributors and members over the past year. We're really looking forward to seeing you all at conference and to meeting more new members during 2012"

Conference time again

This year's one-day conference will be the key event for the Oracle community in Ireland, and the committee have even more proactive than usual in sourcing exciting papers from our members. The six streams offer attendees a fantastic selection of speakers covering a range of topics including; Fusion Applications, Oracle E-Business Suite, Oracle Technology, Business Intelligence and Masterclasses.

Highlights include an opening keynote from Jon Paul, Senior Sales Manager of Oracle Technology in Ireland and a range of customer presentations including one from Northern Ireland Water. Delegates will benefit from an abundance of Oracle ACEs presenting.

Here are just a few of the names on offer;

- **Brendan Tierney, ACE**
  Dublin Institute of Technology
- **Simon Haslam, ACE Director**
  Veriton Limited
- **Grant Ronald**
  Oracle
- **Roel Hartman, ACE Director**
  LOGICA

The conference once again enjoys support from dedicated sponsors; Oracle, IBM and InsightSoftware.com, without whom we would not be able to bring you such a fantastic event, so many thanks to them for participating.

The superbly designed Convention Centre Dublin overlooking the River Liffey in the heart of Dublin city centre

OUG IRELAND
ORACLE USER GROUP

The day will be rounded off nicely when delegates join OUG Ireland organisers and exhibitors for an hour of drinks and a good old chinwag after Mogen Nørgaard's sure-to-be-entertaining-and-informative presentation. We hope to see you there.

If you're interested in sponsoring any of the Ireland SIGs please contact Isabella or Kerry at: opportunities@ukoug.org

2012 SIG Dates For Your Diary

26th June
AM: BI & EPM
PM: Applications

11th September
AM: BI & EPM
PM: Technology

20th November
AM: BI & EPM
PM: HCM

Development of a Probabilistic Model for Off-shore Wind using Primavera Risk Analysis (Pertmaster)

John Holland,
Milestone & 3re Limited

In the summer of 2011, I was approached by Milestone because of my expertise as a risk manager and analyst, and because I also had extensive experience in the use of Oracle Primavera Risk Analysis (formerly Pertmaster) and other risk modelling tools. Their client, The Crown Estate, needed to develop probabilistic model for offshore wind generation for the whole of the UK coastline.

The Crown Estate held licences for the Primavera Risk Analysis application but also for the commercial version of @Risk from Palisade. They had already built several models using the Primavera Risk Analysis application but they hadn't been able to get it to do what they wanted from one single model.

The origins of the Primavera Risk Analysis product and where it fits into the Primavera product portfolio are worth a mention. Pertmaster Ltd enjoyed a 20 year heritage as a planning and scheduling tool in its own right prior to the acquisition by Primavera Systems Inc.

The key feature that sets Pertmaster apart from other planning systems is its stochastic capability. Since its earliest versions Pertmaster users have enjoyed the unique ability to set a range of inputs rather than finite values for almost all data types. In the simplest and most common use case instead of having a single value for the activity duration, as in Primavera P6, the user can specify a range. For example an activity with a duration of ten days, in P6 could on evaluation of the uncertainties around that activity be deemed able to be completed in a minimum of seven days, a most likely value of 10 days and a worst case of 15 days. In this tool distributions can be applied to all manner of planning data types such as resource quantities, resource costs and non-working time. There are also structures in Pertmaster to allow for conditional and programmatic branching which give the risk modeller great flexibility in building a decision support system from a Primavera P6 plan. The Pertmaster scheduling engine reschedules in batch taking values at random from within the specified distribution ranges effectively working out all possible outcomes.

A series of meetings soon established that the client ideally wanted a single probabilistic model, using one application, that was simple to update and use, but would also do several other things:

1. It would include all current Round 1 projects, most of which were complete or are almost complete and were close to the UK shoreline.
2. It would include all current Round 2 projects, which were similar to Round 1 but would not deliver power until between now and beyond 2020.
3. It would include a whole portfolio of new projects, termed Round 3, which were located in 9 large off shore zones around the UK which would have the

ability to add about another 30GW of capacity to the UK Grid. The total capacity for all the projects (about 170) in R1, R2 and R3 could theoretically deliver over 40GW when they eventually come on line, some sites being in shallow coastal waters and some were in deep water.

4. The zones would be developed by 9 various support groups with 3 key stages (Develop, Finance and Construct). Some support groups would work across zones.
5. The zones would be in various territorial waters, i.e. England, Scotland, Wales and Northern Ireland, and some zones would actually straddle territories.
6. Resources were finite so some degree of resource levelling could be required dependant on the initial outcomes from any model.
7. The model would allow risk and uncertainty to be allocated and modelled very simply.
8. The model would allow the client's costs and income to be modelled as one or as a variety of deliverables, and the impact of depreciation would need to be included.
9. The model would allow capacity to be modelled at various points in the life cycle of the programme.
10. The model would have to be easy to update in-house.
11. The model would have 2 main outputs, Probabilistic Gross Income over time (i.e. normally between 5% and 95%) and probabilistic capacities in MW over time, but these outcomes needed to be measured in a variety of ways; either as a whole, or by zone, by support group or by territory etc.

The client had already been working on this programme of work for several years and had extensive data and a variety of models in Primavera Risk Analysis, Excel and other formats which had become unwieldy. This needed, if possible, to be cleaned up or developed/incorporated into one easy to use model. This model would allow a range of outcomes to be viewed, numerically or graphically, and have the ability to be updated quickly in the event of any change.

Added to this there were various stakeholders within the client organisation who were responsible for key areas, such as development and consents, financing, and construction and delivery, all with different skill sets and needs, but all who needed to be consulted if the model had any hope of becoming the accepted probabilistic modelling tool for a programme of works which could theoretically last into the middle of this century.

They had a risk register with almost 60 key risks, which was being managed in Excel, and a variety of reports which needed to be produced on a regular basis, based on the enormous pool of information and knowledge that they had already. The tool had to help simplify this reporting regime. After understanding the issues a strategy was proposed.

The Strategy

After listening to and understanding the client's needs it was clear that this was not an easy problem to solve.

Several issues confronted us:

- The client wanted one model and it had to be simple to use and understand.
- The model would incorporate the multitude of needs described previously so it would be very complex to develop, and could therefore become overly complex to understand and use once developed.
- The various parties had to retain ownership of their functional areas, so they had to be part of the development solution. A way of achieving this would be for them to be involved with the development of the model.
- As a risk manager/analyst first, and a Primavera Risk Analysis user second I had good experience using a variety of modelling and management tools in the past such as @Risk, ARM and Predict, so I was fairly certain a solution to the clients problem could be developed.
- The client wanted a solution in place by Christmas 2011 and it was now September. This client and the various stakeholders were very busy so they were not available very often so juggling all our calendars and availabilities along with those of other clients could be challenging.

The following strategy was suggested and accepted; in truth it then evolved and proved reasonably simple and cost effective, and it suited the needs of all parties:

1. Short initial 12 day commission for one analyst/developer spread over 6 weeks, 2 days per week from the end of September, on dates suitable to the client's representative.
2. Develop an outline plan for the effective use of the 12 days
3. Understand current documents, models, risks
4. Discuss ideas for the way ahead with the Client's representative, based on his 3 years' experience and his expectations as a key user.
5. Start development of an outline model using the scheduling module of Primavera Risk Analysis to model Round 3.
6. Meet the various function groups to understand their needs and expectations and explain what we were doing. This developed into four workshops split into part A and part B – 2 hours for part A and 2 hours for part B with the 3 key groups, Development & Consents, Financing, Construction, and one wash-up review with the senior team; the issues discussed were:
    i. Part A – Uncertainty on the activity and sequencing
    ii. Part B – Risks affecting the activities
7. Use the data from the workshops to enhance the programme, with uncertainties and risks for Round 3.
8. Add the Round 1 & 2 projects to the plan based on data provided by the client.
9. Test the model.

The Process

As in all journeys of discovery the route we took started off by following the plan/strategy above, but along the way slight corrections had to be made to ensure we stayed on course and reached our objectives on time, i.e. by Christmas 2011. >>

We reviewed other modelling applications and spoke to other experts to see if Primavera Risk Analysis was really the correct tool, and we sought advice on what was in essence how best to develop a 3 dimensional model, i.e., time, money, capacity. Not something that has been done very often in our experience.

It became obvious very early that only the Oracle Application, Primavera Risk Analysis offered the flexibility and the graphical outputs to deliver the client's expectations in one package, although at the start I personally had no idea how we would model both cost and capacity in one model as I had never done it before.

The agreement was that the client would supply hardware and software, but because of time constraints and security issues this quickly became unworkable and a workaround was developed whereby we supplied our own laptop and application software and transferred files by email or memory stick with the client.

The allowance of 12 days was not enough so this increased eventually to 19 days total with the approval of the client.

As the Primavera model developed alterations had to be made which were not always obvious at the beginning, and many were not easy to incorporate, as it became apparent that the assumptions initially made kept changing. Also as we progressed better ways of building the model and presenting the outcomes emerged. Because of the flexibility of this application it was fairly easy to do this.

As we progressed presentations were made to the various stakeholders, to get their buy in, this had not been factored in to our original strategy, but we found it became essential as the client would be using the model and would need to have ownership for it.

Various methods of incorporating the multitude of resources to deliver the outputs required were trialled in order to deliver results that the stakeholders would recognise as their own, these were tested and re-tested until a single model was developed which delivered all the required outputs with one run whenever a change was made anywhere in the model.

So in essence our process was:

1. Review the current data models and outputs
2. Understand the client's expectations
3. Develop a stage one plan in Primavera Risk Analysis
4. Get the client's buy-in to this plan
5. Agree the uncertainties and the risks with all the stakeholders
6. Load these into the programme and test and re-test it until it worked giving density distribution curves which the client recognised.
7. Add cash related resources in such a way that they allowed resource levelling and probabilistic cash flows which again delivered results to the expectations of all the stakeholders.
8. Develop a capacity resource methodology which did not need to be entered each time the model was run but allowed for over 50 capacity outputs which varied between 4MW to 920MW, dependant on the site of the turbines, and gave probabilistic capacity flows which again delivered results consistent with the stakeholders' expectations.
9. Deliver a presentation using the working model to all the stakeholders to get their buy in or comments.
10. Develop a user guide for the client to allow him to update and run the model himself.

Guides for this type of assignment or Lessons Learned from the past

The lessons learned over the years from undertaking this type of assignment are:

1. Don't assume you know it all – don't be afraid to ask others the 'dumb' question, hopefully someone will have done it in the past. If not read the manual; the Primavera Risk Analysis Manuals were found to be surprisingly good.
2. Speak to other experts who you trust, re-inventing the wheel wastes time and costs the client money.
3. Engage the client at all stages and if there are other key stakeholders engage them as well.
4. Present the work as you go, this will avoid going off on a tangent.
5. Don't be afraid to scrap some or all of what you have done and start over.
6. Always make a copy of the last version of the model you know worked and use the copy for your new changes.
7. Keep all the old copies during program development, they will ensure you have an audit trail and can go back easily to the previous version if a model crashes.

ABOUT THE AUTHOR

John Holland
Milestone and 3re Limited

John has been working in the construction sector for over 40 years and has been a risk manager/consultant since 1996. He has been involved with Railways, Airports, Power Stations, Nuclear Facilities, the Olympics 2012, and more recently in renewable energy schemes for many major clients and organisations. He runs his own consultancy company, offering risk management and risk analysis advice and assistance.

From the President

I want to take this opportunity to talk about our volunteers, the life blood of our user group. Although UKOUG is a professional organisation with an excellent team to deliver our services, we couldn't do it without the army of volunteers we have advising and shaping the services we offer.

Debra Lilley, President, UKOUG

You wouldn't be reading this without the volunteer editorial team and review panel who help to make it happen.

UKOUG is governed by three volunteer bodies; The Council, The Executive and The Board, as explained in issue 45 of Oracle Scene. These volunteers take on the ultimate level of commitment to ensure the smooth running of UKOUG on behalf of the wider membership.

By far our largest group of volunteers is our SIG Chairs, their deputies and committee members. These volunteers are users or partners themselves, understanding Oracle technology and its uses. They determine what users want to hear about, put together agendas and source speakers. They engage with Oracle through their Liaisons (also volunteers) to seek clarification, submit suggestions and highlight issues. Without these volunteers driving our communities we would have no members.

Without these volunteers driving our communities we would have no members

Another pool of engaged volunteers is our speakers. We encourage end users and new speakers within our communities. End user speakers are a very special kind of volunteer; they provide the content the communities want. 'Real world' stories and how people have overcome everyday issues in the day job. The communities want to share experiences and learn from each other. Let me know what we can do to encourage you to tell us your story.

Many of the better known speakers we have at conferences started as new speakers through user groups. Some have gone on to be part of the ACE Program, where one of the criteria is giving back to the community through the speaking opportunities that UKOUG and other user groups provide for people to achieve that. Our Inspiring Presenter Awards seek to recognise the best speakers, including those speaking for the first time – check out the 2011 winners on P5.

So what motivates people to volunteer? I Googled this question and came across the World Volunteer Web (www.worldvolunteerweb.org) which states:

People spend their energies where they are happy, when they feel satisfaction, where they feel responsible and where they see growth in themselves and in their role. Volunteers can feel more success if they are doing what they are qualified to do.

I hope UKOUG achieves this as one of our core values is 'To Inspire, motivate and develop UKOUG employees and volunteers'

Every year we take a day out to bring our regular volunteers together to say thank you, to learn from them and each other and to make sure we are supporting them in the best way.

My volunteering for UKOUG happened accidentally, but from the outset I loved it. What motivates me is being the voice of the membership and sharing knowledge back. My role has grown over the years and I have benefited in my own job and in the wider community. The access I have to Oracle through both UKOUG and the Oracle ACE Program has enabled me to improve my own knowledge, which helps my company and our customers as well. The biggest benefits for me though are my increased credibility and my amazing network.

You don't have to commit to a long term role to become a UKOUG volunteer though. There are many more people who step up to help out in the moment; to help out at events, at conference, in conference planning committees, to submit or review articles and our paper selection judges. From time to time, we also seek out volunteers to be part of working groups for specific initiatives.

I am proud of UKOUG, our community and all the volunteers that make it happen. If you are a volunteer "Thank You" and if you're not, I urge you to think about it. I promise you will be appreciated and you will enjoy being an active part of this great organisation. ■

Debra Lilley

Please get in touch if you would like to be added to our list of ad hoc volunteers, we can never have too many!
Email: info@ukoug.org

Focus on: Primavera

Background

Primavera Systems, Inc was founded in the early 1980s by Joel Koppelman and Dick Faris. It was a private company based in Pennsylvania, USA that developed software solutions for the Project Portfolio Management (PPM) market.

In 2006 a research document produced by Forrester placed Primavera as one of the technology leaders in the PPM market. With more than 450,000 users in more than 60,000 companies it was stated to be the current global market leader by market share amongst those offering solutions for project-intensive industries.

On 8th October 2008, Oracle Corporation announced it has entered into an agreement to acquire Primavera and on 1st January 2009 Oracle Corporation took legal ownership.

Primavera is focused on the mission critical project portfolio management requirements of key vertical industries including engineering and construction, public sector, aerospace and defence, utilities, oil and gas, manufacturing and high tech, and IT and services. Primavera's PPM products, together with Oracle's project financials, human resources, supply chain management, product lifecycle management, business intelligence, and infrastructure software are expected to provide the first, comprehensive Enterprise Project Portfolio Management solution. This solution is aimed at helping companies optimise resources and the supply chain, reduce costs, manage changes, meet delivery dates, and ultimately make better decisions, all by using real-time data.

The Primavera community was well established before the company was acquired by Oracle. At that time, the user community became part of UKOUG and we worked closely with the key community influencers to ensure that our offering had a structure that would suit users.

UKOUG staff depends on its networks and volunteers to access years of product experience. Take me for example, I have no personal experience of the Primavera product and so have no idea whether it is easy to work with or what challenges users might face on a daily basis, my goal is to facilitate that debate amongst the community members. What I do know, however, is that despite the UKOUG Primavera community being one of our newest communities, it is developing and moving forwards with real intensity. The community has bedded down and is maturing into a well organised, well run and well supported user community and their future is looking bright.

"To help community members keep up to date with the latest industry trends, and to guarantee access to case studies, best practice, and a wealth of customer experiences, we typically hold three events a year; a one-day conference, and two Special Interest Group (SIG) meetings," explains Lavinia Mildwater, Community Manager.

Ways to get involved in the Primavera community

- Join the conversation on Twitter using #ukoug_prim
- Become a member: www.ukoug.org/membership
- Attend a Primavera SIG meeting FREE in 2012 (£170+VAT for non-members & £85+VAT for members in 2013)*
- Develop new skills & increase your network through our range of volunteer opportunities
- Present at an UKOUG Primavera event. We're looking for presentations including BPM, UPK, Social Media, Reporting, and customer case studies. Contact anna@ukoug.org for more information.
- Exhibit at or sponsor an event. Contact opportunities@ukoug.org to discuss what's on offer.

The calendar of events is available at www.ukoug.org/events

Thank You

to the Primavera committee for their continuing hard work and dedication

This year's Primavera conference lived up to the 'refreshed and renewed' community event it promised to be. There was a fantastic mix of industries present sharing strategies and planning techniques with each other.

Dick Farris, Oracle, flew in from the US and delivered an opening keynote that proved a huge hit with the Primavera community, who really fed off his passion for the User Group, the conference and the Primavera offerings.

Delegates were treated to a journey through the Olympic process planning by David Birch, Head of Programme Controls, Olympic Delivery Authority. The implementation elements and project planning techniques against the backdrop of excitement for the up-and coming Olympics made for an inspirational session.

EDF Energy gave a fascinating customer presentation about outage planning using Primavera P6. Working with time pressures on scheduling and reporting gave a deep insight into how to approach planning.

Phil Budden & Mark Paulding from Costain, delivered a session on the journey to Enterprise and deployment of Primavera P6 & PRA in UK Construction. They shared a lot of the issues that most Primavera users relate to in terms of sharing data and keeping systems clean, and provided lots of useful hints and tips on potential issues and how to avoid them.

The guest speaker was Luke Cunliffe, ultra-marathon and extreme footrace competitor, who delivered an amazing display of the challenges he has faced, from trekking across deserts to multiple marathons through the Amazon jungle. It was truly inspirational and showed the power of planning correctly and what can go wrong when you don't.

The question left on the Primavera Committee's mind was why is it still so hard to engage this community, when there are such fantastic things coming out of it. How does the User Group reach out and break the barriers to allow an open dialogue between all users? UKOUG presented the benefits and influence members can achieve when part of the User Group. 2013 will be a growth year for the User Group with a new membership package available for those not yet officially 'signed up' to the Primavera community. ■

"What a refreshing conference, to see so many industries all under one roof coming together to learn from one another. It is exciting to physically be able to see the community develop and grow." Niall Faris, Transport for London

"Brilliant, best Primavera community event ever!" Simon Noble, Oracle

"This has now become the essential go-to conference for Primavera users." Mario Sanvitale, MileStone, Primavera Committee member

The Fusion Challenge

How I learned to stop worrying and love my Applications Strategy

In this brief article I'll try to describe for you what you can expect from Oracle Fusion Applications over the next couple of years and what you need to be doing about it today. I'll also try to answer some of the more commonly posed questions.

David Briggs,
IBM Associate Partner, Oracle Distribution Group

First of all, Fusion Applications are available now – table 1 below provides a summary of the current scope. However it's important to understand that in terms of depth of feature, it's not there yet. Over the next few years the applications will evolve steadily until they encompass a level of functionality equivalent to the current Oracle ERP offerings – EBS, PeopleSoft, JDEdwards, Siebel etc.

Financial Management	Human Capital Management	Customer Relationship Management	Supply Chain Management	Project Portfolio Management	Procurement & Sourcing	Governance Risk & Compliance
Integrated BI & Social Extensibility	Integrated BI & Social Extensibility	Integrated BI & Social Extensibility	Integrated BI & Social Extensibility	Integrated BI & Social Extensibility	Integrated BI & Social Extensibility	Integrated BI & Social Extensibility
Payments & Collections	Global Human Resources	Customer Master	Product Master Data Management	Project Costing	Purchasing	Financial Compliance
General Ledger	Workforce Lifecycle Management	Sales	Inventory Management	Project Billing	Self-service Procurement	Issue & Risk Management
Accounts Payable	Compensation Management	Marketing	Cost Management	Project Perform Reporting	Sourcing	Access Controls
Asset Management	Talent Review	Incentive Compensation	Shipping & Receiving	Project Control	Procurement Contracts	Transaction Controls
Accounts Receivable	Global Payroll	Mobile & Outlook Integration	Distributed Order Orchestration	Project Integration Gateway	Supplier Portal	Configuration Controls
Cash & Expense	Performance & Goal Mgt	Cash & Expense	Global Order Promising	Project Contracts	Spend & Perform Analysis	
Common Modules	Benefits					

TABLE 1: CURRENT FUSION SCOPE

Oracle have assured the market that they will continue to develop the existing ERP offerings and that there is no obligation now or in the foreseeable future for anyone to migrate. So if it's not essential to change, why do anything now?

Your three options

1. Continue on your current path
2. Embrace the complete suite
3. Adopt a co-existence strategy

Certainly one option is simply to ignore the existence of Fusion Apps and continue on your current path. Upgrade when you need to, implement additional modules (from your current ERP set) depending on business need and your financial situation, and maintain your current technologies. This approach is low cost and low risk in the short term, but is discounting the possibility of additional benefits from Fusion as well as potentially storing up work and cost for later.

A second option is to embrace the complete Fusion suite. This option is probably only realistic for medium sized organisations of limited complexity, and makes most sense for operations just starting out on their ERP journey. For larger, complex organisations the functionality isn't there yet for full migration to be possible without significant, possibly unacceptable compromise.

In our view, the third option – co-existence – is likely to be the most appropriate for the majority of existing customers.

So what does 'co-existence' mean?

Quite simply, it means implementing Fusion Apps alongside your existing suite.

As an example, say you've already installed the basic EBS HCM modules and you've identified a business need to introduce a talent management system. Previously your options would have included EBS Integrated Talent Management, other application packages from Oracle and perhaps 'best of breed' software from other vendors. Now you should add to your list of options Oracle Fusion Talent Management. Your ultimate decision will depend on the costs & benefits associated with each of the options and clearly is going to be specific to your circumstances. However your review should also take into account the additional benefits of the Fusion offering – ease of use, 'network at work', built-in integration etc – which may result in a decision to go with Fusion.

So effectively, the co-existence strategy is inevitable. It would be perverse not to include Fusion in your software reviews, and as Oracle's investment in Fusion delivers more features, a decision to go with a Fusion application becomes ever more likely.

In the short term it's unlikely that you'd choose to replace an existing core application with the Fusion alternative. However over time, software implementations could result in more Fusion Applications being installed around your existing core ERP. If so, and as Fusion Apps become feature rich, there will come a time when replacing that core ERP with Fusion becomes viable.

And what if I choose not to go with a co-existence strategy?

In our view, co-existence is almost inevitable for the reasons given. Moreover, a decision to stick with your existing suite could be storing up work and cost for later.

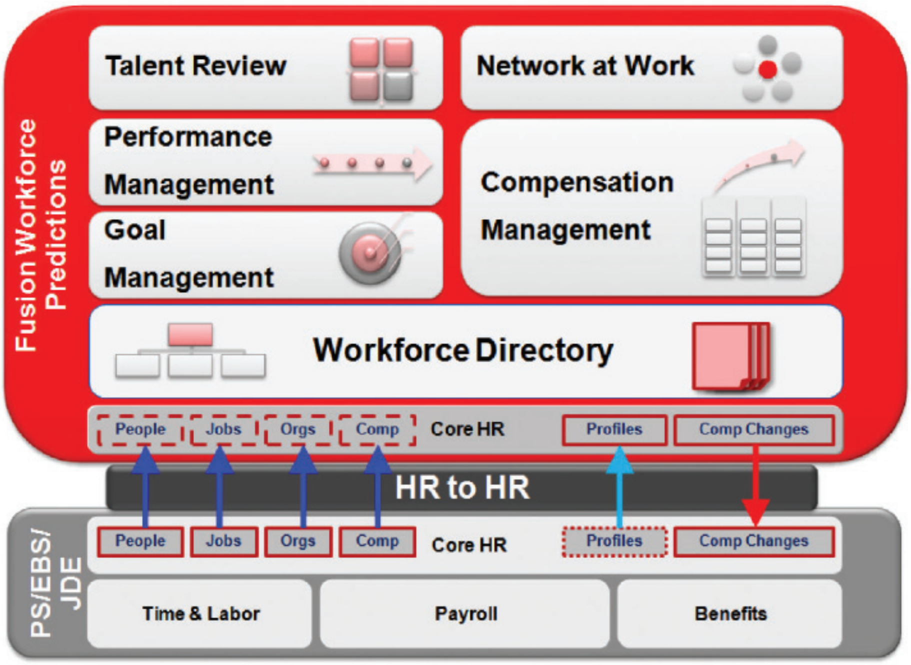
The reason for this is that Fusion uses standard Middleware across the suite. Identity management & security, analytics, the user interface etc are all common. If you decide to stay with your current applications set, you will continue to invest in your existing Middleware which almost certainly has many components and so is expensive to maintain. Once you've successfully negotiated the initial hurdles of introducing Fusion Middleware, the costs of implementing additional Fusion Applications are likely to be lower than those for other software.

So I should start implementing Fusion Apps now?

Actually no, unless you're a fairly simple operation or you're just starting out on your ERP journey.

If that's not you, then you have four next steps.

TABLE 2: CO-EXISTENCE



1 Get yourself onto the current release

If for example you're currently on R11.x of EBS, you should look to migrate to R12. If you have payroll then this upgrade is essential so that you continue to get tax and legal support. If you don't have payroll then it's not essential to upgrade. However, R11.5.10 moves into 'sustaining' support from November 2013 so it would be wise to make the change before then.

In addition to any immediate benefits, moving to R12 also starts to position you for Fusion Applications through the use of Fusion Middleware. >>

2 Review your integration strategy

Fusion Apps comes with an ETL / Publish & Subscribe model for integration. Chances are, you currently have mainly point-to-point interfacing in place. If so, you need to be able to answer three questions:

a. What's my application strategy / target application environment?
b. What's the best integration model for that strategy?
c. How do I get from where I am to where I want to be?

And the likelihood is that you'll find you need to start some integration work very soon.

3 Review your Infrastructure strategy

Cloud is coming, in at least 6 different forms. When you start implementing Fusion Apps, you're going to be offered several ways to do it, including Cloud options. If you make an individual, tactical decision you may find later that you've backed yourself into a corner. For example – if you implement Fusion Talent Management via 'Software as a Service', your provider may not allow you to configure the application exactly as your business needs.

So again there are three questions for you to consider:

a. Of the various infrastructure options now available, which are right for my organisation?
b. What's the right overall architecture for us? How should those elements fit together?
c. And again, how do I get from where I am to where I want to be?

As part of answering those questions, you would need to establish what parameters you would use to decide which applications to implement on each selected option. You'd then have the information you need to decide what the right infrastructure choice is for each specific application.

4 Update your applications strategy & roadmap

You should already have a systems strategy & roadmap, based on the capabilities your organisation is going to need over the next few years and what you expect your strategic partners to enable (specifically Oracle in this context). So what you need to do is overlay Fusion on that strategy:

- Take a view on the current and expected availability of Fusion Apps and the features they're likely to include.
- Update your business priorities: is there additional value in using Fusion Apps to drive required business change earlier than originally planned?
- Decide what place Fusion Apps have in your strategy and roadmap, and update it
- Build the detailed business case for the next steps

So is that it?

Pretty much, yes it is:

- Decide which of the three options (ignore, replace, co-existence) is right for you. If your decision is to go for something other than co-existence, make sure your decision making process was 100% rigorous.
- Review support timing for your current software version(s) and plan your upgrade.
- Review & update your integration strategy
- Update your infrastructure strategy
- Review & update your applications strategy & roadmap

And you're all set for the next few years.

So you can stop worrying, and learn to love your Fusion Ready Applications Strategy. ■

ABOUT THE AUTHOR

David Briggs
IBM Associate Partner, Oracle Distribution Group

He is a senior Retail and fmcg IT professional specialising in large scale IT projects underpinning major Business Transformation. His experience covers all aspects of change management. He has extensive knowledge of Retail applications and has specific expertise in Oracle Retail. Prior to joining IBM Dave worked in IT management for a number of retailers and fmcg manufacturers. He has experience of working in UK and international businesses including two years based in Bangalore, India and one year in Kuwait.

What do Fusion Applications tell you about your own enterprise?

So you have seen Fusion Applications, you like them but the business benefits for moving don't stack up yet. Yet you really liked the way it brought everything together. If only you could have that seamless process in your current HR system or your financials close was as slick? Well you can. The technology underpinning Fusion Applications; Fusion Middleware can give you that in your enterprise today.

Debra Lilley
Fujitsu

Fusion Middleware is the Oracle development platform. Fusion Applications are 100% developed using Fusion Middleware. Fusion Middleware has been available for several years and is used by many to develop / extend their own systems.

Understanding Fusion Middleware
What do we mean by Fusion Middleware (FMW)? I think we're all quite clear that Fusion Middleware contains the SOA and the Process Management modules, but there is a lot more; if we look at Figure 1 below it also includes User Interaction which is their Webcenter products including collaboration. Enterprise Performance Management and Business Intelligence are paramount in FMW, but quite often ignored when people are talking about FMW (because it is sold by different sales people). There is also Content Management and Application Grid (WebLogic). FMW has a single development toolset, and then Enterprise Management & Identity Management make up FMW.

In general our IT estate has grown over a number of years, with a mixture of home-grown and purchased applications, each with their own development and reporting toolsets. Integration has been organic and normally created and owned by the target application. When I talk with IT Directors and try to understand their enterprises, it looks like Figure 2; that is if they can actually articulate all of it. These separate applications are supported in silos and often no-one has a total understanding.

When I try to explain FMW, I use Figure 3. We need to move to a single development platform across our enterprise that services all these applications as a single >>

FIGURE 1: FUSION MIDDLEWARE

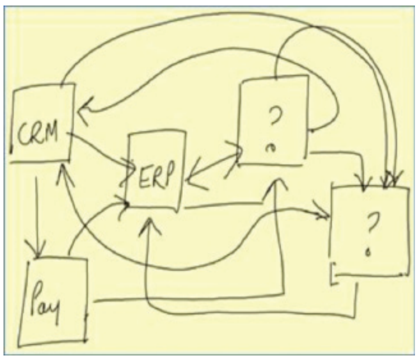


FIGURE 2: EXISTING IT ESTATE

enterprise. BI & EPM is a single platform that looks after all of our data extraction, reporting and intelligence; true insight into our data. SOA & BPM is a single platform that looks after all our data orchestration, the processing of that data, and a single platform that looks after the user experience. This is Fusion Middleware simplified.

I Really like Fusion Applications but...

What if you want Fusion Applications but you or your organisation or indeed the product itself is not ready because of lack of functionality?

Think About Co-Existence

Look at the functionality of some of the new modules, Talent Management or Incentive Compensation perhaps. This co-existence, fits what we talked about above, running multiple applications together. The same integration, used within Fusion Applications between modules can also be used across existing applications. Think back to my enterprise model this is how using one platform to look after both existing applications and part of fusion applications today this way. By adopting Fusion in this way you are getting the value today and you are prepared on your way to full Fusion Applications when they are ready for you.

Oracle have had co-existence since soon after they started their acquisition strategy, although they didn't refer to it as co-existence, rather they just talked about the technology, their Application Integration Architecture. For example, if you use Hyperion, or Primavera, or Transportation Management, there is a pre-built integration to the main Applications Unlimited products, E-Business Suite, Siebel, PeopleSoft, JDE. Co-existence is just an extension of this for Fusion Applications.

There are a number of Fusion Application modules with new functionality and Oracle has provided integration in the same way. Look at the first customer who went live with Fusion Applications, their organisation is successful because of the compensation model they use for their sales people. They took on Incentive Compensation from the Fusion Applications to replace a complicated process they managed manually. It then integrated with their payroll system which in this case was PeopleSoft. This is a very clear example of how adding Fusion

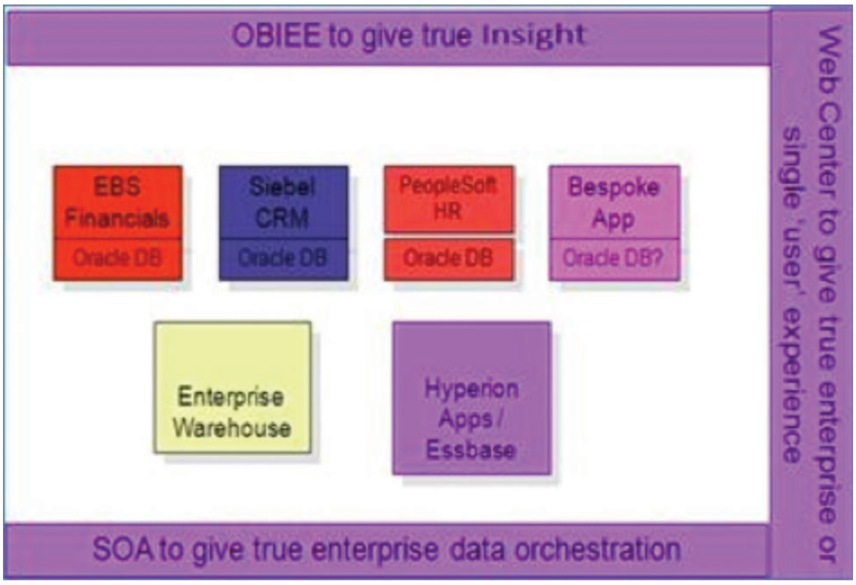


FIGURE 3. FMW ENABLED IT ESTATE

Applications to your existing enterprise can give you benefits today.

Or Simply Fusion Technology

Alternatively, why not adopt Fusion Middleware and get the value from this today? Perhaps Business Intelligence to enable full enterprise reporting, or perhaps using WebCenter to pull together parts of multiple applications today and give that some enhanced user experience.

You are interested in adopting some of the technology today and there's no better place to start in the white paper from Dr Nadia Bendjedou from Oracle. Her white paper '10 things you can do today to prepare for the next generation applications' was written several years ago in preparation for Fusion Applications and it is updated regularly.

http://www.oracle.com/applications/evolutionary-path-to-fusion.pdf

It is a great way to look at the technology used in Fusion Applications and its value. All the existing Application Unlimited products, like E Business Suite, JD Edwards, PeopleSoft and Siebel have adopted some FMW enabled functionality and are all certified for FMW.

Understand Your Strategy

To move to FMW you need a business case. This can be based on either the Business Strategy of your enterprise, or a well defined IT strategy. Do you know or have these?

Traditionally early adopters of FMW were either a consolidation project of a large organisation or an IT driven strategy.

These IT strategies were once explained by Dr Sutherland SVP Technology EMEA. He talked about three different strategies:

- Standardisation of mid tier architectures
- Rationalisation of Integrations
- Extension of packaged applications – putting additional functionality outside the application purchased, integrating using FMW and therefore extending it without customising.

Continuing this idea of IT strategies I wrote a paper for Oracle Open World 2010; 42 Real Life Examples of Fusion Middleware with Applications.

http://www.fujitsu.com/uk/services/application-services/enterprise-applications/debra-lilley.htm

Although this is an old paper it is still very relevant and this is how people are actually using Fusion Middleware to move their applications forward without actually being part of the Fusion Applications movement. I expect that these examples will continue to be relevant. IT modernisation is always relevant, the hardware you use may be expensive to maintain, old versions of software likewise, and consolidation.

What about the business strategy of your enterprise? Organisations need agility, simply because what they do changes, because of legislation or because of economic or competitor influences. Mergers and Acquisitions need to be responded to. Having a single platform for your enterprise gives you that agility. As you are connecting from one platform to any application for any of the functionality, removing, consolidating or adding applications means you only have to change the connection. If you need to change a process or intelligence the connections are already in place.

It can, however, be a like 'chicken and egg', you need the IT to change the business, FMW is required in order to move your business forward, but you may need the business need to justify the business case to change the IT.

I have really simplified the idea here but go back to Figure 2, do you understand your enterprise, and can you articulate the benefits FMW would give you?

Using Fusion Middleware to Give You Fusion Application Benefits

Once you have FMW in place, how do you learn from Fusion Applications? To do this we need to understand their design principles.

Basically Oracle have taken everything (or Object in the non database sense) and thoroughly defined them as Unified Information. Then everything that you do to one of these items has been defined as a service, e.g. create a customer, amend a customer, assign a customer. A process is simply the order and rules around calling these services. Finally for every process Oracle has exposed to the user they have answered four questions:

- What Do You Need to Do?
- What Do you Need to Know?
- How To Get it Done?
- Who can Help?

Apply these principles to your organisation. The services don't have to be your own, you can call an external service, e.g. when you buy a book via Amazon, the service to check your credit card is not theirs, it is one they subscribe to from a Financial Service. If you need a service that isn't available from your existing applications, or that you can subscribe to, then you can use FMW to create a new one.

Where Will You Get Most Benefit?

How well do you understand your business? What is it that makes your organisation successful or differentiates you from your competitors? This is where you should concentrate your efforts. Changing how you pay an invoice probably isn't going to change your organisation, so whether you use an old application or Fusion Applications probably isn't going to give you that differentiation to make you succeed in the business world

In my 42 Real Life Examples of Fusion Middleware paper, there is one example of extending Oracle E-Business Suite for a Ferry Company in Scandinavia. In Scandinavia there are thousands of islands and travelling between them requires ferries. These ferries are a very common form of transport, with people using them frequently including on their daily commute.

They wanted EBS to replace their aging ERP system which ran all of their back office processes and by using Business Accelerators they managed a very cost effective implementation.

However, the differentiator for this company is their user friendly booking system and their duty free sales. Anyone who has been to Scandinavia will know that alcohol is very expensive and some of these islands are designated duty free, so it is also common for people to travel just for the duty free sales.

The savings made over a traditional project were invested in implementing SOA and BPM to provide a single set of unified processes across these three systems. This has led to further savings and efficiencies.

And in Conclusion

Fusion Applications show us not only great functionality and User Experience, but also demonstrate what the Fusion Middleware technology can do. Create your strategy and choose your projects carefully so that you too can have maximum benefits quickly. ■

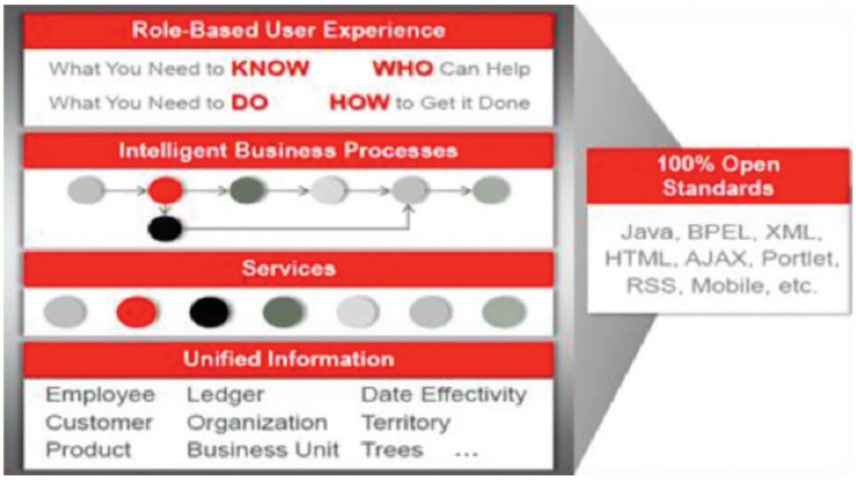


FIGURE 4. FUSION APPLICATIONS DESIGN PRINCIPLES

ABOUT THE AUTHOR

Debra Lilley C Dir, CITP, C Eng
Fujitsu

Debra Lilley is an Oracle Alliance Director with Fujitsu. She is both an Oracle ACE Director Oracle Certified Professional (Applications). Debra has been a UKOUG Director since 2004 and is currently UKOUG President.

Contact Debra:

E debra.lilley@ukoug.org.uk
T twitter.com/debralilley
T twitter.com/UKOUG_President

Customised Object Monitoring

As a Systems Implementer I often have to help my clients with a difficult decision: should we customise some Oracle–supplied code? “No!” I hear you cry, “You can’t do that! Oracle won’t support you!” Well, sometimes to achieve a certain piece of functionality customers are prepared to accept the risks that come with customisation.

Barry Goodsell,
Technical Manager,
Projected Consulting Ltd

One of the biggest problems to overcome is dealing with the fact it is almost guaranteed that your customised code will be overwritten by an Oracle patch at some point in the future. It is often down to the Developer or Functional Consultant to look at the Release Notes for a patch to try and determine whether a certain customisation might be affected. For small patches this isn’t really a problem, but with the larger rollup patches the impact analysis becomes quite a major task. But even then, that approach can be problematic – sometimes Oracle, in their infinite wisdom, release new versions of code objects that are not even mentioned in the Release Notes. The upshot of this is that the only sure way to find out what is impacted is to search through every single file included in the patch – a lengthy and tedious exercise.

I have recently been working with a client who has quite a large number of customisations that have been in place since “go-live” eighteen months ago. The system is now stable after the initial implementation issues and the organisation have started to try and catch-up with the patches that they had neglected to apply whilst trying to get to “business as usual”. Performing the impact analyses of the patches was taking up a considerable amount of time and so I proposed an automated solution, which I have kindly been given permission to share with you.

The Problem

The main problem is that we need to capture the “state” of a customised object just after it has been installed, so that we can compare that state with the state after a patch has been applied. If the states are different then we know that Oracle has overwritten our customisation. My first version of this utility used the LAST_DDL_TIME from ALL_OBJECTS. However, this was not entirely reliable as this timestamp is changed when an object is compiled, even if it hasn’t changed.

It was when I was browsing through the PL/SQL Package and Types Manual for 10g Database what I came across the new DBMS_CRYPTO package. DBMS_CRYPTO (and it’s quaintly named predecessor DBMS_OBFUSCATION_TOOLKIT) is used to encrypt and decrypt data, using a variety of industry standard encryption and hashing algorithms. You may need to ask your DBA to grant you EXECUTE rights on it, as by default it is not exposed to all users.

DBMS_CRYPTO contains a HASH function which can create a hash of a RAW, BLOB or a CLOB returning a RAW. The function supports three different hashing algorithms: MD4, MD5 and SHA1. The two Message Digest (MD) algorithms return a 128-bit hash value; the Secure Hash Algorithm returns a 160-bit hash value. When investigating whether to use hashes, I was concerned that two different bits of code could potentially

Hash Function

A hash function is any well-defined procedure or mathematical function for turning some kind of data into a relatively small integer, which may serve as an index into an array. The values returned by a hash function are called hash values, hash codes, hash sums, or simply hashes.

Hash functions are mostly used to speed up table lookup or data comparison tasks – such as finding items in a database, detecting duplicated or similar records in a large file, finding similar stretches in DNA sequences, and so on.

Extract courtesy of wikipedia.org

produce the same hash value. To see how many different hash values can be generated from a function we need to look at the size of the returned hash values.

For MD4/5: $2^{128} = 3.4 \times 10^{38}$
For SHA: $2^{160} = 1.5 \times 10^{48}$

Both of these are very large numbers indeed! You stand more chance of winning the lottery jackpot two weeks in a row than ever hitting the same hash value. I decided to go with SHA because 160-bits is only 20-bytes, not a lot of storage required for each object that we want to monitor.

The Solution

Now to write some code! The first function that I wrote (GET_HASH) just encapsulated the call to the HASH function taking in a CLOB parameter. I decided to use the CLOB variant as I thought that it would be easiest to create CLOB representations of the objects that I want to monitor.

Still using 9i?

DBMS_CRYPTO is new to Oracle10g which doesn't help those of you still on Oracle9i. You could use DBMS_UTILITY.GET_HASH_VALUE, but this only accepts VARCHAR2 parameters.

In the past I have used a Java Stored Procedure to hash a VARCHAR2 string; without too much work it could be converted to process a CLOB.

The next problem was how to actually get these representations out of the database. A lot of the things that I wanted to monitor are found in the Data Dictionary, but some things like Workflows and Alerts, are stored in E-Business Suite tables where there are quite complex relationships between the tables.

Having been working with XML Publisher quite extensively over the last few years I thought that XML would be the right way to go. As it happens, Oracle Server provides quite a number of different ways of creating XML from the database – the package that I was most interested in was DBMS_XMLGEN. This package, to quote the manual, "converts the results of a SQL query into a canonical XML format. The package takes an arbitrary SQL query as input, converts it to XML format, and returns the result as a CLOB" – exactly what I needed:

```
FUNCTION get_xml
  ( p_sql         IN           VARCHAR2 )
RETURN CLOB
IS
  l_ctx      dbms_xmlgen.ctxhandle;
  l_result   CLOB;

BEGIN
  l_ctx := dbms_xmlgen.newContext(p_sql);
  dbms_xmlgen.setConvertSpecialChars(l_ctx, TRUE);
  l_result := dbms_xmlgen.getXML(l_ctx);

  dbms_xmlgen.closeContext(l_ctx);

  RETURN l_result;
END get_xml;
```

I then needed a function to build a suitable SQL statement given a table name and one or more primary key column names and values. This could then call GET_XML and GET_HASH and return the hash value:

```
PROCEDURE add_condition
  ( p_sql                     IN OUT NOCOPY VARCHAR2
  , p_pk_column               IN            VARCHAR2
  , p_pk_value                IN            VARCHAR2 )
IS
BEGIN
  IF (p_pk_column IS NOT NULL)
  THEN
    p_sql := p_sql || ' AND '||p_pk_column||' = '''||p_pk_value||'''';
  END IF;
END add_condition;

FUNCTION calculate_data_hash
  ( p_table_name              IN            VARCHAR2
  , p_pk_column1              IN            VARCHAR2  DEFAULT NULL
  , p_pk_value1               IN            VARCHAR2  DEFAULT NULL
  , p_pk_column2              IN            VARCHAR2  DEFAULT NULL
  , p_pk_value2               IN            VARCHAR2  DEFAULT NULL
  , p_pk_column3              IN            VARCHAR2  DEFAULT NULL
  , p_pk_value3               IN            VARCHAR2  DEFAULT NULL )
RETURN RAW
IS
  l_sql      VARCHAR2(2000);

BEGIN
  l_sql := 'SELECT * FROM '||p_table_name||' WHERE 1=1';

  add_condition(l_sql, p_pk_column1, p_pk_value1);
  add_condition(l_sql, p_pk_column2, p_pk_value2);
  add_condition(l_sql, p_pk_column3, p_pk_value3);

  RETURN get_hash(get_xml(l_sql));

END calculate_data_hash;
```

Using the above CALCULATE_DATA_HASH function we can calculate the hash value for almost any type of database object. We just need to pass in the database table or view name and enough column names and values to uniquely identify our object:

```
FUNCTION calculate_hash
  ( p_object_type             IN        VARCHAR2
  , p_object_name             IN        VARCHAR2
  , p_table_name              IN        VARCHAR2  DEFAULT NULL
  , p_pk_column1              IN        VARCHAR2  DEFAULT NULL
  , p_pk_value1               IN        VARCHAR2  DEFAULT NULL
  , p_pk_column2              IN        VARCHAR2  DEFAULT NULL
  , p_pk_value2               IN        VARCHAR2  DEFAULT NULL
  , p_pk_column3              IN        VARCHAR2  DEFAULT NULL
  , p_pk_value3               IN        VARCHAR2  DEFAULT NULL )
RETURN RAW
IS
  l_hash_value  RAW(40) := NULL;

BEGIN
  CASE
    WHEN (p_object_type = 'DATA')
    THEN
      l_hash_value := calculate_data_hash
        ( p_table_name  => p_table_name
        , p_pk_column1  => p_pk_column1
        , p_pk_value1   => p_pk_value1
        , p_pk_column2  => p_pk_column2
        , p_pk_value2   => p_pk_value2
        , p_pk_column3  => p_pk_column3
        , p_pk_value3   => p_pk_value3 );

    WHEN (p_object_type IN
      ('PROCEDURE','FUNCTION','PACKAGE','PACKAGE BODY','TYPE','TYPE
BODY'))
    THEN
      l_hash_value := calculate_data_hash
        ( p_table_name  => 'ALL_SOURCE'
```

>>

```
        , p_pk_column1  => 'TYPE'
        , p_pk_value1   => p_object_type
        , p_pk_column2  => 'NAME'
        , p_pk_value2   => p_object_name );

    WHEN (p_object_type = 'VIEW')
    THEN
      l_hash_value := calculate_data_hash
        ( p_table_name  => 'ALL_VIEWS'
        , p_pk_column1  => 'VIEW_NAME'
        , p_pk_value1   => p_object_name );

    WHEN (p_object_type = 'MATERIALIZED VIEW')
    THEN
      l_hash_value := calculate_data_hash
        ( p_table_name  => 'ALL_MVIEWS'
        , p_pk_column1  => 'MVIEW_NAME'
        , p_pk_value1   => p_object_name );

    WHEN (p_object_type = 'TRIGGER')
    THEN
      l_hash_value := calculate_data_hash
        ( p_table_name  => 'ALL_TRIGGERS'
        , p_pk_column1  => 'TRIGGER_NAME'
        , p_pk_value1   => p_object_name );

    WHEN (p_object_type = 'MESSAGE')
    THEN
      l_hash_value := calculate_data_hash
        ( p_table_name  => 'FND_NEW_MESSAGES'
        , p_pk_column1  => 'MESSAGE_NAME'
        , p_pk_value1   => p_object_name );

    ELSE
      l_hash_value := NULL;

  END CASE;

  RETURN l_hash_value;

END calculate_hash;
```

Now that we can create the hash value for a wide variety of objects, we need somewhere to store those values. I created a table called XXC_CUSTOMISED_OBJECTS which had columns for the Object Name and Type, the Table Name and three pairs of Primary Key Column Names and values. To make life easier for the developers, I also created a simple API (REGISTER_OBJECT) to either create or update a hash record in this table. This API is to be called immediately after any customised object has been created, to store the hash of the newly created object in the table.

We now have a table holding all the information about the objects that we want to monitor and their current hash values. After an Oracle-supplied patch has been applied to our Patch Test environment, we can recalculate the hash values to see whether anything has changed. To make life simpler, I added a function that returns the current (as opposed to the stored) hash value for a given CUSTOM_OBJECT_ID.

```
FUNCTION calculate_hash
  ( p_custom_object_id      IN        NUMBER )
RETURN RAW
IS
  r_object   xxc_customised_objects%ROWTYPE;

BEGIN
  SELECT   cob.*
  INTO     r_object
  FROM     xxc_customised_objects cob
  WHERE    cob.custom_object_id    = p_custom_object_id;

  RETURN calculate_hash
    ( p_object_type => r_object.object_type
    , p_object_name => r_object.object_name
    , p_table_name  => r_object.table_name
    , p_pk_column1  => r_object.pk_column1
    , p_pk_value1   => r_object.pk_value1
    , p_pk_column2  => r_object.pk_column2
    , p_pk_value2   => r_object.pk_value2
    , p_pk_column3  => r_object.pk_column3
    , p_pk_value3   => r_object.pk_value3 );

END calculate_hash;
```

To determine whether any objects have changed, I wrote the following view which calls the above function; any records where the STORED_HASH_VALUE is different from CURRENT_HASH_VALUE point to objects that have been altered since creation:

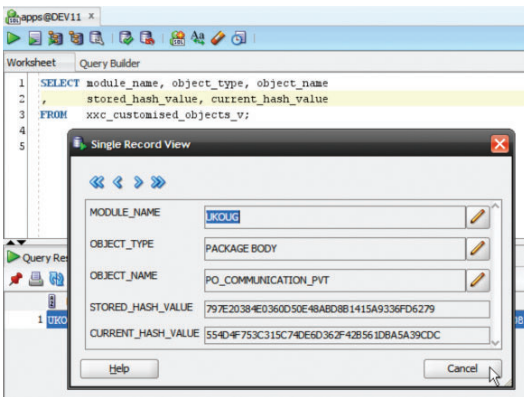
```
CREATE OR REPLACE VIEW xxc_customised_objects_v
AS
SELECT  OBJ.*
,       DECODE(OBJ.stored_hash_value
          , OBJ.current_hash_value, 'N'
          , 'Y') AS object_changed
FROM (
  SELECT  cob.module_name
  ,       cob.object_type
  ,       cob.object_name
  ,       cob.table_name
  ,       cob.pk_column1
  ,       cob.pk_value1
  ,       cob.pk_column2
  ,       cob.pk_value2
  ,       cob.pk_column3
  ,       cob.pk_value3
  ,       cob.hash_value                AS stored_hash_value
  ,       xxc_custom.calculate_hash
            (cob.custom_object_id)      AS current_hash_value
  FROM    xxc_customised_objects cob
) OBJ
ORDER BY OBJ.module_name, OBJ.object_type, OBJ.object_name
```

Example

Let's assume that you've made a customisation to the package body of PO_COMMUNICATION_PVT to enable extra attributes on the Purchase Order Print. After you've installed your customised version you would need to create and store a hash of the current package body:

```
BEGIN
  xxc_custom.register_object
    ( p_module_name => 'UKOUG'
    , p_object_type => 'PACKAGE BODY'
    , p_object_name => 'PO_COMMUNICATION_PVT' );
END;
```

At some point in the future, you have applied an Oracle patch and you want to check to see if the customised package body has been over-written: just select from the view and you can see that the hashes don't match, so you will need to re-apply your customisations to the new version:



Conclusion

This is a relatively simple, non-invasive method for monitoring changes to database objects. It has the potential to eliminate the many hours normally spent examining the contents of Oracle patches by quickly providing you with a list of objects that have been changed.

The process is simple to extend to monitor other object types by adding further sections to the first overload of the CALCULATE_HASH function. In fact, the version that you can download from the UKOUG website has support for Workflows and Alerts. This takes advantage of the fact that the DBMS_XMLGEN package fully supports nested cursor statements in the SQL, which can give you an XML representation of a complete relational data structure. ■

ABOUT THE AUTHOR

Barry Goodsell
Technical Manager, Projected Consulting

Barry Goodsell has over 20 years of experience with the Oracle database and development tools. He has been developing and supporting extensions to E-Business Suite for over 15 years, with his experience ranging from Release 10.7SC through to Release 12. He is an expert in all of Oracle's development tools and languages, including SQL, PL/SQL, Oracle Forms and Reports, Workflow, Oracle Discoverer, Java and JDeveloper. Barry specialises in developing web user interface extensions to E-Business Suite using Oracle Application Framework (OAF) and reporting solutions using OBIEE and BI Publisher.

Embedding Automated Configuration Controls Through Your R12 Journey Using Oracle CCG (Configuration Controls Governor)

Gautam Prakash,
Security and Controls Specialist, PricewaterhouseCoopers

Over the last few years, there has been increased pressure on organisations to efficiently deal with financial and operational risks in their processes. The result has been a slow change in management outlook towards automated processes and controls. This has happened in the Oracle world at a time when most of the installed base has been on a stable 11i environment for a while and when there has been an impending R12 upgrade hovering like a dark cloud in the sky.

In this article, we look at how the upgrade to R12 is one of the apt times for organisations to embark on their Governance, Risk and Compliance (GRC) journey by starting to use Configuration Controls Governor (CCG) in order to make the implementation efficient and reap the benefits of this application in the new R12 world as well.

Background

Oracle Configuration Controls Governor (CCG) is an application from the Oracle GRC Suite of Applications used to document and analyse the configuration and standing data in your ERP (EBS, Siebel and/or PeopleSoft) at a point in time. Additionally this application is also used to improve application and database auditing.

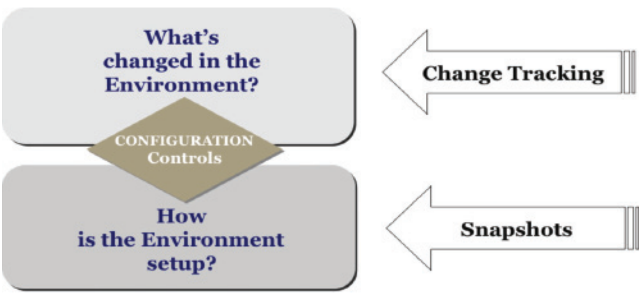


FIGURE 1: FUNCTIONALITIES OF CCG

At a high level, CCG primarily has two basic functionalities:

- Ability to document application configuration at a given point in time. This is delivered using **Snapshots**. Besides providing a documented evidence of the application configuration, CCG also provides the ability to compare snapshots on both the same instance or across multiple instances (for example between the test and production instances).
- An independent audit trail can be maintained and reported through CCG providing a single workbench access to identify all the changes made to key configuration and master tables. This functionality is called **Change Tracking**.

CCG during an R12 Implementation

The key concern during a major ERP upgrade or implementation is ensuring that **configuration management** is effectively working. While many organisations have a robust process to handle configuration management, the last link of the chain is usually taken for granted, i.e. the configuration in the application has been carried out as per the documentation and this is consistently replicated through the Test and Production Instances. In our experience, this is not always the case and can have a fundamental impact on how transactions are processed.

CCG Snapshots provide an efficient way to automate the configuration management process as CCG provides an independent report of the configuration in the ERP instance. As a good practice, once the BR100 (Application Configuration Document) is signed off and the DEV environment is configured accordingly, this configuration should be baselined by snapshotting (for lack of a better word!) using CCG. The configuration in the Test and Production environment can then be compared to this baselined configuration at appropriate times during the project to confirm that there is no **configuration drift** and appropriate investigation and action can be taken if differences are identified.

Another high risk area during an implementation is **data migration**. CCG can be effectively used to validate the accuracy of the data migration by comparing the source legacy data with the master data in the application. As CCG master data is obtained directly from the source application and reported through an independent application (based on its own database), thereby providing more comfort.

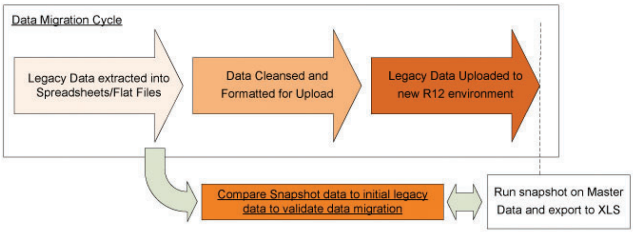


FIGURE 2: USING CCG TO VALIDATE DATA MIGRATION

CCG Snapshots in a Post Go-Live Environment?

Configuration Management is an ongoing activity in an ERP environment and these processes need to be ingrained in Business as Usual activity. A key concern noted in many organisations is that although these processes are usually relatively robust during a project, they tend to become informal and lead to poorly maintained documentation and a mismatch between the application and the documentation.

CCG helps strengthen these processes by allowing Change Authority or Internal Audit to run snapshots on a periodic basis to monitor changes in key application configuration which can be validated against the change management approvals in a given period.

To facilitate more accurate and effective testing, the configuration deviation between the Test and the Production environments need to be within a set tolerance. Again, the configuration in the two instances can be compared using CCG Snapshots. In the post Go-Live environment, it takes a few months for ERP instance to be stabilised and it is in this period that there is a greater risk of testing changes on an environment which is not a true reflection of the live environment.

As is the norm, external auditors typically run their own scripts and tools to review the application configuration as organisations have not been proactive about controlling the application configuration. Auditors need to go through the same process every year to confirm that the application controls have not changed since the last review. However, auditors are now taking notice of the change in management's outlook towards change management controls and there is a change in the audit approach. It is not uncommon for auditors to place reliance on CCG for the application controls.

But can I use iSetup for this?

While CCG and iSetup and complementary products and one might be tempted to weigh in favour of iSetup due to lower initial costs, the key difference needs to be appreciated. As per Oracle, iSetup has, and will continue to have, an IT Operations focus mainly reducing implementation costs in migrating configuration from one instance to another. CCG, on the other hand, has a more GRC focus looking to reduce governance/ compliance risks and costs.

By design, CCG is segregated from the EBS instance and can be managed and used independent of the ERP application. Also, CCG fits better with a future GRC outlook with improved auditing using Change Tracking and improved change management processes using Snapshots. More focus on Risk and Governance – ideally owned by Internal Audit.

How can we use CCG to audit better?

As a systems auditor, I have seen many organisations auditing key tables in EBS but most of them are at a loss with what they do with the audit records. While Oracle provides detailed auditing capabilities out of the box, the lack of a reporting front-end leads to overall poor controls. Also, the fact that the audit records usually lie in the same database as the source transactions, the reliability of these records is suspect. >>

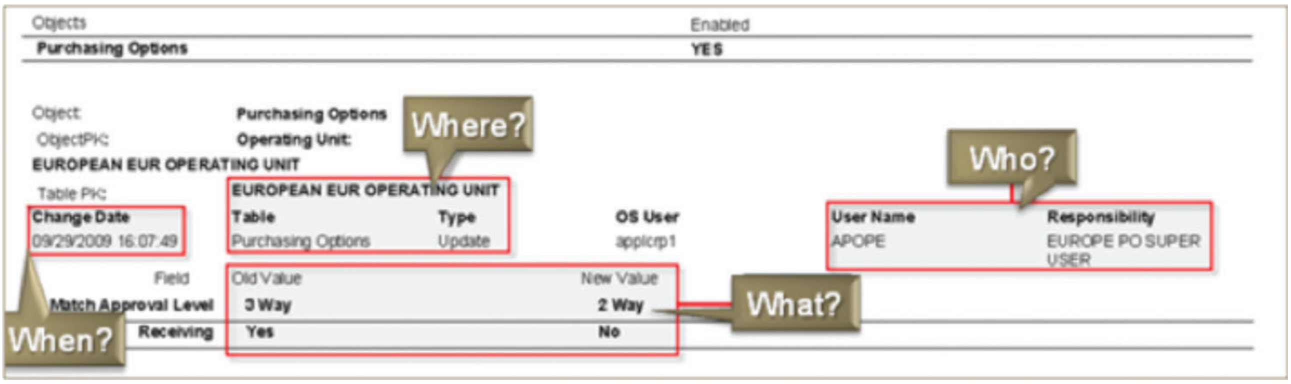


FIGURE 3: AUDIT REPORTS IN CCG

The CCG auditing model tries to fill in these gaps by providing a simple but effective interface to view and manage these audit records, send out alerts on changes to critical information (e.g. bank account information) and an independent database to store and maintain the sanctity of the audit records. The reports focus on the key questions, primarily what has been changed? Who has made the change? When the change was carried out? And where was it made in the application?

The Business Case

The business case for implementing CCG is not a simple one to make as some advantages are quantifiable (process efficiencies, costs reductions) but others are not (Proactive monitoring means reduced risks, fraud detection). The early adopters of this application have been organisations who have either suffered financial losses due to changes in key master data or those who have identified a need to improve their controls environment and have found CCG to meet most of their business requirements.

Some of the key advantages of the CCG application have been noted as below:

- Improved Configuration Management during the implementation/upgrade project implies efficiencies in the project, less effort and intervention by the Change Authority and better controls on the final configuration and master data in the live environment.
- On an ongoing basis, the process of managing and reviewing the configuration documentation can be simplified and made more efficient by including the CCG snapshots in the process.
- The costs related with auditing the application configuration by the external and internal auditors can be significantly brought down by changing the audit approach and relying on CCG.
- Proactive monitoring of the key application configuration and master data minimises the risks related to inappropriate changes and while it is difficult to put a cost on this, some of the recent events in the electronic world have helped to place more emphasis on this.
- The activities of DBAs and Application Super Users can be audited and reported from an independent application, minimising the chances of fraud.

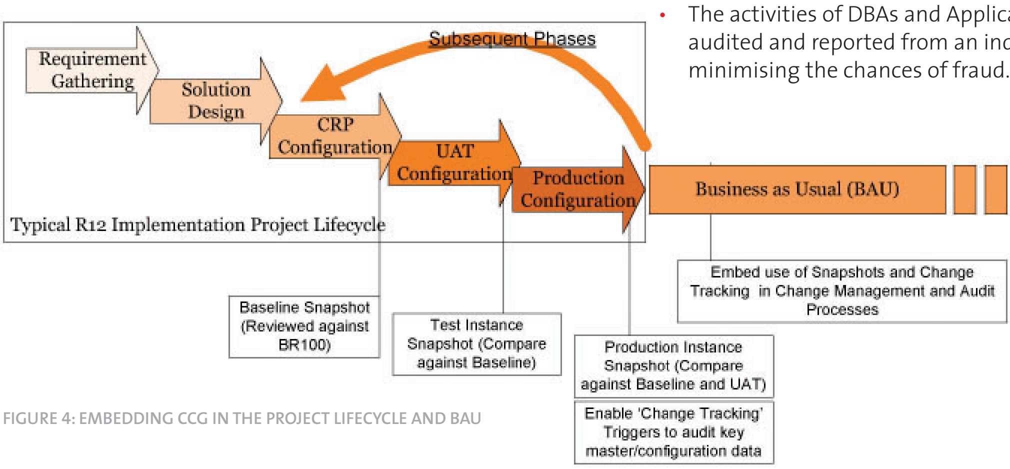


FIGURE 4: EMBEDDING CCG IN THE PROJECT LIFECYCLE AND BAU

Conclusion

Today, in an environment where efficiency and cost savings are key but the risks and their implications are greater than ever, it is imperative for managements to consider their long term GRC strategy. To reduce costs and embed the new or revised processes, it can be a smart move to start the GRC journey with the use of CCG during the R12 implementation and utilise some of the functionalities to derive additional efficiencies in the implementation lifecycle and beyond. ■

ABOUT THE AUTHOR

Gautam Prakash
Oracle Security and Controls Specialist, PricewaterhouseCoopers

Gautam is an Oracle Security and Controls specialist working in the Risk Assurance practice of PricewaterhouseCoopers. He has 6 years of experience of helping organisations implement Oracle E-Business Suite and now specialises in reviewing and improving the automated controls in their ERP environment, including access, configuration and transaction controls using PwC's inhouse tools and the Oracle GRC Suite of applications. The author has implemented CCG as part of a team at PricewaterhouseCoopers for 3 different clients and audited one CCG implementation and provides an interesting insight on the lessons learnt by these organisations.

UK OUG
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UKOUG 2012... yes the planning for conference is already underway!

The UKOUG Council are pleased to announce the formation of a working group, liaising closely with the UKOUG office to ensure UKOUG 2012 meets members' expectations of a high value conference experience.

With weekly conference calls we have already started discussions about paper submission, judging and selection. We want to look at how these processes are designed as each year we see feedback about content clashes and missing topics and we want to avoid this where possible.

We are very grateful to members for providing feedback in the surveys – it is vitally important and helps us improve both the standard and relevance of the sessions, and also the agenda layout.

Look out for the launch of Call for Papers, coming in April/May... it'll be a great opportunity for you or your company to tell your story and to be part of this event where the Oracle Technology & E-Business Suite communities come together to share experiences. Apart from the feeling that you are giving back to the Oracle community (after all, how often do we all attend useful presentations or read helpful blog posts?), speaking is also a great chance for you to polish up your knowledge of a topic, which in turn makes you even more useful to your employer.

If you are new to presenting and nervous about being on stage at conference, why not offer to present in the more informal surroundings of a SIG first. Then you will be ready for the buzz of UKOUG 2012. This event is seen in the Oracle world as one of the best conferences to speak at and attend, and we hope to keep it that way.

UKOUG 2012 Council Working Group – Debra Lilley, Lisa Dobson, Colin Terry & Simon Haslam.

Create a UKOUG profile **in 3 easy steps**

STEP 1

Find out if you are a member or not

Member: If your organisation already has a membership, contact your main contact (the person nominated by your company to manage the membership) for the membership number.

Non member: Create a guest profile. This will enable you to register for events and opt in to receive various communications including the weekly event updates and the fortnightly ebulletin.

STEP 2

Go to www.ukoug.org and click on Join UKOUG

STEP 3

Choose the relevant joining option, create a profile of your interests, hit submit and you will be sent an email with your password

If you need assistance contact the membership team at **membership@ukoug.org** who will be happy to help. To find out why you will want to create a profile see P33

Using an Oracle Data Miner Model in SQL and PL/SQL

There are a number of ways of applying a data mining model, developed using Oracle Data Miner, in SQL and PL/SQL. This article builds on my previous article in the June 2011 Oracle Scene magazine on using the new Oracle Data Miner tool. The Oracle Data Miner tool is a graphical workflow based tool. It allows you to explore your data, build data mining models, evaluate these models and apply this model to new data.

Brendan Tierney
School of Computing, Dublin Institute of Technology

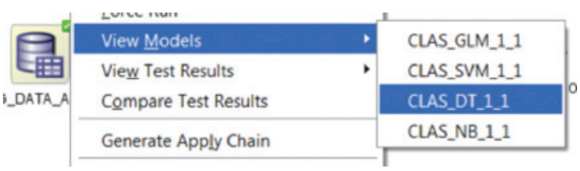
At some stage you will want to include code in your applications to use these data mining models. Oracle is working at including the use of Oracle Data Miner (ODM) in many of their new Fusion Applications. To use these ODM models in our custom developed applications we can use the ODM PL/SQL API to apply the models by bulk processing, or if we want to apply our ODM model on individual records, we can use the ODM SQL functions.

This article will illustrate the PL/SQL and SQL functions available to apply an ODM model to data in our database.

Data Setup for Examples

The examples used in this article are based on using the sample data, that is available in the SH schema. We will also use one of the ODM models that was developed in the article in the June 2011 Oracle Scene magazine article (See the archive at www.ukoug.org)

When developing our initial models using the ODM, it created a Decision Tree model called CLAS_DT_1_1.



The following examples use a renamed version of this Decision Tree model. To rename to model we run the following command.

```
DBMS_DATA_MINING_RENAME('CLAS_DT_1_1', 'CLAS_DECISION_TREE');
```

Using ODM Models in PL/SQL

To perform this bulk processing to score the data we have in our database we need to use the APPLY procedure that is part of the DBMS_DATA_MINING package. The format of the procedure is:

```
DBMS_DATA_MINING.APPLY (
model_name IN VARCHAR2,
data_table_name IN VARCHAR2,
case_id_column_name IN VARCHAR2,
result_table_name IN VARCHAR2,
data_schema_name IN VARCHAR2 DEFAULT NULL);
```

Parameter Name	Description
Model_Name	The name of your data mining model
Data_Table_Name	The source data for the model. This can be a tree or view.
Case_Id_Column_Name	The attribute that give uniqueness for each record. This could be the Primary Key or if the PK contains more than one column then a new attribute is needed
Result_Table_Name	The name of the table where the results will be stored
Data_Schema_Name	The schema name for the source data

The main condition for applying the model is that the source table (DATA_TABLE_NAME) needs to have the same structure as the table that was used when creating the model.
Also the data needs to be prepossessed in the same way as the training data to ensure that the data in each attribute/feature has the same formatting.

When you use the APPLY procedure it does not update the original data/table, but creates a new table (RESULT_TABLE_NAME in our example) with a structure that is dependent on what the underlying DM algorithm is. The following gives the Result Table description for the main DM algorithms:

For a Classification algorithms

```
case_id     VARCHAR2/NUMBER
prediction  NUMBER / VARCHAR2 -- depending a target data type
probability NUMBER
```

For Regression

```
case_id    VARCHAR2/NUMBER
prediction NUMBER
```

For Clustering

```
case_id     VARCHAR2/NUMBER
cluster_id  NUMBER
probability NUMBER
```

We can setup a sample subset of data, in a table called NEW_DATA_TO_SCORE, from the SH schema using the same set of attributes as was used to create the model (MINING_DATA_BUILD_V). In our database we copied 1500 records into the NEW_DATA_TO_SCORE table.

The next step is to run the DBMS_DATA_MINING.APPLY function. The parameters that we need to feed into this procedure are:

Parameter Name	Description
Model_Name	CLAS_DECISION_TREE -- we imported this model from our test database
Data_Table_Name	NEW_DATA_TO_SCORE
Case_Id_Column_Name	CUST_ID -- this is the PK
Result_Table_Name	NEW_DATA_SCORED -- new table that will be created that contains the Prediction and Probability.

The NEW_DATA_SCORED table will contain 2 records for each record in the source data (NEW_DATA_TO_SCORE). For each record in NEW_DATA_TO_SCORE we will have one record for the each of the Target Values (0 or 1) and the probability for each target value. So for our NEW_DATA_TO_SCORE, which contains 1,500 records, we will get 3,000 records in the NEW_DATA_SCORED table.

To apply the model to the new data we run:

```
BEGIN
   dbms_data_mining.apply(
      model_name => 'CLAS_DECISION_TREE',
      data_table_name => 'NEW_DATA_TO_SCORE',
      case_id_column_name => 'CUST_ID',
      result_table_name => 'NEW_DATA_SCORED');
END;
```

This takes 1 second to run on my laptop, so this apply/scoring of new data is really quick.

The new table NEW_DATA_SCORED has the following description:

```
SQL> desc NEW_DATA_SCORED
Name                            Null?    Type
------------------------------- -------- -------
CUST_ID                         NOT NULL NUMBER
PREDICTION                               NUMBER
PROBABILITY                              NUMBER

SQL> select count(*) from NEW_DATA_SCORED;
COUNT(*)
----------
3000
```

We can now look at the prediction and the probabilities that were generated by the APPLY function.

```
SQL> select * from NEW_DATA_SCORED where rownum <=12;
CUST_ID    PREDICTION PROBABILITY
---------- ---------- -----------
103001              0           1
103001              1           0
103002              0  .956521739
103002              1  .043478261
103003              0  .673387097
103003              1  .326612903
103004              0  .673387097
103004              1  .326612903
103005              1  .767241379
103005              0  .232758621
103006              0           1
103006              1           0
```

Using ODM Models in SQL

The PREDICTION SQL function can be used in many different ways. The following examples illustrate the main ways of using it. Again we will be using the same data set with data in our NEW_DATA_TO_SCORE table.

The syntax of the function is:

```
PREDICTION ( model_name, USING attribute_list);
```

Example 1 – Real-time Prediction Calculation

In this example we will select a record and calculate its predicted value. The function will return the predicted value with the highest probability.

>>

```
SELECT cust_id, prediction(clas_decision_tree using *)
FROM NEW_DATA_TO_SCORE
WHERE cust_id = 103001;
CUST_ID    PREDICTION(CLAS_DECISION_TREEUSING*)
---------- ------------------------------------
103001                                        0
```

So we get a predicted class value is 0 (zero) and this has a higher probability than a class value of 1.

Example 2 – Selecting top 10 Customers with Class value of 1
For this example, we are selecting from our NEW_DATA_TO_SCORE table. We want to find the records that have a class value of 1 and has the highest probability. We only want to return the first 10 of these.

```
SELECT cust_id
FROM NEW_DATA_TO_SCORE
WHERE PREDICTION(clas_decision_tree using *) = 1
AND rownum <=10;
CUST_ID
----------
103005
103007
103010
103014
103016
103018
103020
103029
103031
103036
```

Example 3 – Selecting records based on Prediction value and Probability
For this example, we want to find from what Countries do the customers come from where the Prediction is 0 (i.e. they will not take up the offer) and the Probability of this occurring being 1 (100%). This example introduces the PREDICTION_PROBABILITY function. This function allows us to use the probability strength of the prediction.

```
select country_name, count(*)
from new_data_to_score
where prediction(clas_decision_tree using *) = 0
and prediction_probability (clas_decision_tree using *) = 1
group by country_name
order by count(*) asc;
COUNTRY_NAME                             COUNT(*)
---------------------------------------- ----------
Brazil                                            1
China                                             1
Saudi Arabia                                      1
Australia                                         1
Turkey                                            1
New Zealand                                       1
Italy                                             5
Argentina                                        12
United States of America                        293
```

The examples that I have given above are only the basic examples of using the PREDICTION function. There are a number of other uses that include using the PREDICTION_COST, PREDICTION_SET, PREDICTION_DETAILS.

Using ODM Models on Real-time Data

In some scenarios you may not have the data you want to score in a table. For example, you want to score data as it is being captured and before it gets committed to the database.

The format of the command to use is:

```
prediction(ODM_MODEL_NAME USING <list of values to be used and what the mode attribute they map to>)
prediction_probability(ODM_Model_Name, Target Value, USING <list of values to be used and what model attribute they map to>)
```

In our previous examples we had the USING * to indicate to the functions to use all the attribute. In the real-time scenario we need to replace the USING * with the data values and their corresponding attribute name used in the model.

```
Select prediction(clas_decision_tree
USING
20 as age,
'NeverM' as cust_marital_status,
'HS-grad' as education,
1 as household_size,
2 as yrs_residence,
1 as y_box_games) as scored_value
from dual;
SCORED_VALUE
------------
0
Select prediction_probability(clas_decision_tree, 0
USING
20 as age,
'NeverM' as cust_marital_status,
'HS-grad' as education,
1 as household_size,
2 as yrs_residence,
1 as y_box_games) as probability_value
from dual;
PROBABILITY_VALUE
-----------------
1
```

So we get the same result as we got in our previous examples.

Depending on what data we have gathered, we may or may not have all the values for each of the attributes used in the model. Oracle Data Miner allows you to score data based on partial data. So we can score our data without having all the data values captured in our application. In this case, we can submit a subset of the values to the functions and still get a result.

```
Select prediction(clas_decision_tree
USING
20 as age,
'NeverM' as cust_marital_status,
'HS-grad' as education) as scored_value2
from dual;
SCORED_VALUE2
-------------
0
Select prediction_probability(clas_decision_tree, 0
USING
20 as age,
'NeverM' as cust_marital_status,
'HS-grad' as education) as probability_value2
from dual;
PROBABILITY_VALUE2
------------------
1
```

Again we get the same results. In other cases we may still get the expected prediction but the probability will be lower.

Conclusion

We have looked at a number of ways to apply an Oracle Data Miner model to our data in our database. The examples included how we can perform build processing using the ODM PL/SQL and using the ODM SQL functions. There APIs and functions allow us to easily include data mining within our applications with some simple statement and with the minimum of coding.

Contact Brendan:

E brendan.tierney@dit.ie
T @brendantierney
B http://brendantierneydatamining.blogspot.com/
W www.comp.dit.ie/btierney
YT www.youtube.com/user/btierney70

ABOUT THE AUTHOR

Brendan Tierney
School of Computing, Dublin Institute of Technology

Brendan is an independent consultant and lecturer with the Dublin Institute of Technology in Ireland. Brendan is an Oracle ACE and has extensive experience working in the areas of Data Warehousing, Data Mining, Data Architecture and Database Design. He has worked on projects in Ireland, UK, Belgium and USA. He has been working with the Oracle database and tools since 1992, starting with Oracle 5, Forms 2.3, ReportWriter 1.1. Brendan is the deputy editor of the UKOUG Oracle Scene magazine and is the deputy chair of the OUG Ireland BI SIG. Brendan has presented at ViraThon, UKOUG Annual Conference and the OUG Ireland User Group Conference.

The Tools of Fusion: Oracle JDeveloper and Oracle ADF

Groovy Baby!

Over the past few years I've been writing this column, my goal has been to give you an insight into how Oracle uses tools and technologies to build Fusion Applications...

Grant Ronald,
Senior Group Manager,
Oracle Application
Development Tools

... and hopefully to give you an understanding of how you might solve your own particular business problems using the same tools and techniques. I've covered broad topics such as WebCenter, mobile application development, application customisation, team development and an overview of our Java productivity framework, Oracle ADF. However, in this issue I'm going to dip into a specific feature of Oracle ADF that is not only incredibly powerful, but also nicely demonstrates how the ease of declarative application development and the flexibility of coding can be brought together.

Ease of declarative meets the flexibility of code

One of the benefits of Oracle ADF is that it provides, out of the box, core application development features that most application developers are going to need. Whether it is a feature such as data persistence, application flow, security, UI components, list of values or lookups, JDeveloper allows you to quickly and declaratively utilise that feature of Oracle ADF and adapt it to your specific needs. You also get various hook points in which you would write Java application logic. But what if you had just a little more flexibility in setting up these declarative features without dropping into fully-blown Java coding? So, rather than having a declarative validation rule that executes for every row of data, which is the default behaviour, you might want to define that the validation rule is only executed in specific circumstances. Another example might be rather than setting an attribute's default value to a static value, you might want to execute some conditional logic and assign different values based on that assertion.

Oracle ADF supports this "softening" of the interface between the declarative and coding worlds through a scripting language, Groovy. Groovy script can be used within many of the declarative features of ADF Business Components to give you huge amounts of flexibility and control. So for the validation rule mentioned earlier, you could augment the default declarative behaviour with a Groovy expression to control when, if and how, that declarative validation rule is executed.

Groovy in 30 Seconds

So what is Groovy? Probably a visit to Wikipedia will give you a fuller definition than I can offer in a limited word count, but personally, I like to think of it as "quick and dirty Java". For the most part, it looks like Java, and since it runs inside the JVM, it runs like Java and has access to the Java libraries; so it can do pretty much anything Java can do, and sometimes, more. The following simple Groovy example will print out a message depending if the time is am or pm.

```
amPM = Calendar.getInstance().get(Calendar.AM_PM)
if (amPM == Calendar.AM)
{
    println ("Good Morning")
} else {
    println ("Good evening")
}
```

Isn't that just Java then? Strictly speaking no, but if you think of Groovy as the power of Java but just a little more agile and slightly more forgiving, then you're on the right tracks.

Groovy in ADF Business Components

So where can you use this magical scripting language in ADF applications? There are a number of different places where Groovy expressions can be used within ADF Business Components: as a validation rule, default attribute values, transient attribute values, view accessors, bind variables and even as part of validation error messages. Let's take a look at some typical examples.

Using Groovy Expressions in Validation

The declarative validation in ADF Business Components already allows you to build complex validation rules, but this can be further extended using Groovy expressions. For an ADF Business Components attribute or entity you can execute a Groovy expression as a validation rule. This validation expression can have access to any scoped Java methods or ADF Business Components artefacts such as attributes, making it a powerful extension for building business rules. As the developer, all you have to do is ensure your expression returns a true assertion if the validation is successful, or false for a failure. For example, the following code will ensure that for a customer entity, CreditLimit is dependant on the IncomeLevel – thus ensuring a high credit limit is not given for someone with a low income-level.

```
if (IncomeLevel == “A: Below 30,000”)
   {return CreditLimit < 1000}
else
   {if (IncomeLevel == “B: 30,000 - 49,999”)
     {return CreditLimit < 2000}
   else
      return CreditLimit < 3000}
```

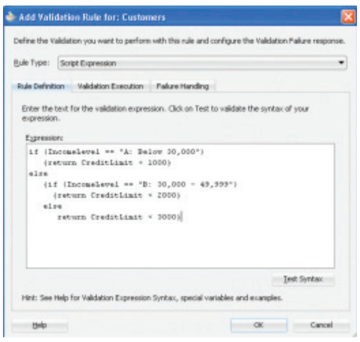


FIGURE 1: GROOVY SCRIPT VALIDATION

Now, to further enhance this example, you may want to display the customer's name as part of the error message. ADF Business Components already provides a declarative feature to do this, but let's suppose that we want to use some of the standard Java string processing to format the error message to our exact requirement. Again, Groovy gives you the ability to extend the default declarative behaviour.

As shown in figure 2, the error message is defined as:

```
Customer {f} {1}'S account failed the validation
```

Where the "l" token references the Groovy expression:

```
CustLastName.toUpperCase()
```

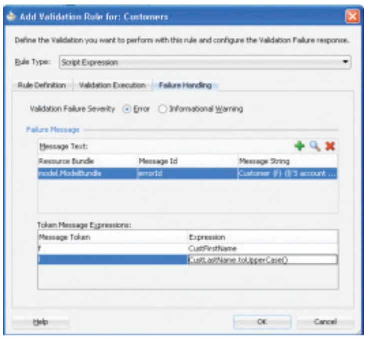


FIGURE 2: USING JAVA STRING MANIPULATION IN GROOVY

That means that when the error message is rendered the attribute value of CustLastName will have the standard Java string method **`toUpperCase()`** applied to it, which will output the value in upper case. That, of course, is a trivial example; but think of the possibilities. Your error message could involve some conditional logic depending on some application factor. Or even a call to a utility method to read your error messages from a database table via some sort of look up. You have the power to extend and augment standard declarative ADF features, all through a couple of simple lines of script.

Using Groovy Expressions for Attribute Values

Another candidate where you can use Groovy expressions is for defining attribute values. These can be default values for attributes or values for calculated attributes. A simple example might be the default value for an employee's salary:

```
if (JobId != “SA_REP”)
 { return 10000
 }
   else
 { return 0
 }
```

In this example, the default salary for a new employee is 10000, unless the employee is in a sales role where they work on commission and so the base salary is 0.

Again, this is a simple example but can easily be extended to a more realistic case. Let's assume that the default salary for non-sales employees is based on some complex algorithm, based on their job role, which is implemented in Java logic elsewhere in the system. In which case, we want to call that code when defining the default values for a new employee. The code then becomes

```
if (JobId != “SA_REP”)
 { return adf.object.getDefaultSalaryForGrade(JobId)
 }
   else
 { return 0
 }
```

The prefix **`adf.object`** is the Groovy shorthand for calling an entity level Java method **`getDefaultSalaryForGrade()`**, passing in the value of the JobId attribute as a parameter. This example also demonstrates a common Oracle ADF development scenario where complex business application logic could be developed by one part of your team (e.g. your Java "top guns"), and is consumed by developers involved in the more declarative side of the development. >>

FIGURE 3: CALLING A JAVA METHOD USING GROOVY

In fact, you might have already been using Groovy without even knowing it. If you ever created a transient calculated attribute such as LineTotal, which has its value defined by the expression **`Quantity * UnitPrice`**, then you were using a Groovy expression. And a prime example of how you might use Groovy to extend this expression to be "smarter" would be something like:

```
(Quantity != null ? Quantity : 0) * (UnitPrice != null ?
UnitPrice : 0)
```

In this case the Groovy expression is utilising ternary operators "?" and ":", which can read as a shorthand version of if-then-else. So, the above expression is checking to prevent a multiplication of null. You see, using a little bit of script you can even help prevent runtime errors! Groovy Baby!

A Groovy Summary

There are two sides to the Oracle ADF development coin: the highly productive declarative side of the framework coupled with the boundless flexibly of the Java programming language. With Groovy you have the ability to bring real flexibility into the core declarative features of ADF Business Components. Of course, in these pages I've only scratched the surface but you can find further details of using Groovy in ADF applications in the following:

"Introduction to Groovy Support in JDeveloper and Oracle ADF 11g"
http://www.oracle.com/technetwork/developer-tools/jdev/introduction-to-groovy-128837.pdf

and

"ADF Insider: Using Groovy in ADF Applications"
http://download.oracle.com/otn_hosted_doc/jdeveloper/11gdemos/ADF_Insider_Groovy/ADF_Insider_Groovy.html ■

ABOUT THE AUTHOR

Grant Ronald
Senior Group Manager, Oracle Application Development Tools

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

The Two Sides of the Success Coin

Everybody knows I'm a positive guy. I am the leading expert in the art of being happy about what I've got and being not unhappy about things I haven't got. That's a fact.

Mogens Nørgaard, Miracle AS

I never worry about the future.
I always see opportunities in even really bad situations.
I see good in every human being.
I always forgive sinners.

However, I might be in a situation where all these good things could be severely challenged.

Great Unifying System

My former dear friend, my co-CEO Lasse, the oily-haired suit-clad man with the pink and white shirts... has decided to implement Oracle's E-Business Suite internally in Miracle. He wants to "standardise", "simplify", "consolidate across the business", and what have you. We've all heard it before.

We have two main systems for registering time spent with customers and/or projects. The oldest one is MirRes (Miracle Resources). It was originally developed by one of my guys way back in the late 90's when I was still at Oracle running Premium Services. We needed something better than ... the E-Business Suite module of that time. So Torben Holm developed RM * (pronounced R-M-Star), which is a Unix joke. Very nerdy.

>>

RM * was brilliant. It showed a grid of dates versus consultants, and each part of the grid had a colour to indicate what sort of activity the person had that day. And a letter, too, for the colour blind.

It was built by the guys for the guys, which also meant that they enforced the usage of it when we hired new people. As a manager, I never had to remind people about using it or anything. They'd get beaten up by the rest of the team if they didn't.

Premium Services closed down, and Oracle forgot about RM *. When I later started Miracle with Lasse, we build MirRes exactly like RM * (in WebDB – now APEX), and it has worked very well. Whenever the requirements to the system grew or changed, one of the guys just did it. Once in all these years I've seen a late-night email going around asking who was blocking MirRes, and Peter Gram replying that he was just updating the system with some new, needed functionality, and it that would be back up in two minutes; and it was. We once had a newbie implement a change that didn't work. Let me put it this way: it was discovered and debugged REAL FAST, and he became much more careful with his programming after that.

No specs, no processes, no development model, no test cycle, no white shirts... Just simple solutions. And as I said: if something didn't work, the poor soul who was responsible found out REALLY fast from the other Miracles... Needless to say, it's always online. Never has been down.

Then we started doing big development projects a few years ago, and the first, large customer needed information in many other dimensions.

So we got a special system for that. It was partly standard, partly modified to suit some special needs. Sounds familiar?

The system has a SQL Server database underneath, is hosted formally somewhere in our basement, probably involves an internal SLA... and is often down, of course. As a matter of fact, I believe we have issues a couple of times each week. Sounds familiar?

All this will change when we get the GUS (Great Unifying System) called Oracle E-Business Suite. Then it will finally be possible to combine the bad things from BOTH systems in one: programming will be done by people without insight, the system will need maintenance constantly (equal to downtime), but – to compensate for these things – it will be expensive.

However, the other side of the coin, the benefits of a growing company.

The famous Mogens' business attire

Our Christmas Party

The annual, traditional Christmas Party takes place in every Danish company, except IKEA where they want to <something multi-whatever>. It involves pickled herrings, lots of other food, beer, snaps (the Danish vodka, you could call it), and more. It takes place in December, and there are SO many babies born in September in Denmark for whatever reason.

This year we had 110 attendees for the Miracle Christmas Party, and it started on a Friday around 1730 hours. The Christmas beer from the Miracle Breweries was 8.5%, and the Miracle Whisky Club had donated all their leftovers to the good cause.

Around 2100 hours I was receiving two pieces of good advice on how to run the company per minute. Advice per minute is a good measure for a CEO as to when he should leave a party, and so I went home. Two per minute is a lot to absorb.

Some hours later 10 of my guys from faraway Jutland gate crashed (I had promised them they could sleep in my house), and from then on it was brutal. In fact, I may not remember every detail of that evening.

The next morning, Saturday, I woke up in my own bed, feeling fresh and well.

Then I discovered a woman by my side. In fact, it was the 34-year old, tall, blonde law student recently hired into one of our other businesses....

"Good morning", I said, and she responded kindly "Good morning...".

"How did you end up in my bed?", I asked simply...

And she came up with the one response that will frighten men until the end of days: "Don't you remember?".

"Uhm, no, I don't", I answered truthfully.

Turns out that I had promised her she could sleep in my bed and that I wouldn't touch her. She said she was grateful I had kept my word as a true gentleman. Well, I didn't even know she was there!

Anyway, the best thing about our Christmas Party was not the party, the beer, the good advice or waking up besides the beautiful, tall, much younger blonde. Oh no.

The best thing was lending her my spare bathrobe and then walking downstairs together to have breakfast with the other Miracle guys. No comments, of course, were made from either side.

Hahahahahahaha. It's wonderful to see your company grow.

Developing a Standard Platform to Effectively Integrate Core Corporate Systems

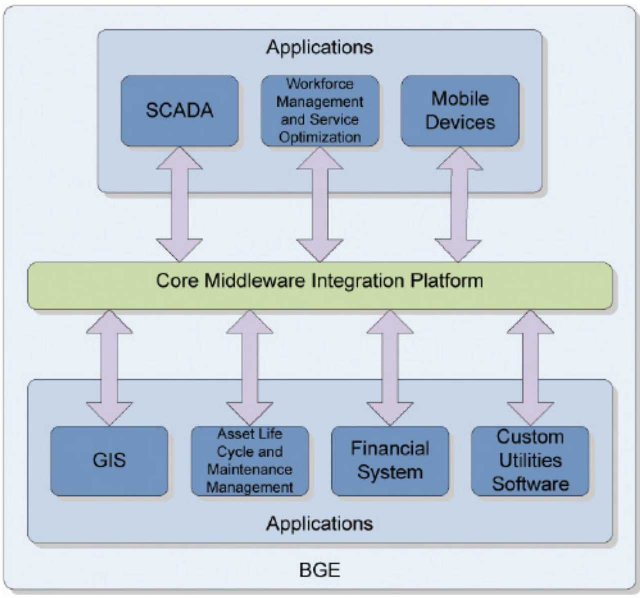
Ramdas Panicher,
Oracle Technical Specialist,
Bord Gáis Energy

Bord Gáis Éireann (Est. 1975) is a major energy provider supplying both gas and electricity to homes and businesses throughout Ireland and builds and operates one of the most modern and safe gas networks in the world. Bord Gáis Éireann meets its commitments to its customers through its two main businesses: Bord Gáis Networks and Bord Gáis Energy.

In June 2008, Bord Gáis Networks embarked on a major investment programme, to carry forward the capability of the business and to introduce a new organisation structure, systems and processes to drive efficiencies in order to meet the increasing challenges of the separated open market.

The Networks Transformation Programme vision is to make Bord Gáis Networks a best in class Network Utility Service Provider improving our customer service capability allowing us to meet our current and future regulatory targets and expectations.

As part of the Network Transformation Programme (IT and Organisational transformation), Bord Gáis Networks embarked on a programme to implement an Asset Life Cycle and Maintenance Management software, Workforce management and service optimisation software and Work Order Management Software. These systems had to be integrated with the other legacy systems so that all the applications could exchange relevant data with each other and work seamlessly as an integrated solution. For this project to be successful the Middleware role was critical.



Business Driver

Our primary business driver was to develop a corporate Middleware platform strategy (main business goal) so that all the systems will use a standard platform for all their data integration needs.

Bord Gáis Networks took on a very ambitious business challenge that involved the implementation of major new systems as well as significant enhancements and changes to the existing systems. This required changes right across the Organisation (both technical and business related). Timeframes were aggressive and a number of different suppliers, integration partners and technologies were involved meaning that careful coordination was required to ensure that all parts would work together (once integrated).

Our main business objective was to provide a consistent, reliable, and manageable platform for application integration.

Consistency

We established a reference architecture and did a Proof Of Concept for each interface pattern. This became the blue print for all the interfaces thus ensuring that all the interfaces have the same quality and follow the same approach.

Reliability

We have created a Highly Available solution incorporating the HA features of Oracle RAC, WebLogic Whole Server Migration and Veritas Cluster Server that has ensured that we have had no unscheduled outages since go live.

Manageability

All the Interfaces capture key pieces of data (e.g. Unique Message Reference, Business Entity Reference etc) as it progresses through the Middleware and this can be viewed by using our custom tool (Web Administration Tool).

Our highly available architecture is monitored using Grid Control allowing IT to support the business in a proactive manner through alerts and notifications.

We chose Oracle Fusion Middleware because all our Interface requirements were met by OSB and BPEL/Mediator and the SOA Suite License gave us the flexibility to use BAM and OWSM in the future.

We chose Oracle Fusion Middleware because all our Interface requirements were met by OSB and BPEL/Mediator and the SOA Suite License gave us the flexibility to use BAM and OWSM in the future. We also have a large footprint of Oracle Software and we can now use Fusion Middleware to integrate these quite easily in the future.

Business Solution

The business solution touches all aspects of Bord Gáis Networks business as it delivered replacement solutions for all core applications and processes. This posed significant challenges in terms of user involvement in scoping, design, testing and final approval.

Overview of the business solution and issues dealt with as part of the project include:

- The Middleware project kicked off in Jan 2010. We started by setting up a governance board and doing a capacity planning exercise to design the technical architecture.
- We then analysed all the interfaces and developed a reference architecture for each interface pattern.
- We had three kinds of interfaces; Synchronous, Fire & Forget (Asynchronous) and Ordered Delivery.
- We use Oracle Service Bus for Synchronous and Fire & Forget interfaces and use both Oracle Service Bus and the mediator for Ordered Delivery.
- Reporting/Audit trail of messages; Each Entry, Exit and Error is logged when a message goes through each proxy and mediator.
- A web based interface was developed so that users could trace the path of the messages and in case of errors resubmit them from the error queue. This interface is used by all the business users and administrators to do a variety of tasks that would have been time consuming using the standard OSB and Fusion Middleware console.

Some of the characteristics of our Solution are as follows:

- The requirement to deliver a solution that impacts all aspects of the Bord Gáis Networks Organisation in an extremely tight timeframe that required the Middleware team having to deal with delivering messages between 7 different systems.
- The scale of the solution required Middleware team having to define and enforce governance and coding standards to be used by a diverse range of developers and system integrators based across a number of locations (Dublin, Cork and Mumbai – India)
- We were one of the earliest adopters to use the features of the Mediator in SOA Suite 11gR1 for ordered delivery of messages. Since this was a new feature in SOA Suite 11gR1 we had to work closely with support to resolve many issues and raise enhancement requests for the same.
- We track each message right from entry into the Middleware to exit from the Middleware and these statistics are available to all the users through a custom tool (Web Administration Tool).
- The Web Administration Tool developed internally by the Middleware team provides a unique set of functionality that allows end users and other support teams to view message status and to trouble shoot most of the errors themselves thus leaving the Middleware team free to do other admin tasks. This has proven to be very successful and is now a key component of the overall solution.

>>

- Highly Available solution incorporating the HA features of Oracle RAC, WebLogic Whole Server Migration and Veritas Cluster.

The system has been up and running since Nov 2010 and is used by more than 500 people in various locations across Ireland.

Technical Challenges

Some Specific technical challenges during the 10 month project time frame were as follows:

- Setting up a Governance Board
- Proof of Concept of the Reference Architecture
- Design, Test and Implement the Deployment Strategy
- Design, Test and Implement a Highly Available Middleware Architecture
- Design, Test and Implement the Disaster Recovery strategy
- Implement 40 interfaces and align their testing with the overall program (Network Transformation Project)
- Design and Develop a tool to trace the status of the messages that goes through the Middleware

Benefits

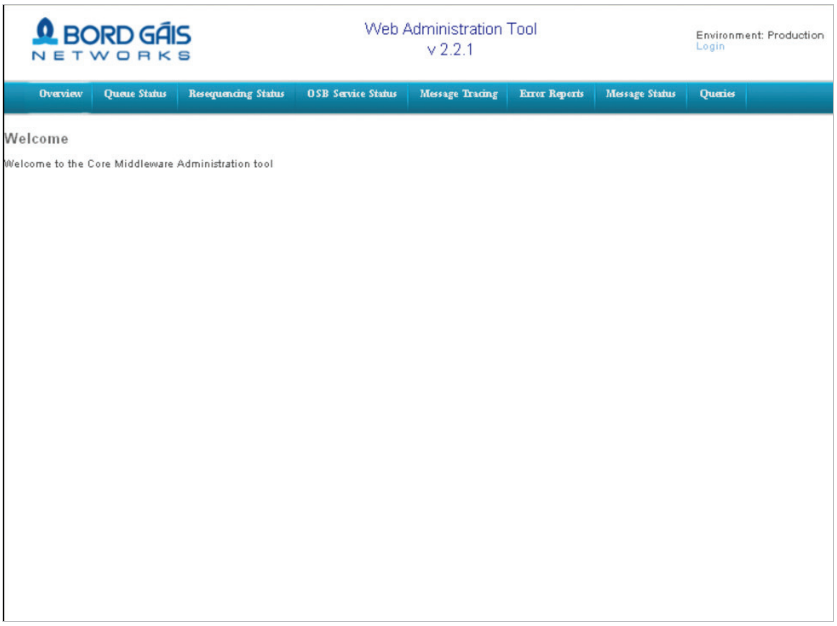
We have delivered a Middleware solution that has demonstrated its efficiency, reliability and effectiveness to both senior business and IT managers. Middleware is now accepted as a key feature of the Bord Gáis Networks IT landscape and further projects are being planned that will make use of the Middleware solution framework.

We have a reference architecture in place that will be the cornerstone for all future implementations. All the future integrations will follow this reference architecture thus reducing the costs associated with the development, maintenance and support of the integration. It also helps us to provide more realistic estimates for new interfaces.

Our strategy of using a custom tool (Web Administration tool) to trace messages and report errors have relieved the workload on the Middleware staff as most of the business users have become quite self sufficient in diagnosing issues and resolving them to a great extent.

Our web administration tool has the following main features:

- Displays the WebLogic Queue Statuses and lets you Pause/Resume Queues.
- Displays the status of the Messages in the mediator and lets you abort/retry it.
- Displays the status of the OSB Proxies and lets you enable/disable it.
- Helps to trace a message's Entry and Exit from the Middleware.
- Displays the error details for each interface and will let you view the XML Payload and resubmit a message.
- Displays metrics for the messages that flows through the Middleware.
- During scheduled system outages we can easily disable/enable the target OSB proxies (by the click of a button) to the affected system. ■



ABOUT THE AUTHOR

Ramdas Panicher
Oracle Technical Specialist,
Bord Gáis Energy

Ramdas Panicher works as an Oracle Technical Specialist within the Oracle Service Support Group in Bord Gáis Energy. Ramdas has extensive experience in application development and worked as the Middleware Project Lead on this project. He has been working with the Oracle database and its various products for the last 15 years.

Not a seat free in the room

PeopleSoft User Conference 2012 – Mapping the PeopleSoft future together

The UKOUG PeopleSoft conference saw a terrific turnout at the CBI Conference Centre in London. Registration even had to close early for the first time ever highlighting the growth of the PeopleSoft community within the User Group.

With a great mix of familiar faces, and some new to the user group, the conference felt like it was "back to what it once was" with a friendly, buzzing community feel. If you were one of the lucky ones who attended we hope you will pass on and share what you learnt and saw with other PeopleSoft users and help promote best practice and resource saving tips with the wider community.

The opening keynote session was given by the ever enthusiastic and engaging Marc Weintraub from Oracle Product Strategy. Mark talked about the current innovations that are keeping PeopleSoft applications in the vanguard of ERP systems and which continue to draw in new customers and add significant value for existing customers. He also stressed the value of the new release strategy of Feature Packs and Version Recuts.

The rest of the day was packed full of great customer and partner presentations alongside value packed product updates from the Oracle team including Jeff Robbins (PeopleTools), Amira Morcos (Financials), Tracy Martin (HCM) and Liz Wilson (Payroll).

Breaking out into four streams including financials, HCM, Technology and Global Payroll gave delegates a deeper understanding of their specific PeopleSoft area of interest. Highlights from delegates included PeopleSoft Financial Management Solutions – A roadmap focused on value and Oracle's Fusion Applications for PeopleSoft Customers. And IBM's, Cultivating organisational creativity in an age of complexity, gave attendees a great update in general for HR professionals to really get to grips with what is happening strategically in their field.

From a committee perspective – Graham Smith, Oracle user, Oxfam had the following to say:

"The UKOUG Technology SIG were especially grateful to have Jeff Robbins over from Oracle in the US to outline PeopleTools strategy and also our old friend Chris Heller (Grey Sparling) who gave a live demo of PeopleTools Test Framework. PeopleSoft security can often be a dull and overlooked subject at conference but Steve Smith (Cambridge University) gave an entertaining and incredibly useful presentation on common security issues along with strategies for dealing with them. The open roundtable discussion was excellent value covering subjects such as upgrade gotchas, Oracle Search (SES), archiving and portal branding. If you are involved in any way with PeopleTools as a developer, analyst or administrator then the UKOUG Technology SIG is the place to be! "

The sold out exhibition hall looked fantastic with experts from the partner community on hand to lend solutions and advice to the many users attending. The conference felt a constant hum of conversation and business card exchanges which took place during the networking at lunch and breaks.

Thanks from the users to those who took a stand and sponsored the event for their contribution in making the event the success it was. Many thanks go out to the speakers who took time out to share their knowledge with this group of PeopleSoft users and to everyone who put time and effort put into preparing content for this conference.

Feedback from delegates and a fresh shake up in the committee members will now influence the future of PeopleSoft within the user group community as a whole. Should it be integrated into the large conference in December or keep its own individual conference? The discussion continues.

What's happening in Middleware?

UKOUG Council member Simon Haslam caught up with Will Lyons and Frances Zhao at UKOUG 2011 to find out more about what's happening in the Middleware space. Here's how the conversation went:

15 minutes with Will Lyons and Frances Zhao

Will Lyons

Frances Zhao

Simon Haslam:
Can I ask each of you to give us a little introduction about what you're doing here at UKOUG 2011 and how you fit into Oracle?

Will Lyons:
Great, thanks a lot Simon. My name's Will Lyons I'm Director of WebLogic Server product management in the US and I'm really delighted to have the opportunity to attend UKOUG and give talks. My talk on Monday was on the WebLogic Server 12c announcement and we also gave a talk on Exalogic and what's engineered about Exalogic.

Frances Zhao:
Simon, as you know I have been coming here for a few years. I'm always very excited to be here as there are so many great Oracle product users and customers who are excited to talk about our new technologies. This year I have been here meeting with our customers talking about WebLogic Server Active GridLink and I will also be talking about the management of new features and our new offerings.

Simon Haslam:
Many readers will have seen then recent announcements that Oracle have made – Will in fact presented one of the WebLogic 12c launch webcasts about WebLogic12c – perhaps you can tell us Will, what are you most excited about with WebLogic and the 12c enhancements?

Will Lyons:
Well, first I'd like to say that UKOUG was the first public forum where we've actually done an in-person announcement about WebLogic 12c, and we're thankful to have the opportunity to take advantage of this forum to get the word out to our users.

> We've got a lot of new features in 12c, the first is Java EE 6 support so WebLogic now supports the full Java EE 6 standard

We've got a lot of new features in 12c, the first is Java EE 6 support so WebLogic now supports the full Java EE 6 standard so we've completed our standard support begun in 11g and we've also got a number of other developer productivity features improved maintenance support, support for Java SE, we've got great IDE (integrate development environment) support, in both Oracle Enterprise Pack for Eclipse and NetBeans support, so a lot of new features and capabilities for developers. We also are announcing a new product as part of the 12c announcement which is Oracle Traffic Director which is layer seven software load balancer, very high performance, nice management tools, a lot of interesting new capabilities and it supports 12c and will be supported on Exalogic specifically. We're also announcing the new release of Oracle Virtual Assembly Builder which supports deployments of multi-tier environments to virtual systems and the tool itself has been enhanced. It will be supported by more products in the Fusion Middleware stack and in the 11g line including WebLogic Server, in Coherence, in Traffic Director and also in other new products like SOA Suite and Oracle Service Plus so there's a lot of new enhancements there.

One interesting point about Oracle Virtual Assembly Builder is that ultimately it will be supported on Exalogic systems

One interesting point about Oracle Virtual Assembly Builder is that ultimately it will be supported on Exalogic systems and it is an example of a new feature which supports the deployment of applications, multi-tier applications to private cloud environments even on conventional systems or on Exalogic systems eventually and it also will be used as the underlying provisioning infrastructure in the new Oracle public cloud. One of the points we're emphasising as part of our announcement is that WebLogic Server 12c is not only the number one application server for deploying applications on conventional systems but we support the same standards-based applications that can be deployed to engineered systems like Exalogic or also ultimately to the Java service which is part of the Oracle public cloud as well.

Simon Haslam:
Frances, you talked about Active GridLink at UKOUG 2011, can you tell us a bit more about the new enhancements that have been built into GridLink, and how they may help customers?

Frances Zhao:
Yes, Simon, as you know as the market-leading mid-tier integration solution Active GridLink leverages additional Oracle RAC advancements to provide high availability, scalability and high performance solutions. In the previous 11g releases, we had added capabilities such as Fast Connection Failover, Runtime Connection Load Balancing, XA Transaction Affinity, etc, which showed fantastic performance numbers.

In WebLogic 12c, we have additional enhancements to push the performance even to next level

In WebLogic 12c, we have additional enhancements to push the performance even to next level. The most attractive features include Web Session Affinity and Connection Labeling. This directly benefits our customers with building mission critical high-end solutions and environments. Another area that I would like to mention is that Active GridLink works with Oracle Data Guard and Active Data Guard. Lots of our customers are building site to site recovery disaster recovery systems, this would be a great help.

Simon Haslam:
And these new Active GridLink capabilities are no longer just available to Exalogic customers?

Frances Zhao:
That's right. Active GridLink is available with WebLogic Suite as well.

Simon Haslam:
In the webcast you presented, Will, you also mentioned the convergence of the HotSpot and JRockit java virtual machines. Could you give a little more detail as to how that will fit into 12c?

Will Lyons:
WebLogic 12c supports JRockit and Hotspot JDK 6 and JDK 7. We bundle jdk 1.6, but also support JDK 1.7. Regarding the convergence, JRockit and Hotspot are being converged to a single Java VM based on Hotspot.

Regarding the convergence, JRockit and Hotspot are being converged to a single Java VM based on Hotspot

This was announced during the acquisition of Sun. This is expected to be completed over the next 12-24 months. Java SE 7 represents the converged JVM – you will gradually see JRockit functionality like JRockit Mission Control and flight recorder appearing in it.

Simon Haslam:
So we've touched on a raft of new features in WebLogic Server 12c, as well as OVAB and the new Oracle Traffic Director product. Can we expect to see new versions of the components of Fusion Middleware which run on top of WebLogic, such as SOA Suite or even Forms and Reports, soon?

Will Lyons:
There's no announced plan at the moment, but generally WebLogic Server 12c is the first of the Fusion Middleware to release, followed by the rest of Oracle portfolio in CY2012 / CY2013. Currently Enterprise Manager is the only other Oracle FMW product that is designed to work with WebLogic 12c as of December 2011. ■

Thanks very much to both Will and Frances for giving us a summary of their announcements at UKOUG 2011. Their slides can be downloaded from the UKOUG 2011 website: http://2011.ukoug.org

ABOUT THE COUNCIL MEMBER

Simon Haslam
Principal Consultant, Veriton Ltd

Simon is an Oracle ACE Director with over 16 years' experience using Oracle products. During the day, Simon helps various mid-sized organisations build robust Oracle Fusion Middleware infrastructures to run mission-critical applications. He is a long standing UKOUG volunteer previously serving as Chair of the UKOUG Application Server & Middleware SIG and, more recently, on the Council where he's working on the subgroups to deliver improvements for UKOUG 2012 and standard performance measures for SIGs.

Oracle Premier Support Get Proactive!

Customer Value delivered through Oracle Proactive Services

Proactive behaviour means taking control and making things happen rather than just adjusting to a situation or waiting for something to happen.

Kate Cumner,
Oracle Support Services

Definition of Proactive

In Organisational Behaviour and Industrial/Organisational Psychology, proactive behaviour means taking control and making things happen rather than just adjusting to a situation or waiting for something to happen.

Translating this to the Customer Services Industry this means; do you want more service, with improved SLA's, to fix problems, or avoid problems in the first place?

Next Generation Support services

In January 2010 a study conducted for Oracle among the worlds' CIO audiences revealed details about customers IT challenges:

> "The majority of respondents listed improving the business value of IT, reducing total cost of ownership and minimising risk as the main ones"

"The majority of respondents listed improving the **business value of IT, reducing total cost of ownership and minimising risk** as the main ones" Reducing IT complexity, providing proactive and preventative systems maintenance contribute to a lower 'Total Cost of Ownership' and reduce potential risk with the IT stack. This presents an opportunity to create value and help CIOs accomplish their IT Goals.

Proactive services enables customers to take full advantage of the value-added services that go beyond "break/fix"

5 Best Practices based on the Customer Experience

To help customers get the maximum value from their IT investment; the customers with a Premier support contract have access to a wealth of information through My Oracle Support.

Many of our Premier Support customers know that there are support resources and tools available that they're not taking advantage of. Our Proactive Movement focus is to help customers better understand the features and benefits of support from Oracle.

In the next section we mention a few reasons why customers use My Oracle Support:

Customers want to **learn more about our products**, and have access to the **Knowledge and Content**. Knowledge is key, but an overload is counterproductive. Customers want to have knowledge and content readily available with a minimal search experience and limited to the search criteria entered.

A lot of investment is put in making the content much more cleaner, searchable, findable and readable.

My Oracle Support now contains features like:

- Search engine seamlessly expands search using synonyms and acronyms;
- Support and Customer Recommended links offer applicable solutions based on search keywords; >>

- The "Powerview" feature enables better filtering of knowledge results returned.

Customers can become members of the communities in **My Oracle Support Community** Tab and get access to a broad pool of knowledge. Communities provide access to practical application from other customers, deep product knowledge from engineers which lead to faster resolution.

Customer surveys also indicate that they would appreciate the Organisation of knowledge around **Lifecycle concepts** and aligned with the customers' context information.

Customers are running total projects around installation of new products, or upgrading to newer releases, performing cyclic maintenance and patching exercises, optimising their current IT investment, back-up and recovery strategies ...

With the **Guided Lifecycle Advisors** we build proactive guidance and collaborative support to successfully perform lifecycle tasks on schedule and on budget.

For each of these Lifecycles/Phases we provide detailed, specific resources, in the form of documents and/or multimedia. There is a step-by step guide for the phase, direct links to relevant Knowledge Articles, and Communities, coupled with resources such as on-line training.

This year Oracle has launched the upgrade and patching advisors and will be rolling out more.

To invest in a **more Preventative focus** we have tools, services and reporting that deliver business value through improved utilisation, performance and uptime.

With the premise that understanding potential problems and recommended actions results in healthier systems, **Oracle Configuration Manager** collects data which is used in.

- Health check Services to prevent problems
- Patch Recommendations
- Build and validate patch plans
- Targeted Knowledge that matched system configurations
- Change history for comparison over time and validation of standards
- Projects to manage and archive lifecycle knowledge

We are building more Proactive and Preventative solutions and we are working on helping customers during **Problem Resolution** through Pre-fill SR's with product information from a configuration or by using **Automatic Service Requests** (ASR) feature for Hardware.

Join the Proactive movement for success

To learn more about Pro-active Support visit:
http://www.oracle.com/us/support/software/premier/proactivesupport-198366.html
and check out the demo section.

Also see these:

Lifecycle Advisor
https://support.us.oracle.com/oip/faces/secure/km/DocumentDisplay.jspx?id=250.1 (Note 250.1)

Automatic Service Requests
http://www.oracle.com/technetwork/server-storage/asr/overview/index.html

My Oracle Support Community
https://communities.oracle.com

SPOTLIGHT ON: LISA DOBSON

Why do you volunteer your time at UKOUG?

"A wise woman once taught me the principle of 'Pay it Forward'. If you haven't seen the movie, then you need to," explains Lisa. "If you get a lot out of something, then you are duty bound to put something back. It is wrong to just take without giving."

Lisa dreamed of being a forensic scientist or a mermaid, but the reality was that she was thrust into the light of DBA-dom, completely by accident. She felt she was a lone DBA, didn't have a clue and needed help. A friend introduced her to UKOUG, where she learned, made lots of friends and continued to learn more. When she started to volunteer she wanted to help others the way she had been helped and set out to make a difference by making sure that UKOUG took care of and provided for beginner DBAs.

As she says, "I just wanted to make sure that any others in my position would find it much easier to get help than I did. The problem was, once I started volunteering it became addictive and now UKOUG really is my passion. I get so much out of it that I really want to work my socks off to put as much back into it."

If you can relate to this, why not get involved? Contact the UKOUG office on **+44 (0)20 8545 9670.**

Look out for the volunteer spotlight on our Council members in the June edition of Oracle Scene.

OracleScene DIGITAL additional content

Tune the JVM that runs Coherence: Part II

Part I of this article can be found in the digital version of Oracle Scene Issue 45 on the UKOUG website. In this second instalment we present additional considerations that involve the system on which the JVM runs and set-up a performance test.

René van Wijk, Oracle ACE

1.1 System Tuning

When we run our application we do not want to run against system restrictions. Some points are worth considering when using Coherence.

Packet loss minimisation

The operating system buffers must be large enough to handle incoming network traffic while the application is paused during garbage collection. To configure Linux to allow for larger buffers we can follow these steps:

- Edit the **/etc/sysctl.conf** and add the following lines:

```
# increase TCP max buffer size
net.core.rmem_max = 2096304
net.core.wmem_max = 2096304
```

- Run **/sbin/sysctl -p** to make the changes effective. By executing **cat /proc/sys/net/core/rmem_max** and **cat /proc/sys/net/core/wmem_max** we can check the current values.

Maximum number of open file descriptors

Because operating systems represent each connection as a file descriptor, the number of available file descriptors effectively controls the number of client connections. Most operating systems handle sockets as a form of file access and use file descriptors to keep track of which sockets are open. To contain the resources per process, the operating system restricts the number of file descriptors per process. Linux limits the number of open file descriptors per process, by default this is equal to 1024. It could be that the 1024 limit does not offer optimal performance. To obtain the current open file limit we can use the **ulimit** command. The **ulimit -aS** command shows the current limit, the **ulimit -aH** command shows the hard limit. To increase the total number of file descriptors for all users we can add the following to the **/etc/sysctl.conf file: fs.file-max = 344030**. To check the current value we can use **cat /proc/sys/fs/file-max**. If we want to make sure that a process (running under the **oracle** user) gets a maximum of 4096 open file descriptors, we have to edit the **/etc/security/limits.conf** file:

```
oracle soft nofile 4096
oracle hard nofile 4096
```

Note that this number applies across all processes running under the **oracle** user. To make the adjustments active, execute the **ulimit -u 4096** command and log out and log in again.

Timesources

Linux has several timesources to choose from; the fastest being TSC (time stamp counter) and is used by default. However, if during start-up inconsistencies are found Linux switches to a slower timesource. This can have a negative performance impact on Coherence. To check if TSC is used we have to check the system logs **/var/log/dmesg**. Look for an entry along the lines of:

```
time.c: Using tsc for timekeeping HZ 1000
time.c: Using 3.579545 MHz WALL PM GTOD TSC Timekeeping timer.
time.c: Detected 2799.204 MHz processor.
```

Network card (NIC)

Configure the network card at it's maximum link speed and at full duplex. To determine the configuration of the network card we can use **/sbin/ethtool eth0**. To change the maximum speed and duplex style we can use, for example, **/sbin/ethtool -s eth0 speed 1000 duplex full**.

Maximum transaction unit (MTU)
Is the maximum packet size, in bytes, that can be transmitted across a link. By default, Coherence assumes an MTU of 1500 bytes and uses a default packet size of 1500 - 32 = 1468 bytes. To determine the MTU we can use the **`ping`** utility, for example, **`ping -c 3 -M do -s 1468 172.31.0.108`**. If a message indicating that packets must be fragmented is presented, the specified Coherence **`packet-size`** is too large. In this case we have to decrease the packet size until packets can be transmitted without fragmentation.

The speed at which data is transmitted is controlled in Coherence by using the **`flow-control`** and **`traffic-jam`** elements. These elements can help achieve the greatest throughput with the least amount of packet failure. By using **`traffic-jam`** and **`flow-control`** we can throttle the amount of traffic Coherence places on the network. Flow control is used to dynamically throttle the rate of packet transmission to a given cluster member based on point-to-point transmission statistics which measure the cluster member's responsiveness. Flow control stops a cluster member from being flooded with packets while it is incapable of responding. A packet traffic jam is when the number of pending packets that are enqueued by client threads for the packet publisher to transmit on the network grows to a level that the packet publisher considers intolerable. To determine performance we must check if the cluster nodes are experiencing any packet loss and/or packet duplication. By using an MBean browser we can look at the involved statistics in particular:

- **`PublishSuccessRate`** (Coherence, PointToPoint) - if less than 1.0, packets are being detected as lost and being resent. In the case of rates below 0.98 tuning is necessary.
- **`ReceiverSuccessRate`** (Coherence, PointToPoint) - if less than 1.0, packets are received multiple times, this is usually due to the publisher being overly aggressive in declaring packages as lost.
- To get an indication on how client requests and server tasks are being handled, we can respectively look at the **`RequestAverageDuration`** and the **`TaskAverageDuration`** attributes (Coherence, Service).

When we need to tune we can override the settings by using the **`tangosol-coherence-override.xml`** file, for example,

```
<coherence xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance"
           xmlns="http://xmlns.oracle.com/coherence/coherence-
operational-config"
           xsi:schemaLocation="http://xmlns.oracle.com/
coherence/coherence-operational-config
           coherence-operational-config.xsd">
    <cluster-config>
        <packet-publisher>
            <packet-delivery>
                <flow-control>
                    <enabled>true</enabled>
                    <pause-detection>
                        <maximum-packets>16</maximum-packets>
                    </pause-detection>
                    <outstanding-packets>
                        <maximum-packets>4096</maximum-packets>
                        <minimum-packets>64</minimum-packets>
                    </outstanding-packets>
                </flow-control>
            </packet-delivery>
            <traffic-jam>
                <maximum-packets>8192</maximum-packets>
                <pause-milliseconds>10</pause-milliseconds>
            </traffic-jam>
        </packet-publisher>
    </cluster-config>
</coherence>
```

Two settings can be used to adjust flow control behaviour:

- **`pause-detection`** - controls the maximum number of packets that are resent to an unresponsive cluster member (for example, due to long garbage collection pauses) before determining that the member is paused. When a cluster member is marked as paused, packets addressed to it are sent at a lower rate until the member resumes responding. The **`pause-detection`** value is specified by using the **`maximum-packets`** element and defaults to 16 packets.
- **`outstanding-packets`** - used to define the number of unconfirmed packets that are sent to a cluster member before packets addressed to that member are deferred. The **`outstanding-packets`** value can be specified as either an explicit number by using the **`maximum-packets`** element, or as a range by using both the **`maximum-packets`** and **`minimum-packets`** elements. When a range is specified, this setting is dynamically adjusted based on network statistics. The maximum value should always be greater than 256 packets and defaults to 4096 packets. The minimum range should always be greater than 16 packets an defaults to 64 packets.

Two settings can be used to adjust traffic jam behaviour:

- **`maximum-packets`** – controls the maximum number of pending packets that the packet publisher tolerates before determining that it is clogged and must slow down client requests (requests from local non-system threads). When the configured maximum packets limit is exceeded, client threads are forced to pause until the number of outstanding packets drops below the specified limit. This setting prevents most unexpected out-of-memory conditions by limiting the size of the resend queue. A value of 0 means no limit. The default value is 8192.
- **`pause-milliseconds`** – controls the number of milliseconds that the publisher pauses a client thread that is trying to send a message when the publisher is clogged. The publisher does not allow the message to go through until the clog is gone, and repeatedly sleeps the thread for the duration specified by this property. The default value is 10.

Finally, to determine how many JVMs to run per system depends on the number of processors/cores and the amount of memory. To keep things in balance run one JVM per two cores, i.e.,

- Multiple JVMs per server allow Coherence to make efficient use of network resources. Coherence's packet publisher and packet receiver have a fixed number of threads per JVM.
- Too many JVMs increases contention and context switching on processors.
- Too few JVMs may not be able to handle available memory and may not fully use the network card (NIC).
- In the case of large heaps, the JVM must have enough available processing power to avoid long garbage collection pauses.

1.2 Performance testing

For performance testing we need to know the application's behaviour in order to create a benchmark. To accomplish this the application needs to be profiled. Profiling an application >>

will reveal things, such as where the most time is spent, common garbage collection patterns and which locks are contended and which are not. Once enough data has been collected, we are able to isolate a suitable subset of the application for the benchmark. The ideal benchmark is a small self-contained program that emulates the relevant parts of the application.

A test that randomly reads, writes and removes data from the cache can be implemented as follows:

```
public class PersistenceTest {

    private Random generator = new Random();

    public PersistenceTest() {
    }

    public static void main(String[] args) {
        PersistenceTest test = new PersistenceTest();
        KlantDAO klantDAO = new KlantDAOBean();
        test.doRandomReadWriteTest(klantDAO);
    }

    private void doRandomReadWriteTest(KlantDAO klantDAO) {
        klantDAO.preload();

        while (true) {¬
            // generate a random client
            Klant klant = createKlant();

            // insert or update a client - an update is issued when the client already exists
            // when the credit limit is between 4000 and 12000 the client is also added
            // to the continuous query cache
            klantDAO.addEntity(klant.getKlantnummer(), klant);
            if (generator.nextDouble() &lt; 0.001) {
                // remove a client
                klantDAO.removeEntity(generateKlantNummer());
                // get all client data
                klantDAO.findEntities();
                // get data from the continuous query cache
                klantDAO.getKlantData();
            } else {
                // find a client by ID
                klantDAO.findEntity(generateKlantNummer());
            }
        }
    }

    private Klant createKlant() {
        int klantnummer = generateKlantNummer();

        Klant klant = new Klant();
        klant.setKlantnummer(klantnummer);
        klant.setNaam(“Person” + klantnummer);
        klant.setAdres(“Middleware”);
        klant.setStad(“Magic”);
        klant.setProvincie(“NL”);
        klant.setPostcode(“1234AB”);
        klant.setGebied(1);
        klant.setTelefoonnummer(“123-4567”);
        klant.setReputatieNummer(1);
        klant.setKredietlimiet(Math.rint(generator.nextDouble() * 5000.0));
        klant.setCommentaar(Long.toString(Math.abs(generator.nextLong()), 36));
        return klant;
    }

    private Integer generateKlantNummer() {
        int klantnummer = generator.nextInt(10000);
        if (klantnummer == 0 || (klantnummer &gt;= 100 && klantnummer &lt;= 109)) {
            return 42;
        } else {
            return klantnummer;
        }
    }
}
```

Wrap the application into a jar file (test.jar). We start one default cache server by using:

```
#!/bin/sh
# coherence options
COHERENCE_MANAGEMENT_OPTIONS="-Dtangosol.coherence.management=all
                              -Dtangosol.coherence.management.remote=true"
COHERENCE_OPTIONS="-Dtangosol.coherence.cacheconfig=hibernate-cache-config.xml
                   ${COHERENCE_MANAGEMENT_OPTIONS}"
export COHERENCE_OPTIONS

JAVA_HOME="/home/oracle/aqualogic/jrrt-4.0.1-1.6.0"
export JAVA_HOME
MEM_ARGS="-jrockit -Xms1024m -Xmx1024m -Xns256m -XXkeepAreaRatio:25
          -Xgc:pausetime -XpauseTarget:200ms -XX:+UseCallProfiling -XX:+UseLargePagesForHeap"
export MEM_ARGS

CLASSPATH="coherence-hibernate.jar:coherence.jar:commonj.jar:coherence-work.jar:ojdbc14.jar:
           antlr-2.7.6.jar:asm-attrs.jar:asm.jar:c3p0-0.9.1.jar:cglib-2.1.3.jar:
           commons-collections-2.1.1.jar:commons-logging-1.0.4.jar:ehcache-1.2.3.jar:
           dom4j-1.6.1.jar:jta.jar:hibernate3.jar:test.jar"
export CLASSPATH

# start the test
${JAVA_HOME}/bin/java ${MEM_ARGS} ${COHERENCE_OPTIONS} com.tangosol.net.DefaultCacheServer
```

and start two other nodes by using:

```
#!/bin/sh
# coherence options
COHERENCE_MANAGEMENT_OPTIONS="-Dtangosol.coherence.management=all
                              -Dtangosol.coherence.management.remote=true"
COHERENCE_OPTIONS="-Dtangosol.coherence.cacheconfig=hibernate-cache-config.xml
                   ${COHERENCE_MANAGEMENT_OPTIONS}"
export COHERENCE_OPTIONS

JAVA_HOME="/home/oracle/aqualogic/jrrt-4.0.1-1.6.0"
export JAVA_HOME
MEM_ARGS="-jrockit -Xms1024m -Xmx1024m -Xns256m -XXkeepAreaRatio:25
          -Xgc:pausetime -XpauseTarget:200ms -XX:+UseCallProfiling -XX:+UseLargePagesForHeap"
export MEM_ARGS

CLASSPATH="coherence-hibernate.jar:coherence.jar:commonj.jar:coherence-work.jar:ojdbc14.jar:
           antlr-2.7.6.jar:asm-attrs.jar:asm.jar:c3p0-0.9.1.jar:cglib-2.1.3.jar:
           commons-collections-2.1.1.jar:commons-logging-1.0.4.jar:ehcache-1.2.3.jar:
           dom4j-1.6.1.jar:jta.jar:hibernate3.jar:test.jar"
export CLASSPATH

# start the test
${JAVA_HOME}/bin/java ${MEM_ARGS} ${COHERENCE_OPTIONS} datamodel.test.PersistenceTest
```

As we are using multiple nodes some notes on the distributed cache are in order. A distributed cache is a collection of data that is partitioned across a number of cluster nodes such that exactly one node in the cluster is responsible for each piece of data in the cache, and the responsibility is load-balanced among the cluster nodes, i.e.,

- partitioned - the data is spread out over all the servers in such a way that no two servers are responsible for the same piece of data. This means that the size of the cache and the processing power associated with the management of the cache can grow linearly with the size of the cluster. Operations against data in the cache involves at most one other server.
- load-balanced - since the data is spread out evenly over the servers the responsibility for managing the data is automatically load-balanced across the cluster.
- failover - the distributed cache allows the number of back-ups to be configured. As long as the number of back-ups is one or higher, any cluster node can fail without data loss.

A partition is a unit of storage and transfer. When new nodes are added to the cluster, the oldest node in the grid is responsible for coordinating ownership of partitions. One thing to note is that the oldest member has a lot of work to do regarding the management of partitions and this becomes noticeable when starting up many nodes simultaneously.

We run a JRockit Mission Control flight recording by using the profile normal template and let it run for 30 minutes. Let us first take a look at the performance and check if the cluster nodes are experiencing any packet loss and/or packet duplication: >>

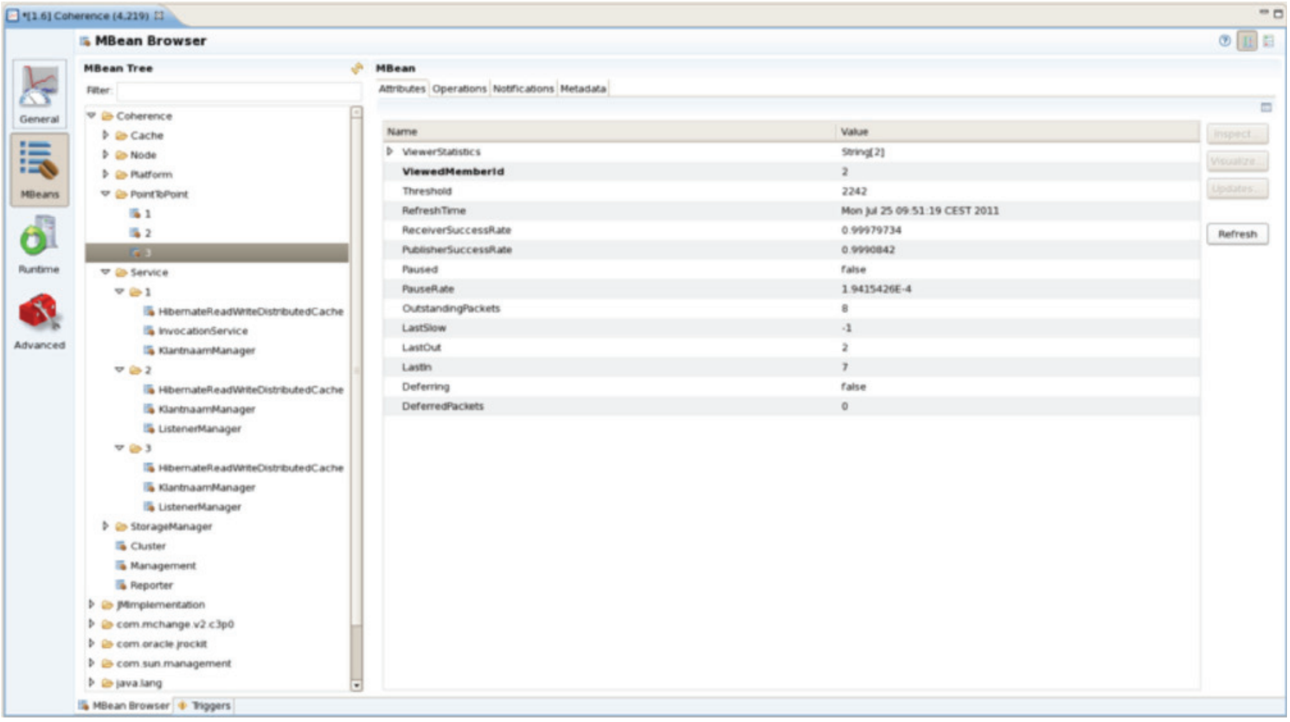


ILLUSTRATION 1: PACKET LOSS AND/OR PACKET DUPLICATION

The attributes ReceiverSuccessRate and PublisherSuccessRate give us information about the packet loss and packet duplication (see Illustration 1). The statistics for the other nodes were: **ReceiverSuccessRate** - 0.9996977 and 0.999444, **PublisherSuccessRate** - 0.99894196, 0.99912125. To get an indication on how client requests and server tasks are being handled, we can respectively look at the **RequestAverageDuration** and the **TaskAverageDuration**:

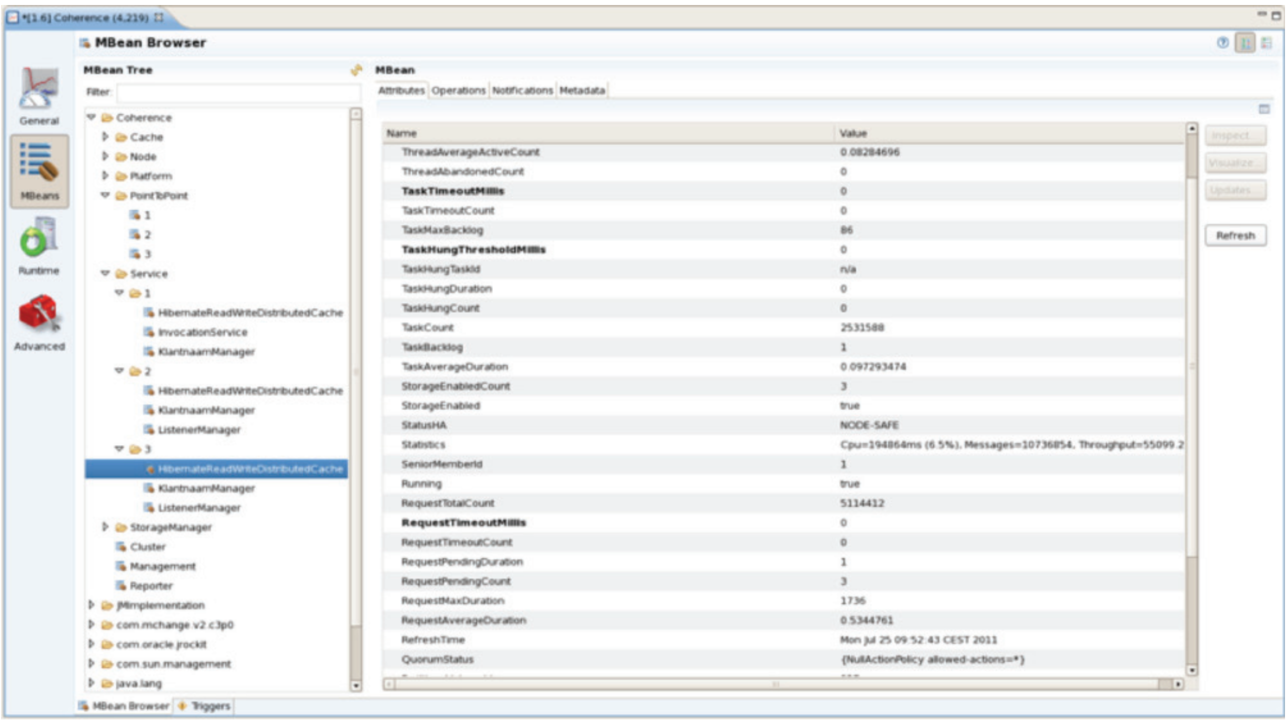


ILLUSTRATION 2: CLIENT REQUESTS AND SERVER TASKS HANDLING

The attributes **TaskAverageDuration** and **RequestAverageDuration** give us information about the handling of client requests and server tasks (see Illustration 2). The statistics for the other nodes were: **TaskAverageDuration** - 0.10510177 and 0.104214214, **RequestAverageDuration** - 0.5974955 and 0.55941284. Note that these values are in milliseconds. To get an idea of the latencies we take a look at the CPU/Threads - Latencies:

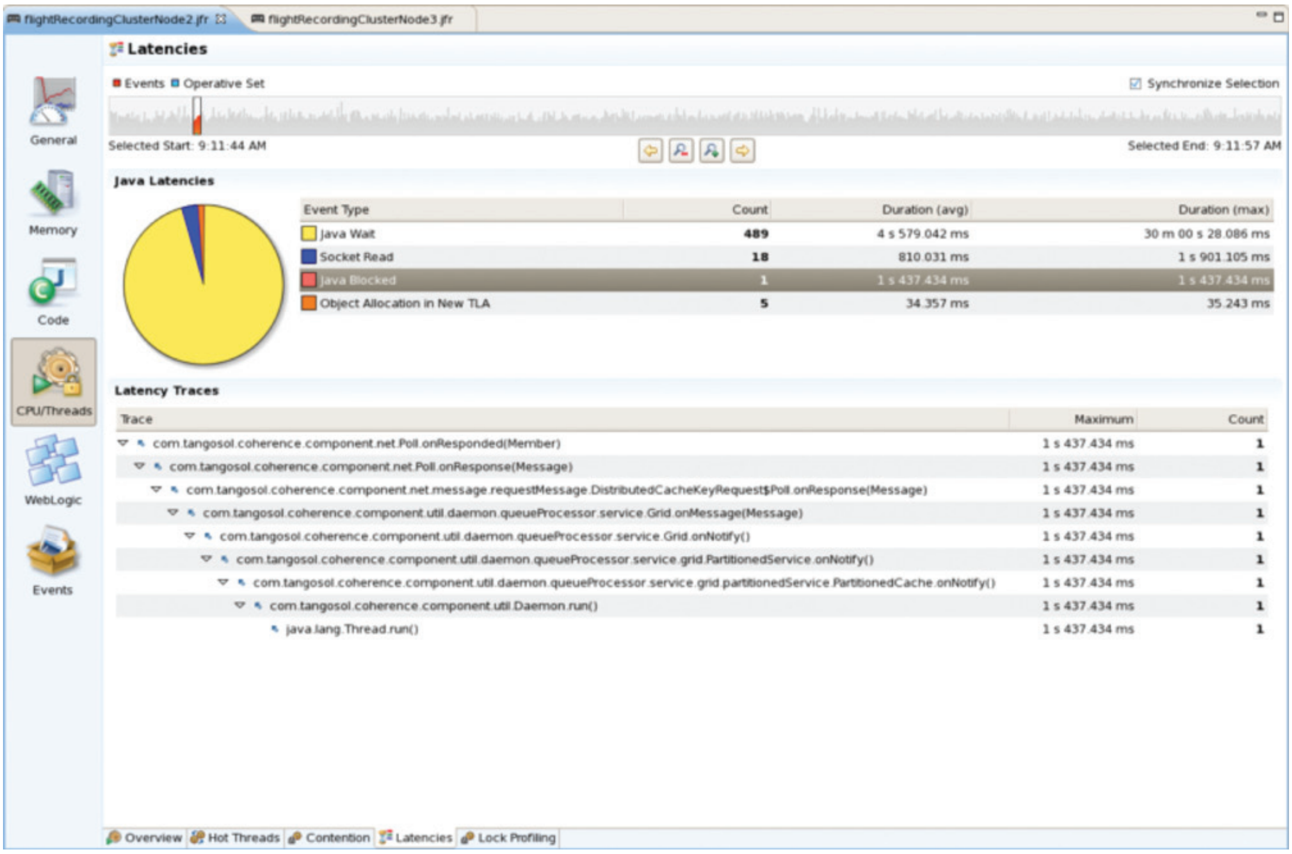


ILLUSTRATION 3: BLOCKED EVENTS

There were two Java blocked events and one that really stands out (see Illustration 3). Let us investigate this event further by using the Events environment (see Illustration 4 and Illustration 5):

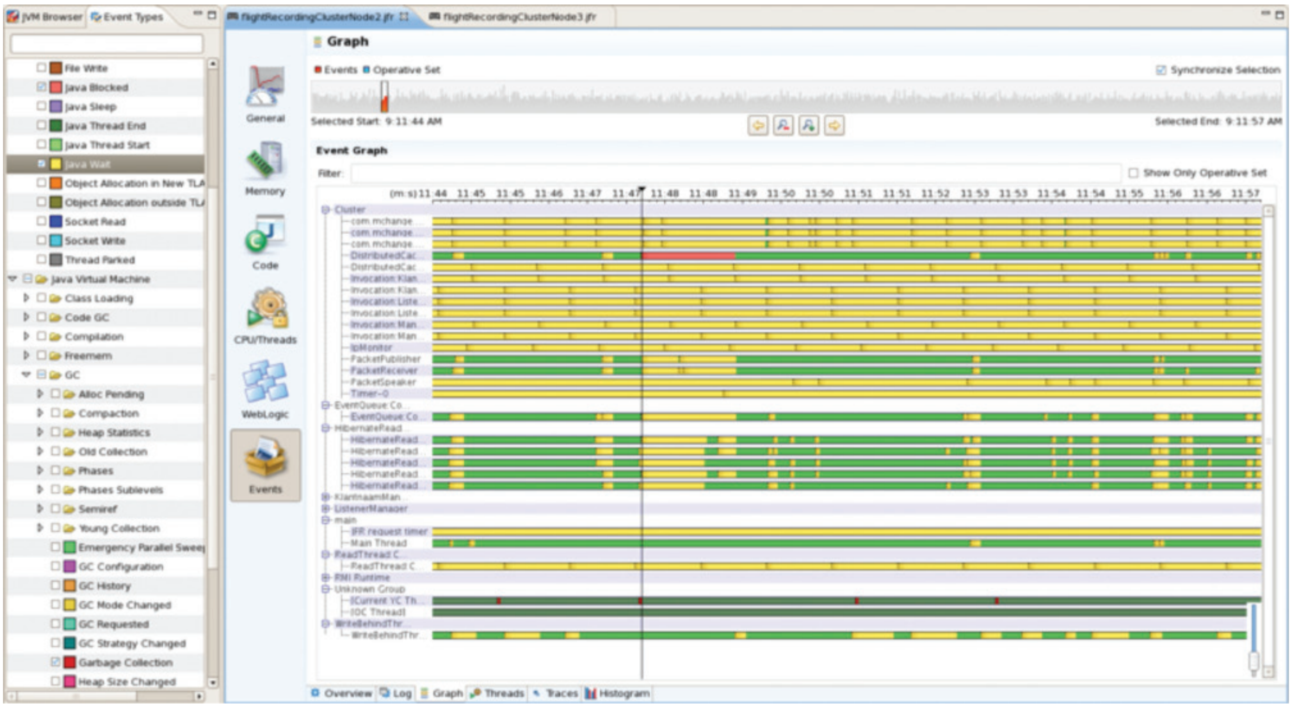


ILLUSTRATION 4: JAVA BLOCKED EVENT DETAILS

>>

Technology: René van Wijk

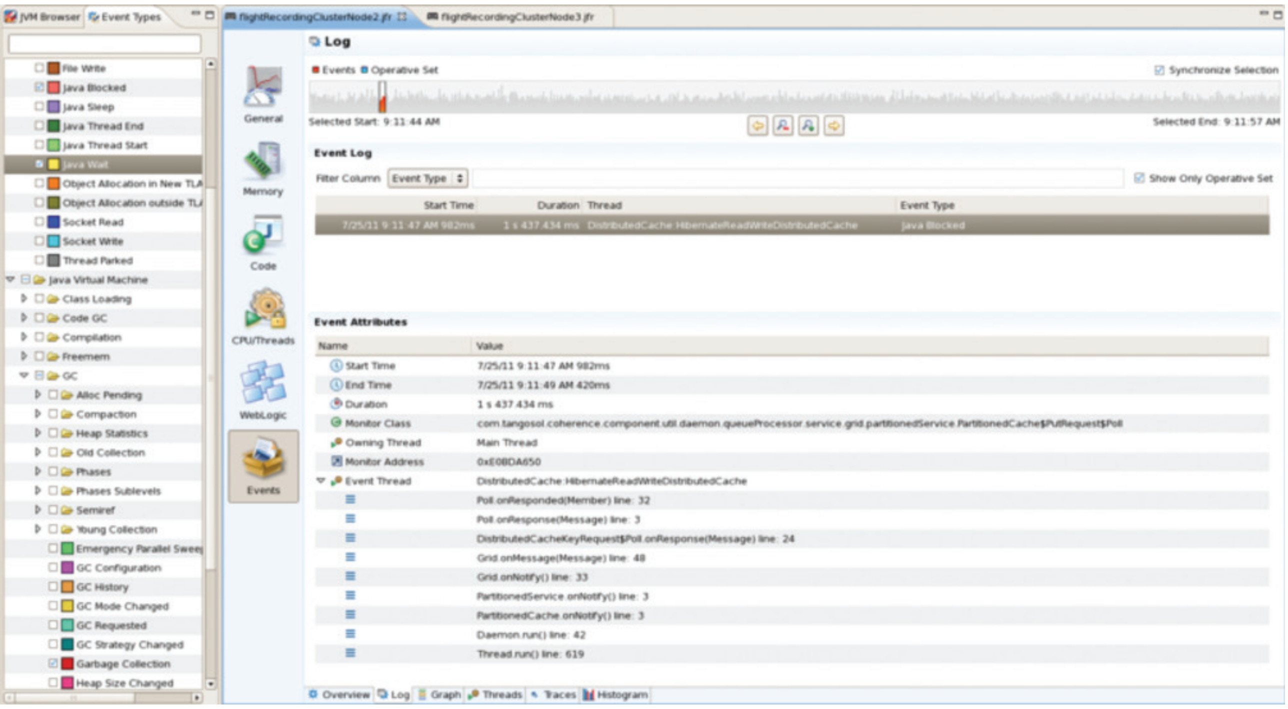


ILLUSTRATION 5: JAVA BLOCKED EVENT DETAILS

Each clustered service in Coherence is represented by a thread at each JVM participating in the cluster. This thread is responsible for communicating with other nodes and providing the functionality exposed via the **`NamedCache`** API along with system level functionality such as life-cycle, distribution and fail-over etcetera. As a rule, all communications between the service threads are done in an asynchronous (non-blocking) mode, allowing for a minimum processing latency at this tier. On the other hand, the client functionality (for example a **`NamedCache.put`** call) is quite often implemented using a synchronous (blocking) approach using the internal **`poll`** API. Naturally, this **`poll`** API is not allowed to be used by the service thread, since this could lead to a high latency at best and deadlock at worst. When a listener is added to a local map that is used as a primary storage for the partitioned cache service, the events that such a listener receives are sent synchronously on that same service thread. It is discouraged to perform any operations that have a potential of blocking during such an event processing. A best practice is to queue the event and process it asynchronously on a different thread. Sometimes an event is caused by a re-distribution. Note that before the bucket transfer is started, the distribution logic marks the bucket as 'not owned' and can thus be tested by using **`BackingMapManagerContext.isKeyOwned`**.

The young collection (see Illustration 6) happening before the Java blocked event has the following characteristics:

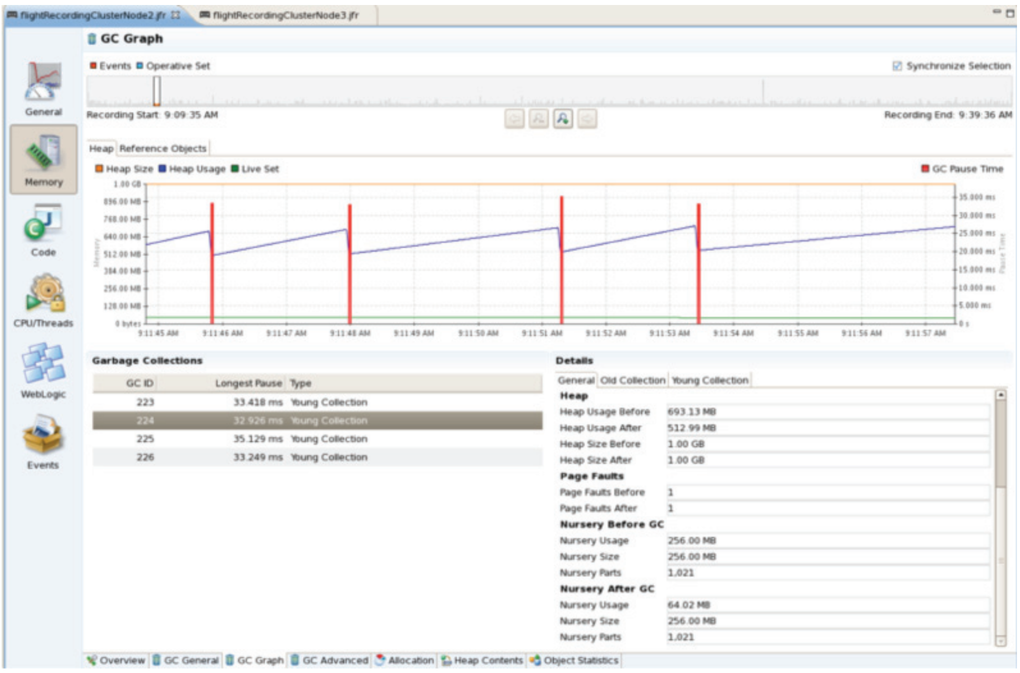


ILLUSTRATION 6: GARBAGE COLLECTION DETAILS

The overall garbage collection (see Illustration 7) and the heap contents (see Illustration 8) look as follows:

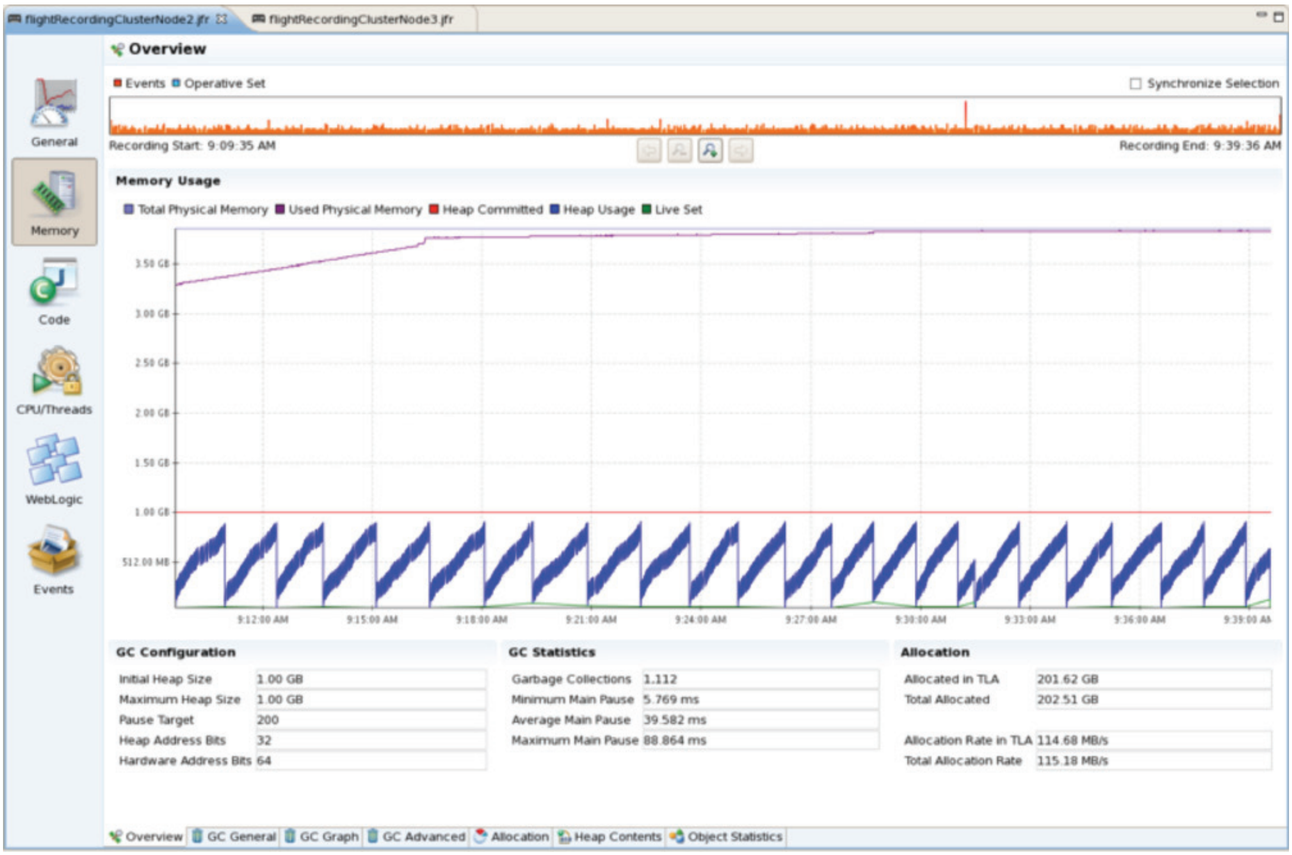


ILLUSTRATION 7: GARBAGE COLLECTION OVERVIEW

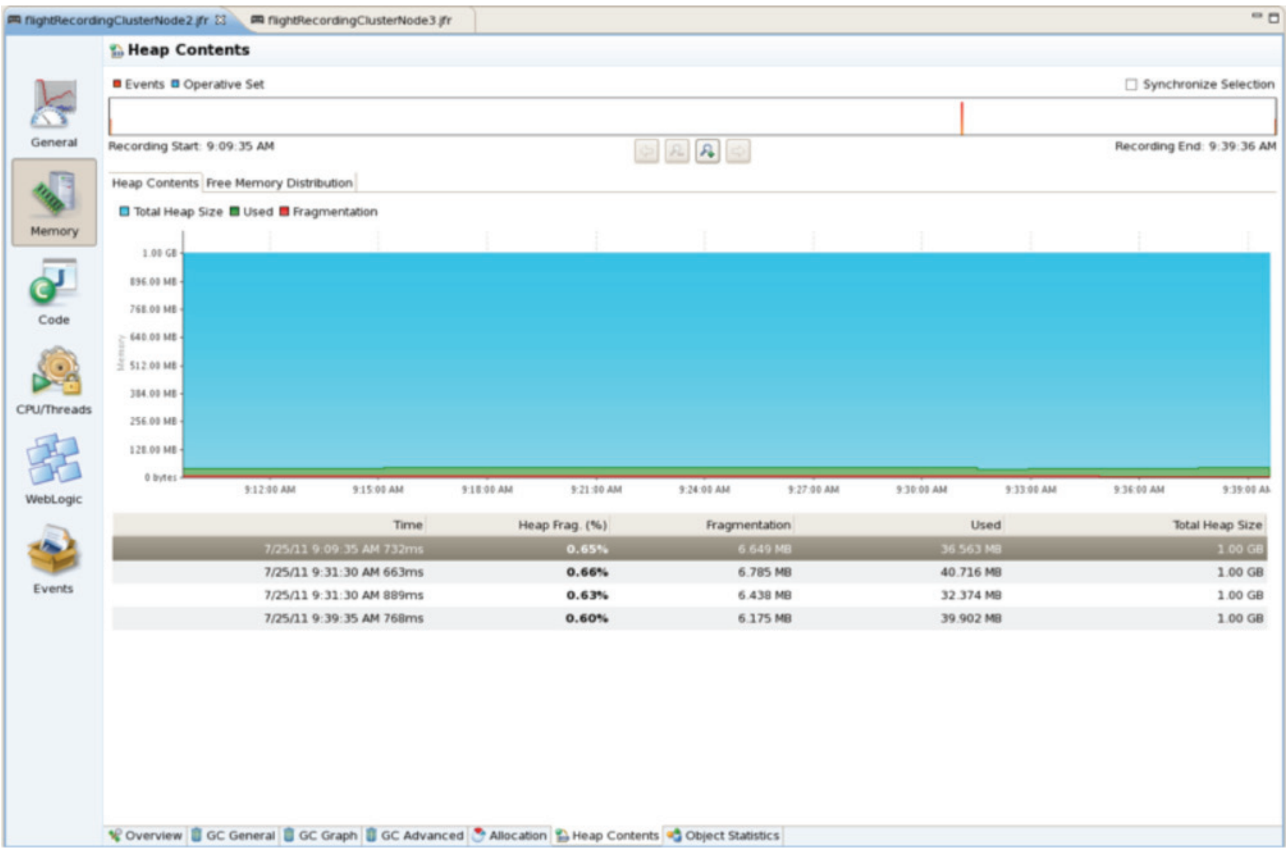


ILLUSTRATION 8: HEAP CONTENTS

Overall the garbage collection is frequent (see Illustration 7), but with an average pause of 40 milliseconds and a maximum of 89 milliseconds; this is something with which we can live given the service level agreement of 200 milliseconds. When using multiple nodes the garbage collection burden is less than when using a single node. This is to be expected as the live set in the case of a distributed cache is partitioned among the nodes, i.e., the live set is 1 / `NumberOfNodesInTheCluster` which in our example is 1/3.

1.3 References

[1] http://middlewaremagic.com/weblogic/?p=6779
[2] http://middlewaremagic.com/weblogic/?p=6850
[3] http://middlewaremagic.com/weblogic/?p=6930

ABOUT THE AUTHOR

René van Wijk
Oracle ACE

René is a graduate of the Delft University of Technology. Since then he has been working with Electromagnetism, Minimum Description Length, Statistical Independence Coherence, Hibernate, JRockit, Spring and Weblogic Servers. René transfers his knowledge and experience regularly through training, publications, and presentations at seminars and conferences.

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Reduce Cost and Increase Sales with Oracle Fusion Sales Planning

Sales Planning/Performance Management (SPM) solutions, part of the CRM suite of applications, include process and applications which help an organisation during the Pre and Post Sales phase, that include processes from defining Territories to Incentive Planning and Calculation.

It is estimated that about 60% to 70% of organisations continue to execute these processes manually using excel spreadsheets which is time consuming and error prone. Another 10% to 15% of organisations rely on home grown systems, with high TCO.

Even though SPM solutions have been in the market for a long time, adoption has been slow. The reasons could be many from considering it to be a back office process and not a revenue generating process, to the inability of organisations to build a business case for implementing a SPM solution as part of the CRM endeavors.

It is recommended that organisations broaden their CRM endeavors to include **Sales Planning Solutions**, to help them take on top challenges of sales organisations as listed below,

- **Reducing Cost of Sale**
- **Increasing Sales Revenue**

To dig deeper into the various solutions for the challenges mentioned above, we will need to have a look at **Oracle Fusion Sales Planning** offering.

Oracle Fusion Sales Planning Overview

Oracle Fusion Sales Planning suite is part of Oracle Fusion CRM Applications, built on best of breed functionality of existing Oracle Applications like Oracle E-Business Suite, Siebel and designed and developed on Oracle Fusion Middleware Technologies.

Oracle Fusion Sales Planning suite consists of 3 modules namely Oracle Fusion Territory Management, Oracle Fusion Quota Management and Oracle Fusion Incentive Management.

Oracle Fusion Territory Management: Provides best of functionality, to help organisations define balanced and effective territories using past, present data through embedded BI. And also helps organisation in defining valid territories with various tools. Supports the following functionality:

- Support of both Centralised and De-centralised Territory Management Process.
- Embedded BI i.e. Oracle Essbase and Oracle Fusion Sales Predicator Dashboard, which help sales organisations to slice and dice data to define Balanced and Effective Territories
- What-If analysis functionality – Territory Proposals
- Productive Territory Planning tools like Territory Simulation and Territory Validation Tools to identify Gaps, Overlaps and Invalid territories.

Oracle Fusion Quota Management: Another module in Oracle Fusion Applications provides the functionality of organisations to set Quotas/Sales target for Territory and a separate quota for Territory Owners. It does support both top down and bottom up quota setting process.

The process is tightly integrated with Oracle Fusion Territory management and requires territories to be defined prior to Quota setting. The process ends with Quotas being published into Oracle Fusion Incentive Compensation and supports following functionalities

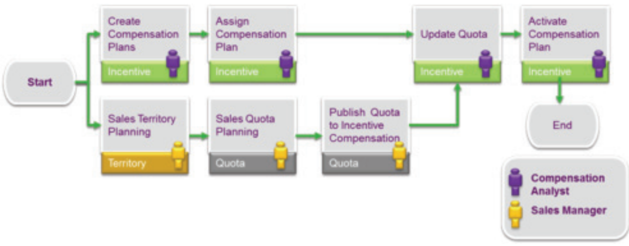
- Support of Top Down and Bottom Up Quota Management Process
- Productive Tools to set aggressive yet attainable Quotas based on past and present Transactional Data
- Productive Tools that help in distributing variance and setting Quota Seasonality
- Loosely connected with Oracle Fusion Incentive Compensation

Oracle Fusion Incentive Compensation: Provides best of breed functionality which includes processes for Compensation Planning, Transaction Collection and Commission Calculation, Payment and Dispute Management in addition to Oracle Fusion Applications key differentiators like User Experience, Embedded Dashboards etc.

Technology: Kiran Amara & Mahesh Potluri

Oracle Fusion Sales Planning can be divided into 2 major flows **Pre and Post Sales**

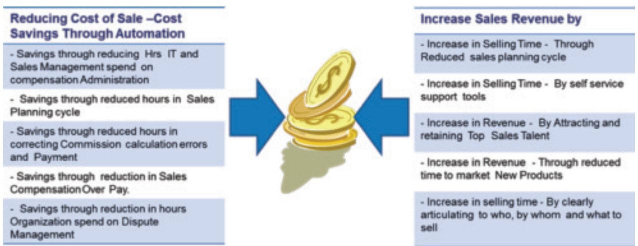
- **Pre Sales:** This process starts with sales organisation setting sales Territories, then defining with a sales Quota/Targets for them and Compensation Planning



- **Post Sales:** This process flow starts with Transactions collection, followed by Commission Calculation, Payout and Dispute Management

Having briefly discussed the capabilities of Oracle Fusion Sales Planning, let's look at how the solution as a whole, stacks up in addressing the top challenges of sales highlighted above

- **Reducing Cost of Sale** –Cost Savings Through Automation
- **Increasing Sales Revenue** – By Increase in selling time, increase in sales productivity and Agility to respond to marketing dynamics.



Reducing Cost of Sale - Cost Savings through Automation:

The Pre and Post Sales process is very long ranging from weeks to months to complete, and requires a lot of manual work through its various stages like territory planning, sales target setting, transaction collection, commission calculation and payment; any sought of automation would definitely result in driving down **cost of sale**.

Saving Through Reduced Sales planning Time: Sales Planning process includes Sales Managers and Commission Administers, crunching excel spreadsheets for planning territories, setting sales targets and incentive plans, the process is complicated, error prone and long. Latest statistics show an increase of 15% to 20% pre and post sales process time in a sales organisation, and a substantial decrease in selling time.

As a best practice SPM solutions should streamline and automate the complete process from Territory Planning to Incentive planning and Commission Payout. Thereby providing benefits to an organisation in the form of cost savings through reduced sales planning time from weeks to days.

Saving Through Reduced Commission Overpayment: Use of excel spreadsheets for planning incentives can lead to over compensation forecasting as well as commission over payments, hence increasing cost per sales.

As a best practice SPM solution it should provide comprehensive analytical reports, and "What If scenarios" to help managers forecast their sales commission budget more accurately and reduce over payments.

Saving Through Reduced Commission Calculation Errors: Commission process includes compiling thousands of transactions from single or multiple transaction management systems, applying credit rules and calculating commissions. The process itself is extremely error prone and cumbersome.
A good SPM solution should be robust to handle large amounts of transactions and provide the necessary Tools to ensure accuracy in commission calculations.

Increase in Sales Revenue

SPM solutions are not front line revenue generating solutions, but contribute to Increase in Sales Revenue by:

Increasing Selling Time: Sales Management spend most time in manually executing pre and post sales process, leading to loss of precious selling time. Good SPM solutions should provide automation of Pre & Post Sales process , that would free up the sales organisations from excel crunching and hence Increased Selling Time

Doing more with less- Increasing Sales Productivity: Post-recession organisations have inclined towards building high performing and lean sales organisation with the ability to remove flab at every level of the process. Yet sales organisations need to acquire and retain top sales talent, increase sales revenue through increase in sales productivity

Good SPM solutions should increase sales productivity through automation and self-service oriented functionalities by involving sales representatives in the pre-sales process from accepting territories, quota and post sales process of viewing and simulating commission. Otherwise sales reps would be required to manually colligate and verify the same.

Attracting and Retaining Top Sales Talent: With the costs of retaining top talent shooting up, organisations with a sound SPM strategy are better placed to attract and retain talent by providing a transparent and accurate commission process with a high emphasis on self-service and ability to address employee grievances through fixed SLA.

Improved Sales Organisations Agility to Ever Changing Market demands: Organisations with manual processes would need to spend weeks in sales planning prior to the launching of new products, leading to loss of first mover advantage.

SPM solutions designed around component re-use and self-service helps in reducing sales planning time significantly prior launching of new products to days or hours from weeks and months.

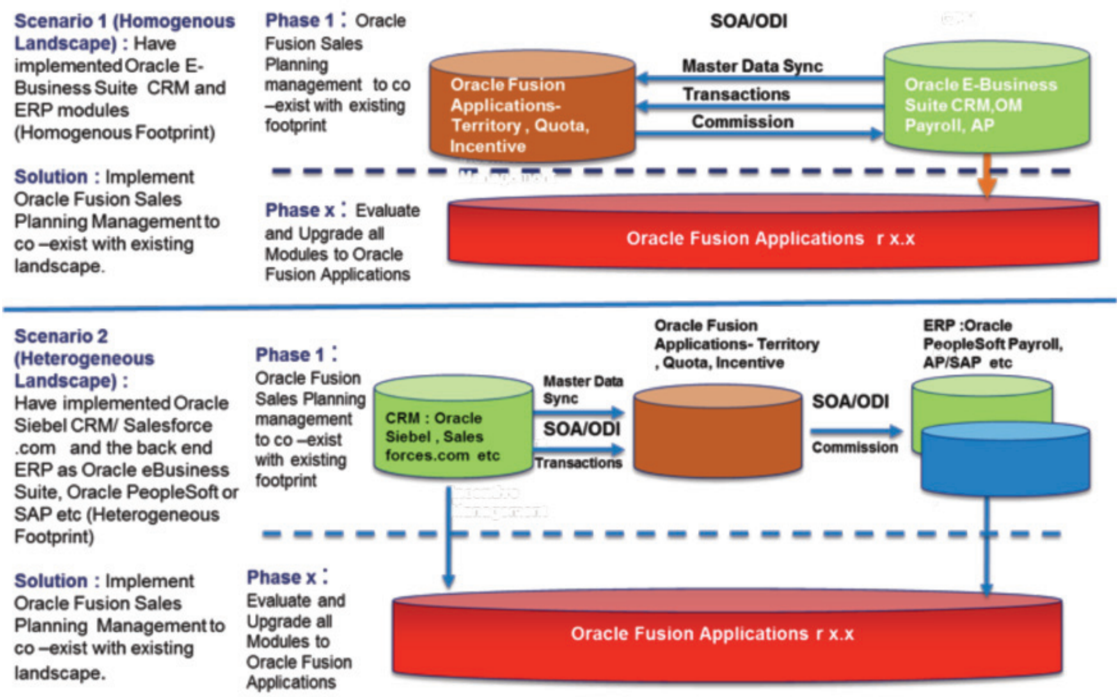
Better Alignment to Organisation Business Objectives: SPM solutions support top down process for sales planning. Corporate targets are set at the top and then rolled down the hierarchy, with inbuilt tools for verifying and correcting variance and canned historical reports ensuring better alignment, with organisations' business objectives.

Art of Motivation of Sales Organisation, Through Creative Incentive Programs: Gone are the days when sales reps were paid just for products sold. Organisations are looking at coming up with innovative compensation programs to include, number of opportunities generated through self-prospecting, green field accounts generated, recurring revenue etc, ensuring they align to organisations' business objectives, making it more challenging for tracking and administration.

Oracle Fusion Sales Planning Key Enablers	KPIs Affected
• **Automated Closed Loop Planning cycle**, frees up sales organisation from manual process by providing an integrated solution from territory management to incentive calculation, payment and dispute management. Drives cost down with high emphasis on user experience, embedded BI and automation	• Cost savings through automation • Saving through reduced sales planning time • Increase Selling Time • Improved sales organisations agility to ever changing market demands
• High re-use quotient of compensation plan components like performance measures, rate tables, which tremendously reduces time to define new compensation plans • Productivity tools, reports for setting balanced territories and quota using past and present transactional data	• Saving through reduced sales planning time • Increase selling time • Doing more with less - increasing sales productivity • Improved sales organisations agility to ever changing market demands
• **Comprehensive embedded business intelligence and dashboard reporting** to enable sales organisations to better forecast commission payout and prevent commission calculation errors at an earlier stage. • Embedded exception process flows and integrated robust payment process (process for verifications of commission calculations with approvals prior payment) would help reduce over payment and reduce commission errors	• Saving through reduced commission overpayment and calculation errors
High Self Service Quotient with • Support of centralised and de centralised territory management process; where in the sales organisation can take part in the territory planning process on the system directly. • Support of top down approach for quota management, where in the sales management can take part in the quota management process • OOTB reports for sales organisation to view quota attainment & commission • Self service dispute management process to handle employee grievances towards commission payments.	• Doing more with less-increasing sales productivity • Attracting and retaining top sales talent • Improved sales organisations agility to ever changing market demands • Better alignment to organisation business objectives

Oracle Fusion Sales Planning Adoption Scenarios

Oracle Fusion Sales Planning can be adopted as a co-existing solution to existing Oracle and non-Oracle Systems or as part of Oracle Fusion CRM pillar as a whole.



Adoption Scenarios	POV
Customer on Oracle E-Business Suite 12.X/ Siebel CRM 8.x / Sales Force.com/Siebel On Demand / SAP CRM with no SPM solution	Recommended to evaluate to implement Oracle Fusion Sales Planning suite as co-existing solution
Customer on Oracle E-Business Suite 12.x with Oracle E-Business Suite incentive Compensation	Recommended to evaluate to Implement Oracle Fusion Sales Territory and Quota Management as a co-existing solution with Oracle E-Business Suite Incentive Compensation
Customer on Oracle E-Business Suite 11.x with Oracle E-Business Suite Incentive Compensation	Recommended to upgrade to latest release of Oracle E-Business R12.x also evaluate to Implement Oracle Fusion Sales Territory and Quota Management as a co-existing solution with Oracle E-Business Suite Incentive Compensation
Customer on Siebel CRM 6.x, 7.x with Oracle Siebel Incentive Compensation Management	Recommended to upgrade to latest version of Oracle Siebel CRM, also to evaluate to upgrade Oracle Siebel Incentive Compensation Management to Oracle Fusion Sales Planning as co-existing solution
Customer on Oracle PeopleSoft 8.x with no Sales Planning solution	Recommended to upgrade to latest release of Oracle PeopleSoft, also evaluate to implement Oracle Fusion Sales Planning as a co-existing solution.
Customer on Competitor product like SFDC, SAP etc.	Recommend to evaluate to implement Oracle Fusion Sales Planning suite as a co-existing solution

Conclusion

This article covered the Oracle Fusion Sales Planning solution and how it can help organisations to reduce the cost of sales with automation. The Oracle Fusion Sales Planning solution can be highly beneficial for client who want to to adopt a co-existing approach with their existing Oracle or Non-Oracle investments, or as part of the Oracle Fusion CRM pillar as a whole. ■

ABOUT THE AUTHORS

Kiran Amara & Mahesh Potluri
Principal Consultant & Lead Consultant, Infosys

Kiran Amara a Principal Consultant at Infosys has around 12 + experience in helping customers on their CRM journey across industries like Hi-Tech, Telecom, Professional Services and Retail.

Mahesh Potluri a Lead consultant at Infosys has around 12+ years of IT experience and involved in various engagements with multiple customers across the globe in CRM and Distribution areas of Oracle Applications. He has domain expertise in Manufacturing, Hi-Tech, Service and Telecom areas.

Both of them are part of Oracle Fusion Applications CoE at Infosys Limited and also have been part of Oracle Fusion CRM Co-development program with Oracle Fusion Applications Development Team from Infosys.

15 minutes

with James Morle Niall Litchfield & Tanel Poder

Oracle Scene's Neil Jarvis grabbed a coffee and a catch up with some of the big names at UKOUG 2011 December. Here's what they had to say about their presentations, what they would like to see in the next release of Oracle and more...

James Morle

James has spent the last 20 years designing, building and fixing some of the largest Oracle platforms. He is the founder of Scale Abilities, a consultancy based in the UK focused on full-stack performance and architecture for large systems.

I'm James Morle, I'm the founder of a company called Scalabilities that primarily does Oracle consulting in the UK and around the world. We do full stack Oracle consulting, so we go all the way up from disks, spinning stuff, to the usability and application tiers.

How did you get involved in Oracle?
Well that's a long time ago now, it must be 1990 I would say, so I was working in local government and when Margaret Thatcher announced the poll tax. That was when Oracle started to get into the local government space and I think actually the first application they did was council tax, it wasn't the poll tax that we used for them it was the replacement. So suddenly we went from an Informix shop into an Oracle shop and I did a couple of years of that with about 30 users, which was quite big for Oracle back then. The next one was 3000 users on parallel server, 4 nodes, so that was an interesting change.

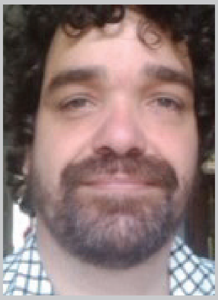
When did you get involved in presenting?
I think the first presentation I did formally was at Miracle's conference in Denmark in 2000 or 2001 and I was coerced into it by Mogens Nørgaard. I wrote the presentation the morning before I gave it and it was actually Sane Sam. The original version of Sane Sam was written in a chalet in Denmark about 3 hours before I gave the presentation. And I guess that habit has continued!

In your UKOUG 2011 presentations, you describe large scale application testing, in what situation would you use RAT testing?
Right so RAT is a capture and replay style of load testing tool and I've been doing a lot of work with that and a tool that we've developed at Scalabilities called Simora. It's a very similar approach where you capture a real workload and replay that against a test system, so it's for testing new hardware, upgrades, you maybe testing promotions to see if you've got enough capacity for that.

What issues did you come across whilst testing with Simora and RAT?
They both encounter similar issues. They have different approaches to how they operate, but ultimately they're both subject to the same challenges of replaying something that was a one time event that you now need to synchronise everything to make sure everything plays back as it was. Probably the major issue is getting the balance right between loading it to the same level as it did before also loading it accurately, so if you don't synchronise too much to tend to load as hard, if you synchronise not enough you're not as accurate, but you can load it almost the same. So it's a balance.

You're one of the founder members of the OakTable, would you like to explain what the OakTable do?
Yes, the OakTable is a collection of, I think about 95 individuals now. It started off with 17 people about 10 years ago and we were all in one place at the same time which was actually at a Jonathan Lewis masterclass in Denmark. We realised that we have the same sort of approach and values to Oracle technical issues, so rather than closing our ears and pretending we're the best and all that stuff, we have a more scientific approach to it with a bit of peer review and accepting when we're wrong and enjoy to learning from it. We like to present at events like the UKOUG conference, write papers, blogs, and share with the community.

And finally, what feature would you like to see in the next release of Oracle?
I don't know that they'd get this into the next release given that that's probably already in the bag more or less, at least all the specs are written and so forth. I think the overriding trend in the industry is SSD and that's a disruptive technology. I think at the moment the way SSD is used in the enterprise is very much a use it like disk analogy. I think that's going to change over the next 5 years or so. I believe Oracle are in a great place to make the best of that, they own all the bits of the stack these days. I think they can do a much better job of lowering storage latency by using SSD. ■



Niall Litchfield

Niall is a DBA of over 15 years standing, with extensive experience of running databases on various x86(64) platforms, and with a particular bias towards Microsoft Windows. Niall began professional life as a "bean-counter" for KPMG, consequently he is a DBA who respects auditors, not least because they have to stand in unheated warehouses in the middle of winter watching other people count things, something he never wants to do again.

How did you first get involved in Oracle?
I worked, like a lot of people who get into IT, first of all on the front line support desk taking phone calls from people. My professional background is as an accountant, one of the systems that I got involved in supporting was a finance system that ran on Oracle, so I got to play with this strange beast called a database. That was in the mid-late nineties on Oracle 6 and we're now in the early 2010s not on Oracle 6!

When did you get involved in presenting and how did you get involved?
It was probably around the dot com time there were a lot of people making a lot of money out of IT and buying and using Oracle. One of the online social networks that used to exist then was a thing called Usenet, that's pretty much died now, but I hung out in Usenet answering questions and doing things like that and learning about Oracle really by producing test cases for questions that people asked. A lot of the same things came up time after time after time, so in 2001 I started a thread asking what are the myths and misconceptions that are prevalent in the Oracle world. Out of that came a presentation about five things that people commonly misunderstood – fortunately only two of them are still common, so some success. So that's where presenting came from.

In your UKOUG 2011 presentation, you mention common misconfigurations, would you like to explain some of these?
Certainly yes, so one thing you might hire a consultancy company for, or an independent consultant, is to come in and do a health check at your IT estate or, in my case, your Oracle estate. As well as doing some of the advanced stuff, I look at basic things. Probably the scariest thing that I see done wrong frequently people taking back ups of their critical systems, in ways that are almost guaranteed to mean that they can't recover them properly if they ever need to go back to the back up. So backup and recovery and getting that right is, scarily because it's quite simple, one of the things that people don't do.

On that, what value would you put on testing backup and recovery scenarios and what approach should companies take to ensure flawless recovery?
There are probably two strands to that answer, one of them is that no system, whether its backup and recovery or whatever, in my view, is of any value until you've actually tested it, used it, put it through some load testing and tried odd little things that you don't think will happen, but might. So what I'd say is, if you've got a backup and recovery plan, but you haven't run your backup and recovery plan then until you've run it it's just a piece of paper, so definitely test it.
Then the second bit about flawless recovery revolves around humans being creatures of habit. My little boy is really into a particular video game and probably like any parents we have lots of arguments about how long he spends on this video game, but he's really good at it because he's spent lots of time doing it and he's done it over and over again. So I think the way to get flawless recovery is to have done it 30 or 40 times.

And finally, what feature would you like to see in the next release of Oracle?
So the feature I'd like to see is a feature that already exists. That's the tuning and diagnostics packs, which are options to the Enterprise Edition. At the moment a lot of our customers don't buy the Enterprise Edition and that means they can't buy these options, so the feature that I'd like to see is that they're able to give Oracle some more money and buy those options in the same ways that the Enterprise customers can. ■

Tanel Poder

Tanel is the managing director and technology evangelist at the European operations of Enkitec, a leading consulting firm with over 60 Exadata implementations completed to date. He is one of the first Oracle Certified Masters in the world, an Oracle ACE Director and a proud member of the OakTable Network. Tanel recently co-authored the Expert Oracle Exadata book published by Apress and shares his articles, scripts and tools in his blog at: http://blog.tanelpoder.com

My name is Tanel Poder, I'm a long time Oracle performance geek and an Exadata performance geek nowadays as well.

How did you get involved with Oracle?
I actually got involved with Oracle by accident, so I was already a UNIX geek and enthusiast and I just walked around my university campus and one of my old friends asked me "hey do you want to join this company which does Oracle?". My interview was really easy because I knew UNIX a little so I already had the foundation for Oracle and I learned quite quickly. Already knowing UNIX somewhat, made it much easier for me to troubleshoot Oracle because I understood what was going on under the hood. Just like when a developer knows SQL trace they can analyse their applications better, I knew UNIX and UNIX diagnostics tools and so I could analyse what Oracle does better.

How did you get involved in presenting and when did it start? Do you remember your first presentation?
I did smaller ones like presales things locally in Estonia where I'm from, but my first international experience was in Orlando, Florida in 2003. I decided I wanted to talk about sub divider odioms so I submitted my abstract and to my surprise I got accepted. I had a very big room for up to 500, people but I only had 10-15 people in there, so it was an interesting start.

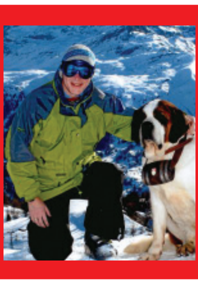
What is the most common performance problem you've seen?
The most common ones are actually what you probably know already, bad SQL flipping execution plans, somebody has forgotten to gather stats, somebody has put fine variables together with histograms and then if sudden changes happen, like yesterday the system worked ok and today is doesn't, but these are not the most interesting kind of cases. So at conference I talked about one of the most complex performance issues I have seen and, as far as troubleshooting it goes, there is a very common pattern that people do wrong. At that client the problem was that they had short spikes of CPU virtualisation and it was very slow for a couple of minutes. What people often do next is they will take a stats pack or AWR report of one hour and try to troubleshoot the problem that lasted for one minute with performance data from a whole hour. This is when you're unlikely to find anything because one hour's data doesn't show you what happened within this one minute or a few seconds. So that's a common pattern I see when there are complex spikes and these kind of hiccups in the system.

What feature would you like to see in the next release of Oracle?
My current favourite feature is still, starting from 11g, the SQL monitoring feature, so whenever your query goes slow you can click on it and see what that query does wrong. This feature answered my previous request. Going on to the future, I think one of the things that is not yet complete is the SQL plan stability. Oracle has done a lot of work to improve it, to fix your plans so that they don't suddenly on Monday morning go very slow, but in real life we have dynamically generated queries. The applications are not doing everything the perfect way and this is when you still can get bad plans, so this is where Oracle can still improve.

Exadata is a big topic at the moment, how do you see the future of Exadata?
I think the future of Exadata is going to be very bright. In the US you already see the adoption with a lot of companies are buying and going live. They have success stories and that motivates other companies to do the same. Europe is a bit behind, but I think the same is going to happen here as well and it's already happening. Two years ago people had heard about Exadata because marketing shows talked about it, but now anybody you talk to knows someone who is running Exadata already. I think it's going to have a bright future, not only because of the performance and heavy selling by Oracle, but also because it's an engineered system so you can make your life easier by buying Exadata instead of buying all the different components and spending a year engineering it together and testing it and so on. So the future is going to be bright.

And finally, are there any gotchas that you'd like to share with readers around performance issues? Things people should look out for?
You should be systematic and always be vigilant. Whenever you get desperate and suddenly you find yourself changing things without knowing why this change will help you when you fix something, this is non-systematic. So I never change anything before I have clear evidence

in the form of performance numbers showing this is the problem and then this is why this change will help. Often people have a problem and maybe they take some sort of performance report and they don't understand the numbers and then it's down to guesswork, ok let's take this node to another cluster, let's patch this, let's gather stats again, and maybe it will help, but this just wastes time. Systematically drilling down into the root cause of the problem is a much better approach. ■



ABOUT THE INTERVIEWER

Neil Jarvis
Deputy Editor

Neil Jarvis has 20+ years experience of working with the Oracle RDBMS and is currently Chief Technical Specialist at HSBC. Neil has been a UKOUG member for over 10 years and has been actively involved in the user community presenting at SIGs, participating in event committees and on the Oracle Scene editorial team.

What would you like to see in the next release of Oracle?

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SUPPLIER GUIDE

A list of suppliers of Oracle-related products and services to save you the time and energy of searching for them.

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