



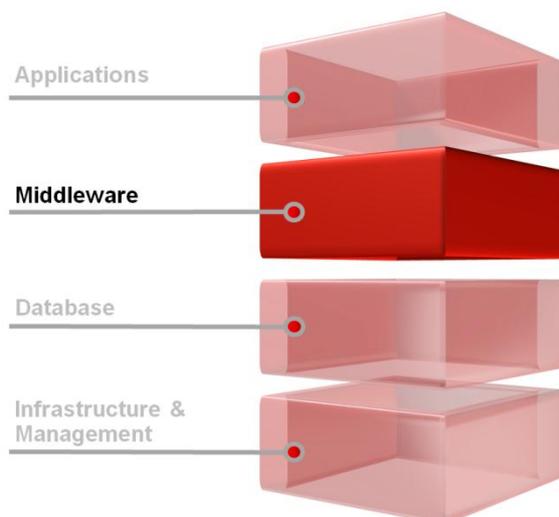
this edition by Lucas Jellema (Oracle ACE Director and CTO of AMIS from Nieuwegein, The Netherlands)

How to get energized by Fusion Power

What better moment to start a new column in the ODTUG Technical Journal on Oracle Fusion Middleware (from now on referred to as FMW). July 2009 1st saw the kick-off of the huge launching campaign for the FMW 11g release and last month's Oracle Open World conference not only explained the road map for the near future but also clearly demonstrated the importance of the middleware for Oracle's strategy and technology stack. The invitation AMIS received from the ODTUG editorial board to contribute a new quarterly column on Fusion Middleware to this journal was therefore well timed and well received. We consider it a privilege to share our expertise, experience and especially our enthusiasm on FMW with the readers of the ODTUG Technical Journal.

What is Fusion Middleware?

It would be silly to write a column before we have agreed on what exactly Fusion Middleware *is*. However, coming up with a clear, concise and complete definition of FMW is not all that simple.



Thomas Kurian once used a rather loose definition: you have applications running in the browser and underneath it you have a database and your operating system and the hardware. And that thing in the middle, between the application and the underlying bits – that is the middleware! Well, that

helps... not much. Sure it is somewhere in the middle, the name sort of gave that away. And it is not the database or anything below that. And it is not client side JavaScript or Flash components either.

The scope of FMW is pretty broad. And in terms of marketing and licensing, Oracle has been adding various products to the FMW area that it could not easily put somewhere else – including Oracle Discoverer, Forms and Reports. We need a little more focus here. The next figure shows which areas Oracle considers part of Fusion Middleware.



The whole range of FMW 11g encompasses products for Content and Document Management, Business Intelligence and Enterprise Performance Management, Enterprise Collaboration, SOA (Service Oriented Architecture) and Business Process Management, Data Integration and Real Time Data Consolidation, Event Processing and Business Activity Monitoring (BAM), Security and Identity Management, Governance of SOA (and other IT) artifacts and Application Development. The underlying infrastructure for all of this is an Application Server with optionally an embedded memory-grid based cache and in-memory database facilities in addition to the standard JEE services for transaction coordination, management of data sources and queues and facilities for clustering. The middleware stack is managed using administrative tools such as browser based consoles, displays for monitoring and utilities for logging and diagnosis.

Looking back, Oracle has been working on (creating and acquiring) the various pieces of the FMW 11g puzzle for the last five years and longer. Products that sometimes started out as apparently feeble attempts to mimic existing functionality in a new technology realm have matured and caught up with the latest 2.0 trends and technology and standards – for example ADF and WebCenter. The underlying stack has dramatically been overhauled with the acquisition of BEA and the replacement of Oracle iAS (OC4J) with WebLogic Server (WLS). Many formerly fairly loosely integrated components are finally integrated, both in design time (JDeveloper) as well as run time (WLS with Enterprise Manager). The SOA Suite for example is a real suite at last, in its 11g release, whereas previously the suite was just a collection of products that knew little or no synergy.

Note: make no mistake about it: Oracle has done almost everything to ensure that no one has a reason for not migrating to WebLogic Server 11g. All products – with the exception of the Single Sign On – are now available on WLS 11g and the existing iAS license allows organizations to use the comparable WLS edition. Oracle also provides a migration facility that is quite good at migrating

both 10.1.3 applications and the overall 10.1.3 environment. There is no real future in iAS and OC4J – it will be supported for several years to come, but without any meaningful functional enhancements. Your best strategy is to not make any additional investments in your OC4J environment and skills; try to start your migration to WLS 11g as soon as possible.

Zooming in

For the purpose of this column we are going to zoom in a little further than this. We will consider Fusion Middleware especially in the areas that are closest to the heart of application developers, such as Service Oriented Architecture – the new SOA Suite 11g – and Event Processing, Business Process Management – soon to be integrated into the SOA Suite run time engine – and Rich Web Application Development with ADF and WebCenter. Of special interest will be the overlap, interaction and integration between these areas. We will also occasionally brush upon the underlying WebLogic Server, perhaps the Coherence grid as well as the Identity Management infrastructure.

JDeveloper and ADF 11g	• Unified Design Time & Rich Internet Applications Framework
WebLogic Suite 11g	• Enhanced Performance and Availability
SOA Suite 11g	• More Efficient and Agile Applications
WebCenter Suite 11g	• Enhanced Enterprise 2.0 Portal
Identity Management 11g	• Industry's First Service-Oriented Security

JDeveloper – as the unified design time for most of these components – will frequently feature in this column.

Building Fusion Applications

Fusion Middleware is primarily of interest to you and us because of the applications we want to build with it. Web applications and business process implementations that do work for our customers and our own organizations. This column will hopefully help you make decisions with regard to the best selection from the technology stack to meet your objectives and to achieve success with specific features and niche areas.

Oracle has a similar interest – Fusion Middleware is first and foremost the foundation for their Fusion Applications, the next generation of enterprise applications. In Fusion Applications, all FMW components come together. The user interface is built using ADF Faces Rich Components on top of ADF Business Components, enriched with WebCenter Services for content sharing, communication and collaboration and to expose the tasks from the Human Workflow service that runs in the SOA Suite run time container. Those tasks originate in BPEL processes from SOA composite applications that may be kicked off from the user interface or from events broadcast over the SOA Suite's event

delivery network. Oracle Data Mining and BI tools provide the data for embedded analysis and recommendations. The applications work with external facilities for email, instant messaging, text messaging, document imaging and so on.

In the past, Oracle created development tools for our sake. And then instructed its own employees to use them as well – ‘we eat our own dogfood’. Today things are somewhat different: Oracle create technology for doing something as challenging as Fusion Applications – and then they make that stack available to us as well: we get to try their dogfood for our meals. By the time we get our hands on the FMW tools and technology, it has been tried and tested in the many development teams at Oracle that try to do more or less the same job that we do. We want to learn from Oracle’s experiences with FMW. In this column, we will therefore frequently discuss best practices from the ‘development studios’ within Oracle itself. As they are the first to work with the technology, at a scale most of us will never have to deal with, we can learn a lot from their experiences. If it works for them, we should be able to find a way to make it work for us too.

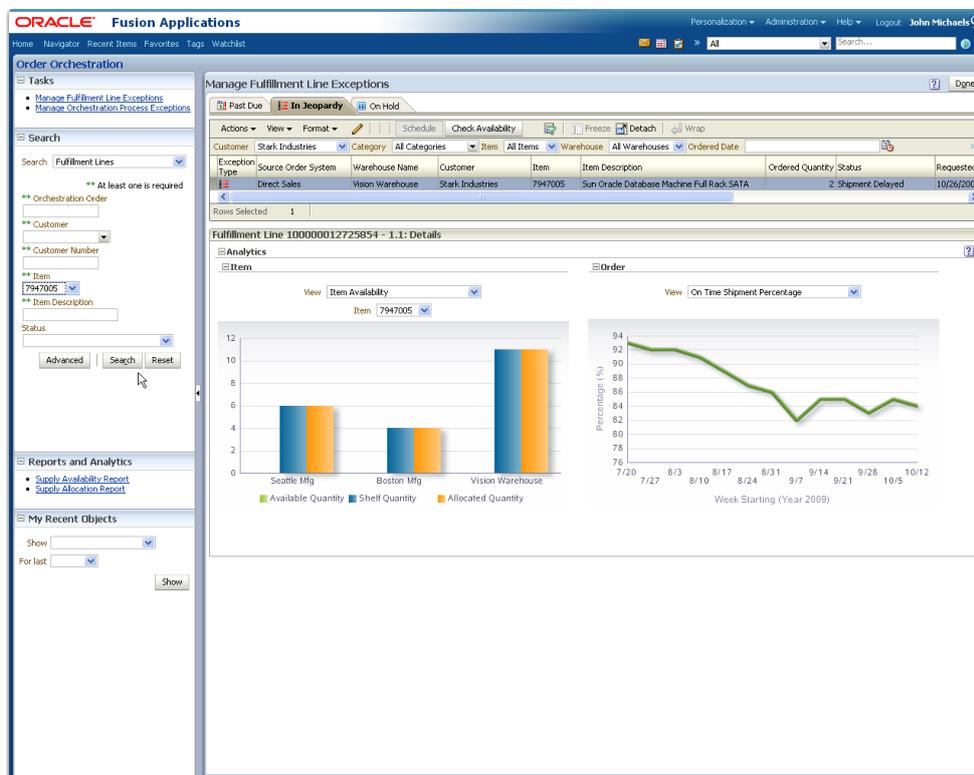


Figure: This picture shows one of the screens in Fusion Applications, the Order Fulfillment Module. On the left side we see WebCenter Services for Tasks (integrated with the SOA Suite Human Workflow Service) and application wide Search; the right shows a typical ADF Rich Client interface with embedded Data Visualization, use of various dynamic layout containers such as tabs and panel boxes and of course the Rich Table.

One of the slides in Larry Ellison’s keynote during Oracle Open World clearly demonstrated the importance of Fusion Middleware for Fusion Applications – and also revealed a little of the best practices applied within the Fusion Development teams (even though it seemed Larry was a little uncertain as to what he should comment on that particular slide). Clearly and not surprisingly ADF Business Components are the primary means for Fusion Application to get to the database. More

valuable is the importance of Task Flows that is indicated here: almost 11000 task flows have been developed – some with a lot of reuse potential and most simply because task flows are a very clean, service-like way of developing user interfaces with associated logic as well as the unit of access control. Task flows will frequently make their appearance in this column – also because they are the vehicle through which WebCenter Services are provided. The number of services running in the SOA Suite underneath the applications is substantial too, marking the service oriented architecture underpinning the Fusion Applications.

Product Family	Tables	Entity Objects	View Objects	App Modules	Services	Task Flows
CRM	996	1137	2520	341	377	2122
Financials	1,310	1534	4867	563	119	2329
GRC	170	173	405	86	57	764
HCM	1,269	1597	4038	558	130	2872
Incentive Comp	169	171	230	76	8	167
Procurement	211	285	953	113	14	428
Projects	480	523	1775	207	21	691
SCM	932	1028	3336	512	439	1422
Setup	73	86	261	45	50	162
Total	5,440	6534	18385	2501	1215	10957

Conclusion

One of the key lessons across the years obviously is how the database remains the constant – throughout the rise and fall of various generations of application technology and middleware infrastructure. Data oriented logic such as calculations and business rules are really best implemented in the database. For reasons of performance, ease of implementation, potential for reuse, integrity of the data and ability to survive upheaval in the enterprise technology stack. If you have not yet embarked on an FMW adventure and do not plan on doing so anytime very soon, make sure you have applied that key lesson in existing applications to prepare for what is inevitably coming your way.

In future issues of this magazine, we will explore key areas of Fusion Middleware in this column and we dive into the best ways of making use of them. We will introduce topics such as SOA, BPEL, Coherence, Event Driven Architecture, Enterprise Service Bus, Task Flows and Portlets to an audience of seasoned Oracle developers in a way that fits in with your world. If there are topics you would like to be discussed in particular, please let us know.

AMIS is an Oracle Certified Advantage Partner, founded in 1991 and located in The Netherlands. AMIS are friends of the Oracle community, for example through frequent presentations at the ODTUG Kaleidoscope and Oracle Open World conferences and its popular technology weblog: <http://technology.amis.nl/blog>. AMIS staff were awarded two Oracle ACE Director and two Oracle ACE nominations in recent years. This edition of the

column AMIS on Fusion was written by Lucas Jellema, Oracle ACE Director and CTO of AMIS and author of the upcoming Oracle SOA Suite 11g Handbook (Oracle Press). He can be contacted at lucas.jellema@amis.nl