

## Oracle E-Business Suite Release 11*i* and Release 12 A Study in Contrasts

Brian Bent April 17, 2008







#### **Audience**

- Functional/Technical
- PeopleSoft, JD Edwards, Retek, Siebel, Hyperion
- Oracle E-Business Suite
  - Release 10.7
  - Release 11.0.3
  - Release 11*i*
  - Release 12
  - Application Technology Group Rollup
  - RDBMS Version
  - Platform
  - Storage







### Agenda

- Concepts
- Patching
- Performance
- Next Steps
- More Information







## Concepts







### Release 11i/ 12 Terminology

- Release 11/is 11.5.x or 11/.x
  - **–** 11.5.1 ... 11.5.2 ... 11.5.10
- Release 12 is 12.0.x
  - 12.0.4 (January 15)
- Point Releases
  - Applies to all products in all suites (Media Releases, Maintenance Pack, Consolidated Updates and Release Update Packs – MP\*/CU/RUP)
  - \* MP is complete release







## Release 11// 12 Basics to Remember

- Release 11/112 are not static releases
- Release 11/12 install everything regardless of licensing and de-normalizing the data in the database for reporting performance
- Release 11i/12 contain constantly evolving technology components
- Release 11/112 point upgrades introduce significant changes to functionality and technology
- Release 11/12 have significant interdependencies of Critical Pseudo Products: AD, FND, AK, HZ (TCA), OWF, TXK, ADX, SHT, ATG, AU, FWK, OAM, UMX





## What is Release 11*i*? Release 12?

- Release 11*i* (November 2004)
  - The biggest, most complex Oracle Applications release ever!
  - Ten\* CD/DVD major releases containing:
    - Major changes to the tools and technology stack
    - Bug fixes
    - NEW and CHANGED functionality!
    - 11.5.9/11.5.10 CUs introduced
- Release 12 (February 2007)
  - Even Bigger! 18 more modules
  - 60% Java even more than Release 11*i*
  - Fusion Middleware
  - 10*g*R2 database
  - Fourth Release Update Pack (January 2007)







## What is Release 11*i*? What is Release 12?

#### Release 11i

- Completely new architecture, tools and technology true three-tier
  - Internet Computing Architecture (ICA)
  - Technology Stack Forms, Java, Apache(html)
  - Oracle8i/Oracle9i/10g CBO, Partitioning
- Multiple Application Server Components
  - Forms-Based: ERP, Back Office
  - HTML/JAVA-Based: Self Service, Workflow, " i" Products
  - Business Intelligence: Discoverer 3i/4i/10g, Reports, XML (BI)
     Publisher

#### Release 12

- More architecture, tools and technology changes
  - Fusion Middleware
- More Application Server Components changes, especially BI







### Release 11//12 Concepts

- All or Nothing: Oracle Applications Software and Database – No sharing of Software/Objects
- Multiple Component Requirements: Database Software (3), Forms, Reports, Java, JDBC, Apache, Self-Service (OA) Framework, Workflow, XML Gateway
- Hybrid Application: OLTP/Batch/Web Coexist and each is separate database distribution





### Release 11//12 Products

Increased Modules, Functionality, and Features

Release 10.740 products

Release 11.0.x50 products

Release 11.5.5161 products

Release 11.5.6175 products

Release 11.5.7179 products

Release 11.5.8191 products

Release 11.5.9197 products

Release 11.5.10 209 products

Release 12220 products





### Release 11/Bug Fixes

- More stable functionality (technical and applications) continuously appearing with each major patch release
  - -11.5.5/6
  - **–** 11.5.7
  - -11.5.8
  - -11.5.9
  - -11.5.10

- − ~ 20,000 bug fixes
- ~ 40,000 bug fixes
- > 60,000 bug fixes
- > 100,000 bug fixes
- ~ 180,000 bug fixes
- Initially released on Oracle9i... now 10gR2 certified
- ATG Introduced
- Workflow changed ... again
- Rapid cloning changed ... again
- AD enhancements ... again
- New Java framework 5.10 … again
- JInitiator 1.3.1 latest release September 2007 1.3.1.29







### Release 12 Bug Fixes

 More stable functionality (technical and applications) continuously improving with each major RUP (Release Update Pack).

-12.0

-12.0.1

-12.0.2

-12.0.3

-12.0.4

~ 63602 bug fixes

~ 827 bug fixes

~ 4163 bug fixes

~ 7569 bug fixes

~ 10682 bug fixes

- Initially released on Oracle10gR2 ... 11g certification expected 2008
- JRE 1.5 & JRE 1.6
- RUPs in Release 12 are like CUs were for Release 11i, only better







### Release 11/Objects

 "Stub" applications, performance improvements, additional functionality continuously appearing with each major patch release

```
− 10.7 – ~ 25,000 objects
```







### Release 12 Objects

 "Stub" applications, performance improvements, additional functionality continuously appearing with each major patch release

-12.0 -  $\sim 360,512$  objects

− 12.0.1 − ~ 368,368 objects

 $-12.0.2 - \sim 361,748$  objects

 $-12.0.3 - \sim 363,764$  objects







## Release 11/Architecture 11.5.10.0

- Client
  - Oracle JInitiator 1.3.1.18 on Client
- Middle Tier
  - Apache Web Server 1.3.19 (HTML, JSP, JServ)
  - JRE (Java Runtime Environment) 1.4
  - JDK (Java Development Kit) 1.4
  - Oracle Applications Java Framework 5.10
  - Oracle Forms/Reports 6*i* (6.0.8.24 Patch 15)
  - Workflow 2.6.3 (OWF.H)
- Database Tier
  - Oracle 9*i* Enterprise Edition 9.2.0.5
  - Other Oracle Home Software Directories App 8.0.6.3, iAS 8.1.7 = 9iAS 1.0.2.2.2 (Release 1)
  - Oracle Portal 3.0.9.8.4
    - Discoverer 4*i* (4.1.48) 10/31/06







### Release 11/Architecture Latest 11.5.10.2

#### Client

- Oracle JInitiator 1.3.1.29 or Sun JRE 1.5.0\_14 Plug-in on Client
- Middle Tier
  - Apache Web Server 1.3.19 (HTML, JSP, JServ)
  - JRE (Java Runtime Environment) 1.6
  - JDK (Java Development Kit) 1.6
  - Oracle Applications Java Framework 5.10
  - Oracle Forms/Reports 6*i* (6.0.8.27 Patch 18)
  - Workflow 2.6.3 (OWF.H)
- Database Tier
  - Oracle 9*i* Enterprise Edition 9.2.0.8 or 64-bit 10*g*R2
  - Other Oracle Home Software Directories App 8.0.6.3, iAS 8.1.7 = 9iAS 1.0.2.2.2 (Release 1)







## Release 12 Architecture 12.0.0

- Client
  - Sun's JRE 1.5 on Client
- Middle Tier
  - Apache Web Server 10.1.3.0.0 (HTML, JSP, OC4J)
  - JRE (Java Runtime Environment) 1.5
  - JDK (Java Development Kit) 1.5
  - Oracle Applications Java Framework 5.10
  - Oracle Forms/Reports 10*g* (10.1.2.2)
  - Workflow 2.6.3 (OWF.H)
- Database Tier
  - Oracle 10gR2 Enterprise Edition
  - Other Oracle Home Software Directories App 10.1.2, Web 10.1.3





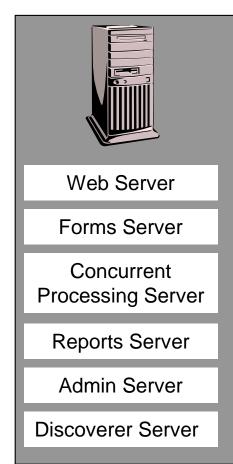


### Release 11/Architecture

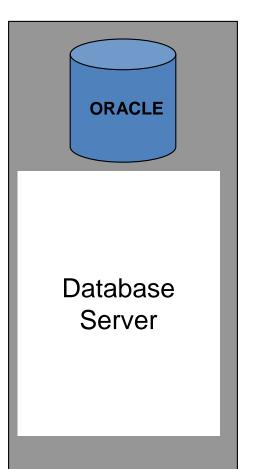
#### **Desktop Tier**



#### **Application Tier**



#### **Database Tier**







### Release 12 Architecture



**Desktop Tier** 

Sun J2SE java plug-in

Internet Explorer

Firefox Netscape



Application Tier

Web Services => 10.1.3
Forms Services => 10.1.2
Concurrent Processing Server
Admin Server



Database Tier

Oracle RDBMS 10gR2

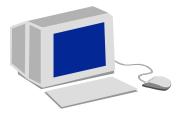




# Release 11 / Architecture – Components

#### Release 11.5.10.2 DVD Release

Client Tier



**Web HTTP Servers** 

Middle Tier





\*optional

9*i*AS ORACLE\_HOME (1.0.2.2.2 – 8.1.7.4)

Database Tier





**Application Technology Stack** 





Concurrent
Processing Server



8.0.6.3 ORACLE\_HOME

9.2.0.8/10.2.0.3 ORACLE\_HOME







# Release 12 Architecture – Components

#### Release 12 DVD Release

Client Tier



JRE 1.5

Web HTTP Servers

Middle Tier







**Application Technology Stack** 

Admin Server

Forms

Server



Concurrent
Processing Server

\*optional

10*g*AS ORACLE\_HOME (10.1.3)

Database Tier



10*g*R2 Database 10.1.2 ORACLE\_HOME

10.2.0.2 ORACLE\_HOME





## Release 11/112 Recommended Architecture

- Five Nodes MetaLink 285267.1
  - Database \*
  - Administration
  - Concurrent Managers
  - Forms
  - Web
- Recommendations for Ease of Support and Maintenance
  - Single User
  - Single Logical Disk Mountpoint
  - Shared Application File System > Single Tier
  - Oracle Applications Tablespace Model (OATM)







## Release 11.5.10.2 – Applications Interdependencies – Feb 2007

- Release 11.5.10.2 8 out of 22 Family Packs Out of Date (HR, BIS, FIN, PROJ, SCM)
- Consolidated Update #1 Superseded
- Consolidated Update #2 Included
- Consolidated Update #3 CANCELLED
- 11.5.10.2/9.2.0.8 Certified
- 10gR2 Certified Fusion Applications Jump-Off Point
- Applications Unlimited and Lifetime Support Eligible





### Release 12 – Applications Interdependencies – Feb 2007

- Release 12.0.4 18 Family Packs
  - 18 new modules including E-Business Tax
- Release Update Pack #1 Released April 17
- Release Update Pack #2 Released July 18
- Release Update Pack #3 Released October 16
- Release Update Pack #4 Released January 15
- 10gR2 Certified (11g Pending)
- Fusion Applications Jump-Off Point
- Applications Unlimited and Lifetime Support Eligible





## 11.5.10.2 – Applications Interdependencies – February 2007

Desktop – JInitiator 1.3 / JRE 1.5

**Release Consolidated Updates** 

Release 11.5.10.2 Base Install

Family Packs – FIN, HR, PRC

**Module Mini-Packs** 

ATG Consolidated Updates (RUP #6)

Application Technology Group (ATG)

FND\* HZ\* JTT\* XDO\* OWF FWK TXK UMX

Application DBA (AD) / Rapid Install (ADX)

8.0.6.3 – Forms, Reports, 9*i*AS – Java, HTML, Apache

Layers of Increasing Impact

RDBMS Oracle9*i*, 10*g* 

**Operating System** 





## Release 12 – Applications Interdependencies – February 2007

Desktop – JRE 1.5 or JRE 1.6

Release Update Packs 12.0.4 includes Quarterly CPUs

Release 12.0.0 Base Install

Family Packs – FIN, HR, PRC

**Module Mini-Packs** 

**Application Technology Group (ATG)** 

FND\* HZ\* JTT\* XDO\* OWF FWK TXK UMX

Application DBA (AD) / Rapid Install (ADX)

10.1.2 – Forms, Reports, 10.1.3 – Java, HTML, Apache

RDBMS Oracle 10*g*R2

**Operating System** 

Layers of Increasing Impact







## Patching





## Release 11*i*Patch Definitions

- Media Pack (50+ CDs, 10-15 DVDs)
  - 11.5.10.0 November 2004, 11.5.10.2 July 2005
  - Entire Applications Release Including Technology
  - Desktop Components
  - Documentation
  - Latest Maintenance Pack Included
- Maintenance Pack (AU 11.5.10)
  - Entire Code Set Release for All Application Modules
  - No Technology Patches or Components Included
  - Lots of Pre/Post Tasks, VERY Long-Running
  - Consolidated Update Patches 11.5.9 and 11.5.10
- Family Pack (HR\_PF.K) Currently 22
  - All Product Modules Mini-Packs for the Specific Family
  - Lots of Pre/Post Tasks, VERY Long-Running
- Product Mini-Pack (GL.H)
  - Entire Patch Set for Specific Application Modules
  - Functionality Changes AND Bug Fixes
- One-Off Bug Patch (High Priority)
  - Fixes Specific Issue, No Regression Testing







## Release 12 Patch Definitions

- Media Pack
- Patch definitions are the same as Release 11*i* except:
  - Release Update Pack (RUP) is not the same as R11*i* Release Update Patch (also called a RUP) nor R11*i* Consolidated Update (CU)
  - R12 RUPs are quarterly, include latest CPU patches for the applications, but not for database, app servers and tools technology, and do not require you to apply prior RUPs (MetaLink Doc. ID 433461.1)







### Patchsets.sh Comparison Utility

Patchset Comparison Utility Found on Oracle's FTP Site:

ftp://ftp.oracle.com/support/outgoing/PATCHSET\_COMPARE\_TOOL/patchsets.sh

- Updated Nightly By Oracle
- Can Be Used For 10.7, 11.0.x, 11.5.x and Release 12
- Displays Currently Available Patchsets
- Reads the applptch.txt File or the Database
- Produces Reports on Differences





## OAM Patch Advisor / Patch Wizard

- Introduced in OAM.G Mini-Pack
- MetaLink Document 226826.1
- Uses InfoBundle11i.zip / Patch Information Bundle
- Release 11.5.9 Patch Advisor
- Release 11.5.10 Patch Wizard
- Release 12 Patch Wizard







## InfoBundle11*i*.zip / Patch Information Bundle

- Updated Nightly by Oracle's ARU System (Automated Release Update)
- Updates Patch Snapshot Repository
- Recommended Patch List
- Includes Patch Prerequisites
- MetaLink Document 233039.1
- For Release 11i InfoBundle11i.zip
- For Release 12 Patch Information Bundle







### Patch Application Methods

- Manual (Interactive)
- Automated (Non-interactive)
- Merge Patch Utility (Automated)
- OAM (Oracle Applications Manager) \*
- Commercial

\* Does not apply patches





### Patch Management/Tracking

- Manual (applptch.txt)
- Manual (spreadsheet)
- Manual (patchsets.sh)
- Database (AD patch AD.E)
- Commercial





### Oracle Patch Documentation

- Release 11*i* 
  - Maintenance Procedures (B19299-01)
  - Maintenance Utilities (B19300-01)
- Release 12
  - Maintenance Procedures (B31569-02)
  - Maintenance Utilities (B31568-02)
  - Patching Procedures (B31567-03) (Updated Oct 2007)
- Steven Chan's Blog
  - http://blogs.oracle.com/schan





# Minimum Patching – Security Patches

- Security Docs
  - (189367.1, 277535.1, 287176.1, 217368.1)
- Quarterly Critical Patch Update (CPU)
  - Significant Impact Database, Tools and Apps
  - Plan as Part of Release/Change Mgmt
  - MetaLink Doc. ID: 265987.1
  - www.integrigy.com
     Patch Impact Analysis
- Applications codeset \$APPL\_TOP (not cumulative!)
- Web Tier \$ORACLE\_HOME (cumulative)
- Application Tier \$ORACLE\_HOME (cumulative)
- Database Tier \$ORACLE\_HOME (cumulative)
- Release 11/Minimum Technology Baseline (363827.1)







### Release 12 Patching

- RUP1, RUP2, RUP3 & RUP4 have been released
- AD Update Pack 4 Patch 6510214
  - Prerequisite for RUP4
  - MetaLink Doc. ID: 465284.1
- RUP4 Patch 6435000
  - MetaLink Doc. ID: 465776.1
- Oracle Assets Data Corruption Patch 6812211
  - MetaLink Doc. ID: 553165.1
- 18 more modules introduced





### Patch Tips

- Pre-Patched/Staged \$APPL\_TOP
  - MetaLink Doc. ID 242480.1
- Shared Application File System
  - MetaLink Doc. ID 233428.1 & 384248.1
- Distributed AD Patching
  - MetaLink Doc. ID 236469.1
- Patching Best Practices and Reducing Downtime
  - MetaLink Doc. ID 225165.1







## Performance







### Performance Considerations

- Patched Current
- Pinning
- Statistics
- Diagnostics







### Patched Current

- Latest, Greatest Optimized Code
- Interdependencies Between Modules
- New Functionality and Features
- Changed Functionality







## **Pinning**

- Oracle Applications requires space in the ORACLE System Global Area (SGA) for stored packages and functions; if SGA space is fragmented, there may not be enough space to load a package or function; you should pre-allocate space in the SGA shared pool for packages, functions, and sequences by "pinning" them
- Pinning objects in the shared pool can provide a tremendous increase in database performance, if it is done correctly; since pinned objects reside in the SQL and PL/PLSQL memory areas, they do not need to be loaded and parsed from the database, which saves considerable time
- PIND Pinning Toolkit MetaLink 301171.1





### **Statistics**

- The Concurrent Program Gather Schema Statistics should be run weekly (at a minimum) using ALL, 99 and NOBACKUP values unless time prohibits
- Minimum Gather Statistics should be run weekly against all non-sys/system objects using 10%
- Additionally, a separate statistics gathering process should be run daily on high transactions modules (e.g. AP, PO, OE, ONT, PA, PAY) during low processing periods
- Using any value larger than 50 will force a compute vs. an estimate for statistics; any value <50 only provides estimated statistics. Computed statistics provide a significant performance improvement for Application modules
- FND\_STATS Required MetaLink 141532.1







# Release 11/R12 Diagnostics

- Diagnostics will be required by Oracle Support for SRs by end of 2008
- Remote Diagnostic Agent (RDA)
- BDE Scripts Database
- Statspack / Automatic Workload Repository (AWR)
- Technology Validation Utility / CSM
- OAM Performance Tuning Wizards and Diagnostics are constantly being enhanced

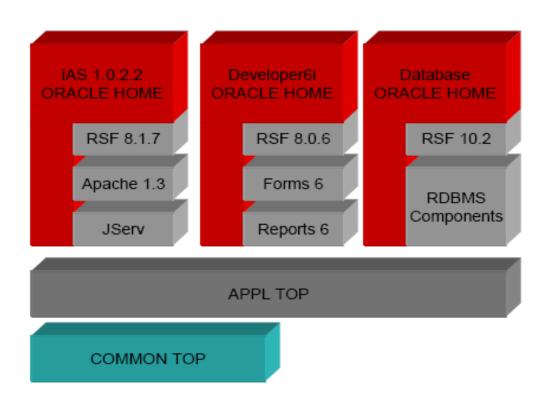






# Release 11*i* Components

#### 11i Installed & Managed File System



#### Major Components:

Java Home: 8.1.7-based iAS 1.0.2

•C Home: 8.0.6-based Developer 6

Database Home: 10.2

 Appl Top: Applications' code staging area

 Common Top: Runtime location for Java, HTML, run-time generated files

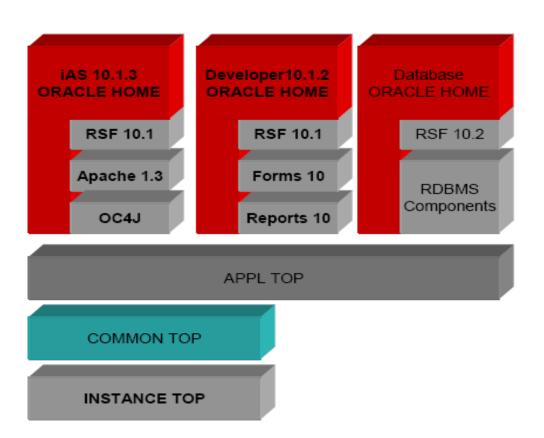






# Release 12 Components

#### R12 Installed & Managed File System



#### Major Components:

Java Home: 10.1-based

iAS 10.1.3 -new

•C Home: 10.1-based Developer 10 standalone install of AS 10.1.2

phase2 – new

•Database Home: 10.2

 Appl Top: Applications' code staging area

 Common Top: Runtime location for Java, HTML

 Instance Top: configuration and runtime generated files –new





# Release 12 Components

- Sun's Native 1.6 Java Runtime Environment (JRE)
- Java Home 10.1.3
  - Required Support Files (RSF) 10.1
  - Apache 1.3.34
  - OC4J Oracle Containers for J2EE
    - Execute Servlets, Java Server Pages (JSP) and Enterprise Java Beans (EJB)
    - Three Instances (OACore, Forms, OAFM)
    - Deploys EAR (Enterprise Archive), WAR (Web Application Files), JAR (Web Application Code), JSP and HTML
    - Oracle Process Manager and Notification Server (OPMN)





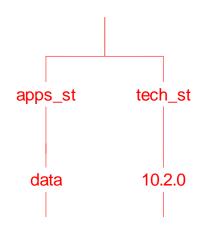
# Release 12 Components

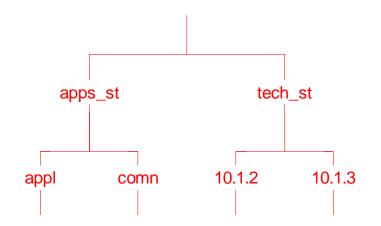
- Developer Home 10.1.2
  - Required Support Files (RSF) 10.1
  - Forms
    - Swan UI
    - Servlet
    - Forms Trace
    - Forms Generator
  - Reports (Only Available from Concurrent Managers)
  - 'C' Code
- Database Home 10.2.0.3
- APPL\_TOP
  - Application Code
- COMMON\_TOP
  - Runtime Java and HTML
- INSTANCE\_TOP
  - Configuration Files

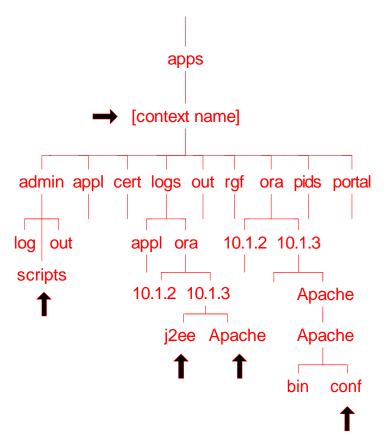




# Release 12 Directory Structure













## Release 12 Changes

- No JInitiator Use JRE 1.6
- No mod\_plsql
- No Oracle Graphics Rewrite with XML Publisher and OAF/BI Beans
- Report Server not utilized
- OC4J replaces JServ with Orion-web.xml, Orionapplication.xml, OC4J.properties and Server.xml







## Release 12 Changes

- Not Included in Rapid Installation
  - Discoverer 10.1.2
  - SSO/OID 10.1.2
  - Portal 10.1.4
  - WebCache 10.1.2
  - Collaboration Suite 10.1.2
  - Warehouse Builder 10gR1
  - Enterprise Manager 10.1.2
  - Integration Server 10.1.3
  - Forms Developer installed separately as part of Developer Suite







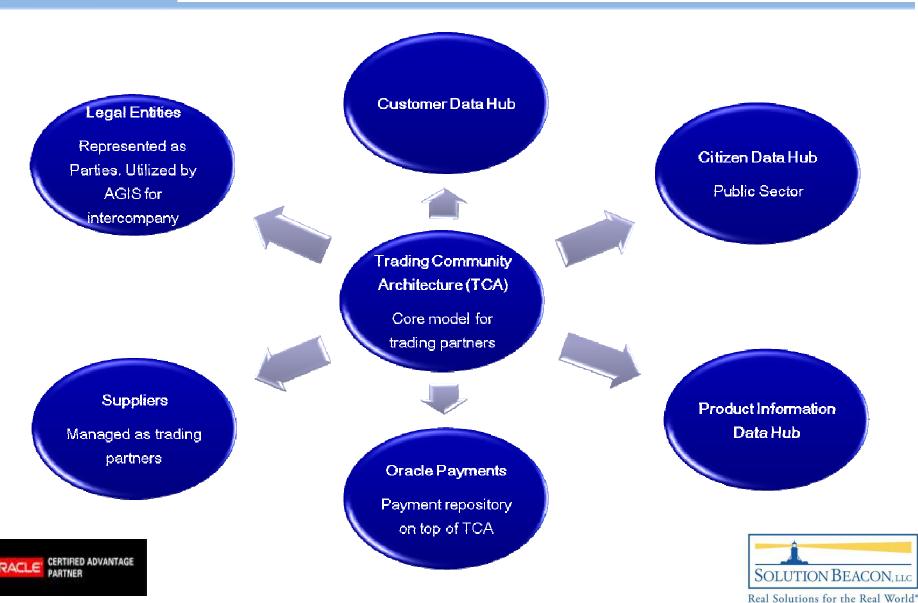
## Release 12 Functional Highlights







## Data Management – A Single Source of Truth





## Multi-Org Access Control

- Access multiple operating units within a single application responsibility
- Perform tasks for and across multiple operating units
  - Enter transactions
  - Process data
  - View information
  - Run reports
- Increase effectiveness of Shared Service Centers







- Subledger Accounting Schema XLA
  - Rule-based accounting engine with a centralized data model and repository
  - Individual subledgers will no longer generate accounting
  - Generates and stores detailed accounting entries
  - User-defined Accounting Rules







- Payments Schema IBY
  - Payment Factory Model
  - Single Payment across Operating Units with the same Legal Entity
  - Bank/Branches are TCA Parties
  - Bank Account owned by Legal Entity
  - Single User Interface







- E-Business Tax Schema ZX
  - Manages Transaction Taxes
    - Order to Cash
    - Procure to Pay
  - Calculates Tax at Line Level
  - Utilizes Data Repositories
    - Tax Content rates and rules
    - Tax Record tax entries
  - Single User Interface
  - Tax Simulator
  - Integration with third party vendors







- Advanced Global Intercompany System Schema FUN
  - Automatic Intercompany Invoicing
    - Receivables invoice used and mirror is created in payables
  - Still Supports Manual Entry
  - Transactions batches can be applied across ledgers
  - Reconciliation Tool
    - Run Intercompany Reconciliation Data extract





## Next Steps







## Release 12 Next Steps\*\*

- Upgrade Database to 10gR2
- Review mod\_plsql
- Migrate to XML (BI) Publisher
- Install Forms/Reports Builder 10.1.2
- Review Custom.pll Library
- 10% Larger Database
- Review Fusion Middleware

\*\*Subject to Change

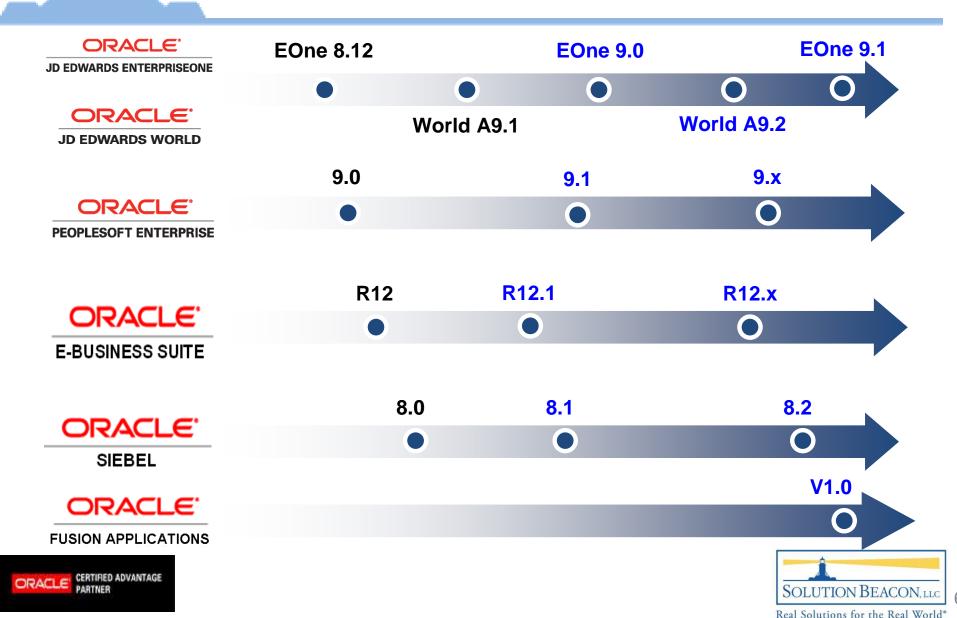






## Customer Driven Roadmaps

#### **GM Organizational Model Drives Execution**





## Oracle Lifetime Support Policy – Revisited

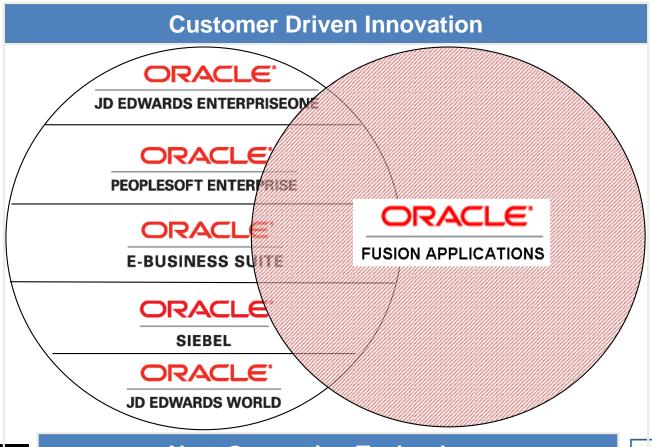
Key Feature	Premier Support (5 Years)	Extended Support (3 Years)	Sustaining Support (Infinite)
Major Product and Technology Releases	•	•	•
Technical Support	•	•	•
Access to Support Portal	•	•	•
Updates and Fixes	•	•	Pre-existing
Security Alerts	•	•	Pre-existing
Upgrade Scripts	•	•	Pre-existing
Critical Patch Updates	•	•	
Tax, Legal, and Regulatory Updates	•	•	
Certification with Existing third-party Products/versions	•	•	
Certification with most new Oracle products	•	•	
Certification with most new third-party	•		





## How Fusion Applications Fit

Customers continue to extend value in current products and choose if they move to Fusion.





**Next Generation Technology** 



## Fusion Technology in Apps Unlimited Family Today

The Plan is to Evolve to the Next Generation by Leveraging Fusion Technology Today

#### Application Integration Architecture

Reduced TCO through sustainable integrations



#### Reporting

Easy, intuitive end user reports built from any data source





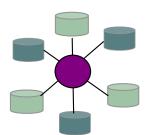
#### **BI Intelligence**

Insight provided within the context of operational systems



#### **Master Data Management**

Consolidate and leverage master data



#### **GRC**

Control cost and risk; insight to increase accountability

Risk Assessment Survey					
Risk Issue	Strategic Weight	Weighted Score			
Are you launching a new product?	10	10			
2. Are you entering a new market?	9	0			
3. Are you targeting a new customer segment?	5	0			

#### **Enterprise Manager**

Reduce resolution times with integrated management







## **Upgrade Strategy?**

- Stick with Release 11i and Upgrade to Fusion Later
  - If you don't need new features of Release 12, you can stay where you are, but you'll still have to apply CPUs and RUPs
- Upgrade to Release 12 and Upgrade to Fusion Later
  - Very stable release
  - Includes new modules and many functional enhancements
  - You'll still have to apply CPUs and RUPs
- Either way, where possible begin preparing for Fusion NOW with the Fusion Middleware!





## Prepare for Fusion!

- Understand your business processes Use the Business Process Analysis Suite
- Rethink your customization strategy take inventory and engineer for the future
- Cleanse and consolidate your critical data consider Master Data Management (MDM)
- Extend your business intelligence portfolio OBIEE, BAM and Oracle DBI
- Adapt enterprise reporting and publishing use BI Publisher for high fidelity XML based reporting







### Prepare for Fusion!

- Secure your global enterprise implement Identity Management Capabilities – reduce risk
- Improve the scalability and availability of your data implement Oracle 10g/11g databases
- Centralize systems management use the Applications Management Pack (AMP) and OEM
- Build your strategic plan for your Applications Understand Applications Unlimited and Lifetime Support
- Develop SOA, EDA, BPM experience Get familiar with the Fusion Architecture Technology
- Patch and the patch stay up to date to minimize downtime







## More Information





## Over \$24,800 donated to the Solution Beacon Foundation from the sale of our books!

## Got Oracle? Get the Books!

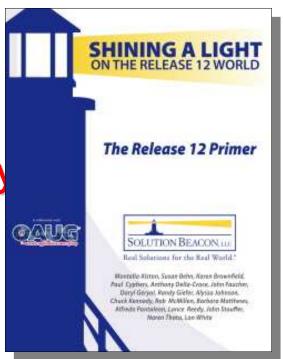
Installing, Upgrading and Maintaining

Oracle E-Business Suite Applications Release 11.5.10+

By Burbara Matthews, John Stouffer, Rancy Giefer, Karen Brownfield, Jeif Holt, Bruno Coon, James Morrow, Tim Sharpe and Faun deHenr

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The Release 12 Primer – Shining a Light on the Release 12 World

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### Questions and Answers

#### Thank You!

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