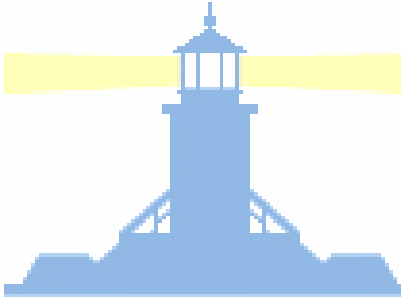


# Oracle E-Business Suite Release 11/ and Release 12 A Study in Contrasts (Technical Track)

Kevin Dahl  
May 30, 2008  
8:40am – 9:40am



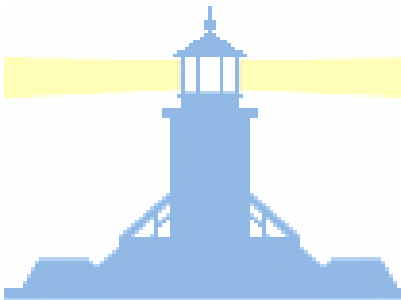


# Kevin Dahl

- Oracle DBA 18 Years
- Oracle Apps DBA 15 Years
- Release 10.x to 12
- RDBMS Version 7 to 10g

Email: [kdahl@solutionbeacon.com](mailto:kdahl@solutionbeacon.com)





# Audience

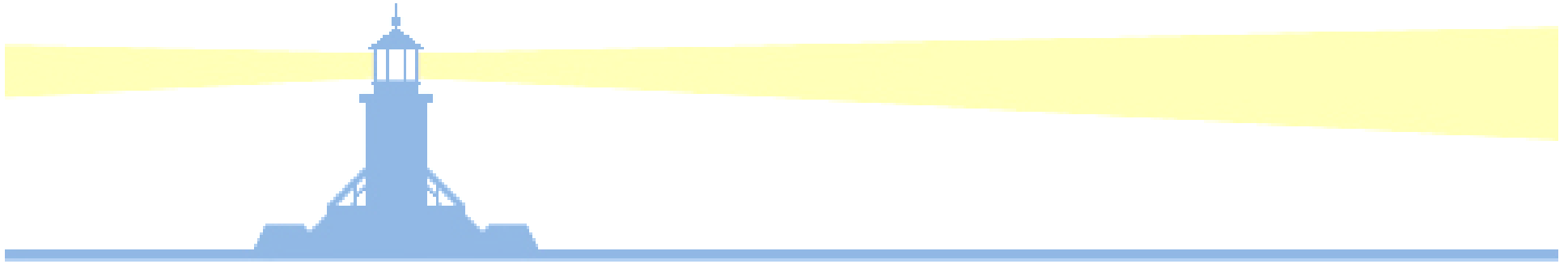
- Functional / Technical
- PeopleSoft, JD Edwards, Retek, Siebel, Hyperion
- Oracle E-Business Suite
  - Release 10.7
  - Release 11.0.3
  - Release 11*i* (11.5.8 or earlier)
  - Release 11*i* (11.5.9 or later)
  - Release 12





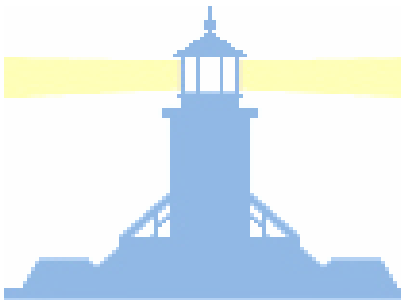
# Agenda

- Concepts
- Patching
- Performance
- Next Steps



# Concepts

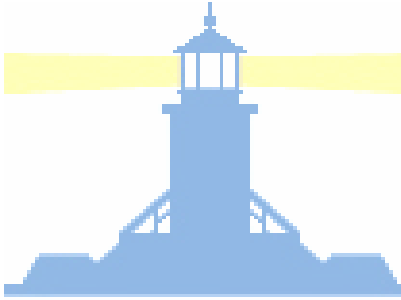




# Release 11*i*/ 12 Terminology

- Release 11*i* is 11.5.x or 11*i*.x
  - 11.5.1 ... 11.5.2 ... ... 11.5.10
- Release 12 is 12.0.x
  - 12.0.4 (January 15) full RUP
  - 12.0.5 (May 15) Financials and HRMS (2 patches)
- 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

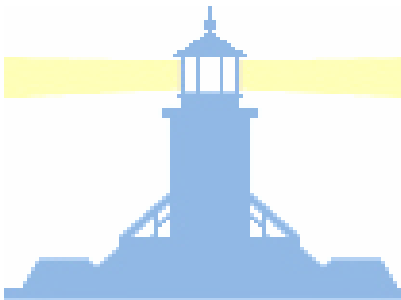




# Release 11// 12

## Basics to Remember

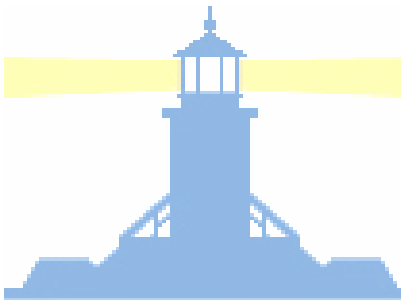
- Release 11//12 are not static releases
- Release 11//12 install everything regardless of licensing and de-normalizing the data in the database for reporting performance
- Release 11//12 contain constantly evolving technology components
- Release 11//12 point upgrades introduce significant changes to 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 11i? Release 12?

- Release 11i (November 2004)
  - The biggest, most complex Oracle E-business release at that time!
  - 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 11i
  - Fusion Middleware (IDM, 10gAS, etc)
  - 10gR2 database
  - Fifth Release Update Pack (May 2008)



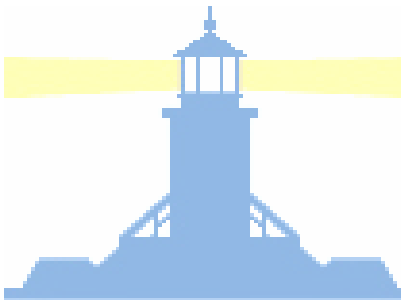


# What is Release 11*i*?

## What is Release 12?

- Release 11*i*
  - Completely new architecture, tools and technology – true three-tier
    - Internet Computing Architecture (ICA)
    - Technology Stack – Forms, Java, Apache(html)
    - Oracle8*i*/Oracle9*i*/10*g* – Cost Based Optimizer(CBO), Partitioning
  - Multiple Application Server Components
    - Forms-Based: ERP, Back Office
    - HTML/JAVA-Based: Self Service, Workflow, “*i*” Products
    - Business Intelligence: Discoverer 3*i*/4*i*/10*g*, Reports, XML (now BI) Publisher
- Release 12
  - More architecture, tools and technology changes
    - Fusion Middleware
  - More Application Server Components changes, especially BI





# Release 11*i*/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 10.7 40 products
  - Release 11.0.x 50 products
  - :
  - Release 11.5.5 161 products
  - Release 11.5.6 175 products
  - Release 11.5.7 179 products
  - Release 11.5.8 191 products
  - Release 11.5.9 197 products
  - Release 11.5.10 209 products
  - Release 12 220 products





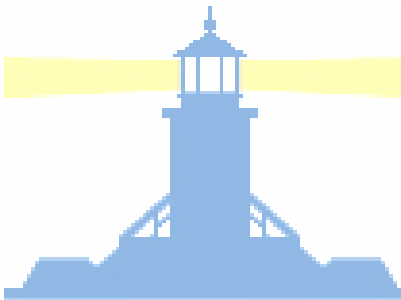
# Release 11 / Bug Fixes

- More stable functionality (technical and applications) continuously appearing with each major patch release
  - 11.5.5/6 – ~ 20,000 bug fixes
  - 11.5.7 – ~ 40,000 bug fixes
  - 11.5.8 – > 60,000 bug fixes
  - 11.5.9 – > 100,000 bug fixes
  - 11.5.10 – ~ 180,000 bug fixes
    - Initially released on Oracle9i ... now 11g 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



*Note: Metrics from Vision Environments*





# Release 12 Bug Fixes

- More stable functionality (technical and applications) continuously improving with each major RUP (Release Update Pack)
  - 12.0 – ~ 63,602 bug fixes (base)
  - 12.0.1 – ~ 827 bug fixes (additional)
  - 12.0.2 – ~ 4163 bug fixes (cumulative)
  - 12.0.3 – ~ 7,569 bug fixes (cumulative)
  - 12.0.4 – ~ 10,682 bug fixes (cumulative)
  - 12.0.5 – ~ 6,800 bug fixes (partially)
- Initially released on Oracle 10gR2 ... 11g certified in 2008
- JRE 1.5 & JRE 1.6
- RUPs in Release 12 are like CUs were for Release 11*i*, only better



*Note: Metrics from Vision Environments*





# Release 11/Objects

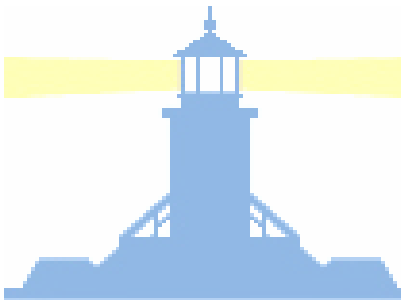
- “Stub” applications, performance improvements, additional functionality continuously appearing with each major patch release
  - 10.7 – ~ 25,000 objects
  - 11.0 – ~ 30,000 objects
  - :
  - 11.5.5/6 – ~ 200,000 objects
  - 11.5.7 – ~ 240,000 objects
  - 11.5.8 – ~ 280,000 objects
  - 11.5.9 – ~ 310,000 objects
  - Fresh\* 11.5.9 ~ 200,000 objects
  - 11.5.10 – ~ 270,000 objects





# Release 12 Objects

- “Stub” applications, performance improvements, some additional functionality continuously appearing with each major patch release
  - 12.0 – ~ 360,512 objects
  - 12.0.1 – ~ 368,368 objects
  - 12.0.2 – ~ 361,748 objects
  - 12.0.3 – ~ 363,764 objects
  - 12.0.4 – ~ 366,577 objects
  - 12.0.5 –

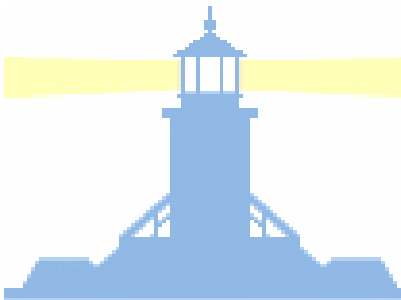


# Release 11i Architecture

## 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 6i (6.0.8.24 – Patch 15)
  - Workflow 2.6.3 (OWF.H)
- Database Tier
  - Oracle 9i 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 4i (4.1.48) – 10/31/06



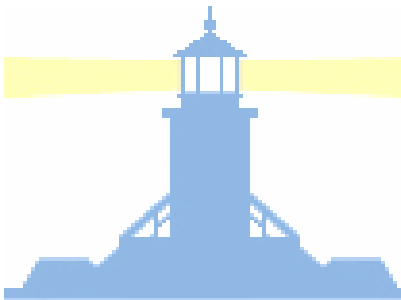


# Release 11*i* Architecture

## Latest 11.5.10.2

- Client
  - Oracle JInitiator 1.3.1.29 or Sun JRE 1.5.0\_12+ / 1.6.0\_3+
- 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, 10*g*R2 or 11*g*
  - Other Oracle Home Software Directories – App 8.0.6.3, *i*AS 8.1.7 = 9*i*AS 1.0.2.2.2 (Release 1)





# Release 12 Architecture

## 12.0.0

- Client
  - Sun JRE 1.6 / 1.6 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 10g (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



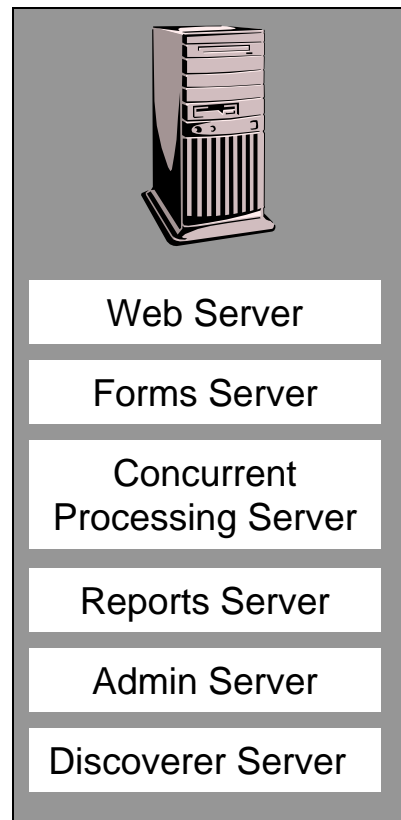


# Release 11i Architecture

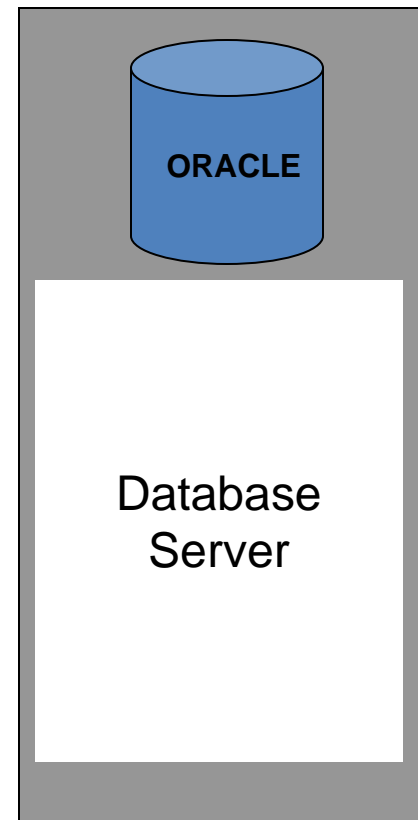
Desktop Tier



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

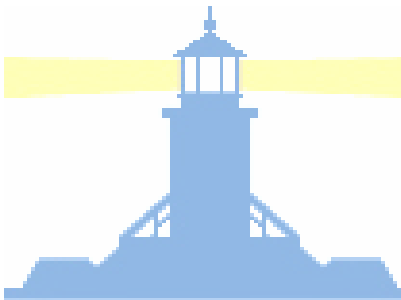
Admin Server



Database  
Tier

Oracle RDBMS 10gR2  
(10.2.0.3) if R12.0.2 or  
higher

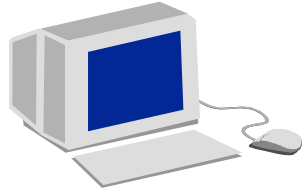




# Release 11i Architecture – Components

## Release 11.5.10.2 DVD Release

Client Tier



**JInitiator**

Web HTTP Servers

Application Technology Stack

Middle Tier

**Apache**

**Admin Server**

**Concurrent Processing Server**

**Discoverer Server\***

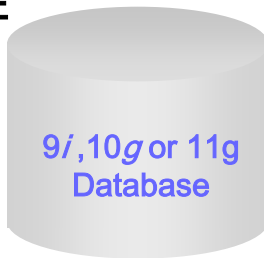
**Forms Server**

**Reports Server \***

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

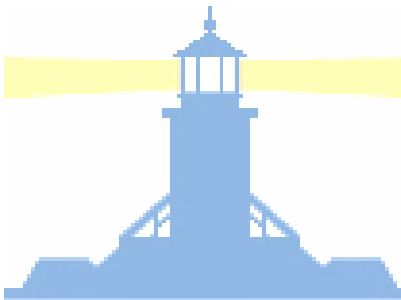
8.0.6.3 ORACLE\_HOME

Database Tier



9.2.0.8/10.2.0.3/11.1.0.6 ORACLE\_HOME

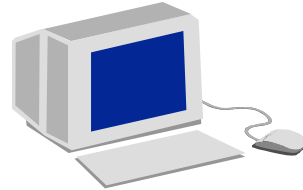




# Release 12 Architecture – Components

## Release 12 DVD Release

Client Tier



JRE 1.6

### Web HTTP Servers

Middle Tier

Apache

Discoverer Server\*

OCJ4 Container

### Application Technology Stack

Admin Server

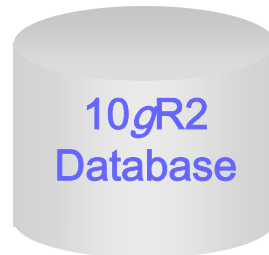
Concurrent Processing Server

Forms Server

\*optional  
10gAS ORACLE\_HOME  
(10.1.3)

10.1.2 ORACLE\_HOME

Database Tier



10.2.0.3 ORACLE\_HOME



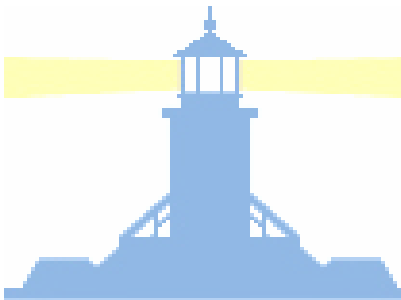


# Release 11#12

## 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

- 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



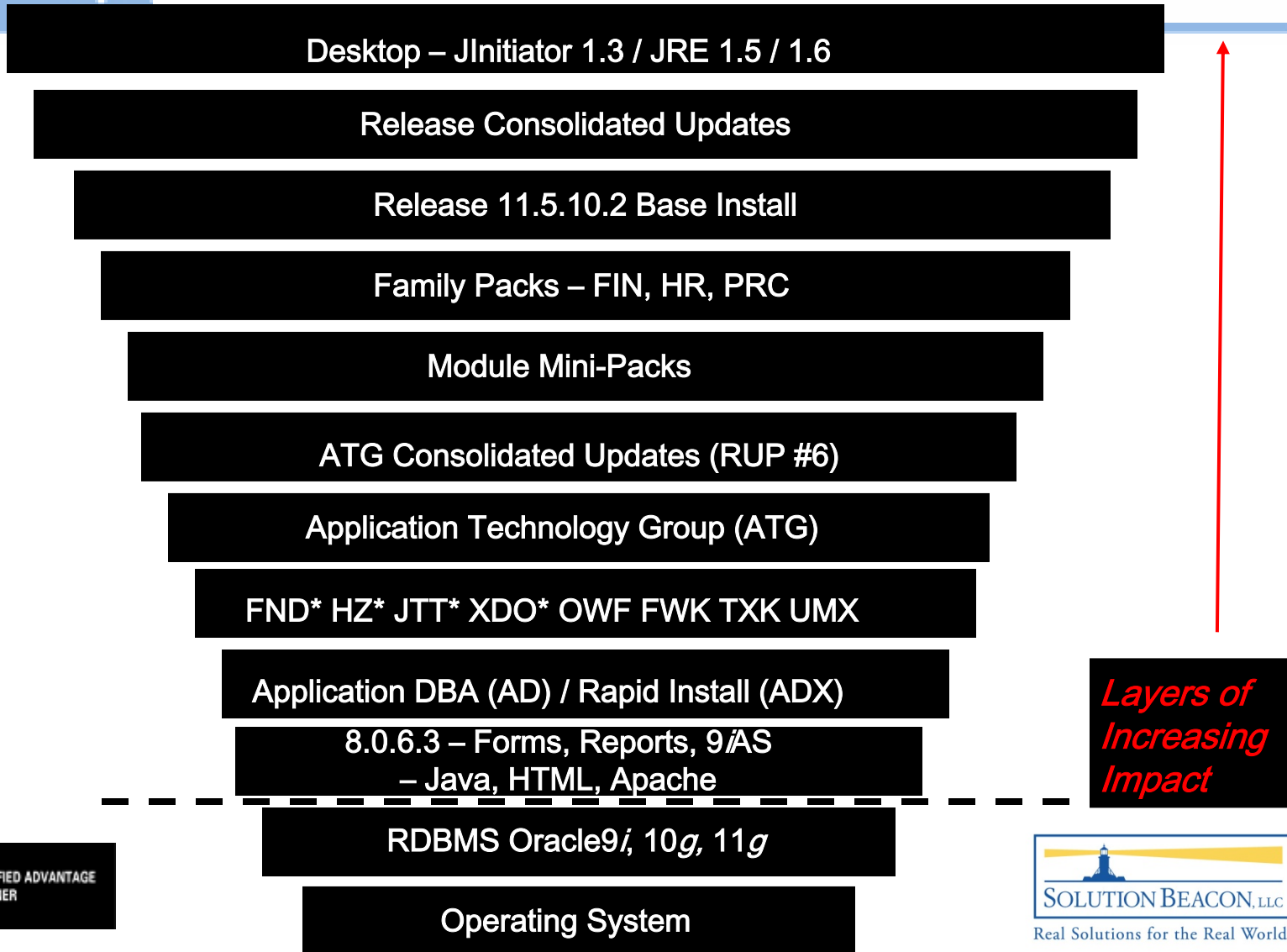


# Release 12 – Applications Interdependencies

- Release 12.0.5 – Focused on FIN and HRMS
  - Delivered in 2 separate patches that are about 200m +
- 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
- Release Update Pack #5 – Release May 16 (financials family and HRMS)
- 10gR2 Certified (11g Pending)
- Fusion Applications Jump-Off Point
- Applications Unlimited and Lifetime Support Eligible

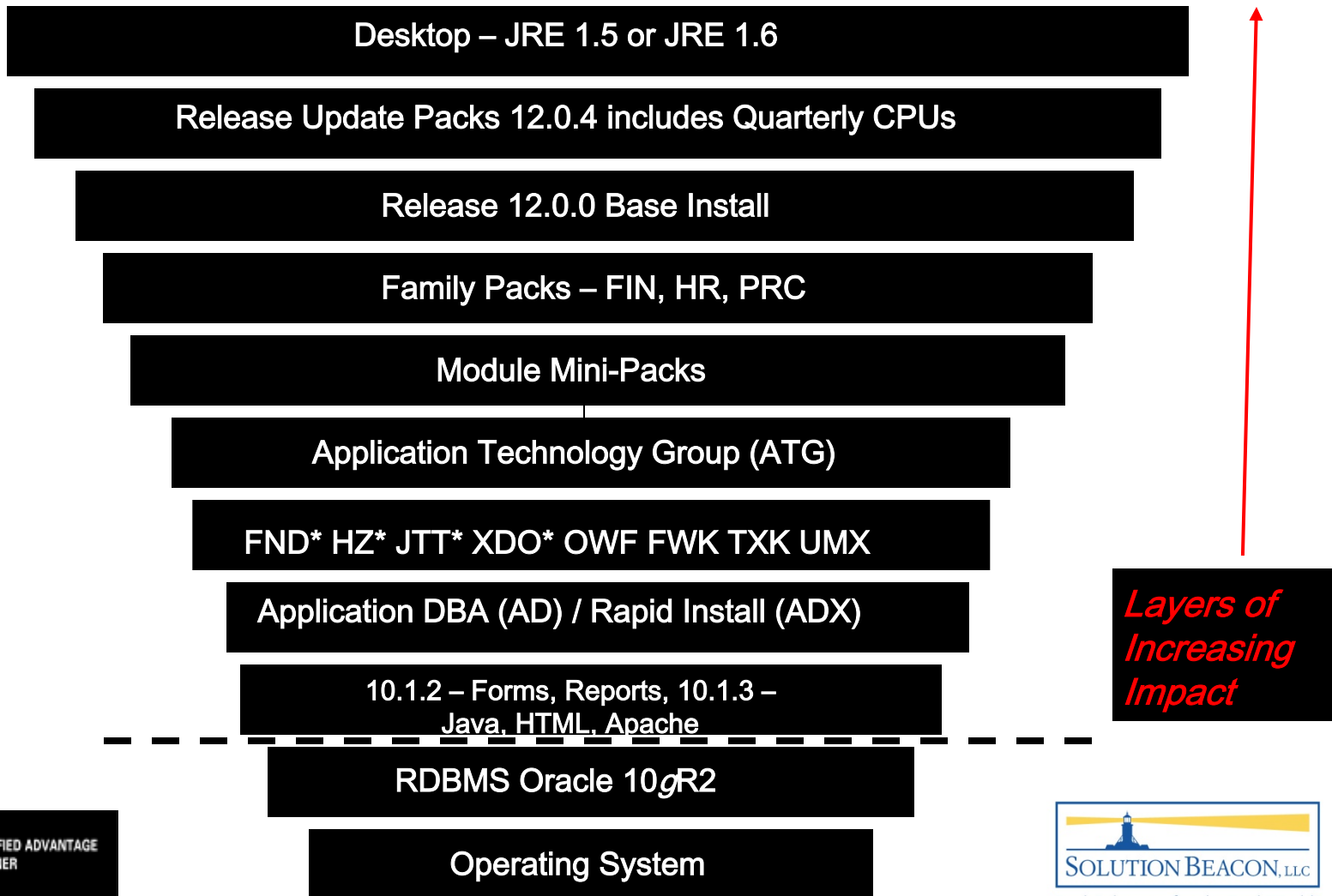


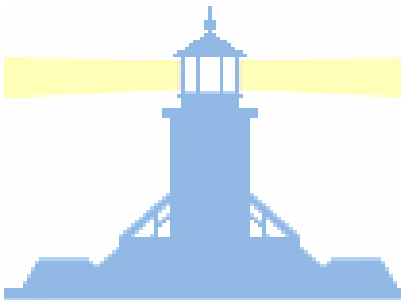
# Release 11.5.10.2 – Applications Interdependencies – April 2008



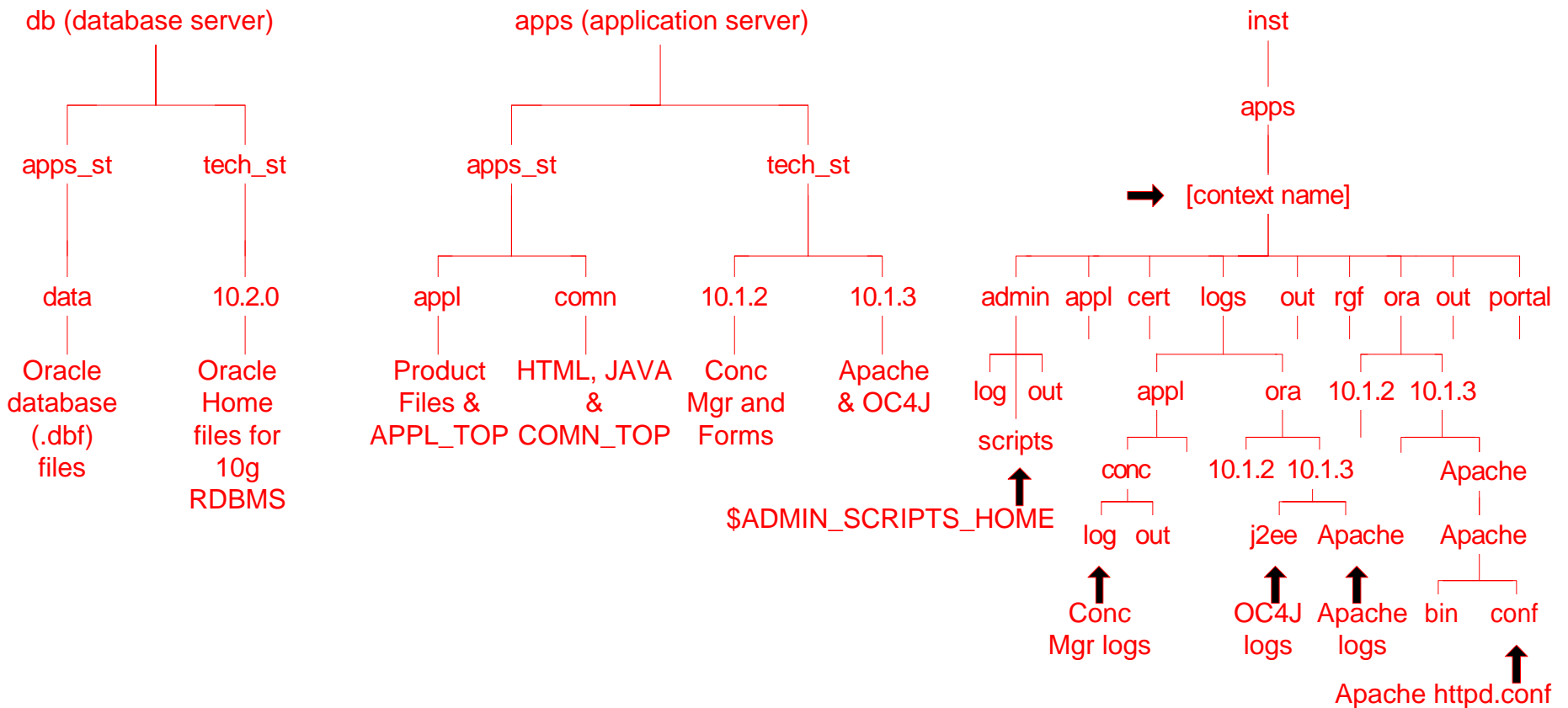


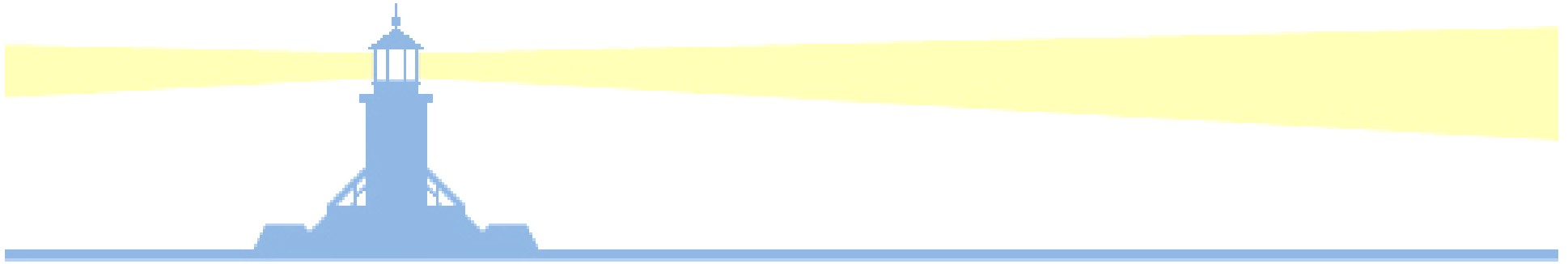
# Release 12 – Applications Interdependencies – April 2008






# Release 12 Directory Structure





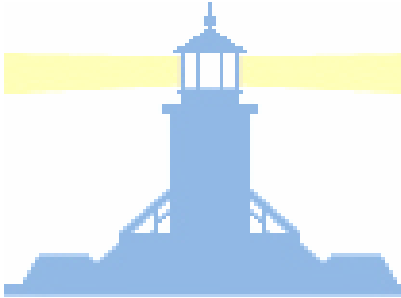
# Patching





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



# Patchsets.sh Comparison Utility

Patchset Comparison Utility Found on Oracle's FTP Site:

[ftp://ftp.oracle.com/support/outgoing/PATCHSET\\_COMPARE\\_TOOL/patchsets.sh](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/.zip / Patch Information Bundle

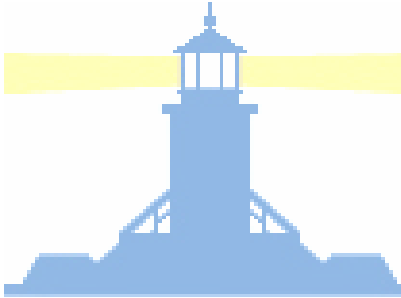
- Updated Nightly by Oracle's ARU System (Automated Release Update)
- Updates Patch Snapshot Repository
- Recommended Patch List
- Includes Patch Prerequisites
- MetaLink Document 233039.1
- For Release 11i – InfoBundle11/.zip
- For Release 12 – Patch Information Bundle



# Patch Application Methods

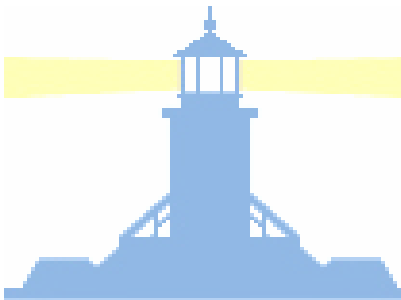
- Manual (Interactive)
- Automated (Non-interactive)
- Merge Patch Utility (Automated)
- OAM (Oracle Applications Manager) \*
- Commercial

\* Does not apply patches



# Patch Management/Tracking

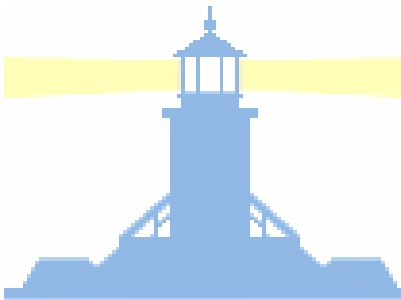
- Manual (applptch.txt)
- Manual (spreadsheet)
- Manual (patchsets.sh)
- Database (AD patch – AD.E)
- Commercial



# 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

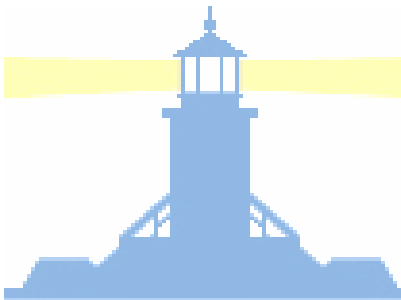
- Security Docs
  - (189367.1, 277535.1, 287176.1, 217368.1)
- Quarterly Critical Patch Update (CPU)
  - Significant Impact – Database, Tools and Apps
  - Plan as Part of Release/Change Mgmt
  - MetaLink Doc. ID: 265987.1
  - [www.integrigy.com](http://www.integrigy.com) – Patch Impact Analysis
- Applications 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)





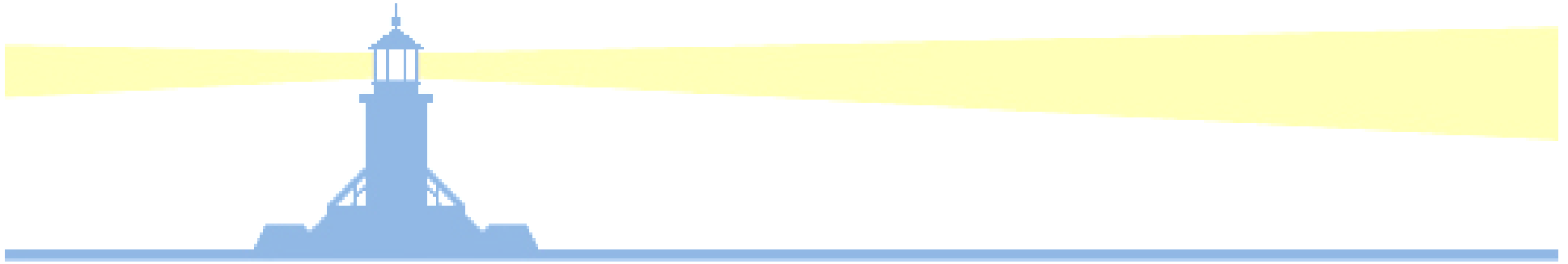
# Release 12 Patching

- RUP1, RUP2, RUP3, RUP4 and RUP5 have been released
- RUP5 Financials Patchset 6836355
  - MetaLink Doc. ID: 565898.1
- RUP5 HRMS Patchset 6610000
  - Metalink Doc ID: 565977.1
- Check pre-reqs for above. Also, new functionality for both RUPs is described in the Note 404152.1 Release 12.0.5 Release Content Document.



# 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
- Take advantage of 10g features



# 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 11i/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



# 10g Features

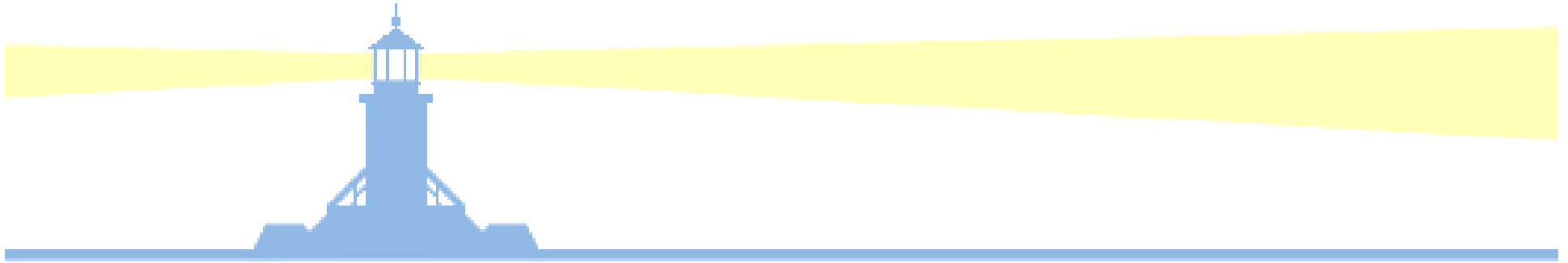
- ASMM

Introduced in 10g to relieve DBAs from sizing some parts of the SGA by themselves.

When enabled, it lets Oracle decide on the right size for some components of the SGA:

- *SHARED POOL*
- *LARGE POOL*
- *JAVA POOL*
- *DB CACHE (using the DB\_BLOCK\_SIZE value)*

– They are called auto-tuned parameters.



# Next Steps



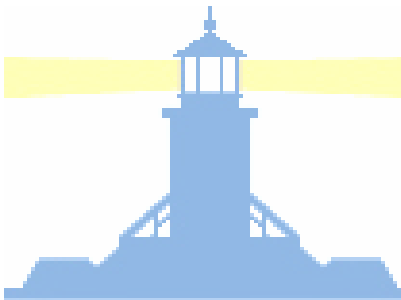


# Release 12 Next Steps\*\*

- 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





# Upgrade Strategy?

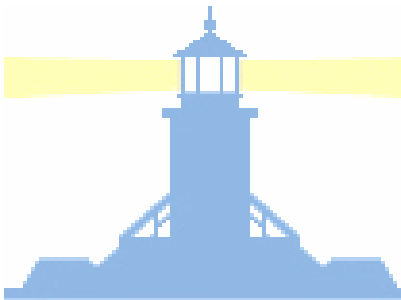
- Stick with Release 11*i* and Upgrade to Fusion Later
  - If you don't need new features of Release 12, you can stay where you are, but you'll still have to apply CPUs and RUPs
- Upgrade to Release 12 and Upgrade to Fusion Later
  - With RUP 5 now a very stable release
  - Includes new modules and many 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!

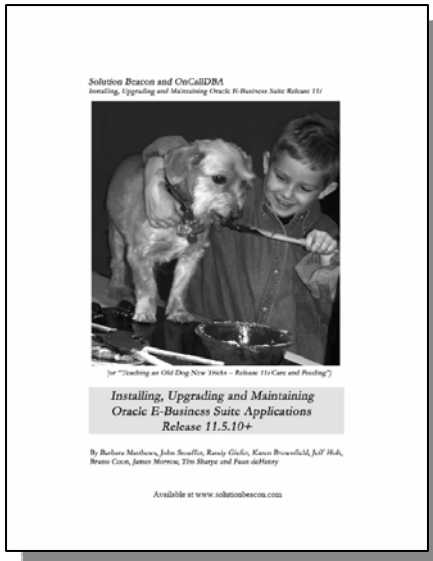
- Secure your global enterprise – implement Identity Management Capabilities – reduce risk
- Improve the scalability and availability of your data – implement Oracle 10g/11g databases
- Centralize systems management – use the Applications Management Pack (AMP) and OEM
- Build your strategic plan for 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



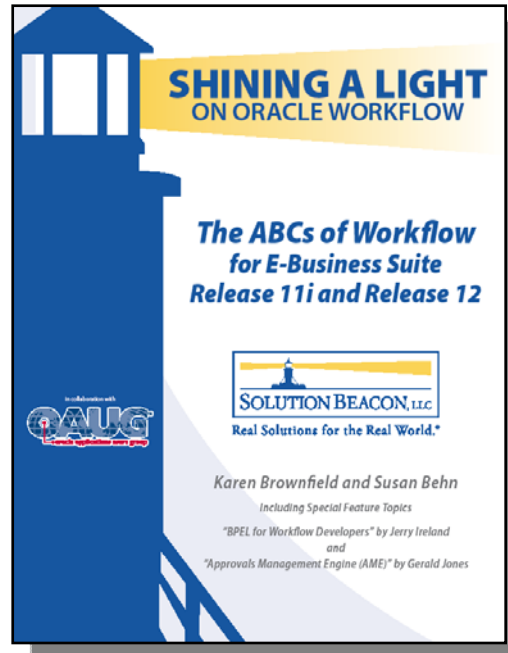
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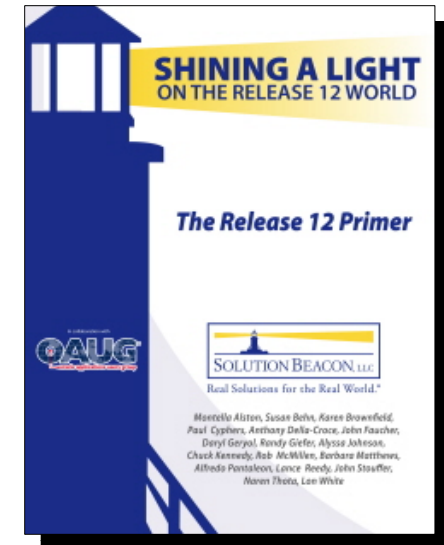
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# Questions and Answers

Thank You!

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