

# Release 12 Apps DBA 101



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- Board Member 2010-2011, OAUG
- Oracle Certified ACE
- Oracle Databases Version 5+
- Oracle Applications Release 8+
- Specialist in Assessments, Upgrades and Client Advocacy

# Presentation Objectives

- Learn about the new features, functionality and utilities available with Release 12
- We will also cover patching strategy and patch nuances that have changed from Release 11*i*

# Release 12 Basics

- Release 12 aka R12
- Each new point release of R12 is packaged in a RUP (Release Update *Pack*)
- Current R12 RUPs are 12.0.1, 12.0.2, 12.0.3, 12.0.4, 12.0.5, 12.0.6, 12.1.1 (aka EBS 12.1 RUP 1), 12.1.2 (aka EBS 12.1 RUP 2)
- Oracle *usually* releases a new RUP for Release 12 every three months concurrent with the quarterly CPU
- RUPs may include new or stub applications, performance improvements AND, new or enhanced functionality
- Read the Release Content Documents (RCDs) on MetaLink to see what changed between RUPs

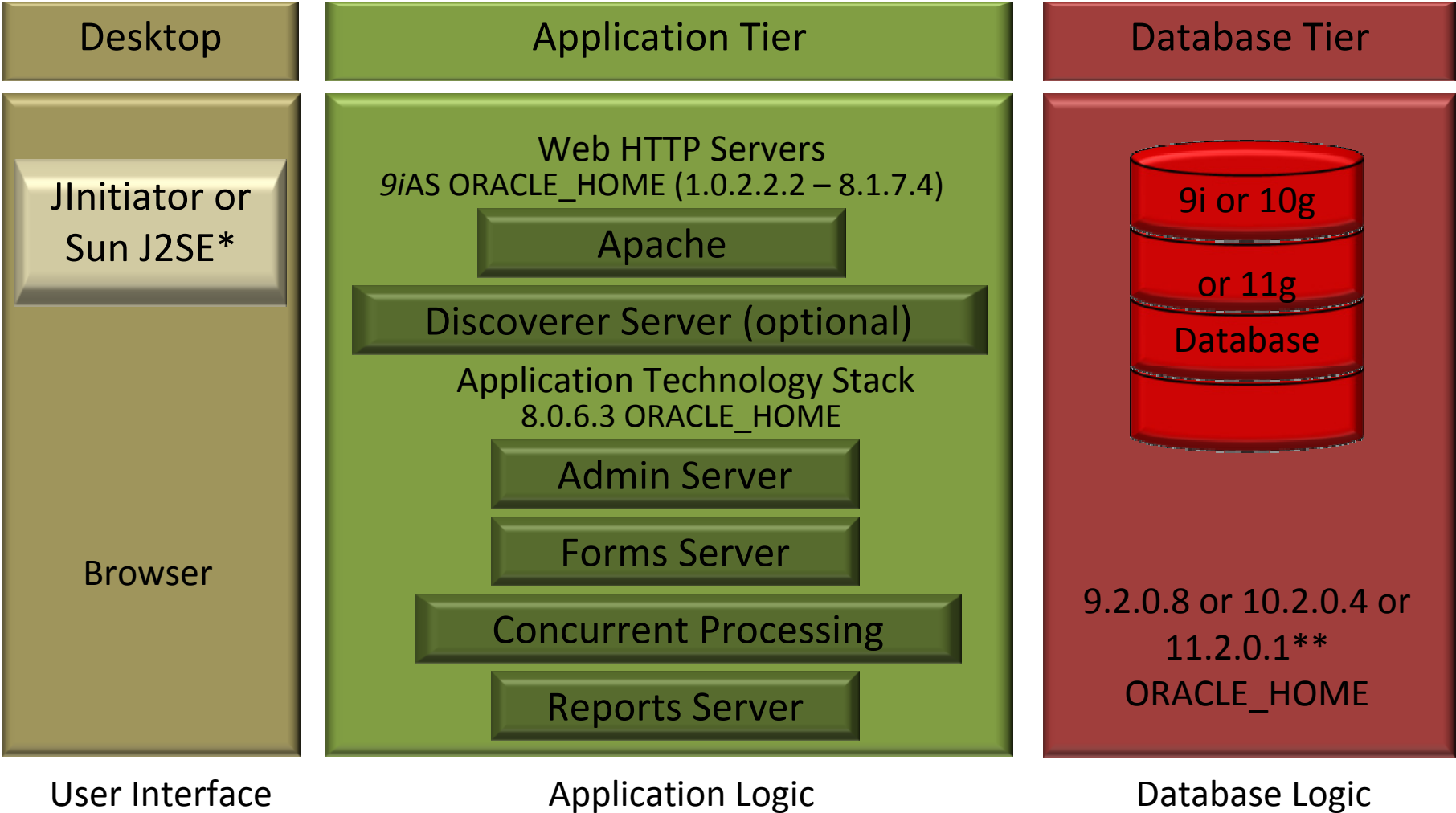
# Release 12 Basics

- Release 12 is constantly changing
- It is the DBA's job to be constantly vigilant, watching for changes:
  - Oracle released EBS Release 12.1.2 in December, and in March announced a mandatory CUP for anyone upgrading to 12.1.1 (so if you are upgrading, you will be on EBS R12.1 RUP 2 CUP 1!)
  - Oracle released the January CPU, then modified the January CPU in February with a mandatory change
  - PSUs - Use the PSU Method for Database and Applications, beginning with the January 2010 Quarterly CPU
- Check My Oracle Support often, even if you think you don't have any problems!

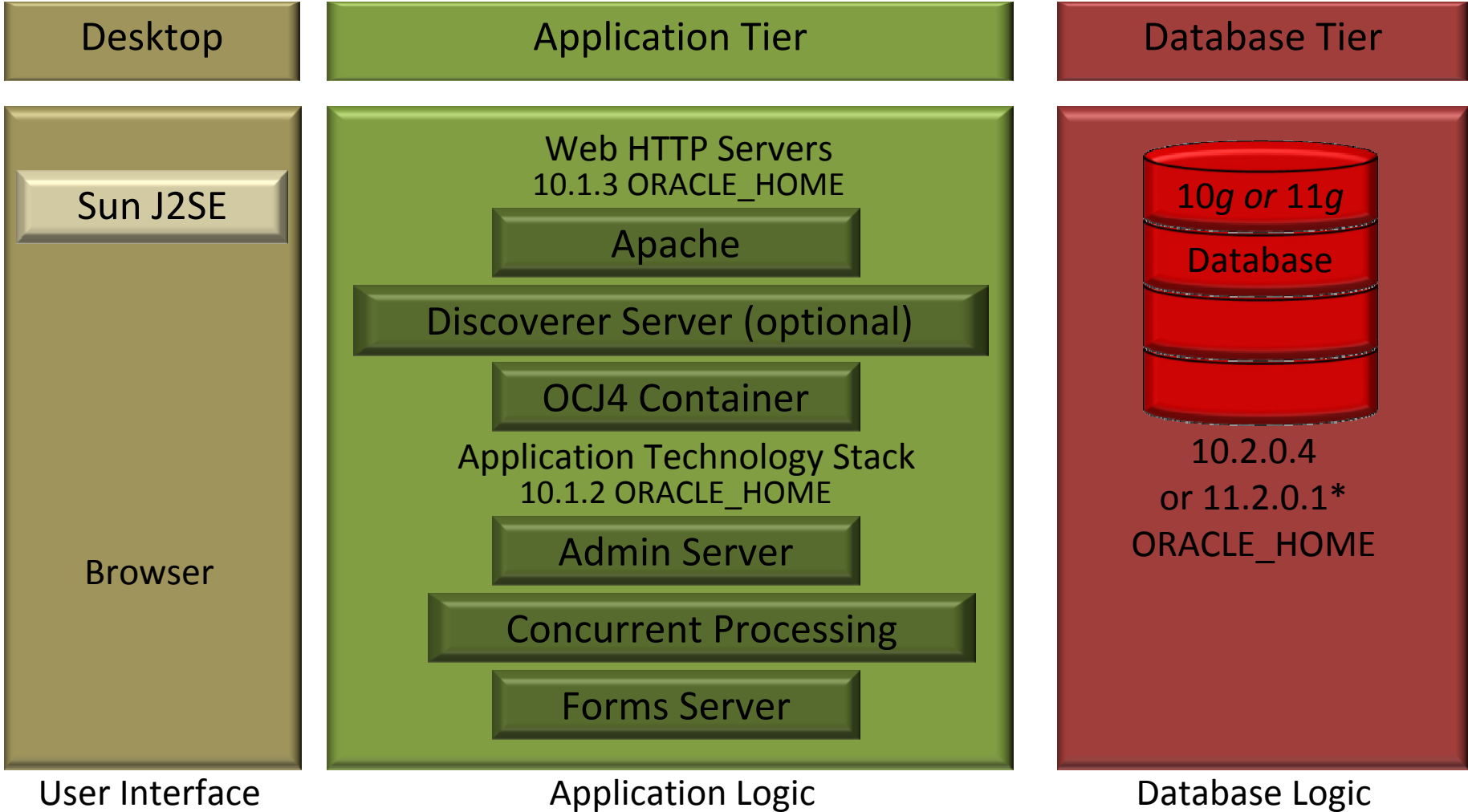
# Release 12 Basics

- When you install Release 12, you install all modules, whether you license them or not (200+)
- Certain additional patches *should* be applied on a regular schedule (e.g., quarterly Critical Patch Updates - Use the PSU Method for Database and Applications - Starting with January Quarterly CPU)
- Quarterly Release 12 Upgrade Packs (RUPs) can change/add functionality and/or technology
- Applications Technology (ATG) or pseudo products are an integrated set of modules used by all of the other modules: FND, OAM, OWF, FWK, JTT, JTA, TXK, XDO, ECX, EC, AK, ALR, UMX, BNE, and FRM

# Release 11i Architecture Components



# Release 12 Architecture Components



# R11*i* and R12 Multi-Tiered Architecture

- Desktop Tier
  - R11*i* – uses a browser and Jinitiator\* or Sun J2SE Plug-In
  - R12+ – uses a browser and Sun J2SE Plug-in

\*Jinitiator Desupported

# Desktop Tier - The Case for Sun J2SE

- JInitiator 1.1.8 for R11*i* desupported Dec 2008
- JInitiator 1.3 was desupported July 2009
- Sun J2SE required for R12
- Sun J2SE includes all features that JInitiator enhanced to support Oracle Forms
- Upgrading directly to Sun J2SE is less disruptive than going from 1.1.8 to 1.3 to Sun J2SE
- Sun J2SE eliminates the need for Oracle to support their patched JInitiator versions of Sun's software
- **Whether your company is running R11*i* or R12, you should be running Sun J2SE**

# R11*i* and R12 Multi-Tiered Architecture

- Application (Middle) Tier
  - The Application Tier holds the code that users run against the database
  - R11*i* - Web Services, Forms Server, Report Server, Concurrent Processing Server and an Admin Server
  - R12 - Web Services, Forms Server, Concurrent Processing Server and an Admin Server
  - R11*i* - uses *i*AS 1.0.2.2.2 (JServ)

# R11*i* and R12 Multi-Tiered Architecture

- Application (Middle) Tier
  - R12 uses Oracle Application Server 10g
    - OracleAS 10g 10.1.2 – Forms – equivalent to the R11*i* 8.0.6 ORACLE\_HOME
    - OracleAS 10g 10.1.3 – the Web Server and Oracle Containers for Java (OCJ4) – equivalent to the R11*i* 8.1.7 ORACLE\_HOME
    - Note – “Server Partitioned” --> “Split Configuration” --> “Mixed Platform Architecture”
    - Oracle JDeveloper 10.1.3
    - JDBC 10.2
    - Provides more functionality than R11*i* JServ

# JServ versus 10g AS

- Release 11*i* JServ - a simple Java apps server that supports JSP and Servlets, and little else
- Release 12 Oracle Application Server 10g
  - supports Sun's Java Enterprise Edition version 1.4 (Java EE 1.4) programming standards
  - Includes Oracle Identity Management for security
  - Supports BPEL, Discoverer in an OC4J Container
  - Latest version of OID for E-Business Suite is 10.1.4
  - Version 10gR2 10.1.2 and 10gR3 10.1.3 **Premier Support** for externally integrated OracleAS 10g components (not the internal EBS R12 technology stack components) ends in **December, 2010**

# JServ versus 10g AS

- Release 12 OAS 10g
  - Uses OCJ4 (Oracle Containers for Java)
    - Supports multiple instances of OCJ4, not for scalability (which was why you could have multiple JServ instances), but for division of processing
    - Each instance of OCJ4 is used as a compartment to contain one portion of the OAS 10g functionality
    - This allows the individual instances to be tuned for their actual workload, and helps to prevent them from competing for resources

# Oracle Process Management and Notification (OPMN)

- *Oracle Process Manager and Notification Server Administrator's Guide 10g Release 3 (10.1.3)*
- Installed and configured with every Oracle Application Server
- Essential for running Oracle Application Server
- An integrated way to manage all Oracle Application Server components including Discoverer, OCJ4, etc.
- Checks to see if a service has terminated and tries to restart the service automatically (death detection)

# Oracle Process Management and Notification (OPMN)

- Dynamic Resource Management (DRM) – you can customize process management
  - Spawn an additional OC4J process if average response time exceeds a threshold and if there are less than four processes
  - Start an additional OC4J process every day at 5pm for peak hours
- Resource Management Directive (RMD) tells DRM when and what to do - Directives are configured in opmn.xml
- Creates a file for each managed process and can rotate log files

# R11*i* and R12 Multi-Tiered Architecture

- Database Tier
  - R11*i* - runs Oracle 9*i*R2 or Oracle 10gR2 or Oracle 11gR2
  - R12 – runs Oracle 10gR2 or Oracle 11gR2

# Database Tier – Oracle 10g

- Performance – PL/SQL 2x faster
- Manageability - Automatic Workload Repository (AWR) and Automatic SGA Tuning
- Optimizer Improvements
- Oracle 10.2.0.3 is certified with R12 Version 12.0.2 or higher
- Oracle Database Vault is certified for R11*i* and R12

# Database Tier – Oracle 11g

- Database Replay – captures complete database workload so you can “replay” at will
- SQL Performance Analyzer – capture specific SQL statements and replay them
- Data Pump Improvements – performance
- Advanced Compression - reduced space and better performance
- Active Data Guard – offloads resource intensive activities from a production database to synchronized standby databases, enables fast incremental backups, high availability and disaster recovery

# Premier, Extended or Sustaining Support?

- Premier Support
  - Includes certification with **new** third party products/versions and Oracle products
- Extended Support
  - Costs more than Premium Support -10%, 20%, 20%
  - Certification is with most **existing** instead of **new** third party products/versions and Oracle products
  - Extended Support may not include certification with some new third-party products/versions
  - So if you find a new problem with an existing certified configuration, Oracle Support will help you
  - **If you're still running Oracle 9i you're on Extended Support (which ends July 2010)**
  - **If you're still running on Oracle 10g, you're on Extended Support (which ends July 2013)**

# Premier, Extended or Sustaining Support?

- Sustaining Support
  - Does not include new updates, fixes, security alerts, data fixes and critical patch updates; new tax, legal and regulatory updates; new upgrade scripts; certification with new third-party products/versions; certification with new Oracle products
  - If you have a question and there's already an answer in MetaLink, Oracle Support will point you to it
  - **If you're still running Release 11.0.3, you're not supported - Sustaining Support ended Jan 2009**
  - **Sustaining Support Means No Changes/Alterations to Your System**

# Should We Upgrade to Oracle 11gR2?

Release	GA Date	Premier Support Ends	Extended Support Ends	Sustaining Support Ends
-----	-----	-----	-----	-----
8.1.7	Sep 2000	Dec 2004	Dec 2006	Indefinite
9.2	Jul 2002	Jul 2007	Jul 2010	Indefinite
10.1	Jan 2004	Jan 2009	Jan 2012	Indefinite
10.2	Jul 2005	Jul 2010	Jul 2013	Indefinite
11.1	Aug 2007	Aug 2012	Aug 2015	Indefinite
<b>11.2</b>	<b>Sep 2009</b>	<b>Jan 2015</b>	<b>Jan 2018</b>	<b>Indefinite</b>

# Should We Upgrade to Oracle 11gR2?

- Release 10g software is 6 years old
- End of life for 10gR2 Premier Support is July 2010. Why would you upgrade to a release whose support is ending? 10%, 20% and 20% Additional Support Cost...
- 11g has new/improved features
- If you are planning an upgrade, you should consider upgrading to Version 11gR2
- If the software is stable, always upgrade to the latest release
- Version 11gR2 is stable!

# Should We Upgrade to R12.1?

- Release 11.5.10 software is 6 years old
- Premier Support for 11.5.10.2 ends Nov 2010
  - Why would you upgrade to a release whose support is ending even if the first year of extended support costs nothing - subsequent extended support years are 20% and 20%
  - Why would you stay on a release whose support is ending?
- New/improved modules – the biggest difference for Release 12 is on the functional side; much more so than the technical side
- Swan Interface – enhanced user interface
- Always upgrade to the latest release of Release 12.1 with the latest RUP

# MUST We Upgrade to R12?

Eventually we all must accept a little change...

Release	GA Date	Premier Support Ends	Extended Support Ends	Sustaining Support Ends
11.0.3	May 1999	Feb 2007	Not Offered	Jan 2009
11.5.1	May 2000	Jul 2006	Not Offered	Indefinite
11.5.2	Oct 2000	Jul 2006	Not Offered	Indefinite
11.5.3	Jan 2001	Jul 2006	Not Offered	Indefinite
11.5.4	Jun 2001	Jul 2006	Not Offered	Indefinite
11.5.5	Sep 2001	Jul 2006	Not Offered	Indefinite
11.5.6	Jan 2002	Jul 2006	Not Offered	Indefinite
11.5.7	May 2002	May 2007	Not Offered	Indefinite
11.5.8	Nov 2002	Nov 2007	Not Offered	Indefinite
<b>11.5.9</b>	<b>Jun 2003</b>	<b>Jun 2008</b>	<b>Not Offered</b>	<b>Indefinite</b>
<b>11.5.10</b>	<b>Nov 2004</b>	<b>Nov 2010</b>	<b>Nov 2013</b>	<b>Indefinite</b>
<b>12</b>	<b>Jan 2007</b>	<b>Jan 2012</b>	<b>Jan 2015</b>	<b>Indefinite</b>
<b>12.1</b>	<b>May 2009</b>	<b>May 2014</b>	<b>May 2017</b>	<b>Indefinite</b>

# MUST We Upgrade to R12?

- What's the risk to *not* upgrading?
  - The biggest risk is Security
  - Critical Patch Updates (CPUs)
    - CPUs address security vulnerabilities
    - Oracle releases a new CPU every quarter
    - R12 Apps CPUs are cumulative (PSU) as of January's CPU ☺
    - Release 12.1.2 includes the Sep 2009 CPU because it was released before the Jan 2010 CPU



# MUST We Upgrade to R12?

- What's the risk to *not* upgrading?
  - Oracle follows strict compliance with ATG\_PF RUP policy (N-1)
    - January 2010 CPU will only support ATG RUP 6 and RUP 7
    - To stay current on security, you must stay relatively current on ATG RUPs, which means you must stay relatively current on which Release of the Applications you are running
  - If Sarbanes-Oxley compliance is important to your company, can you afford to fall behind on security updates?
  - If *you* know there's a Critical Patch Update, and *you* know what vulnerabilities it fixes, so do *hackers*
  - [www.integrigy.com](http://www.integrigy.com) - independent analysis of each quarterly CPU

# Upgrade Paths

- Dual Phase Upgrade
  - Earlier releases (<11.5.7) must upgrade to 11.5.10.2 first, then Release 12.
  - If not on latest certified Oracle 10g or 11g, must upgrade to it before upgrading to Release 12.
  - The two phases do not have to occur during the same critical downtime.
  - Use OATM Migration Utility to upgrade to Oracle Applications Tablespace Model (OATM)
- Single Phase Upgrade
  - 11.5.7 and later releases must upgrade to Oracle 10g if not there already and then must upgrade to the latest certified database (currently 11gR2), and Release 12.1 during the same critical downtime

# Administration and Maintenance Tools

- Oracle Enterprise Manager (OEM)
- Oracle Applications Manager (OAM)
- Patching
- Cloning
- AutoConfig
- Diagnostics

# Oracle Enterprise Manager (OEM)

- Oracle Enterprise Manager 10g Grid Control (10gR5)
- Monitor end-to end E-Business Suite performance, availability and configuration changes
- Can monitor multiple E-Business Suite instances

# Oracle Applications Manager (OAM)

- A web-based management tool
- Allows you to use maintenance utilities that used to be available only from the command line
- The main console is the OAM Dashboard
- System Administrators can check the status of an EBS instance's database, concurrent managers and other services, concurrent requests, and Workflow processes
- Can also manage initialization parameters and profile options

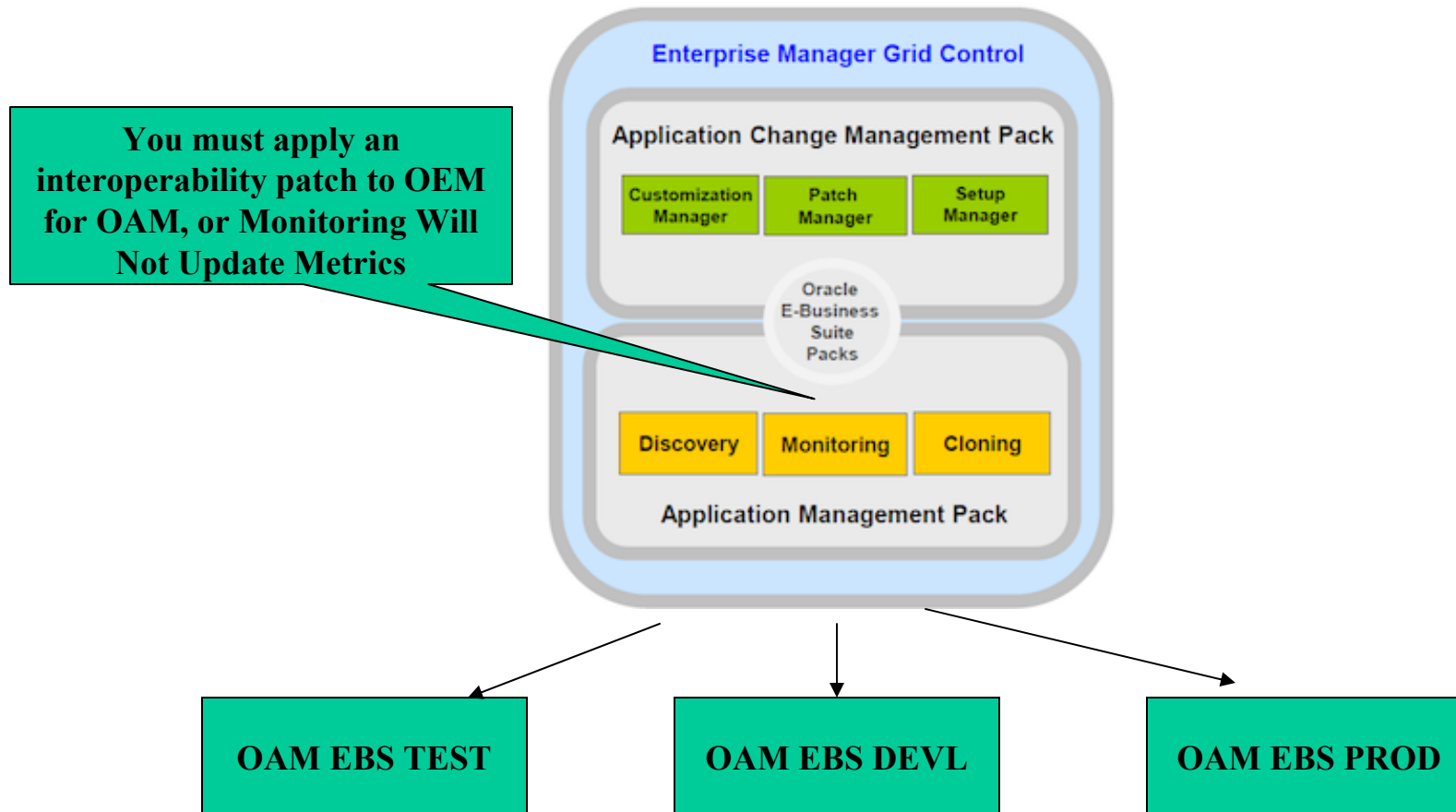
# Oracle Applications Manager (OAM)

- Recommended tool for making changes to AutoConfig
- Use License Manager to enable licensed E-Business Suite modules
- Monitors Jserv, Business Flow, Concurrent Manager, Runaway Forms Processes
- Includes Patch Advisor and Patch History
- Create your own System Alerts
- Tracks security issues, including Sign-on Auditing
  
- MetaLink Note: 387859.1 “Using AutoConfig to Manage System Configurations in Oracle E-Business Suite Release 12”

# Oracle Applications Manager (OAM)

- Administer Concurrent Managers and Workflow components
- Includes Diagnostic Wizards for Concurrent Manager Recovery, Service Infrastructure, GCS and Forms Monitoring, CP Signature and Dashboard Collection Signature
- Provides a menu-driven system to set up, run and view Diagnostics

# OEM + OAM + AMP + ACP



- Based on **Application Management Pack and Application Change Management Pack 3.1 Now Available** by Steven Chan, Oracle
- Also see **Application Change Management Pack for Oracle E-Business Suite An Introduction** by Ken Baxter, Biju Mohan, Oracle

# Applications Management Pack (AMP) 3.1

- Extends Oracle Enterprise Manager 10g Grid Control to help monitor and manage EBS systems
- Integrates Oracle Application Manager with Grid Control to provide an end-to-end management solution
- Provides advanced features to monitor and manage EBS systems, including Cloning, Application Service Level Management, extended performance metrics, and links from Grid Control to OAM

# Application Change Management Pack (ACP) 3.1

- Provides a centralized view to monitor and orchestrate changes (both functional and technical) across multiple Oracle E-Business Suite systems.
- Manage changes introduced by customizations, patches and functional setups during implementation or maintenance activities.
- Oracle Application Change Management Pack for Oracle E-Business Suite User's Guide, Release 3.1, Part No. E14530-02

# **Application Change Management Pack (ACP) 3.1**

- Simplifies applying changes – patches, setups, customizations - across multiple Oracle E-Business Suite systems
- Improves user productivity by automating change deployment
- Standards-based change deployment framework reduces human errors
- Notifies specified users of updates
- Provides a Change Approval Mechanism

# Application Change Management Pack (ACP) 3.1\*

- Customization Manager
- Patch Manager
- Setup Manager

\* AMP is a prerequisite

# Which Tool Does What?

- Rapid Install Wizard - Fresh Install of E-Business Suite
- AutoConfig – manages configuration files (httpd.conf, appsweb.cfg) MetaLink Note: 387859.1
- Applications Patching - AutoPatch
  - Upgrading E-Business Suite from R11*i* to R12 \*
  - Applying an R12 RUP, a Family Pack, Mini-Pack, etc.
- Database and CPU Patching – OPatch and N-apply
- Diagnostics – a set of non-intrusive programs that can be run to gather information about aspects of the applications
- Oracle Integration Repository (*i*Rep) – Shows all interfaces in the E-Business Suite for R11*i*

# Rapid Install Wizard

- If you are installing the Applications
  - Rapid Install Wizard installs the ORACLE\_HOMEs and databases, and the APPL\_TOP and COMMON\_TOP directories that contain the Applications code

# Rapid Install Wizard

- Instance Home
  - New for Release 12
  - \$INST\_TOP
  - \$ORACLE\_BASE/inst/apps/context\_name
  - context\_name is the dbSID\_host
  - Facilitates shared application file system for multi-node configurations

# AutoConfig

- Automatically configures an Oracle Applications Release 12 instance
- All necessary information saved in the Applications context file or the Database context file
- Applications context file is an XML repository in \$INST\_TOP with APPL\_TOP information
- Database context file is an XML repository in the RDBMS ORACLE\_HOME with database tier information
- AutoConfig logfiles are stored under \$INST\_TOP/admin/log for Application and \$ORACLE\_HOME/appsutil/log/<CONTEXT\_NAME> for the database

# AutoConfig

- AutoConfig Template files have named tags that are replaced with instance-specific information located in <product\_top>/admin/template – should not be edited
- Custom Template File – copy the template and edit it, when AutoConfig detects a custom template file, it uses it
- AutoConfig Driver Files – lists the AutoConfig file templates and their destination locations

# AutoConfig

- AutoConfig Scripts
  - adchkcfg.sh – run before running AutoConfig to review changes. Generates a report showing differences between current and modified AutoConfig
  - adtmplrpt.sh – provides information about location of AutoConfig templates
  - restore.sh – to roll back an AutoConfig session

# Applications Patching

- Patching is Oracle's way of releasing code fixes, functionality enhancements or new functionality
- Patches can update or create new file system objects like forms, reports and sql scripts
- Patches can execute code within the database to change seeded data

# R12 Applications Patching Changes

- With Release 12, Oracle keeps major new features and bug fixes separate
- Major new functionality reserved for point releases
- A new maintenance branch will be created for each point release
- New feature introduction into maintenance branches limited and requires executive approval
- Codelevels make checking for prerequisites easier
- Patch Application Assistant (PAA) enhances tracking manual steps
- New Oracle manual “Oracle Applications Patching Procedures”

# R12 Applications Patching Changes

- Codelines and Codelevels
  - Patches are grouped into codelines.
  - A codeline begins with a point release and progresses to include all patches required to maintain that point release
  - Release 12.0 -> Codeline A, Release 12.1 -> Codeline B
  - The unique set of product features for a point release or a product family are a codelevel

# R12 Applications Patching Changes

- In Release 11*i*, patches could require other individual patches as prerequisites, making it difficult to determine if a new patch included all the functionality of an older patch
- In Release 12, patches can only require a codelevel as a prerequisite
- MetaLink Note: 459156.1, Oracle Applications Patching FAQ for Release 12

# Types of Applications Patches

- R11*i* Consolidated Updates (CUs) and R12 Release Update Packs (RUPs)
  - Most thoroughly tested
  - 11.5.10.2 is the latest R11*i* CU
  - 12.1.2 is the latest R12 RUP
  - CUs are released after a maintenance pack
  - You must be running an existing Release 12 to apply an R12 RUP
- Maintenance Packs – a collection of the latest product family patchsets – 11.5.10.2 is the latest R11*i* Maintenance Pack.
- Technology Stack Updates – patchsets or mini-packs that change the underlying services. The latest for Release 11*i* is 11i.ATG\_PF.H.delta.7 (e.g., ATG RUP 7)

# Types of Applications Patches

- Family Packs/Product Family RUP
  - Tested by their product teams
  - Mini-packs for a specific, individual product family for a specific point release
  - Understand the thoroughness of the testing before you plan a Family Pack upgrade
- One-off Patches/Individual Bug Fix – rare w/no regression testing – a patch that fixes one issue – for example – One-off Patch 6812211 to fix potential data corruption issue in R12 Oracle Assets
- Pre-upgrade patch – upgrade related, high priority patches consolidated from all the products within a product family

# Types of Applications Patches

- If you are trying to decide whether to apply a Family Pack or a Release Update Pack (RUP), the major difference is that RUPs are the most thoroughly tested.
- If possible, stay current on CPUs and Technology Stack Updates, even if you can't stay current on Family Packs

# Applications Patching

- AutoPatch applies *Applications patches* (not database patches, operating system patches, or CPUs)
- AutoPatch records patch details in the OAM Applied Patches Database
- OAM includes tools like Applied Patches, Timing Reports and Patch Wizard to help determine what patches have already been applied, how long they may take to apply, and which ones are available
- Using Patch Wizard, there is no excuse for not knowing exactly what – right down to the SQL code – is being changed by a patch - true Patch Impact including custom objects in R12
- MetaLink Note: 225165.1

# AutoPatch

- Use AD Merge Patch to group patches together for application, then apply the merged patch using AutoPatch
- Use AutoPatch Non-interactive Mode to automate patch application
- Use a Shared Application Tier File System for multi-node systems to apply patches only once
- MetaLink Note: 181665.1

# Patch Application Assistant (PAA)

- Oracle Patch Application Assistant (PAA) helps you track and perform manual steps during patching
- For patches with manual steps, PAA generates a customized set of instructions specific to your installation and displays the relevant manual steps
- For merged patches, PAA automatically merges the contents of the individual patch readme files.
- If you need to use PAA, the patch readme will ask you to run `admsi.pl`

# Database and CPU Patching

- OPatch utility – To apply patches to the RDBMS
- Critical Patch Updates (CPUs) – Quarterly security patches tied to ATG RUPs that patch the ORACLE\_HOMEs
- CPU Patching - n-apply CPU (aka n-apply) - To apply a Critical Patch Update (CPU) – n-apply uses OPatch, but provides customized features to make applying CPUs more reliable
- Use individual patches or switch to PSU - one way switch only

# Oracle E-Business Suite Diagnostics

- Free utilities
- New diagnostics delivered in a standard Oracle Patch and are applied using AutoPatch
- Diagnostics don't alter data or setups
- Latest patch included in Release 12.1.2 is E-Business Suite Diagnostics 12.1.2 (Patch 7717707)
- Oracle Support may ask you to run a Diagnostic when logging an SR
- Stay current on Diagnostic patches, as the Diagnostic programs are useful in troubleshooting
- New Diagnostic Patches typically are released with each new RUP

# Oracle E-Business Suite Diagnostics

## To Run Diagnostics

- Login to E-Business Suite using your username/password
- Select the **"Oracle Diagnostics Tool"** responsibility
- Choose application for which you want to execute a diagnostic test from the 'Application' drop-down list of values
- Click on the 'Advanced' tab
- Select the test to execute by clicking on the corresponding link on the left side of the screen
- Enter input parameters
- Click on the 'Run Test' button
- To review the test output, click on the 'Report' icon displayed in the status line

# Oracle Integration Repository (iRep) - included in R12

To view all the interfaces in the 11i E-Business Suite in one place

- PL/SQL
- Concurrent Programs
- Open Interfaces
- Interface Views
- Electronic Data Interchange (EDI) Message Transactions
- XML Gateway Message Maps
- Java Methods

# Other Tools, Utilities and Patches

- Remote Diagnostic Agent (RDA) – comprehensive picture of environment - 4.15.0 = OCM
- 10g Upgrade Companion Version 2 – for upgrading from Oracle 9i to 10g, MetaLink Note: 466181.1
- Oracle 11gR2 Upgrade Companion – for upgrading from Oracle 9i to 11gR2, MetaLink Note: 785351.1
- Integrating E-Business Suite Release 12 with Oracle Internet Directory and Single Sign-On, MetaLink Note: 376811.1
- Debugging Tools (MetaLink Note: 373548.1 and 454178.1)
- Gather Statistics program has Gather Auto option to reduce how much statistics gathering you need to do

# Links

- <http://blogs.oracle.com/shan> - Steven Chan, Director of Applications Technology Integration for Oracle – wonderful articles explaining the nuances of the Applications
- [www.Integrigy.com](http://www.Integrigy.com) – E-Business Suite Security, including CPU vulnerability evaluation
- <http://orclville.blogspot.com> – Floyd Teter’s Fusion perspective from the trenches
- [www.OnCallDBA.com](http://www.OnCallDBA.com) – E-Business Suite books. Assessments and concurrent manager expertise
- [www.justadba.com](http://www.justadba.com) – that’s us!

# Questions and Answers

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Thank You!