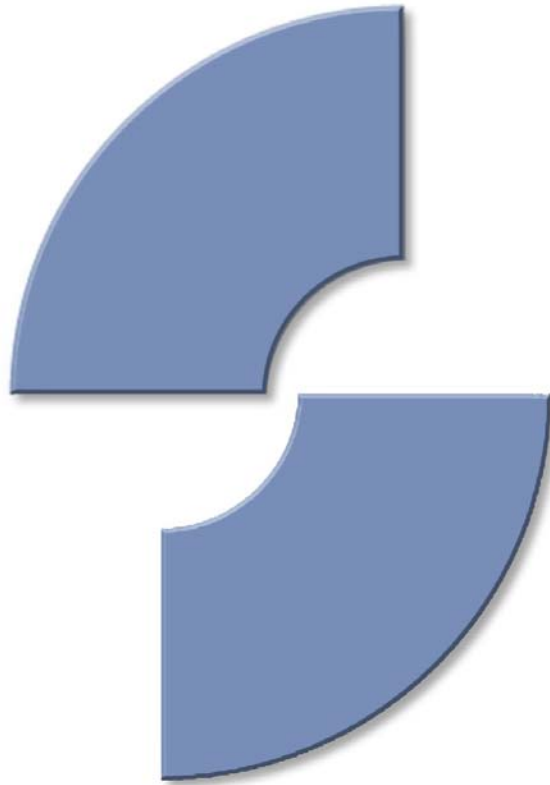


Considering an Upgrade to E-Business Suite 11.5.10.2 or R12?

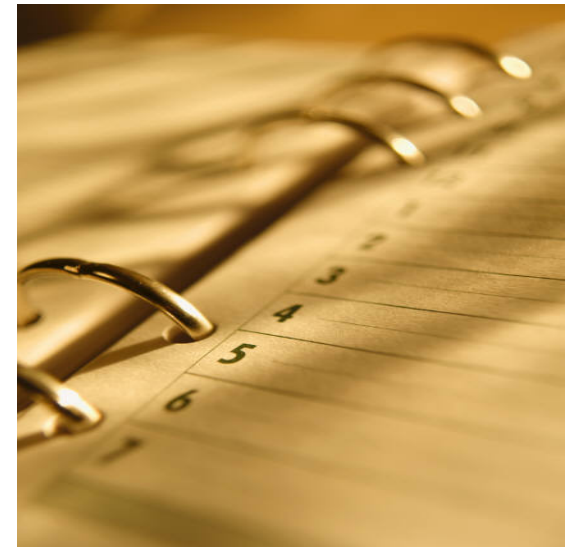
Learn From a Recent R12 Upgrade



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OAUG Collaborate '08
April 13, 2008

Agenda

- About Solbourne
- R12 Overview
- Choosing Between 11i and R12
- Factors Affecting R12 Decision
- Conclusions
 - Lessons learned
 - Reducing Downtime
 - What You Can Start Today
- Document References
- Q & A



About Solbourne

- National Consulting Firm Headquartered in Boulder, CO
- Over 130 Employees
- Oracle Family of Applications Focused Since 1994
 - Fusion Middleware Technology
 - E-Business Suite
 - PeopleSoft Enterprise
 - Education and Change Management
- Oracle Certified Advantage Partner – Highest Level
- Over 260 Oracle Applications Projects – Commercial and Public Sector



E-Business Suite Release 12 Overview

R12 Technology Stack Components



R12 Technology Stack Components

- **Release Technology Stack 11i to 12**
 - Leveraging the latest Oracle Database
 - Leveraging the latest Oracle Application Server
 - Latest standards provide better integration



R12 Technology Stack Components

Component	11.5.10	12
RDBMS Server	9i Release 2 (9.2.0.5)	10gR2 10.2.0.2
Web Server	Internet Application Server iAS 1.0.2.2.2 (Apache 1.3.19)	Oracle Application Server 10g 10.1.3 (Apache 1.3.34)
Java Servlet Container	JServ	OC4J
Forms Server	Oracle Developer6i 6.0.8.24	Oracle Application Server 10g 10.1.2
Reports Server	Oracle Developer6i 6.0.8.24	Oracle Application Server 10g 10.1.2
Client Viewer Applet Host	Oracle JInitiator 1.3.1.18	Java (J2SE) native plug-in 1.5.0_09+
Discoverer	Discoverer 4i - 4.1.48	Discoverer 10g -10.1.2.0.2
Java Development Kit	JDK 1.4 – 1.4.2	JDK 5.0 - 1.5.0_08

R12 Technology Stack Components

- Sun Java 1.5.0 Client
 - Sun JDK simplifies administration
- Application Server 10g
 - Improved Scalability, Reliability, Manageability
 - J2EE Compliant
- Database 10gR2
 - Database & Grid Control
 - Improved Scalability w/ RAC, Support for ASM
 - Self Tuning, Flashback Recovery, etc...

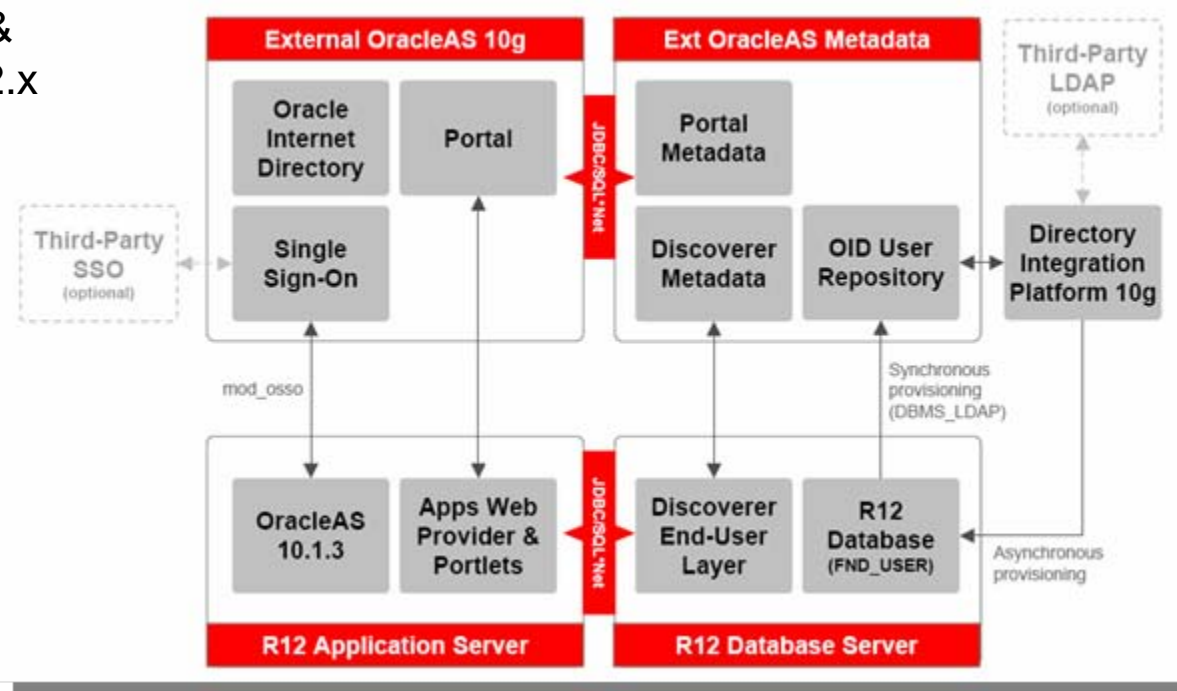


R12 Technology Stack Components

- **Release Technology Stack R12**

- Optional External Integration (Separate Server or Homes)

- ✓ OracleAS 10g Single Sign-On & Oracle Internet Directory 10.1.2.x
- ✓ Discoverer 10.1.2.x
- ✓ OracleAS 10g 10.1.3.1 SOA Suite
- ✓ Portal 10.1.4
- ✓ WebCache 10.1.2.x
- ✓ Oracle Integration 10.1.2.x
- ✓ Collaboration Suite 10gR2
- ✓ Enterprise Manager 10gR2



Component	11i File System	R12 File System
ORACLE_HOME (RDBMS Home)	<Base>/<SID>db/9.2.0	<Base>/db/tech_st/10.2.0
ORADATA (Data Files)	<Base>/<SID>data	<Base>/db/apps_st/data
ORACLE_HOME (Developer Home)	<Base>/<SID>ora/8.0.6	<Base>/apps/tech_st/10.1.2
IAS_ORACLE_HOME (iAS Oracle Home)	<Base>/<SID>ora/iAS	<Base>/apps/tech_st/10.1.3
APPL_TOP (Application Top)	<Base>/<SID>appl	<Base>/apps/apps_st/appl
COMMON_TOP (Common Top)	<Base>/<SID>comn	<Base>/apps/apps_st/comn
INST_TOP (Instance Top) Instance Top (New) <ul style="list-style-type: none"> • Separate common & instance specific files • Share common files between nodes and/or instances • Technology stack and applications can have separate owners • Shared file systems can be made read only when not patching for code safety • Co-location of instance state including configuration and log files • Network or local storage for each top 		

R12 Enhancements

- **Enhanced Cloning and Management with Grid Control E-Business Suite Admin Packs**
 - Application
 - Service Level Monitoring,
 - Automated Clones, Data Scrambling
- **Personalization**
 - Usability Enhancements,
 - External content in pages
 - Configurable start page

R12 Enhancements

- **BI Publisher**
 - High-fidelity reporting
- **SWAN Look and Feel**
 - Best of EBS, Peoplesoft, etc...
- **R12 Updates**
 - Quarterly RUP 12.x.y
 - Annual Point Release 12.x.1
 - Critical Patch Updates



ORACLE Expense Reports

Report Issue Global Policy Home Logout Preferences Personalize Page Diagnostics

EXPENSES

Track Submitted Expense Reports

The following expense reports are either outstanding or have been paid in the last 30 days.

Report Number	Report Submit Date	Report Status	Last Report Status Activity (Days)	Current Approver	Receipts Status	Report Total (USD)	Purpose	Duplicate	Withdraw
		Pending System Administrator Action		8 Expenses Administrator		0.00	Client visit - Seatt...		
		Pending System Administrator Action		8 Expenses Administrator		0.00	Client visit - Seatt...		
No18822	30-Sep-2005	Pending Manager Approval		1 Andretti, Mr. Evan	Not Required	287.87			
No18662	27-Sep-2005	Pending Manager Approval		3 Andretti, Mr. Evan	Not Required	8.00	Test		
No18663	27-Sep-2005	Pending Manager Approval		3 Andretti, Mr. Evan	Not Required	41.00			

Update Expense Reports

Click an Update icon to make changes to a saved, rejected, or returned expense report.

Report Number	Report Date	Status	Report Total (USD)	Purpose	Update	Duplicate	Delete
No18235	29-Sep-2005	Saved	168.00	Client visit - Seatt...			
No18502	23-Sep-2005	Saved	100.00	Travel			

Notifications

View Open Notifications Go

Select Notifications: Open Reassign

Select All | Select None

Select From	Subject	Sent	Due
<input type="checkbox"/>	Frost, Mr. Jamie Expense J11.5:18404 for Frost, Mr. Jamie (2.00 USD)	21-Sep-2005	26-Sep-2005

TIP Vacation Rules - Redirect or auto-respond to notifications.
TIP Worklist Access - Specify which users can view and act upon your notifications.

Report Issue Global Policy Home Logout Preferences Personalize Page Diagnostics

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R12 Hardware Requirements

- **Storage Requirements**
 - Expected Upgrade Tablespace Growth
 - Starting Point Assumption = 10%
 - Oracle Experience

Years of Data Migrated	Before Upgrade DB Size(GB)	After Upgrade DB Size(GB)	Delta(GB)	%Growth
3 Years	6609.97	6808.44	198.47	3%
12 Years	6609.97	7161.61	551.64	8.30%

* Years of data migrated refers to the number of financial periods (in units of years) selected to be migrated during the actual upgrade phase. For example, 3 years of Financials data refers to upgrading the financials documents such as payables, receivables, costing, projects, and fixed assets for the periods from 2004 through 2006. (Note: 399362.1)



R12 Hardware Requirements

- **Storage Requirements**
 - Additional Space Required During Upgrade
 - Oracle recommends that you keep 11i Application Tier File System until upgrade complete
 - 28GB Application Tier, 5GB Database Tier
 - Staging
 - 35GB Zip Files / 45GB Uncompressed



R12 Hardware Requirements

- **Memory Requirements**

- Database Init Parameter Sizing Estimates 11i/10g to R12/10g

Parameter Name	Dev/Test	11 – 100	101 – 500	501 – 1,000	1,001 – 2,000s
Processes	200	200	800	1200	2500
Sessions	400	400	1600	2400	5000
db_block_buffers	20000	50000	150000	250000	400000
sga_target	1G	1G	2G	3G	14G
shared_pool_size (csp)	N/A	N/A	N/A	1800M	3000M
shared_pool_reserved_size (csp)	N/A	N/A	N/A	180M	300M
shared_pool_size (no csp)	400M	600M	800M	1000M	2000M
shared_pool_reserved_size (no csp)	40M	60M	80M	100M	100M
Total Memory Required	~ 2 GB	~ 3 GB	~ 6 GB	~ 13 GB	~ 25 GB

R12 Hardware Requirements

- **Memory Requirements**
 - Minimum Middle Tier Requirements

Component	11i 10		R12	
Web Server	iAS 1.0.2.2	256 MB	AS10g 10.1.2	1 GB
Forms and Reports	Developer 6i	512 MB	AS10g 10.1.3	1.5 GB

Note: Middle tier estimates are based on minimum requirements from component installation guides. Additional memory should be allocated based on expected concurrent user count and load estimates.

R12 Hardware Requirements

- The CPU requirements for an upgrade depend on many factors, including:
 - The size of the database
 - The amount of data to be upgraded
 - The number and duration of long-running processes associated with Release 12 products
 - Minimizing Downtime During Upgrade
 - Implementing New Modules or Functionality with R12
 - Expanding User Base with R12
 - Previous Experience with 11i



R12 Hardware Requirements

- Starting Points
 - Disk Minimum 10% Growth
 - CPU Add 25% to 11i
 - Memory Add 25% to 11i

R12 Upgrade Paths

- R12 Upgrade Paths**

Starting	Upgrade Path	Documentation
11.0, 11.5.1 - 11.5.6	Release 11.5.10 CU2 > Release 12	Maintenance Pack Installation Notes, Release 11.5.10 CU2 (Doc ID: 289788.1) > Oracle Applications Upgrade Guide: Release 11i to Release 12 (Doc Library CD)
11.5.7 - 11.5.10	Release 12	Oracle Applications Upgrade Guide: Release 11i to Release 12 (Doc Library CD)



Oracle Applications Upgrade Paths

- **Database Upgrade Version Requirements**
 - Oracle 10g Release 2 (10.2.0.2) Required
 - Release 11.5.9 CU2 and 11.5.10 CU2
 - Upgrade database before migrating to R12 to limit R12 migration downtime or during R12 migration.
 - Release 11.5.7, 11.5.8, 11.5.9 base, 11.5.9 CU1, 11.5.10 base, and 11.5.10 CU1
 - Upgrade database during R12 migration downtime.



R12 Upgrade Tools

- **The Upgrade Manual Script (TUMS)**
 - Patch with script run from middle tier.
 - Examines your current configuration and creates an HTML report listing upgrade tasks that do not apply to your system.
 - Unique to your system configuration.
 - Can significantly reduce upgrade downtime.
- **Rapid Install**
 - Installs application products and technology stack components
 - Creates the new file system for the middle tier and database
 - After upgrade steps, used to configure and start services



R12 Upgrade Tools

- **AutoPatch**

- Standard Application Patching Tool
- Used to apply all patches including main R12 upgrade driver

- **Upgrade by Request**

- During upgrade, you can choose to upgrade only the most active data and postpone upgrade of historical data
- Upgrade by Request can be used to upgrade historical data that was skipped during the main upgrade process
- Limits Upgrade Downtime



R12 Upgrade Tools

- **AutoUpgrade**
 - No longer used in R12
 - Functionality has been migrated to AutoPatch to reduce upgrade steps and improve upgrade experience
 - Information provided to AutoUpgrade in the past is no longer required

R12 Upgrade Tools

- **Maintenance Wizard**
 - Formerly Known as Upgrade Assistant
 - Presents a consolidated, personalized set of instructions in a step-by-step format
 - Validation of important activities
 - Maintains log and status information for all tasks
 - Downloads, merges, and installs many required patches automatically
 - Provides project management utilities to record the time taken for each task and completion status
 - Can Also be used to execute tasks for you.



* Maintenance Wizard Note: 215527.1

R12 Upgrade Process

	Before Downtime	During Downtime	After Downtime
Technical Upgrade Tasks	<ul style="list-style-type: none"> • Familiarization and Sizing • Apply AD.I • Run TUMS • Establish Sufficient Tablespace Room • Migrate to OATM • Apply ATG_PF.H.RU4 (Migrate to Workflow for Alert E-Mails) • Various Product Related Tasks 	<ul style="list-style-type: none"> • Migrate to 10gR2 (if not already completed) • Apply R12 AD.A Minipack • Run the R12 Patch Driver • Apply Latest Product Patches • Configure and Start Services • Reapply Customizations • Finish System Admin Tasks (SSL, Workflow Mailer, XML Gateway, PDF Printing, XML Publisher Setup) 	<ul style="list-style-type: none"> • Verify Completion of Concurrent Programs • Install Online Help • Migrate Custom Development • Run Data Migration program for Historical Data • Update URLs in Open Workflows • Various Product Related Tasks
Functional Upgrade Tasks	<ul style="list-style-type: none"> • Familiarization • Business Process Mapping • Complete Optional Reducing Downtime Tasks in "Appendix E" of Upgrade Guide 		<ul style="list-style-type: none"> • Verification Tasks • Identify approach to Upgrade Historical Data

R12 Upgrade Process

- **Custom Code Requiring Changes**
 - Forms & Reports
 - C code
 - Java code
 - Any code using mod_plsql
 - Development Tools: compilers, Forms/Reports Builder 10.1.2, JDev 10.1.3
 - User Interfaces: new look & feel

Choosing Between 11i and Release 12

Choosing Between 11i and R12

*“At the heart of the choice between Release 11i and 12 is a hierarchy of business decisions, decisions that require broad and deep input from the stakeholders in your end-user community.” **



* Steven Chan, “Choosing Between Release 12 or 11i”, February 15 2007
<http://blogs.oracle.com/schan/newsItems/departments/release12/2007/02/15#a1226>

Choosing Between 11i and R12

*“1. What's the prioritized list of applications that your business users use today? What are the differences in Release 11i and Release 12 functionality for those applications?” **



* Steven Chan, “Choosing Between Release 12 or 11i”, February 15 2007
<http://blogs.oracle.com/schan/newsItems/departments/release12/2007/02/15#a1226>

Choosing Between 11i and R12

*“2. What business advantages, process improvements, and new organizational capabilities will be possible with the new Release 12 features?” **



* Steven Chan, “Choosing Between Release 12 or 11i”, February 15 2007
<http://blogs.oracle.com/schan/newsItems/departments/release12/2007/02/15#a1226>

Choosing Between 11i and R12

*“3. What are the new architectural or deployment capabilities in Release 12? How will these new capabilities improve system performance, scalability, availability, manageability, and security?” **



* Steven Chan, “Choosing Between Release 12 or 11i”, February 15 2007
<http://blogs.oracle.com/schan/newsItems/departments/release12/2007/02/15#a1226>

Choosing Between 11i and R12

“4. What investments have you made in adapting your organization to Release 11i, and vice versa? This might include:

- Employee, partner, vendor, and supplier training*
- Customizations and Personalizations, including custom Forms, OA Framework screens, workflows, concurrent programs, and reports*
- Integrations with third-party systems” **



* Steven Chan, “Choosing Between Release 12 or 11i”, February 15 2007
<http://blogs.oracle.com/schan/newsItems/departments/release12/2007/02/15#a1226>

Choosing Between 11i and R12

*“5. Which of your customizations, extensions, and Personalizations can be replaced with new Release 12 features? What savings will these represent? How much of those investments will carry over to Release 12?”**



* Steven Chan, “Choosing Between Release 12 or 11i”, February 15 2007
<http://blogs.oracle.com/schan/newsItems/departments/release12/2007/02/15#a1226>

Choosing Between 11i and R12

“6. How will Release 12 help reduce your operational costs? What are the incremental costs of Release 12 infrastructure, relative to your current Release 11i infrastructure costs? These costs might include server, storage, and networking hardware and licensing.”



* Steven Chan, “Choosing Between Release 12 or 11i”, February 15 2007
<http://blogs.oracle.com/schan/newsItems/departments/release12/2007/02/15#a1226>

Factors Affecting the R12 Decision

Factors Affecting DGS R12 Decision

- **Technology Stack**
 - Technical Upgrade Steps (Advantage: Release 12)
 - Report Development (Advantage: 11.5.10.2)
 - Post Upgrade Patching (Advantage: Release 12)
- **Project Impact and Total Cost of Ownership**
 - Risk (Advantage: 11.5.10.2)
 - Testing (No Clear Advantage)
 - Support & Total Cost of Ownership (Advantage: Release 12)

Factors Affecting DGS R12 Decision

- **Application and Technology Stack Features**
 - Functionality (Advantage: Release 12)
 - Navigational Features and Look and Feel (Advantage: Release 12)
 - Database Server (No Clear Advantage)
 - Applications Server (Advantage: Release 12)
 - Technical Features (Advantage: Release 12)
 - Personalizations (Advantage: Release 12)

Conclusions

Lessons learned

- **JInitiator is De-Supported and Current Certification for Sun JRE is 1.6.0_03+ or 1.5.0_10+**
- **Concurrent Request Access**
- **Procurement and Payables Include Significant Changes**
- **Multiple Organization Flag**

Reducing Downtime

- Upgrade to 10gR2 Now if 11.5.9.2 or 11.5.10.2
- Convert to Oracle Applications Tablespace Model (OATM)
- Upgrade to ATG_PF.H.RU4
- Use TUMS to skip unnecessary tasks

Reducing Downtime

- Follow Module Specific Tasks to Reduce Downtime in Appendix E of the R12 Upgrade Guide
- Archive or Purge Historical Data that has past retention
- Take advantage of Upgrade by Request
- Establish adequate hardware

What You Can Start Today

- Migrate to OATM (FAQ Note: 269293.1)
- Upgrade to ATG_PF.H.RU4 or Higher (Patch 4676589)
- Increase available storage (some tests implied 10%)
- Upgrading RDBMS to 10gR2 – it is certified with 11i (Oracle MetaLink Note 362203.1)
- Apps R12 no longer uses (disables) mod_plsql; if you have any custom use for it, start planning a migration
- Oracle Graphics is no longer supported and Oracle recommends using BI Publisher



Document References

R12 Online Documentation (Metalink Knowledge Tab)

Note: 394692.1 - Oracle Applications Documentation Resources,
Release 12

Note: 399362.1 - E-Business Suite Release 12 Upgrade
Tablespace Sizing and Best Practices

Note: 380482.1 - Oracle E-Business Suite Release 12 Technology
Stack Documentation Roadmap



Document References

Note: 376811.1 - Integrating Oracle E-Business Suite Release 12 with Oracle Internet Directory and Oracle Single Sign-On

Note: 373634.1 - Using Discoverer 10.1.2 with Oracle E-Business Suite Release 12

Note: 380484.1 - Using Oracle Portal 10g with Oracle E-Business Suite Release 12

Note 374398.1 - Preparing Custom Development for Next Oracle E-Business Suite Release



Document References

Note: 215527.1 - Maintenance Wizard Overview

Note: 393931.1 - Upgrading Sun J2SE (Native Plug-in) with Oracle Applications 12 for Windows Clients

Steven Chan's Release 12 Blog

<http://blogs.oracle.com/schan/release12>

Questions & Answers



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