

# What You Need to Know About Identifying Customizations Before Upgrading to Release 12.1

Barbara Matthews, On Call DBA

Donna Campbell, TruTek

## A Little Bit About Us

- Barb Matthews ([barb@oncaldba.com](mailto:barb@oncaldba.com)) loves Patch Wizard, upgrading to Release 12, and chocolate
- Donna Sue Campbell ([donnasuecampbell@gmail.com](mailto:donnasuecampbell@gmail.com)) has worked as an Apps DBA since 1997, and is an expert on fndload and iSetup
- Barb and Donna have never met (until today), but we seem to work well together.

## Why Addressing Customizations Is Such An Important Part of the R12 Upgrade

- All it takes is one serious customization issue to derail your rollout
- Maintaining customizations costs money
- Eliminate customizations if you can
- Now's your chance to clean up and organize and follow standards to make future upgrades easier

## This is an Albatross



Don't Let Customizations Be Your Albatross

## A Brief Overview of the Oracle R12 Upgrade Process if You've Customized

- Assessment/Health Check – Determine Your Overall Readiness and Plan
- Patch/Upgrade R11i Where Necessary – OATM, Release 11i Mandatory Extended Support Patches, ATG RUP7, AD.I.7, HR, RDBMS 11gR2
- First Pass – Upgrade to R12 to See What Issues You Have – This is a Technical Upgrade
- **Determine Customizations Impact**
- Determine the Functional Impact
- Do More Upgrade Passes, Apply More Patches, Customize and Document, Refine Your Process
- Test and Rollout

## A Brief Overview of the Oracle R12 Upgrade Process if You've Customized

- Determine Customizations Impact
  - Understand What Constitutes a Customization
  - Make a List of Each Potential Customization
  - Review New Oracle Functionality to Determine if any Customizations Can Be Eliminated
  - Determine Which Customizations Should be Kept
  - Understand If There Are Tools That Can No Longer Be Used

## A Brief Overview of the Oracle R12 Upgrade Process if You've Customized

- Customizations Impact
  - Decide if you should fix broken customizations on the R12 side
  - Learn how to use new tools if needed
  - Review Oracle naming conventions for customizations
  - Determine how to maintain the customizations
  - Customize and test... and DOCUMENT

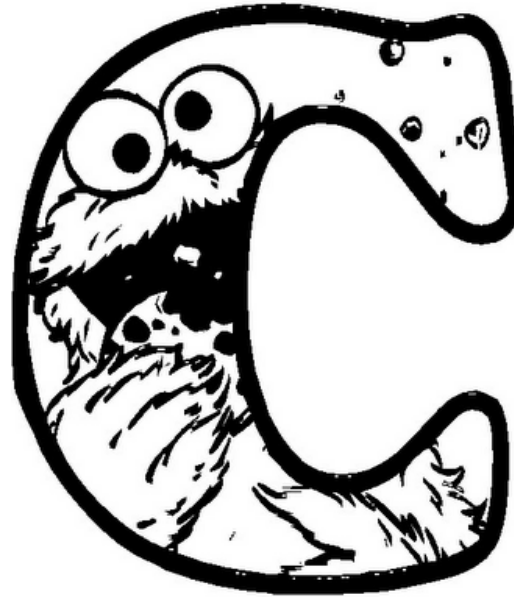
## What is a Customization?

- Programs that your developers have stored under \$CUST\_TOP
- Changes that your users and developers and DBAs have made over the years to features or setups of the E-Business Suite
- Third Party Tools that integrate with the E-Business Suite

## What is CEMLI?

CEMLI is Oracle's term for customization types

- “Oracle defined the CEMLI Framework, which translates into **20 classes of extensions** that customers can add to their Oracle systems.”
- The framework was established by Oracle On Demand to categorize customizations
- See *Oracle® E-Business Suite On Demand Reference Guide* (Part # B10082-07) for further details



## Configurations

profile options, flexfields, menus, etc.



## Extensions

built-ins that extend, e.g., personalizations, APEX



## Modifications

changes to Oracle seeded code



## Localizations

country-specific requirements; statutory and country-specific business practices that are not included in the standard software package



## **Integrations/Interfaces**

inbound / outbound interfaces to integrate Apps  
with non-Oracle software

## What is the CEMLI Services?

- Oracle's CEMLI Services provide expertise and a tool to identify, analyze and optimize customizations
- The CEMLI Services tool is part of Oracle Consulting Services via subscription through Advanced Customer Services. Also available when an organization migrates to Oracle OnDemand Services

\$\$\$

## What is Included in the CEMLI Services Tool?

- **CEMLI Catalog** – provides an inventory of CEMLIs by name, type and location
- **CEMLI Performance Check** – evaluates Oracle E-Business Suite performance via dashboard
- **CEMLI Packager** – is a change management tool to package and promote your customizations
- **CEMLI Patch Impact Analysis** – evaluates the impact of E-Business patches on custom code

## What Other Tools Help Manage Customizations?

- Oracle E-Business Suite Application Management Suite via an added-cost Plug-in to Oracle Enterprise Manager includes
  - Oracle Application Management Pack (AMP)
  - Oracle Application Change Management Pack (ACMP) which includes Customization Manager
- Patch Wizard Flagged Files (included in OAM)

## What Other Tools Help Manage Customizations?

- Database level testing tools such as Real Application Testing, Database Replay, and SQL Performance Tester
- Oracle Application Testing Suite (OATS) for application testing
- Third-party tools – version control, configuration management, and testing tools

# A Customization Example

## I Have a Confession...

- Back in the 90s, I created a customization
- Back then, we called them *enhancements*
- Here's how it worked: I wanted to save concurrent manager information, so I could look for patterns about usage. So
  - I created a table, called VTK\_FND\_CONC\_HIST to hold all my data

- I created a delete trigger on the `fnd_concurrent_requests` table called `VTK_DEL_TRIGGER` that copied records into the table prior to deleting them
- I created a report called `VTK_Concurrent_Hist` to show information about Concurrent Requests
- I set up a Concurrent Program called `VTK_CONC_HIST` to run the report

- I added the report to the Concurrent Manager so people could run it
- I put all my code under \$CUST\_TOP in the appropriate subdirectories
- I documented each of the programs carefully, so it would be clear what they were supposed to do

Honestly, it seemed like such a good idea at the time

## What Did I Do Right?

- I left a trail behind so that if the table, view, trigger or report needed to be re-created, you could do so by running the code from \$CUST\_TOP
- I used my company's defined customization top, \$VTK\_TOP
- I put all the code under \$VTK\_TOP
- I documented each program
- I followed a naming convention for all of my tables, views, triggers and reports

## What Did I Do Wrong?

- I didn't document how all those programs tied together
- I didn't use the XXX naming convention
- I was deeply attached to Oracle's seeded SYSADMIN applications account at the time, so I used that account, rather than my BMATTHEWS account for all of my setups
- I didn't use version control software
- I manually copied all my changes from TEST to PROD

## Now What Should We Do With This for R12?

- Review R12 – Does it have something that provides similar functionality? Could we eliminate my *enhancements*?
- Decide if this program is still used. Good news, you can run the report to see if anyone ever runs the report! Sometimes the usefulness of a customization goes away when the employee who needed it leaves the company.
- Look at the history table. Is it saving too much information? Has it become unwieldy? Do we need to create another customization that periodically cleans out the older data?

## Now What Should We Do With This for R12?

- Consider if these programs run the way we need them to run now, 15 years later. Consider adjusting, for example, how much data is saved.
  - Do we really need to know all the Concurrent Request information for concurrent programs that are run thousands of times a day?
  - 15 years of history... do we need to carry this data over for the upgrade, or can we truncate the table? Is performance information from hardware and software that have changed dramatically going to be useful?
- Change all the code to have XXX as part of the name instead of VTK

## Now What Should We Do With This for R12?

- Consider what could make this set of code fail during or after an upgrade:
  - If the FND\_CONCURRENT\_REQUESTS table changes, our historical copy will not have the same format, so the Purge Concurrent Requests and/or Manager Data concurrent program will fail
  - If the trigger fails to recompile at some point, will anyone notice? Do we need to enhance this customization with some sort of alert?
- Test it to make sure it runs as expected
- Learn how to use FNDLOAD or iSetup to migrate the code

## Now What Should We Do With This for R12?

- Learn how to document customizations in R12 to reflect relationships between different pieces of code
- Learn how to use the OAM Register Flagged Files tool to register the custom code
- Use a Configuration Management Tool to check-out and check-in code while working on it
- Use a \$Header line in all custom object code to include who did the customization, the version number, the date, and what Oracle object is being customized (if you are modifying Oracle code)
- **Ponder how much time, effort and money it will take to keep this set of programs. Is it worth it?**

# Types of Customizations

## Types of Customizations: Extensions

- Extensions are preserved during patching and upgrades
  - Extend using E-Business Suite built-ins or Integration Repository Public APIs or APEX
  - Issue: While they may be preserved, if underlying tables or forms have changed, they may not work correctly or at all (so, if you personalized a form and the form no longer exists, the personalization won't be there either)

## Types of Customizations: Extensions Using APEX

**April, 2011 Oracle Whitepaper - Extending Oracle E-Bus R 12.1.3 using APEX 4.0.2** - <http://www.oracle.com/technetwork/developer-tools/apex/learnmore/apex-ebs-extension-white-paper-345789.pdf>

- Oracle E-Bus Suite public APIs can either be coded into the APEX applications or you can define 'INSTEAD OF' triggers against the new views to call appropriate APIs
- APEX contains pre-configured Authentication Scheme for E-Bus & Single Signon
- R12 Patch 12316083: ONEOFF:9652599: APEX SUPPORT IN FND EXTERNAL GATEWAY -This patch provides APEX UI Integration with E-Business Suite.
  - *Extending Oracle E-Business Suite Release 12 using Oracle Applications Express (APEX) [1306563.1]*

## Types of Customizations: Modifications

- Modifications to Oracle Applications seeded forms / reports / pages, database objects - tables, views, packages, etc.
- Customizations by Modification are NOT protected; they can be overwritten or lost
- Issue: Changes should have been made to copies, and then stored in \$CUST\_TOP, but that isn't necessarily what was done
- Issue: All changes need to be tested
- Issue: These types of customizations may be overwritten by patches

## Types of Customizations: Interfaces Where are the R12 Interfaces?

- Release 12 Oracle® Integration Repository
- Oracle® Integration Repository provides a complete catalog of Oracle E-Business Suite's business interfaces, and a comprehensive view of the interface mechanisms available. You can use this tool to discover and deploy the appropriate business interface from the catalog for integration with any system, application, or business partner.
- MOS Note 462586.1 - Where are the Oracle Release 12 (R12) API Reference Guide

## Types of Customizations: Interfaces What R12 Interfaces are Available?

### Release 12 Oracle® Integration Repository Features

- A unified repository from which all integration interface types are exposed
- Updates are automated and documented
- Catalog is searchable on keywords and navigable by product family
- A powerful user interface to help you find the data you are looking for from the repository

## Types of Customizations: Interfaces How to Use the R12 Interfaces?

- Oracle® Integration Repository Users Guide, Part# B25999-01
- In R12.1.1, the Integration Repository is under the Integrated SOA Gateway responsibility. See Note 462586.1 “How To Access API References via Oracle Integration Repository”
- BE AWARE: Publishing of API guides is being phased out for many modules with the availability of the Integration Repository.
- You will need to test all of your Release 11i interfaces

## Types of Customizations: Bolt-Ons

- Depending on the product, these may be considered either Extensions or Interfaces
- Custom or Third Party applications may provide capability Oracle is not currently providing
- Oracle Partner companies deliver many types of capabilities including barcoding, imaging, document management, patching, etc.
- [www.OAUG.org](http://www.OAUG.org) lists Third Party Oracle Certified Partners and products
- Issue: Make sure there is an R12 certified version
- Issue: Test all functionality to ensure that the Third Party product works as expected with R12

## Issue: You Aren't The Only One Making Changes

- Oracle has made major, substantial changes to the E-Business Suite functionality and performance
- Oracle has changed the RDBMS, which may affect your customizations' performance
- Oracle has changed parts of the underlying data model, which may affect whether your customizations will run
- Oracle may have added functionality that makes some of your customizations or Third Party products unnecessary

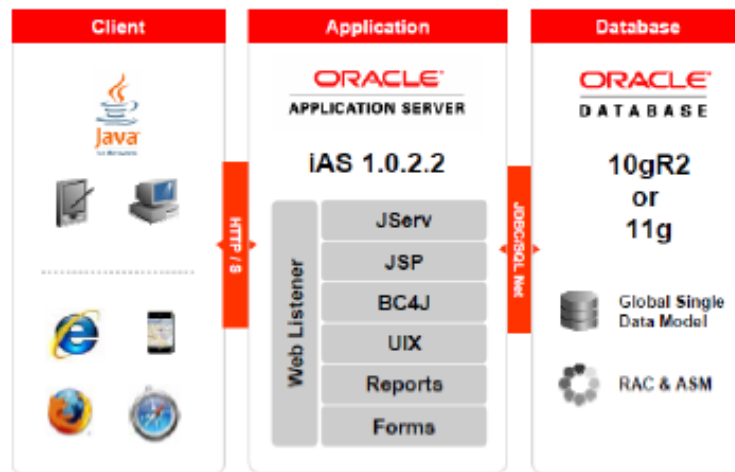
## Issue: You Aren't the Only One Making Changes

- Oracle may have added new features that make adding new third party products necessary
- You may be able to eliminate customizations using Oracle's extensions
- Oracle may eliminate tools you use
- Oracle's changes to code could break your custom workflows and other reports
- Oracle has changed file system names and environmental variables, which may affect your customizations

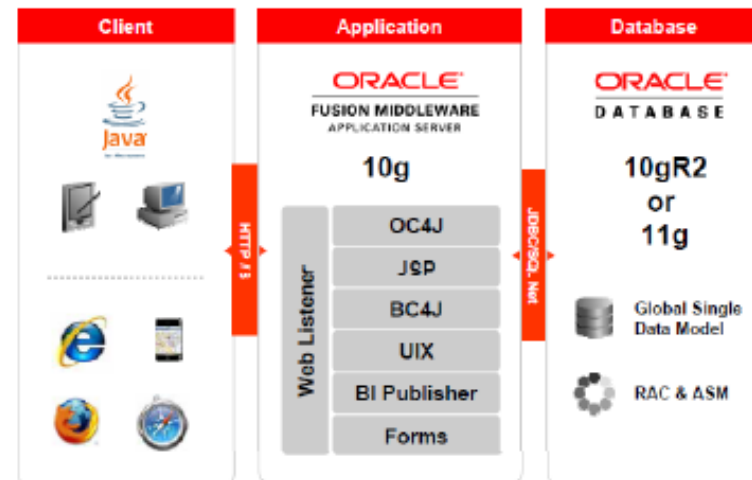
# What You Need to Know About Identifying Customizations Before Upgrading to Release 12.1

## How to Prepare: Become Familiar with R12 Tech Stack

### Release 11i Technology Stack 3-Tier Logical Architecture



### Release 12 Technology Stack 3-Tier Logical Architecture



Source: Oracle Documentation - <http://www.oracle.com/technetwork/documentation>

## How to Prepare: Understand the Typical E-Business Built-ins Used for Customizing

### Custom

- Menus
- Responsibilities
- Request Sets
- Functions
- Value Sets
- Request Groups
- Profiles Options
- Descriptive Flexfields
- Folders available on some forms
- Workflows
- Interface data loads
- User Mgt, e.g., Roles/Responsibilities/  
Categories, Permissions/grants etc.)
- Personalizations on seeded  
Forms & Web pages
- Registered Forms (fmb) using  
Template.fmb
- Registered Custom Reports
- Registered Custom programs,  
e.g, java, C, perl, sqlplus,  
sql\*loader, pl\*sql stored  
procedure, etc.
- Custom database schema
- Custom database objects  
(tables, views, indexes, triggers,  
pkgs etc.)
- Custom code using Oracle API's

## How to Prepare: Understand R12 New Functionality

- Take training classes and attend presentations about new features
- Read manuals and My Oracle Support Documents:
  - Release 12.1 Documentation Roadmap [790942.1]
  - Oracle E-Business Suite Release 12.1 Information Center [806593.1]
  - E-Business Suite Release 12.1 Release Value Propositions [804373.1]
  - Oracle E-Business Suite Upgrade Guide [461705.1]
  - Database preparation guidelines for Release 12 Upgrade [761570.1]

## How to Prepare: Understand R12 New Functionality

- Read 11i to 12.1 docs:
  - Planning Your Oracle E-Business Suite Upgrade from Release 11i to Release 12.1 – Whitepaper [987516.1]
  - Oracle Applications Upgrade Guide Release 11i to Release 12.1.1 [1082375.1]
  - Forms Personalizations – for 11i [279034.1] for Release 12 [395117.1]
  - Upgrading Forms & OAF Personalizations from Ebusiness Suite 11i to 12.1 [1292611.1]

## How to Prepare: Understand R12 New Features

- General Ledger – SubLedger Accounting & Ledger Sets
- Global Intercompany System
- Legal enhancements
- EB Tax Engine
- Bank Account Model
- Consolidated Purchasing Workbench
- Fixed Assets – Conversion to Group Asset Structure
- Payables New Supplier Model(Trading Community Architecture – TCA)
- Payments iPayment setup required to make payments (UMX Security)

-----  
For details on all new features see Note 1302189.1

Oracle E-Business Suite 12.1 & 12.2 Release Content Documents

## How to Prepare: Understand R12 New Features

### Review

- *Oracle Financials & Procurement Functional Upgrade Guide* to review changes in tax codes, payments, bank accounts, and specifically suppliers and sites which are now located in TCA.
- Output of the *Accounting Setup Manager Pre-Update Diagnostic Report* to find setup inconsistencies
- *Oracle Financials Concept Guide & Oracle Financials Implementation Guide* and *R12 Upgrade Considerations by Product [889733.1]* to understand new features within Release 12.1

## How to Prepare: Study the Data Model

- *EBS Data Model Comparison Report Overview [ID 1290886.1]* - “The EBS data model comparison report provides the database object definition changes between two EBS releases to help users to preview the database object definition changes before upgrading their instances from one release to another and understand the impact of the database object changes that may affect the customization or business flow.”
- The new *Seed Data Comparison Report [1327399.1]*.
- Be Aware that as of Release 12.1.3 several 11.5.10.2 products are no longer available

## How to Prepare: Understand Other R12 Changes That May Affect Customizations

- R12 Requires Oracle Applications Tablespace Migration (OATM)
- R12 Multi-org Access Control (MOAC) - recode custom org code
- R12 no longer supports Mod PL\*SQL – migrate custom code
- R12 uses Registered Flagged Files Tool in OAM ,instead of applcust.txt
- R12 uses 10g Developer for Forms/Reports
- R12 uses 10g JDeveloper for OAF development
- R12 delivers new BI Publisher XML reports
- R12 middle tier to support technology & security including SOA (Service Oriented Architecture) to integrate to other applications
- R12 set\_of\_books\_id is replaced with ledger\_id, so all code referencing set\_of\_books\_id will need to be changed

## How to Prepare: Understand What Migrates to R12

- AK mode of OA Framework will automatically upgrade shipped OAF pages and personalizations from AK to MDS if the AK and MDS repositories are in the same database instance. If not, manually migrate using Personalization Migration tool
- Web ADI customizations, which are custom integrators in 11i using Oracle shipped APIs, can be migrated to Release 12
  - Spreadsheets created in 11i do not interact with Oracle Applications products after the upgrade; these will need to be recreated once you get to Release 12
- Custom Folders migrate from 11i to Release 12
- Custom workflows can be protected from the Release 12 upgrade by confirming the protection and customization options

# What You Need to Know About Identifying Customizations Before Upgrading to Release 12.1



Connection Point

2011

## How to Prepare: Look for File System Changes

File System Changes R12 Vs 11i	Oracle Applications 11i	Release 12
Environment Source file	APPSORA.env	APPS<SID>_<hostname>.env
Context File (middle tier)	\$APPL_TOP/admin/\$TWO_TASK.xml	\$INST_TOP/appl/admin/\$TWO_TASK_<hostname>.xml
tnsnames.ora (OH)	\$ORACLE_HOME/network/admin/<CONTEXT>	\$INST_TOP/ora/10.1.2/network/admin
listener.ora	\$ORACLE_HOME/network/admin/<CONTEXT>	\$INST_TOP/ora/10.1.2/network/admin
appsweb.cfg	\$OA_HTML/bin	\$INST_TOP/ora/10.1.2/forms/server
tnsnames.ora (Apache)	\$IAS_ORACLE_HOME/network/admin/<CONTEXT>	\$INST_TOP/ora/10.1.3/network/admin
zone.properties	\$IAS_ORACLE_HOME/Apache/Jserv/etc	\$ORA_CONFIG_HOME/10.1.3/j2ee/oaocore/application-deployments/oaocore/oa_servlets/orion-web.xml <b>and</b> .../oaocore/html/orion-web.xml (Same file located in both directories)
httpd.conf	\$IAS_ORACLE_HOME/Apache/Apache/conf	\$ORA_CONFIG_HOME/10.1.3/Apache/Apache/conf
apps.conf	\$IAS_ORACLE_HOME/Apache/Apache/conf	\$ORA_CONFIG_HOME/10.1.3/Apache/Apache/conf
formservlet.ini	\$IAS_ORACLE_HOME/Apache/Jserv/etc	\$ORACLE_HOME/forms/server/default.env
topfile.txt	\$APPL_TOP/admin	\$APPL_CONFIG_HOME/admin
adovars.env	\$APPL_TOP/admin	\$APPL_CONFIG_HOME/admin
adjborg2.txt	\$APPL_TOP/admin	\$APPL_CONFIG_HOME/admin
SSL Certificates	\$COMMON_TOP/admin/certs	\$INST_TOP/certs
AD scripts logs	\$COMMON_TOP/admin/log/<SID_hostname>	\$LOG_HOME/appl/admin/log
Concurrent Request logs	\$APPLCSF	\$APPLCSF
Apache logs	\$IAS_ORACLE_HOME/Apache/Apache/logs	\$LOG_HOME/ora/10.1.3/Apache
Jserv logs	\$IAS_ORACLE_HOME/Apache/Jserv/logs	\$LOG_HOME/ora/10.1.3/j2ee
javacache.log	\$COMMON_TOP/rgf/<SID_hostname>	\$LOG_HOME/appl/rgf

**Per Metalink note: 433111.1**

# How to Prepare: Look for Environmental Variable Changes

Environment Variables Changes: R12 Vs 11i	Oracle Applications 11i	Release 12
APPL_TOP	\$HOME/<SID>appl	\$HOME/apps/apps_st/appl
COMMON_TOP	\$HOME/<SID>comm	\$HOME/apps/apps_st/comm
ORACLE_HOME (applmgr)	\$HOME/<SID>ora/8.0.6	\$HOME/apps/tech_st/10.1.2
IAS_ORACLE_HOME	\$HOME/<SID>ora/IAS	\$HOME/apps/tech_st/10.1.3
ORACLE_HOME (oracle)	\$HOME/<SID>db/10.2.0	\$HOME/db/tech_st/10.2.0
ORADATA	\$HOME/<SID>data	\$HOME/db/apps_st/data
JAVA_TOP, OA_JAVA	\$COMMON_TOP/java	\$COMMON_TOP/java/classes
OA_HTML	\$COMMON_TOP/html	\$COMMON_TOP/webapps/oacore/html
FND_SECURE	\$FND_TOP/secure/<SID>	\$INST_TOP/appl/fnd/12.0.0/secure
ADMIN_SCRIPTS_HOME	\$COMMON_TOP/admin/scripts/<SID>	\$INST_TOP/admin/scripts
LOG_HOME	-	\$INST_TOP/logs
FORMS_WEB_CONFIG_FILE	-	\$INST_TOP/ora/10.1.2/forms/server/appsweb.cfg
AF_JLIB	-	\$COMMON_TOP/java/lib
JAVA_BASE	-	\$COMMON_TOP/java
INST_TOP	-	\$HOME/inst/apps/<CONTEXT>
ORA_CONFIG_HOME	-	\$INST_TOP/ora
APPLCSF	\$COMMON_TOP/admin	\$LOG_HOME/appl/conc

**Per Metalink Note 433111.1**

## Now That You Know the Areas That Might Have Changed, How Do You Find Your Changes?

That's the tricky part.

1. Look at your documentation of changes you've made
2. Look at your \$CUST\_TOP
3. Query the underlying tables for objects like menus, responsibilities, forms, value sets, triggers, flexfields, workflows, etc.
4. Look for changes in ownership (so if a form was owned by SYSADMIN, but the record was updated by your DBA, then it may have been changed)

## Now That You Know the Areas That Might Have Changed, How Do You Find Your Changes?

5. When you apply patches, you can use Patch Wizard to determine what code changed – this may help you spot areas where your customizations could be affected
6. Review your Interfaces
7. Consider using a third party tool that will help find customizations, because finding them isn't easy, and it would be nice if it were automated so that you could tell if Oracle made changes between R12 patches as you do the upgrade

## Now That You Know the Areas that Might Have Changed, How Do You Find Your Changes?

8. If you've saved your Concurrent Manager history on R11i, you can tell if a customized Concurrent Program is likely to need to be maintained by seeing if it has been run in the past
9. After you finish your First Pass Upgrade, look at invalid objects – customized objects may not recompile

## How to Prepare: Inventory ALL Oracle Application Customizations

- Custom Forms, Web Pages, Reports, PL\*SQL packages, SQL, java, C programs
- Custom database schema and objects (tables, views, indexes, triggers, packages, etc.)
- Customizations registered within the E-Business Suite:
  - Profile Options, Menus, Responsibilities, Descriptive Flex Fields, Value Sets, Concurrent Programs – Form & Executable, Functions.
  - User Management – Custom Roles, Categories, etc.

## How to Prepare: Ensure Version Control

- Use a Configuration Management tool to track and control customizations, check-out and check-in current versions, and use promotion processes that ensure version control

## How to Prepare: Follow Documentation Standards

- Follow Oracle Applications Customizations Standards:
  - Follow naming conventions for customizations, XXX
  - Use Custom Tops XXX\_TOP for OS objects, e.g., fmb, rdf, sql, etc.
  - Modifying \$APPL\_TOP/applcust.txt is obsolete
    - Use OAM Register Flagged Files tool
  - Create current documentation for custom objects and install instructions

## How to Prepare: Follow Documentation Standards

- **Developers should modify Oracle's \$Header line and add their name and version.** If modifying Oracle code, leave the Oracle version of the object. Example:
  - If we modified Oracle seeded Invoice fmb INVTMTX.fmb:  
**\$Header INVTMTX.fmb 12.1.2.0.3 2011/01/30 22:03 pneelamr ship**  
We would change the \$Header line to:  
**\$Header INVTMTX.fmb 12.1.2.0.3 2011/01/30 22:03 pneelamr ship  
, BMATTHEWS v1.3 2011/11/24**
    - This indicates Barb Matthews took the seeded INVTMTX.fmb version 12.1.2.0.3 and modified it 4 times, v1.0, v1.1, v1.2, v1.3. Version 1.3 was done on November 24, 2011
  - You can check any Oracle \$Header line at the command line:  
strings -a INVTMTX.fmb |grep \$Header

## How to Prepare: Decide If You Should Keep or Eliminate Customizations

- Consider Application and Technology changes between R11i and R12
- Review R12 Product Update Docs for new R12 functional capability, new System Profiles, new set up changes, etc.
- Be willing to change your processes to follow R12 approach
- Review customizations for technical and/or functional issues
- Consider resources and skill set needed to redo customization
- Consider migrating Forms and Reports to XML pages and reports
- Consider if customizations need to be integrated or non-integrated

## How to Test Customizations

- Will Forms and Reports Customizations Migrate to R12 – Do you Need to Recode?
  - Open Custom Reports in 10g Report Builder and Recompile
  - Open Custom Forms in 10g Forms Builder and Recompile
  - Use Forms Migration tool to find errors but don't let it make actual changes
  - Modify Custom Forms/Reports for Multi-org (MOAC)

## How to Test Customizations

- Use R12 Template.fmb for custom forms and frmcmp\_batch.sh command to recompile forms:
  - Example compile: `frmcmp_batch.sh module=PERWSEMA.fmb userid=APPS/APPS output_file=/d01/oracle/PROD/apps/apps_st/appl/per/12.0.0/forms/US/`
- Use fndload to download, modify and upload customizations to be migrated: Menus, Responsibilities, Personalizations, Value Sets, Concurrent Programs, Key Flexfields, DFF, Printers, Request Groups and Request Sets, Message, Roles, etc.

## What to Worry About For Customizations You Keep

- Customizations must be unit tested and system tested
- Ensure customizations work as advertised on the upgraded environment
- Ensure customizations do not break R12 seeded functionality
- Identify types of customization issues, including setup / coding / testing/ training / bug
- Ensure customizations are benchmarked
  - Ensure that customizations run as expected, equal to or faster than in 11i – save your R11i Concurrent Manager history so you can see 11i performance
  - Test customizations with load expected in new R12 Production environment

## Consider Oracle's Tools for Creating R12 Customizations

- *Preparing Custom Development for the Next Oracle Applications E-Bus Suite Release [374398.1]*
  - Forms Builder / Report Builder (6i to 10g)
  - XML Publisher to BI Publisher – most Oracle seeded reports are XML – if you need to change them, you need to know XML
  - JDeveloper (9i to 10g) & OAF or ADF
  - BPEL using EBS Adapter, Ebus Integrated SOA Gateway invokes third party web services for Workflow, Business Events, PL\*SQL, APIs

## Consider Oracle's Tools for Creating R12 Customizations

- Oracle Application Express (APEX) & R12.1.x E-Business Integration - APEX provides a quick and easy way to extend Oracle Applications
- SQL Loader/Data Pump
- Programming Languages: PL\*SQL, SQL, C, Java, etc.
- Oracle Application Utilities
  - iSetup – useful once the upgrade is complete for ongoing maintenance
  - fndload, xdoload, xmlimporter – may migrate data to new instances
  - Patch Wizard – tells files that a patch has changed

## Consider Oracle's R12 Migration Tools for Customizations: iSetup

iSetup is a E-Business Suite module that allows you to

- Use E-Business Suite screens rather than at Unix level commands
- Map your Oracle Application instances
- Easily migrate setups between instances with a user-friendly interface
- Source and target instances must be running the same patch set levels

The screenshot shows the ORACLE iSetup web interface. The top navigation bar includes 'Home', 'Migrations', 'Reports', and 'Administration'. Below this, there are tabs for 'Selection Sets', 'Extracts', 'Transforms', and 'Loads'. The 'Extracts' section is active, displaying a 'Simple Search' form with a text input field for 'Name', 'Go', and 'Clear' buttons. Below the search form, there are 'Create' and 'Upload' buttons. A table titled 'Extract search results' is shown with columns: 'Select Name', 'Request ID', 'Source Instance', 'Submitted On', 'Phase', 'Status', 'Active', 'Delete', and 'Download'. The table currently contains one row with the text 'No search conducted.'. A tip at the bottom states: 'TIP You can Transform, Load or Report on an Active Extract. Reports can also be generated on a Reportable Extract.' The footer includes 'Privacy Statement', navigation links, and 'Copyright (c) 2006, Oracle. All rights reserved.'

## Consider Oracle's R12 Migration Tools for Customizations: FNDLOAD

### FNDLOAD upload of Responsibilities

```
FNDLOAD apps/pwd@db 0 Y UPLOAD $FND_TOP/patch/115/import/afscursp.lct file_name.lct  
FND_RESPONSIBILITY RESP_KEY="Inventory"
```

### FNDLOAD upload of xml Data Definition

```
FNDLOAD apps/$password O Y UPLOAD $XDO_TOP/patch/115/import/xdotmpl.lct ${shortname}_xdo tmpl.lct  
XDO_DS_DEFINITIONS APPLICATION_SHORT_NAME=DataDefinitionname  
ATA_SOURCE_CODE=${shortname}
```

### XDOLOADER Upload of XDO template:

```
java oracle.apps.xdo.oa.utilXDOLoader UPLOAD -DB_USERNAME apps -DB_PASSWORD ${password} -  
JDBC_CONNECTION host.name:1541:BETA -LOB_TYPE TEMPLATE -APPS_SHORT_NAME MRP -  
LOB_CODE=${shortname} -LANGUAGE en -TERRITORY US
```

### XMLImporter upload (import) web pages

```
java oracle.jrad.tools.xml.importer.XMLImporter /ora/appst/oracle/apps/x/wip/traveler/webui/  
-username apps -password xxxx -rootdir $APPL_TOP/ -dbconnection "host.name:1561:BETA" -jdk13 -mmdir  
/ora_apphome/betacomn/html/jrad
```

## OAF Versus ADF Customizations Approach

- For pages requiring close integration with E-Business Suite, use OA Framework
  - OAF's Oracle Application AOL provides E-Business integrated functionality, e.g., functions, menus, responsibility, functional security, data security, messages, profiles, flexfields, and concurrent programs
  - Standards/guidelines are available for developing extensions in OAF
  - OAF pages can be developed so they will migrate easily to ADF for future Fusion use

## OAF Versus ADF Customizations Approach

- If you don't need close integration with the E-Business Suite, then use ADF10g
  - ADF 10g does not include any support for AOL
  - ADF is used in Oracle Fusion Applications – Future direction of Apps development

## Useful R12 My Oracle Support Notes

- 416708.1 How to find right version of JDeveloper for eBusiness Suite 11i and 12
- 330236.1 Configuring JDeveloper For Use With Oracle Applications 11i and R12
- 1107973.1 Oracle Application Framework Developer's Guide Release 12.1.3
- 391554.1 Oracle Application Framework Documentation Resources, Release 12
- 395441.1 Oracle Application Framework Support Guidelines for Customers R12
- 397362.1 Multi Org Access Control (MOAC) in Oracle Purchasing
- 221549.1 Most Commonly Used FND APIs in APPS Customizations (sample code)
- 462586.1 Where are the Oracle® Release 12 (R12) API Reference Guide?
- 458225.1 Release 12 Integration Repository
- 396116.1 Oracle Integration Repository Documentation Resources Release 12

## R12 Information

Check *Oracle E-Business Suite Release 12.1 Information Center*,  
MOS Doc. ID: 806593.1

- *E-Business Release 12.1 Transfer of Information (TOI) Online Training*, MOS Doc. ID: 807319.1
- *E-Business Suite Release 12.1: Live Advisor Webcasts*, MOS Doc ID: 398877.1

Steven Chan - Oracle E-Business Suite Technology Blog:

- [http://blogs.oracle.com/stevenChan/entry/personalization\\_upgrades\\_whitepaper](http://blogs.oracle.com/stevenChan/entry/personalization_upgrades_whitepaper)
- [http://blogs.oracle.com/stevenChan/entry/new\\_whitepaper\\_extending\\_e\\_business](http://blogs.oracle.com/stevenChan/entry/new_whitepaper_extending_e_business)

## More On Customizations

- *Best of OOW Panel – Four Presentations We Just Can't Stop Talking About* – Bill Dunham, OATC, Inc.
- Sara Woodhull's Session 17250 at OOW, *Upgrading Your Customizations to Oracle E-Business Suite 12.1*
- *Oracle OpenWorld 2011 Presentation Recap: Upgrading your Customizations to Oracle E-Business Suite Release 12 (and Beyond)*

What You Need to Know About Identifying Customizations  
Before Upgrading to Release 12.1



Connection Point

2011

# Q & A