

# O2 Works

*Putting Oracle to Work*

Oracle E-Business Specialists

## Lessons Learned from a Successful 12.0.6 to 12.2.4 Upgrade



Presentation for NCOAUG Training Day

February 26, 2016



# EBS Upgrade from R12.0.6 to R12.2.4

**Kevin Dahl (O2Works)**

**and**

**Susan Thomas (Wolverine Trading, LLC)**

[kdahl@o2works.com](mailto:kdahl@o2works.com)

[sthomas@wolve.com](mailto:sthomas@wolve.com)

# Introduction

- Wolverine Trading
- Why Upgrade from R12.0.6 to R12.1.3
- Prep the OS
- Prep the R12.1.0.6 source
- Upgrade the database from 11gR2 to 12c
- Install R12.2.0 tech stack
- Prep for R12.2.0 patch
- Apply R12.2.0 upgrade patch
- Run Rapidwiz again
- Enable online patching
- Prep R12.2.0 for R12.2.4
- Apply R12.2.4 upgrade patch
- Perform post R12.2.4 upgrade steps (technical and apps)

# Wolverine Trading



The Wolverine companies comprise a number of diversified financial institutions specializing in proprietary trading, asset management, order execution services, and technology solutions. We are recognized as a market leader in derivatives valuation, trading, and value-added order execution across global equity, options, and futures markets.

- Main business lines:
  - Proprietary trading (WT)
  - Asset Management (WAM)
  - Execution business (WEX)
  - Technology solutions (WTT)

# Wolverine Upgrade Background

- **Upgraded from Release 12.0.6 to 12.2.4**
- **Why upgrade?**
  - Oracle was discontinuing support for 12.0.6
  - We were behind on critical patches
  - Some desired functionality required major patching
- **Challenges included uncertainty of what to expect from the upgrade including reliability and how long it would take**

# Considerations

- **Sizing hardware**
  - CPU, memory, DISK
- **Changing hardware**
  - 32-bit to 64-bit Linux
- **Project Size**
  - upgrading from R12.0.6 meant a reduced number of changes as opposed to upgrading from 11i
- **Impact on third party support group after go live**
  - knowledge transfer including instructions in patching, cloning and architectural differences
- **New features**
  - adop (AD Online Patching). AD=Applications DBA
  - slight cloning changes
  - [https://blogs.oracle.com/stevenChan/entry/usability\\_improvements\\_in\\_release\\_12](https://blogs.oracle.com/stevenChan/entry/usability_improvements_in_release_12)

# Prep the OS

- **Prep the OS**

- See note 1330701.1 - Oracle E-Business Suite Installation and Upgrade Notes Release 12 (12.2) for Linux x86-64
- Make sure your server meets CPU, memory and disk space requirements for your organization. Generally, a 10% to 20% increase over current environment
- An additional 150G would suffice for installation software and patches. NFS mount this space so it is available for all tiers and iterations on other servers
- VNC is preferred for both GUI installs and application of long running patches
- If you are functioning as Linux admin, use YUM to install packages
- Currently, 2 users environment is preferred (oracle / applmgr)
- Before setting selinux to permissive or disable mode, confirm with your security team. One of the two is required

# Prep the R12.1.0.6 source

- **Prep the R12.1.0.6 source**

- See upgrade Guide:  
[http://docs.oracle.com/cd/E26401\\_01/index.htm](http://docs.oracle.com/cd/E26401_01/index.htm)
- Review functional steps listed in chapter 2 with your functional team. There will be tasks they need to complete in the source right before the upgrade begins
- Confirm required technical tasks are completed in source before beginning upgrade: default passwords, db JRE, gather stats, init.ora parms, case sensitivity, etc



# Upgrade the DB from 11gR2 to 12c

- **Upgrade the database from 11gR2 to 12c**
  - Wolverine migrated from 11gR2 32-bit Linux to 12c 64-bit Linux so, manual upgrade was required (rather than use of DBUA)
  - Per note 1349240.1 the standard R12.2 upgrade path would be followed. that means:
    - Follow step 2 in 1349240.1. Upgrade to 12c following the steps in the 11i interoperability note 1524399.1 (11i with 12c DB) except for the steps listed in step2 of 1349240.1
    - Apply database patches per note 1147107.1. Take your time reviewing this note to ensure the correct database patches are applied to the 12c ORACLE HOME. Any SQL associated with these patches will be executed later

# Install R12.2.0 tech stack

- **Install R12.2.0 tech stack**

- If you are installing a 2 user environment, run as root
- The initial run of rapidwiz requires an upgrade action selection of **Create Upgrade File system**
- When at the database node screen, **Use Existing Oracle Home** was checked because the newly installed 12c home will be used. That selection means the installer will **NOT** install the 11.2.0.3 ORACLE\_HOME delivered with the EBS R12.2 installation software

# Prep for R12.2.0 patch

- **Prep for R12.2.0 patch**

- Disable AOL audit trail per chapter 3 of the upgrade guide. Work with functional personnel to identify groups to archive
- Note 1448102.2 has 3 tabs: **Introduction**, **R12.1** and **R12.2**. Ensure you refer to the **R12.2** tab. Also, it is critical you download the latest 12.2 Preinstall Patch Report. The reports are updated about every other month so, ensure you keep downloading the latest version until you freeze your patches
- Identify latest CUPS patches per note 1448102.2 which points you to patch 10117518
- Patch 10117518 is one of those patches that Oracle updates periodically. So, ensure you download the latest (until you freeze patches)
- Refer to note 1320300.1 for plan of application of preqs (step 3.1), the CUP (step 3.2), and application of the newly merged upgrade driver (steps 3.3 and 3.4). **THIS SUPERCEDES** what is written in the upgrade guide

# Apply R12.2.0 upgrade patch

- **Apply R12.2.0 upgrade patch (1320300.1)**
  - Pre req: apply AD upgrade patch and required patches as a merged patch (Step 3.1)
  - Apply CUP and other patches identified in 1448102.2 pre install zipped html file of patches as a merged patch in preinstall mode (Step 3.2)
  - Merge the 12.2.0 upgrade driver with the preinstall patches from Step 3.2 (Step 3.3)
  - Backup environment and then apply merged path with nocopyportion,nogenerateportion options (Step 3.4)
  - Address any failures of the patch via Metalink research or service requests

# Finish 12.2.0 Upgrade

- **Configure Release 12.2 E-Business Suite instance (required)**
  - Run Rapid Install again. It uses autoconfig to update your system configuration using the values it finds in the context file. Update dbtier RDBMS ORACLE\_HOME file system with AutoConfig and Clone files after rapid install completes. There are also several other related steps
- **Upgrade considerations for Add-on Localization products (conditional)**
  - Not relevant because Wolverine did not use CLE, CLL, CLA, or CLJ
- **Integrate custom objects and schemas (conditional)**
- **Re-enable custom triggers, constraints, and indexes (conditional)**

# Enable online patching

- **Enable online patching**

- Chapter 4 of the upgrade guide describes the details
- It is NOT optional to enable online patching
- Online patching is among the most significant architectural changes delivered with version R12.2
- There are several scripts that you will run to enable online patching
- When online patching is fully implemented, after the entire upgrade is complete you will be able to patch while users are in the system and cutover the changes from the patch edition to the run edition during quieter times (weekends). Note there WILL be an outage during cutover
- Online patching will increase the duration and complexity of patching for the DBA
- If possible, invest in snapshot technology for application tier and use guaranteed restore point for database. This will allow quick creation of restore points for pre patch and pre cutover

# Prep R12.2.0 for R12.2.4

- **Prep R12.2.0 for R12.2.4**
  - Prep steps will change depending on the release (12.2.4 or 12.2.5) and the startCD used. However, they will include database patching and tech stack patching. Patch 17537119 (the most recent version unless you've frozen your patches) will provide recommendations
  - The recommended patches or bugs will need to be compared and “decoded” by referencing note 1594274.1
  - Note that if any note has multiple paths with 1 for already upgraded to R12.2.2 and another not, you would choose the non upgraded because at this point the app is at R12.2.0

# Apply R12.2.4 upgrade patch

- **Apply R12.2.4 upgrade patch**
  - Ensure all pre-req steps have been done
  - Apply R12.2.4 patch following path A. That means that the current environment is not quite ready for full online patching. So, that means the upgrade patch for R12.2.4 and another patch will use adop BUT will be applied in downtime mode. After apply in downtime mode is complete, adop phase=cleanup will be run followed by adop phase=fs\_clone
  - Online help and another patch will be applied in adop hotpatch mode



# Perform post R12.2.4 upgrade steps

- **Perform post R12.2.4 upgrade steps**
  - Complete post upgrade steps mentioned in upgrade guide
  - Apply post R12.2.4 upgrade critical patches via adop

# Post R12.2.4 upgrade steps (Apps)

- In 12.2, the concept of value set security was introduced as Oracle is assuming that clients will want some additional security around value sets . The default is no one can view, create, or update value sets. If you do not want this default, you will need to reset it. (The steps are listed in the R12.2 Oracle E-Business Suite Flexfields Guide)
  - If you want complete backward compatibility, where all users with access to the Segment Values form can modify all value sets, use the following procedure:
    1. In the Functional Administrator responsibility, navigate to the Grants page and select Create Grant.
    2. Enter a name and description for the grant.
    3. For the Security Context, assign the grant to all users (the default setting).

# Post R12.2.4 upgrade steps (Apps)

4. For Data Security, select Flexfield Value Set Security Object for the Object, and select Next.
  5. For Data Context Type, select Instance Set.
  6. For Instance Set, select All value sets, and select Next.
  7. For Set, select the Flexfield Value Set Security Insert/Update Set permission set. You do not need to specify any parameter values. select Next.
  8. Check your settings and select Finish.
- The online preparation scripts run by the DBA may flag schemas that should be registered, which would require the migration of objects to the custom top and the re-registration of objects within the Oracle Applications.

# Post R12.2.4 upgrade issues (Apps)

- **WEB ADI** – The buttons on the Web ADI screens are only wide enough to show one letter. The rest of the button label is cut off.  
Solution: Installed patch
- **AR** – Very slow performance when searching for an Original Amount on the Account screen  
Solution: Installed patch
- **BPA** – Prior to upgrading, a template had been created that used ATTRIBUTE2 and ATTRIBUTE3 as content items. After upgrading, these two items were not available any more.  
Solution: No solution from oracle yet after opening an SR

# Post R12.2.4 upgrade issues (Apps)

- **AP** – Very slow performance upon submitting a PPR or in any subsequent task.  
Solution: Submit the concurrent request "Gather Schema Statistics" with Schema Name: ALL and Estimate Percent: 20%
- **AP** – On a custom check template, the payment reason comment from the invoice intermittently missing on the check's memo line.  
Solution: Recreate the custom template
- **AP** – When printing certain checks, the address extended past where the template designated  
Solution: No solution provided by Oracle. We will be handling the few occurrences manually

# Conclusion

- **Conclusion**
  - Use latest started. The advantages to this are updated patches which reduce subsequent patching and other functionality changes
  - Use latest version of these patches until freeze is in effect
    - 17537119
    - 10117518
  - Use latest version of R12.2.0 preinstall patches report until freeze is in effect. This is delivered in note 1448102.2
  - End-user perspective
    - Ease of transition from 12.0.6
    - O2Works provided on-time and under budget upgrade

# Contact Information

**Thanks**

**Kevin Dahl (O2Works)**

[kdahl@o2works.com](mailto:kdahl@o2works.com)

**Susan Thomas (Wolverine Trading, LLC)**

[sthomas@wolve.com](mailto:sthomas@wolve.com)