

Rapid Migrations to Releases 11.5.10.2 and 12.0.6

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Introduction

This paper describes the technical architecture of e-business suite releases 11i and R12 and recommended approaches for migrating to release 11i and R12. The reason for including the description and migration path for an older release of e-business suite (11i) is twofold:

- Some customers are still choosing to migrate to 11.5.10.2 from earlier releases of e-business suite
- Other customers, choosing to migrate to R12, must first migrate to 11.5.10.2 if they currently on older releases of e-business suite

Reasons to Migrate to 11.5.10.2

Desupport

Oracle will continue to support ALL versions of 11i indefinitely via their sustaining support policy. That policy dictates that With Sustaining Support, you receive technical support, including access to online support tools, knowledgebases, and technical support experts. Sustaining Support is available as long as you license your products. However, e-business suite versions prior to 11i do not have Sustaining Support. Thus, support for those earlier versions expires. For example, sustaining Support for version 11.0.3 expired January 2009. So, based on desupport alone, it is advisable to upgrade to e-business version 11.5.10.2. [see <http://www.oracle.com/support/library/brochure/lifetime-support-applications.pdf>]

Minimum Technology Baselines and the ATG N-1 Approach

The Oracle Applications Technology family ATG_PF rebasedlined its code releases for 11.5.9 and 11.5.10. Per the FAQ in metalink note 363827.1, ATG patches will work in e-business suite versions prior to 11.5.10 with some caveats. The caveats may be unacceptable to the business and thus the business would decide to upgrade 11.5.10.2. (see metalink note 363827.1)

Quarterly Critical Patch Updates

The quarterly critical patch updates require an ATG level be met as well as being on version 11.5.10. Critical patch updates are not provided for e-business suite versions that are no longer covered by premier or extended support. That means all e-business suite versions prior to 11.5.10 are not tested by oracle for critical patch support. In other words, those prior versions are susceptible to issues addressed by the critical patches. Only an upgrade to 11.5.10 will ensure the important critical patches can be applied. Note that extended support (this support requires an additional fee) ends for 11.5.10.2 in November of 2013. Premier supports ends for 11.5.10 in November of 2010. For the business, exposure to the threats posed by NOT being able to apply quarterly critical patch updates may be enough to drive an upgrade to 11.5.10.2. (see critical patch updates on News and Notes of metalink)

Requirement for Upgrade to Release 12 for Some 11i Versions

E-Business suite releases 11.5.7 and below must upgrade to 11.5.10.2 before they can upgrade to Release 12 of E-Business suite.

Rationale and Steps for Rapid Migration Approach to 11.5.10.2

Rapid Migration vs Upgrade

The Release 11.5.10.2 Maintenance Pack is designed to be applied to an existing Release 11*i* installation. Although some of the maintenance pack prerequisite steps update some of the Oracle technology stack components, the maintenance pack itself only updates Oracle Applications files and data. It is advisable to keep the Oracle technology stack up-to-date beyond the mandatory updates dictated in the prerequisite steps. The maintenance pack does NOT deliver a technology stack that is as up to date as the 11.5.10.2 rapid install. Thus, to obtain a clean technology stack for the 11.5.10.2 environment, the rapid migration approach is recommended.

High Level Checklist for Migration to 11.5.10.2

The following is a high level migration checklist for 11.5.10.2.

1. Perform a Fresh Install of 11.5.10.2
2. Replace Fresh Install Database With Current Database
3. Update Codeset – Apply “C” Drivers for any Previous Patches Applied Newer Than Current DVD Release
4. Follow Maintenance Pack Instructions for Same Release as DVD Bundle
5. Re-Apply Customizations/Extensions
6. Release 11*i* Rapid Migration
7. Patch Current
8. Patchsets.sh
9. InfoBundle11i.zip
10. ATG Rollup (#7)
11. Critical Patch Update (CPUs) Oct '05 – current
12. HR, Financials, Projects Family Packs
13. Diagnostics
14. RDA, TUMS-MP, Technology Validation, BDE, ACT Scripts

Detailed Level Checklist for Migration to 11.5.10.2

1. Perform a Fresh Install of 11.5.10.2
 - a. Install JDK (Included by RapidWiz for Linux/Solaris)
 - b. Install UnZip 5.41
 - c. Test Installation – Validates Environment

- d. Shutdown All Processes
- 2. Replace Fresh Install Database With Current Database
 - a. Delete Fresh Install Database
 - b. Upgrade Fresh Install Database Technology 9.2.0.6 to latest 9i version if not on 10gR2 or optionally upgrade to 10gR2
 - c. Copy Current Database
 - d. Recreate Control File
 - e. Upgrade Current database to 10gR2 (if applicable)
 - f. Startup Database and Listener
 - g. Update Database Configuration/Profile Information
- 3. Update Codeset – Apply “C” Drivers for any Previous Patches Applied Newer Than Current DVD Release
 - a. Check Existing Database for Patches Released After DVD Bundle
 - b. Apply Latest Quarterly Critical Patch Update
- 4. Follow Maintenance Pack Instructions for Same Release as Media Bundle – All Tasks Must be Review for Applicability
 - a. Section 1 – Pre-Install Tasks
 - i. Latest AD Minipack
 - ii. ALL Pre/Post Patch Tasks
 - iii. Configure Database for New Products
 - iv. Oracle Install Base / Service / Contracts prerequisites
 - b. Section 2 – Applying the Maintenance Pack, 3480000
 - i. Enable maintenance mode
 - ii. C Driver – NA
 - iii. D Driver – Apply – “U”
 - iv. G Driver – NA
 - c. Section 3 – Post-Install Tasks
 - i. Install Help
 - ii. Gather Statistics
 - d. Section 4 – Product Specific Tasks
 - i. Apply HR Global
 - ii. Upgrade to Discoverer 10g if desired
 - e. Section 5 – Miscellaneous
 - i. Patch current for Family Packs
 - ii. Upgrade to latest technology Component Versions via ATG RUPs
 - iii. Upgrade Developer 6i to patch set 19
 - iv. Upgrade from jinitiator 1.3.1.x to JRE 1.6
 - v. Convert to OATM if on 10gR2. If not, convert after next step completed
 - vi. Upgrade to 10gR2 / 11g if you did not do above

Resulting Architecture Delivered by Rapid Migration to
11.5.10.2

This is the architecture delivered by the rapid migration process described above:

The Client tier

- Sun JRE 1.6

Middle Tier

- E-Business suite 11.5.10.2
- 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* (6.0.8.28 – Patch 19)
- Workflow 2.6.3 (OWF.H)
- Other Oracle Home Software Directories – App 8.0.6.3, *iAS* 8.1.7 = 9*iAS* 1.0.2.2.2 (Release 1)

Database Tier

- Oracle RDBMS Enterprise Edition 10gR2 or 11g

Reasons to Migrate to Release 12

Previously Mentioned Benefits

The reasons for upgrading to Release 12 of e-business suite include the following mentioned for upgrading to 11.5.10.2.

- Desupport
- Minimum Technology Baselines
- Quarterly Critical Patch

Again, the categories given above will deliver critical items to the business such as database and application protection from known threats as well as improved technical and functional operations of the application.

Additional Benefits

In addition, Release 12 includes pieces of fusion middleware by default such as the 10gAS versions that replace the 8.0.6 and 8.1.7 Oracle Homes of the 11.5.10.2 environment.

There are also the following functional improvements. These are just a few:

- Multi-Org Access Control enables companies operating shared service centers or those utilizing multiple operating units to realize cost savings with improved processing efficiencies. With multi-org access control, transaction entry, processing, and reporting can occur across operating units from within the same responsibility.
- The Subledger Accounting Engine is one of the biggest changes in Release 12. This new engine consolidates and processes all accounting entries in one location and stores them in a centralized repository. Benefits include consistency in processing, better reconciliation tools, ease of auditability, and faster month-end close. User-defined accounting rules can be defined through a forms-based system, to reflect unique accounting policies minimizing customizations while retaining the specialized accounting rules in subsequent upgrades.
- Visibility of Assets from Purchasing to Payables to Assets will reduce research time and provide users a complete picture of item information.
- New Release 12 functionality. Because Release 12 has 18 new products and over 2400 enhancements, it has been Solution Beacon's experience

that most companies are able to replace some of their customizations with standard Oracle functionality. This saves both time and money in maintaining and upgrading customizations.

- BI Publisher. This product comes bundled with Release 12 and reduces the need to develop customized reporting. Documents including invoices, checks, and purchase orders can be easily modified by updating Word or Acrobat templates instead of requiring costly development. Output formats, including Excel, Word, Acrobat, and Html are supported; and documents can also be delivered in a variety of way including email, fax, and electronically. Currently, over 350 templates come out-of-the-box in the Financial product family alone.

The net result of an upgrade to Release 12 would produce a reduction in Total Cost of ownership because of simplified database administration due to improvements in more recent database versions delivered or certified with Release 12 as well improvements in the monitoring of the application via OEM (Oracle Enterprise Manager) and improvements in the application itself. Also, there are the functional improvements that will reduce TCO depending somewhat on the products used by the entity considering the upgrade.

Release 12 Perquisites

Assess source E-business version

If you are on Release 11.0 you must upgrade to 11.5.10.2 and then 12.0.4 and then apply RUP 6. Business on release 11.0 must use the standard upgrade to 11.5.10.2. The rapid migration approach mentioned above is not compatible with pre 11i versions.

If you are on release 11.5.1 – 11.5.7 you must upgrade to 11.5.10.2 and then 12.0.4 and then apply RUP 6. Business' can use the rapid migration approach to 11.5.10.2 mentioned above because they are on a version of release 11i.

If you are on e-Business release 11.5.8 and 11.5.9 or 11.5.10(base, CU1, CU2) you can directly upgrade to release 12.0.4 and then apply RUP 6.

Database considerations

Release 12 requires a 10gR2 database or greater. The various versions of acceptable release 11i environment require the following paths for upgrading a non 10gR2 database.

- Release 11.5.9 CU2 and 11.5.10 CU2
 - Upgrade to 10gR2 either before or during upgrade downtime
- Release 11.5.9 base, 11.5.9 CU1, 11.5.10 BASE, and 11.5.10 CU1
 - Upgrade to 10gR2 during downtime window
- Release 11.5.8
 - Upgrade to 10gR2 during downtime window

Release 12 Upgrade Detail

The following detailed steps outline the technical steps for upgrading from an appropriate 11i release to release 12.0.6. Keep in mind that there are other system administration and functional steps that are also a part of the upgrade to release 12 from appropriate 11i steps.

1. Obtain 12.0.4 media and install in staging area
2. Ensure latest recommended version of rapidwiz is being used per metalink note 549389.1
3. These are the recommended and required prep technical steps. Not shown are optional steps or other steps dependent on given product install
 - a. Run TUMS utility – delivered in a patch. Produces a report that lists task that can be omitted from the upgrade
 - b. Convert to multi-org if you haven't
 - c. Review sizes of old and new tablespaces
 - d. Run AD preparation scripts – for OATM
 - e. Gather schema stats
 - f. Run rapid install
 - g. Upgrade database to 10gR2 if 11.5.9(CU2) or 11.5.10 (CU2)
4. Upgrade
 - a. Shutdown 11i application tier processes
 - b. Ensure init.ora has parms set for upgrade
 - i. Remove db_file_multiblock_read_count permanently because it overrides _db_file_optimizer_read_count
 - ii. Ensure _db_file_optimizer_read_count is set to 8
 - iii. job_queue_processes should equal number of CPUs
 - iv. parallel_max_servers should equal 2X number of CPUs
 - v. pga_aggregate_target per mn 396009.1
 - vi. recyclebin=OFF
 - c. ensure TEMP is temp and locally managed
 - d. enable maintenance mode
 - e. apply AD upgrade driver for 12.0.4 (6604842) from 12.0.4 apptop
 - f. apply American English upgrade patch 6394500 in \$AU_TOP/patch/115/driver. Use adpatch with options nocopyportion and no generateportion
 - g. apply NLS version of preceding patch if you have additional languages. Note that 6394500 is NOT available on metalink
 - h. disable maintenance mode
 - i. reset init.ora parms if necessary
5. Finish Upgrade
 - a. run rapidwiz to configure and start server processes
 - b. create new appsutil.zip for dbtier
 - c. generate new context file for dbtier
 - d. run autoconfig on dbtier

- e. configure client software to use J2SE if not already using
6. Apply RUP 6
7. ensure application processes are shut down
8. apply R12.AD.A.Delta.6 (7305220)
9. apply RUP 6 (6728000)
 - a. apply the latest consolidated online help patch (7109200)
 - b. apply these 2 patches that address post RUP 6 issues
 - i. 7649893, 7653364
 - c. generate appsutil.zip again and apply to dbtier
 - d. run autoconfig on dbtier
 - e. run adpreclone.pl on dbtier and apps tier
 - f. refer to metalink note 743368.1 for additional product specific patches
10. patch current at this point, if necessary
11. ensure all relevant sysadmin and functional tasks listed in the upgrade have been completed
12. restart apps

Summary

The inclusion of the rapid migration steps for 11i in this document is important because those businesses on older releases of 11i are required to upgrade to 11.5.10.2 before upgrading to release 12.

The technical steps for the upgrade to release 12 are similar to those for the rapid migration to 11i. However, it is important to note that there are also key sysadmin and functional steps that must be performed.

Finally, it is quite possible errors will be encountered while applying the patches for release 12.04 and RUP 6. One way to mitigate encountering those errors is to search metalink before performing the upgrade to see if additional patches have been identified that would eliminate errors encountered during the R12 upgrade process.