

Care and Feeding of 11i

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Introduction

- Welcome and Introduction
- Workshops Overview
 - ◆ The focus of the workshops is to share “Real-World” experience as well as tips and techniques to install, upgrade and tune the complex Oracle Application environment delivered with Release 11*i*
- Audience Profile
 - ◆ Current Platform and O/S, Database Version, Applications Release, Application Interface, Language, Installation, Re-implementation or Upgrade Plans and Timelines

Workshop Discussion Topics

- Release 11*i* Concepts
 - ◆ What is Release 11*i*
 - ◆ Architecture
 - ◆ Server Configuration
- Installation Overview
- Administration and Maintenance
 - ◆ Cloning
 - ◆ AutoConfig
 - ◆ Migrations
 - ◆ Patching



Release 11*i* Concepts

What is Release 11i?

- The Biggest and Most Complex Oracle Applications Release Ever!
- Seven CD bundle releases containing:
 - ◆ major changes to the tools and technology stack
 - ◆ bug fixes
 - ◆ NEW functionality!

What is Release 11*i*?

- Completely New Architecture, Tools and Technology – True Three-Tier
 - ◆ Internet Computing Architecture (ICA)
 - ◆ Technology Stack – Forms, Java, Apache(html)
 - ◆ Oracle 8*i*/9*i* – CBO, Partitioning

- Multiple Application Server Components
 - ◆ Forms-Based: ERP, Back Office
 - ◆ HTML/JAVA-Based: Self Service, Workflow, “*i*” Products
 - ◆ Business Intelligence: Discoverer 3*i*/4*i*, Reports

What is Release 11*i*?

- Increased Modules, Functionality, and Features
 - ◆ Release 10.7 40 products
 - ◆ Release 11.0.x 50 products
 - ◆ Release 11.5.5 161 products
 - ◆ Release 11.5.6 175 products
 - ◆ Release 11.5.7 179 products
 - ◆ Release 11.5.8 191 products

Note: The current CD release is 11.5.8. 11.5.8 is already six product family packs out of date.

Release 11*i* Guiding Principles

KISS



**Keep it Simple and Supportable
Possible vs. Practical**

Release 11*i* Concepts

- All or Nothing: Oracle Applications Software and Database – No sharing of Software/Objects
- Interdependencies of Products: AD, FND, AK, HZ (TCA)
- Multiple Component Requirements: Database Software (3), Forms, Reports, Java, JDBC, Apache, Self-Service Framework, Workflow
- Hybrid Application: OLTP/Batch/Web Coexist

Architecture – 11.5.1/11.5.2

■ Client

- ◆ Oracle JInitiator 1.1.7.27

■ Middle Tier

- ◆ Webservers (WebDB 2.2 and WebDB 2.5)
- ◆ Jserv 1.1
- ◆ JRE (Java Runtime Environment) 1.1.8
- ◆ Web Listener 2.2
- ◆ Oracle Forms/Reports 6i (6.0.8.8.0)
- ◆ Workflow 2.5

■ Database Tier

- ◆ Oracle 8i Enterprise Edition 8.1.6
- ◆ Other Oracle Home Software Directories – App 8.0.6, WebDB 8.1.6

Architecture – 11.5.3

■ Client

- ◆ Oracle JInitiator 1.1.7.27

■ Middle Tier

- ◆ Apache Web Server 1.3.9 (Full - jsp, JServ)
- ◆ Jserv 1.1
- ◆ JRE (Java Runtime Environment) 1.1.8
- ◆ JDK (Java Development Kit) 1.1.8
- ◆ Oracle Forms/Reports 6i (6.0.8.8.0)
- ◆ Workflow 2.5

■ Database Tier

- ◆ Oracle 8i Enterprise Edition 8.1.6
- ◆ Other Oracle Home Software
Directories – App 8.0.6, iAS 8.1.6, 9iAS
1.0.2.1

Architecture – 11.5.4

■ Client

- ◆ Oracle JInitiator 1.1.8.7 on Client

■ Middle Tier

- ◆ Apache Web Server 1.3.9 (Full - jsp, JServ)
- ◆ Jserv 1.1
- ◆ JRE (Java Runtime Environment) 1.1.8
- ◆ JDK (Java Development Kit) 1.2.2 (1.3*)
- ◆ Self Service Framework 5.2.3C
- ◆ Oracle Forms/Reports 6i (6.0.8.12.1-Patch 3)
- ◆ Workflow 2.5

■ Database Tier

- ◆ Oracle 8i Enterprise Edition 8.1.7.1
- ◆ Other Oracle Home Software Directories – App 8.0.6, iAS 8.1.6, 9iAS 1.0.2.1

Architecture – 11.5.5

■ Client

- ◆ Oracle JInitiator 1.1.8.13 on Client

■ Middle Tier

- ◆ Apache Web Server 1.3.9 (Full - jsp, JServ)
- ◆ JRE (Java Runtime Environment) 1.1.8
- ◆ JDK (Java Development Kit) 1.3
- ◆ Self Service Framework 5.2.3C
- ◆ Oracle Forms/Reports 6*i* (6.0.8.14.2 - P5)
- ◆ Workflow 2.5

■ Database Tier

- ◆ Oracle 8*i* Enterprise Edition 8.1.7.1
- ◆ Other Oracle Home Software Directories –
App 8.0.6.3, *iAS* 8.1.6, 9*iAS* 1.0.2.1

Architecture – 11.5.7

■ Client

- ◆ Oracle JInitiator 1.1.8.16 on Client

■ Middle Tier

- ◆ Apache Web Server 1.3.19 (Full – jsp, JServ)
- ◆ JRE (Java Runtime Environment) 1.1.8
- ◆ JDK (Java Development Kit) 1.3.1_02
- ◆ Self Service Framework 5.6E
- ◆ Oracle Forms/Reports 6i (6.0.8.18 – Patch 9)
- ◆ Workflow 2.6

■ Database Tier

- ◆ Oracle 8i Enterprise Edition 8.1.7.3
- ◆ Other Oracle Home Software Directories – App 8.0.6.3, iAS 8.1.7, 9iAS 1.0.2.2 (Release 1)
- ◆ Oracle Portal 3.0.9.8.1

Architecture – 11.5.8

■ Client

- ◆ Oracle JInitiator 1.1.8.16 on Client

■ Middle Tier

- ◆ Apache Web Server 1.3.19 (Full - jsp, JServ)
- ◆ JRE (Java Runtime Environment) 1.1.8
- ◆ JDK (Java Development Kit) 1.3.1_02
- ◆ Self Service Framework 5.6E
- ◆ Oracle Forms/Reports 6i (6.0.8.18 - Patch 9)
- ◆ Workflow 2.6

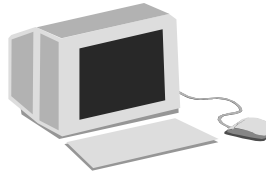
■ Database Tier

- ◆ Oracle 8i Enterprise Edition 8.1.7.4
- ◆ Other Oracle Home Software Directories – App 8.0.6.3, iAS 8.1.7, 9iAS 1.0.2.2 (Release 1)
- ◆ Oracle Portal 3.0.9.8.1

11i Architecture – Components

Release 11.5.8

Client
Tier



Middle
Tier

Web HTTP Servers

Apache

Discoverer
Server *

*optional

8.1.7 iAS ORACLE_HOME

JInitiator

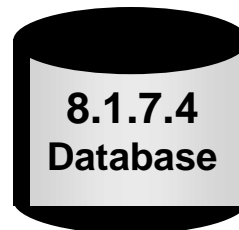
Application Technology Stack

Admin Server	Concurrent Processing Server
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Forms Server	Reports Server
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8.0.6.3 ORACLE_HOME

Database
Tier



8.1.7.4
Database

8.1.7.4 ORACLE_HOME

Single Server Configuration

- Single Tier Definition: All Application components installed on a single server
 - ◆ Pros
 - ◆ Ease of Administration – installation and process control
 - ◆ No network traffic
 - ◆ Ease of maintenance – single tier patching
 - ◆ Cons
 - ◆ Scalable only within the single server - must provide for present and future growth needs
 - ◆ All or nothing performance tuning

Multi-Server Configuration

- Multi-Tier Definition: All Applications components installed on two or more servers (up to 5 separate nodes)
 - ◆ Pros
 - ◆ Separate database server
 - ◆ Load balancing
 - ◆ Specific component level performance tuning
 - ◆ Ability to add additional front-end servers as user load increases

Multi-Server Configuration

- Multi-Tier Definition, continued
 - ◆ Cons
 - ◆ Increased network traffic
 - ◆ Increased administration – process control and backups
 - ◆ Increased maintenance – more patches and platforms
 - ◆ Greater architectural complexity
 - ◆ Consistent production, test and development environments
 - ◆ More complicated load balancing – OLTP vs. Batch vs. Web
 - ◆ Higher OS license costs

Server Configuration Recommendations

- Single Tier
 - ◆ New Paradigm Shift
- Scalable
 - ◆ As Needed Growth
- Maintenance
 - ◆ Patching

Server Sizing Configurations

- Disk Space (for fresh install)
 - ◆ 50GB for the software and database
 - ◆ 15GB for the software staging areas
 - ◆ 10-25GB for patches, log/out files, archives, disk backups, temporary files, etc.
 - ◆ RAID for disk drives is necessary
- Typical ERP Server Configuration
 - ◆ Combined Single Server
 - ◆ 4CPU, 4GB RAM (Scalable)
 - ◆ 75GB disk effective (after RAID)

Server Sizing Recommendations

■ Memory

- ◆ Oracle Recommendation – 8MB/user
- ◆ Real World Recommendation
 - ◆ 15MB for every active user
 - ◆ 15MB for concurrent manager processes
 - ◆ 20MB for database background processes
 - ◆ 500MB SGA (pinning packages and sequences)

Server Sizing Recommendations

■ CPU

- ◆ Oracle Recommendation – 70 users/CPU
- ◆ Real World Recommendation
 - ◆ 15 Active Users/CPU (super users)
 - ◆ 50 Logged Users/CPU
 - ◆ 1 CPU Dedicated - Database and Application Processes (DB, Forms, Web, Concurrent Managers)

Desktop Sizing – Oracle Minimum

	Windows 3.11	Windows 95+	Windows 2K
CPU - MHz	Pentium 120+	Pentium 133+	Pentium 200+
Memory	32MB	48 MB	64-96MB



Macintosh?



Desktop Sizing – Real World

Windows 95/98/2000

CPU	1GHz+
Memory	Minimum 512MB (1024MB better)
Color Palette	Must be able to run a minimum of 256 colors (a Java requirement), but ideally 65,536 (64K) colors
Jinitiator	Latest release that is certified for the Oracle Applications Release (1.1.8.16 released with 11.5.8)
Browser	Either Netscape Navigator 4.73 or higher or Internet Explorer* 5 or higher



*** Why IE? - Preferred by Oracle - MetaLink**



Desktop Considerations

- Java applets are particularly CPU intensive since they are run locally on the user's PC. A faster CPU has a more noticeable affect on performance, all other things being equal.
- JInitiator 1.1.8.7 and certain other Oracle tools are incompatible with Pentium 4 Processors (minimum of 1.1.8.10 required)
- Automatic download and installation of the JInitiator requires temporary changes to IE security settings
- Periodic "cleaning" of cache and other temporary files is necessary to reduce browser/memory issues while accessing the Oracle Applications. (see Clean Cache in Free Tools section at <http://www.solutionbeacon.com>)

Single UNIX Account Owner

Single User – oraappl, oraSID, or any other single account other than oracle*

■ Pros

- ◆ Ease of access
- ◆ Ease of administration
- ◆ Ease of maintenance - specifically patching

■ Cons

- ◆ Less auditability (NT)
- ◆ Less control - more access to entire system

***Why not oracle?**

Multiple UNIX Account Owners

Multi-User – oraSID (database, database software) and applSID (applications/web software)

■ Pros

- ◆ Separation of duties / responsibilities by account
- ◆ Auditability - increased security, restricted access

Multiple UNIX Account Owners

■ Cons

- ◆ Need root access for installation (NT)
- ◆ Increased complexity of Apps process management
- ◆ Application vs. database maintenance must be closely coordinated and controlled
- ◆ Directory and file permissions may need to be adjusted for dual access / management
- ◆ Increased sharing of database/application files

Account Recommendation

- Use a single account instead of multiple accounts which typically increases the overall amount of time until an Application issue is resolved.
- For most companies, the distinction between Applications management/maintenance and control is constantly being blurred by business considerations that force support staff to respond quicker to Application issues.
- At a minimum, if multiple accounts are used, the accounts must use the same group (dba).

“Simplified” OFA

Rapid Install Directories

```
ORACLE_SID@servername > du -sk* (K bytes)
15,784,807  SIDappl (APPL_TOP = 16GB)
650,190    SIDcomn (COMN_TOP) - for Java/HTML
25,360,696 SIDdata (25GB = Database Files)
2,152,544  SIDdb (2.1GB = 8.1.7, oraInventory
           and JRE)
5,846,955  SIDora (6GB = 8.0.6 (APPL_TOP),
           iAS (APACHE/9iAS) Oracle Homes

50GB      Total (Approx)
```



***Increasing with every release**



Software Staging Directories

1,404,554	ora8i
4,836,546 datafiles	oraAppDB - compressed
3,780,205	oraApps
2,413,515	oraiAS
566,781	redCD

15GB

Total Staging Area required is approximate and varies based on platform.

Only Minimum Application Software - no other Software, Doc or Patch CDs Loaded.



Supplemental Directories*

- ../SIDadm – Administrative
- ../SIDarch – Archive Logs (Large), \$ARCH_TOP
- ../SIDexp – Exports
- ../SIDinst – Installation
- ../SIDlog – Log Files (Large)
- ../SIDout – Output Files (Large)
- ../SIDptch – Patches (Large), \$PATCH_TOP
- ../SIDscr – Scripts, \$SCRIPTS_TOP
- ../SIDtmp – Temporary (Large)

As compared to:

- ../SIDcomn – \$COMN_TOP

* **DBA created**

Applications Process Ports

SID
Server
Function
Database
RPC
Reports
Web Listener
Servlet
Forms Listener
Metrics Server Data
Metrics Server Req.
JTF Fullfilment Server
iMeeting Collaboration Server
iMeeting Recording Server
iMeeting Monitor
Map Viewer Servlet
OEM Web Utility
VisiBroker Orb Server
MSCA Server
MSCA Dispatcher
OACORE Servlet Range
Discoverer Servlet Range
Forms Servlet Range
Forms Start

Note: 11.5.7/8 Apps will reserve multiple sequential ports



Environment Management

- Three Specific Oracle Environments for supporting the 11*i* Applications – Database, Applications, Web
- Manually create profiles for each environment (profile.SID.app, profile.SID.db, profile.SID.web)
- Create a list profiles program to automatically list all available environment profiles upon signon
- Source the appropriate profile for the task(s) to be performed including start, stop, backups and patching

Environment Profile Management

Oracle Applications Environment Manager (OAEM)

- Facilitates .profile establishment (DB, Apps, Web)
- No need for multiple UNIX .profile scripts
- Provides start/stop/status – all components
- Download from Free 11*i* Tools section of Solution Beacon website



Installation

Installation Overview

- All Products are Installed Regardless of Licensing – database objects and software code
- Oracle Seed Database – 25GB
- Simple Installation – 2 to 4 Hours
- Validates Configuration
- Starts All Processes
- Core Apps – AD, AX, FND, TCA (HZ)

Pre-Installation Checklist Summary

- Establish Initial Hardware Configuration
- Verify Certification Matrix
- Verify Licensed Products
- Check Upgrade/Install Note on MetaLink daily
- Check Release Notes – Generic
- Check Release Notes – Platform Specific
- Order Software CD Bundle – 11.5.8 or latest for your platform
- Download Java and OS Patches – migration issues
- Contact Support for CSI Detailed Report for Licensed Products
- Unset \$ORACLE_BASE

Rapid Install Overview

- Check /tmp – must have 750MB of free space minimum, preferably 2GB
- Stage Software
 - ◆ Directory Naming, \$TEMP, \$TMP, \$TMPDIR, X-Windows emulator
- Patch Rapid Install – Check MetaLink
- Select Products – Check Detail, Licensing
- Select Country, Language, Character set
- Specify Directories – tmp
- Define Software Account(s), Group
- Define Ports/Java 1.3 Location
- Review Settings
- Save Configuration/Install Files – _SIDconfig.txt – Installation Directory
- Automatic Validation Check (Port, Mount Points, Space, Temp, Host, System Utilities, Java)
- Automatic Process Startup
- Finishing
 - ◆ Digital Signature/Repackaging – 11.5.8. Install
 - ◆ Regenerating Jar Files – Force=Y) 11.5.8 – NA
 - ◆ JVM (JInitiator) Client Installation) 11.5.8 – NA

Post-Installation Checklist Summary

- Disk/Tape Backup
- Cleanup Installation Files
- Verify Product Licensing – License Manager
- Apply Initial Patches (AD, FND)
- Run ADADMIN Tasks – Create Environment File
- Disk/Tape Backup
- Change Process Log File Destinations
- Run Patchsets (patchsets.sh from FTP Site)
- Apply Technology Stack Patches
- Apply Product Family Packs
- Apply Fully Installed Product Mini-packs
- Run ADADMIN Tasks
- Disk/Tape Backups
- Check for Latest Patchsets (patchsets.sh) – shared installs ?
- Update Install/Patch Documentation

Product Installation Check

- Validate Modules - \$APPL_TOP/SID.env
- Validate \$APPLFULL/\$APPLSHAR -AD
- \$AD_TOP/sql/adutconf.sql
- FND_PRODUCT_INSTALLATIONS
- Relinking (applprod.txt)
- Patchsets.sh
- http://machine.domain:Port/OA_HTML/US/ICXINDEX.htm
- <http://machine.domain:Port> – Portal page
- <http://machine.domain:Port/dev60cgi/f60cgi>
– Java Applet

Environment Verification

- Temporary Files
- init.ora – utl_file_dir
- Common Log/Out Files – APPLCSF
- Process Log Files
- Forms Parameters – Timeout
 - ◆ To prevent FRM-92100 set FORMS60_TIMEOUT=60 (1 hour) or 1440 (1 day) in APPLSYS.env (sid.env) file located in the \$APPL_TOP
 - ◆ Default is 15 minutes



Administration and Maintenance

Environment Management

- Oracle Enterprise Manager (OEM)
 - ◆ Multiple Instances
 - ◆ Applications Manager
 - ◆ Management Pack - Applications
- Oracle Applications Manager (OAM)
- AutoConfig (11.5.7/8 Impact)
- Scripts

Housekeeping

- Apply Minimal Patches
 - ◆ Latest AD Consolidated (AD.G) - starting with 11.5.7 AD mini-packs and AD consolidated are the same
 - ◆ Password Utility – patch required
 - ◆ Clone Utility – patch required pre-11.5.7
 - ◆ Workflow 2.6 – 5 patches required pre-11.5.7
 - ◆ ADI Security – patch required
- Backup AD/FND bin directories
- Modify processes, rbs, temp, redos, init.ora
- Resize the Database
- Pinning – installed module packages/sequences
- Run ADADMIN Steps
- Cold Backup to Disk/Tape

Pinning

- Oracle Applications requires space in the ORACLE System Global Area (SGA) for stored packages and functions. If SGA space is fragmented, there may not be enough space to load a package or function. You should pre-allocate space in the SGA shared pool for packages, functions, and sequences by "pinning" them.
- Pinning objects in the shared pool can provide a tremendous increase in database performance, if it is done correctly. Since pinned objects reside in the SQL and PL/PLSQL memory areas, they do not need to be loaded and parsed from the database, which saves considerable time.

Cloning

- Definition of Cloning: The process of reproducing an entire environment, including the Oracle software (\$ORACLE_HOME) and Application software (\$APPL_TOP) directory structures.
- Whitepapers: MetaLink Note 135792.1
- Limitations
 - ◆ Architecture
 - ◆ Technology Stack
 - ◆ AutoConfig (11.5.7 +)

Cloning Methods

- Manually
 - ◆ Dozens of Configuration Files
 - ◆ Numerous Site Profile Values
 - ◆ Not Supported
- Oracle's adclone.pl Utility (pre-11.5.7)
- Oracle's AutoConfig Utility (11.5.7)
- Oracle's Rapid Clone Utility (11.5.8)
- No sharing of software

Cloning Checklist – Pre-11.5.7

- Clone Patches
- PERL Path
- High-Level Tasks
 - ◆ Target Installation
 - ◆ adclone.pl Pre-Clone
 - ◆ Copy Directories (HTML/JAVA)
 - ◆ Copy Database
 - ◆ adclone.pl Post-Clone
 - ◆ Post-Clone Tasks
 - ◆ FND_PRODUCT_GROUPS Update

AdClone

- Adclone.pl MetaLink Note 135792.1
 - ◆ Patch 2115451 + Pre-requisite
 - ◆ Supported
 - ◆ Limitations – Identical Configuration, Database and Technology Patches Not Cloned

Migrations – Point Releases

- Basic Definition and Configuration
 - ◆ Technology
 - ◆ Applications
- Migration Strategies
 - ◆ Technology
 - ◆ Maintenance Pack

Patch Definitions

- CD Bundle (50+ CDs)
 - ◆ Entire Applications Release
- Maintenance Pack (AU - 11.5.8)
 - ◆ Entire Code Set Release for All Application Modules
 - ◆ No Technology Patches Included
 - ◆ Lots of Pre/Post Tasks, VERY Long-Running
- Family Pack (PRC_PF G)
 - ◆ All Product Modules Mini-packs for the Specific Family
 - ◆ Lots of Pre/Post Tasks, VERY Long-Running
- Product Mini-Pack (GL G)
 - ◆ Entire Release for Specific Application Modules
- One-Off Bug Patch (High Priority)
 - ◆ Fixes Specific Issue, No Regression Testing

AutoPatch Review

- AutoPatch Checklist
 - ◆ Research on Patch # – MetaLink, OAUG Archives
 - ◆ Readme.txt, README.html
 - ◆ Shutdown Application Processes
 - ◆ Pre-Requirement Patches/Tasks, Post-Patch Tasks
 - ◆ C Driver
 - ◆ D Driver
 - ◆ G Driver
 - ◆ Migration to Other Environments
- AutoPatch (\$AD_TOP/bin/adpatch)
 - ◆ Bug Fixes
 - ◆ Additional Functionality to Existing Products
 - ◆ New Products – ADSPLICE (New Products)

AutoPatch Documentation

- Standards - Patch Naming, Driver Log Files, Patch Status, Issue Tracking Spreadsheet
- Process - Discovery, Evaluation and Examination, Pre/Post Patch Tasks, Testing, Migration Approval, Freeze Patch Levels (Install - Int. Testing vs. Upgrade - Latest)
- Installation - Rapid Install, AD Consolidated, FND Mini-Pack
- Ongoing Maintenance - Frequency, Business Requirements/Impact
- 11.5.8 - six product family packs out of date

Patchsets.sh Comparison Utility

Patchset Comparison Utility Found on Oracle's FTP Site:

ftp://oracle-ftp.oracle.com/apps/patchsets/PATCHSET_COMPARE_TOOL/

- ◆ Updated Nightly By Oracle
- ◆ Can Be used For 10.7, 11.0.x and 11.5.x
- ◆ Displays Currently Available Patchsets
- ◆ Reads the applptch.txt File or the database
- ◆ Produces Reports on Differences
- ◆ Automate FTP Script

Patch Application

- Manual (Interactive)
- Automated (Non-interactive)
- Merge Patch Utility (Automated)
- OEM (Future)
- OAM (Oracle Applications Manager)

Patch Management/Tracking

- Manual (applptch.txt)
- Manual (spreadsheet)
- Manual (patchsets.sh)
- Database (AD patch)
- Commercial (RingMaster)

Platinum

What is Platinum?

Platinum 7.1 is the latest patched release (11.5.7) of CRM and ERP software designed to greatly simplify and expedite the installation of a fresh E-Business environment. The Platinum Environment, apart from being nearly fully patched, also includes all prerequisite patches and critical bug fixes. The Platinum Environment is a tool for rapid installation and implementation – not upgrades. All the applications are patched but the technology stack is NOT patched.

Oracle e-Business Partners Only – HP/SUN/NT/Linux



Platinum (continued)

- As per MetaLink:
 - ◆ “Because of the overall improvement in product quality and general availability of the Rapid Install to fully configure most products in R11.5.7, the Platinum environment CDs are no longer available/orderable.
 - ◆ The primary release vehicle for the Oracle e-Business Applications Suite will be via the Oracle Applications Releases that contain the consolidated ERP and CRM functional advances and product fixes. All Oracle Applications Releases are available to internal and external audiences and support both new installs and upgrades.

Platinum (continued)

- ◆ To minimize the impact of this transition, we are providing the Platinum 7.1 Consolidated Patch, 11i.JTP.A (2014756) which contains fixes to product defects found as a result of testing the Oracle Consulting Implementation Flows on R11.5.7.
- ◆ The Platinum 7.1 Consolidated Patch, unlike most other Applications patches, can only be applied to a single release level. This patch, Platinum 7.1, should only be applied to Oracle Applications Release 11.5.7 Rapid Install or 11.5.7 Maintenance Pack (Patch number 2123967.)”

Q&A



Thank you!

***Hope you enjoy the Release 11i
Workshops! Remember:***

KISS



Keep It Simple and Supportable

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