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# Preparing to Run Oracle E-Business Suite on System z and Oracle 11gR2 New Features

Speakers: David Simpson and Sam Amsavelu Speaker's Company: IBM Corporation

Date of Presentation: Thursday, March 3, 2011: 1:30PM-2:30 PM Session Number: 8469 Room 203B (Anaheim Convention Center)



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Influence

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# Agenda



- Oracle E-Business Suite Components:
  - Implementation Options for Oracle E-Business Suite on Linux on IBM System z
  - Sizing Oracle E-business Suite
- 11gR2 New Features\*
- \*available for IBM System p and System x as of publication



# 10.2.0.5.2 is Now Available!

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#### Patch 10248542: DATABASE PSU 10.2.0.5.2 (INCLUDES CPUJAN2011) Last Updated Mar 3, 2011 (Today) Size 2.1MB Platform IBM: Linux on System z Product Oracle Database Family Support Level Software Release 10.2.0.5 Classification Other Recommendations Release Oracle 10.2.0.5 All Database Patch Tag 🚺 Add to Plan Read Me Download 1 Files, Total 2.1 MB Show File Details **Bugs Resolved by This Patch** 6402302 DROP SYNONYM DDL IS NOT CAPTURED/PROPAGATED OR APPLIED Downloads 0 View Trends 'J000' TRACE FILE REGARDING GATHER\_STATS JOB INTERMITTENTLY SINCE 10.2.0.4 7519406 ORA-7445[XTYQBCB] OCCURS DURING EXECUTING SQL THAT USES 60000 BIND VARIABLES. 8277300 M Be the First! 8350262 CREATE DBCONSOLE CERT WITH 10YEAR VALIDITY 8394351 ORA-12801: ERROR SIGNALED IN PARALLEL QUERY SERVER P005 RUNNING DM QUERY Be the first to share your experience 8544696 TABLE GROWTH - BLOCKS ARE NOT REUSED installing this patch. 8546356 ORA-600 [KDSGRP1] AFTER REBUILD COMPOSITE PARTITION INDEX ONLINE IN RAC ORA-00600 [KDISS UNCOMPRESS: BUFFER LENGTH] 8664189 Write a Review ORA-600 [KTSPTRN\_FIX-EXTMAP] DURING EXTENT ALLOCATION 9711859 Learn More about the Patch Community 9713537 ENHANCE CAUSE/ACTION FIELDS OF THE INTERNAL ERROR ORA-00600 Open Read Me to view all Bugs

### What is E-Business Suite?



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Applications	Dashboard	Site Map								
Applications Dashboard: TEST							Nav	Navigate to	Application Services	es 💽 Go
Overview	Performance	Critical Activities	Business Flows	Securi	ty Software	Updates				
Application	s System Status									
Data Retrieve	ed: 03-Aug-2010 (	06:35:20								
Host	Platform		Host Status	Admin	Database	Concurrent Proces	sing	Forms	Web	
ORAINST1	IBM: Linux or	n System z	1			$\bigcirc$				
Configurati	on Changes (las	t 24 hours)			Sy	stem Alerts				
	Site Level Profile ions Context File	20				~ ~	0 0			
Web Comp	onents Status				Us	er Initiated Alerts				
Servlet	ved: 01-Oct-2003 Agent ✓ Up Agent ✓ Up TCF ✓ Up	<b>a</b> )			Dat	New Occurrences Open Alerts	010 06:35:2 0 0 0 0	0 🖻		
CATIO THE IS			eption of Web Cor Please see Help			is retrieved from the sy	-	odically.	To retrieve up-to-the-	-minute data, please

# **Oracle E-Business Suite Certification**

Oracle E-Business R12 is certified for Linux on IBM System z Servers for both

mid tier (application server) and database tiers.

#### Versions available

- Current release of E-Business Suite
  - E-Business Suite R12.1.2 with Release Upgrade 12.1.3
- Certified on the following Linux Distributions
  - Novell SuSE SLES10
  - Red Hat Enterprise EL5
- Database certified for Linux on System z Servers
  - Initial release uses Oracle 10g R2 (10.2.0.4)
  - Database certifications are planned after the database versions are available (10.2.0.5 and 11gR2)

#### Middle Tier uses

- Oracle Fusion Middleware 10gR2 Forms and Reports 10.1.2.3 PS
- Oracle Fusion Middleware 10gR3 OC4J 10.1.3.4 PS
- Java Development Kit (JDK) 6.0





## **Business Challenges Today**



- Support for Multiple Environments Development, Training, Pilot, and Test Environments
- Multiple Application and Database servers
  - Load balancing servers, Oracle RAC, Discoverer (AdHoc Reporting)
  - Dev, QA, Test, Training, Pilot, and Sandbox
  - Patching Environments
- Auditing and Software License Compliance (Customizations normally require Full Use DB licenses)
- Acquisitions and Takeovers being able to integrate quickly



### **Virtual Machine Partitioning for E-Business Suite**



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Efficiently Exploiting the Entire Mainframe Complex

A *Virtual Machine* simulates the existence of a dedicated real machine, including processor functions, storage, and input/output resources.



# **Oracle E-Business Suite Components**



rience b Enterprise

- In general all of the modules (with a few exceptions) of R12 are supported.
  - For specifics, please review the following My Oracle Support Note: Oracle E-Business Suite Installation and Upgrade Notes Release 12 (12.1.2) for IBM: Linux on System z (Note: 1116895.1)
- The products in the 12.1 Rapid Install media are available:
  - Financials, Human Resources, Order Management, Logistics, Supply Chain Planning, Manufacturing, Procurement
  - Intelligence, Marketing & Sales, Channel Revenue Management, Service, Projects, Product Lifecycle Management
  - Learning Management, Master Data Management
  - Interaction Center Technology, Financial Services, Communications/Utilities, Public Sector/University

# **Oracle E-Business Suite Certification**



 The following Oracle E-Business Suite R12 products are currently not supported on Linux on System z:

Product Family	Products				
Oracle Marketing & Sales	Field Sales				
Oracle Service Mobile	Mobile Field Services				
Oracle Advanced Supply Chain Planning	Advanced Supply Chain Planning (64-bit), Constraint Based Optimization (64-bit), Inventory Optimization (64-bit) <sup>1</sup>				

Note: <sup>1</sup>These products are planned for a future release of EBS R12 on Linux on System z.



# **Oracle E-Business Suite Certification**

Associated Oracle solutions not available on Linux on System z

- Other Oracle solutions that are sometimes associated with E-Business Suite (EBS) but are not supported on Linux on System z include:
  - Oracle Retail Suite
  - Retek
  - ProfitLogic
  - 360Commerce
  - Demantra
  - Oracle Transportation Management (G-Log)
  - Oracle Pharmaceuticals (Clinical)
  - Oracle iLearning





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### Oracle E-Business Suite Linux on System z Certification

#### Technology Certifications Completed

- OracleAS 10g Single Sign-On 10.1.2.3
- OracleAS 10g Internet Directory 10.1.2.3
- OracleAS 10g Portal 10.1.2.3
- OracleAS 10g Release 3 (10.1.3) Patch Set 5 (10.1.3.5)
- OracleAS 10g BPEL Process Manager 10.1.3.5
- OracleAS 10g WebCache 10.1.2.3
- OracleAS 10g Discoverer 10.1.2.3

#### • Database certification planned after database versions are available

- Oracle Database 10gR2 10.2.0.5 patch set
- Oracle Database 11gR2 (11.2.0.2)





# **Implementation Options**

#### New Installations

• Use 12.1.2 Rapid Wiz for installation, then install the Release Upgrade (RUP) 12.1.3

### Migrating to R12 E-Business Suite on Linux on IBM System z

- Running mixed architecture today (split tier mid tier and database tier)
  - Running E-Business Suite11i
    - Use R12 Rapid Wiz to upgrade and migrate, then upgrade to RUP 12.1.3
  - Running E-Business Suite R12
    - Use the Migration Utility that is available in Release 12.1.3 release
- Running on another platform today
  - 11i or R12
    - Move existing 10gR2 Database first to Linux on IBM System z in a mixed platform architecture mode
    - Use the methods listed above to migrate the middle tier



### **E-Business Suite Architecture**





# **Sizing E-Business Suite**



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- TechLine Sizing Questionaire Good Place to Start! <a href="http://www-03.ibm.com/support/techdocs/atsmastr.nsf/WebIndex/PRS1672">http://www-03.ibm.com/support/techdocs/atsmastr.nsf/WebIndex/PRS1672</a>
- CPU requirements for running Oracle Applications depend on:
  - The number of concurrent users and their usage profiles
  - The number of concurrent manager processes and the types of jobs that they are running
  - The load for activities other than Oracle Applications (monitoring, backups, Oracle Grid Agent)
  - Response time requirements

#### Memory Requirements (RDBMS and forms server)

- Oracle database overhead (dbms\_stats jobs etc)
- Size of system global areas (SGA, PGA, ASM)
- Number of concurrent users (4.5MB per user)
- Other software running on the database tier
- Linux Page File Tables
- General guideline of 25 MB per user to estimate the Applications requirements for the node where you
  install the forms server. \*





#### Node:

#### Space Required:

Applications node file system (includes 35 GB OracleAS 10.1.2 Oracle Home, OracleAS 10.1.3 Oracle Home, COMMON\_TOP, APPL\_TOP, and INST\_TOP)

Database node file system (Fresh install) 55 GB

Database node file system (Vision Demo 208 GB database)





### **E-business Suite System Checker**



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Install Oracle Applications - Pre-Install Checks Validate System Configuration The pre-install tests are listed below, each with an icon that indicates the test results. Click on the test icon for details. of that test. If one or more tests fail, the issues must be resolved before continuing. One or more of the pre-install tests show that further review is required. Port Availability OS User and Group Check Port Uniqueness File Systems File Space Host/Domain System Utilities Retry Cancel Help Back R Next  $\gg$ Valuable

### **Performance Tips for E-Business Suite**



 The User client Java client connection to the Oracle Forms uses "message diff-ing" to reduce network bandwidth.

- This Java client has a lot of Jar files to assist with the user interface (modal boxes, calendar, widgets etc.)
- Location of the Oracle Forms Server with respect to the data server. Minimizes the application start-up time.
  - 1. Invoke Java Virtual Machine (JVM).
  - 2. Load all initial Java client classes.
    - Authenticate security of classes.
  - 3. Display splash screen.
  - 4. Initialize Form.
    - Load additional Java classes, as required.
    - Authenticate security of classes.
    - Render boilerplate objects and images.
    - Render all elements on the initial screen.
  - 5. Remove splash screen.
  - 6. Form is ready for use.



# Why Virtualize E-Business Suite?



- Hardware resources can be locked into a particular configuration that might be suboptimal for the overall project lifecycle.
  - Preparation (patching, configuration, spot testing, development),
  - QA testing (unit, performance, integration),
  - A project's hardware is sized to accommodate the maximum load
  - Hardware resources can lie unused for the majority of the project
- Patching E-business Suite with the ALL the inter-dependencies can be really complex.
  - environment in "Limbo" while waiting for a resolution
- Different time zones. Physical-world time-slicing is hard, as it's hard to capture all runtime components and their integrations' dependencies on other servers. In the virtual world, shutdown, suspend, and startup actions are much faster and cleaner.
- Security, DR, Cloning, Availability, Higher Utilization, Management,, Over commitment of resources
- Cloning capabilities in Virtualized environments.



# **Oracle Support Notes**



- Oracle Applications Installation and Upgrade Notes Release 12 (12.1.2) for Linux on IBM System z [ID 1116895.1] – NEW!!!
- How To Upgrade 11i Custom Forms To R12 [ID 563258.1]
- Oracle Applications Installation Guide: Using Rapid Install (which is supplemented by Oracle Applications Release Notes and Oracle Applications NLS Release Notes)
- Oracle Applications Upgrade Guide: Release 11i to Release 12.1.1
- Oracle E-Business Suite Maintenance Pack (MP) Installation instructions
- Oracle Applications Release 11.5.10.2 Maintenance Pack Installation Instructions [ID 316365.1]
- Application Tier Platform Migration with Oracle E-Business Suite Release 12 [ID 438086.1]
- Planning Your Oracle E-Business Suite Upgrade from Release 11i to Release 12.1 [ID 987516.1]
- Using Transportable Database to migrate E-Business Suite R12 Using Oracle Database 10gR2 or 11g [ID 734763.1]
- How to Reduce the Disk Space Used by a Cloned E-Business Suite Environments. [ID 443383.1]

### Good Sizing Links ->

http://blogs.oracle.com/stevenChan/2010/08/ebs\_sizing\_primer.html

http://www.oracle.com/technetwork/articles/systems-hardware-architecture/oo-soln-ent-bus-suite-170239.pdf





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- Disclaimer
  - The following are just a sample of new features (not exhaustive list)
  - Please check with Oracle documentation for the availability of the discussed features support on your specific platform

- Where is my alert.log?
  - Default location under admin subdirectory has been moved
  - And available under new sub directory called diag
  - alert log is available as xml file as well as txt file under trace subdirectory





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- Invisible index
  - invisible to the optimizer
  - create an invisible index or make an existing index invisible
  - test a new index without effecting the execution plans
  - test the effect of dropping an index without dropping it
- RESULT\_CACHE
  - Function Results of queries and query fragments can be cached in memory for future executions (size, manual, expiration)
- Memory\_target and memory\_max\_target
  - Governs both SGA & PGA
  - Memory is transferred to where mostly needed
  - Shared Pool, Large Pool, Java Pool, Buffer Cache (DEFAULT buffer pool) and Pga\_Aggregate\_Target are sized dynamically





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- MAX\_UTILIZATION\_LIMIT
  - hard limit on the amount of CPU utilized by a consumer group
- Oracle Restart
  - For stand alone servers:
    - automatically restarts various Oracle components (ASM, Listeners, instances, applications) when required, and automatically stops Oracle components in an orderly fashion (just like clusters)
- SecureFiles
  - Superset of ANSI standard for Large Objects (LOBs)
  - Easy migration from old LOB / basic file system
  - Very high write performance (4 MB buffer cache)
  - Better space management, reduced fragmentation
  - Manage both relational and unstructured data with same security model
  - Requires tablespaces managed with ASSM





• RAC

- ASM and clusterware consolidated
  - Grid infrastructure installation
- OCR and Voting disks can be now in ASM
  - Auto backup of voting disk into OCR
- Enhanced Cluster Verification Utility
  - Simplified installation
- Enhanced RAC de-install utility
- No more reboot of the nodes
- SCAN (Single Client Access Name)
  - During cluster installation, SCAN is configured which is a domain / host name and resolves up to three ip addresses
  - A SCAN listener is created for each of the SCAN ip addresses
  - SCAN listeners provide the load balancing
  - client uses SCAN name to connect, no need to specify vip name
  - when new node is added, no need to edit thsnames.ora



- AWR, ADDM improvements
  - better wait time analysis
- Oracle Real Application Testing
- Oracle 11g licensed feature
  - Database Replay
    - provides the ability to rerun actual production workloads, including online user and batch workloads, in test environments
  - SQL Performance Analyzer
    - Measure and report on performance before and after a change
    - provides a granular view of the impact of environment changes on SQL execution plans and statistics



