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)
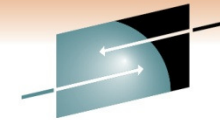
Trademarks

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!

SHARE
Technology · Connections · Results

☆ Patch 10248542: DATABASE PSU 10.2.0.5.2 (INCLUDES CPUJAN2011)

Last Updated Mar 3, 2011 (Today)   **Size** 2.1 MB

Product Oracle Database Family   **Support Level** Software

Release Oracle 10.2.0.5   **Classification** Other Recommendations

Patch Tag All Database

Platform   IBM: Linux on System z ▼

Release   10.2.0.5

[Read Me]   [Download]   [Add to Plan ▼]

1 Files, Total 2.1 MB   Show File Details

Bugs Resolved by This Patch

6402302	DROP SYNONYM DDL IS NOT CAPTURED/PROPAGATED OR APPLIED
7519406	'J000' TRACE FILE REGARDING GATHER_STATS_JOB INTERMITTENTLY SINCE 10.2.0.4
8277300	ORA-7445[XTYQBCB] OCCURS DURING EXECUTING SQL THAT USES 60000 BIND VARIABLES.
8350262	CREATE DBCONSOLE CERT WITH 10YEAR VALIDITY
8394351	ORA-12801: ERROR SIGNALED IN PARALLEL QUERY SERVER P005 RUNNING DM QUERY
8544696	TABLE GROWTH - BLOCKS ARE NOT REUSED
8546356	ORA-600 [KDSGRP1] AFTER REBUILD COMPOSITE PARTITION INDEX ONLINE IN RAC
8664189	ORA-00600 [KDISS_UNCOMPRESS: BUFFER LENGTH]
9711859	ORA-600 [KTSPTRN_FIX-EXTMAP] DURING EXTENT ALLOCATION
9713537	ENHANCE CAUSE/ACTION FIELDS OF THE INTERNAL ERROR ORA-00600

Open Read Me to view all Bugs

Downloads 0   View Trends

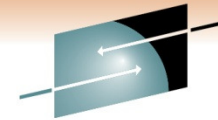**Be the First!**   Write a Review

Be the first to share your experience installing this patch.

[Write a Review]

Learn More about the Patch Community

What is E-Business Suite?

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.
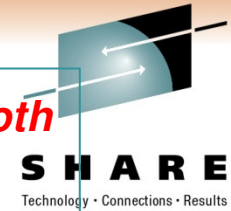
- **Versions available**
  - Current release of E-Business Suite
    - E-Business Suite R12.1.2 with Release Upgrade 12.1.3
  - Certified on the following Linux Distributions
    - Novell SuSE SLES10
    - Red Hat Enterprise EL5

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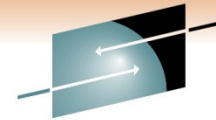
- **Middle Tier uses**
  - Oracle Fusion Middleware 10gR2 - Forms and Reports - 10.1.2.3 PS
  - Oracle Fusion Middleware 10gR3 - OC4J – 10.1.3.4 PS
  - Java Development Kit (JDK) – 6.0

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
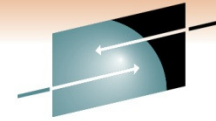
Efficiently Exploiting the Entire Mainframe Complex

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

Both tiers could be in 1 guest

| EBS DB Prod Linux | EBS Mid Tier Prod Linux | EBS DB Dev/test Linux | EBS Mid Tier Dev/test Linux | Oracle DB Linux | Other Oracle DB or apps Linux |

z/VM

I/O and Network

Memory

Processors
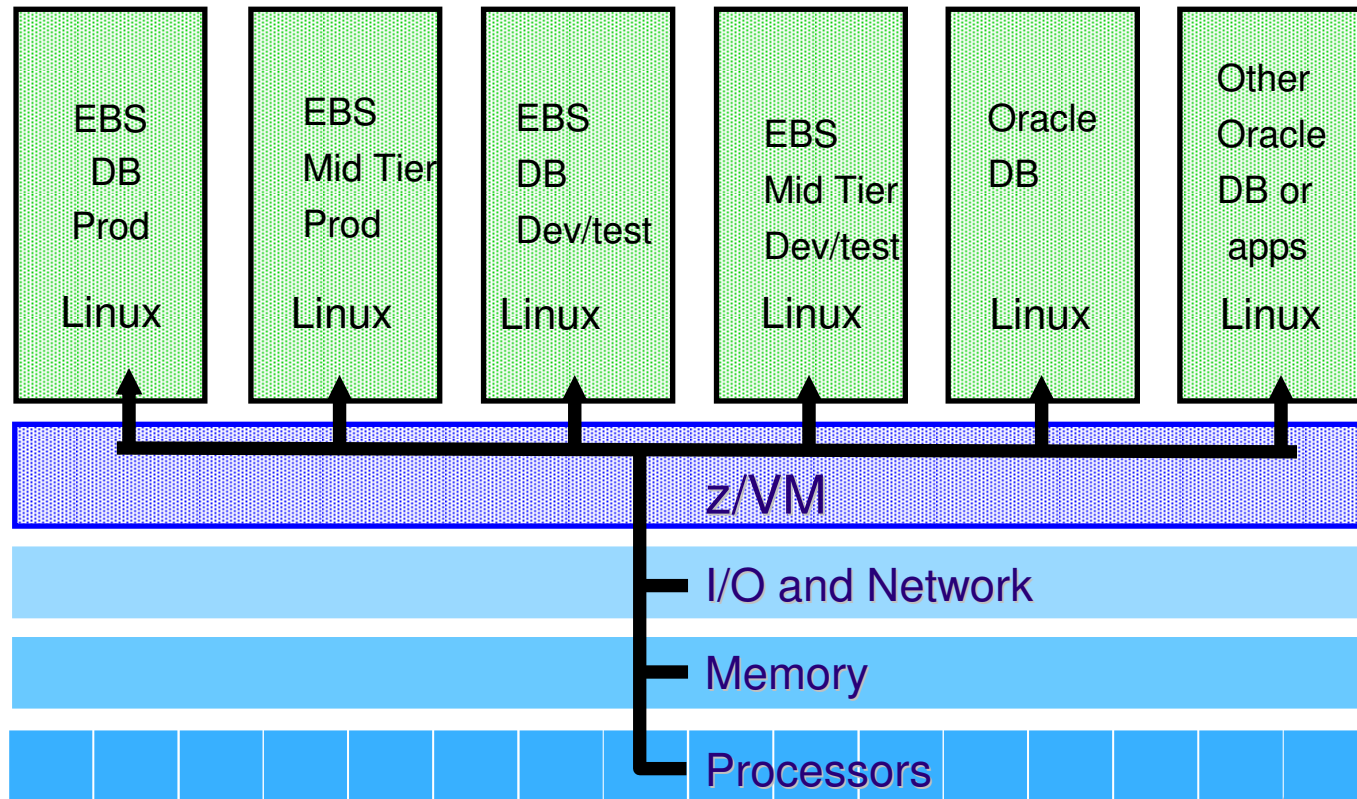
Easy to create new images, easy to manage

Oracle E-Business Suite Components

- 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**
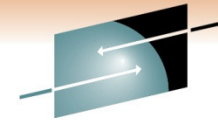
Oracle E-Business Suite Certification

- **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)[1]

Note: [1]These products are planned for a future release of EBS R12 on Linux on System z.

Oracle E-Business Suite Certification
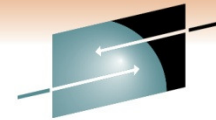
Associated Oracle solutions **not** available on Linux on System z

- 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

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)
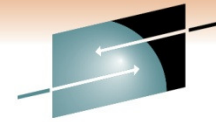
Implementation Options

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
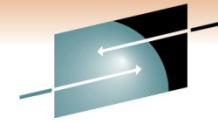
End User

Browser Interface

- Presentation
- Use Interaction

Middle Tier to be enabled to run on Linux on System z (2010)

Oracle AS Application Server

- Application Portal
- GUI Services
- Reporting
- Business Process Mgt
- Mobile Services
- Concurrent Processing
- Integration
- App & Sys Mgt

Linux on System z

Oracle 10gR2 Database

- Data Storage
- Data Intensive Logic

Sizing E-Business Suite

- **TechLine Sizing Questionaire – Good Place to Start!**
  http://www-03.ibm.com/support/techdocs/atsmastr.nsf/WebIndex/PRS1672

- **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. *

Source Oracle Ebusiness Suite Install Guide
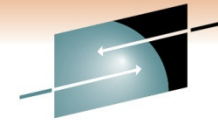
File System Space Requirements for Standard Installation

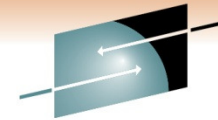| Node:	Space Required:
Applications node file system (includes OracleAS 10.1.2 Oracle Home, OracleAS 10.1.3 Oracle Home, COMMON_TOP, APPL_TOP, and INST_TOP)	35 GB
Database node file system (Fresh install)	55 GB
Database node file system (Vision Demo database)	208 GB

E-business Suite System Checker

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?
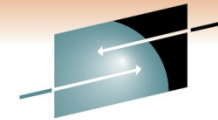
- Hardware resources can be locked into a particular configuration that might be sub-optimal for the overall project lifecycle.
  - Preparation (patching, configuration, spot testing, development),
  - QA testing (unit, performance, integration),
  - A project's hardware is sized to accommodate the maximum 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

Oracle 11gR2 new features

- 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 availble under new sub directory called diag
    - alert log is available as xml file as well as txt file under trace subdirectory

Oracle 11gR2 new features

- 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

Oracle 11gR2 new features

- 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

Oracle 11gR2 new features

- 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 tnsnames.ora

Oracle 11gR2 new features

- 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