

Update on Running Oracle Solutions on Loz and How to Best Utilize Oracle Support Structure when running Loz

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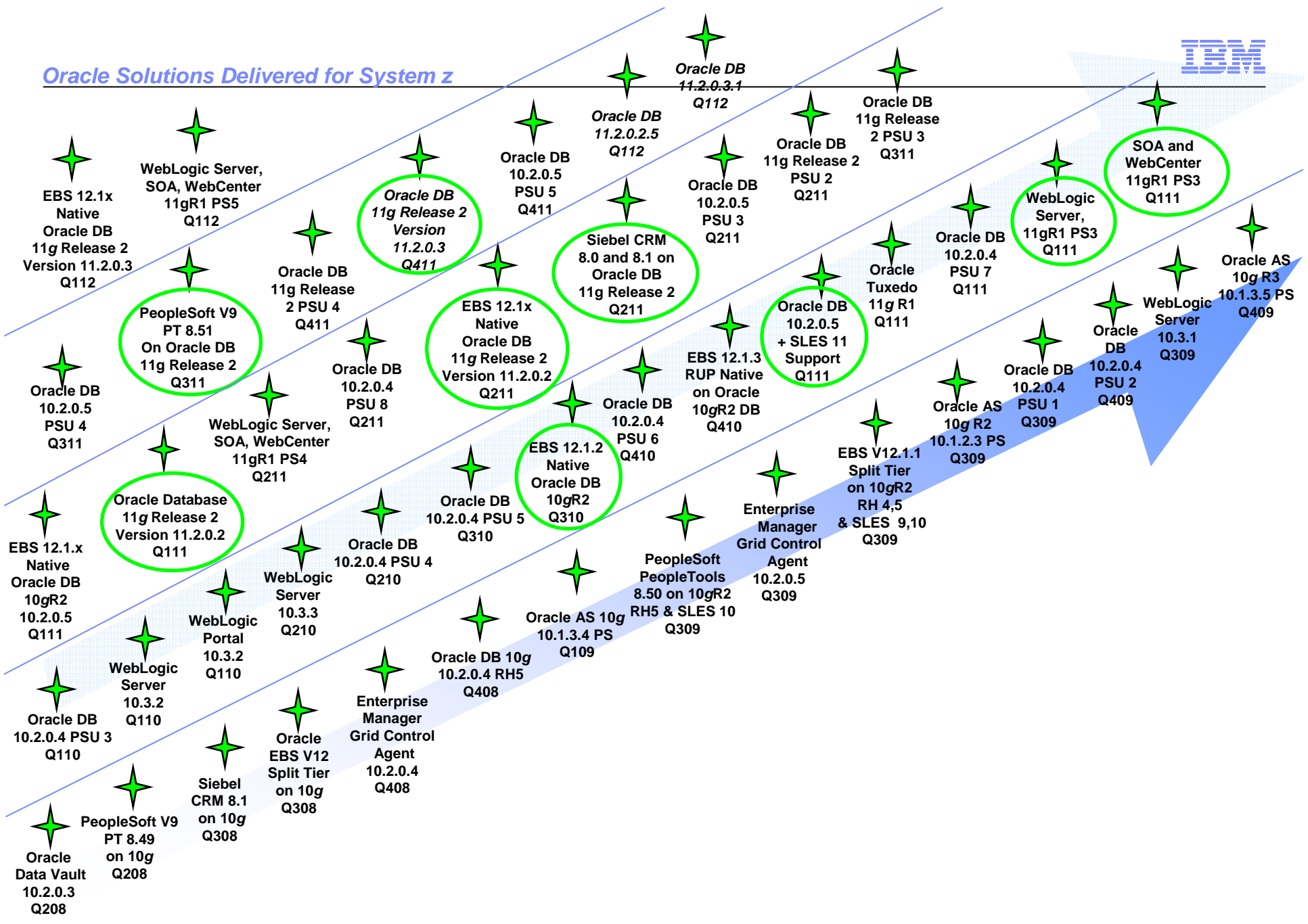
Wednesday, March 14, 2012, 8-9am
Session Number 10705



Topics

- IBM Oracle Partnership and Solution Commitment
- Oracle System z Solutions Update
 - Oracle Technology
 - E-Business Suite, PeopleSoft, Siebel
- Upcoming Events
- Oracle z Support Update – Oracle

Oracle Solutions Delivered for System z



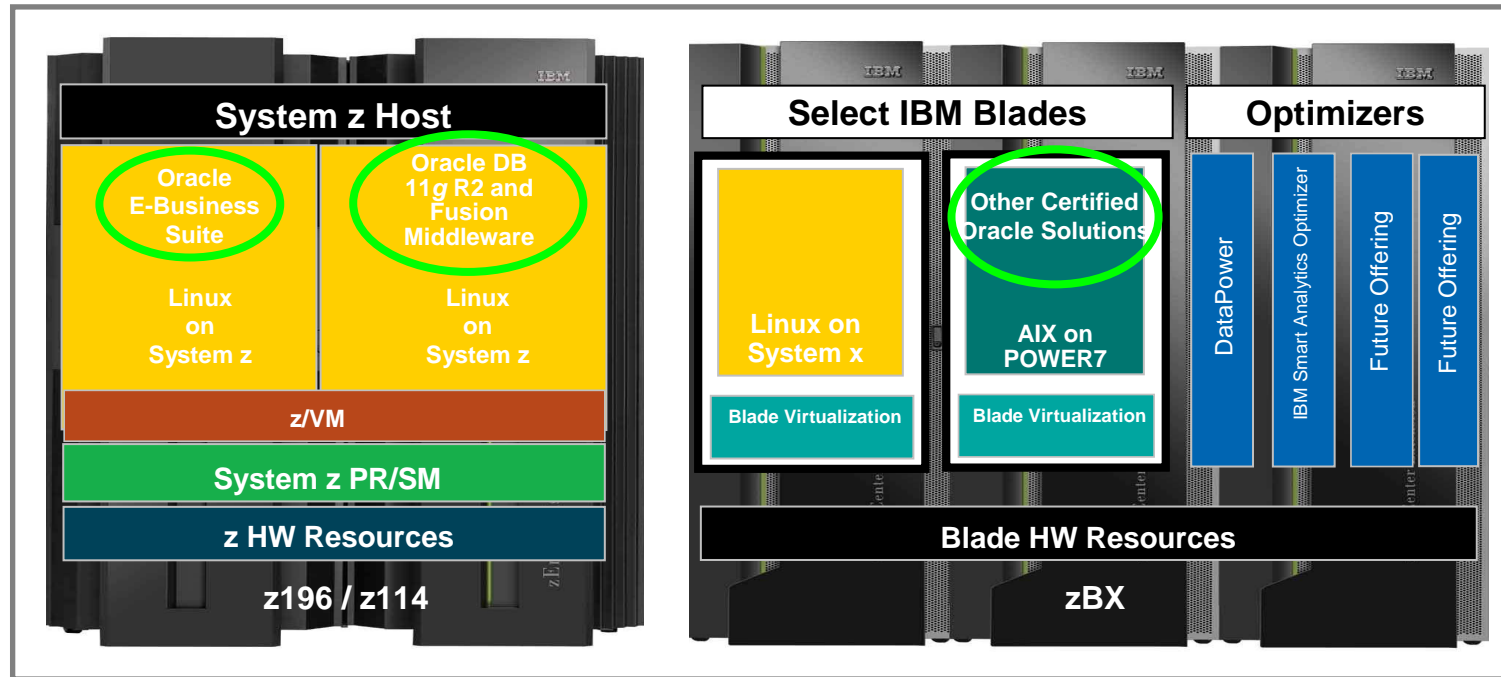


IBM and Oracle's Commitment to Oracle on Linux for System z

To meet the rapid growth of Linux, server virtualization and IT Optimization, IBM and Oracle have increased development and support investments to deliver complete, open and integrated solutions to our customers. Specifically, IBM and Oracle have:

- **IBM and Oracle have expanded porting resources to make Oracle technology infrastructure current and complete for Linux on System z (“LoZ”)**
- **IBM is investing in >40 development and tech staff to bring LoZ solutions to market**
- **IBM is investing in hardware resources for Oracle development on LoZ**
- **IBM dedicated resources to engage customers in design, proof-of-concept and benchmark activities**
- **Aligned our technical support organizations to simplify problem resolution**
 - **Dedicated Oracle System z team in Oracle Support**
- **Published IBM and Oracle customer collateral covering various topics regarding Oracle on Linux on System z**

E-Business Suite deployed on IBM zEnterprise System



Oracle solution landscape on a single zEnterprise System

- Run Oracle database and Oracle E-Business Suite on [highly available and reliable Linux zEnterprise 196 \(z196\) or zEnterprise z114 \(z114\) Server](#)
- Run other certified Oracle solutions on AIX [on zEnterprise BladeCenter Extension \(zBX\)](#)
- Fully benefit from zEnterprise, [the first hybrid system](#), and manage all your E-Business solution servers with the zEnterprise Unified Resource Manager

Oracle E-Business Suite Certification



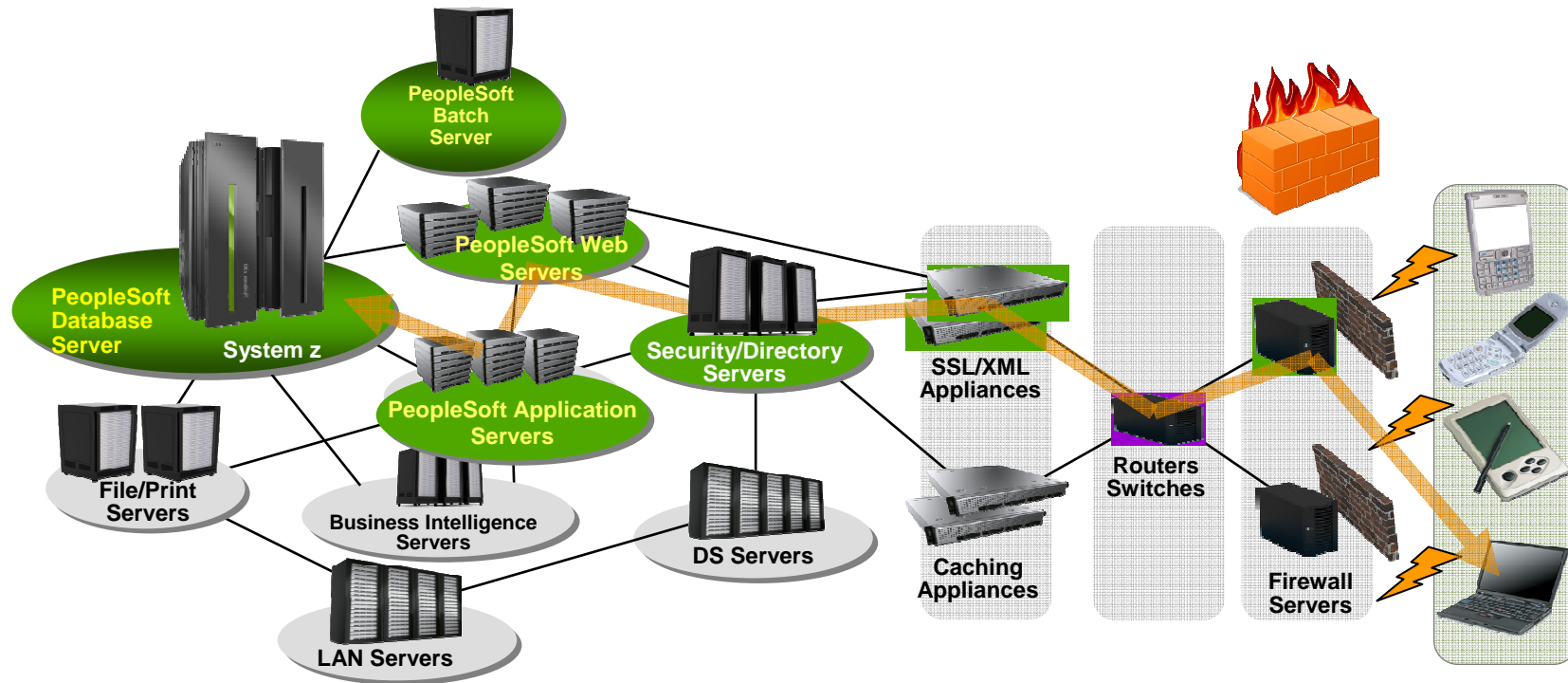
Oracle E-Business R12 is certified for Linux on IBM System z Servers for both mid tier (application server) and database tier (E-Business native on Linux on System z Servers)

- Version 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 installation uses Oracle 10g R2 (10.2.0.4 and 10.2.0.5 patch set)
 - Upgrade to Database 11gR2 (11.2.0.3) is certified
 - Database 11gR2 is certified on SLES11 (but not the mid tier)
- 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

PeopleSoft Human Capital Customer (Pre zBX) The Problem

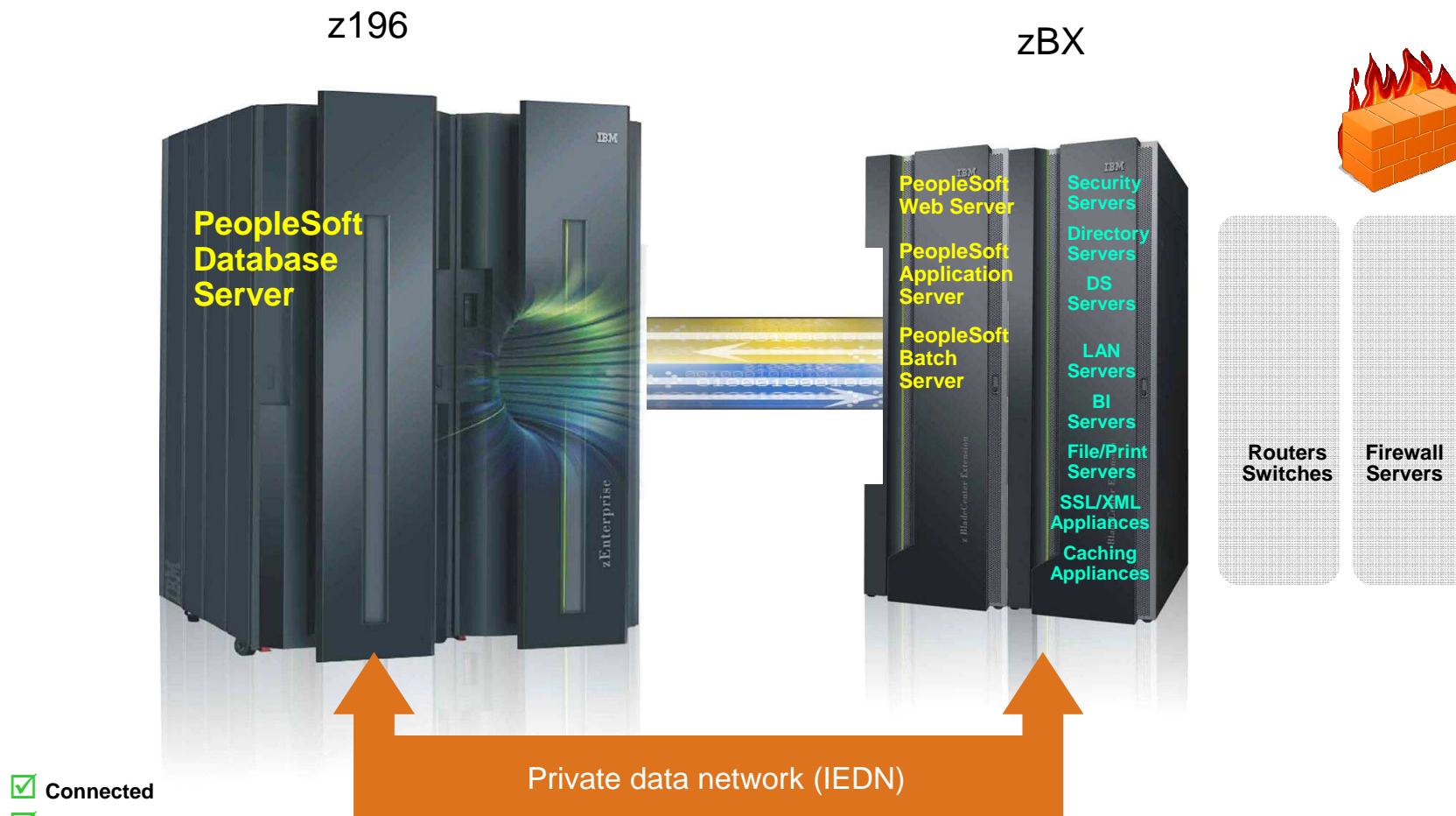
A Better Approach is needed.

One that provides the ability to manage the IT infrastructure and Business Application as an integrated whole.



- Connected
- Integrated
- Flexible, Dynamic, and Responsive
- Aligned with Business Service Objectives

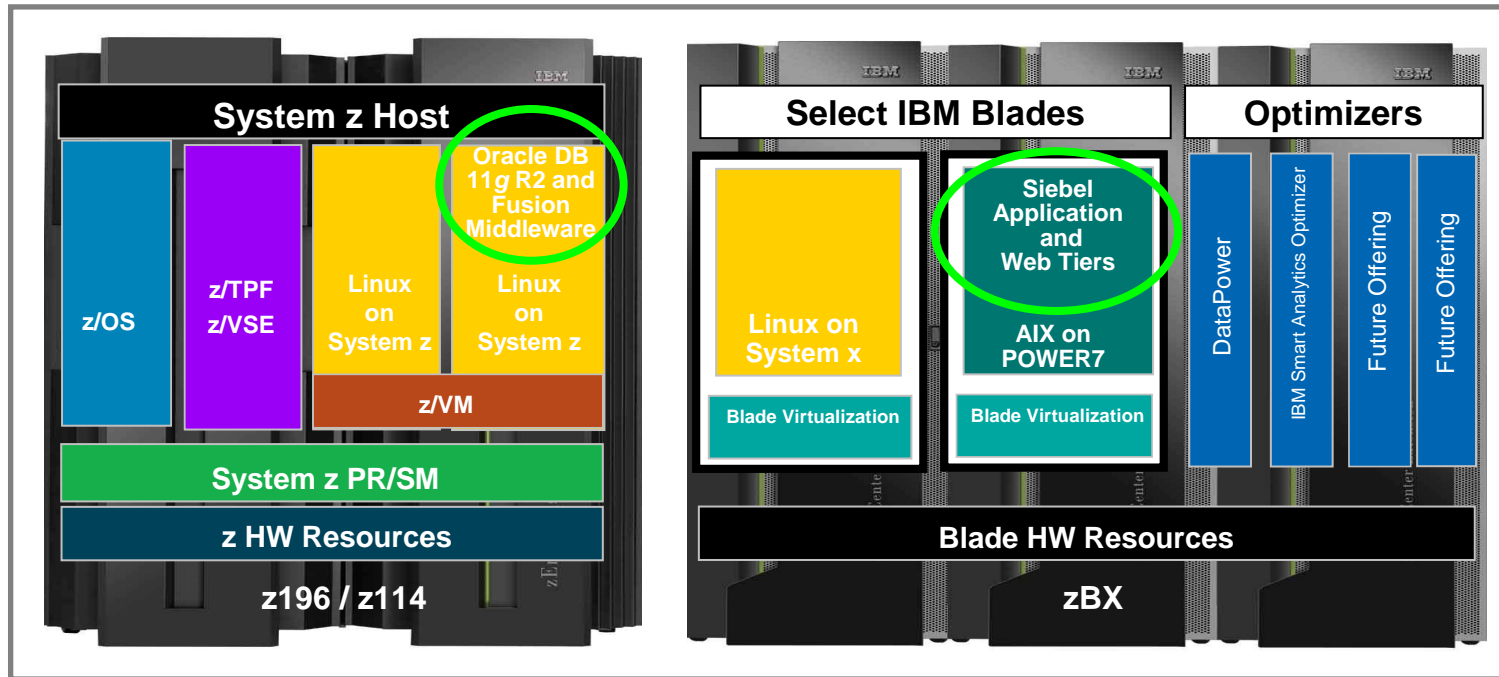
PeopleSoft Enterprise Human Capital Management The Solution



- ✓ Connected
- ✓ Integrated
- ✓ Flexible, Dynamic, and Responsive
- ✓ Aligned with Business Service Objectives

[Reference Whitepaper: IBM zEnterprise System running DB2 and z/OS for Oracle's PeopleSoft Enterprise using the IBM zEnterprise BladeCenter Extension \(zBX\)](#)

Siebel for Linux deployed on zEnterprise System



Siebel 3-tier options on a single zEnterprise System

- Run Oracle database and Fusion Middleware on the highly available and reliable zEnterprise 196 (z196) or zEnterprise z114 (z114) Server
- Run Siebel Application and Web Tiers with AIX on zEnterprise BladeCenter Extension (zBX)
- Fully benefit from zEnterprise, the first hybrid system, and manage the Siebel multi-tier environment with the zEnterprise Unified Resource Manager

Oracle's Dedicated Level 2 System z Support

Enhancement to existing Support for Linux on System z Servers

- Manager, Raimund Reng
- System z skilled and knowledgeable
- WW Support
- Level 2 support team
- Request z team connected when z environment problems
- Joint User/Oracle/IBM Conference Calls
- Webcasts, Oracle z support update



International zSeries Oracle SIG

- **User Group Formed Over 26 Years Ago**
 - **One of the Oldest Still Active Oracle SIGs**
 - **Started With Oracle on MVS (z/OS)**
 - **Included Oracle on Linux on System z 10 Years Ago**
 - **z/OS Oracle end of support announcement -> focus on Linux on System z**
 - **Growing Technical Community**
 - **In 2010 Joined IOUG as a SIG**
 - **www.zseriesoraclesig.org**
-



System z Sessions At Collaborate 12, April 22-26, Las Vegas

(all sessions specific to Oracle on Linux on System z)

213	Monday 9:45 – 10:45	SIG and z Oracle Solution Update (Mike, Gaylan)
226	Monday 11:00 – 12:00	Customer Experiences 11gR2 Loz (Dave Simpson)
220	Monday 1:15 – 2:15	How to Run a POC on Loz (Tom Kennelly)
204	Monday 2:30 – 3:30	Diagnosing Performance Problems (Thomas Niewel)
367	Monday 3:45 – 4:45	Oracle Support Update (Damian Gallagher)
197	Monday 5:00– 6:00	Preparing Linux Guest for 11gR2 Instal (Kathryn Arrell)
	Monday Evening	Welcome Reception, Exhibitor Showcase
214	Tuesday 8:00 – 5:00	All Day Bootcamp, Installing 11gR2 (IBM Office) (transportation leaves Mandalay Bay 8:15 am)
205	Wednesday 8:15 – 9:15	Migrating to Oracle DB Loz (Thomas Niewel)
211	Wednesday 9:30 – 10:30	Tuning Linux most efficient O Loz (Dave Simpson++)
378	Wednesday 11:00 – 12:00	SIG Wrapup and Panel Discussion (Mike Zechman, all)

Workshops – WSC

- **Recommended Training, POC and Installations**
- **For Oracle DBAs and Linux on z IT People**
- **LXOR6 (Wildfire Workshops)**
- **Customizing Linux and the Mainframe for Oracle DB Applications**
 - **For clients considering a move of Oracle to Linux on System z**
 - **Topics include hardware technologies, software components, best practices, performance and tuning, performance tools, linux distributions, tools and services for sizing**

- **No charge, Client Team Registration**
- **Offered in Various Cities across North America**
 - **April 24, Las Vegas (Collaborate, 1 Day Lab)**
 - **2Q and 2H 2012 TBA**
- **2.5 days, Attendees responsible for travel expenses**
- **Combination Lectures and Lab Exercises**

Mission:

Provide technical pre-sales solution support for Oracle applications and technology with IBM platforms including: Oracle E-Business Suite, PeopleSoft, JD Edwards, Siebel, and others.



▪ **On-Site Resources**

- IBM Hardware and Software Brand Experts
- Technology Managers
- Solutions Sales
- Project Managers

▪ **Labs**

- Located at Oracle and IBM
- Benchmarking/Sizing tests
- Redbooks and whitepapers

▪ **Sizing Tools**

- Creation and ownership of worldwide sizing tools and processes
- Support the Techline resources

▪ **Technical Sales Support**

- IBM Technical Sales
- Business Partners
- On-site briefings

▪ **Third level support, when necessary**

Information Sources

- <http://www.ibm.com/redbooks>
 - SG24-6482-00 Experiences with Oracle Database 10g on Linux for zSeries
 - SG24-7191-00 Experiences with Oracle 10gR2 Solutions on Linux for System z
 - SG24-7573-00 Using Oracle Solutions on Linux on System z
 - SG24-7634-00 Experiences with Oracle Solutions on Linux for IBM System z

 - REDP-4788-00 Installing Oracle 11gR2 RAC on Linux on System z

- <http://otn.oracle.com>
 - (Select "Downloads")

- <http://www.vm.ibm.com/perf/tips>
 - General z/VM Tuning Tips

- <http://www-124.ibm.com/developerworks/oss/linux390/index.shtml>
 - Lot's of information on Linux for System z

- <http://www-128.ibm.com/developerworks/linux/linux390/perf/index.html>
 - Hints and Tips for tuning Linux on System z

- <http://www.zseriesoraclesig.org>
 - Special Interest Group of Oracle users on the mainframe (z/OS and Linux)

- <http://www.mail-archive.com/linux-390%40vm.marist.edu/>
 - Marist List Server

My Oracle Support Notes

- 1306465.1 - Getting Started - 11gR2 Grid Infrastructure, ASM and DB (IBM: Linux on System z)

- 1290644.1 - Requirements for Installing Oracle 11gR2 on SLES11 on IBM: Linux on System z (s390x)

- 1306889.1 - Requirements for Installing Oracle 11gR2 on RHEL 5 on IBM: Linux on System z (s390x)

- 1308859.1 - Requirements for Installing Oracle 11gR2 RDBMS on SLES 10 SP3 on IBM: Linux on System z (s390x)

- 1086769.1 - Ensure you have prerequisite rpms to install Oracle Database and AS10g(midtier) on IBM: Linux on System z (s390x)



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DataPower*	IBM*	IMS	System x*	z9*	z/VSE*
DB2*	IBM eServer	Parallel Sysplex*	System z*	z10 BC	
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DS8000*	IMS	POWER7*	System z10*	zEnterprise	
ESCON*	Parallel Sysplex*		System z10 Business Class		

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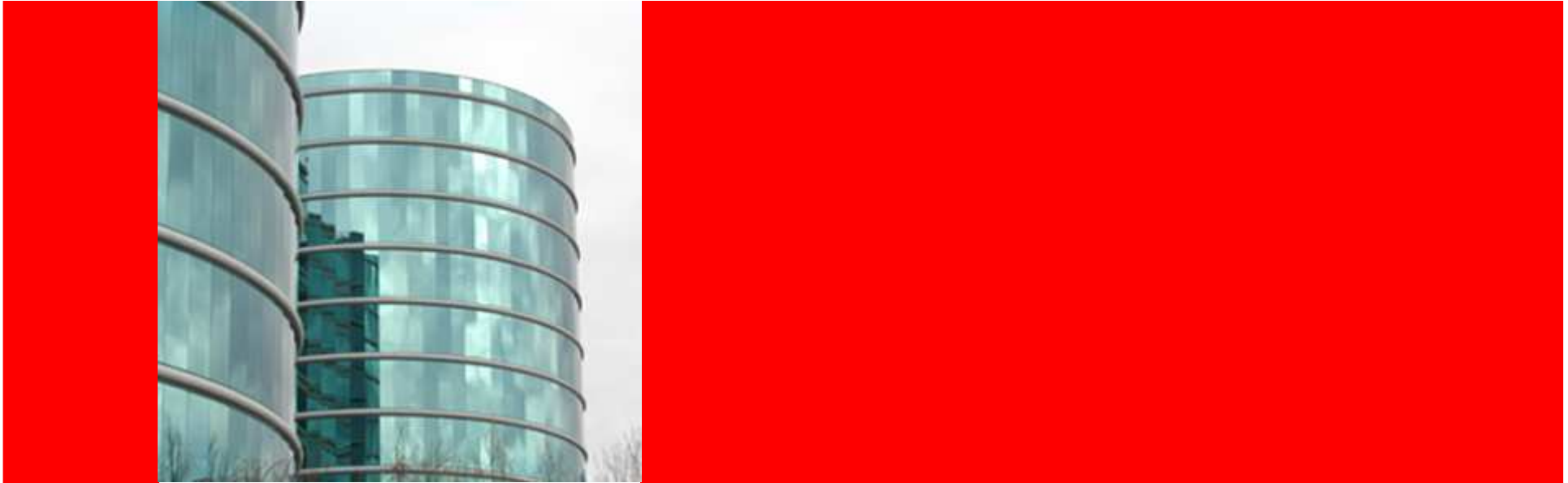
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You

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Oracle Support Update for Oracle running on Linux on System z

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Mainframe Information Technology Support



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Agenda

- Oracle RDBMS on z/Linux
 - Version Availability
 - Product Updates including PSU and CPU
 - Available Backports (Major)
 - Useful Notes
 - Support Readiness – how to better assist you
- Q&A



Product Availability

- 10.2.x
 - Latest is 10.2.0.5
 - Extended Support fee will be waived from August 2010 – July 2012.

- 11.2.x
 - Latest is 11.2.0.3 (Grid Infrastructure is now available)
 - Premier Support Ends Jan 2015
 - Extended Support Ends Jan 2018





Supported/Certified Linux on Z

- **10.2**

OS versions and minimum levels:

OS	Version	Minimum Update Level	Minimum Kernel Version
Redhat Enterprise Linux	4	Update 2	2.6.9-22.EL
	5	Update 4	2.6.18
SUSE Linux	9	SP2	2.6.5-139
Enterprise	10	SP3	2.6.16.21
Server	11	SP1	2.6.27.19




Supported/Certified Linux on Z

- **11.2**


OS versions and minimum levels:

OS	Version	Minimum Update Level	Minimum Kernel Version
Redhat Enterprise Linux	4	Update 8	2.6.9
	5	Update 4	2.6.18
SUSE Linux	10	SP3	2.6.16.21
Enterprise Server	11	SP1	2.6.27.19



Problems to be aware of when installing/upgrading to 11.2.0.3

- Missing LIBSTDC++-33-3.2.3-47.3 causing installer to fail
 - Prereq check fails in Grid installation about missing rpm compat-libstdc++-33.3.2.3-47.3 (or not installed)
 - What to do:
 - Ignore but need to make sure that all rpm prerequisites are met.
 - The following notes will help in this problem:
 - 11.2.0.3 PREREQ CHECK WARNING FOR MISSING compat-libstdc++-33.3.2.3-47.3 ON IBM: LINUX ON SYSTEM Z ON SLES 11 (**Doc ID 1383381.1**)
 - Getting Started - 11gR2 Grid Infrastructure,SI(Single Instance), ASM and DB (IBM: Linux on System z) [Doc ID 1306465.1](#)
 - Ensure you have prerequisite rpms to install Oracle Database and AS10g(midtier) on IBM: Linux on System z (s390x) (**Doc ID 1086769.1**)




Common Problems when installing/upgrading to 11.2.0.3

- **DASD STORAGE DEVICE with a SOFT LINK**
 - This is another show stopper when installing 11.2.0.3
 - This is important as ASMLib is becoming less useful with Linux disk management evolves.
 - The problem occurs when ECKD/DASD devices are configured → which is necessary for device persistence and easy manipulation/selection of ASM devices
 - This is only applicable for multiple nodes, single node still works fine

REFERENCES:

BUG 13497268 - GRID INSTALL HANGS AT 75% WHEN USING DASD STORAGE DEVICE WITH A "SOFT LINK"

How to Manually Configure Disk Storage devices for use with Oracle ASM 11.2 on IBM: Linux on System z under SLES (**Doc ID 1350008.1**)



Problems to be aware of when installing/upgrading to 11.2.0.3

- UPGRADING from 10g to 11g
 - **Bug 5100163** - ASM diskgroup created in 10g can have unformatted blocks - may become unmountable
 - Discussed in detail → Doc ID 5100163.8
- OPATCH AUTO availability
 - OPATCH AUTO is not yet supported on z/Linux
 - It will be available soon

BUG 13722527 - OPATCH AUTO FUNCTIONALITY NOT AVAILABLE IN 11.2.0.1.9 VERSION ON IBM: ZLINUX



Node Evictions? How can we Help you?

- Node eviction is one of the issues that is not easy to resolve right away....

What are the reasons?

- Oracle clusterware is designed to perform a node eviction by removing one or more nodes from cluster if some critical problem is detected
 - A node that is not responding via a network heartbeat
 - A node that is not responding via disk heartbeat
 - A hung or severely degraded machine
 - A hung ocspd.bin process
 - An oracle bug
 - Other
 - If the node being evicted is not properly maintained*
 - * Patch is missing in the node



Node Evictions? How can we Help you?

Why evict the node?

- The purpose of node eviction is to maintain overall health of the cluster by removing bad members.

What do we need in order to troubleshoot Node evictions?

- RDA
- Clusterware alert log → `<GRID_HOME>/log/<nodename>`
- The cssdagent log(s)
→ `<GRID_HOME>/log/<nodename>/agent/ohasd/oracssdagent_root`
- The cssdmonitor log(s) in
→ `<GRID_HOME>/log/<nodename>/agent/ohasd/oracssdmonitor_root`
- The ocspd log(s) → `<GRID_HOME>/log/<nodename>/ocspd`
- The lastgasp log(s) → `/etc/oracle/lastgasp` or `/var/opt/oracle/lastgasp`
- IPD/OS or OS Watcher data
- 'opatch lsinventory -detail' output for the GRID home
- Message file → `/bin/errpt -a > messages.out`
- Additional diagnostics maybe requested



Node Evictions? How can we Help you?

What about Cluster Health Monitor?

- Unfortunately CHM is not supported on IBM Linux on System Z ☹.

References that are helpful for node evictions:

Troubleshooting 11.2 Clusterware Node Evictions (Reboots) (Doc ID 1050693.1)

OS Watcher Black Box User Guide (Doc ID 301137.1)

Troubleshooting 10g and 11.1 Clusterware Reboots (Doc ID 265769.1)



Product Updates (including PSU and CPU)

- 10.2.0.5
 - Latest PSU
 - Patch 13343471: DATABASE PATCH SET UPDATE 10.2.0.5.6 (INCLUDES CPU JAN2012)
- 11.2.0.2
 - Latest PSU
 - Patch 13343424: DATABASE PATCH SET UPDATE 11.2.0.2.5 (INCLUDES CPU JAN2012)
 - Patch 13653086: GRID INFRASTRUCTURE PATCH SET UPDATE 11.2.0.2.5 (INCLUDES DB PSU 11.2.0.2.5)



Product Updates (including PSU and CPU)

- 11.2.0.3
 - Released on Dec. 2nd 2011 under Patch 10404530: 11.2.0.3.0 PATCH SET FOR ORACLE DATABASE SERVER
 - Grid Infrastructure was released on Jan 27th 2012 under Patch 13348650: GRID INFRASTRUCTURE PATCH SET UPDATE 11.2.0.3.1 (INCLUDES DB PSU 11.2.0.3.1)
 - Latest PSU: Patch 13343438: DATABASE PATCH SET UPDATE 11.2.0.3.1 (INCLUDES CPU JAN2012)



Product Updates (Including PSU and CPU)

DB Replay or RAT (Real Application Testing)

From 10.2.0.4.4

- 10.2.0.4.0 Patchset + one-off patch 10239989
- Patch 10239989 was released on Feb. 7th

From 10.2.0.5

- 10.2.0.5 Patchset + one-off patch 9373986
- Patch 9373986 was released on Feb. 9th

→ →To 11.2.0.2

- 11.2.0.2 + on-off patch 11870615
- Patch 11870615 was released on Feb. 3rd



What to expect in the APRIL PSU/CPU

- README when installing GRID INFRASTRUCTURE will be better and it will include a clear STEP-by-STEP manual instructions
- **OPATCH AUTO** 'may be' be available
- **COMPOSITE PATCHES** will be introduced



What to expect in the APRIL PSU/CPU 2012

OPATCH AUTO

- We are hoping that this will be included for this patch
- It's already available on other platforms except on zlinux
- Eliminates the steps (like stopping CRS, instance, nodeapps, asm, running rootprepatch.sh or any other scripts require) to be performed by user while applying or rollingback patch.
- This is the recommended way of applying a patch instead of manual patching.*



What to expect in the APRIL PSU/CPU 2012 COMPOSITE PATCHING

- **Important terms:**

Patch Conflict – 2 or more patches change the same files

Cumulative Patch – a patch that contains multiple bug fixes and will have several iterations in its lifecycles

Patch Set Update (PSU) – Cumulative patch release for the DB, FMW and EM

Overlay Patch – a patch would conflict but is allowed to be installed on top of cumulative patch



What to expect in the APRIL PSU/CPU 2012

COMPOSITE PATCHING

- Oracle's new packaging format used for cumulative patches
- Eliminates the need to rollback previously applied composite releases
- Reduces the need to rollback previously applied overlay patches
- Improves patch apply performance



What to expect in the APRIL PSU/CPU

COMPOSITE PATCHING

- It is constructed of one or more sub-patches
 - The sub-patches are installed separately with the most recent sub-patch being named the composite patch
 - A new version will always include the previous-releases (sub-patches)
 - If no prior composite patch is installed all sub-patches contained in the composite patch will be installed
 - If prior sub-patches are installed, only the new sub-patches of the composite patch will be installed and 'will not' rollback previous sub-patches



What to expect in the APRIL PSU/CPU

COMPOSITE PATCHING

➔ It will appear in the inventory as one patch installed with sub-patches

Interim patches (1) :

Patch 13545268: applied on Fri Dec 09 10:59:28 EST 2011

Patch Description: "Database Patch Set Update : 11.2.0.3.2 (13545268)"

Created on 2 July 2012, 07:52:00 hrs PST8PDT

Sub-patch 13343438; "Database Patch Set Update : 11.2.0.3.1 (13343438)"

Bugs fixed:

9275072, 9352237 ...



What to expect in the APRIL PSU/CPU

COMPOSITE PATCHING

- When a later composite patch is installed, the inventory will reflect the new composite patch number as the patch installed, and the previously installed composite patches as sub-patches

Patch 13795248 : applied on Fri Dec 10 10:00:28 EST 2011

Patch Description: "Database Patch Set Update : **11.2.0.3.3 (13795248)**"

Created on 11 May 2012, 09:35:00 hrs PST8PDT

Sub-patch 13545268; "Database Patch Set Update : **11.2.0.3.2 (13545268)**"

Sub-patch 13343438; "Database Patch Set Update : **11.2.0.3.1 (13343438)**"

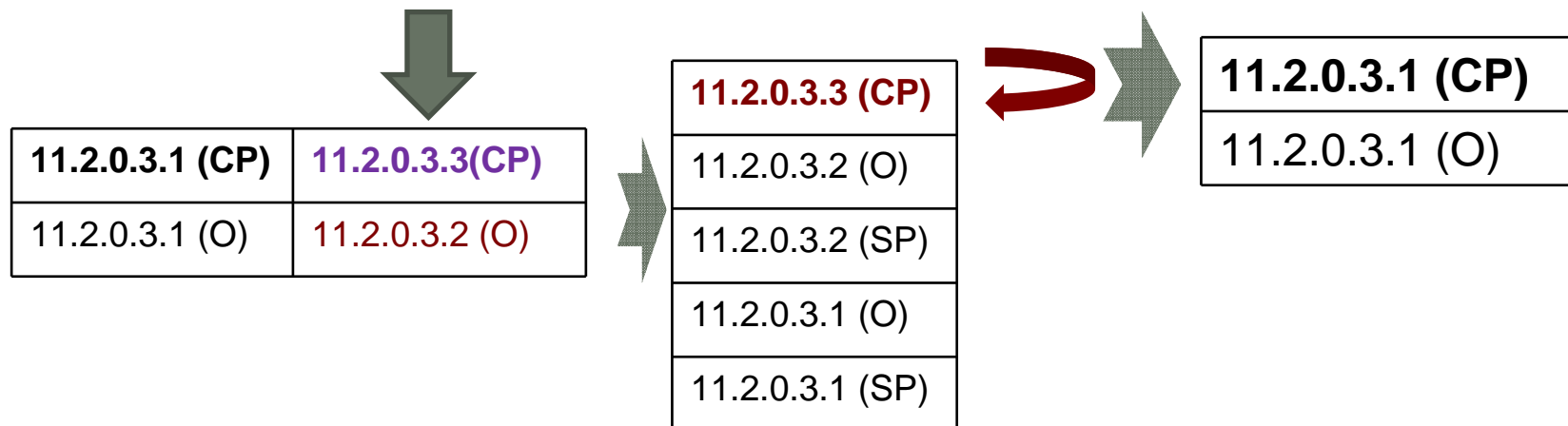
Bugs fixed:

9275072, 9352237 ...

What to expect in the APRIL PSU/CPU

COMPOSITE PATCHING

→ Should the composite patch be rolled back, only the most recently applied sub-patch(es) plus any overlay patch(es) associated to the sub-patch(es) will be rolled back.



CP = Composite Patch

O = Overlay

SP = SubPatch



What to expect in the APRIL PSU/CPU

COMPOSITE PATCHING – Conflict Resolution

- Reduce the need to create overlay patches each time a new composite patch is released
 - Conflicts can occur for any sub-patch of a composite patch
 - Resolutions to conflicts will be against the specific sub-patch that is conflicting

USEFUL NOTE/S:

Patch Set Updates for Oracle Products (Doc ID 854428.1)

=> Notes will be added about composite patching when ready



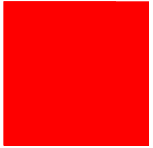
USEFUL NOTES

Document 1345364.1 ORA-00445: Background Process "xxxx"
Did Not Start After 120 Seconds

Document 1350008.1 How to Manually Configure Disk Storage
devices for use with Oracle ASM 11.2 on IBM: Linux on
System z under SLES

Document 1351746.1 How to Manually Configure Disk Storage
devices for use with Oracle ASM 11.2 on IBM: Linux on
System z under RedHat 5

Document 1376691.1 Composite Patches for Oracle Products



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