

Create Your Oracle Apps R12 Lab With Less Than US\$1000



Ajith Narayanan
Software Development Advisor, Dell IT
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Who Am I?



Ajith Narayanan
Software Development Advisor
Dell IT

- 8+ years of Oracle DBA experience.
- Blogger :- <http://oracledbascriptsfromajith.blogspot.com>
- Website Chair:- <http://www.oracleracsig.org> – Oracle RAC SIG

Agenda



- *** You are an Oracle Apps DBA, Now What? Wanna be an architect?
- *** Oracle Apps R12 , Multi tier Architecture
- *** How do we design the Multi tier architecture and build it?

~~~~~Q&A~~~~~

# You are an Oracle Apps DBA, Now What? Want To Be An Architect?



Most of the Oracle Apps DBA does the following on daily basis

Manage the Oracle Apps Instance 11i or R12

Troubleshoot issues in database, jsp routing issues, forms access , workflows background engine , clones the instance for non-prod's, patching(DB&Apps Tier), look into concurrent manager issues etc.. etc .... and keeps the business as usual, great job indeed !

Have you ever dreamt of designing such a multi tier system by yourself, If you have already dreamt about that, you are already an architect. 😊

# Oracle Apps R12 , Multi Tier Architecture

NZOUG

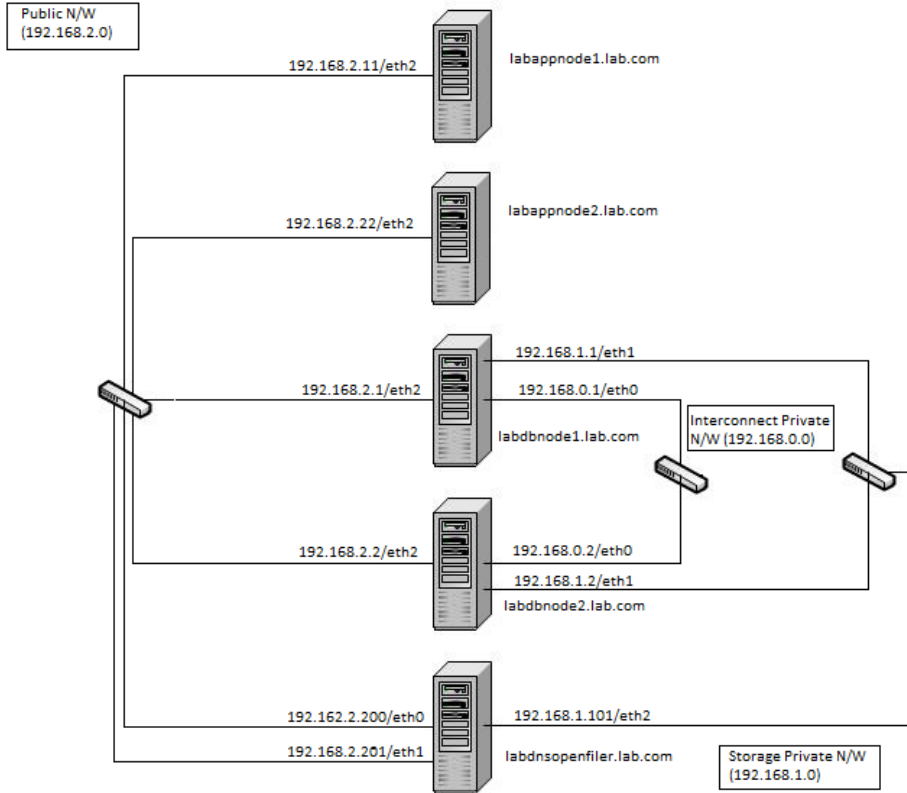
Inspiring. Practical. Informative.

2013

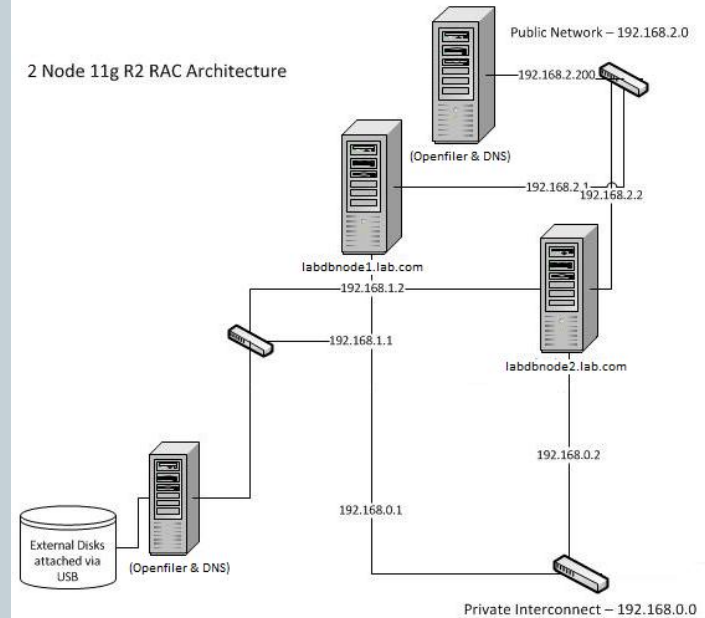
Te Papa, Wellington  
New Zealand, 18 to 19 March

2013

## Oracle Apps R12 Vision Instance (Multi Node Architecture)



## 2 Node 11g R2 RAC Architecture



# Oracle Apps R12 , Multi tier Architecture - Functions



| Node Type            | NAME                    | Version               | Function                           |
|----------------------|-------------------------|-----------------------|------------------------------------|
| Application Node1    | labappnode1.lab.com     | Oracle EBS 12.1.1     | WEB Node                           |
| Application Node2    | labappnode2.lab.com     | Oracle EBS 12.1.1     | Concurrent Node (Batch Processing) |
| RAC DB Node1         | labdbnode1.lab.com      | Oracle RDBMS 11.1.0.7 | Clustered DB node1                 |
| RAC DB Node2         | labdbnode2.lab.com      | Oracle RDBMS 11.1.0.7 | Clustered DB node2                 |
| DNS Server/Openfiler | labdnsopenfiler.lab.com | Openfiler             | DNS/SharedStorage                  |

|                      | Apps Tier                                       |                                   | DB Tier                                              |
|----------------------|-------------------------------------------------|-----------------------------------|------------------------------------------------------|
| E-Business Suite     | Oracle EBS R12.1.1                              | RDBMS                             | Oracle 11gR1 RAC (11.2.0.2)                          |
| BASE Directory       | /u01/app/oracle/ebsR12                          | ORACLE_BASE                       | /u01/app/oracle                                      |
| ORACLE_HOME          | /u01/app/oracle/ebsR12/apps/tech_st/10.1.2      | ORACLE_HOME                       | /u01/app/oracle/EBSR12                               |
| IAS_ORACLE_HOME      | /u01/app/oracle/ebsR12/apps/tech_st/10.1.3      | DB_HOME Owner                     | oracle:(oinstall, dba)                               |
| APPL_TOP             | /u01/app/oracle/ebsR12/apps/apps_st/appl        | DB LISTENER                       | LABDB_LISTENER                                       |
| INST_TOP             | /u01/app/oracle/ebsR12/inst/apps/<CONTEXT_NAME> | DB Listener Host/port             | node1-vip, node2-vip (TCP:1522)                      |
| Port Pool            | 1                                               | DB Storage Type, File Management  | ASM with OMFs                                        |
| Application OS Owner | applmgr:(oinstall, dba)                         | ASM diskgroups for DB and FRA     | DATA (60GB), FRA (10GB)                              |
| OS Platform          | Oracle Enterprise Linux 5.7 (64 bit)            | OS Platform                       | Oracle Enterprise Linux 5.7 (64 bit)                 |
|                      |                                                 | Clusterware                       | Oracle 11gR2 Grid Infrastructure 11.2.0.1            |
|                      |                                                 | Cluster Name                      | lab                                                  |
|                      |                                                 | Database Cluster Nodes            | node1, node2                                         |
|                      |                                                 | Clusterware Home                  | /u01/app/grid11201 (GRID_HOME)                       |
|                      |                                                 | Clusterware Owner                 | oracle:(oinstall, dba)                               |
|                      |                                                 | VIPs                              | node1-vip, node2-vip                                 |
|                      |                                                 | SCAN                              | labdnsopenfiler.lab.com                              |
|                      |                                                 | SCAN VIPs                         | 2 SCAN VIPs resolving labdnsopenfiler.lab.com by DNS |
|                      |                                                 | SCAN_LISTENER Host/port           | Scan VIPs Endpoint: (TCP:1525)                       |
|                      |                                                 | OCR and Voting Disks Storage Type | ASM                                                  |
|                      |                                                 | OCR Disks/Voting Disk             | +GIS_FILES (Normal Redundancy)                       |

# How do we design the Multi tier architecture and build it?



Now that we have plan, How do we build it we less than \$1000?

What hardware I had to buy for creating my R12 Lab?

|                                                          |                    |            |
|----------------------------------------------------------|--------------------|------------|
| 4 port KVM Switch                                        | -1No – (\$15 X 1)  | \$15 /-    |
| 8 port Gigabit D-Link Switch (Public N/W)                | -1No – (\$45 X 1)  | \$45 /-    |
| 8 port Digisol Switch (Private N/W)                      | -1No – (\$15 X 1)  | \$15 /-    |
| PCI Ethernet cards                                       | -5Nos- (\$8X5)     | \$40 /-    |
| USB 2.0 Ethernet Adapter(10/100/1000Mbps) (Interconnect) | -2Nos- (\$35 X 2)  | \$70 /-    |
| 5 End of life Optiplex Dell Desktops                     | -5 Nos-(\$150 X 5) | \$750/-    |
| Total                                                    |                    | = \$935 /- |

What software I had to buy for creating my R12 Lab? All downloads from OTN for free ☺

- NAS Storage Solution: Openfiler 2.3 (2.6.26.8-1.0.11.smp.pae.gcc3.4.x86.i686)
- Operating System: Oracle Enterprise Linux 5.5 (2.6.18-194.el5PAE)
- Clusterware: Oracle 11g R2 Grid Infrastructure (11.2.0.2)
- Oracle RAC: Oracle RDBMS 11g R2 (11.2.0.2)



# Action Plan



–Implementation Goal:

Establish the best practice of configuring EBS R12:

- On 64 bit Dell desktops.
- On Linux x86-64 like Oracle Enterprise Linux
- Enable Apps for RAC by converting database to RAC

Implementation Method:

- Prepare your multiple nodes
- Fresh Install EBS R12
- Install 11g r2 Grid & Database Software Binaries
- Convert the Database to 11g R2 RAC
- Establish the Applications for RAC database

# Prepare The Shared Storage



openfiler

15:29:30 up 69 days, 2:26, 1 user, load average: 0.19, 0.07, 0.07

[Log Out](#) | [Status](#) | [Update](#) | [Shutdown](#)

[Status](#) | [System](#) | [Volumes](#) | [Cluster](#) | [Quota](#) | [Shares](#) | [Services](#) | [Accounts](#)

## System Information: labdnsopenfiler.lab.com (192.168.2.200)

### System Vital

|                      |                                           |
|----------------------|-------------------------------------------|
| Canonical Hostname   | labdnsopenfiler.lab.com                   |
| Listening IP         | 192.168.2.200                             |
| Kernel Version (SMP) | 2.6.32-71.18.1.el6-0.20.smp.gcc4.1.x86_64 |
| Distro Name          | Openfiler NAS/SAN                         |
| Uptime               | 69 days 2 hours 25 minutes                |
| Current Users        | 0                                         |
| Load Averages        | 0.18 0.06 0.06                            |

### Hardware Information

|                 |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
|-----------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Processors      | 4                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |
| Model           | Intel(R) Core(TM) i5 CPU 650 @ 3.20GHz                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |
| CPU Speed       | 3.19 GHz                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |
| Cache Size      | 4.00 MB                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |
| System Bogomips | 25535.77                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |
| PCI Devices     | <ul style="list-style-type: none"><li>- Audio device: Intel Corporation 5 Series/3400 Series Chipset High Definition Audio</li><li>- Communication controller: Intel Corporation 5 Series/3400 Series Chipset HECI Controller</li><li>- Ethernet controller: Intel Corporation 82578DM Gigabit Network Connection</li><li>- Ethernet controller: VIA Technologies, Inc. VT6105/VT6106S [Rhine-III]</li><li>- Host bridge: Intel Corporation Core Processor DRAM Controller</li><li>- IDE interface: Intel Corporation 5 Series/3400 Series Chipset 2 port SATA IDE Controller</li><li>- IDE interface: Intel Corporation 5 Series/3400 Series Chipset 4 port SATA IDE Controller</li><li>- IDE interface: Intel Corporation 5 Series/3400 Series Chipset PT IDER Controller</li><li>- ISA bridge: Intel Corporation 5 Series Chipset LPC Interface Controller</li><li>- PCI bridge: Intel Corporation 5 Series/3400 Series Chipset PCI Express Root Port 1</li></ul> |

### Network Usage

| Device | Received | Sent      | Err/Drop |
|--------|----------|-----------|----------|
| lo     | 19.59 MB | 19.59 MB  | 0/0      |
| eth1   | 49.18 GB | 17.01 GB  | 0/0      |
| eth0   | 1.38 GB  | 961.26 MB | 0/0      |
| eth2   | 0.00 KB  | 0.00 KB   | 0/0      |

### Status section

- [System Overview](#)
- [iSCSI Targets](#)
- [FC Targets](#)

### Support resources

- [Report bug](#)
- [Get support](#)
- [Forums](#)
- [Admin Guide](#)

openfiler

15:30:04 up 69 days, 2:26, 1 user, load average: 0.30, 0.11, 0.08

[Log Out](#) | [Status](#) | [Update](#) | [Shutdown](#)

[Status](#) | [System](#) | [Volumes](#) | [Cluster](#) | [Quota](#) | [Shares](#) | [Services](#) | [Accounts](#)

## Network Configuration

|                |                                                      |
|----------------|------------------------------------------------------|
| Hostname:      | <input type="text" value="labdnsopenfiler.lab.com"/> |
| Primary DNS:   | <input type="text"/>                                 |
| Secondary DNS: | <input type="text"/>                                 |
| Gateway:       | <input type="text"/>                                 |

## Network Interface Configuration

| Interface | Boot Protocol | IP Address    | Network Mask  | Speed    | MTU  | Link | Edit                      |
|-----------|---------------|---------------|---------------|----------|------|------|---------------------------|
| eth0      | Static        | 192.168.2.200 | 255.255.255.0 | 1000Mb/s | 1500 | Yes  | <a href="#">Configure</a> |
| eth1      | Static        | 192.168.1.101 | 255.255.255.0 | 100Mb/s  | 1500 | Yes  | <a href="#">Configure</a> |
| eth2      | Static        | 192.168.2.201 | 255.255.255.0 | 10Mb/s   | 1500 | No   | <a href="#">Configure</a> |

[Create bonded interface](#)

## Network Access Configuration

| Delete                   | Name           | Network/Host | Netmask       | Type  |
|--------------------------|----------------|--------------|---------------|-------|
| <input type="checkbox"/> | otclab-dbnode2 | 192.168.1.2  | 255.255.255.0 | Share |

### System section

- [Network Setup](#)
- [Clock Setup](#)
- [UPS Management](#)
- [Shutdown/Reboot](#)
- [Notification](#)
- [System Update](#)
- [Backup/Restore](#)
- [Secure Console](#)

### Support resources

- [Report bug](#)
- [Get support](#)
- [Forums](#)
- [Admin Guide](#)

# Prepare The Shared Storage



Configure the Shared Storage for 11g R2 Grid Infrastructure and RAC Database:

Volume Group: Openfiler

Physical Volume: /dev/sda5 (1st extended partition on the last physical partition of local disk /dev/sda nas-server)

Logical Volumes: data\_1

- a) Connect to the nas-server using: `https://127.0.0.1:446` using `openfiler<password>`
- b) Create the Volume group “grid” and created the two logical volumes `asmdisk01` and `asmdisk02` for ASM.
- c) Assign iSCSI targets to these LUNs so that they can be discovered by the clients (cluster nodes `node1`, `node2` )

Steps to Create data\_1 of size 25GB.

- (1) Clicked on ‘Add Volumes’ link under the “Volumes” tab.
- (2) Filled the appropriate values and press “create”
- (3) The 3rd Volume `data_1` was created.
- (4) Assigned the `iscsi-target` to this newly created volume.
  - (a) Clicked on “iSCSI-Targets” line under the “Volumes” tab.
  - (b) Under the “Target Configuration” sub tab, entered the Value of `data_1` in the “Target IQN” box and then clicked “Add” as shown in the screen.
  - (c) Clicked on the “update” on the same screen with all the default values selected.
  - (d) Went to the “LUN Mapping” sub tab where the `iscsi-target` is assigned to the new Logical Volume created (`data_1`)
  - (e) Clicked the “map” for the volume `data_1`.
  - (f) Went to the “Network ACL” tab and allow all the 2 rac nodes to have access on this `iscsi-target`.
- (5) Restarted the `iscsi-target` on the NAS (`service iscsi-target restart`)
- (6) Restarted the `iscsi` service and make it start automatic during the restart of system (On All the RAC Nodes):

# Prepare The Shared Storage



```
chkconfig --level 35 iscsi on          service iscsi restart
```

(7) Manually discovered the new lun and make them discover automatic at every startup of iscsi. This set of commands is required for every luns to be discovered on RAC nodes. I am showing it only for asmdisko3 here. (On All the RAC Nodes):

```
iscsiadm -m discovery -t sendtargets -p 192.168.1.101  
iscsiadm -m node -T iqn.2006-01.com.openfiler:data_1-p 192.168.1.101 -l  
iscsiadm -m node -T iqn.2006-01.com.openfiler:data_1 -p 192.168.1.101 --op update -n node.startup -v automatic
```

Configuration Files:

```
/etc/sysconfig/network (nas-server)
```

# Prepare The Shared Storage



openfiler 15:30:34 up 69 days, 2:27, 1 user, load average: 0.42, 0.15, 0.09 [Log Out](#) | [Status](#) | [Update](#) | [Shutdown](#)

[Status](#) [System](#) [Volumes](#) [Cluster](#) [Quota](#) [Shares](#) [Services](#) [Accounts](#)

### Select Volume Group

Please select a volume group to display.

OpenFiler-Vol01

**Volumes section**

- Manage Volumes
- Volume Groups
- Block Devices
- Add Volume
- iSCSI Targets
- Software RAID

### Volumes in volume group "OpenFiler-Vol01" (228896 MB)

| Volume name   | Volume description  | Volume size | File system type | File system size | FS used space  | FS free space  | Delete | Properties           | Snapshots              |
|---------------|---------------------|-------------|------------------|------------------|----------------|----------------|--------|----------------------|------------------------|
| openfiler_nas | Disk for Filesystem | 220000 MB   | iSCSI            | Not applicable   | Not applicable | Not applicable | In use | <a href="#">Edit</a> | <a href="#">Create</a> |

0 MB allocated to snapshots

openfiler 15:31:57 up 69 days, 2:28, 1 user, load average: 0.45, 0.20, 0.11 [Log Out](#) | [Status](#) | [Update](#) | [Shutdown](#)

[Status](#) [System](#) [Volumes](#) [Cluster](#) [Quota](#) [Shares](#) [Services](#) [Accounts](#)

### iSCSI status

Open sessions for iSCSI target iqn.2006-01.com.openfiler:openfiler-nas

| Identifier        | Initiator Name                      | Connections          |
|-------------------|-------------------------------------|----------------------|
| 40532396700664320 | iqn.1988-12.com.oracle:a9ce6e275b1c | <a href="#">View</a> |
| 40250921707176448 | iqn.1988-12.com.oracle:a9ce6e275b1c | <a href="#">View</a> |
| 39969446713688576 | iqn.1988-12.com.oracle:72795f88b322 | <a href="#">View</a> |
| 39687971753755136 | iqn.1988-12.com.oracle:72795f88b322 | <a href="#">View</a> |
| 39406496793821696 | iqn.1988-12.com.oracle:efa43911a13c | <a href="#">View</a> |
| 39125021783556608 | iqn.1988-12.com.oracle:efa43911a13c | <a href="#">View</a> |
| 23080948111049216 | iqn.1988-12.com.oracle:a9ce6e275b1c | <a href="#">View</a> |
| 22517998174405120 | iqn.1988-12.com.oracle:efa43911a13c | <a href="#">View</a> |

**Connections in session 40532396700664320 of iqn.2006-01.com.openfiler:openfiler-nas**

| Id | IP address  | State  |
|----|-------------|--------|
| 0  | 192.168.2.2 | active |

[Close Window](#)

**Status section**

- System Overview
- iSCSI Targets
- FC Targets

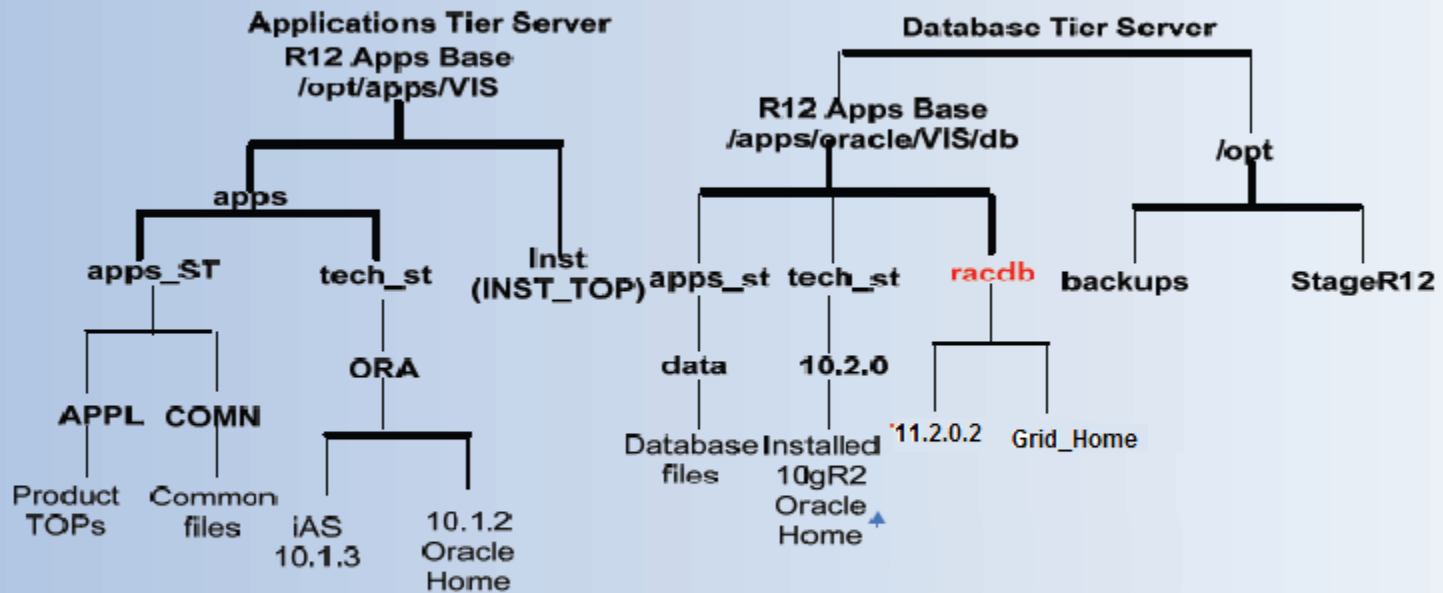
**Support resources**

# Fresh install Oracle Apps R12



## Rapid Install EBS R12

### Database Node and Applications Node File Systems Layout:



### Fresh Install Results:

A Complete working EBS R12 system:

Database tier: single node; Oracle 10.2.0.2 software and Database Applications tier: two nodes: Applications file systems.

# 11G R2 Install , Upgrade & RAC Conversion



## 1) Prepare your system for 11g R2 RAC Conversion

=====

- Shared storage using iscsi technology, Openfiler is used for mimicking NFS storage
- Network: Public and private network configuration, VIP & SCAN configuration (DNS enabled in Openfiler machine)
- Configure user equivalence between DB nodes
- Runcluvfy

## 2) Install GI & 11g R2 Binaries

=====

Direct upgrade to 11gR2 is supported from 9.2.0.8 or higher, 10.1.0.5 or higher, 10.2.0.2 or higher and 11.1.0.6 or higher.  
If you have a database 9.2.0.6 then first you need to upgrade to intermediate release i.e 9.2.0.8 then to 11.2.0.1.

Use Pre upgrade script to check (utlu112i.sql)

Need speed for upgrading, so truncate AUD\$ table and gather dictionary statistics

Start to upgrade:

- Copy spfile + orapw from Old home -> New home.
- -- Use New home to startup upgrade (startup upgrade;)
- -- Check error in spool file and startup again (startup)
- -- Generate fixed object stats
- SQL> exec dbms\_stats.gather\_fixed\_objects\_stats;
- -- Recompile````SQL> @?/rdbms/admin/utlrp.sql
- -- During recompilation: check number of invalid objects
- -- Post upgrade script
- SQL> @?/rdbms/admin/utlu112s.sql

# 11G R2 Install , Upgrade & RAC Conversion



Prepare to converttToRAC.xml

`$ORACLE_HOME/assistants/rconfig/sampleXMLs`

Edit parameters like SourceDbhome, targetdbhome, sourcedbinfo SID, RAC nodes, Instance prefix, convertverify, target database area

Run Rconfig

`$ORACLE_HOME/bin/rconfig convertToRAC.XML`

Create local & remote listeners(SCAN\_NAME)



# Enable Autoconfig on DB Tiers



Generate Appstutil.zip from apps tier

- Configure tnsnames.ora on apps tier to point to one DB instance
- Execute \$AD\_TOP/bin/admkappstutil.pl to create appstutil.zip

Create appstutil in RAC \$ORACLE\_HOME in DB tier

- Copy appstutil.zip and unzip it to RAC \$ORACLE\_HOME
- Copy instance information from old \$ORACLE\_HOME
  - Perl \$OLD\_OH/appstutil/scripts/<context\_name>/adperclone.pl database
  - Copy context file from \$OLD\_OH to \$RAC\_OH/appstutil

Create instance specific XML context file

- Create pairsfile.txt under new \$RAC\_OH/appstutil/clone

S\_undo\_tablespace=UNDOTBS2; s\_db\_clusterInst=2>

S\_db\_oh=<RAC\_OH>

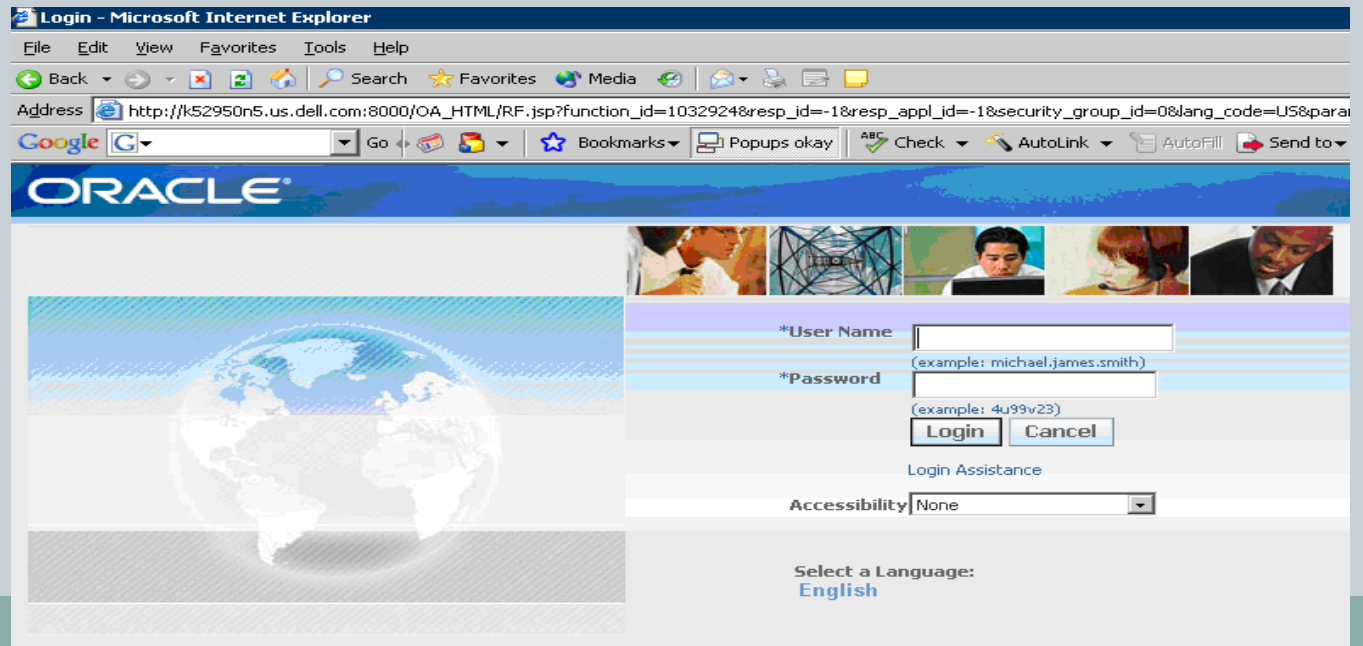
- Run perl adclonectx.pl to create instance specific XML context file
- More details on MOS note:- 388577.1
- Run autoconfig on DB nodes, Prepare to Apps for using RAC nodes.
- Run autoconfig on APP nodes,
  - Prepare tnsnames.ora to RAC node-1
  - Set jdbc\_url in context\_file to the instance of RAC node1
  - Executing autoconfig, \$AD\_TOP/bin/adconfig.sh context\_file=<context\_name>.xml
  - Check tnsnames.ora in \$INST\_TOP/ora/10.1.2 and 10.1.3
  - Verify oraclelab.dbcfile under \$FND\_TOP/secure (APPS\_JDBC\_URL)

# Enable Autoconfig on DB Tiers



## Enable APPS Tier load balancing

- Edit context file and below variables
  - s\_tool\_two\_task - (Forms apps)
  - s\_weboh\_two\_task - (Self Service apps)
  - s\_apps\_jdbc\_connect\_alias - (Self Service apps)
- Run autoconfig.sh \$AD\_TOP/bin/adconfig.sh
- Profile option "Applications Database ID" to set to dbc file under \$FND\_TOP/secure



# Logged Into Oracle Apps R12



Address [http://k452950n6.us.dell.com:8000/OA\\_HTML/OA.jsp?OAFunc=OAHOMEPAGE&akRegionApplicationId=0&navRespId=20872&navRespAppId=178&navSecGrpId=0&transactionId=...](http://k452950n6.us.dell.com:8000/OA_HTML/OA.jsp?OAFunc=OAHOMEPAGE&akRegionApplicationId=0&navRespId=20872&navRespAppId=178&navSecGrpId=0&transactionId=...)

Google Search Web 460 blocked AutoFill Options

**ORACLE** E-Business Suite Diagnostics Logout Pr

**Navigator** Personalize

- AK Html Forms
- Alert Manager, Vision Enterprises
- Application Developer
- Application Developer Common Modules
- Business Intelligence System, Vision Operations (USA)
- CRM Administrator, Vision Enterprises
- CRM HTML Administration
- CRM HTML Developer
- Custom AOL Workbooks
- Customer Support, Vision Operations
- Functional Administrator
- Functional Developer
- HRMS Manager, Vision University
- iMeeting End User responsibility
- iMeeting Guest user responsibility
- iMeeting System Configure responsibility
- iMeeting System Monitor responsibility
- Install Base Administrator
- Install Base User
- Integration Repository
- Interaction History JSP Admin
- iProcurement
- iSetup

**System Administration**

- Schedule Requests
- Monitor Requests
- Oracle Applications Manager
- Lookup Types
- Pregenerate Image Cache

**Request Set**

- Schedule

**Help Administration**

- Help Builder
- Help Upload
- Help Download
- Help Reports

**OA Framework Utilities**

- Pregenerate Image Cache
- CSS Style Lookup
- AK ADA Check

**Favorites**

- System Profile Options
- Define (Security : User)

# Summary



Generate Appsutil.zip from apps tier

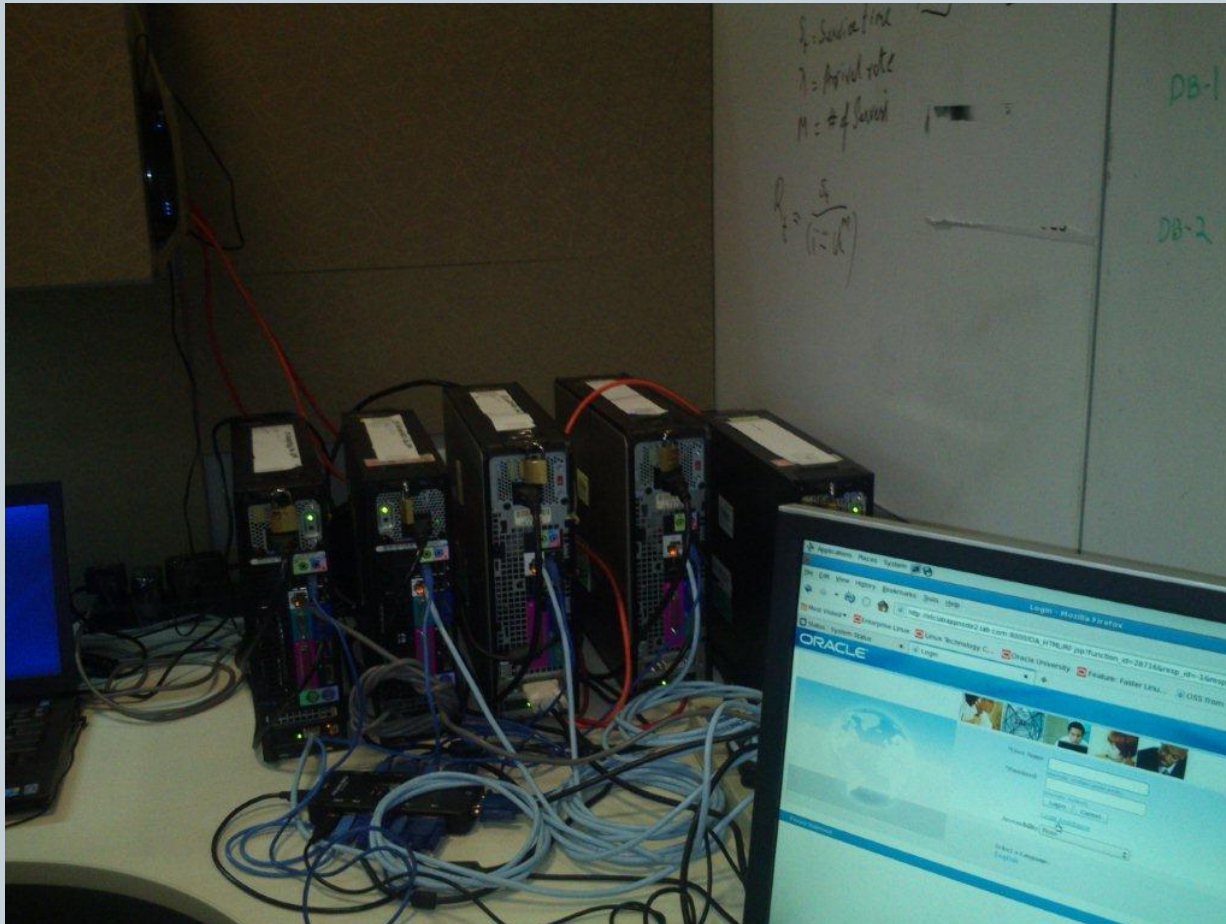
Oracle Apps E-Business Suite R12 fully certified on Linux x86-64  
Implementing paths for Oracle E-Business Suite on RAC

- 1) Preparation of 5 nodes in your multi node architecture. ( Installation of OEL 5.7, Openfiler)
- 2) Preparation of shared storage( iSCSI technology based NFS)
- 3) Mount the shared NFS mount on the designated DB nodes
- 4) Fresh install the Oracle Apps R12.1.1 and vision instance
- 5) Install Oracle 11g R2 Grid and Database Binaries
- 6) Upgrade your database from 10.1.0.5 to 11.2.0.2
- 7) Register all the RAC nodes into the 11g R2 Grid
- 8) Prepare your Middle tier for RAC database.

# Your Dream Machine

**NZOUG** Inspiring. Practical. Informative.

2013 Te Papa, Wellington  
New Zealand, 18 to 19 March 2013



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2013



Te Papa, Wellington  
New Zealand, 18 to 19 March



2013

# Q&A



Thank You