

Virtualizing Oracle E-Business Suite through Oracle VM

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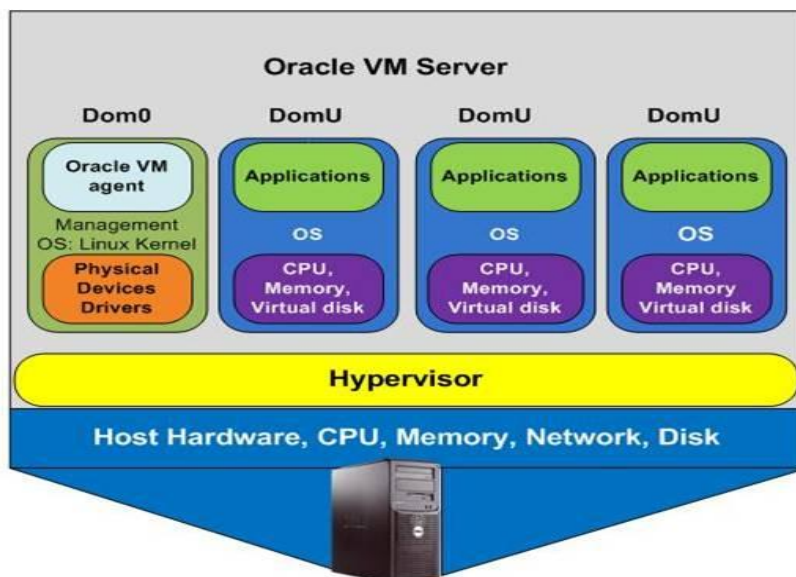
Abstract: Oracle VM provides the server virtualization that not only enables high availability and scalability, also simplifies and standardizes the deployment for Oracle E-Business Suite. To leverage Oracle VM, the existing Oracle E-Business systems on physical servers need to be migrated the VMs and a new development needs to start on the VMs. This article will examine a method to virtualize Oracle E-Business Suite through such an migration and also show how to create and use the VM templates of customers' own project specific Oracle E-Business systems for the on-going project. The article will also explore how to leverage the benefits of Oracle VM such as high availability and scalability and server partitioning for Oracle E-Business suite R12.1 infrastructures.

Introduction to Oracle VM Technology

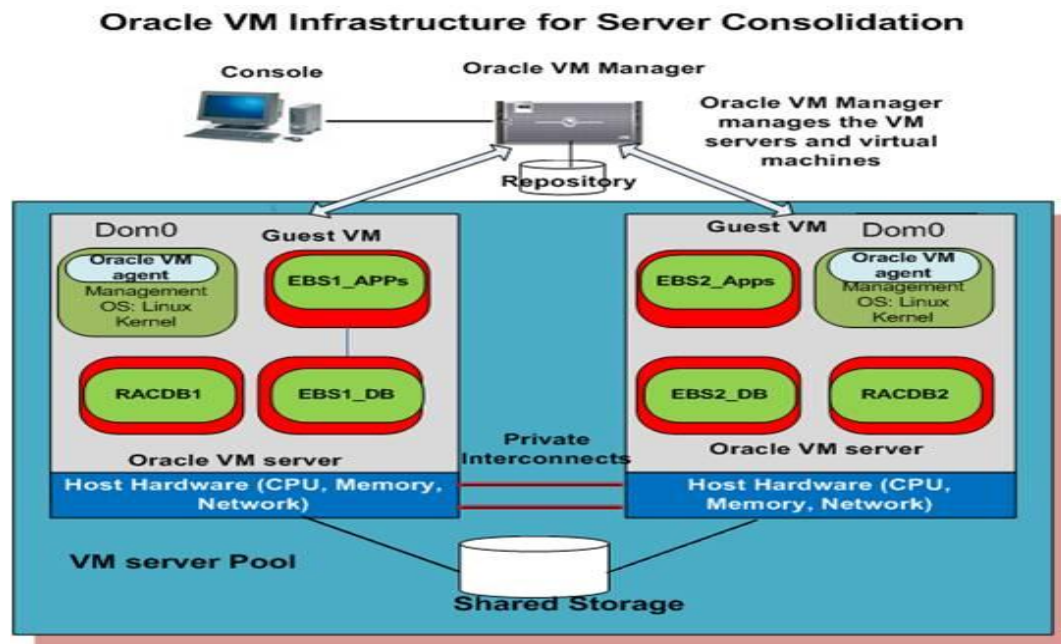
Oracle VM components

The Oracle VM environment includes the following components:

- Oracle VM Server: A virtualization environment that provides a lightweight, server-based platform for running virtual machines. It is based on an updated version of the underlying Xen Hypervisor technology. The Oracle VM software is installed on a bare metal x86 server. It includes a Linux kernel running as dom0 with support to manage one or more domU virtual machines. Dom0 is the management domain that handles the physical device's IO, networking, and etc. Dom0 also runs the VM agents that connect to the VM manager.
- VM (Virtual Machine): Guest Operating System with applications running on domU.
- Virtual CPUs and Virtual Memory are signed for each guest VM All network and storage IOs of guest VMs go through Dom0.



- Virtual Server Pool: An autonomous region of VM servers that collects all of the resources of VM servers. All the VM servers with one virtual server pool need to access the shared storage.
- VM (Virtual Machine): Guest Operating System with applications running on domU.
- Oracle VM Manager: provides a user interface that can be used to manage Oracle VM servers, virtual machines, and resources. VM manager can be configured independently, or combined with Oracle Enterprise Manager to manage the virtual infrastructure. The following diagram illustrates the Oracle VM server components, Oracle virtual machines and Oracle VM manager.



If the High Availability option is enabled with the VM server pool and virtual machines, the virtual machine (VM) can be failed over to an available VM server in the VM server pool if the VM server running the VM fails. All the VM servers in the VM server pool share the storage. The shared storage is configured based on OCFS2 or NFS-based for VM Repository.

VM Repository /OVS is configured in the shared storage so that all the VM servers have the access to. All the guest VM images are stored in the VM repository

The VM repository for Oracle VM 2.2 has the repository root: /OVS and the following directories under the repository root:

- running_pool stores all VM images
- seed_pool stores all the VM templates
- shared_disk stores disks that can be shared by multiple VMs. This is specifically used for configuring Oracle RAC database on multiple VMs

The repository root of Oracle VM 3.x has been changed to something like :

/OVS/Repositories/0004fb0000030000d5029e7ba6a1b194 with the following directories under the root:

- Assemblies: Virtual Assemblies
- ISOs: ISO images
- Templates : Virtual Machine Templates
- VirtualDisks: Virtual disks
- VirtualMachines: Virtual Machines images

Guest VM Creation

An Oracle virtual machine can be created as Paravirtualized VM guest and Hard Virtualized guest. Paravirtualized VM is supported for those virtualization aware OS such as Linux that the source code of the operating system is modified to support virtualization. In many cases paravirtualization may have a better IO performance. Hardware virtualized VM is for those “unmodified OS” such as Windows OS that uses the binary translation for virtualization. In this whitepaper, we will use paravirtualized VM running Oracle Enterprise Linux 5. A guest VM can be created a number of ways through VM manager :

- . Using a virtual machine template
- . Using installation media
- . Importing a virtual machine

This paper we focus on the VM creation through a VM template.

Virtualizing Oracle EBS with Oracle VM

Benefits of virtualizing Oracle EBS with Oracle VM

It is widely known that virtualization has been accepted as an efficient way to increase IT flexibility and help IT services align better with changing business needs. It not only provided capabilities for server consolidation and partitions, but also high availabilities and scalabilities for applications. With the flexibility of a virtualized IT infrastructure, new applications can be rapidly deployed, capacity be easily scaled, and IT resources be quickly redirected. The result is that IT can bring greater value to the business, making virtualization an obvious win from a business perspective.

1. Server consolidation and partitions

Before the virtualization, each application has a series of physical servers and most of the environments don't share the servers. The result is many of the servers in idle state or minimal usage and resources on the servers are wasted. Virtualization provides server consolidation and resources on the servers get efficiently utilized while the well planned partitioning make it possible that each EBS instances can be set up with a fixed and limited resources to share the physical hardware but no interference with other instances.

1. High availability and scalability

Business continuity is so important in today's business and any interruption to the applications means business loss. Virtualization composes of Virtual machines based on a set of physical servers which provided high availability to the databases and applications. The database instances and applications can be easily fail over to or restarted on another VM if one goes down. Meanwhile adding or removing VMs is another advantage of virtualization to scale up or down of the databases and applications based on changing business requirements.

2. Fast deployment and standardization

Traditionally building and configuring a new E-Business Suite System is a complicate process. It requires applying the pre-req patches on the OS level before the installation of the E-Business Suite System, then installation starts on the database tier and all the configuration information is entered, after the installation on the database tier is complete and database and listener are brought up, the apps tier installation can be done and configuration for the entire E-Business Suite system can be complete. In addition, patches and version upgrades need to be applied to the base versions. This process usually takes many hours or even days. With the Oracle E-Business Suite on OVM template, this process is simplified and takes much less time. The Oracle E-Business Suite on OVM templates not only reduce deployment time, but also prevent errors or mistakes for installation and configuration as the templates are pre-built, pre-configured, and ready to use software with the OS which can standardizes the deployments and makes the management and maintenance of E-Business Suite Systems much easier resulting in cost-savings for IT resources.

3. Backup and recovery solution

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The capability of building new OVM template for the Oracle E-Business Suite systems extended the traditional separate backups for OS, databases, and applications to bundle the OS with the database and application. This makes the recovery process more reliable, faster, and completeness.

4. Fast and simplified cloning process

Cloning is one of the major DBA tasks for Oracle E-Business Suite system support and projects. Traditionally the cloning process can be very complicate and time consuming. If one clones an existing Oracle E-Business Suite system to the newly built servers, one must make sure the pre-requisite is met on the new servers; post clone tasks can be tedious and lengthy. With the capability of building new OVM template for the Oracle E-Business Suite systems, the cloning process is much faster and simplified as the OVM template includes the OS and post clone processes are handled by the OVM template script. The cloning process itself essentially a matter of the VM image file copy. Once we restart the VM, the embedded reconfiguration scripts with the VM can reconfigure itself to add the EBS instance specific configuration and form the complete ready-to-run Oracle E-Business suite instance.

Certification of Oracle E-Business Suite on Oracle VM

Oracle VM has been fully certified with Oracle E-Business Suite systems for more than 2 years and it's the only virtualization solution certified and supported by Oracle. Here's a list of certified EBS releases and platforms quoted from Oracle [ID 464754.1]:

- Oracle Applications 11.5.10 CU2 or later with 11i.ATG_PF.H.RUP5 ([Patch 5473858](#)) or later for Linux x86
- Oracle E-Business Suite 12.0.2 (RUP2) or later (including 12.1) for Linux x86
- Oracle E-Business Suite Release 12.0.4 or later (including 12.1) is certified with 64-bit Oracle Linux 5 and 64-bit Red Hat Enterprise Linux (RHEL) 5 on x86-64 with Oracle VM.
- Oracle E-Business Suite Release 12.0.3 (RUP3) or later (including 12.1) is certified with 64-bit Oracle Linux 4 and 64-bit Red Hat Enterprise Linux (RHEL) 4 on x86-64 with Oracle VM.
- Oracle E-Business Suite Release 12 (12.0.4 or higher and 12.1.1 or higher) is certified on Windows Server 2003 (32-bit) running as a guest on Oracle VM using Windows PV driver version 1.0.8 or higher.
- Oracle Applications Release 12 (12.1.1 or higher) on Windows Server 2008 (32-bit) running as a guest on Oracle VM using Windows PV driver version 1.0.8 or higher.
- For more information please refer to My Oracle Support Note 465915.1

The following major configurations are not tested and certified with Oracle E-Business Suite on Oracle VM:

- DMZ
- RAC Database
- Shared APPL_TOP on Apps tier

Oracle VM Templates for Oracle E-Business Suite

An Oracle VM template is a virtual machine (VM) or group of VMs containing the OS and Oracle software which is pre-built, pre-installed, and pre-configured. Oracle VM templates can be downloaded from Oracle E-delivery and deployed to a VM instance. There is no installation required and system is ready to use after the deployment and VM restart. In addition, Oracle also has the virtualization kit which is used to create customized templates. In the terms of Oracle E-Business Suite systems, templates can be created based on an existing E-Business installed on a VM or migrated from a physical server. The customized templates are very useful for creating the “golden copy” and rapid cloning for E-Business projects.

An Oracle VM template is a virtual machine, a group of virtual machines that contain a full pre-built and pre-configured software stack and are ready to use. These templates can be imported into the Oracle VM environment and used to deploy the Oracle virtual machine (VM). The Oracle VM deployed with the template will have the full pre-built and preconfigured software stack and is ready to function. This VM template deployment method eliminates the step of the installing an configuration of the entire stack from Operating system to complex applications software.

The Oracle VM templates are built with some generic default value of configuration parameters such as host name, instance name and IP address. When these template are used to deploy the specific Oracle VM machine instance, these generic parameters will be populated with the instance specific values such as virtual machine hostname, IP address, application instance name and the system specific IP address. Oracle EBS VM templates are built using this idea. Each Oracle EBS template consists of two VM template: Apps template for Application tier and Database VM template for Database tier. The Apps template is the full pre-built and pre-configured Oracle EBS applications tier which includes Oracle Enterprise Linux and Oracle E-BBs applications stack, and the database template is the full pre-built and pre-configured Oracle EBS database tier which include Oracle Enterprise Linux and Oracle EBS database software and the database files. As the part of the deployment process of Oracle EBB Virtual machine using these templates, the OS and applications and the database will be reconfigured at the boot time of the virtual machines. This reconfiguration process will prompt the administrator to provide the value of instance specific parameters such as hostname, host IP address and the applications instance name.

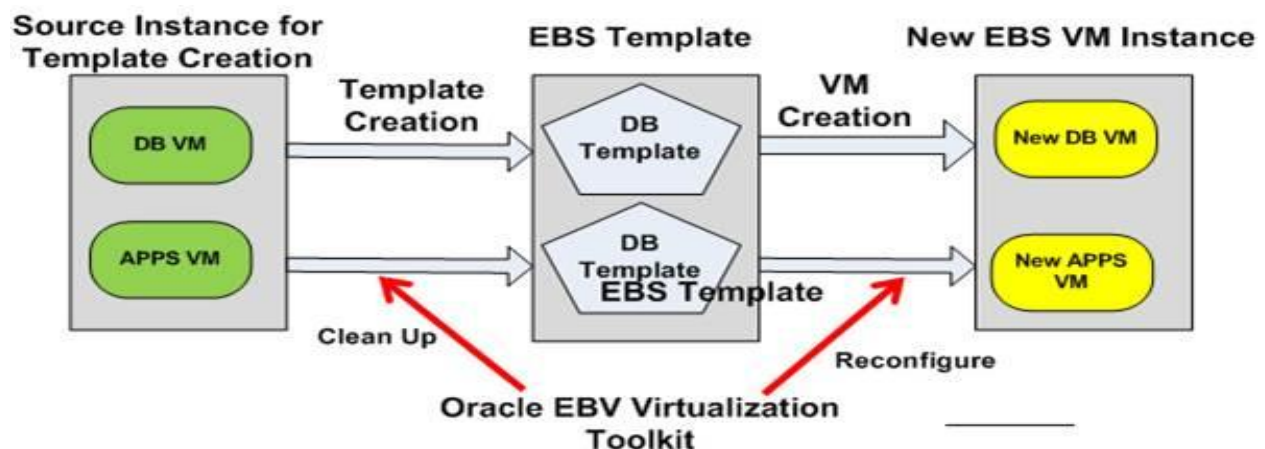
Oracle has built and published the both Apps tier template and Database tier template in [Oracle E-Delivery site](#): It has both 64 bit version and 32 bit version VM templates. For this whitepaper, we will use the 64 bit version: Oracle VM template for Oracle E-Business suite Release 12.1.1 Version Media Pack V1 for x86 (64 bit). This media has two parts:

- Oracle E-Business suite Release 12.1 Application Tier VM Template for x86_64
- Oracle E-Business suite Release 12.1 Demo Database Tier VM Template for x86_64

Metalink note 97768.1 Oracle VM Template Developer Guide for Oracle E-Business Suite explained how these template was built.

Oracle E-Business Virtualization Toolkit

As Oracle EBS VM templates are designed to be deployed more multiple times to create multiple Oracle EBS virtual machines. All these Oracle EBS virtual machines should have the instance specific and host specific configuration such as hostname, pool number, IP address, and instance name, database name. Therefore, even the Oracle VM templates are designed to include the preconfigured self-contained software stack, these instances specific configuration cannot be pre-configured in the VM templates as they are different for each deployment. Then how we can add these instance specific configuration to the Oracle EBS VMs? The solution is to allow the EBS VM templates only have the place holders for these instance specific configurations without the specific values, then allow these configuration to be added into the Oracle EBS VMs through a self reconfiguration process during the first time when the VM restarts after the deployment. This is the basic idea of the Oracle E-Business suite virtualization toolkit.



The Oracle EBS toolkit works in two ways:

1. A reconfiguration process kicks off in the first time when Oracle EBS VMs start after the creation of Oracle VMs through the VM templates. It prompts the administrator to provide the following instance specific configuration and these configurations to self configure the VM OS and the Apps tier or DB Tier.
 - a. OS configuration: hostnames , network configuration IP, Default gateway, etc.
 - b. Oracle EBS instance configuration: instance name, database name, DATA_TOP, RDBMS_HOME, APPL_TOP, system port pool number.

The underneath implementation of the reconfiguration process is to call the Oracle EBS rapid colon utility.

2. The cleanup process: An Oracle EBS VM template is created from an Oracle EBS instance running on Oracle virtual machines. Before the virtual machine is used to create an Oracle EBS template, the cleanup process cleans up the instance specific configuration mentioned in previous session so that the VM template will only have the place holder for these instance specific parameters. And a reconfiguration flag is reset in the VM template so that next time when the virtual machines created from this VM template starts, the reconfiguration process will automatically start up.

How to leverage Oracle VM for Oracle EBS Environment

Oracle VM solution can bring the great benefits for Oracle E-Business suite implementation. One of the issues involved with an Oracle E-Business implementation project is that we need so many development environments and Oracle APPs and DBAs spend a significant time in building the environments by fresh installation or cloning from other environment. Oracle VM can provide the solution to consolidate this environment into virtual machines that can share in the physical hardware. The Oracle VM template based development can much simplify the creation of the new development and testing environment by simply create Oracle EBS virtual machines from an prebuilt Oracle EBS templates.

There are two ways to build the Oracle EBS virtual machines:

- Build the Oracle virtual machines, then fresh install Oracle E-Business suite on the VMs.
- Build from the existing Oracle EBS VM templates

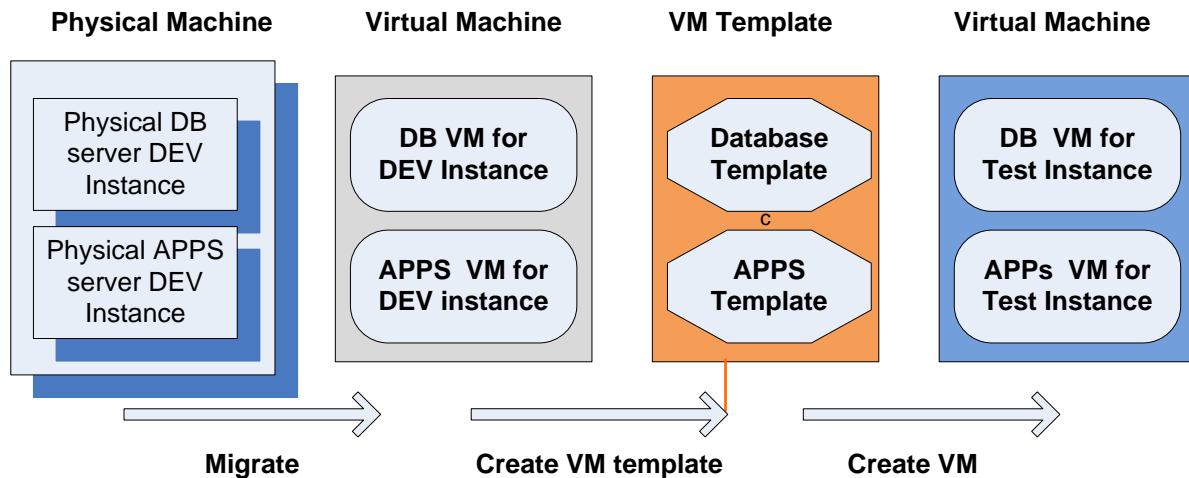
In the first method, the fresh installed Oracle E-Business only can bring us either vision instance or an instance that has no customer data and customer configuration. Usually this method is only used when we initially start the Oracle E-Business project. For the second method , we need an existing Oracle EBS VM template Although we can use the Oracle EBS VM templates downloaded from Oracle E-delivery, these templates are built for the vision instance, which is for the demo purpose and doesn't have the customer data and configuration. We need to have a way to create the Oracle EBS VM template from customer's existing Oracle EBS instances which mostly like are running on the physical hosts.

The process to virtualize Oracle EBS Environment

The goal of this paper is to create a streamline process that customers can use to virtualize their Oracle EBS environment on Oracle VM. The virtualization process has to achieve the following design requirements:

- The entire Oracle EBS environment including the configuration and database need to be migrated from the physical machines to the Oracle virtual machines.
- The Oracle EBS virtual machines can be used to create the Oracle EBS VM templates.
- The Oracle EBS VM templates can be used to deploy new Oracle EBS VMs.

This means this process will migrate all the Oracle EBS configuration, setup, business data, customization, etc to the virtualization environment. After the migration, the exact same Oracle EBS instance will be running on the Oracle virtual machines. Then new Oracle virtual machines can used to create the new Oracle VM template. This new Oracle VM template should be different from the Oracle EBS vision instance VM template as it is the custom built and has the customer's own business data and setup and customization. The Oracle VMs built from these new VM templates are the clone of the Oracle EBS instance on physical environment. The follow diagram shows the virtualization process workflow.



We can leverage the Oracle E-Business suite templates for virtualization process as the Oracle EBS templates from Oracle include the following components t

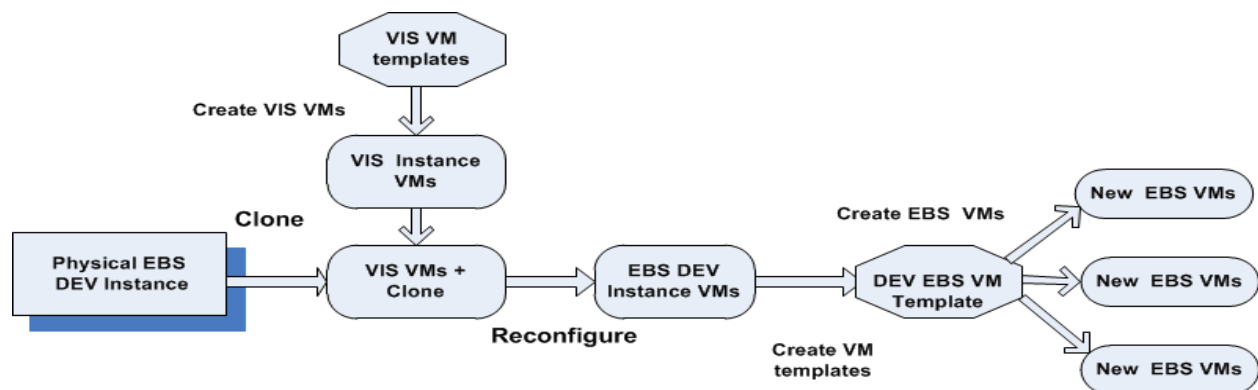
- OS configuration for Oracle EBS (APPS and DB)
- Include Oracle E-Business Visualization Toolkit

Our virtualization process strategy is to combine the EBS VM templates with clone of EBS instance from the physical environment:

- OS configuration + EBS VM toolkit from VM template
- Business data, customization and setups from physical system.

Migration Process Design: The migration process consists of the following steps :

- Starting with downloaded Oracle EBS VIS VM Templates
- Build Oracle EBS VMs from the EBS VIS VM templates
- Replacing APPS and DB with the cloned copy from DEV(physical)
- Reconfigure and forms Oracle EBS DEV Instance VMs
- Create the new DEV VM templates
- Create new EBS VMs from the DEV VM template



Oracle EBS on Oracle VM POC Project

We have worked on a joint proof of concept project between Dell Oracle solutions engineering and Dell IT Oracle Applications team on development of method of virtualizing the Oracle EBS suite on Oracle Virtual Machines. The requirements are very similar to those that were mentioned in previous sessions:

1. Migrate the entire Oracle EBS 12.1 development instance including Apps tier and database from the physical servers to Oracle VM environment. The instances have the business database, applications setup and customization.
2. Create the Oracle EBS VM templates for the Oracle EBS instances on the physical machines.
3. Being able to deploy additional Oracle EBS VMs using the Oracle EBS VM templates.

Servers and shared storage infrastructure of the POC project

For this POC project, the underline infrastructure consists of the physical environment and virtual environment. The physical environment is the Oracle Applications development instance DEV running Oracle E-Business Suite 12.1.1 x86-64 bit running on two servers

Apps tier: Dell PE 2950 running Oracle Enterprise Linux 5U3

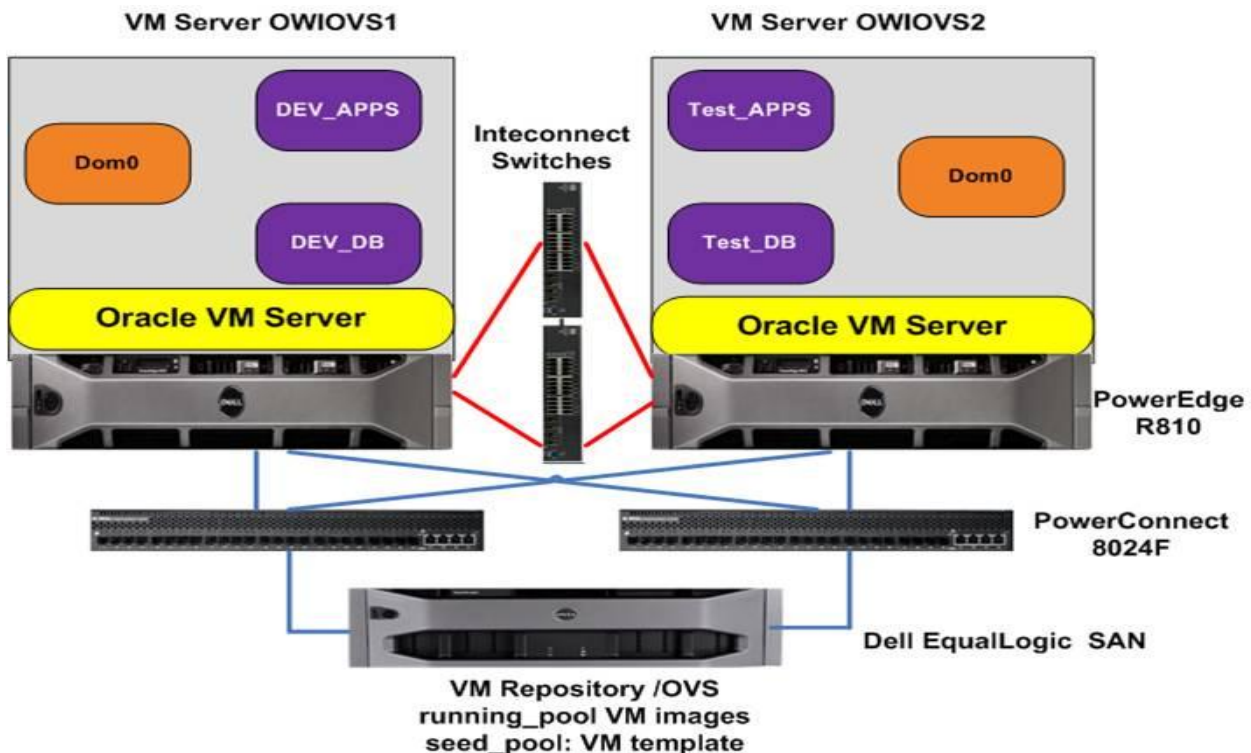
Database Tier: Dell PE 6950, Oracle Enterprise Linux 5U

The Virtual Infrastructure is based on Oracle VM servers running on:

Oracle VM servers: 2 x Dell PowerEdge R810

Shared SAN storage: Dell EqualLogic PS6510 Storage , allocated 2TB for VM repository

VM Manager: 1 Dell PE2950 running VM Manager 2.2

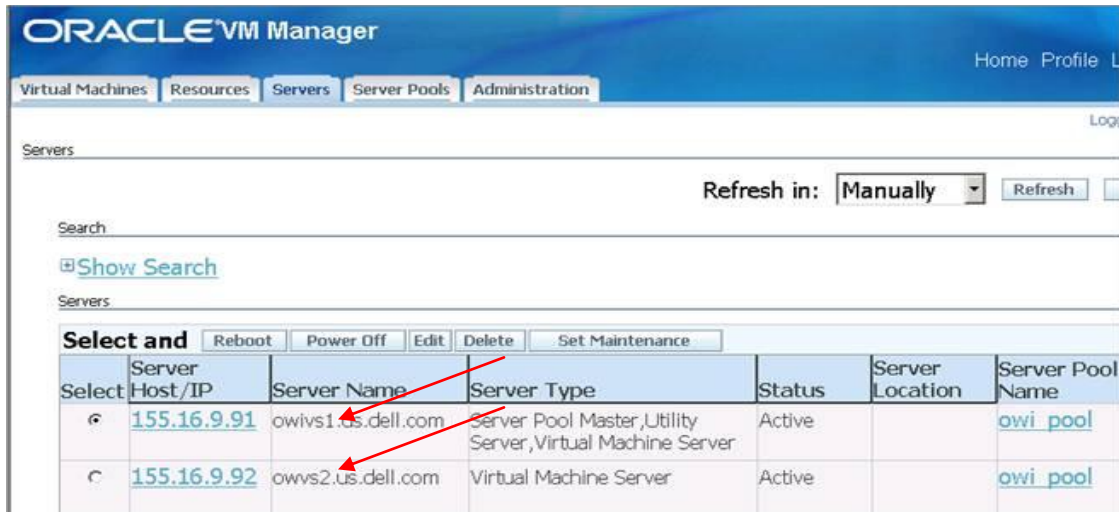


The diagram above shows the virtual infrastructure:

To implement this infrastructure, as the prerequisite for the migration POC project, the following tasks need to be completed:

- Establish the physical hardware connections as shown in the diagram above. Two R810 servers were connected to EqualLogic storage PS6550 through two Ethernet switches.
- Two dual interconnect switches are connected between two R810 servers

- Installed and configured Oracle VM 2.2 on two R810 servers: OWIOVS1 and OWIOVS2
- Installed Oracle VM manager on second server (PE2950) and connect to the two Oracle VM servers OwioVS1 and OWIOVS2 as showed as follow:



- Establish the shared storage access from two OVS servers and created the OVS repository /OVS mounted in volume /dev/mapper/ovsp1 as follow:

```

root@owivs1:/OVS
[root@owivs1 OVS]# df -k
Filesystem            1K-blocks      Used Available Use% Mounted on
/dev/sda2              3050092    1159400    1733256   41% /
/dev/sda1              101086      45961     49906    48% /boot
tmpfs                  524376         0     524376    0% /dev/shm
/dev/mapper/ovsp1      2097157120 1687035904 410121216   81% /var/ov
s/mount/226B143F95794C66ADC22DEF917E97E3
[root@owivs1 OVS]# ls -l /OVS
lrwxrwxrwx 1 root root 47 Nov  9 09:15 /OVS -> /var/ovs/mount/226
B143F95794C66ADC22DEF917E97E3
[root@owivs1 OVS]# ls
iso_pool    publish_pool  seed_pool
lost+found  running_pool  sharedDisk
[root@owivs1 OVS]#

```

Virtualization Process Design

With the implementation of Oracle VM infrastructure, we can start designing the process of virtualizing the Oracle EBS instance DEV from physical machines to virtual machines. Based on the requirement of the POC project, the entire virtualization process consists of the following three steps:

1. Migration: to migrate the Oracle EBS instance DEV from physical machines to Oracle VM.
2. VM Template Creation: to create Oracle EBS VM template based on the Oracle VM migrated on step1.
3. New Oracle EBS VM creation: to create new Oracle EBS instance based on the VM template created on step2.

The following session will examine the each phrase of the virtualization process:

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Migration of Oracle EBS instance from physical machines to virtual machines

As mentioned in the previous session, the migration process will achieve the following design requirements:

- Migrate the entire Oracle EBS environment including the configuration and database from the physical machines to the Oracle virtual machines
- The migrated Oracle EBS virtual machine should have Oracle E-Business Virtualization Toolkit so that we can use it to build the VM templates.

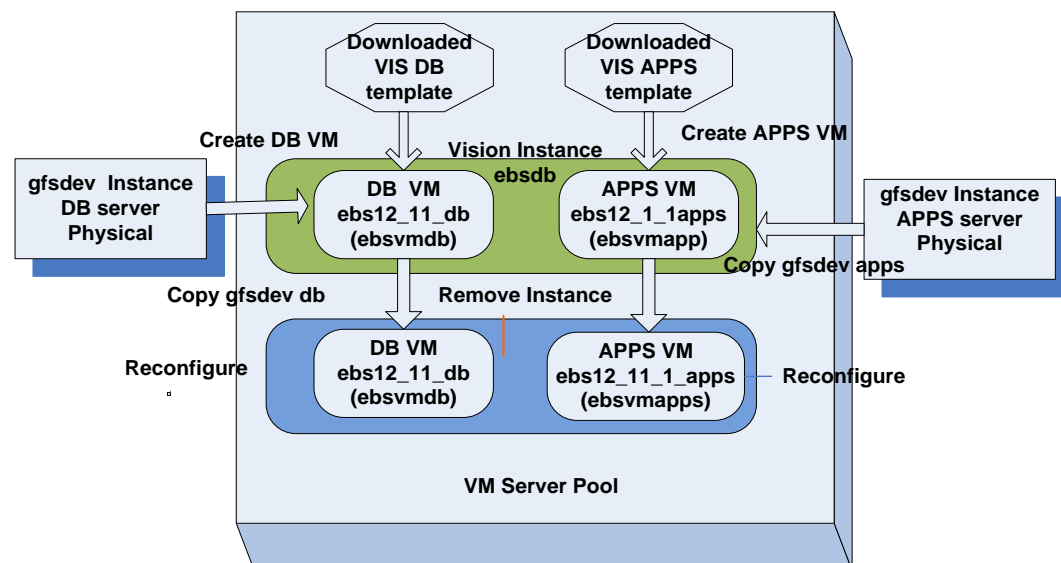
To meet the first requirement, the migration process will have to clone the Apps tier application file systems and the database file systems and database files from Oracle EBS instance DEV on physical servers.

In order to meet the second requirement, we need to closely look at the Oracle EBS VM template from downloadable from Oracle E-delivery. Although this template only has the vision instance and is not very practical to be used directly in the customer environment. But the VM template from Oracle does provide some very important components that we can leverage for the migration process:

- Completed configuration of Linux OS and all the prerequisites for Oracle EBS installation in APPS tier and Database node.
- Oracle E-Business Visualization Toolkit. As we mentioned earlier, this toolkit is essential for building the Oracle EBS template and create Oracle EBS VM using the template.

As shown in the following diagram, the migration process will start with the Oracle EBS VM template downloaded from Oracle. The migration process consists of three steps:

- Use the Oracle EBS template from Oracle to build the Oracle EBS vision instance Apps tier VM and DB tier VM.
- Clone the Apps tier file systems from the DEV instance gfsdev on the physical server to the Apps tier VM ebsvmapp, and clone the Database tier file system and database files from DEV instance gfsdev on the physical server to the DB tier VM ebsvmdb
- Reconfigure Apps tier VM ebsvmapp and the the DB tier VM ebsvmdb with the cloned copy EBS instance from physical server.



Step1: Create Vision Instance VMs from Oracle EBS Vision Instance Template

The Oracle EBS vision instance VM templates were downloaded from Oracle E-delivery site and imported into the VM manager:

OVM_EL5U3_X86_64_EBIZ12.1.1_APPS_VIS_VM

OVM_EL5U3-x86_64-EBIZ12.1.1_DB_VIS_VM

ORACLE VM Manager

Virtual Machines | Resources | Servers | Server Pools | Administration

Virtual Machine Templates | Virtual Machine Images | ISO Files | Shared Virtual Disks

Source | General Information | Import | Confirmation

General Information

- Server Pool Name:
- Virtual Machine Template Name:
- Operating System:
- Virtual Machine System Username:
- Virtual Machine System Password:
- Description:

Both Apps tier VM template and DB tier Vm template are imported into VM manager.

ORACLE VM Manager

Home | Profile | Logout | Help

Virtual Machines | Resources | Servers | Server Pools | Administration

Virtual Machine Templates | Virtual Machine Images | ISO Files | Shared Virtual Disks

Logged in as admin

Refresh in:

Search

[Show Search](#)

Virtual Machine Templates

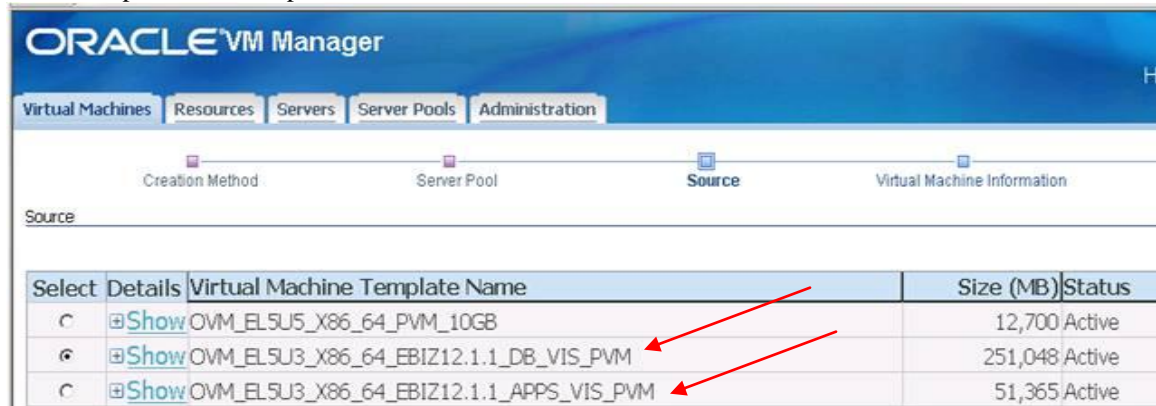
Select	Virtual Machine Template Name	Size (MB)	Server Pool Name	Status	Creation Time
<input checked="" type="radio"/>	OVM_EL5U3_X86_64_EBIZ12.1.1_DB_VIS_PVM	251048	owi_pool	Active	Oct 11, 2010 10:18:59 PM
<input type="radio"/>	OVM_EL5U3_X86_64_EBIZ12.1.1_APPS_VIS_PVM	51365	owi_pool	Active	Oct 11, 2010 10:09:10 PM
<input type="radio"/>	OVM_EL5U5_X86_64_PVM_10GB	12700	owi_pool	Active	May 17, 2010 2:39:08 PM

Refresh in:

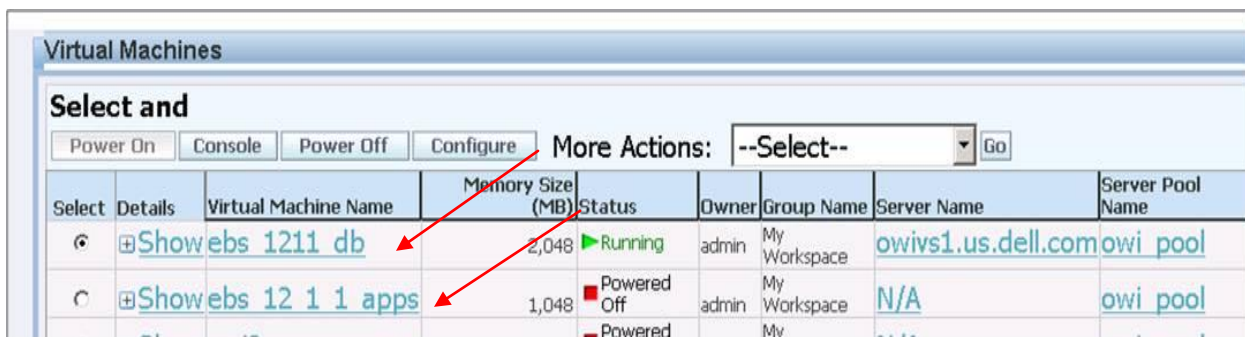
Create VMs using two templates



Pick the imported VM template to create VMs



Once these two VM were created, we started up two VMs. The DB VM (ebsvmdb) needed to be started first.



First time we logged in to the DB through the VM console in the VM manager, we can see that the DB VM started to reconfiguring itself by calling the ebiz_1211_ereconfig.sh scrip, a part of Oracle virtualization toolkit embedded in the VM template . In the background, this script will call Oracle EBS R12 Rapid clone script: adclone.pl The reconfiguration process is prompting the administrator to enter the instance specific configuration such as the network configuration, instance name , DB name and so on. The following screen shot shows the process:

```

Enter hostname (e.g, host.domain.com): ebsvmdb.us.dell.com

Network configuration changed successfully.
IP configuration: Static IP address
IP address:      155.16.9.31
Netmask:         255.255.0.0
Gateway:         155.16.0.1
DNS server:      155.16.0.1
Hostname:        ebsvmdb.us.dell.com
ip_tables: (C) 2000-2006 Netfilter Core Team

Copyright (c) 2002 Oracle Corporation
Redwood Shores, California, USA

Oracle Applications Rapid Clone

Version 12.0.0

adcfgclone Version 120.31.12010000.1

Enter the APPS password :

Running:
/u01/E-BIZ/12.1.1/UIS/db/tech_st/11.1.0/apputil/clone/bin/../jre/bin/java -Xmx600M -cp /u01/E-BIZ/12.1.1/UIS/db/tech_st/11.1.0/apputil/clone/jlib/java:/u01/E-BIZ/12.1.1/UIS/db/tech_st/11.1.0/apputil/clone/jlib/xmlparserv2.jar:/u01/E-BIZ/12.1.1/UIS/db/tech_st/11.1.0/apputil/clone/jlib/ojdbc5.jar:/u01/E-BIZ/12.1.1/UIS/db/tech_st/11.1.0/apputil/clone/jlib/oracle.apps.ad.context.CloneContext -e /u01/E-BIZ/12.1.1/UIS/db/tech_st/11.1.0/apputil/clone/bin/../context/db/CTXORIG.xml -validate -pairsfile /tmp/adpairsfile_3935.lst -stage /u01/E-BIZ/12.1.1/UIS/db/tech_st/11.1.0/apputil/clone 2> /tmp/adcfgclone_3935.err; echo $? > /tmp/adcfgclone_3935.res

Log file located at /u01/E-BIZ/12.1.1/UIS/db/tech_st/11.1.0/apputil/clone/bin/CloneContext_101619447.log

Provide the values required for creation of the new Database Context file.

Target System Hostname (virtual or normal) [ebsvmdb] : _

```

```

Version 12.0.0

adcfgclone Version 120.31.12010000.1

Enter the APPS password :

Running:
/u01/E-BIZ/12.1.1/UIS/db/tech_st/11.1.0/apputil/clone/bin/../jre/bin/java -Xmx600M -cp /u01/E-BIZ/12.1.1/UIS/db/tech_st/11.1.0/apputil/clone/jlib/java:/u01/E-BIZ/12.1.1/UIS/db/tech_st/11.1.0/apputil/clone/jlib/xmlparserv2.jar:/u01/E-BIZ/12.1.1/UIS/db/tech_st/11.1.0/apputil/clone/jlib/ojdbc5.jar:/u01/E-BIZ/12.1.1/UIS/db/tech_st/11.1.0/apputil/clone/jlib/oracle.apps.ad.context.CloneContext -e /u01/E-BIZ/12.1.1/UIS/db/tech_st/11.1.0/apputil/clone/bin/../context/db/CTXORIG.xml -validate -pairsfile /tmp/adpairsfile_3935.lst -stage /u01/E-BIZ/12.1.1/UIS/db/tech_st/11.1.0/apputil/clone 2> /tmp/adcfgclone_3935.err; echo $? > /tmp/adcfgclone_3935.res

Log file located at /u01/E-BIZ/12.1.1/UIS/db/tech_st/11.1.0/apputil/clone/bin/CloneContext_101619447.log

Provide the values required for creation of the new Database Context file.

Target System Hostname (virtual or normal) [ebsvmdb] :
Target Instance is RAC (y/n) [n] : n
Target System Database SID : ebsdb
Target System Base Directory : /u01/E-BIZ/12.1.1/UIS
Target System utl_file_dir Directory List : /usr/tmp
Number of DATA_TOP's on the Target System [1] :
Target System DATA_TOP Directory 1 [/u01/E-BIZ/12.1.1/UIS/db/apps_st/data] :
Target System RDBMS ORACLE_HOME Directory [/u01/E-BIZ/12.1.1/UIS/db/tech_st/11.1.0] :
Do you want to preserve the Display [null] (y/n) ? :

```



```

VNC: Xen-62_ebs_1211_db
/u01/E-BIZ/12.1.1/UIS/db/tech_st/11.1.0/appsutil/template/adxdbctx.tmp

The new database context file has been created :
/u01/E-BIZ/12.1.1/UIS/db/tech_st/11.1.0/appsutil/ebsdb_ebsvmdb.xml

Log file located at /u01/E-BIZ/12.1.1/UIS/db/tech_st/11.1.0/appsutil/clone/bin/CloneContext_1016194347.log
Check Clone Context logfile /u01/E-BIZ/12.1.1/UIS/db/tech_st/11.1.0/appsutil/clone/bin/CloneContext_1016194347.log for details.

Running Rapid Clone with command:
perl /u01/E-BIZ/12.1.1/UIS/db/tech_st/11.1.0/appsutil/clone/bin/adclone.pl java=/u01/E-BIZ/12.1.1/UIS/db/tech_st/11.1.0/appsutil/clone/bin/.../jre mode=apply stage=/u01/E-BIZ/12.1.1/UIS/db/tech_st/11.1.0/appsutil/clone component=dbTier method=CUSTOM dbctxtg=/u01/E-BIZ/12.1.1/UIS/db/tech_st/11.1.0/appsutil/ebsdb_ebsvmdb.xml showProgress contextValidated=true
Running:
perl /u01/E-BIZ/12.1.1/UIS/db/tech_st/11.1.0/appsutil/clone/bin/adclone.pl java=/u01/E-BIZ/12.1.1/UIS/db/tech_st/11.1.0/appsutil/clone/bin/.../jre mode=apply stage=/u01/E-BIZ/12.1.1/UIS/db/tech_st/11.1.0/appsutil/clone component=dbTier method=CUSTOM dbctxtg=/u01/E-BIZ/12.1.1/UIS/db/tech_st/11.1.0/appsutil/ebsdb_ebsvmdb.xml showProgress contextValidated=true
APPS Password :

Beginning database tier Apply - Sat Oct 16 19:48:53 2010

/u01/E-BIZ/12.1.1/UIS/db/tech_st/11.1.0/appsutil/clone/bin/.../jre/bin/java -Xmx600M -DCONTEXT_VALIDATED=true -Doracle.installer.oui_loc=/u01/E-BIZ/12.1.1/UIS/db/tech_st/11.1.0/oui -classpath /u01/E-BIZ/12.1.1/UIS/db/tech_st/11.1.0/appsutil/clone/jlib/xmlparserv2.jar:/u01/E-BIZ/12.1.1/UIS/db/tech_st/11.1.0/appsutil/clone/jlib/odbc6.jar:/u01/E-BIZ/12.1.1/UIS/db/tech_st/11.1.0/appsutil/clone/jlib/.../java:/u01/E-BIZ/12.1.1/UIS/db/tech_st/11.1.0/appsutil/clone/jlib/oui/OraInstaller.jar:/u01/E-BIZ/12.1.1/UIS/db/tech_st/11.1.0/appsutil/clone/jlib/oui/ewt3.jar:/u01/E-BIZ/12.1.1/UIS/db/tech_st/11.1.0/appsutil/clone/jlib/oui/share.jar:/u01/E-BIZ/12.1.1/UIS/db/tech_st/11.1.0/appsutil/clone/jlib/oui/srv.jar:/u01/E-BIZ/12.1.1/UIS/db/tech_st/11.1.0/appsutil/clone/jlib/omisc.jar oracle.apps.ad.clone.f
ApplyDBTier -e /u01/E-BIZ/12.1.1/UIS/db/tech_st/11.1.0/appsutil/ebsdb_ebsvmdb.xml -stage /u01/E-BIZ/12.1.1/UIS/db/tech_st/11.1.0/appsutil/clone -showProgress
APPS Password : Log file located at /u01/E-BIZ/12.1.1/UIS/db/tech_st/11.1.0/appsutil/log/ebsdb_ebsvmdb/ApplyDBTier_10161948.log
:      0% completed

```

Then we started up the APPS tier VM (ebsvmapp) to reconfigure itself:

Virtual Machines

Select and

Power On

Console

Power Off

Configure

More Actions:

--Select--

Go

Select	Details	Virtual Machine Name	Memory Size (MB)	Status	Owner	Group Name	Server Name
<input checked="" type="radio"/>	<div>Show</div>	ebs 1211 db	2,048	Running	admin	My Workspace	owivs1.us.dell.com
<input type="radio"/>	<div>Show</div>	ebs 12 1 1 apps	1,048	Running	admin	My Workspace	owivs1.us.dell.com

Figure : startup Apps tier VM (VM name :ebs12_1_1_apps) (hostname: ebsvmapps):

Automatic reconfiguring APPS VM by calling rapid clone adclone.pl utility


```

VNC: Xen-59_ebs_12.1.1_apps
Bringing up interface eth0: [ OK ]

Enter hostname (e.g, host.domain.com): ebsvmapp.us.dell.com

Network configuration changed successfully.
IP configuration: Static IP address
IP address: 155.16.9.32
Netmask: 255.255.0.0
Gateway: 155.16.0.1
DNS server: 155.16.0.1
Hostname: ebsvmapp.us.dell.com
ip_tables: (C) 2000-2006 Netfilter Core Team

Copyright (c) 2002 Oracle Corporation
Redwood Shores, California, USA

Oracle Applications Rapid Clone

Version 12.0.0

adcfgclone Version 120.31.12010000.1

Enter the APPS password :

Running:
/u01/E-BIZ/12.1.1/UIS/apps/apps_st/comm/clone/bin/./jre/bin/java -Xmx600M -
/apps/apps_st/comm/clone/jlib/java:/u01/E-BIZ/12.1.1/UIS/apps/apps_st/comm/c
r:/u01/E-BIZ/12.1.1/UIS/apps/apps_st/comm/clone/jlib/ojdbc14.jar oracle.apps
-e /u01/E-BIZ/12.1.1/UIS/apps/apps_st/comm/clone/bin/./context/apps/CTXORI
le /tmp/adpairsfile_3917.lst -stage /u01/E-BIZ/12.1.1/UIS/apps/apps_st/comm/
e_3917.err; echo $? > /tmp/adcfgclone_3917.res

Log file located at /u01/E-BIZ/12.1.1/UIS/apps/apps_st/comm/clone/bin/CloneC
Provide the values required for creation of the new APPL_TOP Context file.
Target System Hostname (virtual or normal) [ebsvmapp] : ebsvmapp_

```

```

VNC: Xen-59_ebs_12.1.1_apps

Target System Base Directory : /u01/E-BIZ/12.1.1/UIS
Target System Tools ORACLE_HOME Directory [/u01/E-BIZ/12.1.1/UIS/apps/tech_st/10.1.2] :
Target System Web ORACLE_HOME Directory [/u01/E-BIZ/12.1.1/UIS/apps/tech_st/10.1.3] :
Target System APPL_TOP Directory [/u01/E-BIZ/12.1.1/UIS/apps/apps_st/appl] :
Target System COMMON_TOP Directory [/u01/E-BIZ/12.1.1/UIS/apps/apps_st/comm] :
Target System Instance Home Directory [/u01/E-BIZ/12.1.1/UIS/inst] :
Target System Root Service [enabled] :
Target System Web Entry Point Services [enabled] :
Target System Web Application Services [enabled] :
Target System Batch Processing Services [enabled] :
Target System Other Services [disabled] :
Do you want to preserve the Display [atgtxk-10:0.0] (y/n) ? : n
Target System Display [ebsvmapp:0.0] :
Do you want the the target system to have the same port values as the source system (y/n) :
Target System Port Pool [0-99] : 0
Checking the port pool 0
done: Port Pool 0 is free
Report file located at /u01/E-BIZ/12.1.1/UIS/inst/apps/ebsdb_ebsvmapp/admin/out/portpool.lst
Complete port information available at /u01/E-BIZ/12.1.1/UIS/inst/apps/ebsdb_ebsvmapp/admin
pool.lst

```

```

Running Rapid Clone with command:
perl /u01/E-BIZ/12.1.1/UIS/apps/apps_st/comm/clone/bin/adclone.pl java=/u01/E-BIZ/12.1.1/UIS/apps/ap
ps_st/comm/clone/bin/.../jre mode=apply stage=/u01/E-BIZ/12.1.1/UIS/apps/apps_st/comm/clone component
=appsTier method=CUSTOM appctxtg=/u01/E-BIZ/12.1.1/UIS/inst/apps/ebsdb_ebsvmapp/appl/admin/ebsdb_ebs
vmapp.xml showProgress contextValidated=true
Running:
perl /u01/E-BIZ/12.1.1/UIS/apps/apps_st/comm/clone/bin/adclone.pl java=/u01/E-BIZ/12.1.1/UIS/apps/ap
ps_st/comm/clone/bin/.../jre mode=apply stage=/u01/E-BIZ/12.1.1/UIS/apps/apps_st/comm/clone component
=appsTier method=CUSTOM appctxtg=/u01/E-BIZ/12.1.1/UIS/inst/apps/ebsdb_ebsvmapp/appl/admin/ebsdb_ebs
vmapp.xml showProgress contextValidated=true
APPS Password :

Beginning application tier Apply - Sat Oct 16 21:25:22 2010

/u01/E-BIZ/12.1.1/UIS/apps/apps_st/comm/clone/bin/.../jre/bin/java -Xmx600M -DCONTEXT_VALIDATED=true
-Doracle.installer.oui_loc=/oui -classpath /u01/E-BIZ/12.1.1/UIS/apps/apps_st/comm/clone/jlib/xmlpa
rserve2.jar:/u01/E-BIZ/12.1.1/UIS/apps/apps_st/comm/clone/jlib/ojdbc14.jar:/u01/E-BIZ/12.1.1/UIS/apps
/apps_st/comm/clone/jlib/java:/u01/E-BIZ/12.1.1/UIS/apps/apps_st/comm/clone/jlib/oui/OraInstaller.ja
r:/u01/E-BIZ/12.1.1/UIS/apps/apps_st/comm/clone/jlib/oui/ewt3.jar:/u01/E-BIZ/12.1.1/UIS/apps/apps_st
/comm/clone/jlib/oui/share.jar:/u01/E-BIZ/12.1.1/UIS/apps/apps_st/comm/clone/jlib/oui/srvrm.jar:/u01/
E-BIZ/12.1.1/UIS/apps/apps_st/comm/clone/jlib/ojmisc.jar oracle.apps.ad.clone.ApplyAppsTier -e /u01/
E-BIZ/12.1.1/UIS/inst/apps/ebsdb_ebsvmapp/appl/admin/ebsdb_ebsvmapp.xml -stage /u01/E-BIZ/12.1.1/UIS
/apps/apps_st/comm/clone -showProgress
APPS Password : Log file located at /u01/E-BIZ/12.1.1/UIS/inst/apps/ebsdb_ebsvmapp/admin/log/ApplyApp
psTier_18162125.log
\ 62% completed

```

Database instance ebsdb running on DB tier server VM:

```

XEN: Xen-62_ebs_1211_db
Enterprise Linux Enterprise Linux Server release 5.3 (Carthage)
Kernel 2.6.18-128.0.0.2.el5xen on an x86_64

ebsvmdb login: root
Password:
[root@ebsvmdb ~]# ps -ef | grep oracle
oracle      8038      1  0 19:52 ?        00:00:00 /u01/E-BIZ/12.1.1/UIS/db/tech_st/
ebsdb -inherit
oracle      8668      1  0 19:55 ?        00:00:00 ora_pmon_ebsdb
oracle      8670      1  0 19:55 ?        00:00:00 ora_ckpt_ebsdb
oracle      8674      1  0 19:55 ?        00:00:00 ora_diag_ebsdb
oracle      8676      1  0 19:55 ?        00:00:00 ora_dbrm_ebsdb
oracle      8678      1  0 19:55 ?        00:00:00 ora_psp0_ebsdb
oracle      8680      1  0 19:55 ?        00:00:00 ora_dia0_ebsdb
oracle      8682      1  0 19:55 ?        00:00:00 ora_mman_ebsdb
oracle      8684      1  0 19:55 ?        00:00:00 ora_dbw0_ebsdb
oracle      8686      1  0 19:55 ?        00:00:00 ora_lgwr_ebsdb
oracle      8688      1  0 19:55 ?        00:00:00 ora_ckpt_ebsdb
oracle      8690      1  0 19:55 ?        00:00:00 ora_smon_ebsdb
oracle      8692      1  0 19:55 ?        00:00:00 ora_reco_ebsdb
oracle      8694      1  0 19:55 ?        00:00:00 ora_mmon_ebsdb
oracle      8696      1  0 19:55 ?        00:00:00 ora_mmm1_ebsdb
oracle      8707      1  0 19:56 ?        00:00:00 ora_fbda_ebsdb
oracle      8711      1  0 19:56 ?        00:00:00 ora_gmnc_ebsdb
oracle      8713      1  0 19:57 ?        00:00:00 ora_q000_ebsdb
oracle      8715      1  0 19:57 ?        00:00:00 ora_q001_ebsdb
oracle      8717      1  0 19:57 ?        00:00:00 ora_q002_ebsdb
oracle      8719      1  0 19:57 ?        00:00:00 ora_q003_ebsdb
oracle      8721      1  0 19:57 ?        00:00:00 ora_q004_ebsdb
oracle      8755      1  0 19:57 ?        00:00:00 ora_cjq0_ebsdb
root        9496    9468  0 20:02 tty1      00:00:00 grep oracle
[root@ebsvmdb ~]#

```

After we got both Apps tier VM and DB tier VM up, we can startup Oracle E-Business 12.1.1 Vision Instance on ebsvmapp. Now we have the EBS 12.1.1 Vision instance running on the VMs.

Oracle EBS 12.1.2 Vision instance configuration based on VM:

Apps Tier: VM name: ebs_1211_apps Hostname: ebsvmapp.us.dell.com, IP: 155.16.9.32

DB Tier: VM name: ebs_1211_db, hostname: ebsvmdb.us.dell.com, IP: 155.16.9.31

Database name: ebsdb



Step 2: Clone APPS and DB from DEV Instance. This includes:

1. Before we cloned the apps tier and DB tier, ran the preclone scripts on the Apps tier node and DB tier node of the physical servers:
 - adpreclone on gfsdevapps (APPS server)
 - adpreclone on gfsdevdb (DB server)
2. Copy Apps tier and DB tier from physical machine to VMs:
 - . Copy the following from gfsdevapps to ebsvmapps
/u01/oracle/gfsd/ → /u01/E-BIZ/12.1.1/VIS
 - . Copy the following the database files and Oracle Database software from gfsdevdb to ebsvmdb
/u01/oracle/gfsd/db → /u01/E-BIZ/12.1.1/VIS/db

Step 3: Reconfigure the VMs to adapt the cloned EBS instance

In this step, we need to accomplish four tasks:

1. cleanup to remove instance specific configuration from vision instance by running this on both Apps tier VM ebsvmapps and DB tier ebsvmdb
/usr/sbin/oraclevm-template -cleanup t
2. Setup for automatic reconfiguration by running this on Apps tier VM ebsvmapps and DB tier ebsvmdb:
/usr/sbin/oraclevm-template -enable:

This set a flag to run automatic reconfiguration next time when the VM startup

- 3: Reconfigure the DB tier by rebooting the DB VM ebs_1211_db (hostname: ebsvmdb)
The automatic reconfiguration process will kick off and run the DB reconfiguration script: ebiz_1211_reconfig.sh. This script runs the rapid clone adclone.pl dbtier . The following screen shots shows the interactive reconfiguration process.

```
Console : ebs_1211_db
[ Disconnect | Options | Clipboard | Record | Send Ctrl-Alt-Del | Refresh ]
Hardware address: 00:16:3E:7E:C6:6D
Enter static IP address: 155.6.9.31
Enter netmask: [255.255.0.0]
Enter gateway: 155.16.0.1
Enter DNS server: 155.16.0.1
Shutting down interface eth0: [ OK ]
Shutting down loopback interface: [ OK ]
Configuring network settings.
IP configuration: Static IP address
Bringing up loopback interface: [ OK ]
Bringing up interface eth0: [ OK ]
Enter hostname (e.g, host.domain.com): ebsvmdb.us.dell.com
Network configuration changed successfully.
IP configuration: Static IP address
IP address: 155.6.9.31
Netmask: 255.255.0.0
Gateway:
DNS server: 155.16.0.1
Hostname: ebsvmdb.us.dell.com
ip_tables: (C) 2000-2006 Netfilter Core Team
Copyright (c) 2002 Oracle Corporation
Redwood Shores, California, USA
Oracle Applications Rapid Clone
Version 12.0.0
adcfgclone Version 120.31.12010000.1
Enter the APPS password : _
```

```
Console : ebs_1211_db
[ Disconnect | Options | Clipboard | Record | Send Ctrl-Alt-Del | Refresh ]
Enter the APPS password :
Running:
/u01/E-BIZ/12.1.1/UIS/db/tech_st/11.1.0/appsubtil/clone/bin/./jre/bin/java -Xmx600M -cp /
2.1.1/UIS/db/tech_st/11.1.0/appsubtil/clone/jlib/java:/u01/E-BIZ/12.1.1/UIS/db/tech_st/11.
1/clone/jlib/xmlparserv2.jar:/u01/E-BIZ/12.1.1/UIS/db/tech_st/11.1.0/appsubtil/clone/jlib/
oracle.apps.ad.context.CloneContext -e /u01/E-BIZ/12.1.1/UIS/db/tech_st/11.1.0/appsubtil/c
/context/db/CTXORIG.xml -validate -pairsfile /tmp/adpairsfile_3927.lst -stage /u01/E-BIZ/
db/tech_st/11.1.0/appsubtil/clone 2> /tmp/adcfgclone_3927.err; echo $? > /tmp/adcfgclone_
Log file located at /u01/E-BIZ/12.1.1/UIS/db/tech_st/11.1.0/appsubtil/clone/bin/CloneConte
22.log
Provide the values required for creation of the new Database Context file.
Target System Hostname (virtual or normal) [ebsvmdb] : ebsvmdb
Target Instance is RAC (y/n) [n] : n
Target System Database SID : ebsdb
Target System Base Directory : /u01/E-BIZ/12.1.1/UIS
Target System utl_file_dir Directory List : /usr/tmp
Number of DATA_TOP's on the Target System [1] : 1
Target System DATA_TOP Directory 1 [/u01/oracle/gfsd/db/apps_st/data] : /u01/E-BIZ/12.1.1
s_data
RC-00002: Warning: Directory /u01/E-BIZ/12.1.1/UIS/db/apps_data not found.
Target System DATA_TOP Directory 1 [/u01/oracle/gfsd/db/apps_st/data] : /u01/E-BIZ/12.1.1
s_st/data
Target System RDBMS ORACLE_HOME Directory [/u01/E-BIZ/12.1.1/UIS/db/tech_st/11.1.0] :
Do you want to preserve the Display [null] (y/n) ? : y
```



```

Beginning application tier Apply - Wed Nov 10 08:48:04 2010

/u01/E-BIZ/12.1.1/VIS/apps/apps_st/comm/clone/bin/./jre/bin/java -Xmx600M -DCONTEXT_VALIDATED=true
-Doracle.installer.oui_loc=/oui -classpath /u01/E-BIZ/12.1.1/VIS/apps/apps_st/comm/clone/jlib/xmlpa
rserve2.jar:/u01/E-BIZ/12.1.1/VIS/apps/apps_st/comm/clone/jlib/ojdbc14.jar:/u01/E-BIZ/12.1.1/VIS/apps
/apps_st/comm/clone/jlib/java:/u01/E-BIZ/12.1.1/VIS/apps/apps_st/comm/clone/jlib/oui/OraInstaller.ja
r:/u01/E-BIZ/12.1.1/VIS/apps/apps_st/comm/clone/jlib/oui/ewt3.jar:/u01/E-BIZ/12.1.1/VIS/apps/apps_st
/comm/clone/jlib/oui/share.jar:/u01/E-BIZ/12.1.1/VIS/apps/apps_st/comm/clone/jlib/oui/srvrm.jar:/u01/
E-BIZ/12.1.1/VIS/apps/apps_st/comm/clone/jlib/omisc.jar oracle.apps.ad.clone.ApplyAppsTier -e /u01
/E-BIZ/12.1.1/VIS/inst/apps/ebsdb_ebsvmapps/appl/admin/ebsdb_ebsvmapps.xml -stage /u01/E-BIZ/12.1.1/
VIS/apps/apps_st/comm/clone -showProgress
APPS Password : Log file located at /u01/E-BIZ/12.1.1/VIS/inst/apps/ebsdb_ebsvmapps/admin/log/ApplyA
ppTier_11100848.log
\      67% completed

```

4: Reconfigure the APPs tier by starting the Apps Tier VM ebs_1211_apps (hostname: ebsvmapp)

Startup the APPs tier VM (VM name, ebs_1211_apps, Linux OS hostname: ebsapps.us.dell.com)

The screenshot displays the Oracle VM Manager web interface. At the top, there's a navigation bar with tabs: Virtual Machines, Resources, Servers, Server Pools, and Administration. Below this, a status bar shows 'Refresh in: 30 seconds' and buttons for 'Refresh' and 'Create Virtual Machine'. The main content area is titled 'Virtual Machines' and contains a table with columns: Select, Details, Virtual Machine Name, Memory Size (MB), Status, Owner, Group Name, Server Name, and Server Pool Name. Two VMs are listed: 'ebs_1211_db' and 'ebs_1211_apps'. The 'ebs_1211_apps' VM is highlighted, showing it is in a 'Running' state with 1,048 MB of memory. A sidebar on the left shows a tree view of virtual machines under 'All Virtual Machines'.

Select	Details	Virtual Machine Name	Memory Size (MB)	Status	Owner	Group Name	Server Name	Server Pool Name
<input type="radio"/>	Show	ebs_1211_db	2,048	Running	admin	My Workspace	owvs2.us.dell.com	owi_pool
<input checked="" type="radio"/>	Show	ebs_1211_apps	1,048	Running	admin	My Workspace	owivs1.us.dell.com	owi_pool

Login to ebs_12_11_apps VM console . the automatic reconfiguration process will kick off and run the reconfiguration script: ebiz_1211_reconfig.sh. This script runs the rapid clone adclone.pl appstier . The following screen shots shows the interactive reconfiguration process to reconfigure the APPs tier OS and Applications:

```

Disconnect | Options | Clipboard | Record | Send Ctrl-Alt-Del | Refresh
Hardware address: 00:16:3E:75:AC:A1

Enter static IP address: 155.16.9.32
Enter netmask: [255.255.0.0]
Enter gateway: 155.16.0.1
Enter DNS server: 155.16.0.1

Shutting down interface eth0: [ OK ]
Shutting down loopback interface: [ OK ]

Configuring network settings.
  IP configuration: Static IP address

Bringing up loopback interface: [ OK ]
Bringing up interface eth0: [ OK ]

Enter hostname (e.g, host.domain.com): ebsvmapps.us.dell.com

Network configuration changed successfully.
  IP configuration: Static IP address
  IP address: 155.16.9.32
  Netmask: 255.255.0.0
  Gateway: 155.16.0.1
  DNS server: 155.16.0.1
  Hostname: ebsvmapps.us.dell.com
ip_tables: (C) 2000-2006 Netfilter Core Team

Copyright (c) 2002 Oracle Corporation
Redwood Shores, California, USA

Oracle Applications Rapid Clone

Version 12.0.0

adcfclone Version 120.31.12010000.1

Enter the APPS password :
```


Console : ebs_12.1.1_apps

Disconnect	Options	Clipboard	Record	Send Ctrl-Alt-Del	Refresh
------------	---------	-----------	--------	-------------------	---------

Version 12.0.0

adcfgclone Version 120.31.12010000.1

Enter the APPS password :

Running:

```

/u01/E-BIZ/12.1.1/UIS/apps/apps_st/comm/clone/bin/./jre/bin/java -Xmx600M -cp /u01/E-BIZ/12.1.1/UIS/apps/apps_st/comm/clone/jlib/java:/u01/E-BIZ/12.1.1/UIS/apps/apps_st/comm/clone/jlib/xmlparserv2.jar:/u01/E-BIZ/12.1.1/UIS/apps/apps_st/comm/clone/jlib/ojdbc14.jar oracle.apps.ad.context.CloneContext -e /u01/E-BIZ/12.1.1/UIS/apps/apps_st/comm/clone/bin/./context/apps/CTXORIG.xml -validate -pairsfile /tmp/adpairsfile_3928.lst -stage /u01/E-BIZ/12.1.1/UIS/apps/apps_st/comm/clone 2> /tmp/adcfgclone_3928.err; echo $? > /tmp/adcfgclone_3928.res

```

Log file located at /u01/E-BIZ/12.1.1/UIS/apps/apps_st/comm/clone/bin/CloneContext_1110083918.log

Provide the values required for creation of the new APPL_TOP Context file.

Target System Hostname (virtual or normal) [ebsvmapps] : ebsvmapps

Target System Database SID : ebsdb

Target System Database Server Node [ebsvmapps] : ebsvmdb

Target System Base Directory : /u01/E-BIZ/12.1.1/UIS

Target System Tools ORACLE_HOME Directory [/u01/E-BIZ/12.1.1/UIS/apps/tech_st/10.1.2] :

Target System Web ORACLE_HOME Directory [/u01/E-BIZ/12.1.1/UIS/apps/tech_st/10.1.3] :

Target System APPL_TOP Directory [/u01/E-BIZ/12.1.1/UIS/apps/apps_st/appl] :

Target System COMMON_TOP Directory [/u01/E-BIZ/12.1.1/UIS/apps/apps_st/comm] :

Target System Instance Home Directory [/u01/E-BIZ/12.1.1/UIS/inst] :

Target System Root Service [enabled] : _

Console : ebs_12_1_1_apps

```
Disconnect Options Clipboard Record Send Ctrl-Alt-Del Refresh

Creating the new APPL_TOP Context file from :
/u01/E-BIZ/12.1.1/VIS/apps/apps_st/appl/ad/12.0.0/admin/template/adxmlctx.tmp

The new APPL_TOP context file has been created :
/u01/E-BIZ/12.1.1/VIS/inst/apps/ebsdb_ebsvmapps/appl/admin/ebsdb_ebsvmapps.xml

Log file located at /u01/E-BIZ/12.1.1/VIS/apps/apps_st/comm/clone/bin/CloneContext_1110083918.log
Check Clone Context logfile /u01/E-BIZ/12.1.1/VIS/apps/apps_st/comm/clone/bin/CloneContext_1110083918.log for details.

Running Rapid Clone with command:
perl /u01/E-BIZ/12.1.1/VIS/apps/apps_st/comm/clone/bin/adclone.pl java=/u01/E-BIZ/12.1.1/VIS/apps/apps_st/comm/clone/bin/.../jre mode=apply stage=/u01/E-BIZ/12.1.1/VIS/apps/apps_st/comm/clone component=appsTier method=CUSTOM appctxtg=/u01/E-BIZ/12.1.1/VIS/inst/apps/ebsdb_ebsvmapps/appl/admin/ebsdb_ebsvmapps.xml showProgress contextValidated=true
Running:
perl /u01/E-BIZ/12.1.1/VIS/apps/apps_st/comm/clone/bin/adclone.pl java=/u01/E-BIZ/12.1.1/VIS/apps/apps_st/comm/clone/bin/.../jre mode=apply stage=/u01/E-BIZ/12.1.1/VIS/apps/apps_st/comm/clone component=appsTier method=CUSTOM appctxtg=/u01/E-BIZ/12.1.1/VIS/inst/apps/ebsdb_ebsvmapps/appl/admin/ebsdb_ebsvmapps.xml showProgress contextValidated=true
APPS Password :

Beginning application tier Apply - Wed Nov 10 08:48:04 2010

/u01/E-BIZ/12.1.1/VIS/apps/apps_st/comm/clone/bin/.../jre/bin/java -Xmx600M -DCONTEXT_VALIDATED=true
-Doracle.installer.oui_loc=/oui -classpath /u01/E-BIZ/12.1.1/VIS/apps/apps_st/comm/clone/jlib/xmlparserv2.jar:/u01/E-BIZ/12.1.1/VIS/apps/apps_st/comm/clone/jlib/ojdbc14.jar:/u01/E-BIZ/12.1.1/VIS/apps/apps_st/comm/clone/jlib/java:/u01/E-BIZ/12.1.1/VIS/apps/apps_st/comm/clone/jlib/oui/OraInstaller.jar:/u01/E-BIZ/12.1.1/VIS/apps/apps_st/comm/clone/jlib/oui/ewt3.jar:/u01/E-BIZ/12.1.1/VIS/apps/apps_st/comm/clone/jlib/oui/share.jar:/u01/E-BIZ/12.1.1/VIS/apps/apps_st/comm/clone/jlib/oui/srvrm.jar:/u01/E-BIZ/12.1.1/VIS/apps/apps_st/comm/clone/jlib/ojmisc.jar oracle.apps.ad.clone.ApplyAppsTier -e /u01/E-BIZ/12.1.1/VIS/inst/apps/ebsdb_ebsvmapps/appl/admin/ebsdb_ebsvmapps.xml -stage /u01/E-BIZ/12.1.1/VIS/apps/apps_st/comm/clone -showProgress
APPS Password : Log file located at /u01/E-BIZ/12.1.1/VIS/inst/apps/ebsdb_ebsvmapps/admin/log/ApplyAppsTier_11100848.log
/ 1% completed
```

Then we startup new EBS instance: ebsvm on VMs(host:ebsvmapps)

Oracle EBS 12.1.2 clone instance configuration based on VM:

Apps Tier: VM name: ebs_1211_apps, Hostname: ebsvmapps.us.dell.com, IP: 155.16.9.32


DB Tier: VM name: ebs_1211_db, hostname: ebsvmdb.us.dell.com, IP: 155.16.9.31


Database name: ebsdb



Address http://ebsvmapps.us.dell.com:8000/OA_HTML/RF.jsp?function_id=28716&resp_id=-1&resp_appl_id=-1&security_group_id=0&lang_code=US¶ms=5s8V1320zKtYUOSKxvukg8oas=nsTB0RDRy8glvFhupt Go Links

ORACLE





*User Name
(example: michael.james.smith)

*Password
(example: 4u99v23)

Login Cancel

Login Assistance

Accessibility

Select a Language:
English

ORACLE Applications Manager Support Cart Setup Home Logout Help

Applications Dashboard Site Map

Oracle Applications Hosts: ebsdb
Last Updated : 10-Nov-2010 12:00:18

Filter contains Go

Select Host and ... Go

Select Details Name	State	Status	Platform	Description
<input type="radio"/> Show EBSVMAPPS	Online	✓	Linux x86-64 (64-bit)	
<input type="radio"/> Show EBSVMDB	Online	✓	Linux x86-64 (64-bit)	

*Let's review the Oracle EBS database on the VM and its original database on physical server:
the ebsvmdb on virtual machine ebs_12_11_db(OS hostname: ebsvmdev)*



Console : ebs_1211_db

```
Disconnect Options Clipboard Record Send Ctrl-Alt-Del Refresh
[oracle@ebsvmdb data]$ pwd
/u01/E-BIZ/12.1.1/VIS/db/apps_st/data
[oracle@ebsvmdb data]$ ls
a_archive01.dbf      a_ref02.dbf      a_txn_ind03.dbf    log01b.dbf      system01.dbf
a_int01.dbf          a_ref03.dbf      a_txn_ind04.dbf    log02a.dbf      system02.dbf
a_int02.dbf          a_summ01.dbf     a_txn_ind05.dbf    log02b.dbf      system03.dbf
a_media01.dbf        a_txn_data01.dbf a_txn_ind06.dbf    odm.dbf         system04.dbf
a_nolog01.dbf        a_txn_data02.dbf cntrl01.dbf        olap.dbf        system05.dbf
apps_ts_tools01.dbf a_txn_data03.dbf cntrl02.dbf        owad01.dbf      system06.dbf
a_queue01.dbf        a_txn_data04.dbf cntrl03.dbf        portal01.dbf     system07.dbf
a_queue02.dbf        a_txn_ind01.dbf  ctxd01.dbf         sysaux01.dbf     system08.dbf
a_ref01.dbf          a_txn_ind02.dbf log01a.dbf         sysaux02.dbf     system09.dbf
[oracle@ebsvmdb data]$ du -hs
44G
```

is the clone of the it's original database on the physical server gfsdevdb

```
oracle@gfsdevdb:/u01/oracle/gfsd/db/apps_st/data
[oracle@gfsdevdb data]$ pwd
/u01/oracle/gfsd/db/apps_st/data
[oracle@gfsdevdb data]$ ls
a_archive01.dbf      a_ref02.dbf      a_txn_ind03.dbf    log01b.dbf      system01.dbf
a_int01.dbf          a_ref03.dbf      a_txn_ind04.dbf    log02a.dbf      system02.dbf
a_int02.dbf          a_summ01.dbf     a_txn_ind05.dbf    log02b.dbf      system03.dbf
a_media01.dbf        a_txn_data01.dbf a_txn_ind06.dbf    odm.dbf         system04.dbf
a_nolog01.dbf        a_txn_data02.dbf cntrl01.dbf        olap.dbf        system05.dbf
apps_ts_tools01.dbf a_txn_data03.dbf cntrl02.dbf        owad01.dbf      system06.dbf
a_queue01.dbf        a_txn_data04.dbf cntrl03.dbf        portal01.dbf     system07.dbf
a_queue02.dbf        a_txn_ind01.dbf  ctxd01.dbf         sysaux01.dbf     system08.dbf
a_ref01.dbf          a_txn_ind02.dbf log01a.dbf         sysaux02.dbf     system09.dbf
[oracle@gfsdevdb data]$ du -hs
44G
```

In the Oracle home, it still keeps two environment files:

gfsd_gfsdevdb.env is copy from the physical server *gfsdevdb* with the database instance name *gfsd*

ebsdb_ebsvmdb.env is generated nby the *adclone* utility for new instance on VM host *ebsvmdb* with the database instance name: *ebsdb*

```

[oracle@ebsvmdb 11.1.0]$ ls
admin          csmig          install        lib            opmn
apex           css            install.platform  lib32         oracore
appsutil      ctx            instantclient  log           oradata
appsutil.zip  dbs            instantclient32 md             oraInst.loc
assistants    demo           inventory      msg           ord
bin           diag           j2ee           mgw           oui
ccr           diagnostics    javavm         network       owb
cdata        ebsdb_ebsvmdb.env  jdbc          nls           owm
cfgtoollogs  emcli          jdk            oc4j          perl
clone        gfsd_gfsdevdb.env  jlib          odbc          plsqli
config       has            jpub          olap          precomp
crs          hs             ldap           OPatch       racg

[oracle@ebsvmdb 11.1.0]$ ls -l *.env
-rw-r--r-- 1 oracle oinstall 4320 Nov 10 08:16 ebsdb_ebsvmdb.env
-rw-r--r-- 1 oracle oinstall 4208 Oct 18 17:33 gfsd_gfsdevdb.env
[oracle@ebsvmdb 11.1.0]$ _

```

```

[oracle@ebsvmdb admin]$ pwd
/u01/E-BIZ/12.1.1/UIS/db/tech_st/11.1.0/network/admin
[oracle@ebsvmdb admin]$ ls -l
total 32
drwxr-xr-x 2 oracle oinstall 4096 Nov 10 08:16 ebsdb_ebsvmdb
drwxr-xr-x 2 oracle oinstall 4096 Nov 10 07:45 gfsd_gfsdevdb
drwxr-xr-x 2 oracle oinstall 4096 Nov 26 2008 samples
-rw-r--r-- 1 oracle oinstall 187 May 8 2007 shrept.lst

```

The screen shot above shows under the network admin director of the ORACLE_HOME there are two directories named after the Oracle EBS instance context name in format: <instancename>_<hostname>:

Original EBS instance gfsd on physical host gfsdevdb : gfsd_gfsdevdb

Cloned and reconfigured EBS instance ebddb on virtual host ebsvmdb: ebsdb_ebsvmdb

The two context names above show new EBS Instance ebsvm = gfsdev copy + Rapid Clone

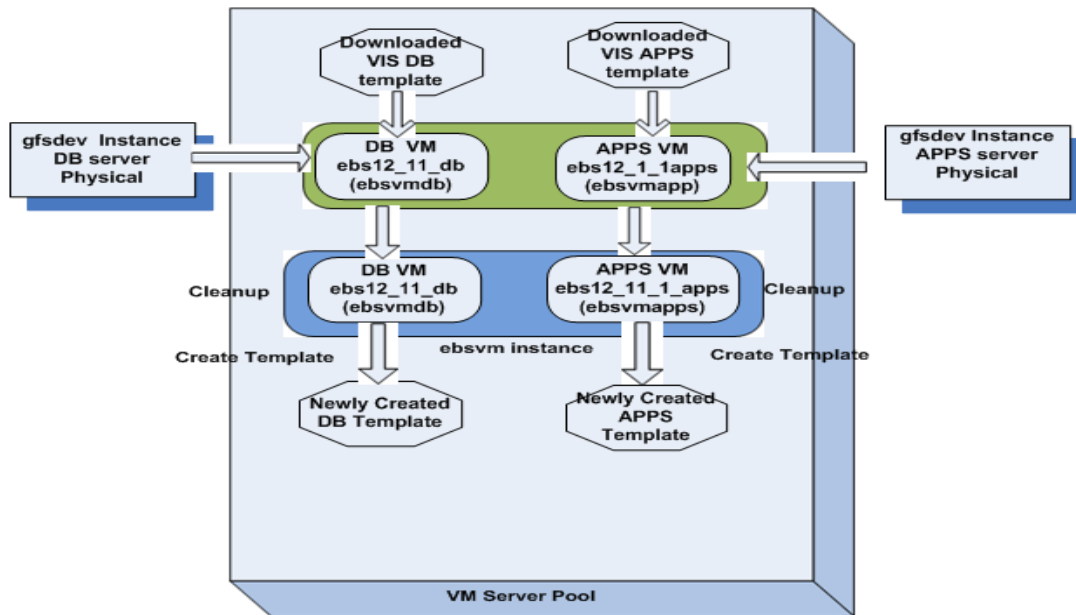
The two new VM hosts ebsvmdb and ebsvmapps VMs also have the virtualization kit scripts

: /usr/sbin/oraclevm-template ,

/u01/ebiz_1211_reconfig.sh

Create a New EBS Template

Once we successfully completed the migration process, we have the copy of the DEV instance running on Oracle VMs. And this copy not only has everything the original EBS instance DEV has, including the business data, customization and setups, these two VMs ebs12_11_db and ebs12_11_apps also have the Oracle EBS virtualization toolkits that can be used to create the new EBS VM template. The following diagram shows the VM template creation.



Cleanup Instance specific configuration and set reconfiguration flag

Before we can use the new EBS VMs `ebs12_11_db` and `ebs12_11_apps` to create the new Oracle VM template, we need to cleanup the instance specific configuration such as instance name, DB name, IP address, pool number and set reconfigure flag to enable the automatic reconfiguration.

We performed the following steps on both VM hosts :

- Shutdown the database on DB tier and applications on APPS tier.
- Run the following cleanup command on both VM hosts:
`/usr/sbin/oraclevm-template -cleanup`
`/usr/sbin/oraclevm-template -enable`

Create VM templates based on the new EBS VMs

To create a VM template based on this two Oracle EBS VMs, we first shutdown both APPS tier VM `ebs12_11_db` and DB tier VM `ebs12_11_apps` VM . From Oracle VM manager, select the VM and take action "Save As Template" to create the responding VM templates as shown in following diagram:

Virtual Machines

Select and

Power On

Console

Power Off

Configure

More Actions:

Save As Template

Select	Details	Virtual Machine Name	Memory Size (MB)	Status	Owner	Group Name	Server N
<input type="radio"/>	Show	ebs 1211 db	2,048	Powered Off	admin	My Workspace	N/A
<input checked="" type="radio"/>	Show	ebs 12 1 1 apps	1,048	Powered Off	admin	My Workspace	N/A
<input type="radio"/>	Show	owi2	8,192	Powered Off	admin	My Workspace	N/A
<input type="radio"/>	Show	15 owi1	8,192	Powered Off	admin	My Workspace	N/A

Create APPS Template `EL5U3_EBX1211_DEV_APPS_PVM` using `ens_12_1_1_apps` VM

Create Virtual Machine Template

* Virtual Machine Template Name:

EL5U3_EBZ1211_DEV_APPS_PVM

Virtual Machine Name:

ebs_12_1_1_apps

Size (MB):

75280

Status:

Powered Off

Creation Time:

Oct 11, 2010

Power-On Time:

Nov 12, 2010

Do the similar step to create VM template EL5U3_EBS1211_DEV_DB_PVM using VM ebs_1211_db.

After successfully creating these two new VM template, there two set of Oracle EBS VM templates on the registered in VM Manager template list:

EBS Vision instance VM templates download from Oracle:

OVM_EL5U3_X86_64_EBIZ12.1.1_DB_VIS_PVM 251,048 MB

OVM_EL5U3_X86_64_EBIZ12.1.1_APPS_VIS_PVM 51,365 MB

Newly created EBS DEV instance VM templates from this POC project:

EL5U3_EBS1211_DEV_DB_PVM 155,280 MB

EL5U3_EBX1211_DEV_APPS_PVM 75,280MB

Previous			
Virtual Machine Template Name	Size (MB)	Status	Creation Time
EL5U3_EBZ1211_DEV_APPS_PVM	75,280	Active	Nov 12, 2010
OVM_EL5U5_X86_64_PVM_10GB	12,700	Active	May 17, 2010
EL5U3_EBZ1211_DEV_DB_PVM	155,280	Active	Nov 12, 2010
OVM_EL5U3_X86_64_EBIZ12.1.1_DB_VIS_PVM	251,048	Active	Oct 11, 2010
OVM_EL5U3_X86_64_EBIZ12.1.1_APPS_VIS_PVM	51.365	Active	Oct 11, 2010

Create New EBS VM from the VM Template

The last step of the virtualization process is to use the templates created in last step to create new Oracle EBS instance. The following diagram shows the last piece of the puzzle.

In the similar way, Apps Tier VM *gfstestapps* was created from the new Apps tier VM template *EL5U3_EBS1211_DEV_APPS_PVM*.

Virtual Machines	
Virtual Machine Name:	gfstestapps
Enable High Availability:	true
Virtual Machine Templates	
Template Name:	EL5U3_EBS1211_DEV_APPS_PVM
Size (MB):	75280
Status:	Active
Server Pool	
Server Pool Name:	owi_pool
Status:	Active
Preferred Server:	Auto

Startup both VMs after the creation:

ORACLE VM Manager
Home Profile Logout

Virtual Machines Resources Servers Server Pools Administration

Refresh in: 30 seconds Refresh Create Virtual Machi

Virtual Machines

Show Search

All Virtual Machines
kblade_pool
owi_pool

Virtual Machines

Select and
Power On Console Power Off Configure More Actions: --Select-- Go

Select	Details	Virtual Machine Name	Memory Size (MB)	Status	Owner	Group Name	Server Name	Server Pool Name
<input checked="" type="radio"/>	Show	gfstestdb	2,048	Running	admin	My Workspace	owivs1.us.dell.com	owi_pool
<input type="radio"/>	Show	gfstestapps	1,048	Running	admin	My Workspace	owivs2.us.dell.com	owi_pool

Reconfigure the VMs

Login to the new VMs through the VM manager console, the reconfiguration process was started automatically to prompt the instance specific configuration in the similar way as we did when we created vision instance VMs using the downloaded VM template.

Console : gfstestdb

```
Disconnect | Options | Clipboard | Record | Send Ctrl-Alt-Del | Refresh |
Enter static IP address: 155.16.9.34
Enter netmask: [255.255.0.0]
Enter gateway: 155.16.0.1
Enter DNS server: 155.16.0.1

Shutting down interface eth0: [ OK ]
Shutting down loopback interface: [ OK ]

Configuring network settings.
IP configuration: Static IP address

Bringing up loopback interface: [ OK ]
Bringing up interface eth0: [ OK ]
Bringing up interface eth0_bak: [ OK ]

Enter hostname (e.g, host.domain.com): gfstestdb.us.dell.com

Network configuration changed successfully
IP configuration: Static IP address
IP address: 155.16.9.34
Netmask: 255.255.0.0
Gateway: 155.16.0.1
DNS server: 155.16.0.1
Hostname: gfstestdb.us.dell.com
ip_tables: (C) 2000-2006 Netfilter Core Team

Copyright (c) 2002 Oracle Corporation
Redwood Shores, California, USA

Oracle Applications Rapid Clone

Version 12.0.0

adcfgclone Version 120.31.12010000.1

Enter the APPS password :
```

Console : gfstestdb

```
Disconnect | Options | Clipboard | Record | Send Ctrl-Alt-Del | Refresh |
adcfgclone Version 120.31.12010000.1

Enter the APPS password :

Running:
/u01/E-BIZ/12.1.1/UIS/db/tech_st/11.1.0/appsubtil/clone/bin/./jre/bin/java -Xmx600M -cp /u01/E-BIZ/12.1.1/UIS/db/tech_st/11.1.0/appsubtil/clone/jlib/xmlparserv2.jar:/u01/E-BIZ/12.1.1/UIS/db/tech_st/11.1.0/appsubtil/clone/jlib/ojdbc5.jar
oracle.apps.ad.context.CloneContext -e /u01/E-BIZ/12.1.1/UIS/db/tech_st/11.1.0/appsubtil/clone/bin/./context/db/CTXDRIG.xml -validate -pairsfile /tmp/adpairsfile_4104.lst -stage /u01/E-BIZ/12.1.1/UIS/db/tech_st/11.1.0/appsubtil/clone > /tmp/adcfgclone_4104.err; echo $? > /tmp/adcfgclone_4104.res

Log file located at /u01/E-BIZ/12.1.1/UIS/db/tech_st/11.1.0/appsubtil/clone/bin/CloneContext_1112142122.log

Provide the values required for creation of the new Database Context file.
Target System Hostname (virtual or normal) [gfstestdb] :
Target Instance is RAC (y/n) [n] : n
Target System Database SID : gfstest
Target System Base Directory : /u01/E-BIZ/12.1.1/UIS
Target System utl_file_dir Directory List : /usr/tmp
Number of DATA_TOP's on the Target System [1] : 1
Target System DATA_TOP Directory 1 [/u01/oracle/gfsd/db/apps_st/data] : /u01/E-BIZ/12.1.1/UIS/db/apps_st/data
Target System RDBMS ORACLE_HOME Directory [/u01/E-BIZ/12.1.1/UIS/db/tech_st/11.1.0] :
Do you want to preserve the Display [null] (y/n) ? : y
Do you want the the target system to have the same port values as the source system (y/n) [y] ? : y
```

Startup the EBS database gfstest on the DB tier VM and see the database process:

Console : gfstestdb

```
Disconnect Options Clipboard Record Send Ctrl-Alt-Del Refresh
Copyright (c) 1982, 2008, Oracle. All rights reserved.

Connected.
ORA-01081: cannot start already-running ORACLE - shut it down first
Disconnected from Oracle Database 11g Enterprise Edition Release 11.1.0.7.0 - 64bit Production
With the Partitioning, OLAP, Data Mining and Real Application Testing options

addbctl.sh: exiting with status 9

foracle@gfstestdb u011$ ps -ef | grep oracle
oracle      8430      1   0 16:24 ?        00:00:00 /u01/E-BIZ/12.1.1/VIS/db/tech_st/11.1.0/bin/tnslsnr
gfstest -inherit
oracle      9059      1   0 16:27 ?        00:00:00 ora_pmon_gfstest
oracle      9061      1   0 16:27 ?        00:00:00 ora_ckpt_gfstest
oracle      9065      1   0 16:27 ?        00:00:00 ora_diag_gfstest
oracle      9067      1   0 16:27 ?        00:00:00 ora_dbrm_gfstest
oracle      9069      1   0 16:27 ?        00:00:00 ora_psp0_gfstest
oracle      9071      1   0 16:27 ?        00:00:00 ora_dia0_gfstest
oracle      9073      1   0 16:27 ?        00:00:00 ora_mman_gfstest
oracle      9075      1   0 16:27 ?        00:00:00 ora_dbw0_gfstest
oracle      9077      1   0 16:27 ?        00:00:00 ora_lgwr_gfstest
oracle      9079      1   0 16:27 ?        00:00:00 ora_ckpt_gfstest
oracle      9081      1   0 16:27 ?        00:00:00 ora_smon_gfstest
oracle      9083      1   0 16:27 ?        00:00:00 ora_reco_gfstest
oracle      9085      1   0 16:27 ?        00:00:00 ora_mmon_gfstest
oracle      9087      1   0 16:27 ?        00:00:00 ora_mml0_gfstest
oracle      9103      1   0 16:28 ?        00:00:00 ora_fbda_gfstest
oracle      9107      1   0 16:28 ?        00:00:00 ora_gmnc_gfstest
oracle      9109      1   0 16:29 ?        00:00:00 ora_q000_gfstest
oracle      9111      1   0 16:29 ?        00:00:00 ora_q001_gfstest
oracle      9113      1   0 16:29 ?        00:00:00 ora_smco_gfstest
oracle      9115      1   0 16:29 ?        00:00:00 ora_w000_gfstest
```

Login into APPs VM (gfstest1apps) OS through the VM manager console and start up the automatic reconfiguration process

```
https://155.16.9.52 - Console - Microsoft Internet Explorer
Enter DNS server: 155.16.0.1

Shutting down interface eth0: [ OK ]
Shutting down loopback interface: [ OK ]

Configuring network settings.
IP configuration: Static IP address

Bringing up loopback interface: [ OK ]
Bringing up interface eth0: [ OK ]

Enter hostname (e.g, host.domain.com): gfstest1apps.us.dell.com

Network configuration changed successfully.
IP configuration: Static IP address
IP address: 155.16.9.33
Netmask: 255.255.0.0
Gateway: 155.16.0.1
DNS server: 155.16.0.1
Hostname: gfstest1apps.us.dell.com
ip_tables: (C) 2000-2006 Netfilter Core Team

Copyright (c) 2002 Oracle Corporation
Redwood Shores, California, USA

Oracle Applications Rapid Clone

Version 12.0.0

adcfgclone Version 120.31.12010000.1

Enter the APPS password : _
```

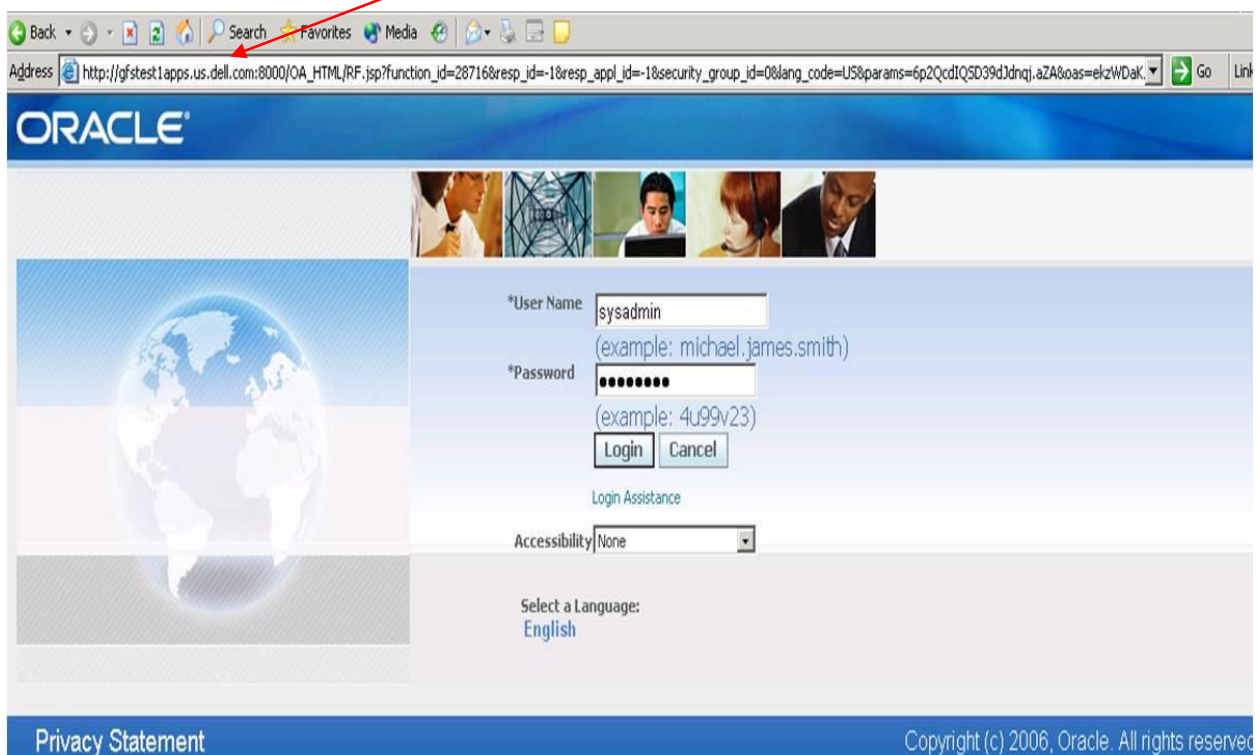

Startup up Apps VM (gfstestapps)

```

https://155.16.9.52 - Console - Microsoft Internet Explorer
Target System Database SID : gfstest
Target System Database Server Node [gfstest1apps] : gfstestdb
Target System Base Directory : /u01/E-BIZ/12.1.1/UIS
Target System Tools ORACLE_HOME Directory [/u01/E-BIZ/12.1.1/UIS/apps/tech_st/10.1.2] :
Target System Web ORACLE_HOME Directory [/u01/E-BIZ/12.1.1/UIS/apps/tech_st/10.1.3] :
Target System APPL_TOP Directory [/u01/E-BIZ/12.1.1/UIS/apps/apps_st/appl] :
Target System COMMON_TOP Directory [/u01/E-BIZ/12.1.1/UIS/apps/apps_st/comm] :
Target System Instance Home Directory [/u01/E-BIZ/12.1.1/UIS/inst1] :
Target System Root Service [enabled] :
Target System Web Entry Point Services [enabled] :
Target System Web Application Services [enabled] :
Target System Batch Processing Services [enabled] :
Target System Other Services [disabled] :
Do you want to preserve the Display [gfsdevapp:0.0] (y/n) ? : y
Do you want the the target system to have the same port values as the source system (y/n) [y
Complete port information available at /u01/E-BIZ/12.1.1/UIS/apps/apps_st/comm/clone/bin/out
_gfstest1apps/portpool.lst

```

Run autoconfig: `oracle@gfstest1apps scripts]$./adautocfg.sh` and start up the Oracle EBS apps processes,
 Login to the new Oracle EBS instance running gfstest on the new VMs gfstestdb and gfstestapps
 New Oracle E-Business Suite Instance Deployed from the Template



Applications Dashboard | Site Map

Applications Dashboard: gfstest

Navigate to

Overview | Performance | Critical Activities | Business Flows | Security | Software Updates

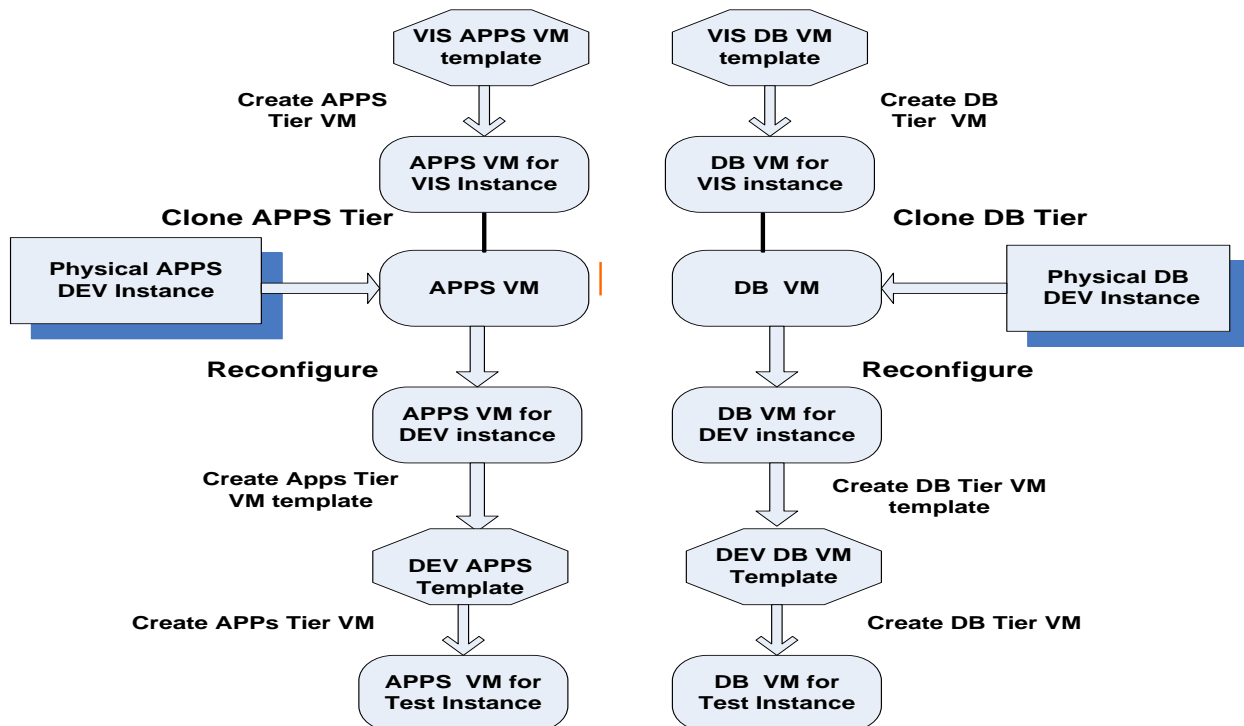
Applications System Status

Data Retrieved: 16-Nov-2010 22:33:17

Host	Platform	Host Status	Admin Database	Concurrent Processing	Forms	Web
GFSTESTDB	Linux x86-64 (64-bit)					
GFSTEST1APPS	Linux x86-64 (64-bit)					

Summary of the virtualization process

In the entire Oracle E-Business Suite virtualization process can be described in the following diagram: It started with combining the Vision Instance VM template and the physical DEV instance to migrate the DEV instance to VMs, then created the DEV instance VM template, and then used the DEV instance VM template to create new EBS VMs.



Oracle EBS High Availability on VM

One of the great benefits of running Oracle E-Business suite on Oracle VM virtualization environment is the high availability provided by the virtualized infrastructure. As Oracle VM virtualization provides the virtual machines for the applications which can be independent from an individual physical machine, the Oracle E-Business Suite application alone with the underneath Oracle VM can be moved around the physical machines with minimal or zero downtime. Depending on the unplanned or planned move, Oracle VM provides two ways to facilitate the move

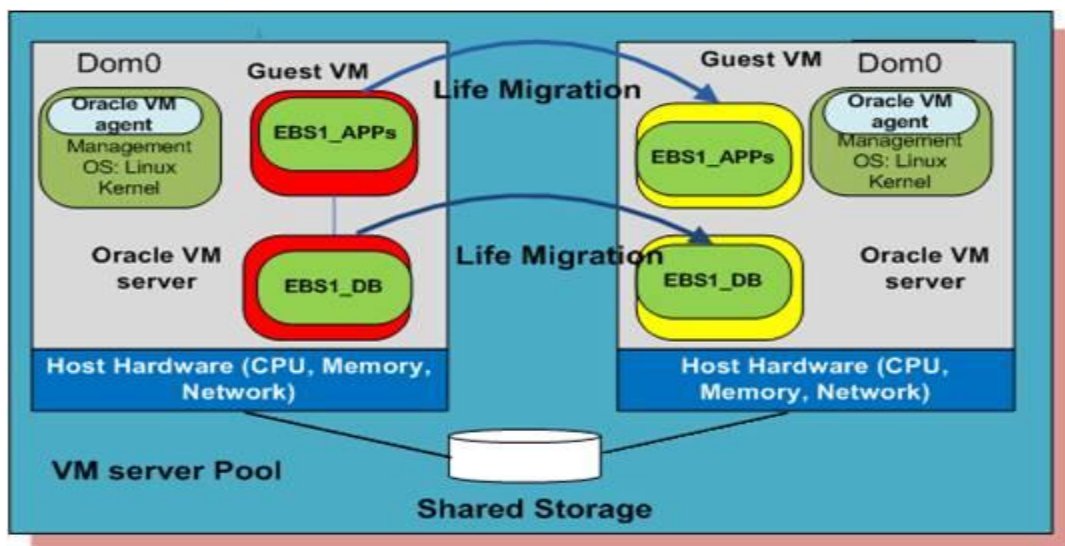
of virtual machines from one Oracle VM server running on a physical machine to another Oracle VM server running on a different physical machine:

Live migration: This option allows us to migrate the Oracle E-Business suite along with the Oracle VM (OVM) OS from one physical machine to another physical machine without any downtime. This capability is extremely useful if the administrators need to do some maintenance on a physical machine as the applications can be migrated to a new physical machine without bringing down the Oracle E-business suite instance. This can eliminate the planned downtime due to the maintenance.

Fail over: this option will allow the Oracle E-Business suite with the Oracle VM to automatically failover to another physical machine in case the physical machine that the OVM of the applications is running. The following session will explore some testing of these two High Availability options.

Live Migration

The following diagram shows the test of live migration: Oracle VM server on left has two Oracle guest VMs: one runs Apps tier, another runs the Database tier. We will test how we can migrate the guest VMs with the Oracle E-business suite applications migrate to the Oracle VM server on the right while keeping the Oracle E-Business Applications instance online.



Before we enable this live migration capability, we need to enable the HA on both VM server pool level and each VM. The following diagrams show how to enable them:

Enable HA on VM server pool

Enable HA on DB tier VM server

[Server Pools](#) > Edit Server Pool

Information

The server pools HA can be enabled.

Edit Server Pool

* Server Pool Name

owt_pool

High Availability Infrastructure

Check

Enable High Availability

☒

Virtual Machines > Virtual Machine Configure

Virtual Machines : ebs_1211_db

General

Network

Storage

Policies

Profiles

High Availability

Placement Policy

High Availability

Number of Virtual CPUs:

1

Scheduling Priority:

Intermediate

50

Scheduling Cap:

High

100

Enable High Availability:

☒

Enable HA on Apps tier VM server:

Virtual Machines : ebs_12_1_1_apps

General

Network

Storage

Policies

Profiles

High Availability

Placement Policy

High Availability

Number of Virtual CPUs:

1

Scheduling Priority:

Intermediate

50

Scheduling Cap:

High

100

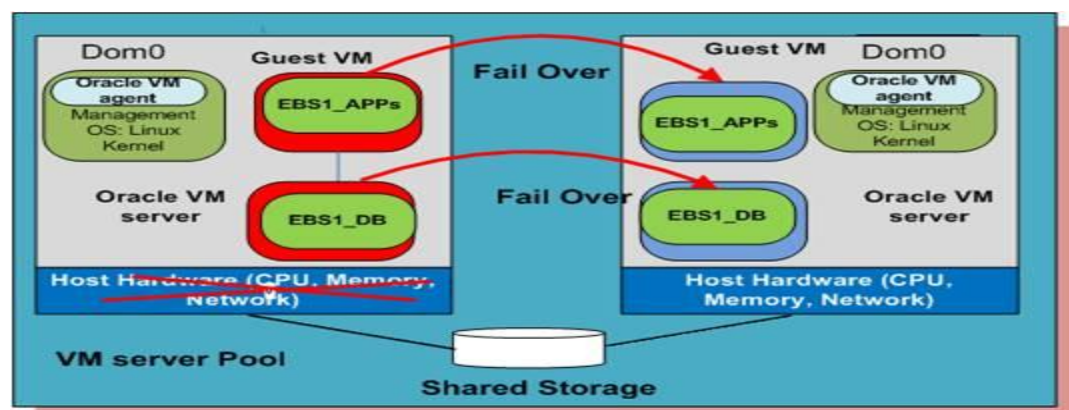
Enable High Availability:

☒

Show the live migration **to** migrate VMs to another VM server in the same VM server pool with no downtime for the Oracle E-Business Suite applications. The left screen shot shows the appsTier VM Ebs12_1_1_apps is migrating, where the right screen shot shows that the end user still can use the Oracle E-Business applications running on the VM.

Failed Over Test

The following diagram shows the test of failover of the Oracle E-Business suite VMs: In case the Oracle VM server on left fails, the two Oracle VMs EBS1_APPS and EBS2_DB have to move to the another VM server to restart.



Initially Both DB Tier VM and APPS tier VM run on OWIVS2 VM server, when the OVS server VM server went down, the both VMs went down then got restarted in OWIOVS1 VM server in less than two minutes.

Both DB and APPS
VMs run on OWIVS2 VM server

OWIVS2 VM server down

Virtual Machines

Select and

Select	Details	Virtual Machine Name	Memory Size (MB)	Status	Owner	Group Name	Server Name	Server Pool Name
<input checked="" type="radio"/>		aShowebs 1211 db	2,048	Running	admin	My Workspace	owivs2.us.dell.com	owi_pool
<input checked="" type="radio"/>		aShowebs 12 1 1 apps	1,048	Running	admin	My Workspace	owivs2.us.dell.com	owi_pool

Failed over to OWIVS1 in 1-2 minutes

Summary and Acknowledgement

In this paper, we have examined the entire process to virtualize the Oracle E-Business Suite. The process includes the step to migrate the Oracle E-Business suite Apps tier and DB tier from physical machines to Oracle virtual machine, then how to build the Oracle E-Business suite template from these Oracle VMs. The last step of the process also include the step to build the new Oracle EBS VMs using this template. To show one of the benefit of running Oracle E-Business suite in Oracle VM environment, we also examines the high availability options: live migration and failover. From the very beginning of the project, we were very lucky to have the great support and advise from Oracle EBS on Oracle VM Team chief architect and engineer Ivo Dujmovic and Noby Joseph in Oracle Corporation. Their help is greatly appreciated.

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