

Oracle VM Administration

3.3.2 Training Notes

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| V0.1 | 01/07/2013 | M Power | First Draft. |
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| | | | |

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1 Training Program Overview

This training program structured under ten sessions. Each session includes workshop activities, allowing participant to undertake specific management activities and to experience the interaction with the OVM manager, the core tool for administering OVM environments. The sessions start with an overview of Oracle's Virtualisation technologies, covering concepts and terminology. These sessions move through the core activities required to manage virtual server environments on a daily basis, to create and deploy new servers and to manage environments through their life.

The eight sessions are,

Session 1, Introduction to Oracle Virtual Machine technology

Session 2, Installing OEL 6.5 on Virtual Box for OVM Manager

Session 3, Overview of OVM Manager

Session 4, Physical Server Discovery

Session 5, Starting and stopping virtual servers

Session 6, Networking

Session 7, Storage and Repositories

Session 8, Cloning and creating new virtual servers

Session 9, Events and Errors

Session 10, Backup and Recovery

2 What you will learn

At the completion of these two sessions you will have a clear understanding of the installation of Oracle Linux 6.5 on top of an Oracle Virtual Box Virtual Machine Client, the installation of OVM Manager, its layout and use in the administration of Virtual machines.

3 Installation of Oracle Enterprise Linux 6.5 on Virtual Box.

During this session we will create a blank Virtual Box client and install OEL 6.5 for use in the installation of Oracle Virtual Machine Manager. We will use this same Virtual Machine provisioning process, covered in this second session, to create a single Oracle Virtual Server that will be discovered for use in session 4.

The following provides the steps to create a new Virtual Machine Client using Virtual Box.

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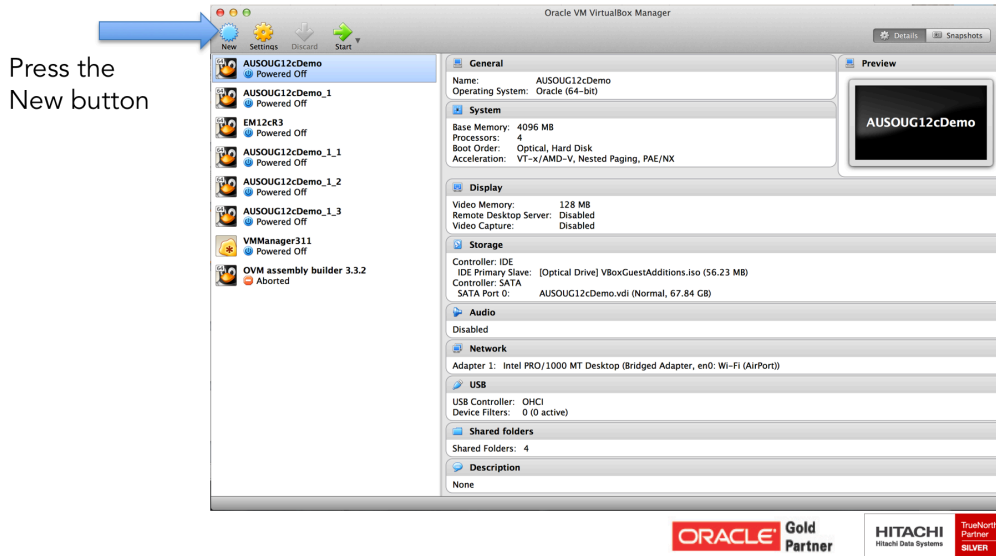
Hands on OVM build using
Oracle Virtual



Start Oracle Virtual Box and press the New Virtual Machine icon on the top menu.



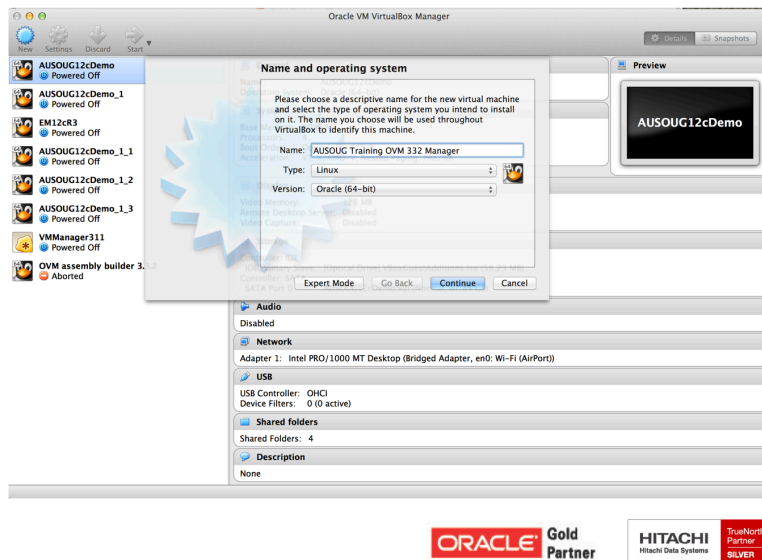
Oracle Virtual Box - Create a Linux base for OVM Manager



In the pop up box, enter a name for the Virtual Machine, Select an OS type of Linux and a Linux version 6 type installation.

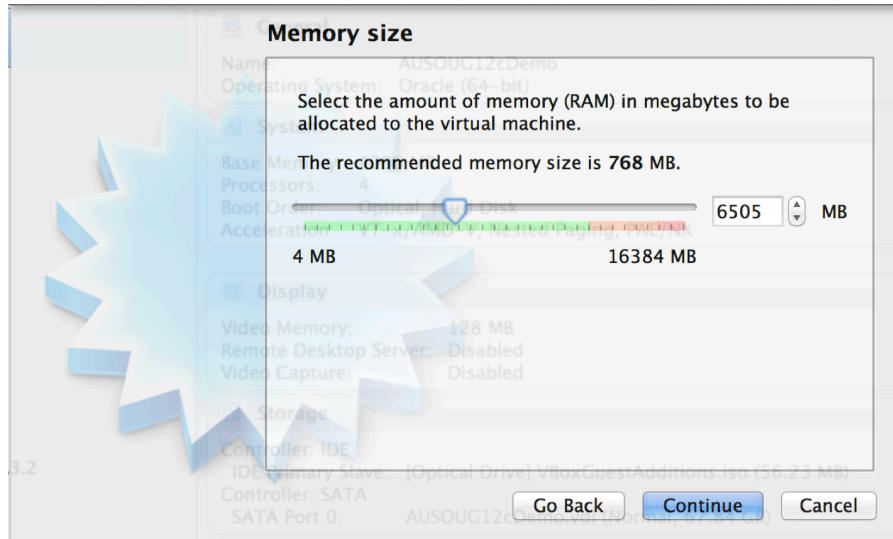


Oracle Virtual Box - Create a VM Linux base for OVM Manager



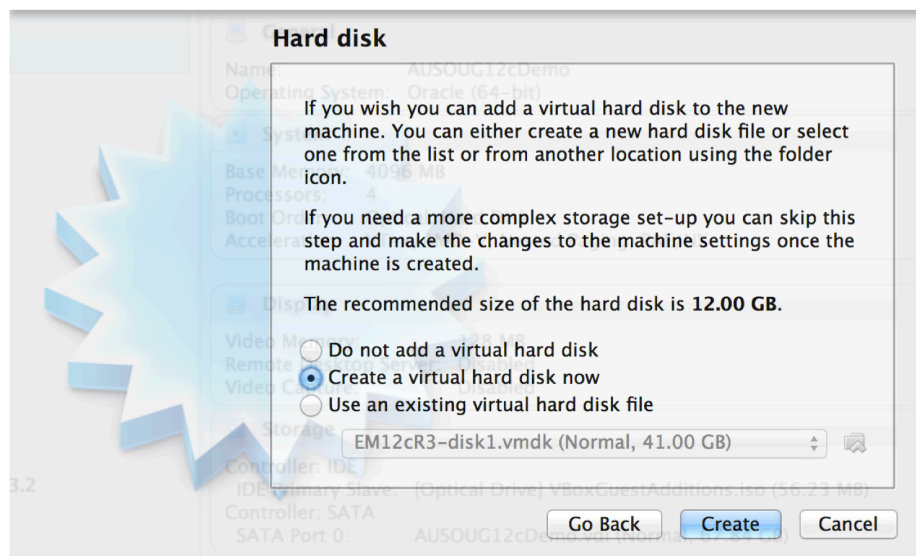
Select as close to 8GB of memory as you can on your machine. You should note that Oracle, specify a minimum memory requirement for OVM Manager of 8GB. It will however start with as little as 6GB on our test systems.

Oracle Virtual Box - Create a VM Linux base for OVM Manager



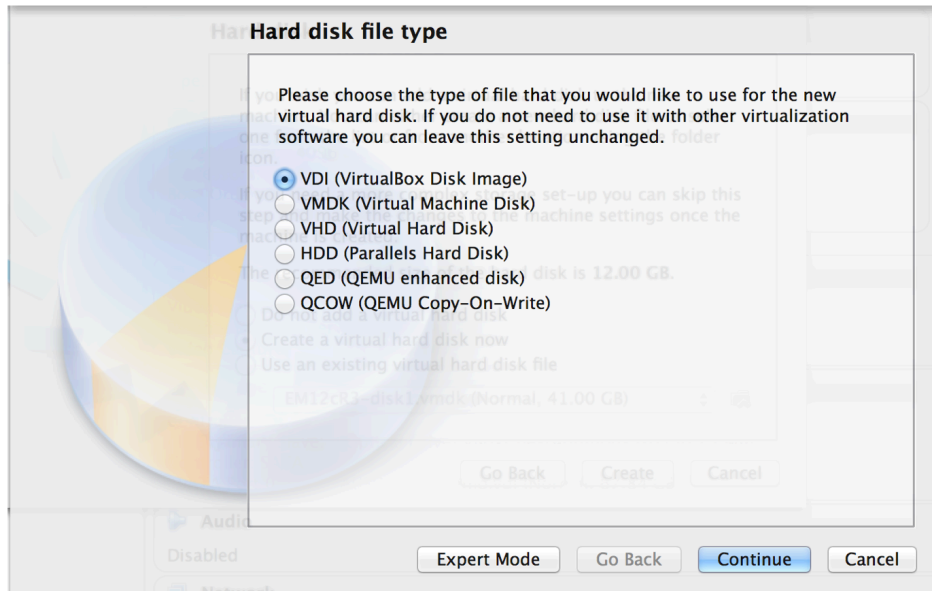
Create a virtual disk for the new Linux server installation of 80 to 100 GB. As a guide, Oracle and RedHat recommend 100 GBs as a base with 30 GB per Oracle Home being installed on the machine. Therefore, a RAC environment with Grid Infrastructure and Database requires a total of 160 GBs of disk space. We do however recommend these be split across two virtual disks, rather than creating a single 160GB disk.

Oracle Virtual Box - Create a VM Linux base for OVM Manager



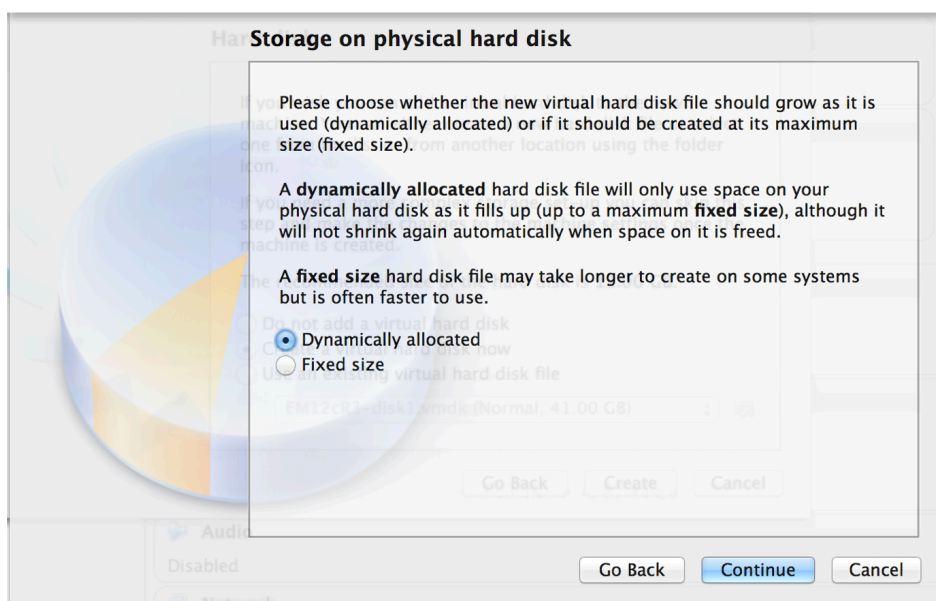
A variety of different Virtual Disk types are available, offering compatibility across different virtual machine technologies. We will select VDI, the native Virtual Box disk image, but we could select VMDK if we wish to use these systems on VMWare as well.

Oracle Virtual Box - Create a VM Linux base for OVM Manager



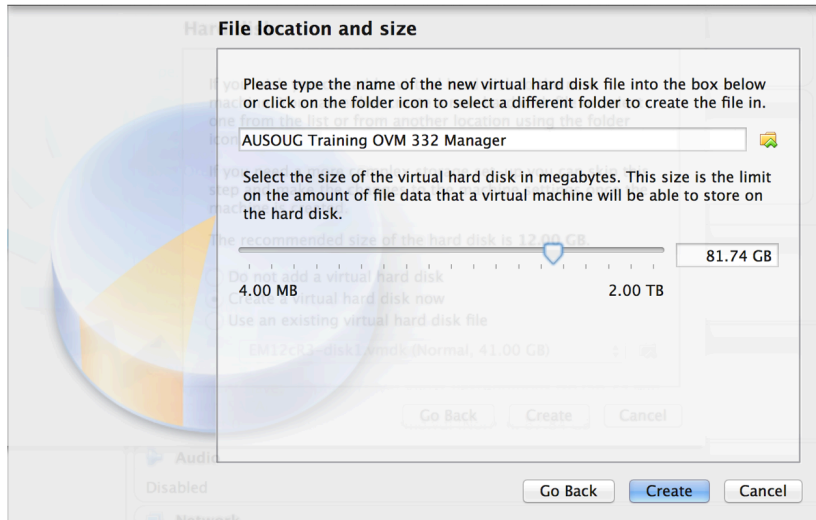
Select Dynamic allocation. In this mode space is used as it is required rather than pre-allocating space right up front. We will discuss the benefits of this later in the course, particularly when we look at OVM in enterprise deployments.

Oracle Virtual Box - Create a VM Linux base for OVM Manager



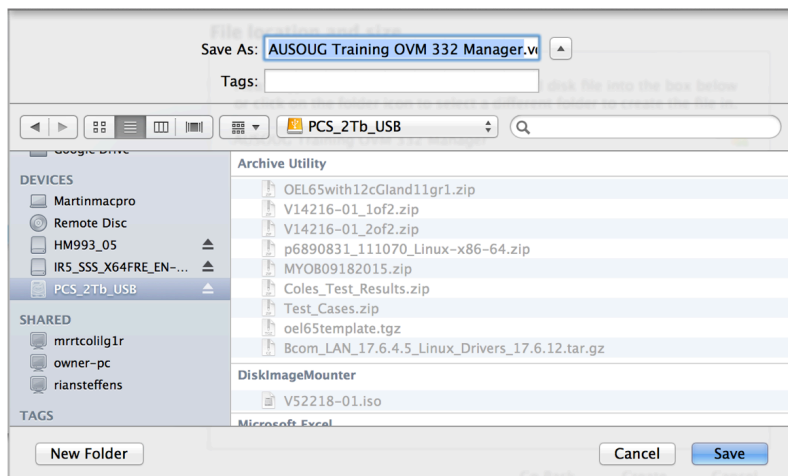
Allocate enough space for general use, between 80 and 100GB to start.

Oracle Virtual Box - Create a VM Linux base for OVM Manager



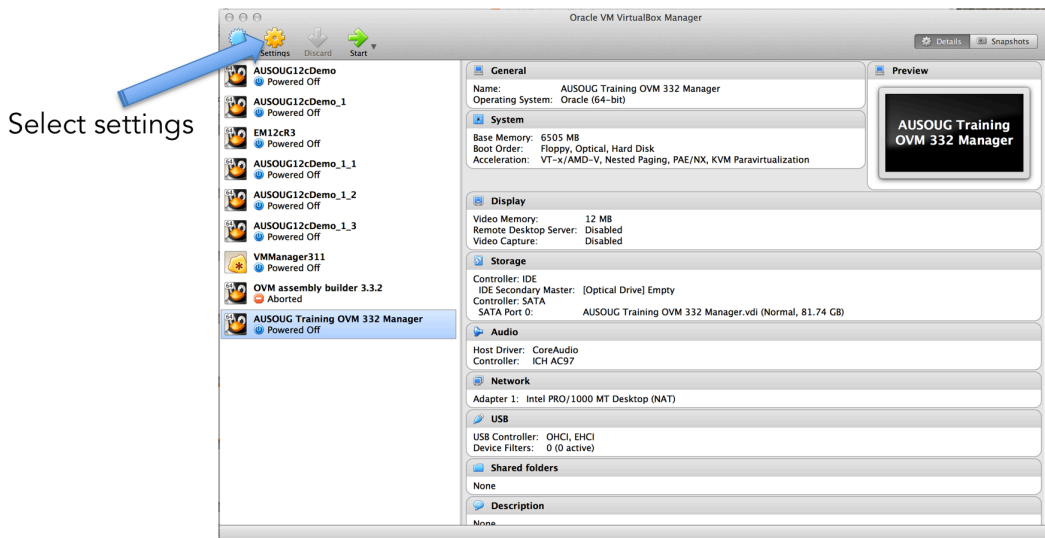
Identify the location of the VDI file, the virtual disk file used for the operating system installation.

Oracle Virtual Box - Create a VM Linux base for OVM Manager



Before starting the new Virtual Machine Client, open the settings and set up network access and other general settings to accommodate the normal operation of the virtual machine.

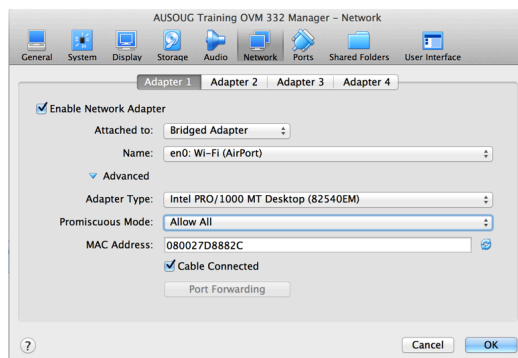
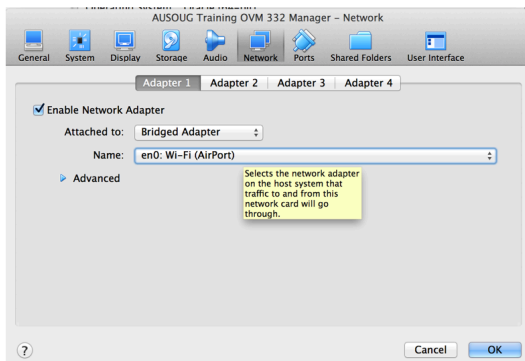
Oracle Virtual Box - Create a VM Linux base for OVM Manager



Ensure the new virtual machine is highlighted in the list of virtual machines and press the Settings button on the menu bar.

Select the Network Tab, and select a Bridged Adaptor.

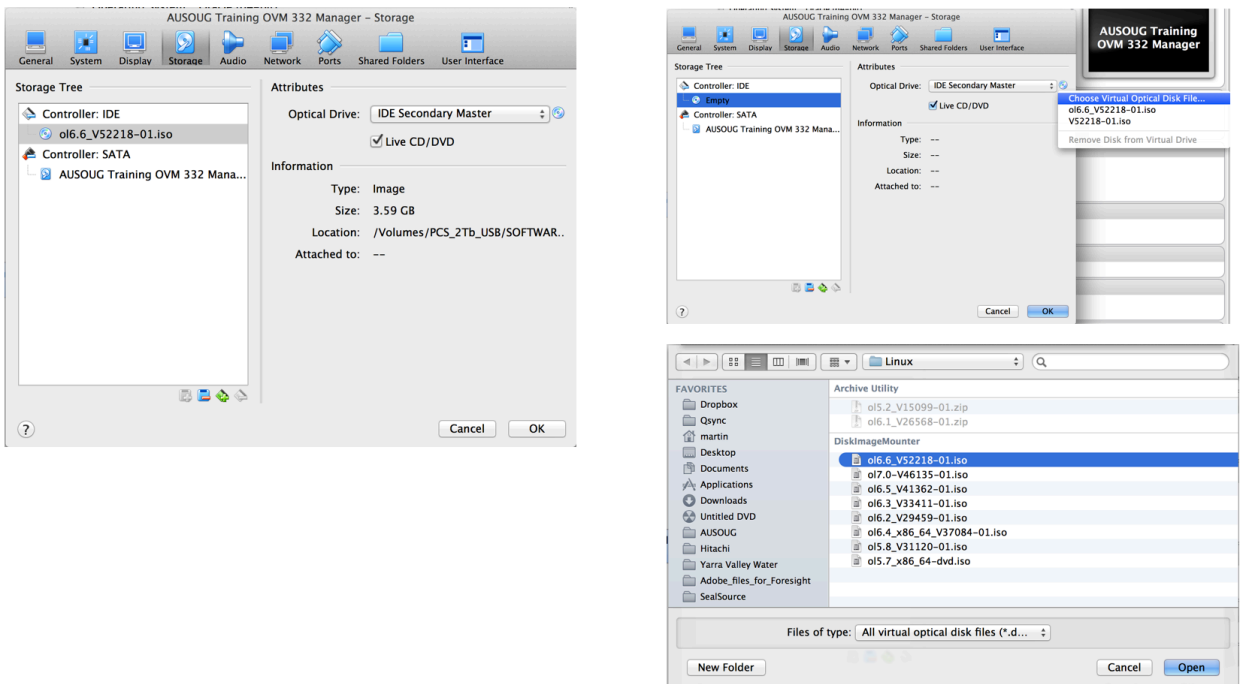
Oracle Virtual Box - Create a VM Linux base for OVM Manager



For the Bridged Adaptor to work the PS or Laptop must be physically plugged into a switch, router or Hub. The Wireless network will not work as a bridged network. Select the local physical network card from the drop down list and select the Allow All mode and ensure the cable connected tick box is selected.

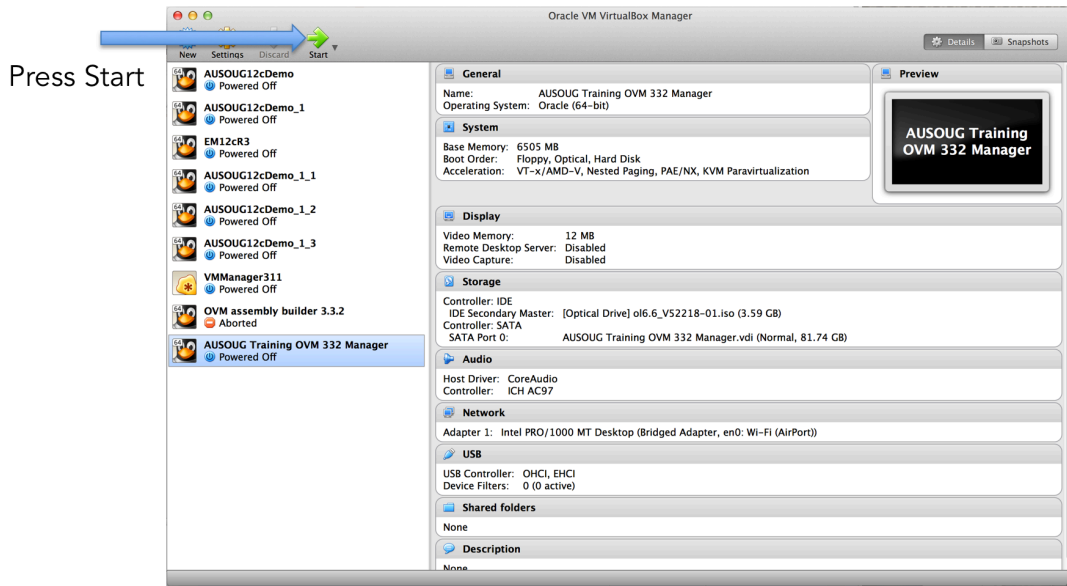
Now mount the Operating System ISO as a Live CD type and as the secondary master disk. This will allow the system to boot from the OEL 6.5 media to install the operating system, and to boot from the installed Linux operating system at the completion of the installation.

Oracle Virtual Box - Create a VM Linux base for OVM Manager



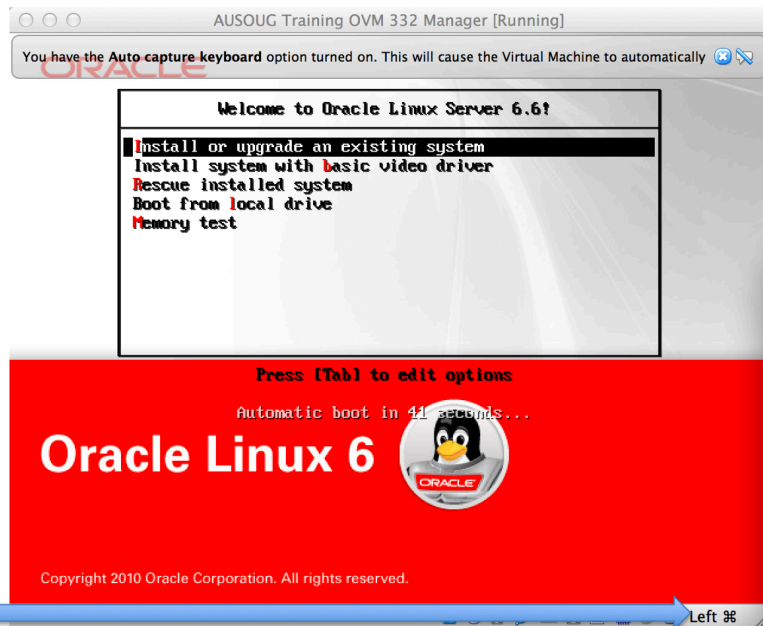
Navigate to the location of the downloaded ISO and select it as shown. Start the virtual machine and commence the operating system installation.

Oracle Virtual Box - Install the Linux base for OVM Manager



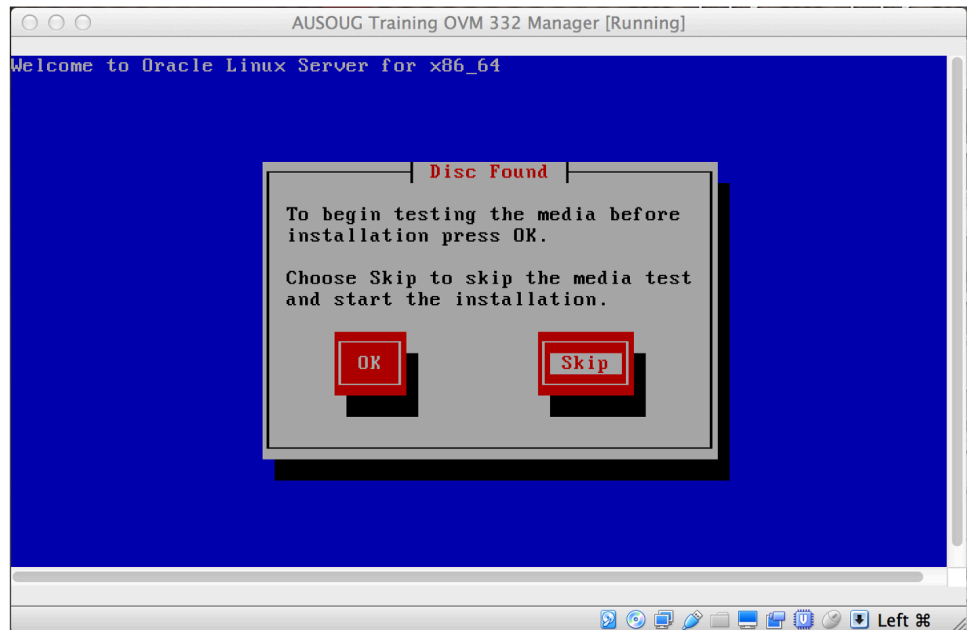
The system will display the Oracle Enterprise Linux installation screen. Select the Install or upgrade an existing system option and note the key option to exit the installation windows in the bottom right corner.

Oracle Virtual Box - Install the Linux base for OVM Manager



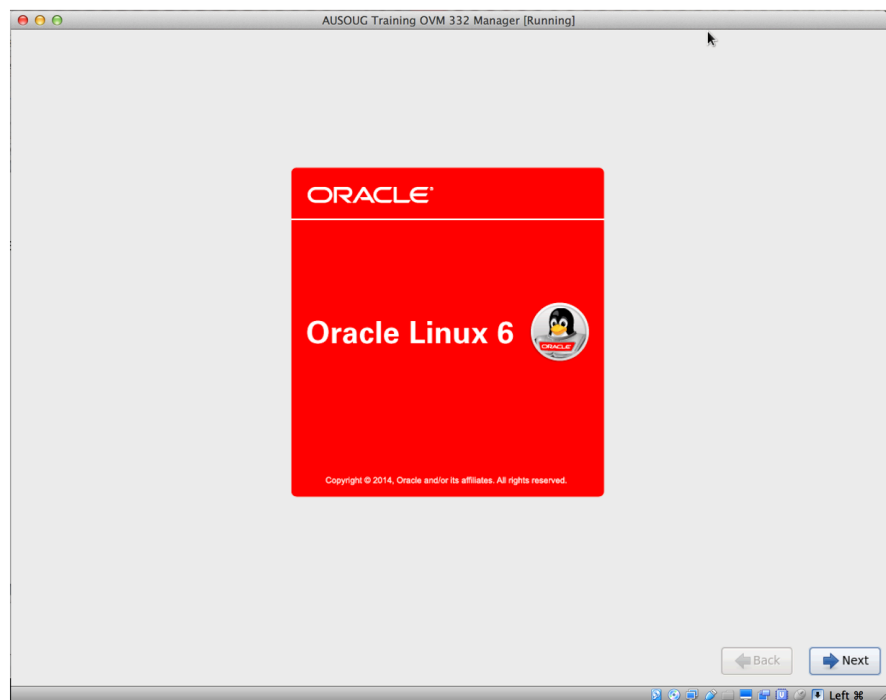
Select the Skip option to start the installation. Note: if you select the OK button the system will verify the installation ISO media, requiring a reboot to start the installation.

Oracle Virtual Box - Install the Linux base for OVM Manager



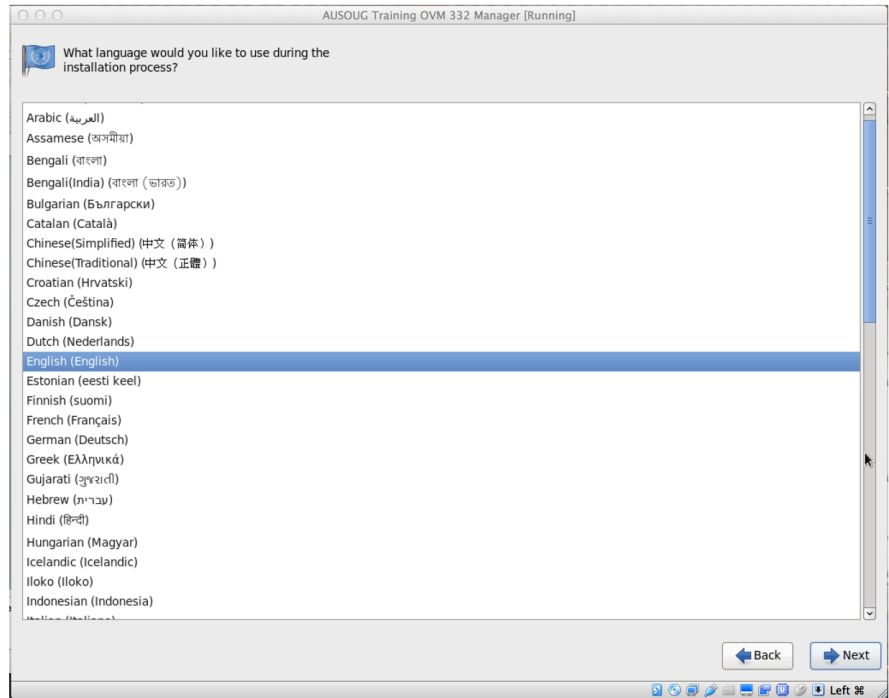
Simply press the next button on the first screen.

Oracle Virtual Box - Install the Linux base for OVM Manager



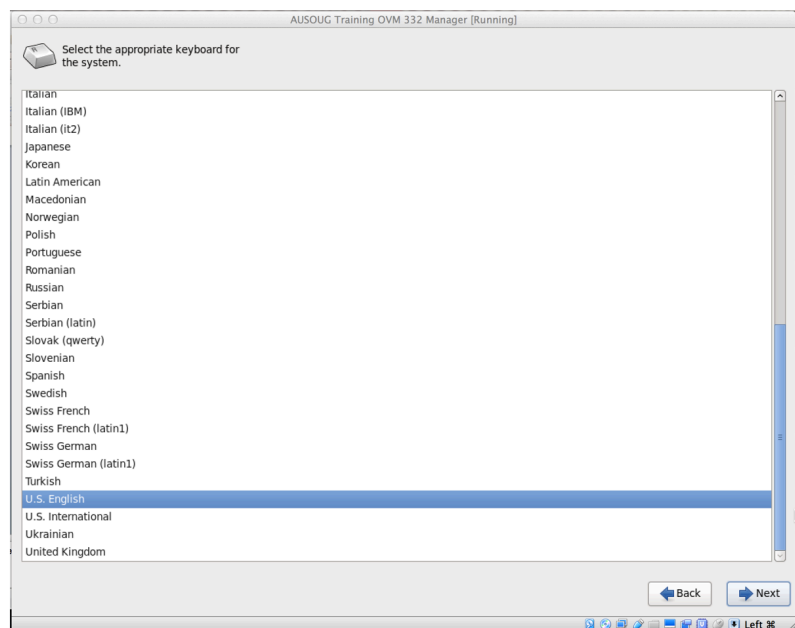
Select English, or the required language. Press the Next button.

Oracle Virtual Box - Install the Linux base for OVM Manager



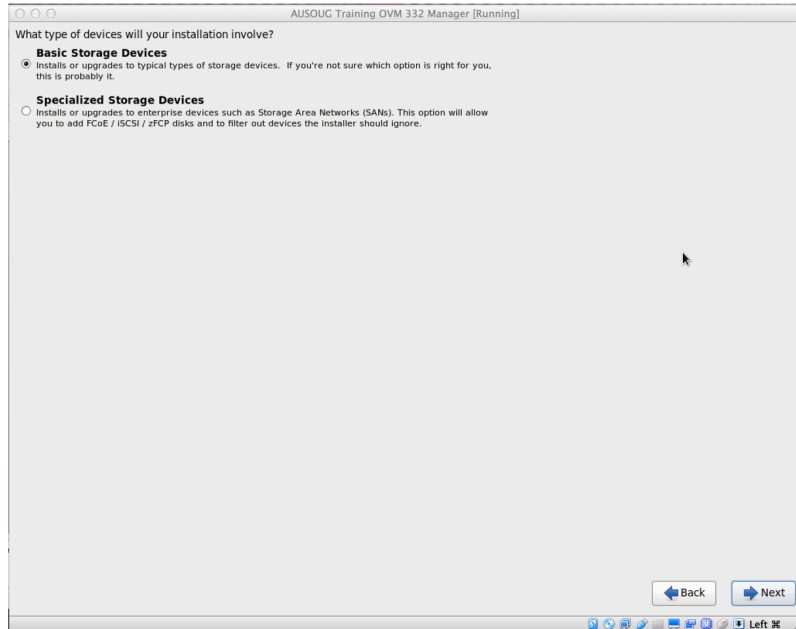
Select the Keyboard type, US English in our case. Note: selecting the United Kingdom keyboard type can have some strange key mappings, particularly the Pond key which will be mapped to the @ symbol. If this is selected, you may need to switch back to the US English to get the character set you need in a day to day environment.

Oracle Virtual Box - Install the Linux base for OVM Manager

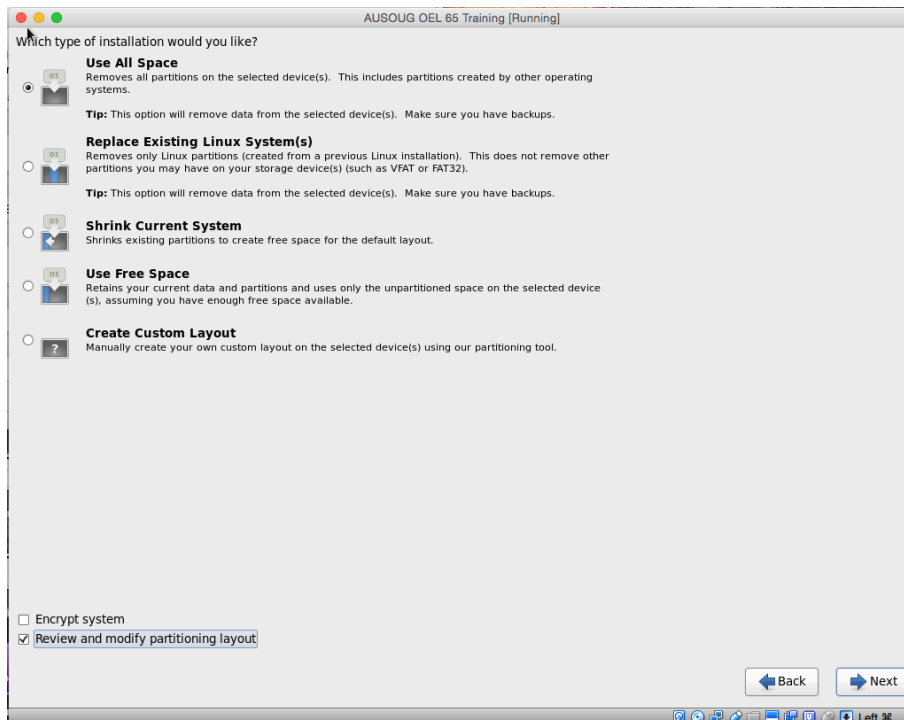


Select the Basic Disk type for a virtual machine environment build.

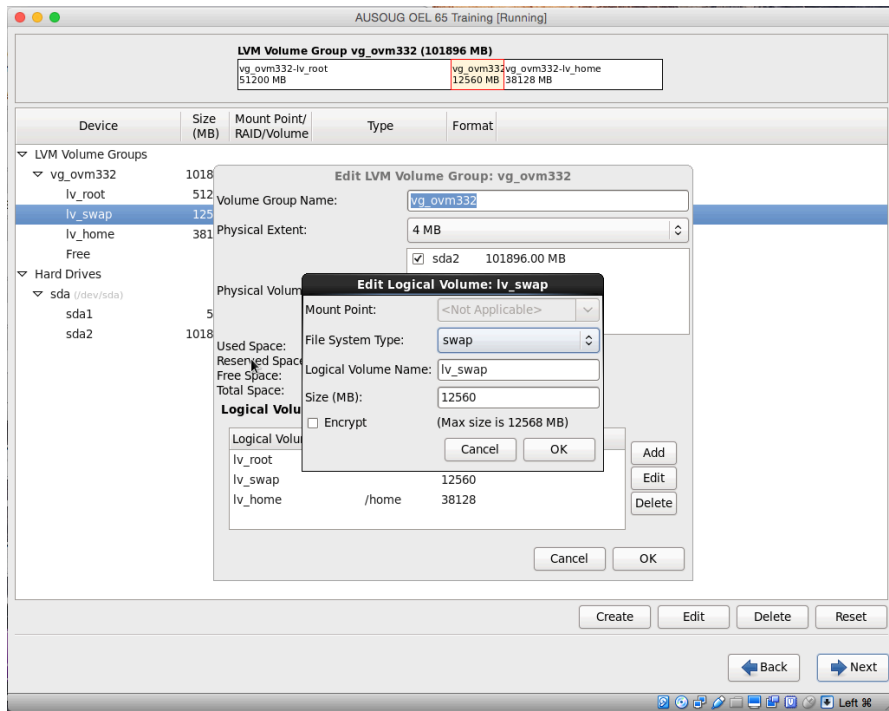
Oracle Virtual Box - Install the Linux base for OVM Manager



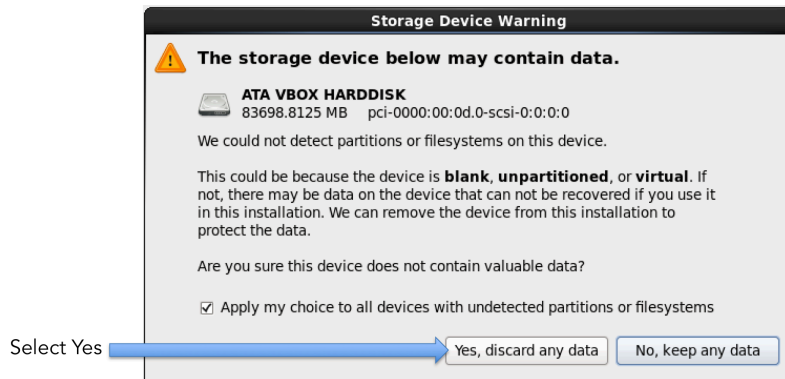
Select the use all space option and tick the box to Review and Modify partition layout.



Change the partition layout, especially verify there is enough swap space for the memory allocated to the virtual machine. Rules are reasonably simple, up to 16GB of memory match the memory and swap space and over 16GB of memory, set the swap space to 16GB.



Oracle Virtual Box - Install the Linux base for OVM Manager



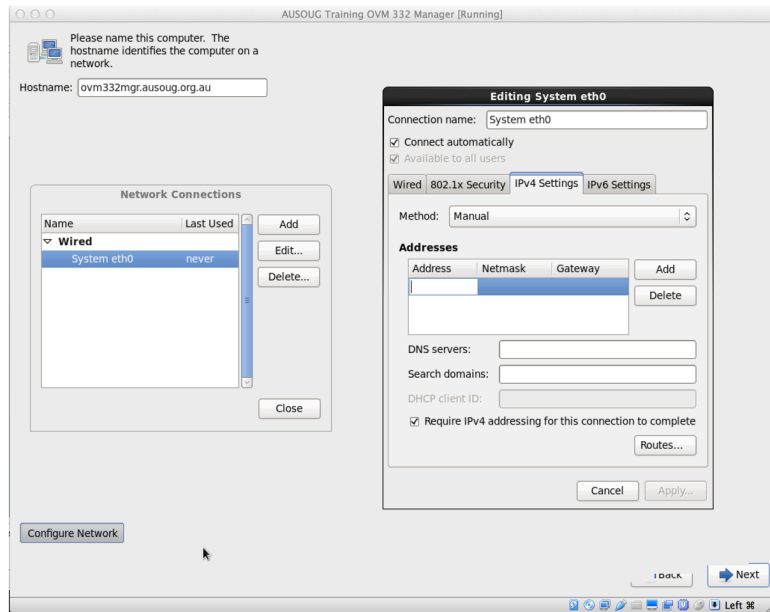
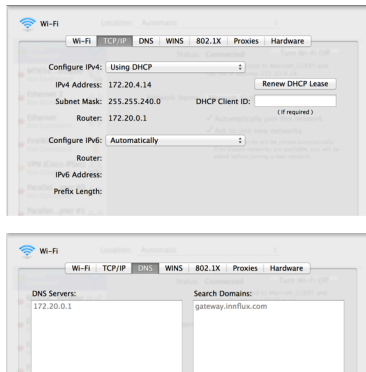
Select Yes, Discard any data.

Now set up the basic network connectivity for the virtual machine, its IP Address, net mask and gateway settings. Include the DNS settings so you can get to the internet for YUM updates and the VM Manager software download.

Oracle Virtual Box - Install the Linux base for OVM Manager

Identify from your host,
Its,

- IP Address
- Subnet Mask
- Default Gateway
- And DNS details.

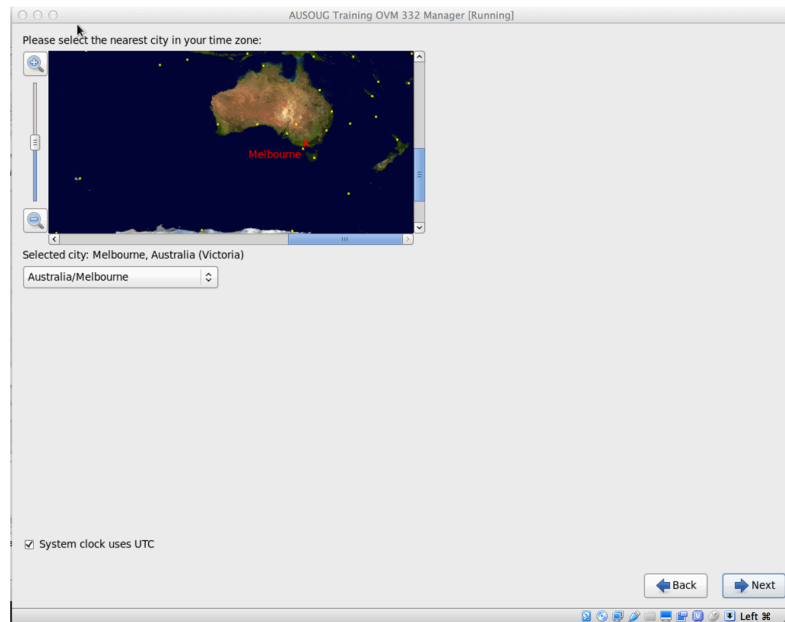


The DNS settings in my case are provided by my ISP. We can see these on the router or in the network settings, as I use DHCP to connect to the internet. They are as follows,

- 192.142.0.51**
- 211.29.132.12**
- 192.142.235.14**

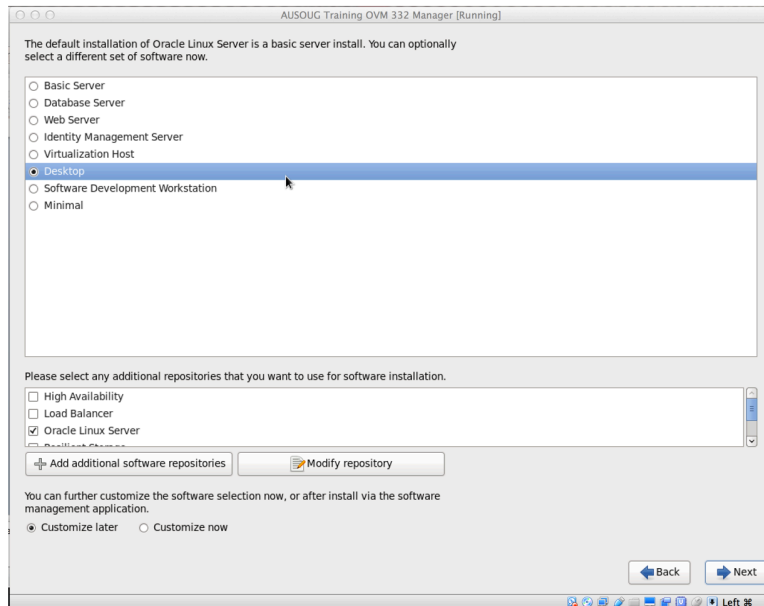
Select the location of the server. In my case this is Melbourne Australia and this sets the local time, day light savings operation and regional settings.

Oracle Virtual Box - Install the Linux base for OVM Manager



Select the Server type, for this instance we will choose a Desktop mode that allows the Oracle Universal Installer to operate and the OVM manager to be viewed on the server itself.

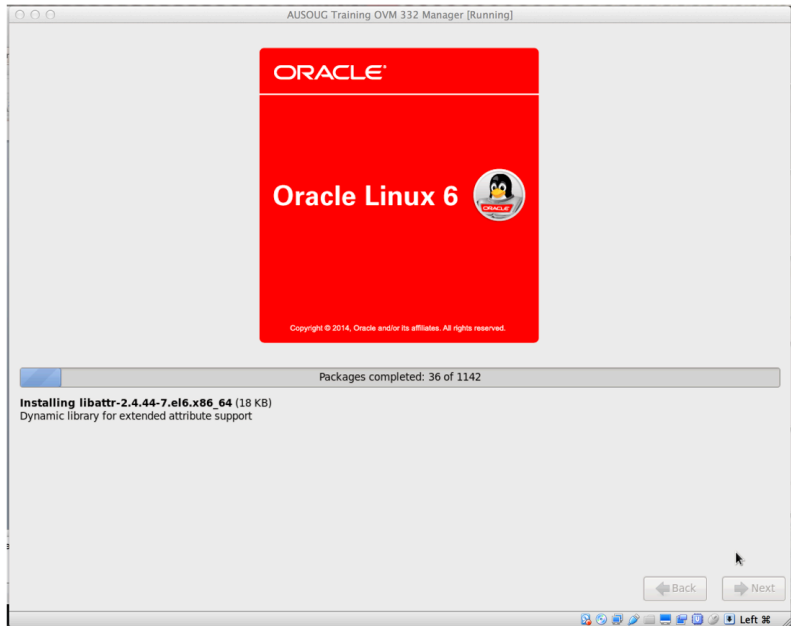
Oracle Virtual Box - Install the Linux base for OVM Manager



Select the Customise Now option at the bottom of the screen if you wish to identify the remaining settings for the installation.

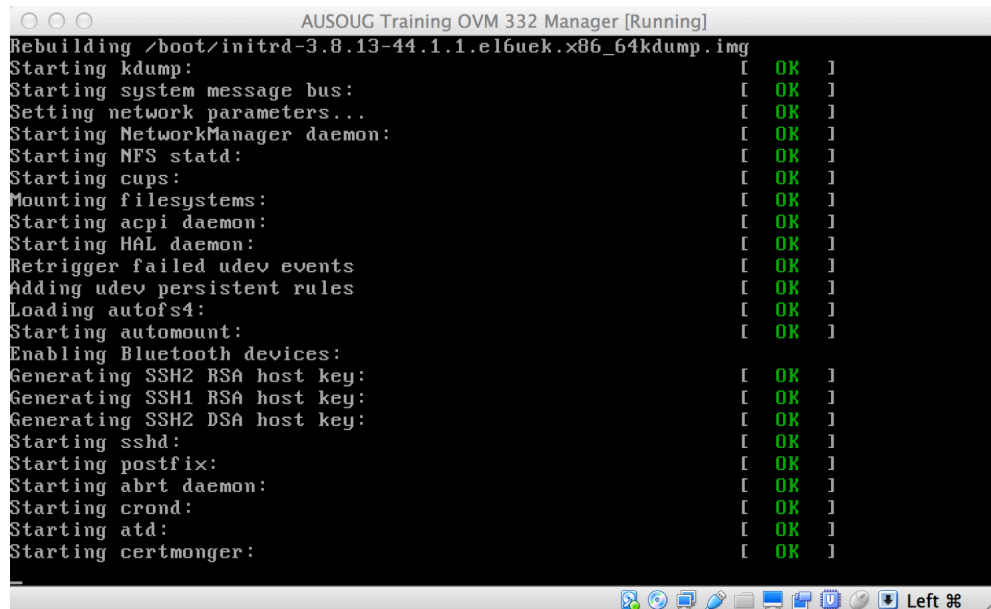
Press the Next button and the installation will now start.

Oracle Virtual Box - Install the Linux base for OVM Manager



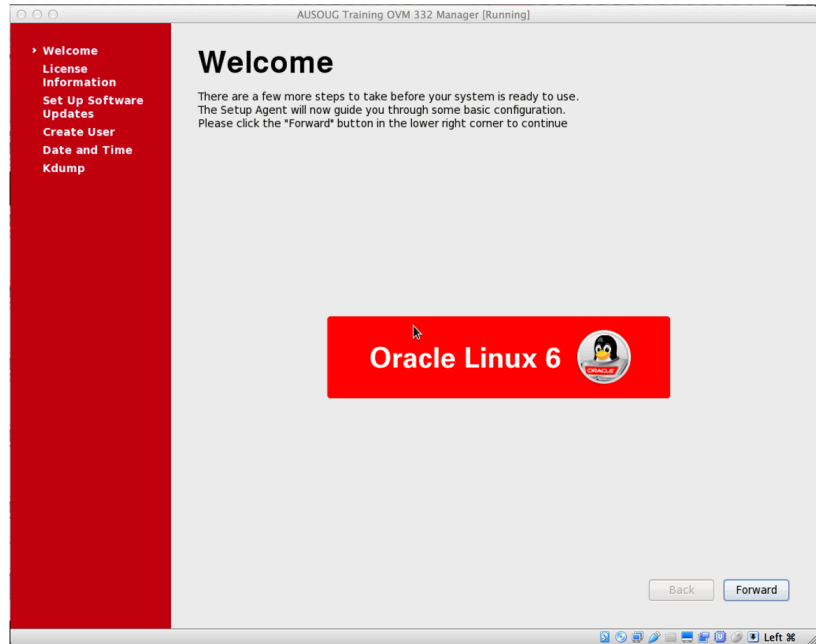
At the completion of the installation a Reboot will be requested. The system will shut down and restart.

Oracle Virtual Box - Install the Linux base for OVM Manager



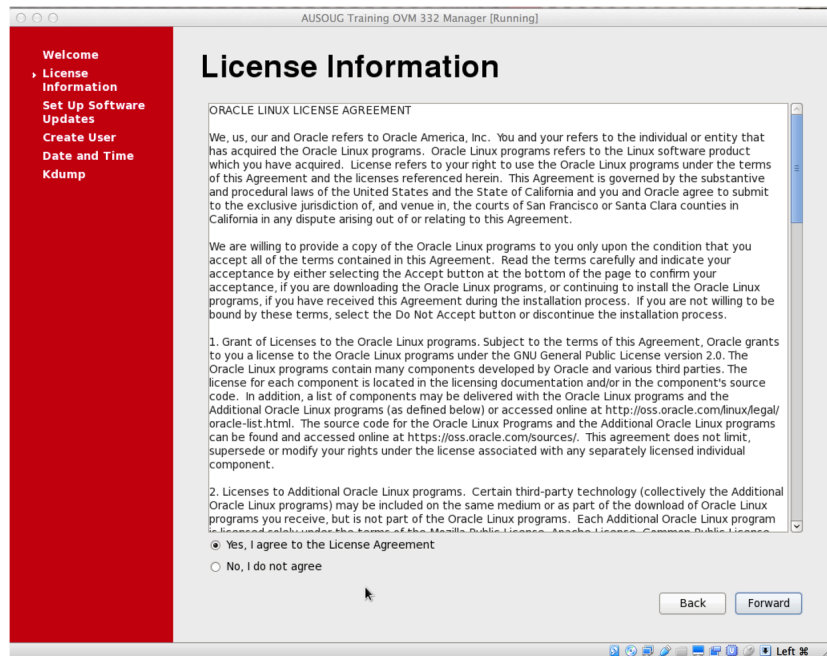
At the completion of the restart the Welcome screen is displayed. Press the Forward button.

Oracle Virtual Box - Install the Linux base for OVM Manager



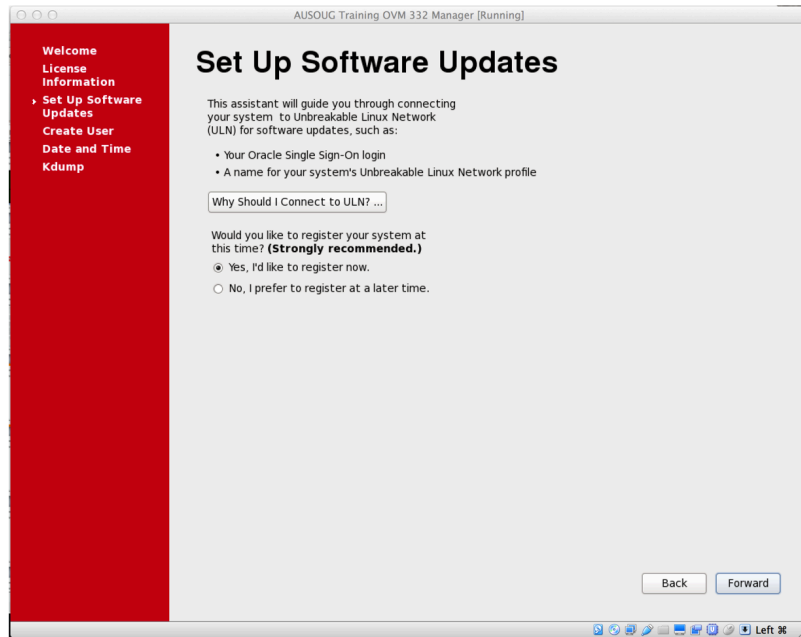
Select the Yes tick box and press the Forward button.

Oracle Virtual Box - Install the Linux base for OVM Manager



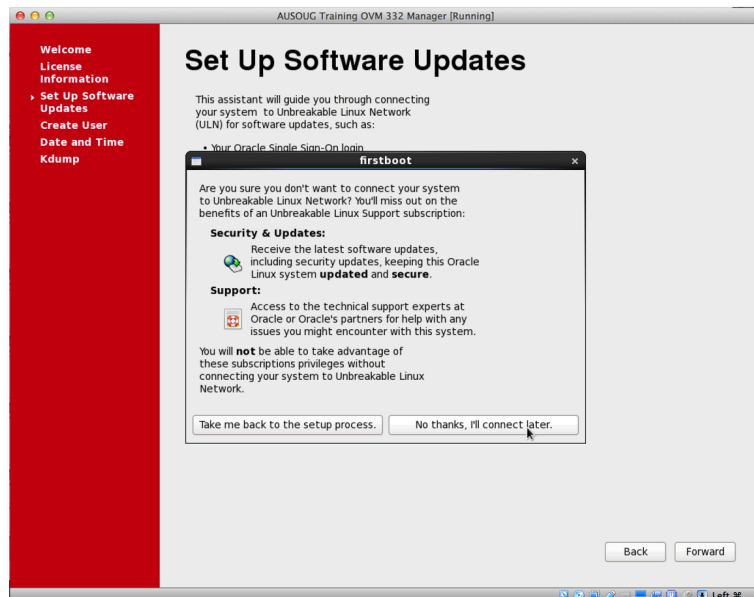
Select the No, I prefer to register at a later time button and press the Forward button.

Oracle Virtual Box - Install the Linux base for OVM Manager



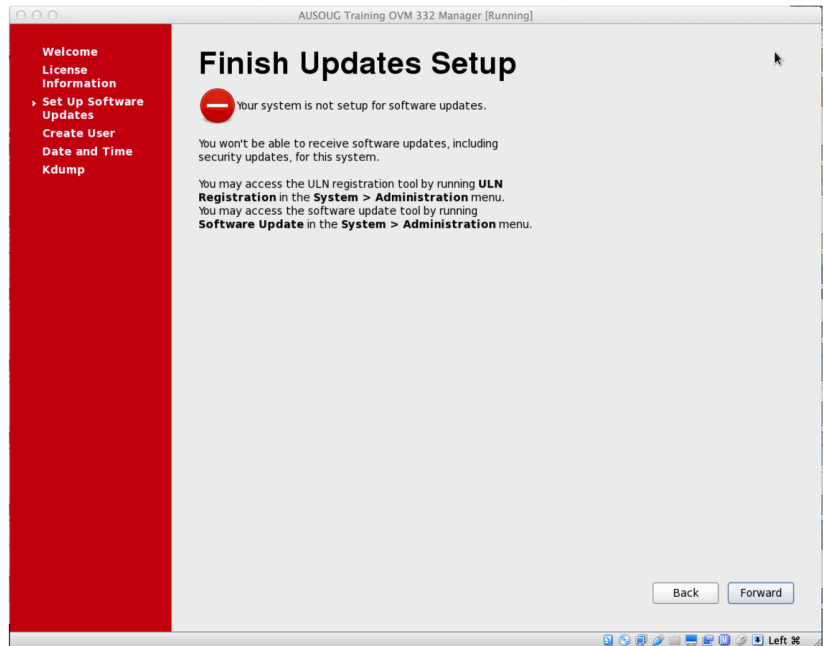
You will be prompted to rethink this decision, simply press the No Thanks button.

Oracle Virtual Box - Install the Linux base for OVM Manager



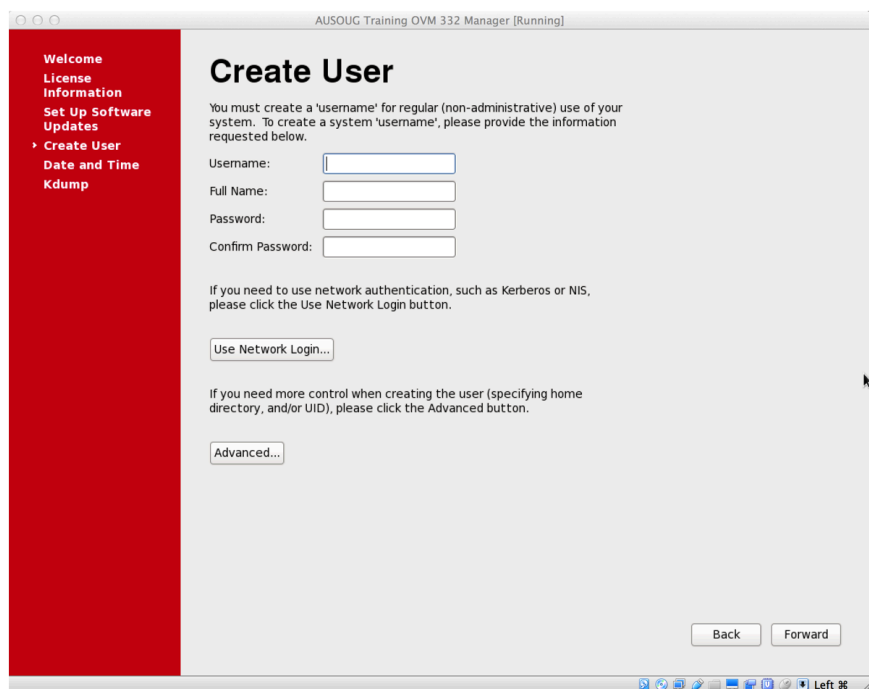
Press the Forward button.

Oracle Virtual Box - Install the Linux base for OVM Manager



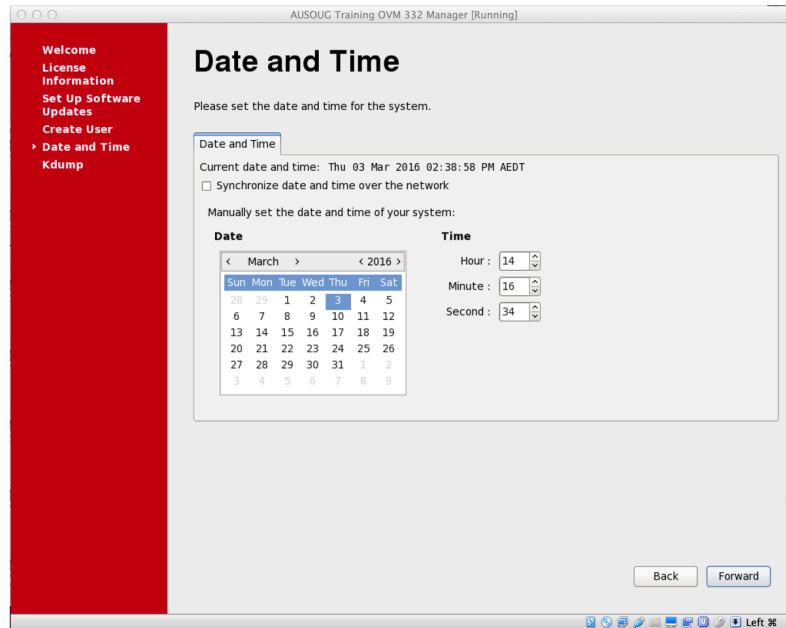
Leave the setup of other users to the script supplied with the OVM Manager software, Press the Forward button.

Oracle Virtual Box - Install the Linux base for OVM Manager



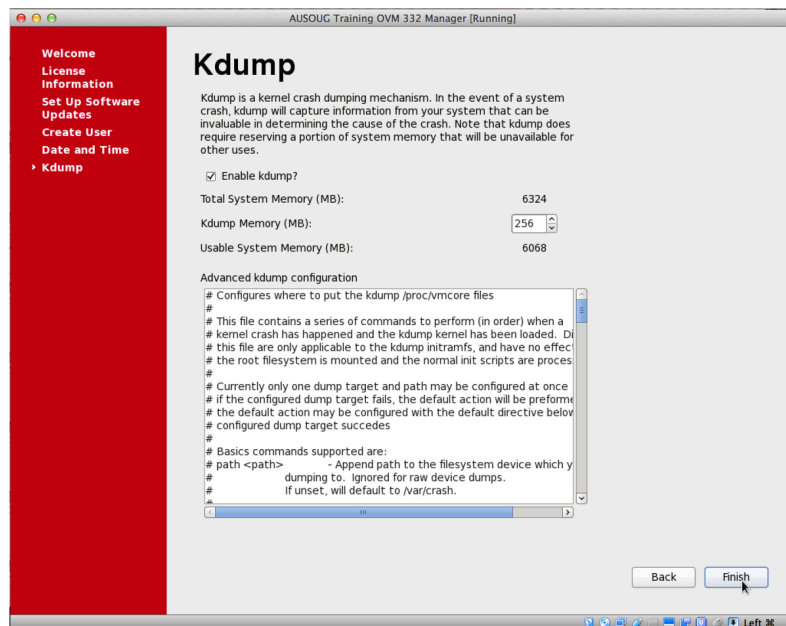
The system will ask you to confirm the decision not to create another user. Confirm this decision.

Oracle Virtual Box - Install the Linux base for OVM Manager



Press the Forward button, unless you know the values for a time server in your environment. If you do, tick the box to Synchronise date and time over the network and fill in the time server IP address.

Oracle Virtual Box - Install the Linux base for OVM Manager



Press the Finish button.

The system will once again reboot and allow you to log into the new server.

Oracle Virtual Box - Install the Linux base for OVM Manager

Linux Installation finished.

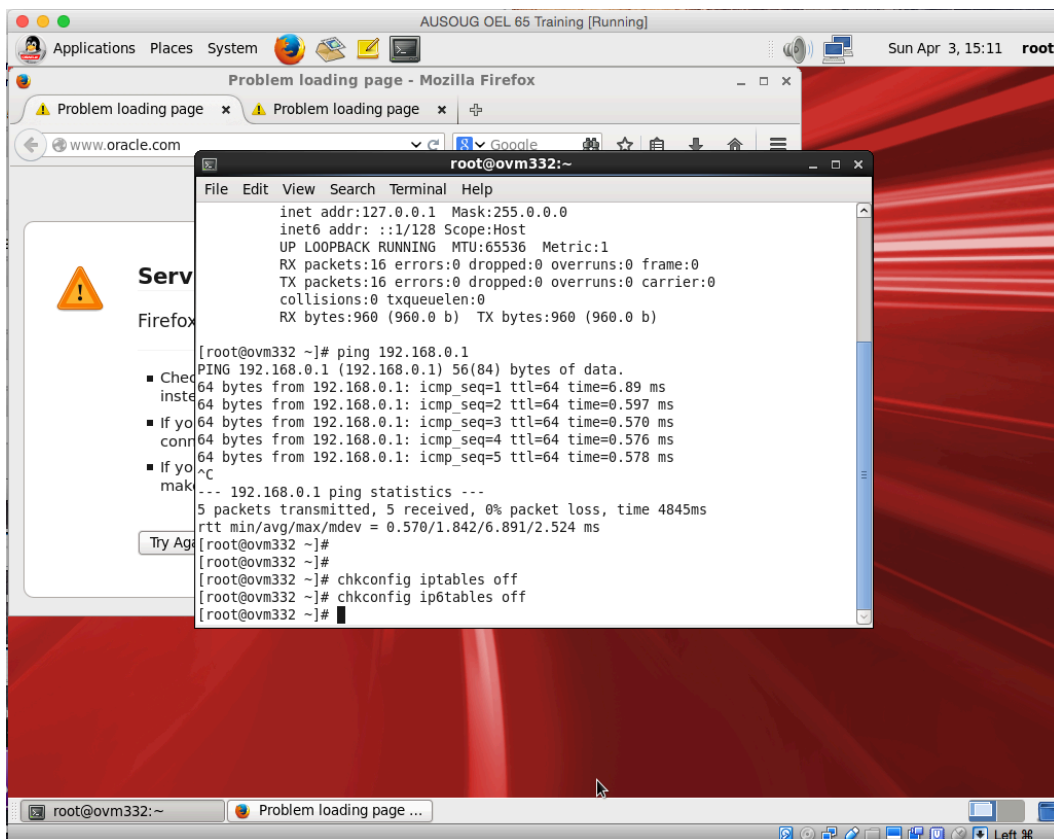
System Reboots and you log in

4 Session 4, Installation of VM Manager

The first things to complete after the reboot are,

1. Setup details in the /etc/hosts file for the server and environment.
2. Disable iptables and ip6tables, the Linux Firewall.
3. Update the /etc/selinux/config file to disable selinux.
4. Verify the /etc/sysconfig/network and /etc/resolv.conf files are correctly set up for the hostname and DNS settings.

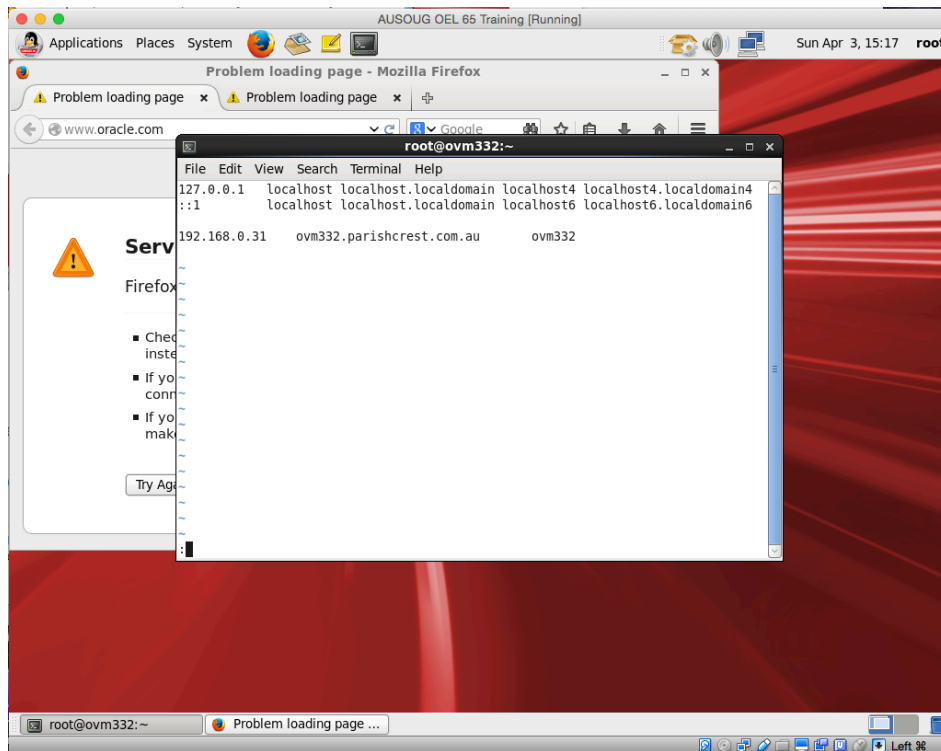
Use the chkconfig command to disable the Linux Firewall, as shown in the next screen shot.

A screenshot of a Linux desktop environment. The window title is "AUSOUG OEL 65 Training [Running]". The desktop background is red with a glowing effect. A terminal window is open, showing the following commands and output:

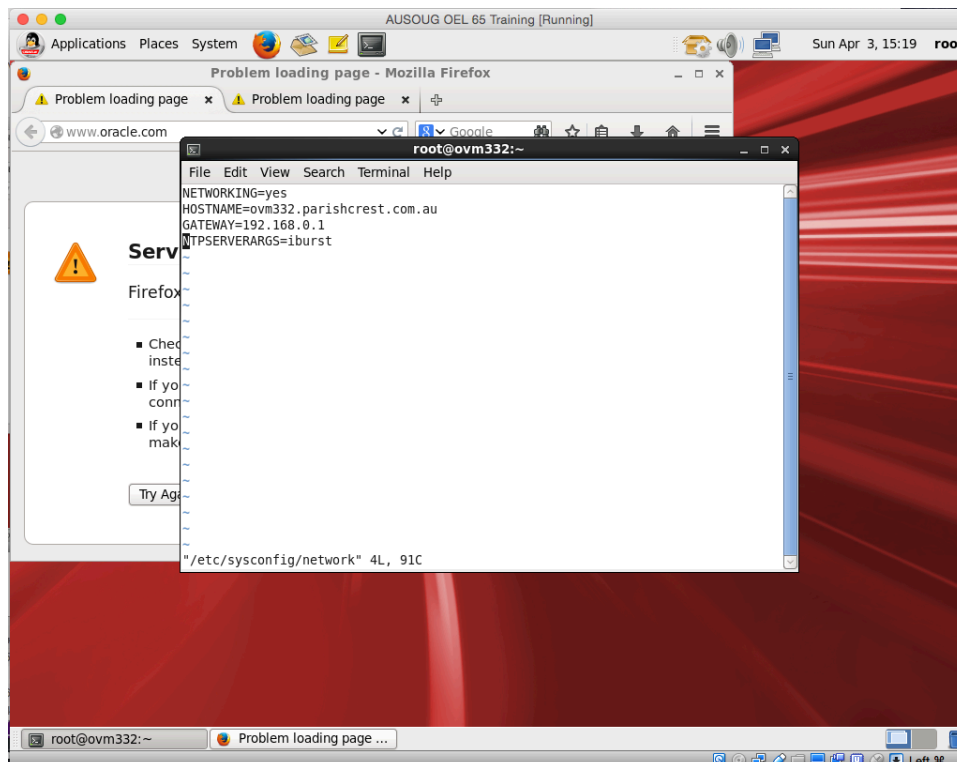
```
root@ovm332:~  
File Edit View Search Terminal Help  
inet addr:127.0.0.1 Mask:255.0.0.0  
inet6 addr: ::1/128 Scope:Host  
UP LOOPBACK RUNNING MTU:65536 Metric:1  
RX packets:16 errors:0 dropped:0 overruns:0 frame:0  
TX packets:16 errors:0 dropped:0 overruns:0 carrier:0  
collisions:0 txqueuelen:0  
RX bytes:960 (960.0 b) TX bytes:960 (960.0 b)  
  
[root@ovm332 ~]# ping 192.168.0.1  
PING 192.168.0.1 (192.168.0.1) 56(84) bytes of data.  
64 bytes from 192.168.0.1: icmp_seq=1 ttl=64 time=6.89 ms  
64 bytes from 192.168.0.1: icmp_seq=2 ttl=64 time=0.597 ms  
64 bytes from 192.168.0.1: icmp_seq=3 ttl=64 time=0.570 ms  
64 bytes from 192.168.0.1: icmp_seq=4 ttl=64 time=0.576 ms  
64 bytes from 192.168.0.1: icmp_seq=5 ttl=64 time=0.578 ms  
^C  
--- 192.168.0.1 ping statistics ---  
5 packets transmitted, 5 received, 0% packet loss, time 4845ms  
rtt min/avg/max/mdev = 0.570/1.842/6.891/2.524 ms  
[root@ovm332 ~]#  
[root@ovm332 ~]#  
[root@ovm332 ~]# chkconfig iptables off  
[root@ovm332 ~]# chkconfig ip6tables off  
[root@ovm332 ~]#
```

Update the /etc/selinux/config file to disable selinux.

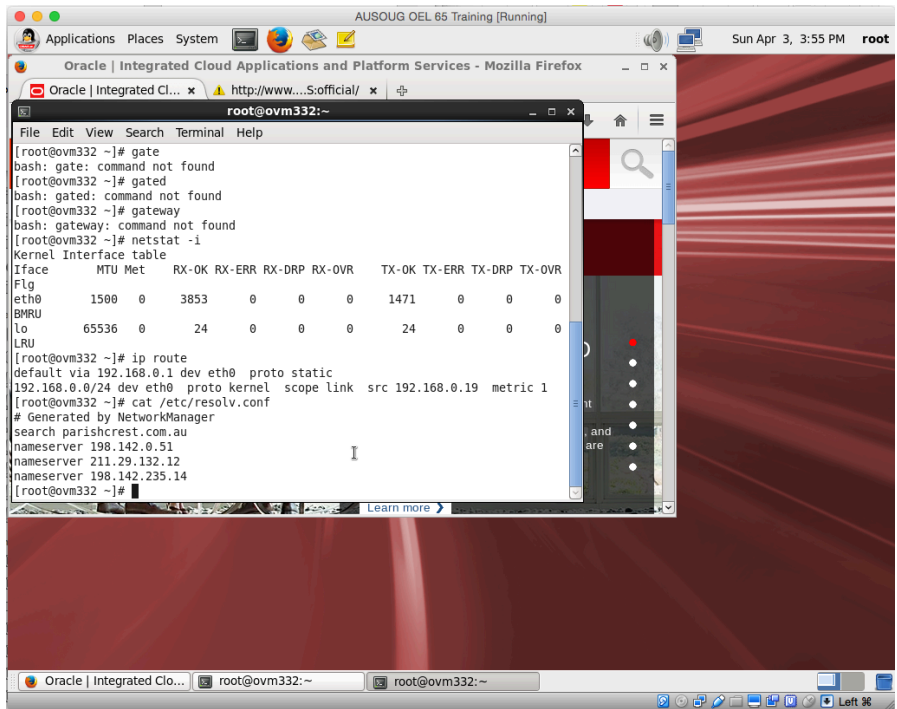
Update the /etc/hosts file with the IP Address for your virtual machine and its hostname.



Update the /etc/sysconfig/network file to ensure the correct domain name is set.

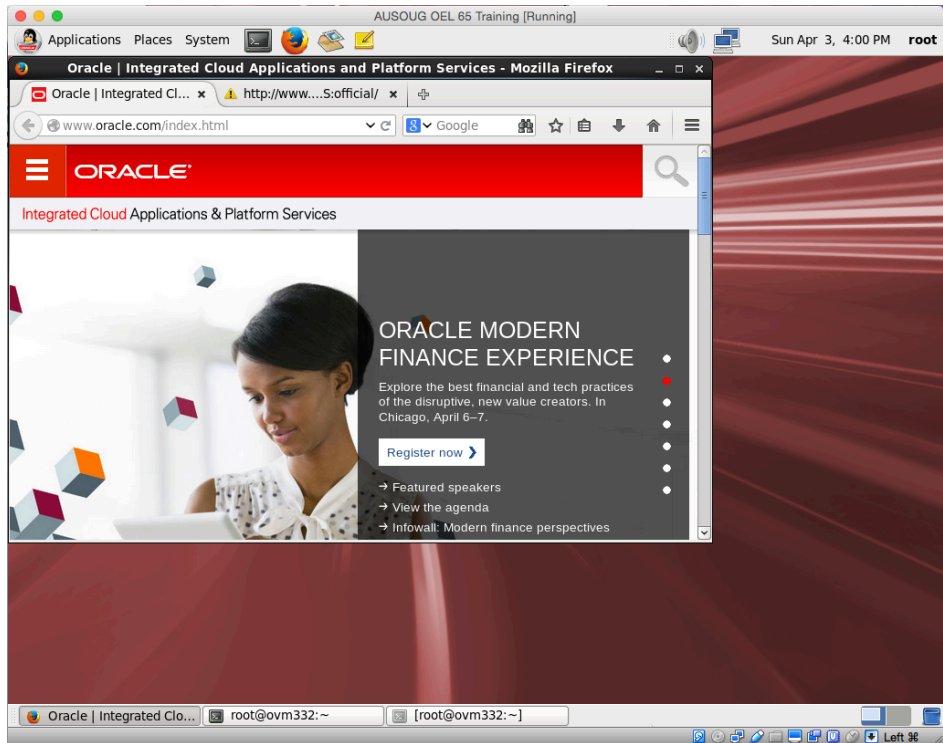


Verify the correct settings in the /etc/resolv.conf file.



Restart the network services by typing **service network restart**.

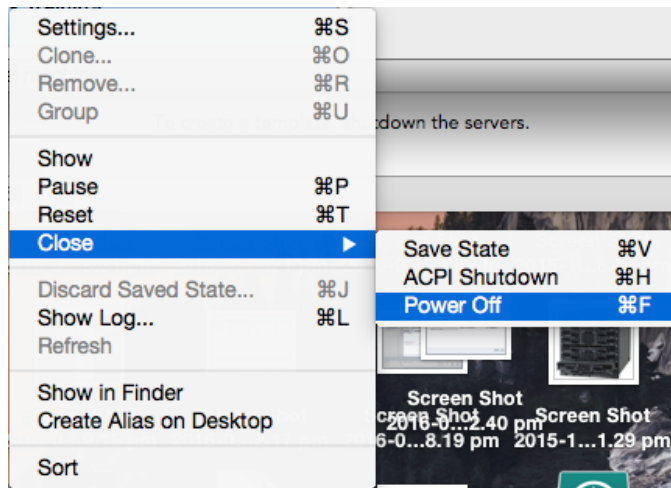
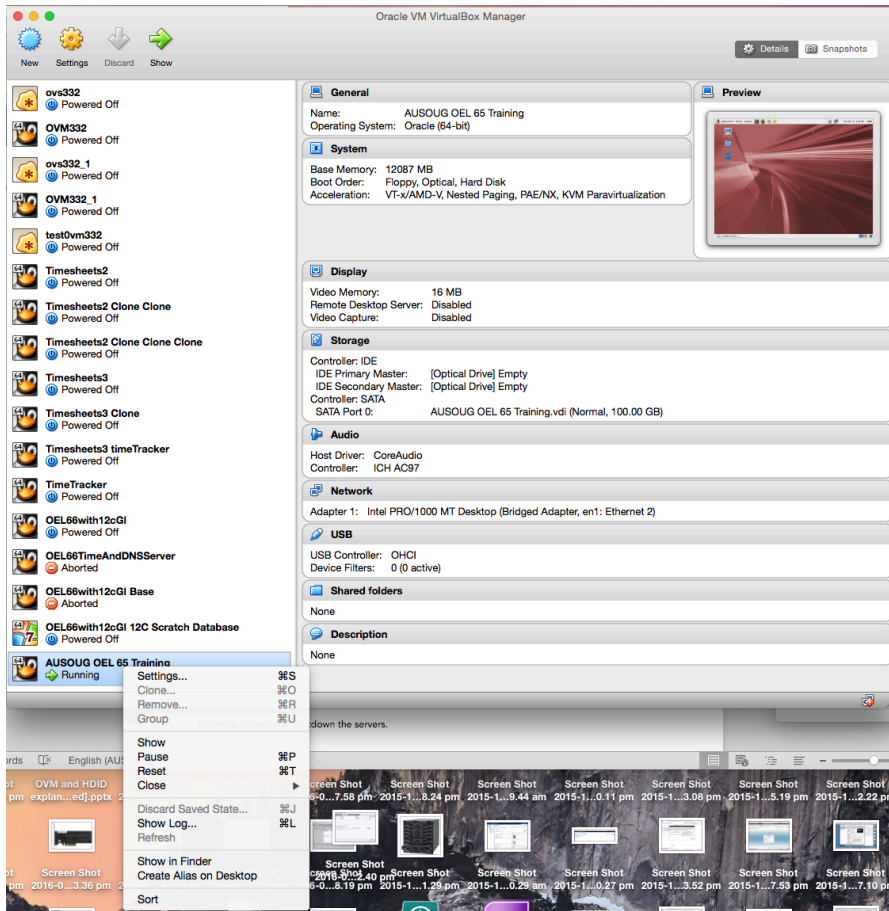
The final test is to open a web browser and see if you can get to the internet.



Download the OVM Manager from edelivery.oracle.com or from metalink.oracle.com.

Before installing it, create an export template of the operating system. We will use this later in the course to install Oracle 12c GI and database.

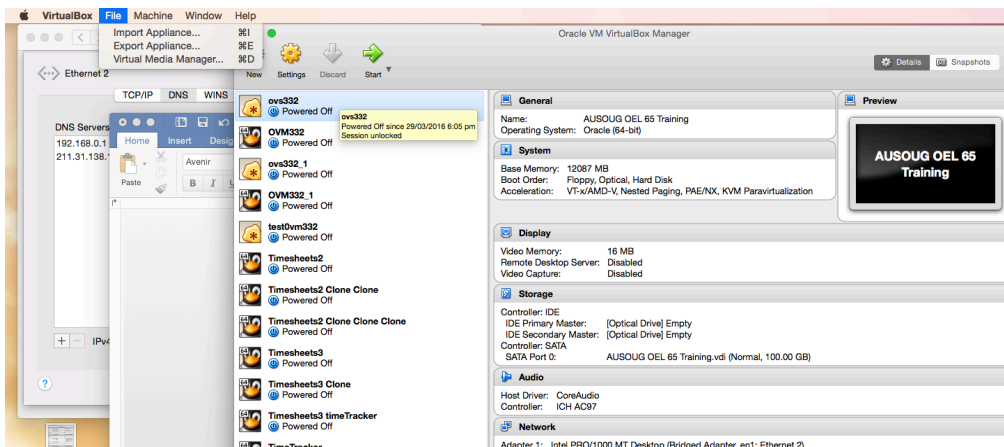
To create a template, shutdown the servers.



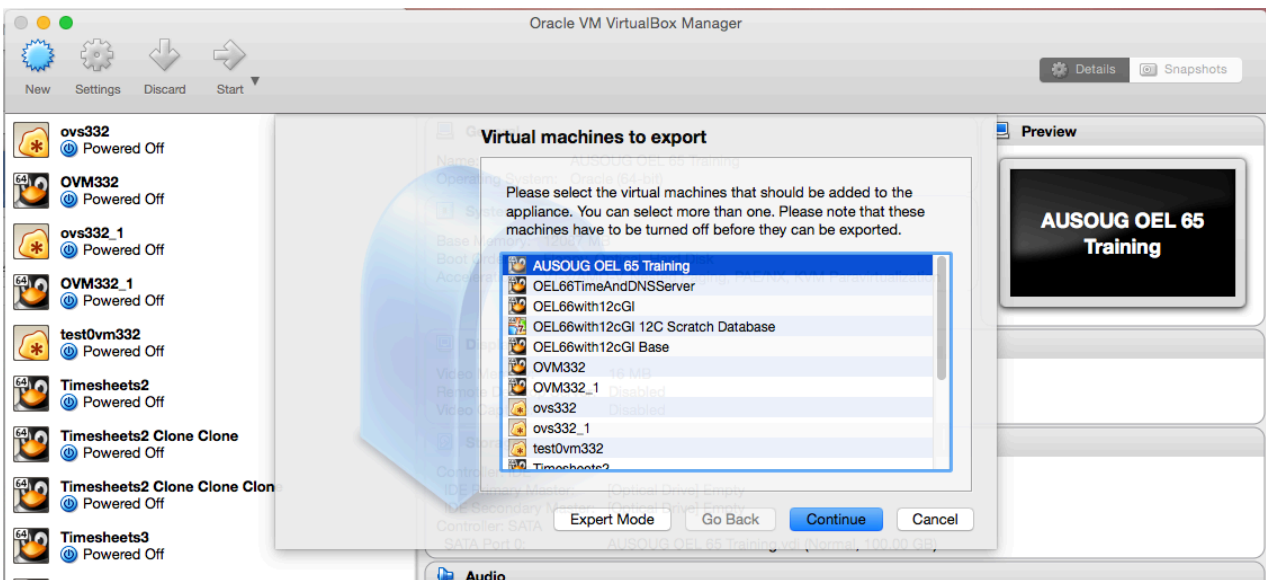
Select the Power Off to shut down the virtual machine.
Confirm the Power Off.



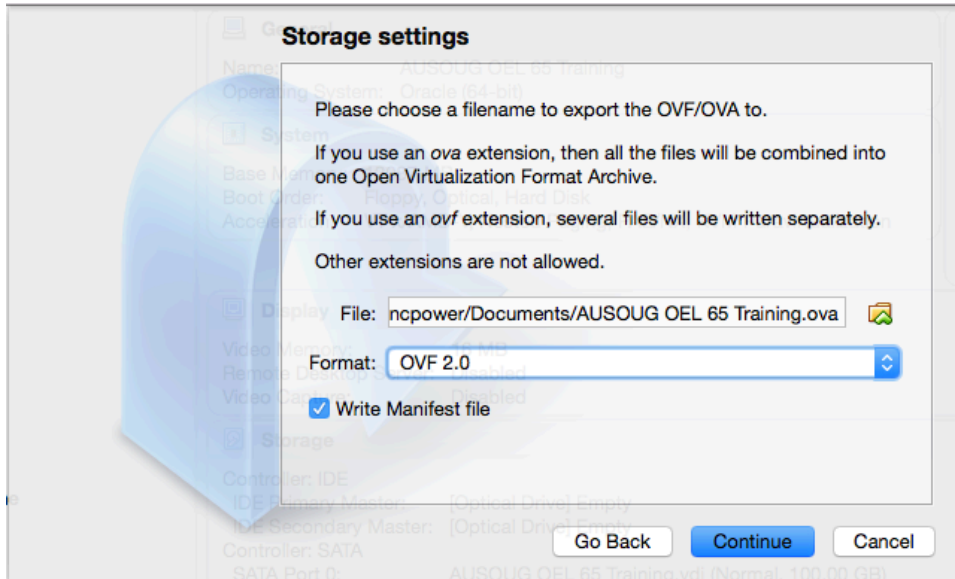
From the File menu item, select the Export Appliance option.



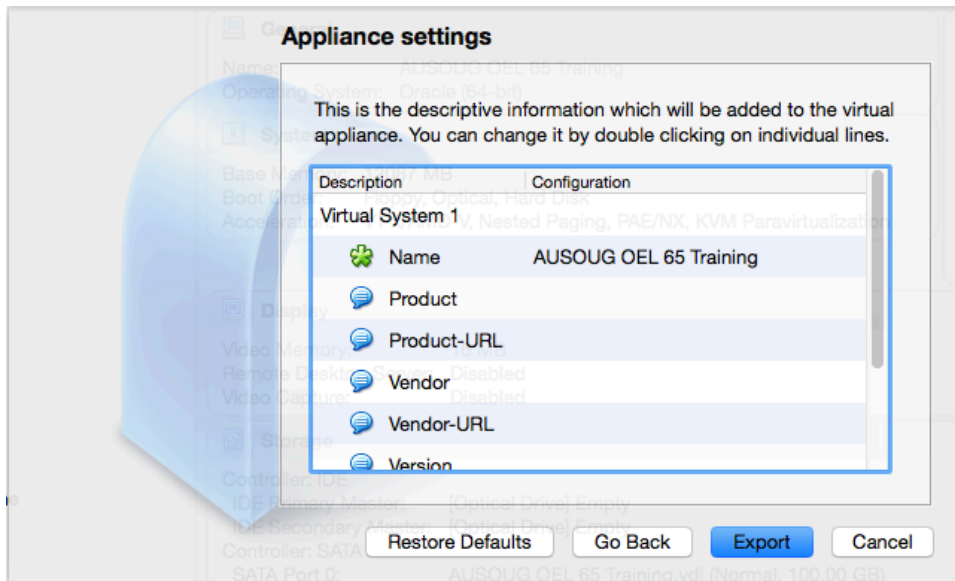
Select the Virtual Machine to export from the list.

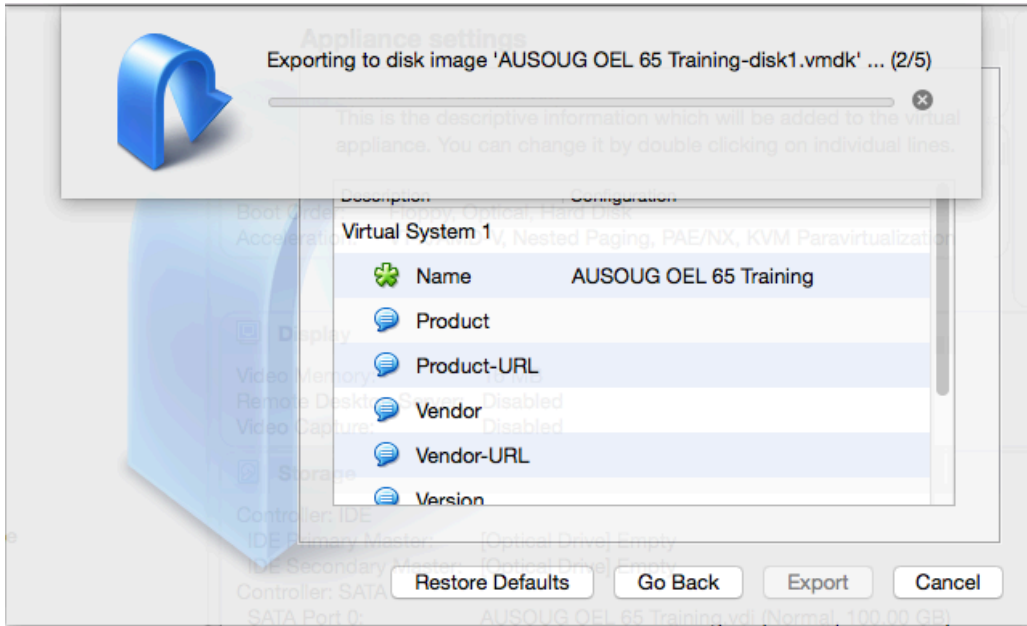


Select the Format from the drop down list and tick the Write Manifest file.

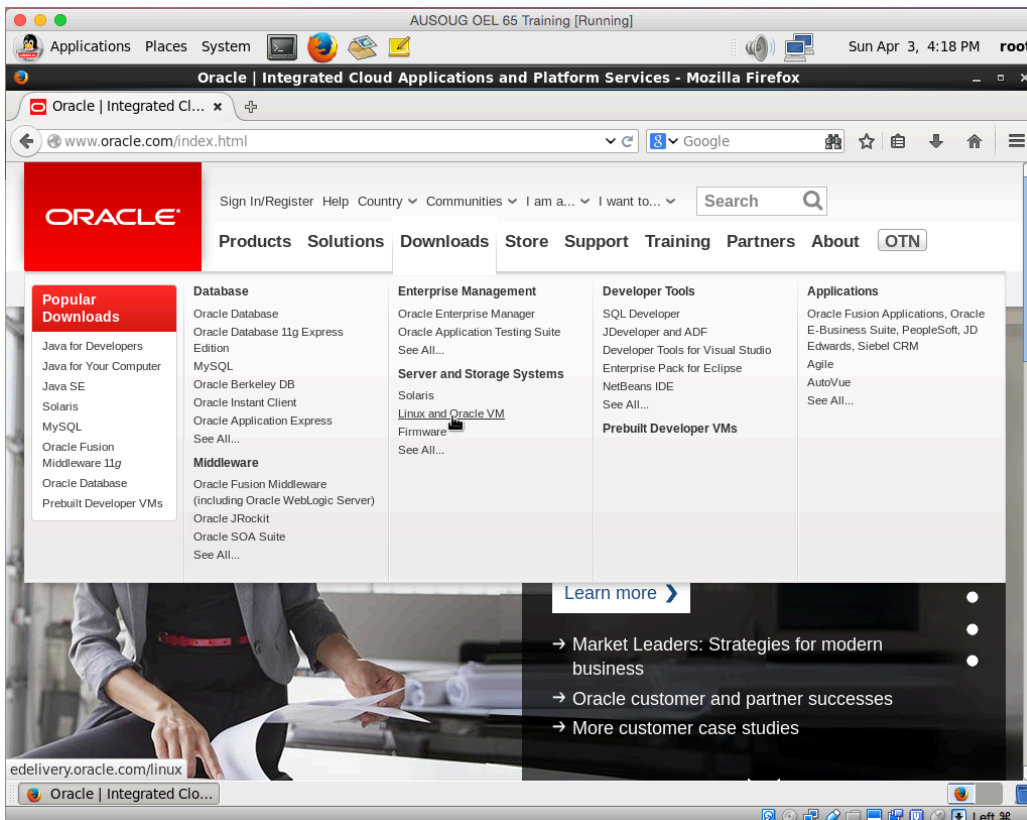


Press the Continue button and then press the Export button to start the process of creating the ova appliance file.

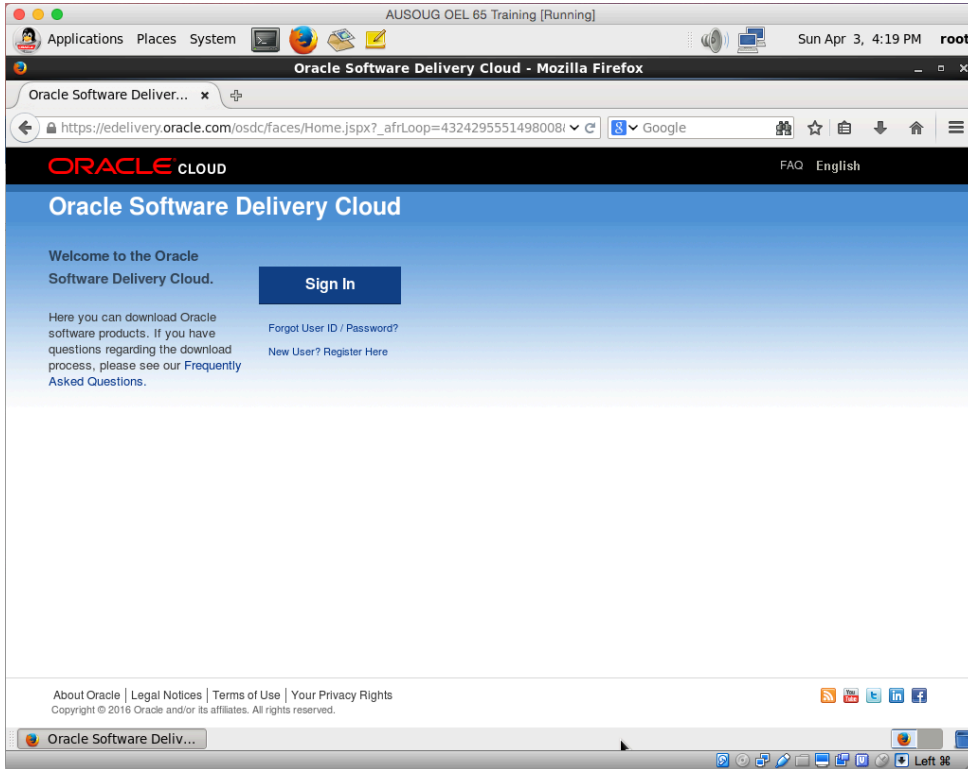




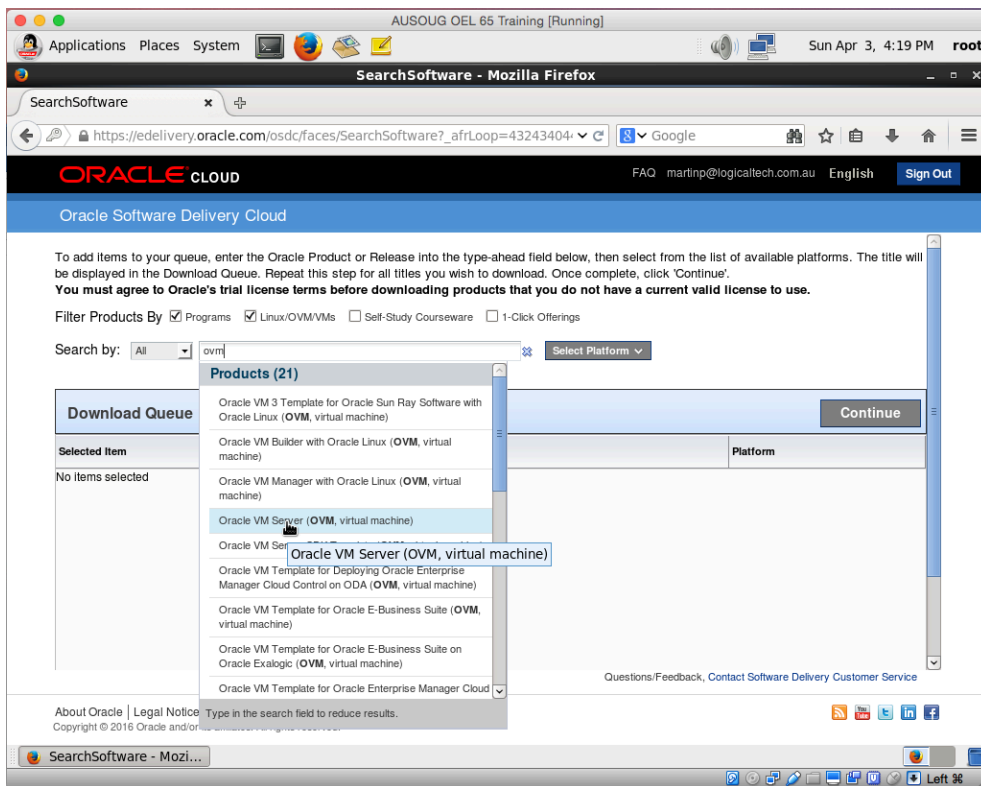
Once the file is created we can restart the virtual machine and download the OVM manager software.



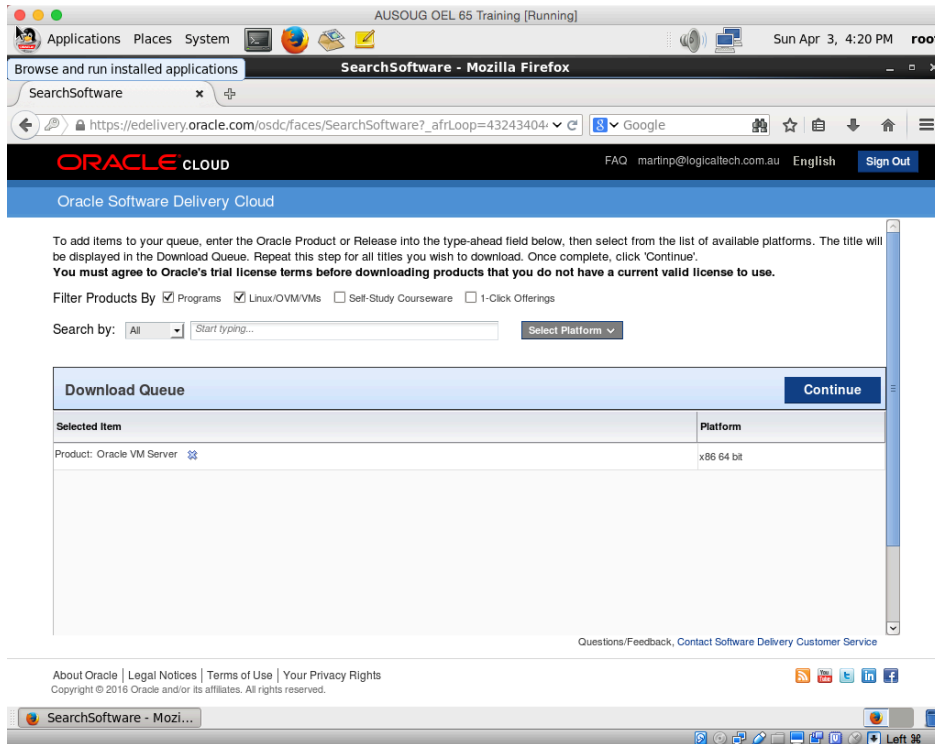
From www.oracle.com select the Downloads, Linux and Oracle VM link.



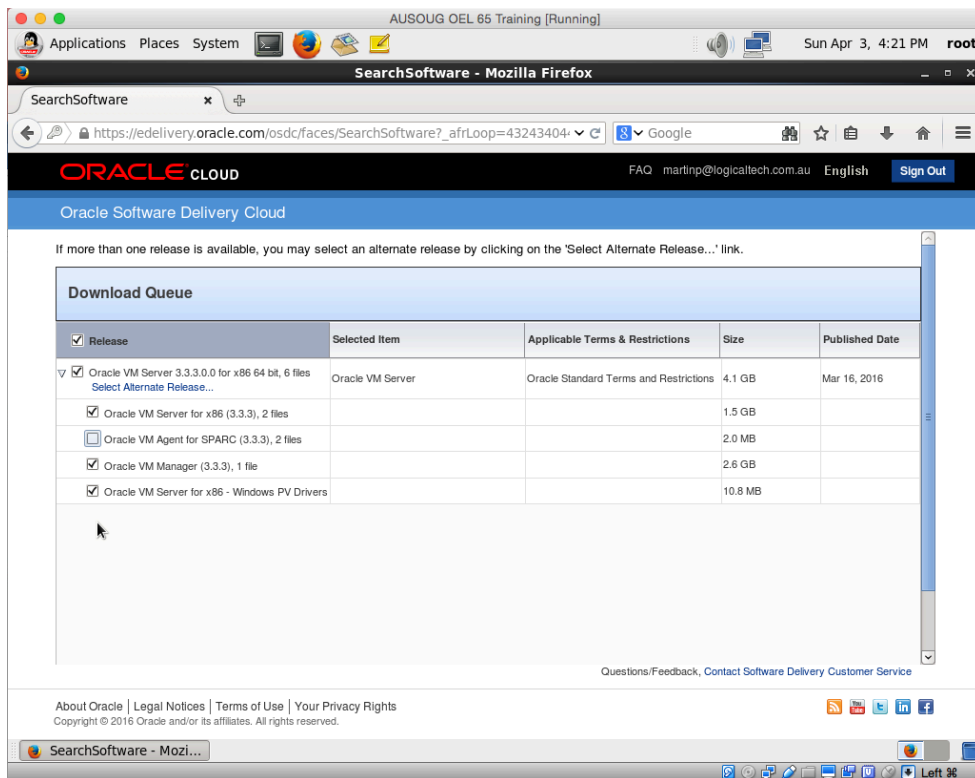
Sign into edelivery.



Enter ovm in the first box and select Oracle VM Server and then select the x86_64 bit option from the drop down list.



Press the continue button and then select the expose details icon on the left hand side of the listed product.



Download the OVM Manager file and the Para virtualized drivers disk.

Once the software has been downloaded onto the virtual server, we will mount it as a CDROM and work through the two part installation process.

I choose to change the names of the files to allow easy identification of the software later. So I have changed the name of the manager software to ovmm-3.3.2-installer-OracleLinux-b1072.iso.

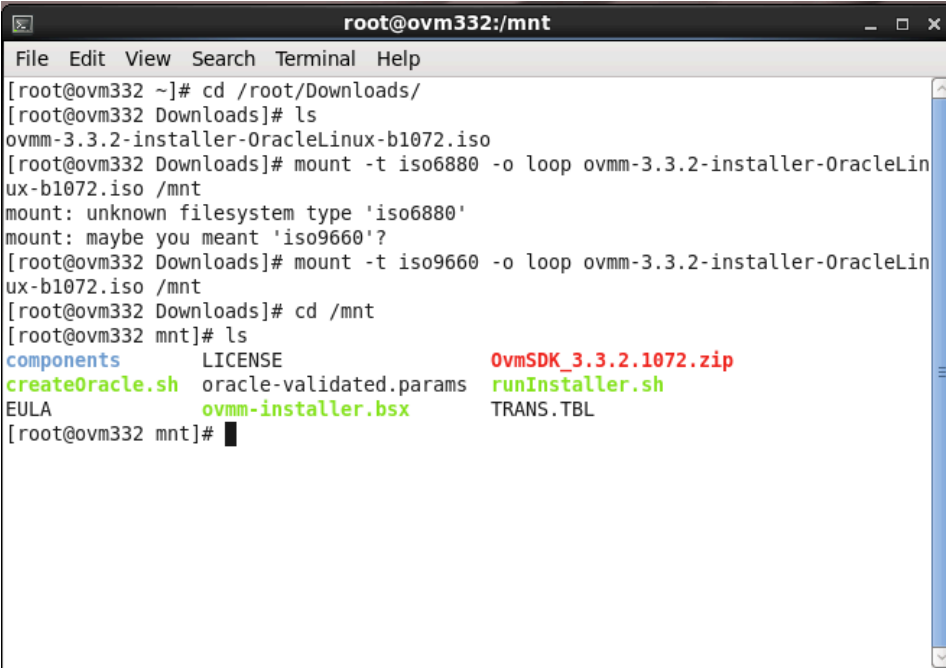
To mount the disk run the following as the root user.

```
mount -t iso9660 -o loop /root/Downloads/ ovmm-3.3.2-installer-OracleLinux-b1072.iso /mnt
```

This will mount the software under the /mnt mount point. You can cd to this mount and view the files by typing,

```
cd /mnt
```

```
ls -al
```



```
root@ovm332:/mnt
File Edit View Search Terminal Help
[root@ovm332 ~]# cd /root/Downloads/
[root@ovm332 Downloads]# ls
ovmm-3.3.2-installer-OracleLinux-b1072.iso
[root@ovm332 Downloads]# mount -t iso6880 -o loop ovmm-3.3.2-installer-OracleLinux-b1072.iso /mnt
mount: unknown filesystem type 'iso6880'
mount: maybe you meant 'iso9660'?
[root@ovm332 Downloads]# mount -t iso9660 -o loop ovmm-3.3.2-installer-OracleLinux-b1072.iso /mnt
[root@ovm332 Downloads]# cd /mnt
[root@ovm332 mnt]# ls
components          LICENSE              OvmSDK_3.3.2.1072.zip
createOracle.sh     oracle-validated.params  runInstaller.sh
EULA                ovmm-installer.bsx      TRANS.TBL
[root@ovm332 mnt]#
```

Two setup file are run to complete the OVM manager installation. The first, createOracle.sh creates the oracle user, group and base settings for the manager installation. Run this file as the root user using the following command in the /mnt directory.

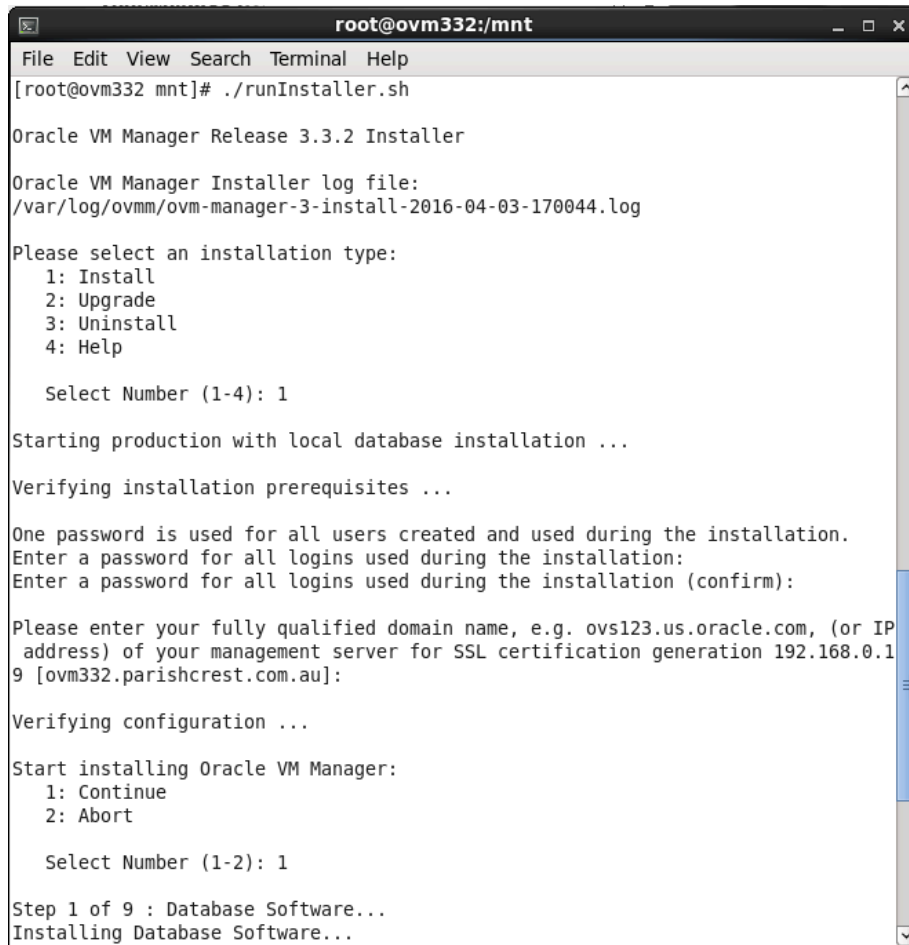
```
./createOracle.sh
```

Note: the ./ tells Linux to execute a file in the local directory. Depending on you environment setup this may of may not be necessary.

```
root@ovm332:/mnt
File Edit View Search Terminal Help
[root@ovm332 Downloads]# cd /mnt
[root@ovm332 mnt]# ls
components          LICENSE              OvmSDK_3.3.2.1072.zip
createOracle.sh     oracle-validated.params  runInstaller.sh
EULA                ovmm-installer.bsx     TRANS.TBL
[root@ovm332 mnt]# ./createOracle.sh
Adding group 'oinstall' with gid '54321' ...
Adding group 'dba'
Adding user 'oracle' with user id '54321', initial login group 'dba', supplementary group 'oinstall' and home directory '/home/oracle' ...
Changing ownership of '/home/oracle' to oracle:dba
Creating user 'oracle' succeeded ...
For security reasons, no default password was set for user 'oracle'. If you wish to login as the 'oracle' user, you will need to set a password for this account.
.
Verifying user 'oracle' OS prerequisites for Oracle VM Manager ...
oracle soft nofile 8192
oracle hard nofile 65536
oracle soft nproc 2048
oracle hard nproc 16384
oracle soft stack 10240
oracle hard stack 32768
oracle soft core unlimited
oracle hard core unlimited
Setting user 'oracle' OS limits for Oracle VM Manager ...
Altered file /etc/security/limits.conf
Original file backed up at /etc/security/limits.conf.orabackup
Verifying & setting of user limits succeeded ...
Creating mountpoint '/u01' ...
Modifying iptables for OVM
Adding rules to enable access to:
    7002 : Oracle VM Manager https
    54322 : Oracle VM Manager core via SSL
    123 : NTP
    10000 : Oracle VM Manager CLI Tool
service iptables status: stop
iptables: Applying firewall rules: [ OK ]

iptables: Setting chains to policy ACCEPT: filter [ OK ]
iptables: Flushing firewall rules: [ OK ]
iptables: Unloading modules: [ OK ]
iptables: Applying firewall rules: [ OK ]
iptables: Setting chains to policy ACCEPT: filter [ OK ]
iptables: Flushing firewall rules: [ OK ]
iptables: Unloading modules: [ OK ]
Rules added.
[root@ovm332 mnt]#
```

Once this has run, execute the runInstaller.sh to install the manager software and database.



```
root@ovm332:/mnt
File Edit View Search Terminal Help
[root@ovm332 mnt]# ./runInstaller.sh

Oracle VM Manager Release 3.3.2 Installer

Oracle VM Manager Installer log file:
/var/log/ovmm/ovm-manager-3-install-2016-04-03-170044.log

Please select an installation type:
  1: Install
  2: Upgrade
  3: Uninstall
  4: Help

Select Number (1-4): 1

Starting production with local database installation ...

Verifying installation prerequisites ...

One password is used for all users created and used during the installation.
Enter a password for all logins used during the installation:
Enter a password for all logins used during the installation (confirm):

Please enter your fully qualified domain name, e.g. ovs123.us.oracle.com, (or IP
address) of your management server for SSL certification generation 192.168.0.1
9 [ovm332.parishcrest.com.au]:

Verifying configuration ...

Start installing Oracle VM Manager:
  1: Continue
  2: Abort

Select Number (1-2): 1

Step 1 of 9 : Database Software...
Installing Database Software...
```

The installation process will install 9 components. It tests for basic network access and requests a password that will be used moving forward for access to the manager. The username defaults to admin and we enter a password of Welcome123 in this instance.

```
root@ovm332:/mnt
File Edit View Search Terminal Help
Step 1 of 9 : Database Software...
Installing Database Software...
Retrieving MySQL Database 5.6 ...
Unzipping MySQL RPM File ...
Installing MySQL 5.6 RPM package ...
Configuring MySQL Database 5.6 ...
Installing MySQL backup RPM package ...

Step 2 of 9 : Java ...
Installing Java ...

Step 3 of 9 : Database schema ...
Creating database 'ovs' ...
Creating database 'appfw'
Creating user 'ovs' for database 'ovs'...
Creating user 'appfw' for database 'appfw'

Step 4 of 9 : WebLogic and ADF...
Retrieving Oracle WebLogic Server 12c and ADF ...
Installing Oracle WebLogic Server 12c and ADF ...
Applying patches to Weblogic ...

Step 5 of 9 : Oracle VM ...
Installing Oracle VM Manager Core ...
Retrieving Oracle VM Manager Application ...
Extracting Oracle VM Manager Application ...

Retrieving Oracle VM Manager Upgrade tool ...
Extracting Oracle VM Manager Upgrade tool ...
Installing Oracle VM Manager Upgrade tool ...

Step 6 of 9 : Domain creation ...
Creating Oracle WebLogic Server domain ...
Starting Oracle WebLogic Server 12c ...
Creating Oracle VM Manager user 'admin' ...

-----
Extracting Oracle VM Manager CLI tool...
Installing Oracle VM Manager CLI tool ...

Step 7 of 9 : Deploy ...
Configuring Https Identity and Trust...
Deploying Oracle VM Manager Core container ...
Configuring Client Cert Login...
Deploying Oracle VM Manager UI Console ...
Deploying Oracle VM Manager Help ...
Disabling HTTP access ...

Step 8 of 9 : Oracle VM Tools ...

Retrieving Oracle VM Manager Shell & API ...
Extracting Oracle VM Manager Shell & API ...
Installing Oracle VM Manager Shell & API ...

Retrieving Oracle VM Manager Wsh tool ...
Extracting Oracle VM Manager Wsh tool ...
Installing Oracle VM Manager Wsh tool ...

Retrieving Oracle VM Manager Tools ...
Extracting Oracle VM Manager Tools ...
Installing Oracle VM Manager Tools ...
Copying Oracle VM Manager shell to '/usr/bin/ovm_shell.sh' ...
Installing ovm_admin.sh in '/u01/app/oracle/ovm-manager-3/bin' ...
Installing ovm_upgrade.sh in '/u01/app/oracle/ovm-manager-3/bin' ...

Step 9 of 9 : Start OVM Manager ...
Enabling Oracle VM Manager service ...
Shutting down Oracle VM Manager instance ...
Starting Oracle VM Manager instance ...
Waiting for the application to initialize ...
Oracle VM Manager is running ...

Please wait while WebLogic configures the applications...
```

```
root@ovm332:/mnt
File Edit View Search Terminal Help
Installation Summary
-----
Database configuration:
Database type           : MySQL
Database host name     : localhost
Database name          : ovs
Database listener port : 49500
Database user          : ovs

Weblogic Server configuration:
Administration username : weblogic

Oracle VM Manager configuration:
Username                : admin
Core management port    : 54321
UUID                    : 0004fb00000100003370762883d766ff

Passwords:
There are no default passwords for any users. The passwords to use for Oracle VM
Manager, Database, and Oracle WebLogic Server have been set by you during this
installation. In the case of a default install, all passwords are the same.

Oracle VM Manager UI:
https://ovm332.parishcrest.com.au:7002/ovm/console
Log in with the user 'admin', and the password you set during the installation.

Note that you must install the latest ovmcore-console package for your Oracle Li
nux distribution to gain VNC and serial console access to your Virtual Machines
(VMs).
Please refer to the documentation for more information about this package.

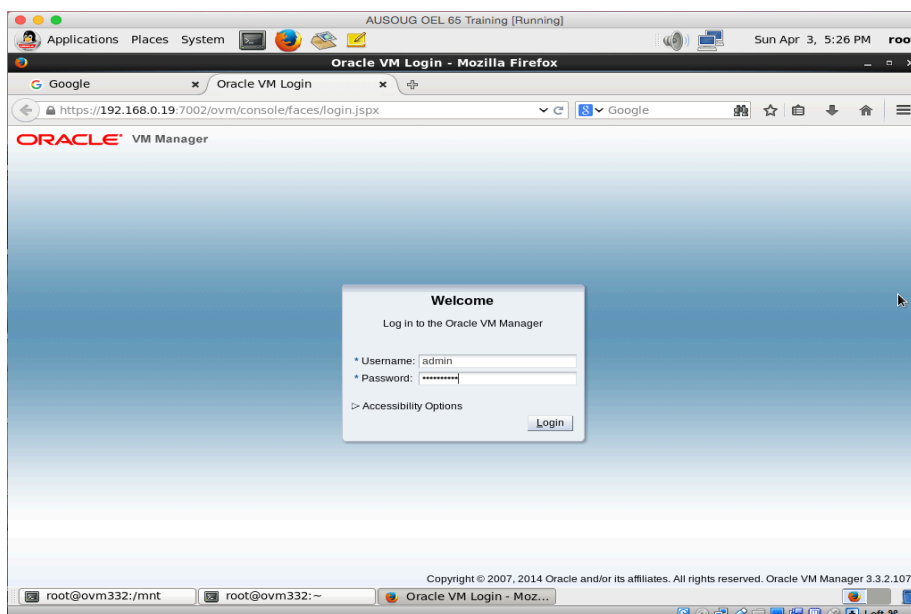
For more information about Oracle Virtualization, please visit:
http://www.oracle.com/virtualization/

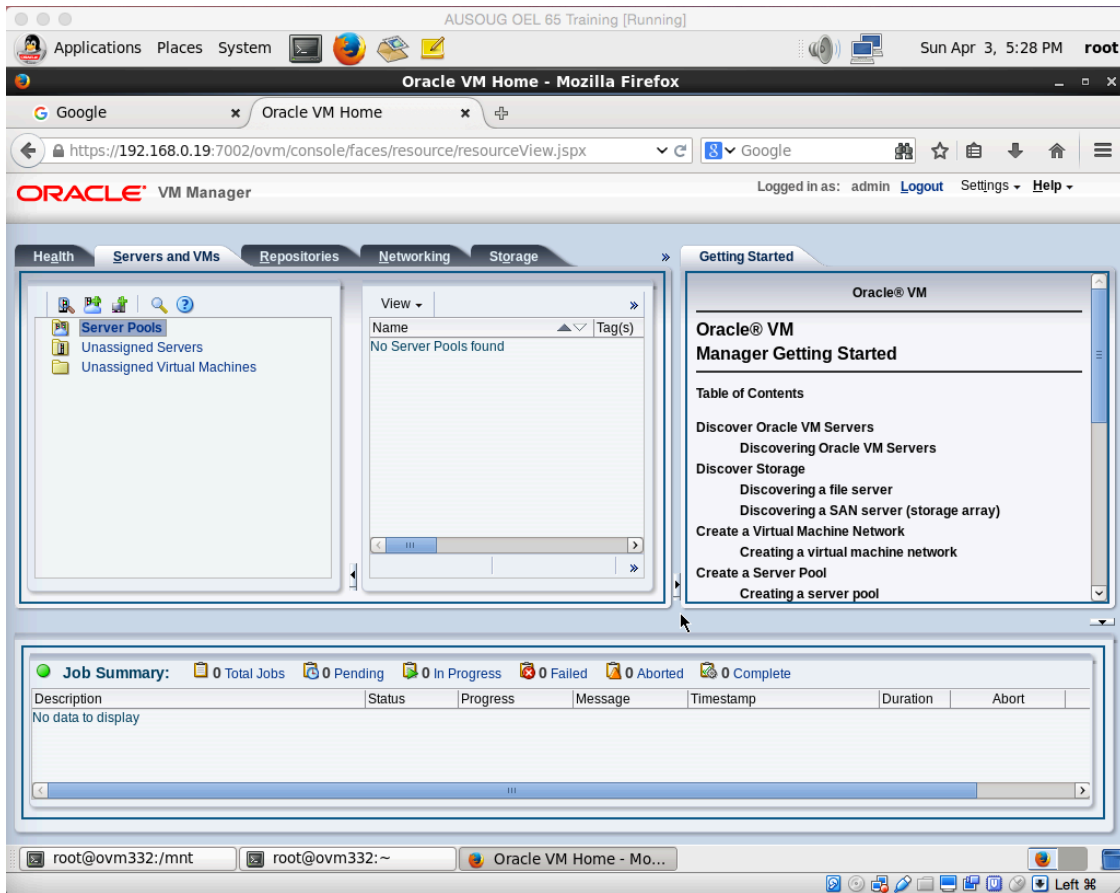
Oracle VM Manager installation complete.

Please remove configuration file /tmp/ovm_config4nyz3z.
[root@ovm332 mnt]#
```

It is now possible to log into the OVM Manager by entering the following URL in a web browser.

<https://192.168.0.19:7002/ovm/console>





That completes the installation of the OVM Manager. The next session covers the OVM Manager and its sections. This will then be followed by the build of an Oracle Virtual Server and the discovery of this server in the manager.

Session 4, An overview of VM Manager

4.1 What is covered in this section?

In this session we will discuss the Oracle Virtual Manager, its components and functions. We will explore the GUI, its basic tabs and functions along with a discussion on the process of importing templates and ISO image files for use in the assembly of new virtual servers. We will look at the basic network and storage options and the workflow interface and error management functions. By the end of this session you will understand how to log into the OVM Manager and navigate its functions.

4.2 What Features Does Oracle VM Provide?

The VM Manager is a combination of command line interface commands, APIs and a graphic user interface applications used to control and administer OVM environments. The APIs and command line interface allow scripting of repetitive functions as well as the development of custom interfaces within third party tools such as HP Open View, whilst the GUI delivers a structured set of management functions for the creation, amendment and management of virtual machines and their interaction within a highly availability environment.

Oracle VM Manager provides the following main capabilities:

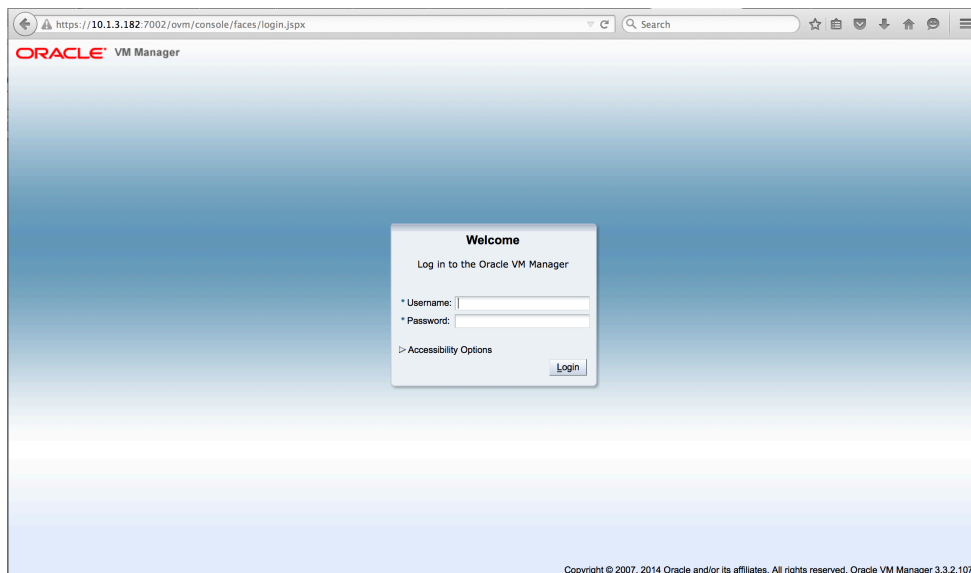
- Manages the physical Oracle VM Servers and can, for example, reboot or rediscover the physical hardware.
- Creates and configures server pools.
- Creates and manages Oracle VM Server logical networks, for example, NIC port bonding, and configuring network interfaces to operate within defined VLAN networks.
- Manages storage devices such as local disks, SAN storage and Network File Servers.
- Creates and manages storage repositories.
- Manages resources, including ISO files, virtual machine templates, virtual machine images, and virtual machine assemblies.
- Manages the virtual machines. This includes creating virtual machines from either installation media or from templates, starting, logging in, shutting down, and deleting virtual machines.
- Imports, clones and migration of virtual machines.

- Performs load balancing of virtual machines in server pools.
- Manages jobs in the Oracle VM environment.
- Manages policies such as High Availability, Distributed Resource Scheduling, and Distributed Power Management

A Web Services API is available for programmatic access to Oracle VM Manager, and therefore all the objects Oracle VM Manager has ownership of. See the Oracle VM Web Services API Developer's Guide for a description of all APIs for programmatic access to Oracle VM Manager functions. A command line interface is also available to access Oracle VM Manager, see the Oracle VM Manager Command Line Interface User's Guide for more information.

Access to the OVM manager is available from the following URL.

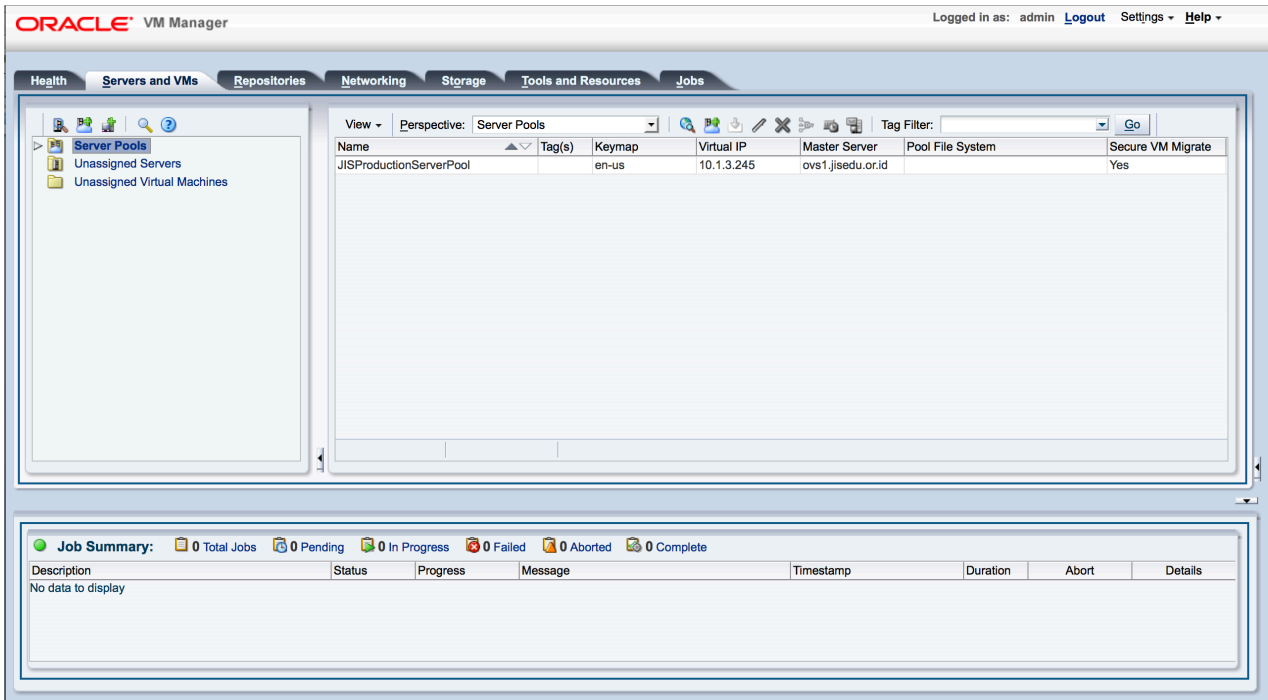
<https://192.168.0.19:7002/ovm/console/faces/login.jspx>



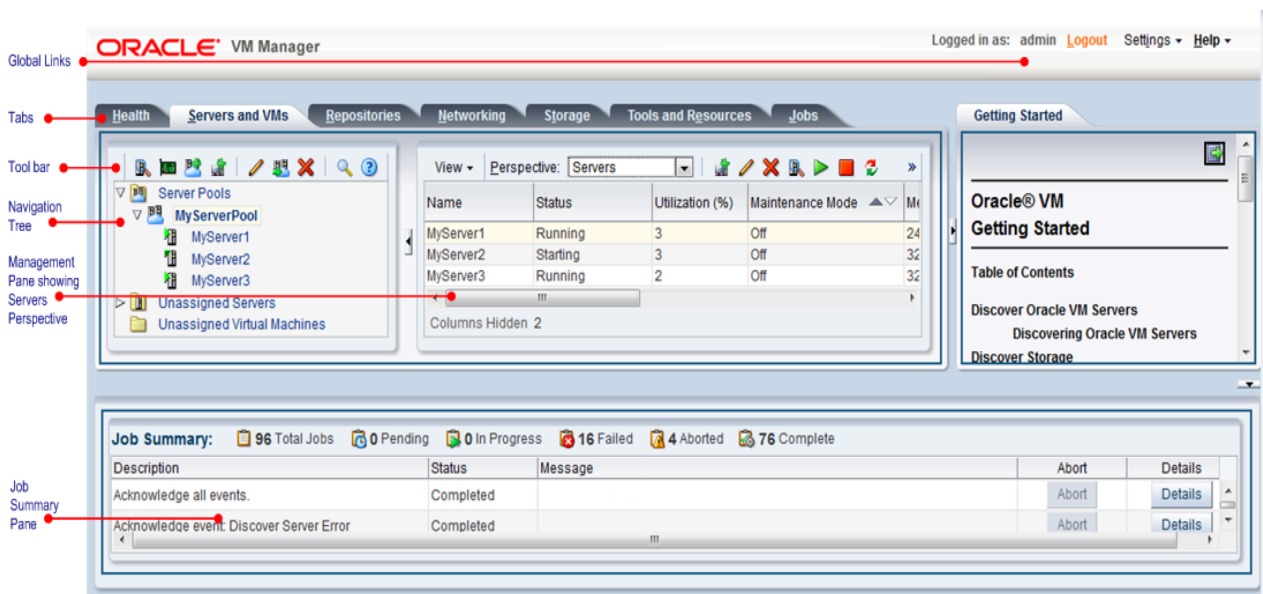
The login screen requires a user name and password. Enter the following,

Username = admin

Password = Welcome123



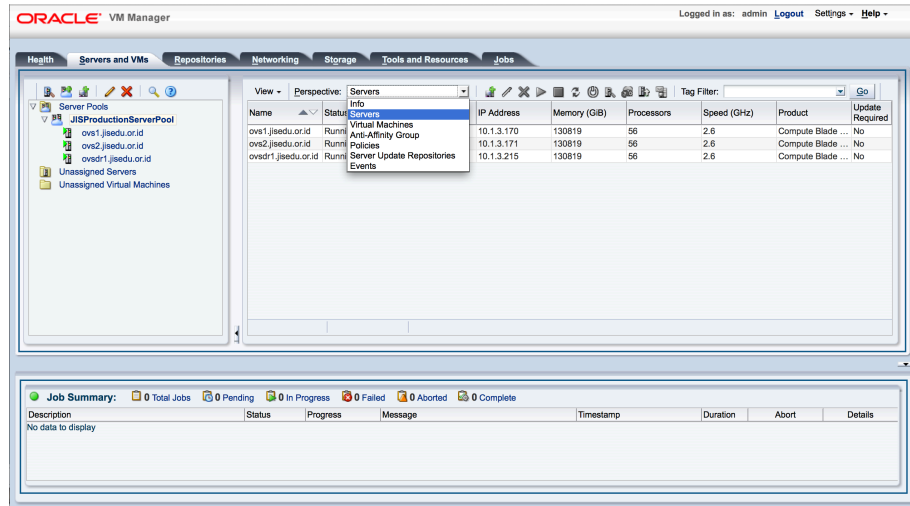
On entry to the Manager screen you will see Seven Tabs. Each tab contains access to distinct management functions or details of the health of the VM environment including jobs completed through the manager interface. Each tab is divided into three regions, the Navigation Tree top left, Management Panel top right and the Job Summary at the bottom.



Each of the panels or regions can be collapsed or expanded by mouse clicking on the "expand" or "collapse" icon.

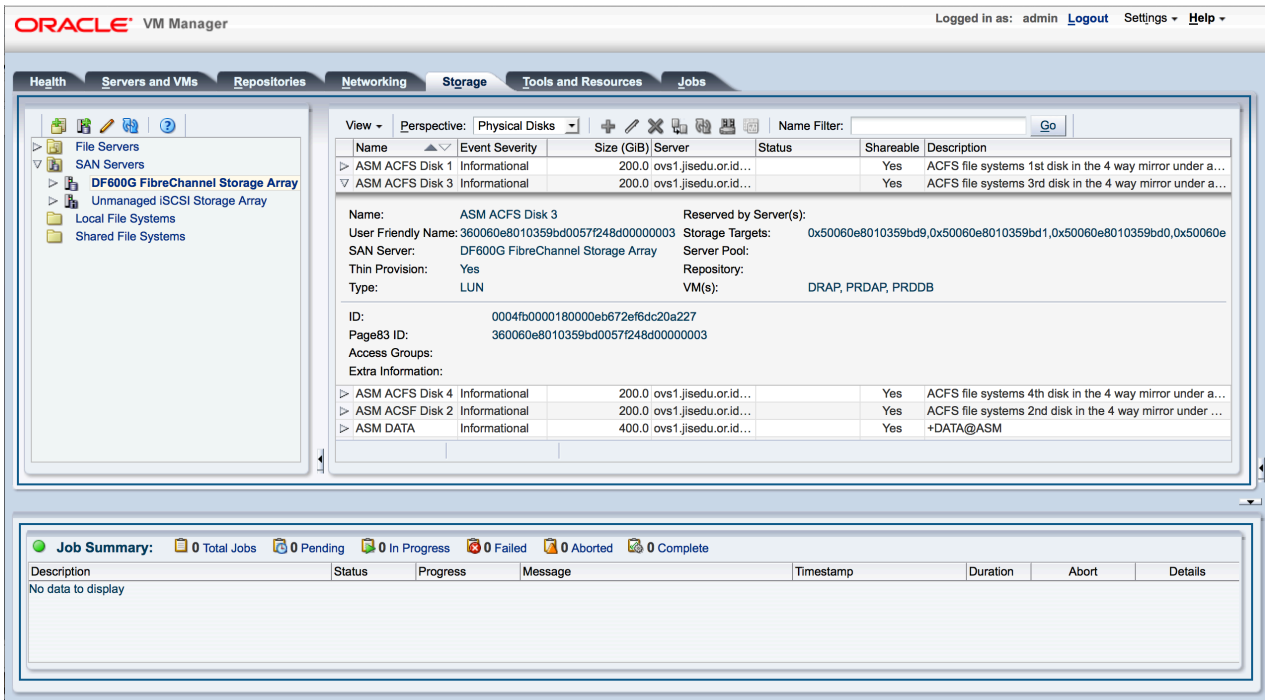


The Navigation Tree is used to display the details of high-level devices such as physical servers, server pools, network devices, storage or repositories. The Management panel displays the items owned by items displayed in the Navigation Tree. This panel has multiple views, described as perspectives. The drop down list allows the panel to display details of many services owned by a server, server pool or storage array as an example.



4.3 Exercise 1:

1. Log into the OVM Manager
2. Explore each of the tabs
3. From the Server and Virtual Machine tab, select the server pool and review the content of each of the perspectives by selecting each option from the drop down list.
4. Select one of the available servers and review the changes to the Management panel.



When a SAN is used with OVN, you will note the details of the presented LUN are available including the details of the Virtual machines accessing the LUN.

4.4 Review of Oracle Virtual Machine Overview

You should now be able to discuss the Oracle Virtual Manager, its components and functions. You will have the ability to log into the Manager console and to navigate its basic tabs and functions. You will be able to describe the process of importing templates and ISO image files for use in the assembly of new virtual servers along with the basic network and storage options available within the interface. Finally you will understand the role of the workflow interface and error management functions.