

Author – A.Kishore

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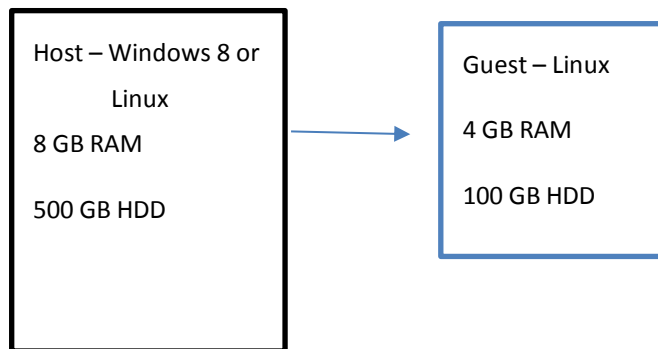
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INSTALLATION OF ORACLE ENTERPRISE LINUX 5.8 ON ORACLE VIRTUAL BOX

Below document covers step by step to Install Oracle Enterprise Linux 5.8 on Oracle Virtual Box Environment, once installation is done you may proceed with Oracle Database Installation. The host can be Windows 8 or Linux.



ORACLE VIRTUALBOX SOFTWARE

<http://download.virtualbox.org/virtualbox>

Linux Users

http://download.virtualbox.org/virtualbox/5.0.10/VirtualBox-5.0.10-104061-Linux_x86.rpm

Windows Users

<http://download.virtualbox.org/virtualbox/5.0.6/VirtualBox-5.0.6-103037-Win.exe>

ORACLE ENTERPRISE LINUX 5.8 SOFTWARE

<http://edelivery.oracle.com/linux>

You need to Sign in to edelivery.oracle.com and search for Oracle Linux

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Filter Products By ☒ Programs ☒ Linux/OVM/VMs ☐ Self-Study Courseware ☐ 1-Click Offerings

Product *

Select Platform ▼

Selected Products

Product	Platform
Oracle Linux ⓘ	x86 64 bit

Continue

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Select Oracle Linux 5.8

<input checked="" type="checkbox"/> Available Release	Selected Product	Applicable Terms & Restrictions	Size	Published Date
> <input checked="" type="checkbox"/> Oracle Linux 5.8.0.0.0 for x86 64 bit, 2 files Select Alternate Release...	Oracle Linux	Oracle Standard Terms and Restrictions	6.5 GB	Mar 08, 2012

File Download



To individually download files click on the filename, to download all files click on the 'Download All' button.

Print

Oracle Linux 5.8.0.0.0 for x86 64 bit

Oracle Linux (5.8.0.0.0)		
V31120-01.iso	Oracle Linux Release 5 Update 8 for x86_64 (64 Bit)	3.6 GB
V31121-01.iso	Oracle Linux Release 5 Update 8 source	2.9 GB

Select the DVD version –

Note:, if you want to Install Linux on a new Server, you need to burn them using the image option available with your cd-writer software, if you are using Oracle VM u may not need

Refer: http://www.petri.co.il/how_to_write_iso_files_to_cd.htm

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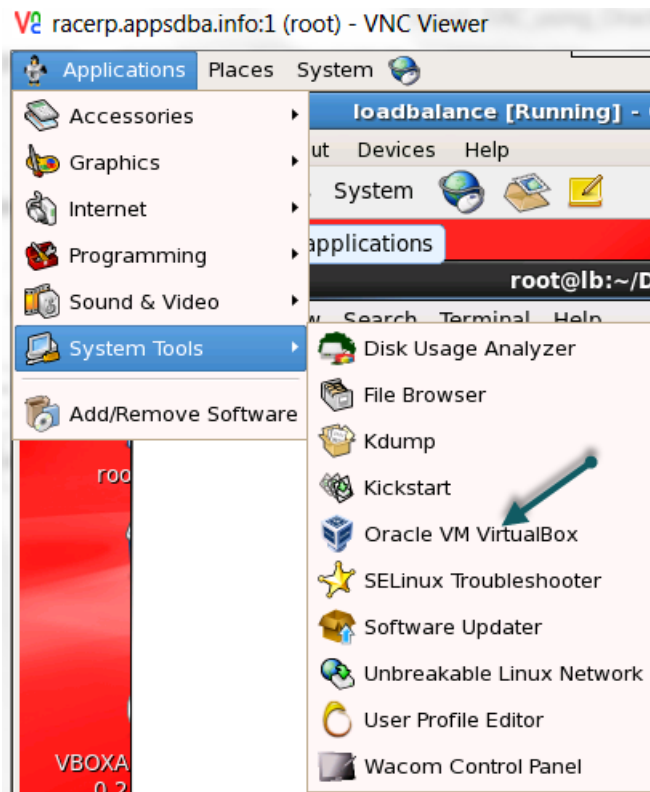
ORACLE VIRTUALBOX INSTALLATION

`rpm -Uvh VirtualBox-5.0-5.0.2_102096_el5-1.x86_64.rpm` on Linux box

or Install the `VirtualBox-5.0.6-103037-Win.exe` version on the Windows host machine

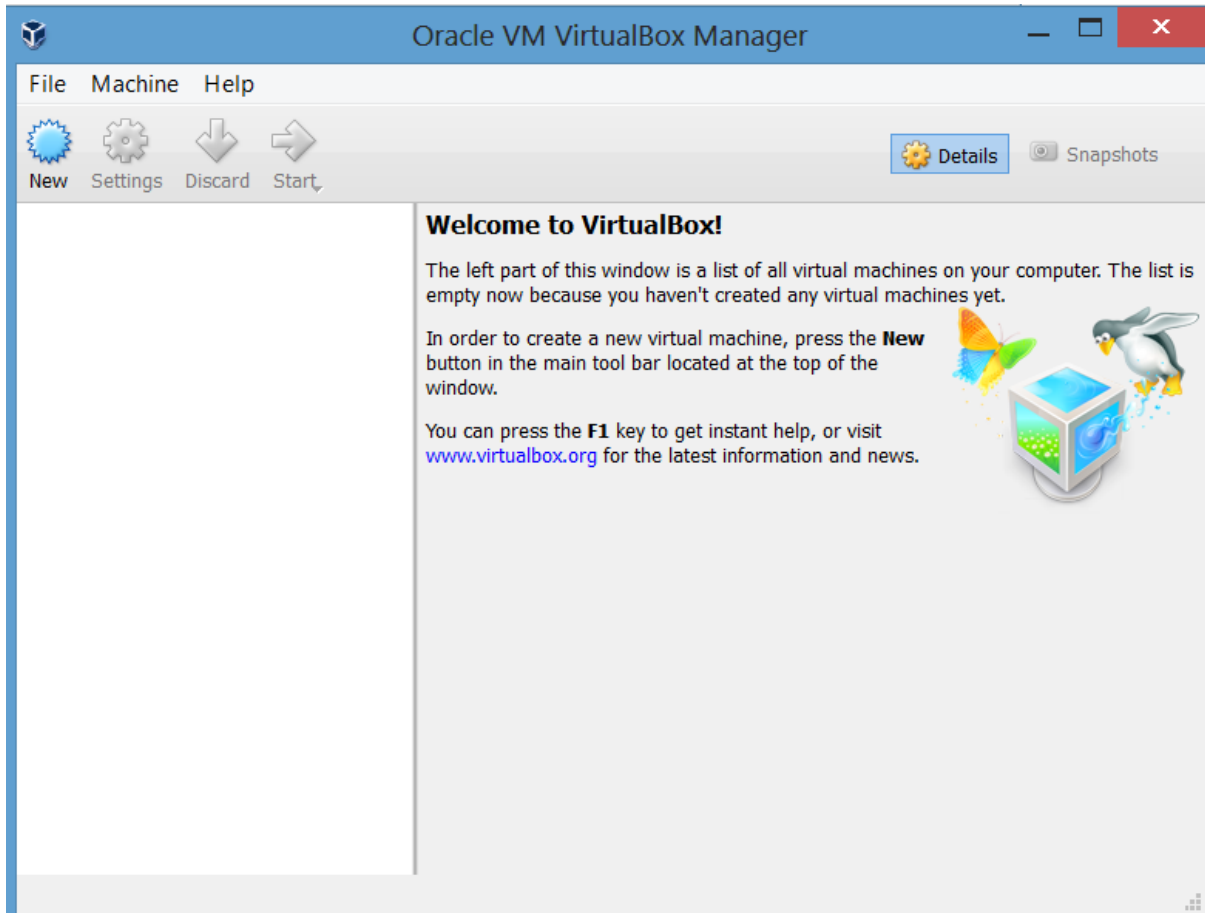
VIRTUAL MACHINE SETUP

Go to System Tools – Oracle VM VirtualBox

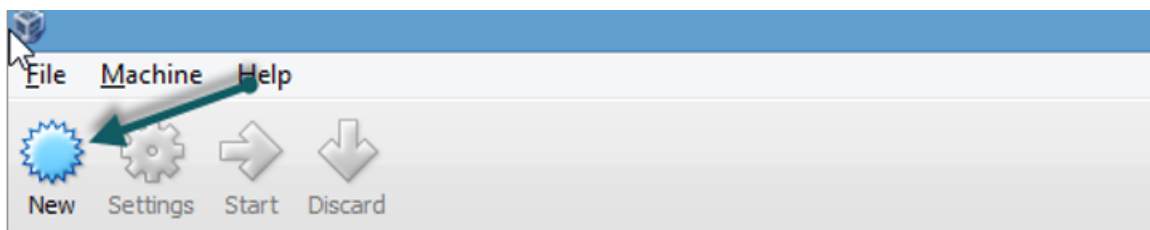


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Start VirtualBox and click the "New" button on the toolbar. Click the "Next" button on the first page of the Virtual Machine Wizard.



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Enter the name "linux1", OS "Linux" and Version "Oracle (64 bit)", then click the "Next" button.



Create Virtual Machine

Name and operating system

Please choose a descriptive name for the new virtual machine and select the type of operating system you intend to install on it. The name you choose will be used throughout VirtualBox to identify this machine.

Name: linux1

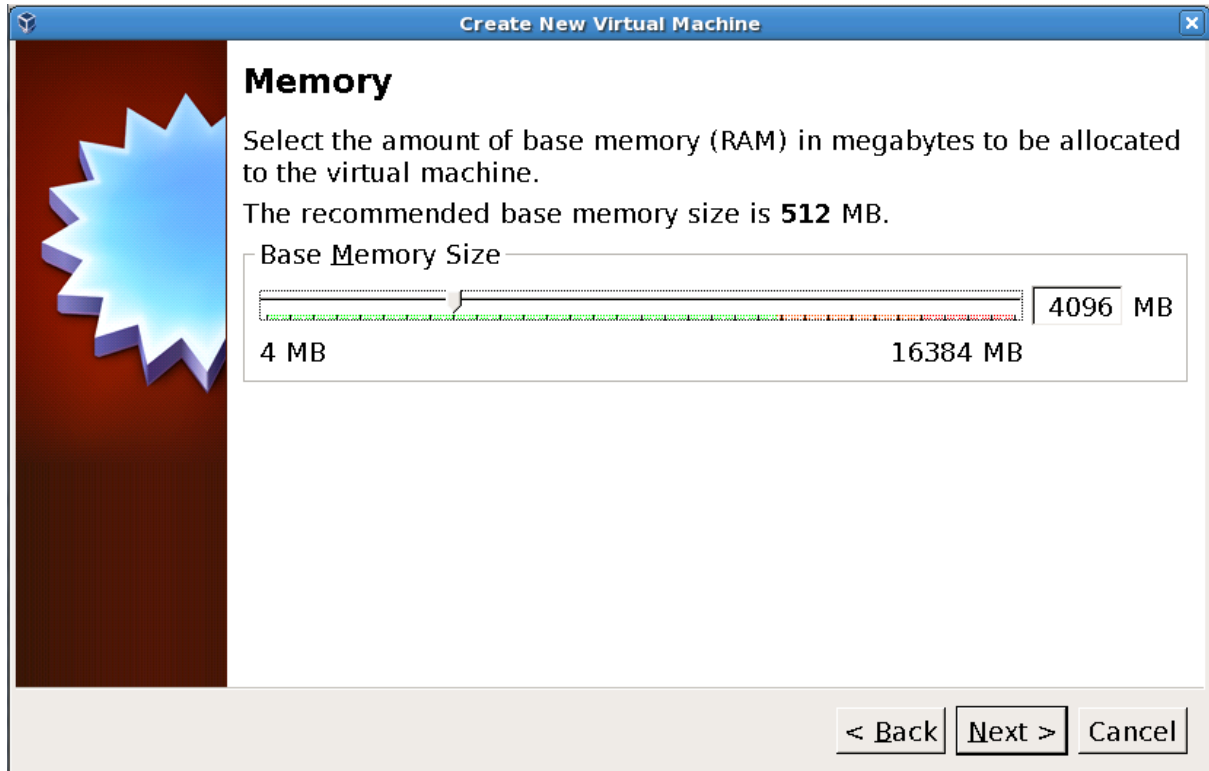
Type: Linux

Version: Oracle (64-bit)

Expert Mode < Back Next > Cancel

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Create New Virtual Machine

Memory

Select the amount of base memory (RAM) in megabytes to be allocated to the virtual machine.

The recommended base memory size is **512 MB**.

Base Memory Size

4 MB 16384 MB

4096 MB

< Back Next > Cancel

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Create New Virtual Machine

Virtual Hard Disk

If you wish you can now add a start-up disk to the new machine. You can either create a new virtual disk or select one from the list or from another location using the folder icon.

If you need a more complex virtual disk setup you can skip this step and make the changes to the machine settings once the machine is created.

The recommended size of the start-up disk is **8.00 GB**.

☒ **Start-up Disk**

☒ Create new hard disk

☐ Use existing hard disk

asm1.vdi (Shareable, 5.00 GB)

< Back

Next >

Cancel

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Create New Virtual Disk

Virtual disk storage details

Please choose whether the new virtual disk file should be allocated as it is used or if it should be created fully allocated.

A **dynamically allocated** virtual disk file will only use space on your physical hard disk as it fills up, although it will not shrink again automatically when space on it is freed.

A **fixed size** virtual disk file may take longer to create on some systems but is often faster to use.

Storage details

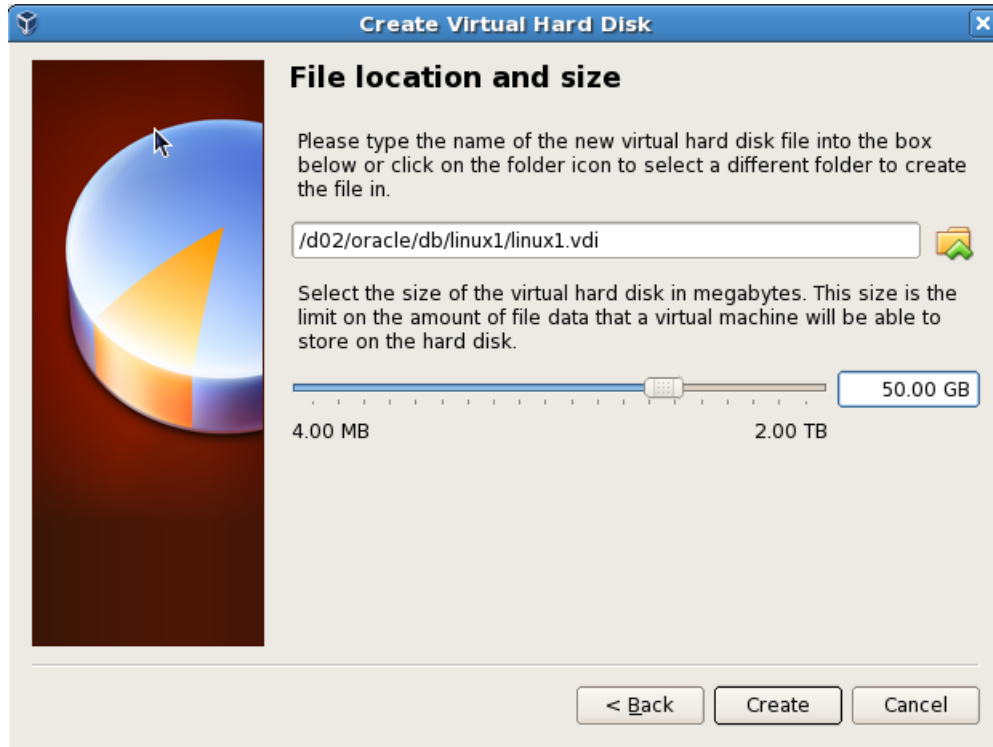
☒ Dynamically allocated

☐ Fixed size

< Back Next > Cancel

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The "linux1" VM will appear on the left hand pane. Scroll down the "Details" tab on the right and click on the "Network" link.

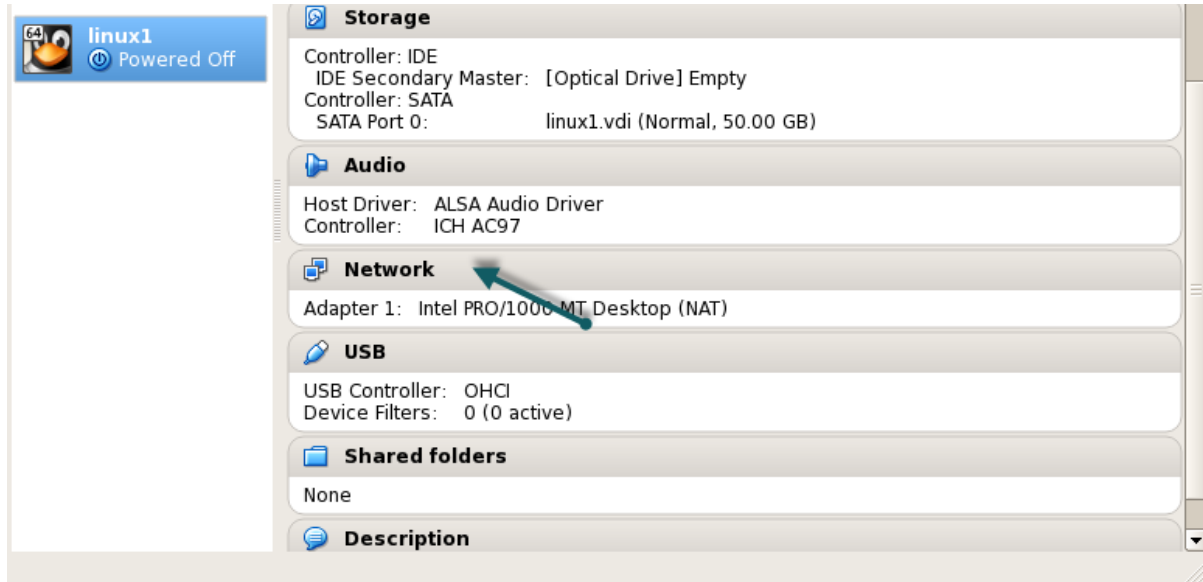
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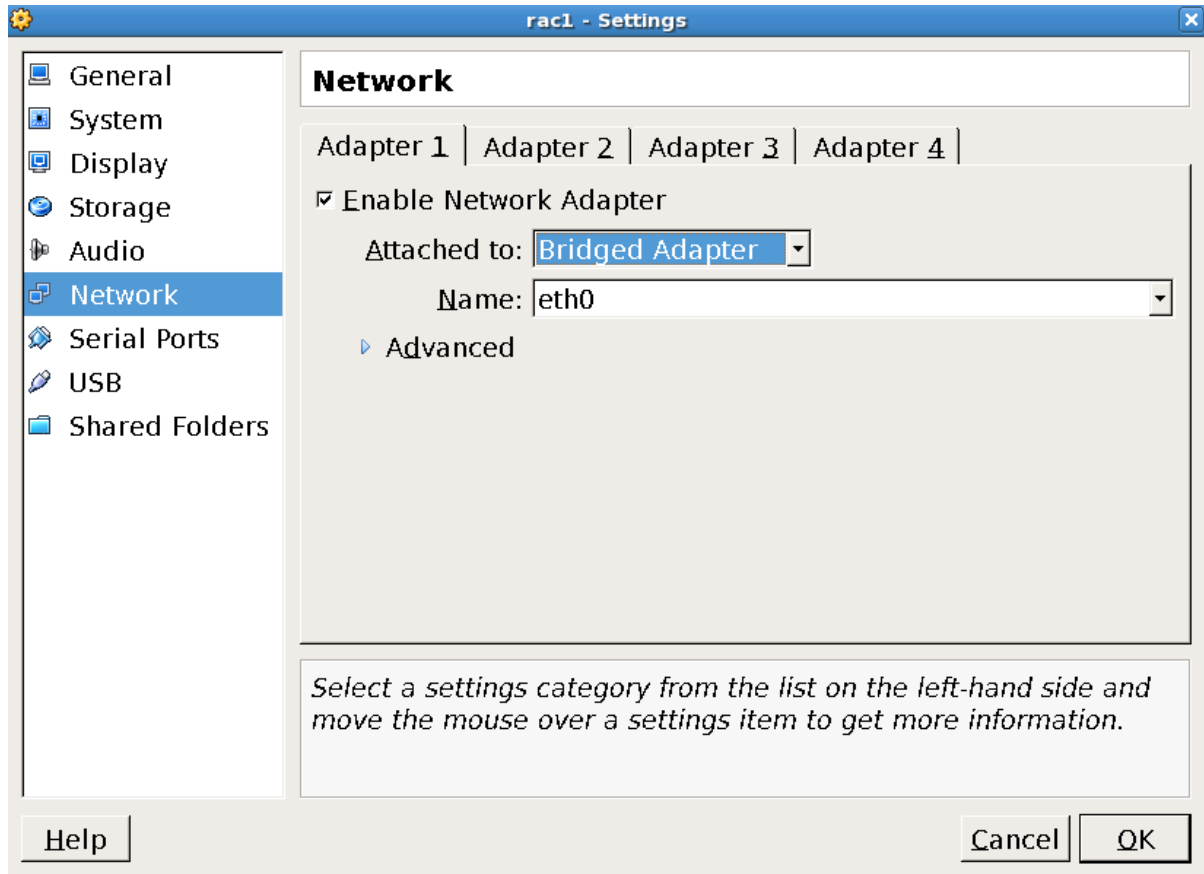
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Make sure "Adapter 1" is enabled, set to "Bridged Adapter" and "eth0",



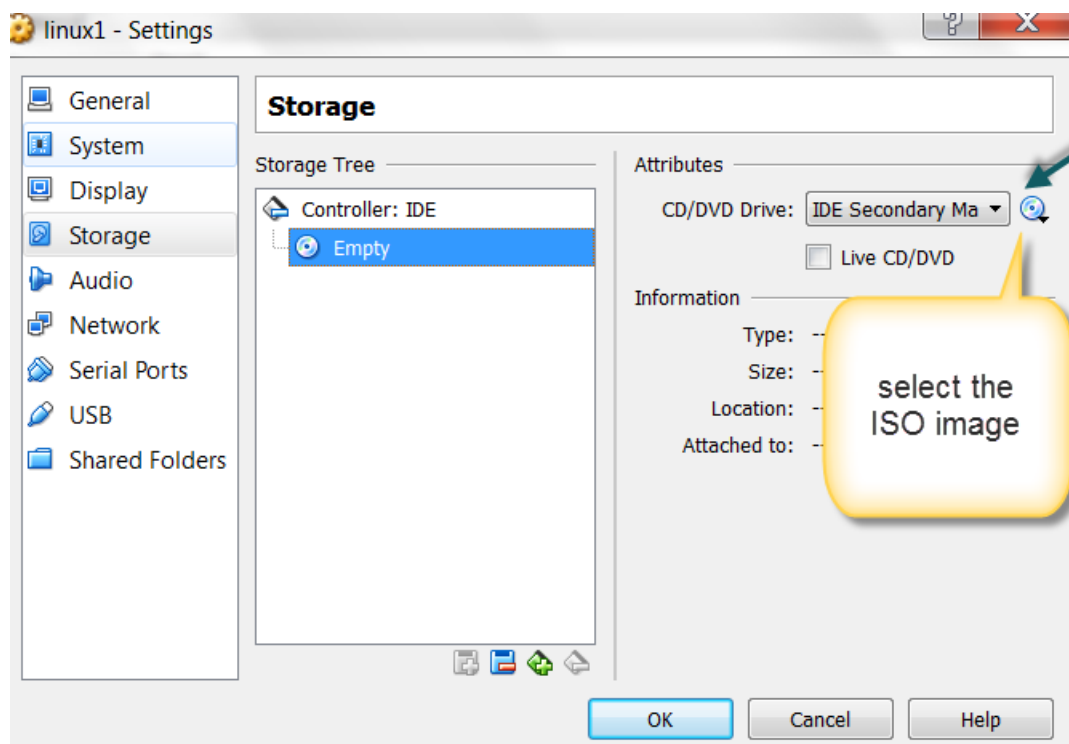
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The virtual machine is now configured so we can start the guest operating system installation.

GUEST OPERATING SYSTEM INSTALLATION

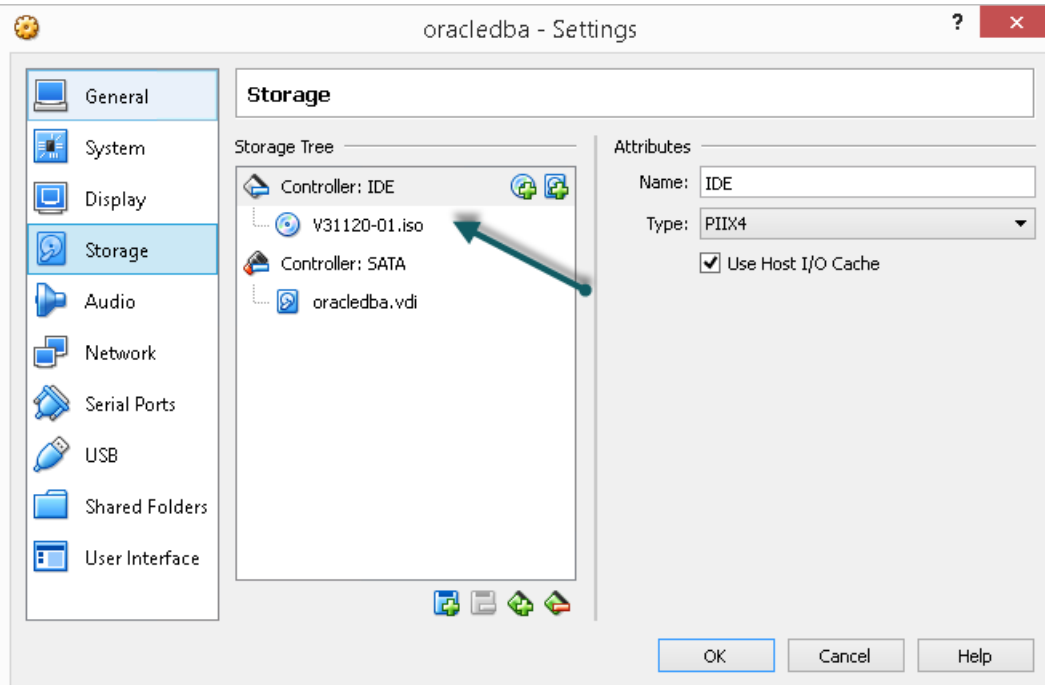
In the storage section, select the OEL5.8 iso file



V31120-01.iso

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Start the virtual machine by clicking the "Start" button on the toolbar. The resulting console window will contain the Oracle Linux boot screen.

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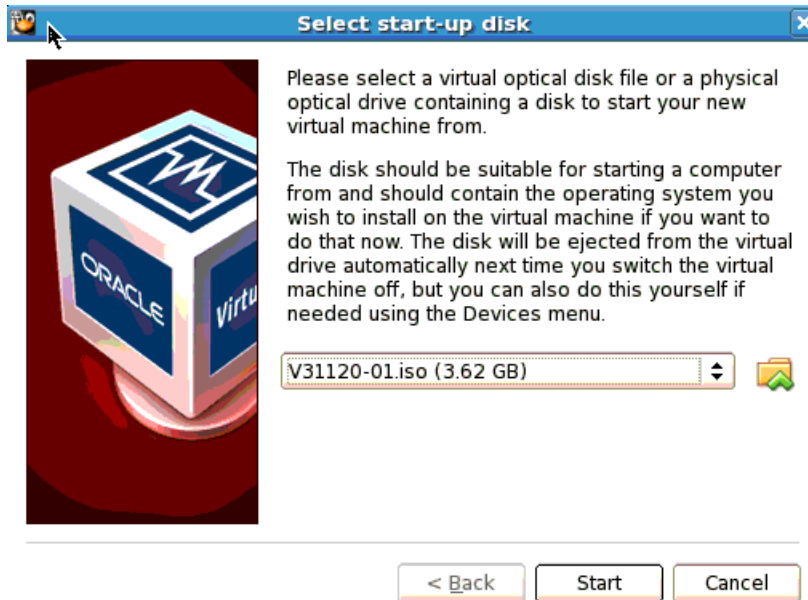
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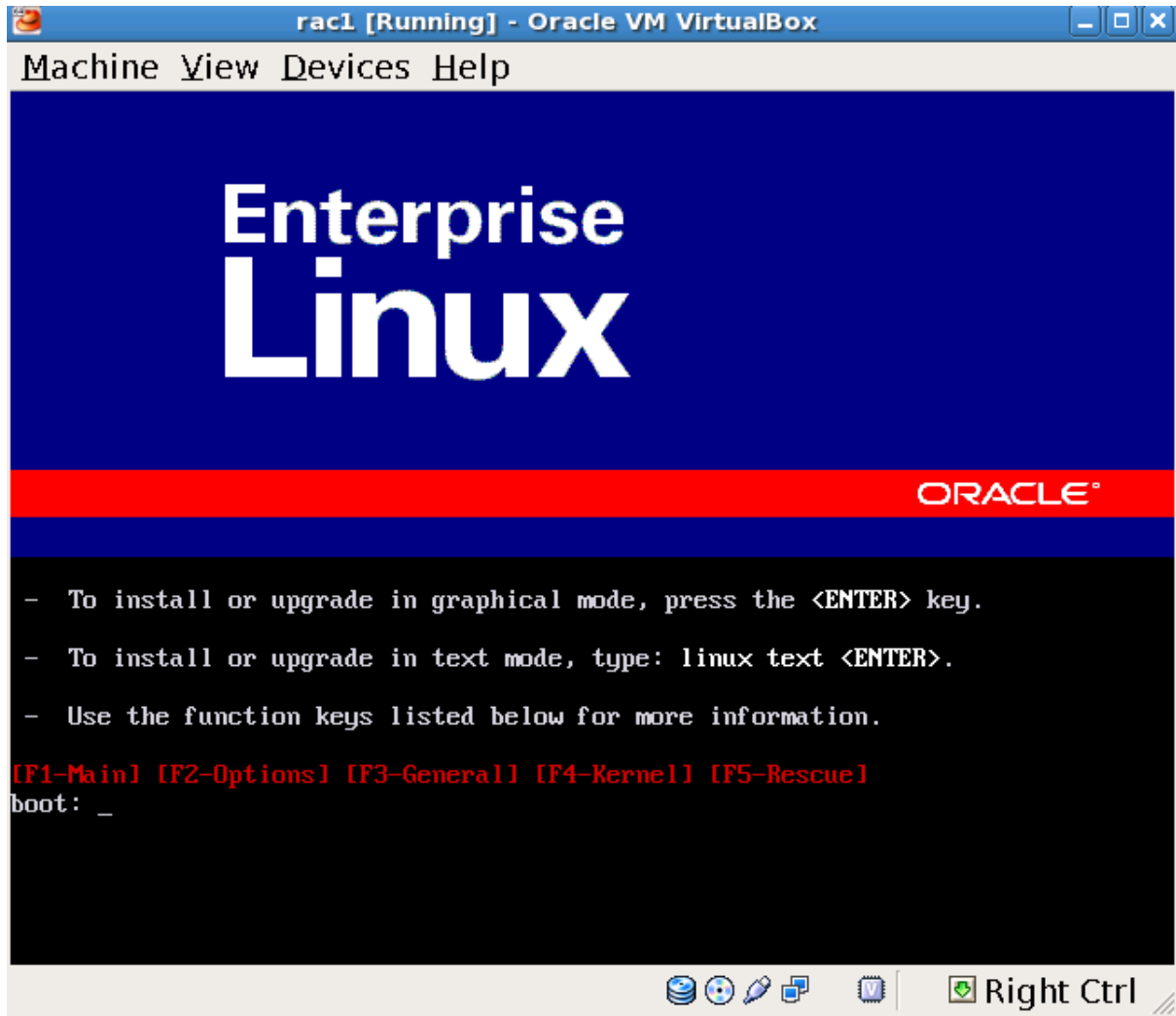
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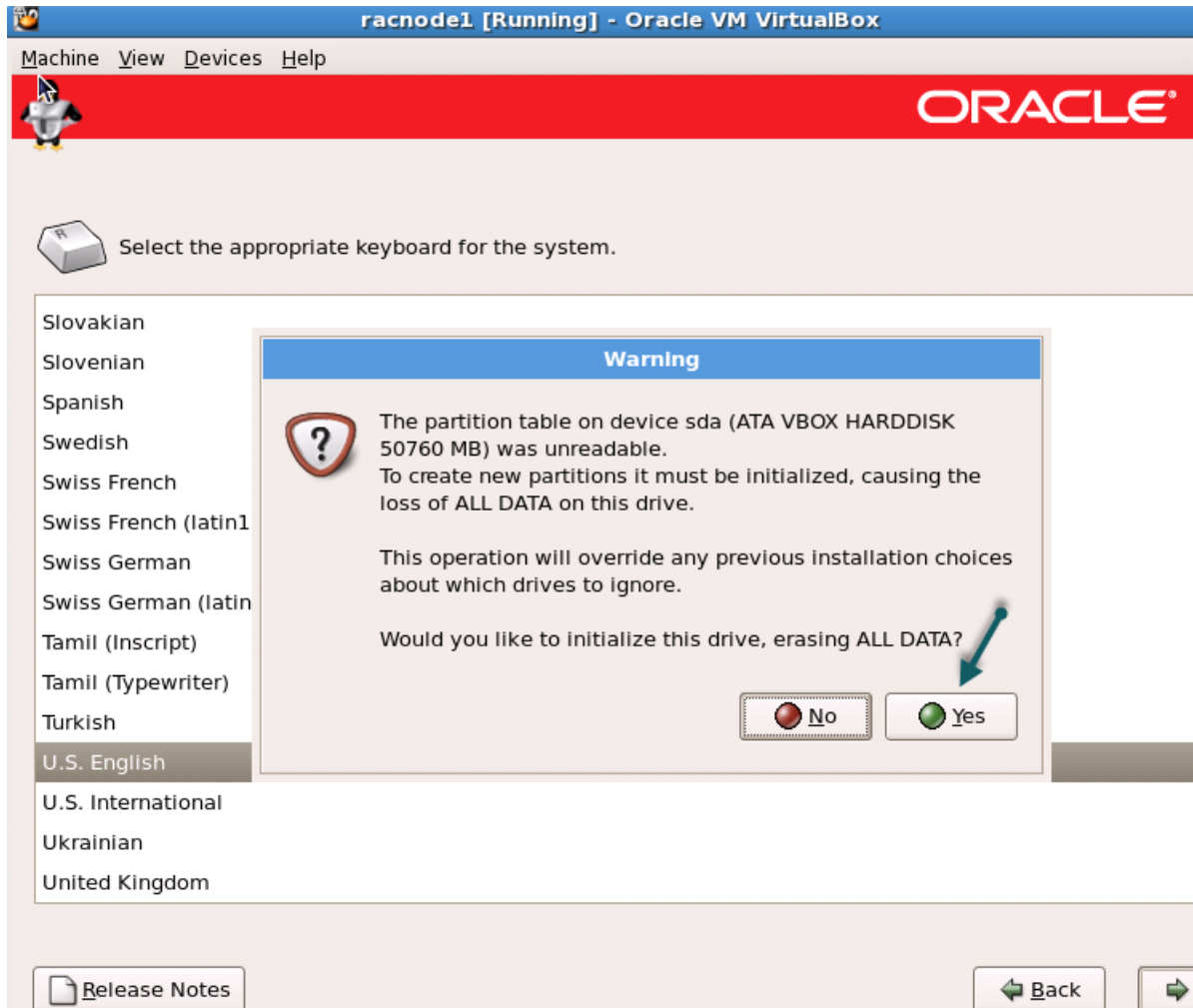
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Click Yes

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rac1 [Running] - Oracle VM VirtualBox

Machine View Devices Help

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Installation requires partitioning of your hard drive.
By default, a partitioning layout is chosen which is
reasonable for most users. You can either choose
to use this or create your own.

Remove all partitions on selected drives and create default layout. ▾


☐ Encrypt system


Select the drive(s) to use for this installation.


<input checked="" type="checkbox"/>	sda	30922 MB	ATA VBOX HARDDISK
-------------------------------------	-----	----------	-------------------

+ Advanced storage configuration

☒ Review and modify partitioning layout

 Release Notes

 Back

 Next

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Network Devices

Active on Boot	Device	IPv4/Netmask	IPv6/Prefix
<input checked="" type="checkbox"/>	eth0	DHCP	Auto

Hostname

Set the hostname:

☐ automatically via DHCP

☒ manually (e.g., host.domain.com)

Miscellaneous Settings

Gateway:

Primary DNS:

Secondary DNS:

Right Ctrl

Let us go with DHCP for now, once installation is complete we shall make it static

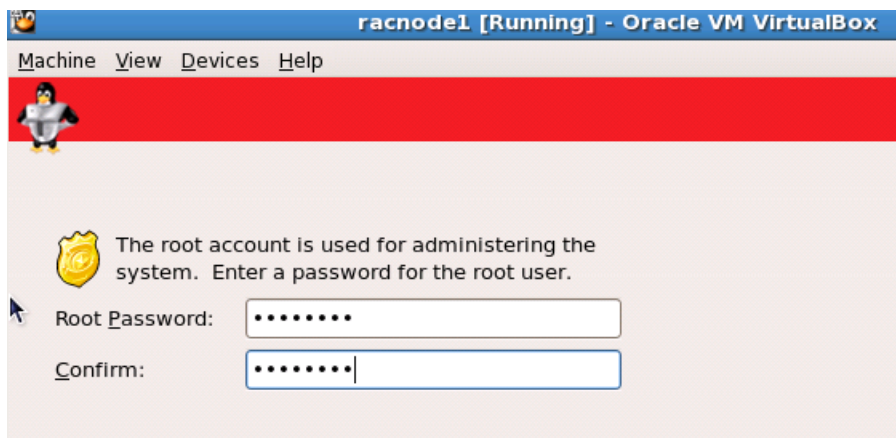
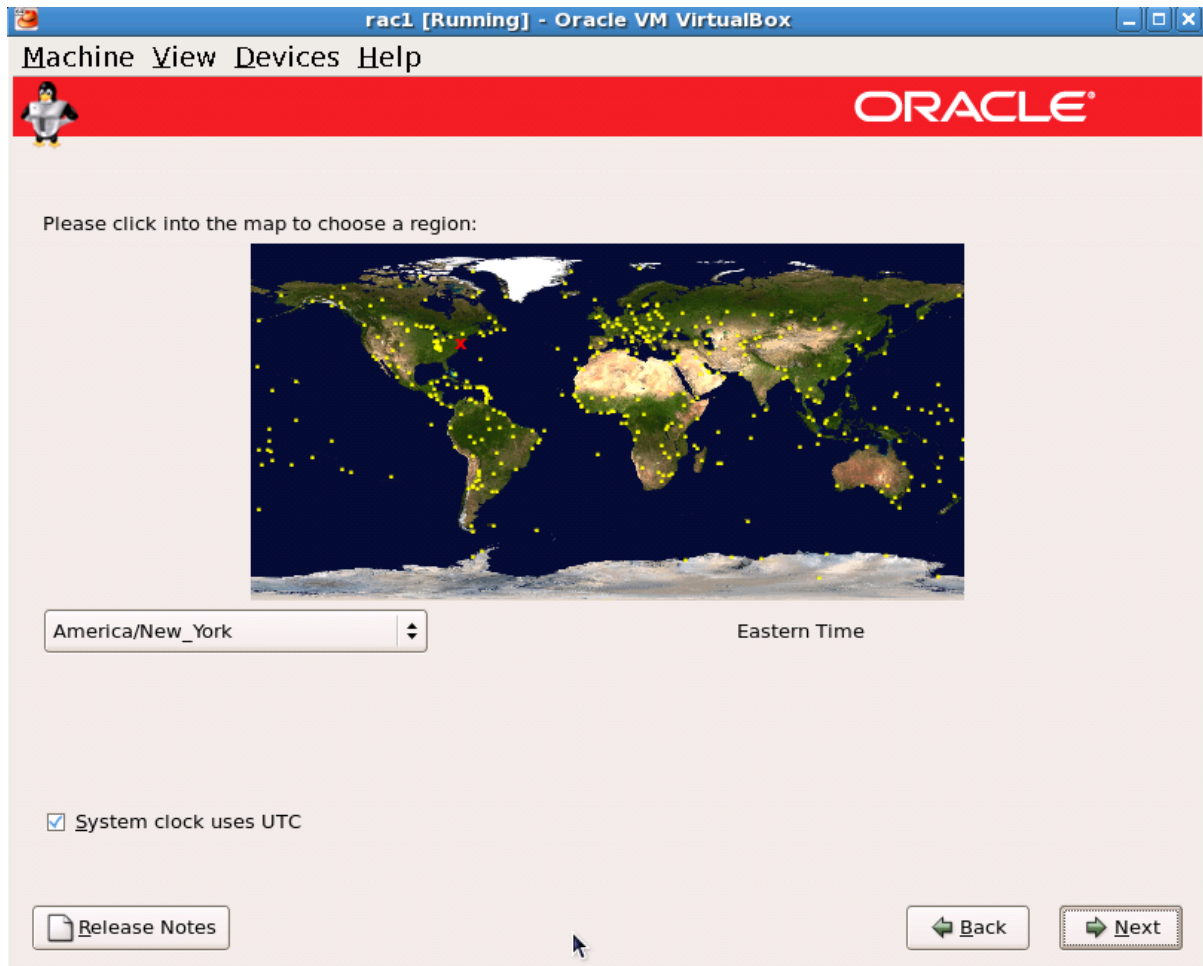
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Machine View Devices Help



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The default installation of Enterprise Linux includes a set of software applicable for general internet usage. What additional tasks would you like your system to include support for?

☒ Software Development

- ☐ Web server
- ☐ Virtualization
- ☐ Clustering
- ☐ Storage Clustering

You can further customize the software selection now, or after install via the software management application.

☒ Customize later ☐ Customize now

Release Notes

Back

Next

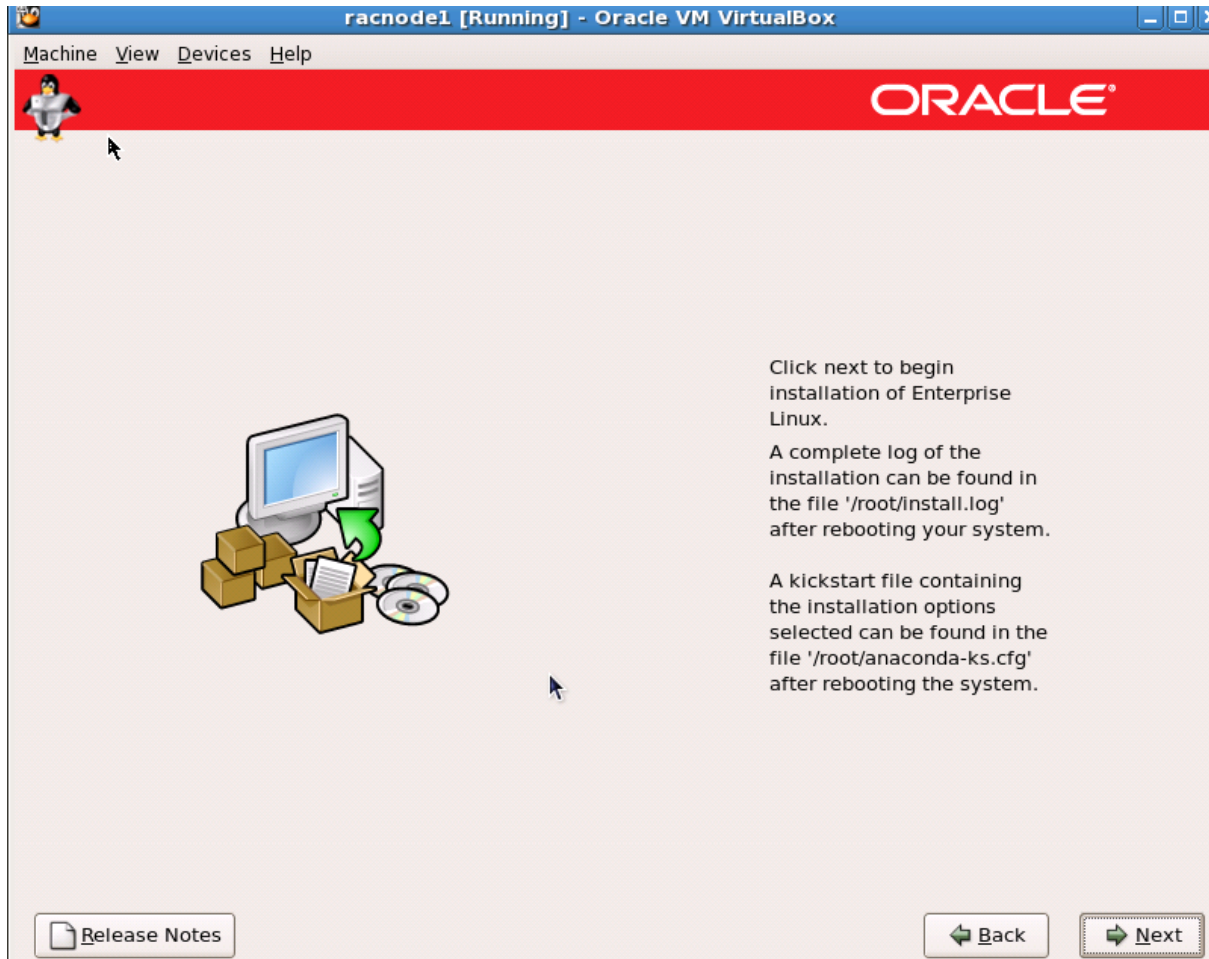
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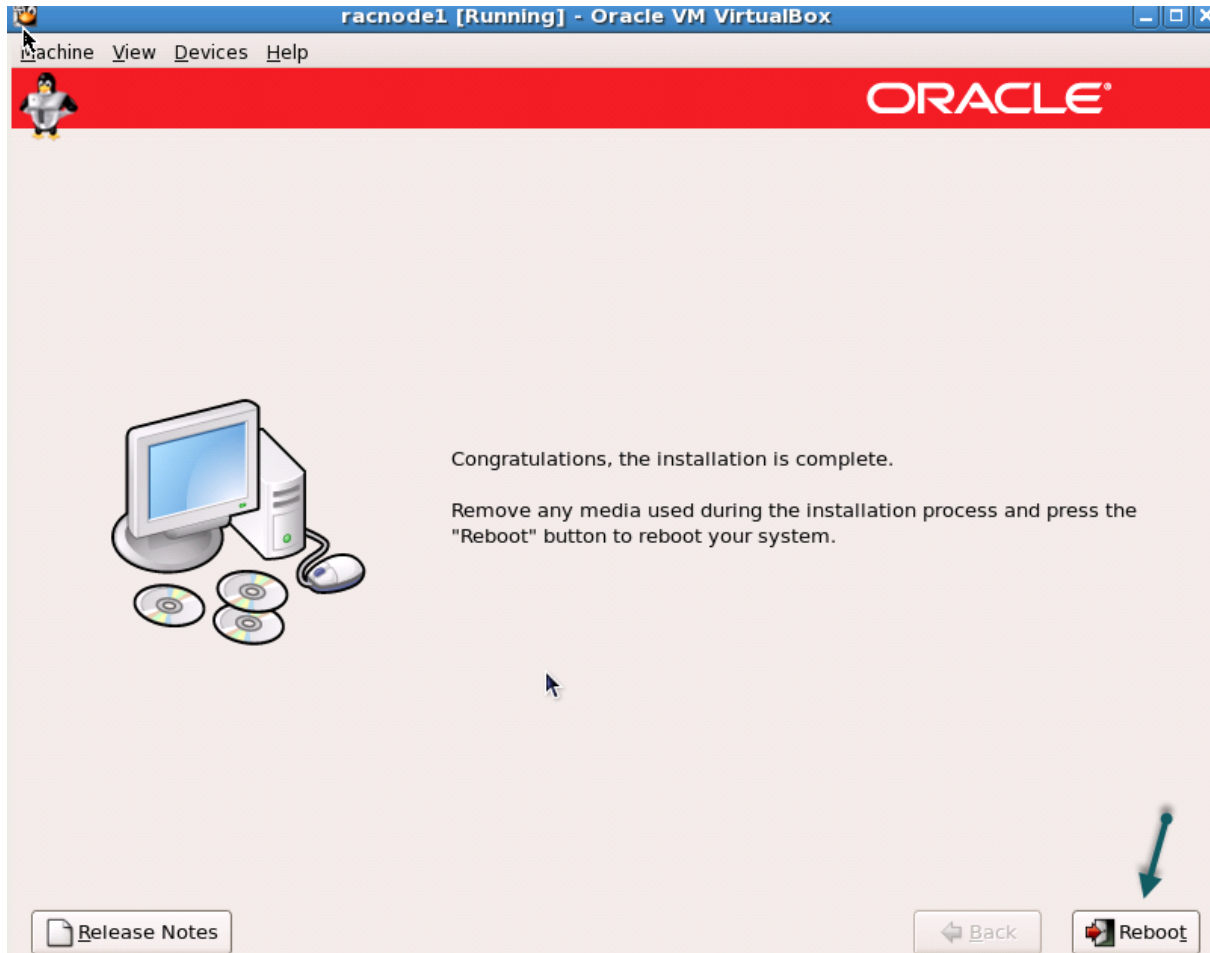
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Reboot the Guest Machine

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› **Welcome**
License Agreement
Firewall
SELinux
Kdump
Date and Time
Create User
Sound Card
Additional CDs



Welcome

There are a few more steps to take before your system is ready to use. The Setup Agent will now guide you through some basic configuration. Please click the "Forward" button in the lower right corner to continue.



Enterprise Linux

← Back

→ Forward

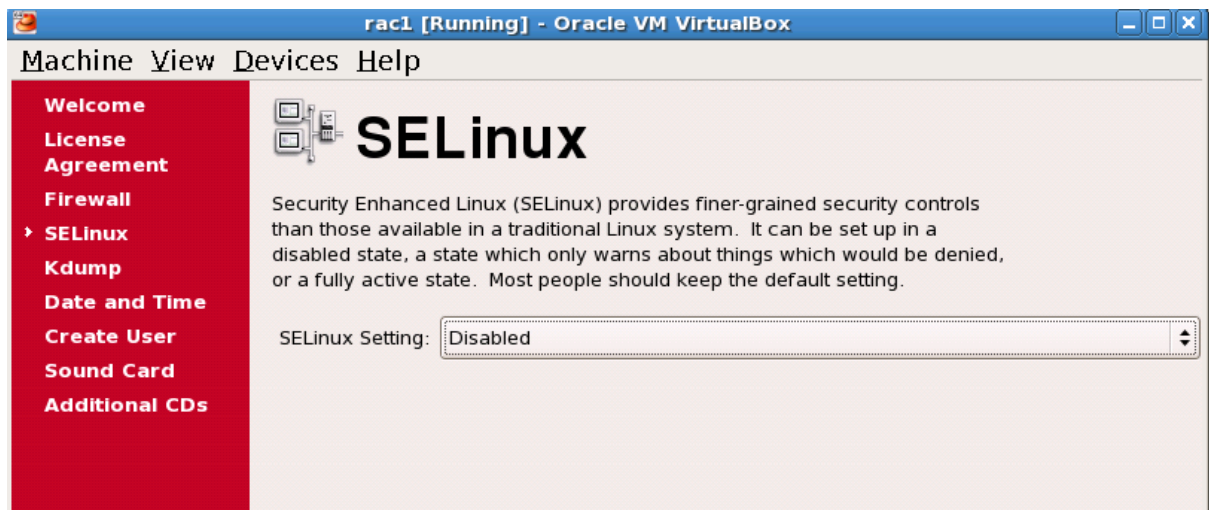
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Create User

It is recommended that you create a 'username' for regular (non-administrative) use of your system. To create a system 'username,' please provide the information requested below.

Username:
Full Name:
Password:
Confirm Password:

If you need to use network authentication, such as Kerberos or NIS, please click the Use Network Login button.

Use Network Login...



Back

Forward



It is highly recommended that a personal user account be created. If you continue without an account, you can only log in with the root account, which is reserved for administrative use only.

Continue

Create account

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Reboot the machine

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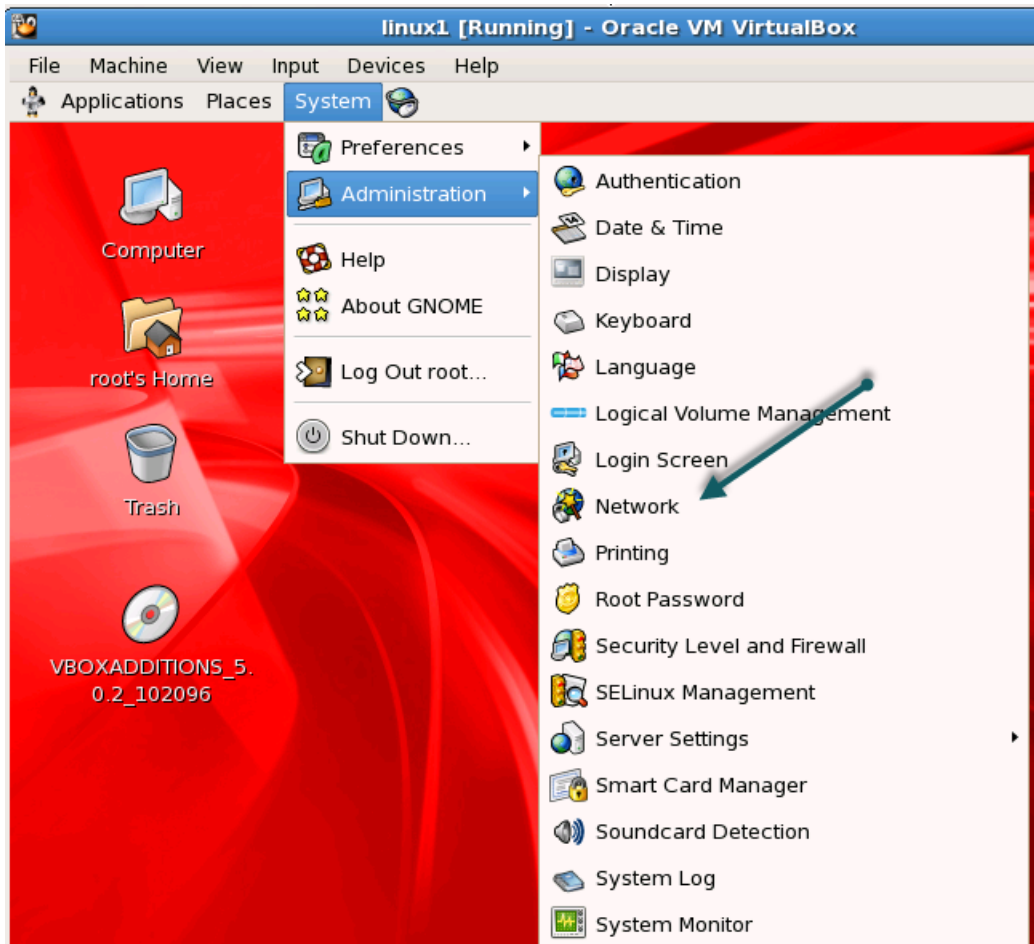
<http://www.appsdba.info>

Identify the IP address and make it static

```
root@linux1:~  
File Edit View Terminal Tabs Help  
[root@linux1 ~]# ifconfig  
eth0      Link encap:Ethernet  HWaddr 08:00:27:CC:90:D1  
          inet addr:192.168.1.2  Bcast:192.168.1.255  Mask:255.255.255  
          inet6 addr: fe80::a00:27ff:fecc:90d1/64 Scope:Link  
          UP BROADCAST RUNNING MULTICAST  MTU:1500  Metric:1  
          RX packets:3 errors:0 dropped:0 overruns:0 frame:0  
          TX packets:35 errors:0 dropped:0 overruns:0 carrier:0  
          collisions:0 txqueuelen:1000  
          RX bytes:992 (992.0 b)  TX bytes:7688 (7.5 KiB)  
          Base address:0xd010 Memory:f0000000-f0020000  
  
lo        Link encap:Local Loopback  
          inet addr:127.0.0.1  Mask:255.0.0.0  
          inet6 addr: ::1/128 Scope:Host  
          UP LOOPBACK RUNNING  MTU:16436  Metric:1  
          RX packets:886 errors:0 dropped:0 overruns:0 frame:0  
          TX packets:886 errors:0 dropped:0 overruns:0 carrier:0  
          collisions:0 txqueuelen:0  
          RX bytes:3153580 (3.0 MiB)  TX bytes:3153580 (3.0 MiB)  
  
[root@linux1 ~]#
```

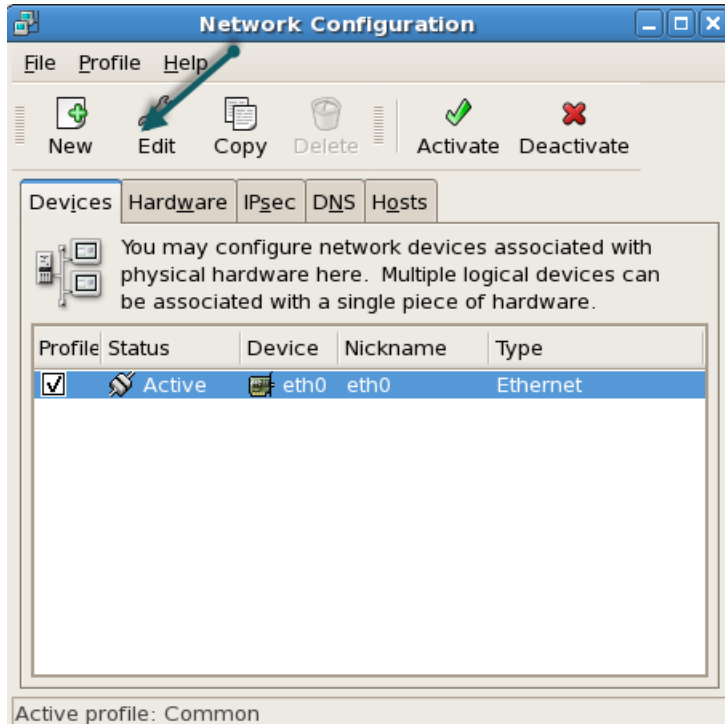
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Ethernet Device

General Route Hardware Device

Nickname: eth0

☒ Activate device when computer starts

☐ Allow all users to enable and disable the device

☐ Enable IPv6 configuration for this interface

☐ Automatically obtain IP address settings with: dhcp

DHCP Settings

Hostname (optional): linux1.appsdba.info

☒ Automatically obtain DNS information from provider

☒ Statically set IP addresses:

Manual IP Address Settings

Address: 192.168.1.2

Subnet mask: 255.255.255.0

Default gateway address: 192.168.1.1

☐ Set MTU to: 0

☐ Set MRU to: 0

Save the settings

Network Configuration

File Profile Help

Save Ctrl+S Copy Delete Activate Deactivate

Quit Ctrl+Q

Devices Hardware IPsec DNS Hosts

You may configure network devices associated with physical hardware here. Multiple logical devices can be associated with a single piece of hardware.

Profile	Status	Device	Nickname	Type
<input checked="" type="checkbox"/>	Active	eth0	eth0	Ethernet

Active profile: Common

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You need to start the network using below command

Service network restart

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PREPARE STEPS

EDIT THE “HOSTS” FILE OF LINUX1 .

Follow the below steps on linux1

```
vi /etc/hosts
```

Do not remove the following line, or various programs

that require network functionality will fail.

```
127.0.0.1    localhost.localdomain localhost
```

```
192.168.1.2  linux1.appsdba.info  linux1
```

EDIT THE “SYSCTL.CONF” OF LINUX1 WITH THE FOLLOWING VALUES.

```
vi /etc/sysctl.conf
```

```
kernel.core_uses_pid = 1
kernel.shmmax=4294967295
kernel.shmmni=4096
kernel.sem=256 32000 100 142
fs.file-max = 6815744
kernel.msgmnb = 65535
kernel.msgmni = 2878
net.core.rmem_default = 262144
net.core.rmem_max = 4194304
net.core.wmem_default = 262144
net.core.wmem_max = 1048576
net.ipv4.tcp_wmem = 262144 262144 262144
net.ipv4.tcp_rmem = 262144 262144 262144
```

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```
fs.aio-max-nr = 1048576
net.ipv4.ip_local_port_range = 9000 65500
```

EDIT THE “LIMITS.CONF” FILE OF LINUX1 WITH THE FOLLOWING VALUES.

vi /etc/security/limits.conf

```
*      hard  nofile   327680
*      soft  nofile   262144
*      hard  nproc    327680
*      soft  nproc    262144
*      hard  memlock   3145728
*      soft  memlock   3145728
*      hard  stack     16384
*      soft  stack     10240
```

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Create "oracle" User and Directories in both nodes.

```
groupadd -g 1000 oinstall
groupadd -g 1031 dba
useradd -u 1101 -g oinstall -G dba oracle
```

CREATE DIRECTORIES AND GRANT PERMISSIONS

```
mkdir -p /u01/app/oracle
chown -R oracle:oinstall /u01/app/
chmod -R 775 /u01/app/oracle
chown oracle:oinstall /u01/app/oracle
mkdir -p /u01/app/oraInventory
chmod -R 775 /u01/app/oraInventory
cd /u01/app
chown -R oracle:dba oraInventory
```

Change the password of oracle user

```
[root@rac1 home]# passwd oracle

Changing password for user oracle.

New password:

BAD PASSWORD: it is based on a dictionary word

BAD PASSWORD: is too simple

Retype new password:

passwd: all authentication tokens updated successfully.
```

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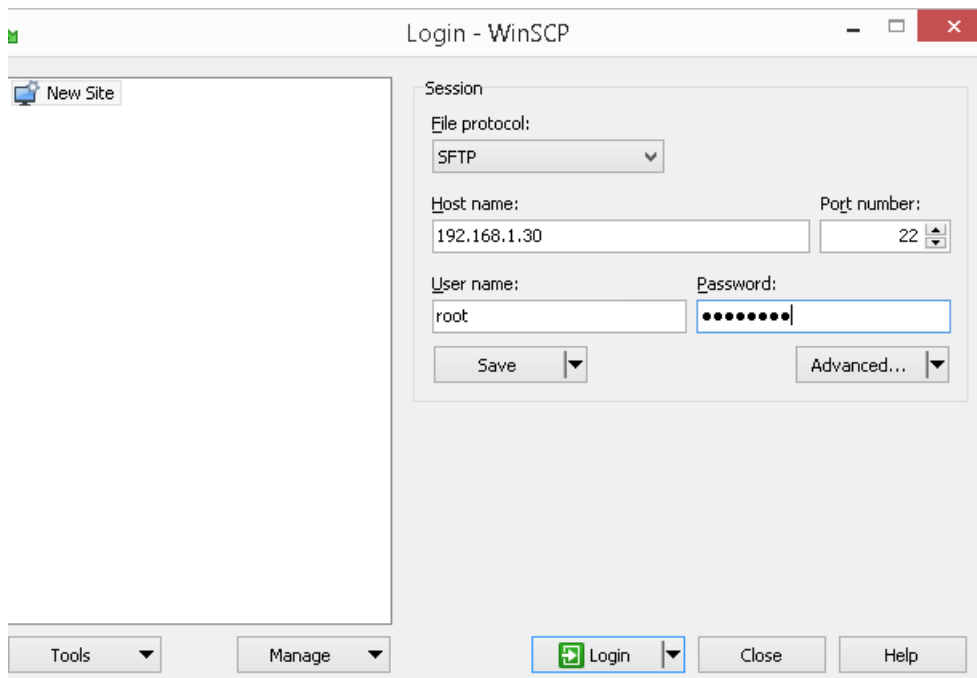
<http://www.appsdba.info>

INSTALL MISSING PACKAGES

Please download the packages required

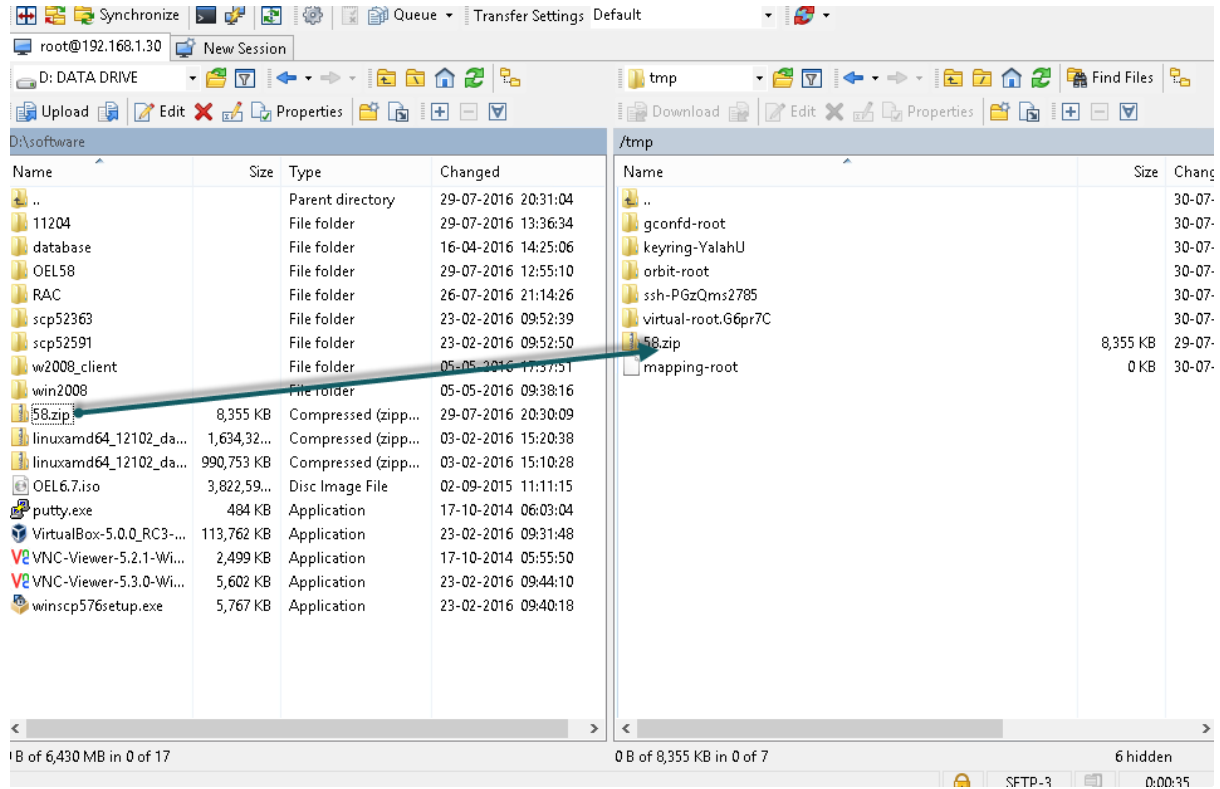
<http://www.appsdba.info/packages/58.zip>

Using winscp transfer the files to linux box



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```
# From Oracle Linux 5 DVD
```

To identify the missing packages

```
rpm -q --qf '%{NAME}-%{VERSION}-%{RELEASE} (%{ARCH})\n' \  
openmotif21 \  
xorg-x11-libs-compat \  
gcc \  
gcc-c++ \  
glibc \  
glibc-common \  
glibc-devel \  
libgcc \  
libstdc++-devel \  
libstdc++ \  
libXi \  
libXp \  
libaio \  
libgomp \  
make \  
gdbm \  
sysstat \  
compat-libstdc++-296 \  
compat-libstdc++-33 \  
elfutils-libelf-devel \  
elfutils-libelf-devel-static \  
libaio-devel \  
unixODBC \  
unixODBC-devel \  
| grep "not installed"
```

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```
rpm -Uvh sysstat-7.0.2-11.el5.x86_64.rpm
rpm -Uvh libaio-devel-0.3.106-5.i386.rpm
rpm -Uvh libaio-devel-0.3.106-5.x86_64.rpm
rpm -Uvh unixODBC-libs-2.2.11-10.el5.i386.rpm
rpm -Uvh unixODBC-libs-2.2.11-10.el5.x86_64.rpm
rpm -Uvh unixODBC-2.2.11-10.el5.i386.rpm
rpm -Uvh unixODBC-2.2.11-10.el5.x86_64.rpm
rpm -Uvh unixODBC-devel-2.2.11-10.el5.i386.rpm
rpm -Uvh unixODBC-devel-2.2.11-10.el5.x86_64.rpm
rpm -Uvh xorg-x11-libs-compat-6.8.2-1.EL.33.0.1.i386.rpm
rpm -Uvh libXp-1.0.0-8.1.el5.i386.rpm
rpm -Uvh libXp-1.0.0-8.1.el5.x86_64.rpm
rpm -Uvh openmotif21-2.1.30-11.EL5.i386.rpm
rpm -Uvh compat-db-4.2.52-5.1.x86_64.rpm
rpm -Uvh compat-db-4.2.52-5.1.i386.rpm
```

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Login as the oracle user and create a file oracle.env.

su - oracle

Note : Changed the hostname marked in pink

cat > oracle.env

```
# User specific environment and startup programs
# database name - ORCL

PATH=$PATH:$HOME/bin
export PATH
PATH=$PATH:$HOME/bin
export PATH

# Oracle Settings
TMP=/tmp; export TMP
TMPDIR=$TMP; export TMPDIR
DB_HOME=/u01/app/oracle/product/11.2.0/dbhome_1
ORACLE_HOSTNAME=linux1.appsdba.info; export ORACLE_HOSTNAME
export ORACLE_UNQNAME=ORCL
export ORACLE_SID=ORCL

ORACLE_HOME=$DB_HOME; export ORACLE_HOME
PATH=$ORACLE_HOME/bin:$PATH; export PATH
LD_LIBRARY_PATH=$ORACLE_HOME/lib:/usr/lib; export LD_LIBRARY_PATH
CLASSPATH=$ORACLE_HOME/JRE:$ORACLE_HOME/jlib:$ORACLE_HOME/rdbms/jlib; export CLASSPATH

ORACLE_TERM=xterm; export ORACLE_TERM
if [ $USER = "oracle" ]; then
    if [ $SHELL = "/bin/ksh" ]; then
        ulimit -p 16384
        ulimit -n 65536
    else
        ulimit -u 16384 -n 65536
    fi
fi
```

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INSTALL GUEST ADDITIONS

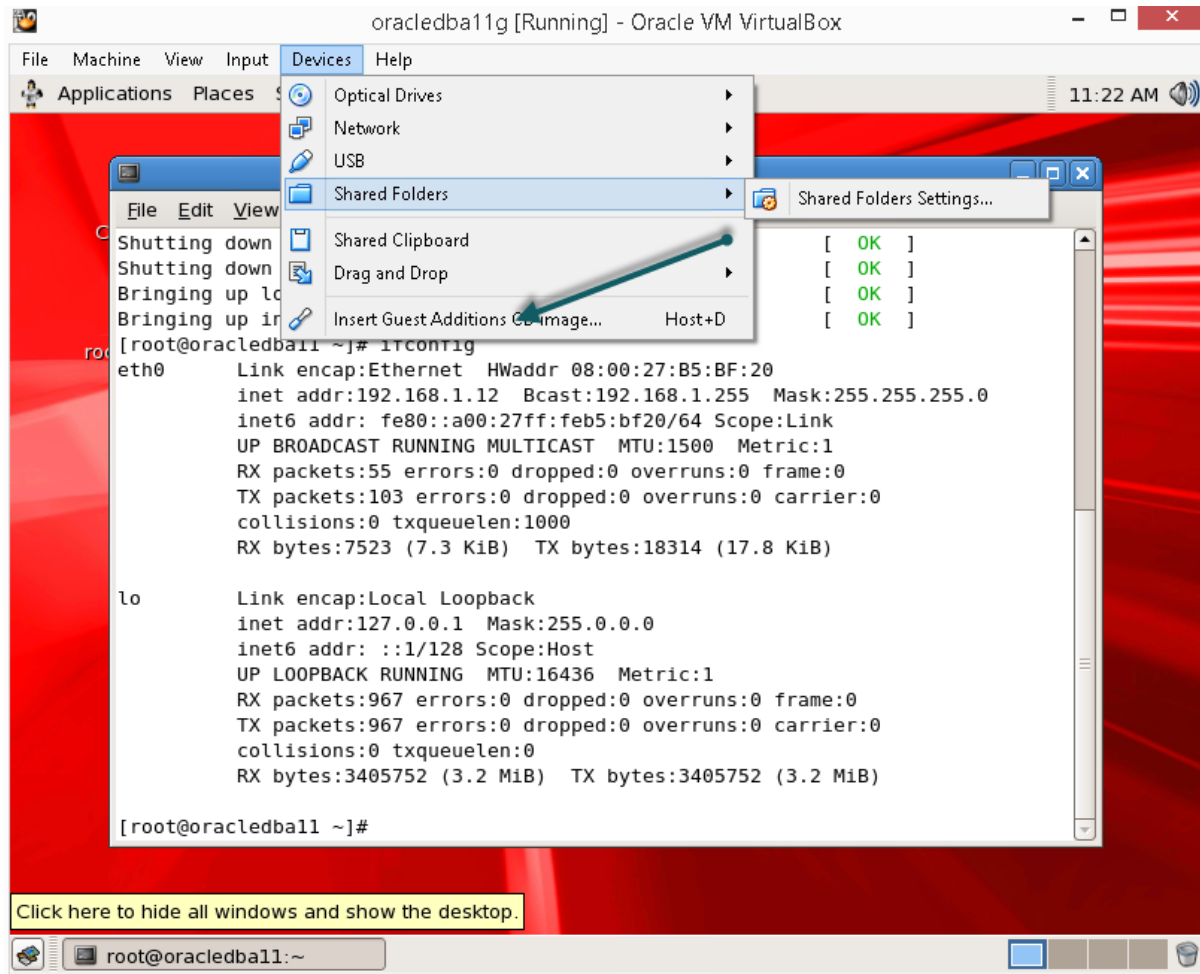
Log into the VM as the root user and add the "divider=10" option to the kernel boot options in "/etc/grub.conf" file to reduce the idle CPU load. The entry should look something like this.

```
# grub.conf generated by anaconda
#
# Note that you do not have to rerun grub after making changes to this file
# NOTICE: You have a /boot partition. This means that
#
#   all kernel and initrd paths are relative to /boot/, eg.
#
#   root (hd0,0)
#   kernel /vmlinuz-version ro root=/dev/VolGroup00/LogVol00
#   initrd /initrd-version.img
#boot=/dev/sda
default=0
timeout=5
splashimage=(hd0,0)/grub/splash.xpm.gz
hiddenmenu
title Enterprise Linux (2.6.18-164.el5)
    root (hd0,0)
    kernel /vmlinuz-2.6.18-164.el5 ro root=/dev/VolGroup00/LogVol00 rhgb quiet divider=10
    initrd /initrd-2.6.18-164.el5.img
```

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Click on the "Devices > Install Guest Additions" menu option at the top of the VM screen, then run the following commands.



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df -h

```
[root@linux1 VBOXADDITIONS_5.0.2_102096]# df -h
Filesystem      Size  Used Avail Use% Mounted on
/dev/mapper/VolGroup00-LogVol100
                43G   2.9G   38G    8% /
/dev/sda1        99M   13M    82M   13% /boot
tmpfs            2.0G    0    2.0G    0% /dev/shm
/dev/hdc         56M   56M    0  100% /media/VBOXADDITIONS_5.0.2_102096
```

cd /media/VBOXADDITIONS_5.0.2_102096/

sh ./VBoxLinuxAdditions.run

```
[root@linux1 54]# cd /media/VBOXADDITIONS_5.0.2_102096/
[root@linux1 VBOXADDITIONS_5.0.2_102096]# sh ./VBoxLinuxAdditions.run
Verifying archive integrity... All good.
Uncompressing VirtualBox 5.0.2 Guest Additions for Linux.....
VirtualBox Guest Additions installer
Copying additional installer modules ...
Installing additional modules ...
Removing existing VirtualBox non-DKMS kernel modules      [ OK ]
Building the VirtualBox Guest Additions kernel modules
Building the main Guest Additions module                  [ OK ]
Building the shared folder support module                  [ OK ]
Not building the VirtualBox advanced graphics driver as this Linux version is
too old to use it.
Doing non-kernel setup of the Guest Additions             [ OK ]
Starting the VirtualBox Guest Additions                    [ OK ]
Installing the Window System drivers
Installing X.Org 7.1 modules                                [ OK ]
Setting up the Window System to use the Guest Additions   [ OK ]
You may need to restart the the Window System (or just restart the guest system)
to enable the Guest Additions.

Installing graphics libraries and desktop services componen[ OK ]
```

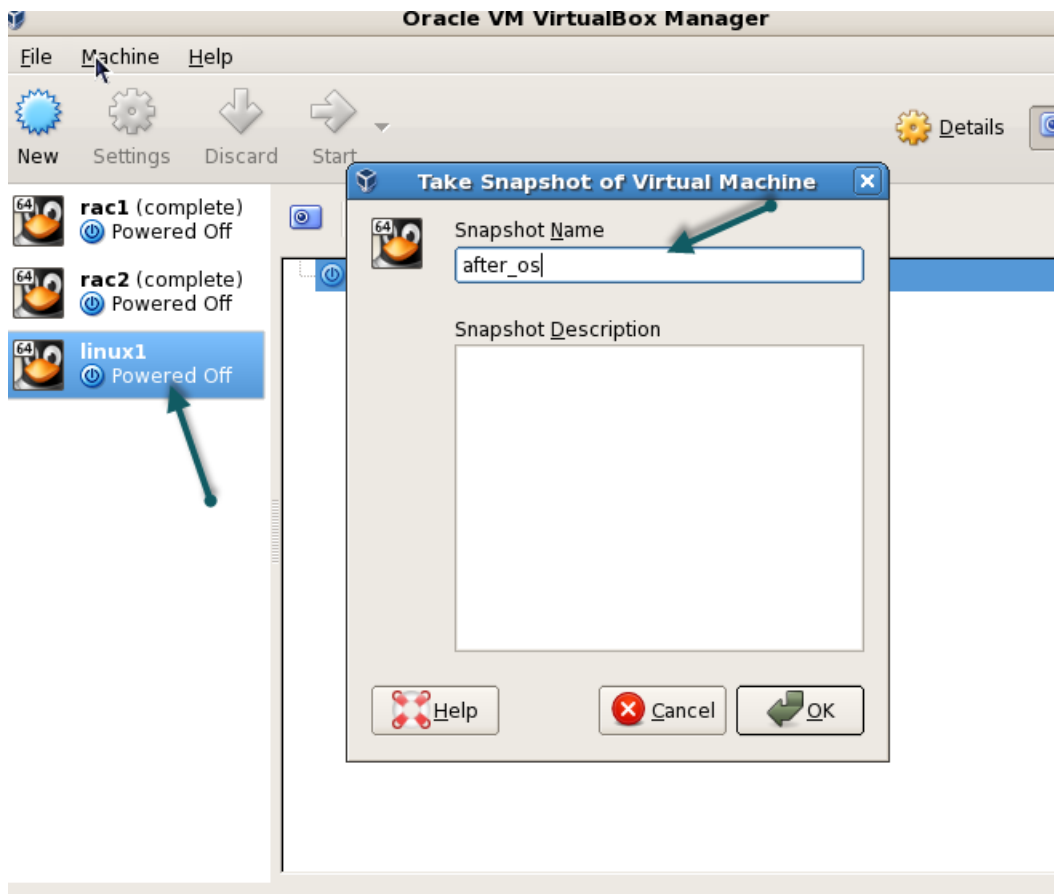
The VM will need to be restarted for the additions to be used properly. The next section requires a shutdown so no additional restart is needed at this time.

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Snapshot linux1 - Backup

- Shutdown linux1
- After shutdown go to Oracle VM



You may proceed with Oracle Database Installation ☺

Happy Learning :-)