Oracle Enterprise Linux 6.9 Installation

Oracle VirtualBox is used for the installation. The installation is for an Oracle Database installation later on. This installation is not meant to be for a production environment but rather for a sandbox-test environment.

1. REQUIRED SOFTWARE

Hypervisor	Oracle VirtualBox 5.2.6
Terminal Emulator	Putty v0.63
X11 Display Server	Xming 6.9.0.31
Linux Image	OracleLinux-R6-U9-Server-x86_64-dvd.iso

2. CREATING A NEW VIRTUAL MACHINE

Run VirtualBox software and click "New"

💱 Oracle VM VirtualBox Manager		_		×
New Settings Discard Start		Machine Tools	Global	Tools
Ed De la Calendaria de	Welcome to VirtualBox!			
	The left part of this window lists all virtual machines and virtual machine groups on your computer. The right part of this window represents a set of tools which are currently opened (or can be opened) for the currently chosen machine. For a list of currently available tools check the corresponding menu at the right side of the	2		
	main tool bar located at the top of the window. This list will be extended with new tools in future releases. You can press the F1 key to get instant help, or visit <u>www.virtualbox.org</u> for more information and latest news.	Ņ	K	
	Details Tool to observe virtual machine (VM) details. Reflects groups of <u>properties</u> for the cu allows basic operations on certain properties (like the machine storage devices).	rrently chosen VM and	1	
	Snapshots Tool to control virtual machine (VM) snapshots. Reflects <u>snapshots</u> created for the cu allows snapshot operations like <u>create</u> , <u>remove</u> , <u>restore</u> (make current) and observe <u>edit</u> snapshot attributes like <u>name</u> and <u>description</u> .	rrently selected VM a their properties. Allow	nd ıs to	

Give some name, select as follows and click "Next"

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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:	OEL69	
Type:	Linux	- 54
Version:	Oracle (64-bit)	



Arrange the total memory and click "Next"

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Create Virtual Machine

Memory size

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

The recommended memory size is 1024 MB.



Next	Cancel

Select "Create a virtual hard disk now" and click "Create"

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Create Virtual Machine

Hard disk

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

If you need a more complex storage set-up you can skip this step and make the changes to the machine settings once the machine is created.

The recommended size of the hard disk is 12,00 GB.

O Do not add a virtual hard disk

- Create a virtual hard disk now
- Use an existing virtual hard disk file

/			
RACAppliance-disk007.vmdk (Normal	30,00 0	GB) 🔻	2

Select "VDI" as the hard disk file type and click "Next"

Create Virtual Hard Disk

Hard disk file type

Please choose the type of file that you would like to use for the new virtual hard disk. If you do not need to use it with other virtualization software you can leave this setting unchanged.

VDI (VirtualBox Disk Image)

VHD (Virtual Hard Disk)

VMDK (Virtual Machine Disk)

Expert Mode	Next	Cancel

Select "Dynamically allocated" not to waste space on the host server

Create Virtual Hard Disk

Storage on physical hard disk

Please choose whether the new virtual hard disk file should grow as it is used (dynamically allocated) or if it should be created at its maximum size (fixed size).

A **dynamically allocated** hard disk file will only use space on your physical hard disk as it fills up (up to a maximum **fixed size**), although it will not shrink again automatically when space on it is freed.

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

Oynamically allocated

O Fixed size



For a single instance Oracle database test server, 25GB of disk space is more than enough even if we are planning to use "File System" for datafiles instead of ASM.

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Create Virtual Hard Disk

File location and size

Please type the name of the new virtual hard disk file into the box below or click on the folder icon to select a different folder to create the file in.

OEL69								
Select th amount (ne size of of file da	f the vir Ita that	tual hard a virtual r	disk in r nachine	negabyte will be ab	s. This size ble to store	is the l on the	imit on the hard disk.
1 1 1	1 1 1	1 1	1 1 1		1 1 1	1 1 1		25,00 GB
4,00 MB						2,00 TB		
						Create		Cancel

Start the server

First, select the server to be started and then click the "Start" button with the green arrow.



A dialog box will popup asking for the location of the iso file. After selecting the iso file *"OracleLinux-R6-U9-Server-x86_64-dvd"* click "Start"

Select start-up disk
 Plase select a virtual optical disk file or a physical optical dive containing a disk to start your new virtual machine from.
 The disk should be suitable for starting a computer from and should contain the operating system you wish to install on the virtual machine if you want to do that now. The disk will be ejected from the virtual drive automatically next time you switch the virtual machine off, but you can also do this yourself in needed using the Devices menu.
 DracleLinux-R6-U9-Server-x86_64-dvd.iso (3,77 G)
 Start

3. LINUX INSTALLATION

With the selection of the iso file in the previous step, the OS installation begins. Select *"Install or upgrade an existing system"* and press the "Enter" key



Click "Next" 🔯 OEL69 [Running] - Oracle VM VirtualBox File Machine View Input Devices Help ORACLE Oracle Linux 6 🧾 Next Back 😥 💿 峰 🗗 🌽 🚞 📕 🕼 🔘 🛞 Right Control Select your language and click "Next" 😂 OEL69 [Running] - Oracle VM VirtualBox × File Machine View Input Devices Help What language would you like to use during the installation process? (العربية) Arabic Assamese (অসমীয়া) Bengali (বাংলা) Bengali(India) (বাংলা (ভারত)) Bulgarian (Български) Catalan (Català) Chinese(Simplified) (中文(简体)) Chinese(Traditional) (中文(正體)) Croatian (Hrvatski) Czech (Čeština) Danish (Dansk) Dutch (Nederlands) English (English) Estonian (eesti keel) Finnish (suomi) French (Français) German (Deutsch) Greek (Ελληνικά) Gujarati (ગુજરાતી)

Hebrew (עברית) Hindi (हिन्दी) Hungarian (Magyar) Icelandic (Icelandic)

Iloko (Iloko) Indonesian (Indonesia)

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File Machine View Input Devices Help			
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Select "Use All Space", check the "Review and modify partitioning layout" option, and click "Next".

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Which type	e of installation would you like?		
•	Use All Space 1 Removes all partitions on the selected device(s). This includes partitions created by other operating systems.		
	Tip: This option will remove data from the selected device(s). Make sure you have backups.		
0	Replace Existing Linux System(s) Removes only Linux partitions (created from a previous Linux installation). This does not remove other partitions you may have on your storage device(s) (such as VENT or FAT32).		
	Tip: This option will remove data from the selected device(s). Make sure you have backups.		
0	Shrink Current System Shrinks existing partitions to create free space for the default layout.		
0	Use Free Space Retains your current data and partitions and uses only the unpartitioned space on the selected device (s), assuming you have enough free space available.		
0	Create Custom Layout Nanually create your own custom layout on the selected device(s) using our partitioning tool.		
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You can change the swap size according to the software requirements, and click "Next".

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e Machine View Input	Devices Help				
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sda2	25099 vg_t	aysi physical volum	ne (LVM) 🗸		
				Create Ed	it Delete Reset
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Oracle 11g requires the following swap spaces. For other versions you can check preinstallation tasks in database installation guide. You can also ignore any swap space warnings since this is a test installation.

RAM	Swap Space
Between 1 GB and 2 GB	1.5 times the size of the RAM
Between 2 GB and 16 GB	Equal to the size of the RAM
More than 16 GB	16 GB

Click "Format"

ck "Format"	L.		E.	Le.	- LE	
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Click "Next"

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Select "Basic Server", "Customize now" option and click "Next"

💁 OEL69 [Running] - Oracle VM VirtualBox	- 🗆 ×
ile Machine View Input Devices Help	
The default installation of Oracle Linux Server is a basic server insta select a different set of software now.	II. You can optionally
Basic Server Database Server Database Server Web Server Identity Management Server Virtualization Host Desktop Software Development Workstation Minimal	
	₩.
Please select any additional repositories that you want to use for so T High Availability	ftware installation.
□ Load Balancer ☑ Oracle Linux Server □ Decilie Charger	
Add additional software repositories Modify rep You can further customize the software selection now, or after instal management application. Customize later Customize now	pository I via the software
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In terms of customization, select the following packages, and click "Next"

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File Machine View Input Devices Help	
Base System	🦉 🗹 Desktop
Servers Web Services Databases System Management Virtualization Desktops Applications Development UEK4 kernel repo Languages	 Desktop Debugging and Performance Tools Desktop Platform Fonts General Purpose Desktop Graphical Administration Tools Input Methods KDE Desktop Legacy X Window System compatibility Remote Desktop Clients X Window System
×	
A minimal desktop that can also be used as a thin client	t.
	Optional packages selected: 14 of 17
	Optional packages
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- Base System > Base
- Base System > Compatibility libraries
- Base System > Hardware monitoring utilities
- Base System > Large Systems Performance
- Base System > Network file system client
- Base System > Performance Tools
- Base System > Perl Support
- Servers > Server Platform
- Servers > System administration tools
- Desktops > Desktop
- Desktops > Desktop Platform
- Desktops > Fonts
- Desktops > General Purpose Desktop
- Desktops > Graphical Administration Tools
- Desktops > Input Methods
- Desktops > X Window System
- Applications > Internet Browser
- Development > Additional Development
- Development > Development Tools

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Installation begins...



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After the reboot, comes the Welcome screen. Click "Forward"

OEL69 [Running] - Oracle VM VirtualBox

Welcome
 License
 Information
 Set Up Software
 Updates
 Create User
 Date and Time
 Kdump

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

Oracle Linux 6 🤬



ØEL69 [Running] - Oracle VM VirtualBox
 File Machine View Input Devices He
 Welcome
 License
 Information

Set Up Software Updates

Create User Date and Time Kdump **License Information**

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Forward

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We can skip the software updates for now. Click "Forward"

OEL69 [Running] - Oracle VM Virtu	iaBox	- 🗆 X	
rie Machine View Input Dev Welcome License Information , Set Up Software Updates Create User Date and Time Kdump	Set Up Software Updates This assistant will guide you through connecting your system to Unbreakable Linux Network (ULN) for software updates, such as: • Your Oracle Single Sign-On login • A name for your system's Unbreakable Linux Network profile Why Should I Connect to ULN? Would you like to register your system at		
	this time? (Strongly recommended.) Yes, I'd like to register now. No, I prefer to register at a later time. 		
		Back Forward	
	2 S	🖣 🗗 🏈 🗐 🥃 🔐 🔘 🔗 🖲 Right Control 🔡	
We can skin the s	oftware updates for now Click "Forward"		
OEL69 [Running] - Oracle VM Virtu		- 🗆 X	
File Machine View Input Dev Welcome License Information , Set Up Software Updates Create User	Flep Set Up Software Updates This assistant will guide you through connecting your system to Unbreakable Linux Network (ULN) for software updates, such as:		
Date and Time Kdump	Your Oracle Single Sign-On login firstboot Are you sure you don't want to connect your system to Unbreakable Linux Network? You'll miss out on the benefits of an Unbreakable Linux Support subscription: Security & Updates: Bereive the latest software undates	K	
	Receive the latest software updates, expine the potential of the		

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Back Forward

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We do not need to create a user now. Click "Forward"

Ele Machine View Input Dev	viaiBox — 🗆	×
Welcome License Information Set Up Software Updates • Create User Date and Time Kdump	Create User You must create a 'username' for regular (non-administrative) use of your system. To create a system 'username', please provide the information requested below. Username:	
	If you need to use network authentication, such as Kerberos or NIS, please click the Use Network Login button. Use Network Login If you need more control when creating the user (specifying home directory, and/or UID), please click the Advanced button. Advanced	
	Back Forward	

We do not need to create a user now. Click "Forward"

🚰 OEL69 [Running] - Oracle VM VirtualBo	X	_		×
File Machine View Input Devices	Help			_
Welcome License Information Set Up Software Updates	Create User You must create a 'username' for regular (non-administrative) use of your system. To create a system 'username', please provide the information			
→ Create User Date and Time Kdump	requested below. Username: Full Name: Password: Confirm Password:			
	If you need to use network authentication, such as Kerberos or NIS, please click the value of logging into the system. Use Network Lo If you need more directory, and/or No Yes			
	Advanced	Fc	prward	
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Set Date and Time and click "Forward"

Please	ate • set	e a	an _{date}	d and t	T	in for t	1e	:m.
Code WWithuilBox - □ × Provide Report Date and Time Current date and time for the system: Date Optimize date and time over the network Manually set the date and time of your system: Date Image: Current date and time of your system: Date Image: Current date and time of your system: Date Image: Current date and time of your system: Date Image: Current date and time of your system: Date Image: Current date and time of your system: Date Image: Current date and time of your system: Date Image: Current date and time of your system: Date Image: Current date and time of your system: Date Image: Current date and time of your system: Date Image: Current date and time of your system: Date Image: Current date and time of your system: Date Image: Current date and time of your system: Date Image: Current date and time of your system: Date Image: Current date and time of your system: Date Image: Current date and time of your system: Date Image: Current date and time of your system: Date Image: Current date and time of								
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Since this is a test environment, we can disable Kdump. Click "Finish"



4. INSTALL GUEST ADDONS

Click Devices > Install Guest Additions CD image



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5. DISABLE FIREWALL

service iptables stop chkconfig iptables off

Now, we should be able to connect with putty...

6. DISABLE SELINUX

Edit the /etc/selinux/config file.

```
# This file controls the state of SELinux on the system.
# SELINUX= can take one of these three values:
# enforcing - SELinux security policy is enforced.
# permissive - SELinux prints warnings instead of enforcing.
# disabled - No SELinux policy is loaded.
SELINUX=disabled
# SELINUXTYPE= can take one of these two values:
# targeted - Targeted processes are protected,
# mls - Multi Level Security protection.
SELINUXTYPE=targeted
```

Either reboot or run the following command

setenforce disabled

7. NETWORK & PUTTY

First, shutdown the server. Then go to the settings of the server

Select the Host-only adapter. For most of the tests (that do not require internet) host-only adapter works fine. Since I want to connect via Putty, I need connectivity with the host OS. I also don't want to change the IP of the guest everytime I connect the host OS to another network. So a static setting which is best maintained with host-only adapter is more proper here.

🕗 RH	IEL69 - Settings		?	\times
	General	Network		
,	System	Adapter 1 Adapter 2 Adapter 3 Adapter 4		
	Display	Enable Network Adapter 2		
$\overline{\mathfrak{D}}$	Storage	Attached to: Host-only Adapter 🔻		
	Audio	Name: VirtualBox Host-Only Ethernet Adapter #4		-
₽	Network	Advanced	1	
	Serial Ports		3	
Ø	USB			
	Shared Folders			
-	User Interface	4		
		$\mathbf{X}_{\mathbf{x}}$		
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NETWORK TYPES SUMMARY

Bridged	Has a connection with the host Has a connection with the physical network Can connect to the internet
NAT	Does not have a connection with the host Does not have a connection with the physical network Can connect to the internet
Host-Only	Has a connection with the host Does not have a connection with the physical network Can NOT connect to the internet

Host-only networking creates a network that is completely contained within the host computer.



Open the "Network and Sharing Center" of the host machine (Windows in our case) Click the "Change adapter settings" Have a look at the connection details by double-clicking the "VirtualBox Host-Only Network #4" (The one that we have chosen in the previous step)

Network Con	inections					_		
\rightarrow \wedge \uparrow	• 👰 > Control Panel > Netw	ork and Internet > Network C	onnections	5 V	Search Netw	ork Conn	ections	,
Organize 🔻	Disable this network device	Diagnose this connection	Rename this connection	View status of this connection	»	.		
×	Section.	S		VirtualBox Host-Only Network #4 Enabled				
	VirtualBox Host-Only Network #5 Enabled	S .	/	VirtualBox Host-Only Netwo	ork #4 Status			×
		1: doubl	e click	General Connection IPv4 Connectivity:	N	o network a	access	
				Media State:		E	nabled	
				Duration:		2 days 03:	54:35	
				Details		1.0	GDps	
				Activity				
			2. click	Sent —	-	Red	eived	
			2. CICK	Packets:	0		0	
				Properties Disable	e Diagno	ose		
							Close	
tems 1 iter	m selected							8=

The highligted values below are important... Note them down

Network Connection Details				
Network Connection Details:				
Property	Value			
Connection-specific DN				
Description	VirtualBox Host-Only Ethemet Adapter #4			
Physical Address	0A-00-27-00-00-07			
DHCP Enabled	No			
IPv4 Address	192.168.136.1			
IPv4 Subnet Mask	255.255.255.0			
IPv4 Default Gateway				
IPv4 DNS Server				
IPv4 WINS Server				
NetBIOS over Tcpip En	Yes			
Link-local IPv6 Address IPv6 Default Gateway	fe80::78b0:a7c5:17ae:10e%7			
IPv6 DNS Servers	fec0:0:0:ffff::1%1			
	fec0:0:0:ffff::2%1			
	fec0:0:0:ffff::3%1			
<	>			
	Class			
	Lose			

On the Linux server go to System > Preferences > Network Connections. Edit the eth0 connection ipv4 as follows:

	Editing System eth0			×	
Connection n	name: Sy	stem eth0			
✓ Connect a✓ Available	automatica to all users	lly <mark>4</mark>	1		
Wired 802.1x Security IPv4 Settings IPv6 Settings					
Method: Manual					
Addresse	s			2	
Address		Netmask	Gateway	Add	
192.168	3.136.101	255.255.255.0	192.168.136.1	Delete	
	3				
DNS serv	/ers: (
Search d	omains: (
DHCP clie	ent ID: (
\checkmark Require IPv4 addressing for this connection to complete					
				Routes	
			Cancel	Apply	

Restart the network service

service network restart

Now you can also connect using Putty.