Installation of Oracle Linux 5.8 on Virtual Box 4.1 with Guest Additions

Today I wanted to install Oracle Linux on virtual box, which I need for some testing systems. Since the installation and especially the setup of the guest additions were not as smooth as I expected, I decided to share the information.

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2 Installation of Oracle Linux 5.8 on Virtual Box

There are many occasions in which we could need an installation of virtual box. I was investigating a high-availability configuration of some fusion middleware elements and needed to span a Weblogic cluster across two machines. Once we have installed and configured one machine in virtual box, we can easily multiply it by cloning. In this workshop we show how to install Oracle Linux 5.8 on Virtual Box 4.1.16 running on a 64-bit Windows 7 Host machine. We will start from the download of the media and go through the installation process. We will also install the guest additions and configure shared folder.

2.1 Download of Oracle Linux Release 5 Update 8 for x86_64 (64 Bit)

We download the iso image for the installation from the following location:

Link	https://edelivery.oracle.com/EPD/Download/process_download/V31120-01.iso					
File	D:\01Downloads\V31120-01.iso					
MD5	1ec844c1090a417b741a9bf0d6dea240 (matches website)					
Notes	Digest Website https://edelivery.oracle.com/EPD/ViewDigest/get_form?epack_part_number=B66657-					

01, Norton Ok.

2.2 Networking

To begin with, we want to consider the network configuration of the virtual box. There is an article¹ that gives a very good overview of the VBox networking options. We choose *Host-Only* networking, thus multiple virtual machines can talk to each other on an internal network and the host can also participate here.

2.3 Linux Installation

We setup a new virtual machine for Linux 64-bit systems. We configure an 8 GByte volume, 3 CPUs and 4 GByte of RAM. We setup a network interfaces with "host-only" networking. We mount the downloaded iso image and start the new machine.

We go through the installation using the default setting except for some choices like keyboard layout, location etc.

The installation screens are given below.

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Czech (Čeština)		French (latin9)	
Danish (Dansk)		French (pc)	French (pc) This operation will override any previous installation choices About which drives to ignore.
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Finnish (suomi)		Greek	Greek
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1	1	reasonable for most users. You can either choose to use this or create your own.	Active on Boot, Device, IPV4/Netmask, IPV6/Prefix Edit
			S SCHO DHCP Auto
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	Server.	Encrypt system	Hostname
	A complete log of the installation can be found in		For the hostename
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¹ Article about VBox networking options. (<u>https://blogs.oracle.com/fatbloke/entry/networking_in_virtualbox1</u>)

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Table 1. Installation Screens of the Oracle Linux 5 Setup.

We provide the following user/password combinations.

root	welcome1
oracle	welcome1

2.4 Installation of Guest Additions

In the next step we install the guest additions, which are documented in the virtual box manual.² This involves updating the system to compile and integrate a kernel module. We have to deviate from the manual considerably as shown below.

2.4.1 Update Linux with Yum

We need access to the update server on the internet. Therefore we shutdown Linux, and set up a second network interface with "NAT" networking and start again. We can use the installed Firefox browser to see if the internet is working.

Since our user oracle is not in the sudoer's file list, we simply run the installation as root. We open a terminal (Menu->Application->Accessories->Terminal) to update the system with yum. We run the following commands.



² Virtual Box manual, chapter "Guest Additions for Linux" https://www.virtualbox.org/manual/ch04.html#idp11962400

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2.4.2 Updating the System

The guest additions are installed now, but since there was a compilation error, we reboot Linux, update the system and go through the yum-process again. After reboot, the systems package updater indicates that there are updates, displaying the update icon in the toolbar. We can also check manually for updates by calling *Menu->Application->System Tools->Software Updater*. The following figures show the Update menu and the Update dialog.



Figure 1. Updating Linux using the System Update Tool.

The process took about ten minutes. After that we reboot and go through the installation process for the guest additions again. It turns out that the necessary packages were not contained in the update but at least we have all the current packages now.

2.4.3 Fixing the Compile Error

We run yum again but still need to install some packages to fix the compilation error.

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-----Reboot after System Update [oracle@localhost ~]\$ su We change to root again. Password: [root@localhost oracle]# yum update Loaded plugins: rhnplugin, security This system is not registered with ULN. ULN support will be disabled. Skipping security plugin, no data Setting up Update Process No Packages marked for Update [root@localhost oracle]# yum install gcc Loaded plugins: rhnplugin, security This system is not registered with ULN. Nothing to do for gcc and kernel-devel ULN support will be disabled. installation. Setting up Install Process Package gcc-4.1.2-52.el5 8.1.x86 64 already installed and latest version Nothing to do [root@localhost oracle]# yum install kernel-devel Loaded plugins: rhnplugin, security This system is not registered with ULN. ULN support will be disabled. Setting up Install Process Package kernel-devel-2.6.18-308.11.1.0.1.el5.x86 64 already installed and latest version Nothing to do [root@localhost oracle]# <mark>cd /media/</mark> [root@localhost media]# dir VBOXADDITIONS_4.1.16_78094 [root@localhost media]# cd VBOXADDITIONS 4.1.16 78094/ [root@localhost VBOXADDITIONS 4.1.16 78094]# dir 32Bit runasroot.sh VBoxWindowsAdditions.exe 64Bit VBoxLinuxAdditions.run VBoxWindowsAdditions-x86.exe AUTORUN.INF VBoxSolarisAdditions.pkg autorun.sh VBoxWindowsAdditions-amd64.exe [root@localhost VBOXADDITIONS_4.1.16_78094]# sh ./VBoxLinuxAdditions.run Verifying archive integrity... All good. Uncompressing VirtualBox 4.1.16 Guest Additions for Linux...... VirtualBox Guest Additions installer Removing installed version 4.1.16 of VirtualBox Guest Additions... Removing existing VirtualBox DKMS kernel modules Removing existing VirtualBox non-DKMS kernel modules [0K [0K Building the VirtualBox Guest Additions kernel modules The headers for the current running kernel were not found. If the following module compilation fails then this could be the reason. The missing package can be probably installed with yum install kernel-uek-devel-2.6.32-300.32.1.el5uek The kernel build fails (Look at /var/log/vboxadd-install.log to find out what went wrong) again. Doing non-kernel setup of the Guest Additions [OK Installing the Window System drivers Installing X.Org 7.1 modules ſ OK [OK Setting up the Window System to use the Guest Additions You may need to restart the hal service and the Window System (or just restart the guest system) to enable the Guest Additions. Installing graphics libraries and desktop services componen[OK] [root@localhost VBOXADDITIONS_4.1.16_78094]# yum install kernel-uek-devel-2.6.32-300.32.1.el5uek Loaded plugins: rhnplugin, security This system is not registered with ULN. We install the recommended ULN support will be disabled. Setting up Install Process package Resolving Dependencies --> Running transaction check ---> Package kernel-uek-devel.x86 64 0:2.6.32-300.32.1.el5uek set to be installed --> Finished Dependency Resolution Dependencies Resolved _____ Package Arch Version Repository Size Installing: kernel-uek-devel x86_64 2.6.32-300.32.1.el5uek el5 latest 6.8 M Transaction Summary Install 1 Package(s) 0 Package(s) Upgrade Total download size: 6.8 M Is this ok [y/N]: y Downloading Packages: kernel-uek-devel-2.6.32-300.32.1.el5uek.x86_64.rpm | 6.8 MB 00:16 Running rpm_check_debug Running Transaction Test Finished Transaction Test Transaction Test Succeeded Running Transaction Installing : kernel-uek-devel 1/1

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Installed:					
kernel-uek-devel.x86_64 0:2.6.32-300.32.1.el5uek					
Complete!					
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Removing existing VirtualBox non-DKMS kernel modules	l	OK	-		
Building the VirtualBox Guest Additions kernel modules	L	OR	1		
Building the main Guest Additions module	г	OK	1		
Building the shared folder support module	L	OK	1		
Building the OpenGL support module	L	OK	1		
Doing non-kernel setup of the Guest Additions	L r	OK	1		
Starting the VirtualBox Guest Additions	L	OK	1		
Installing the Window System drivers	L	OK	1		Now the Guest
Installing X.Org 7.1 modules	r	OK	1		Addition installation
Setting up the Window System to use the Guest Additions	L F	OK	1		succeeds. We have to
You may need to restart the hal service and the Window S	vsten		-ius	t restart 🧹	
the quest system) to enable the Guest Additions.	10000	. (01	دىر	C ISSCALC S	reboot the system.
the guest system, to chaste the duest Additions.					
Installing graphics libraries and desktop services compo	nen[OK]		
[root@localhost VBOXADDITIONS_4.1.16_78094]#					

The linux system is now up and running.

2.4.4 Summary of Guest Additions Installation Commands

To sum up the necessary steps we have to add a NAT configuration for internet access and run the following commands:

Table 2. Summary of commands to install the guest additions.					
sh ./VBoxLinuxAdditions.run					
cd /media/VBOXADDITIONS_4.1.16_78094/					
yum install kernel-uek-devel-2.6.32-300.32.1.el5uek					
yum install gcc					
yum update					
wget http://public-yum.oracle.com/public-yum-el5.repo					
cd /etc/yum.repos.d/					
su					

2.4.5 Shared Folder Configuration

Now we want to configure shared folder to be mounted on startup. We use the dialog from virtual box (Toos->Shared folders) as illustrated in the figure below.

🔅 ORALIN58_A - Ändern	- 00 E.M	
 ORALINS& A - Andern Allgemein System Anzeige Massenspeicher Audio Netzwerk Serielle Schnittstellen USB Gemeinsame Ordner 	Wahlen Sie eine Kateg	dner automatisch einbin Zugriff
		OK Abbrechen Hilfe

Figure 2. Configuring a shared folder for the linux vbox guest.

We choose a folder from the host system and select automatic mount and permanent folder. We have to add the user oracle to the group vboxsf to access the shared folder from linux. We use the graphical interface which is available at Menu->System->Administration->User and Groups. After login in again, we can access the shared folder at /media/sf_01SharedFolder.

3 Conclusion

We demonstrated the installation of Oracle Linux 5.8 in a virtual box. We briefly discussed the network configuration and illustrated the graphical installation process by displaying the installation screens. We showed how to update the system with yum and how to install the guest additions. Finally we demonstrated the configuration of shared folders.

The resulting virtual machine contains current updates and can be used as a template to clone additional virtual machines for e.g. test environments.