OS Lab-1

Engr. Nauman

About the founder of LINUX

Linus Torvalds

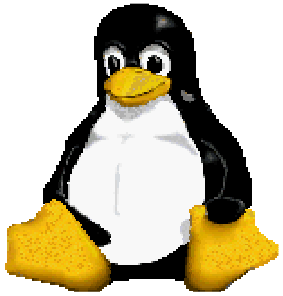
In 1992 develop Linux, an operating system kernel

Inspired by Minix (a kernel and operating system developed by Andrew Tanenbaum)

Torvalds originally used Minix on his computer, a simplified kernel written by Andrew Tanenbaum for teaching operating system design.

TUX

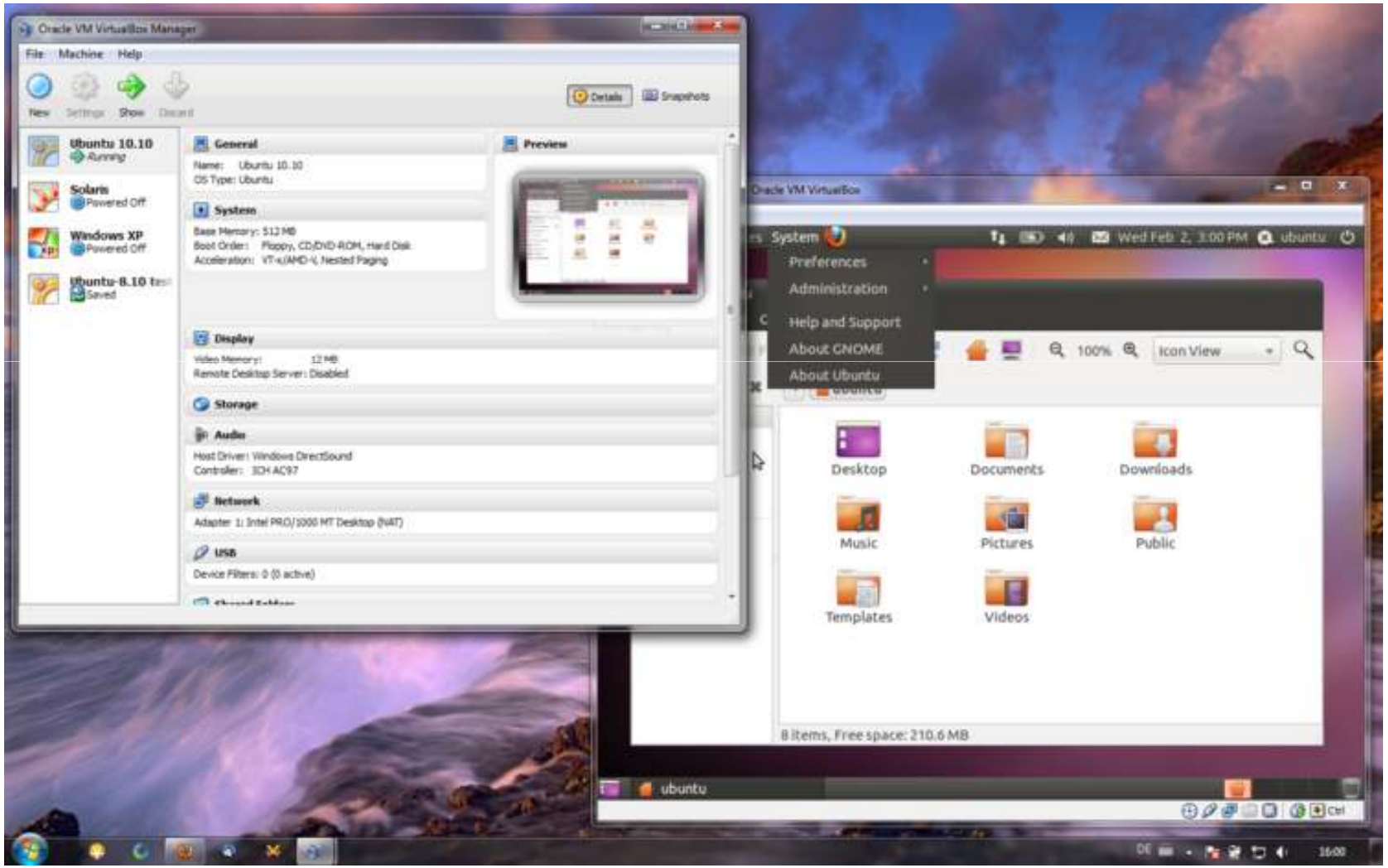
- **Tux** is a penguin character and the official mascot of the Linux kernel



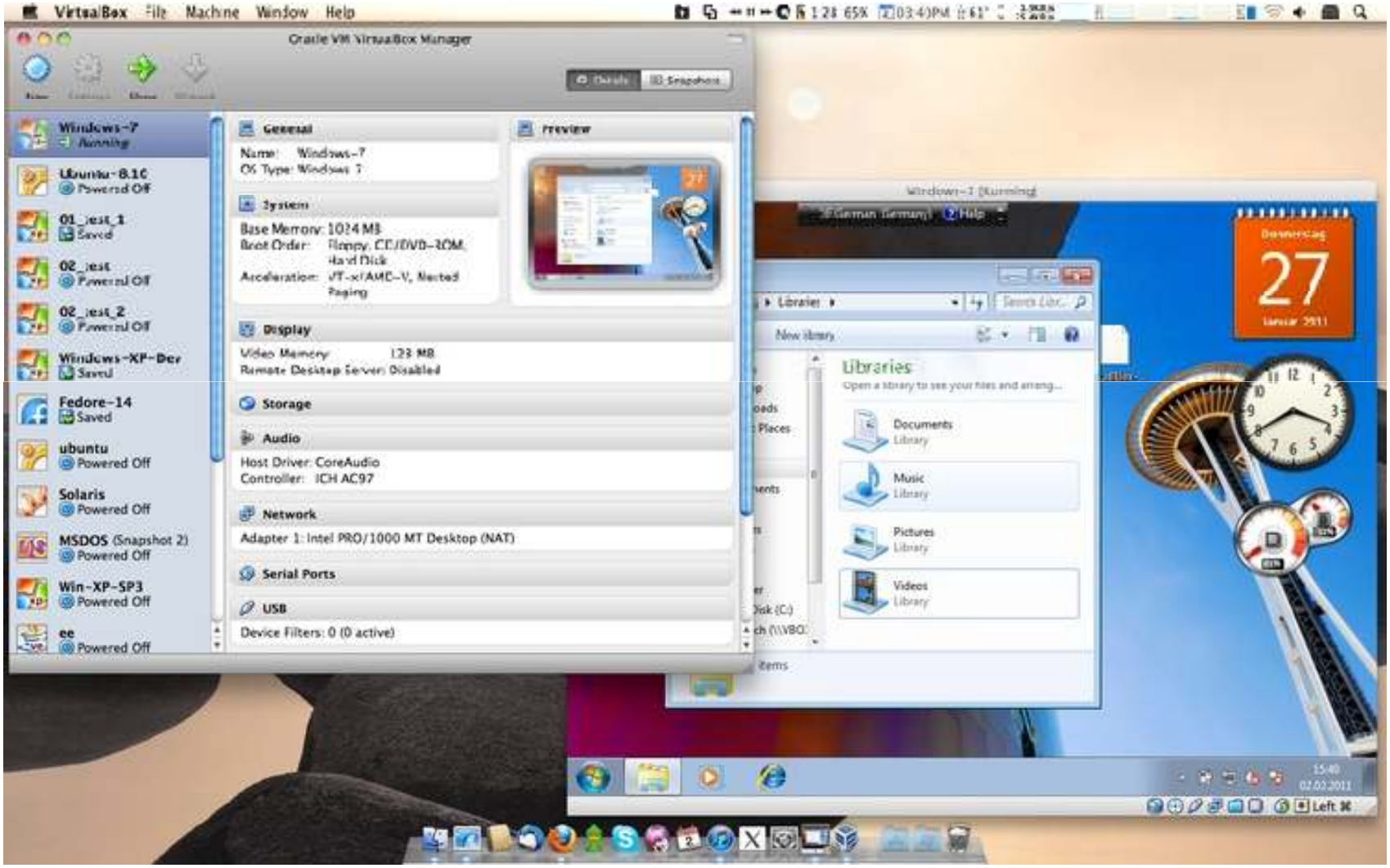
Virtual Box

- Installed on an existing host OS
- *Guest OS*, can be loaded and run, each with its own virtual environment.
- Supported host operating systems
- Linux Mac OS X, Windows XP, Windows Vista, Windows 7,Solaris

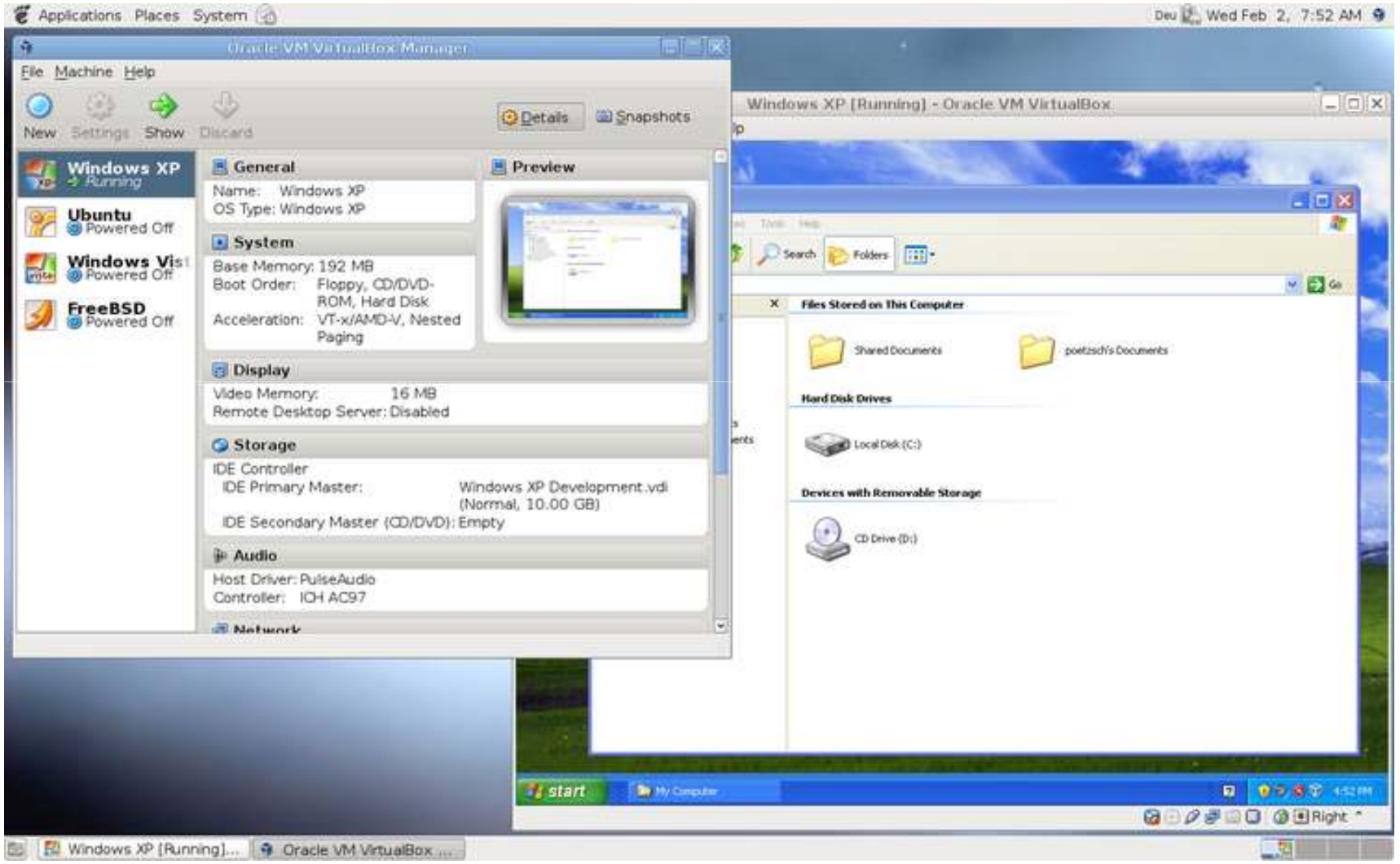
Windows 7 running a Ubuntu 10 VM



Mac OS X running a Windows 7 VM



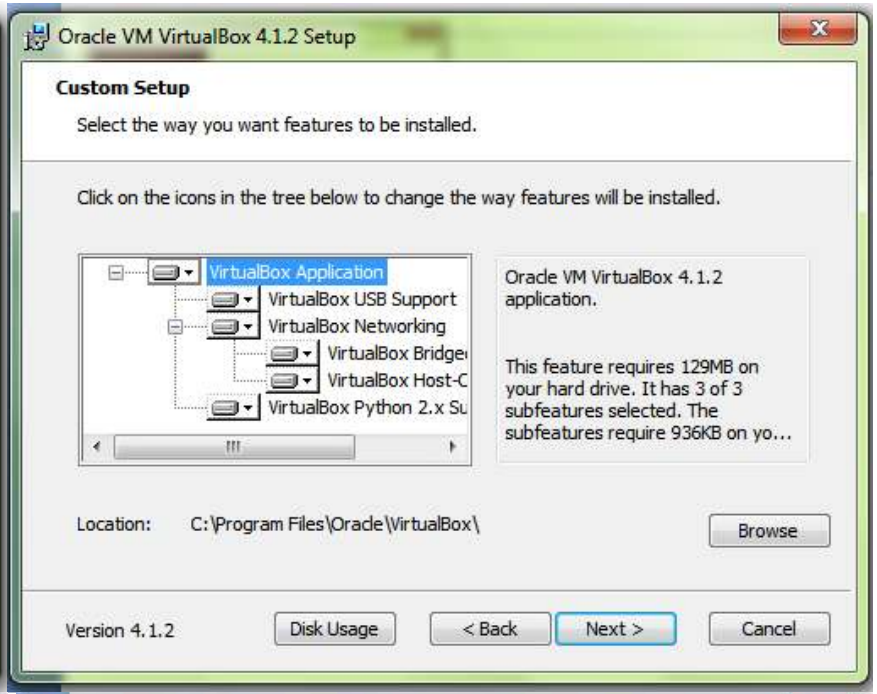
Linux running a Windows XP VM

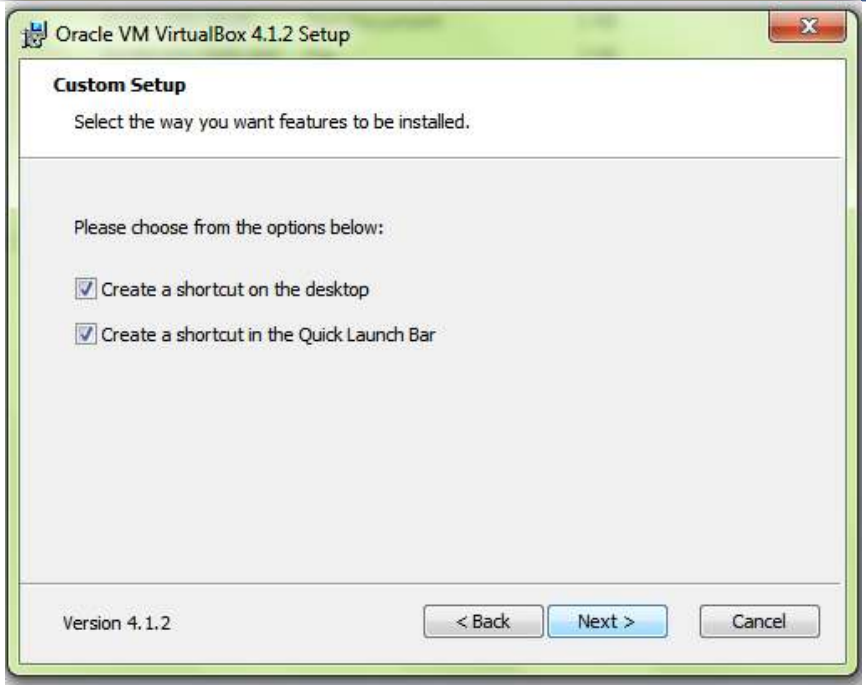


Virtual Box


Downloads - VirtualBox
www.virtualbox.org/wiki/Downloads
VirtualBox
Login Settings Register Help/Guide
About
Screenshots
Downloads
Documentation
End-user docs
Technical docs
Contribute
Community
Download VirtualBox
Here, you will find links to VirtualBox binaries and its source code.
VirtualBox binaries
By downloading, you agree to the terms and conditions of the respective license.
VirtualBox platform packages. The binaries are released under the terms of the GPL version 2.
VirtualBox 4.1.2 for Windows hosts x86/amd64
VirtualBox 4.1.2 for OS X hosts x86/amd64
VirtualBox 4.1.2 for Linux hosts
VirtualBox 4.1.2 for Solaris hosts x86/amd64
VirtualBox 4.1.2 Oracle VM VirtualBox Extension Pack All platforms
Support for USB 2.0 devices, VirtualBox RDP and PXE boot for Intel cards. See this chapter from the User Manual for an introduction to this Extension Pack. The Extension Pack binaries are released under the VirtualBox Personal Use and Evaluation License (PUEL).
Please install the extension pack with the same version as your installed version of VirtualBox! If you are using VirtualBox 4.0.12, please download the extension pack here.
VirtualBox 4.1.2 Software Developer Kit (SDK) All platforms
See the changelog for what has changed.
You might want to compare the
SHA256 checksums or the
MD5 checksums
to verify the integrity of downloaded packages.
Note: After upgrading VirtualBox it is recommended to upgrade the guest additions as well.

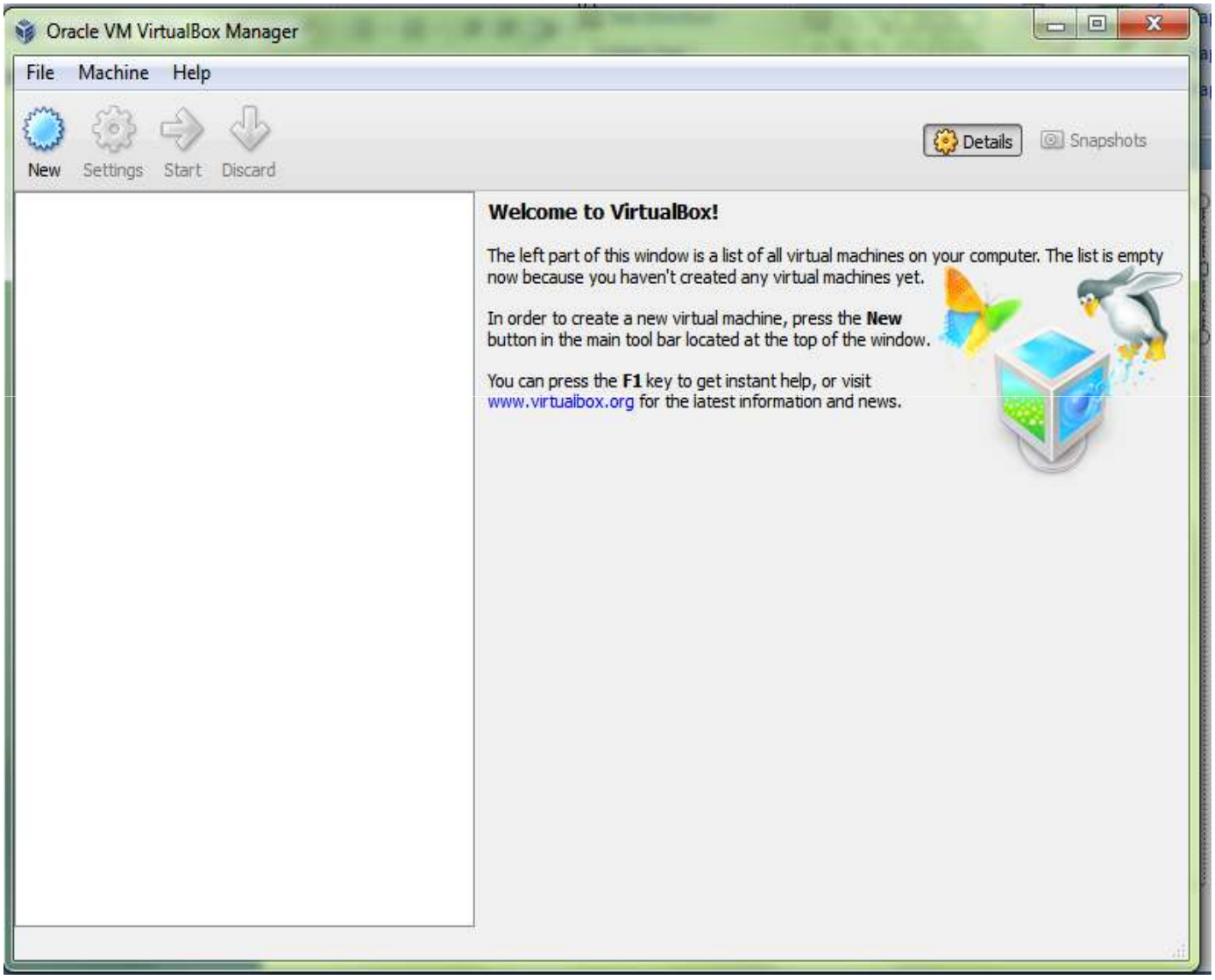

Oracle VM VirtualBox 4.1.2 Setup
Welcome to the Oracle VM VirtualBox 4.1.2 Setup Wizard
The Setup Wizard will install Oracle VM VirtualBox 4.1.2 on your computer. Click Next to continue or Cancel to exit the Setup Wizard.
Version 4.1.2
Next >
Cancel


Oracle VM VirtualBox 4.1.2 Setup
Custom Setup
Select the way you want features to be installed.
Click on the icons in the tree below to change the way features will be installed.
VirtualBox Application
VirtualBox USB Support
VirtualBox Networking
VirtualBox Bridge
VirtualBox Host-C
VirtualBox Python 2.x Su
Oracle VM VirtualBox 4.1.2 application.
This feature requires 129MB on your hard drive. It has 3 of 3 subfeatures selected. The subfeatures require 936KB on yo...
Location:
C:\Program Files\Oracle\VirtualBox\
Browse
Version 4.1.2
Disk Usage
< Back
Next >
Cancel

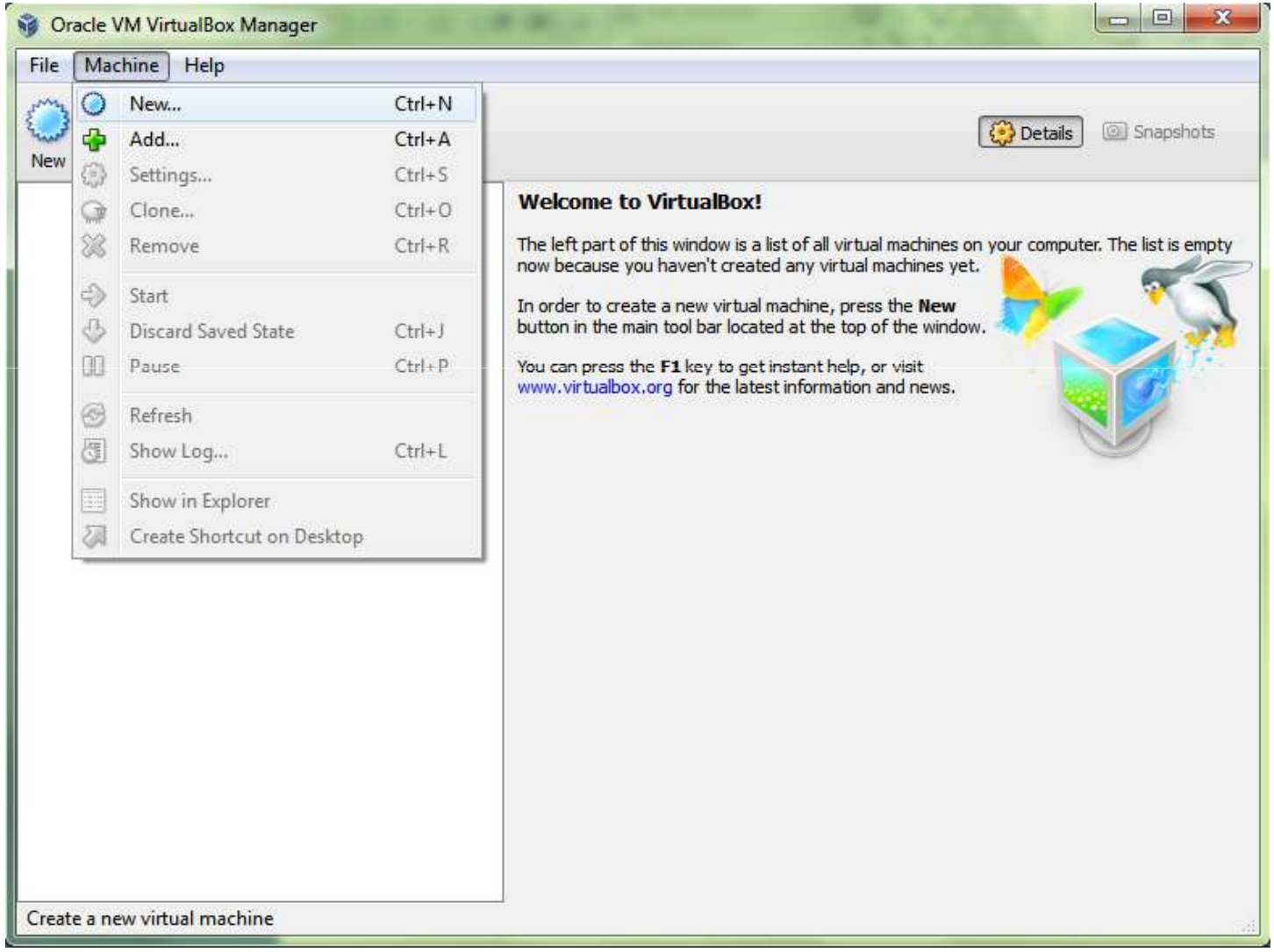

Oracle VM VirtualBox 4.1.2 Setup
Custom Setup
Select the way you want features to be installed.
Please choose from the options below:
Create a shortcut on the desktop
Create a shortcut in the Quick Launch Bar
Version 4.1.2
< Back
Next >
Cancel


Oracle VM VirtualBox 4.1.2 Setup
Oracle VM VirtualBox 4.1.2 installation is complete.
Click the Finish button to exit the Setup Wizard.
Start Oracle VM VirtualBox 4.1.2 after installation
Version 4.1.2
< Back
Finish
Cancel

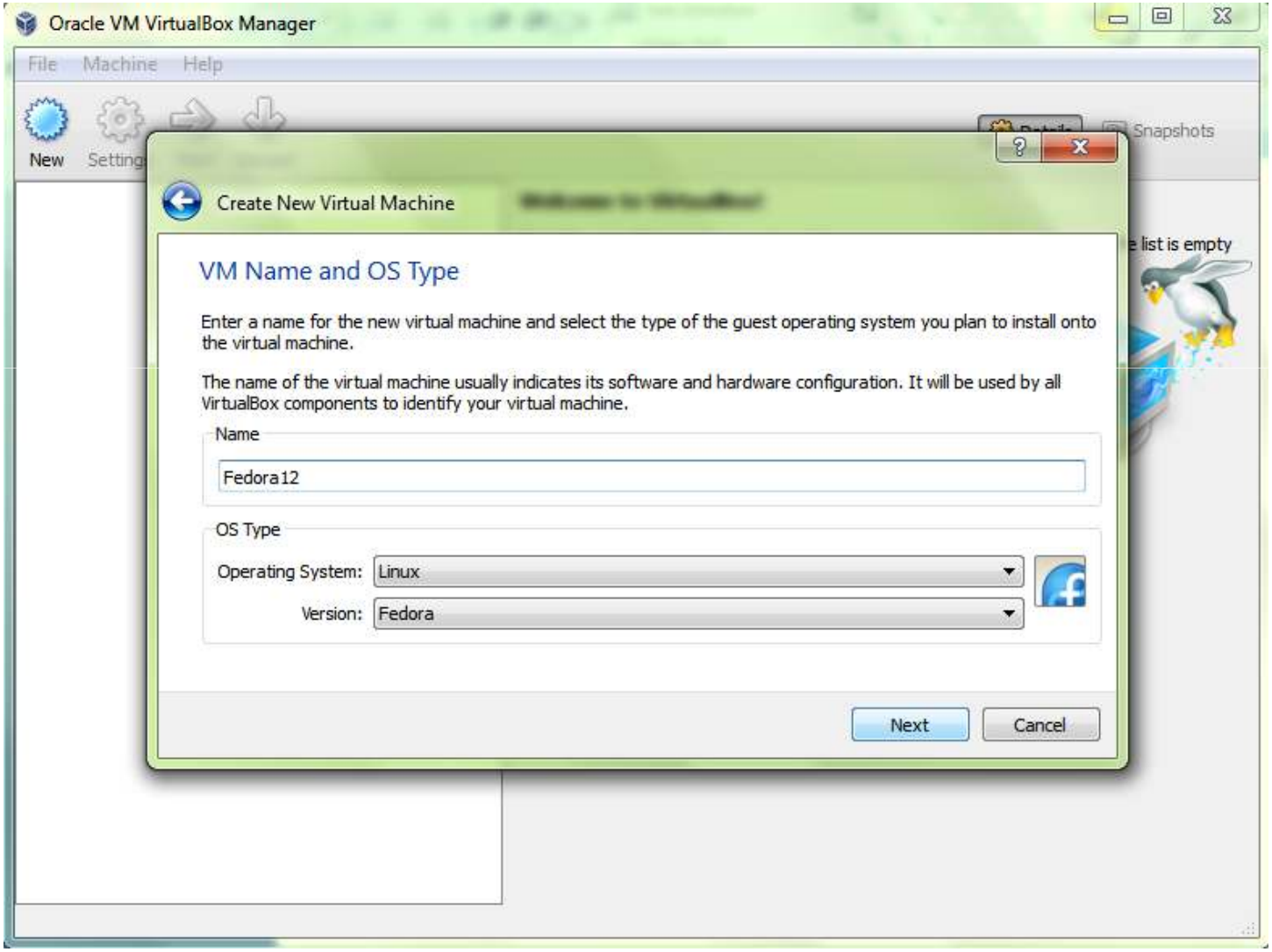
Welcome Screen



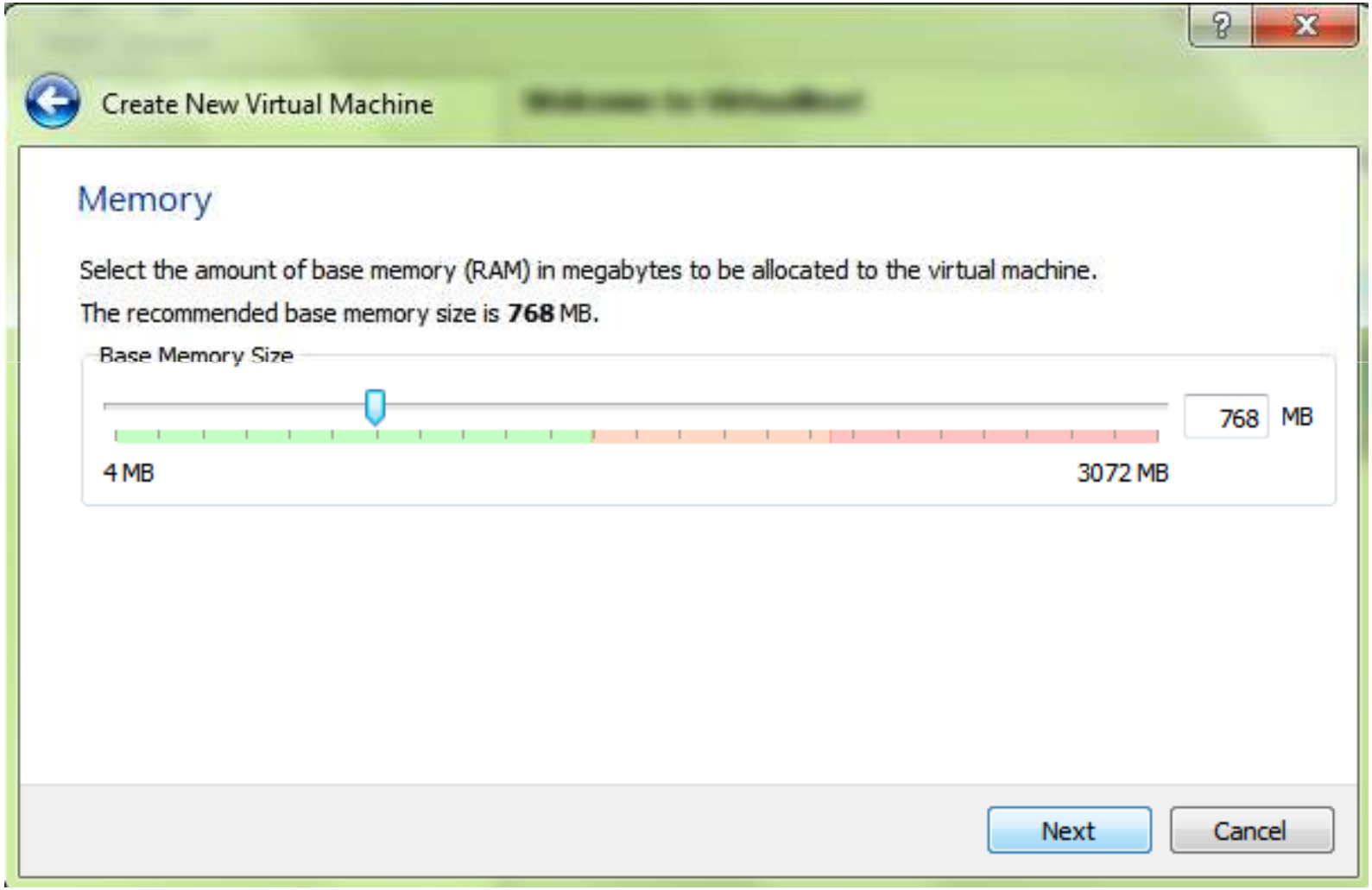
New VM (Ctrl+N)


Oracle VM VirtualBox Manager
File
Machine
Help
New
New... Ctrl+N
Add... Ctrl+A
Settings... Ctrl+S
Clone... Ctrl+O
Remove Ctrl+R
Start
Discard Saved State Ctrl+J
Pause Ctrl+P
Refresh
Show Log... Ctrl+L
Show in Explorer
Create Shortcut on Desktop
Details
Snapshots
Welcome to VirtualBox!
The left part of this window is a list of all virtual machines on your computer. The list is empty now because you haven't created any virtual machines yet.
In order to create a new virtual machine, press the New button in the main tool bar located at the top of the window.
You can press the F1 key to get instant help, or visit www.virtualbox.org for the latest information and news.
Create a new virtual machine

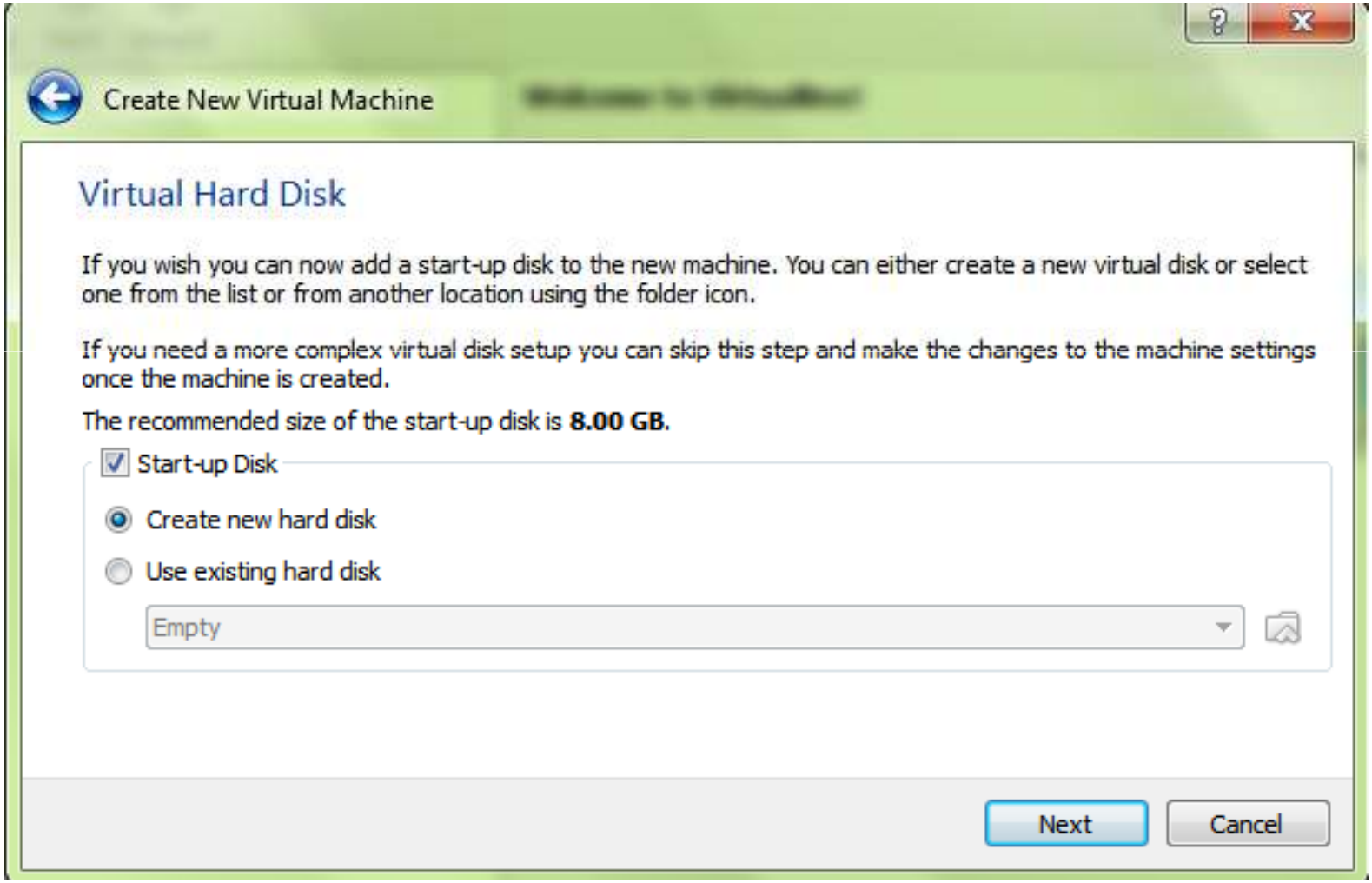
Name and OS Type

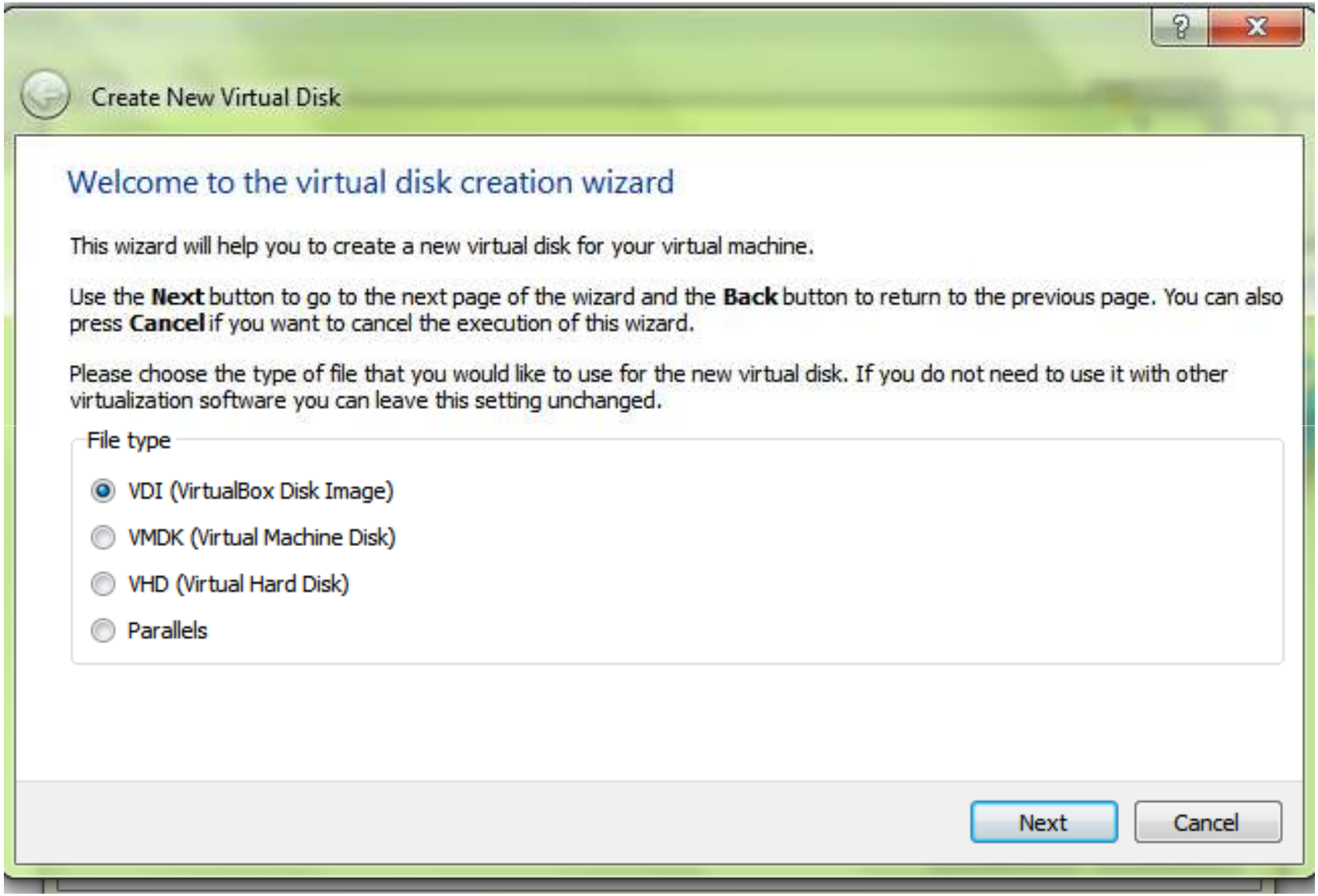


Memory

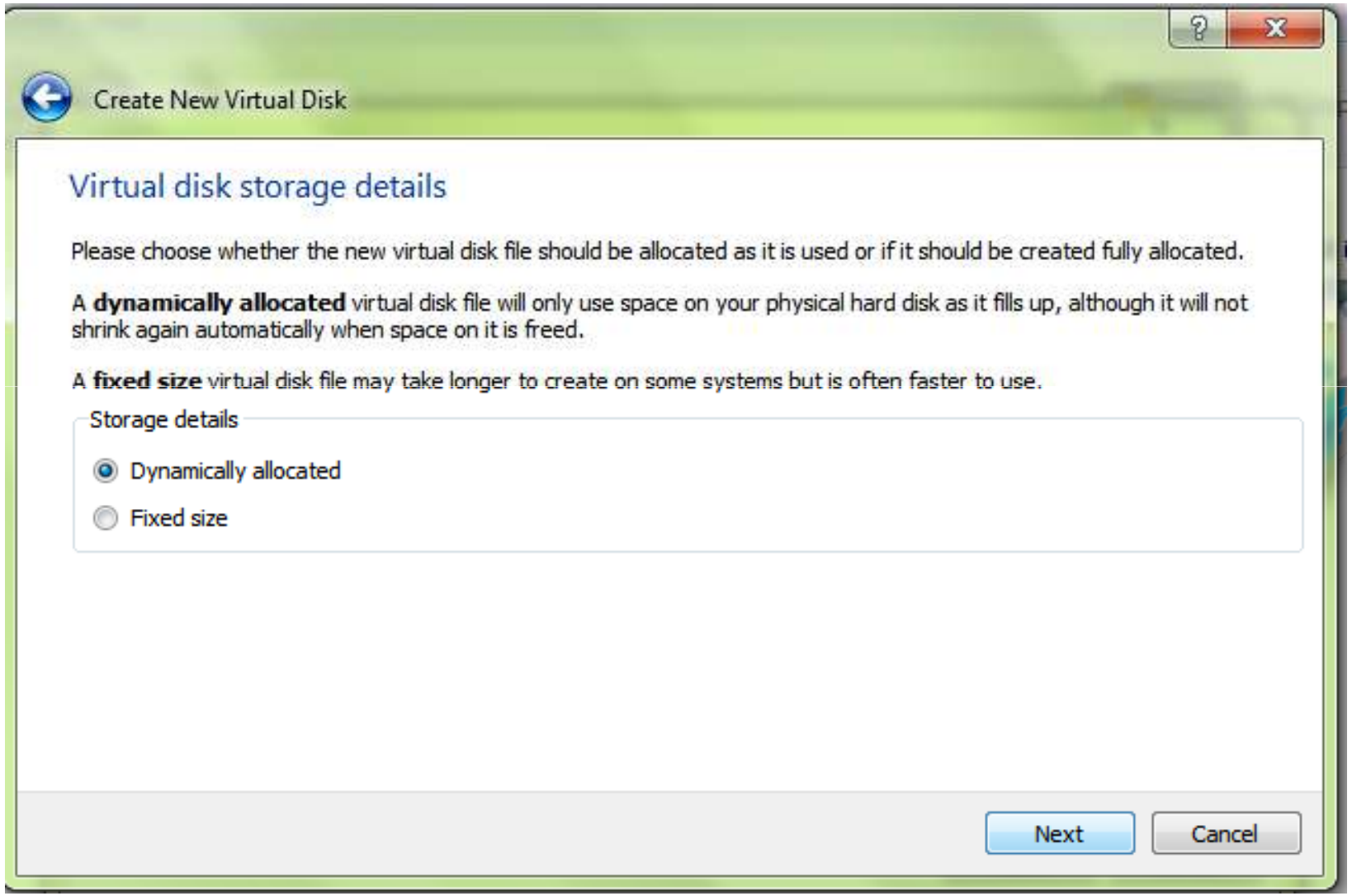

Create New Virtual Machine
Memory
Select the amount of base memory (RAM) in megabytes to be allocated to the virtual machine.
The recommended base memory size is 768 MB.
Base Memory Size
768 MB
4 MB
3072 MB
Next
Cancel

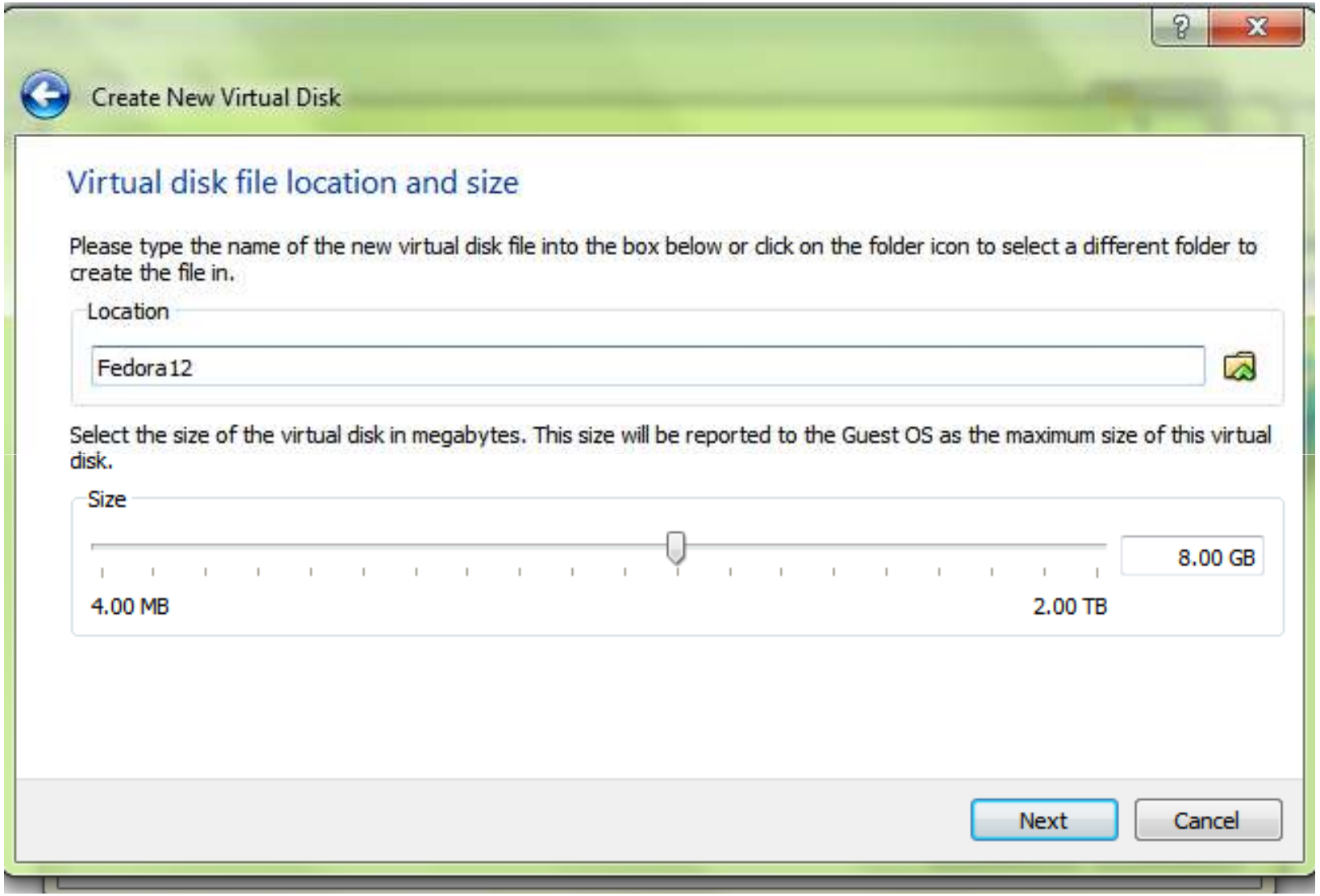
Virtual Hard Disk

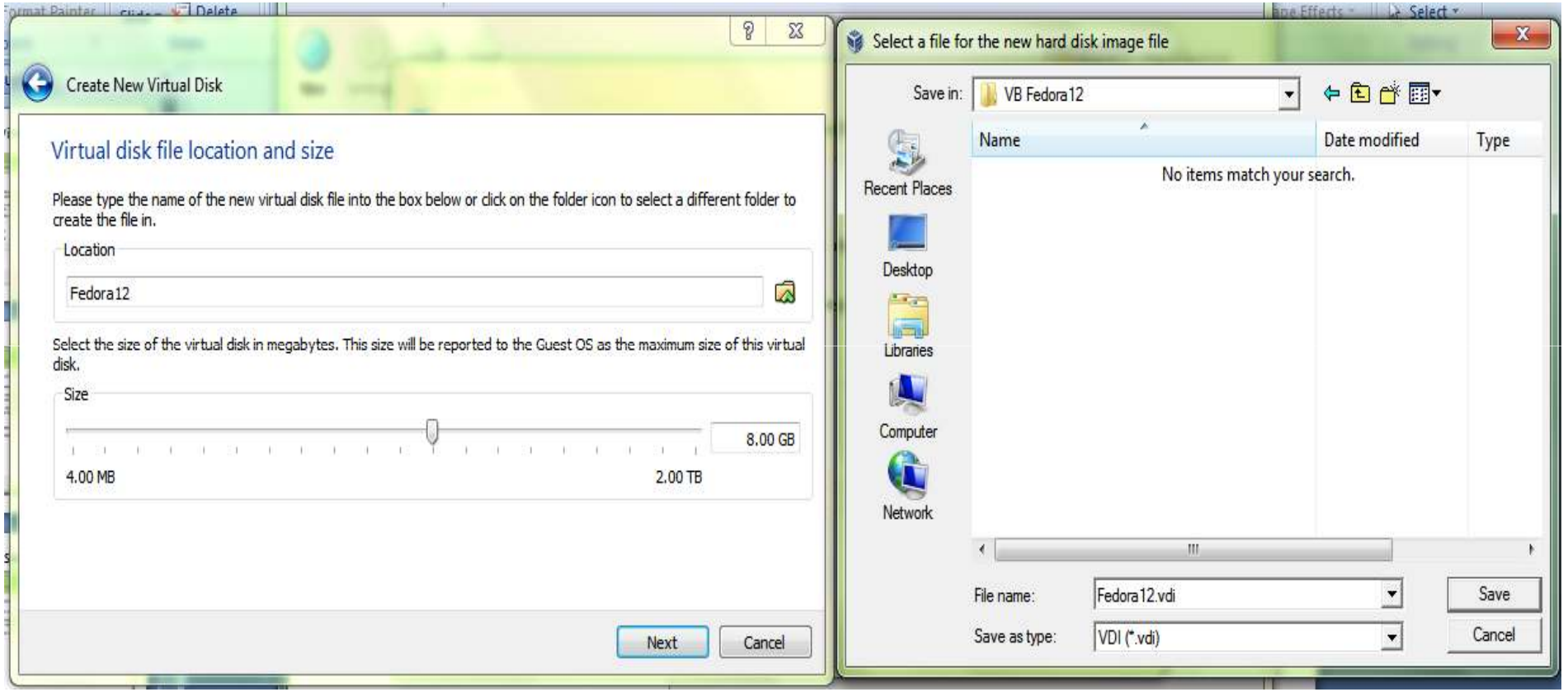


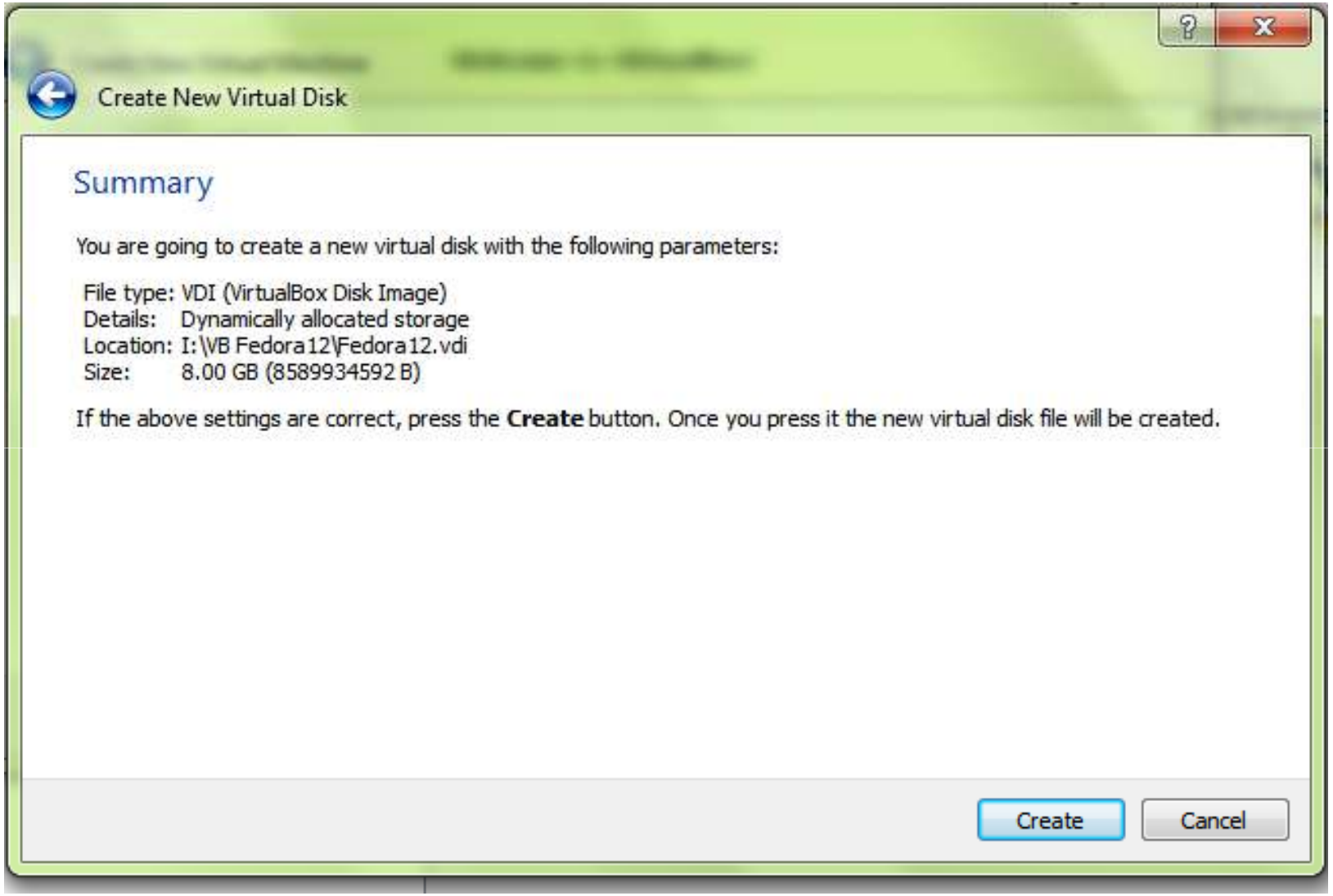

Create New Virtual Disk
Welcome to the virtual disk creation wizard
This wizard will help you to create a new virtual disk for your virtual machine.
Use the Next button to go to the next page of the wizard and the Back button to return to the previous page. You can also press Cancel if you want to cancel the execution of this wizard.
Please choose the type of file that you would like to use for the new virtual disk. If you do not need to use it with other virtualization software you can leave this setting unchanged.
File type
VDI (VirtualBox Disk Image)
VMDK (Virtual Machine Disk)
VHD (Virtual Hard Disk)
Parallels
Next
Cancel

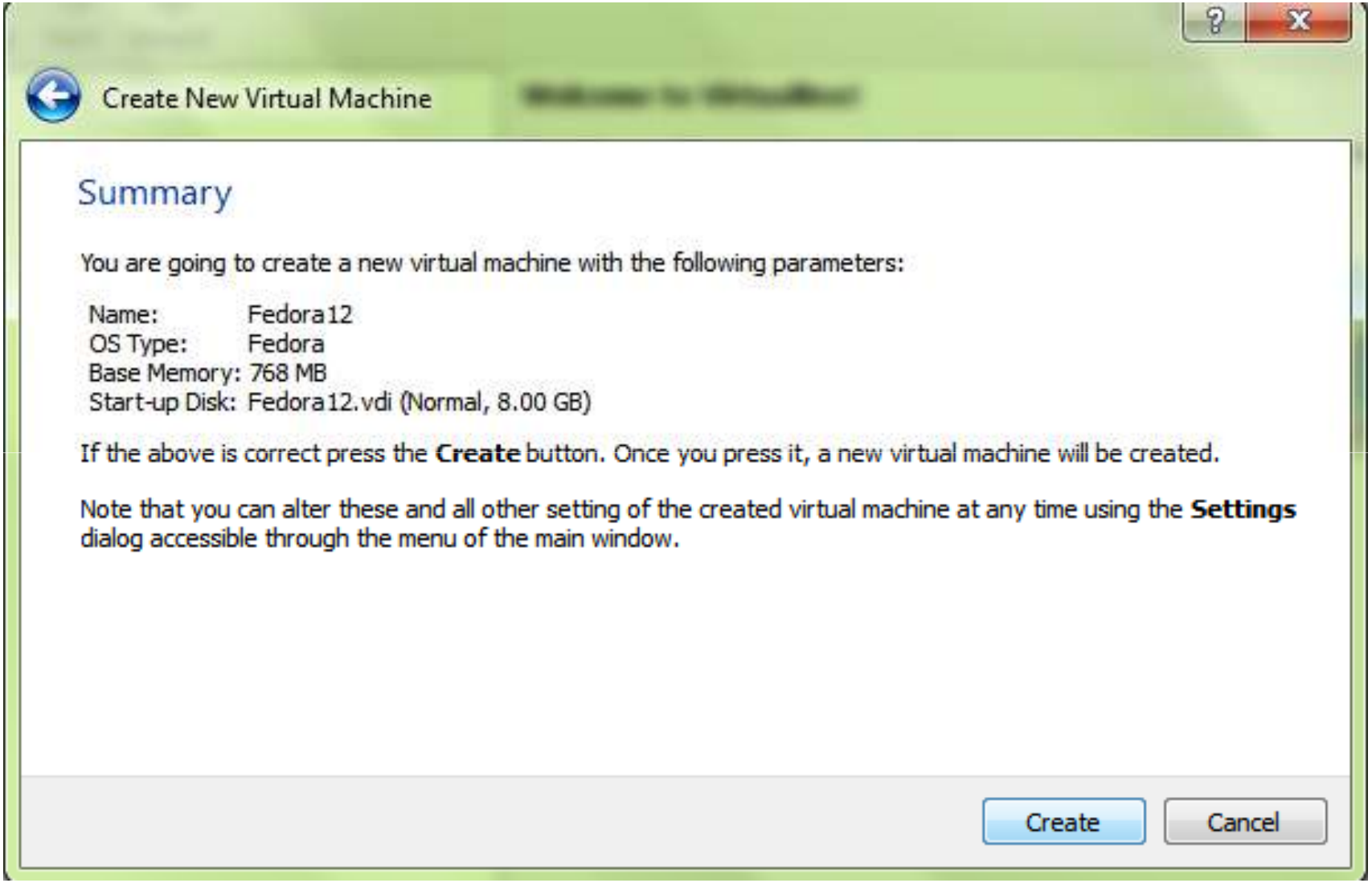
Storage Details



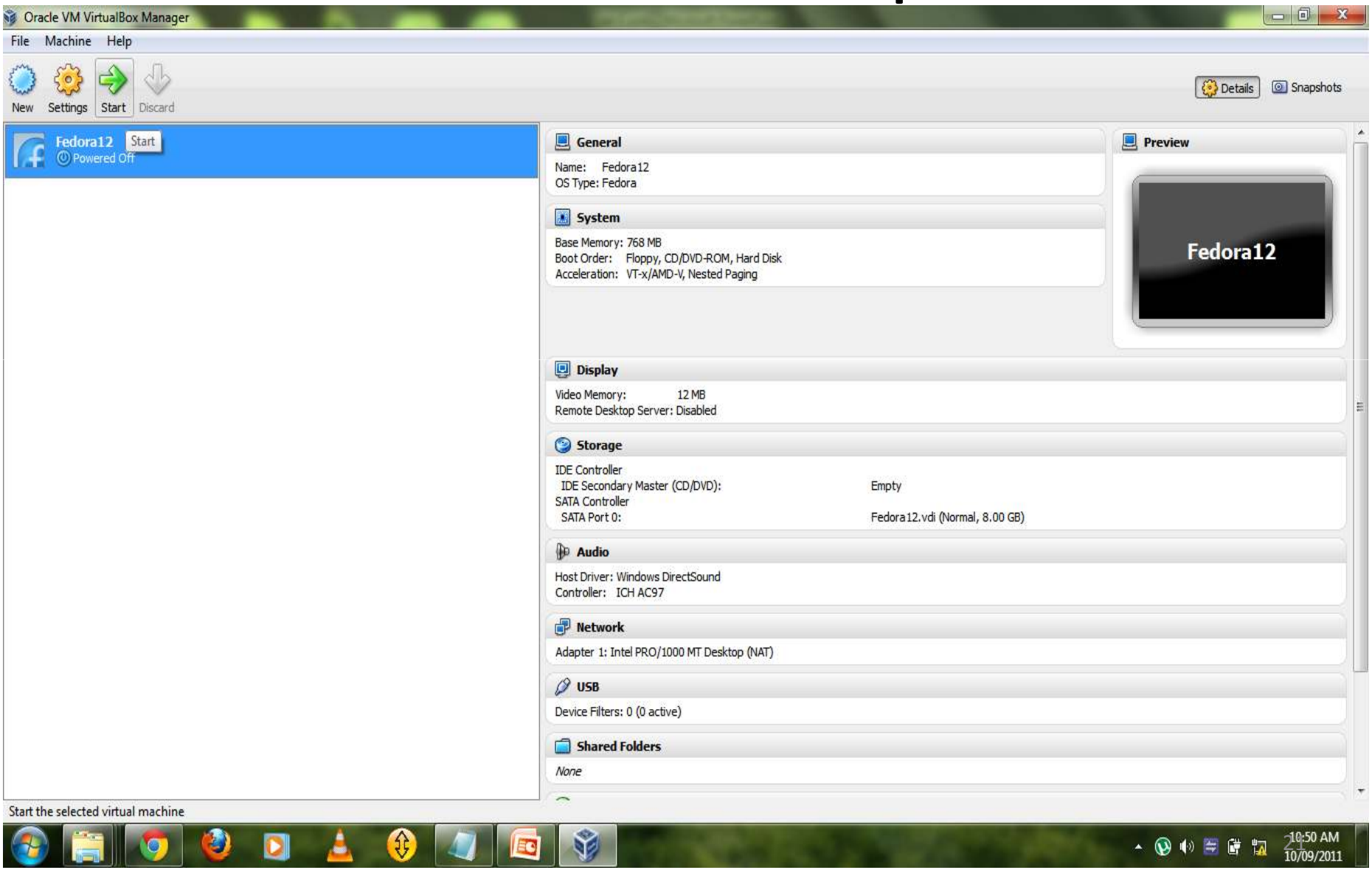

Create New Virtual Disk
Virtual disk file location and size
Please type the name of the new virtual disk file into the box below or click on the folder icon to select a different folder to create the file in.
Location
Fedora12
Select the size of the virtual disk in megabytes. This size will be reported to the Guest OS as the maximum size of this virtual disk.
Size
8.00 GB
4.00 MB
2.00 TB
Next
Cancel

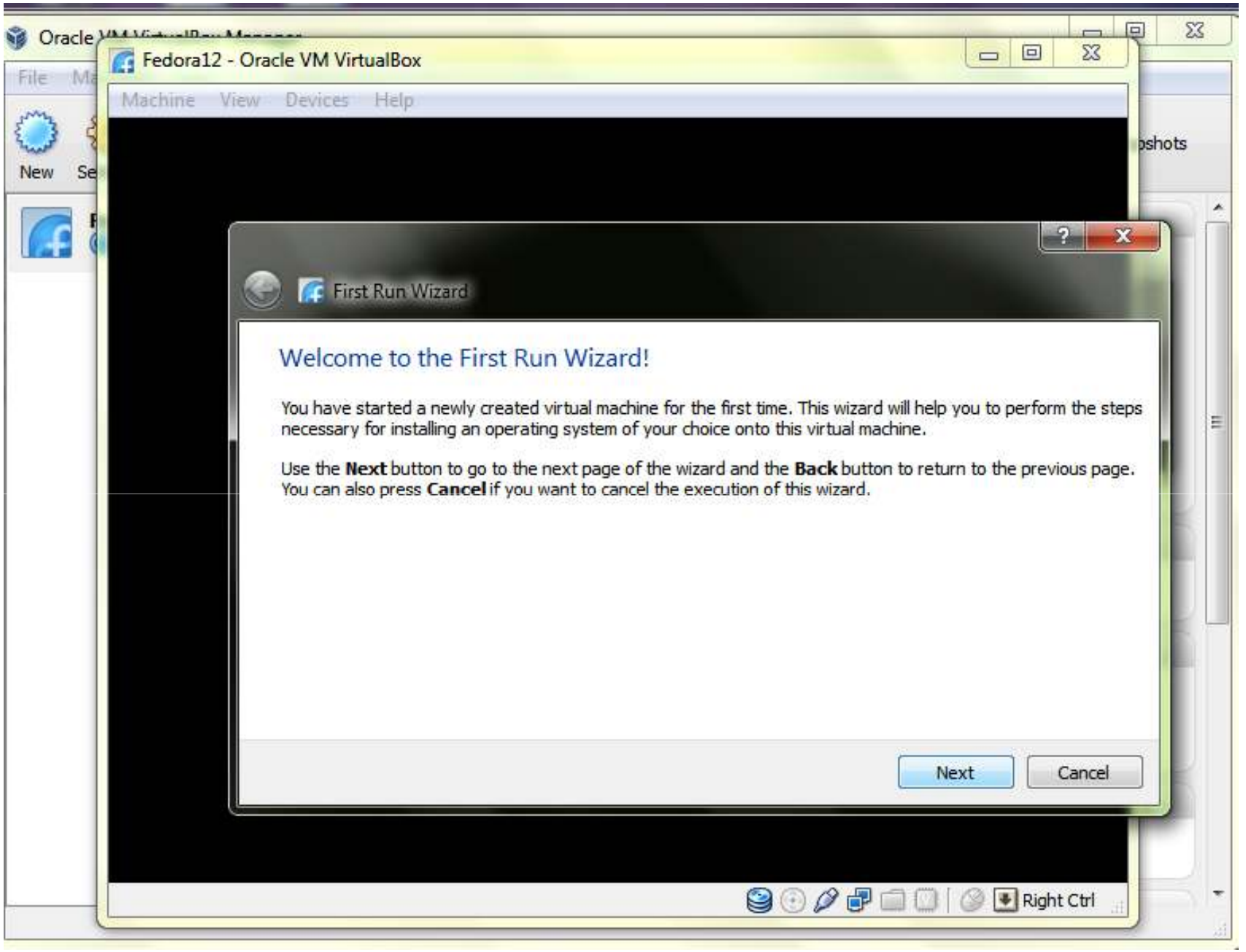

Create New Virtual Disk
Virtual disk file location and size
Please type the name of the new virtual disk file into the box below or click on the folder icon to select a different folder to create the file in.
Location
Fedora12
Select the size of the virtual disk in megabytes. This size will be reported to the Guest OS as the maximum size of this virtual disk.
Size
8.00 GB
4.00 MB
2.00 TB
Next
Cancel
Select a file for the new hard disk image file
Save in:
VB Fedora12
Recent Places
Desktop
Libraries
Computer
Network
Name
Date modified
Type
No items match your search.
File name:
Fedora12.vdi
Save as type:
VDI (*.vdi)
Save
Cancel

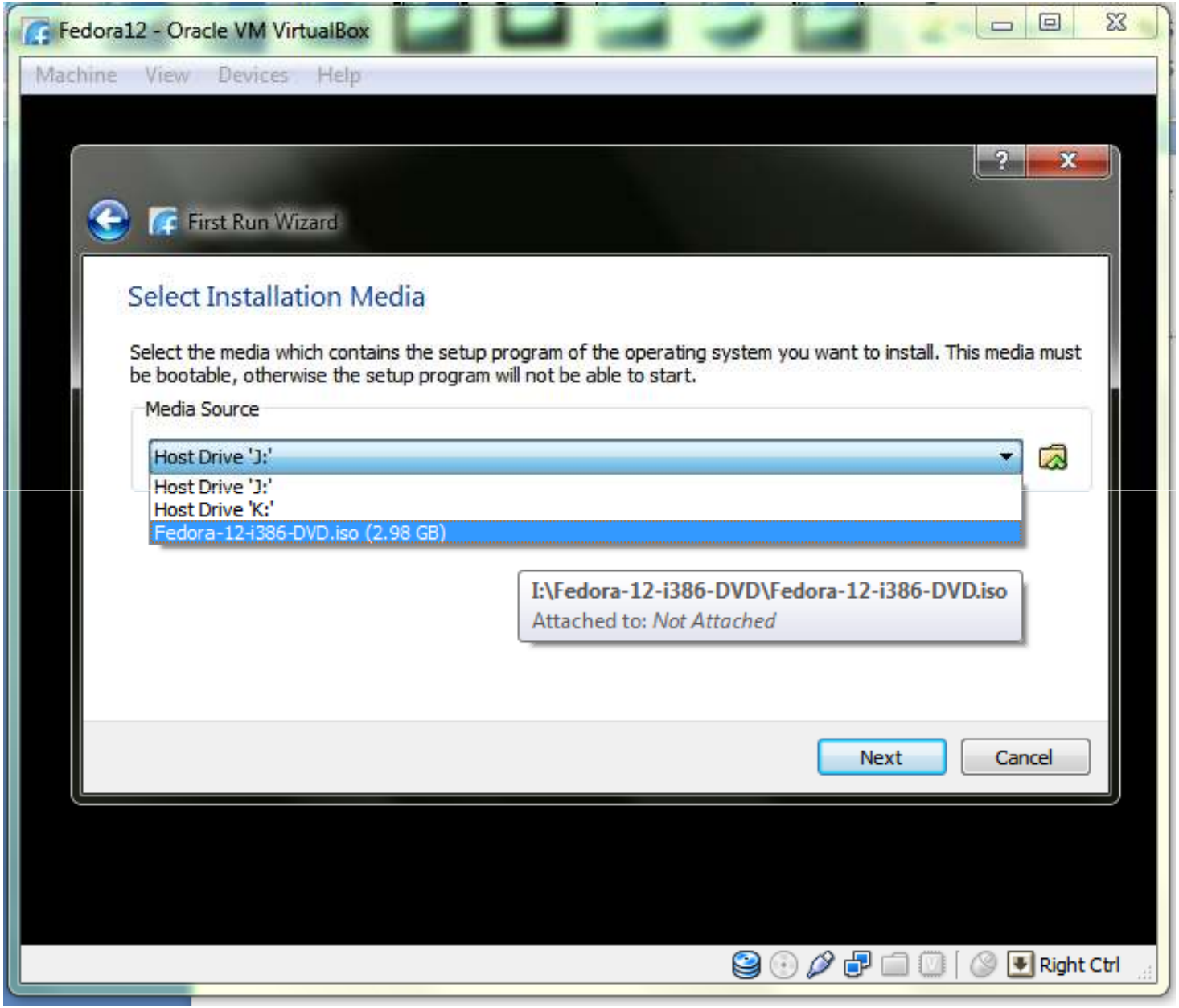

Create New Virtual Disk
Summary
You are going to create a new virtual disk with the following parameters:
File type: VDI (VirtualBox Disk Image)
Details: Dynamically allocated storage
Location: I:\VB Fedora12\Fedora12.vdi
Size: 8.00 GB (8589934592 B)
If the above settings are correct, press the Create button. Once you press it the new virtual disk file will be created.
Create
Cancel


Create New Virtual Machine
Summary
You are going to create a new virtual machine with the following parameters:
Name: Fedora12
OS Type: Fedora
Base Memory: 768 MB
Start-up Disk: Fedora12.vdi (Normal, 8.00 GB)
If the above is correct press the Create button. Once you press it, a new virtual machine will be created.
Note that you can alter these and all other setting of the created virtual machine at any time using the Settings dialog accessible through the menu of the main window.
Create
Cancel

Installation steps:

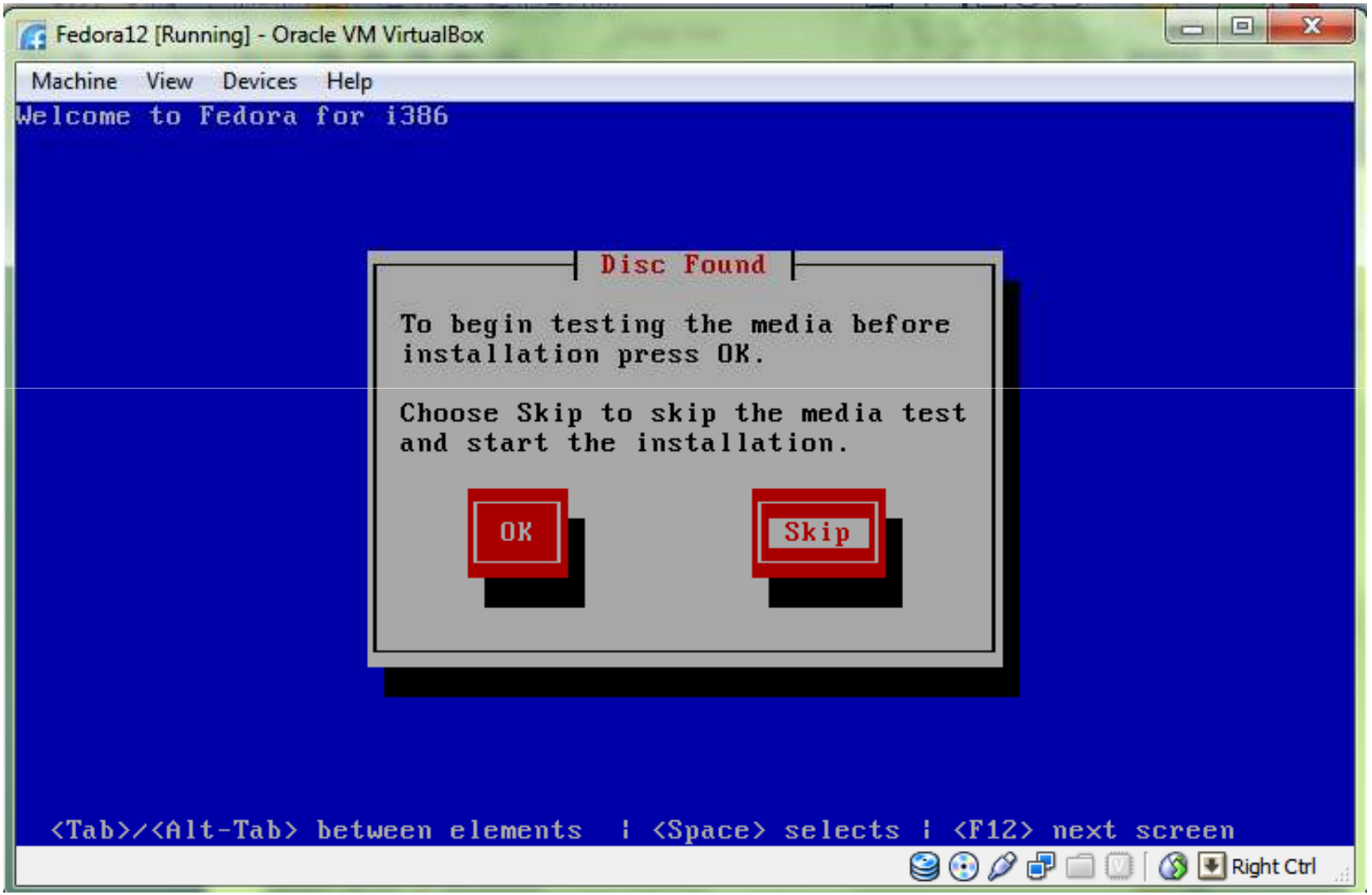



Oracle VM VirtualBox Manager
File
New
Fedora12 - Oracle VM VirtualBox
Machine View Devices Help
First Run Wizard
Welcome to the First Run Wizard!
You have started a newly created virtual machine for the first time. This wizard will help you to perform the steps necessary for installing an operating system of your choice onto this virtual machine.
Use the Next button to go to the next page of the wizard and the Back button to return to the previous page. You can also press Cancel if you want to cancel the execution of this wizard.
Next
Cancel
Right Ctrl

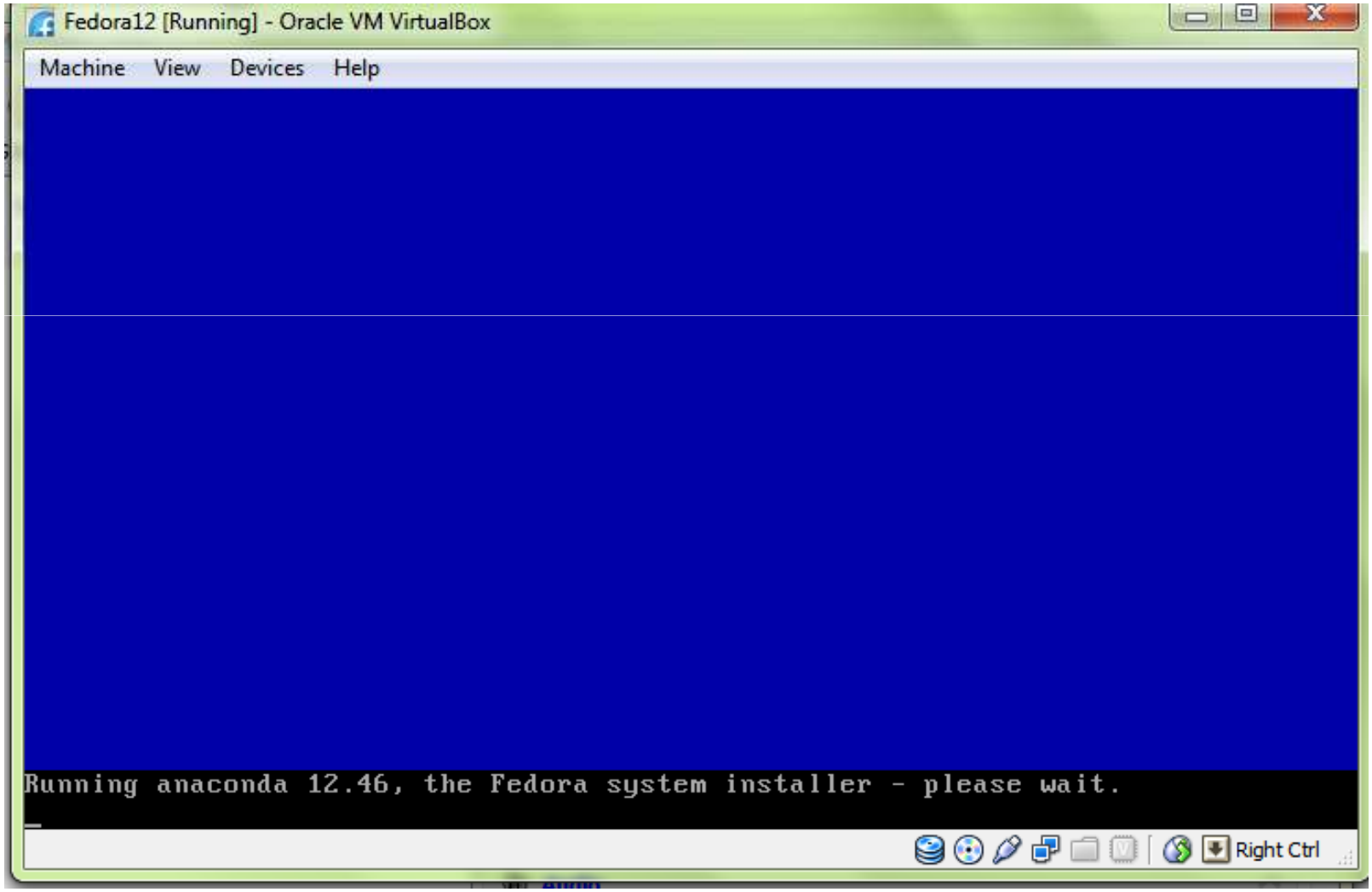

Fedora12 - Oracle VM VirtualBox
Machine
View
Devices
Help
First Run Wizard
Select Installation Media
Select the media which contains the setup program of the operating system you want to install. This media must be bootable, otherwise the setup program will not be able to start.
Media Source
Host Drive 'J:'
Host Drive 'J:'
Host Drive 'K:'
Fedora-12-i386-DVD.iso (2.98 GB)
I:\Fedora-12-i386-DVD\Fedora-12-i386-DVD.iso
Attached to: Not Attached
Next
Cancel
Right Ctrl

Wait for the kernel to boot and start the installation

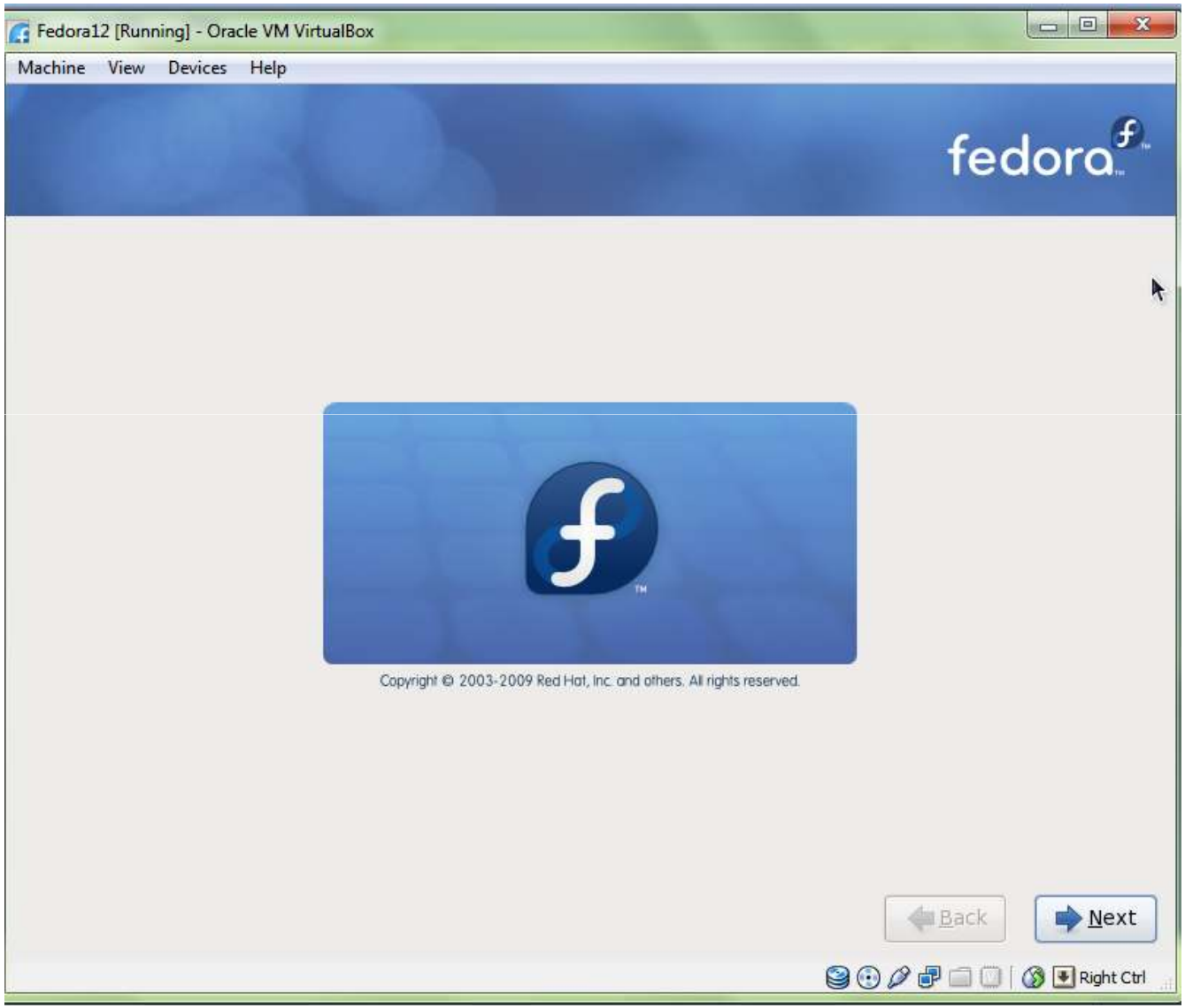
Media Check


Fedora12 [Running] - Oracle VM VirtualBox
Machine View Devices Help
Welcome to Fedora for i386
Disc Found
To begin testing the media before installation press OK.
Choose Skip to skip the media test and start the installation.
OK
Skip
<Tab>/<Alt-Tab> between elements | <Space> selects | <F12> next screen
Right Ctrl

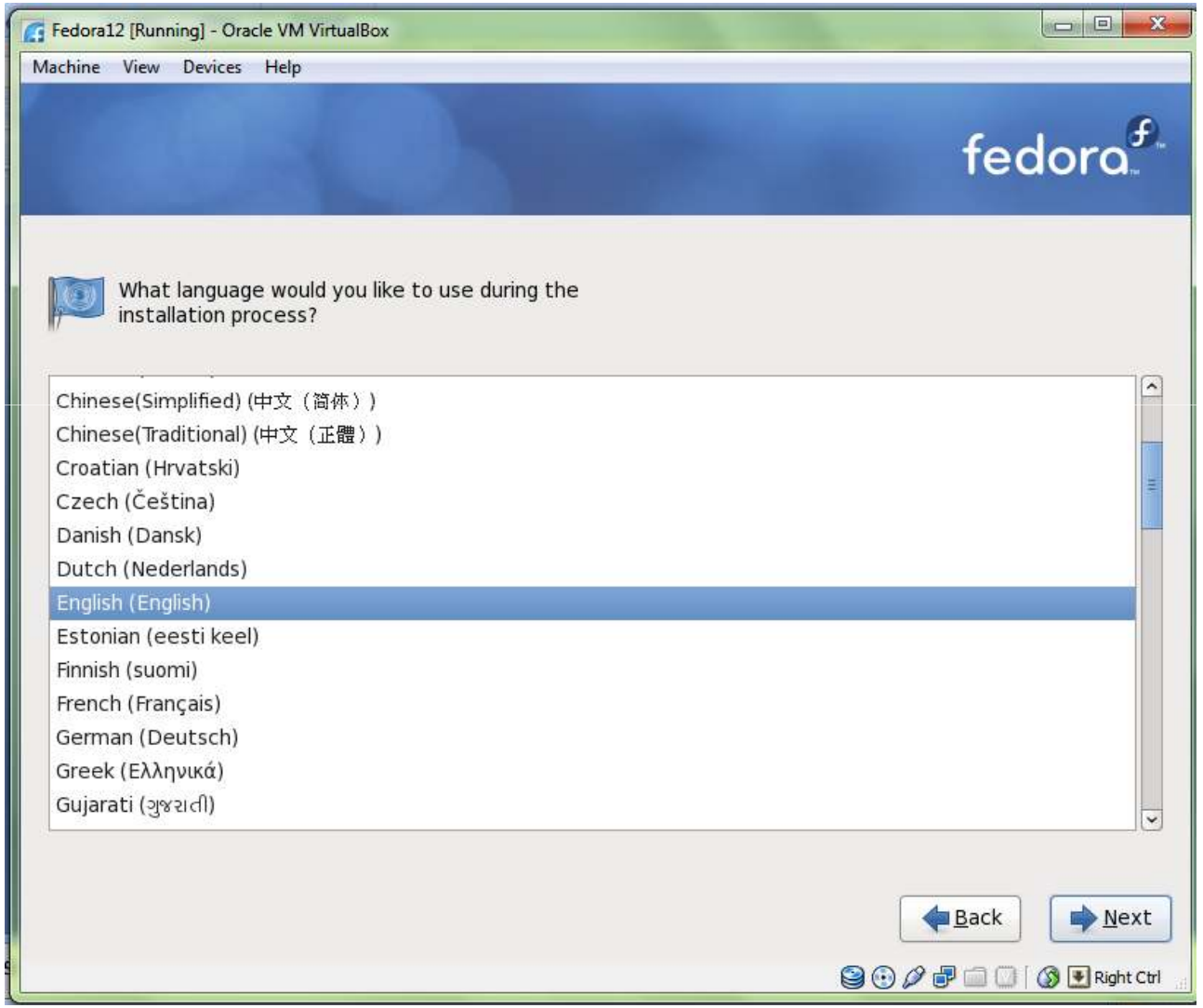
Anaconda is the installer for Red Hat Enterprise Linux and Fedora.



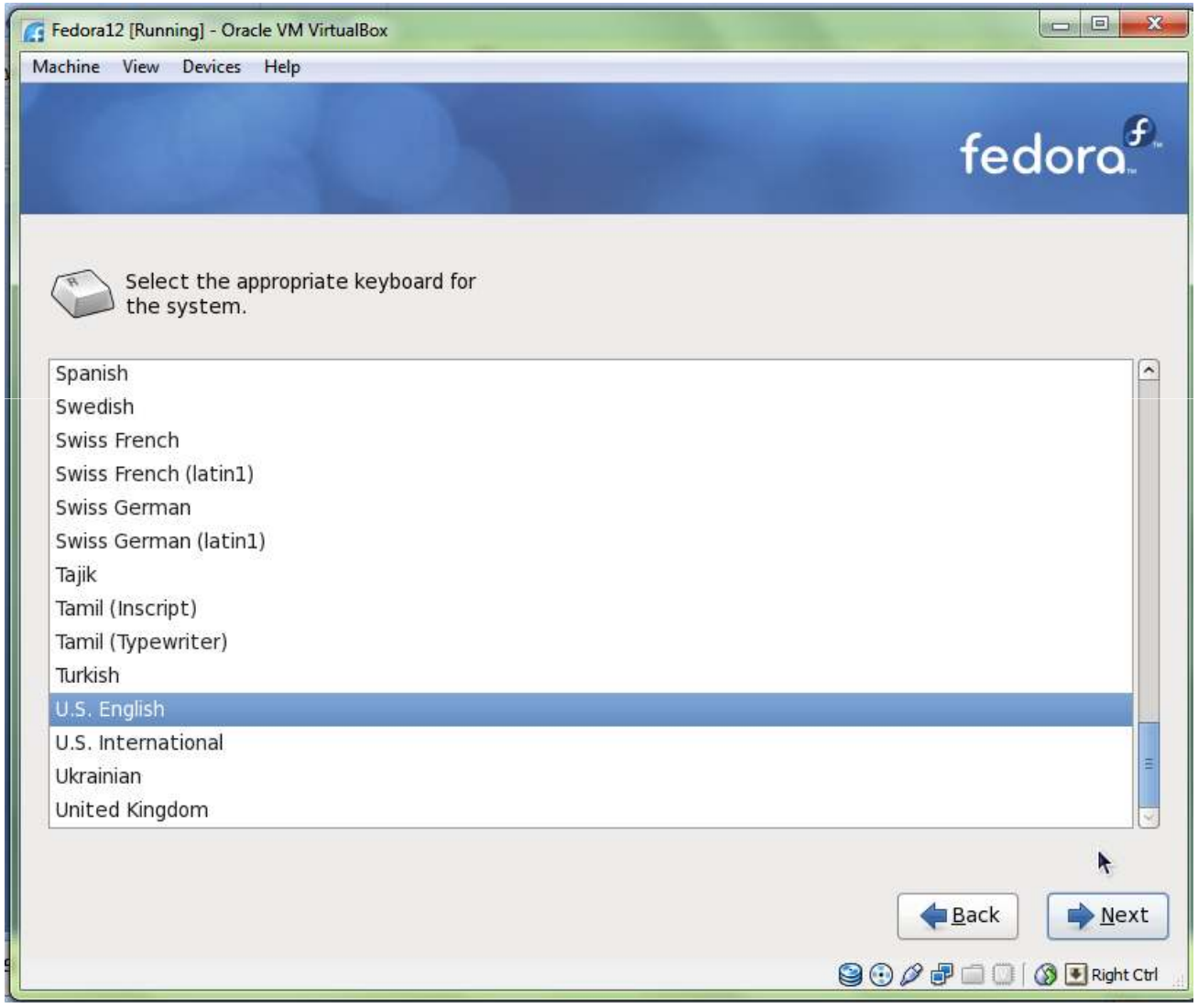
Fedora splash screen

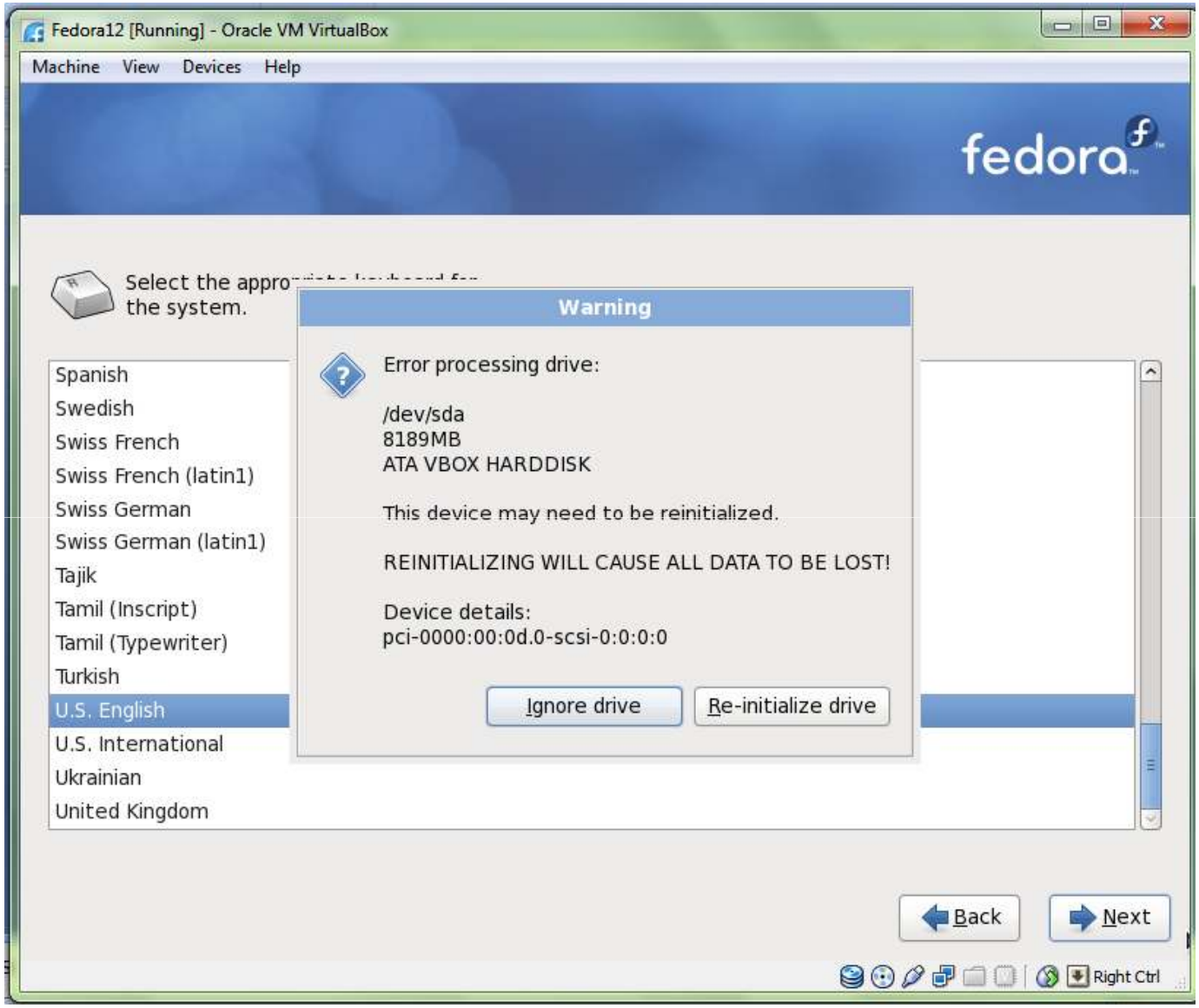


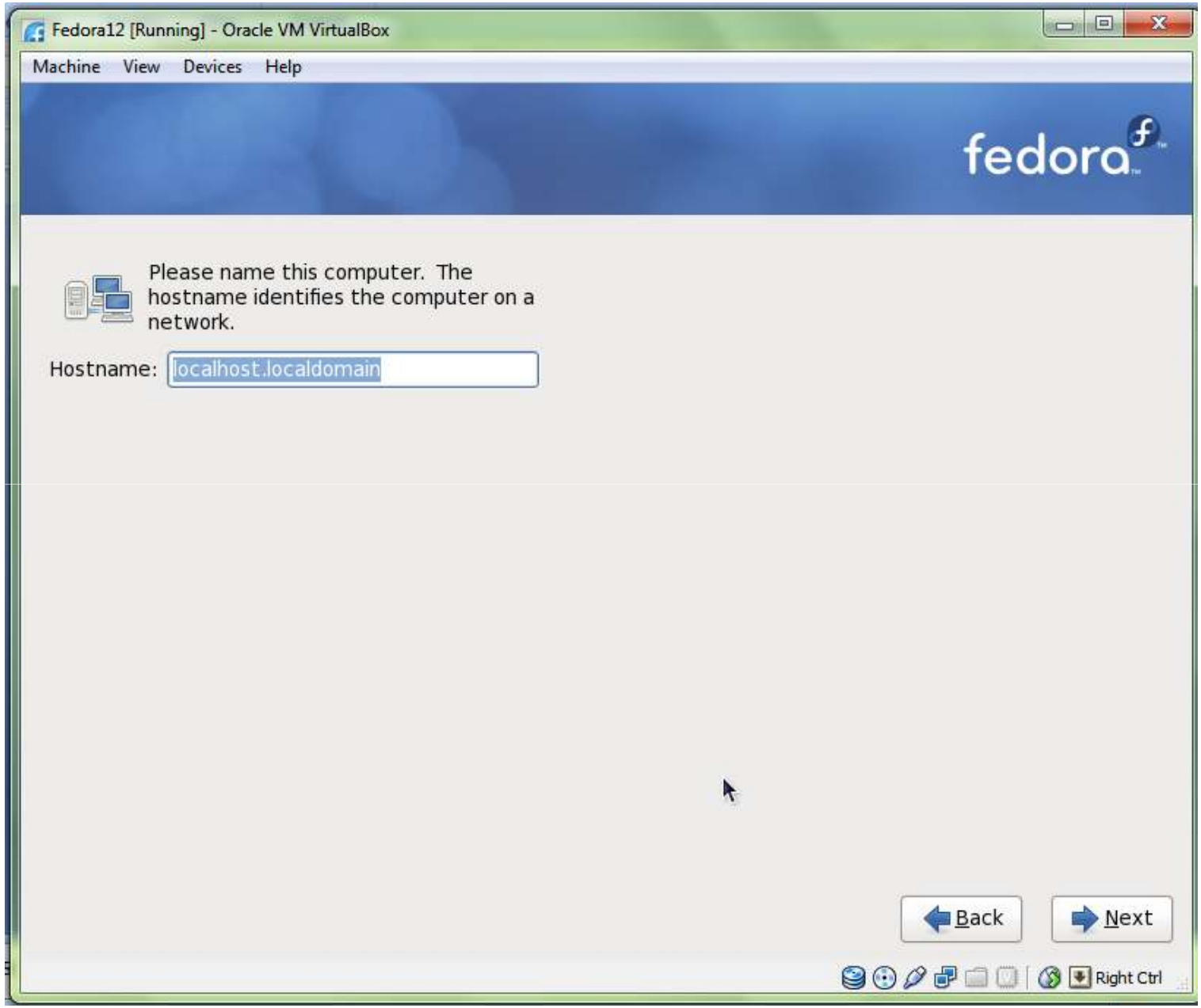
Language (during Installation)



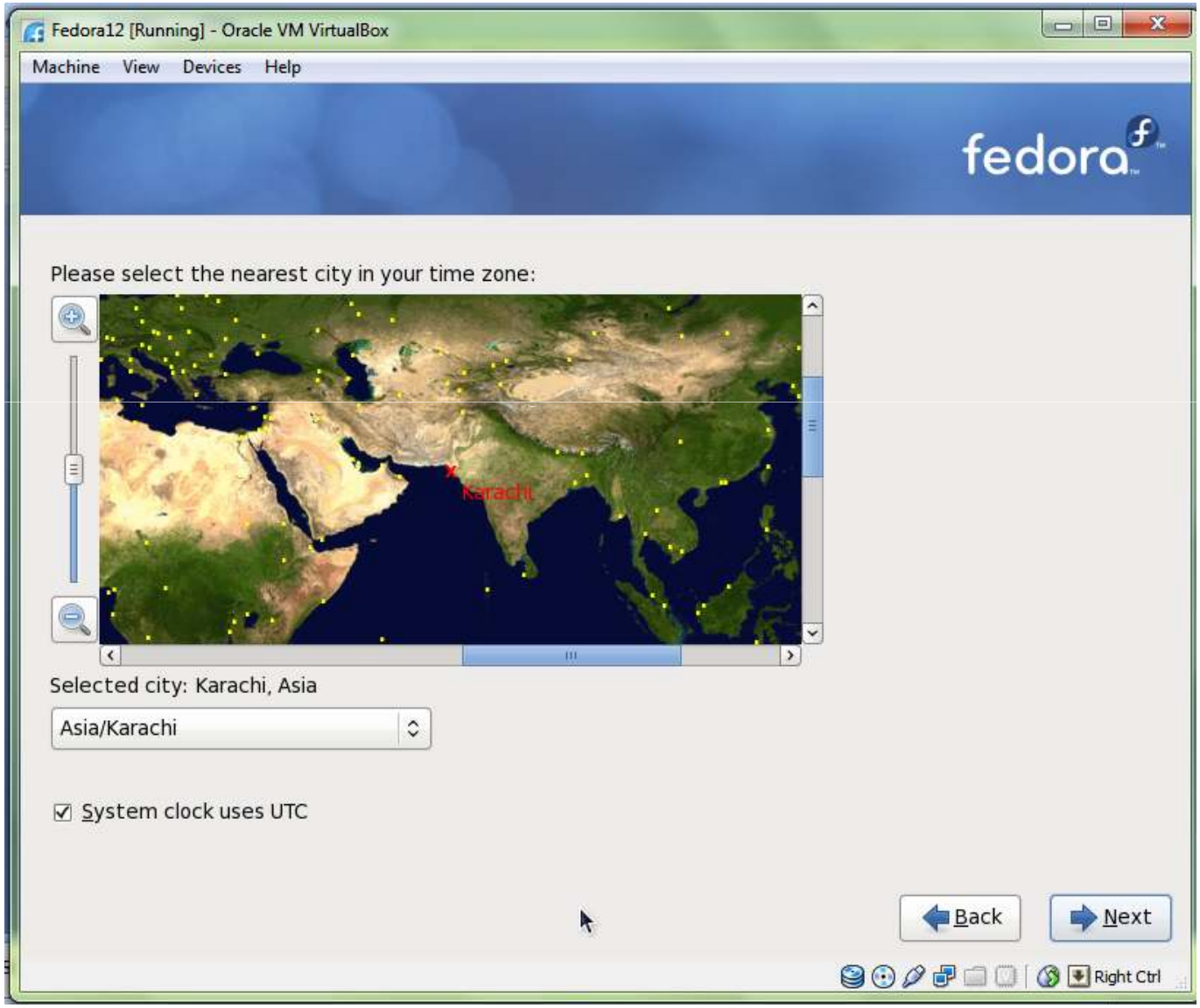
select your keyboard



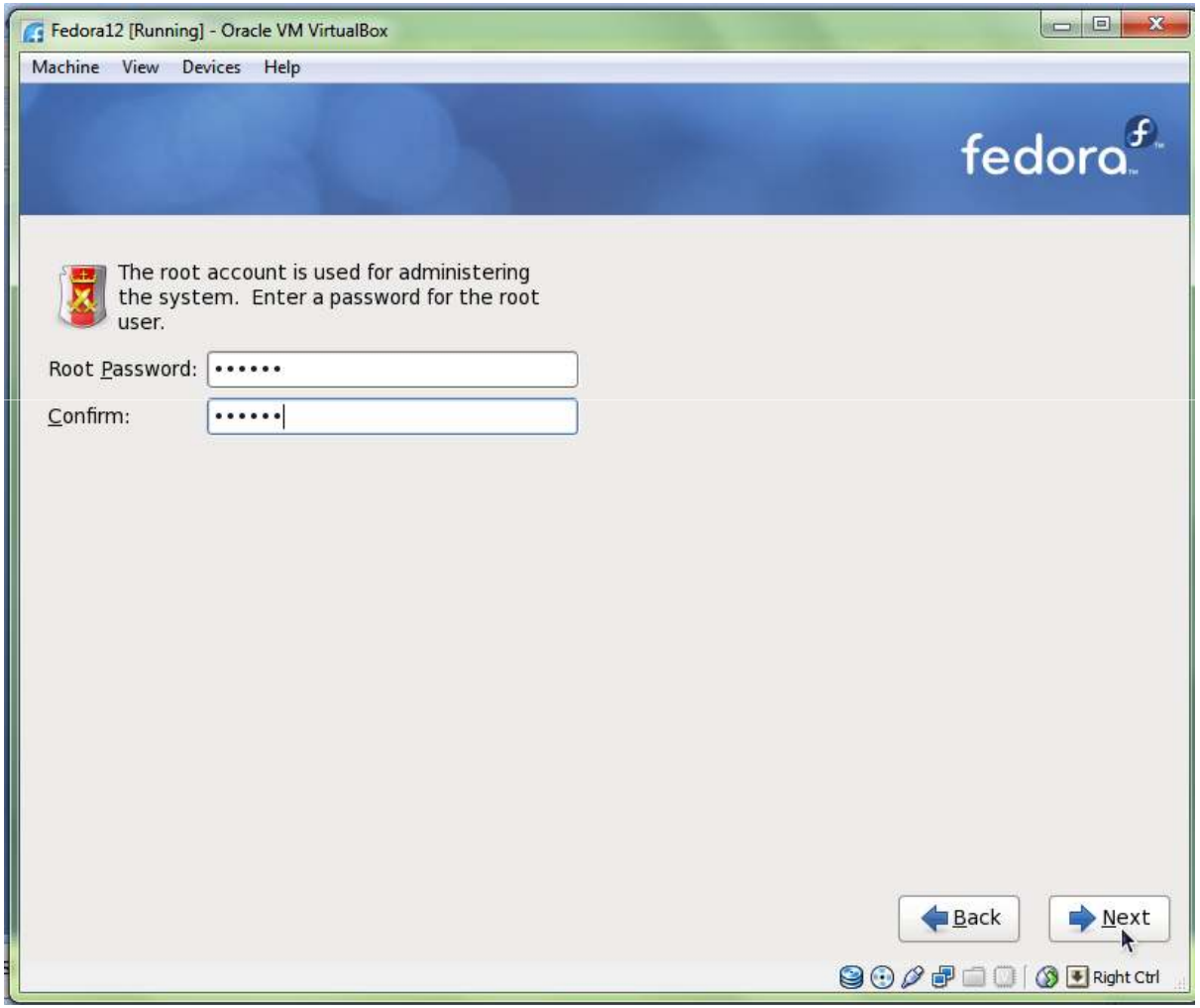

Fedora12 [Running] - Oracle VM VirtualBox
Machine View Devices Help
fedora
Select the appro
the system.
Spanish
Swedish
Swiss French
Swiss French (latin1)
Swiss German
Swiss German (latin1)
Tajik
Tamil (Inscript)
Tamil (Typewriter)
Turkish
U.S. English
U.S. International
Ukrainian
United Kingdom
Warning
Error processing drive:
/dev/sda
8189MB
ATA VBOX HARDDISK
This device may need to be reinitialized.
REINITIALIZING WILL CAUSE ALL DATA TO BE LOST!
Device details:
pci-0000:00:0d.0-scsi-0:0:0:0
Ignore drive
Re-initialize drive
Back
Next
Right Ctrl


Fedora12 [Running] - Oracle VM VirtualBox
Machine View Devices Help
fedora
Please name this computer. The hostname identifies the computer on a network.
Hostname: localhost.localdomain
Back
Next
Right Ctrl

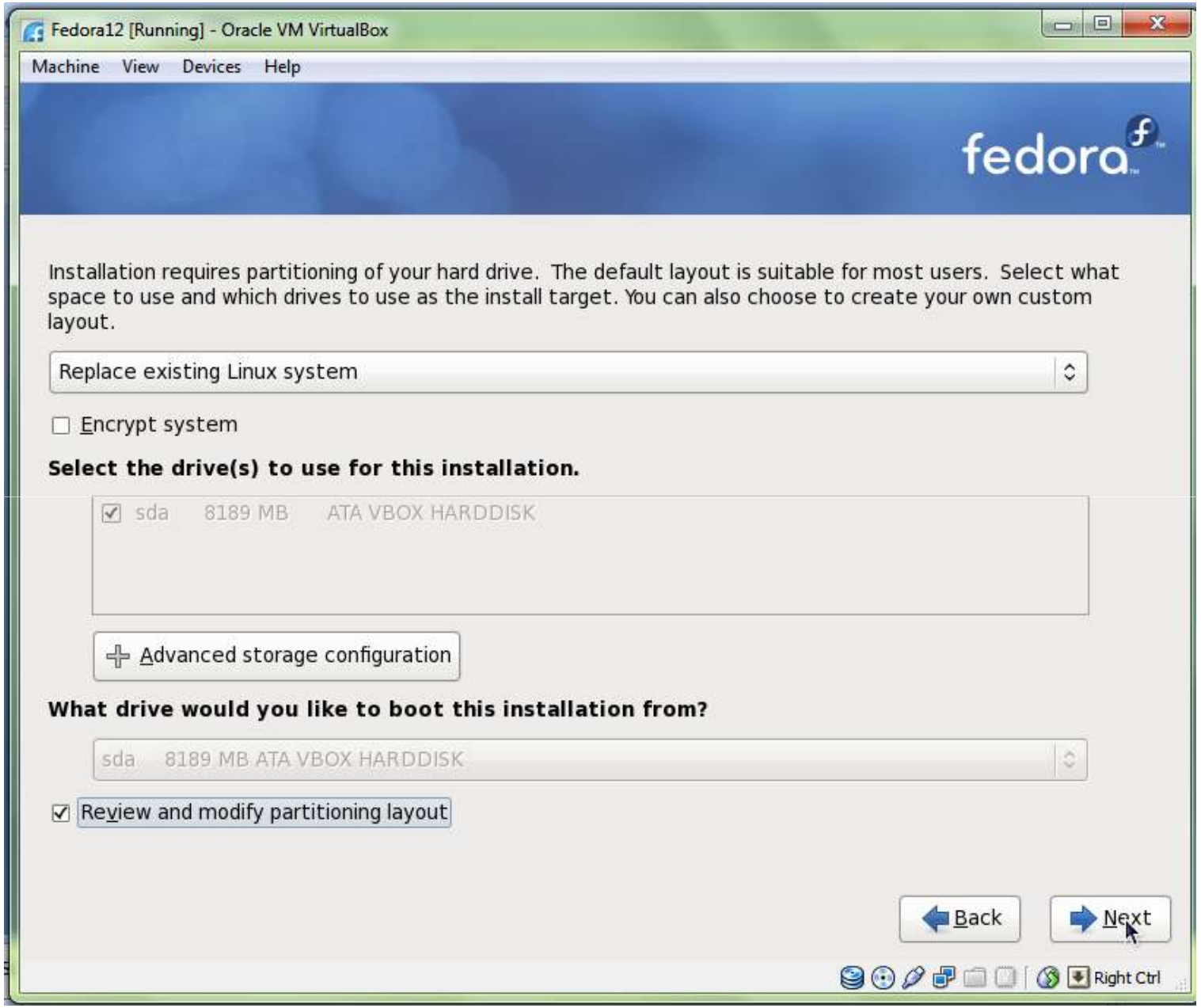
Time zone


Fedora12 [Running] - Oracle VM VirtualBox
Machine View Devices Help
fedora
Please select the nearest city in your time zone:
Karachi
Selected city: Karachi, Asia
Asia/Karachi
System clock uses UTC
Back
Next
Right Ctrl

Root is like Administer in windows XP




Fedora12 [Running] - Oracle VM VirtualBox
Machine View Devices Help
fedora
The root account is used for administering the system. Enter a password for the root user.
Root Password: ••••••
Confirm: ••••••
Weak Password
You have provided a weak password: it is too simplistic/systematic
Cancel
Use Anyway
Back
Next
Right Ctrl


Fedora12 [Running] - Oracle VM VirtualBox
Machine View Devices Help
fedora
Installation requires partitioning of your hard drive. The default layout is suitable for most users. Select what space to use and which drives to use as the install target. You can also choose to create your own custom layout.
Replace existing Linux system
Encrypt system
Select the drive(s) to use for this installation.
sda 8189 MB ATA VBOX HARDDISK
Advanced storage configuration
What drive would you like to boot this installation from?
sda 8189 MB ATA VBOX HARDDISK
Review and modify partitioning layout
Back
Next
Right Ctrl

- **Use entire drive**
  - remove all partitions on your hard drive(s)
    as Windows VFAT or NTFS partitions).
- **Replace existing Linux system**
  - remove only previous Linux installation
  - does not remove partitions VFAT, FAT32 NTFS
- **Shrink existing system**
  - resize your current data
  - install a default Fedora layout in the space that is freed
- **Use free space**
  - select this option to retain your current data and partitions

- **FAT32 (File Allocation Table)**
- **NTFS** (New Technology File System)
- **ext2 /ext3 /ext4 extended file System**

swap partition

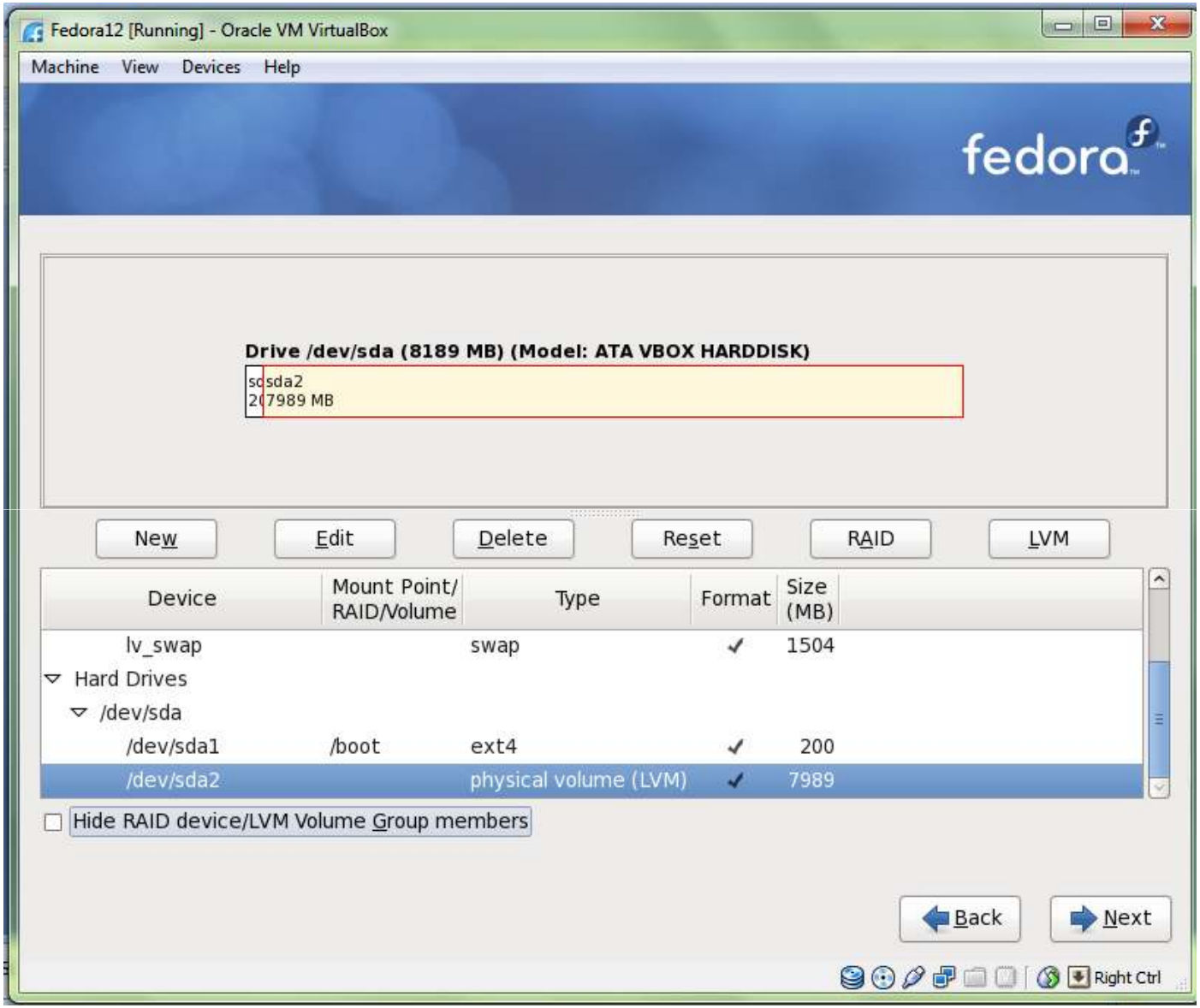
- Type = swap
- A swap partition (at least 256 MB) — swap partitions are used to support virtual memory. In other words, data is written to a swap partition when there is not enough RAM to store the data your system is processing

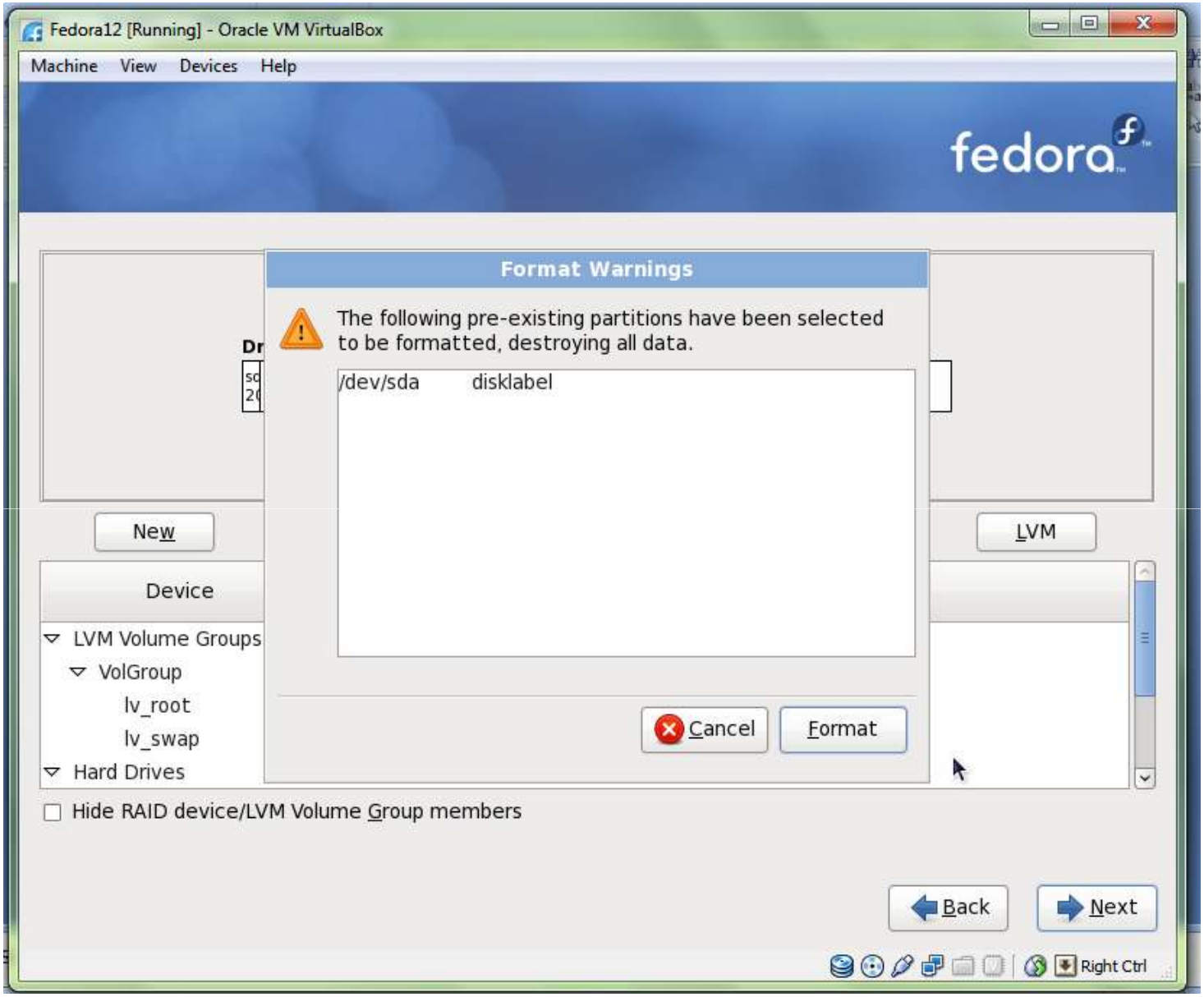
/boot/ partition (250 MB)

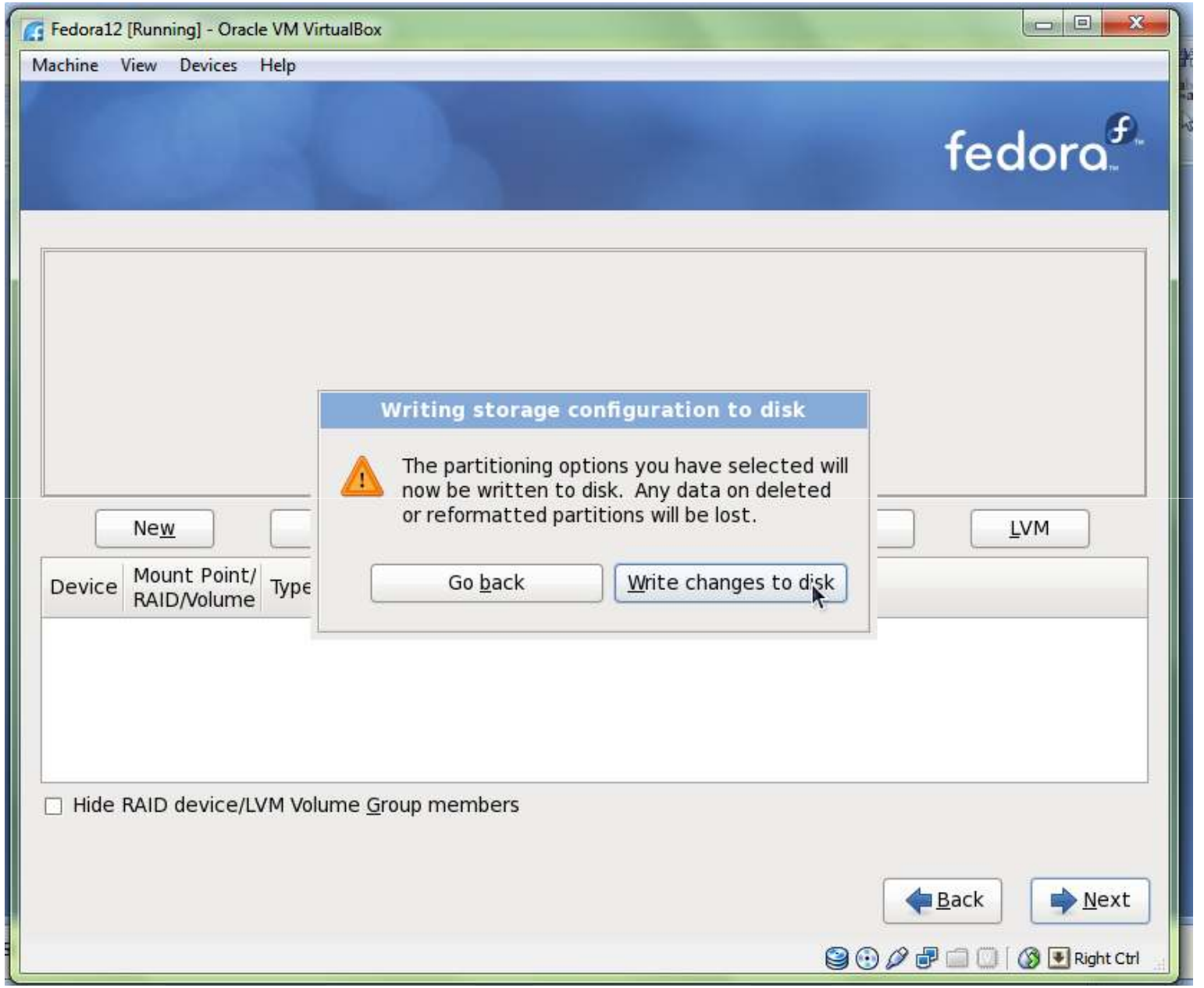
- Type = ext4
- The partition mounted on /boot/ contains the operating system kernel (which allows your system to boot Fedora), along with files used during the bootstrap process

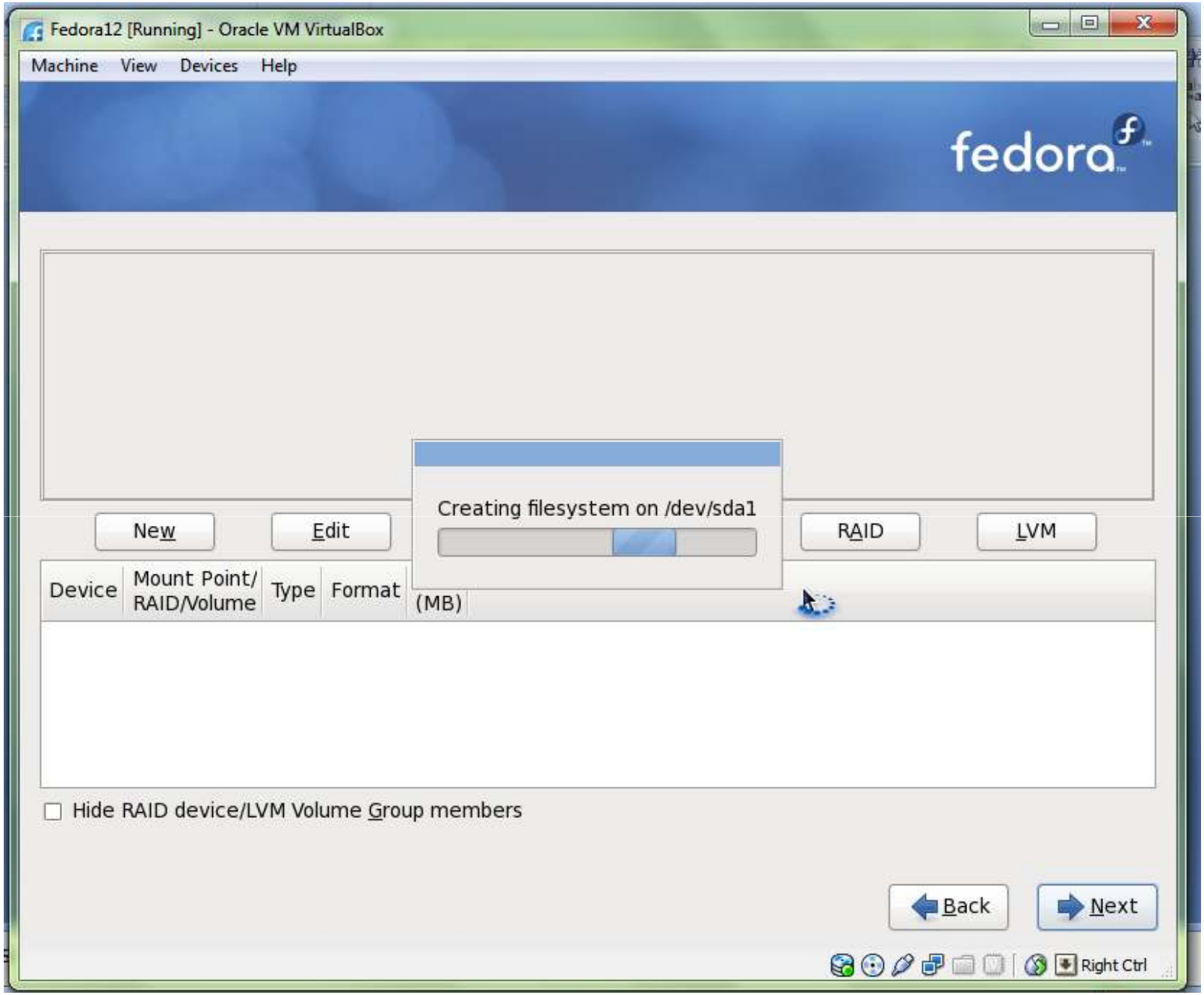
/ A root partition (3.0 GB - 5.0 GB)

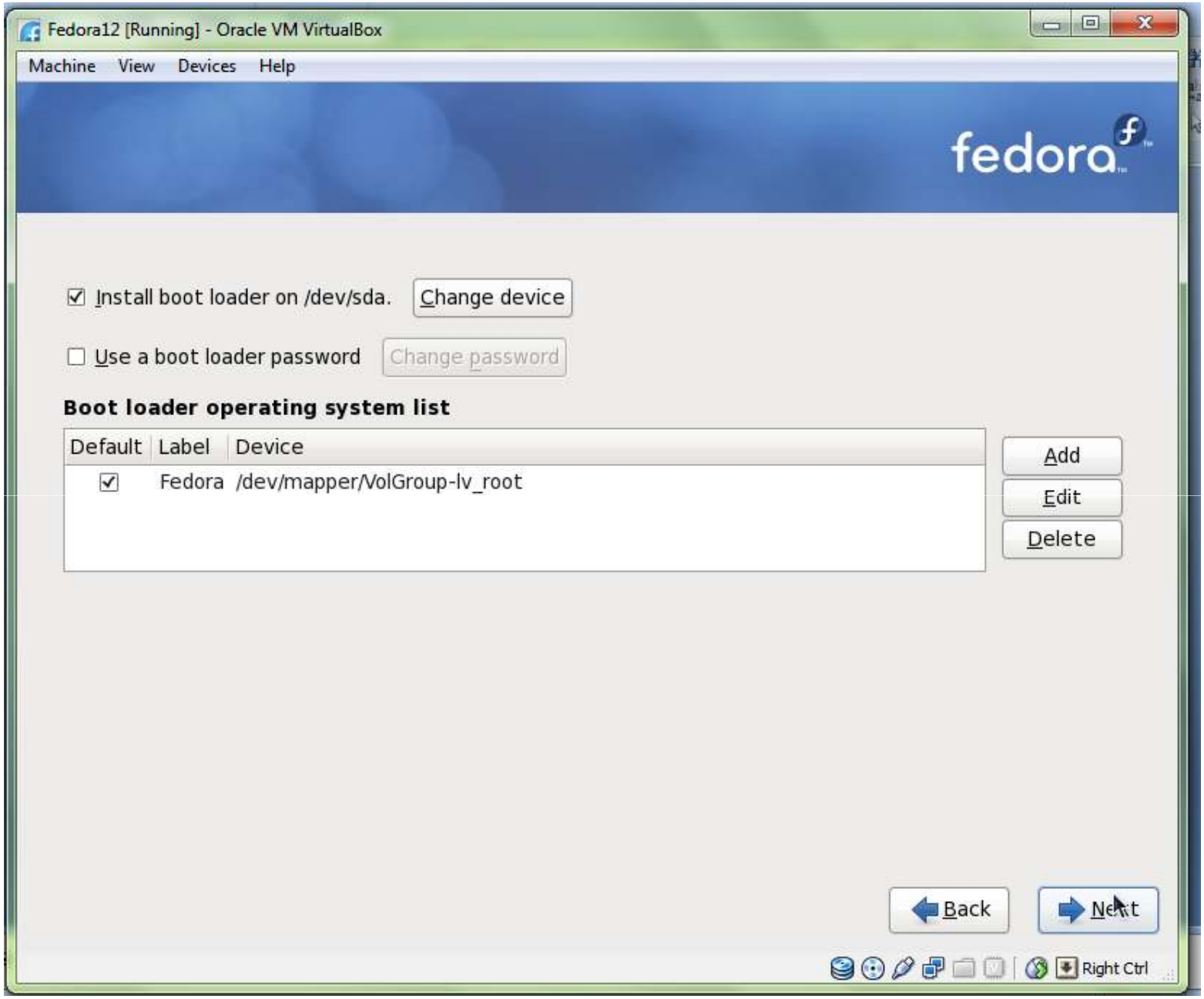
- Type = physical Volume (LVM)
- This is where "/" (the root directory) is located. In this setup, all files (except those stored in /boot) are on the root partition.
- **LVM** is a logical volume manager for the Linux kernel; it manages disk drives and similar mass-storage devices


Fedora12 [Running] - Oracle VM VirtualBox
Machine View Devices Help
fedora
Drive /dev/sda (8189 MB) (Model: ATA VBOX HARDDISK)
sda2
7989 MB
New
Edit
Delete
Reset
RAID
LVM
Device
Mount Point/ RAID/Volume
Type
Format
Size (MB)
lv_swap
swap
1504
Hard Drives
/dev/sda
/dev/sda1
/boot
ext4
200
/dev/sda2
physical volume (LVM)
7989
Hide RAID device/LVM Volume Group members
Back
Next
Right Ctrl


Fedora12 [Running] - Oracle VM VirtualBox
Machine View Devices Help
fedora
Format Warnings
The following pre-existing partitions have been selected to be formatted, destroying all data.
/dev/sda disklabel
Cancel
Format
New
LVM
Device
LVM Volume Groups
VolGroup
lv_root
lv_swap
Hard Drives
Hide RAID device/LVM Volume Group members
Back
Next
Right Ctrl


Fedora12 [Running] - Oracle VM VirtualBox
Machine View Devices Help
fedora
Writing storage configuration to disk
The partitioning options you have selected will now be written to disk. Any data on deleted or reformatted partitions will be lost.
Go back
Write changes to disk
New
LVM
Device
Mount Point/ RAID/Volume
Type
Hide RAID device/LVM Volume Group members
Back
Next
Right Ctrl

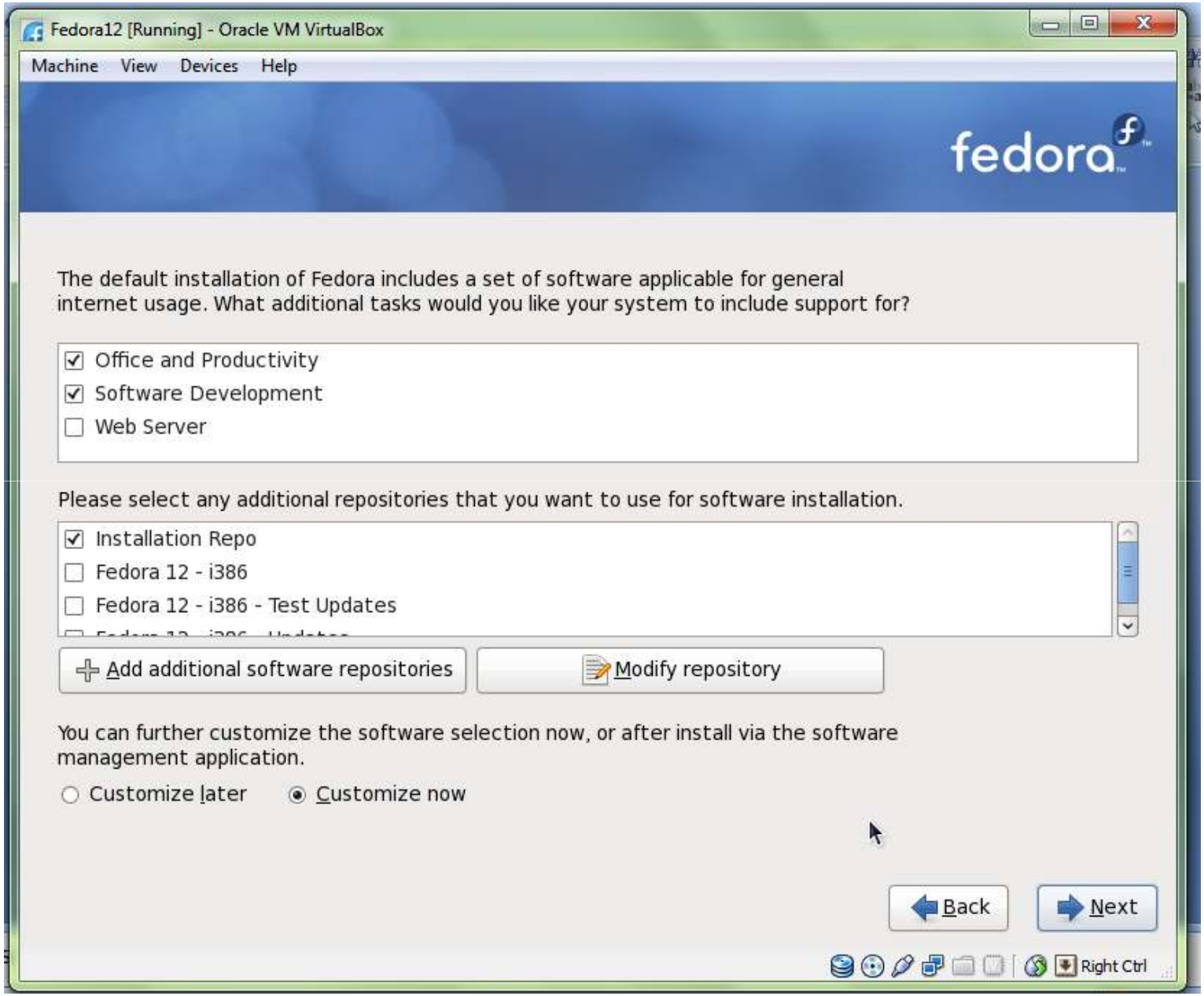

Fedora12 [Running] - Oracle VM VirtualBox
Machine View Devices Help
fedora
Creating filesystem on /dev/sda1
New
Edit
RAID
LVM
Device
Mount Point/ RAID/Volume
Type
Format
(MB)
Hide RAID device/LVM Volume Group members
Back
Next
Right Ctrl

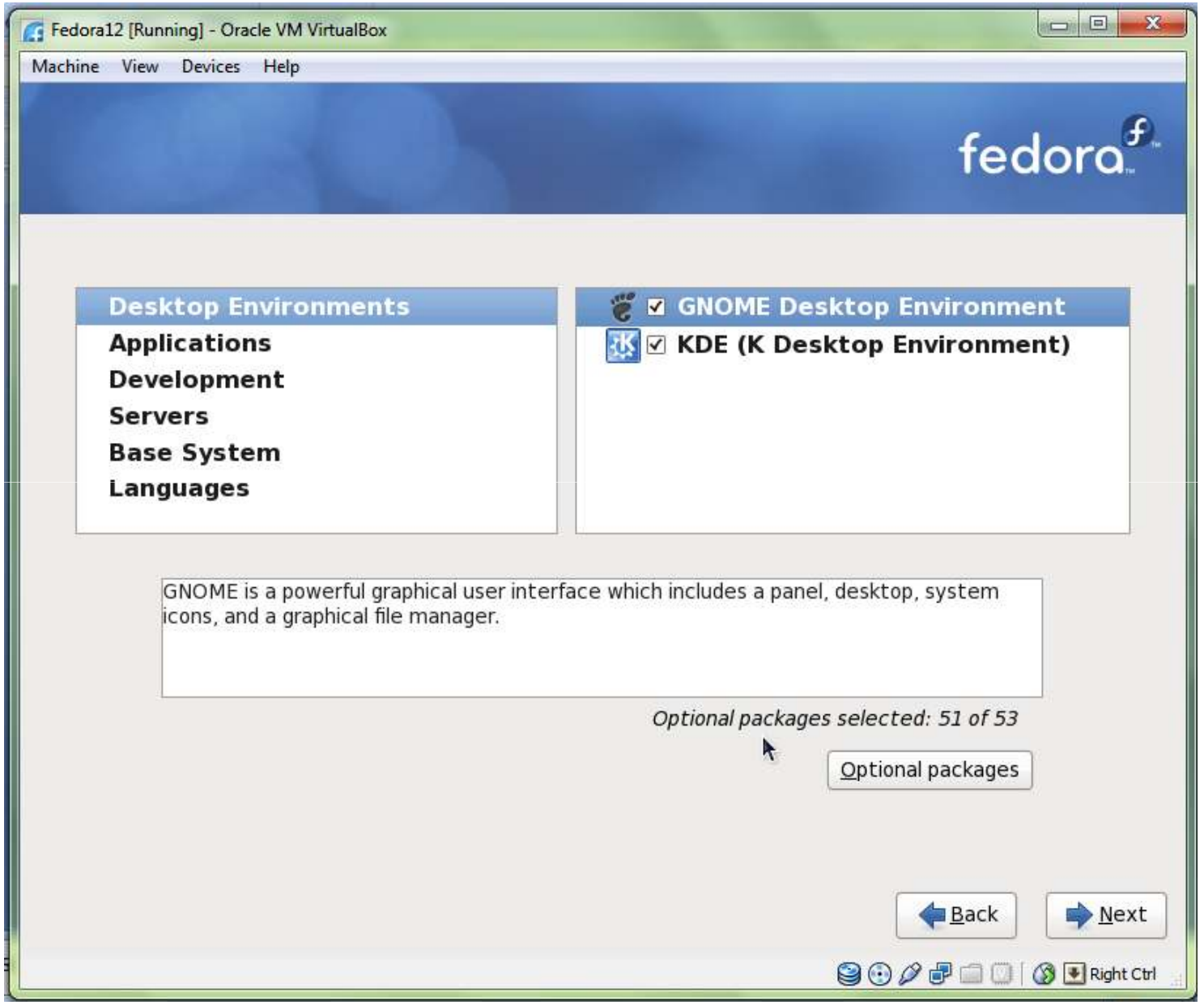

Fedora12 [Running] - Oracle VM VirtualBox
Machine View Devices Help
fedora
Install boot loader on /dev/sda.
Change device
Use a boot loader password
Change password
Boot loader operating system list
Default Label Device
Fedora /dev/mapper/VolGroup-lv_root
Add
Edit
Delete
Back
Next
Right Ctrl

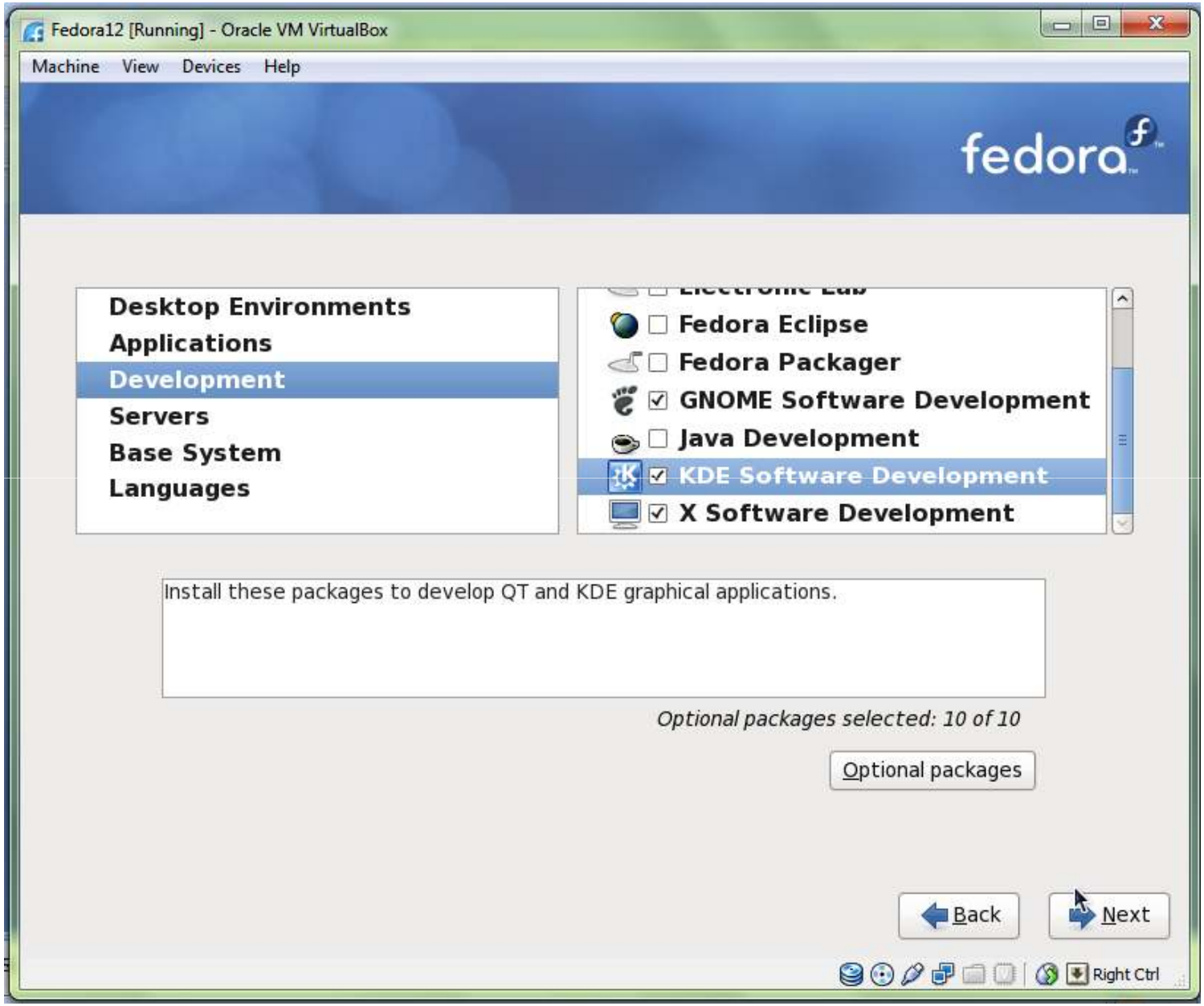
GRUB Boot Loader

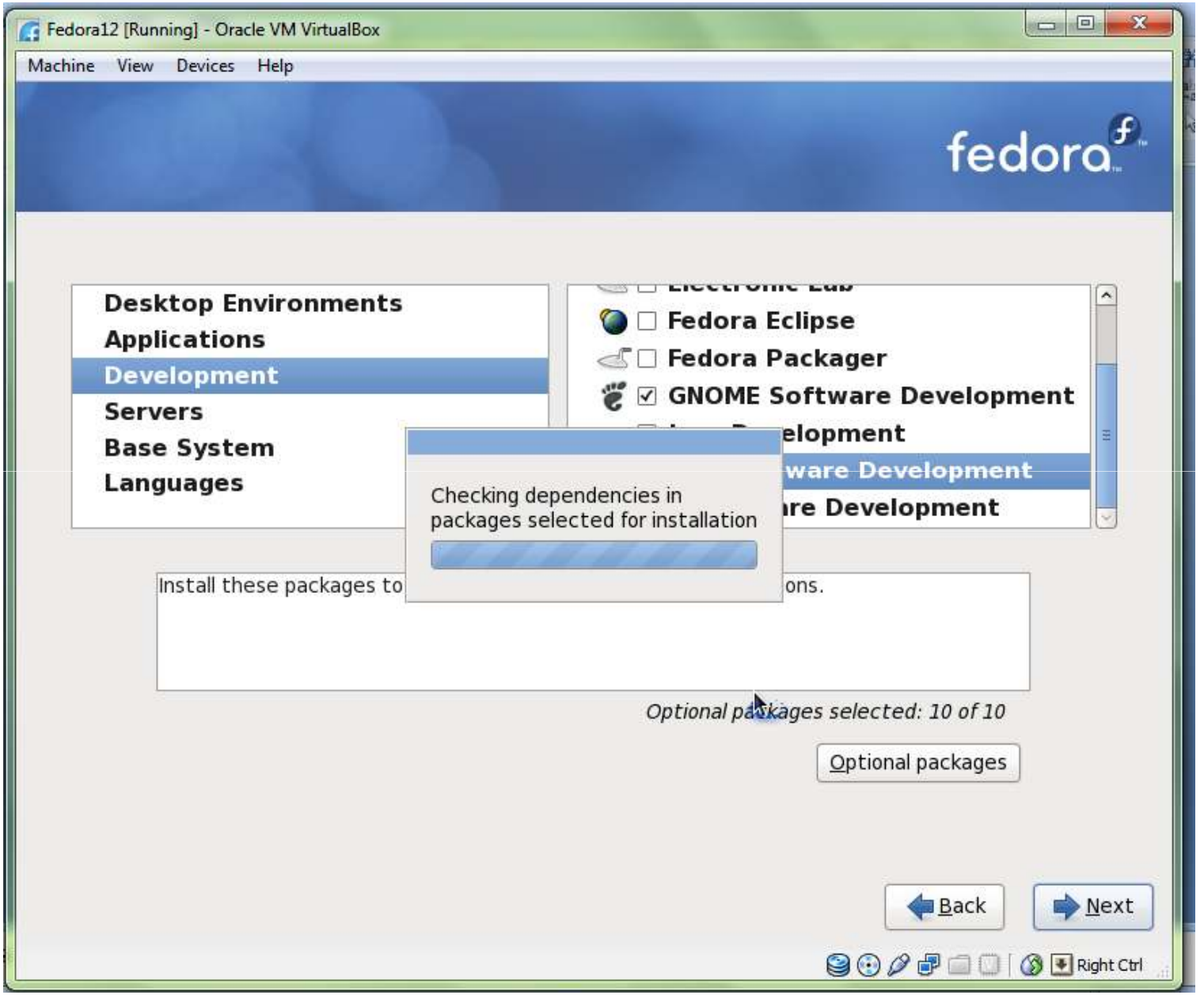
- When a computer turned on, the operating system is loaded into memory by a special program called a *boot loader*.

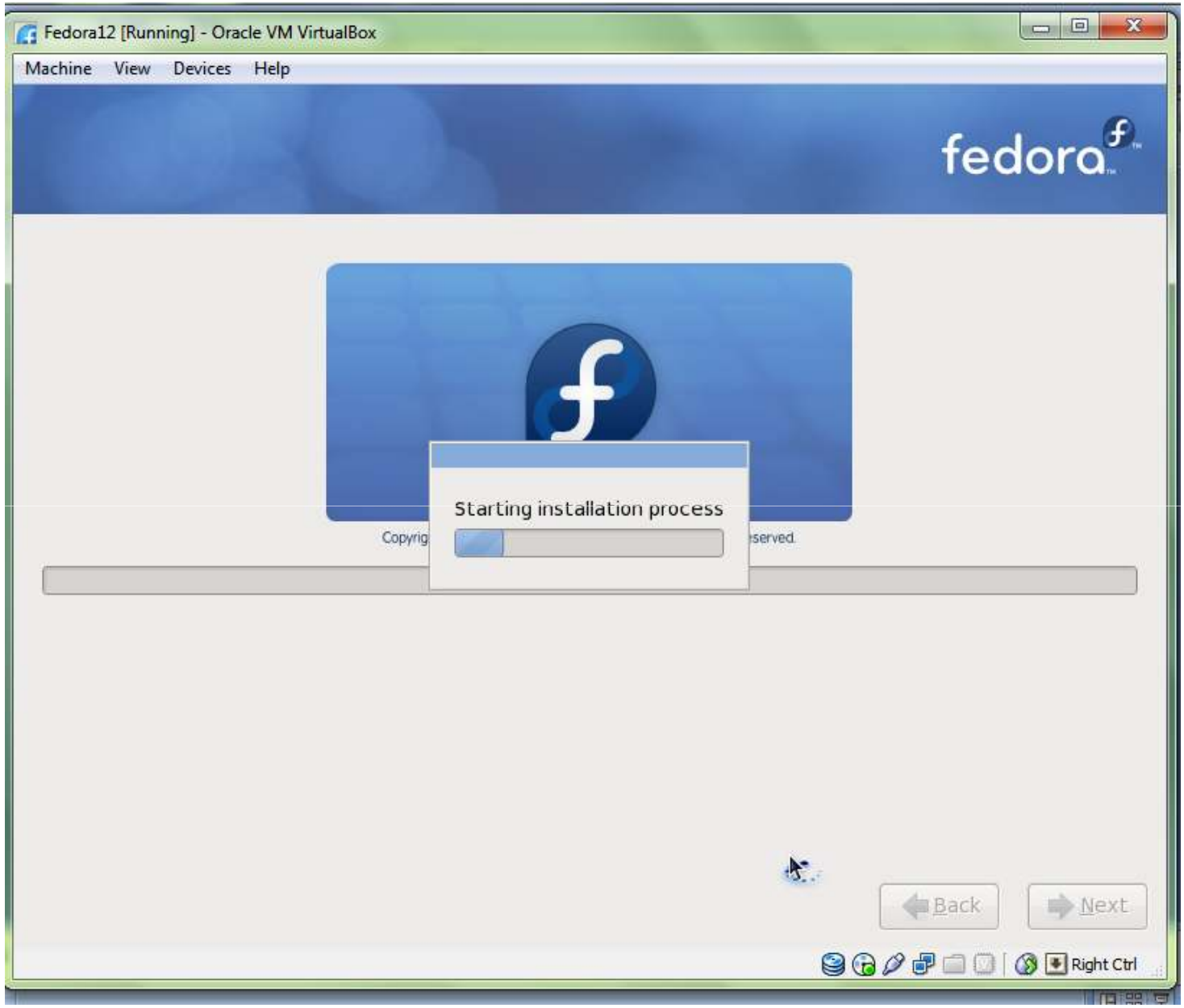
- The *GNU GRand Unified Boot loader* (GRUB) is a program which enables the selection of the installed operating system or kernel to be loaded at system boot time. It also allows the user to pass arguments to the kernel.

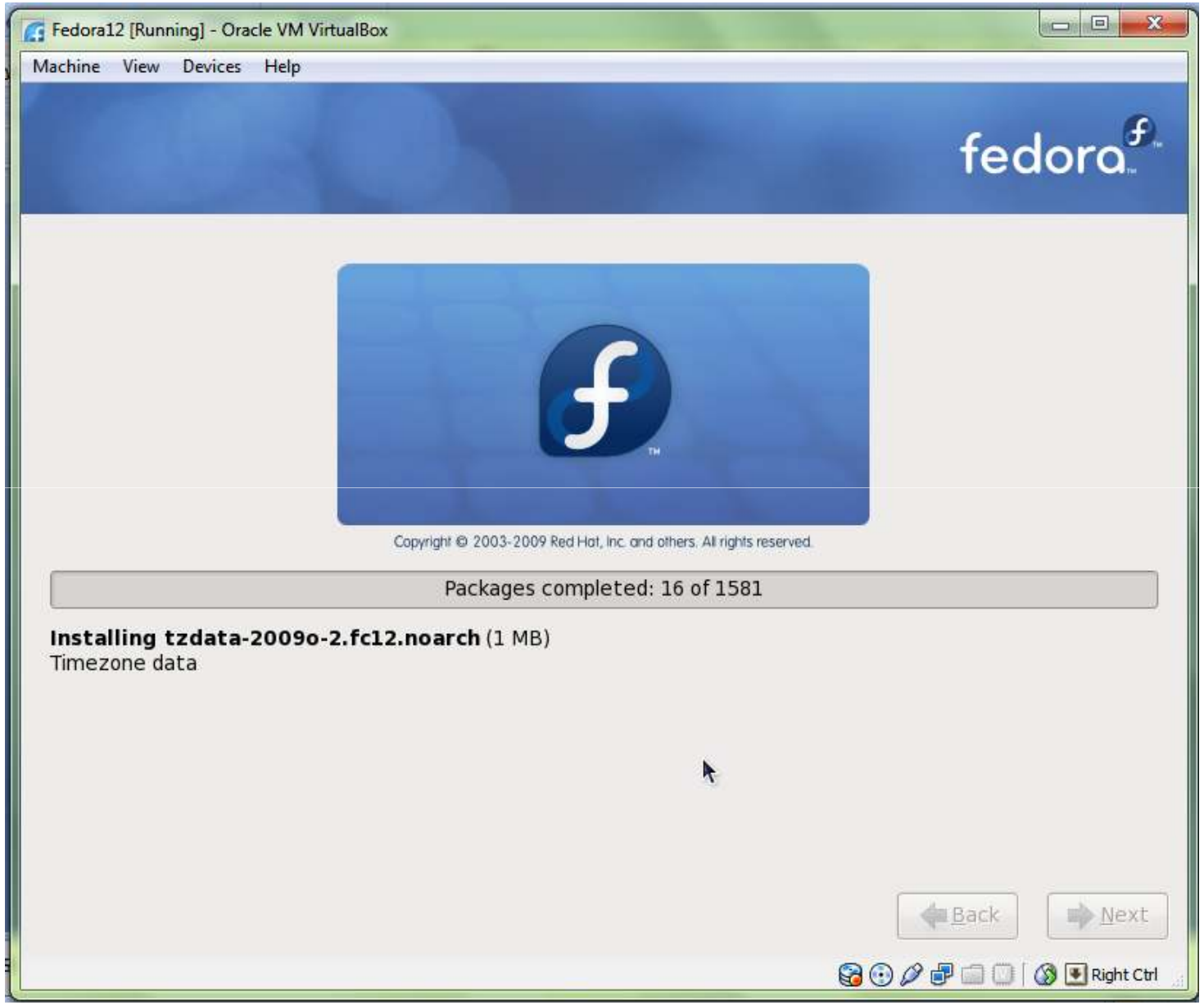

Fedora12 [Running] - Oracle VM VirtualBox
Machine View Devices Help
fedora
The default installation of Fedora includes a set of software applicable for general internet usage. What additional tasks would you like your system to include support for?
Office and Productivity
Software Development
Web Server
Please select any additional repositories that you want to use for software installation.
Installation Repo
Fedora 12 - i386
Fedora 12 - i386 - Test Updates
Add additional software repositories
Modify repository
You can further customize the software selection now, or after install via the software management application.
Customize later
Customize now
Back
Next
Right Ctrl

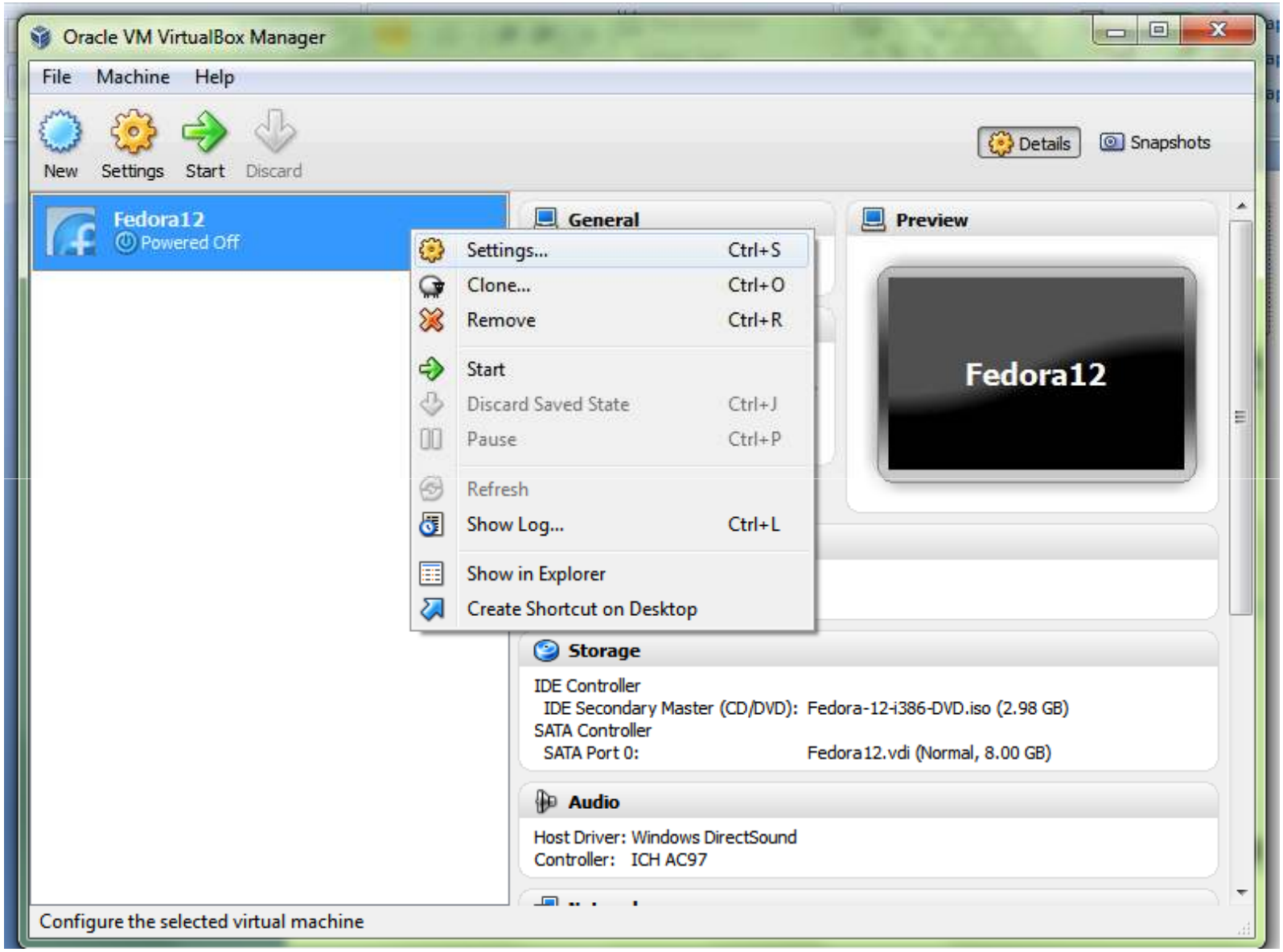

Fedora12 [Running] - Oracle VM VirtualBox
Machine View Devices Help
fedora
Desktop Environments
Applications
Development
Servers
Base System
Languages
GNOME Desktop Environment
KDE (K Desktop Environment)
GNOME is a powerful graphical user interface which includes a panel, desktop, system icons, and a graphical file manager.
Optional packages selected: 51 of 53
Optional packages
Back
Next
Right Ctrl

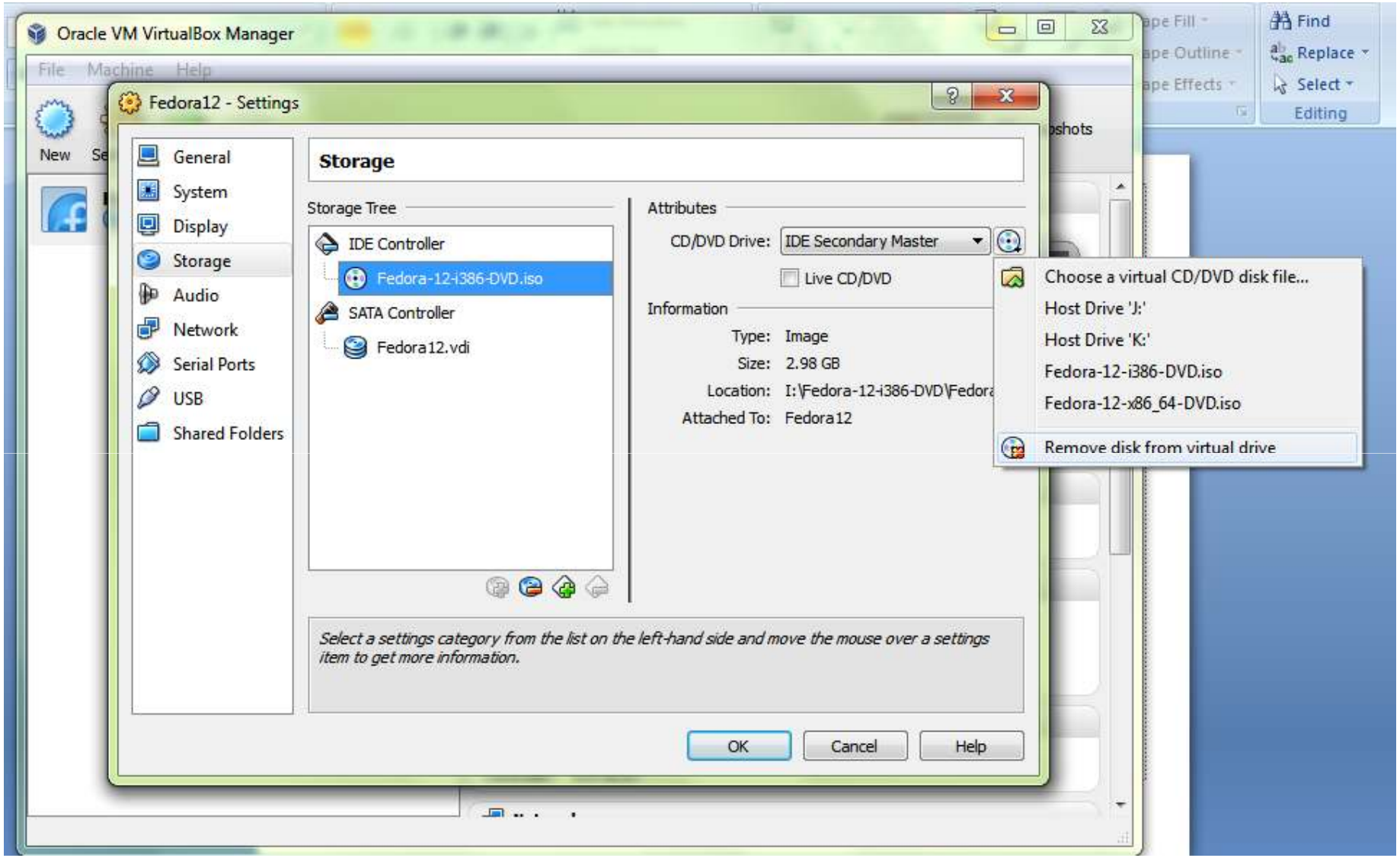

Fedora12 [Running] - Oracle VM VirtualBox
Machine View Devices Help
fedora
Desktop Environments
Applications
Development
Servers
Base System
Languages
Fedora Eclipse
Fedora Packager
GNOME Software Development
Java Development
KDE Software Development
X Software Development
Install these packages to develop QT and KDE graphical applications.
Optional packages selected: 10 of 10
Optional packages
Back
Next
Right Ctrl

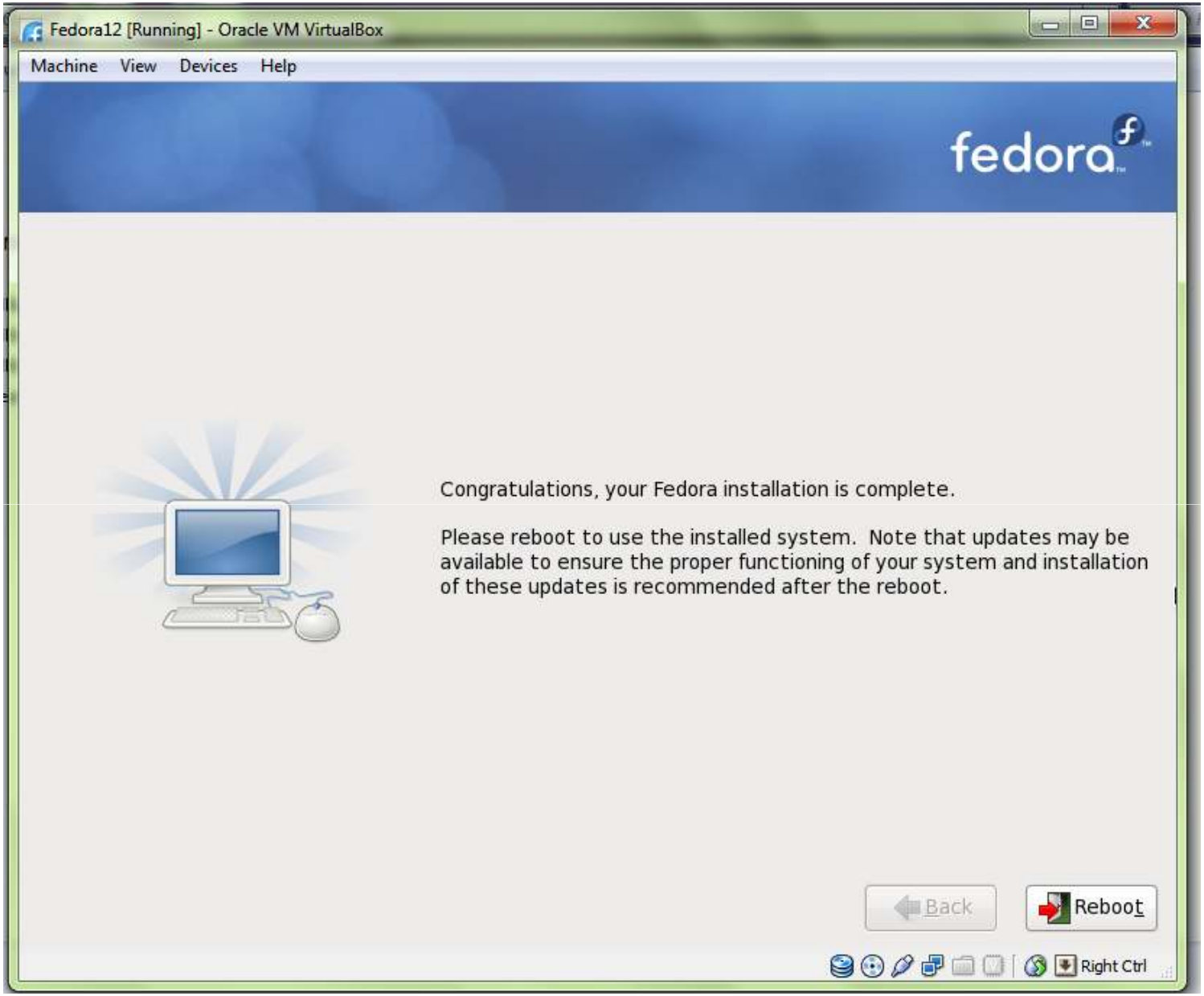

Fedora12 [Running] - Oracle VM VirtualBox
Machine View Devices Help
fedora
Desktop Environments
Applications
Development
Servers
Base System
Languages
Fedora Eclipse
Fedora Packager
GNOME Software Development
Checking dependencies in packages selected for installation
Install these packages to
ons.
Optional packages selected: 10 of 10
Optional packages
Back
Next
Right Ctrl

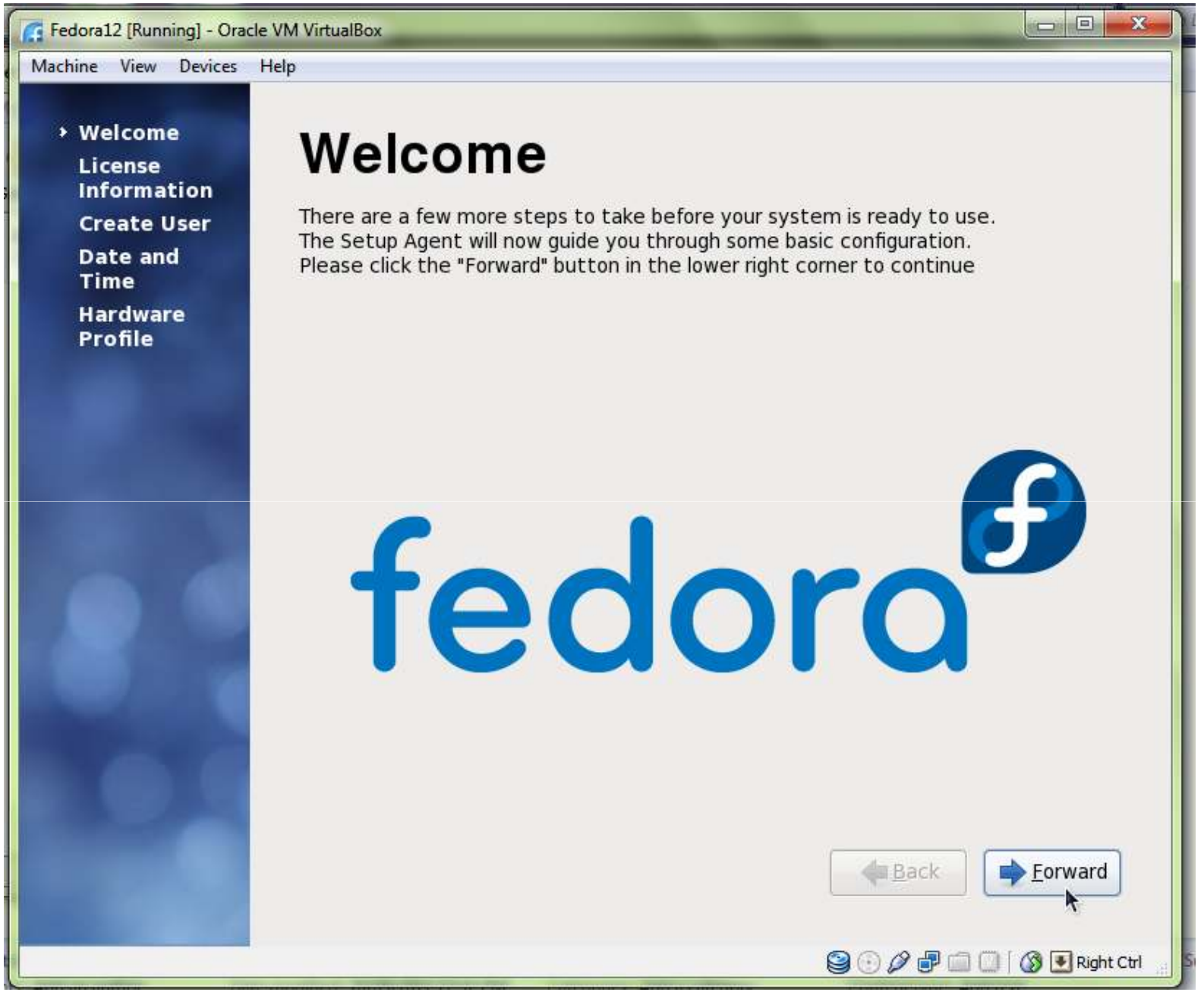

Fedora12 [Running] - Oracle VM VirtualBox
Machine
View
Devices
Help
fedora
Starting installation process
Back
Next
Right Ctrl


Fedora12 [Running] - Oracle VM VirtualBox
Machine View Devices Help
fedora
Copyright © 2003-2009 Red Hat, Inc. and others. All rights reserved.
Packages completed: 16 of 1581
Installing tzdata-2009o-2.fc12.noarch (1 MB)
Timezone data
Back
Next
Right Ctrl

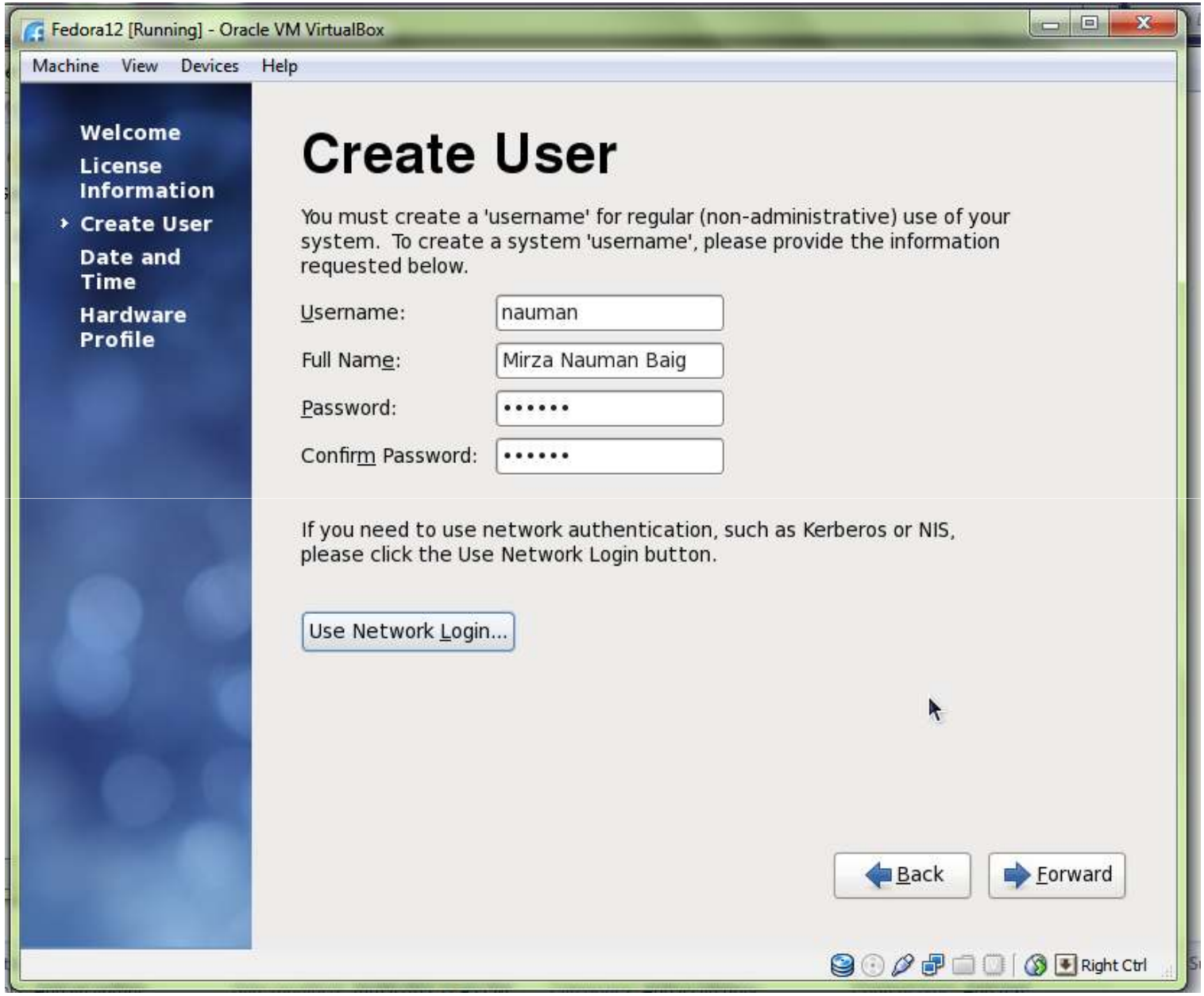

Oracle VM VirtualBox Manager
File
Machine
Help
New
Settings
Start
Discard
Details
Snapshots
Fedora12
Powered Off
General
Preview
Fedora12
Settings... Ctrl+S
Clone... Ctrl+O
Remove Ctrl+R
Start
Discard Saved State Ctrl+J
Pause Ctrl+P
Refresh
Show Log... Ctrl+L
Show in Explorer
Create Shortcut on Desktop
Storage
IDE Controller
IDE Secondary Master (CD/DVD): Fedora-12-i386-DVD.iso (2.98 GB)
SATA Controller
SATA Port 0: Fedora12.vdi (Normal, 8.00 GB)
Audio
Host Driver: Windows DirectSound
Controller: ICH AC97
Configure the selected virtual machine

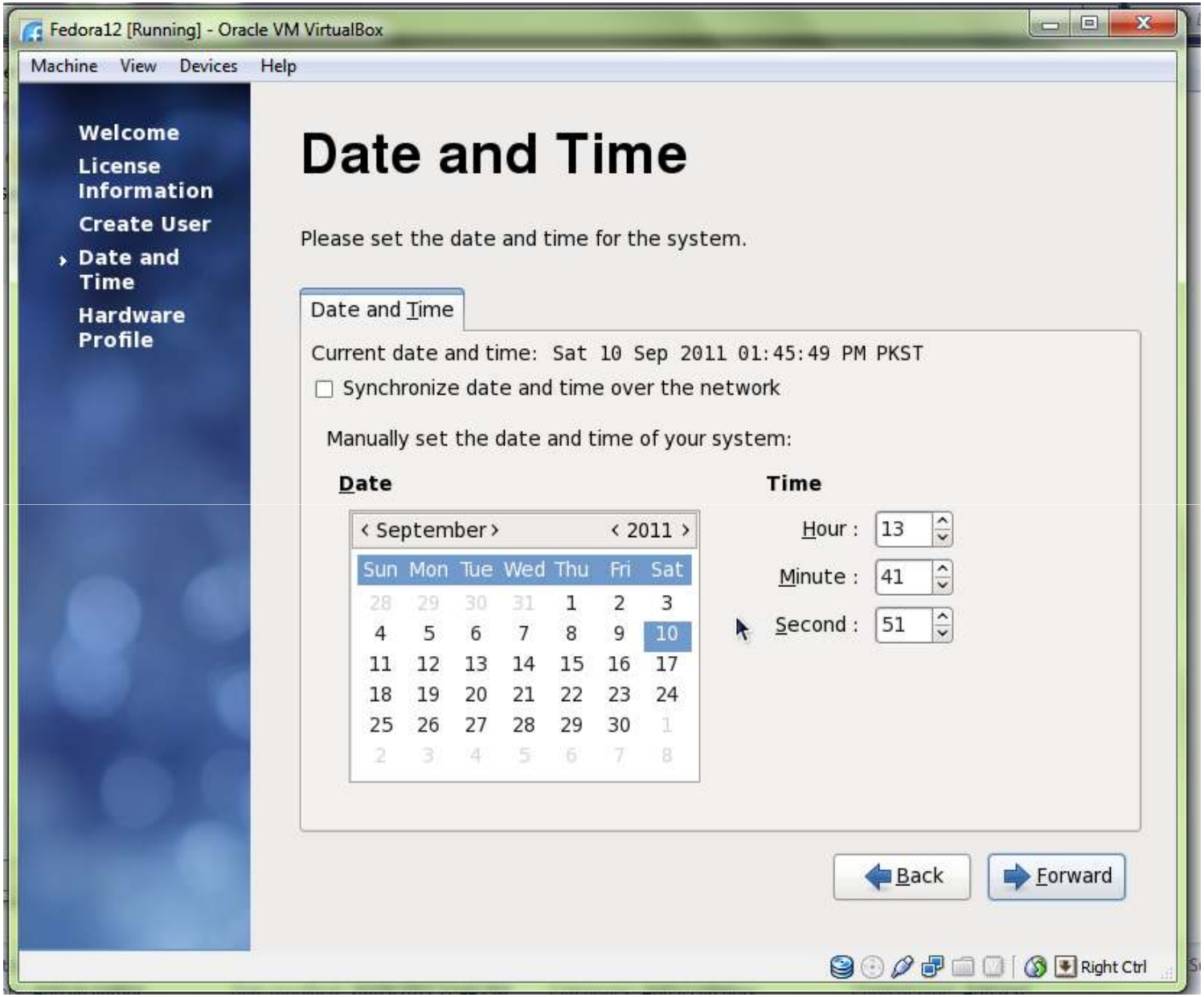

Oracle VM VirtualBox Manager
File Machine Help
New
Fedora12 - Settings
General
System
Display
Storage
Audio
Network
Serial Ports
USB
Shared Folders
Storage
Storage Tree
IDE Controller
Fedora-12-i386-DVD.iso
SATA Controller
Fedora12.vdi
Attributes
CD/DVD Drive:
IDE Secondary Master
Live CD/DVD
Information
Type: Image
Size: 2.98 GB
Location: I:\Fedora-12-i386-DVD\Fedora
Attached To: Fedora12
Choose a virtual CD/DVD disk file...
Host Drive 'J:'
Host Drive 'K:'
Fedora-12-i386-DVD.iso
Fedora-12-x86_64-DVD.iso
Remove disk from virtual drive
Select a settings category from the list on the left-hand side and move the mouse over a settings item to get more information.
OK
Cancel
Help
Find
Replace
Select
Editing

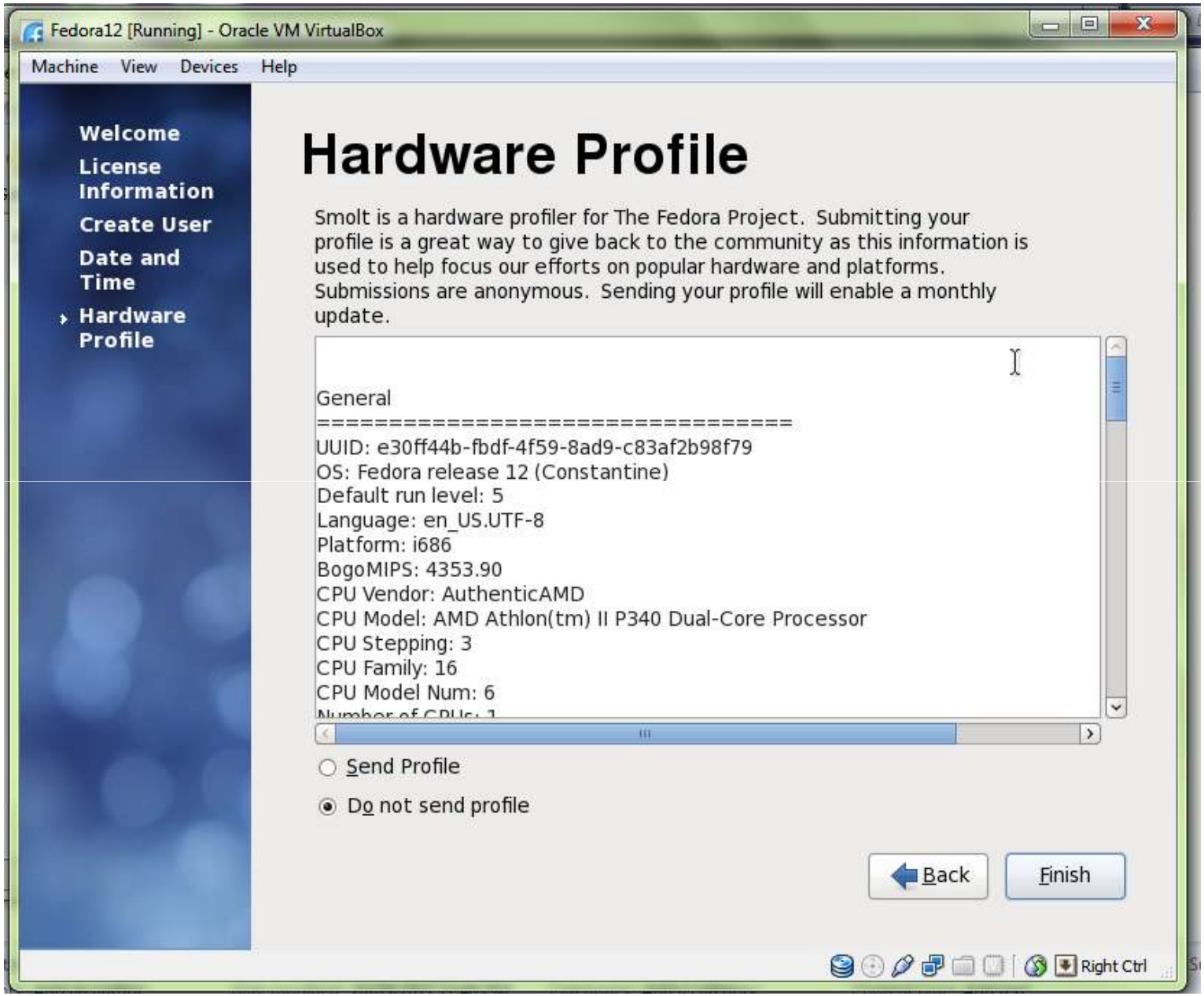

Fedora12 [Running] - Oracle VM VirtualBox
Machine View Devices Help
fedora
Congratulations, your Fedora installation is complete.
Please reboot to use the installed system. Note that updates may be available to ensure the proper functioning of your system and installation of these updates is recommended after the reboot.
Back
Reboot
Right Ctrl

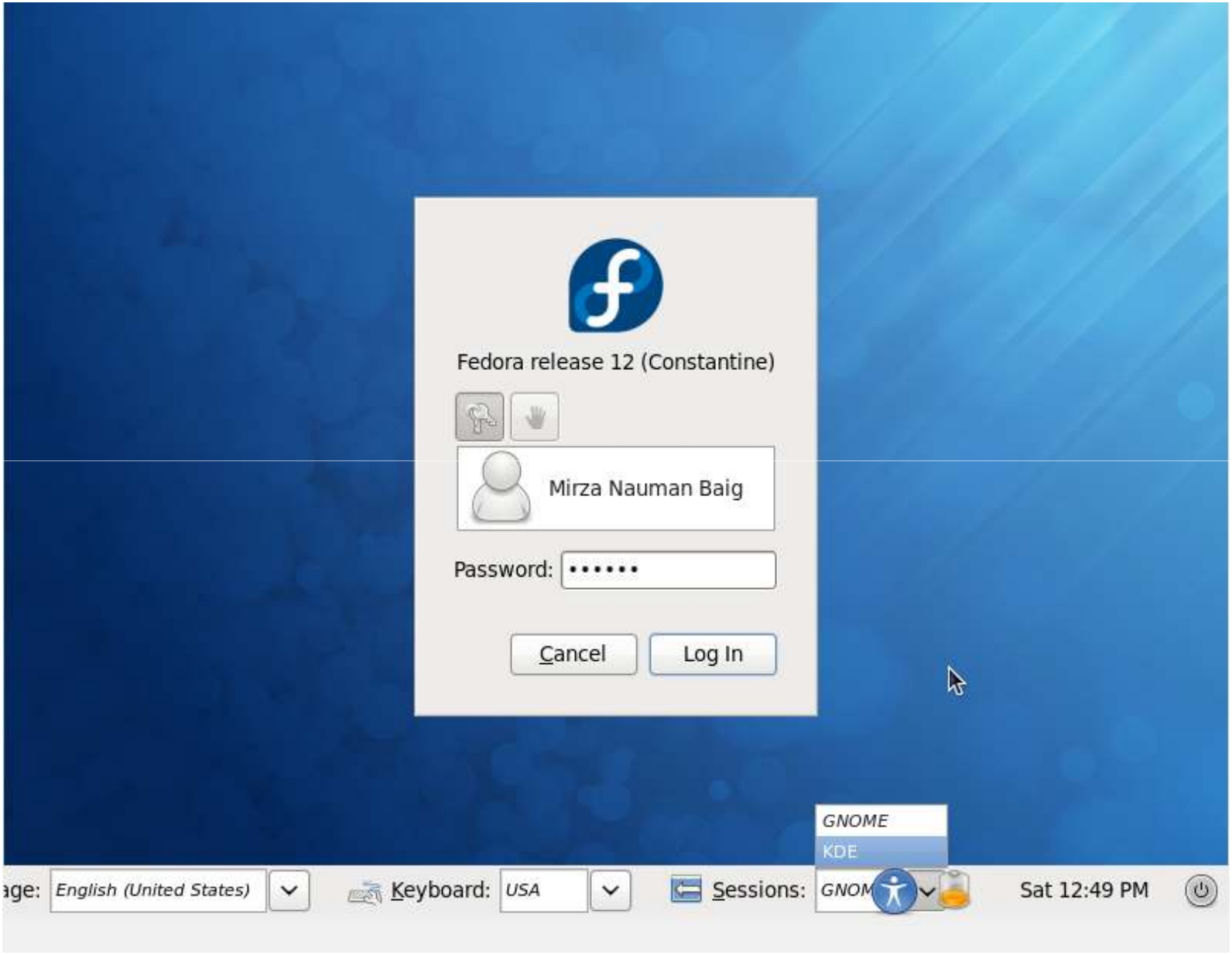

Fedora12 [Running] - Oracle VM VirtualBox
Machine View Devices Help
Welcome
License Information
Create User
Date and Time
Hardware Profile
Welcome
There are a few more steps to take before your system is ready to use.
The Setup Agent will now guide you through some basic configuration.
Please click the "Forward" button in the lower right corner to continue
fedora
Back
Forward
Right Ctrl


Fedora12 [Running] - Oracle VM VirtualBox
Machine View Devices Help
Welcome
License Information
Create User
Date and Time
Hardware Profile
License Information
Thank you for installing Fedora. Fedora is a compilation of software packages, each under its own license. The compilation is made available under the GNU General Public License version 2. There are no restrictions on using, copying, or modifying this code. However, there are restrictions and obligations that apply to the redistribution of the code, either in its original or a modified form. Among other things, those restrictions/ obligations pertain to the licensing of the redistribution, trademark rights, and export control.
If you would like to understand what those restrictions are, please visit http://fedoraproject.org/wiki/Legal/Licenses/LicenseAgreement.
Understood, please proceed.
Back
Forward
Right Ctrl

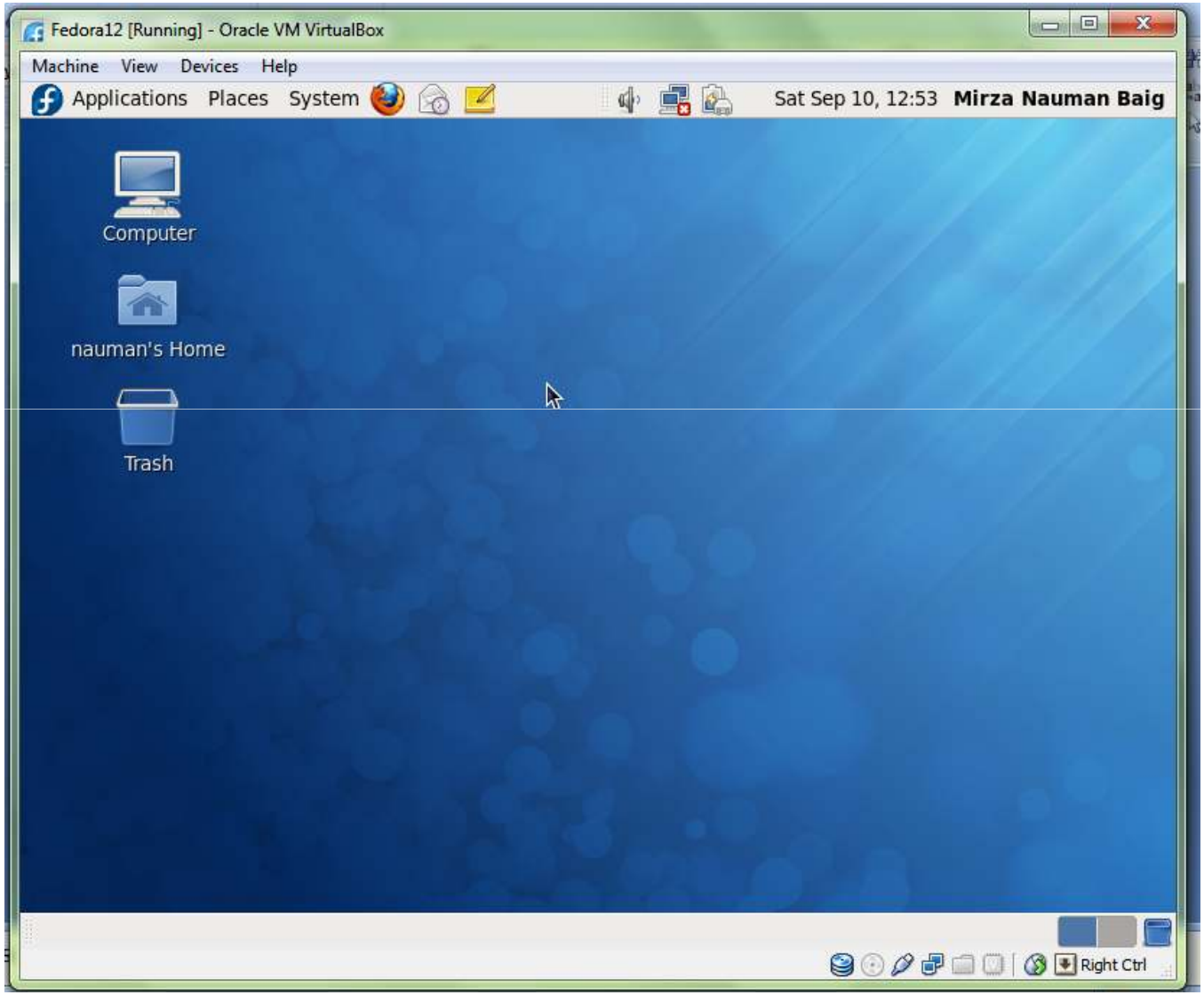

Fedora12 [Running] - Oracle VM VirtualBox
Machine View Devices Help
Welcome
License Information
Create User
Date and Time
Hardware Profile
Create User
You must create a 'username' for regular (non-administrative) use of your system. To create a system 'username', please provide the information requested below.
Username: nauman
Full Name: Mirza Nauman Baig
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
Right Ctrl


Fedora12 [Running] - Oracle VM VirtualBox
Machine View Devices Help
Welcome
License Information
Create User
Date and Time
Hardware Profile
Date and Time
Please set the date and time for the system.
Date and Time
Current date and time: Sat 10 Sep 2011 01:45:49 PM PKST
Synchronize date and time over the network
Manually set the date and time of your system:
Date
‹ September ›
‹ 2011 ›
Sun Mon Tue Wed Thu Fri Sat
28 29 30 31 1 2 3
4 5 6 7 8 9 10
11 12 13 14 15 16 17
18 19 20 21 22 23 24
25 26 27 28 29 30 1
2 3 4 5 6 7 8
Time
Hour : 13
Minute : 41
Second : 51
Back
Forward
Right Ctrl


Fedora12 [Running] - Oracle VM VirtualBox
Machine View Devices Help
Welcome
License Information
Create User
Date and Time
Hardware Profile
Hardware Profile
Smolt is a hardware profiler for The Fedora Project. Submitting your profile is a great way to give back to the community as this information is used to help focus our efforts on popular hardware and platforms. Submissions are anonymous. Sending your profile will enable a monthly update.
General
==========
UUID: e30ff44b-fbdf-4f59-8ad9-c83af2b98f79
OS: Fedora release 12 (Constantine)
Default run level: 5
Language: en_US.UTF-8
Platform: i686
BogoMIPS: 4353.90
CPU Vendor: AuthenticAMD
CPU Model: AMD Athlon(tm) II P340 Dual-Core Processor
CPU Stepping: 3
CPU Family: 16
CPU Model Num: 6
Send Profile
Do not send profile
Back
Finish
Right Ctrl


Fedora release 12 (Constantine)
Mirza Nauman Baig
Password:
Cancel
Log In
GNOME
KDE
English (United States)
Keyboard:
USA
Sessions:
Sat 12:49 PM

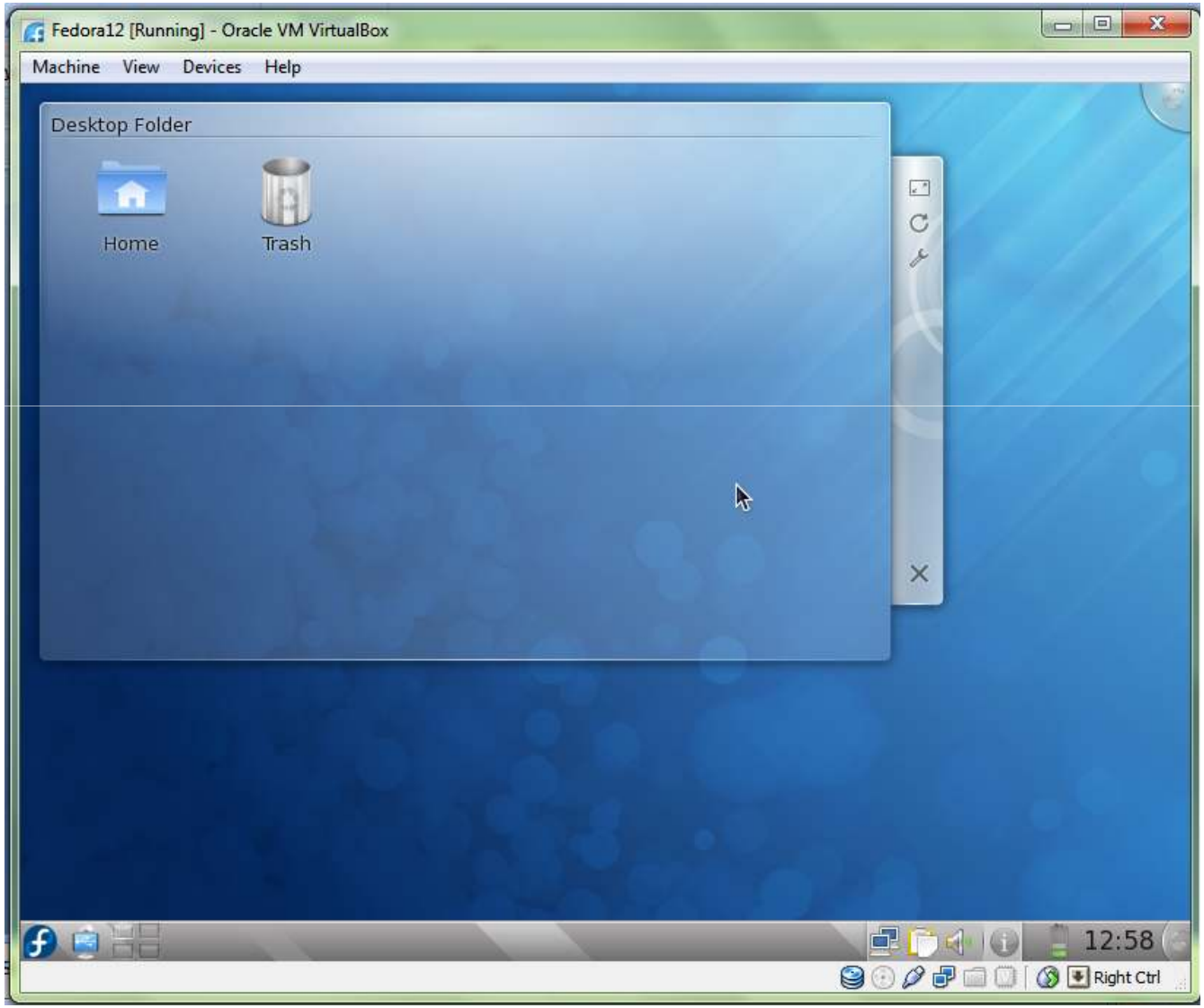
GNOME


Fedora12 [Running] - Oracle VM VirtualBox
Machine View Devices Help
Applications Places System
Sat Sep 10, 12:53 Mirza Nauman Baig
Computer
nauman's Home
Trash
Right Ctrl

GNOME

- “GNOME” is an acronym of **GNU Network Object Model Environment**
- is a desktop environment / graphical user interface that runs on top of a computer operating system. It is composed entirely of free and open source software
- GNOME is part of the GNU Project

KDE


Fedora12 [Running] - Oracle VM VirtualBox
Machine View Devices Help
Desktop Folder
Home
Trash
12:58
Right Ctrl

KDE

- KDE **K desktop Environment**
- is an international free software community producing an integrated set of cross-platform applications designed to run on Linux, FreeBSD, Microsoft Windows, Solaris and Mac OS X systems.
- It is best known for its ***Plasma Desktop, a desktop environment***
- KDE provides an alternative desktop environment with full set of integrated network and internet applications.
- Along with GNOME features

- http://docs.fedoraproject.org/
- http://en.wikipedia.org/