

Corso
[2019-20] - FONDAMENTI DI
INFORMATICA
prof.ssa RAFFAELA MIRANDOLA



POLITECNICO
MILANO 1863

Informazioni Logistiche

Orari: 13.15 16.15

LABS:

15 ott Merc

22 ott Merc

12 nov Merc

26 nov Merc

10 dic Merc

Aula:

B8 06 BOVISA

Contatti / mail / Link

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Sito web del corso

<https://beep.metid.polimi.it/web/2019-20-fondamenti-di-informatica-raffaela-mirandola-/attivita-online-e-avvisi>

Risorse

- Le aule sono cablate
- Portate i vs. PC / Mac
- Configurare rete eduroam/polimiProtected (istruzioni su Polimi)
- Sistema operativo; sono adatti:
 - windows (≥ 7)
 - Linux
 - OSX (“Apple/Mac”)

** Il Politecnico vi da gratis windows 10 originale se volete installarlo..*

Software/Ambienti di sviluppo



A scelta:

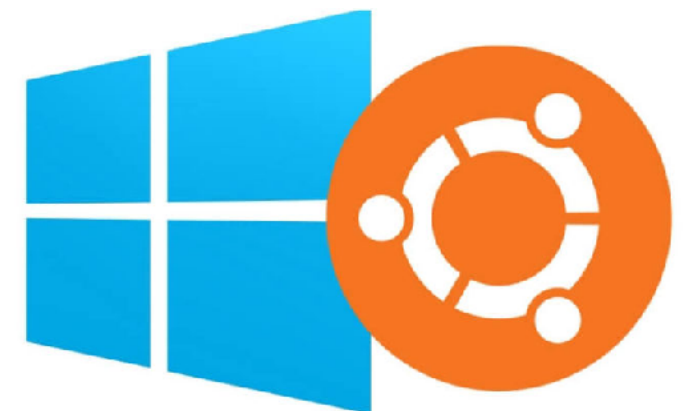
A. **Bash on Ubuntu on Windows (BUW)** (solo windows ≥ 10)

C. Macchina Virtuale Linux

– Link: (nella pagina: <http://home.deib.polimi.it/bolchini/fi201819.htm>)

<ftp://ftp.elet.polimi.it/users/Cristiana.Bolchini/fi/Lubuntu18.ova>

*Scegliete cosa preferite, consigliato **A***



Software/Ambienti di sviluppo



Note:

*1) arrivare al Primo lab con **BUW** già installato (o VM, Xcode x Apple...)
(vedi istruzioni precedenti)*

2) INDISPENSABILE RETE FUNZIONANTE sul vs. PC

Software/Ambienti di sviluppo

- Mac/Osx
 - usate direttamente UNIX su cui OSX e' basato
 - Shell / editor / compilatore.
(vi serve XCode.. scaricatelo dall' App store)
- Linux
 - Usatelo direttamente
 - Shell / editor / compilatore..
 - (VM poco sensato installarla...)



Perche' una VM

Una Macchina virtuale e' un file che viene letto ed eseguito da un programma e che SIMULA completamente la esecuzione di un altro ambiente.

La usiamo per simulare un ambiente LINUX senza dover formattare il vs PC/Mac.

Ha gia tutti i software necessari installati

Perche' una VM (2)

A chi serve:

- Utenti Windows < 10
- Opz. Utenti Win che vogliono usare la stessa versione di Linux dei compagni
- Opz. utenti Mac “ “ “ “ “

Chi puo' farne a meno:

- Utenti win > 10 AND **BUW**
- Utenti Linux
- Utenti Mac (posso usare il loro Unix su cui OSX si appoggia)

Bash on Ubuntu on Windows



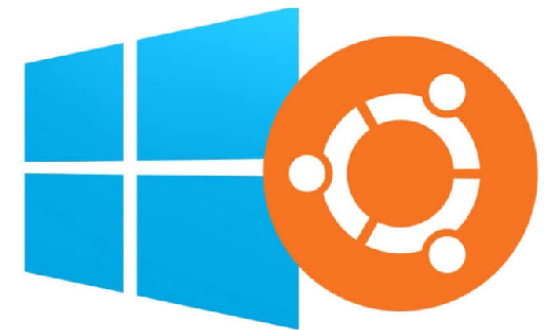
Solo x windows ≥ 10 (versione 16215.0 o successiva)

installa un sottosistema Linux (vers. Ubuntu) all 'interno di windows.

2 casi:

- windows 10 recente ("Fall Creators Update.")
- pre-"Fall Creator Update (comando "lxrun.exe", NON lo faremo.. Vbox..)

<https://docs.microsoft.com/en-us/windows/wsl/install-win10>



nota tecnica:

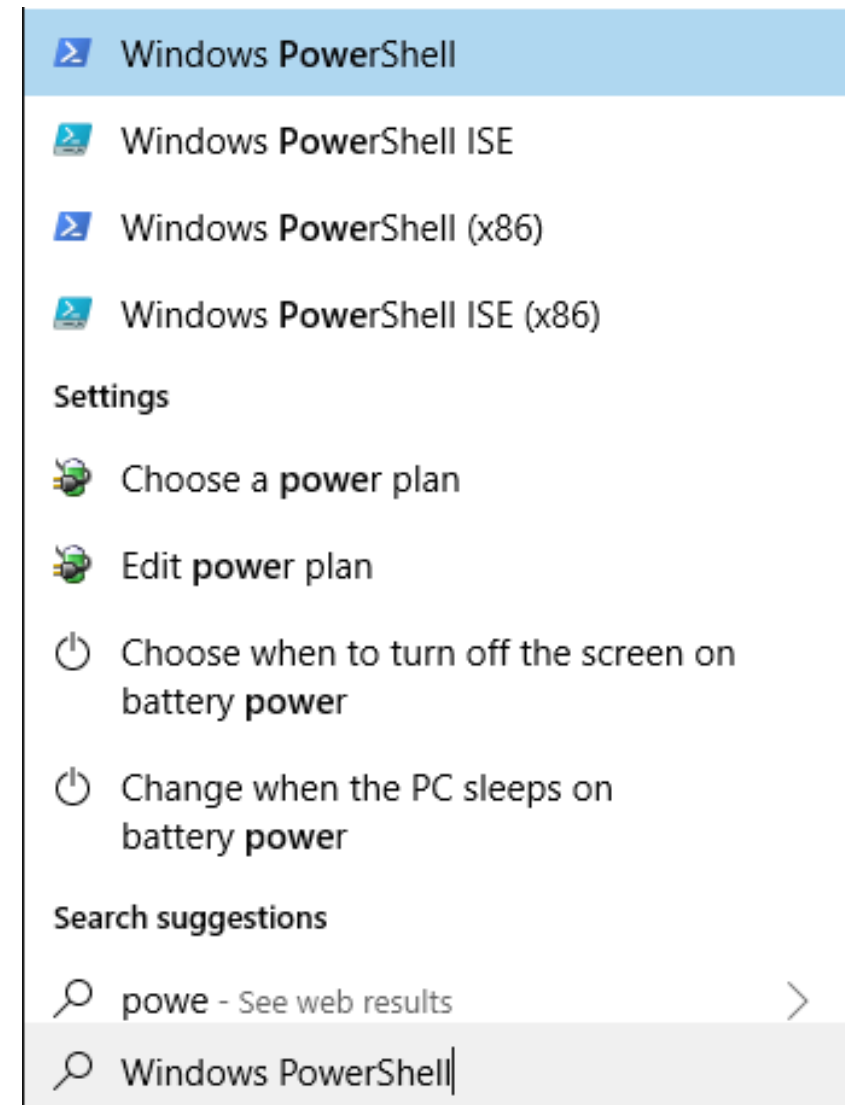
se piu vecchio della vers.16215.0

<https://blogs.msdn.microsoft.com/commandline/2016/04/06/bash-on-ubuntu-on-windows-download-now-3/>

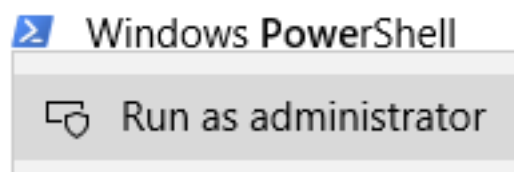
Bash on Ubuntu on Windows (2)



1) Aprire power shell:



2) come administrator:



Bash on Ubuntu on Windows (3)



3) digitare ***ESATTAMENTE***:

```
Enable-WindowsOptionalFeature -Online -FeatureName Microsoft-Windows-Subsystem-Linux
```

```
Administrator: Windows PowerShell
Windows PowerShell
Copyright (C) Microsoft Corporation. All rights reserved.

PS C:\WINDOWS\system32> Enable-WindowsOptionalFeature -Online -FeatureName Microsoft-Windows-Subsystem-Linux
```

4) riavviare..

```
Administrator: Windows PowerShell
Windows PowerShell
Copyright (C) Microsoft Corporation. All rights reserved.

PS C:\WINDOWS\system32> Enable-WindowsOptionalFeature -Online -Featu
PS C:\WINDOWS\system32> Enable-WindowsOptionalFeature -Online -Featu
Do you want to restart the computer to complete this operation now?
[Y] Yes [N] No [?] Help (default is "Y"): █
```

Bash on Ubuntu on Windows (4)

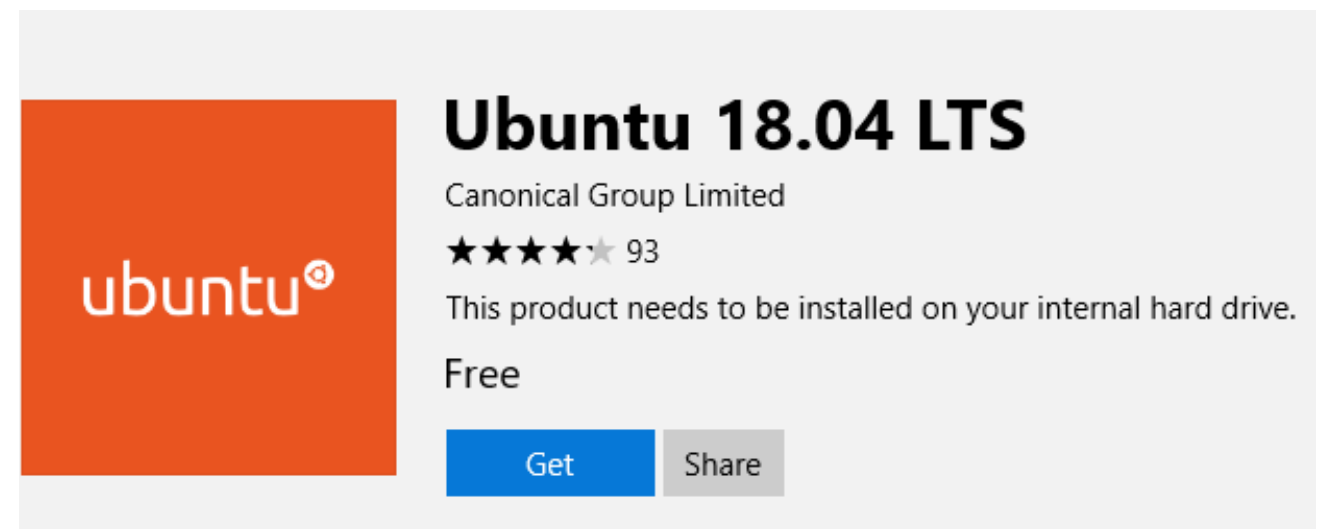


5) Installiamo Ubuntu from Microsoft Store

<https://www.microsoft.com/it-it/p/ubuntu-1804-lts/9n9tngvndl3q#activetab=pivot:overviewtab>

(in alternativa cercare “ubuntu”..)

6) “Ottieni” / “Get” ..



vi chiederà di autenticarvi sul sito Microsoft...

Bash on Ubuntu on Win(4 if **err.**)



Potrete avere:

System Requirements

Minimum

OS	Windows 10 version 16215.0 or higher	required	✗
Architecture	X64	required	✗

Recommended

OS	Windows 10 version 16215.0 or higher	required	✗
Architecture	X64	required	✗

Significa che NON avete la ultima versione di windows. (come detto: **versione 16215.0 o successiva**)

NOTA:

se non vi appare va tutto bene...

Andate alla slide: Bash on Ubuntu on Windows (5)

Bash on Ubuntu on Win(4 if **err.II**)



a) fate Update

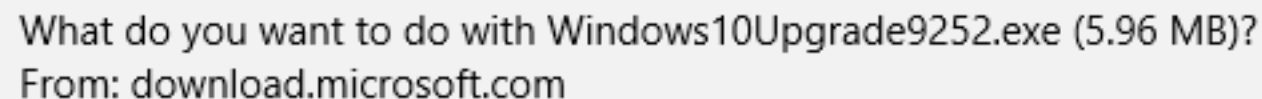
b) Se non parte update, forziamolo:

<https://www.microsoft.com/it-it/software-download/windows10>

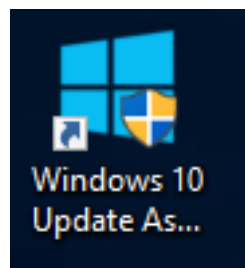
d) Cliccare su:

A blue rectangular button with the text "Aggiorna ora" in white, set against a light gray background.

e) apparirà:

A light gray dialog box with the text "What do you want to do with Windows10Upgrade9252.exe (5.96 MB)?" and "From: download.microsoft.com" below it. A gray "Save" button is on the right.

g) Avrete sulla scrivania:

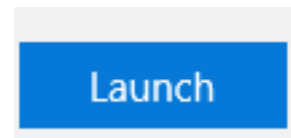


Doppio click..

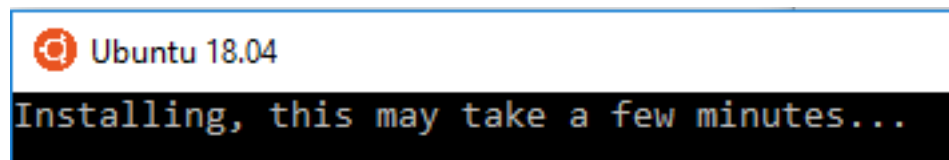
Bash on Ubuntu on Windows (5)



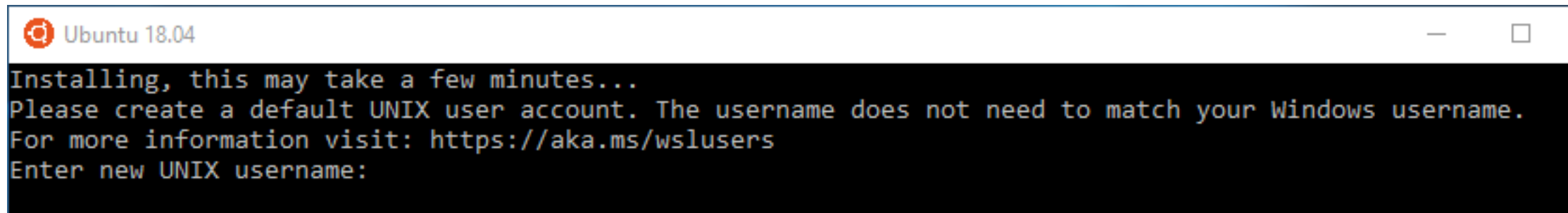
7)



parte...



8) impostare user/password:



(a piacere)

Bash on Ubuntu on Windows (6)



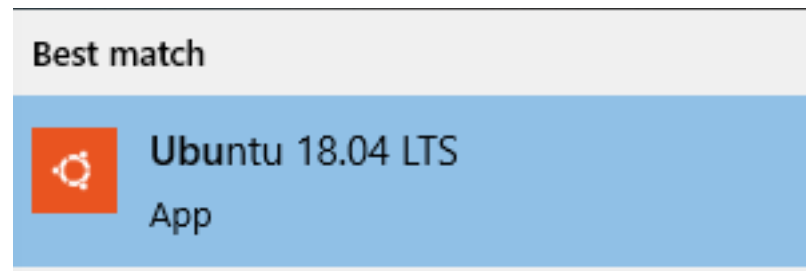
9) confermare..

```
ingconti@DESKTOP-EMUK14Q: ~  
Installing, this may take a few minutes...  
Please create a default UNIX user account. The username  
For more information visit: https://aka.ms/wslusers  
Enter new UNIX username: ingconti  
Enter new UNIX password:  
Retype new UNIX password:
```

ed appare..

```
Installation successful!  
To run a command as administrator (user "root"), use "sudo <command>".  
See "man sudo_root" for details.  
ingconti@DESKTOP-EMUK14Q:~$
```

Per riaprire:
Digitare ubu...



Bash on Ubuntu on Windows (7)



alcuni comandi

```
ls
ls -la
mkdir
cd
rm
```

Bash on Ubuntu on Windows (8)



10) installation tool

Useremo:

Editor: nano / vi / oppure Notepad++ (windows)

Compilatore gcc:

`sudo apt install gcc`

nota: preferibile per prima cosa aggiornare ubuntu: `sudo apt-get update`

Quando installato:

`gcc`

```
ingconti@DESKTOP-EMUK14Q:~$ gcc
gcc: fatal error: no input files
compilation terminated. █
```

ok, installato.. (da errore perche' Non gli abbiamo passato alcun file .cpp)

Bash on Ubuntu on Windows (9)



11) ma come vediamo i file di windows?

Logica Unix / Linux:

- ogni disco e' un Mount Point
- Basta utilizzare: `/mnt/c/`
- Quindi:
 - `cd /mnt/c/`
 - `cd /mnt/c/Users/ing.conti/`

Quindi potremo editare i file in windows.

Installazione VM/OVA



- 1) scaricare OVA dal link:
<ftp://ftp.elet.polimi.it/users/Cristiana.Bolchini/fi/Lubuntu18.ova>
- 2) scaricare VirtualBox da sito Oracle: <https://www.virtualbox.org>

VirtualBox 5.2.18 platform packages

- [Windows hosts](#)

- 3) scaricare ANCHE (supporto USB..)

http://download.virtualbox.org/virtualbox/5.2.18/Oracle_VM_VirtualBox_Extension_Pack-5.2.18.vbox-extpack

*Installazione VM/OVA II



da sito prof. Bochini:

IMPORTARE LA MACCHINA VIRTUALE

=====

E' necessario installare VirtualBox. Questo pacchetto software e' scaricabile gratuitamente dalla pagina web

<https://www.virtualbox.org/wiki/Downloads>

Tra le varie versioni elencate nella sezione "VirtualBox binaries", scaricare quella adatta al proprio sistema operativo (Windows o OSX) ed installarla.

Scaricare il file Lubuntu18.ova.

Eseguire il programma e importare la macchina virtuale Lubuntu18.ova scaricata in precedenza. Per farlo occorre usare il menu

File -> Import Appliance...

e seguire le istruzioni, in particolare indicando a VirtualBox dove si trova il file .ova della macchina virtuale. Una volta importata la macchina virtuale, e' possibile avviarla seguendo le istruzioni disponibili alla pagina

<https://www.virtualbox.org/manual/ch01.html#idm360>

E' possibile che, all'avvio della macchina, Virtualbox segnali un problema relativo al controller USB2.0. In questo caso e' necessario installare il plugin VirtualBox Extension Pack di VirtualBox. Il plugin e' scaricabile da

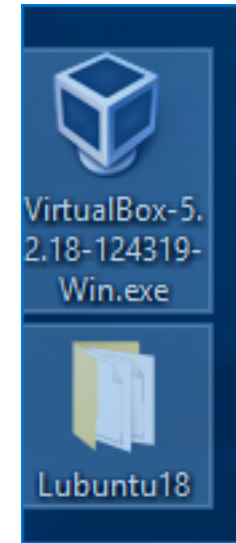
http://download.virtualbox.org/virtualbox/5.2.18/Oracle_VM_VirtualBox_Extension_Pack-5.2.18.vbox-extpack

*** step by step alla prossima slide..**

Installazione VM/OVA



dovreste avere:



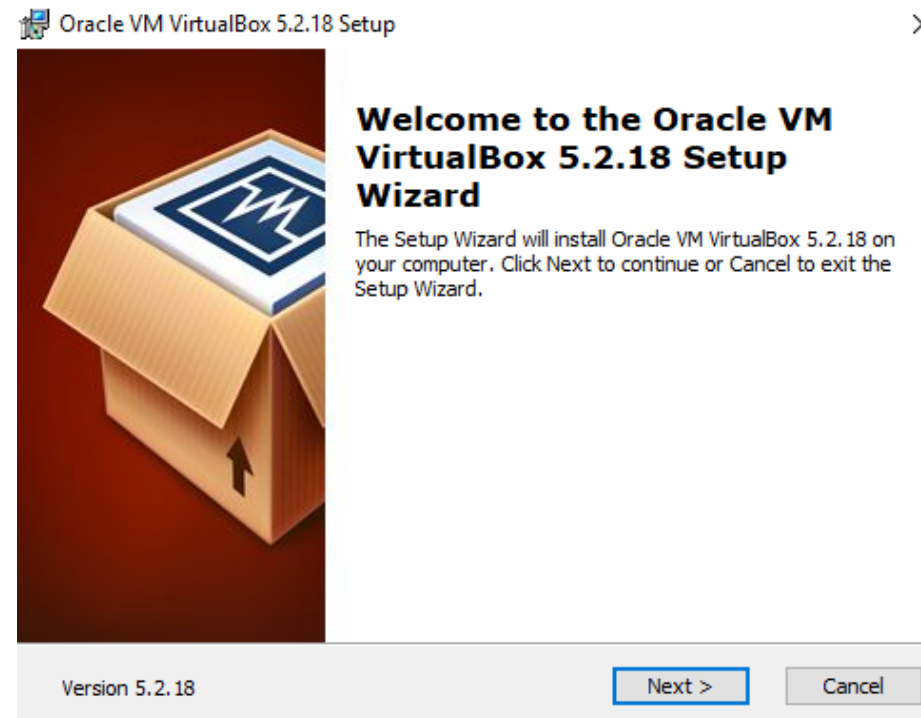
Passi:

- 1) installare VirtualBox
- 2) aprire OVA da Virtual Box

Installare VirtualBox



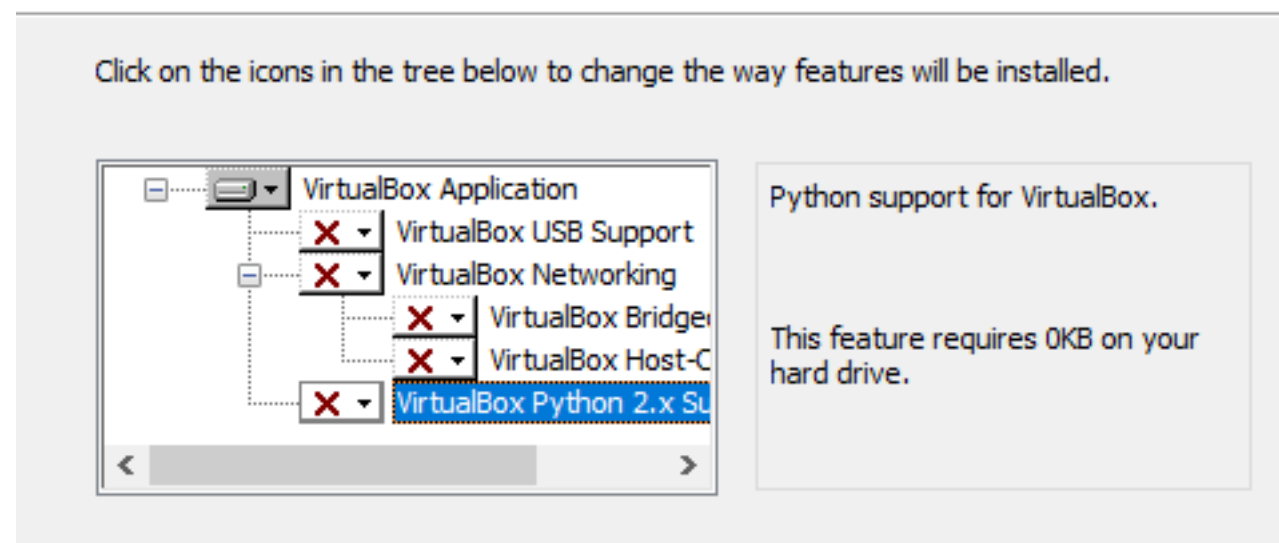
Avrete:



Custom Setup

Select the way you want features to be installed.

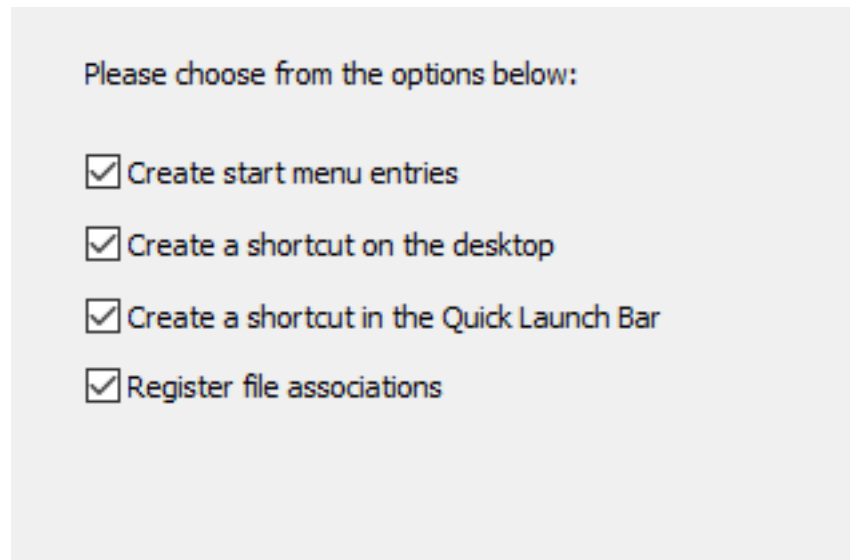
Selezionare solo 1'



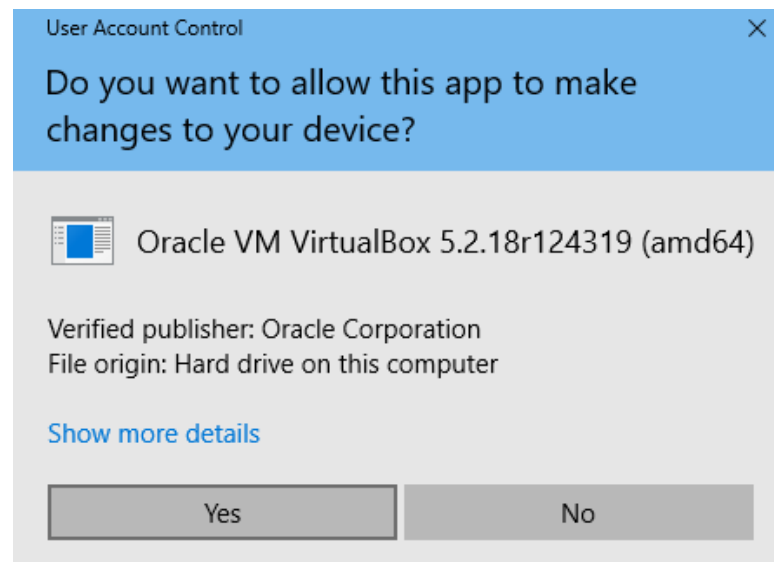
Installare VirtualBox (2)



next...



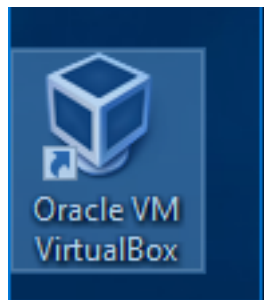
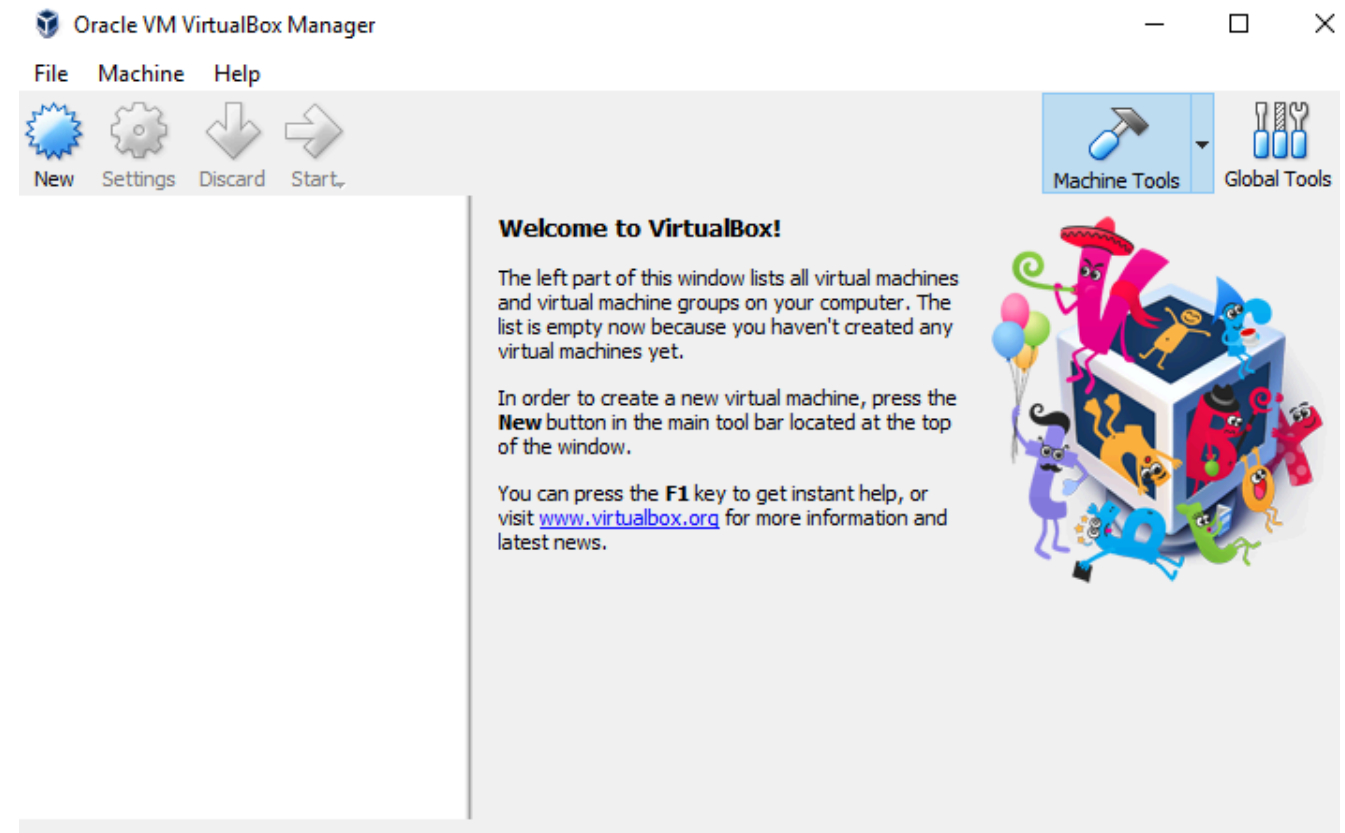
yes...



Installare VirtualBox (3)



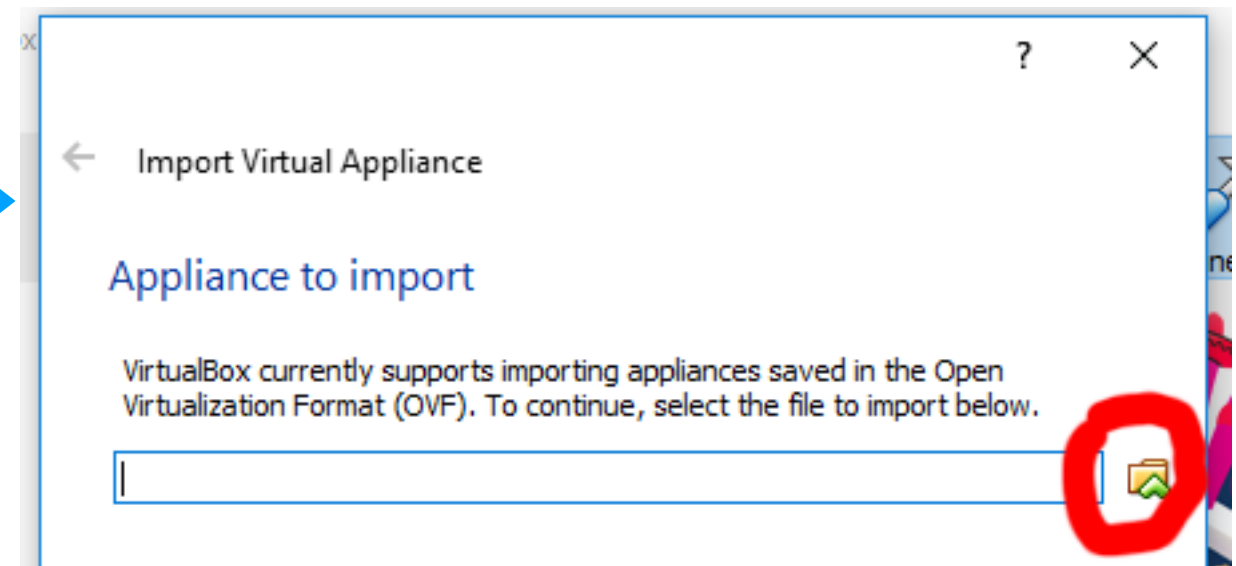
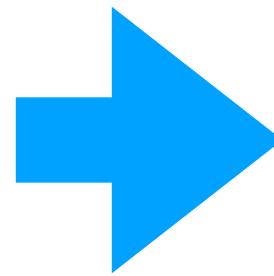
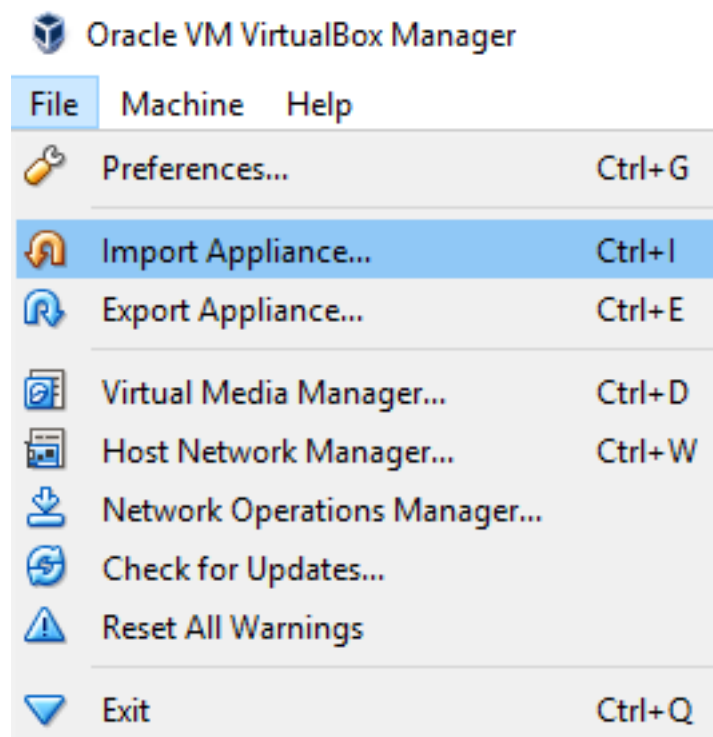
se tutto ok appare la VM e
la sua icon sulla scrivania:



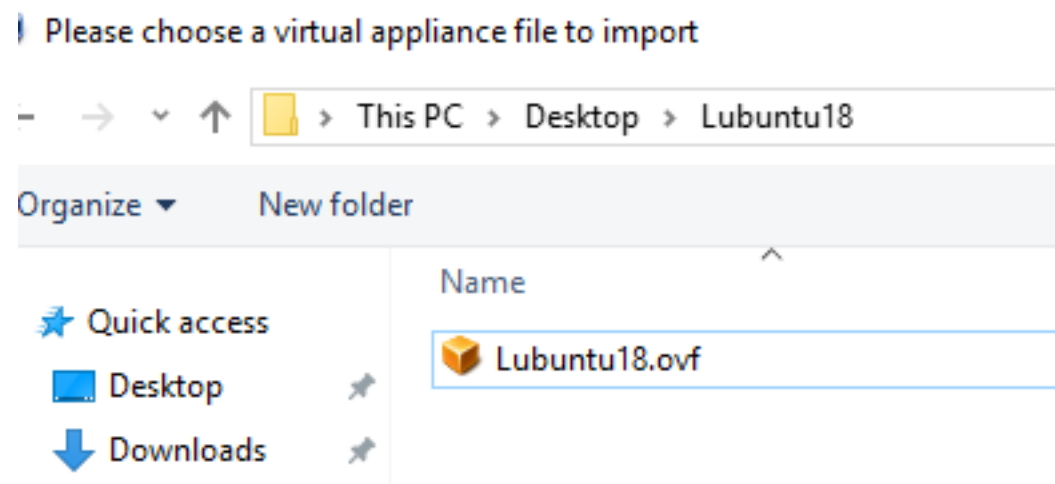
Aprire OVa da VB



dalla VM:



selezionare Lubuntu che avete scaricato:











Aprire OVa da VB (2)



accettare default:

Appliance settings

These are the virtual machines contained in the appliance and the suggested settings of the imported VirtualBox machines. You can change many of the properties shown by double-clicking on the items and disable others using the check boxes below.

Virtual System 1	
 Name	LightUbuntu
 Guest OS Type	 Ubuntu (64-bit)
 CPU	1
 RAM	2048 MB
 DVD	<input checked="" type="checkbox"/>
 USB Controller	<input checked="" type="checkbox"/>
 Sound Card	<input checked="" type="checkbox"/> ICH AC97

☐ Reinitialize the MAC address of all network cards

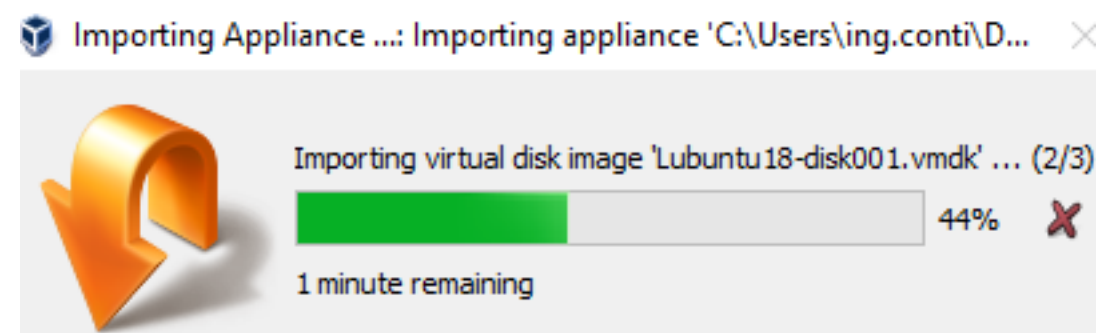
Appliance is not signed

Restore Defaults

Import

Cancel

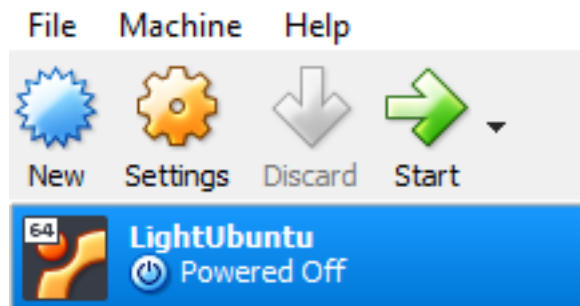
importa....



Aprire OVa da VB (3)

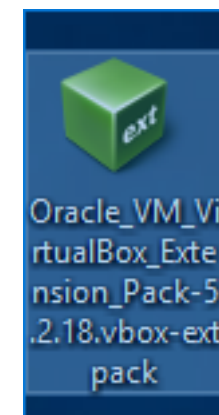


run..



Se appare, manca supporto x USB.
Usiamo:

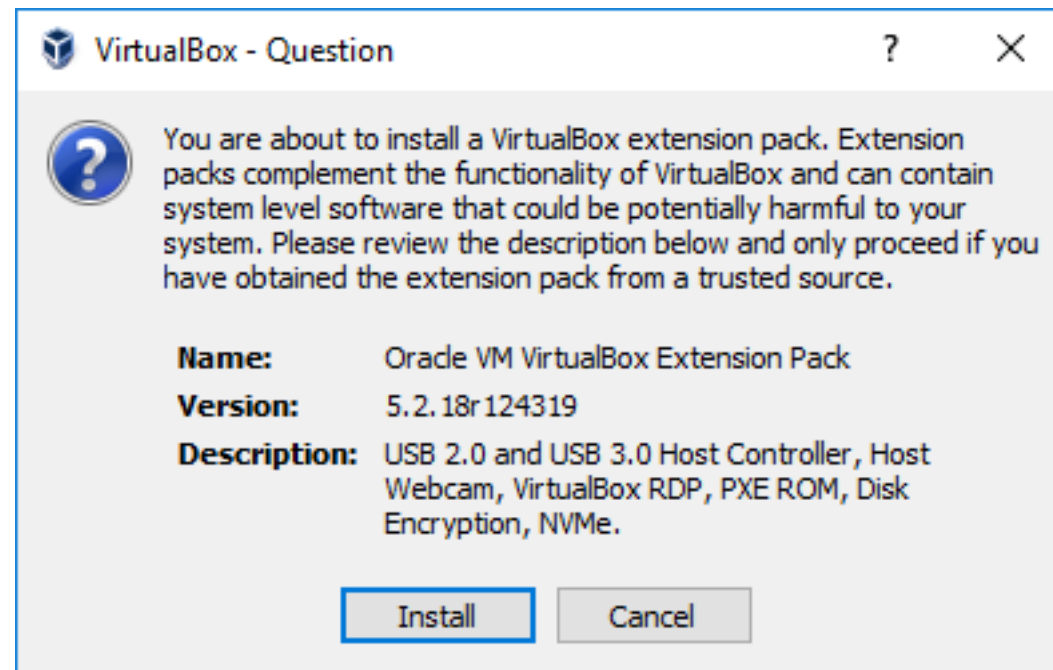
http://download.virtualbox.org/virtualbox/5.2.18/Oracle_VM_VirtualBox_Extension_Pack-5.2.18.vbox-extpack



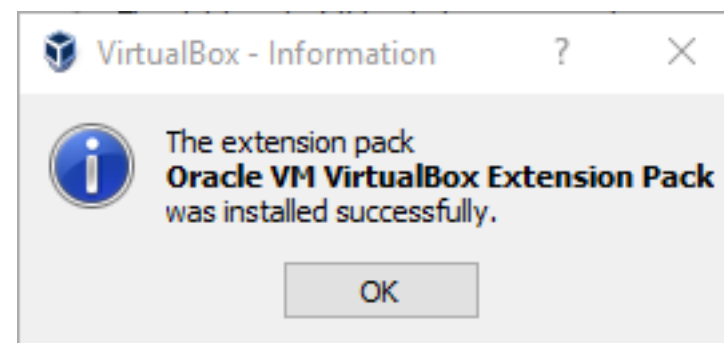
Aprire OVa da VB (4)



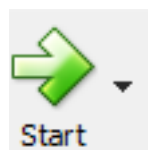
install...



chiedera' autorizzazione, dire si..



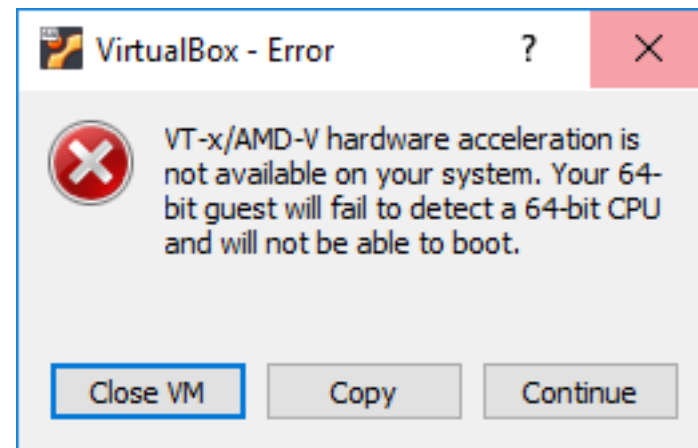
Riapriamo la VM:



Aprire OVa da VB (5)



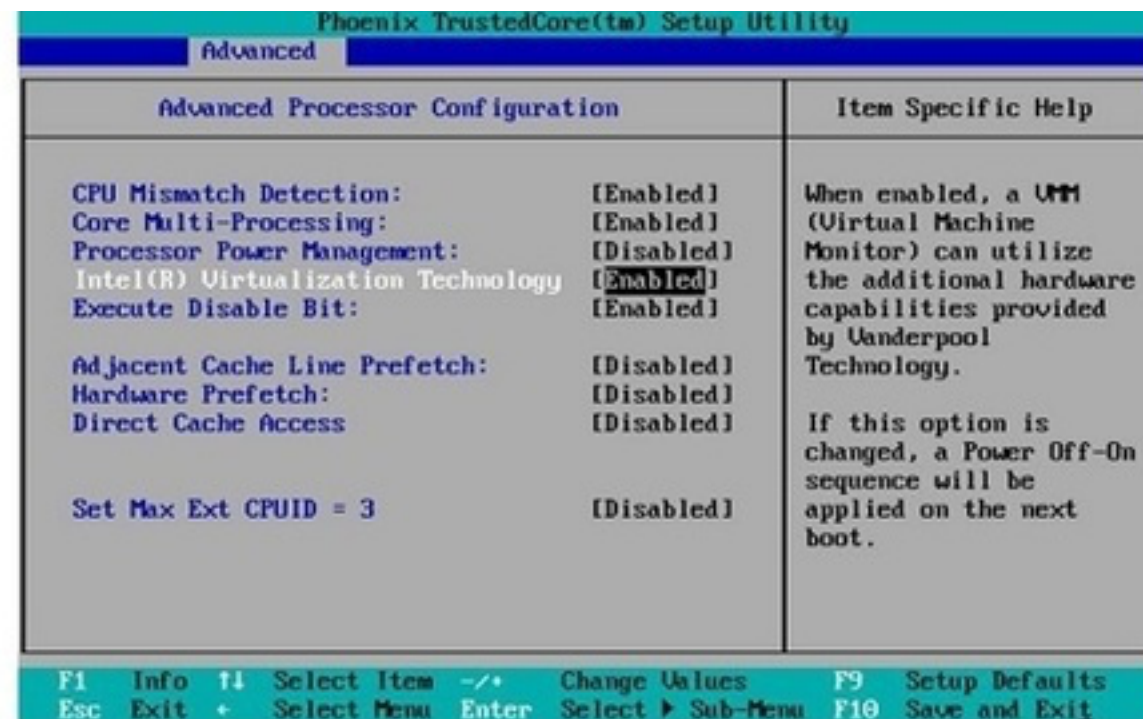
puo' apparire:



“Close”
dovete riavviare la macchina
e verificare abbia nel BIOS.. (!!)

abilitata la
“Tecnologia di virtualizzazione”

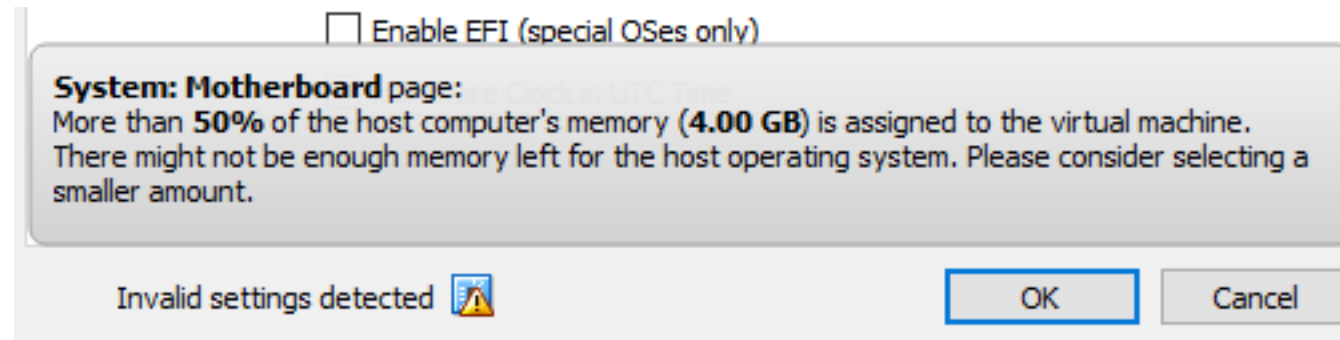
Se non fosse disponibile,
Virtual BOX NON puo' avviare la VM.
(cambiare pc..)



Aprire OVa da VB (6)

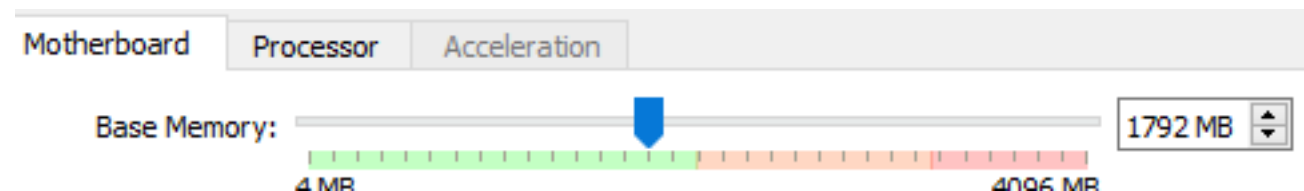


se appare "Invalid Settings detected" passate il mouse sull' avviso giallo:

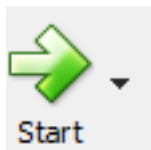


(non e' comunque critico..)

in questo caso regolate la RAM finche non sparisce:



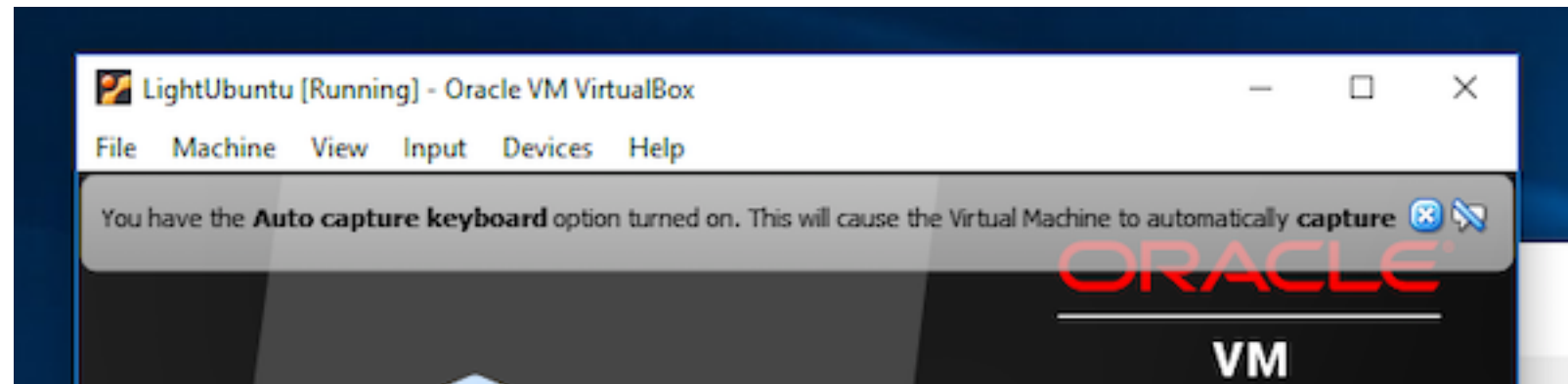
ora RUN..



Aprire OVa da VB (7)




Apparirà:



il mouse verrà “catturato” dalla VM se fate click dentro.
Per “riprendere” il mouse in windows,
premere il Ctl a DX della tastiera.

You have **clicked the mouse** inside the Virtual Machine display or pressed the **host key**. This will cause the Virtual Machine to **capture** the host mouse pointer (only if the mouse pointer integration is not currently supported by the guest OS) and the keyboard, which will make them unavailable to other applications running on your host machine.

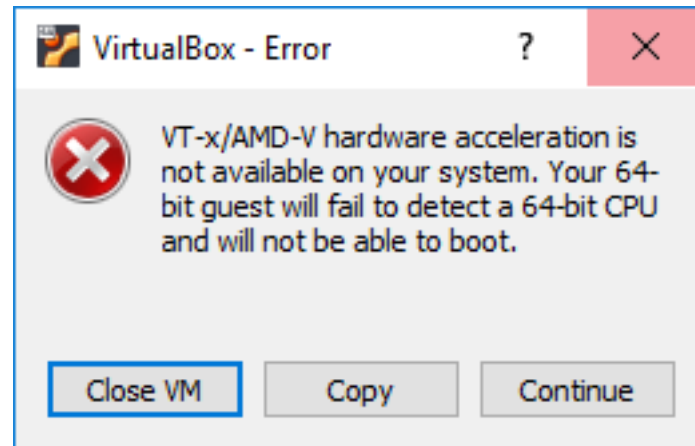
You can press the **host key** at any time to **uncapture** the keyboard and mouse (if it is captured) and return them to normal operation. The currently assigned host key is shown on the status bar at the bottom of the Virtual Machine window, next to the  icon. This icon, together with the mouse icon placed nearby, indicate the current keyboard and mouse capture state.

The host key is currently defined as **Right Ctrl**.

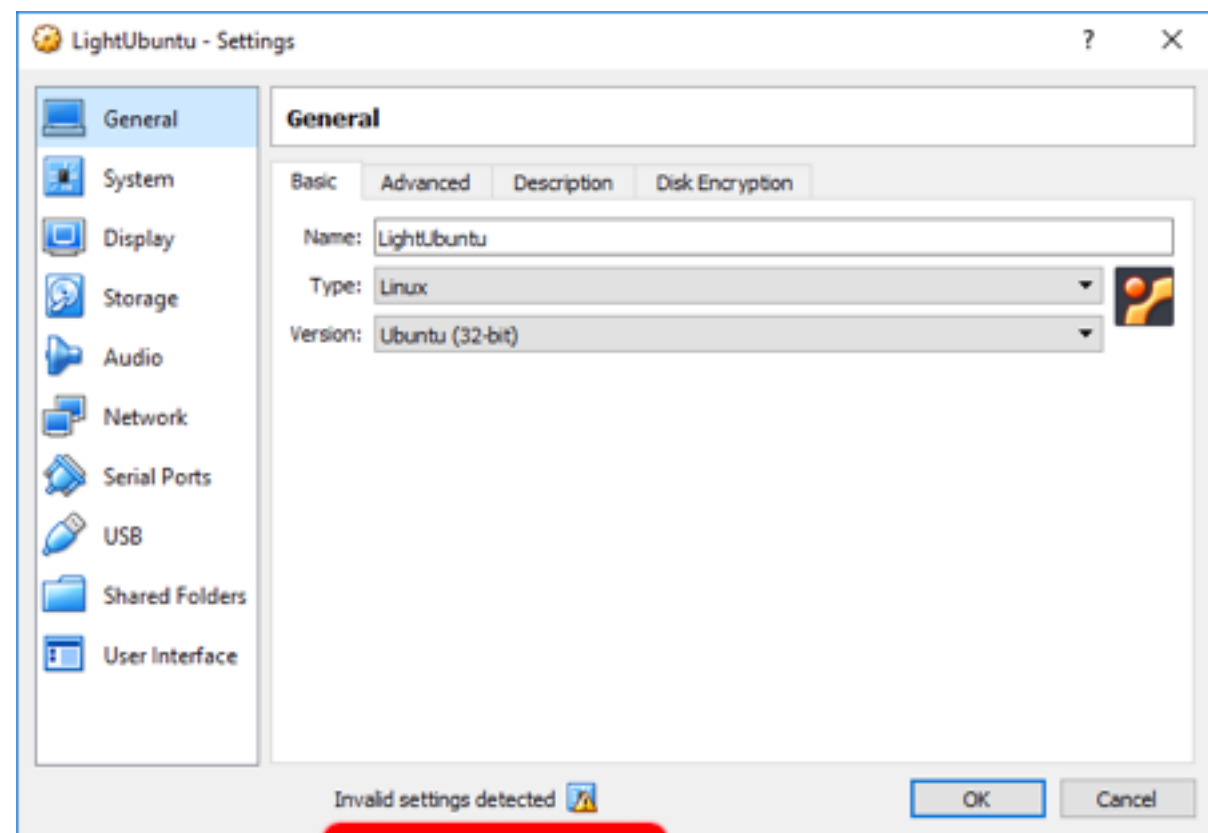
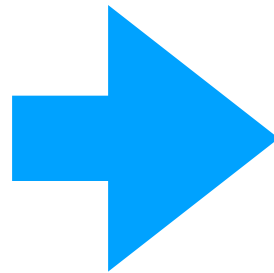
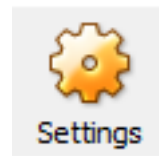
Aprire OVa da VB (8)



puo' apparire:



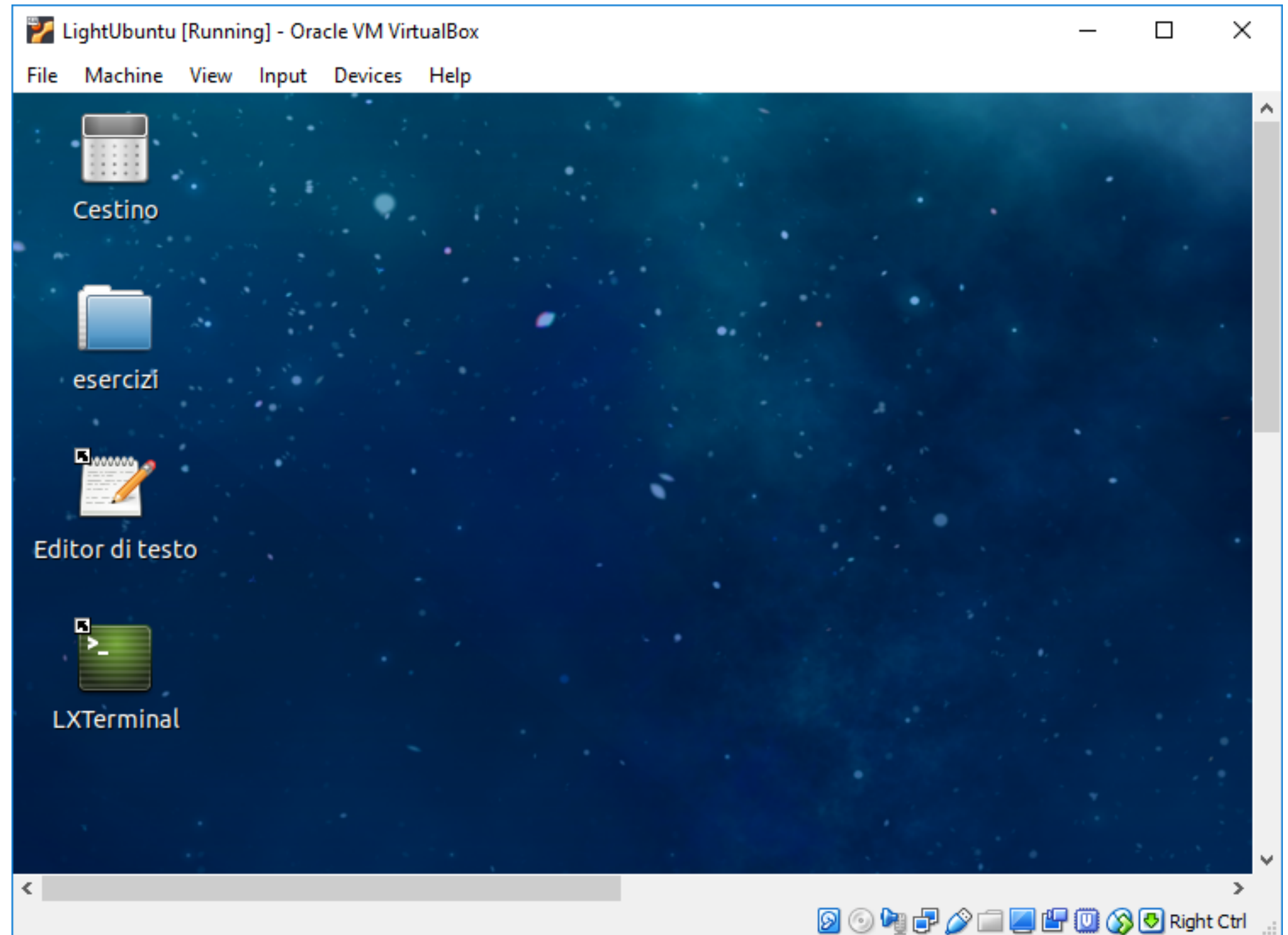
“Close” e verificate i settings:



Aprire OVa da VB (9)



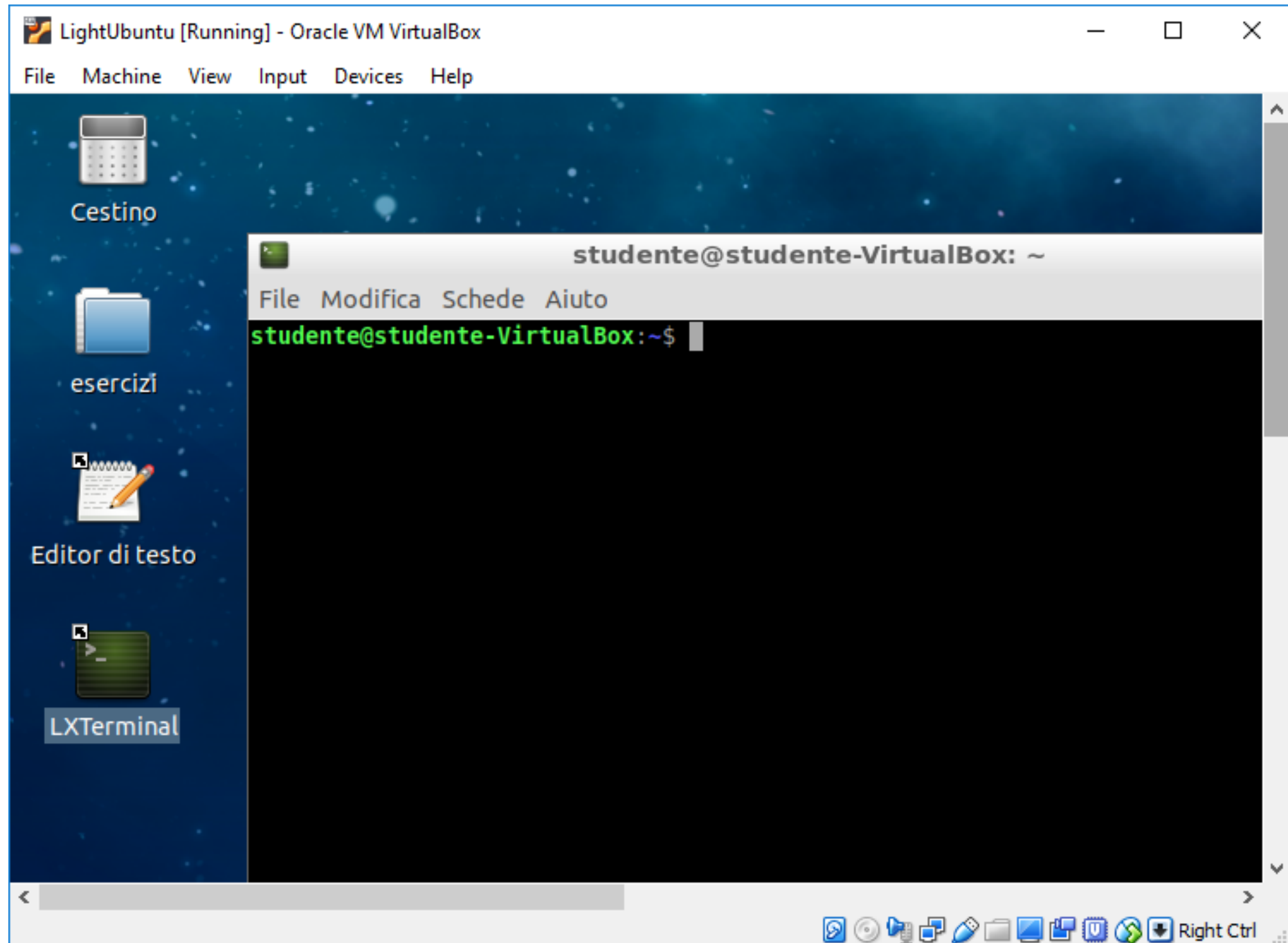
se tutto ok, apparirà:



Uso della VM: terminale



Doppio click su LXterminal



Uso della shell linux/Unix: terminale

alcuni comandi

```
ls  
ls -la  
mkdir  
cd  
rm
```