

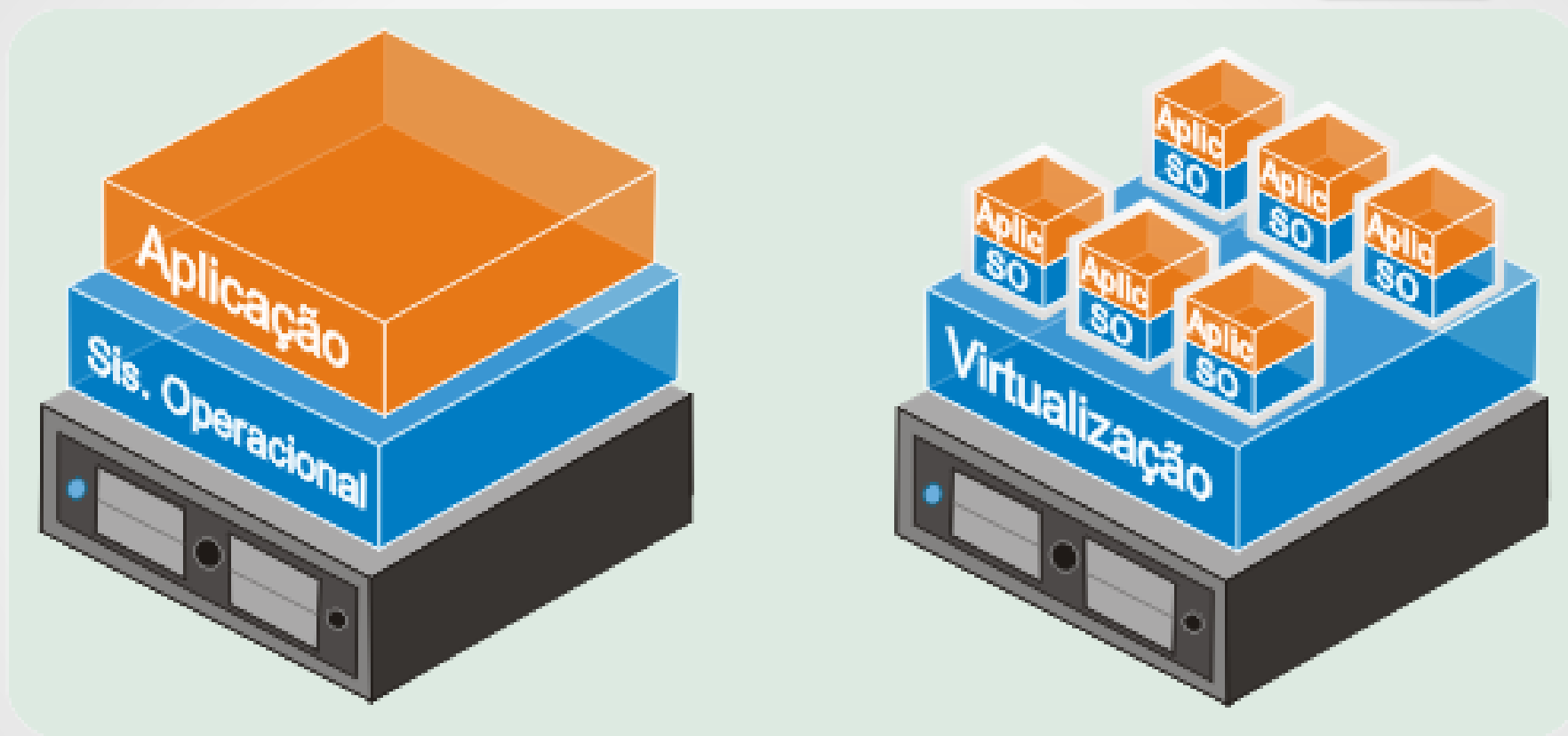
Virtualização

Simulação de plataforma

O que é virtualização?

- Ambiente virtual simulando o real
- Dividir recurso físico em partes (*Hardware*)
- Alguns tipos de virtualização:
 - Virtualização de servidor
 - Virtualização de desktop
 - Virtualização de aplicação
 - Virtualização de perfil

O que é virtualização?

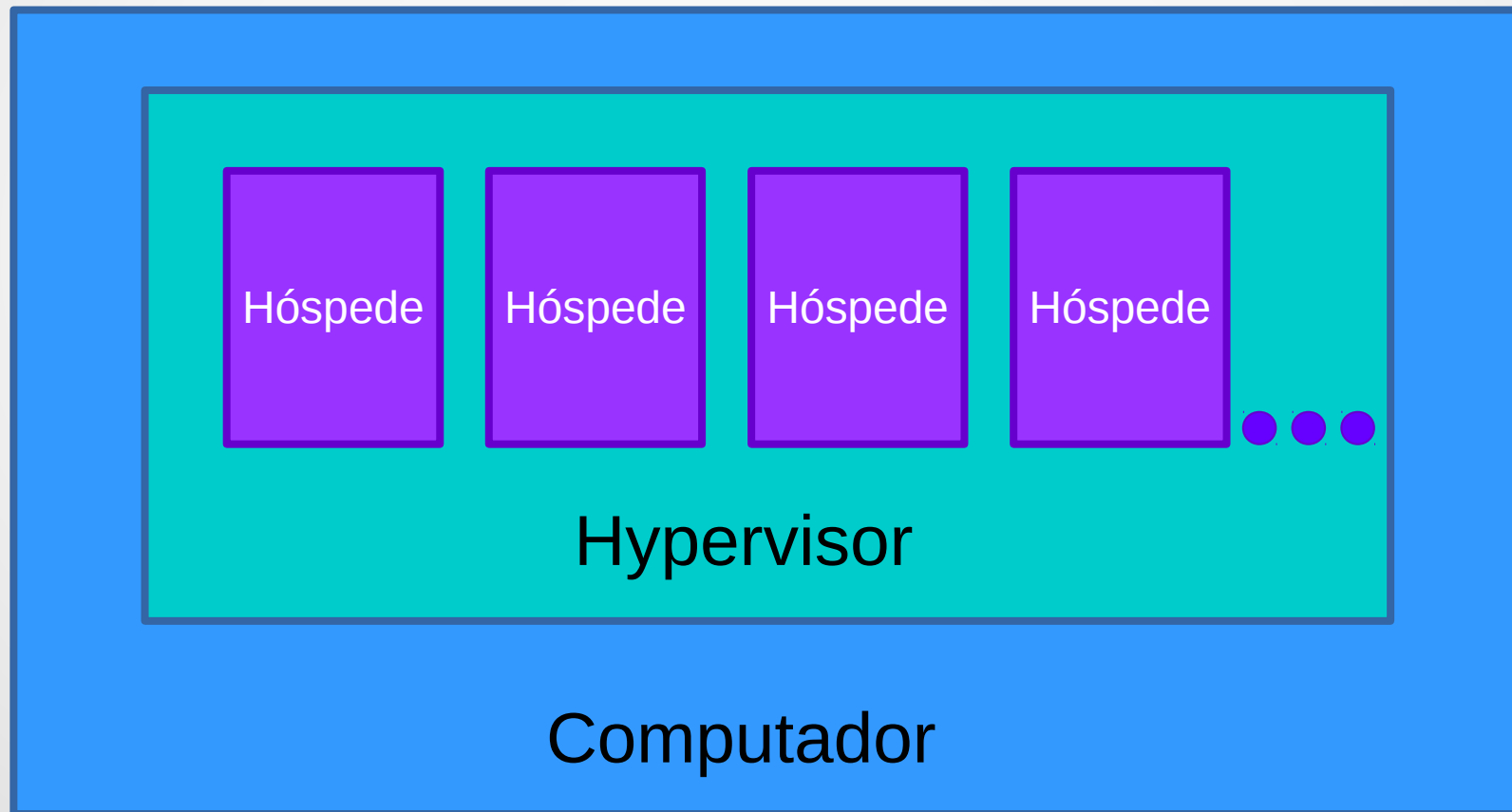


Arquitetura Tradicional x Virtualização

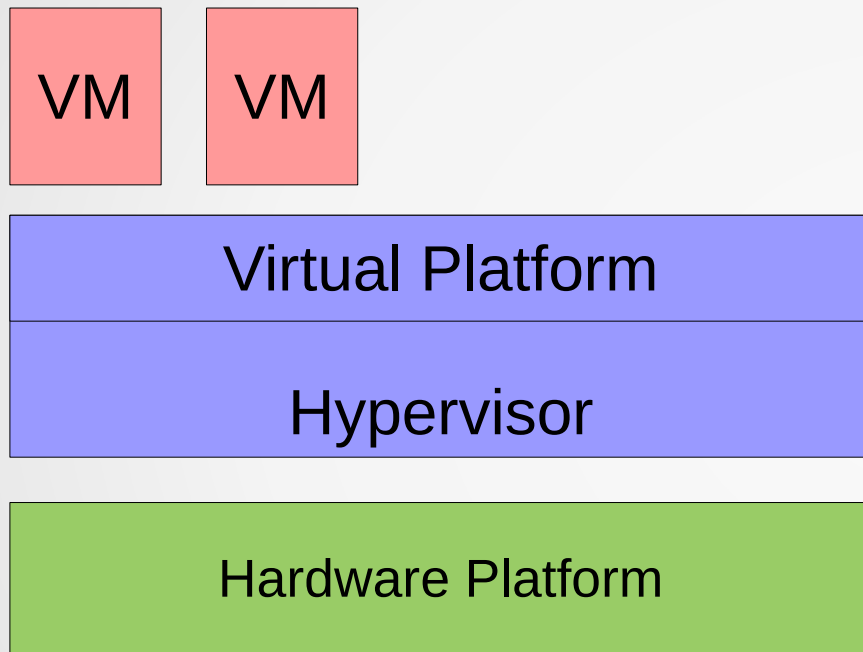
Como a virtualização funciona?

- Hospedeiro (*host*) e o hóspede (*guest*)
- VMM (Virtual Machine Monitor)/*hypervisor*
- “modo supervisor” vs “modo usuário”
- Outros métodos:
 - *Process Virtual Machine* (Máquina Virtual de Processo)
 - *Operating System Virtual Machine* (Máquina Virtual de Sistema Operacional)
 - Hardware na virtualização:
 - IVT (*Intel Virtualization Technology*)/*Vanderpool*
 - AMD-V (*AMD-Virtualization*)/*Pacífica*

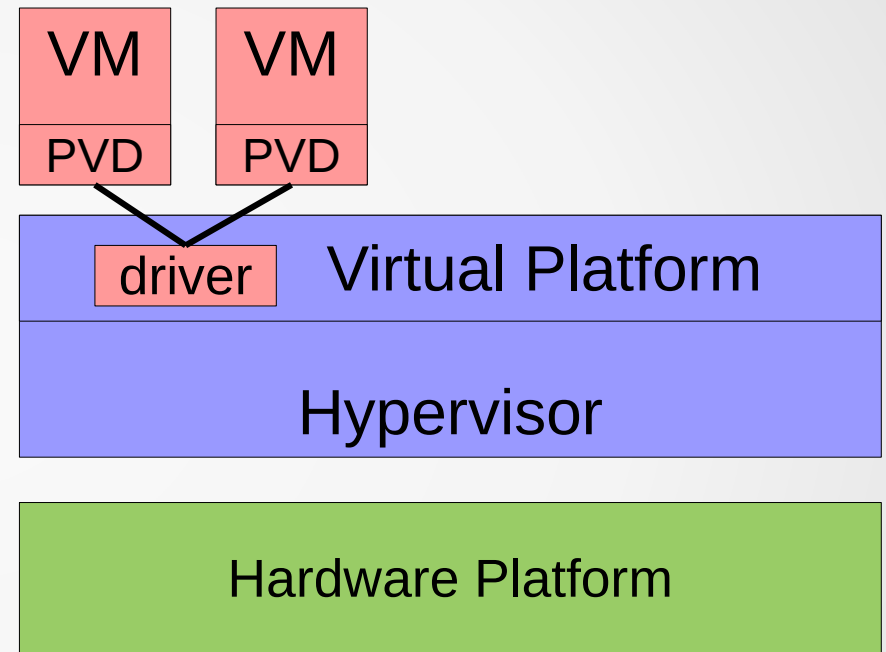
Como a virtualização funciona?



Virtualização total e paravirtualização



Full Virtualization



Para-Virtualization

Benefícios da virtualização

- Melhor aproveitamento da infraestrutura existente
- O parque de máquinas é menor
- Gerenciamento centralizado
- Implementação mais rápida
- Uso de sistemas legados
- Diversidade de plataformas
- Ambiente de testes
- Segurança e confiabilidade
- Migração e ampliação mais fácil

Desvantagem da virtualização

- Sobrecarga afeta a todas as máquinas virtuais
- Segurança
- Portabilidade
- Contingência
- Desempenho
- Gastos

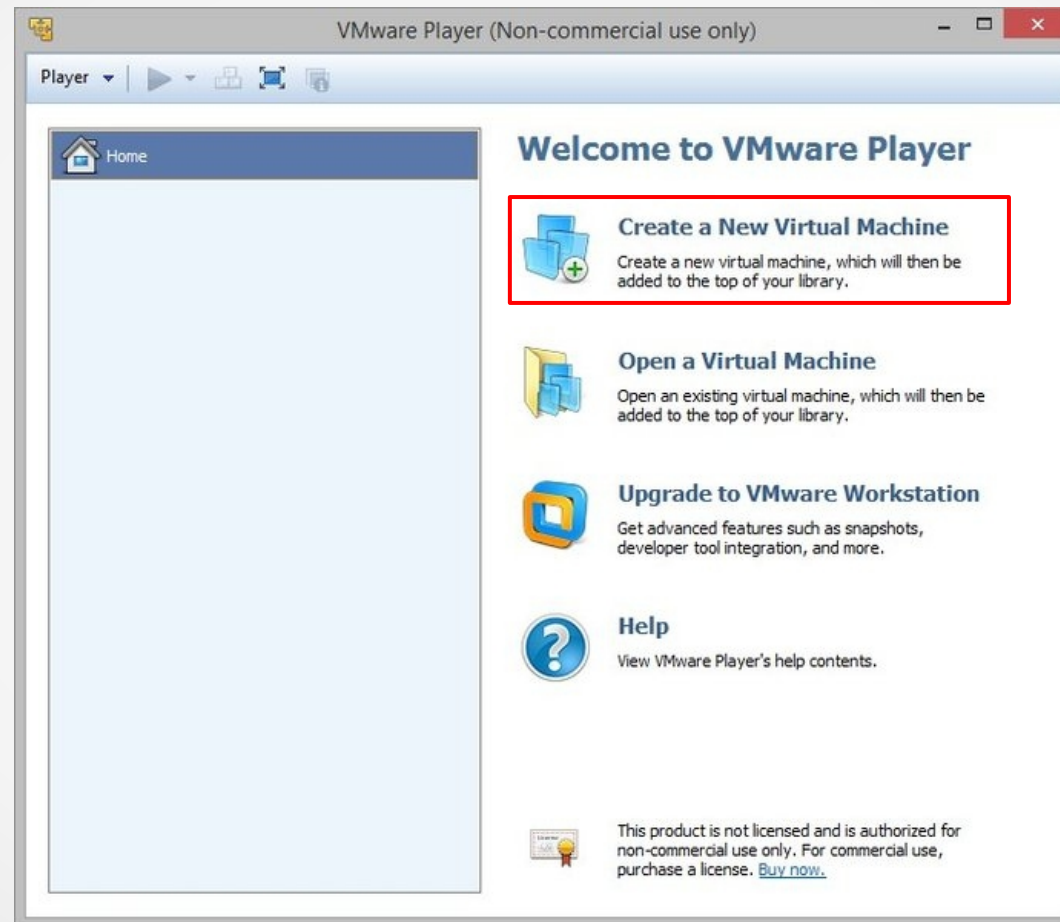
Algumas soluções de virtualização

- VMware Player
 - https://my.vmware.com/en/web/vmware/free#desktop_end_user_computing/vmware_player/7_0
- Windows Virtual PC
 - <https://www.microsoft.com/pt-br/download/details.aspx?id=3702>
- Virtual Box
 - <https://www.virtualbox.org/wiki/Downloads>

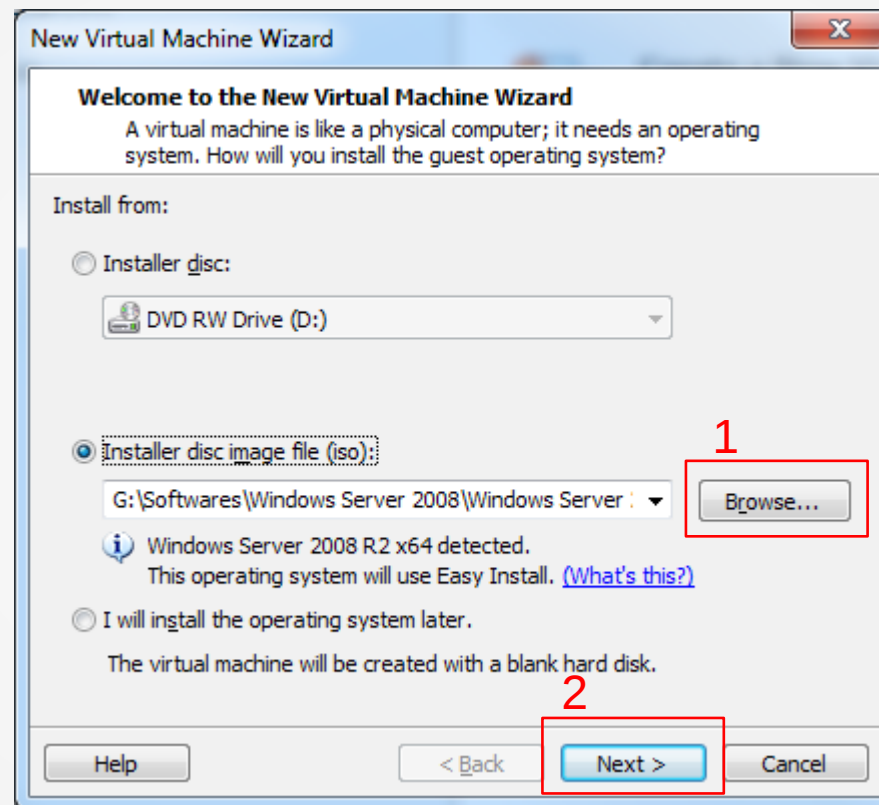


VMware Player

VMware Player



VMware Player



VMware Player

New Virtual Machine Wizard

Easy Install Information
This is used to install Windows Server 2008 R2 x64.

Windows product key
- - - -

Version of Windows to install
Windows Server 2008 R2 Enterprise

Personalize Windows

Full name: ERICKDR

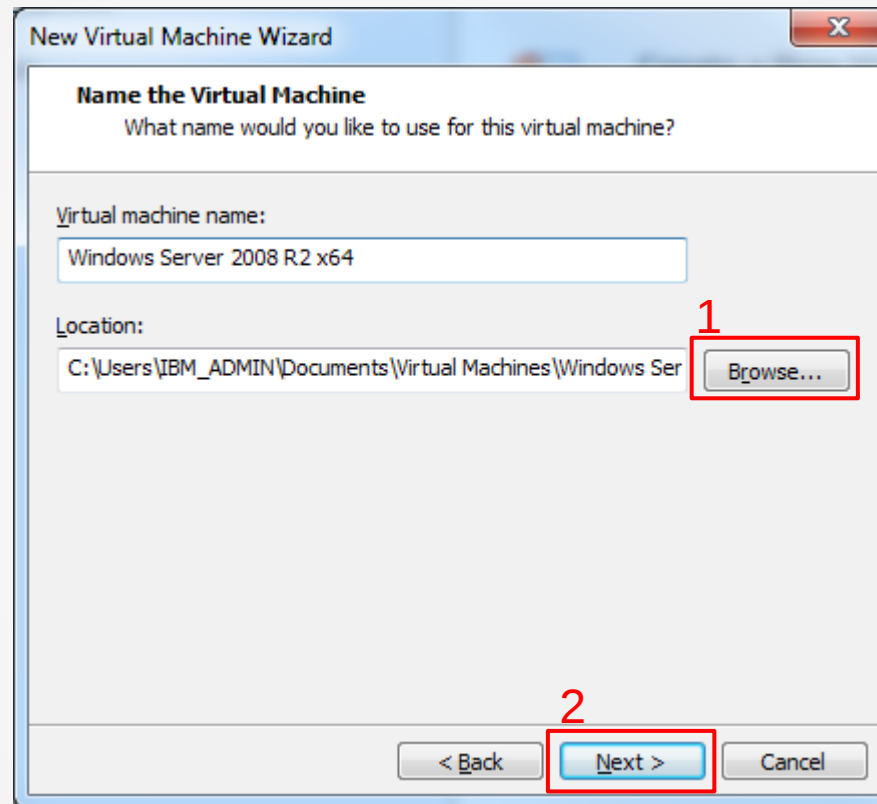
Password: (optional)

Confirm:

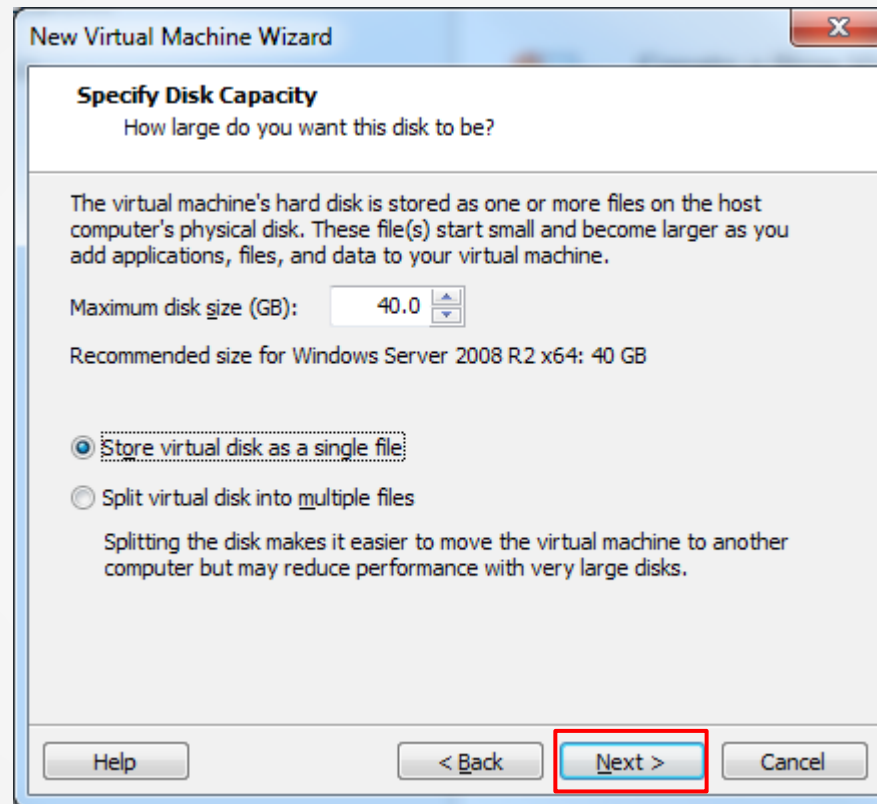
☐ Log on automatically (requires a password)

Help < Back Next > Cancel

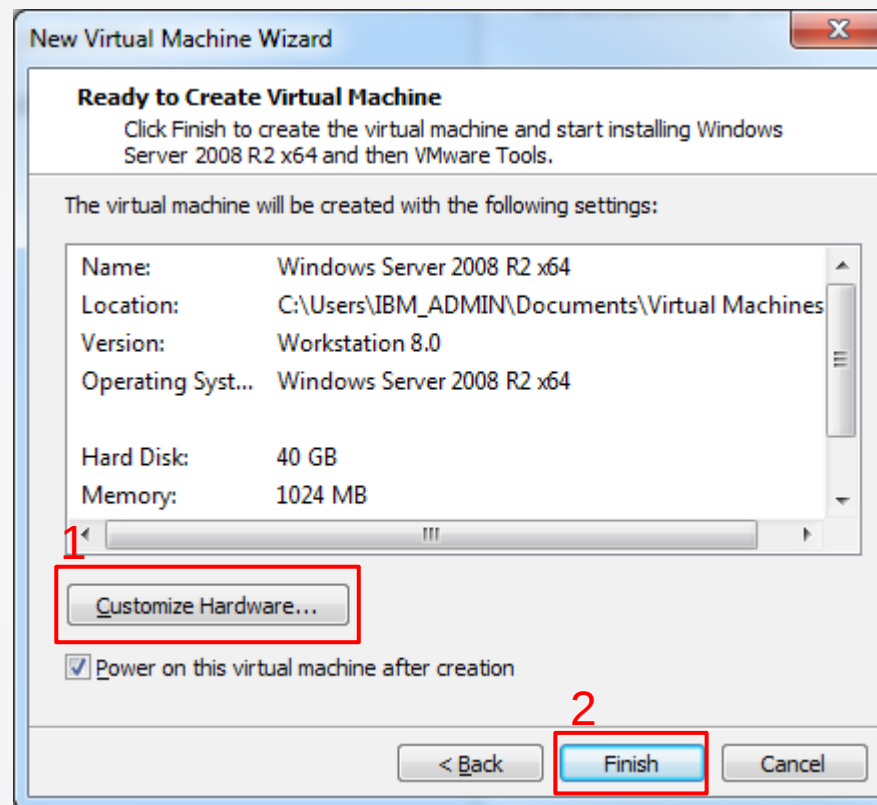
VMware Player



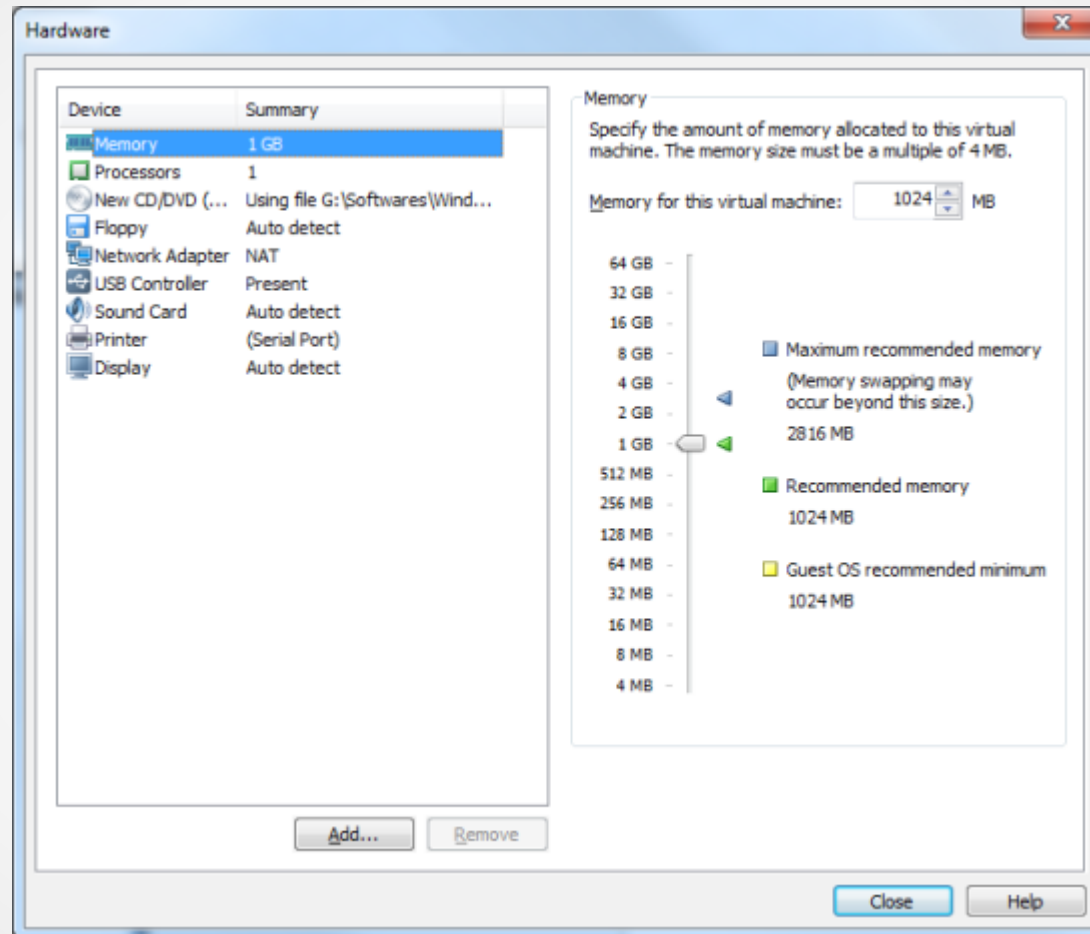
VMware Player



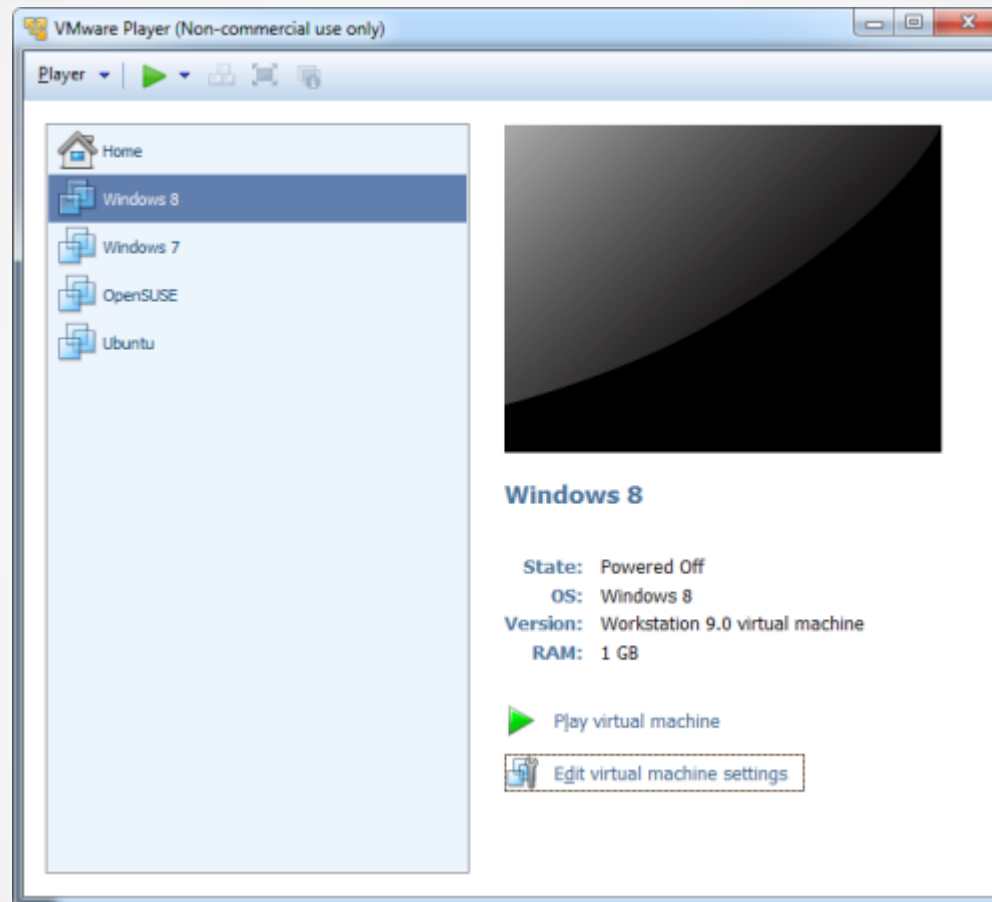
VMware Player



VMware Player



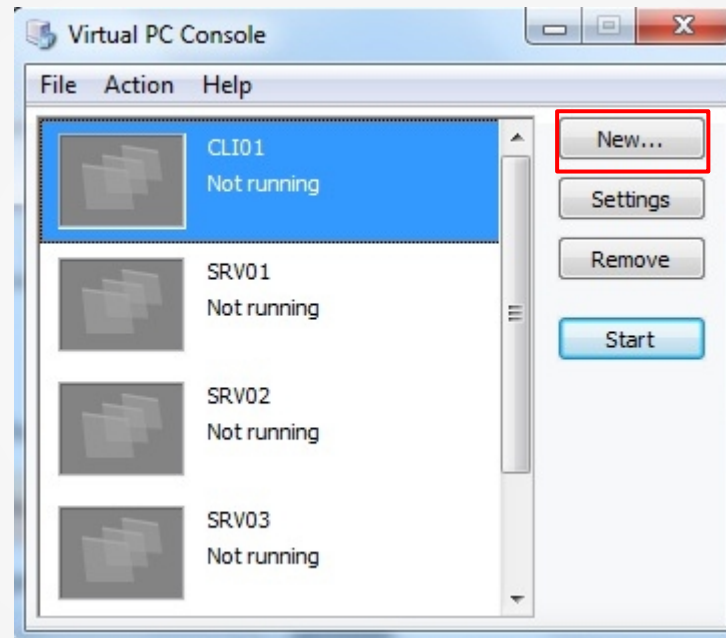
VMware Player



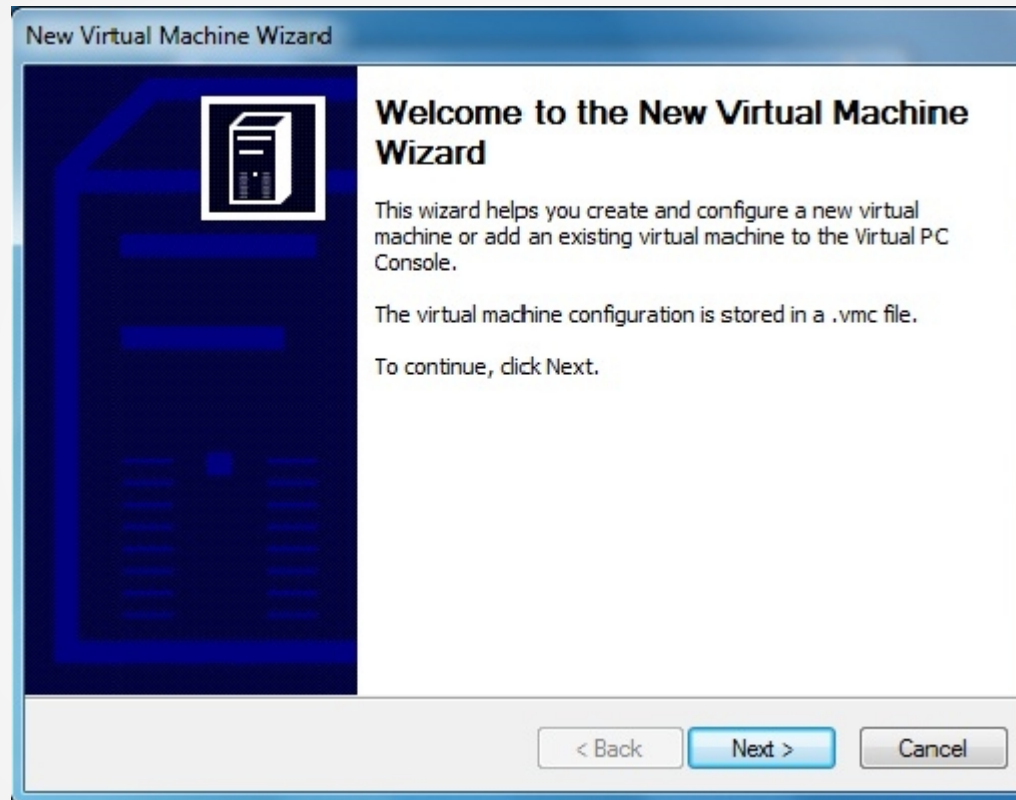


Windows Virtual PC

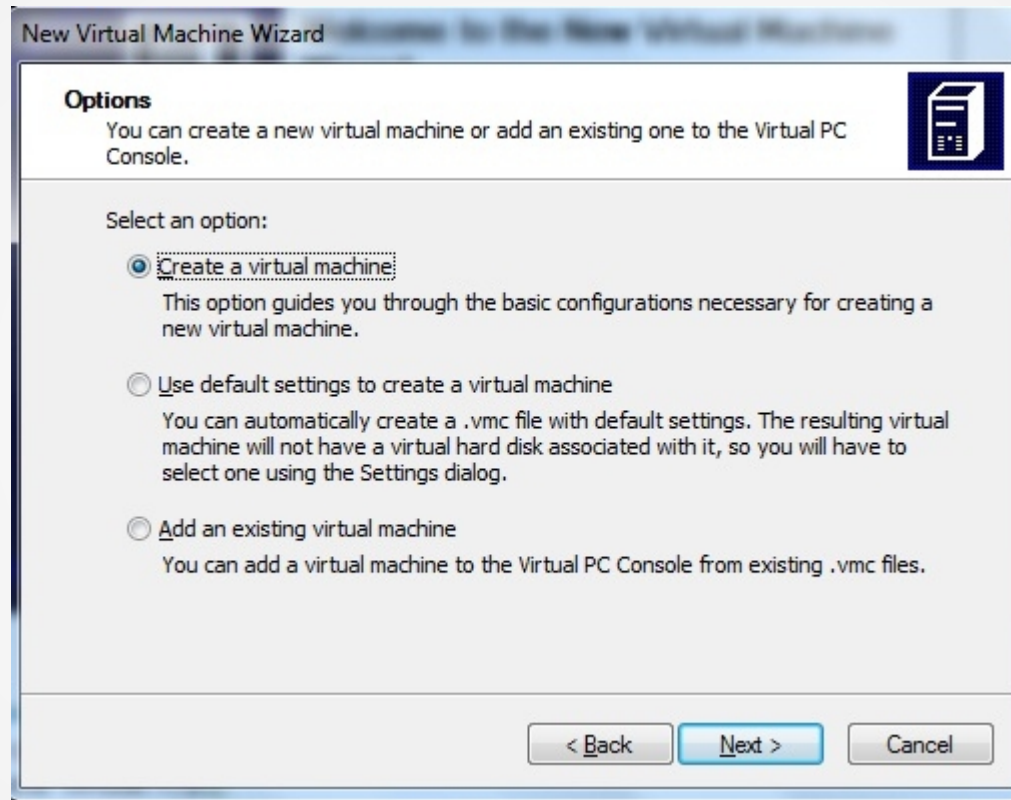
Windows Virtual PC



Windows Virtual PC



Windows Virtual PC



Windows Virtual PC

New Virtual Machine Wizard

Virtual Machine Name and Location

The name you specify will appear in the list of virtual machines in the Virtual PC Console.

Type the name for the virtual machine file. Choose a name that will help you identify this virtual machine's hardware or software configuration or which operating system it will run. The file is automatically saved to the My Virtual Machines folder. To save it to a different location, use the Browse button.

Name and location:

D:\Maquinas Virtuais\teste\teste.vmc

Browse...

< Back Next > Cancel

1

2

Windows Virtual PC

New Virtual Machine Wizard

Operating System
Select the operating system you plan to install on this virtual machine.

Selecting an operating system here allows the wizard to recommend appropriate settings for this virtual machine. If the desired guest operating system is not listed, select an operating system that requires an equivalent amount of memory or select Other.

Operating system: Other ▼ 1

Default hardware selection:

Memory:	128 MB
Virtual disk:	16.384 MB
Sound:	Sound Blaster 16 compatible

2 Next > < Back Cancel

Windows Virtual PC

New Virtual Machine Wizard

Memory

You can configure the RAM on this virtual machine.

To improve the performance of this virtual machine and run more applications on its operating system, increase the amount of RAM allocated to it. To leave more RAM for other virtual machines on your system, use the recommended RAM allocation.

Recommended RAM: [128 MB]

Allocate RAM for this virtual machine by:

☐ Using the recommended RAM

☒ Adjusting the RAM

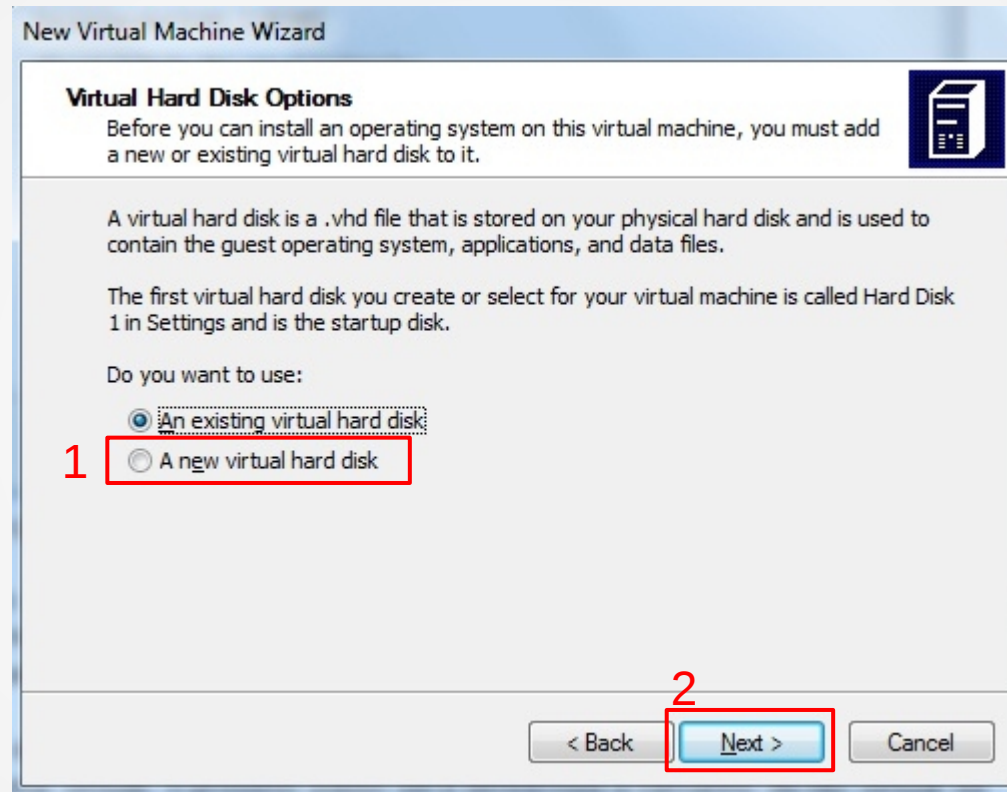
Set the RAM for this virtual machine:

64 MB 1496 MB

512 MB

< Back Next > Cancel

Windows Virtual PC



Windows Virtual PC

New Virtual Machine Wizard

Virtual Hard Disk Location

This wizard creates a dynamically expanding virtual hard disk with the specified size.

Type a name for the new virtual hard disk. Unless you specify a different location, the virtual hard disk file will automatically be saved in the same location as the virtual machine configuration file.

Name and location:

1 Browse...

Maximum virtual hard disk size: 130,557 MB

Virtual hard disk size: MB

To learn more about the different types of virtual hard disks, see Virtual PC Help. For advanced virtual hard disk options, use the Virtual Disk Wizard.

< Back 2 Next > Cancel

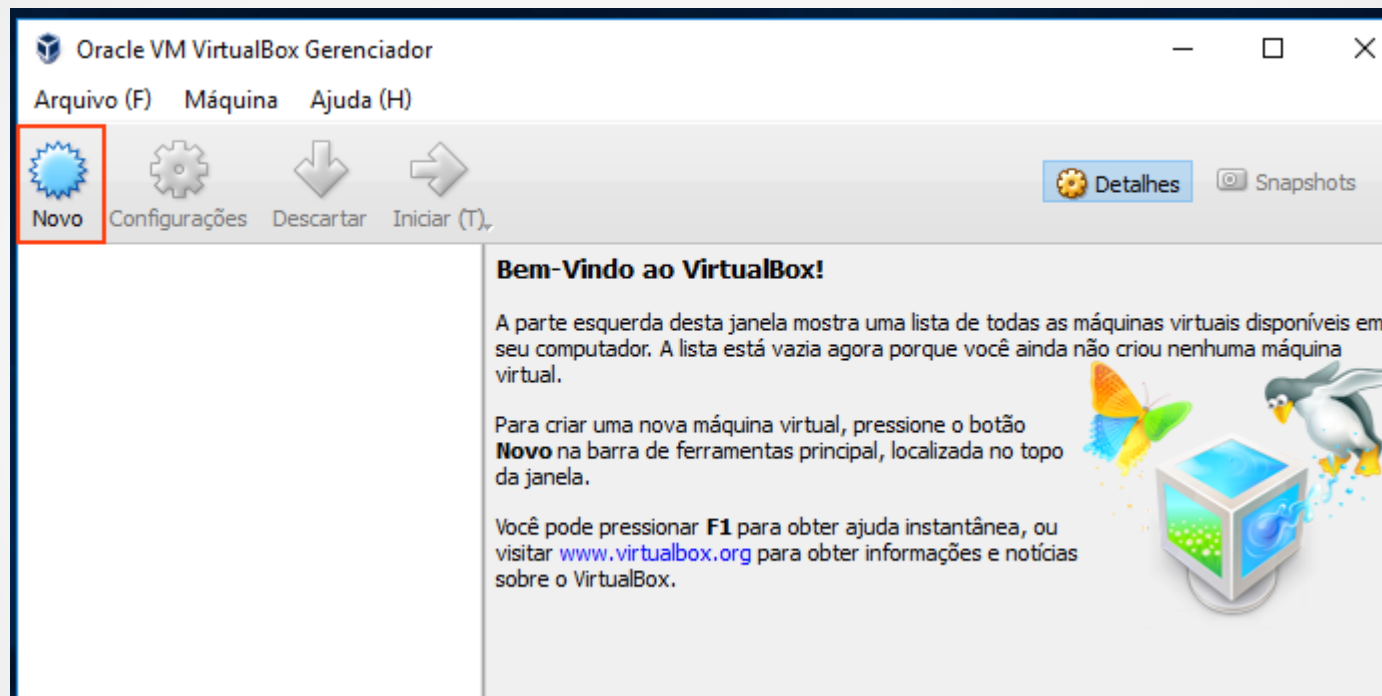
Windows Virtual PC



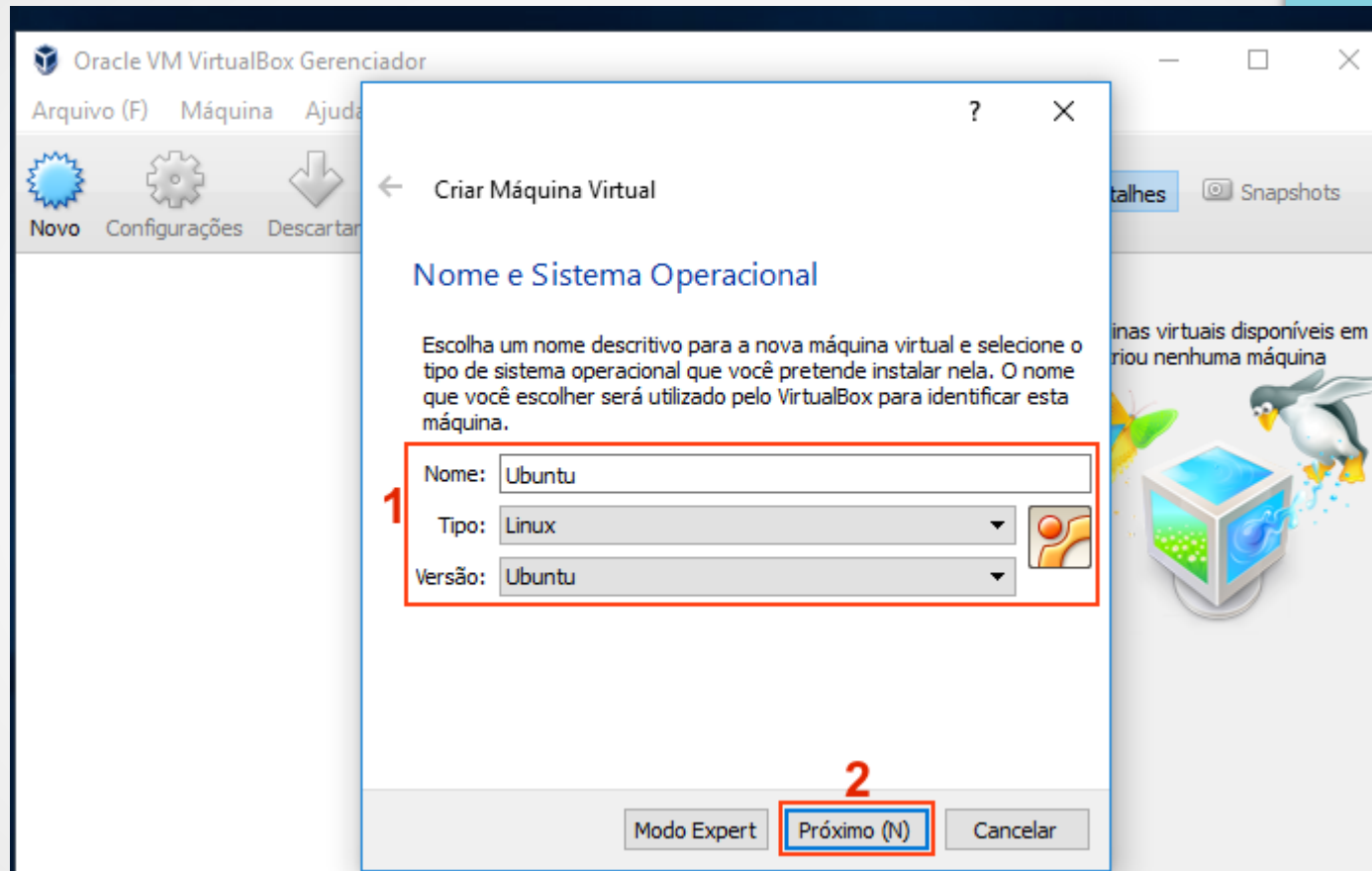


Virtual Box

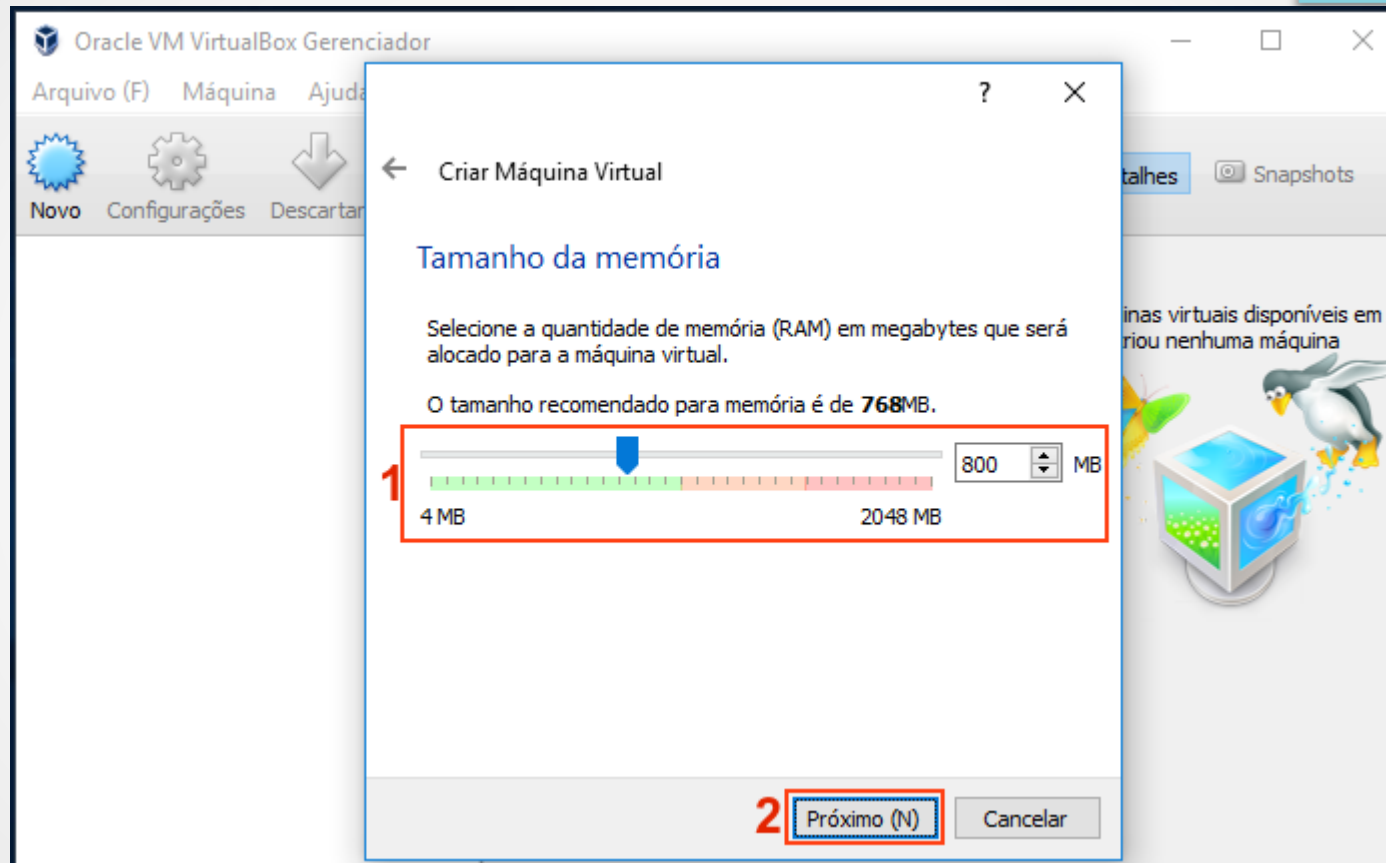
Virtual Box



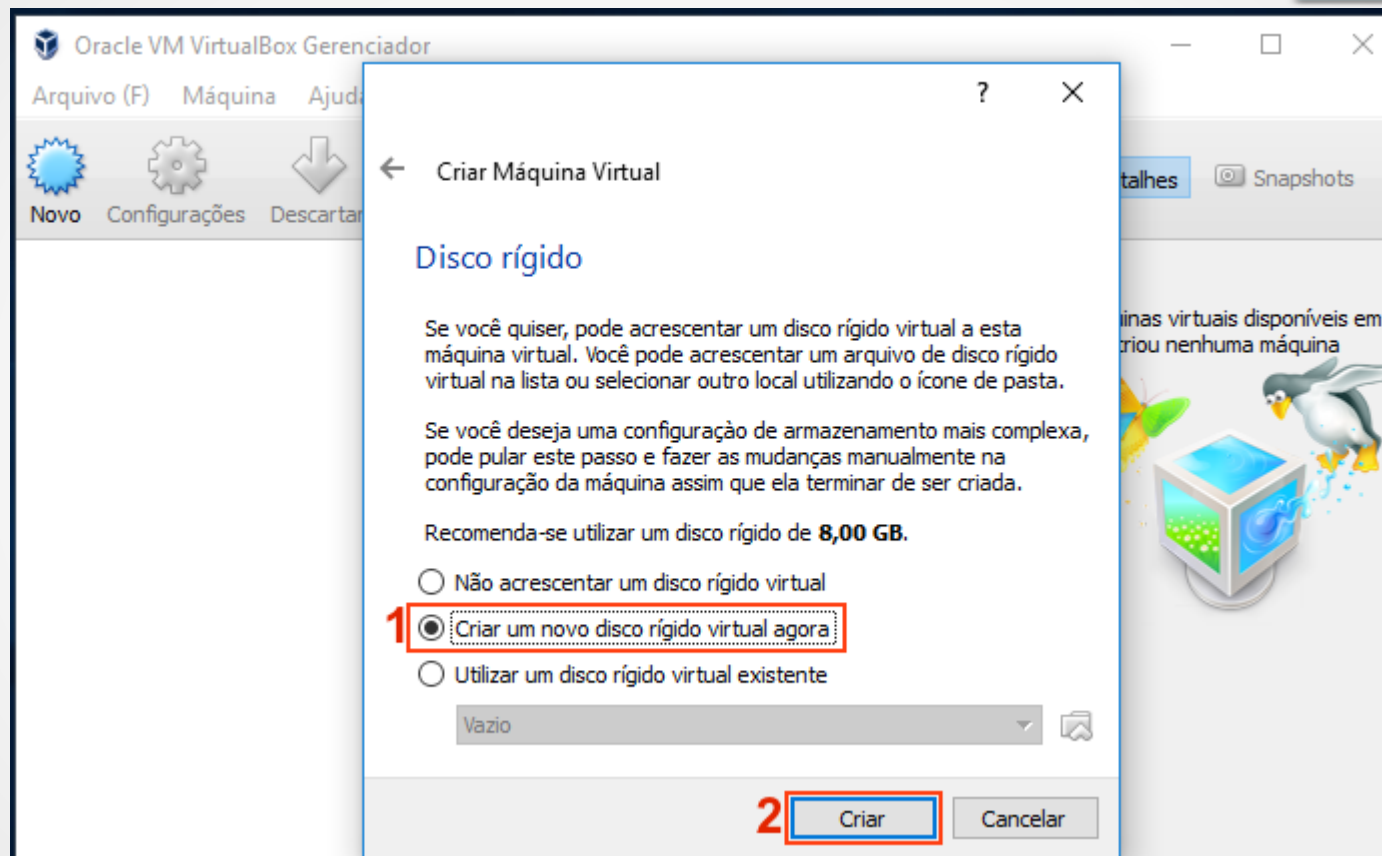
Virtual Box



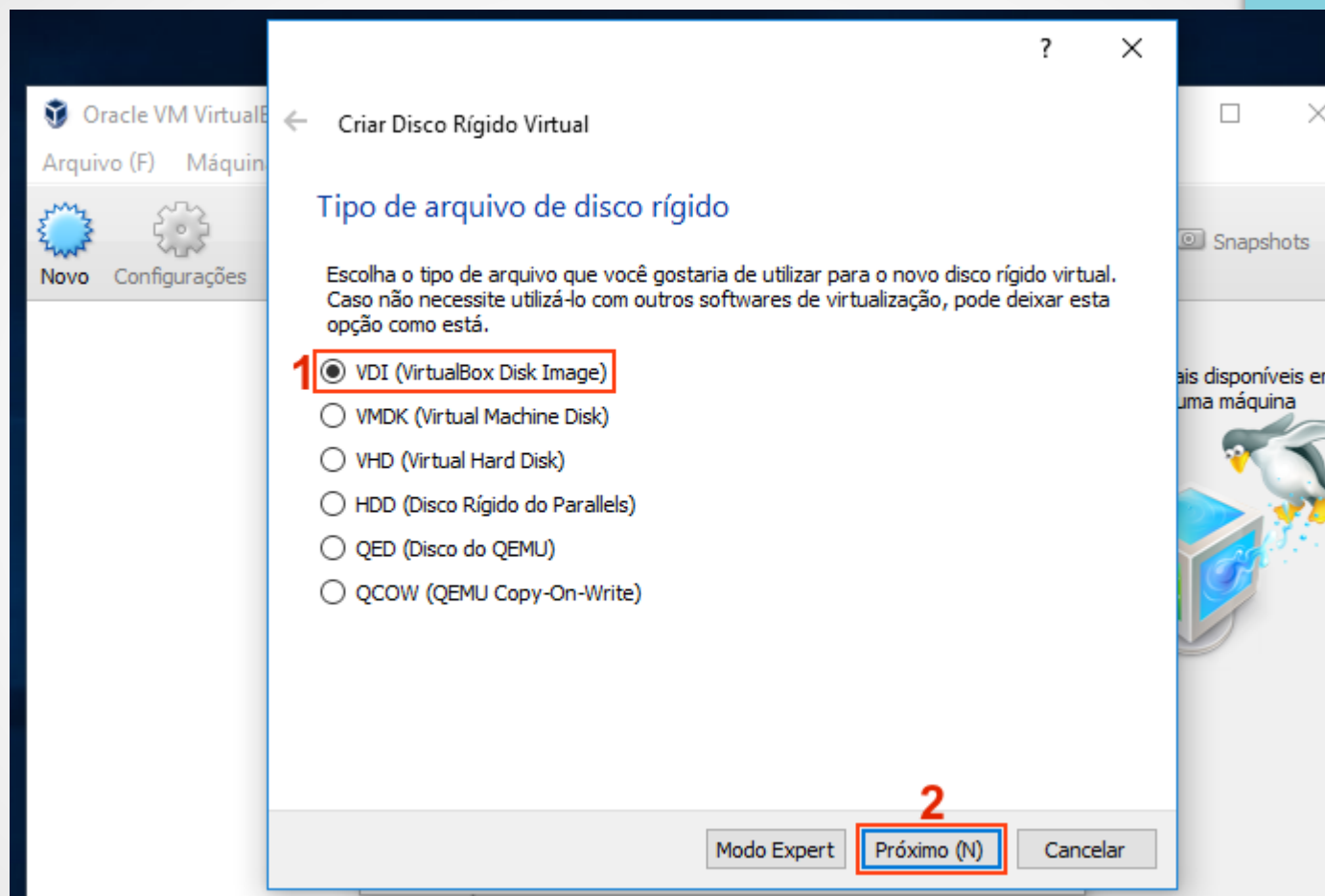
Virtual Box



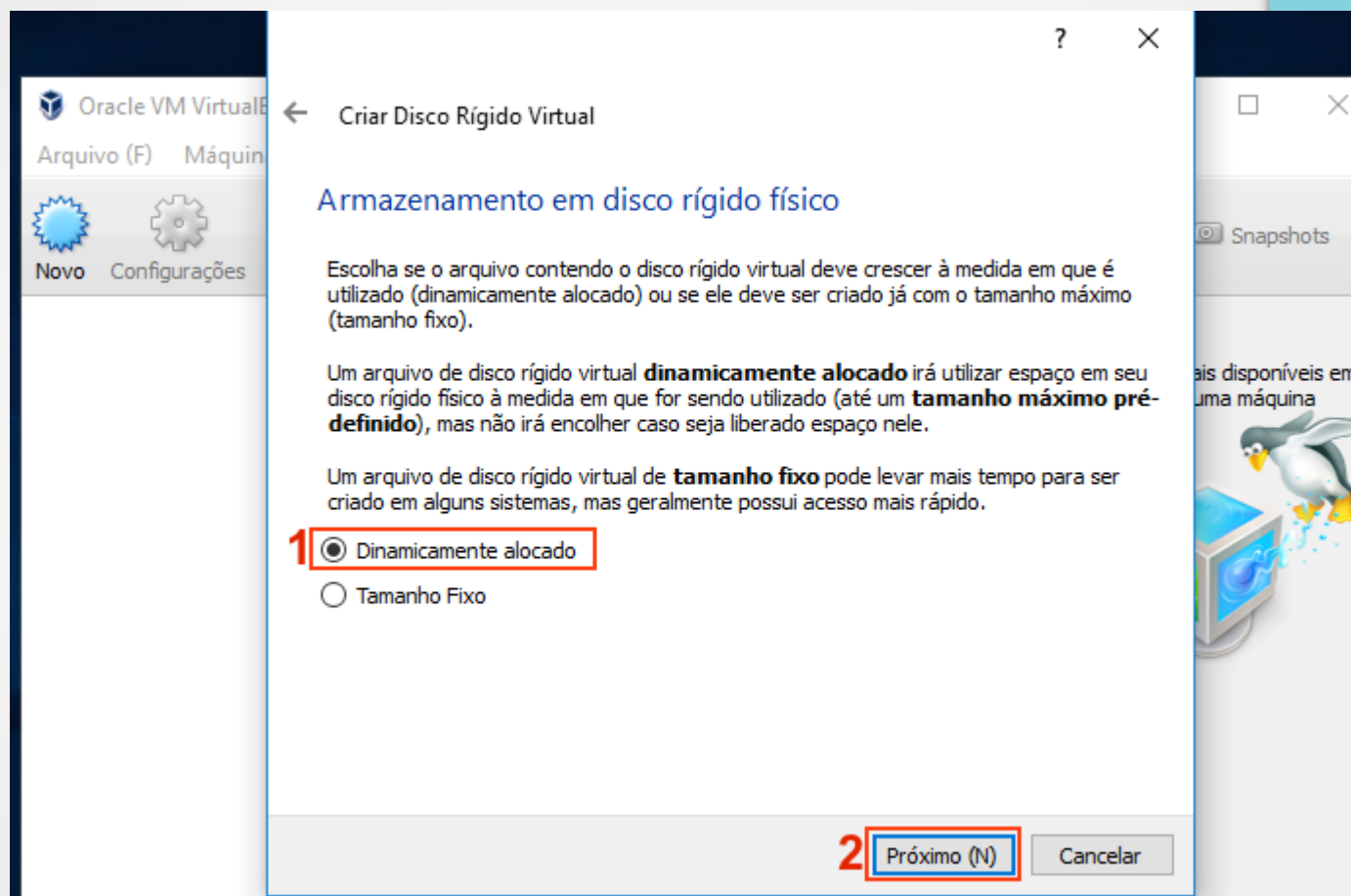
Virtual Box



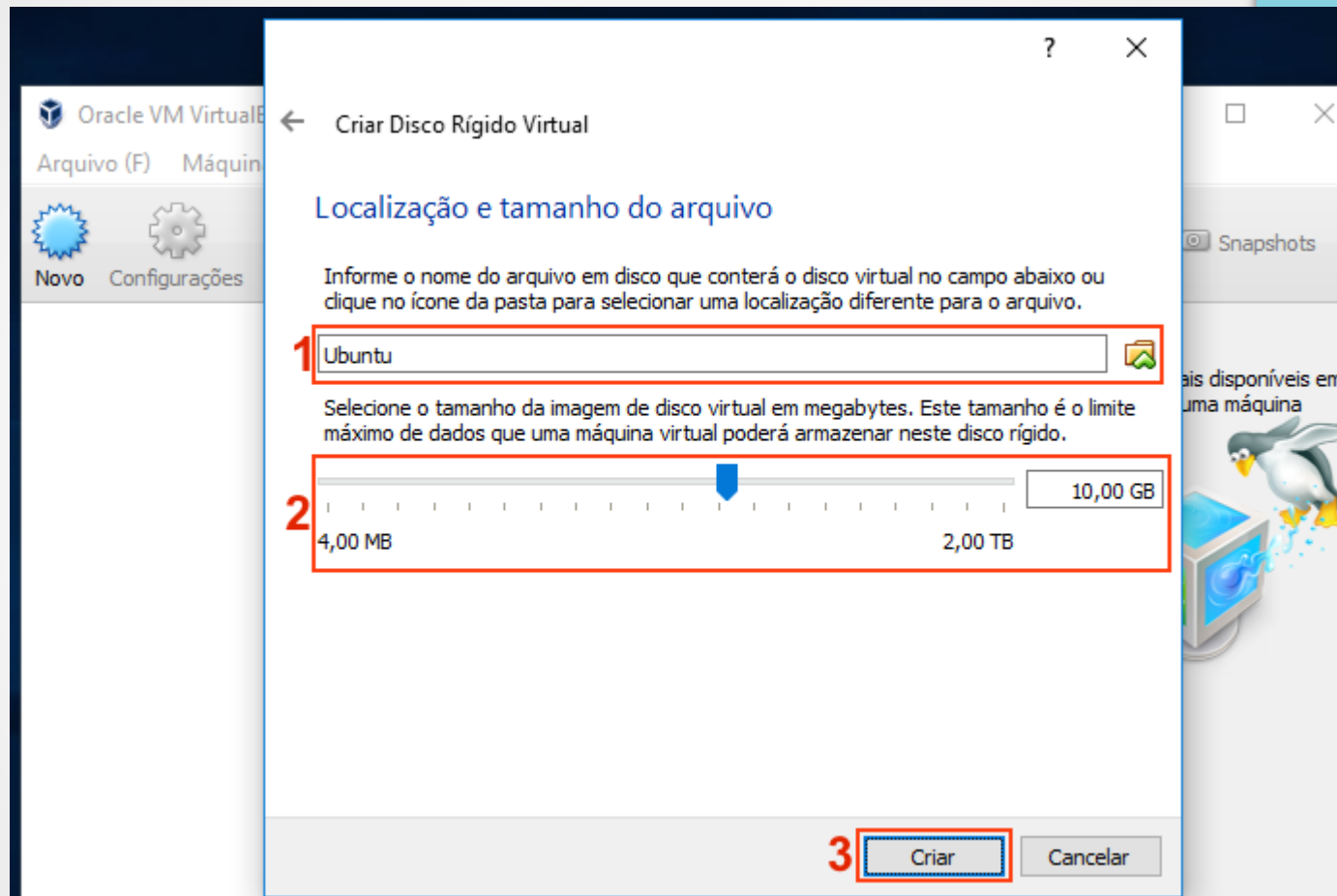
Virtual Box



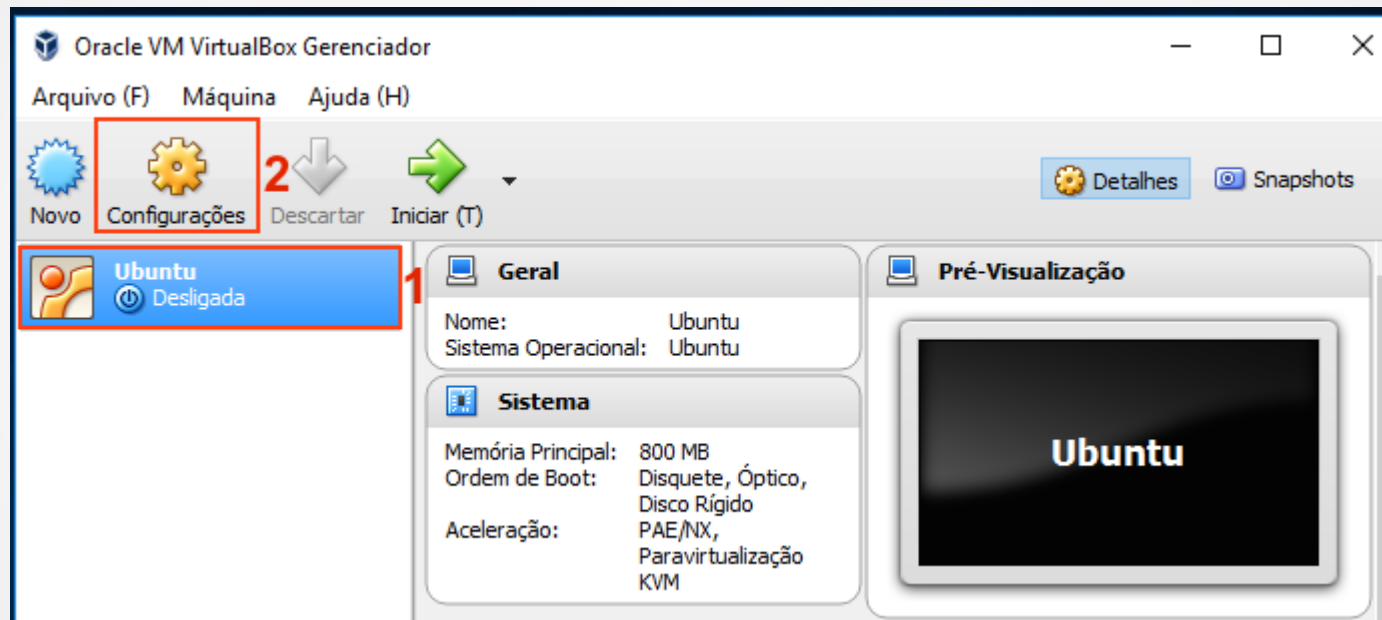
Virtual Box



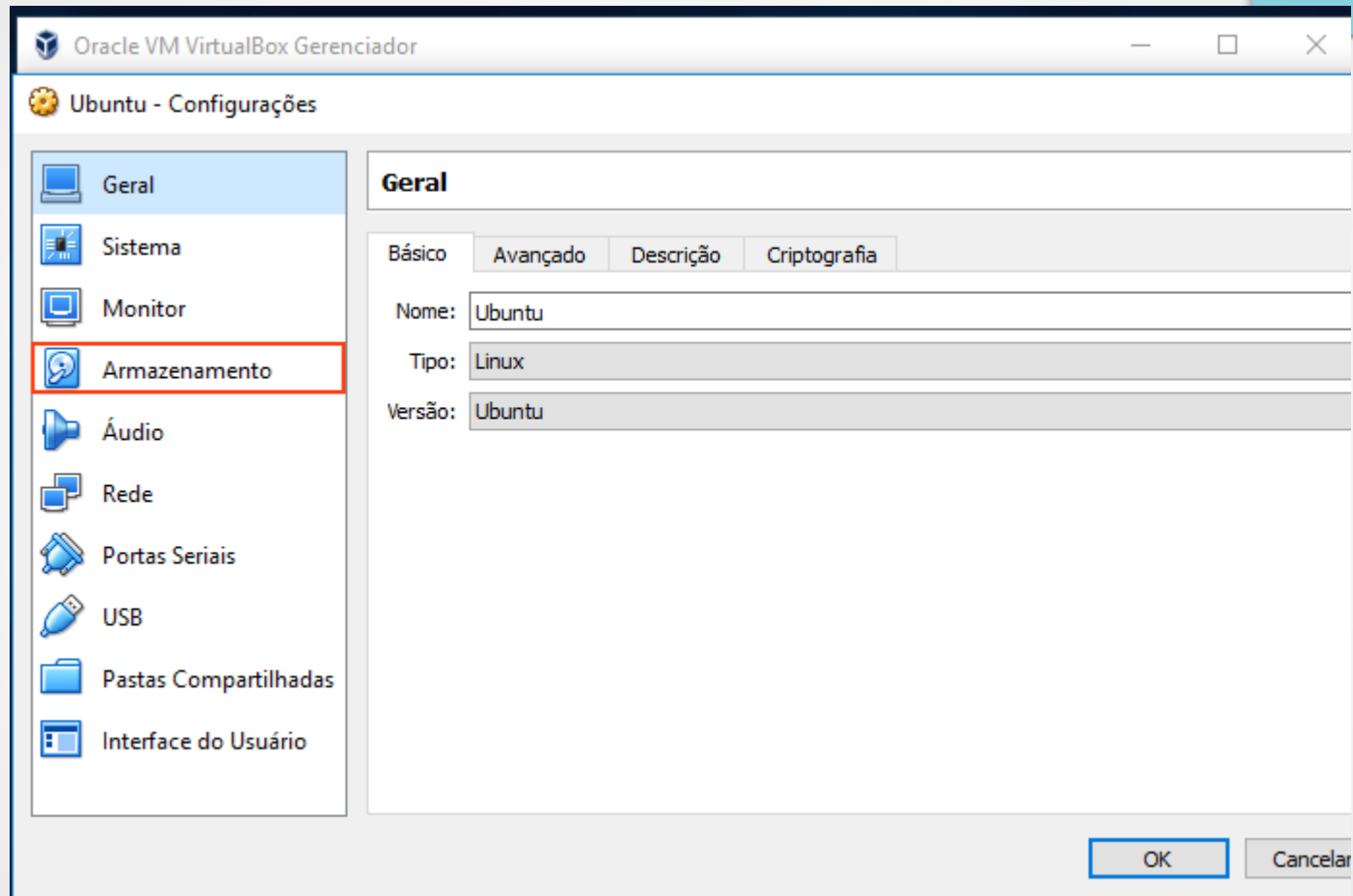
Virtual Box



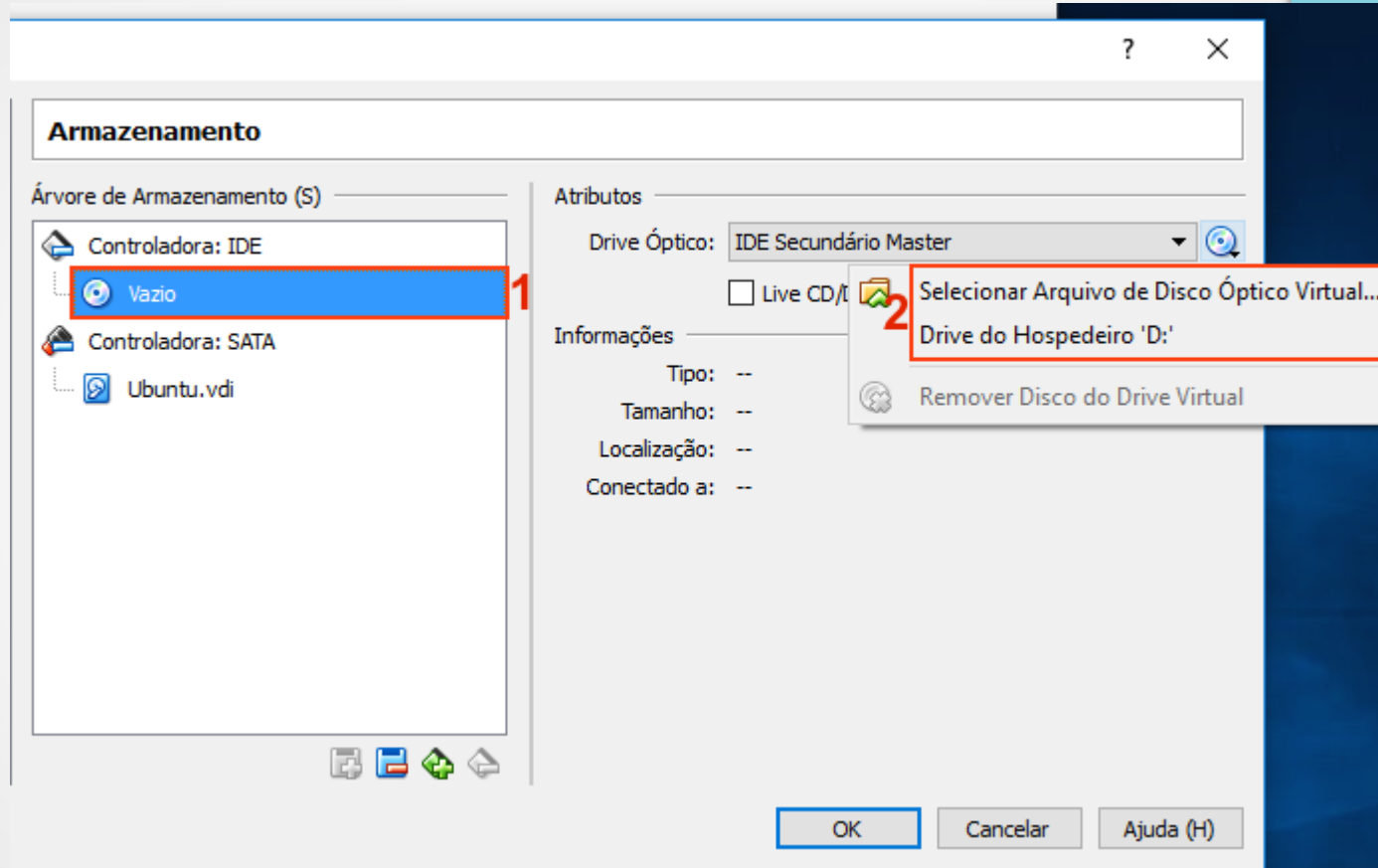
Virtual Box



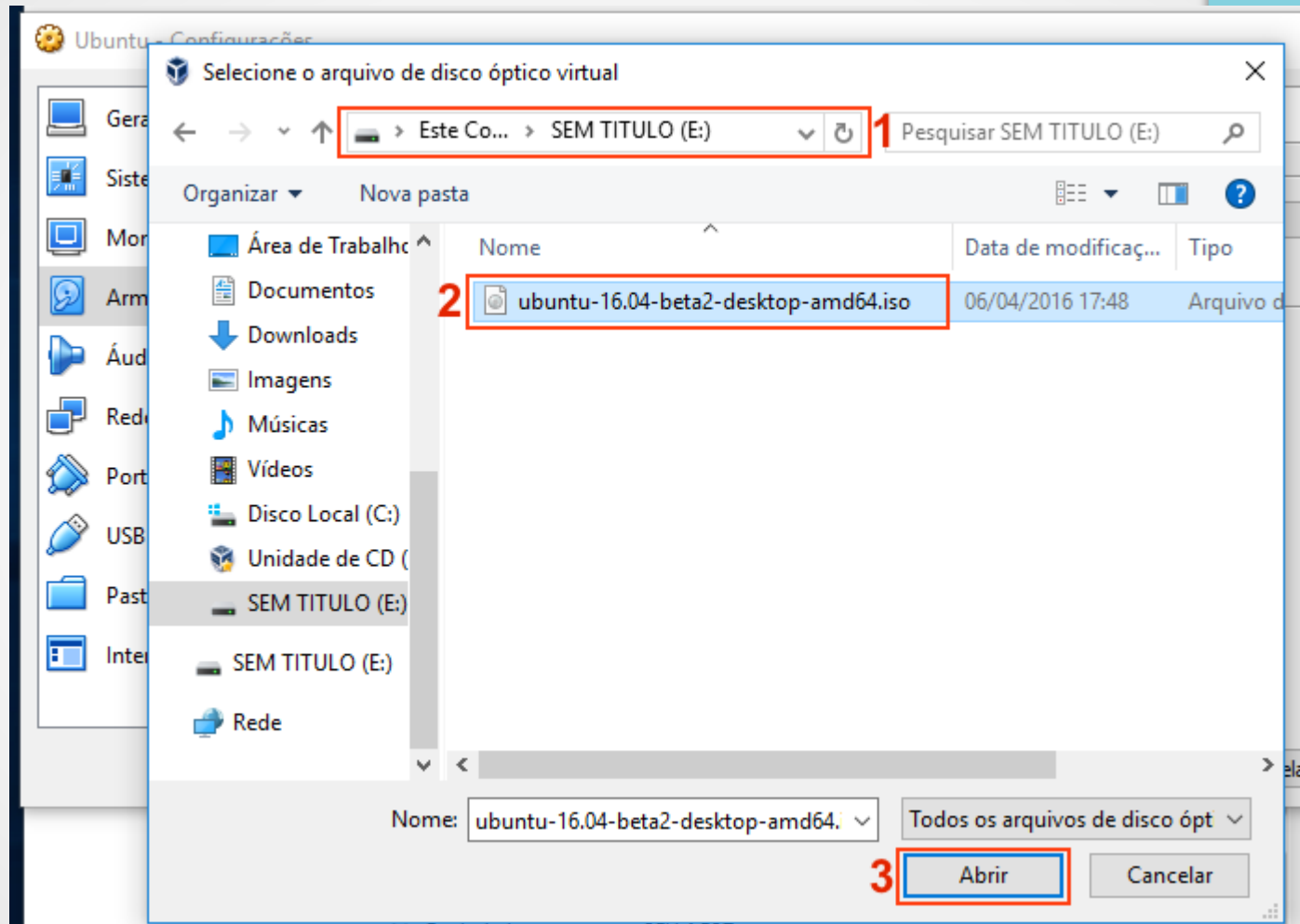
Virtual Box



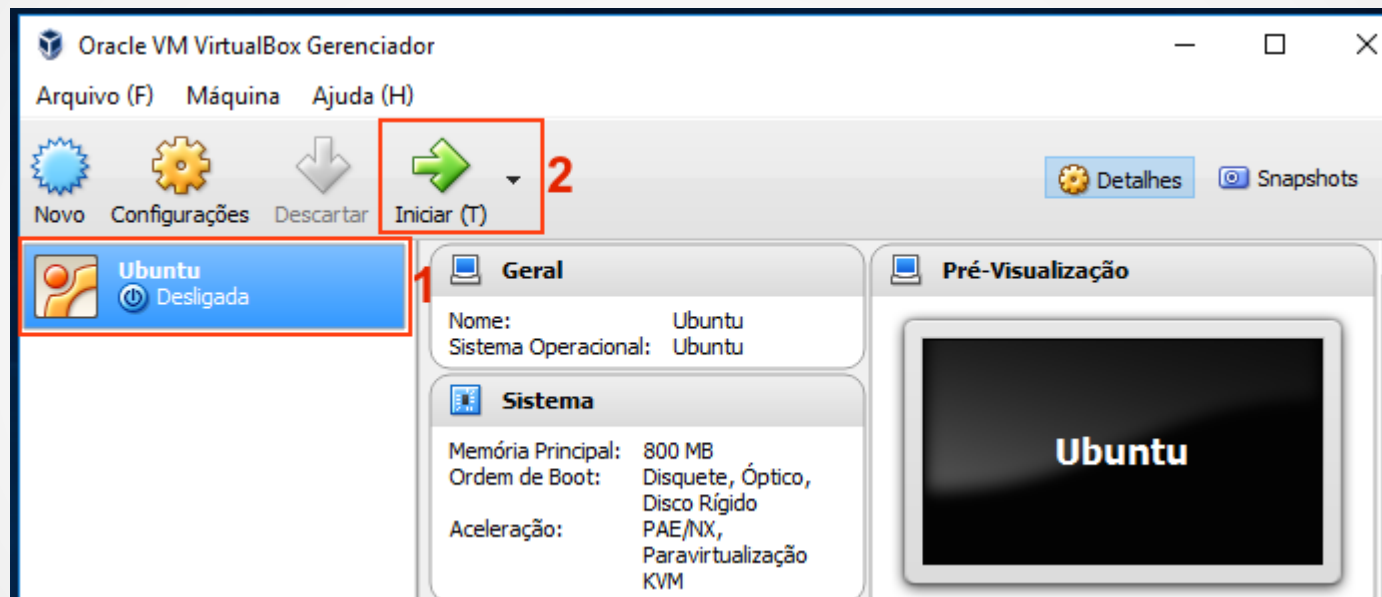
Virtual Box



Virtual Box



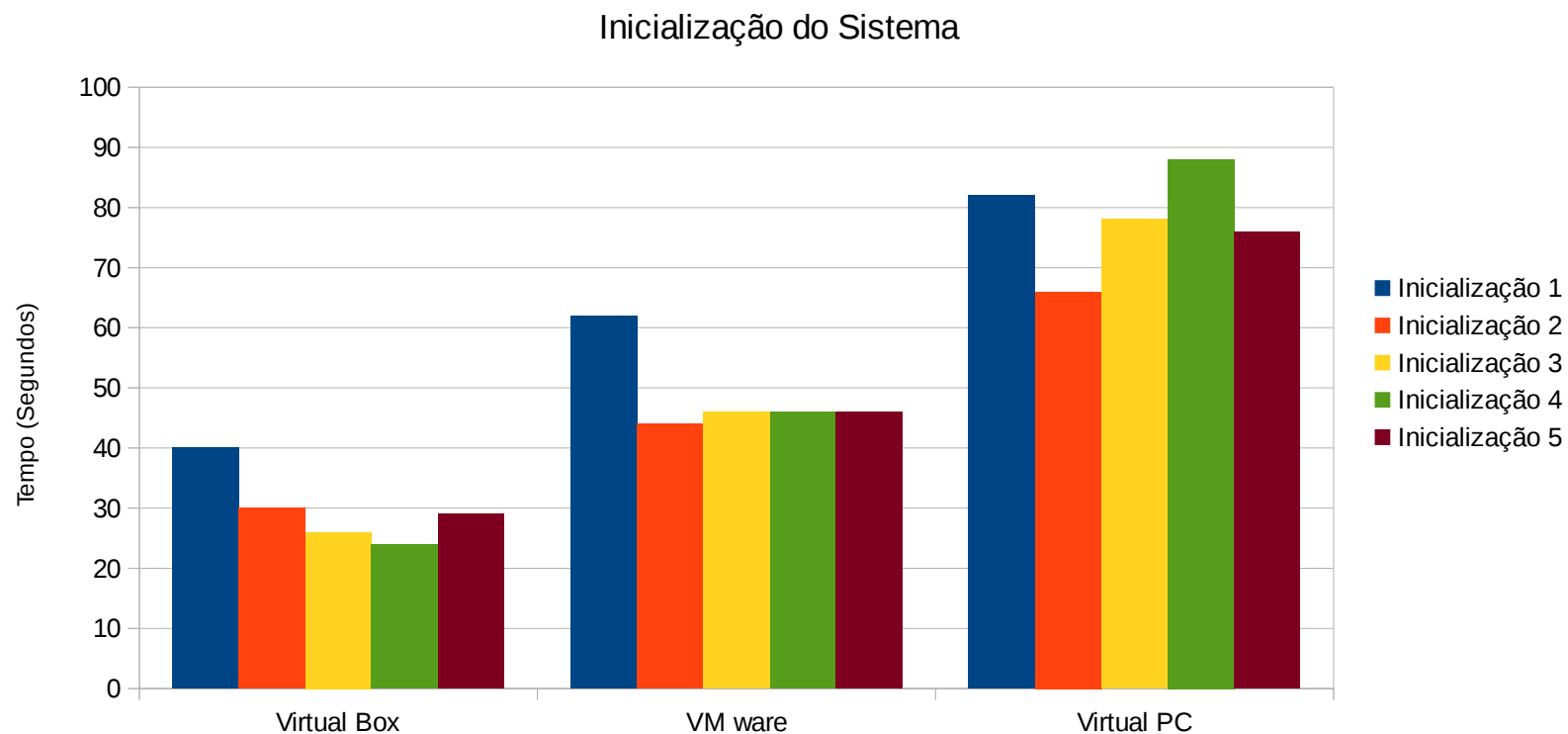
Virtual Box





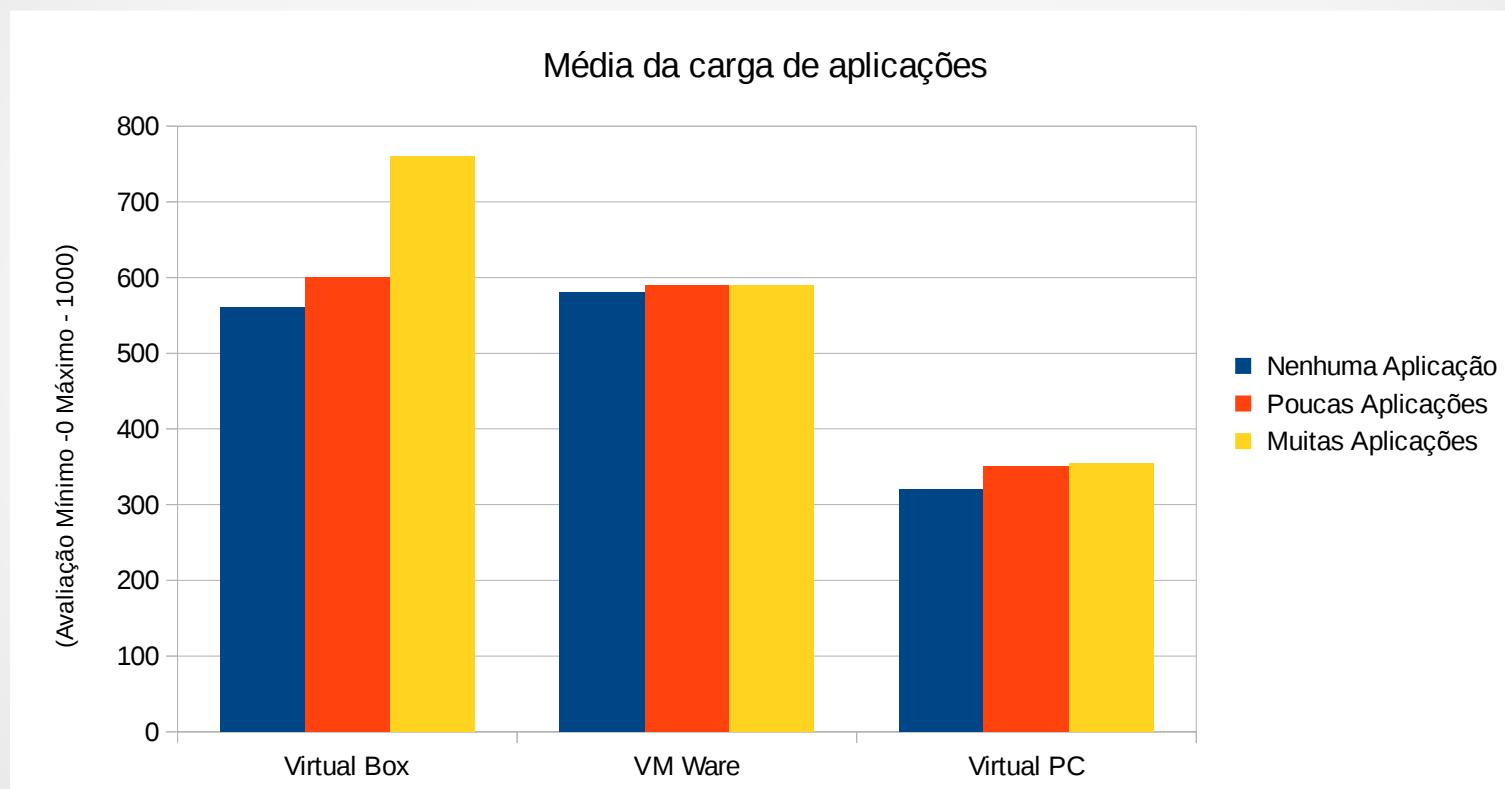
Mas qual escolher?

Tempo de inicialização



Fonte: <http://www.tecmundo.com.br/comparacao-/28433-vm-ware-virtual-box-ou-virtual-pc-qual-e-o-melhor-programa-para-virtualizacao-.htm>

Desempenho com aplicações



Fonte: <http://www.tecmundo.com.br/comparacao-/28433-vm-ware-virtual-box-ou-virtual-pc-qual-e-o-melhor-programa-para-virtualizacao-.htm>

Teste nos discos

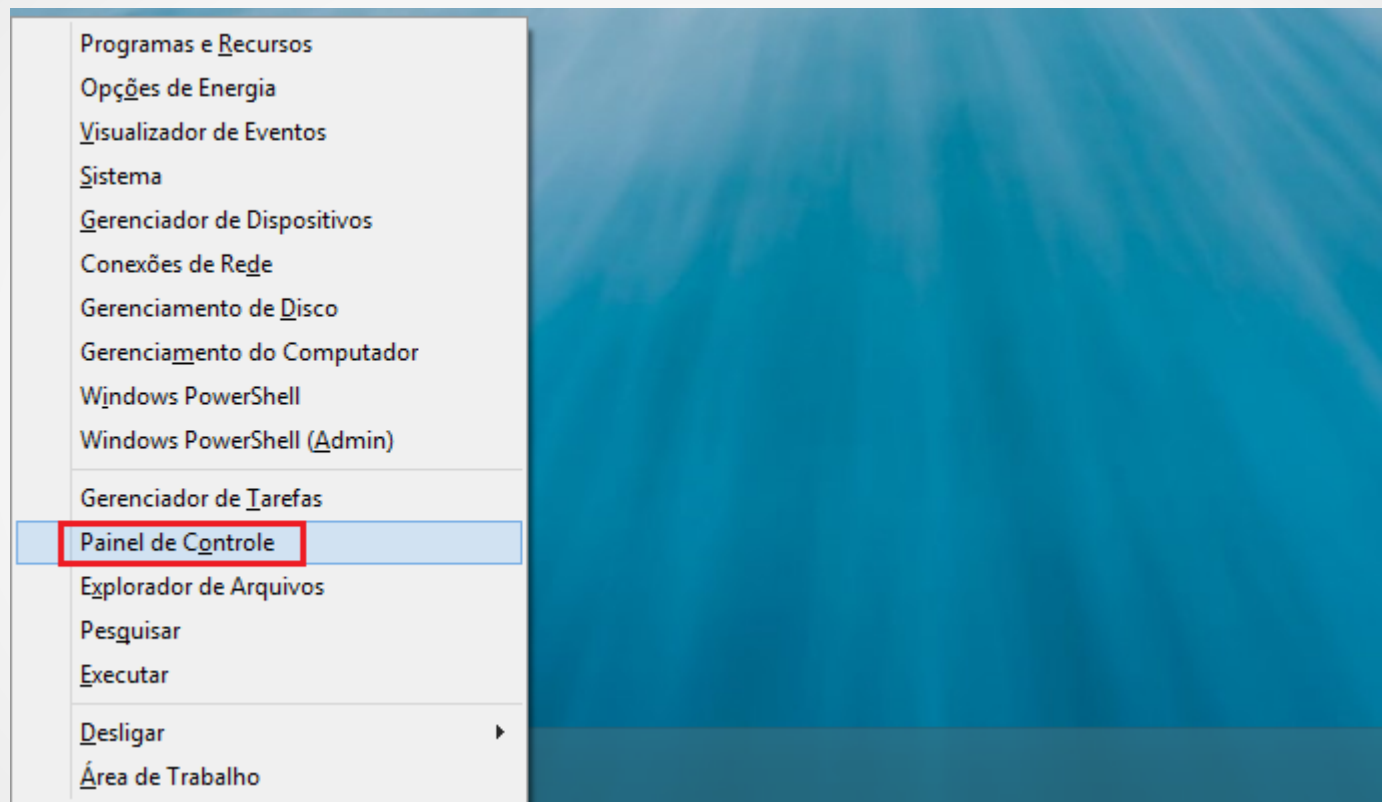
	Plataforma		
	Virtual Box	VM Ware	Microsoft Virtual PC
Velocidade Máxima de Leitura (kbps)	59.746	332.085	189.540
Velocidade Mínima de Leitura (kbps)	16.739	13.322	3.330
Velocidade Média de Leitura (kbps)	50.369	183.539	91.914
Velocidade Média de Gravação (mbps)	133.8	1523.6	227.2
Tempo de Acesso (ms)	12,4	8,7	8,6
Tempo de Teste	6m 12s	3m 53s	7m 9s

Fonte: <http://www.tecmundo.com.br/comparacao-/28433-vm-ware-virtual-box-ou-virtual-pc-qual-e-o-melhor-programa-para-virtualizacao-.htm>

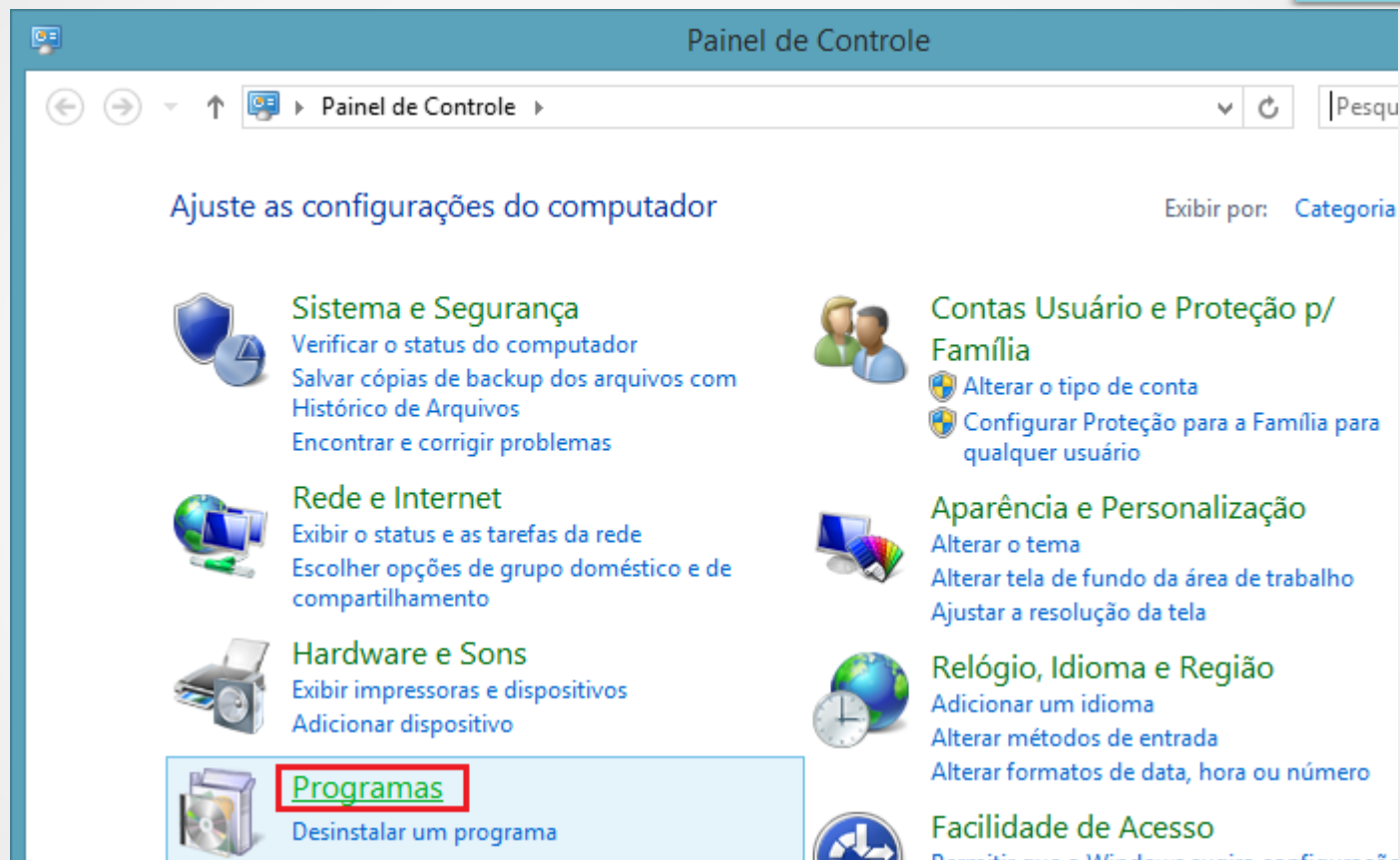
Outra opção (Microsoft Windows)

- Hyper-V
 - Disponível a partir do windows 8 PRO
 - Requer sistema 64bits
 - Processador com *Second Level Address Translation* (SLAT)
 - Intel - *Extended Page Table* (EPT)
 - AMD - *Nested Page Table* (NPT)

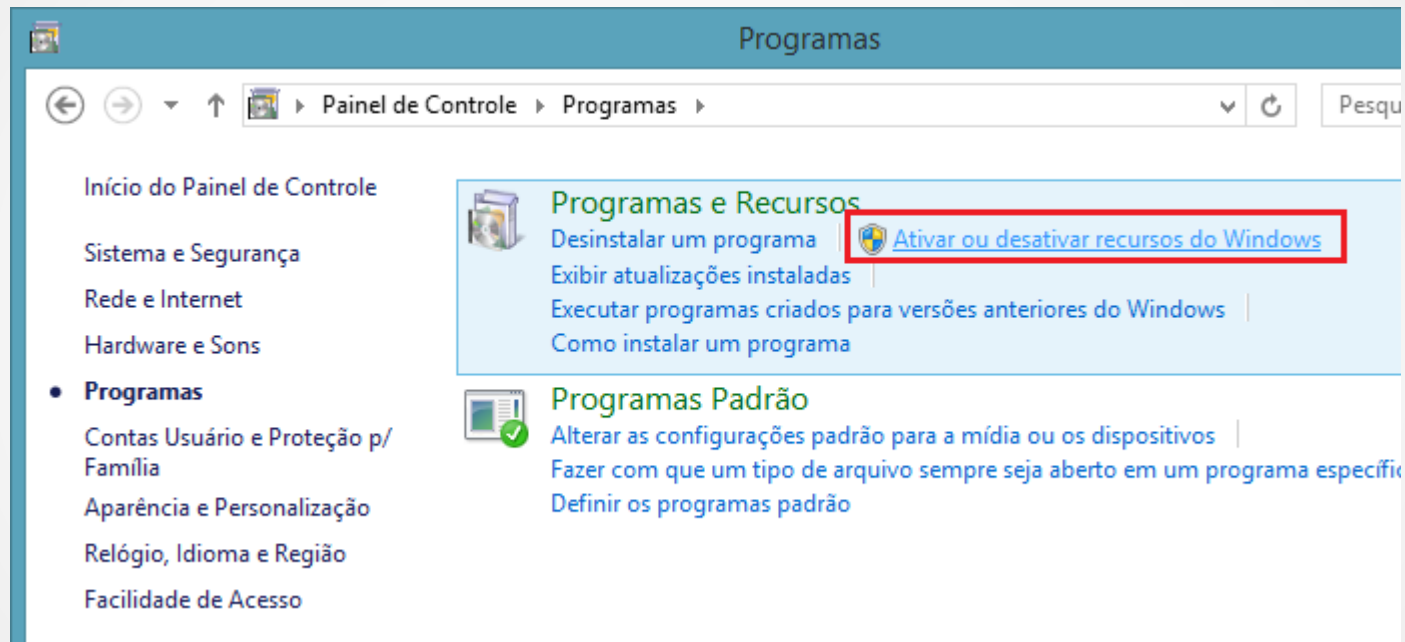
Hyper-V



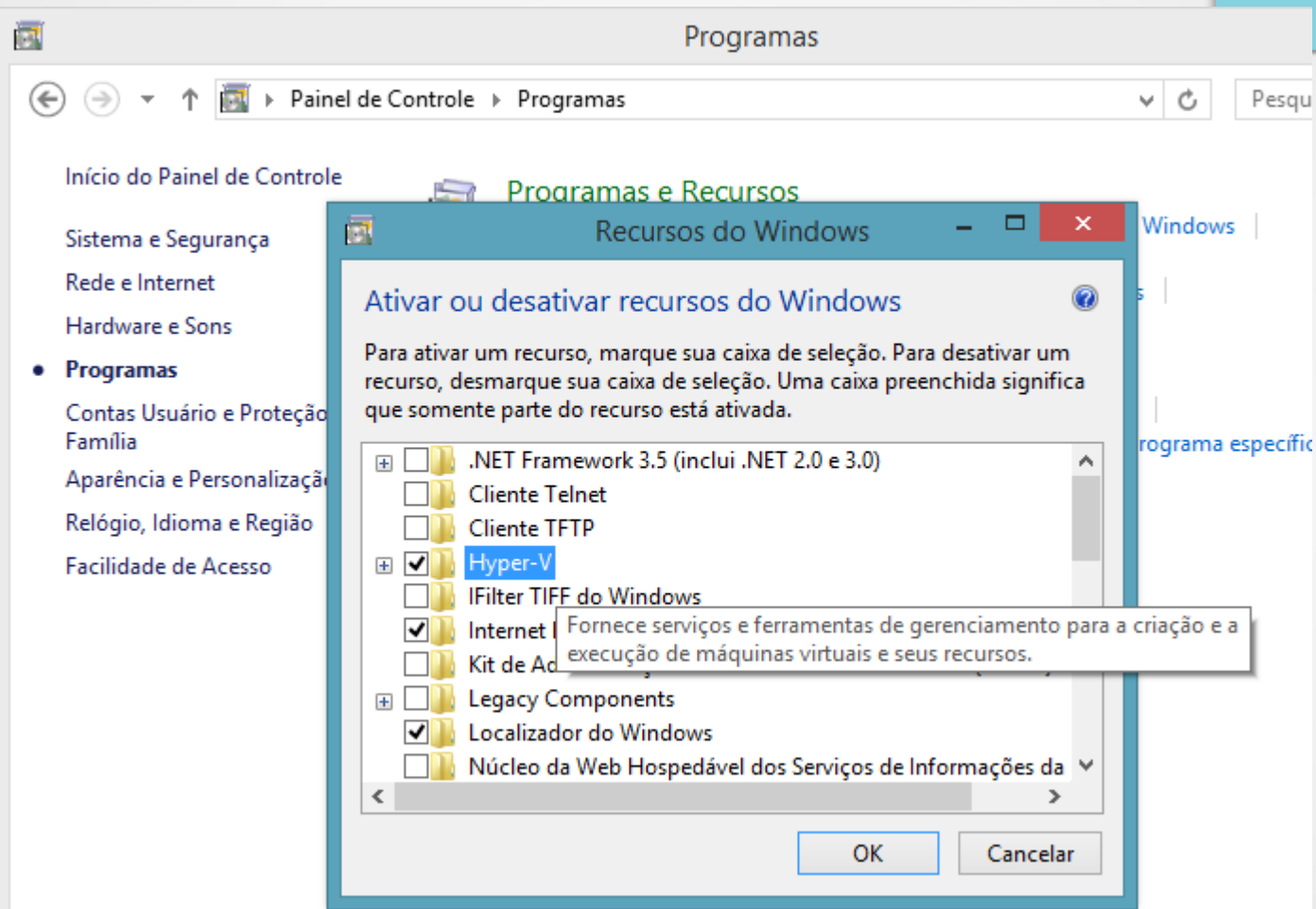
Hyper-V



Hyper-V



Hyper-V



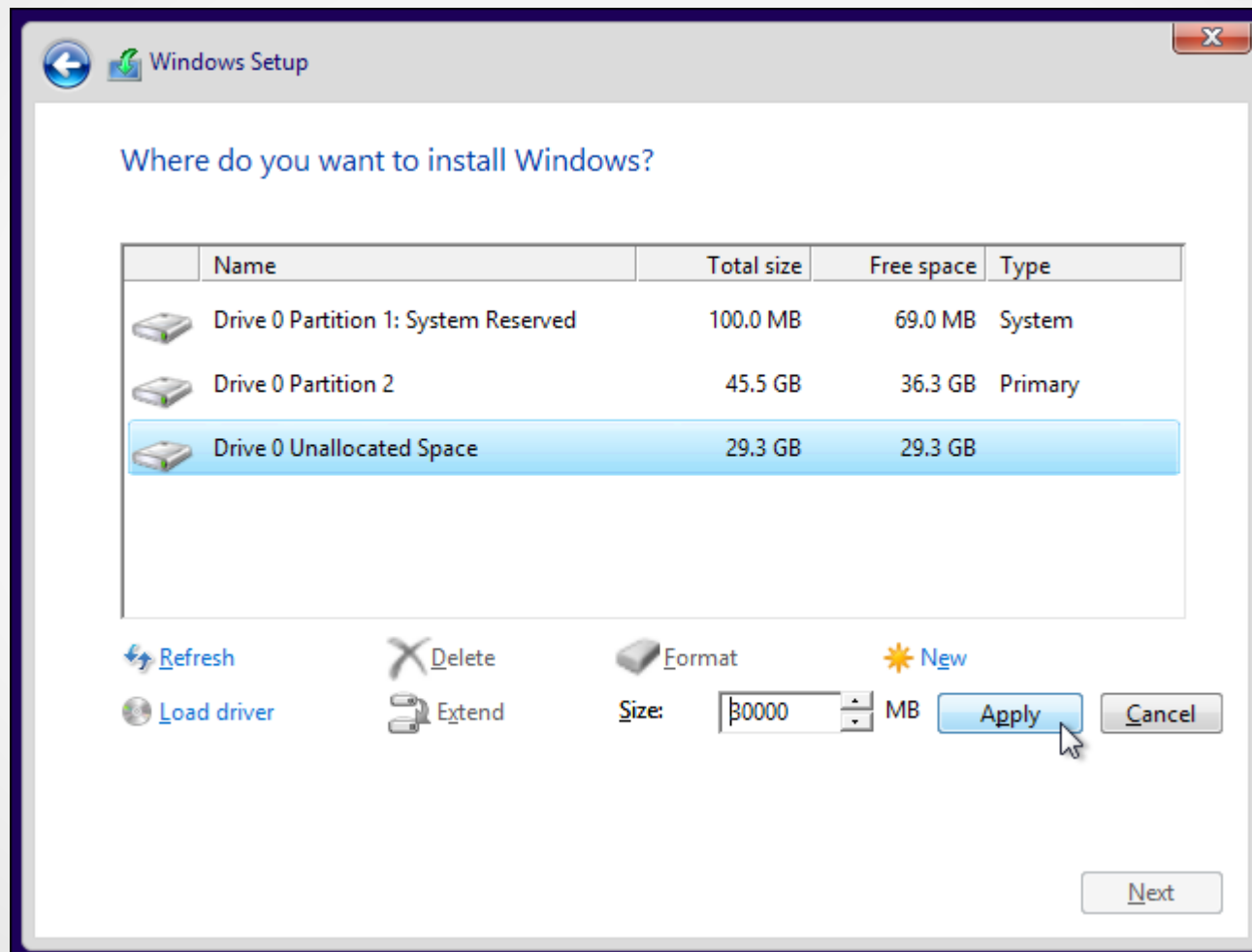
Hyper-V

- Ou por janela de comando:
 - Precione Windows + R
 - Digite cmd
 - Cole o código:
 - “Dism /online /enable-feature
/featurename:Microsoft-Hyper-V–All”
 - Reinicie o sistema

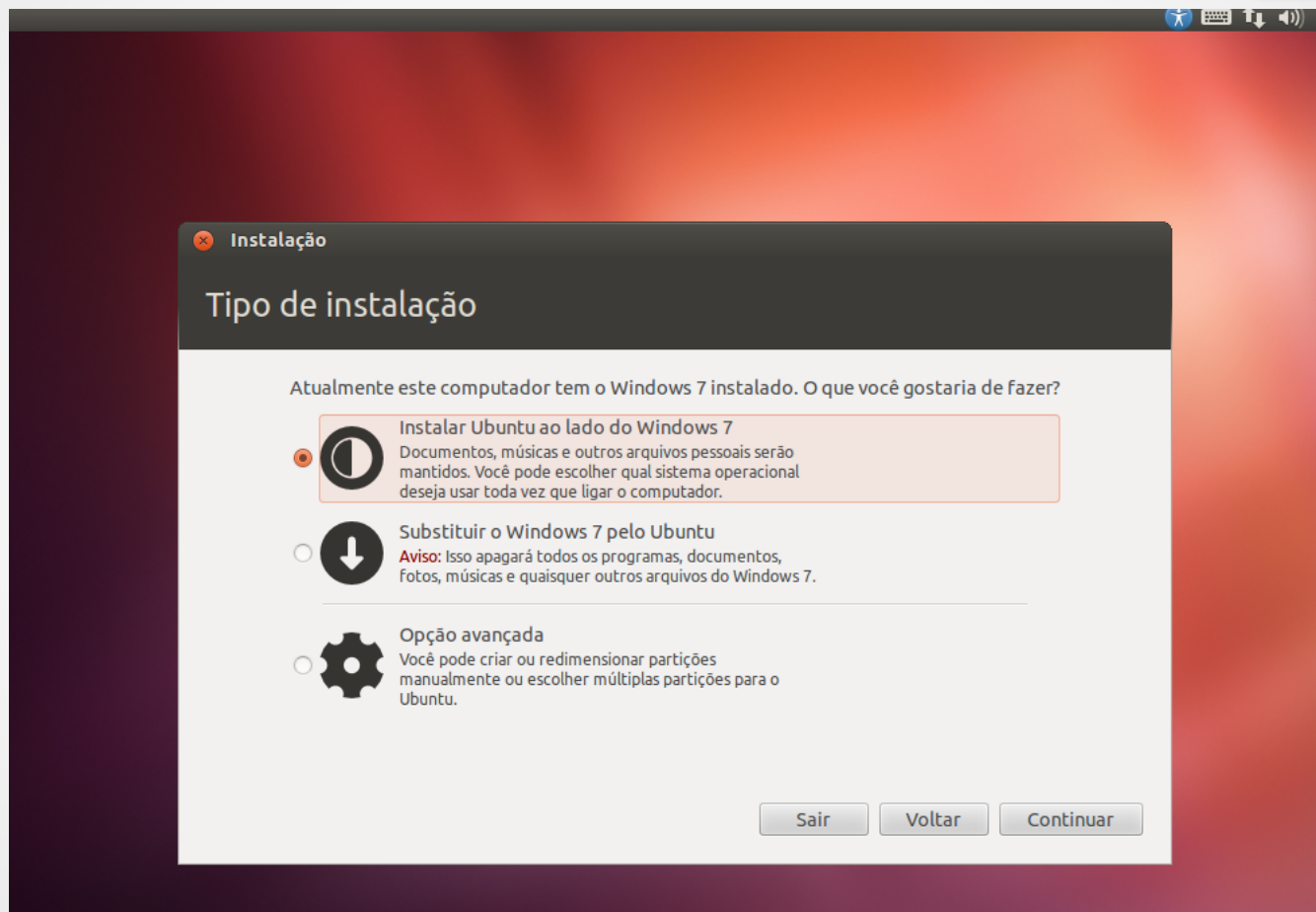
Mas não quero utilizar virtualização, como faço?

- Dual Boot
 - Particionamento do disco em 2 ou mais partes
 - Instalação do sistemas operacionais de escolha em cada partição

Dual Boot



Dual Boot



Dual Boot

GNU GRUB version 2.02~beta2-9ubuntu1

*Ubuntu

Advanced options for Ubuntu

Memory test (memtest86+)

Memory test (memtest86+, serial console 115200)

Windows 7 (loader) (on /dev/sda1)

Use the ↑ and ↓ keys to select which entry is highlighted.
Press enter to boot the selected OS, `e' to edit the commands
before booting or `c' for a command-line.

Perguntas



Obrigado!

- Eberty
- Eglom
- Matheus
- Patrick
- Prabaht

Referências

- <http://www.vmware.com/br/solutions/virtualization.html>
- <https://www.profissionaisti.com.br/2014/07/o-que-e-virtualizacao/>
- <http://www.infowester.com/virtualizacao.php>
- <http://www.tecmundo.com.br/web/1624-o-que-e-virtualizacao-.htm>
- <http://dicas.opsai.com.br/home/diversos/virtualizacao/tipos-de-virtualizacao>
- <https://www.vivaolinux.com.br/artigo/Virtualizacao-de-sistemas>
- http://www.gta.ufrj.br/grad/08_1/virtual/Virtualizaototalepara-virtualizao.html
- <https://ericksonricci.wordpress.com/2012/01/05/tutorial-instalando-e-configurando-vmware-player/>