

WEB SECURITY: **DVWA –** **VULNERABLE WEB APPLICATION**

RRC Polytech
Full Stack Web Development
Winnipeg, MB Canada

Motivation

- **Hackers are (or could be) actually good, pleasant and extremely intelligent people who could keep computer criminals on the run (run away, escaping).**

Ankit Fadia

Table of Contents 297

Course Overview 10

Tips and Fixes 12

Module 1 - Ethical Hacking 12

Module 2 - VM Setup 37

DVWA - Vulnerable Web Application 12

Videos 3

Passwords 25


Module 3 - SQL/XSS Injection 23

Module 4 - Privacy & 36

Download and unarchive DVWA zip file to a folder you can then use using WinSCP.

New ▾

Add Existing Activities ▾

 Bulk Edit

Download of Database Frontend Software ▾

 Link

Please download the free version of the SQLManager for MySQL different free tools, and there are different try before you buy tools from the link above.

Ensure you download and use the "free" version, not the trial version 30 days, and require you to purchase the software or discontinue. You can find alternative software for you to use, this isn't the only option to us for management of a MySQL/MariaDB database.

Installing Debian, setting up SQL, uploading DVWA ▾

 Word Document

DVWA-master ▾

 Zip Compressed File

Attacking DVWA ▾

Download Software from the Following Links

Download the following files:

SQL Manager:

<https://www.sqlmanager.net/tools/free>

-> For MySQL (<https://www.sqlmanager.net/products/mysql/manager/download/128>)

VirtualBox VM Client:

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

-> Windows hosts (<https://download.virtualbox.org/virtualbox/6.1.30/VirtualBox-6.1.30-148432-Win.exe>)

Linux OS - Debian Distribution:

<https://www.debian.org/distrib/>

-> Smaller net install ISO is fine: <https://www.debian.org/distrib/netinst>
(Choose your processor architecture link from there)

Kali (Linux) OS:

<https://cdimage.kali.org/kali-2021.4a/kali-linux-2021.4a-installer-amd64.iso>

Install VirtualBox VM

- Download the Word document
- Install VirtualBox

Download VirtualBox VM

Download VirtualBox

The VirtualBox Extension Pack is available for personal and educational use on this page under the PUEL license. The VirtualBox Extension Pack is also available under commercial or enterprise terms. By downloading, you agree to the terms and conditions of the respective license.

VirtualBox Platform Packages

VirtualBox 7.1.4 platform packages

- [Windows hosts](#)
- [macOS / Intel hosts](#)
- [macOS / Apple Silicon hosts](#)
- [Linux distributions](#)
- [Solaris hosts](#)
- [Solaris 11 IPS hosts](#)

Platform packages are released under the terms of the [GPL version 3](#)

VirtualBox Extension Pack VirtualBox 7.1.4 Extension Pack

This VirtualBox Extension Pack Personal Use and Educational License governs your access to and use of the VirtualBox Extension Pack. It does not apply to the VirtualBox base package and/or its source code, which are licensed under version 3 of the GNU General Public License "GPL").

See our [FAQ](#) for answers to common questions.

VirtualBox Extension Pack Personal Use and Educational License (PUEL)

[PUEL License
FAQ](#)

[PUEL License
Text](#)

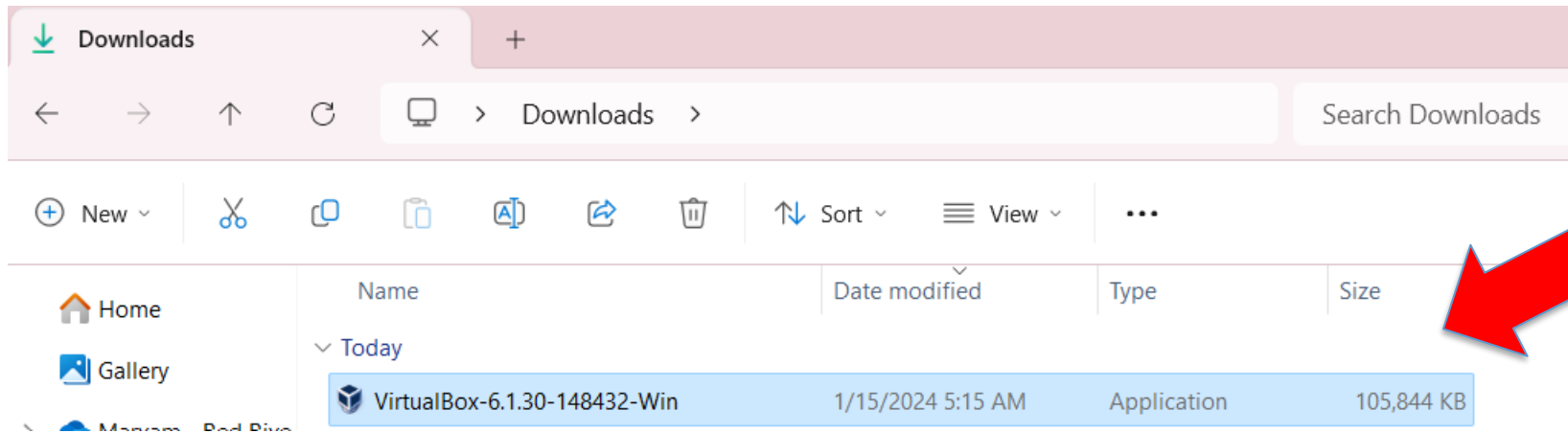
[Accept and download](#)

Download Virtualbox

➤ Installing virtualbox

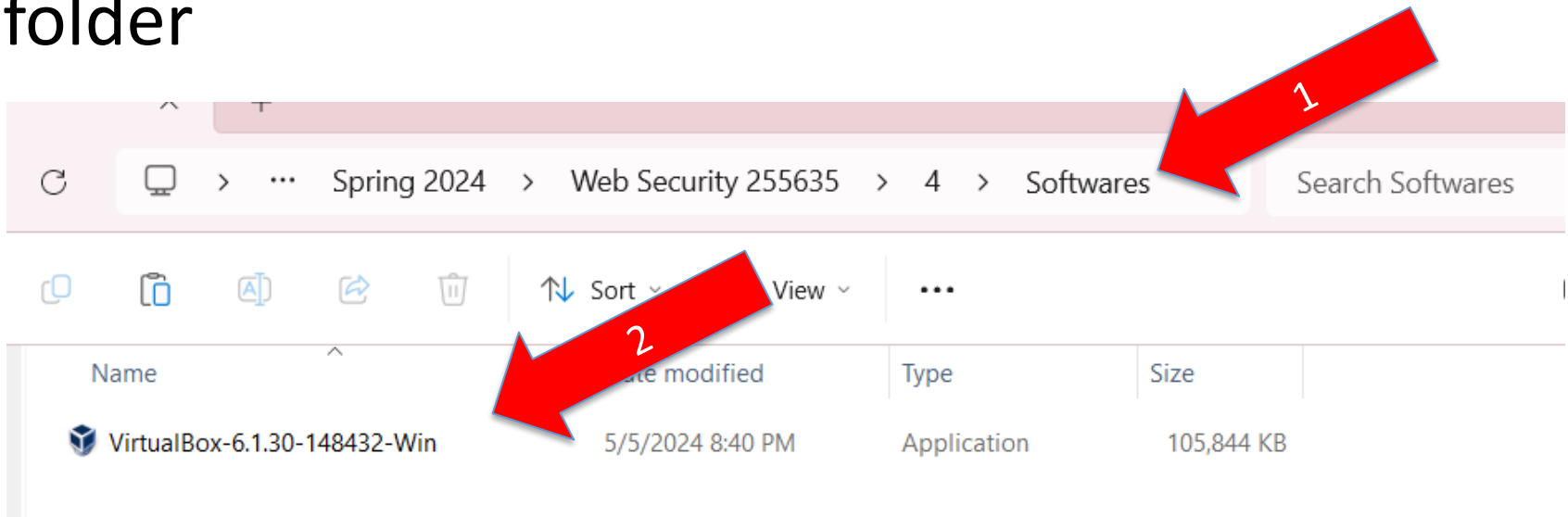
- Google - > virtualbox download
- Click on the second link “Downloading Debian”
- VirtualBox 7.1.4 platform packages Windows hosts -
> the latest VirtualBox

Download VirtualBox- ~~6.1.30~~ (7.1.4)



Create a folder, rename it as “Softwares”

- Paste all your Web Security Software in this folder



Download Debian

- Google
- Type: download debian

Download Debian

➤ Installing Debian

- Google - > Debian download
- Click on the **second link** “Downloading Debian”
- This is Debian 12 for 64-bit PC (amd64) Debian 12.8.0 amd64-netinst.iso. - > the latest Debian

Downloading Debian

This is Debian 12, codenamed *bookworm*, netinst, for 64-bit PC (amd64) [debian-12.4.0-amd64-netinst.iso](#).

Download checksum: [SHA512SUMS](#) [Signature](#)



Important: Make sure to [verify your download with the checksum](#).





download debian



All

Videos

Images

News

Shopping

Web

Books

More

Tools



Debian

<https://www.debian.org> › distrib

Download Debian

Sep 1, 2024 — You can try **Debian** by booting a live system from a CD, DVD or USB key without installing any files to the computer. You can also run the ...

Download via HTTP/FTP

To install Debian on a machine without an Internet connection, it ...

CD

It features easy mirror selection and "upgrading" of older images ...

Installing Debian via the Internet

Tiny CDs, flexible USB sticks, etc. For advanced users: You can ...

Debian-Installer

For downloading full CD and DVD images the use of jigdo is ...

Obtenir Debian

Obtenir Debian · Télécharger une image d'installation · Essayer ...

[More results from debian.org »](#)



Debian

<https://www.debian.org> › download

Downloading Debian

Use the Second Link for Downloading Debian

➤ Use the second link:

Installing Debian via the Internet

Tiny CDs, flexible USB sticks, etc. For advanced users: You can ...

Debian-Installer

For downloading full CD and DVD images the use of jigdo is ...

Obtenir Debian

Obtenir Debian · Télécharger une image d'installation · Essayer ...

[More results from debian.org »](#)



Debian

<https://www.debian.org> > download ⋮

Downloading Debian

May 21, 2024 — **Debian** installer ISOs are hybrid images, which means they can be written directly to CD/DVD/BD media OR to USB sticks. Other Installers.

[Download an installation image](#) · [Debian CD FAQ](#) · [Verifying authenticity](#)

Download Debian with the postfix “-amd64-netinst.iso”



https://www.debian.org/download



[Blog](#) [Micronews](#) [Planet](#)

/ downloading debian

Downloading Debian

This is Debian 12, codenamed *bookworm*, netinst, for 64-bit PC (amd64) [debian-12.8.0-amd64-netinst.iso](#).

Download checksum: [SHA512SUMS](#) [Signature](#)

Debian installer ISOs are hybrid images, which means they can be written directly to CD/DVD/BD media OR to [USB sticks](#).

Other Installers

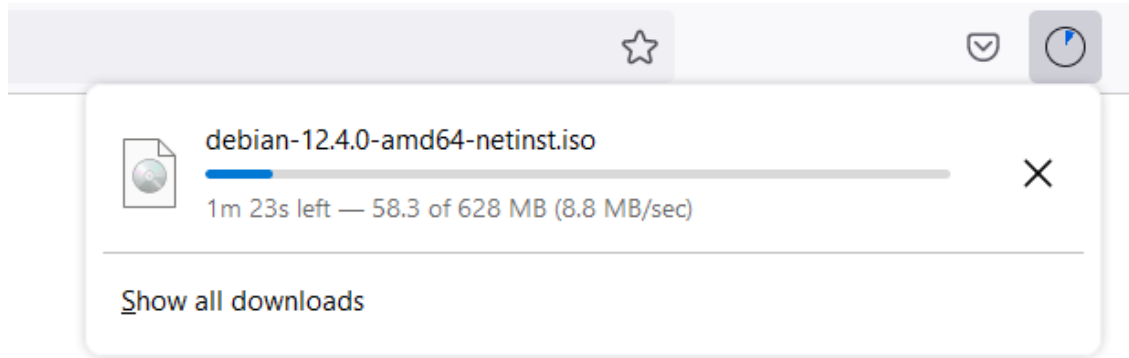
Other installers and images, such as live systems, offline installers for systems without a network connection, installers for other CPU architectures, or

Related Links

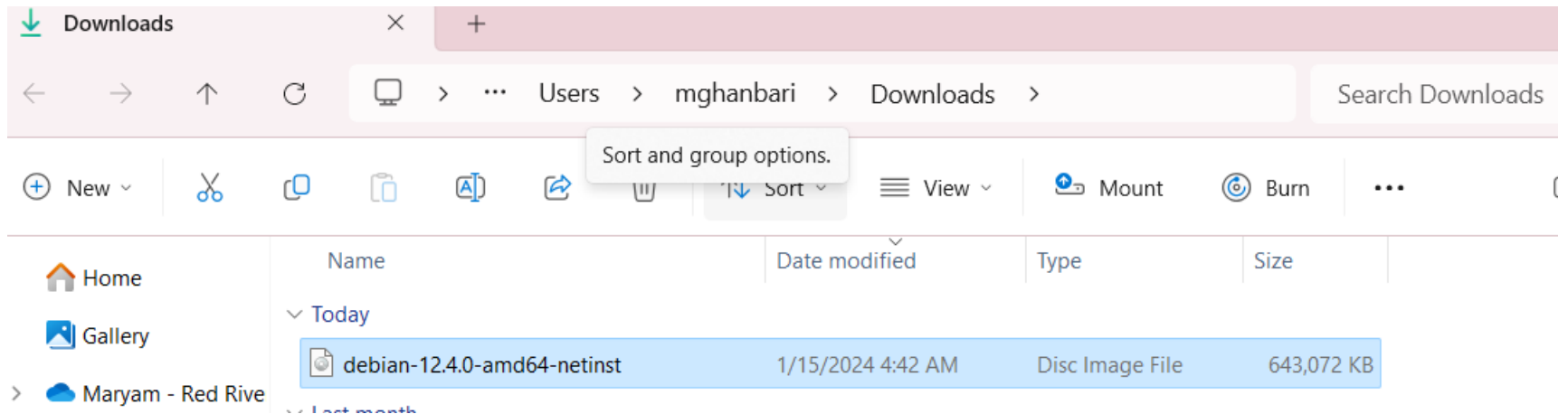
[Installation Guide](#)

[Release Notes](#)

Debian

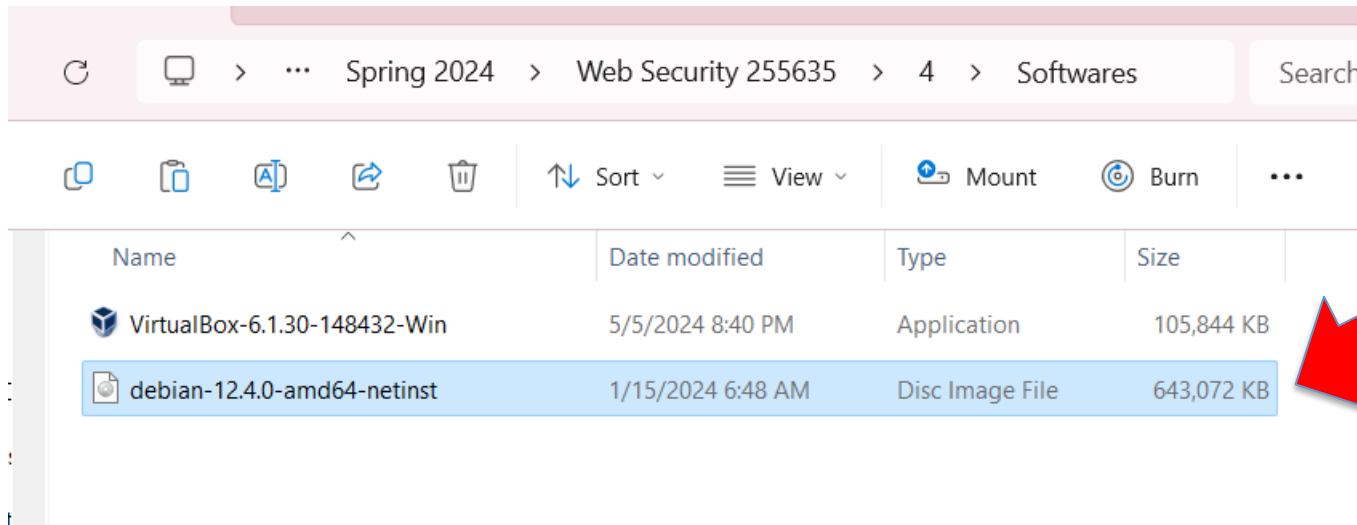


Debian



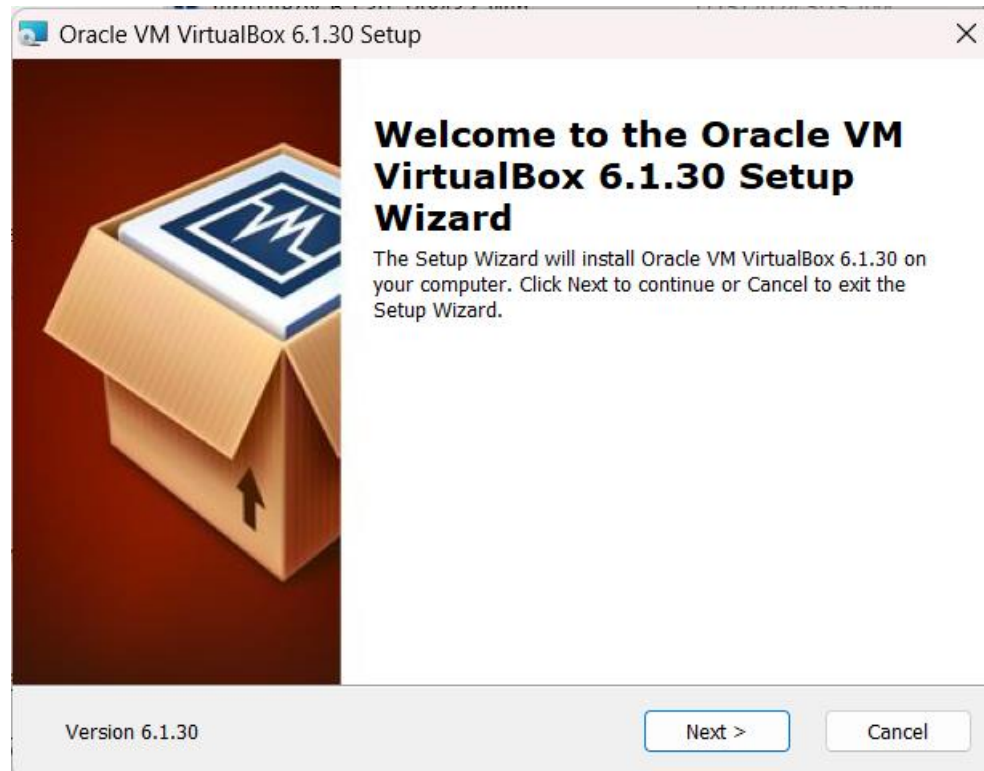
Download Debian

- Google:
 - Downloading Debian

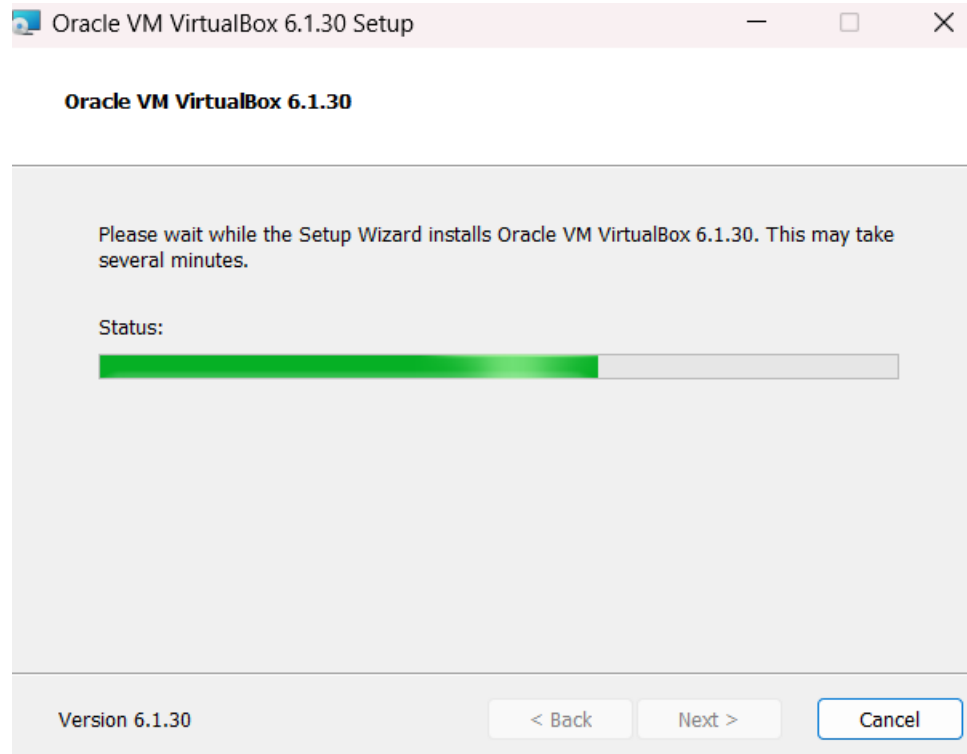


Installing Virtual Box

VirtualBox



VirtualBox

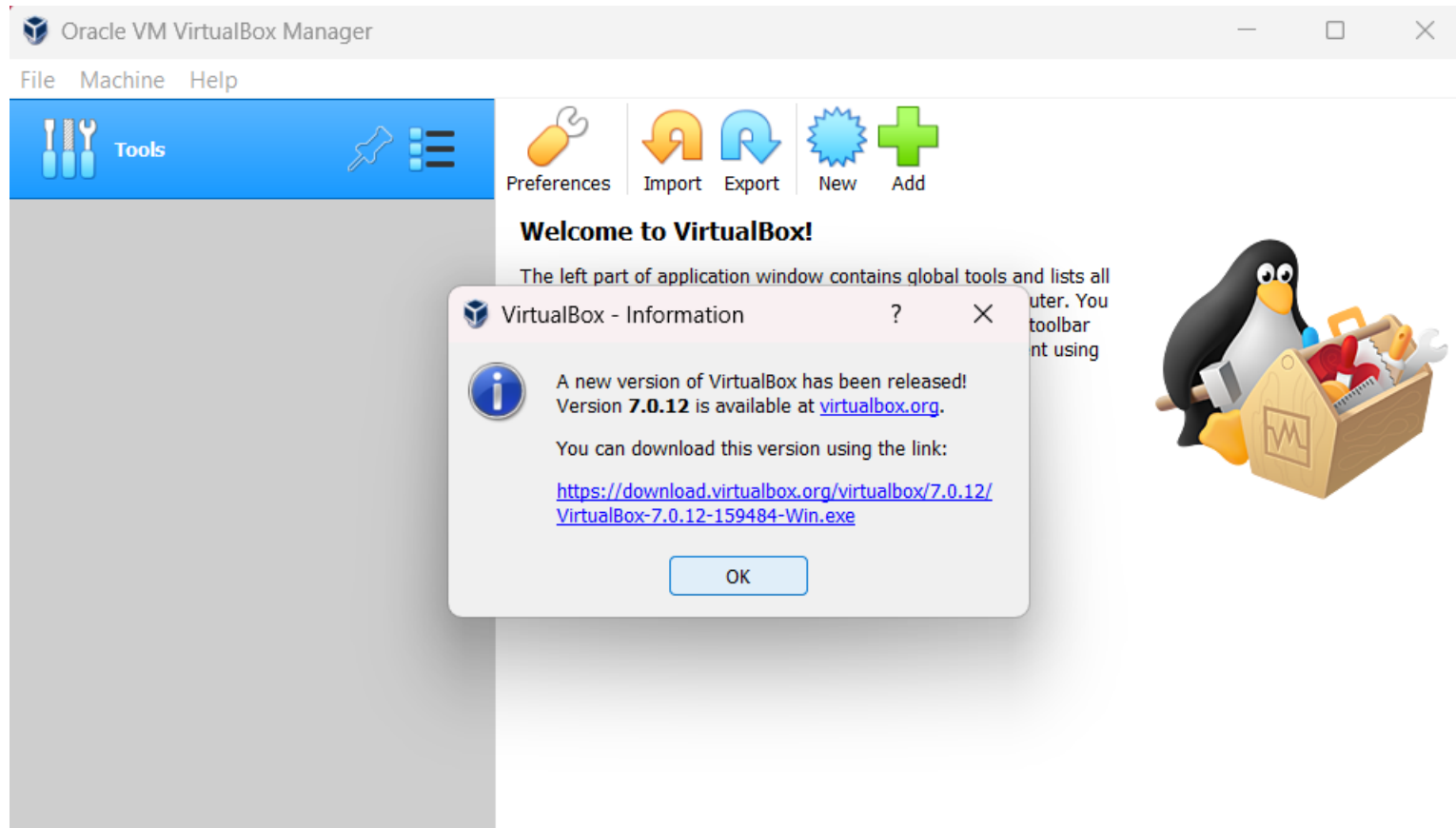


VirtualBox



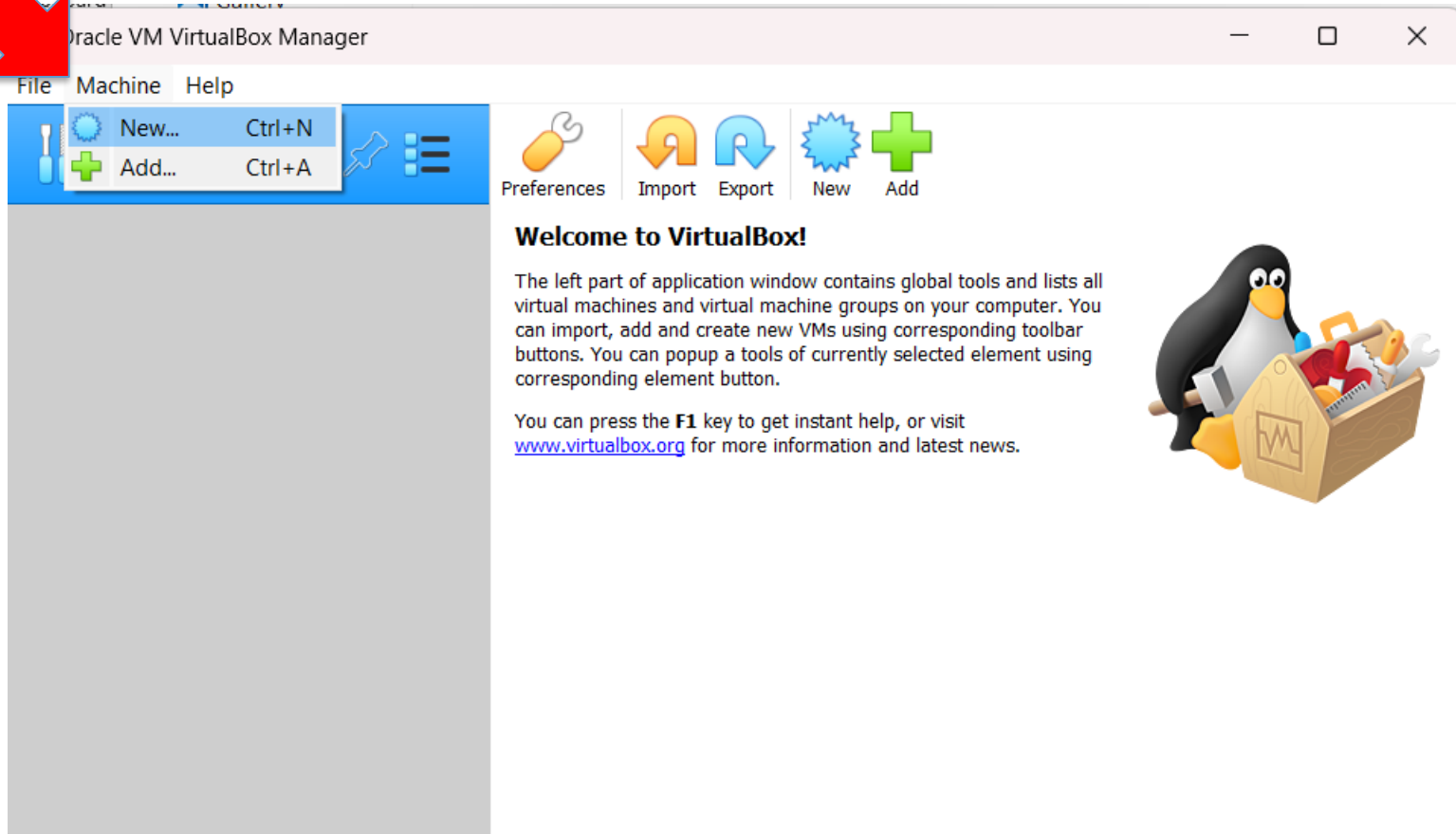
Installing Debian

Debian



Debian

Create new virtual machine



Debian

Create Virtual Machine

Virtual machine Name and Operating System

Please choose a descriptive name and destination folder for the new virtual machine. The name you choose will be used throughout VirtualBox to identify this machine. Additionally, you can select an ISO image which may be used to install the guest operating system.

Name: ✓

Folder:

ISO Image:

Edition:

Type: 64

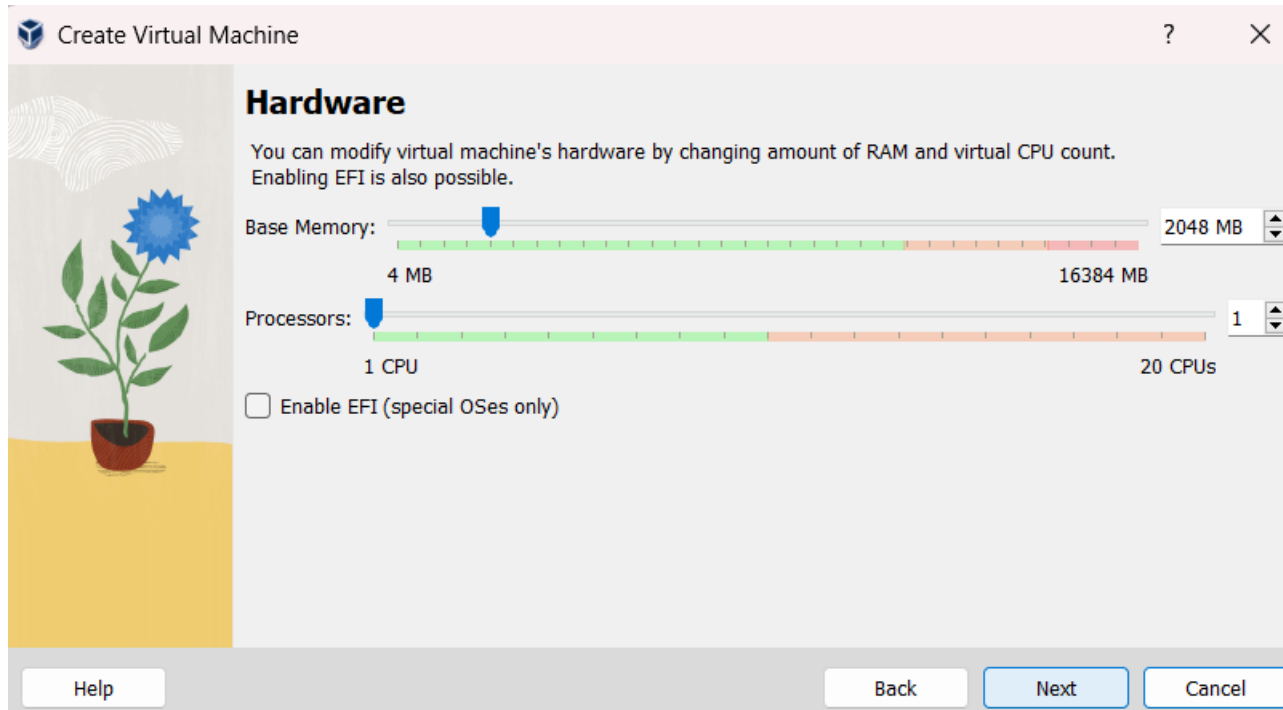
Version:

☐ Skip Unattended Installation

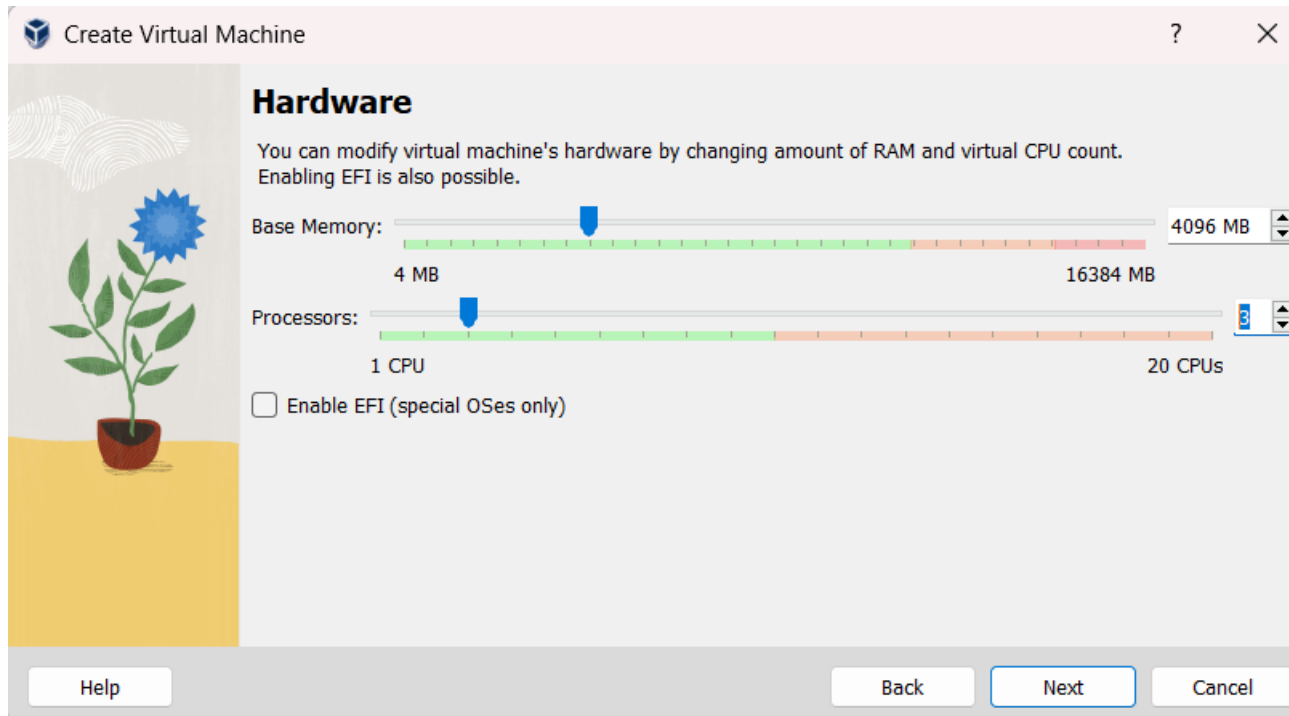
No ISO image is selected, the guest OS will need to be installed manually.

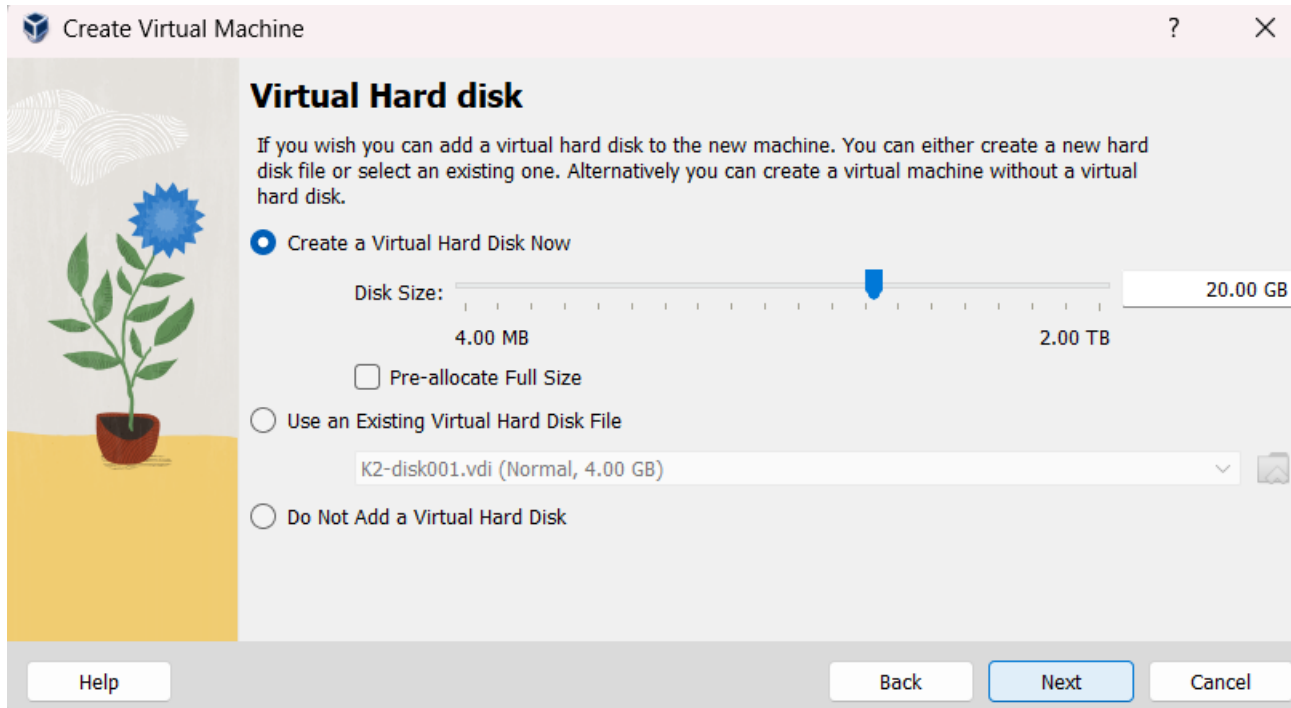
[Help](#) [Expert Mode](#) [Back](#) [Next](#) [Cancel](#)

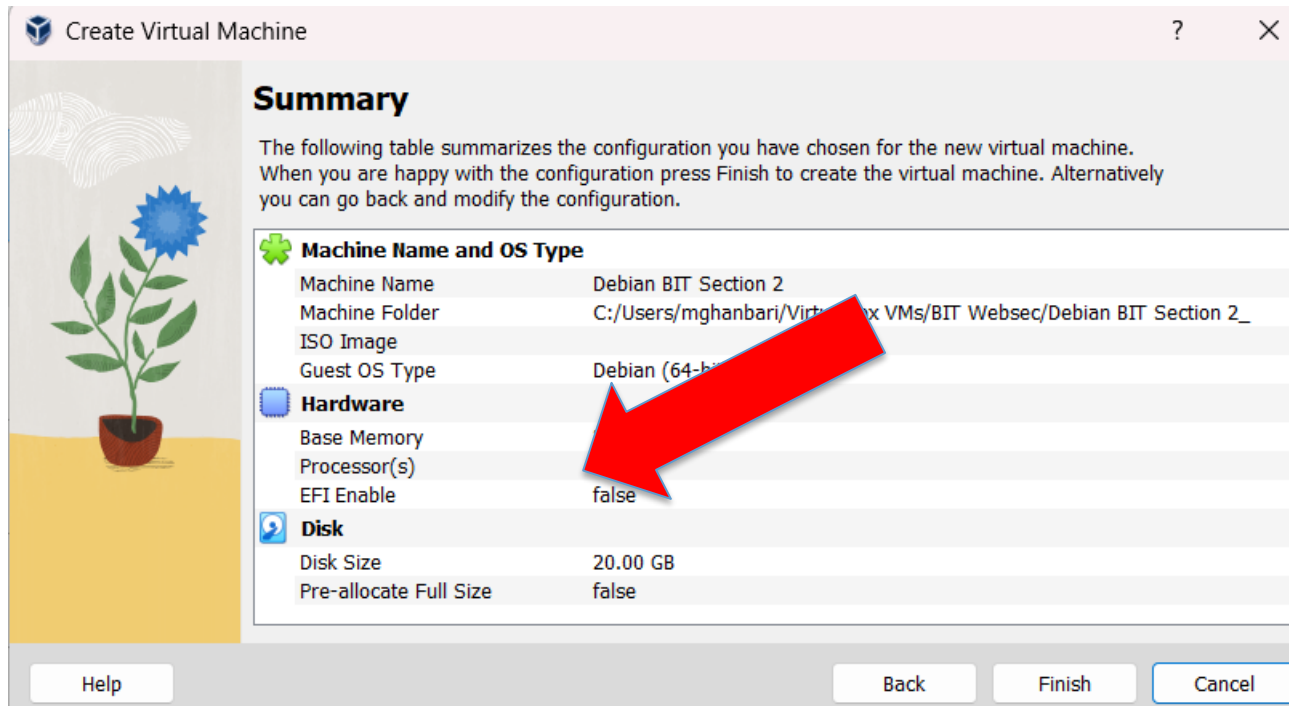
Error



Maryam Computer







Setup Debian

The screenshot displays the Oracle VM VirtualBox Manager interface. On the left, a list of VMs shows "Debian BIT Section 2" with a "Powered Off" status. The main pane shows the settings for this VM, with the "System" tab selected. A red arrow points to the "System" tab. The "Preview" window on the right shows the Debian logo and the text "Debian BIT Section 2".

General

- Name: Debian BIT Section 2
- Operating System: Debian (64-bit)
- Groups: BIT Websec

System

- Base Memory: 4096 MB
- Processors: 3
- Boot Order: Floppy, Optical, Hard Disk
- Acceleration: Nested Paging, KVM Paravirtualization

Display

- Video Memory: 16 MB
- Graphics Controller: VMSVGA
- Remote Desktop Server: Disabled
- Recording: Disabled

Storage

- Controller: IDE
- IDE Secondary Device 0: [Optical Drive] Empty
- Controller: SATA
- SATA Port 0: Debian BIT Section 2.vdi (Normal, 8.00 GB)

Audio

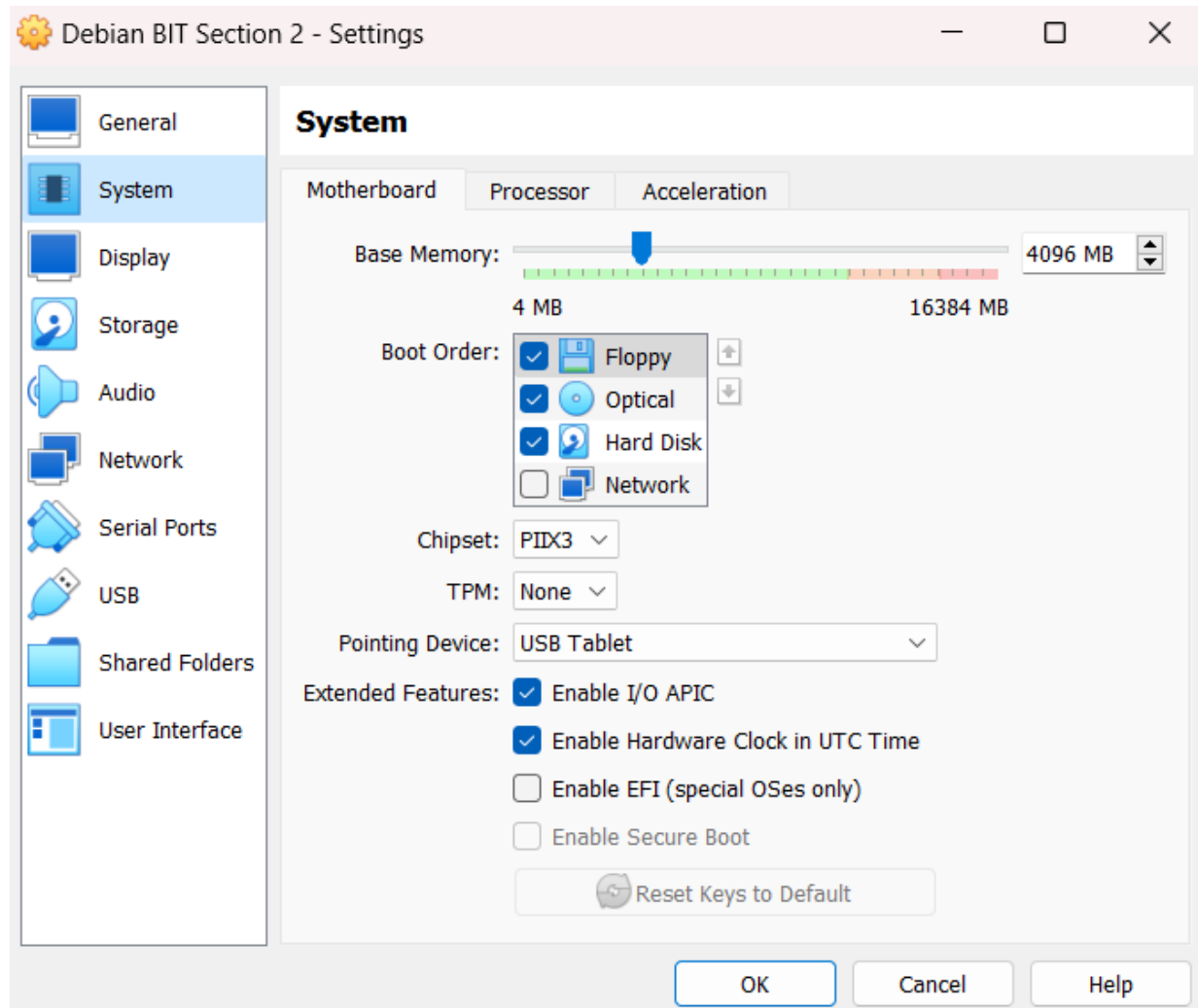
- Host Driver: Windows DirectSound
- Controller: ICH AC97

Network

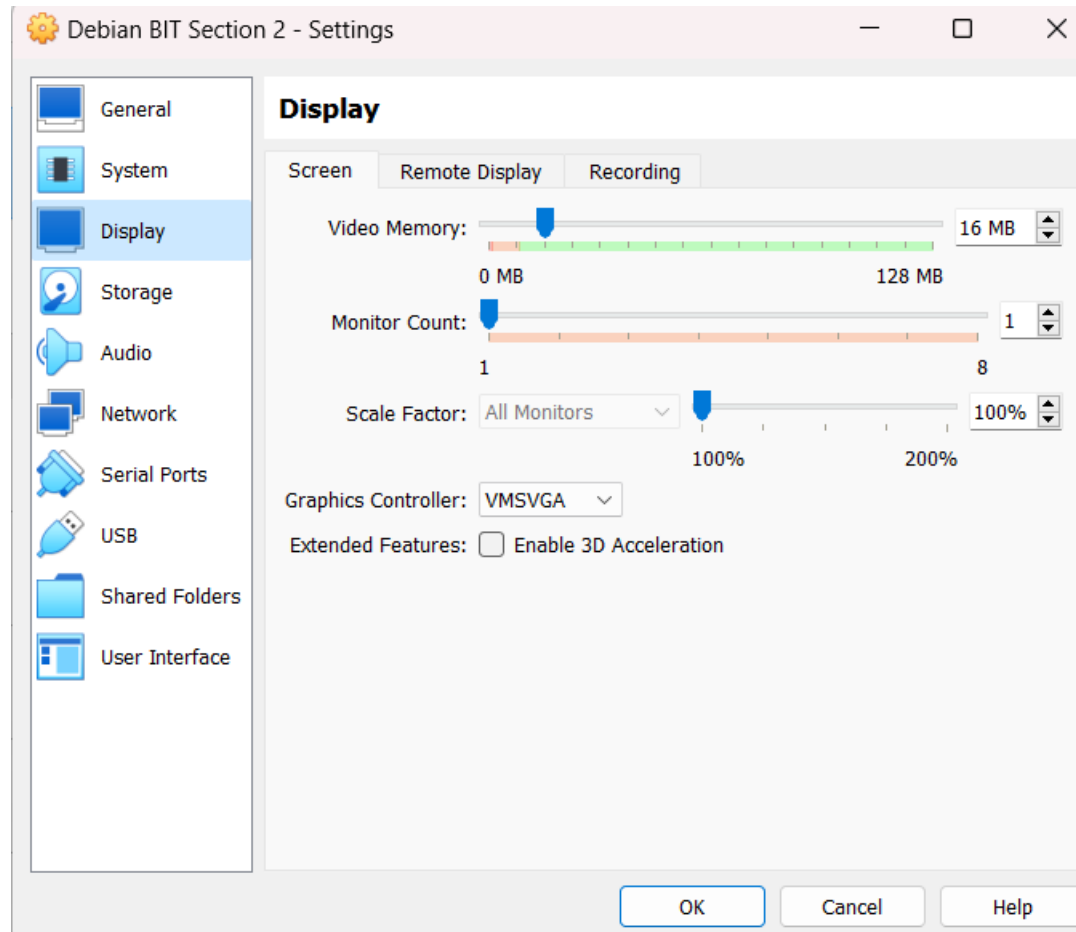
USB

- USB Controller: OHCI
- Device Filters: 0 (0 active)

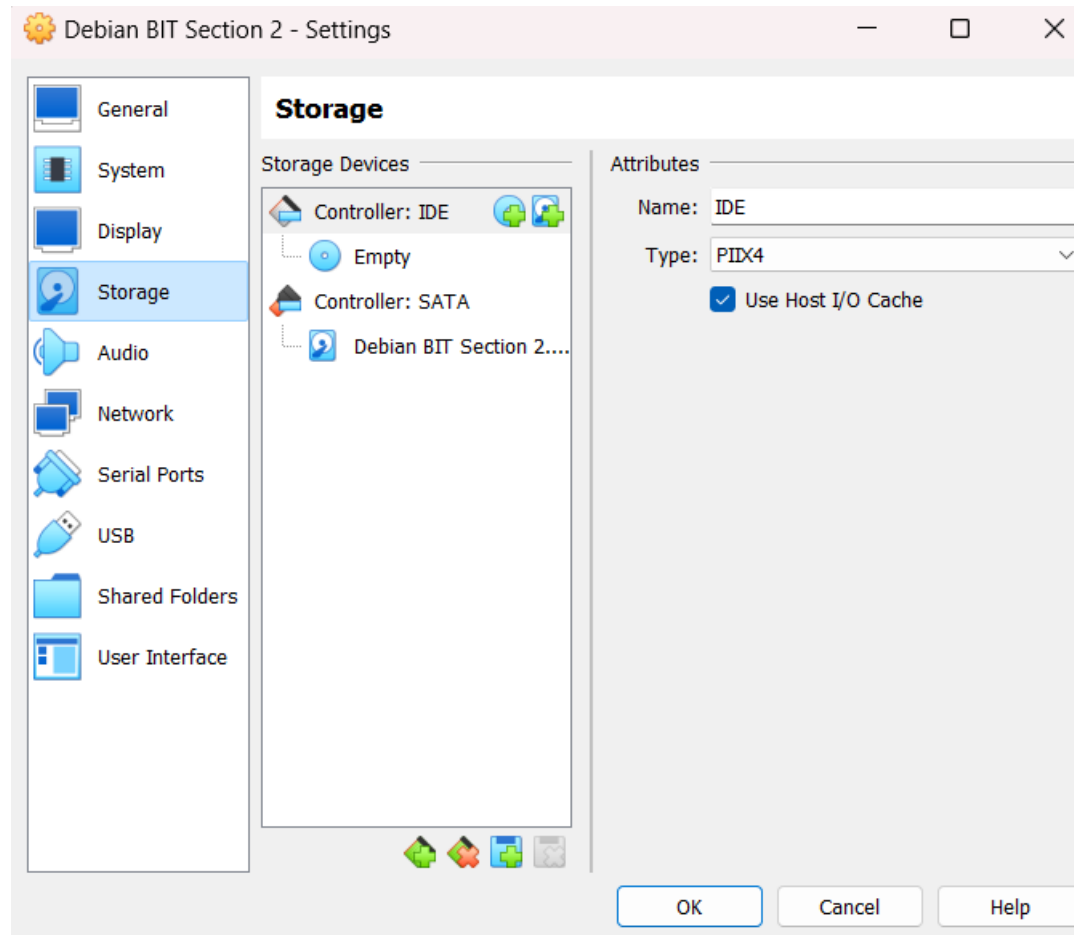
Debian -> System



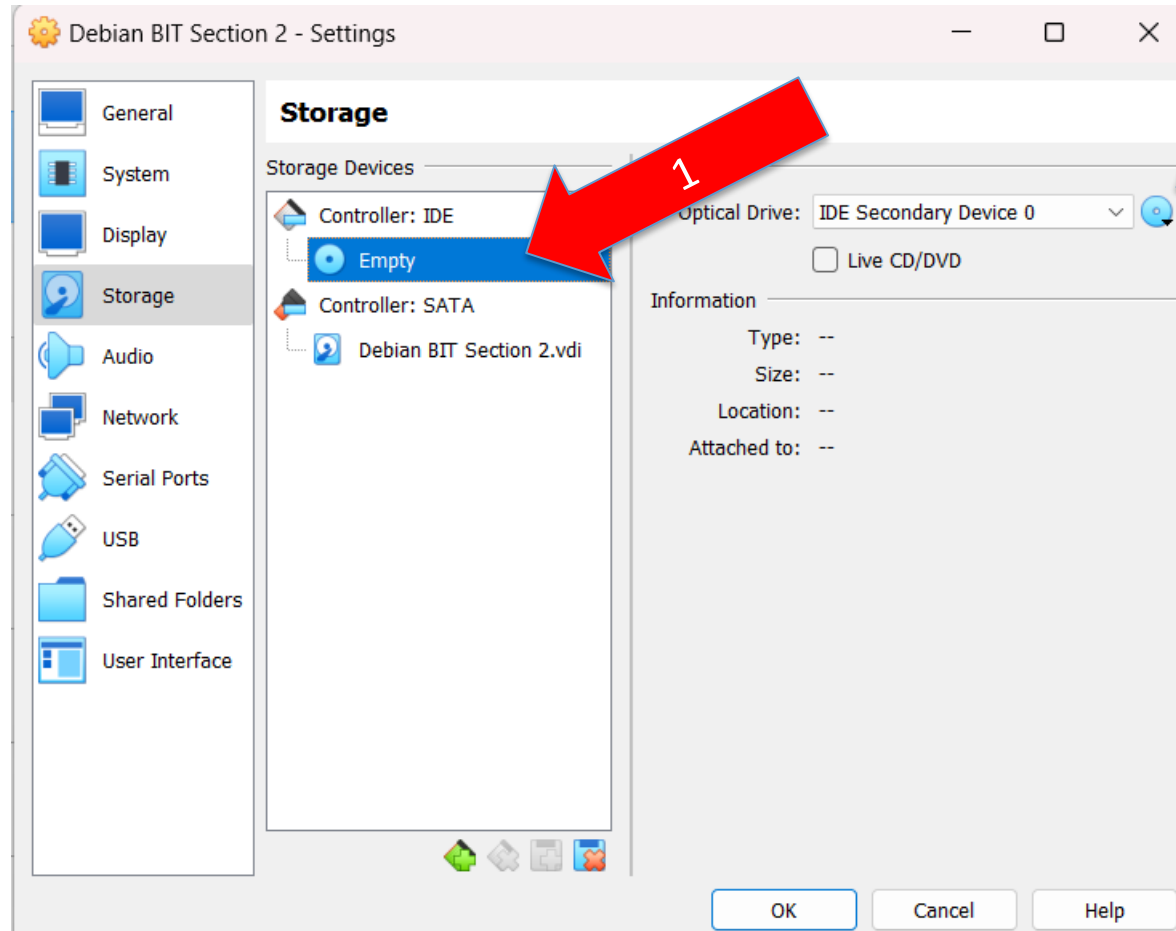
Debian -> Display



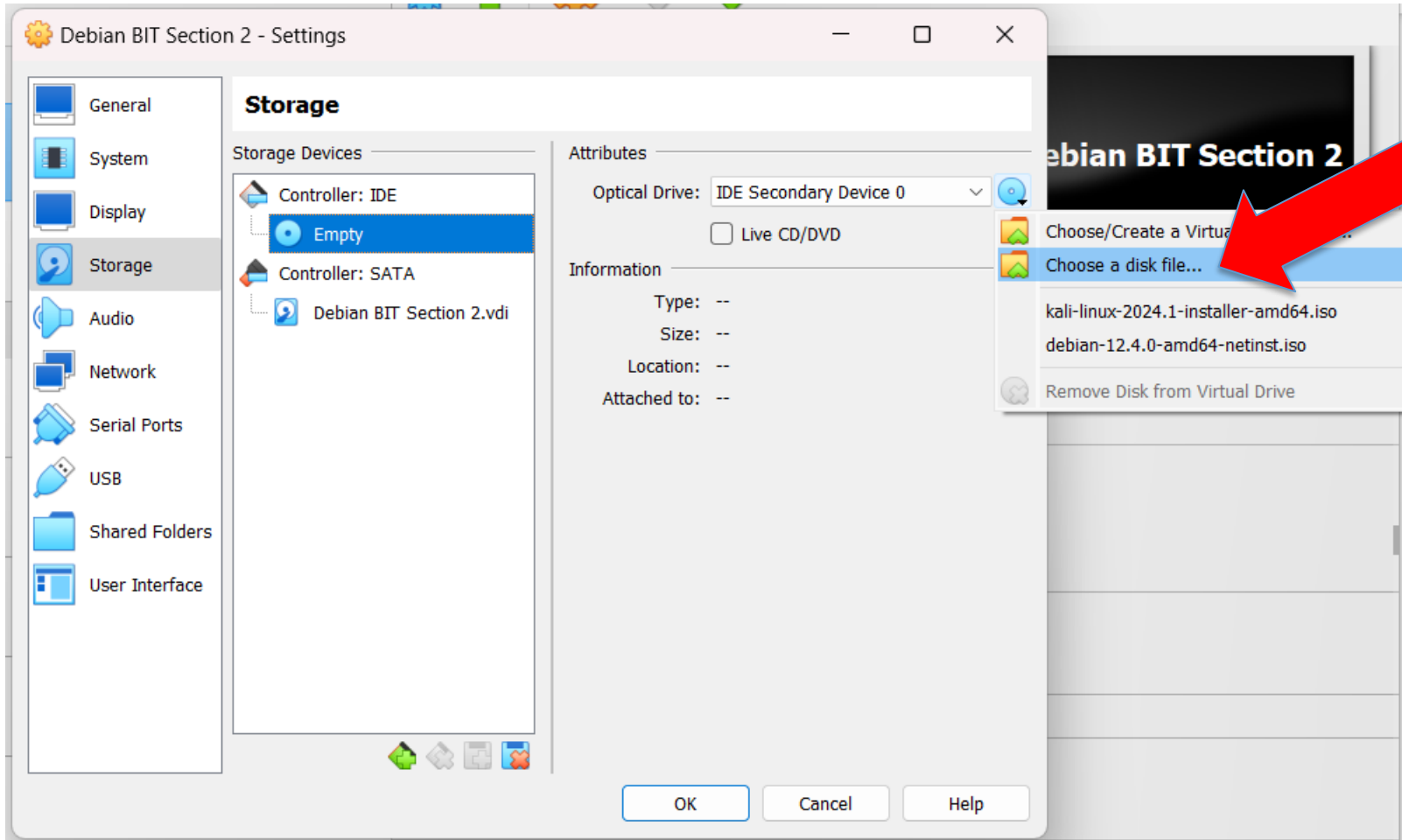
Debian -> Storage (we modify it)

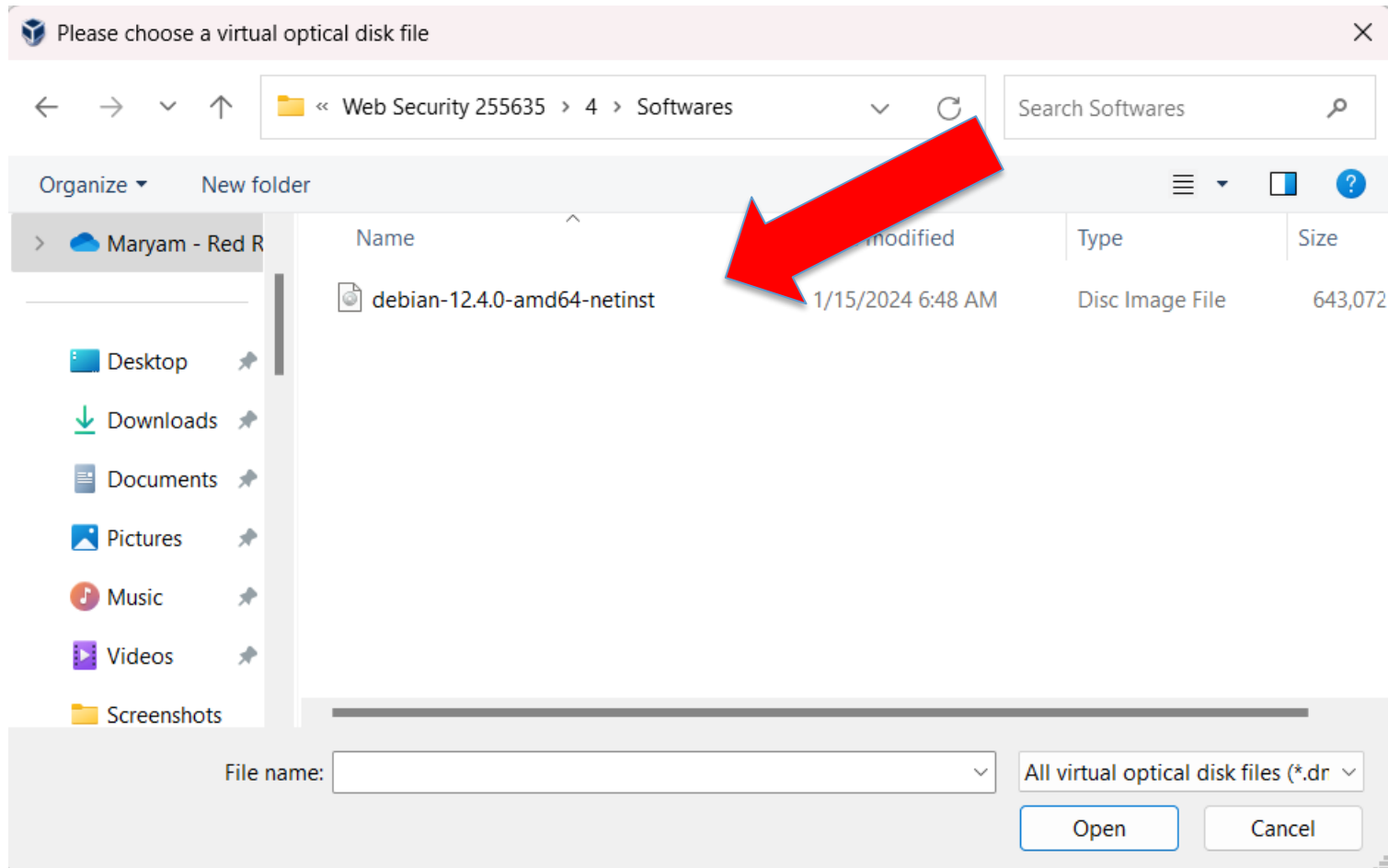


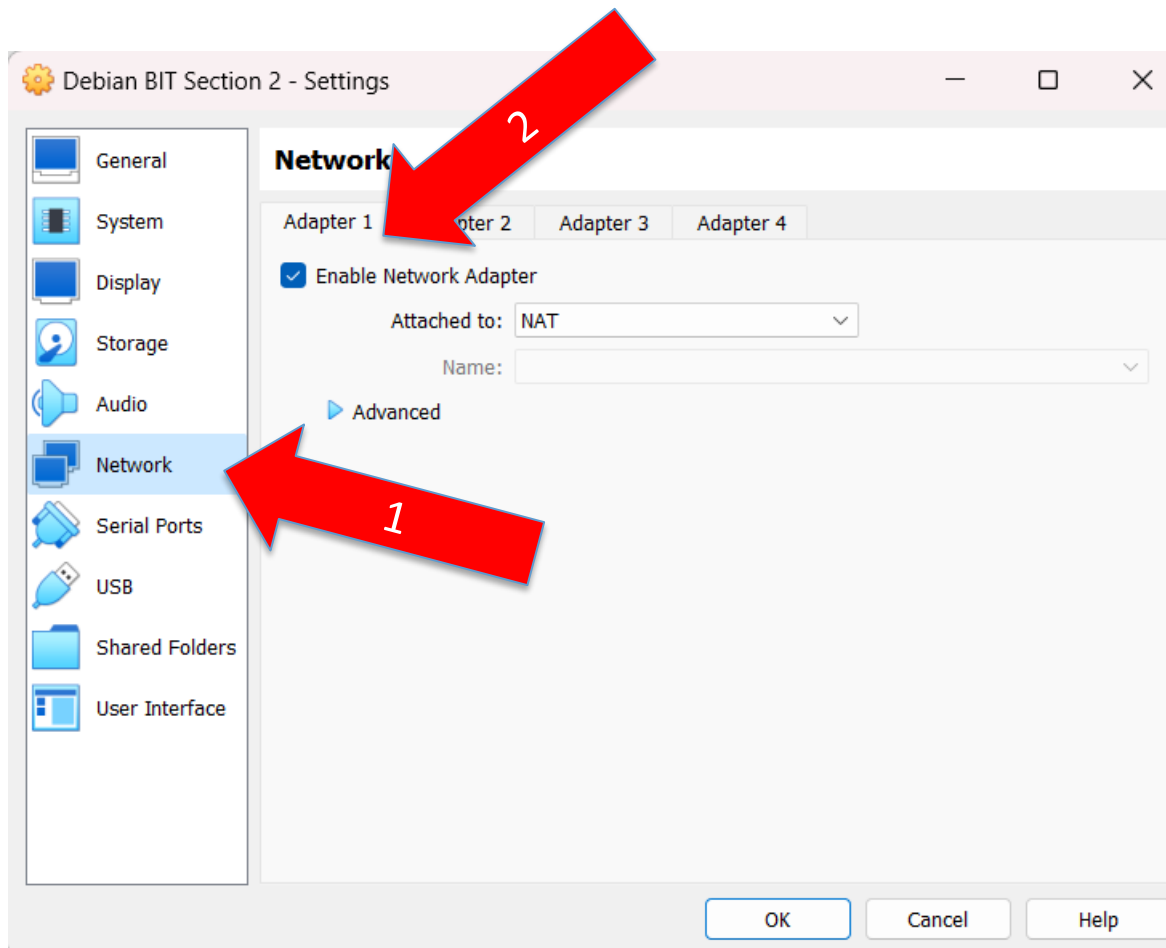
Debian -> Storage -> click on empty

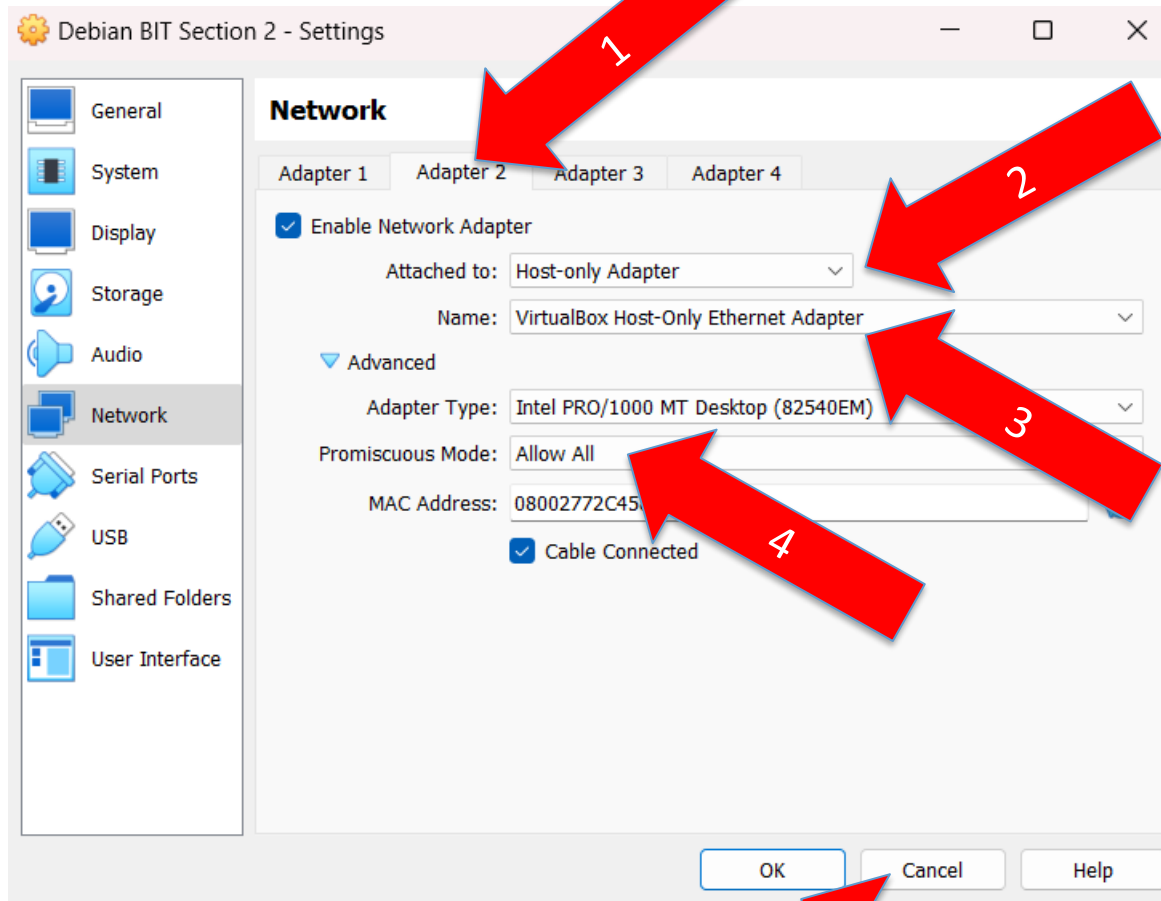


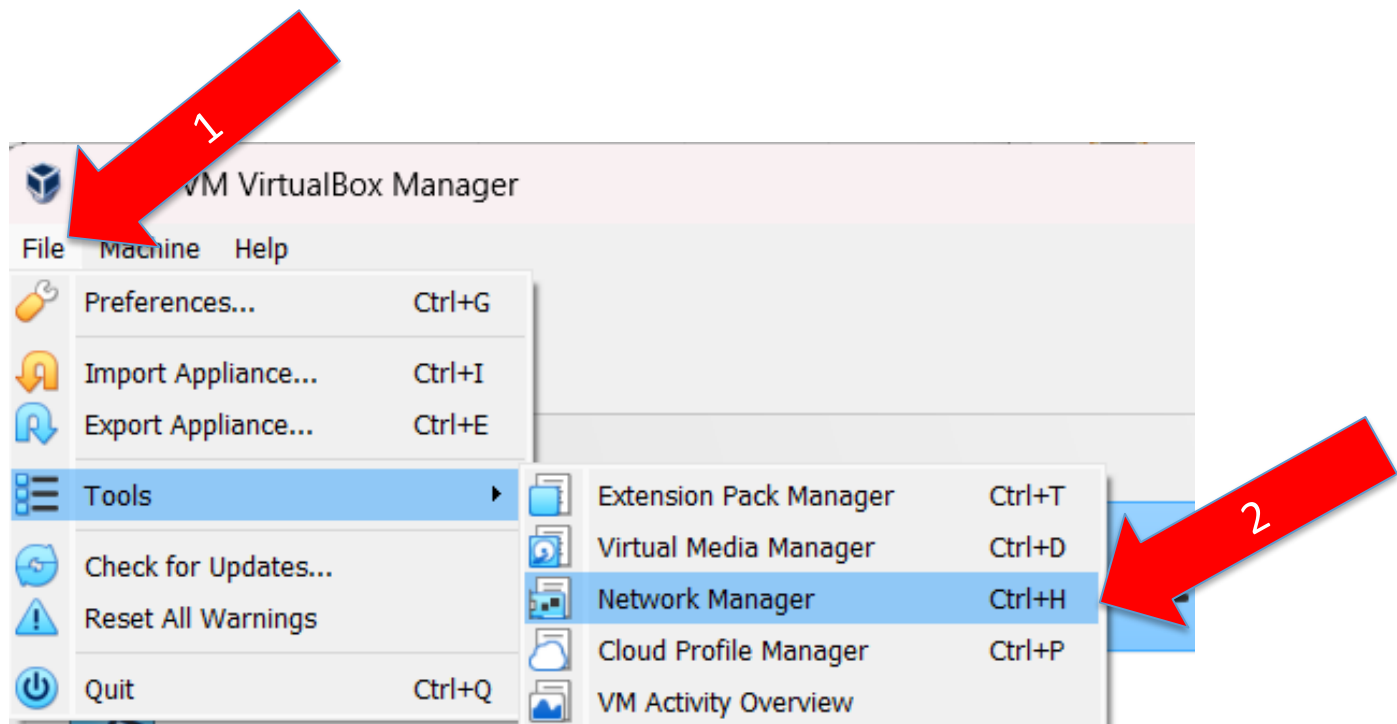
Debian -> Storage ->











Oracle VM VirtualBox Manager

File Machine Network Help

Tools

BIT Websec

Debian BIT Section 2
Powered Off

Create Remove Properties

Host-only Networks NAT Networks Cloud Networks

Name	IPv4 Prefix	IPv6 Prefix	DHCP Server
VirtualBox Host-Only Ethernet Adapter	192.168.56.1/24		Enabled

Adapter DHCP Server

☐ Configure Adapter Automatically

☒ Configure Adapter Manually

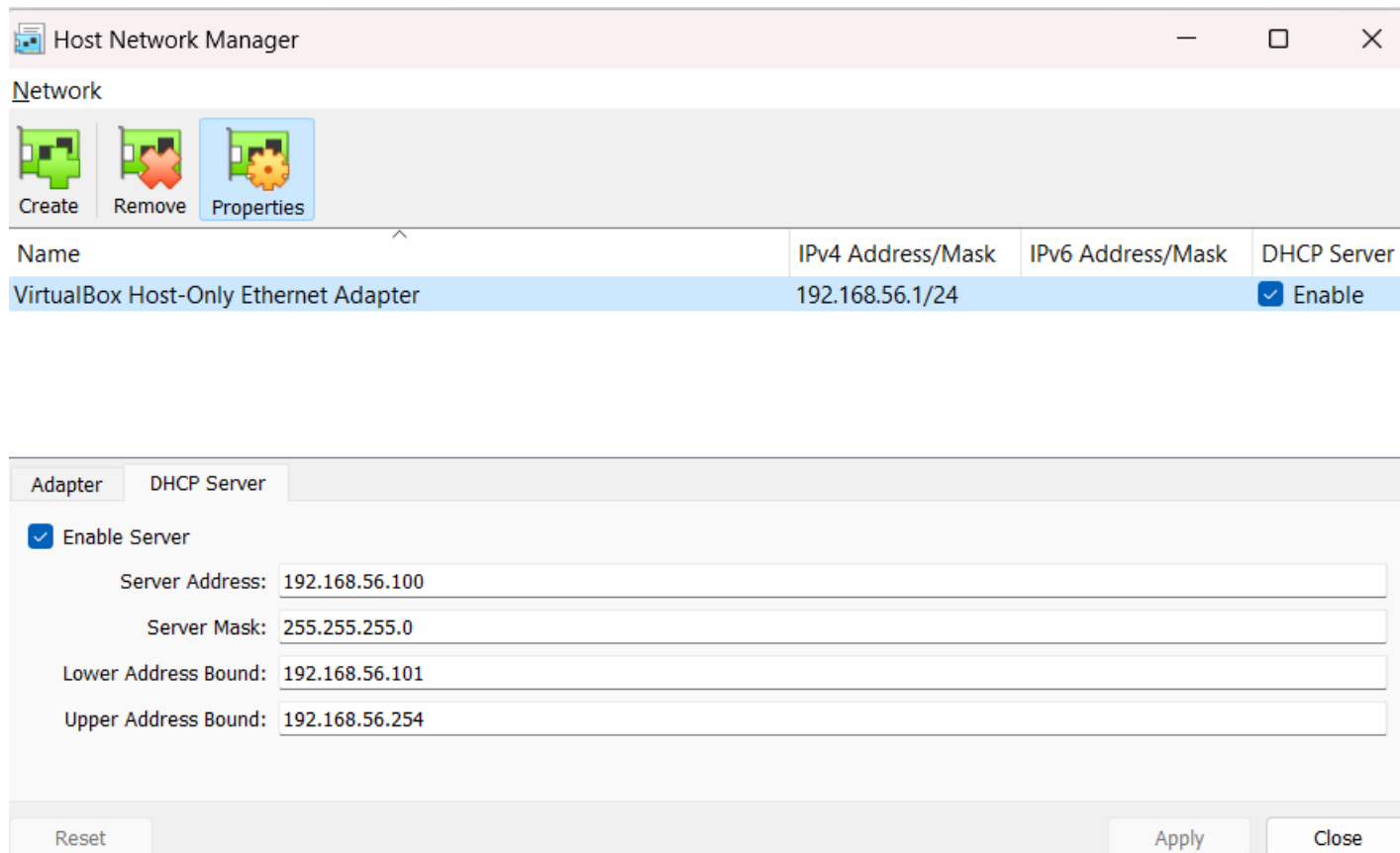
IPv4 Address: 192.168.56.1

IPv4 Network Mask: 255.255.255.0

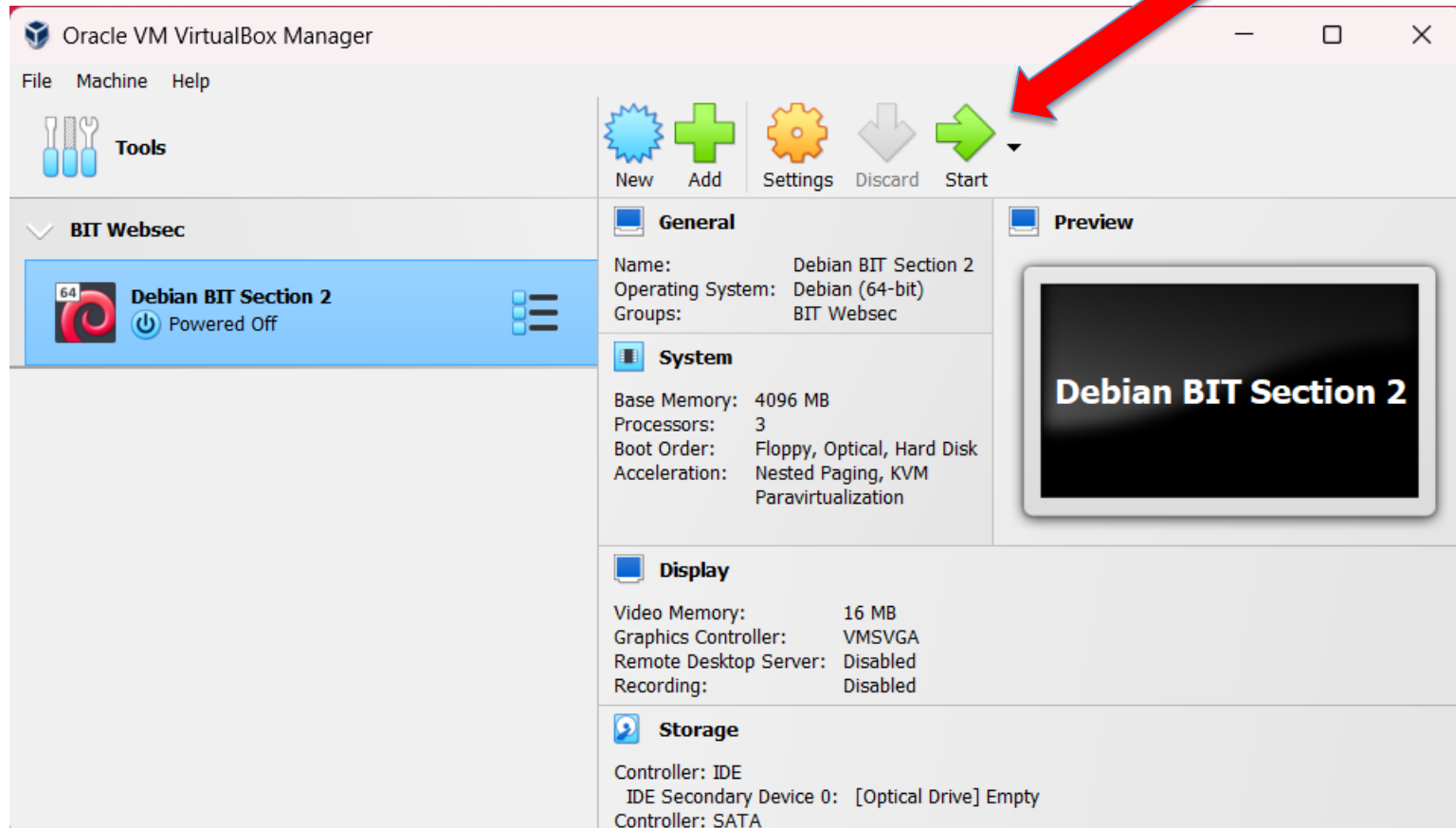
IPv6 Address: fe80::c200:b9cb:e707:8344

IPv6 Prefix Length: 64

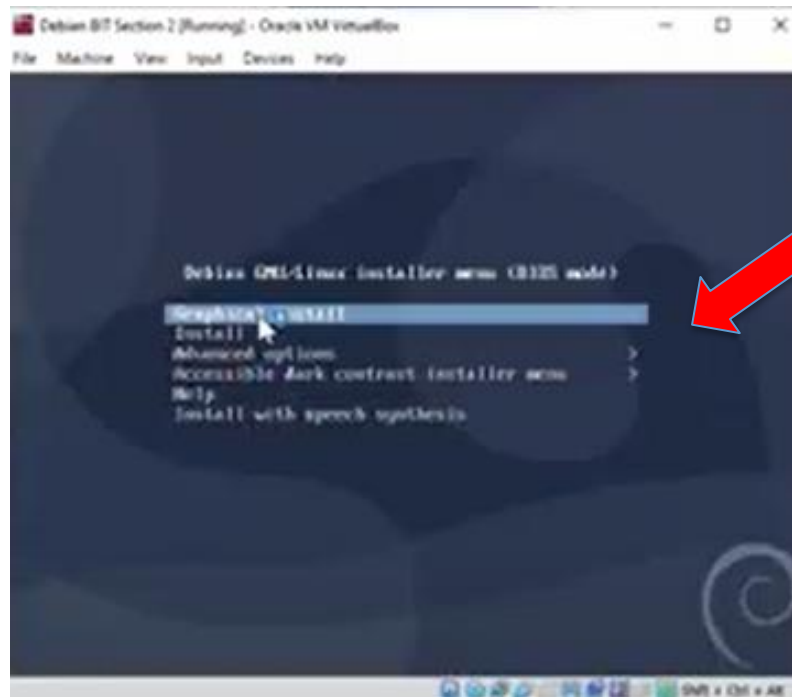
Apply Reset



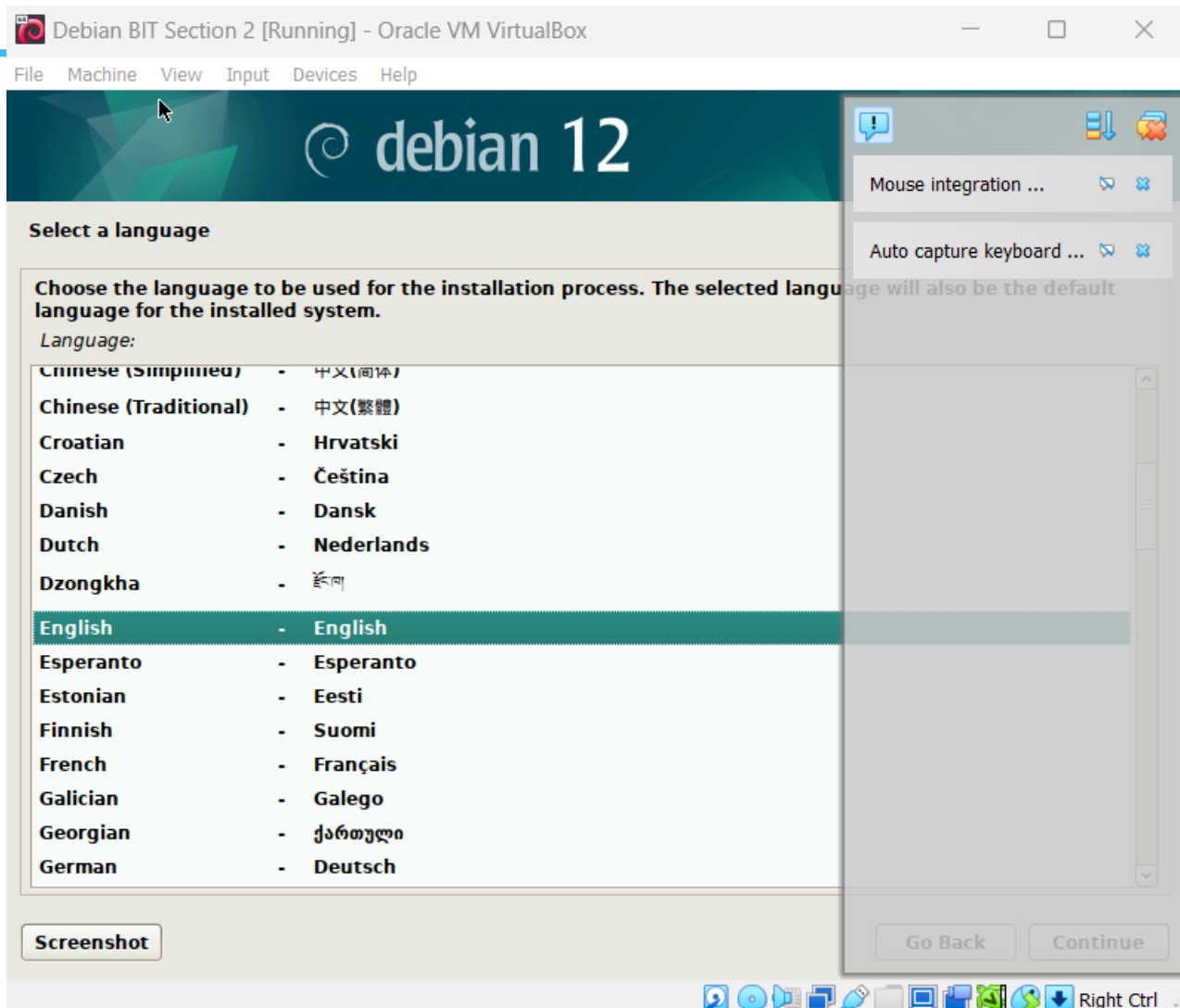
Debian



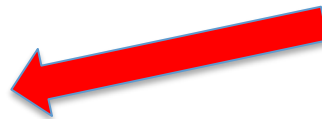




Graphical Install

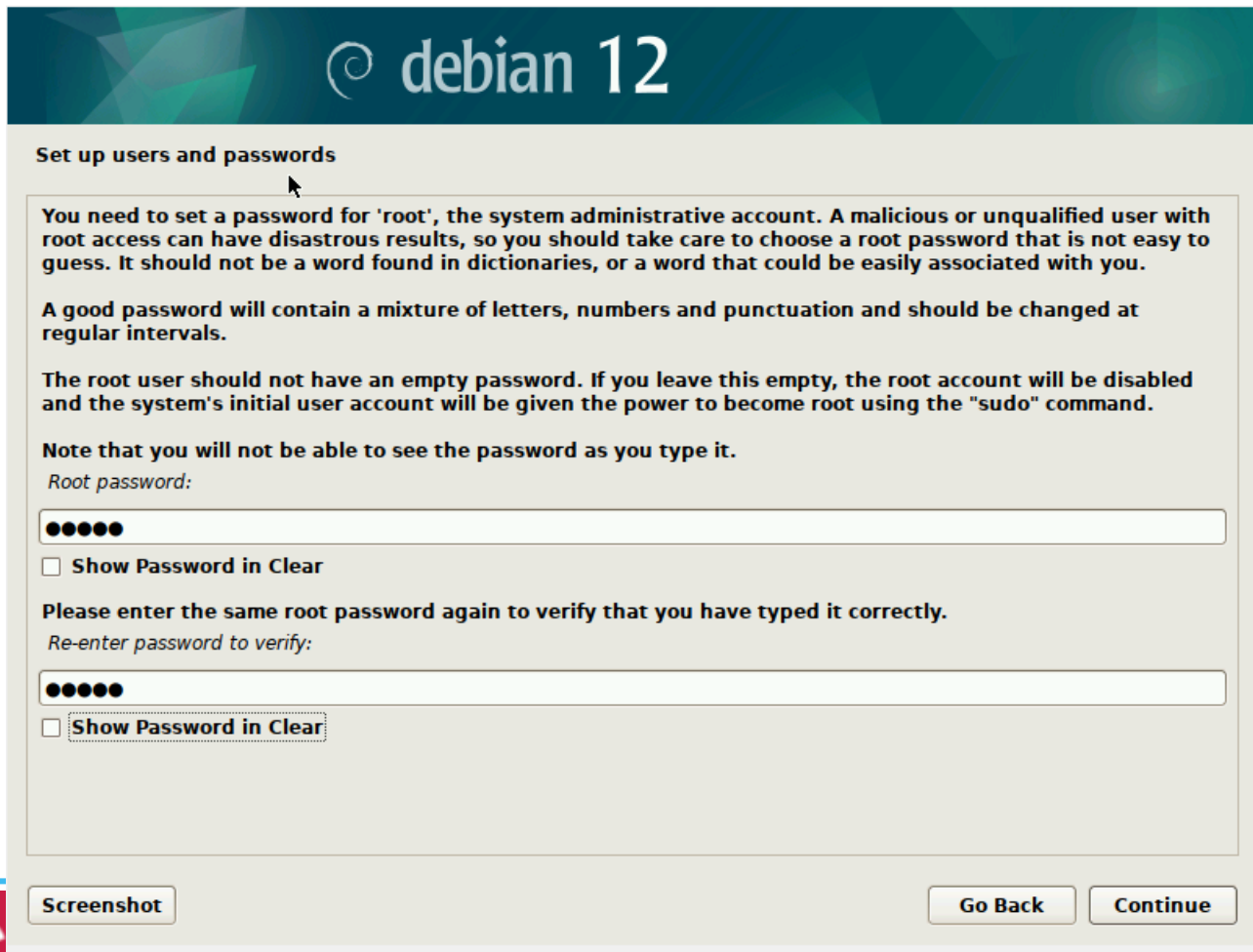


-
- Canada
 - American English
 - Configure the Network: First
 - NAT
 - Name: deb
 - Domain name: opsys.bit
 - Password: password



Root Password: password

➤ Root password : password



The image shows a screenshot of the Debian 12 installation process. At the top, there's a header with the Debian logo and 'debian 12'. Below that, the section is titled 'Set up users and passwords'. The main text explains the importance of setting a strong root password, warning that a weak password could lead to disastrous results. It suggests a password with a mix of letters, numbers, and punctuation, and advises changing it regularly. A note states that the root user must have a non-empty password, otherwise it will be disabled and the 'sudo' command will be used for root access. The screen then prompts for the 'Root password:' with a masked input field (dots). Below the input field is a checkbox labeled 'Show Password in Clear'. The next step is to 'Re-enter password to verify:' with another masked input field and a 'Show Password in Clear' checkbox. At the bottom, there are three buttons: 'Screenshot', 'Go Back', and 'Continue'.

© debian 12

Set up users and passwords

You need to set a password for 'root', the system administrative account. A malicious or unqualified user with root access can have disastrous results, so you should take care to choose a root password that is not easy to guess. It should not be a word found in dictionaries, or a word that could be easily associated with you.

A good password will contain a mixture of letters, numbers and punctuation and should be changed at regular intervals.

The root user should not have an empty password. If you leave this empty, the root account will be disabled and the system's initial user account will be given the power to become root using the "sudo" command.

Note that you will not be able to see the password as you type it.

Root password:

●●●●●

☐ Show Password in Clear

Please enter the same root password again to verify that you have typed it correctly.

Re-enter password to verify:

●●●●●

☐ Show Password in Clear

Screenshot Go Back Continue



Set up users and passwords

A user account will be created for you to use instead of the root account for non-administrative activities.

Please enter the real name of this user. This information will be used for instance as default origin for emails sent by this user as well as any program which displays or uses the user's real name. Your full name is a reasonable choice.

Full name for the new user:

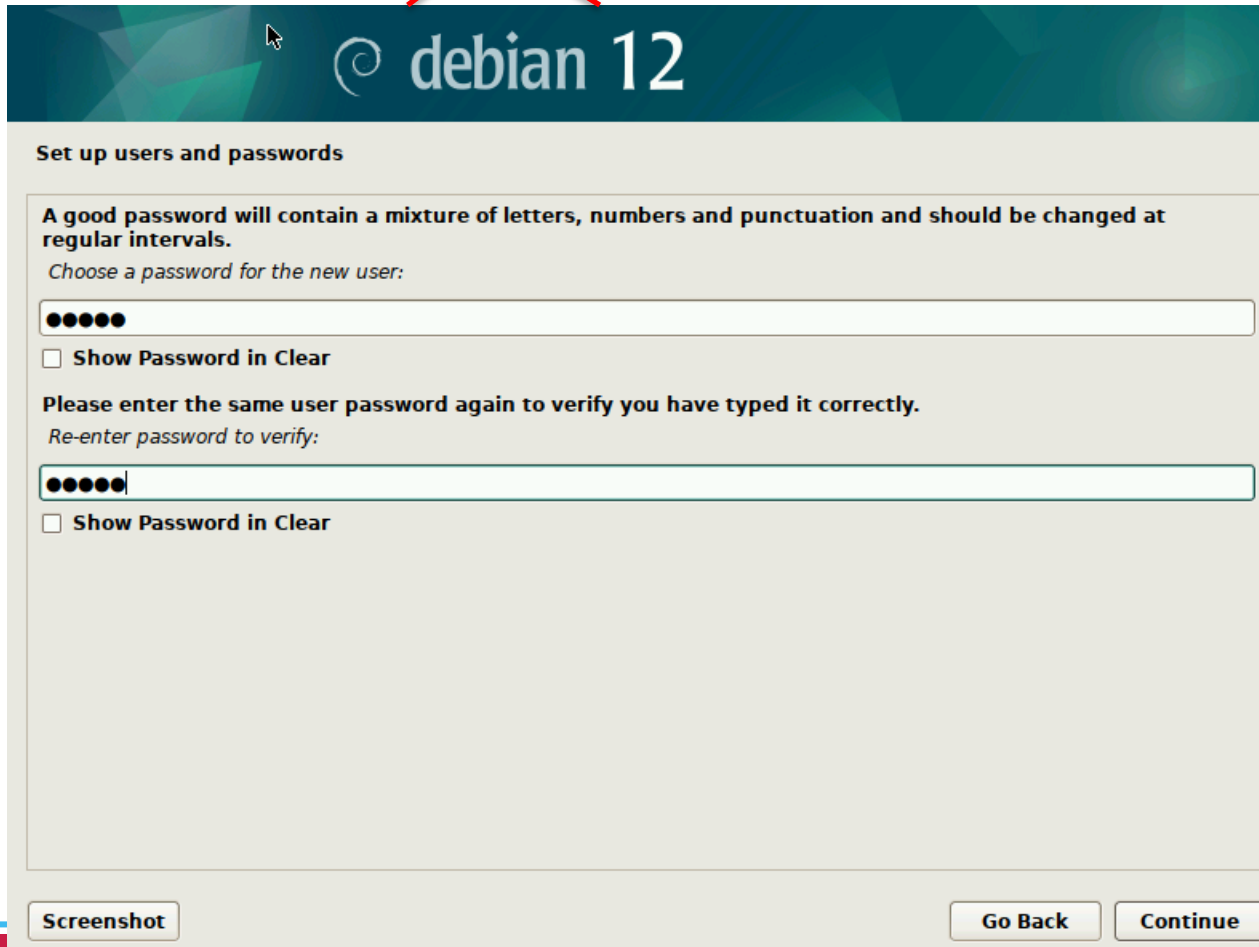
Screenshot

Go Back

Continue

➤ Root Password: password

➤ User password: ~~admin~~



The image shows a window from the Debian 12 installer. The title bar is dark teal with the Debian logo and the text "debian 12". The main content area is light gray and titled "Set up users and passwords". It contains instructions on password requirements and two password input fields. The first field is labeled "Choose a password for the new user:" and the second is labeled "Re-enter password to verify:". Both fields show six black dots. Below each field is a checkbox labeled "Show Password in Clear". At the bottom of the window, there are three buttons: "Screenshot", "Go Back", and "Continue".

© debian 12

Set up users and passwords

A good password will contain a mixture of letters, numbers and punctuation and should be changed at regular intervals.

Choose a password for the new user:

••••••

☐ Show Password in Clear

Please enter the same user password again to verify you have typed it correctly.

Re-enter password to verify:

••••••

☐ Show Password in Clear

Screenshot Go Back Continue

-
- Canada Time Zone: central
 - Guided partitioning: first (use entire disk)
 - Default Continue
 - First: Default Continue (All files in one partition)
 - Default Continue
 - Partitioning: yes
 - CD or DVD: no
 - Package manager: Canada

➤ Configure the package manager

- `ftp.ca.Debian.org`

➤ (empty) Continue

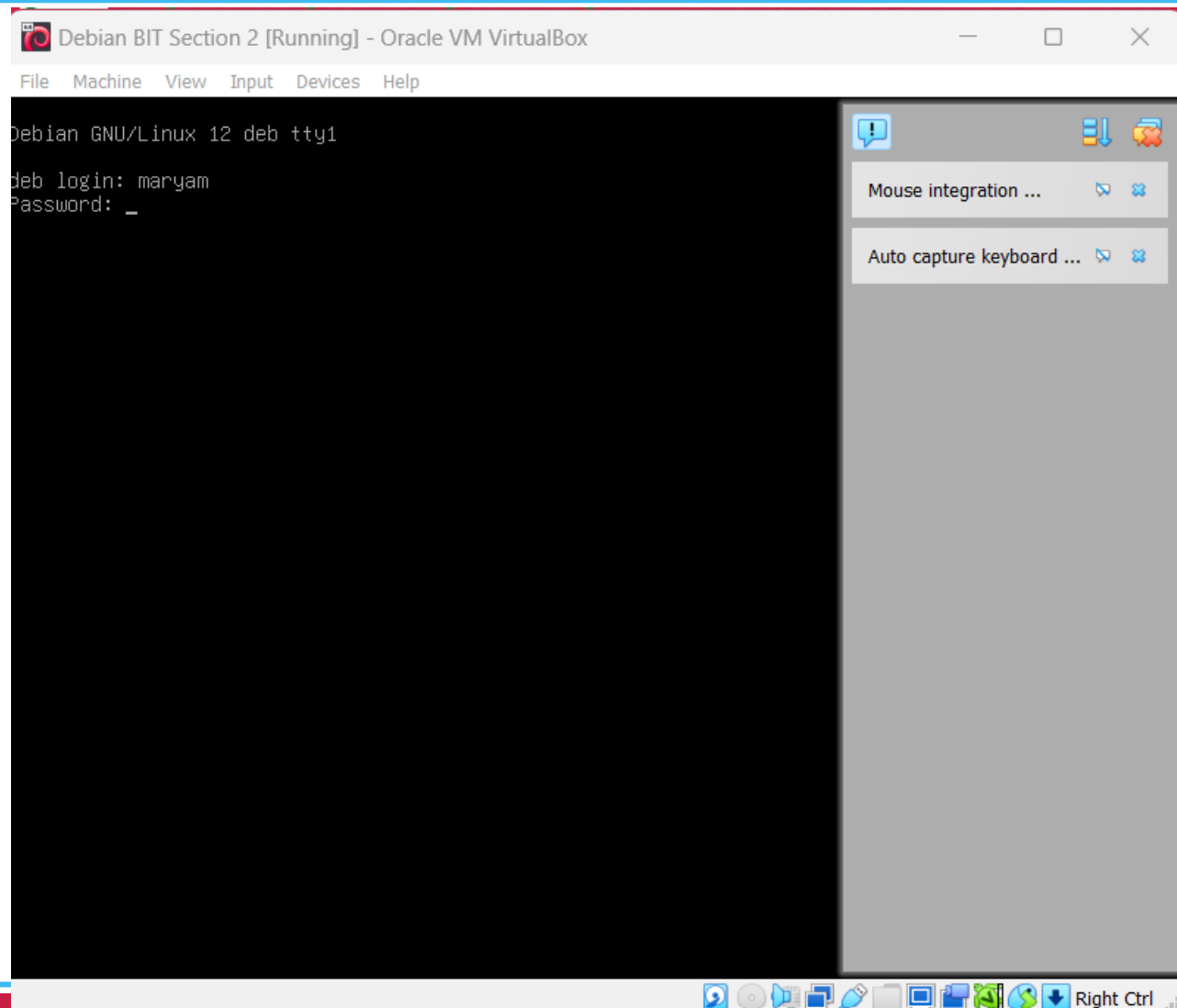
➤ No

-
- Select the last two check box (SSH , Standard system utilities)

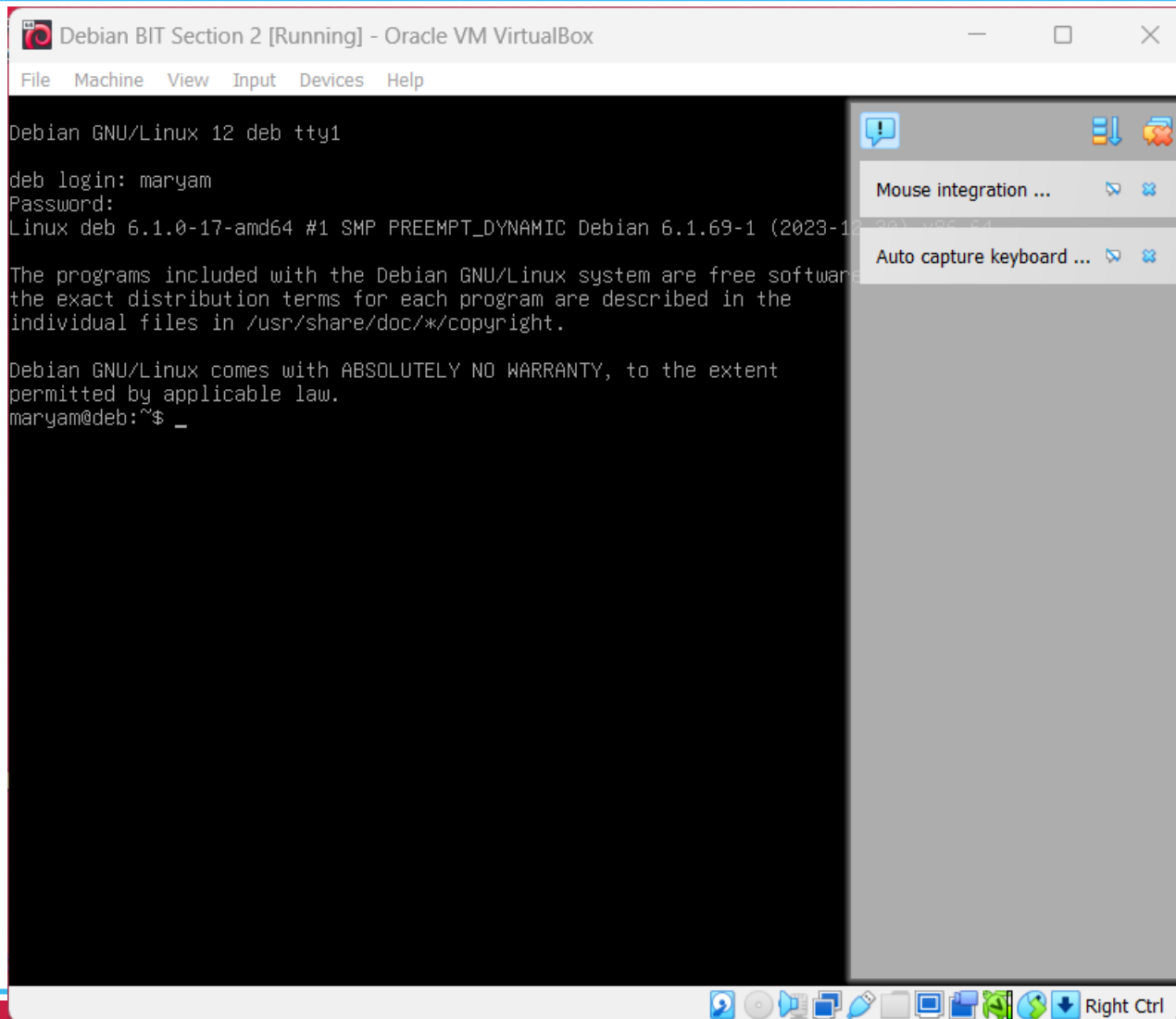


-
- Boot loader: Yes
 - Select second (not manually)
 - Continue (REBOOT)
 - Enter

Login as regular user / admin

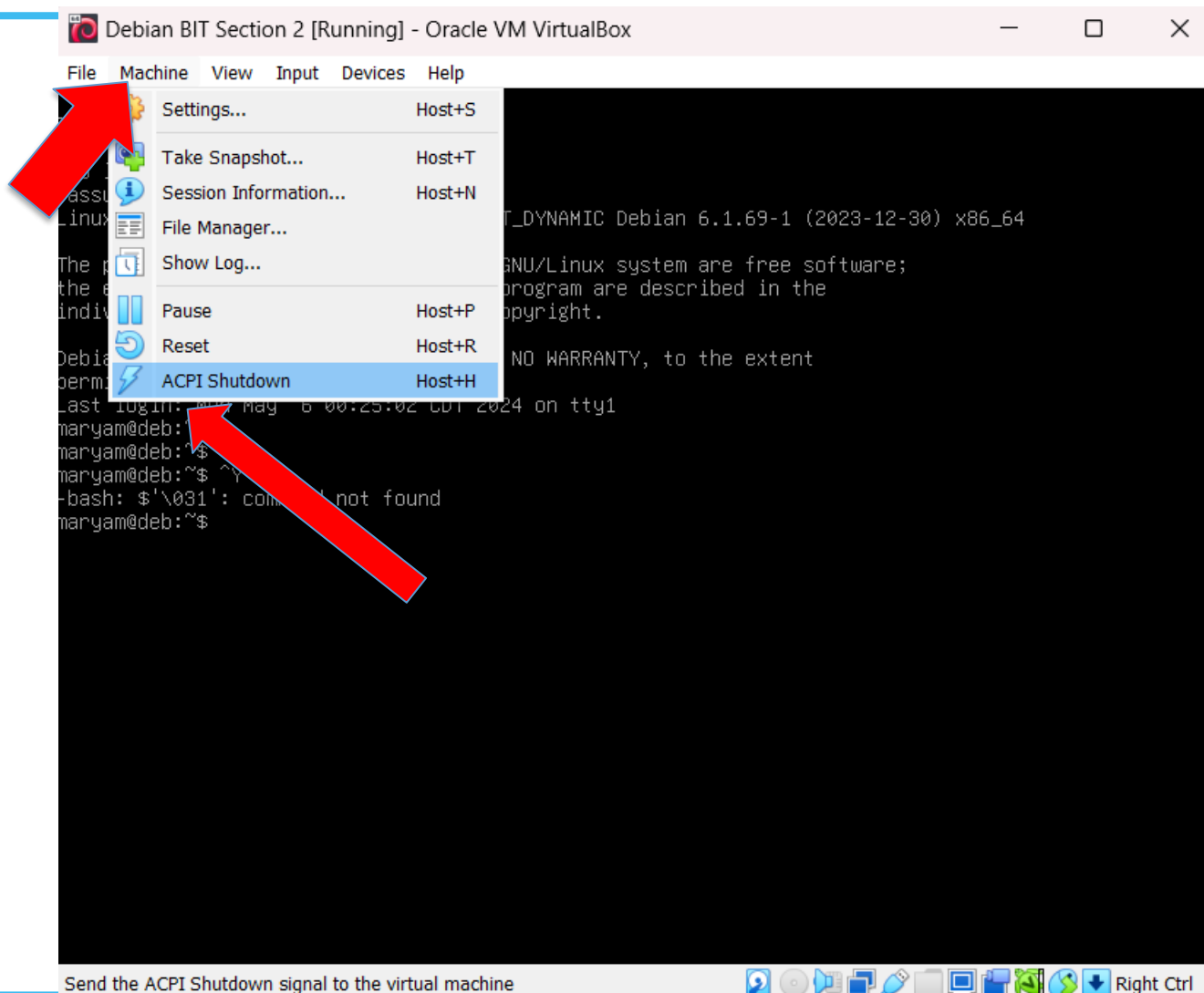


Login as regular user / admin



Shutdown Debian

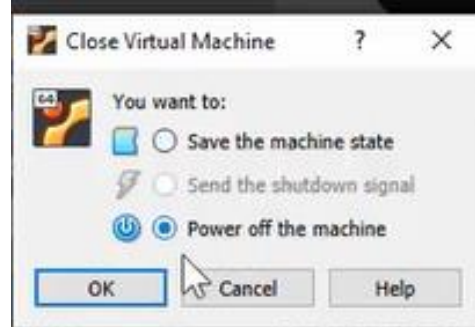
Debian (power off)



Debian (power off)

➤ Second method

- Input -> Keyboard -> Insert Ctrl-Alt-Del
- Close (x) and “power of the machine” -> ok



Oracle VM VirtualBox (Quit)

➤ File -> Quit