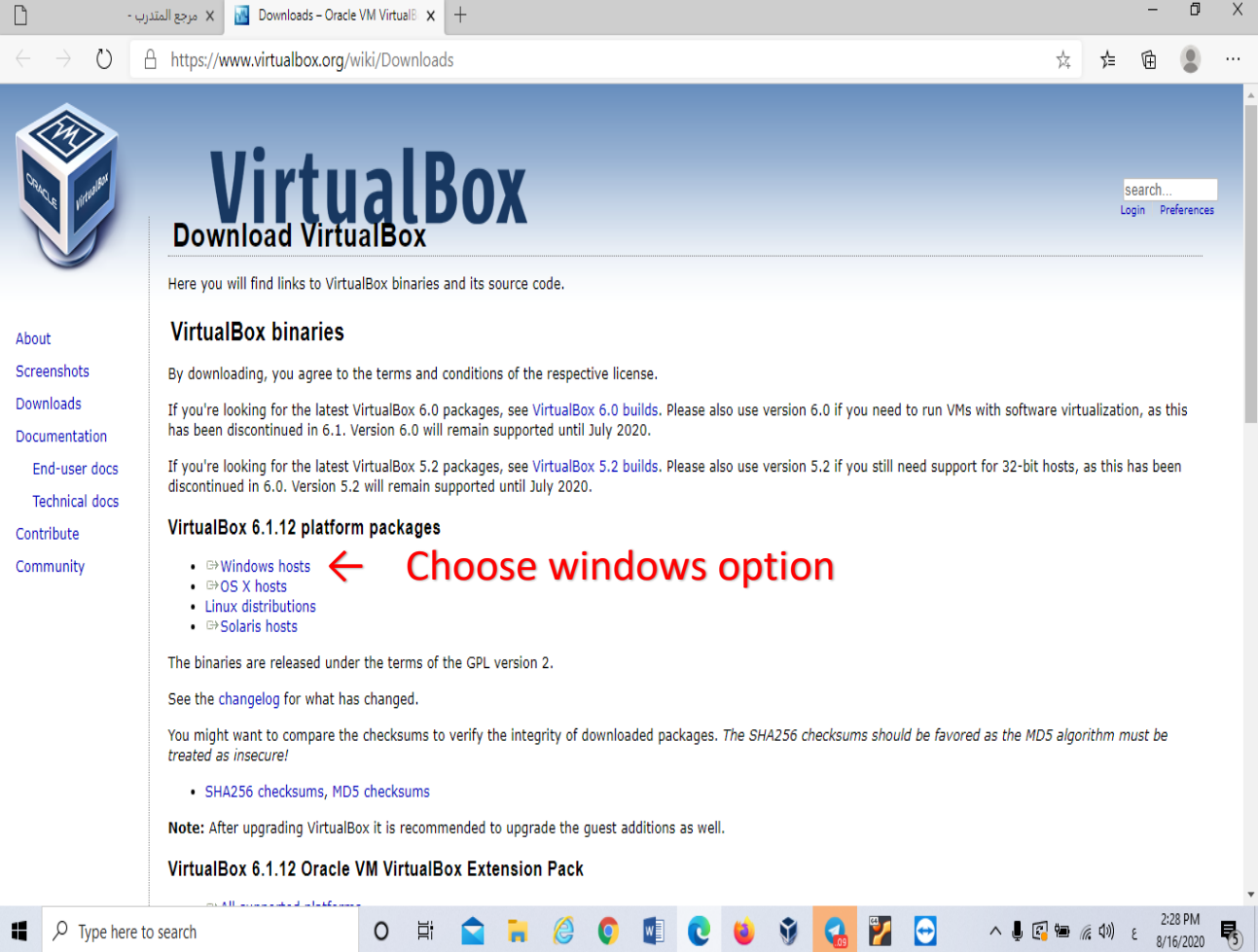


# شرح طريقي في تحميل برنامج ROS

## ● تحميل VirtualBox



The screenshot shows the VirtualBox Downloads page in a web browser. The browser's address bar displays the URL <https://www.virtualbox.org/wiki/Downloads>. The page features the VirtualBox logo and the heading "Download VirtualBox". A sidebar on the left contains links for "About", "Screenshots", "Downloads", "Documentation", "End-user docs", "Technical docs", "Contribute", and "Community". The main content area includes a search bar, a login link, and a preferences link. The text "Here you will find links to VirtualBox binaries and its source code." is followed by the section "VirtualBox binaries". Below this, it states: "By downloading, you agree to the terms and conditions of the respective license." It then provides information about the latest VirtualBox 6.0 packages and version 6.1, noting that version 6.0 will remain supported until July 2020. It also mentions the latest VirtualBox 5.2 packages and version 5.2, noting that version 5.2 will remain supported until July 2020. The section "VirtualBox 6.1.12 platform packages" is highlighted, and a red arrow points to the "Choose windows option" link. Below this, a list of links for "Windows hosts", "OS X hosts", "Linux distributions", and "Solaris hosts" is shown. The text "The binaries are released under the terms of the GPL version 2." is followed by a link to the "changelog". It then states: "You might want to compare the checksums to verify the integrity of downloaded packages. The SHA256 checksums should be favored as the MD5 algorithm must be treated as insecure!". A link for "SHA256 checksums, MD5 checksums" is provided. A "Note" states: "After upgrading VirtualBox it is recommended to upgrade the guest additions as well." The section "VirtualBox 6.1.12 Oracle VM VirtualBox Extension Pack" is also visible. The Windows taskbar at the bottom shows the search bar, task view button, and several application icons, including Chrome, Word, and the VirtualBox application. The system clock in the bottom right corner shows the time as 2:28 PM on 8/16/2020.

VirtualBox  
Download VirtualBox

search...  
Login Preferences

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.

If you're looking for the latest VirtualBox 6.0 packages, see [VirtualBox 6.0 builds](#). Please also use version 6.0 if you need to run VMs with software virtualization, as this has been discontinued in 6.1. Version 6.0 will remain supported until July 2020.

If you're looking for the latest VirtualBox 5.2 packages, see [VirtualBox 5.2 builds](#). Please also use version 5.2 if you still need support for 32-bit hosts, as this has been discontinued in 6.0. Version 5.2 will remain supported until July 2020.

### VirtualBox 6.1.12 platform packages

- Windows hosts ← Choose windows option
- OS X hosts
- Linux distributions
- Solaris hosts

The binaries are released under the terms of the GPL version 2.

See the [changelog](#) for what has changed.

You might want to compare the checksums to verify the integrity of downloaded packages. The SHA256 checksums should be favored as the MD5 algorithm must be treated as insecure!

- SHA256 checksums, MD5 checksums

**Note:** After upgrading VirtualBox it is recommended to upgrade the guest additions as well.

### VirtualBox 6.1.12 Oracle VM VirtualBox Extension Pack

# ● تحميل نظام تشغيل Ubuntu

## Step 1

The screenshot shows the Ubuntu website homepage. At the top, there's a navigation bar with the Ubuntu logo and the text "Operating system". Below this, there's a section titled "Ubuntu: The leading operating system for PCs, IoT devices ..." with a brief description: "Ubuntu is an open source software operating system that runs from the desktop, to the cloud, to all your internet connected things." A search bar is also present.

Below the search bar, there are several links for downloading Ubuntu: "Download Ubuntu desktop, Ubuntu Server, Ubuntu for ...", "Desktop" (with a sub-link "Download the latest LTS version of Ubuntu, for desktop PCs and ..."), "Download Ubuntu Server" (with a sub-link "The long-term support version of Ubuntu Server, including the ..."), "Developers" (with a sub-link "Ubuntu Desktop for developers. Whether you're a mobile app ..."), "Features" (with a sub-link "Learn about all the great features and default applications in the ..."), and "Raspberry Pi" (with a sub-link "Running Ubuntu Server on your Raspberry Pi is easy. Just pick ...").

There's a "Top stories" section with three articles:

- "Ubuntu 20.04 arrives with Linux 5.4 kernel and WireGuard VPN" by ZDNet, 15 hours ago.
- "Ubuntu Linux 20.04 LTS 'Focal Fossa' now available for download" by BetaNews, 22 hours ago.
- "Ubuntu 20.04 LTS 'Focal Fossa' Finally Released: Download/Upgrade Now" by Fossbytes, 19 hours ago.

On the right side, there's a sidebar with the Ubuntu logo and the text "Operating system". Below this, there's a description of Ubuntu: "Ubuntu is a free and open-source Linux distribution based on Debian. Ubuntu is officially released in three editions: Desktop, Server, and Core for the internet of things devices and robots. All the editions can run on the computer alone, or in a virtual machine." It also lists the developer (Canonical), initial release date (20 October 2004), license (Free software + some proprietary device drivers), kernel type (Linux kernel), package managers (GNOME Software, APT, dpkg, Snappy, Flatpak), and programming languages (Python, Java, C, C++, C#).

Below the sidebar, there's a section titled "Ubuntu desktop environments" with links to "View 15+ more" and icons for GNOME, Xfce, LXDE, MATE, and Cinnamon. There's also a section titled "People also search for" with links to "View 15+ more" and icons for Tm, C, A, F, and a penguin.

## Step 2

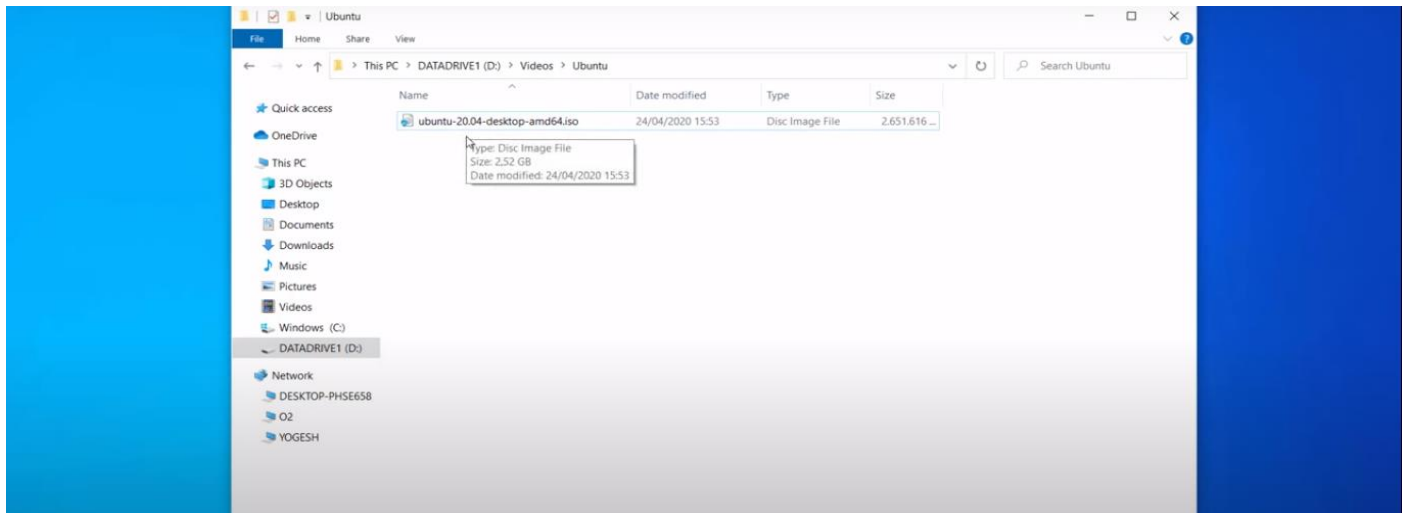
The screenshot shows the Ubuntu website's download section. It features four main columns for different Ubuntu editions:

- Ubuntu Desktop >**: "Download Ubuntu desktop and replace your current operating system whether it's Windows or Mac OS, or, run Ubuntu alongside it." A green button labeled "20.04 LTS" is visible.
- Ubuntu Server >**: "The most popular server Linux in the cloud and data centre, you can rely on Ubuntu Server and its five years of guaranteed free upgrades." A green button labeled "20.04 LTS" is visible. Below it, there are links for "ARM", "IBM Power", and "s390x".
- Ubuntu for IoT >**: "Are you a developer who wants to try snappy Ubuntu Core or classic Ubuntu on an IoT board?" Below this, there are links for "Raspberry Pi 2, 3 or 4", "Intel NUC", "KVM", "Qualcomm Dragonboard 410c", "UP² IoT Grove", and "Intel IEX TANK 870".
- Ubuntu Cloud >**: "Use Ubuntu optimised and certified server images on most major clouds." Below this, there are links for "Get started on Amazon AWS, Microsoft Azure, Google Cloud Platform and more..." and "Download cloud images for local development and testing".

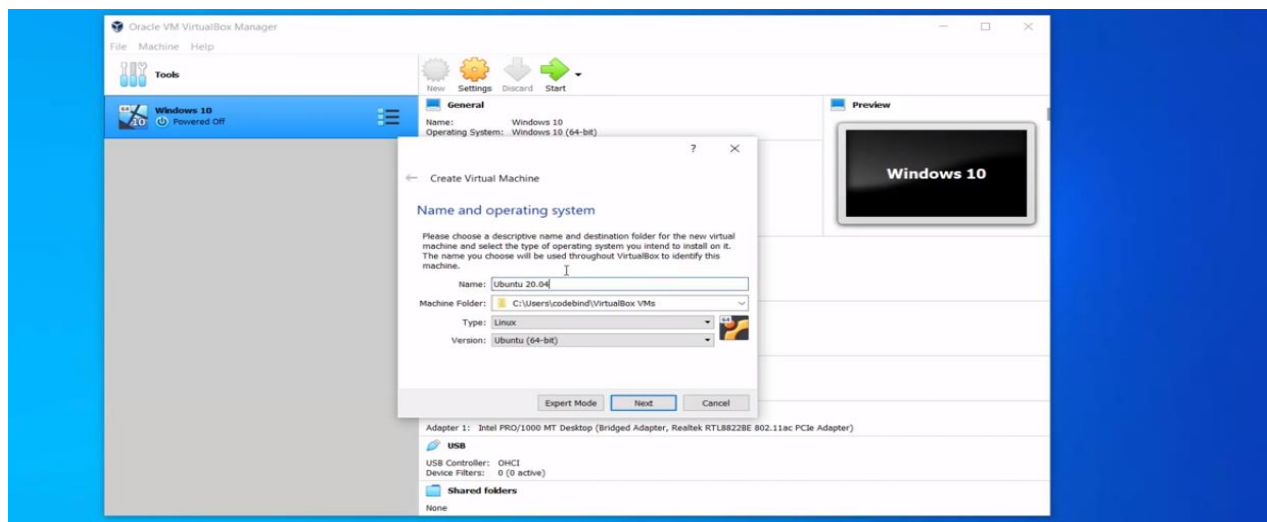
Below these columns, there are four sections:

- TUTORIALS**: "If you are already running Ubuntu - you can upgrade with the Software Updater", "Burn a DVD on Ubuntu, macOS, or Windows. Create a bootable USB stick on Ubuntu, macOS, or Windows", "Installation guides for Ubuntu Desktop and Ubuntu Server", and "You can learn how to try Ubuntu before you install".
- READ THE DOCS**: "Read the official docs for Ubuntu Desktop, Ubuntu Server, and Ubuntu Core".
- OTHER WAYS TO DOWNLOAD**: "Ubuntu is available via BitTorrents and via a minimal network installer that allows you to customise what is installed, such as additional languages. You can also find older releases."
- UBUNTU FLAVOURS**: "Find new ways to experience Ubuntu, each with their own choice of default applications and settings." Below this, there are links for "Kubuntu", "Ubuntu Kylin", "Lubuntu", "Ubuntu MATE", "Ubuntu Budgie", "Ubuntu Studio", and "Xubuntu".

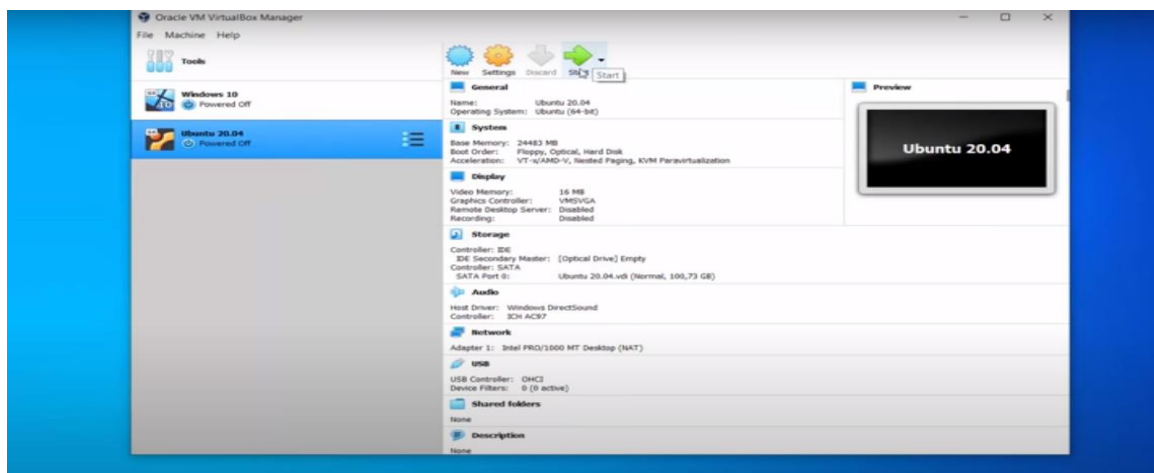
## Step 3



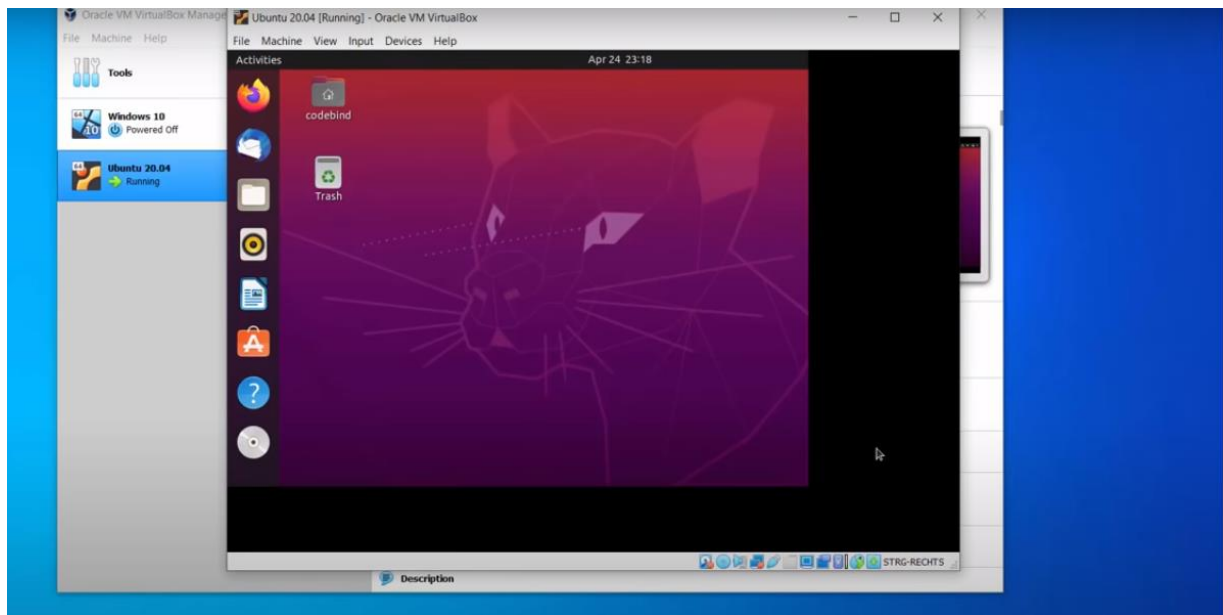
## Step4 Virtual Box Downloaded



## Step5 Test Ubuntu that downloaded on VirtualBox



## Step6 Ubuntu downloading Completed



## Step1 Select Ubuntu option from this website

## Step2 Follow the guidelines mentioned in this page by past the codes on the terminal command on Ubuntu

محتويات

- 1. Ubuntu install of ROS Noetic
  - 1. Installation
    - 1. Configure your Ubuntu repositories
    - 2. Setup your sources.list
    - 3. Set up your keys
    - 4. Installation
    - 5. Environment setup
  - 2. Tutorials

### 1. Installation

#### 1.1 Configure your Ubuntu repositories

Configure your Ubuntu repositories to allow "restricted," "universe," and "multiverse." You can ●follow the Ubuntu guide for instructions on doing this.

#### 1.2 Setup your sources.list

Setup your computer to accept software from packages.ros.org.

```
sudo sh -c 'echo "deb http://packages.ros.org/ros/ubuntu $(lsb_release -sc) main" > /etc/apt/sources.list.d/ros-latest.list'
```

**Mirrors** Source Debs are also available

#### 1.3 Set up your keys

# Rose Downloaded

