



INTRODUCTION TO COMPUTER HARDWARE AND WINDOWS INSTALLATION TROUBLE SHOOTING

Advanced Information and Communication Technology (ICT)

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Outline

01

Introduction to Computer Hardware

Internal Hardware and External Hardware

02

Windows Installation Step by Step Guidelines

Download Windows ISO, Create USB bootable media, Installation

03

Windows Troubleshooting

Settings and Daily Life Problems

04

Questions and Answers

Related questions and answers session

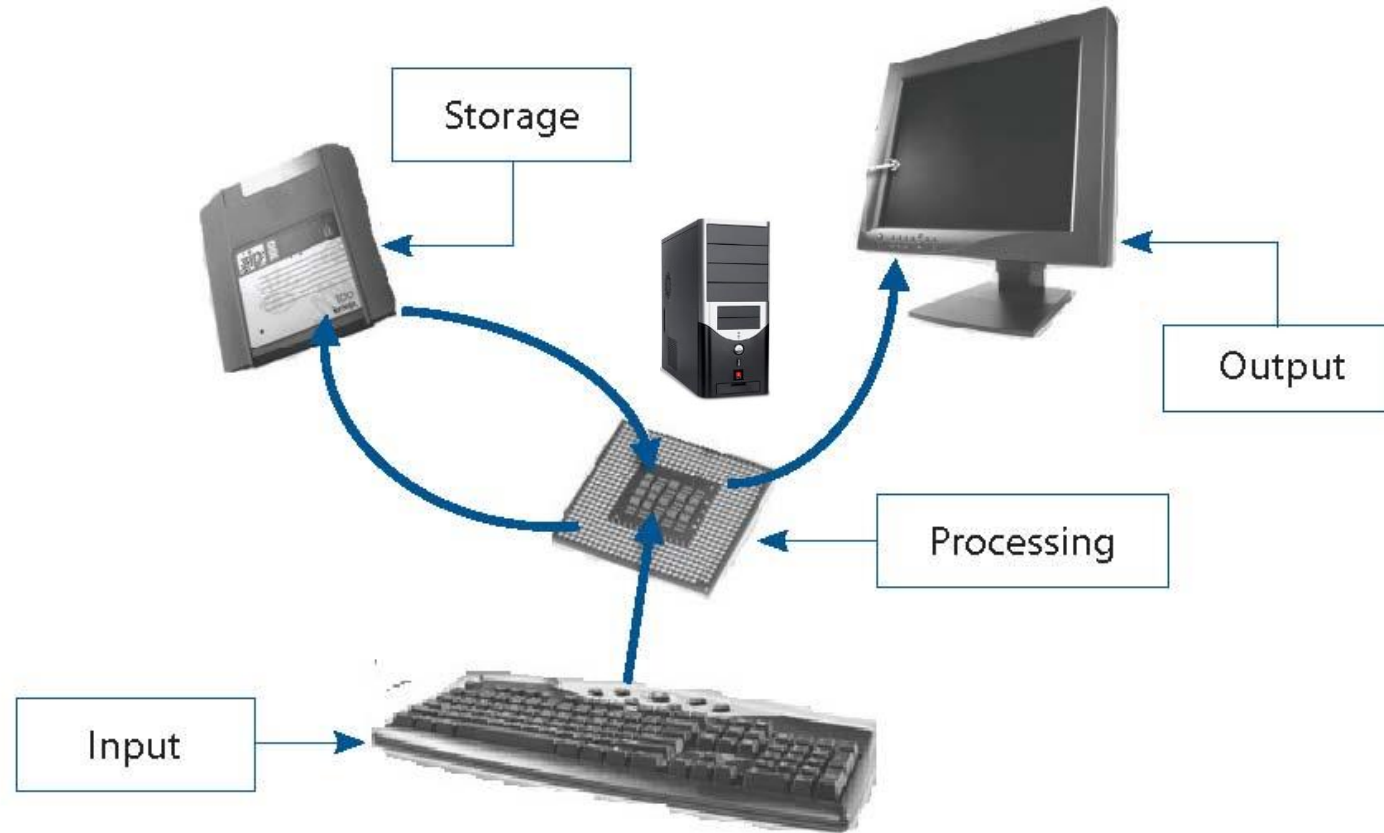
01

INTRODUCTION TO COMPUTER HARDWARE

Internal Hardware and External Hardware

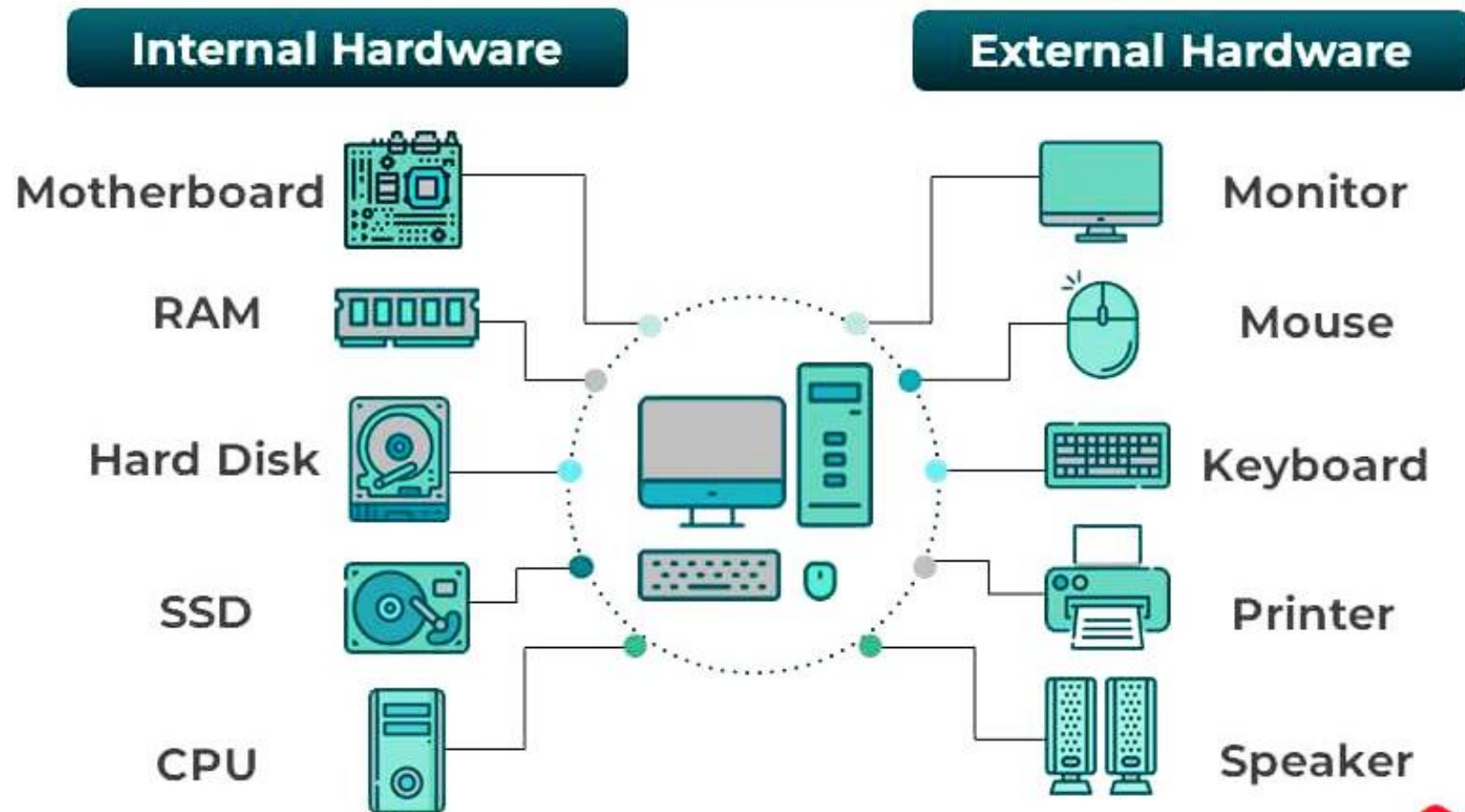
Computer System

- A computer is a machine that performs four basic operations: input, processing, output and storage.

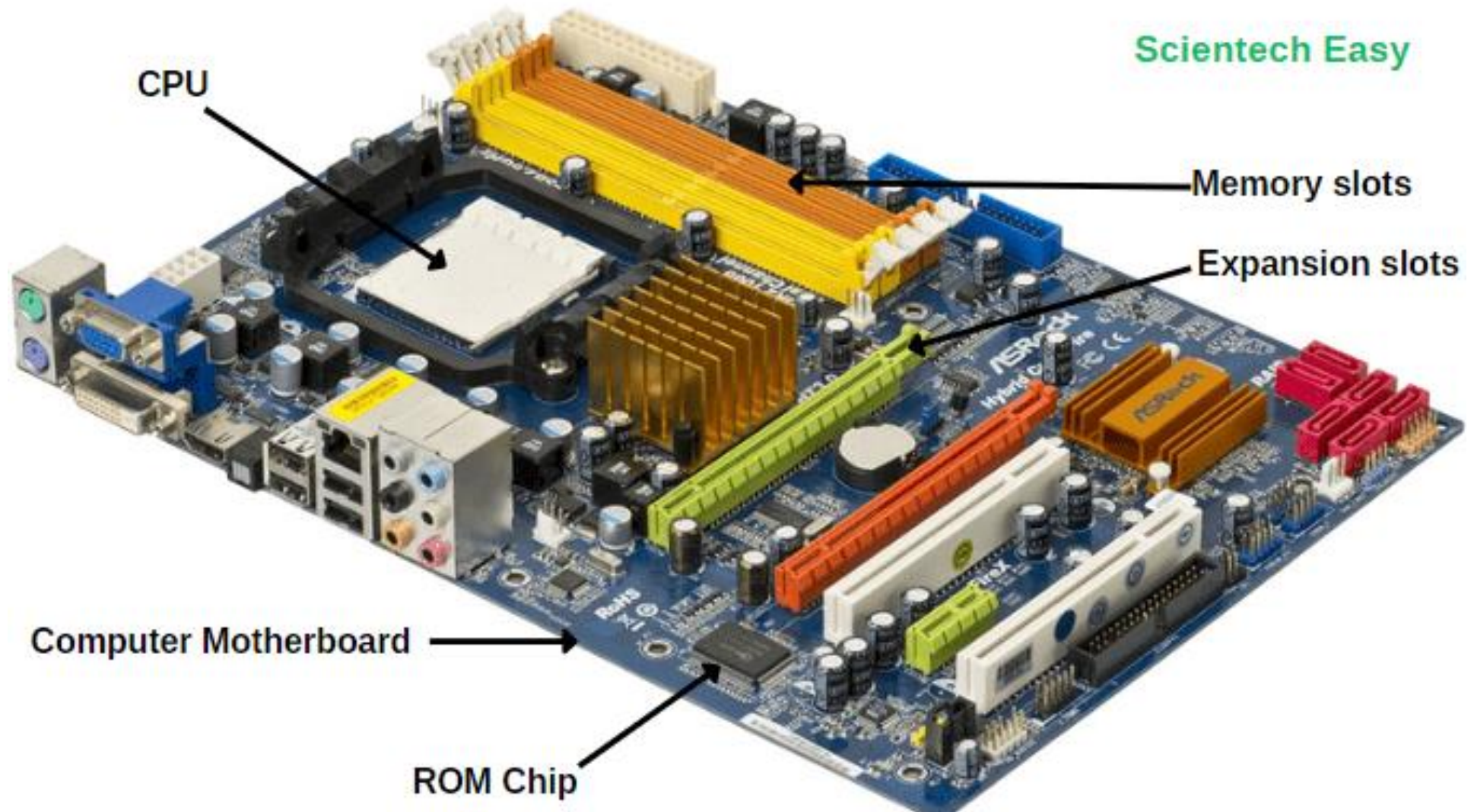


Hardware Components

- Internal Hardware and External Hardware



Motherboard



RAM



HDD (Hard Disk Drive)



SSD (Solid State Drive)



CPU (Processor)



Other Internal Hardware Components



Graphics Card



Power Supply Unit



Cooling Fan



LAN Card

External Hardware Components



Monitor



Printer



Keyboard



Sound Unit



Mouse

02

WINDOWS INSTALLATION

Download Windows ISO, Create USB bootable media, Installation

Step by Step Guide

- Step-01: Go to the Microsoft website for to download the iso file.
 - <https://www.microsoft.com/en-us/software-download/windows10>

- Step-02: Create Windows 10 installation media

Create Windows 10 installation media

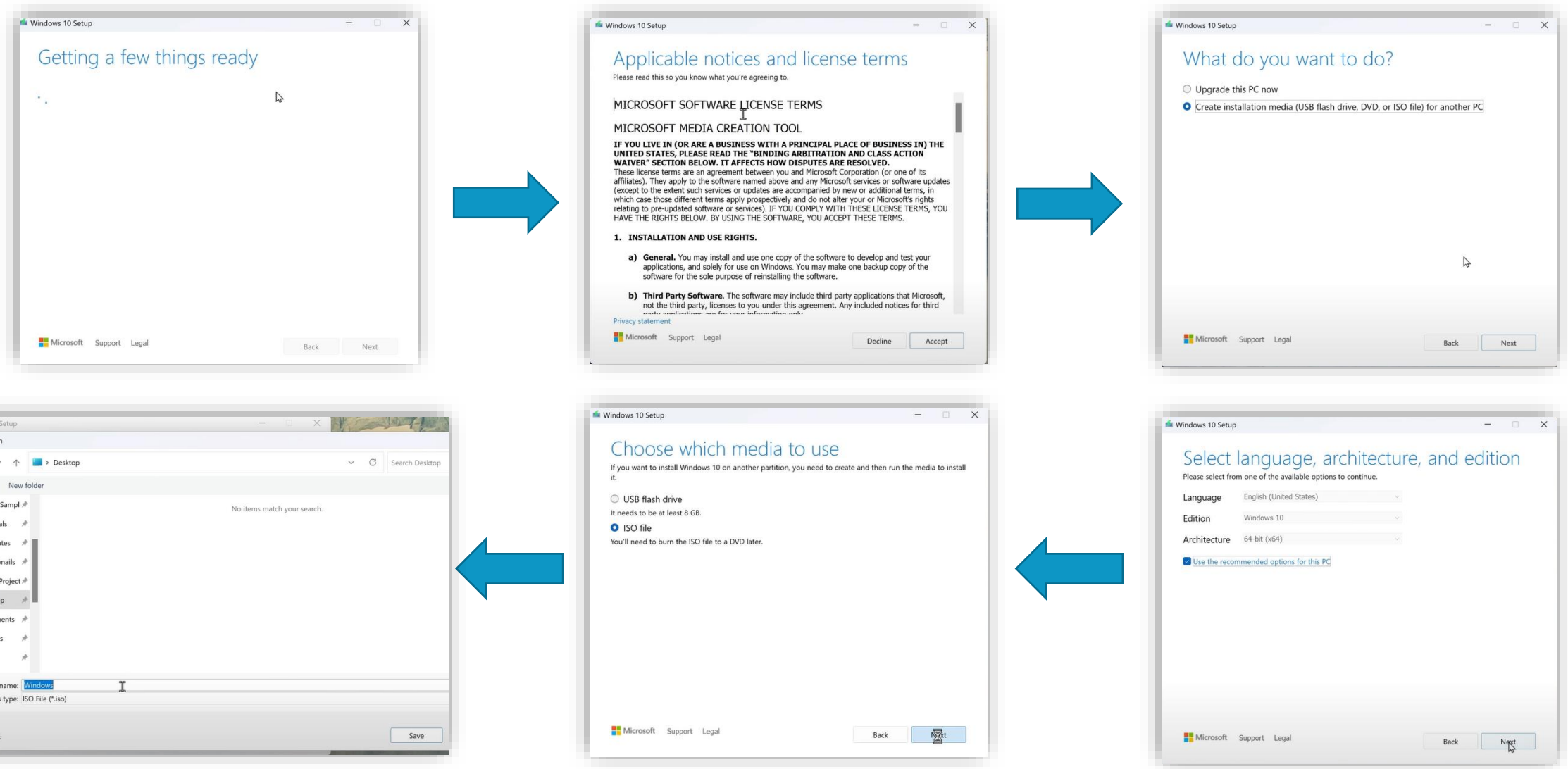
To get started, you will first need to have a license to install Windows 10. You can then download and run the media creation tool. For more information on how to use the tool, see the instructions below.

[Download Now](#)

[Privacy](#)

- Step-03: Open **MediaCreationTool_22H2** file and download the windows 10 iso file.

Step-03: download the windows 10 iso file.



Step by Step Guide

- Step-04: Go to the Rufus website for to download the tools. Search on Google (**Rufus**)
 - <https://rufus.ie/en/>
- Step-05 Download it from here:

Despite its small size, Rufus provides everything you need!

A non exhaustive list of Rufus supported ISOs is also provided at the bottom of this page. ⁽¹⁾

Download

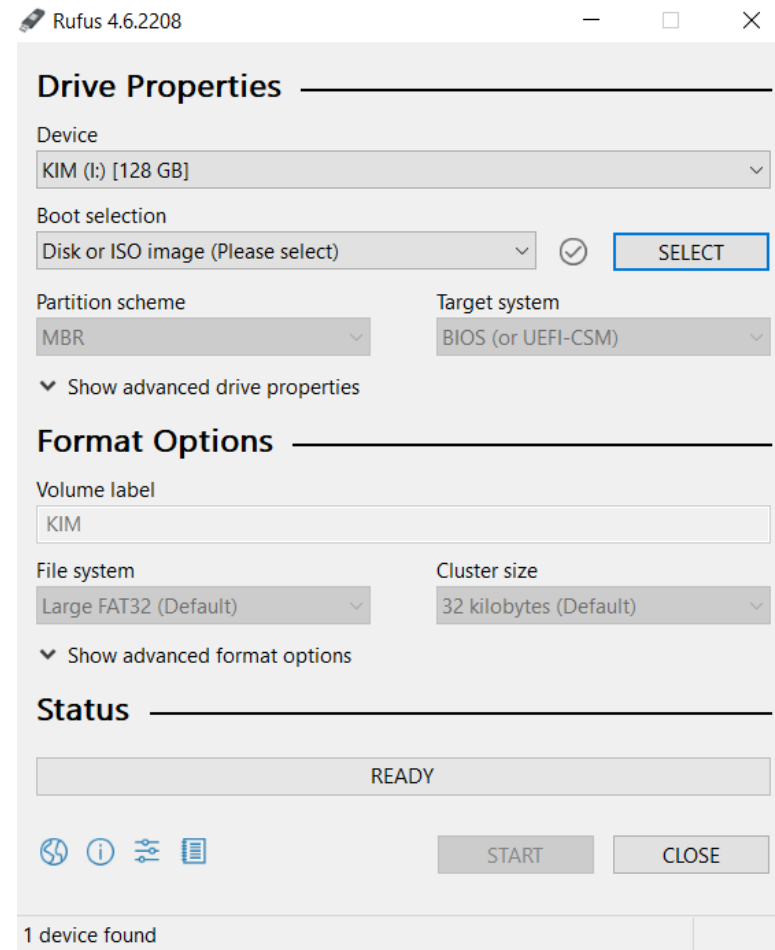
Latest releases:

Link	Type	Platform	Size	Date
rufus-4.6.exe	Standard	Windows x64	1.5 MB	2024.10.21
rufus-4.6p.exe	Portable	Windows x64	1.5 MB	2024.10.21
rufus-4.6_x86.exe	Standard	Windows x86	1.6 MB	2024.10.21
rufus-4.6_arm64.exe	Standard	Windows ARM64	5.1 MB	2024.10.21

[Other versions \(GitHub\)](#)
[Other versions \(FossHub\)](#)

Step by Step Guide

- Step-06: Open the Rufus Software and it automatically detected the inserted pendrive.
- Step-07: Select the ISO image file.
- Step-08: Click on Start



Booting Options

- Restart the Computer and go to the Boot Menu
 - Press **F2 / F10 / F12 / Delete** for boot options.
 - Start Windows Installation
- ASRock: F2 or DEL
 - ASUS: F2 for all PCs, F2 or DEL for Motherboards
 - Acer: F2 or DEL
 - Dell: F2 or F12
 - ECS: DEL
 - Gigabyte / Aorus: F2 or DEL
 - HP: F10
 - Lenovo (Consumer Laptops): F2 or Fn + F2
 - Lenovo (Desktops): F1
 - Lenovo (ThinkPads): Enter then F1.
 - MSI: DEL for motherboards and PCs
 - Microsoft Surface Tablets: Press and hold volume up button.
 - Origin PC: F2
 - Samsung: F2
 - Toshiba: F2
 - Zotac: DEL

Windows 10 Installation Tutorials

A easy guide to install Windows:

<https://www.youtube.com/watch?v=p0wxEjZGcN0>

Check the Windows 10 Full Installation Guides (PDF)!!!

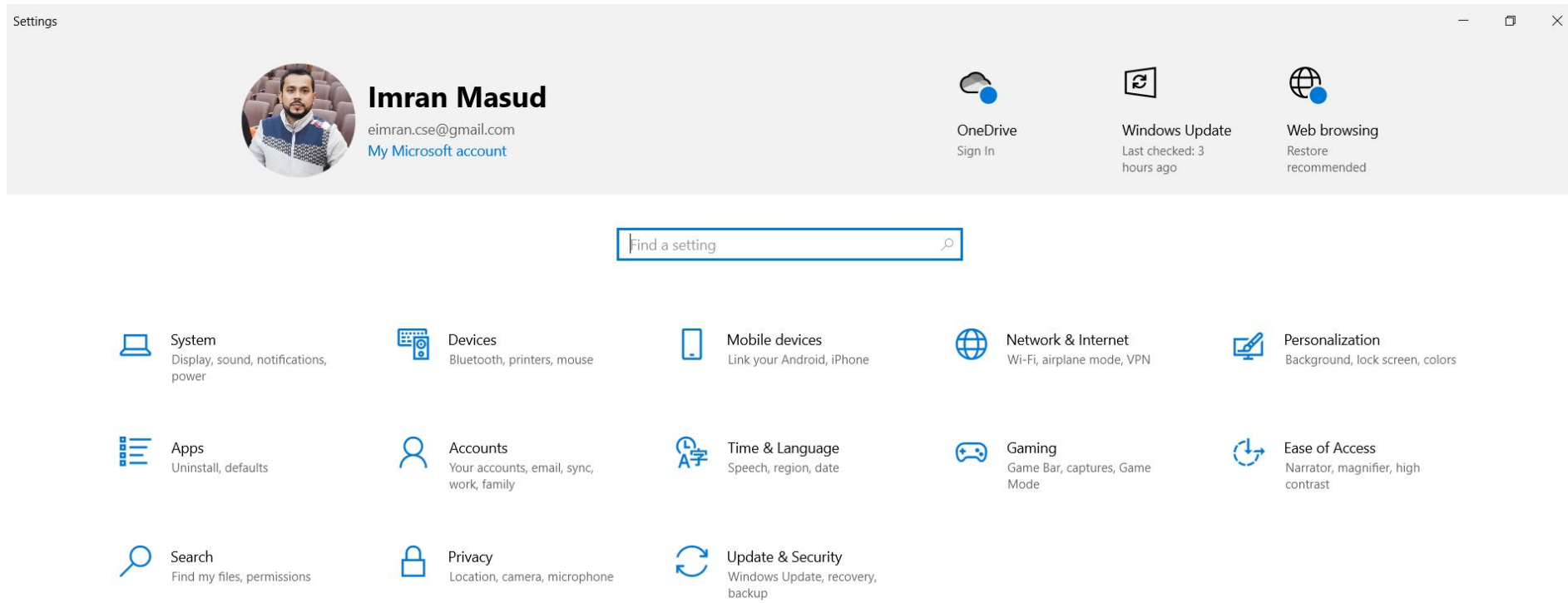
03

WINDOWS TROUBLESHOOTING

Settings and Daily Life Problems

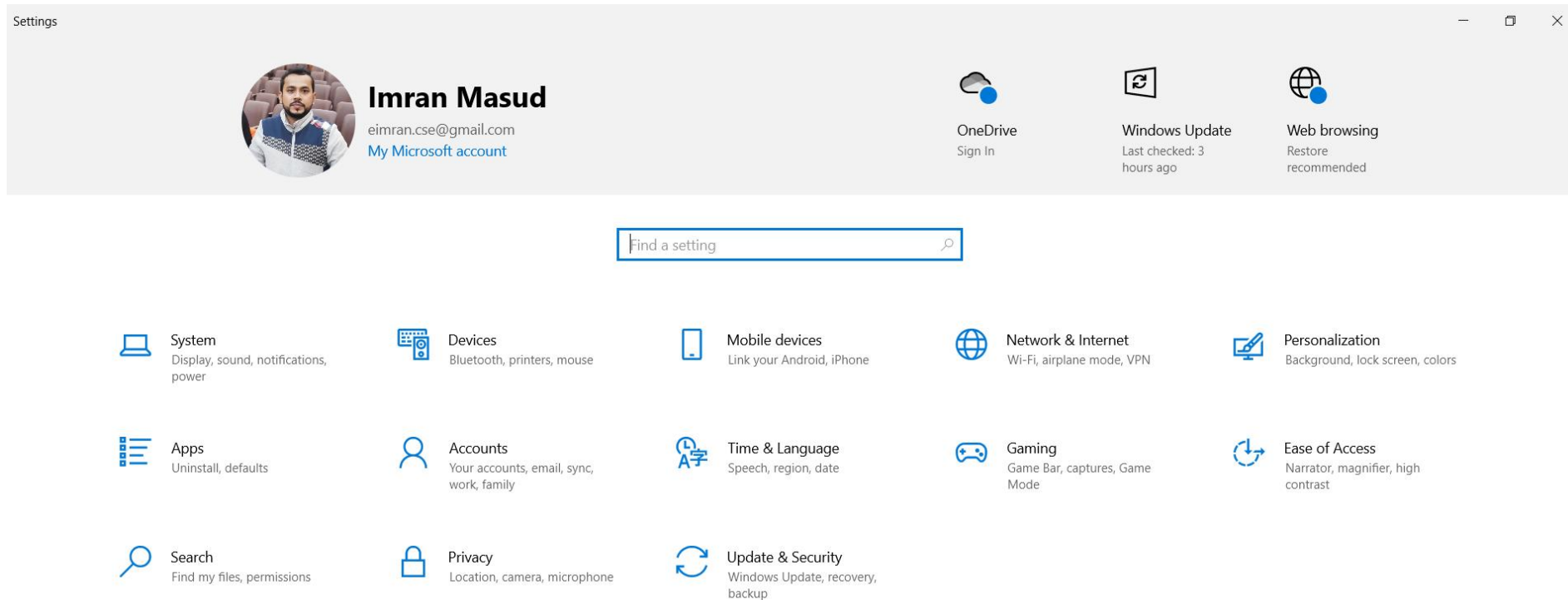
Windows Update Settings

- Type **settings** on windows search and open windows settings. Click on **Update & Security**



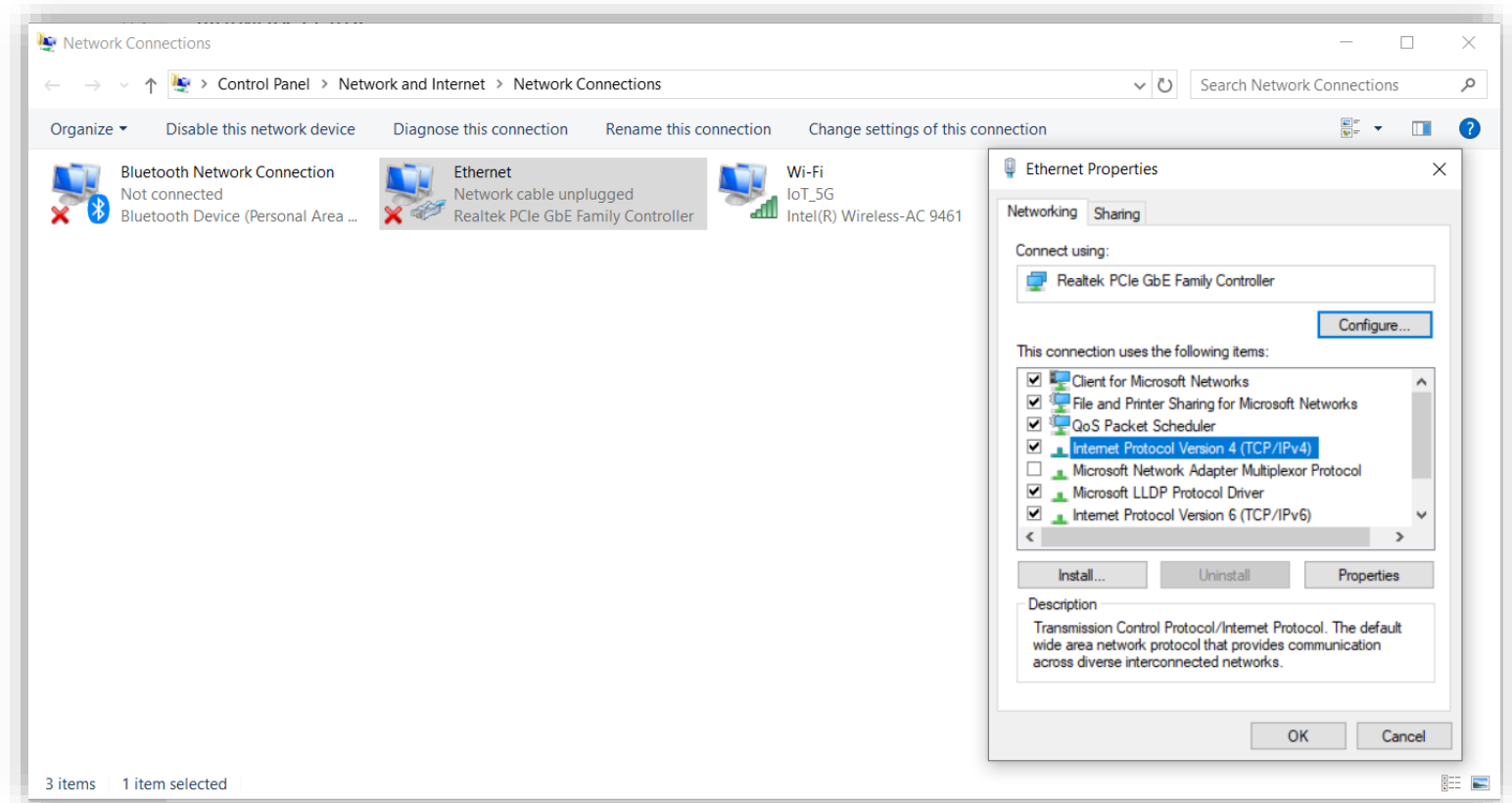
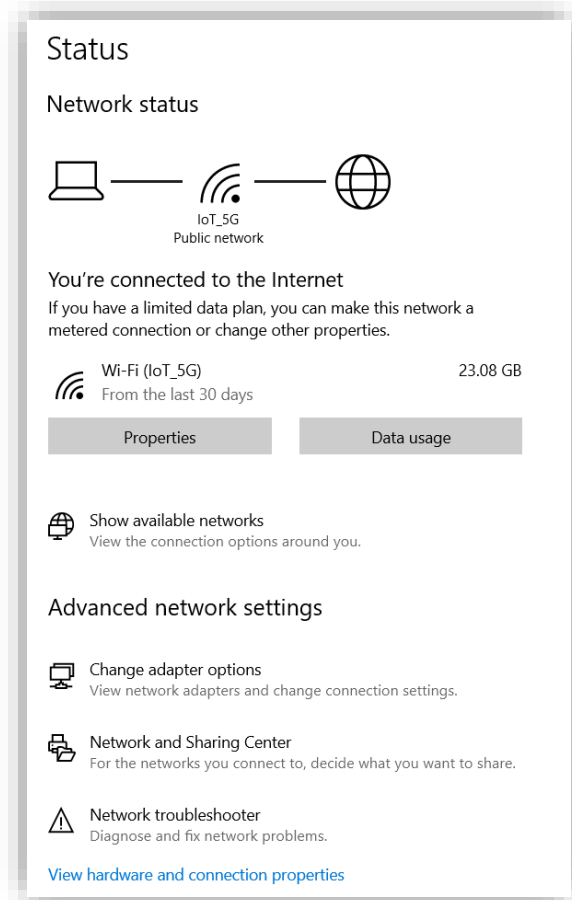
Windows Network Troubleshoots

- Type **settings** on windows search and open windows settings. Click on **Network & Internet**



Windows Network Troubleshoots

- Now click on **Change adapter options**, then go to **Ethernet Properties** and Check the **IP**







Windows Network Troubleshoots

- Ping nearest PC, switch or a domain like (www.google.com)
- Go to `cmd` for ping. Write “`ping www.google.com`”
- Disable the Lan Card and than Enable it initial troubleshoots of network connection.
- Check the Rj-45 connector and its light to ensure the connection is okay or not.

Windows Memory Cleaning

- Delete all temporary files from windows.

Delete files with Storage Sense




1. Open the **Start**  menu and select **Settings**  > **System**  > **Storage** .
[Open Storage settings](#)
2. Select **Configure Storage Sense or run it now**, and under **Temporary Files**, select when you want each type of files deleted.

Note: To delete unnecessary files manually instead, scroll down and under **Free up space now**, select **Clean now**.

Windows Memory Cleaning




- Uninstall unnecessary apps.

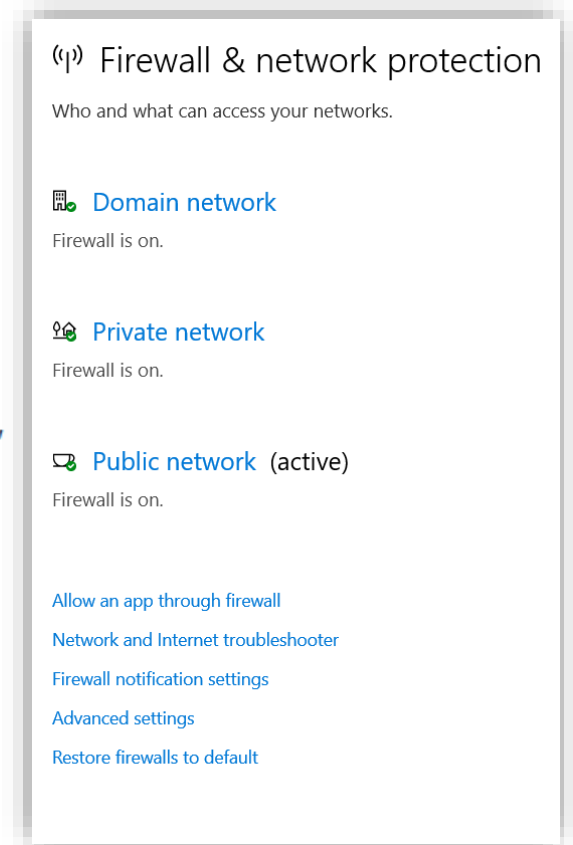
Uninstall apps you don't use anymore

1. Open the **Start**  menu and select **Settings**  > **Apps**  > **Apps & features**.
[Open Apps & features settings](#)
2. Search for a specific app or sort them by size to see which ones are taking up the most space.
3. When you find an app you want to delete, select it from the list, and then select **Uninstall**.

Windows Firewall Settings





- Turn Microsoft Defender Firewall on or off

1. Select the **Start**  button > **Settings**  > **Update & Security**  > **Windows Security** and then **Firewall & network protection**. [Open Windows Security settings](#)
2. Select a network profile: **Domain network**, **Private network**, or **Public network**.
3. Under **Microsoft Defender Firewall**, switch the setting to **On**. If your device is connected to a network, network policy settings might prevent you from completing these steps. For more info, contact your administrator.
4. To turn it off, switch the setting to **Off**. Turning off Microsoft Defender Firewall could make your device (and network, if you have one) more vulnerable to unauthorized access. If there's an app you need to use that's being blocked, you can allow it through the firewall, instead of turning the firewall off.



Turn Microsoft Defender Antivirus real-time protection on or off

- Turn real-time protection off temporarily

1. Select **Start**  > **Settings**  > **Update & Security**  > **Windows Security**  and then **Virus & threat protection** > **Manage settings**. (In early versions of Windows 10, select **Virus & threat protection** > **Virus & threat protection settings**.)

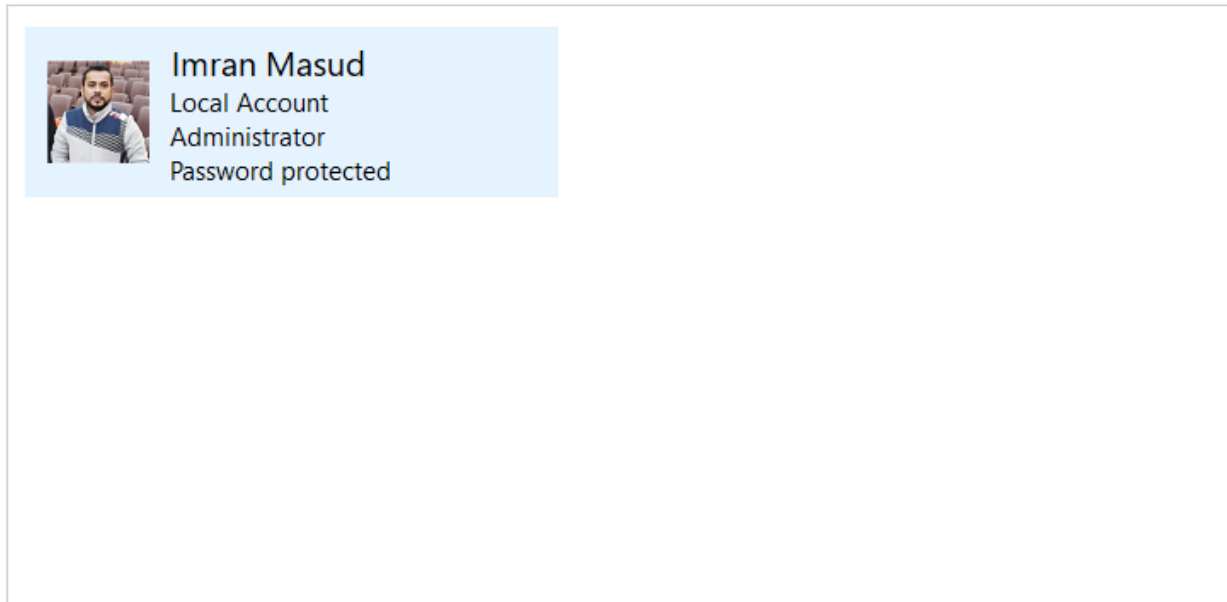
[Open Windows Security settings](#)

2. Switch the **Real-time protection** setting to **Off** and choose **Yes** to verify.

Create a new user in Windows

- Go to [Control Panel](#)>>[User Accounts](#)>>[User Accounts](#)>>[Manage Accounts](#) than click on [Add a new user in PC settings](#)





Choose the user you would like to change



[Add a new user in PC settings](#)

Reset Windows

- Give your PC a Fresh Start: *Resetting your PC lets you perform a clean reinstallation and update of Windows while keeping your personal data and most Windows settings intact. In some cases, a clean installation may improve your device's performance, security, browsing experience, and battery life.*


To reset your PC, go to **Start**  > **Settings**  > **Update & Security**  > **Recovery**  > **Reset this PC** > **Get Started**. Then, select **Keep my files**, choose cloud or local, change your settings, and set **Restore preinstalled apps?** to **No**.

[Open Recovery settings](#)



Note: If you don't see the option to **Restore preinstalled apps**, it means your PC doesn't have preinstalled apps configured.

Some Common Settings

- Default Apps Settings:

1. In the Settings app  on your Windows device, select **Apps > Default Apps**,





- Power and Sleep Settings:

To adjust power and sleep settings in Windows 10, go to **Start** , and select **Settings**  > **System > Power & sleep**.






- Under **Screen**, select how long you want your device to wait before turning the screen off when you're not using your device.
- Under **Sleep**, select how long you want your device to wait before going to sleep when you're not using it.

Some Common Settings

- Notifications and Actions Settings:

1. Select **Start**  > **Settings**  > **System**  > **Notifications & actions** .
2. To change notification settings for all senders, under **Notifications**, set **Get notifications from apps and other senders** to **On** or **Off**. Set the check boxes for any of the following: you can **Show notifications on the lock screen**, you can **Show reminders and incoming VoIP calls on the lock screen**, or you can **Allow notifications to play sounds**.
3. You can also look for an individual app under **Get notifications from these senders**, select it, and decide whether you want notifications from this app **On** or **Off**, and if you want them **On**, whether you want that app to **Show notification banners**, **Show notifications in action center**, or **Play a sound when a notification arrives**, as well as how many appear and how they are prioritized.

Some Common Settings

- Startup Apps Settings: Select **Start**  > **Settings**  > **System**  > **Apps > Startup**
- Windows background apps off:
 1. Select **Start** , then select **Settings**  > **Privacy > Background apps**.
 2. Under **Background Apps**, make sure **Let apps run in the background** is turned **On**.
 3. Under **Choose which apps can run in the background**, turn individual apps and services settings **On** or **Off**.
- Windows task manager settings: **Ctrl + Alt + Delete**
- Device Manager Settings: **This PC>>Manage>>Device Manager**

T **HANK** **Y** **OU!**

Any Questions?