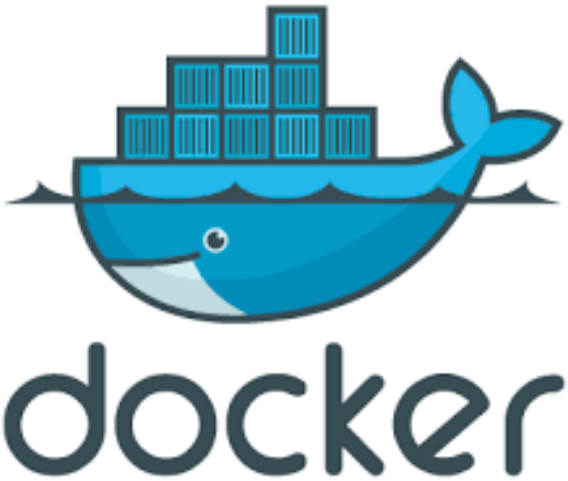


Step by step installation guide of Docker Desktop for windows 10

Abdul Majeed Khan
Cloud Native Computing Batch 36

How to install Docker Desktop in Windows 10.

We will be using community edition (CE) as this is a free version. You can use this edition to install it on your personal computer to learn and build application around it. Knowledge of Docker is a must if you want to build **Cloud Native Microservices based** applications. There are other platforms for building container-based application. But over the years, Docker has become the industry standard for building container-based application using Kubernetes for orchestration. As such, Docker skill is must for IT professionals.

System requirements

- **Hyper-V backend and Windows containers**

  - ✓ Windows 11 64-bit: Pro version 21H2 or higher, or Enterprise or Education version 21H2 or higher.
  - ✓ Windows 10 64-bit: Pro 21H1 (build 19043) or higher, or Enterprise or Education 20H2 (build 19042) or higher.
  - ✓ Hyper-V and Containers Windows features must be enabled.
  - ✓ The following hardware prerequisites are required to successfully run Client Hyper-V on Windows 10:

    - 64-bit processor with Second Level Address Translation (SLAT)
    - 4GB system RAM
    - BIOS-level hardware virtualization support must be enabled in the BIOS settings

- **WSL 2 backend**

  - Windows 11 64-bit: Home or Pro version 21H2 or higher, or Enterprise or Education version 21H2 or higher.
  - Windows 10 64-bit: Home or Pro 21H1 (build 19043) or higher, or Enterprise or Education 20H2 (build 19042) or higher.
  - Enable the WSL 2 feature on Windows.
  - The following hardware prerequisites are required to successfully run WSL 2 on Windows 10 or Windows 11:

    - 64-bit processor with Second Level Address Translation (SLAT)
    - 4GB system RAM
    - BIOS-level hardware virtualization support must be enabled in the BIOS settings.

Prerequisites for Docker Desktop

Docker requires Hyper-V enabled in Windows 10. Without this Docker will not run after you install Docker. To enable Hyper-V in Windows.

Hyper-V Installation Prerequisites

The Hyper-V role can be enabled on these versions of Windows 10:

- Windows 10 Enterprise
- Windows 10 Professional
- Windows 10 Education

The Hyper-V role cannot be installed on:

- Windows 10 Home
- Windows 10 Mobile
- Windows 10 Mobile Enterprise

To install Hyper-V, your computer must meet the below requirement.

- 64-bit Processor with Second Level Address Translation (SLAT).
- CPU support for VM Monitor Mode Extension (VT-c on Intel CPU's).
- Minimum of 4 GB memory. As virtual machines share memory with the Hyper-V host, you will need to provide enough memory to handle the expected virtual workload.

The following items will need to be enabled in the system BIOS:

- Virtualization Technology – may have a different label depending on motherboard manufacturer.
- Hardware Enforced Data Execution Prevention.

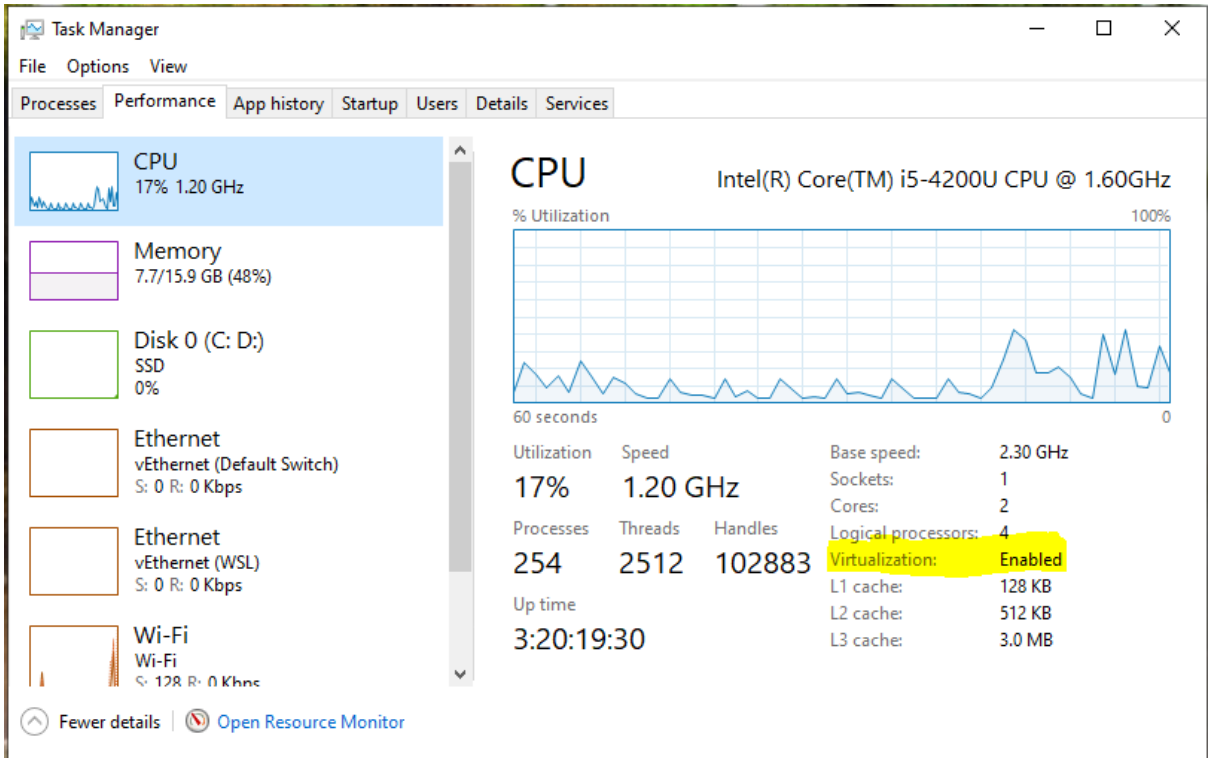
Note: The above requirement might seem confusing to you. What all the above means is that you should have Windows 10 Pro, Enterprise or Education edition installed on your system and your CPU or processor must support Virtualization Technology. VMware Workstation, VMware Player or Oracle Virtual Box does not require Virtualization Technology. To find if your processor supports Virtualization Technology or not, you can Google search the specification of your processor or follow the following step.

How to check if your CPU has Intel VT-x or AMD-V?

You need to check for Intel VT-x if you are using Intel based CPU and AMD-V if you are using AMD CPU. They are the same technology offered by two different processor manufacturers. You can check if your CPU has virtualization technology or not right from within Windows OS.

First method – Easiest option- Check your Task Manager

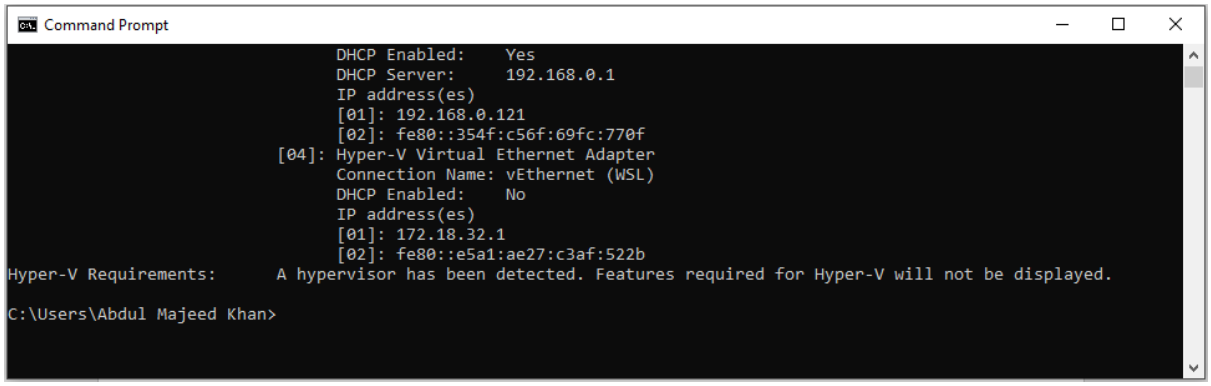
If you have Windows 10 or Windows 8 operating system, the easiest way to check is by opening up **Task Manager->Performance Tab**. You should see Virtualization as shown in the below screenshot. If it is enabled, it means that your CPU supports Virtualization and is currently enabled in BIOS. If it shows disabled, you need to enable it in BIOS. If you don't see virtualization, it means that your CPU does not support virtualization.



Second method – Check command in windows terminal

Open Windows terminal or command prompt and type the following command:

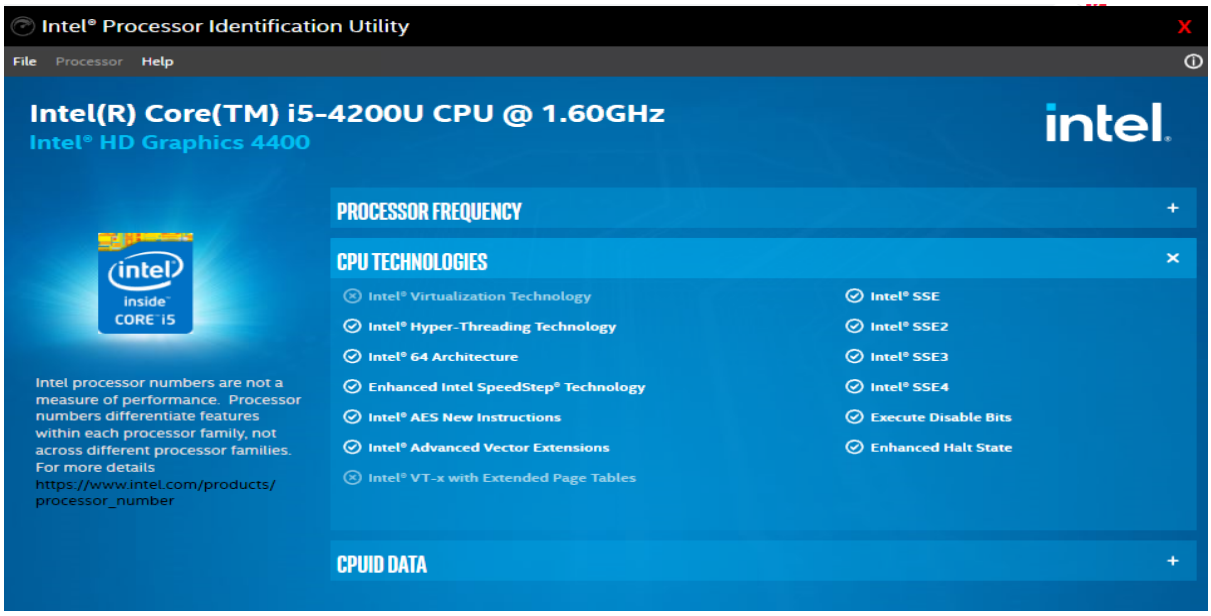
systeminfo



Third method- Use utility tool provided by Intel

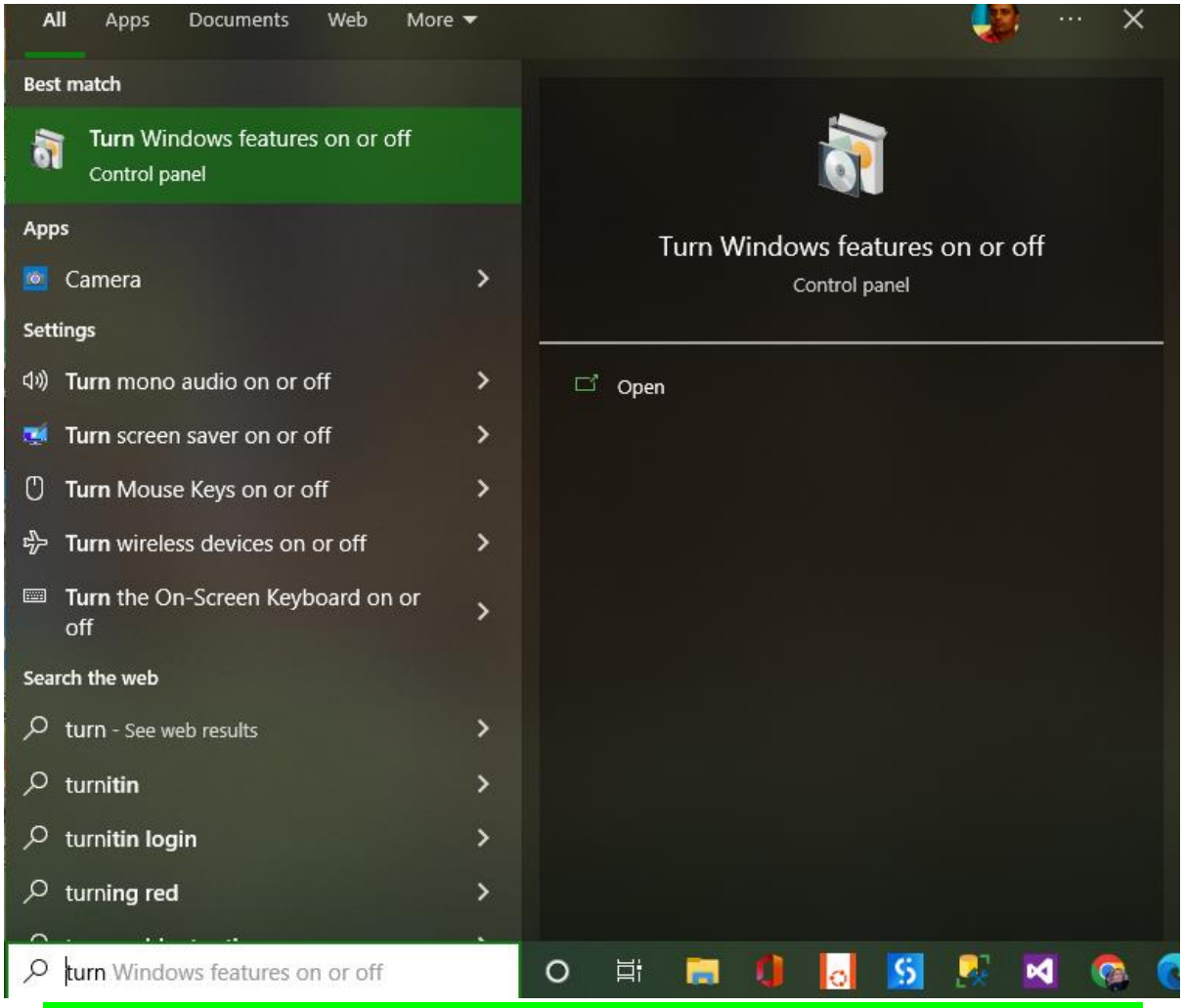
Intel provide their own utility which you will have to download and Run. One you run it, the result dialog box will have an entry for Vitalization. Below is the link for the utility tool for Intel and their corresponding result screenshot when you run it.

Video link reference by sir Ameen Alam [https://www.youtube.com/watch?v=R4uy6Oqiy5I]

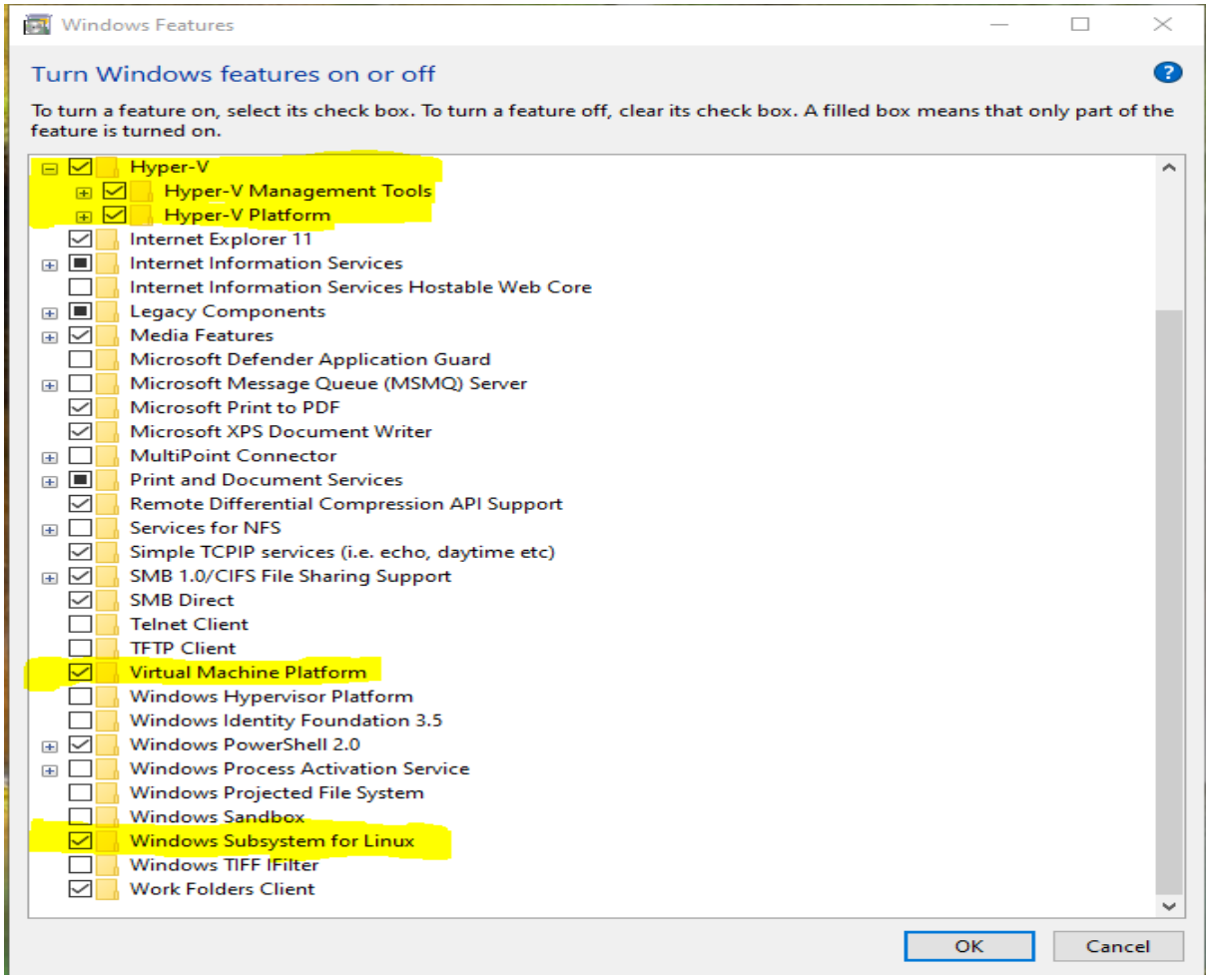


How to enable Hyper-V from Windows features on or off

Make sure that Virtual Machine Platform is enabled on your Windows installation. You can easily check this by opening the *Turn Windows features on or off* from your Control panel.



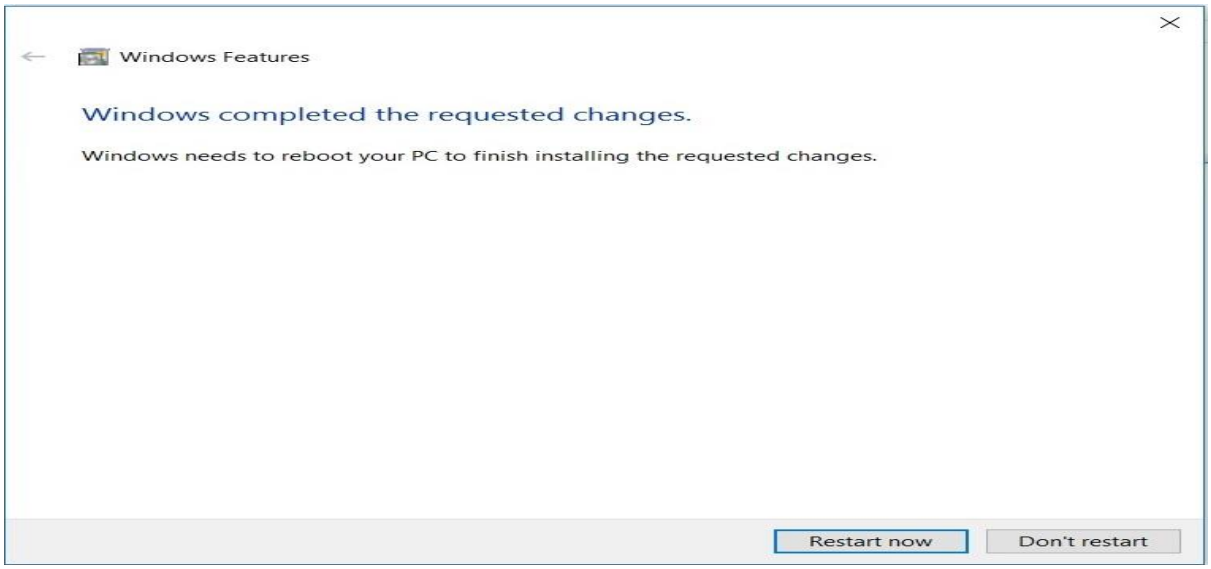
Video link reference by sir Ameen Alam [https://www.youtube.com/watch?v=R4uy6Oqiy5I]



Click OK and wait for the process to complete.

At the end you will be asked to restart your computer. Please go ahead and restart your computer for the rest of the process to complete

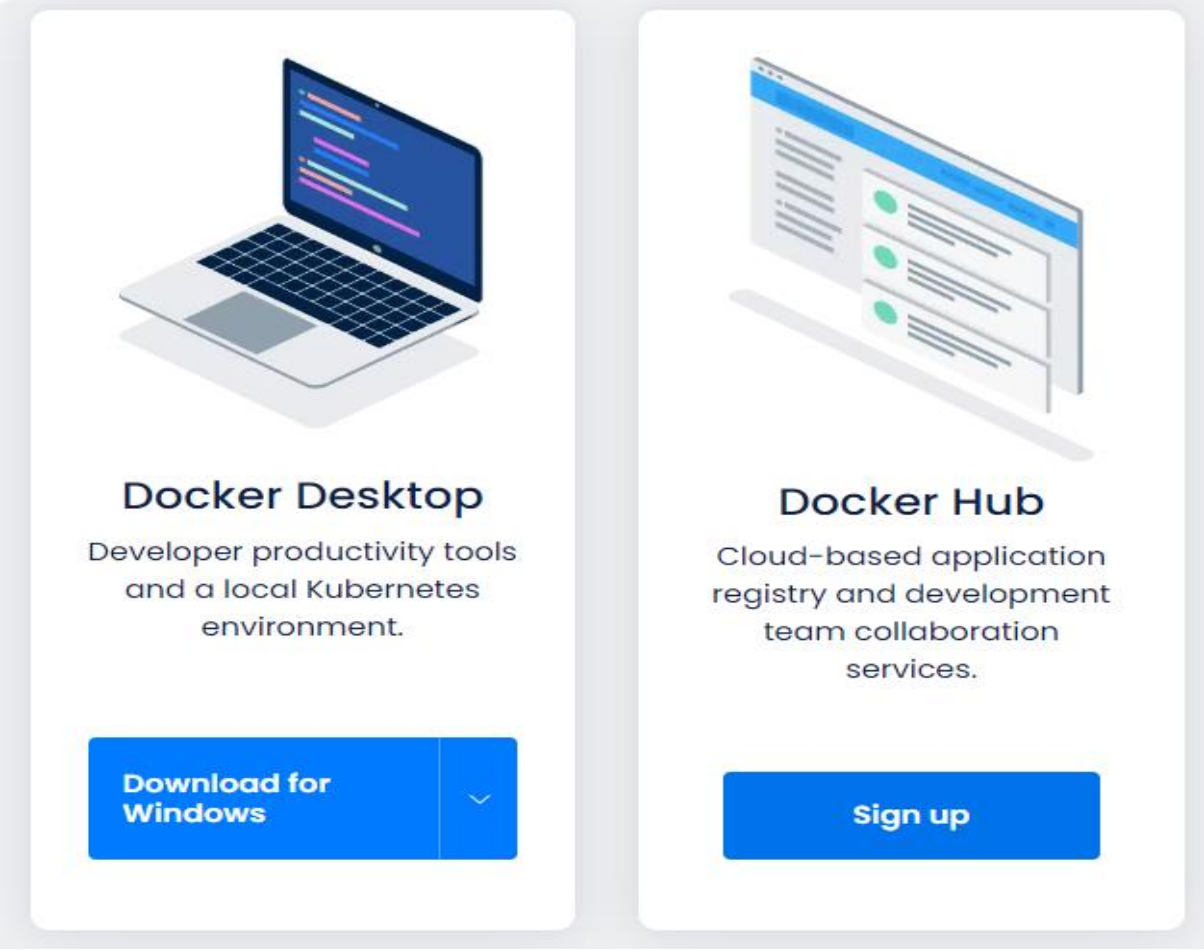
Video link reference by sir Ameen Alam [https://www.youtube.com/watch?v=R4uy6Oqiy5I]



Install Docker Desktop on Windows

Step 1 – Download Docker

Officially Docker installer, community edition can be downloaded from Go to the Docker Official home Page. (https://www.docker.com/)

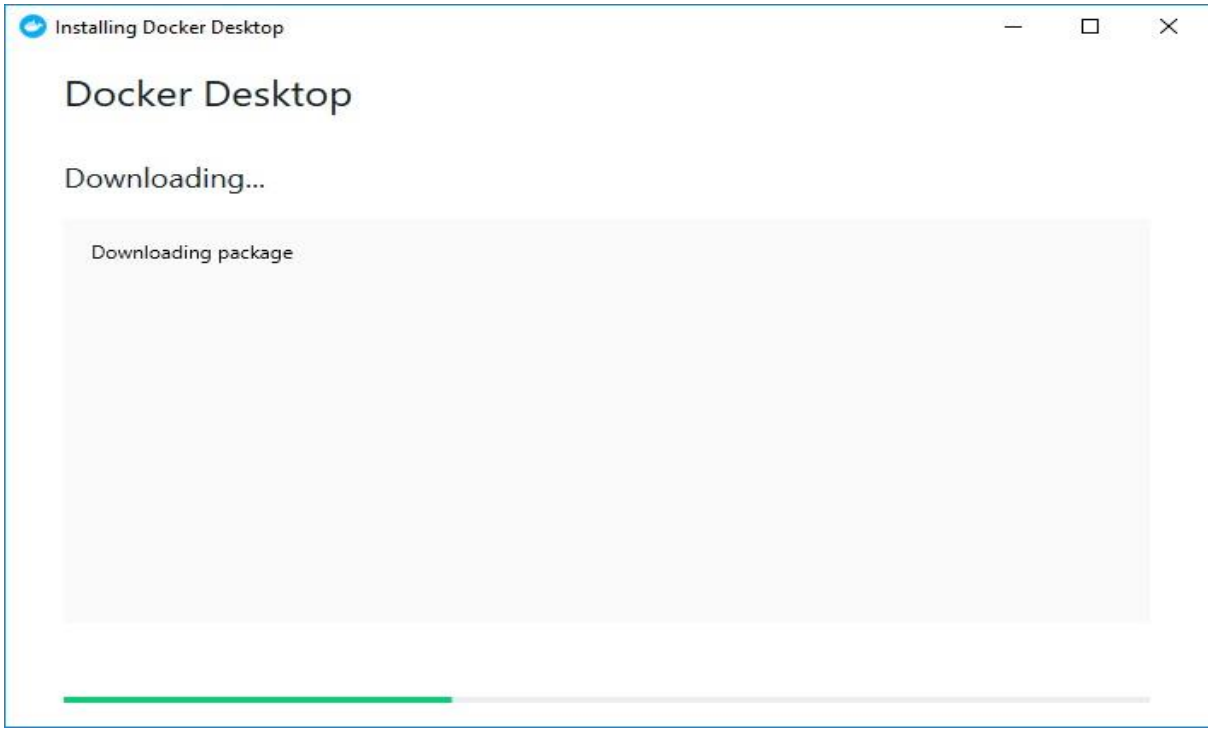


Video link reference by sir Ameen Alam [https://www.youtube.com/watch?v=R4uy6Oqiy5I]

Step 2 – Run the installer

Double click on the downloaded installer file to start the installation wizard. You will see Windows UAC – User Access Control asking for permission to allow the program to run. Click yes to continue.

Now you will see Docker installer downloading additional files required. If you don't have internet connection, installer will move on to the next step. Wait for the process to complete and you will see the configuration screen.

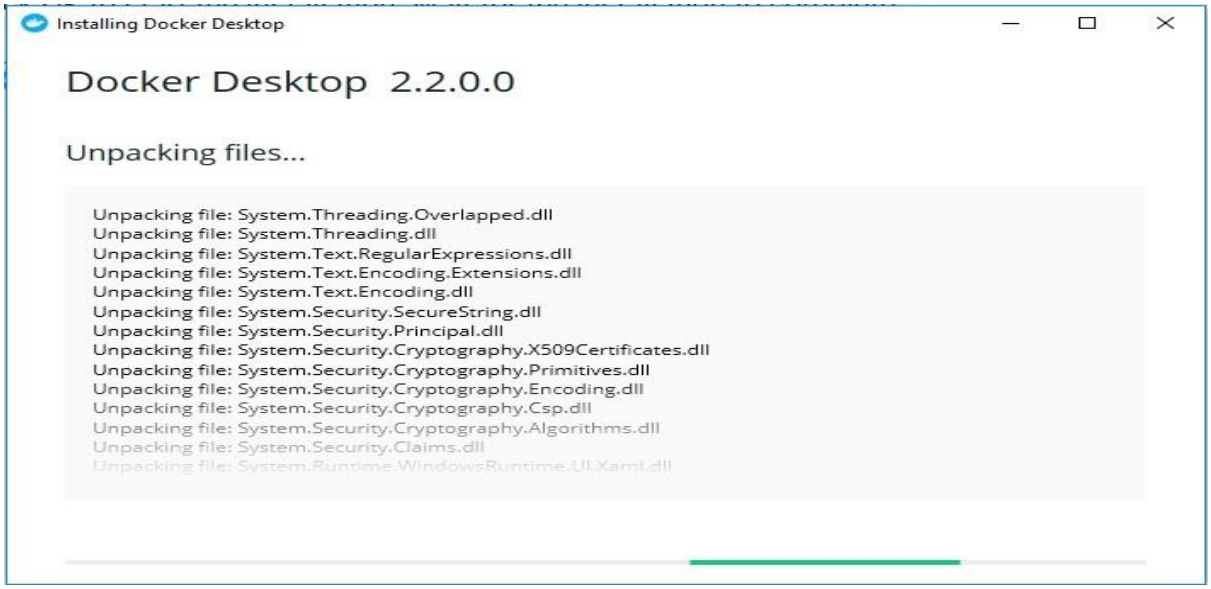


Video link reference by sir Ameen Alam [https://www.youtube.com/watch?v=R4uy6Oqiy5I]

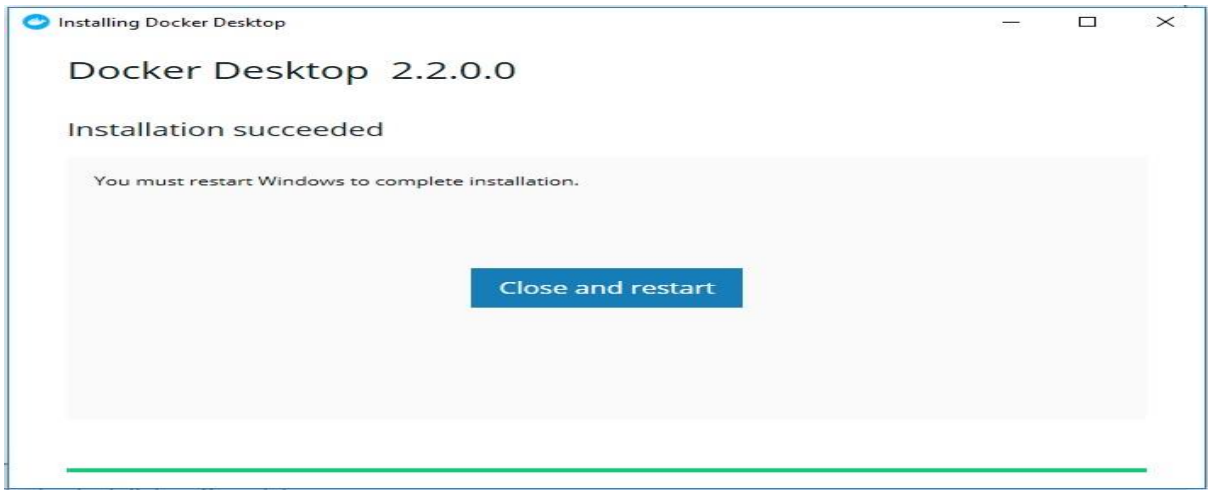
Step 3 – Configuration Settings

In this dialog box you will be asked if you want to create desktop icon for Docker. I leave this checked. Second option is if you want to use Linux or Windows Container. This option can be changed later on. I leave it as default, that is unchecked.

Click OK to start the installation. Wait for the installation to complete.



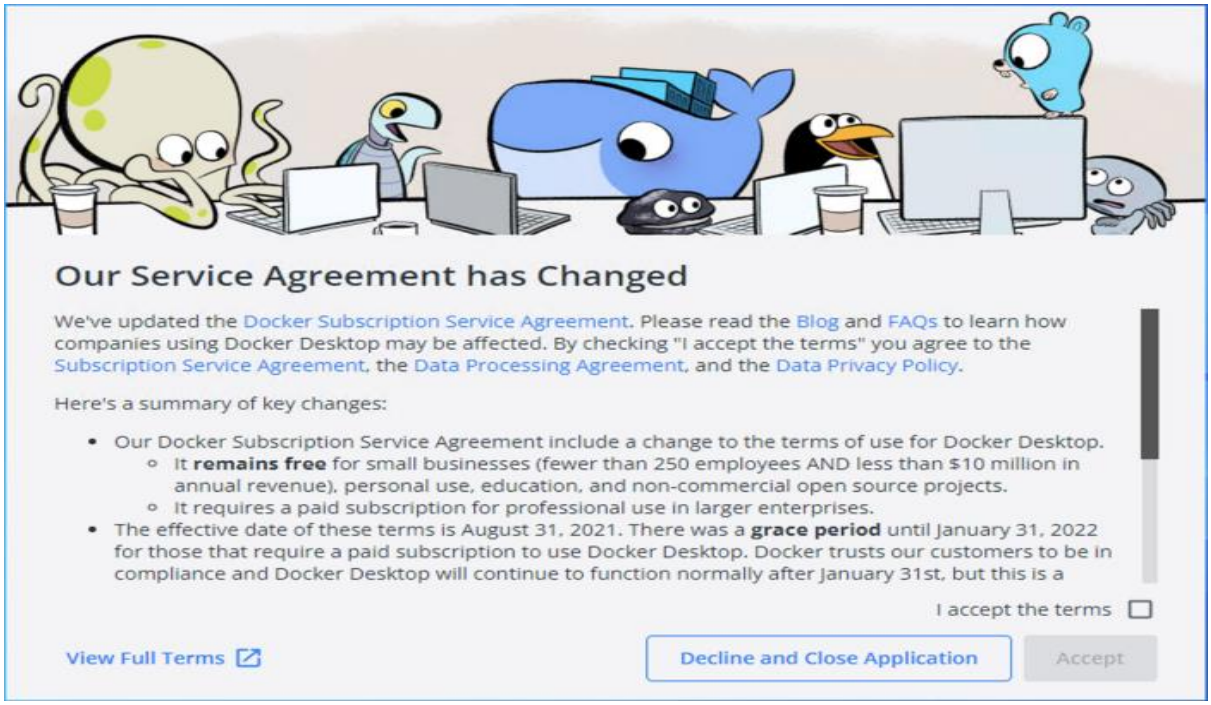
Once the installation completes, click on Close and restart to complete the installation.



Video link reference by sir Ameen Alam [https://www.youtube.com/watch?v=R4uy6Oqiy5I]

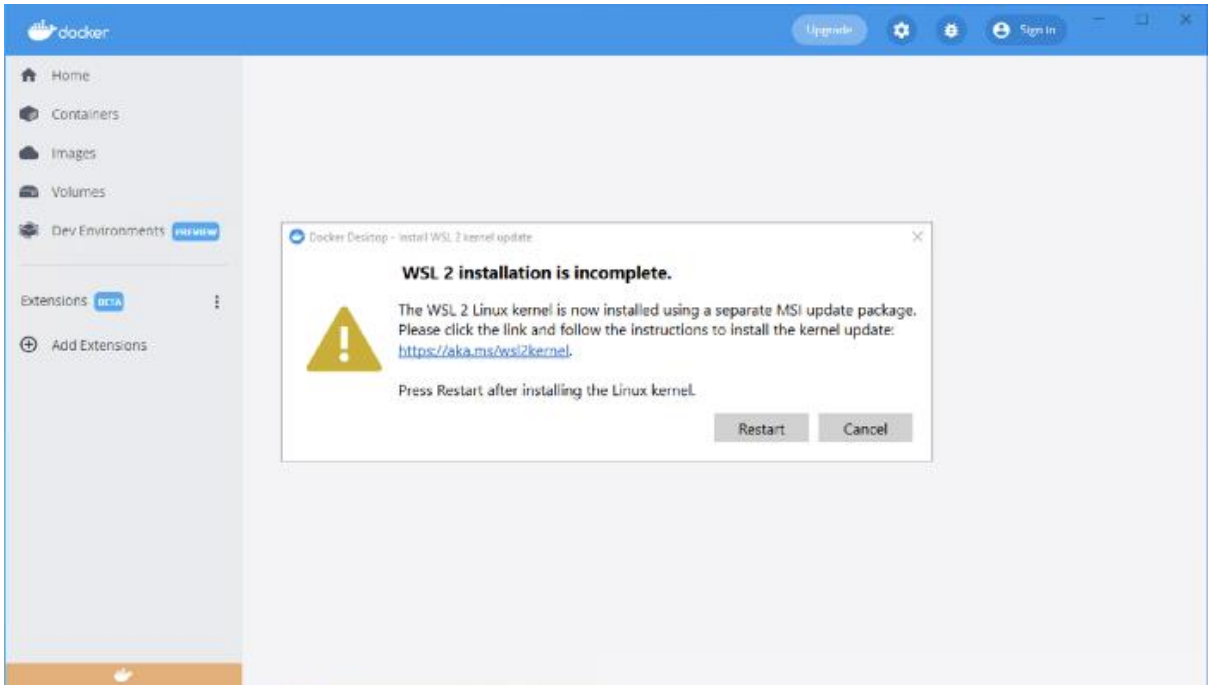
Step 4: License agreement

After the restart, Docker will start automatically and you should see the window below:



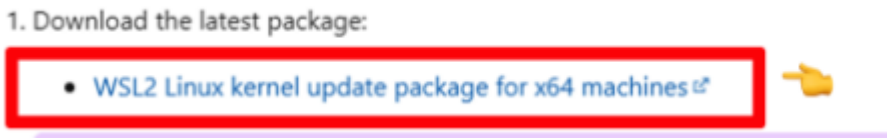
Step 5: WSL 2 installation

After you accept the license terms, the Docker Desktop window will open. However, we are not done yet. Since we have selected WSL 2 as our virtualization engine, we also need to install it. **Don't click Restart just yet!**

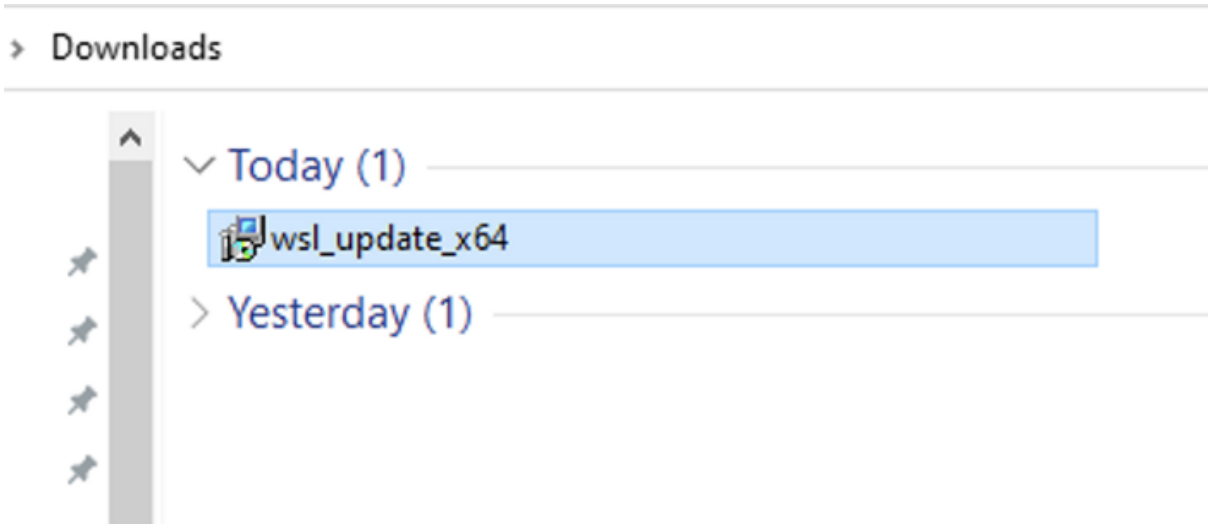


Follow the link in the dialog window and download WSL 2.

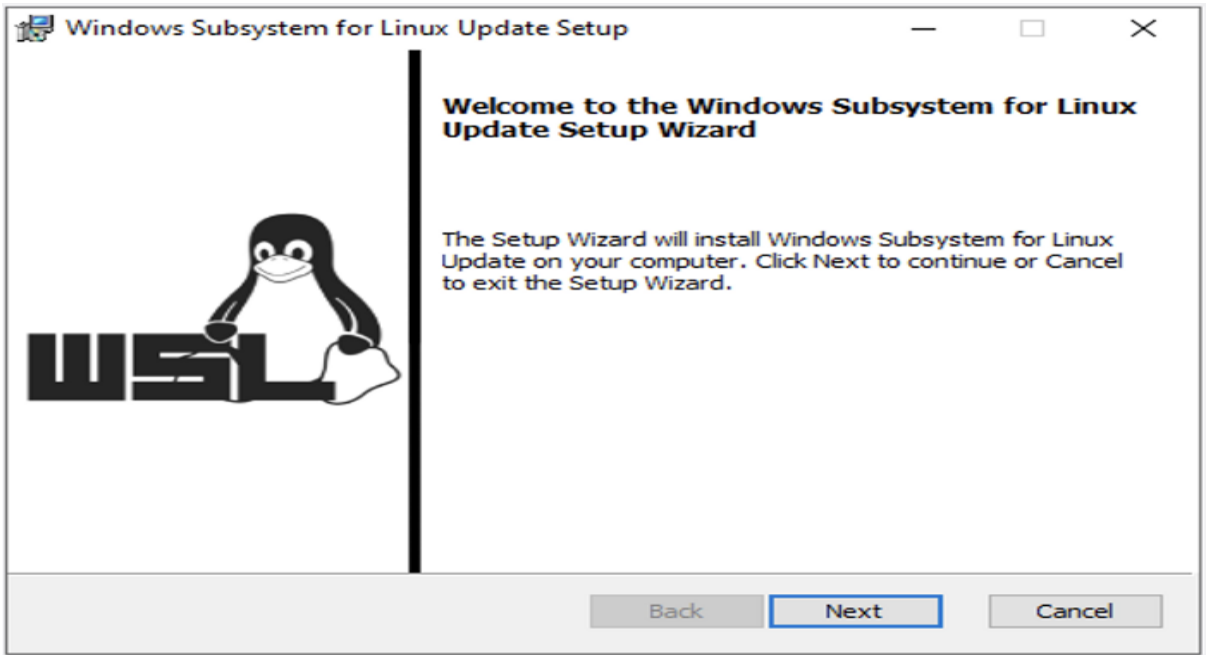
Video link reference by sir Ameen Alam [https://www.youtube.com/watch?v=R4uy6Oqiy5I]



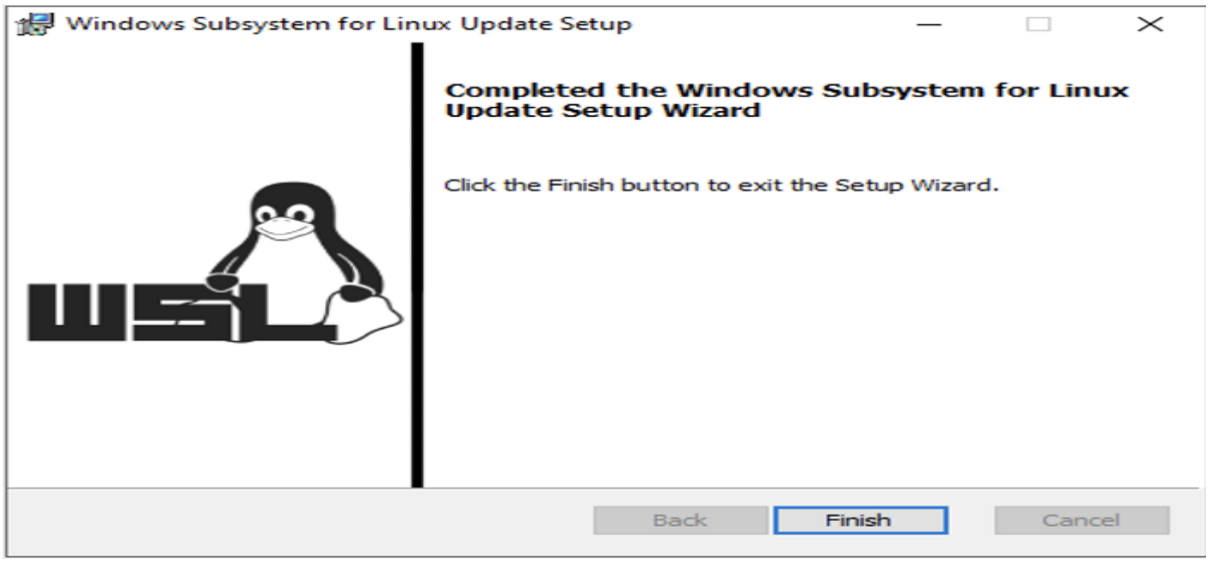
Open the installer.



Click on *Next* to begin installing the Windows Subsystem for Linux (WSL).



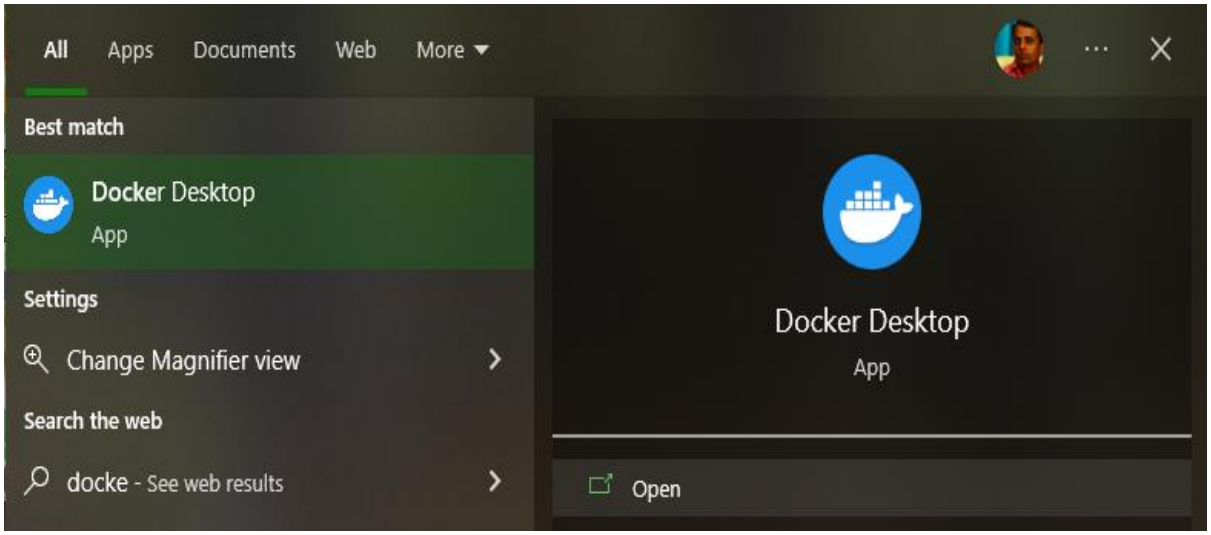
After a few seconds, the installation should complete. So, you may click on Finish.

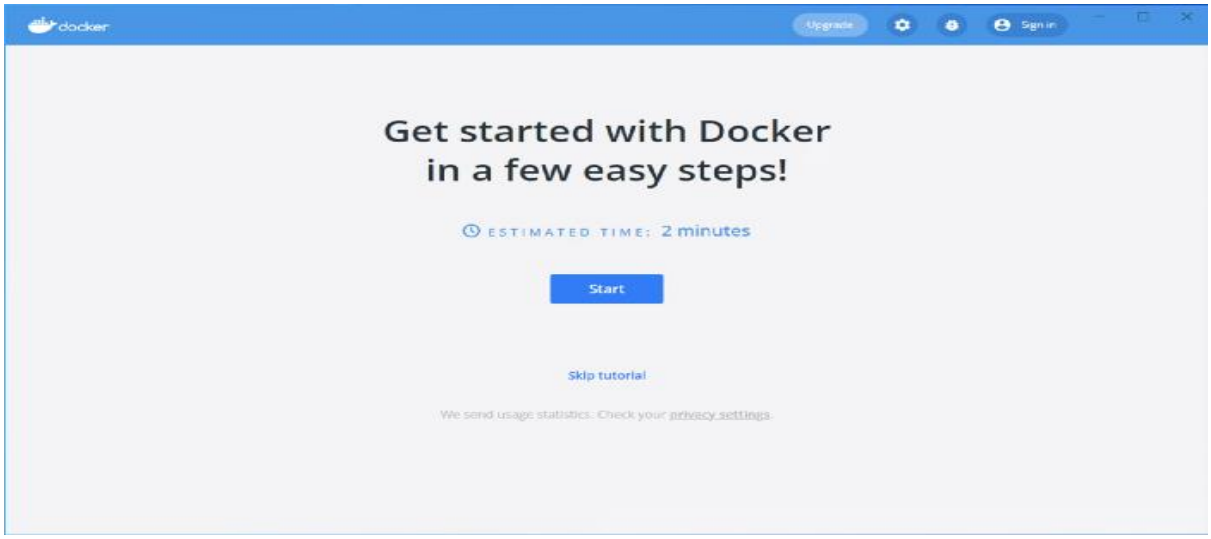


If you still have the Docker Desktop dialog window still lurking in the background, click on Restart. Otherwise, just restart your computer as you normally do.

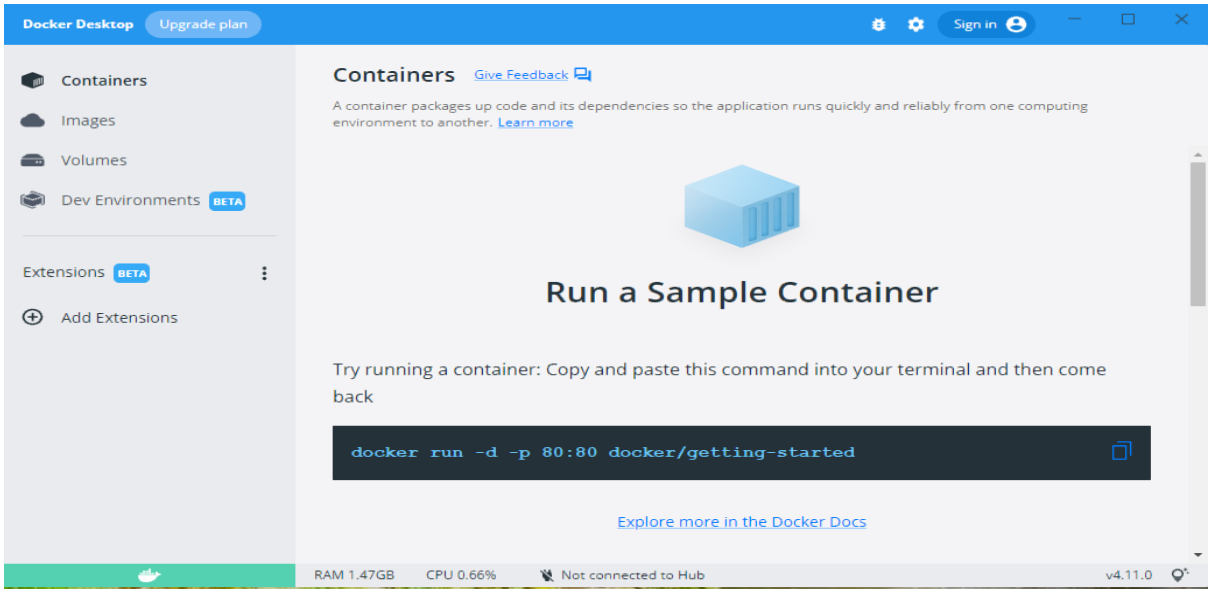
Step 6 — Starting Docker Desktop

If Docker Desktop did not start on its own, simply open it from the start menu.





After this, your Docker Desktop screen should look like this.



Step 7— Testing Docker

Open your favorite command line tool and type in the following command:

```
docker run hello-world
```

Video link reference by sir Ameen Alam [https://www.youtube.com/watch?v=R4uy6Oqiy5I]

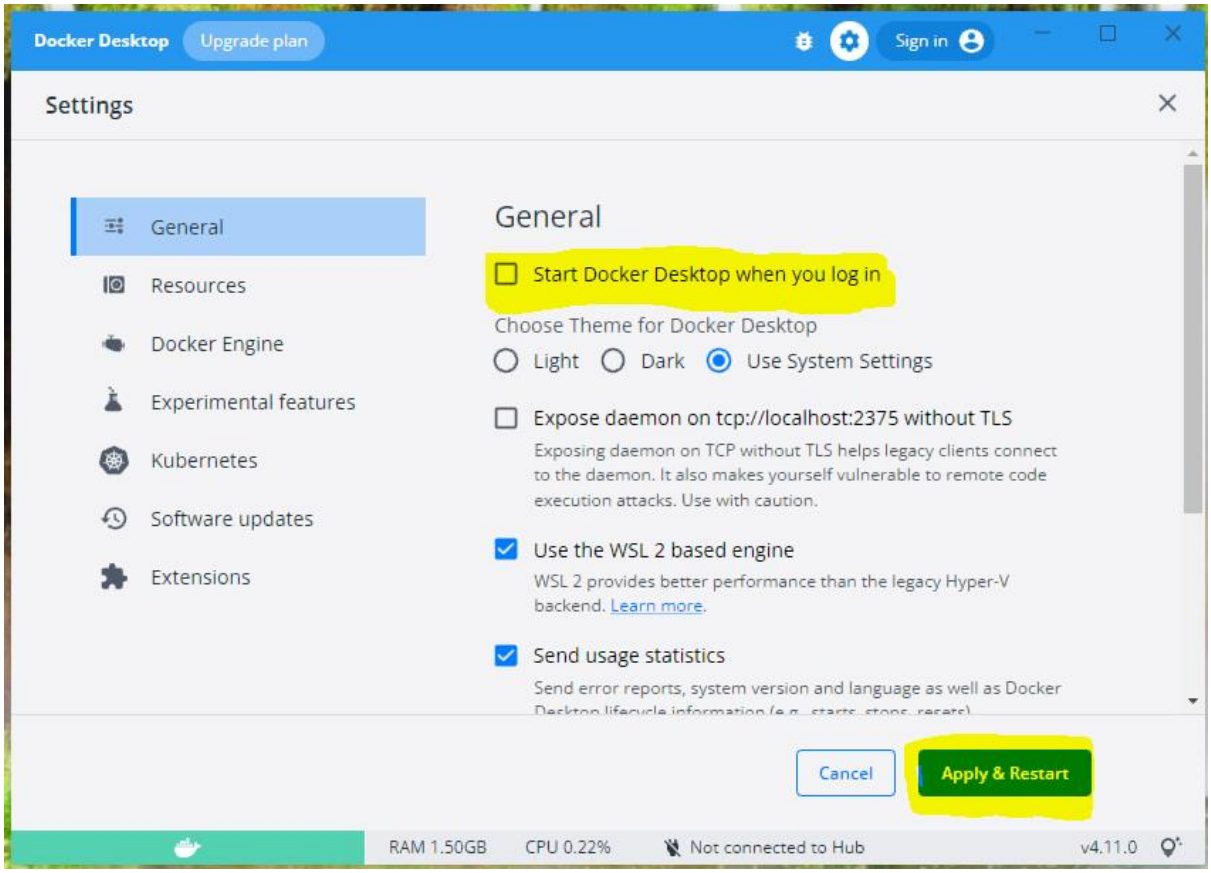
```
Windows PowerShell
Windows PowerShell
Copyright (C) Microsoft Corporation. All rights reserved.

Try the new cross-platform PowerShell https://aka.ms/pscore6

PS C:\Users\Abdul Majeed Khan> docker run hello-world

Hello from Docker!
This message shows that your installation appears to be working correctly.

To generate this message, Docker took the following steps:
 1. The Docker client contacted the Docker daemon.
 2. The Docker daemon pulled the "hello-world" image from the Docker Hub.
    (amd64)
 3. The Docker daemon created a new container from that image which runs the
    executable that produces the output you are currently reading.
 4. The Docker daemon streamed that output to the Docker client, which sent it
    to your terminal.

To try something more ambitious, you can run an Ubuntu container with:
 $ docker run -it ubuntu bash

Share images, automate workflows, and more with a free Docker ID:
 https://hub.docker.com/

For more examples and ideas, visit:
 https://docs.docker.com/get-started/

PS C:\Users\Abdul Majeed Khan> exit
```

Once docker service starts for the first time, you will see a welcome screen asking you to login to Docker Hub. Enter the docker hub credentials you have created and click on sign in. This is optional but it is highly recommended that you do it.

Video link reference by sir Ameen Alam [https://www.youtube.com/watch?v=R4uy6Oqiy5I]

Step 8 – Disable Start Docker at Startup

By default, docker will automatically start when you turn on/login to your computer. Since Docker requires a lot of RAM, I don't recommend this. We can start docker manually when we want to use it.To disable starting docker at startup, right click on the docker Icon in the task bar. Click on Settings, under General Tab, uncheck, Start Docker when your login.



Video link reference by sir Ameen Alam [https://www.youtube.com/watch?v=R4uy6Oqiy5I]