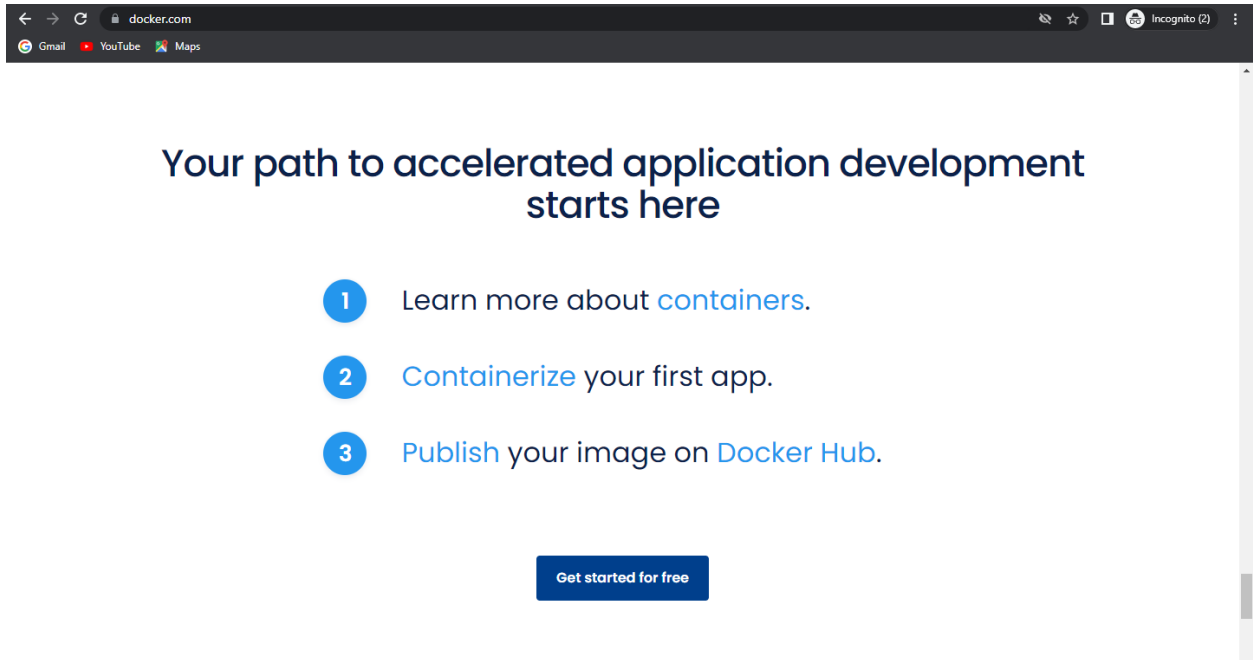**Aim:** To Study and implement containerization using DOCKER.
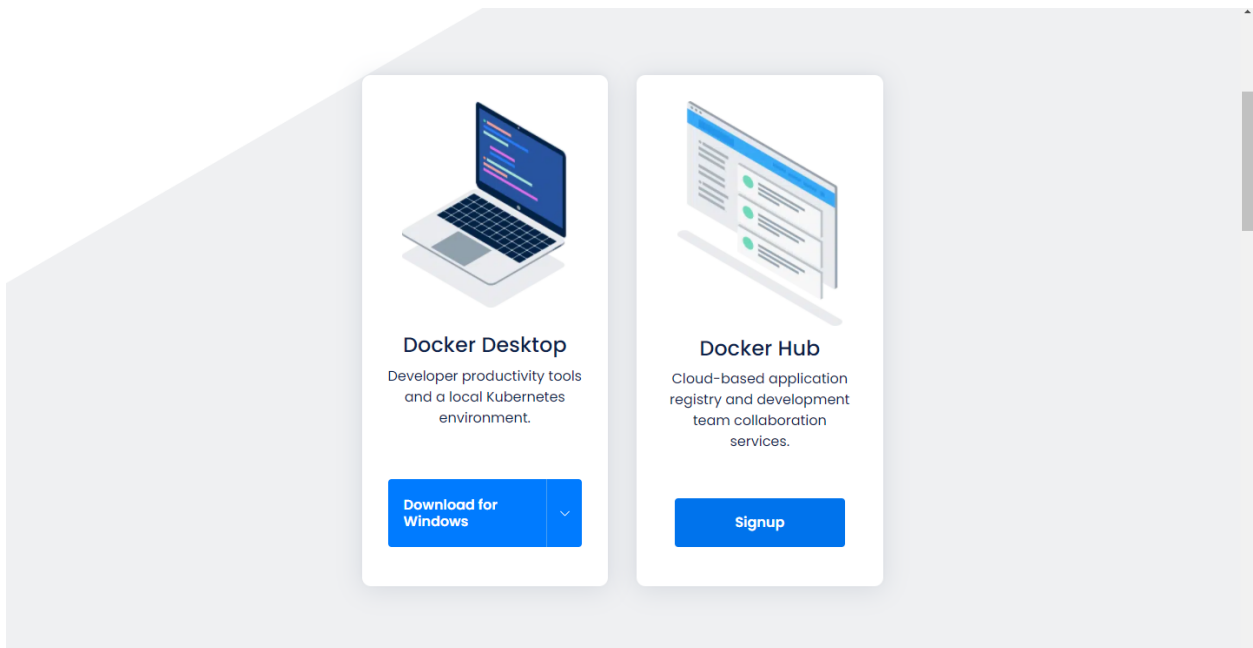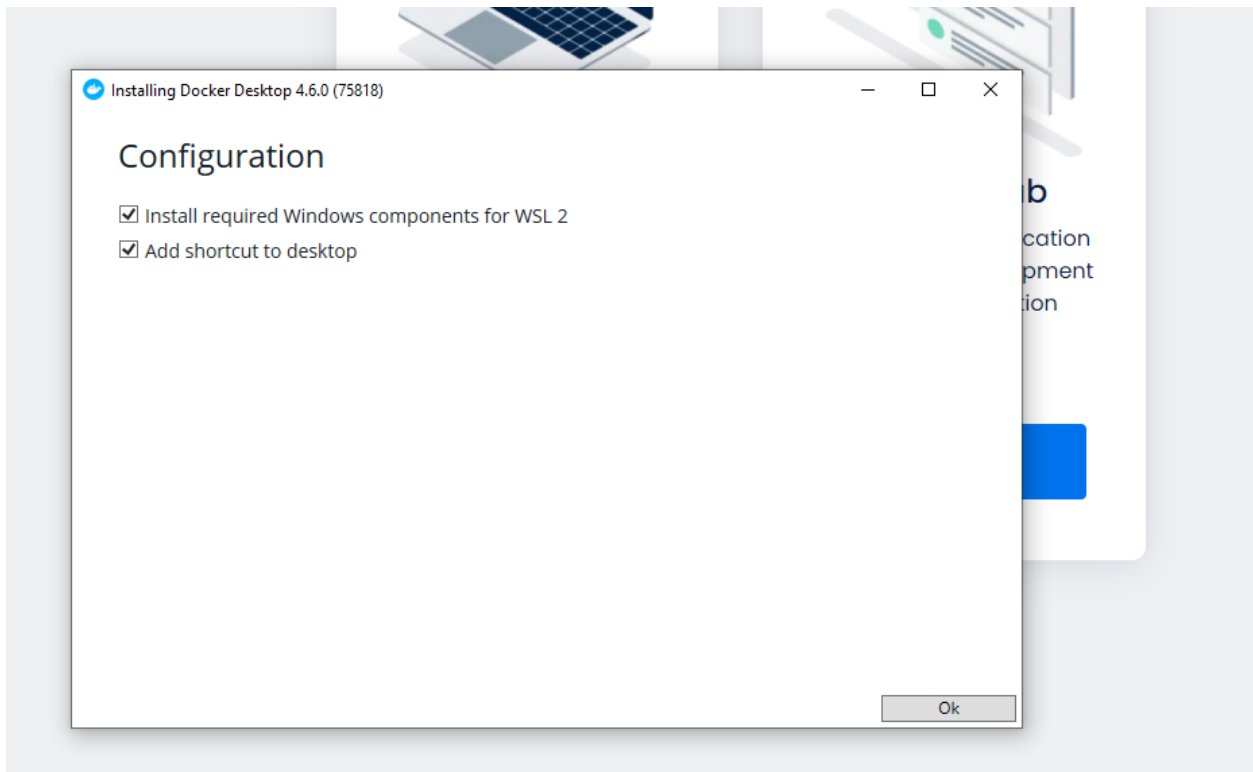
Implementation:

Step 01: Open docker.com
Scroll down, Click on 'Get started for free' tab.

Step 02: Click on Docker Desktop, Download it.

Step 03: After downloading, Open 'Docker Desktop Installer' & start installation.


Installing Docker Desktop 4.6.0 (75818)

Configuration

☑ Install required Windows components for WSL 2
☑ Add shortcut to desktop

Ok

Installing Docker Desktop 4.6.0 (75818)

Docker Desktop 4.6.0

Unpacking files...

Unpacking file: resources/docker-desktop.iso
Unpacking file: resources/ddvp.ico
Unpacking file: resources/config-options.json
Unpacking file: resources/componentsVersion.json
Unpacking file: resources/bin/docker-compose
Unpacking file: resources/bin/docker
Unpacking file: resources/.gitignore
Unpacking file: InstallerCli.pdb
Unpacking file: InstallerCli.exe.config
Unpacking file: frontend/vk_swiftshader_icd.json
Unpacking file: frontend/v8_context_snapshot.bin
Unpacking file: frontend/snapshot_blob.bin
Unpacking file: frontend/resources/regedit/vbs/util.vbs
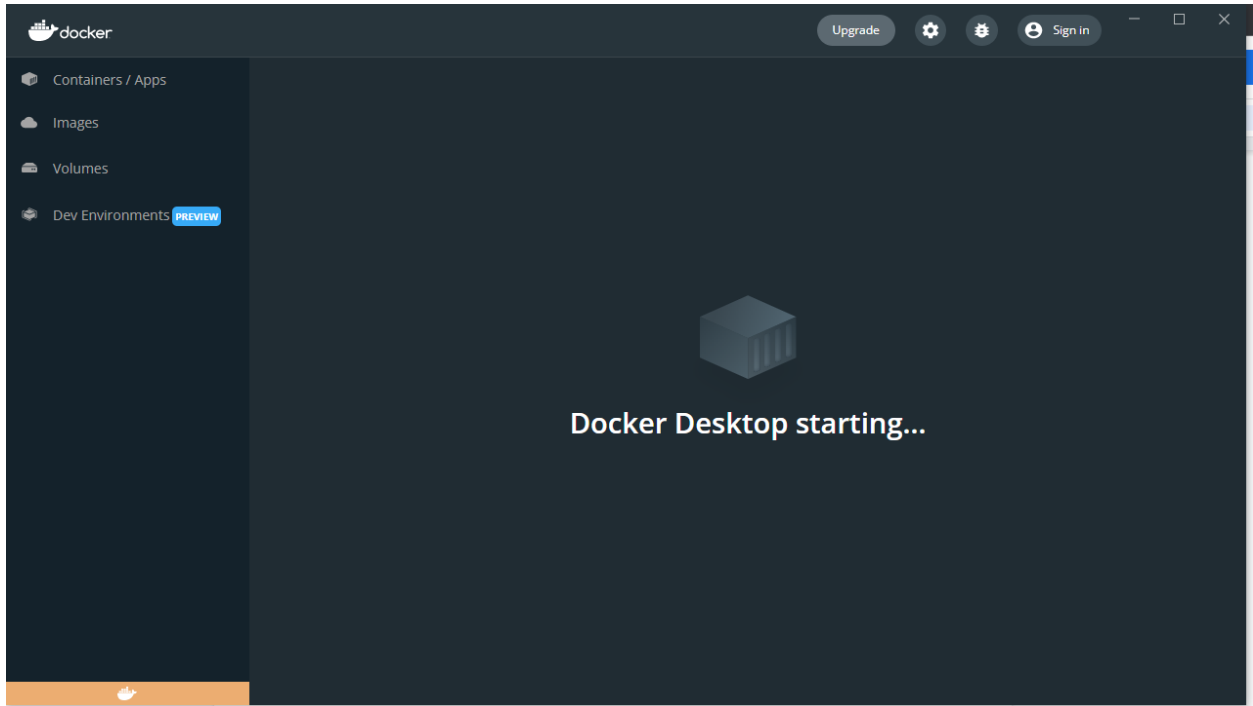Unpacking file: frontend/resources/regedit/vbs/regUtil.vbs
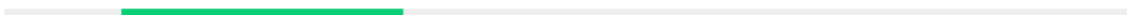
Step 04: After Installation, Restart your device.
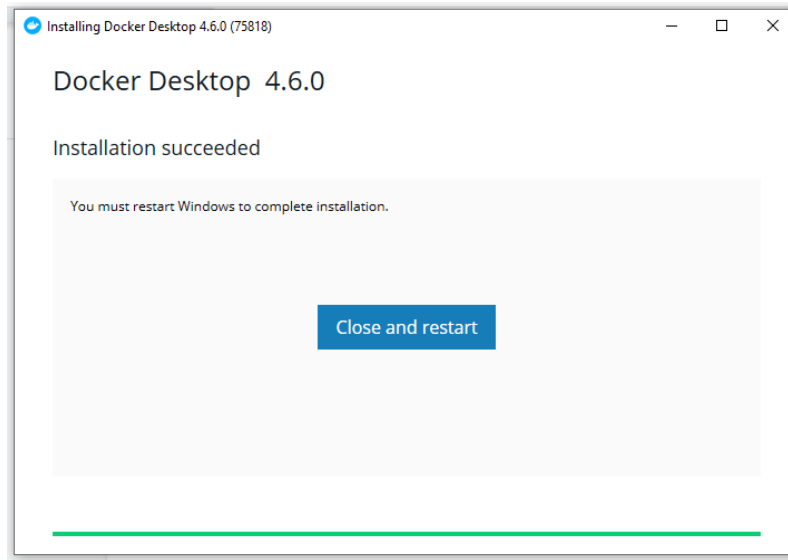
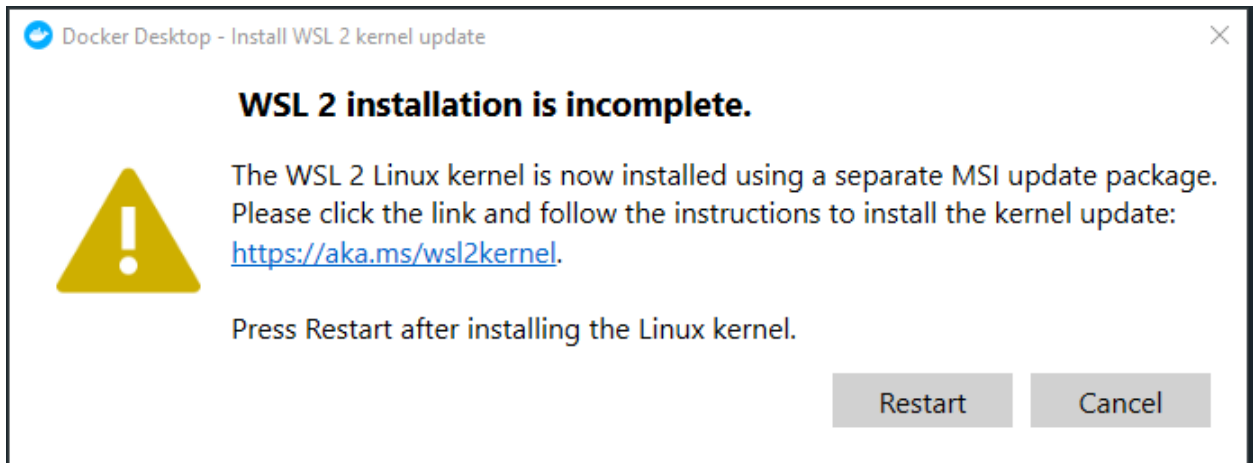**Step 05:** Accept the terms and conditions, Click on Accept.
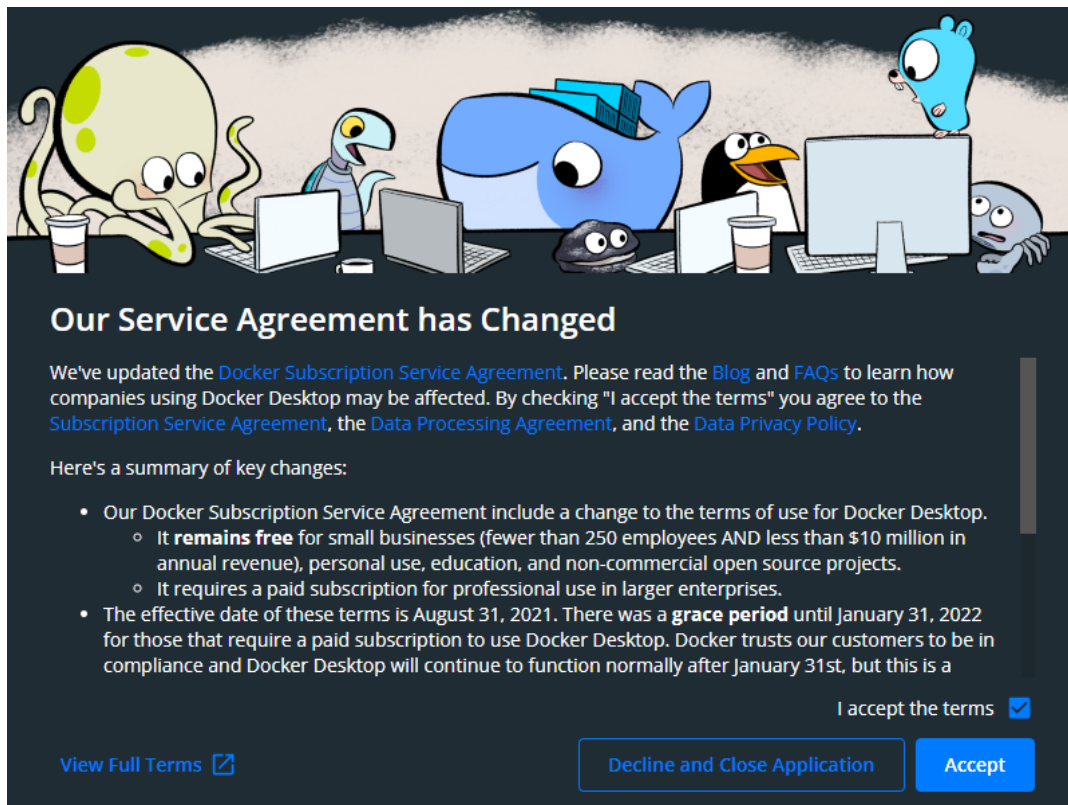
The following window should pop up.
Click on the link - https://aka.ms/wsl2kernel.
(Do not close this window).

Download the WSL2 Linux kernel update package for x64 machines.
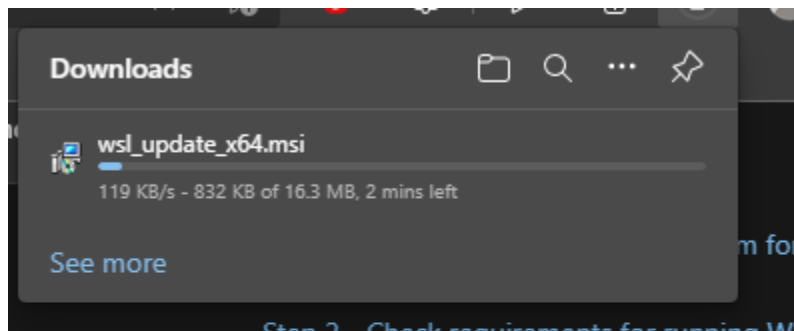
Step 4 - Download the Linux kernel update package

1. Download the latest package:
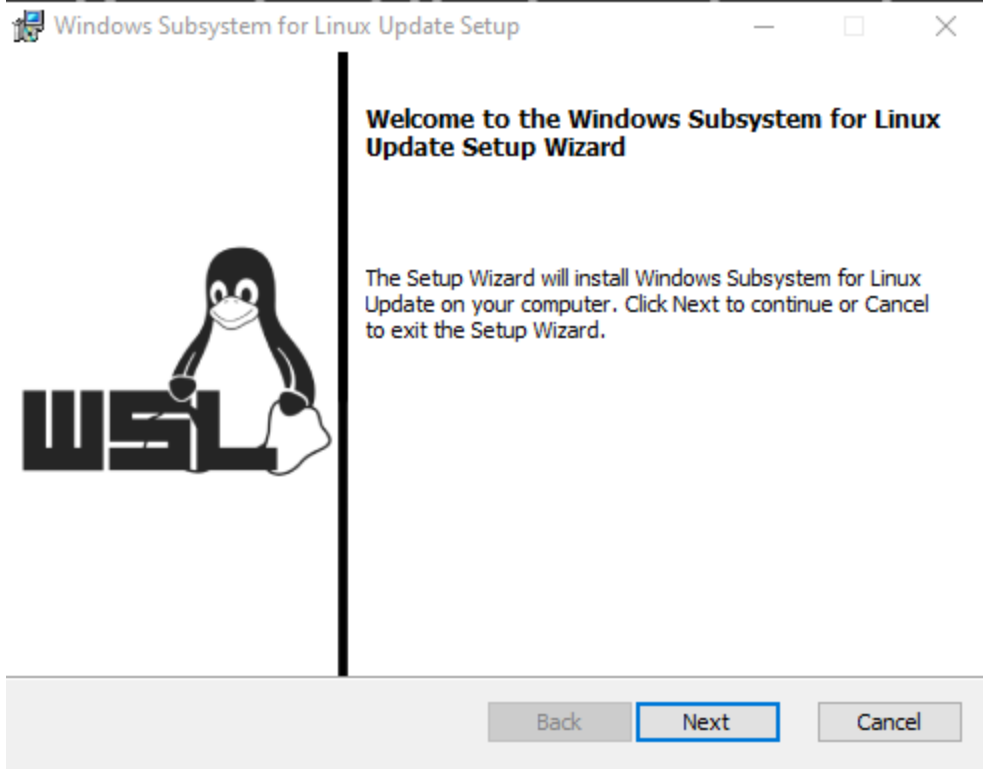
   - WSL2 Linux kernel update package for x64 machines ⬈

   > ⓘ **Note**
   >
   > If you're using an ARM64 machine, please download the **ARM64 package** ⬈ instead.
   > If you're not sure what kind of machine you have, open Command Prompt or
   > PowerShell and enter: `systeminfo | find "System Type"`. **Caveat:** On non-English
   > Windows versions, you might have to modify the search text, translating the "System
   > Type" string. You may also need to escape the quotations for the find command. For
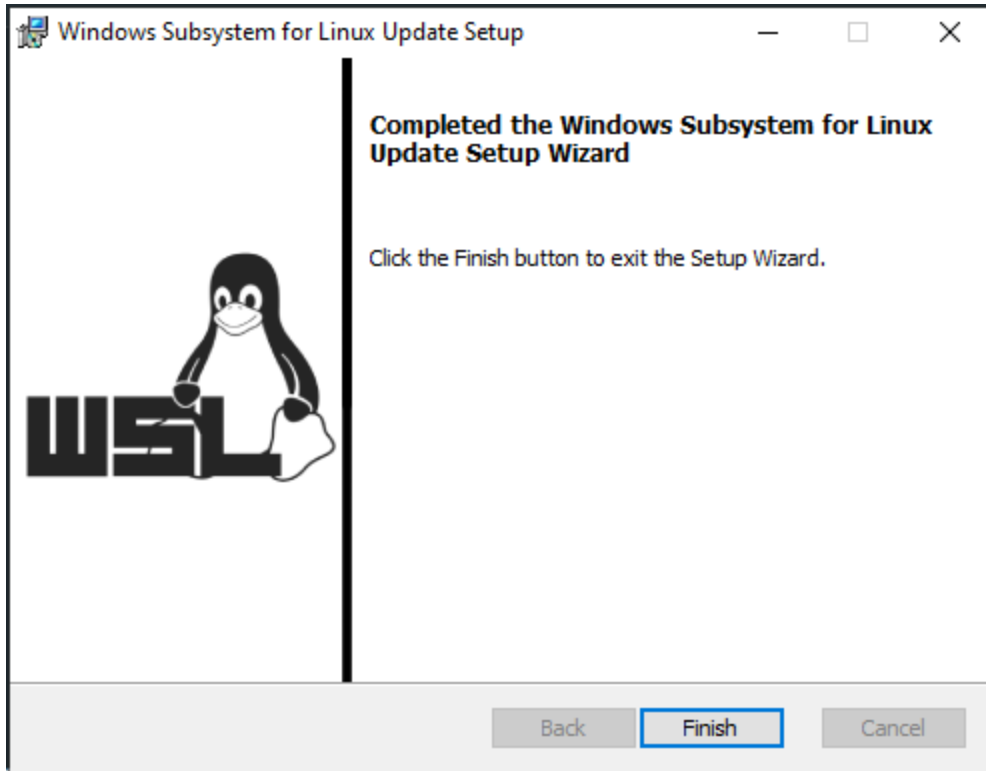   > example, in German `systeminfo | find '"Systemtyp"'`.

2. Run the update package downloaded in the previous step. (Double-click to run - you will
   be prompted for elevated permissions, select 'yes' to approve this installation.)

Downloads ▢ Q ⋯ ☆

🔲 wsl_update_x64.msi
▬▬
119 KB/s - 832 KB of 16.3 MB, 2 mins left

See more

After Download is complete, Run the *.msi* package.
Click on next.

Windows Subsystem for Linux Update Setup

Welcome to the Windows Subsystem for Linux Update Setup Wizard

The Setup Wizard will install Windows Subsystem for Linux Update on your computer. Click Next to continue or Cancel to exit the Setup Wizard.

Back   Next   Cancel

After, the setup is complete, Click on finish.

Open Powershell as an Administrator.
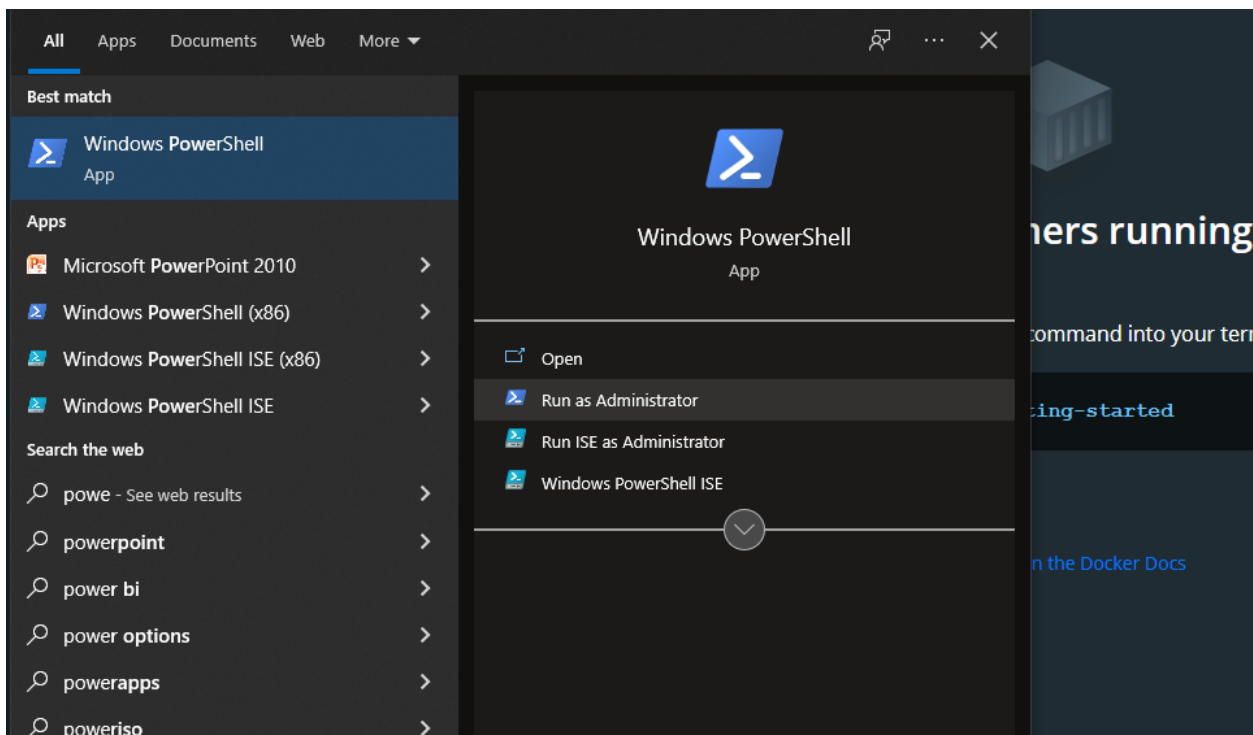
Run the following Command:
wsl --set-default-version 2

Now, Click on Restart
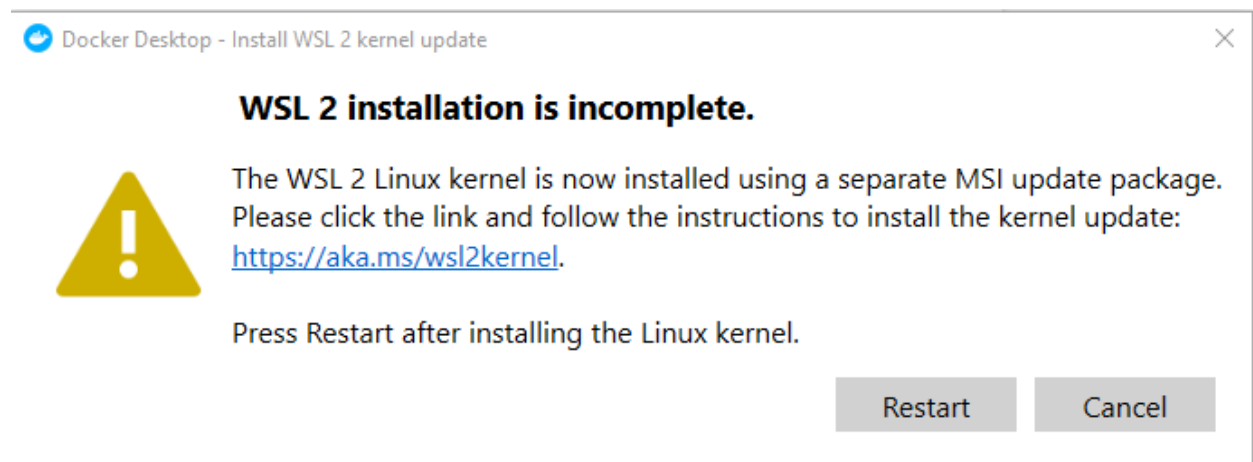
Docker should now restart.
Click on Start.
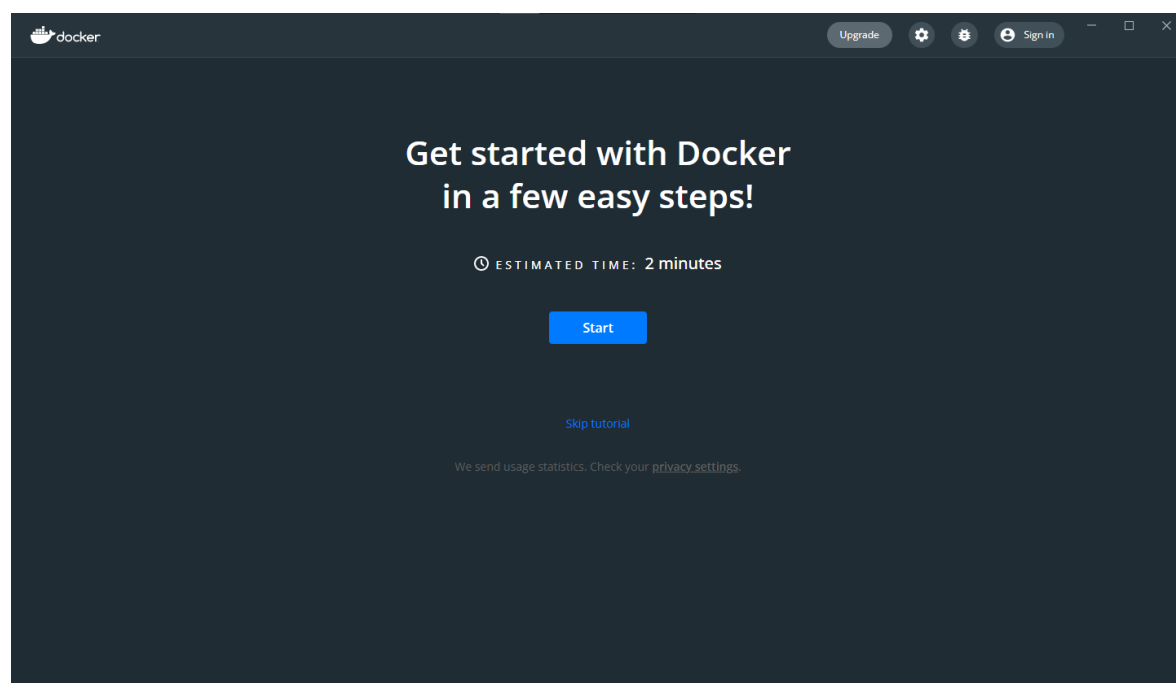
The following window should pop up.
This means, Installation is now complete.

Open Command Prompt, run the following commands:
1) To check the version of Docker:
    docker --version
2) To install image of ubuntu
    docker pull ubuntu
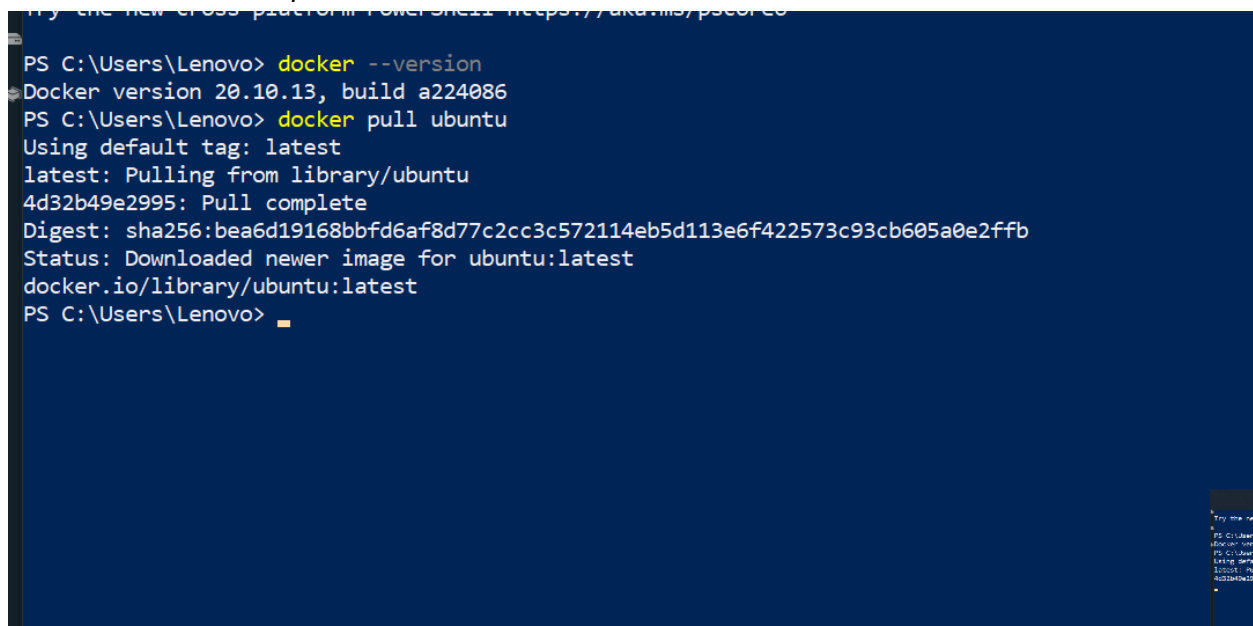
3) Check downloaded images,
   docker images

```
PS C:\Users\Lenovo> docker images
REPOSITORY     TAG          IMAGE ID        CREATED        SIZE
ubuntu         latest       ff0fea8310f3    4 days ago     72.8MB
PS C:\Users\Lenovo>
```
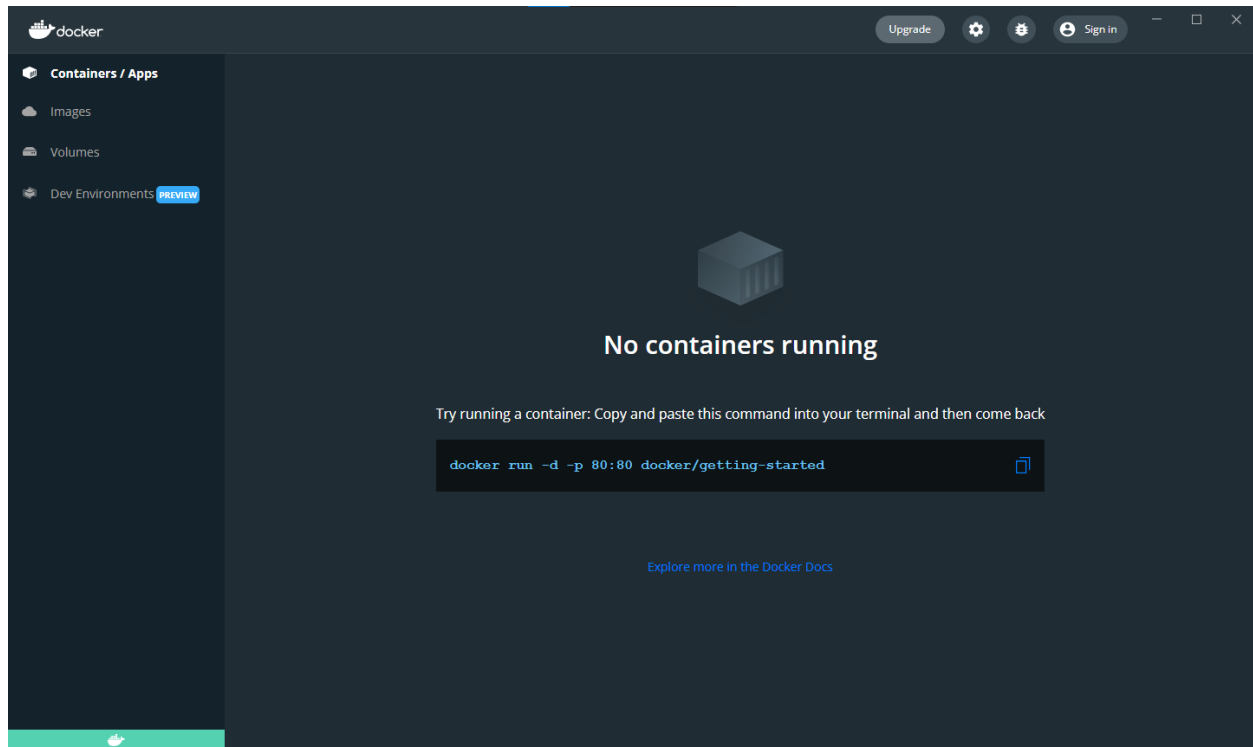
4) Run ubuntu OS
   docker run -it ubuntu /bin/bash

```
PS C:\Users\Lenovo> docker run -it ubuntu /bin/bash
root@f45775828da6:/#
```

5) Open another Command Prompt and follow the steps shown below.
   -docker ps
   docker container ls –a
   docker container rm b71e3e6b1118   //copy docker id for remove but first
                 (Use your container ID in the above command)

   stop your docker
   - docker container stop b71e3e6b1118
   - docker container rm b71e3e6b1118
   - docker ps
   - docker   //list all docker commands
   - docker images
   - docker image rm ff0fea8310f3   // copy image id from previous output
                 (Use your image ID in the above command)
   - docker run -it ubuntu /bin/bash   //check output

```
PS C:\Users\Lenovo> docker ps
CONTAINER ID   IMAGE      COMMAND      CREATED          STATUS          PORTS     NAMES
f45775828da6   ubuntu    "/bin/bash"   About a minute ago   Up About a minute          nostalgic_elion
PS C:\Users\Lenovo> docker container ls -a
CONTAINER ID   IMAGE      COMMAND      CREATED          STATUS          PORTS     NAMES
f45775828da6   ubuntu    "/bin/bash"   About a minute ago   Up About a minute          nostalgic_elion
PS C:\Users\Lenovo> docker container rm f45775828da6
Error response from daemon: You cannot remove a running container f45775828da6297e793470cd07835cf764532a3d5eded8e4094ffc
bc0f687858. Stop the container before attempting removal or force remove
PS C:\Users\Lenovo> docker container stop f45775828da6
f45775828da6
PS C:\Users\Lenovo> docker container rm f45775828da6
f45775828da6
PS C:\Users\Lenovo> docker ps
CONTAINER ID   IMAGE      COMMAND    CREATED   STATUS    PORTS     NAMES
PS C:\Users\Lenovo> docker images
REPOSITORY   TAG       IMAGE ID       CREATED      SIZE
ubuntu       latest    ff0fea8310f3   4 days ago   72.8MB
PS C:\Users\Lenovo> docker image rm f45775828da6
Error: No such image: f45775828da6
PS C:\Users\Lenovo> docker image rm ff0fea8310f3
Untagged: ubuntu:latest
Untagged: ubuntu@sha256:bea6d19168bbfd6af8d77c2cc3c572114eb5d113e6f422573c93cb605a0e2ffb
Deleted: sha256:ff0fea8310f3957d9b1e6ba494f3e4b63cb348c76160c6c15578e65995ffaa87
Deleted: sha256:867d0767a47c392f80acb51572851923d6d3e55289828b0cd84a96ba342660c7
PS C:\Users\Lenovo> docker images
REPOSITORY   TAG       IMAGE ID   CREATED   SIZE
PS C:\Users\Lenovo>
```