Docker Installation Guide

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SECTION E

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Step# 01

Press **‘F2’ or ‘F10’**

Enable Virtualization Hardware/VTX:

If you don’t enable it you will get following error.

‘’Hardware assisted virtualization and data execution protection must be enabled in the BIOS.’’

Step: 02

Go To Google And Search For “Install Docker Container For Windows”.

Following is the Link of Site.

https://docs.docker.com/docker-for-windows/install

This is the Official Website for Installing Docker For Windows.

System Requirement According To WSL Backend:

- Windows 10 64-bit: Home, Pro, Enterprise, or Education, version 1903 (Build 18362 or higher).
- Enable the WSL 2 feature on Windows. For detailed instructions, refer to the Microsoft documentation.
- The following hardware prerequisites are required to successfully run WSL 2 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. For more information, see Virtualization.
- Download and install the Linux kernel update package.

Caution: Download the lastest Version of Docker Container.

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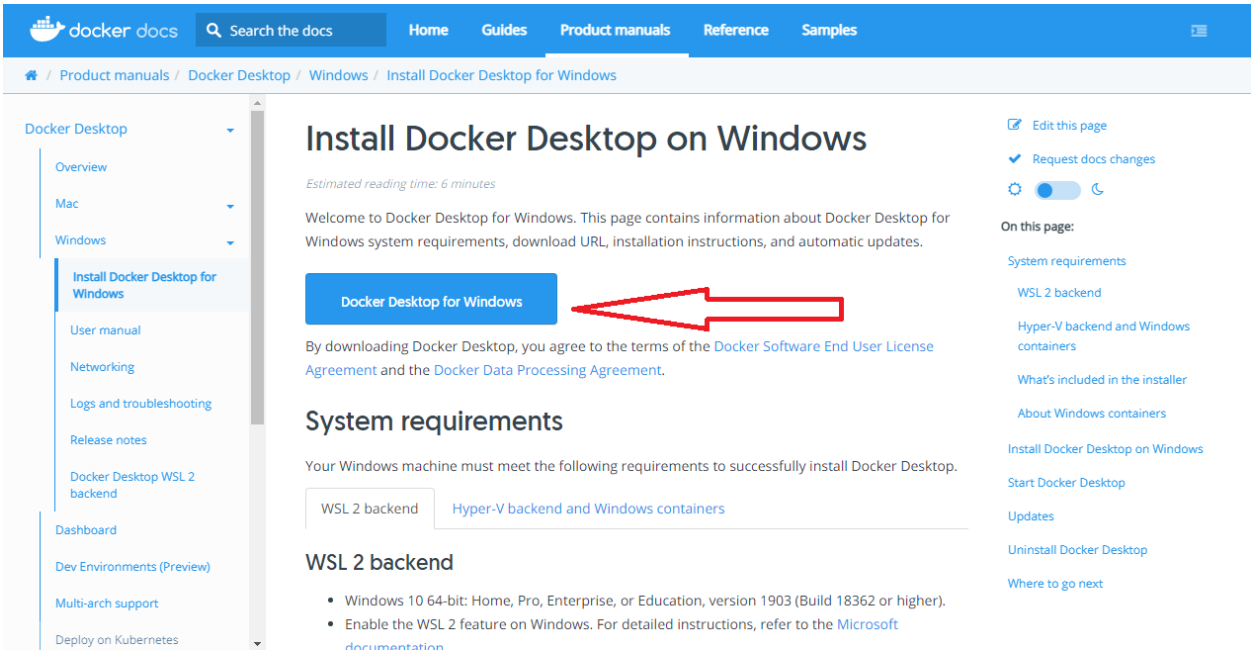


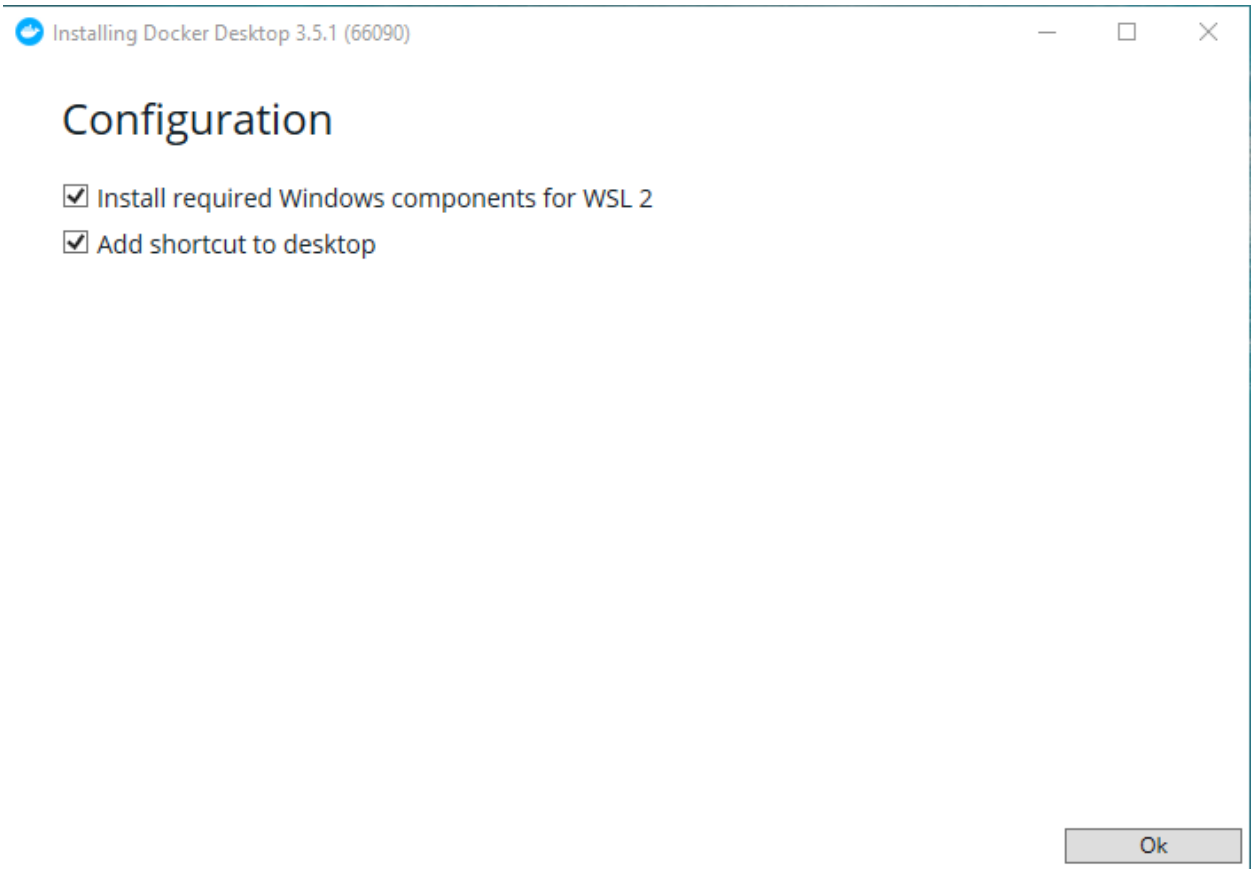
Download it through any Software or using google's Chrome Default Browser Downloaoder.

Step: 03

Install it On Your Computer

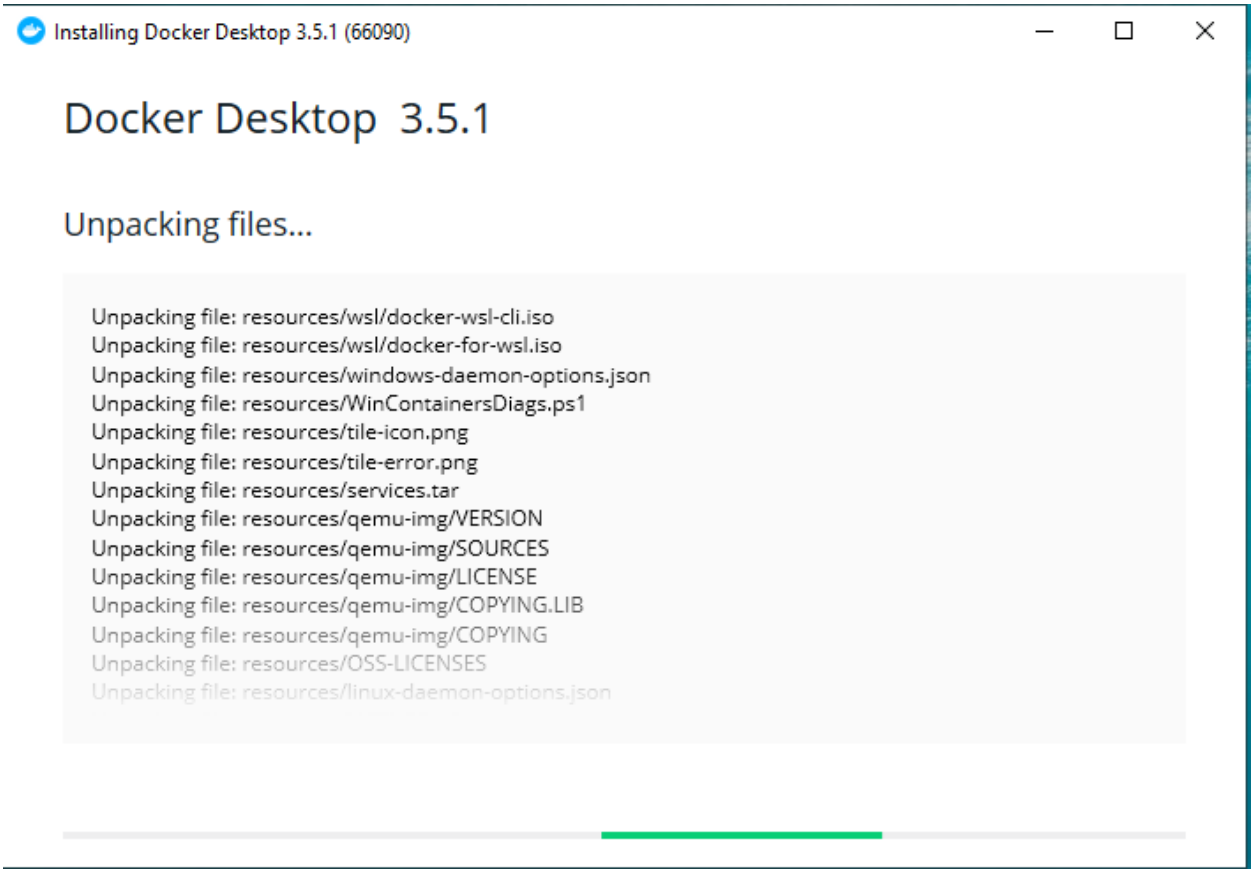
After Windows Authentication, Click on “Yes” and Let the Library to Install.

Allow the WSL and libraries to install. Check both Configuration.



Step# 04

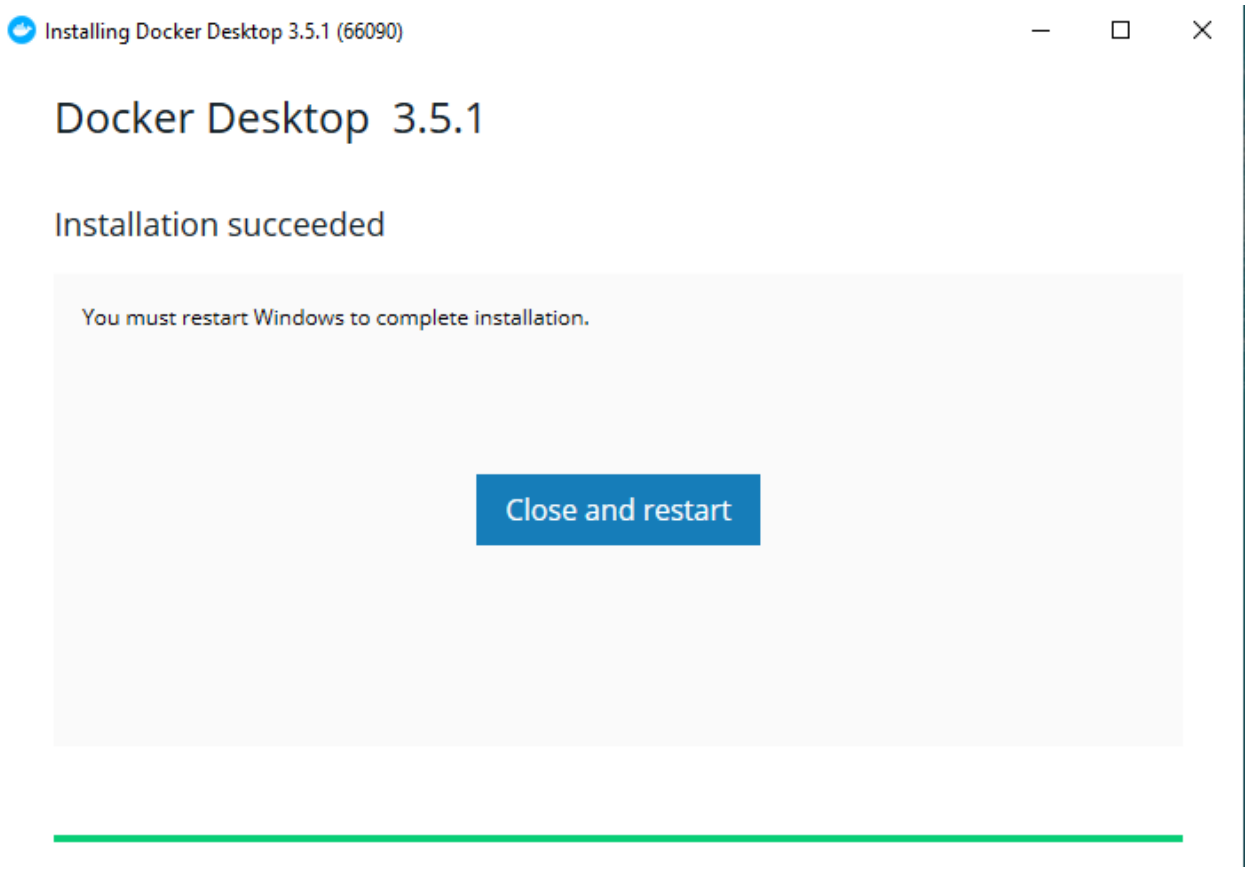
Unpacking the Packages



It Will takes few minutes depends on your system's running speed and your system's hardware.

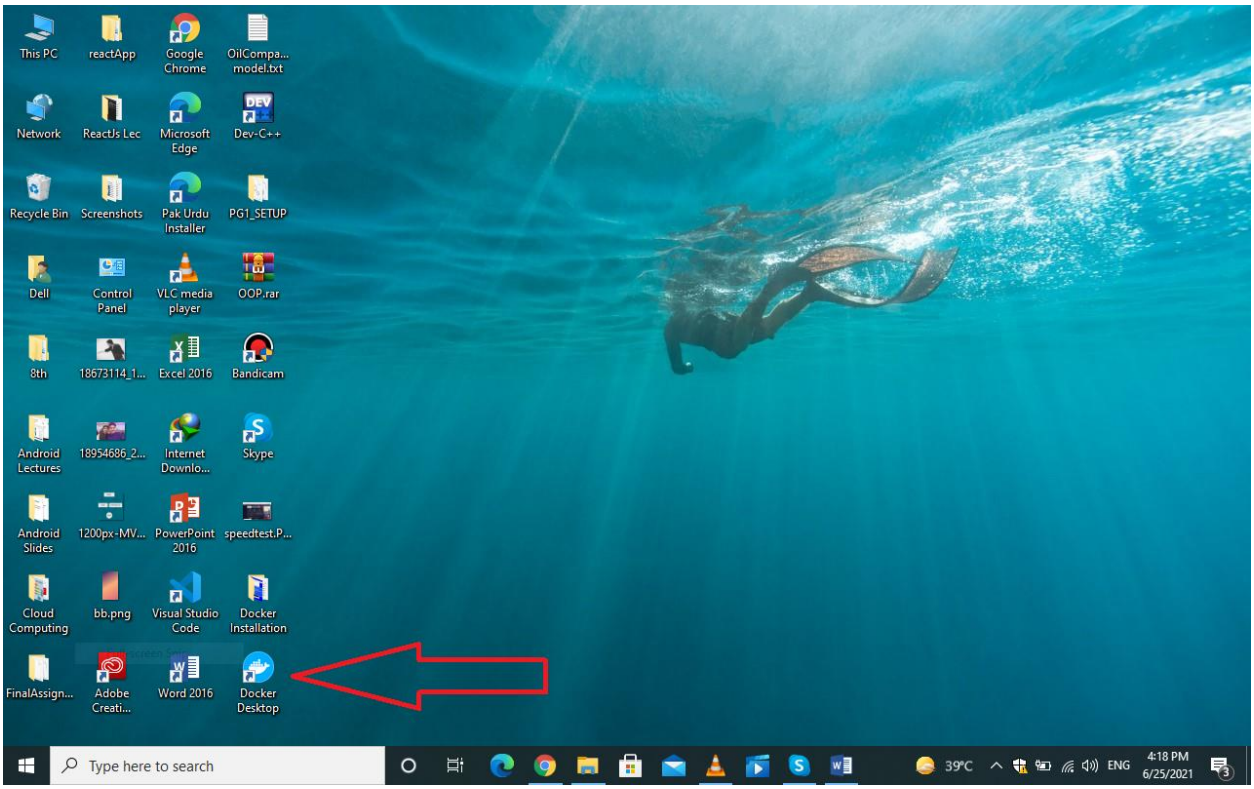
Step# 05

After Unpacking All the Libraries and Resources.Now, Click ''Close and Restart''.It is used to restart all the libraries and update the Software.

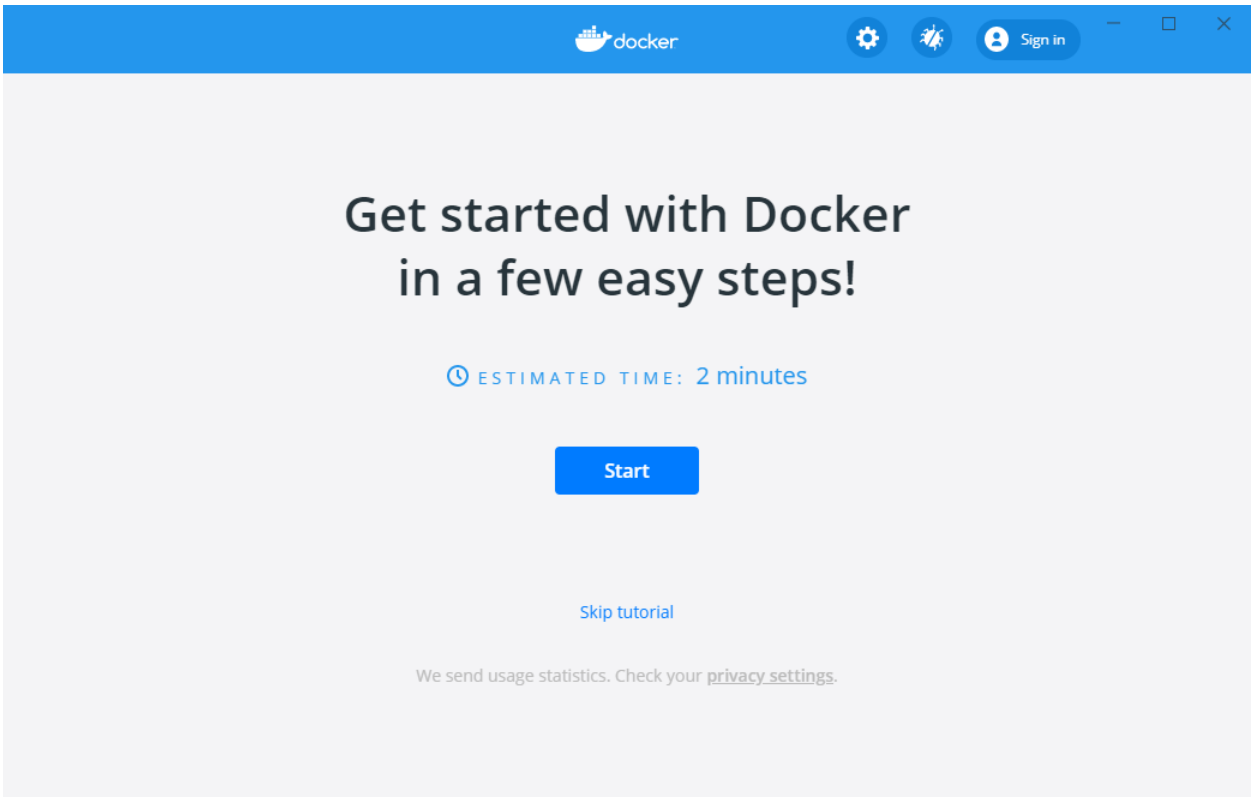


Step# 06

Run **Docker Desktop**


This PC
reactApp
Google Chrome
OilCompa... model.txt
Network
ReactJs Lec
Microsoft Edge
Dev-C++
Recycle Bin
Screenshots
Pak Urdu Installer
PG1_SETUP
Dell
Control Panel
VLC media player
OOP.rar
8th
18673114_1...
Excel 2016
Bandicam
Android Lectures
18954686_2...
Internet Downlo...
Skype
Android Slides
1200px-MV...
PowerPoint 2016
speedtest.P...
Cloud Computing
bb.png
Visual Studio Code
Docker Installation
FinalAssign...
Adobe Creati...
Word 2016
Docker Desktop
Type here to search
39°C
ENG
4:18 PM
6/25/2021

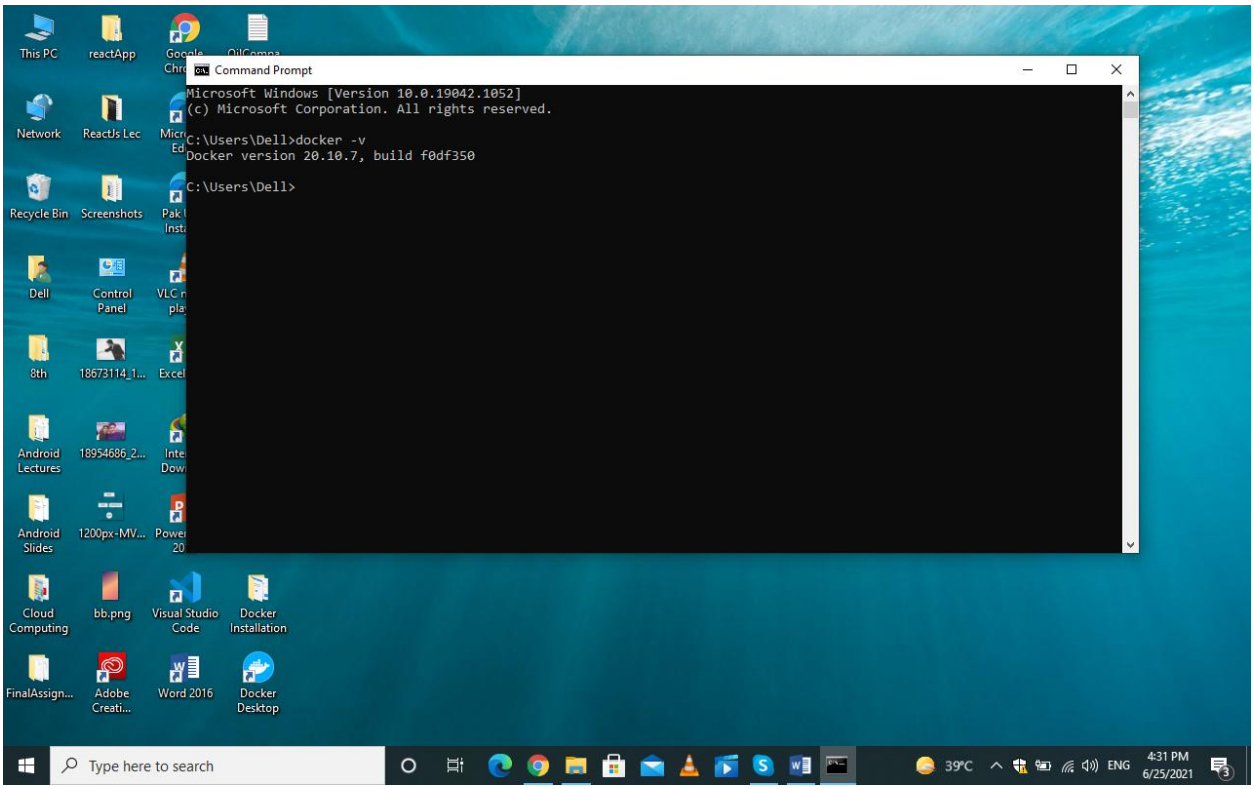
Interface:



Docker has been installed successfully.

Version:

By checking version of docker. Open Cmd>write docker –v .. You will get docker's version.



Advantages Of Docker Over Virtualization:

Below, we are discussing the major limitations and benefits of Docker, let's look one by one –

i. Benefits of Docker

Following are some advantages of Docker, let's discuss them in detail

a. Return on Investment and Cost Savings

Dockers first advantage is ROI. Especially for large, established companies, which need to generate steady revenue over the long term, the solution is only better if it can drive down costs while raising profits.

b. Rapid Deployment

It can decrease deployment to seconds. It is because of the fact that it can create a container for every process and even does not boot an OS. So, even without worrying about the cost to bring it up again, it would be higher than what is affordable, Data can be created as well as destroyed.

c. Security

Docker makes sure that applications that are running on containers are completely segregated and isolated from each other, from a security point of view, by granting us complete control over traffic flow and management.

d. Simplicity and Faster Configurations

The way Docker simplifies the matters is one of the key benefits of it. It gives flexibility to users to take their own configuration, put that into the code, and further deploy it without any problems.
However, the requirements of the infrastructure are no longer linked with the environment of the application, as Docker can be used in a wide variety of environments.

e. CI Efficiency

With the help of a Docker, we can build a container image and can further use that same image over every step of the deployment process.
The advantage of it is the ability to separate non-dependent steps and also run them in parallel. In addition, the duration of time it takes from build to production may speed up notably.

f. Continuous Integration

While it comes to Continuous Integration, Docker works well as part of its pipelines along with tools such as Travis, Jenkins, and Wercker.
These tools can save the new version as a Docker image, every time our source code is updated, just tag it with a version number and push to **Docker Hub**, then deploy it to production.

Disadvantages Of Docker over Virtualization:

a. Missing features

There are a ton of feature requests are under progress, like container self-registration, and self-inspects, copying files from the host to the container, and many more.

b. Data in the container

There are times when a container goes down, so after that, it needs a backup and recovery strategy, although we have several solutions for that they are not automated or not very scalable yet.

c. Run applications as fast as a bare-metal serve

In comparison with the virtual machines, Docker containers have less overhead but not zero overhead. If we run, an application directly on a bare-metal server we get true bare-metal speed even without using containers or virtual machines. However, Containers don't run at bare-metal speeds.

d. Provide cross-platform compatibility

The one major issue is if an application designed to run in a Docker container on Windows, then it can't run on Linux or vice versa. However, Virtual machines are not subject to this limitation.

So, this limitation makes Docker less attractive in some highly heterogeneous environments which are composed of both Windows and Linux servers.

e. Run applications with graphical interfaces

In general, Docker is designed for hosting applications which run on the command line. Though we have a few ways (like X11 forwarding) by which we can make it possible to run a graphical interface inside a Docker container, however, this is clunky.

Hence we can say, for applications that require rich interfaces, Docker is not a good solution.

f. Solve all your security problems

In simple words, we need to evaluate the Docker-specific security risks and make sure we can handle them before moving workloads to Docker.

The reason behind it is that Docker creates new security challenges like the difficulty of monitoring multiple moving pieces within a large-scale, dynamic Docker environment.