In order to install Docker you can go to store.docker.com and install the CE or EE version as per your choice.

For windows it works with Windows 10 pro/ent edition and with windows server 2016 you get the support for windows containers natively out of the box

In case you are using any of the older version windows you have to install docker tool box

What docker tool box does is that essentially installs a tiny linux VM using virtual box and then once done you can run docker containers on that machine.

In order to access the container on older machines you have to provide the IP address of your machine rather than providing localhost.

In order to interact with that machine that run in Virtual box you can use (docker-machine)

Kitematics also gets installed with Docker toolbox it provides you a GUI interface to create docker containers and pull images from docker hub.

Docker supports powershell out of the box in case you want to use any other command line tools, you have to tweak the settings

#docker-machine env default in order to let that interact it with the server side of docker

In case you want to increase or hardware or CPU you can do it by opening virtual box, stopping the VM and changing the configuration of the VM.

In case you are using the latest edition of windows you can switch between linux containers and Windows container via the system tray in going in to settings for docker

In order to run docker you must have virtualization enabled at the bios level. In latest edition of windows docker runs on hyper-V so for windows container you will find nothing at the Hyper-V desktop however if you choose to run linux containers you will find that there is a tiny VM running on Hyper-V this time.

Going in to the advance settings for Linux containers you can configure how much CPU/RAM should be used by containers

You can also bind your drives with your containers, Binding only work with users directory in terms of windows

In order to install Docker on Mac you have to go to store.docker.com and you can choose CE or EE version for MAC.

Depending on OS version you can install Docker tool box or you can install the latest version of CE

Docker generally comes in two version

* Edge
* Stable

Edge version can be referred as Beta version which keeps on changing every month as Docker releases new version every month

Stable version changes every quarter, and the support for that is extended for one additional month.

Docker needs admin privileges to run, so in case you are running it on MAC/Linux you have to provide root privileges either at the installation or you have to add your user to the docker group.

# usermod -aG <username> <docker>

Note :- whenever you have a code that you are working with and that is in the host machine or the local machine. You can mount that directory as a volume in the container and make use of that code inside your container. Whatever changes you make in the code at the host level you will find that in the container.

The changes that you make however is not persistent in case you want to run the container again unless you create a commit out of that container and create that as a new image.

In order to configure Docker you have to go in to preferences. And then configure that for you. Docker starts everytime the computer starts.

File Sharing is an option that would bind mount a local directory in your container.

Advanced option is where you can configure your computing resources, on a mac it does run on another linux VM which is already inbuilt in the mac

Mac does not support docker container natively as the kernel is different from Linux distro, just to mention that docker will not take all the space whatever you are using it. It will take whatever is required as per the container needs.

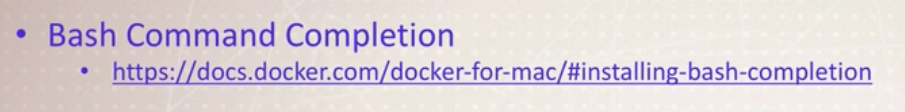
Note :- In order to setup tab completion for docker commands in powershell you have to first add posh-docker feature and enable the remote-signed policy and that would make the tab complete work for docker commands in windows.

For mac you can use bash completion you would need homebrew package manager, and we have got documentation in docker to enabled that feature

* Install home brew
* Brew install bash-completion
* Link the three resources to your terminal

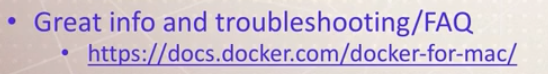
<https://blog.alexellis.io/docker-mac-bash-completion/>

Following these three steps and it would complete the command that’s what tab completion is.



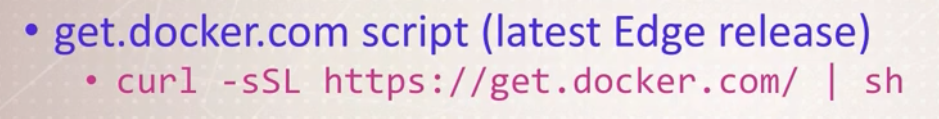
Note :- Bind mounts should not be used for databases

Docker-machine helps you to create machines on the fly with docker pre-installed on them. You can use that to create machines and manage them either locally on the mac through virtual box or on any cloud platform.



**Docker for Linux**

You can install Docker using a curl script



It does uses the edge releases, and you can install docker from the above custom curl script

You can also install that from store.docker.com using specific instructions. RHEL officially only supports docker EE but CentOS version will work for CE on RHEL OS.

Installing in a VM, Cloud instance, all are the same process. You must have to have Kernel version above 3.1

We should not use the pre-installed setups for docker, as updates are pushed on docker platform very rapidly.

We can install Docker from the default package manager by going through the official documentation, although we can do a cheat over here

We can do that by running a curl script which is on <https://get.docker.com> over https

# curl -fsSL get.docker.com -o get-docker.sh

# sh get-docker.sh

This would essentially install Docker CE

There are two other tools, which are docker-machine and docker-compose which does not come up pre installed with the package that you install from the script or docker store

For windows or mac it’s all done but for linux you have to do that.

Docker-machine and docker-compose are single binaries and you can get the steps to install that via the docker documentation.

You can install these binaries through github

<https://github.com/docker/compose-or-machine/releases> to get the latest binaries to install docker-compose and docker-machine

Tab completion does work on Linux machine out of the box.

Note :- In order to check on if the port is being used by any of the application on linux

# lsof -i :80

On windows it is “netstat”

Syntax to map your ports from your container to your host machine is

# <host port>:<container port>

Bind Mount Won't Show Up In Container

This is usually a Docker for Windows issue, where you need to go into Docker Settings GUI (lower right icon) and uncheck the drive where your code is, then save, and then re-check that drive to re-apply the SMB file sharing permissions between the Linux VM and the Windows OS.

# docker version :- Give you the information about your docker client and docker daemon

It also confirms that your client is interacting with the daemon.

# docker info 🡪 Will give you the configuration values out of the docker engine

Starting your first container

You can run your first container by the following command

# docker run <image:tag> -p or –publish to map the host port to the container port

--publish <Hostport:Containerport>

Note :- While you are running a container in windows and you press ctrl+c to come out of the container the container would still run in the backgroup however with linux/Mac It would stop the container.

So, for linux/mac in order to make it work you can run the container in detached mode by passing the flag –detach or -d

Note :- # docker run Image will always start a new container in case you want to start an already stopped container you have to use # docker start <container-id>

If you want to specify the name to a container you can use –name flag

In order to check the logs for a container you can use

# docker logs <name of the container> this will show all the logs, we can also see certain logfiles of the container by using tail command

Syntax

# docker logs --tail 10 <$name-of-container>

In order to check of the current running process we can use the top command using the top command

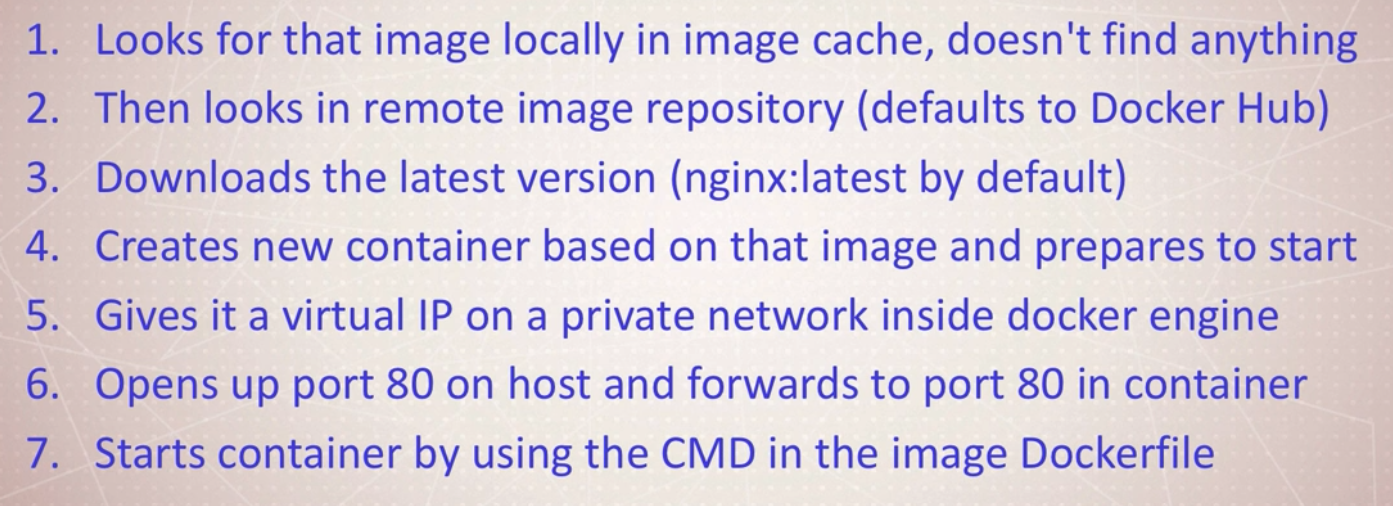
# docker top <Name-of-container> 🡪 Display the running processes of a container

You cannot remove a running container in order to remove the container you must first stop it and then remove it else remove it forcefully

In order to remove the container

# docker rm <container id-1> <container od-2>

Note :- You don’t have to specify the docker container full id, even specifying the first three digits of your container it would pick it up automatically.

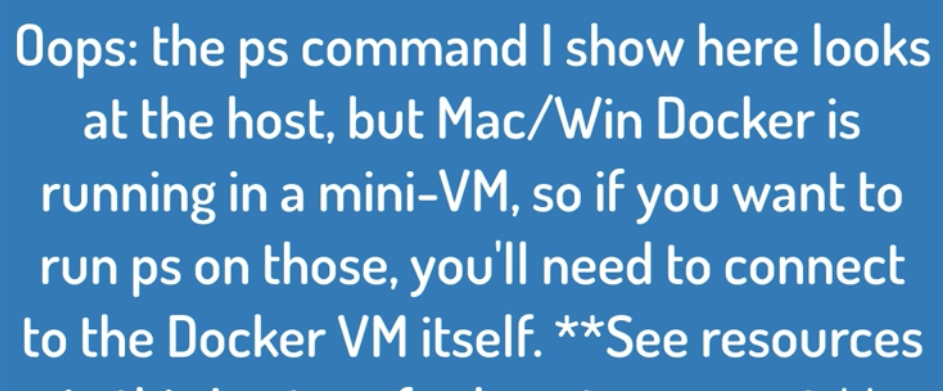




Containers are just a process that runs from a image via the docker engine it runs on the host machine.

Since the containers that you run is essentially a process so any command that you run at the host level to check the running process at the host level

Ex:- ps aux 🡪 lists all the container



"**Windows Containers**" are the new hotness! Technically, they are Native Windows .exe binaries running in Docker containers on a Windows kernel, and have no Linux installed