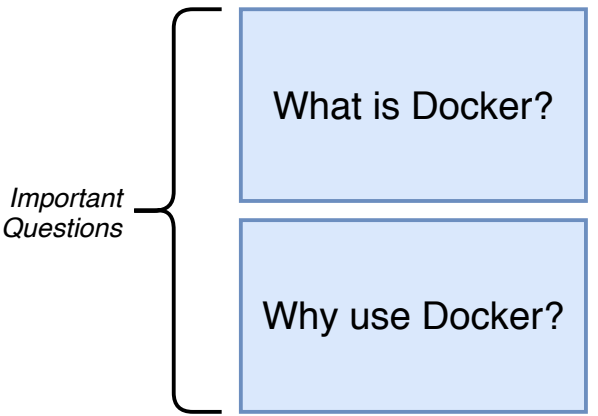
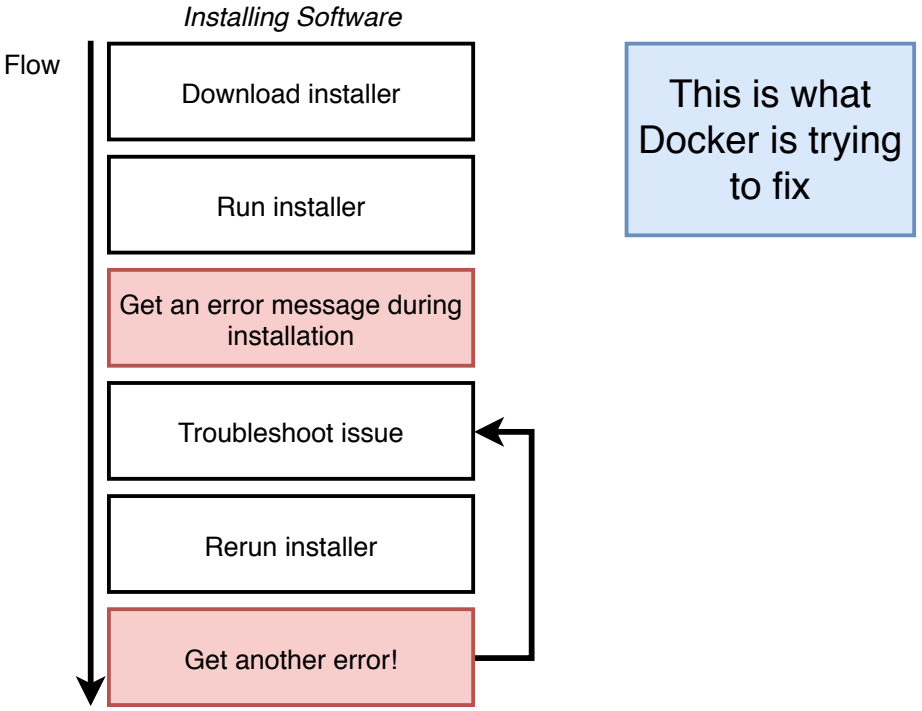
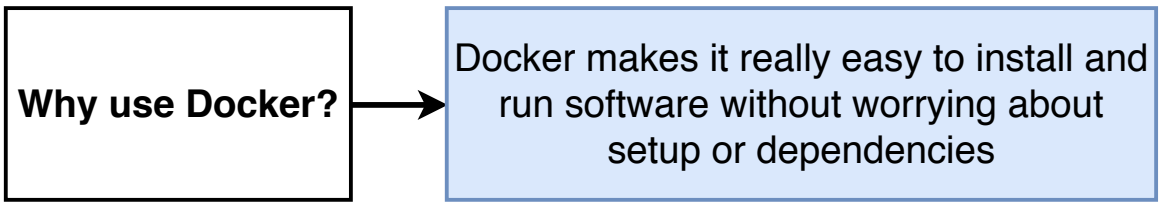
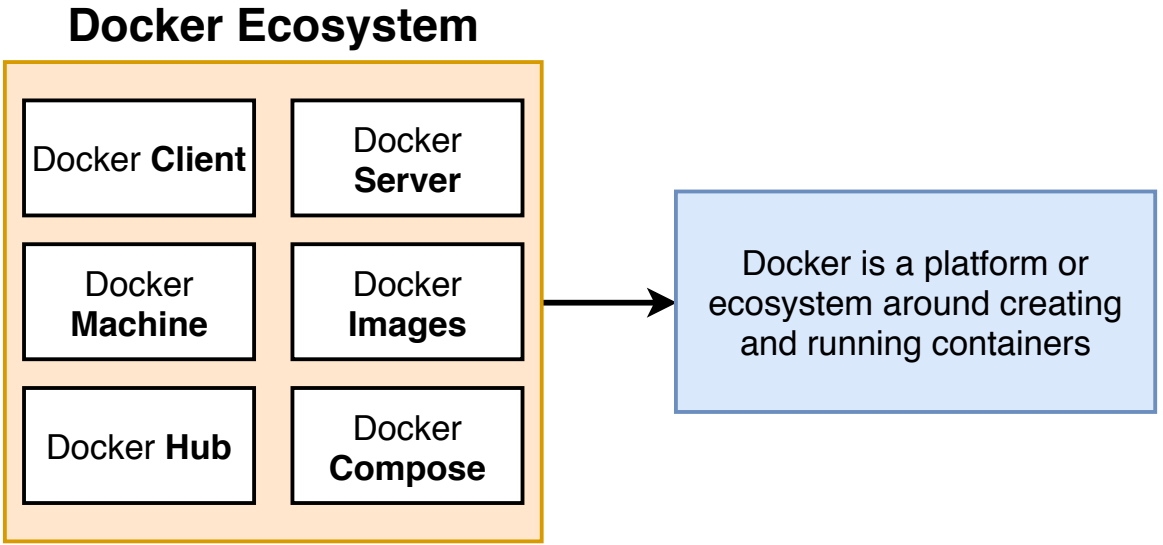
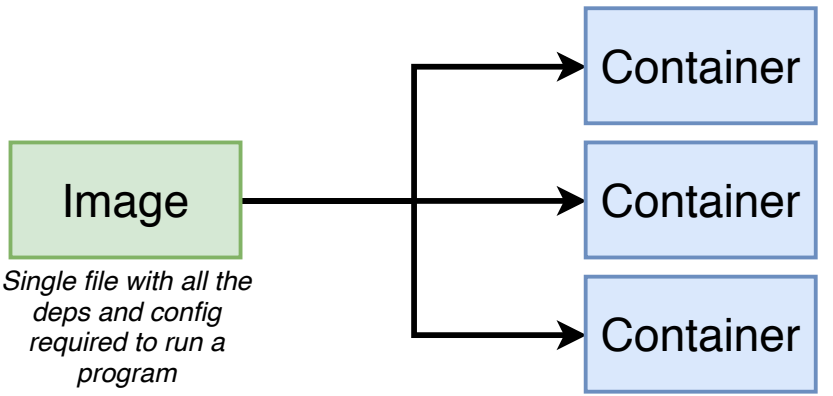

Important Questions
What is Docker?
Why use Docker?


Installing Software
Flow
Download installer
Run installer
Get an error message during installation
Troubleshoot issue
Rerun installer
Get another error!
This is what Docker is trying to fix

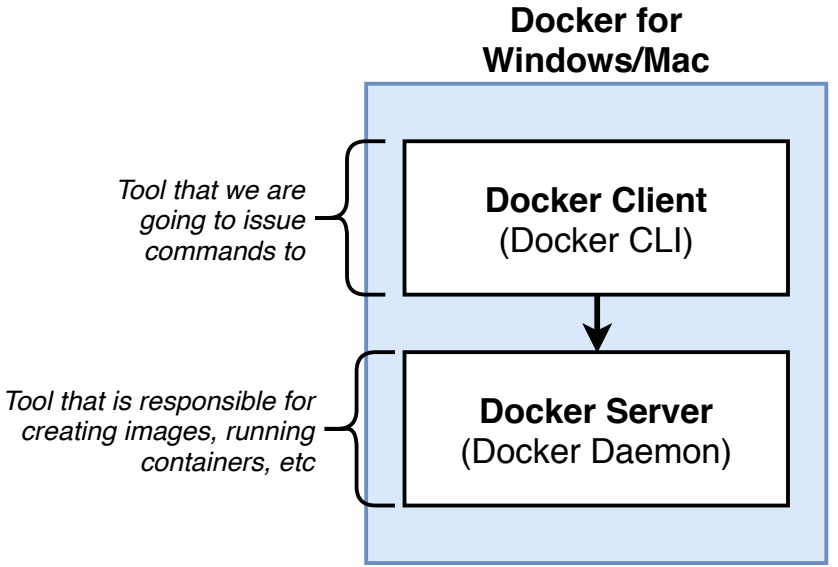

Why use Docker?
Docker makes it really easy to install and run software without worrying about setup or dependencies

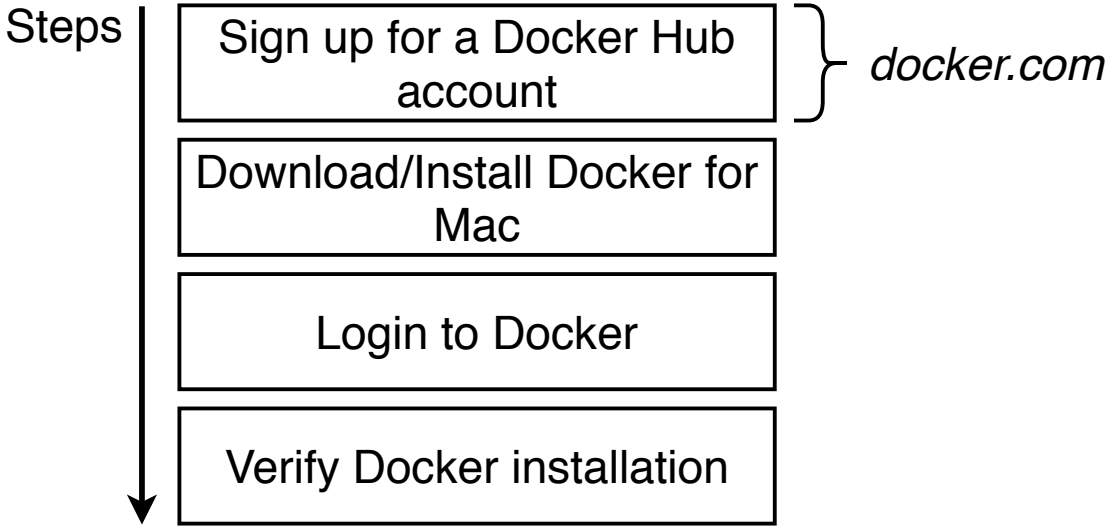

Docker Ecosystem
Docker Client
Docker Server
Docker Machine
Docker Images
Docker Hub
Docker Compose
Docker is a platform or ecosystem around creating and running containers

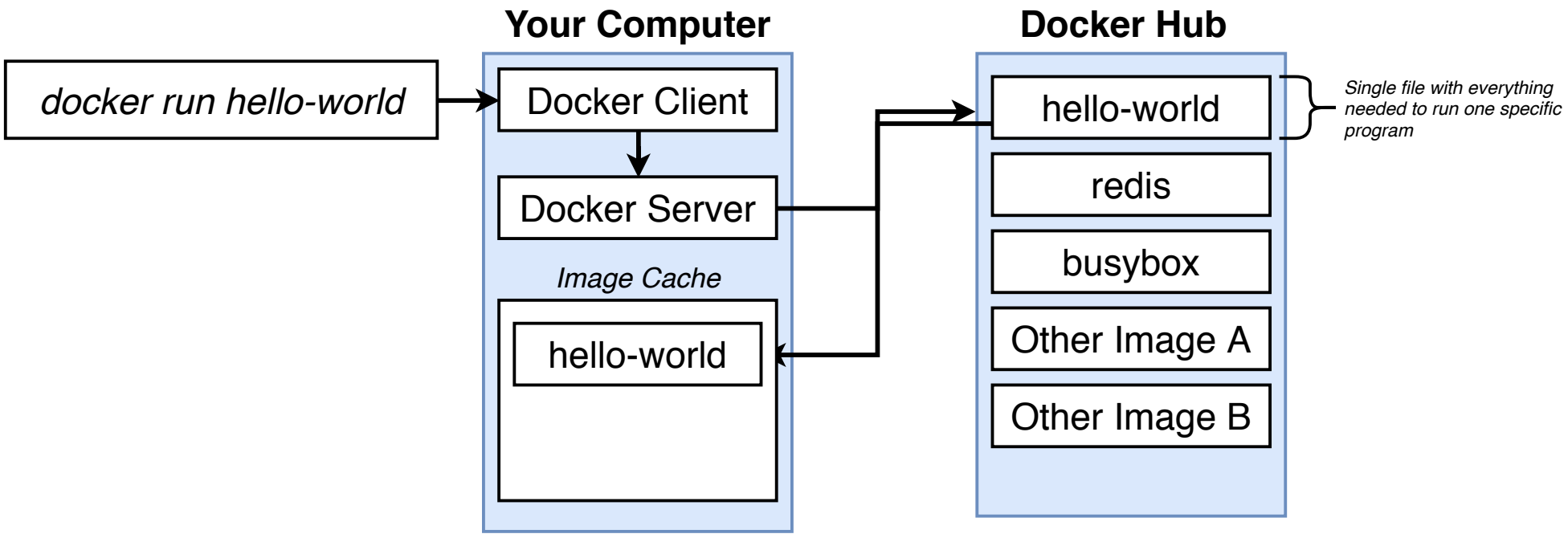


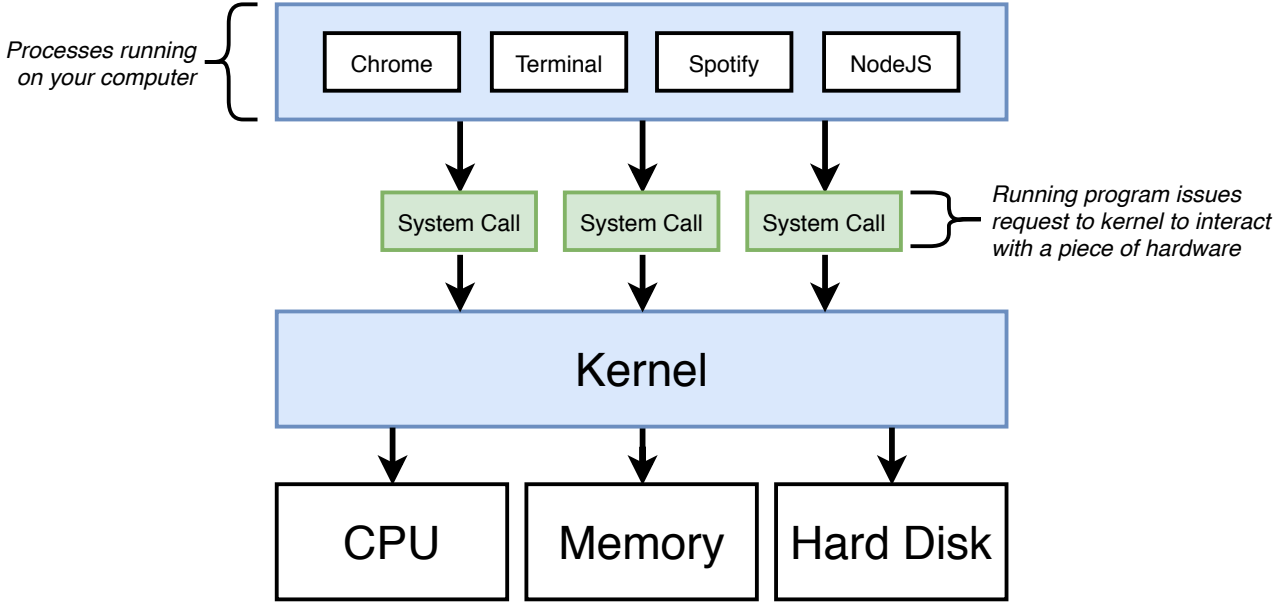
Single file with all the deps and config required to run a program

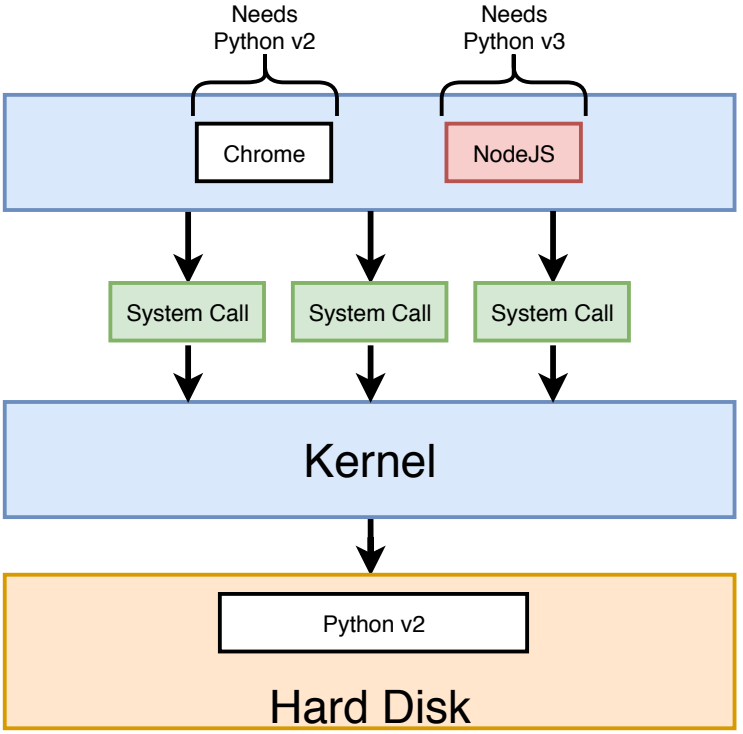
Instance of an image. Runs a program.

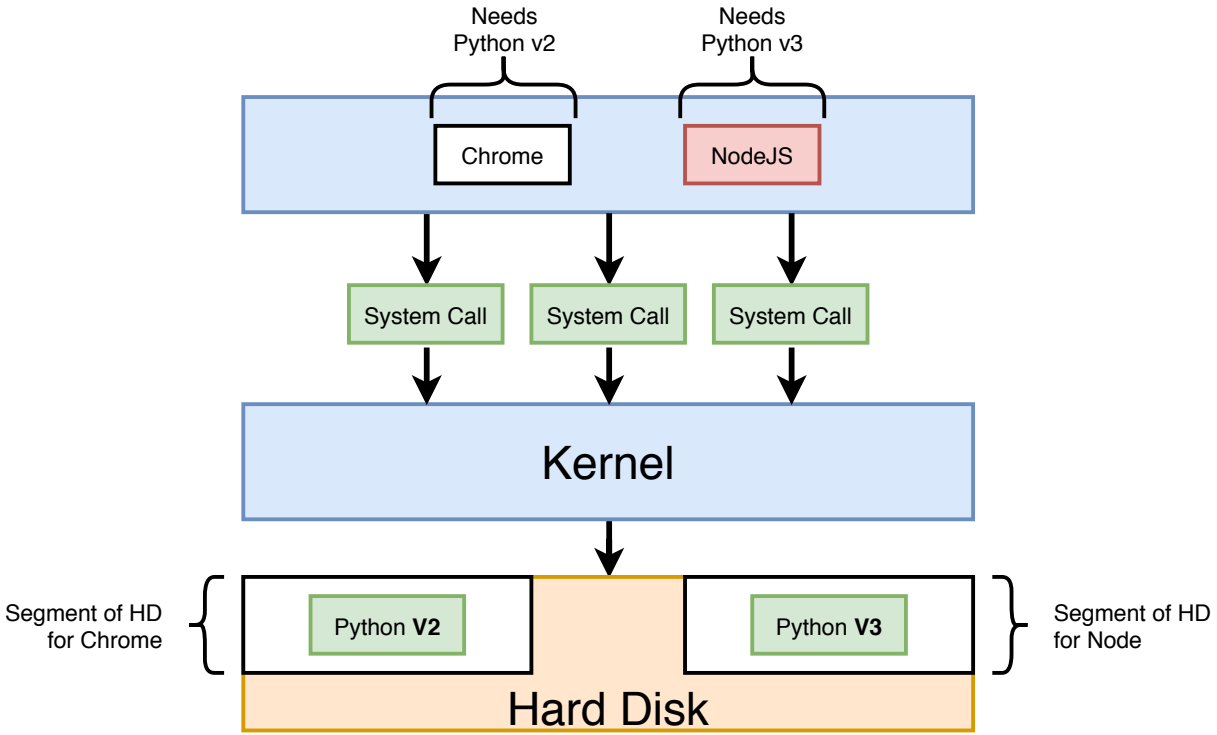

Docker for
Windows/Mac
Tool that we are
going to issue
commands to
Docker Client
(Docker CLI)
Tool that is responsible for
creating images, running
containers, etc
Docker Server
(Docker Daemon)

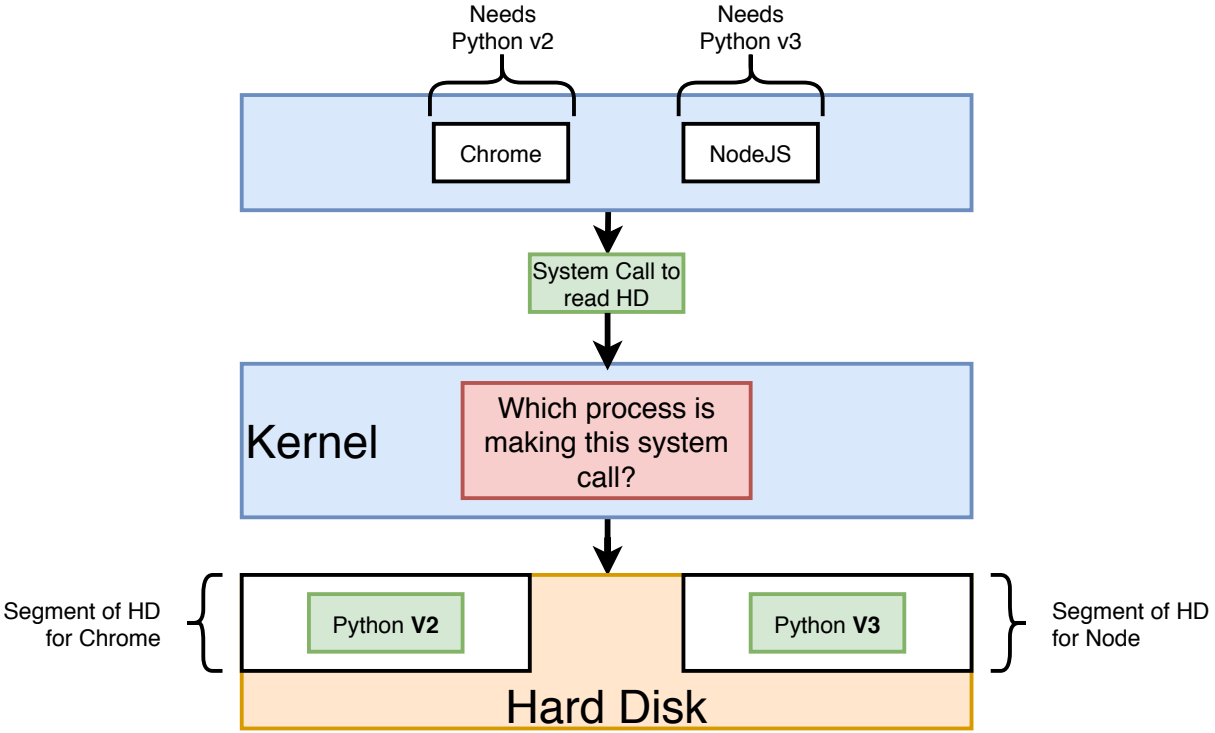

Steps
Sign up for a Docker Hub account
docker.com
Download/Install Docker for Mac
Login to Docker
Verify Docker installation

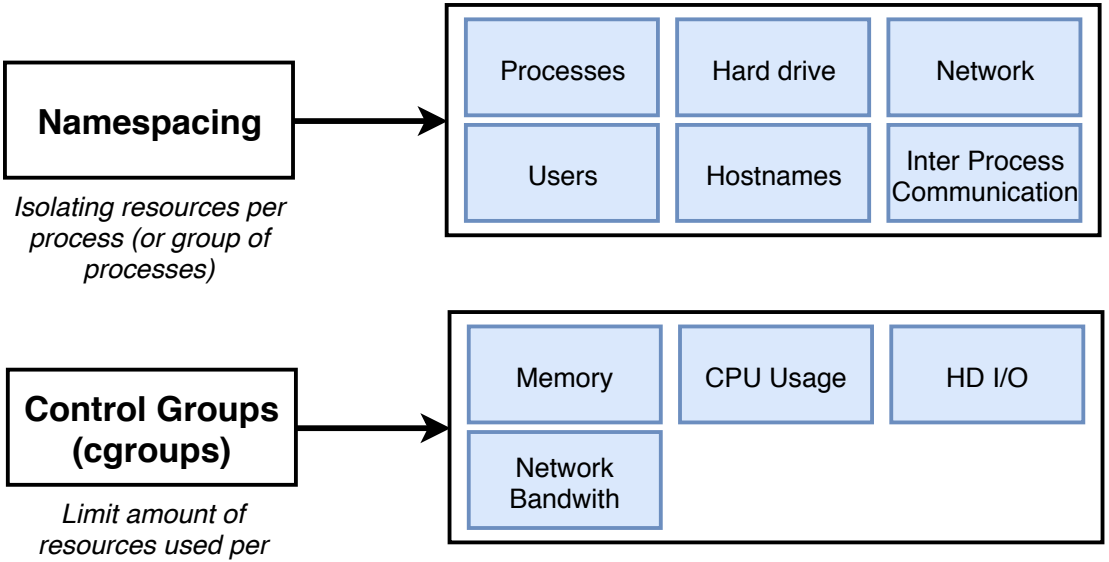

Your Computer
Docker Hub
docker run hello-world
Docker Client
Docker Server
Image Cache
hello-world
hello-world
redis
busybox
Other Image A
Other Image B
Single file with everything needed to run one specific program

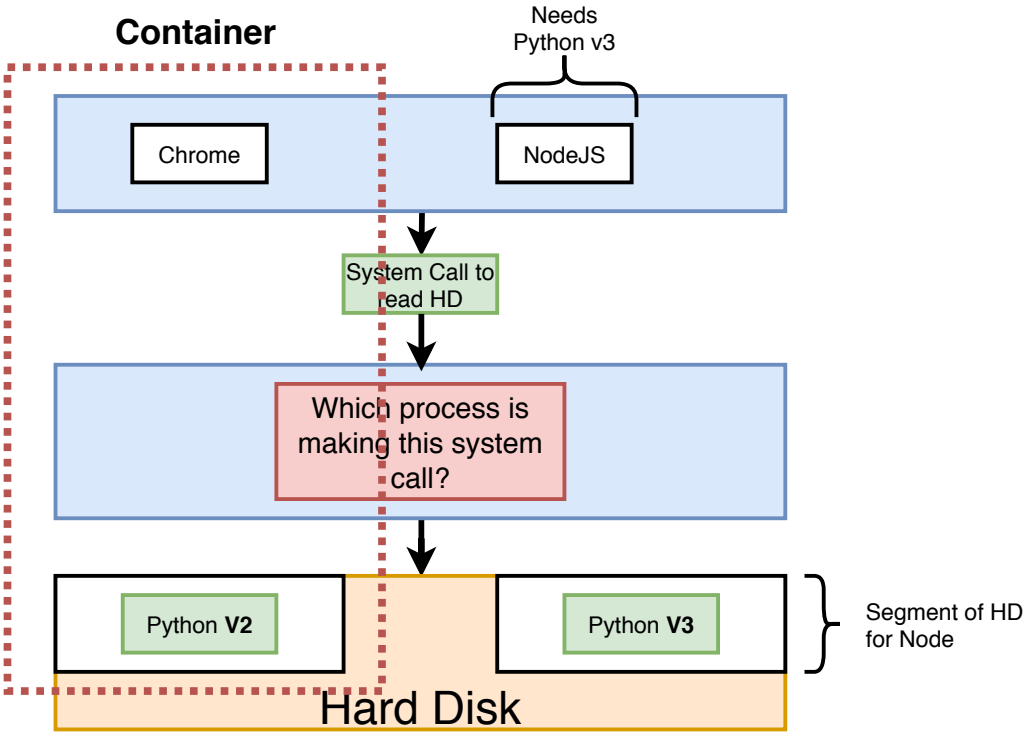

Processes running on your computer
Chrome
Terminal
Spotify
NodeJS
System Call
System Call
System Call
Running program issues request to kernel to interact with a piece of hardware
Kernel
CPU
Memory
Hard Disk

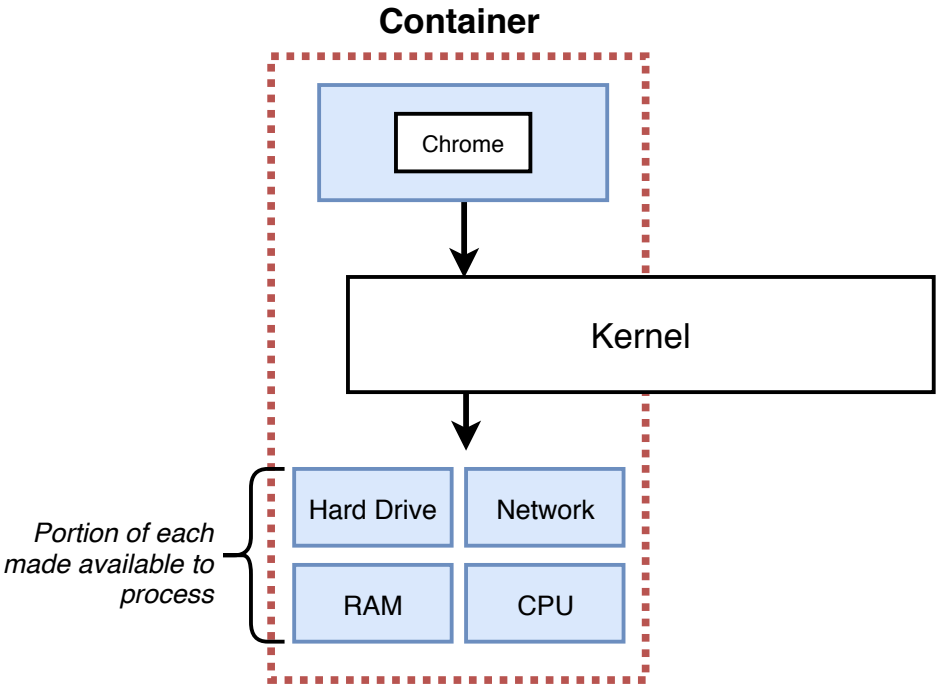

Needs
Python v2
Needs
Python v3
Chrome
NodeJS
System Call
System Call
System Call
Kernel
Python v2
Hard Disk


Needs
Python v2
Needs
Python v3
Chrome
NodeJS
System Call
System Call
System Call
Kernel
Segment of HD
for Chrome
Python V2
Python V3
Segment of HD
for Node
Hard Disk


Needs
Python v2
Needs
Python v3
Chrome
NodeJS
System Call to
read HD
Kernel
Which process is
making this system
call?
Segment of HD
for Chrome
Python V2
Python V3
Segment of HD
for Node
Hard Disk


Namespacing
Isolating resources per process (or group of processes)
Processes
Hard drive
Network
Users
Hostnames
Inter Process Communication
Control Groups (cgroups)
Limit amount of resources used per process
Memory
CPU Usage
HD I/O
Network Bandwith


Container
Needs
Python v3
Chrome
NodeJS
System Call to
read HD
Which process is
making this system
call?
Python V2
Python V3
Segment of HD
for Node
Hard Disk


Container
Chrome
Kernel
Hard Drive
Network
RAM
CPU
Portion of each made available to process

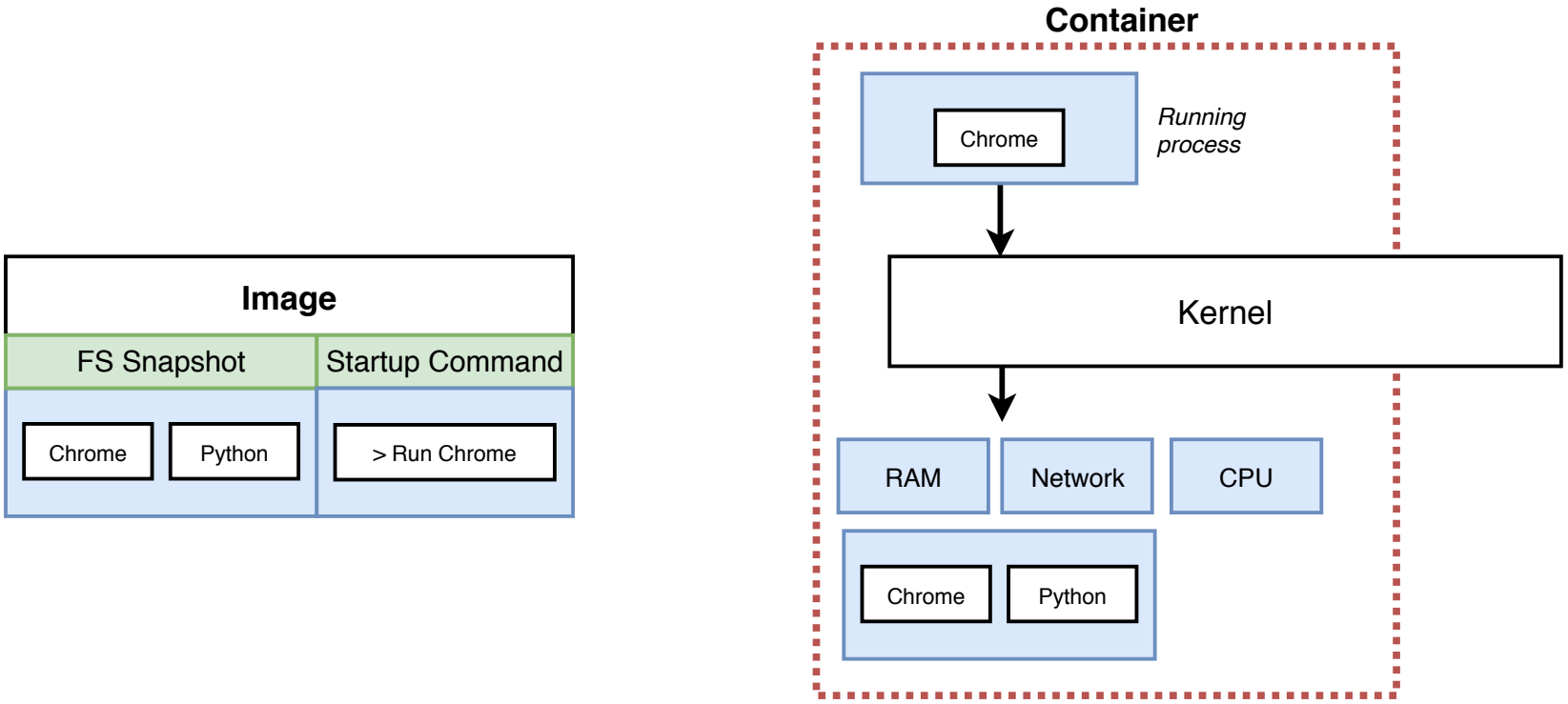
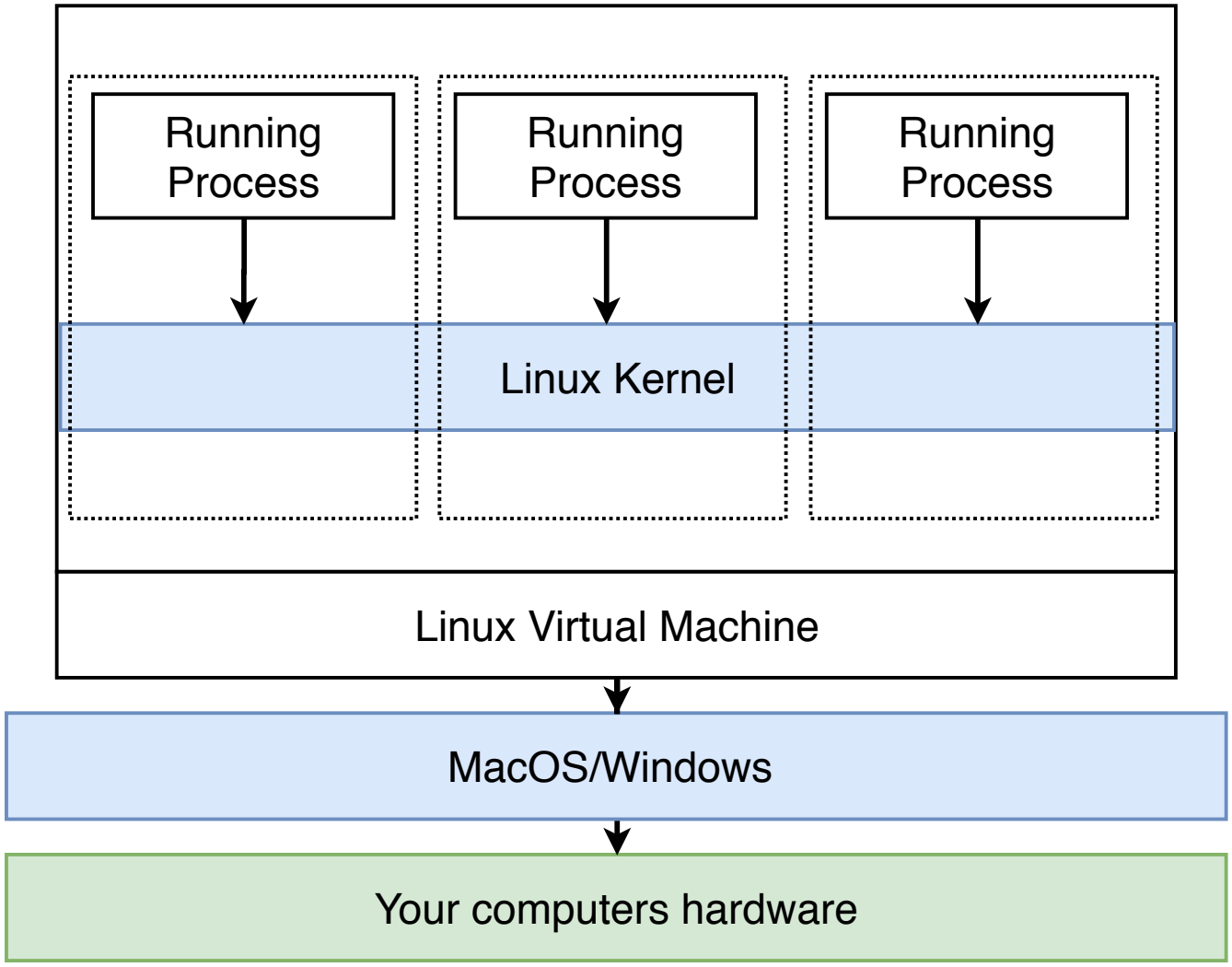


Image
FS Snapshot
Startup Command
Chrome
Python
> Run Chrome
Container
Chrome
Running process
Kernel
RAM
Network
CPU
Chrome
Python


Running Process
Running Process
Running Process
Linux Kernel
Linux Virtual Machine
MacOS/Windows
Your computers hardware