

A decorative graphic on the left side of the slide. It features a large green circle with a white border containing a blue 'IT' logo with a red swoosh. Surrounding this are several other circles: a yellow one with a white border, a blue one, a pink one, a red one, and a small light blue one.

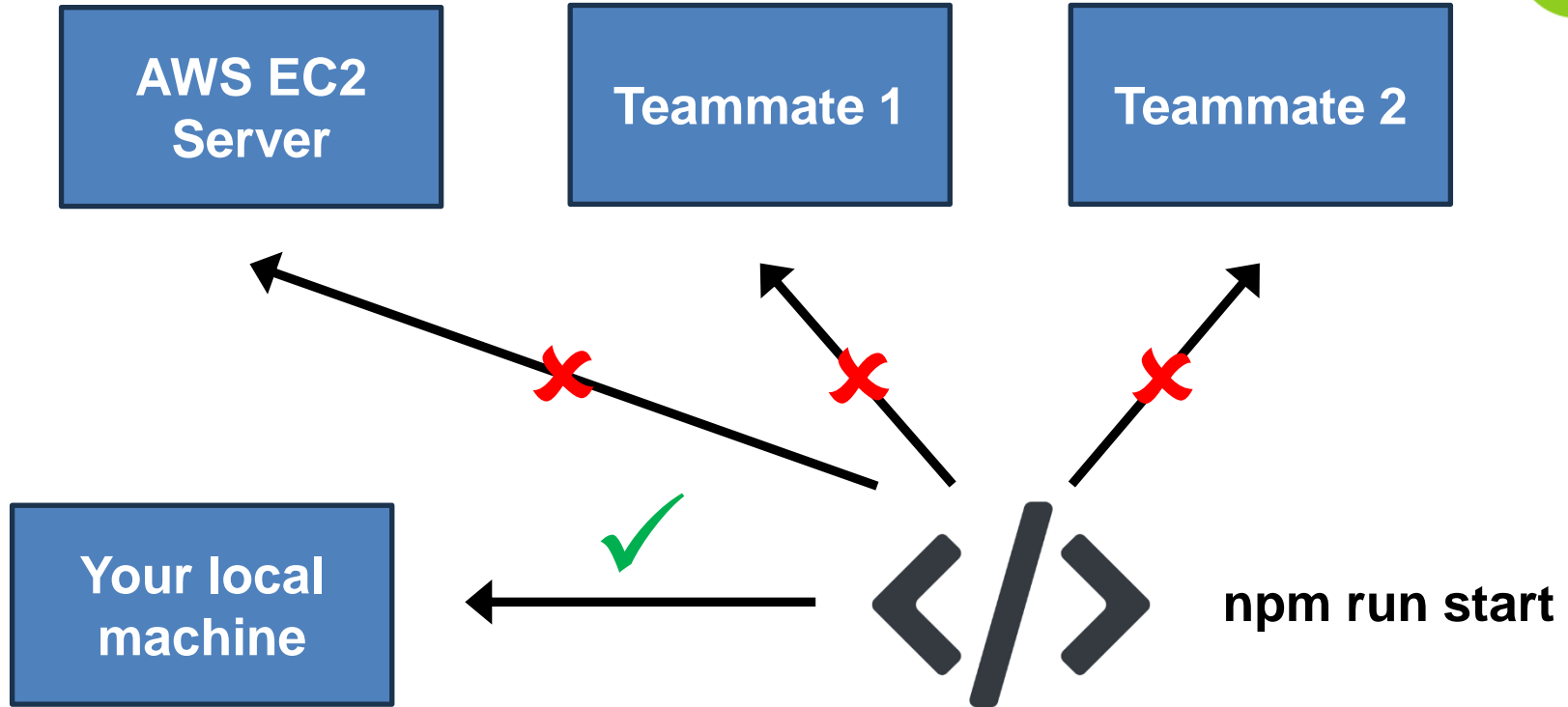
Docker Container Basics

Instructor: Asst. Prof. Dr. Praphan Pavarangkoon
Office: Room no. 418-5, 4th Floor
Email: praphan@it.kmitl.ac.th
Office hours: Thursday at 9:00 – 11:00 or
as an advance appointment

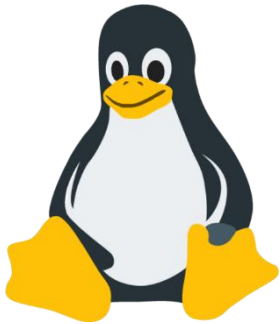
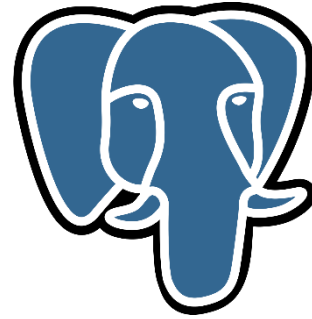
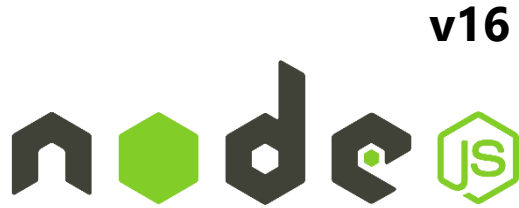
Agenda

- Relating Our Analogy to Docker
- What is Docker?
- Docker for Mac/Windows
- Installing Docker
- Using the Docker Client
- But Really...What's a Container?
- How's Docker Running on Your Computer?

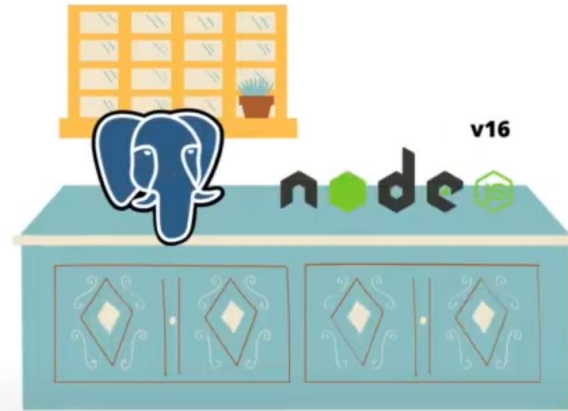
Relating Our Analogy to Docker



Relating Our Analogy to Docker (cont.)



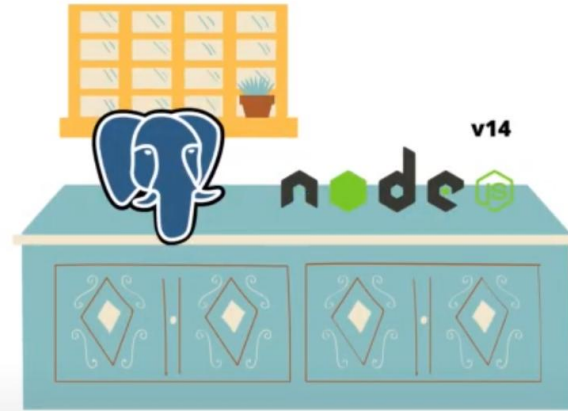
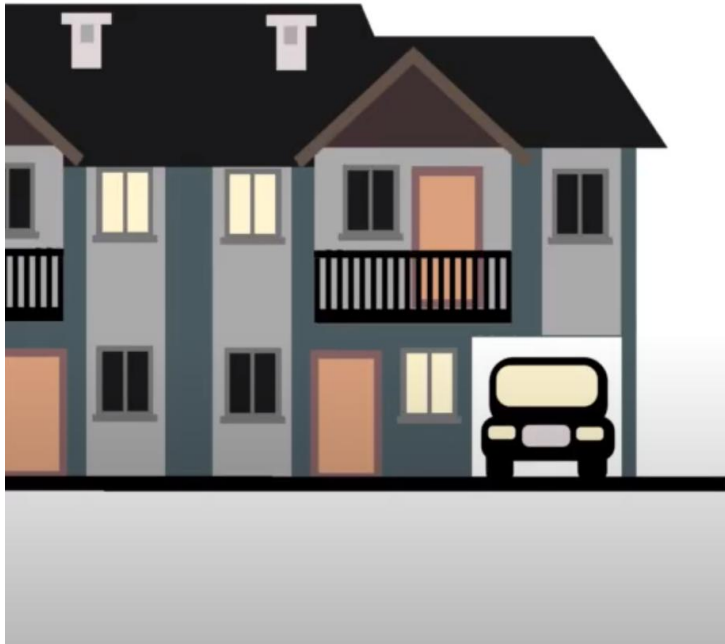
Your Environment



Teammate 1 Environment



Teammate 2 Environment



AWS EC2 Instance

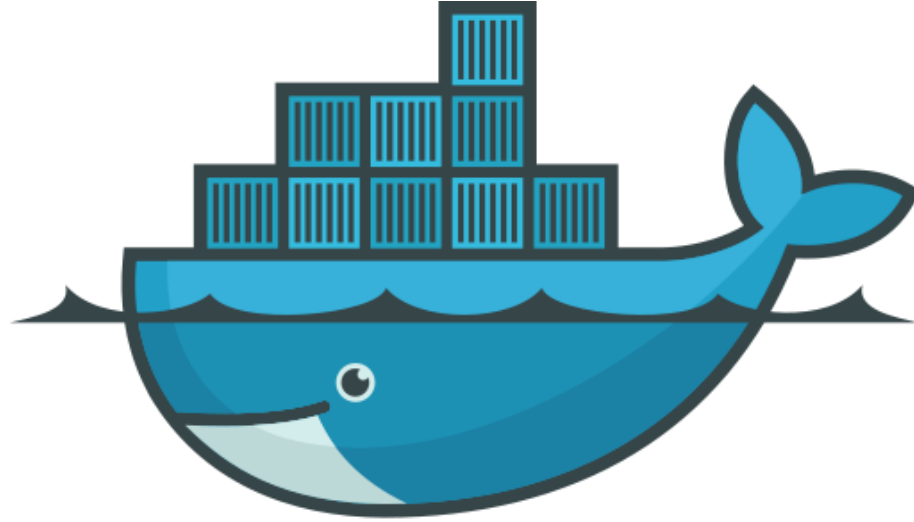


Options



- Configure everyone's environment correctly
- Run the app in isolation with all of its dependencies

Docker



docker

Docker (cont.)



- Docker is an open source **containerization platform**.
- It enables developers to **package applications into containers** – standardized executable components combining application source code with the **operating system (OS) libraries and dependencies** required to run that code in any environment.

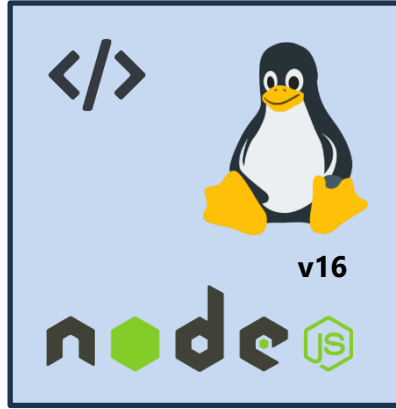
Solution



AWS EC2
Server



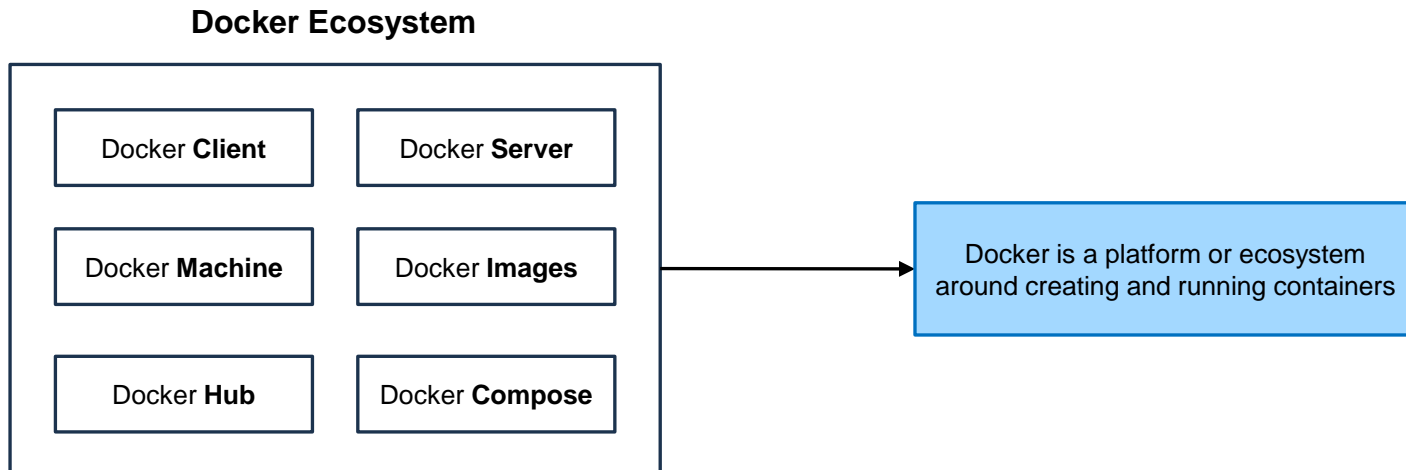
Teammate 1



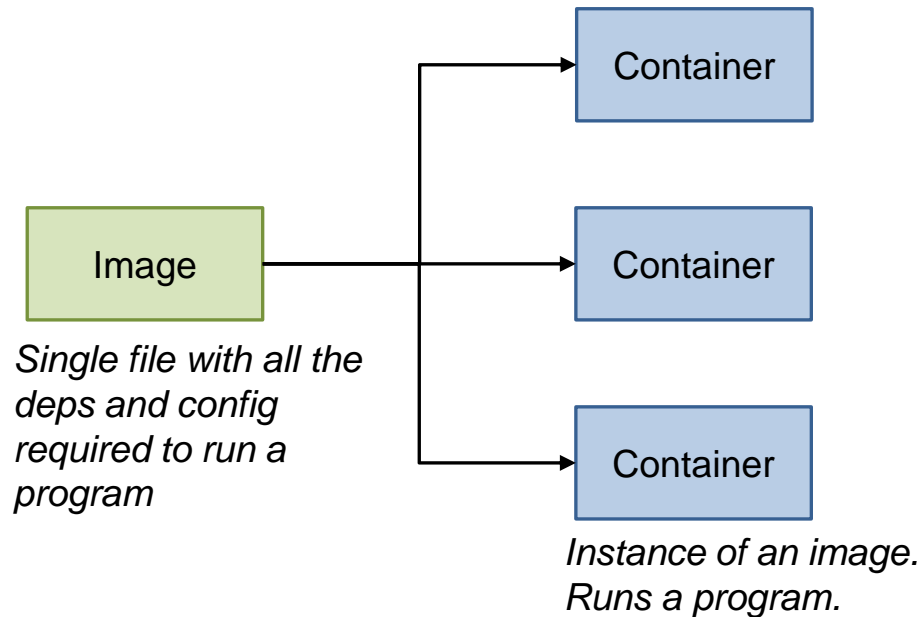
Teammate 2



What is Docker?



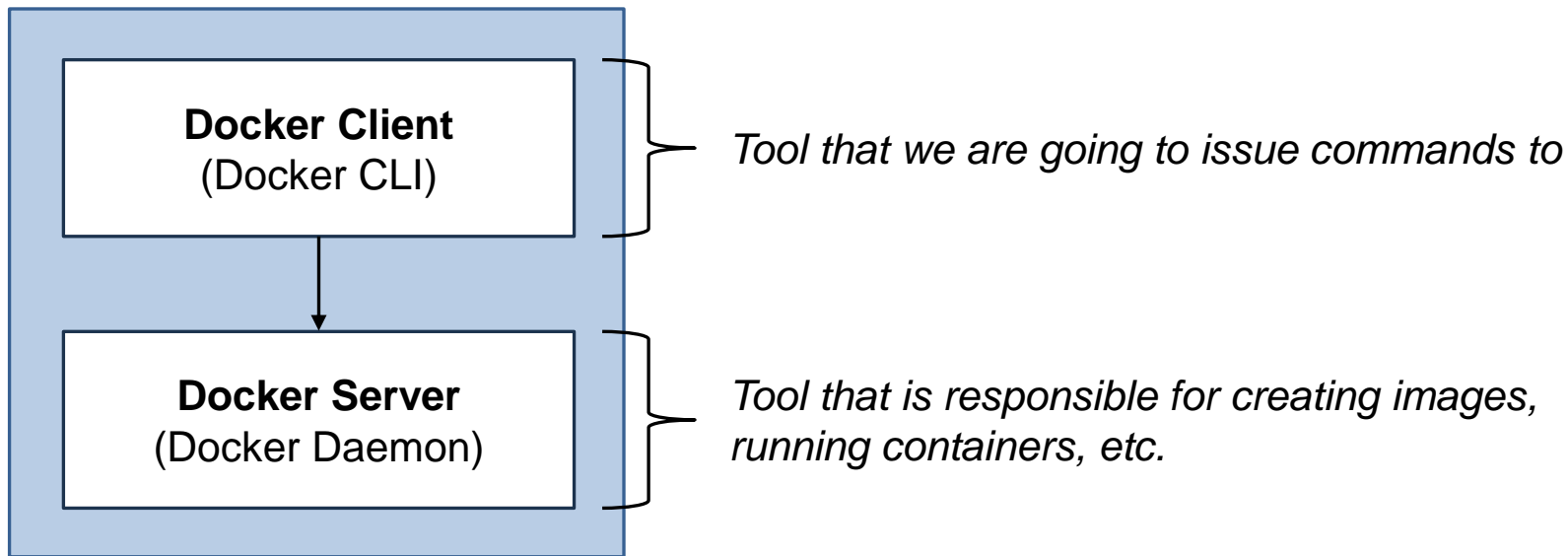
What is Docker? (cont.)



Docker for Windows/Mac



Docker for Windows/Mac



Installing Docker



- Installing Docker on macOS
([*Installing Docker on macOS.pdf*](#))
- Installing Docker with WSL on Windows 10/11
([*Installing Docker with WSL on Windows 10-11.pdf*](#))
- Installing Docker on Linux
([*Installing Docker on Linux.pdf*](#))

Using the Docker Client



```
Command Prompt
Microsoft Windows [Version 10.0.19045.4046]
(c) Microsoft Corporation. All rights reserved.

C:\Users\praphan>docker version
Client:
 Cloud integration: v1.0.35+desktop.10
 Version:          25.0.3
 API version:      1.44
 Go version:       gol.21.6
 Git commit:       4debf41
 Built:            Tue Feb  6 21:13:02 2024
 OS/Arch:          windows/amd64
 Context:          default

Server: Docker Desktop 4.27.2 (137060)
Engine:
 Version:          25.0.3
 API version:      1.44 (minimum version 1.24)
 Go version:       gol.21.6
 Git commit:       f417435
 Built:            Tue Feb  6 21:14:25 2024
 OS/Arch:          linux/amd64
 Experimental:     false
 containerd:
 Version:          1.6.28
 GitCommit:        ae07eda36dd25f8a1b98dfbf587313b99c0190bb
 runc:
 Version:          1.1.12
 GitCommit:        v1.1.12-0-g51d5e94
 docker-init:
```

Using the Docker Client (cont.)



```
Command Prompt

C:\Users\praphan>docker run hello-world
Unable to find image 'hello-world:latest' locally
latest: Pulling from library/hello-world
c1ec31eb5944: Pull complete
Digest: sha256:d000bc569937abbe195e20322a0bde6b2922d805332fd6d8a68b19f524b7d21d
Status: Downloaded newer image for hello-world:latest

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

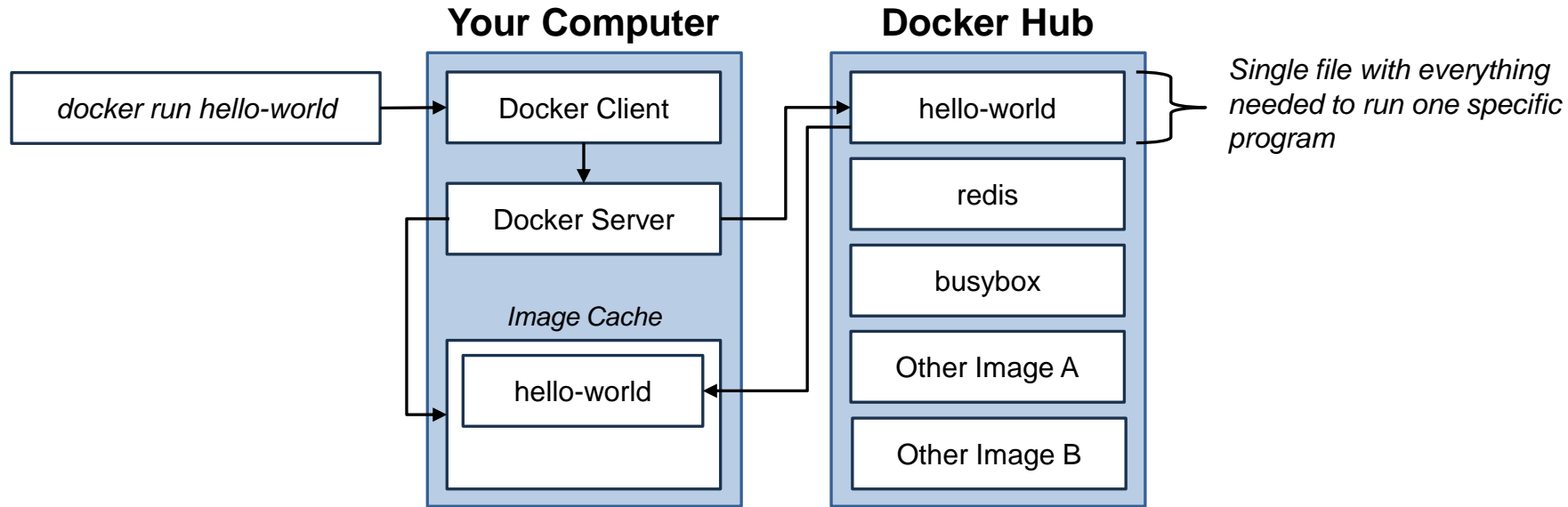
To generate this message, Docker took the following steps:
1. The Docker client contacted the Docker daemon.
2. The Docker daemon pulled the "hello-world" image from the Docker Hub.
   (amd64)
3. The Docker daemon created a new container from that image which runs the
   executable that produces the 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

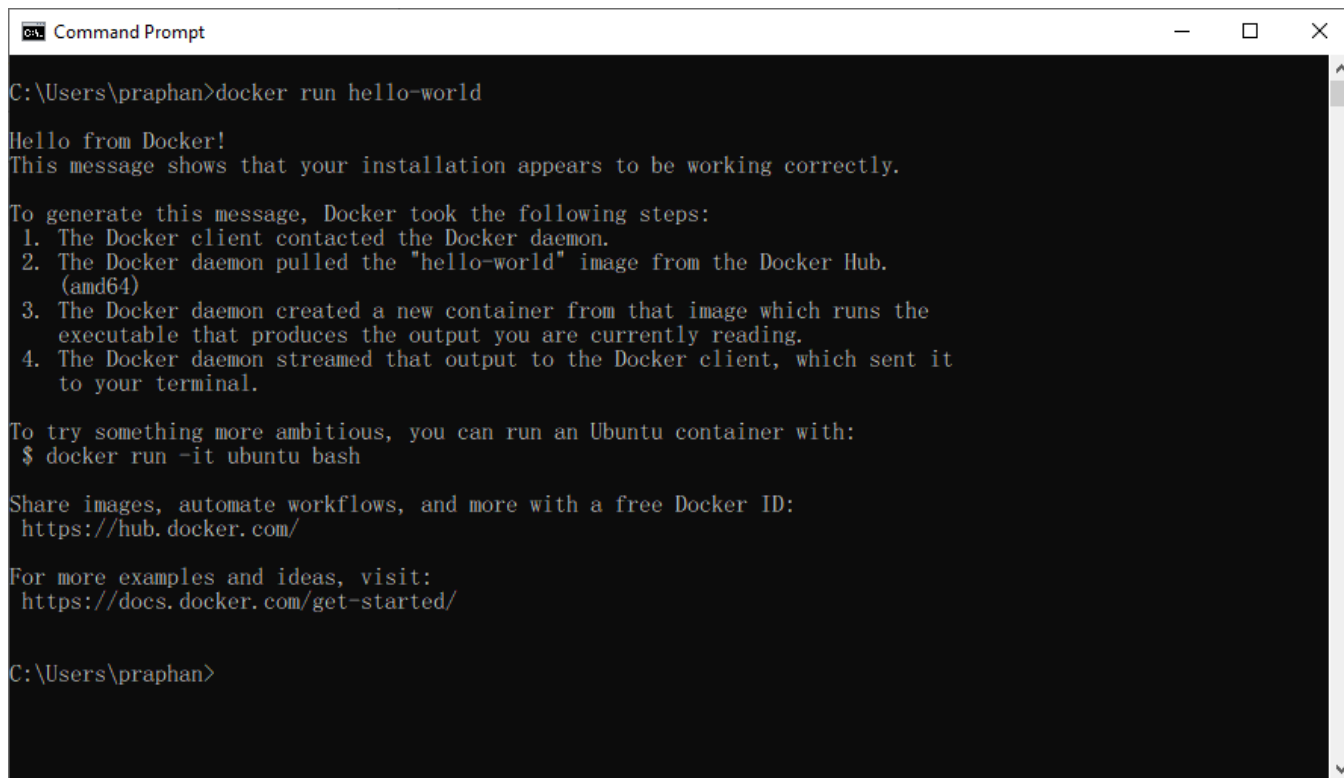
Share images, automate workflows, and more with a free Docker ID:
https://hub.docker.com/

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

Using the Docker Client (cont.)



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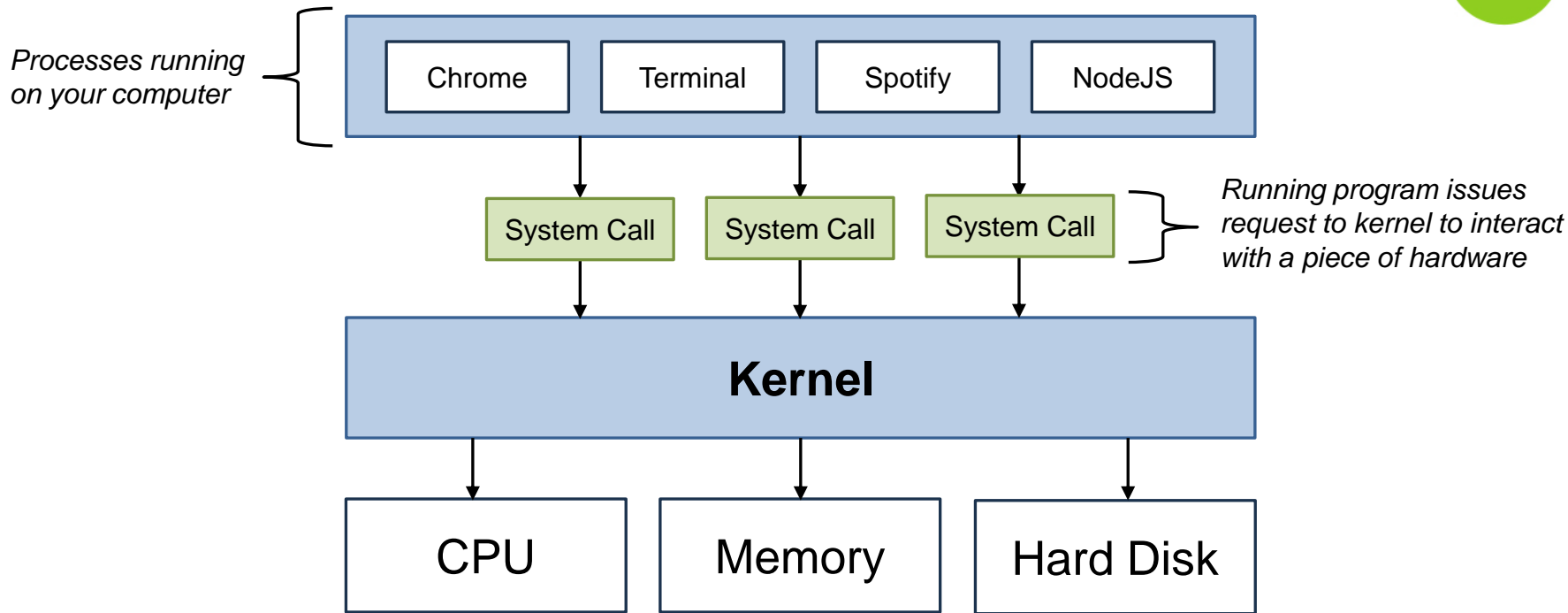
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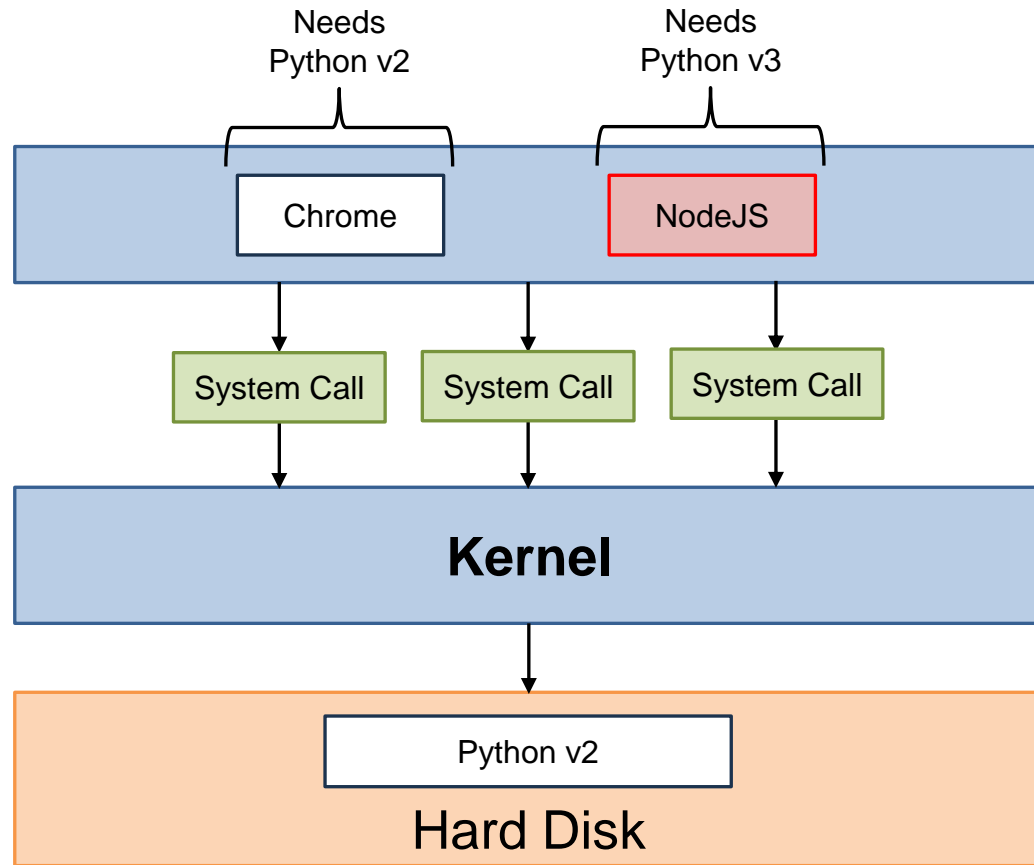
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C:\Users\praphan>
```

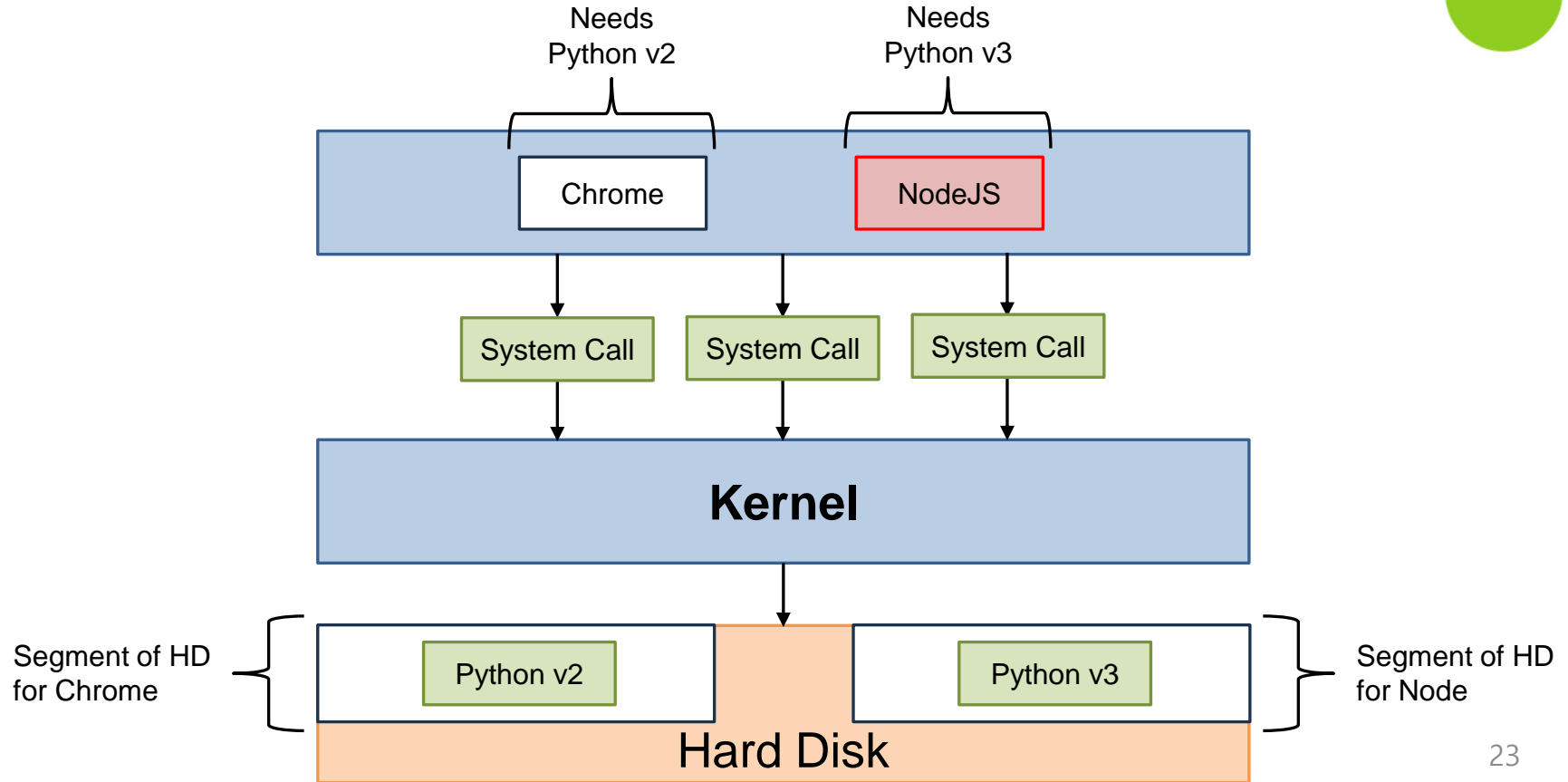
But Really...What's a Container?



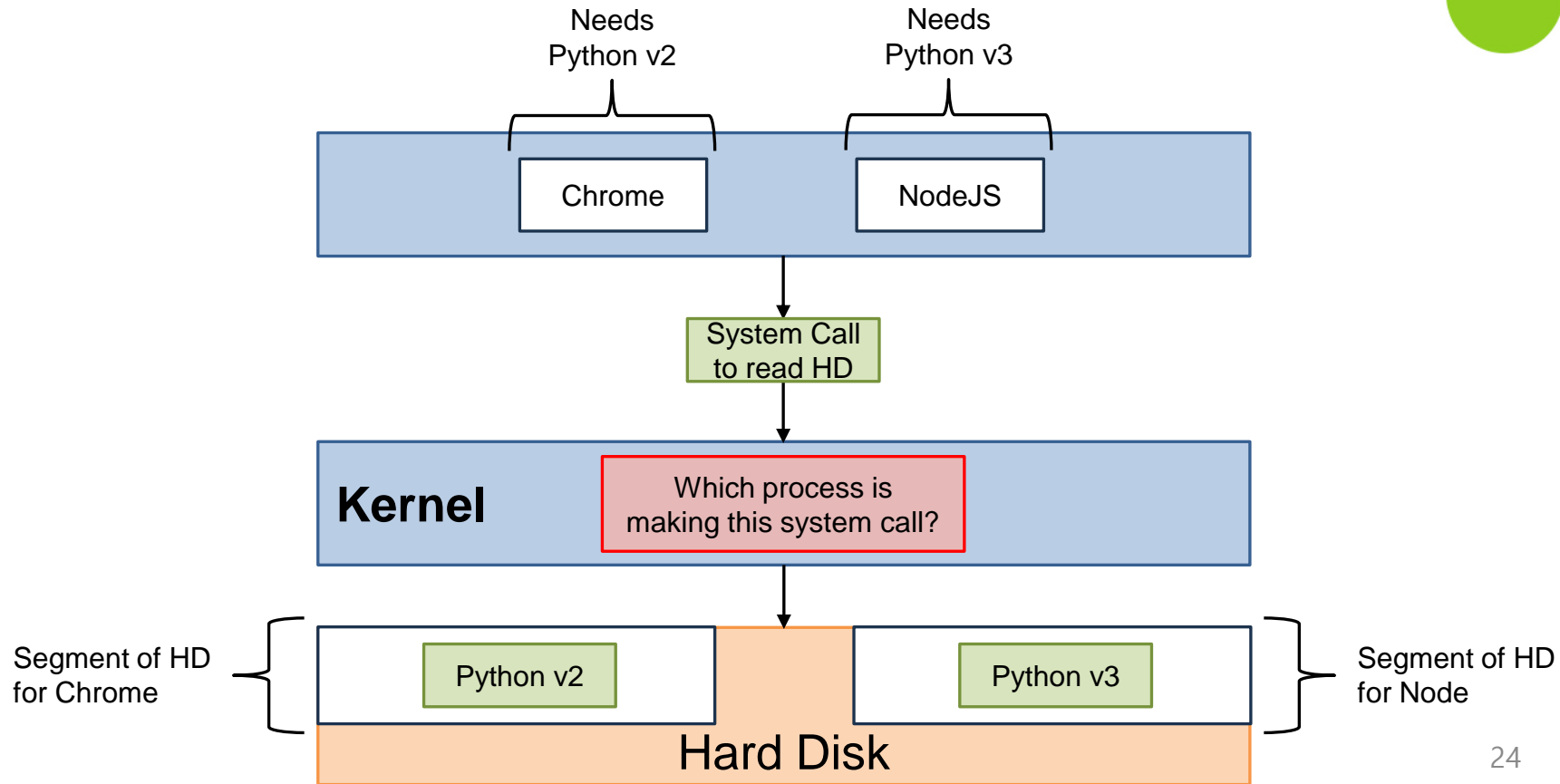
But Really...What's a Container? (cont.)



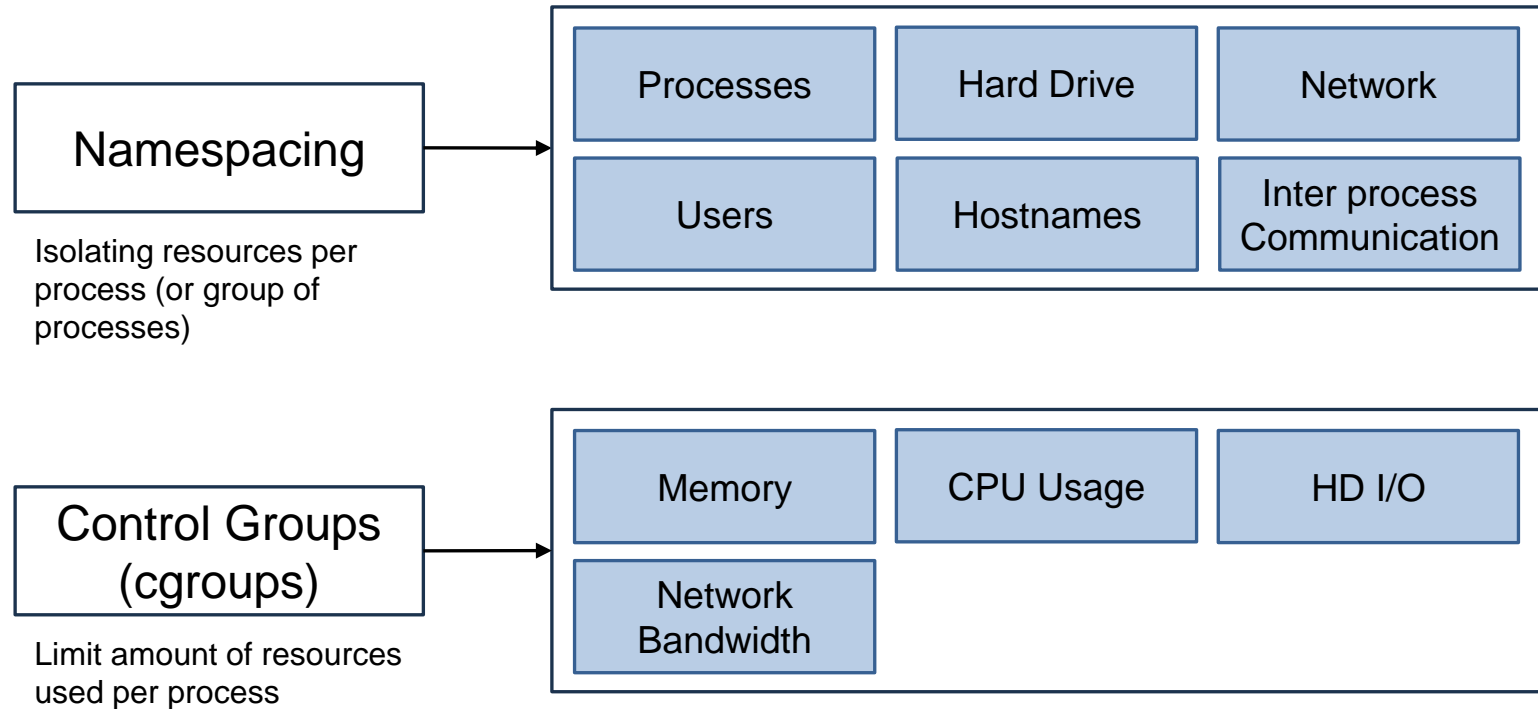
But Really...What's a Container? (cont.)



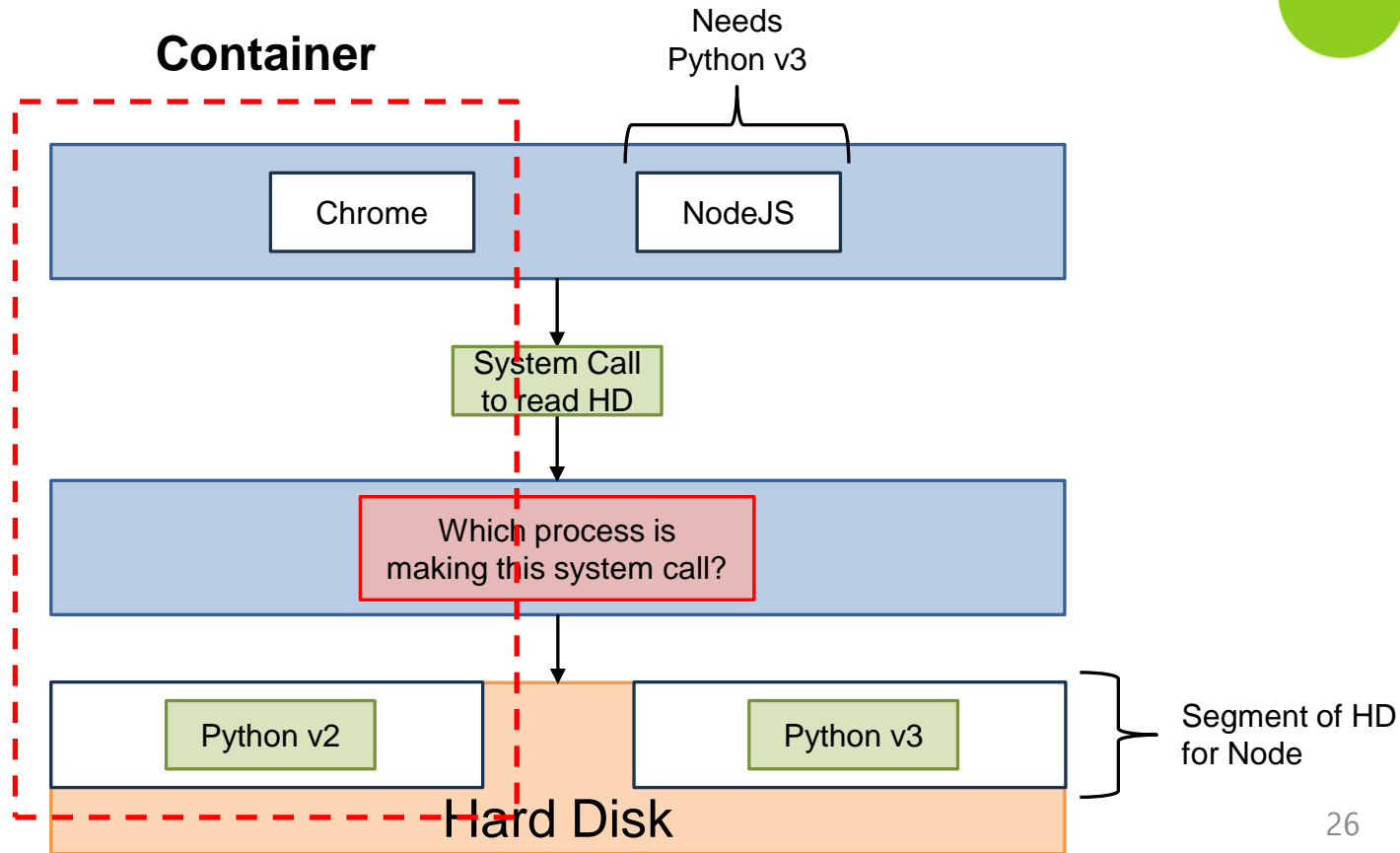
But Really...What's a Container? (cont.)



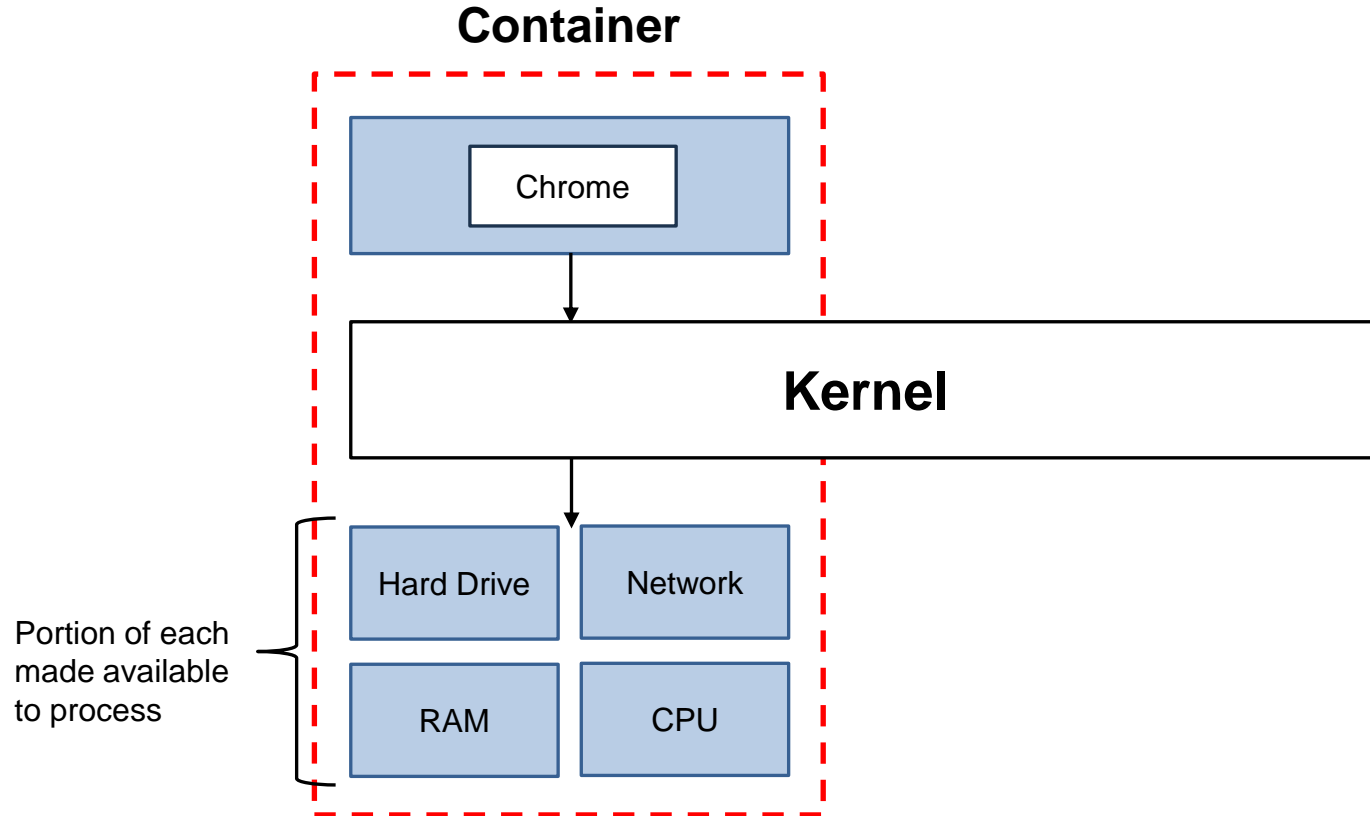
But Really...What's a Container? (cont.)



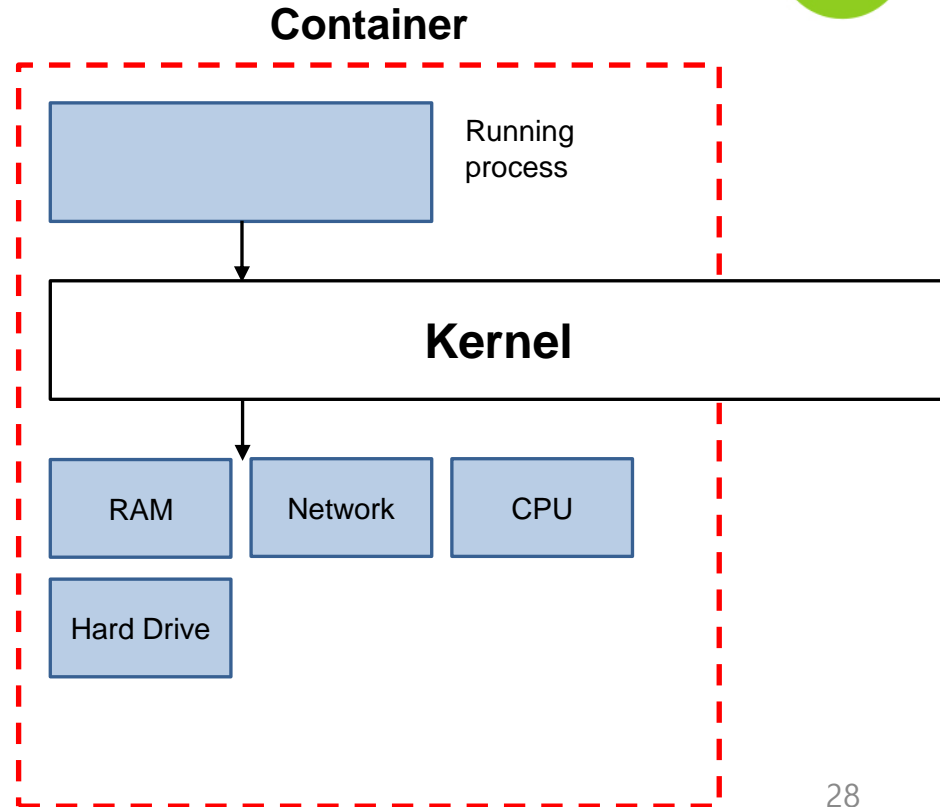
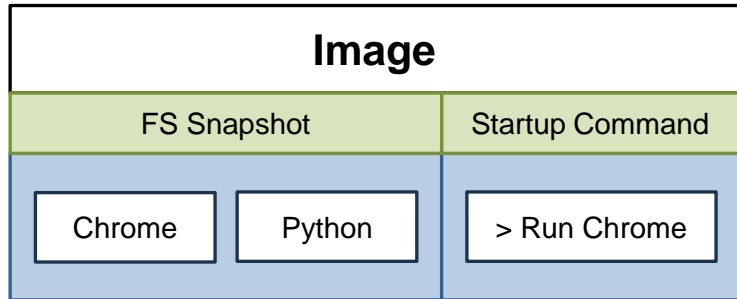
But Really...What's a Container? (cont.)



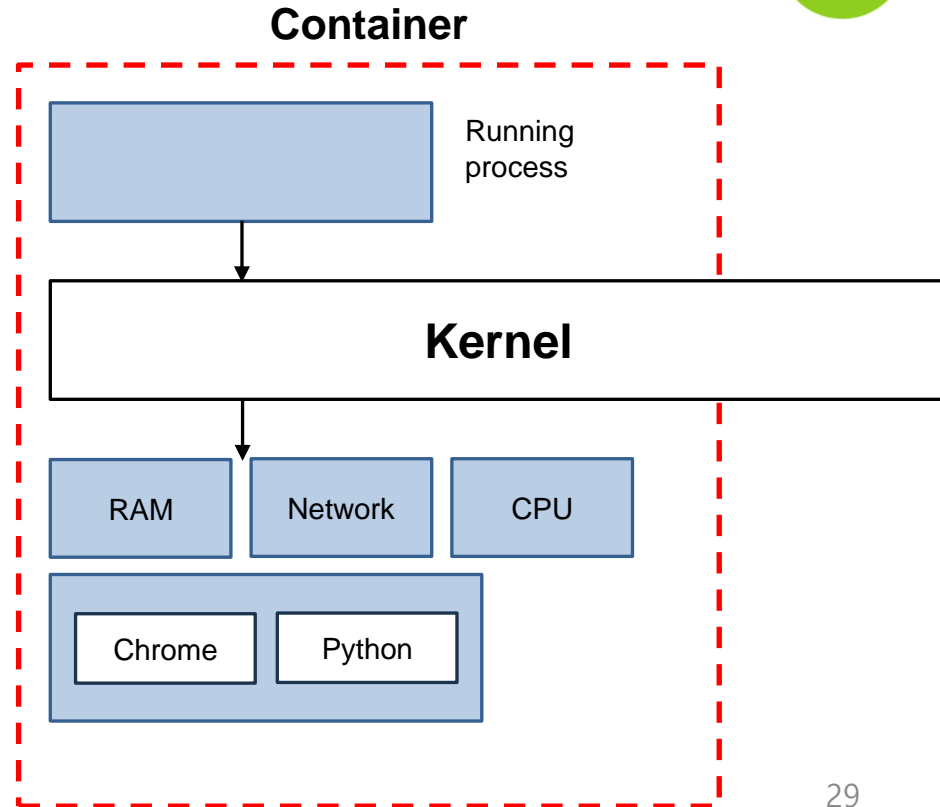
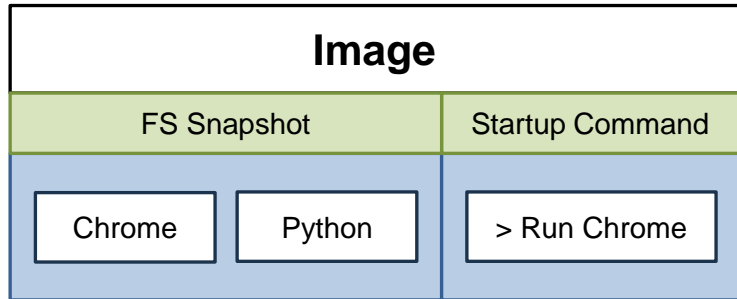
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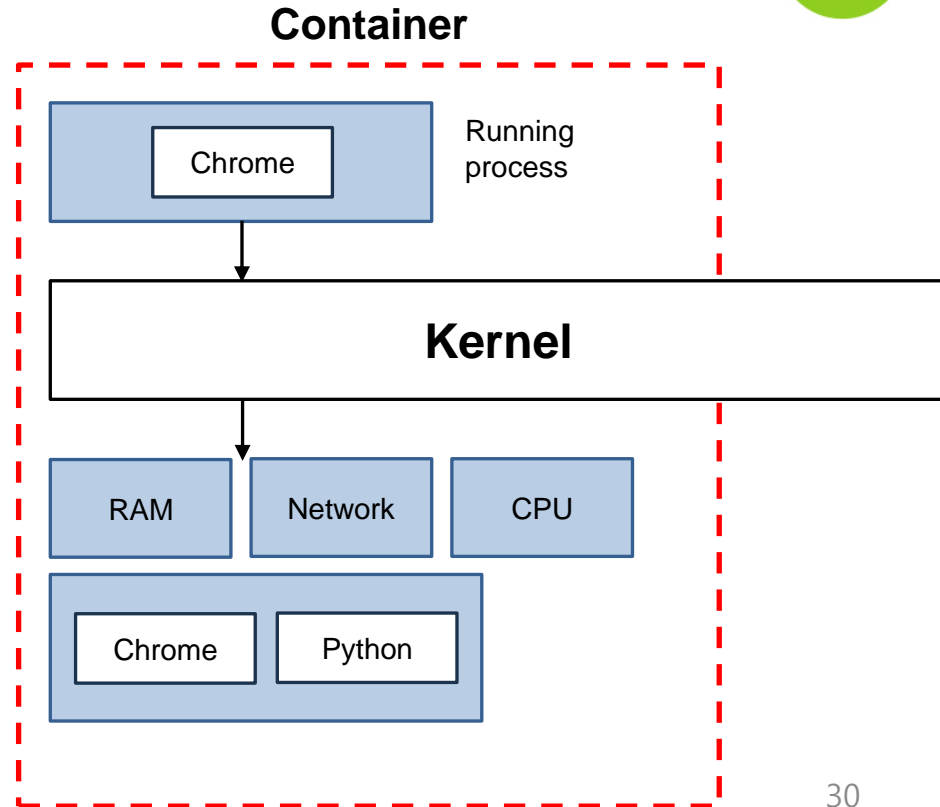
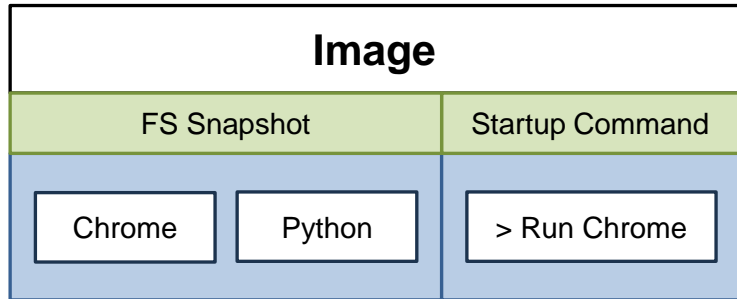
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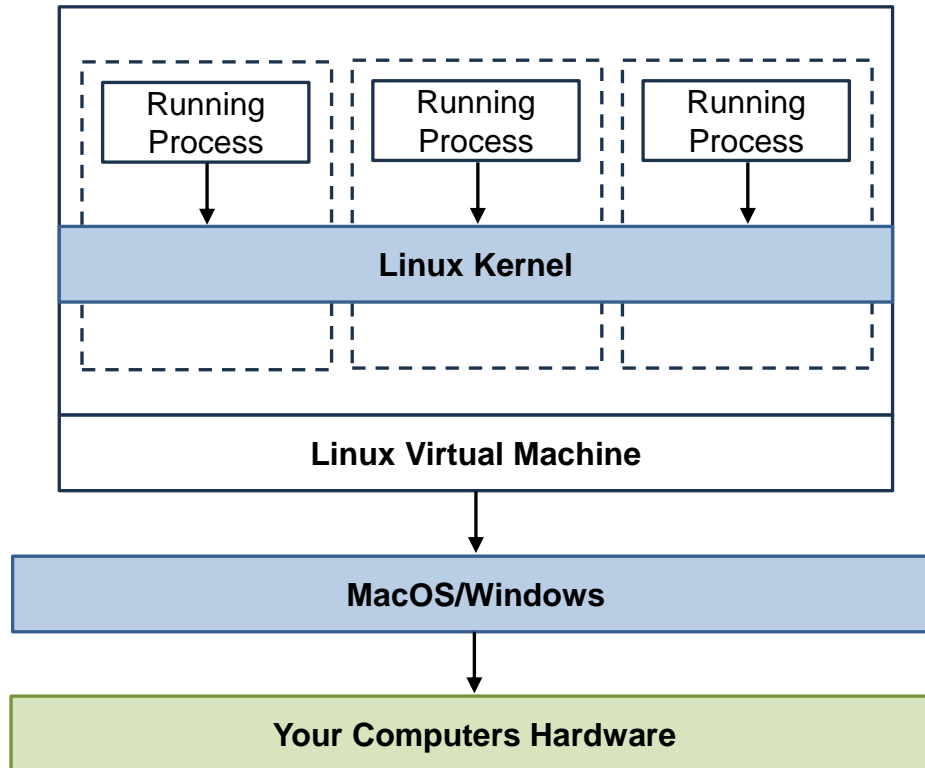
But Really...What's a Container? (cont.)



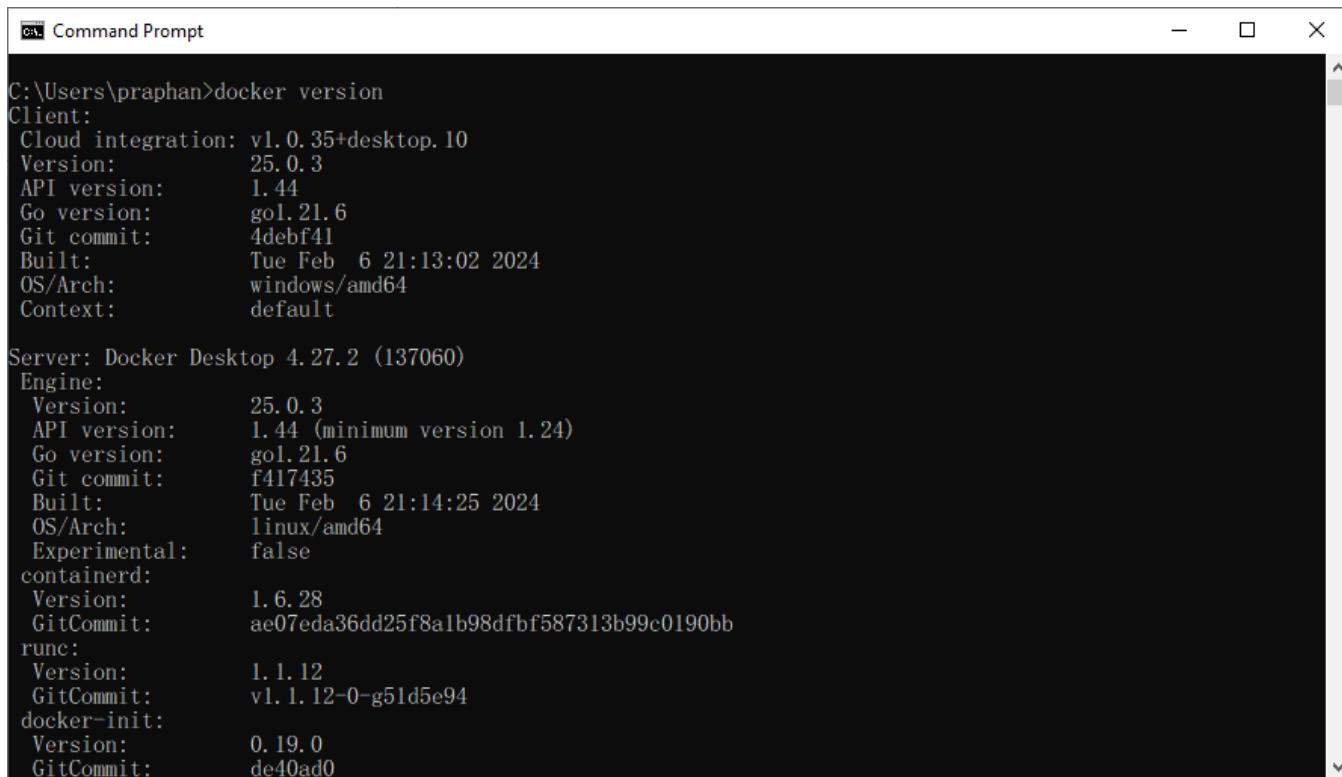
But Really...What's a Container? (cont.)



How's Docker Running on Your Computer?



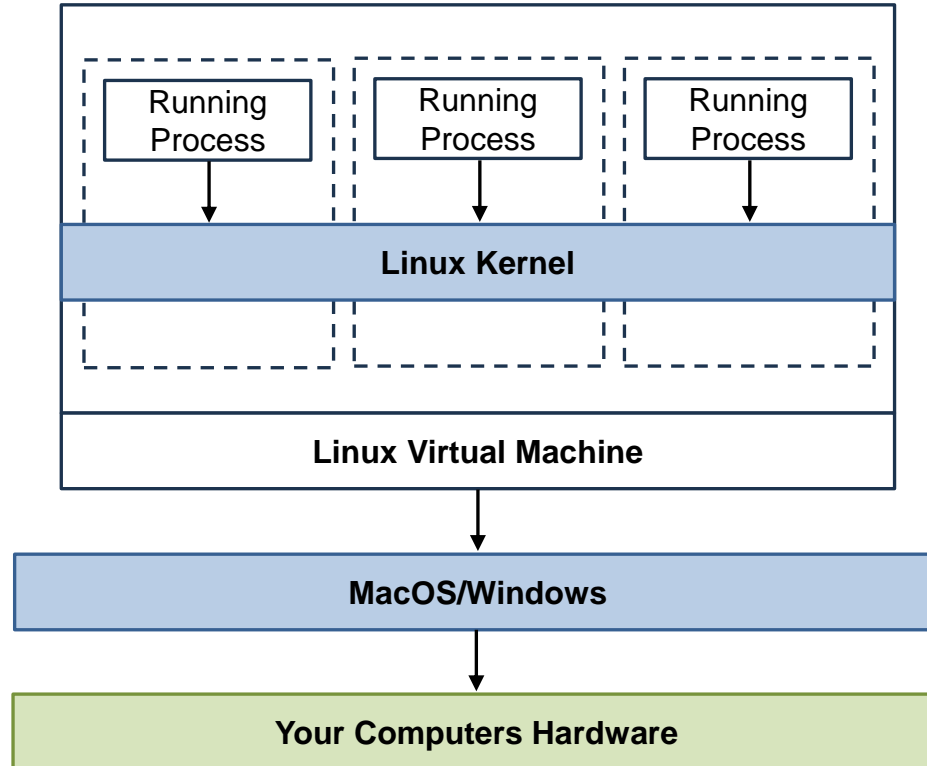
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docker-init:
 Version:          0.19.0
 GitCommit:       de40ad0
```


How's Docker Running on Your Computer? (cont.)



Q & A

