

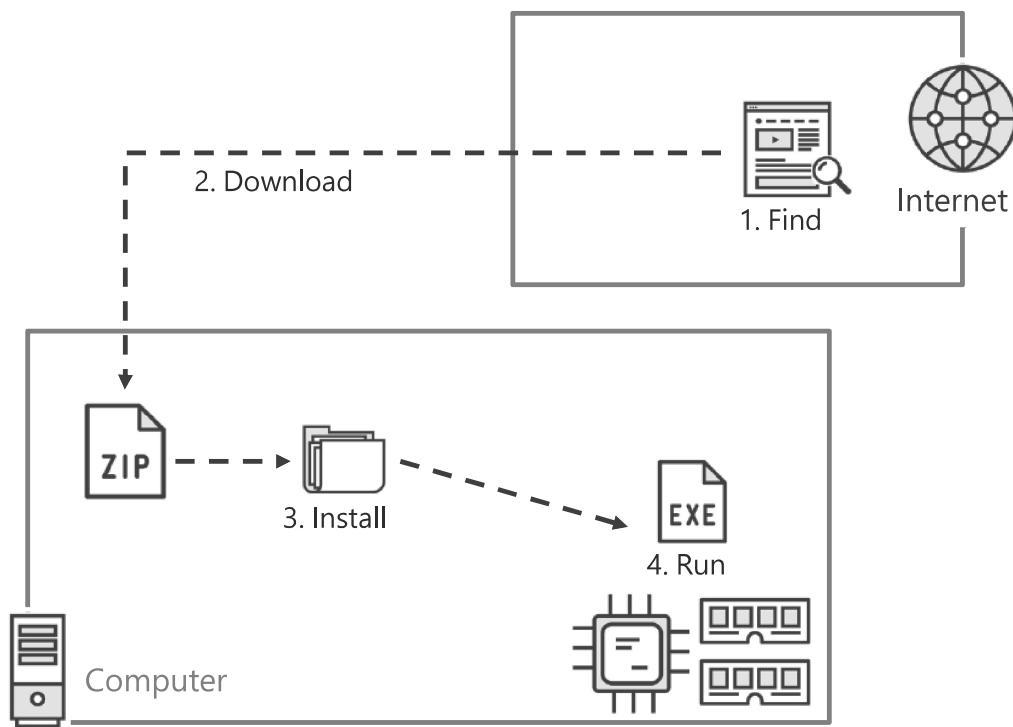
Getting Started with Docker

WHAT IS A CONTAINER?

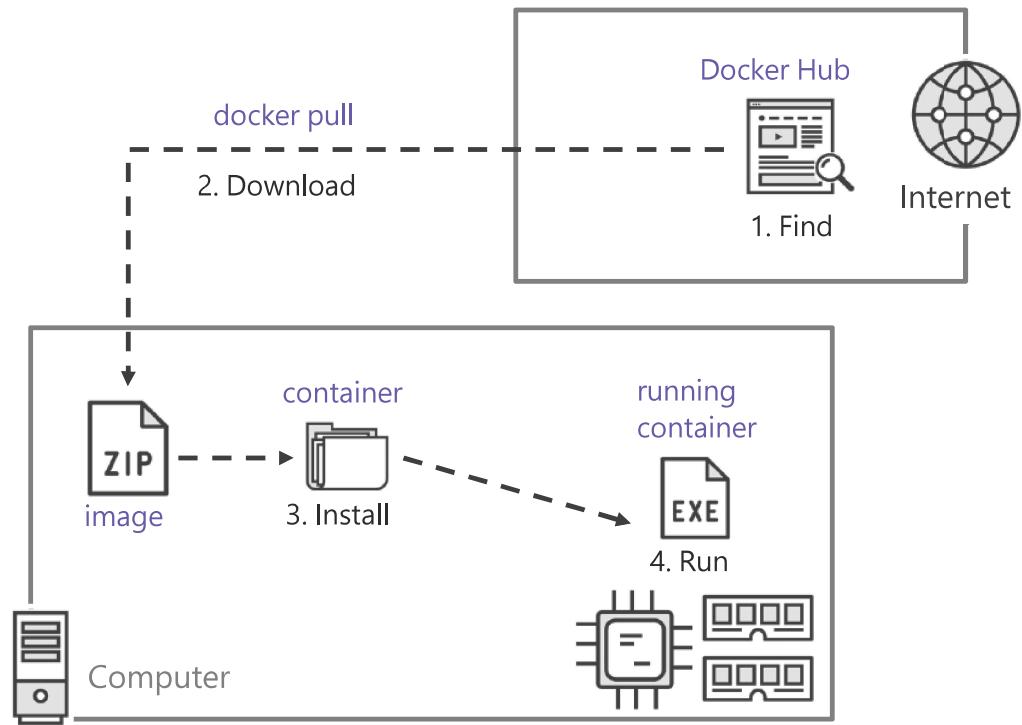


Docker simplifies software

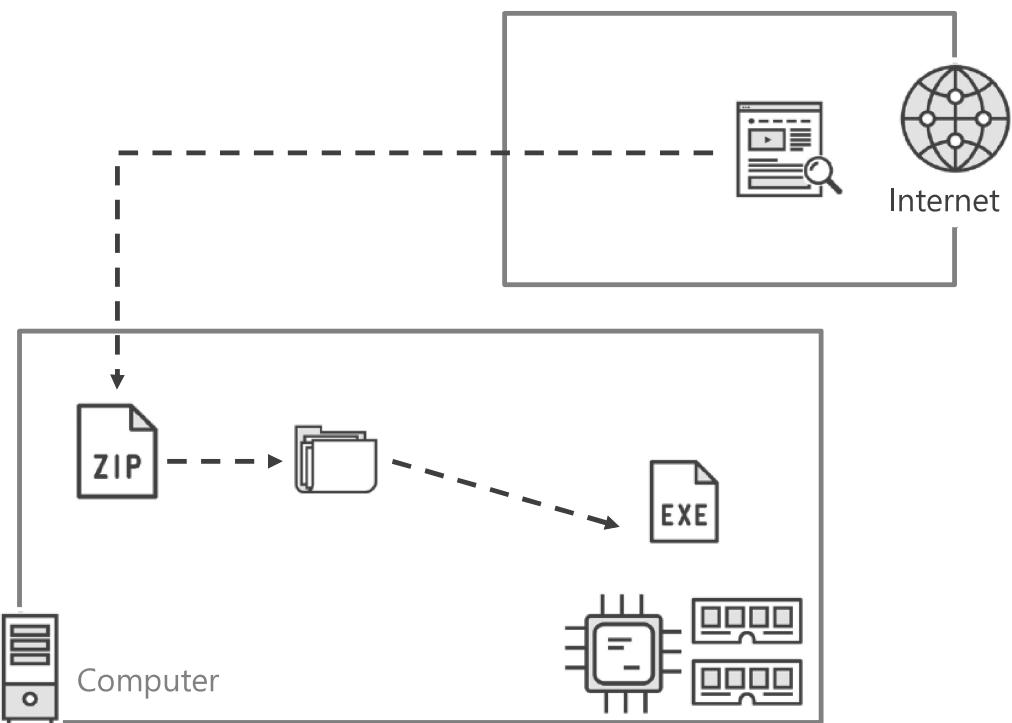
If you already know how to
use software, then you
already understand Docker



`docker run`
does all of this!



1. Find
2. Download
3. Install
4. Run



Docker Hub

The screenshot shows the Docker Hub interface. At the top, there's a search bar with placeholder text "Search for great content (e.g., mysql)". Below the search bar are navigation links: Explore, Repositories, Organizations, Get Help, dockermaestro, and a user icon. A blue header bar also includes "Docker", "Containers", and "Plugins". On the left, there's a sidebar titled "Filters" with sections for "Docker Certified" (checkboxes for Docker Certified and Verified Publisher), "Images" (checkboxes for Official Images and Verified Publisher), and "Categories" (checkboxes for various software types like Analytics, Application Frameworks, etc.). The main content area displays four Docker images in a grid:

- Oracle Database Enterprise Edition**: Docker Certified by Oracle, updated 3 years ago. Tags: Container, Docker Certified, Linux, x86-64, Databases.
- Oracle Java 8 SE (Server JRE)**: Docker Certified by Oracle, updated 7 months ago. Tags: Container, Docker Certified, Linux, x86-64, ProgrammingLanguages.
- Oracle WebLogic Server**: Docker Certified by Oracle, updated 7 months ago. Tags: Container, Docker Certified, Linux, x86-64, Application Frameworks, Application Infrastructure.
- couchbase**: Official Image by couchbase, updated 11 hours ago. Tags: Container, Docker Certified, Linux, x86-64, Application Frameworks, Application Infrastructure.

Traditional Software	Docker Equivalent	Docker Command
Find Software	Docker Hub	
Download software, i.e. a zip file or MSI	Pull an image	<code>docker pull</code>
Install software	Create a container from an image	<code>docker create</code>
Start software	Run the container	<code>docker start</code>
Stop software	Stop the container	<code>docker stop</code>
Uninstall software	Remove the container	<code>docker rm</code>
Not Possible	Do all of this with one command!	<code>docker run</code>

Inverted learning

Use software without knowing how to set it up.

When ready, everything is consistently documented for you to learn how to set it up (Dockerfile).

Challenges with Software Discovery

Where?

- App store
- Package manager
- Standalone website

Trust

- http
- Code itself

Download availability

Challenges with Software Installation

Compatible? Cross-Platform?

- OS, OS version/build, CPU arch
- macOS Sierra 10.12 x64
- Win10 Anniversary Edition x64

Format

- Source
- Standalone executable
- Executable + bundled libraries
- Executable + shared libraries / runtime

Installers, package managers, manual...

- What did it install?!

Updates (auto updaters) & uninstall

Configuration Management

Challenges with Running Software

Helpful documentation

Where is it? PATH?

Starting and stopping

Service registration

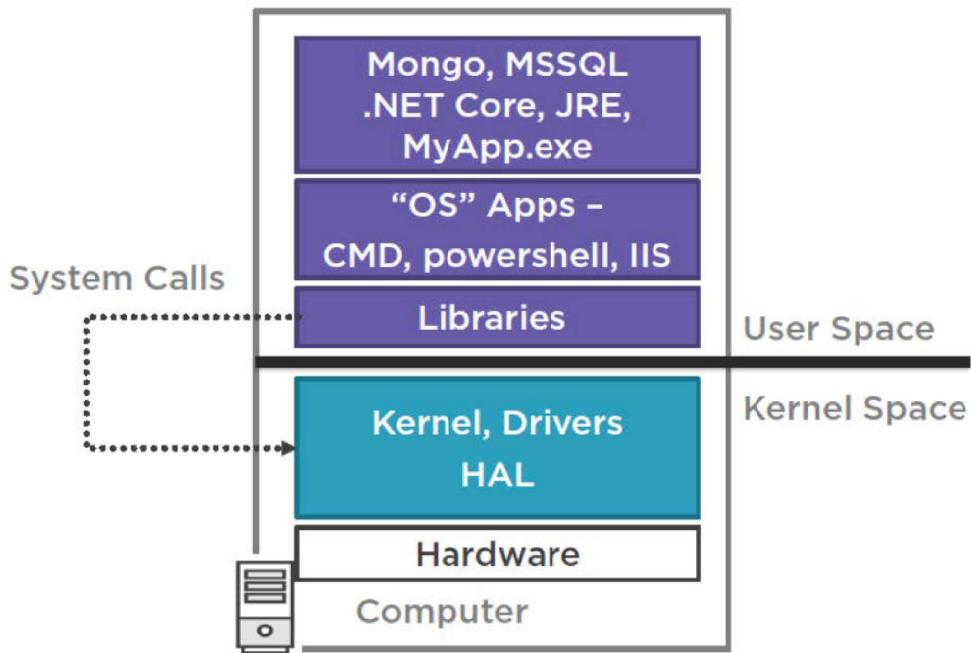
Installing and running dependencies

Security & sandboxing

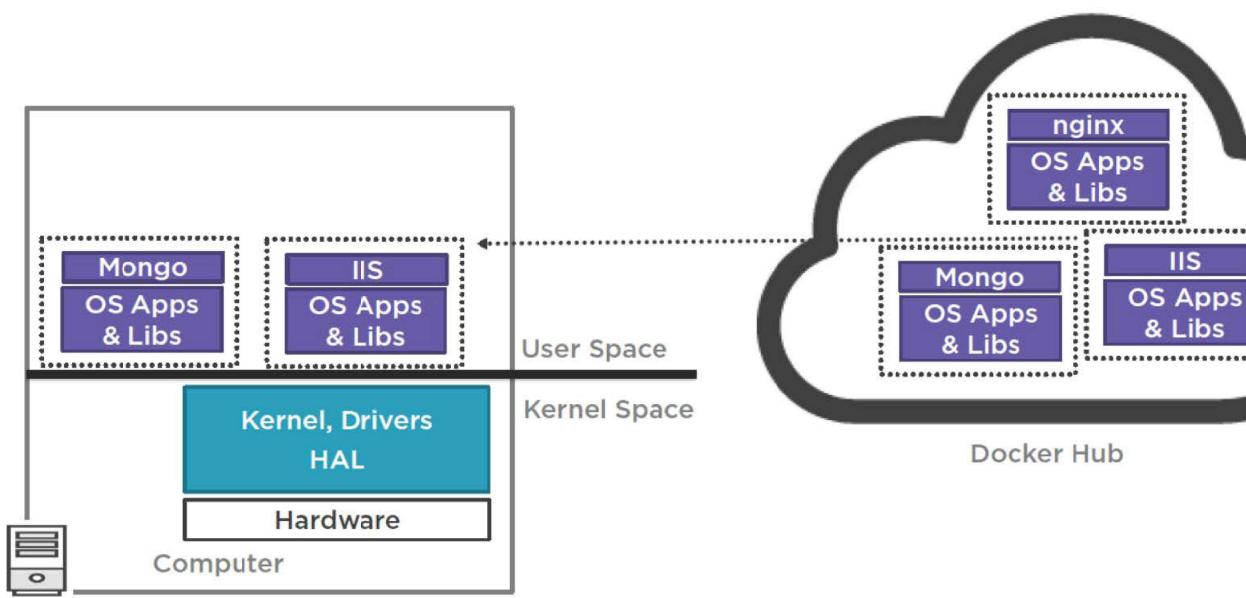
Breaking changes

- OS updates
- Shared library updates

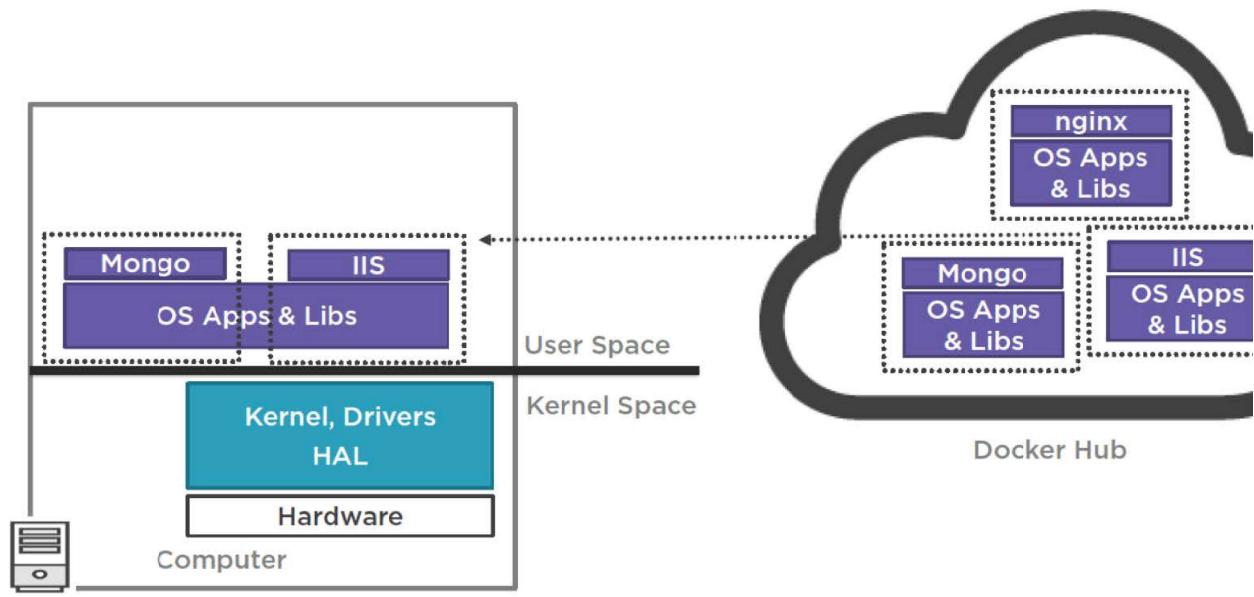
Traditional Software Layer



Container Software Layer



Layer Reuse



Containers are lightning fast compared to VMs