

Docker Introduction

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“Code with Passion!”



Topics

- What is and Why Docker?
- Docker ecosystem
- VMs vs Containers
- Docker architecture

What is and Why Docker?

What is Docker?



The image shows a screenshot of the Docker website homepage. At the top, there is a browser address bar with the URL 'www.docker.com'. Below the address bar is the Docker logo, which consists of a blue whale carrying a stack of blue shipping containers. To the right of the logo is a navigation menu with the following items: 'What is Docker?', 'Use Cases', 'Try It!', 'Install & Docs', and 'Browse'. There are also two buttons: 'Log In' and 'Sign Up'. The main content area features the headline 'Build, Ship and Run Any App, Anywhere' in a large, bold, black font. Below the headline is a sub-headline: 'Docker - An open platform for distributed applications for developers and sysadmins.' At the bottom of the main content area, there are two buttons: 'What is Docker?' and 'Try It!'. On the right side of the main content area, there is a large illustration of a blue whale carrying a stack of blue shipping containers, which is the Docker logo.

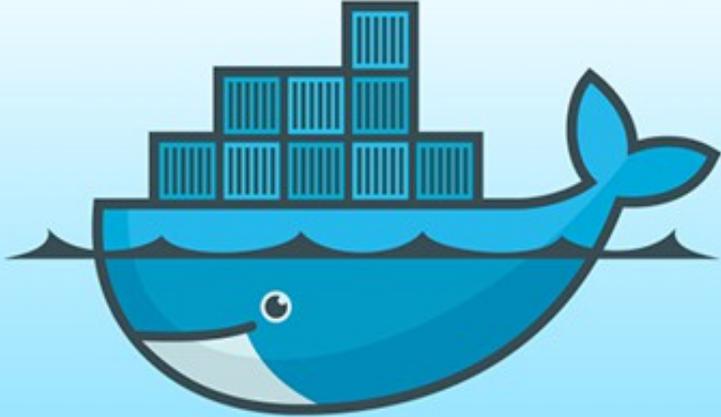
← → ↻ 🏠 📄 www.docker.com

 docker [What is Docker?](#) [Use Cases](#) [Try It!](#) [Install & Docs](#) [Browse](#) [Log In](#) [Sign Up](#)

Build, Ship and Run Any App, Anywhere

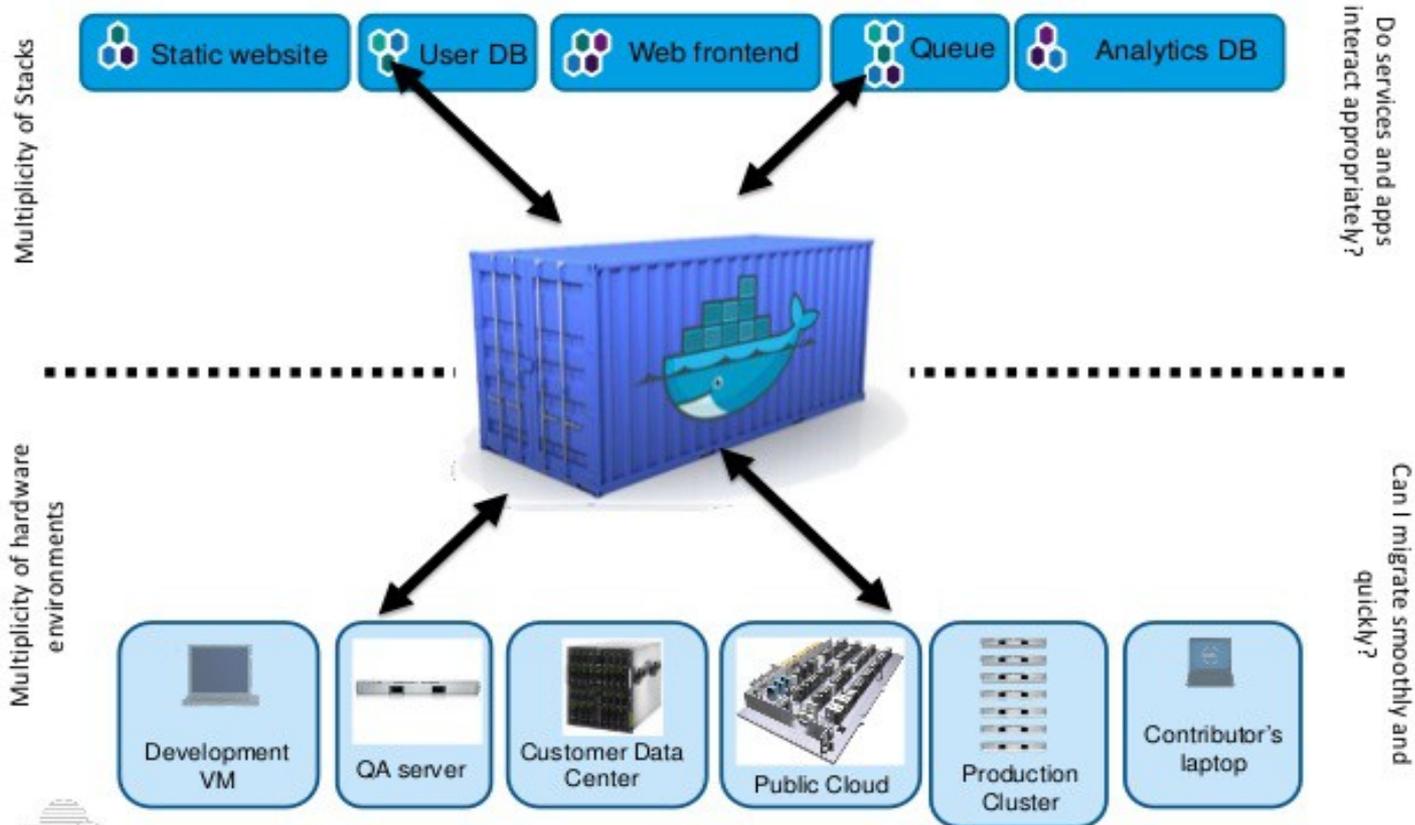
Docker - An open platform for distributed applications for developers and sysadmins.

[What is Docker?](#) [Try It!](#)



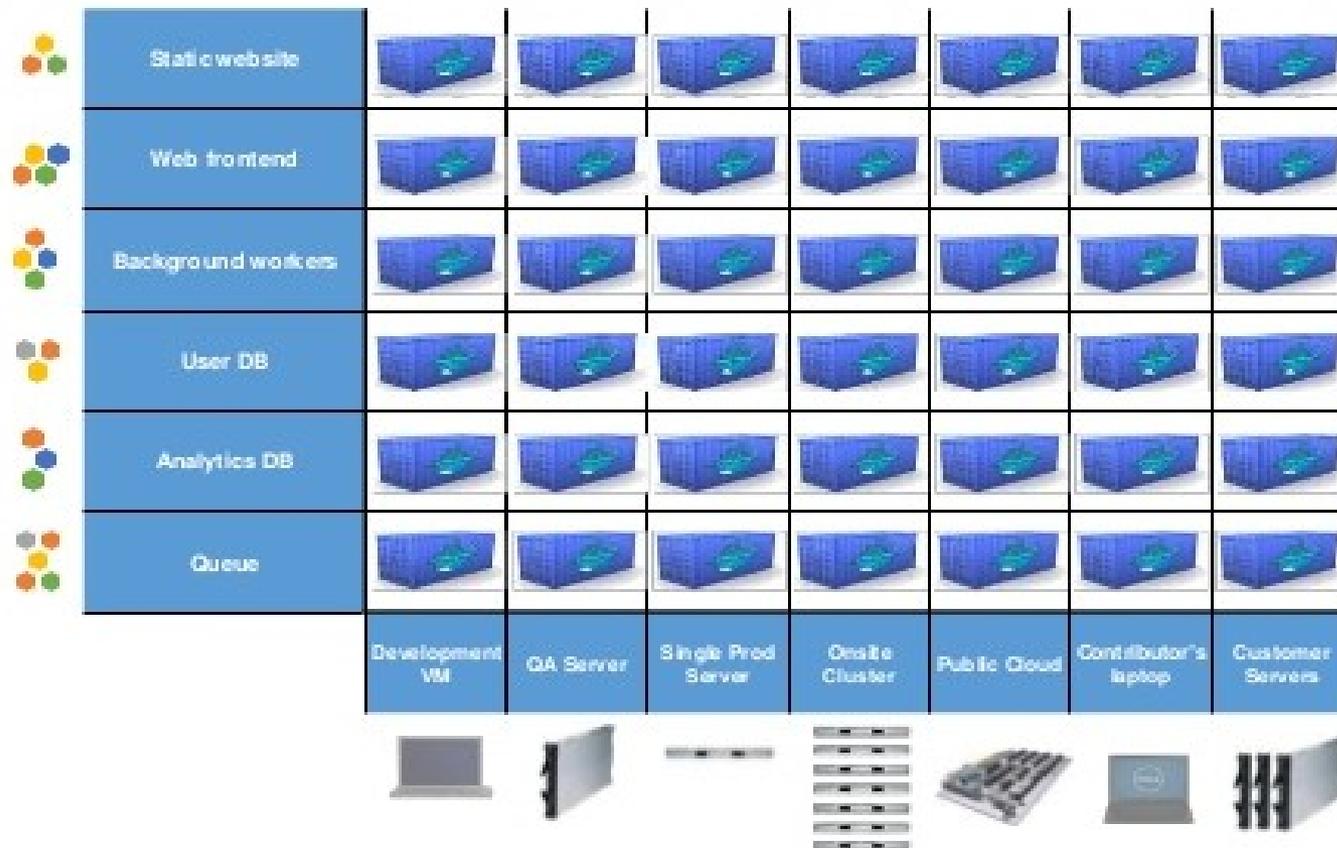
What is Docker?

Docker is a **shipping container** system for code

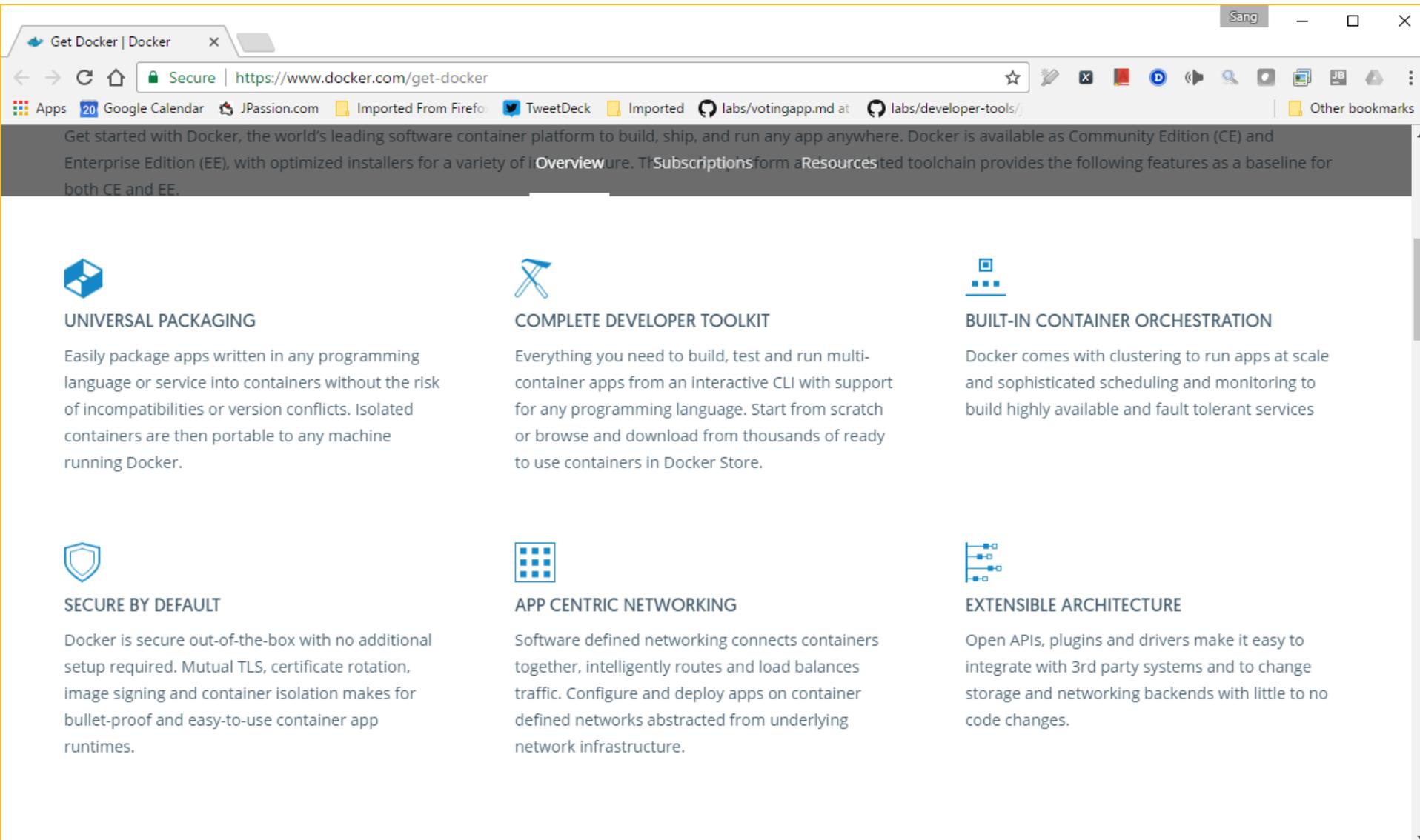


Why Docker?

Docker eliminates the matrix from Hell



Why Docker?



The image is a screenshot of a web browser displaying the Docker website. The browser's address bar shows the URL <https://www.docker.com/get-docker>. The page content is organized into a grid of six feature cards, each with an icon, a title, and a descriptive paragraph. The features listed are: Universal Packaging, Complete Developer Toolkit, Built-in Container Orchestration, Secure by Default, App Centric Networking, and Extensible Architecture. The browser's bookmark bar and navigation icons are also visible at the top.

Get started with Docker, the world's leading software container platform to build, ship, and run any app anywhere. Docker is available as Community Edition (CE) and Enterprise Edition (EE), with optimized installers for a variety of [iOverview](#)ure. [TiSubscriptions](#)form [aResources](#)ted toolchain provides the following features as a baseline for both CE and EE.

- **UNIVERSAL PACKAGING**

Easily package apps written in any programming language or service into containers without the risk of incompatibilities or version conflicts. Isolated containers are then portable to any machine running Docker.
- **COMPLETE DEVELOPER TOOLKIT**

Everything you need to build, test and run multi-container apps from an interactive CLI with support for any programming language. Start from scratch or browse and download from thousands of ready to use containers in Docker Store.
- **BUILT-IN CONTAINER ORCHESTRATION**

Docker comes with clustering to run apps at scale and sophisticated scheduling and monitoring to build highly available and fault tolerant services
- **SECURE BY DEFAULT**

Docker is secure out-of-the-box with no additional setup required. Mutual TLS, certificate rotation, image signing and container isolation makes for bullet-proof and easy-to-use container app runtimes.
- **APP CENTRIC NETWORKING**

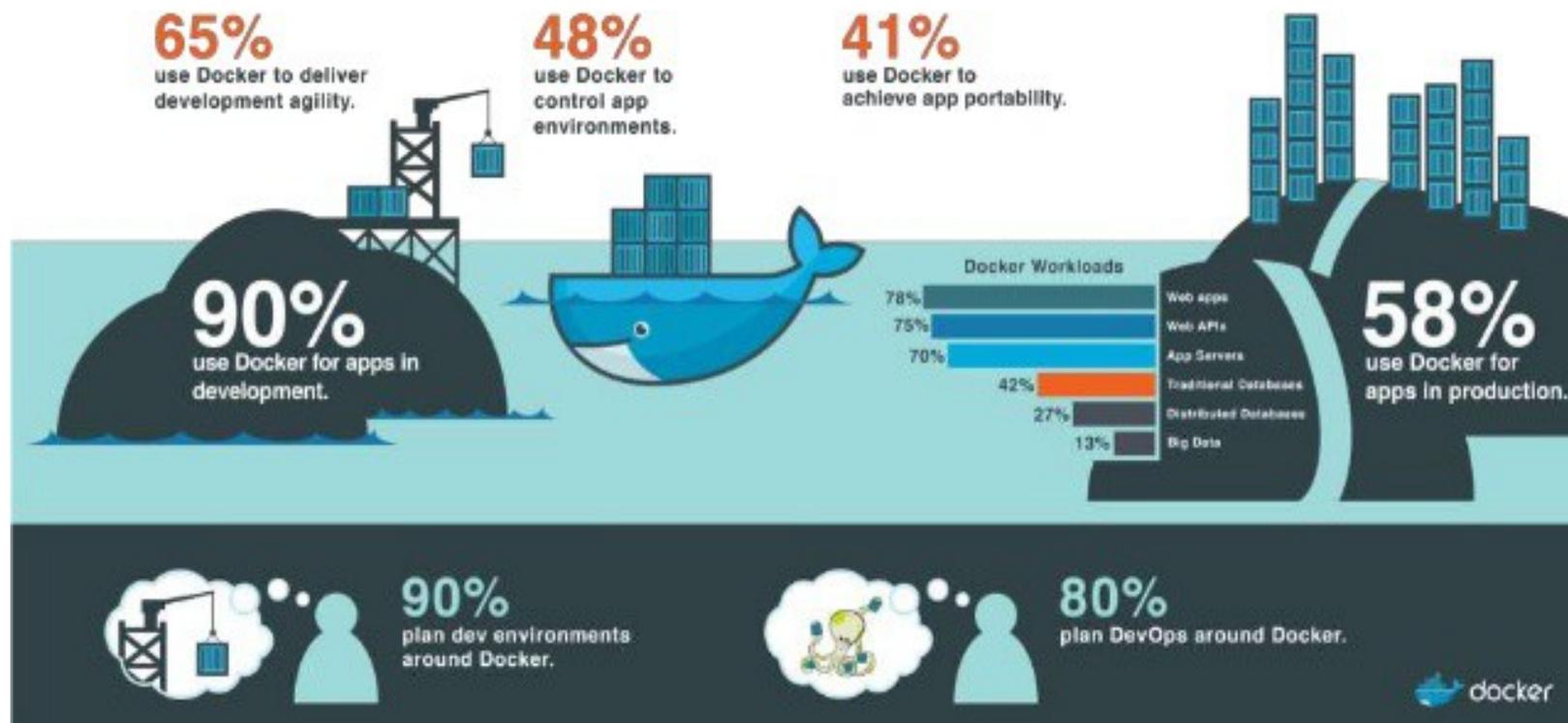
Software defined networking connects containers together, intelligently routes and load balances traffic. Configure and deploy apps on container defined networks abstracted from underlying network infrastructure.
- **EXTENSIBLE ARCHITECTURE**

Open APIs, plugins and drivers make it easy to integrate with 3rd party systems and to change storage and networking backends with little to no code changes.

Docker Ecosystem

Docker Ecosystem

Docker survey 2016 - Enabling the Software Supply Chain



Docker Ecosystem

Service Providers



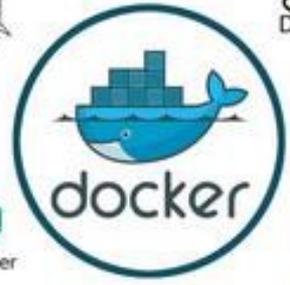
Operating Systems



Configuration Management



Dev Tools



Big Data



Service Discovery



Official Repositories



Orchestration



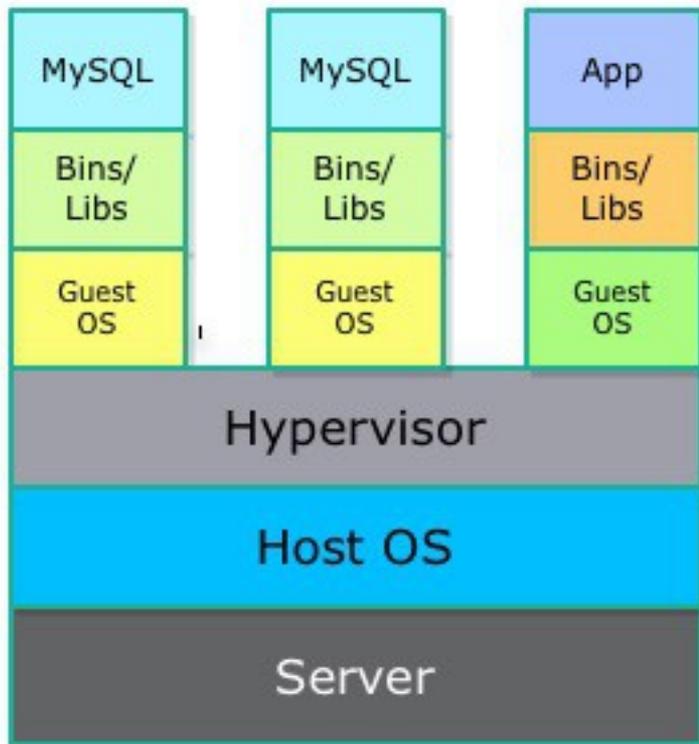
System Integrators



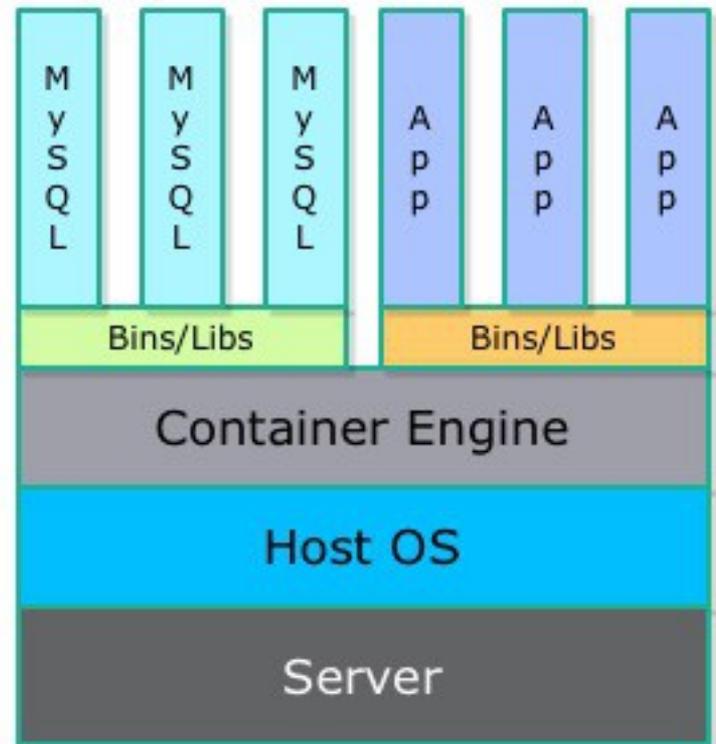
Virtual Machines(VMs) vs Containers

VM vs Containers

Virtual Machines

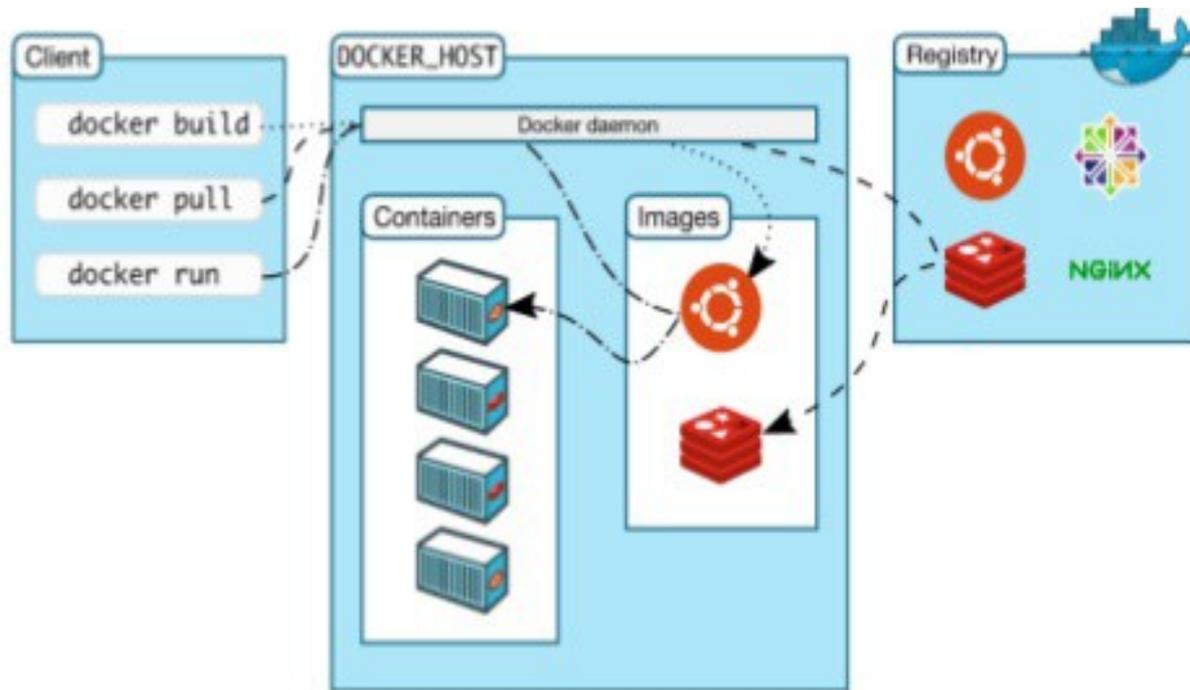


Containers



Docker Architecture

Docker Architecture



What makes up Docker?

- Images
 - > The file system and configuration of our application which are used to create containers
- Containers
 - > Running instances of Docker images - containers run the actual applications
- Docker daemon
 - > The background service running on the host that manages building, running and distributing Docker containers
- Docker client
 - > Command line tool that allows the user to interact with the Docker daemon
- Docker Hub
 - > A registry of Docker images

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