Building for Scale

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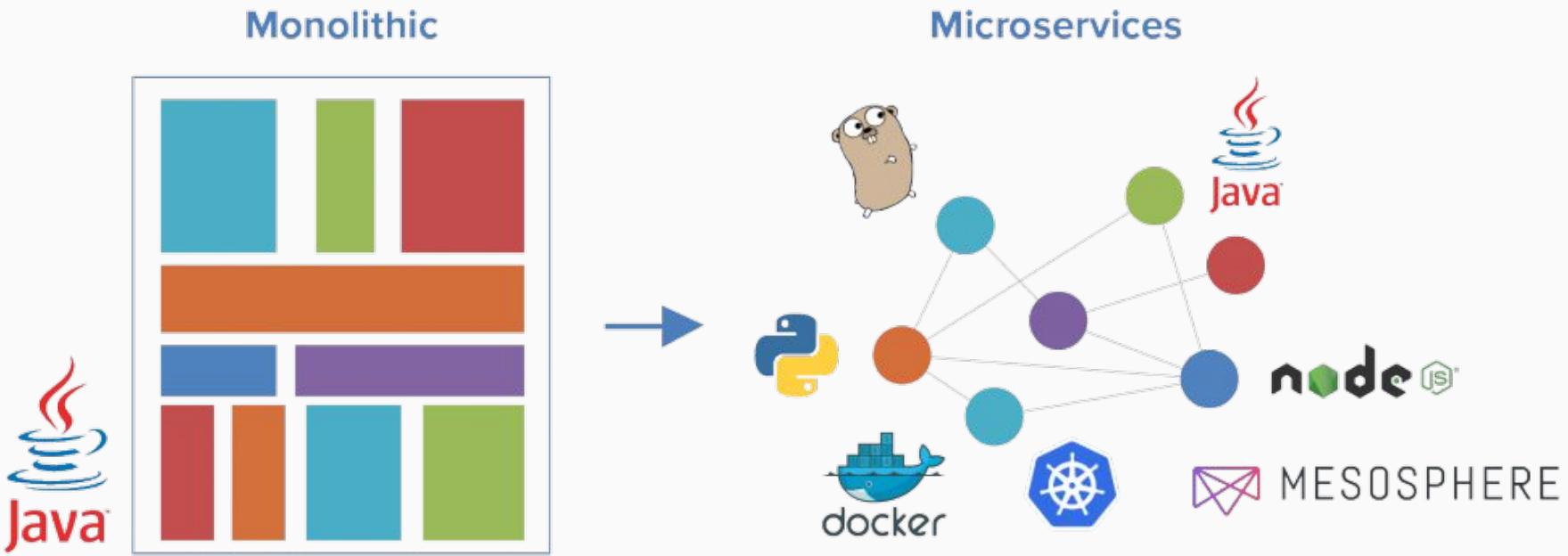
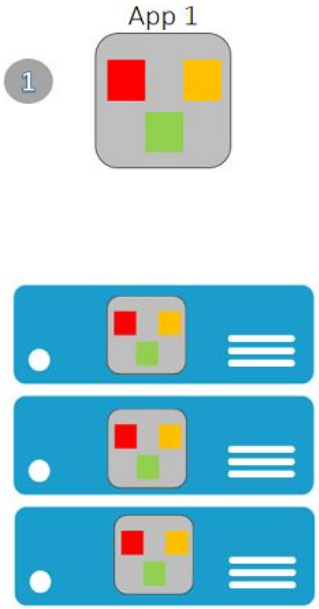
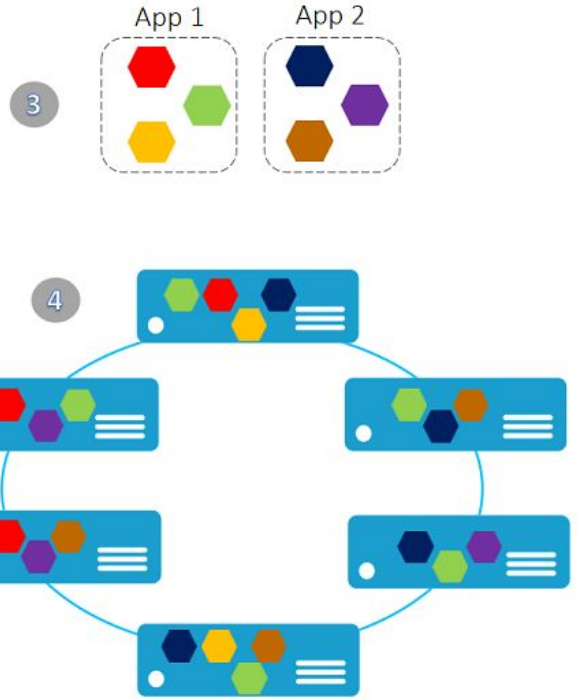
Evolution of Applications


Monolithic
Java
Microservices
Java
node
docker
MESOSPHERE

Monolithic application approach



Microservices application approach



The Twelve Factors

The twelve-factor methodology can be applied to apps written in any programming language.

https://12factor.net

I. Codebase
II. Dependencies
III. Config
IV. Backing Services
V. Build, Release, Run
VI. Processes
VII. Port Binding
VIII. Concurrency
IX. Disposability
X. Dev/Prod Parity
XI. Logs
XII. Admin processes

tip://
Always code as if the guy who ends up maintaining your code will be a **violent psychopath** who knows where you live! :)

Automation: DevOps (CI & CD)

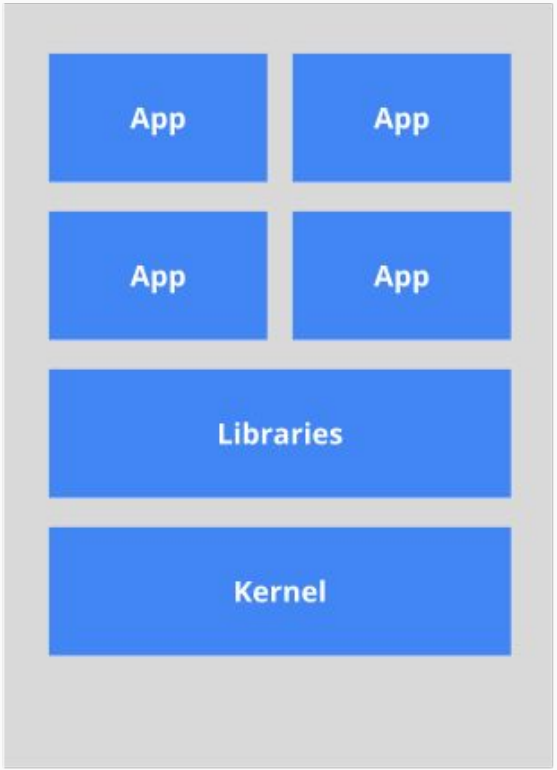
Continuous Integration – Tools
Some names and logos

tip://

You don't need to automate everything at once, and you can, and should, automate gradually, over time.

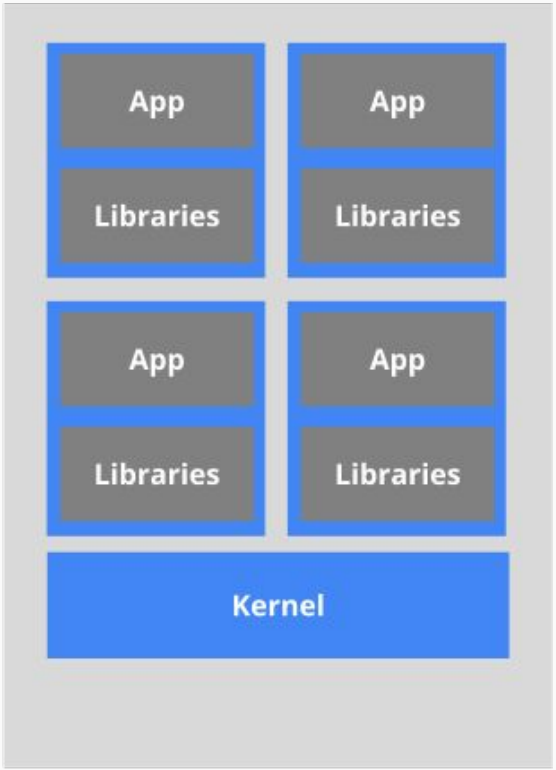
Containerisation

The old way: Applications on host

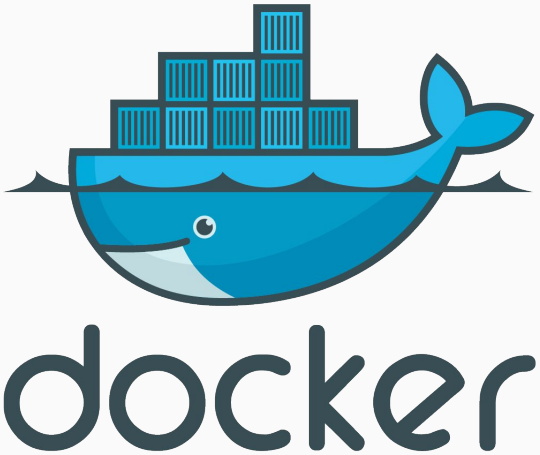


Heavyweight, non-portable
Relies on OS package manager

The new way: Deploy containers



Small and fast, portable
Uses OS-level virtualization



Build, Ship & Run Anywhere

Why Docker?

Because Docker containers are so lightweight, a single server or virtual machine can run several containers simultaneously.

Cloud Orchestration

kubernetes

Production-Grade Container Orchestration

Why Kubernetes?

Kubernetes allows you to deploy cloud-native applications anywhere and manage them exactly as you like everywhere.

Google Container Engine (GKE)
Powered by Kubernetes.

Google Container Engine (GKE) is a powerful cluster manager and orchestration system for running your Docker containers.

You can set up a cluster in minutes.

$300 free

Google Cloud Platform Free Tier

12 Months $300 free credit to get started with any GCP product.

tip://

Learn **k8s** at https://google.qwiklabs.com

Thank you.