# Microservices

# MICROSERVICES

## MICROSERVICES VS MONOLITHIC

By Alexander Souza – G00317835

# MONOLITHIC



All these functionalities are grouped within this great system, making it a monolithic application, that is, an application made in a single unit.

# MONOLITHIC ARCHITECTURE



Advantages and Disadvantages

User Interface

Business Layer

Data Interface

## Advantages and Disadvantages

+ Simple Deploy

- Single Point of Failure

+ Minimizes duplicate code

- Extensive code base

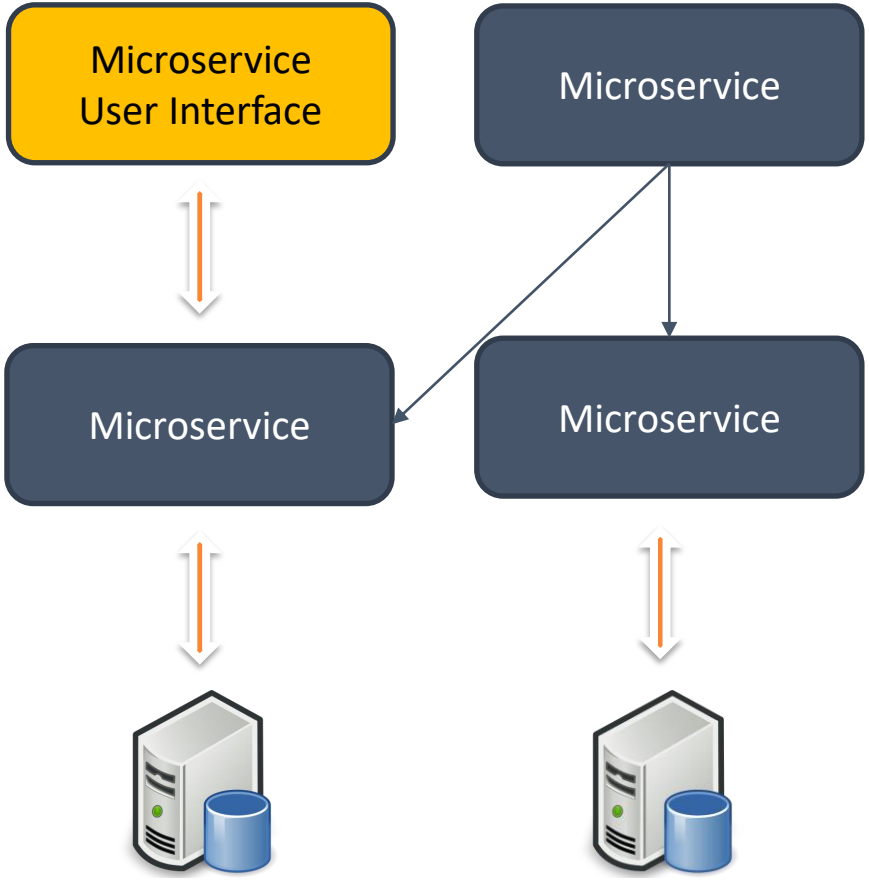
# MICROSERVICES



Is a service that is responsible for one part of the business logic and communicate with each other usually by http.

# MICROSERVICES ARCHITECTURE



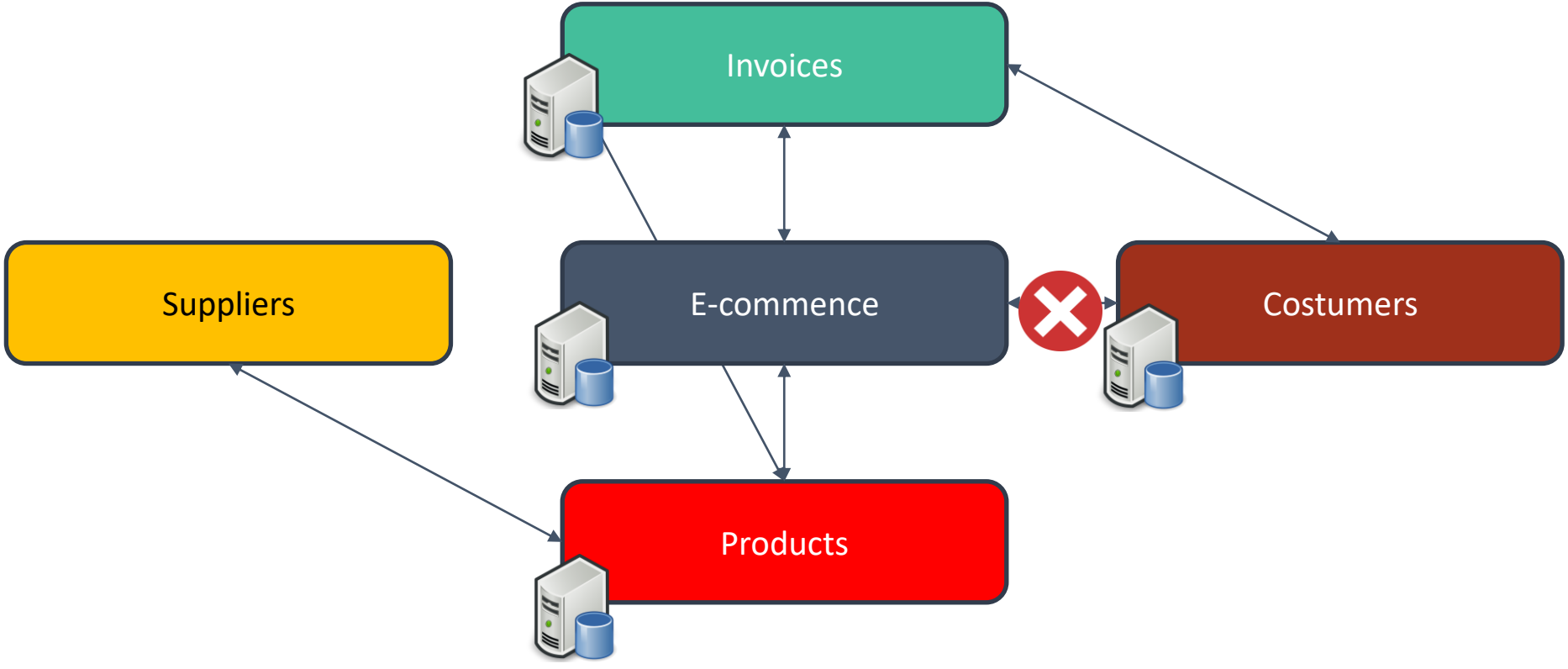



- Independent entities with cross communication through API's or Message Queuing

Ref.: https://dzone.com/articles/scalable-cloud-computing-with-microservices

# MICROSERVICES ARCHITECTURE



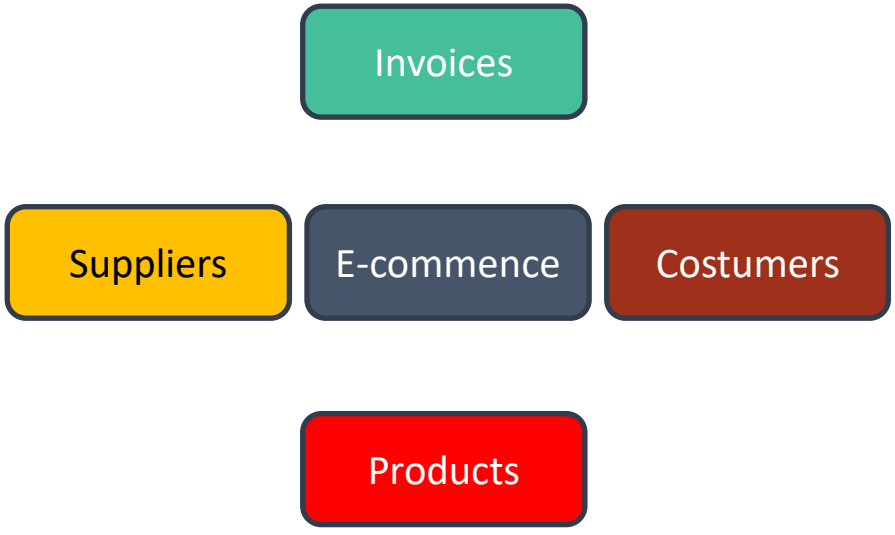



Ref.: https://dzone.com/articles/scalable-cloud-computing-with-microservices

# MICROSERVICES ARCHITECTURE



Advantages and Disadvantages




## Advantages and Disadvantages

+ Minimize single Point of Failure
- Deploy Complexity
+ Smaller code base
- Maximize duplicate code

# CONCLUSION

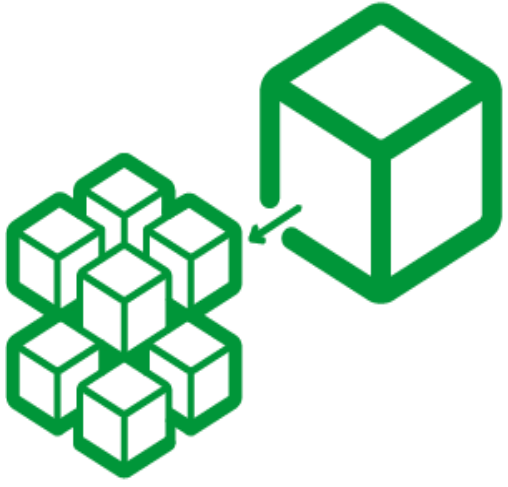
Microservice vs Monolithic

## Microservice

If application is really big, complex, and does a lot of different things.

## Monolithic

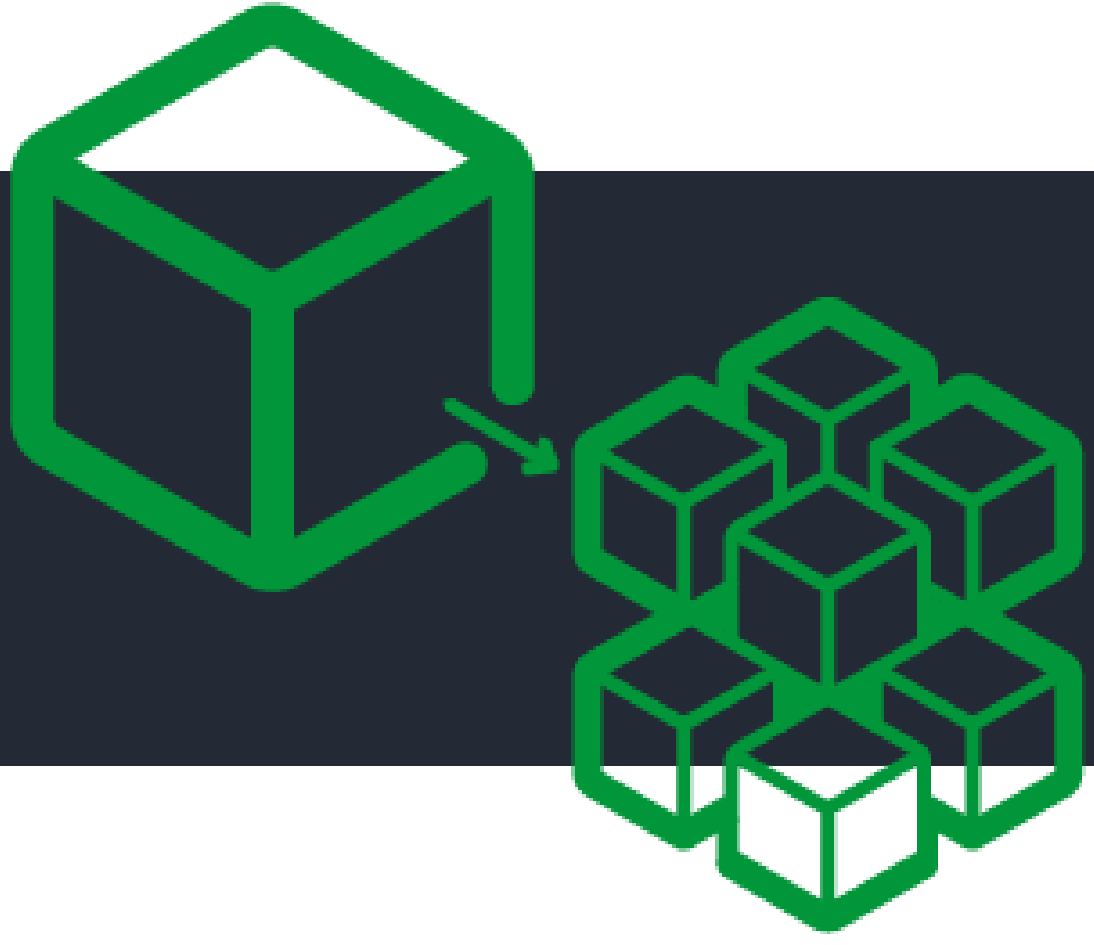
In case of a simple application, monolithic architecture is a better approach.

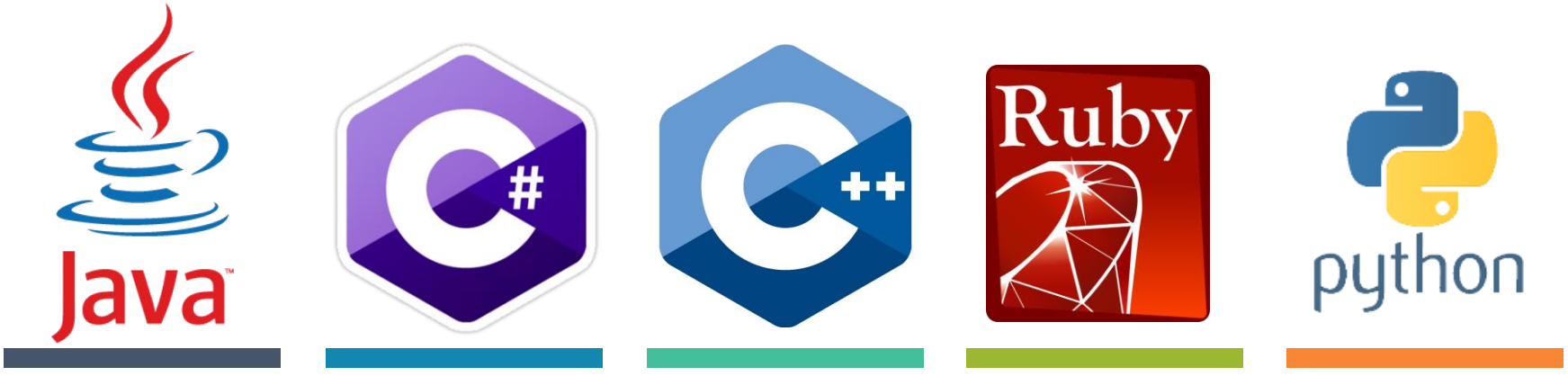


# MICROSERVICES



- Programming languages ?
- Containers ?
- Container platform ?

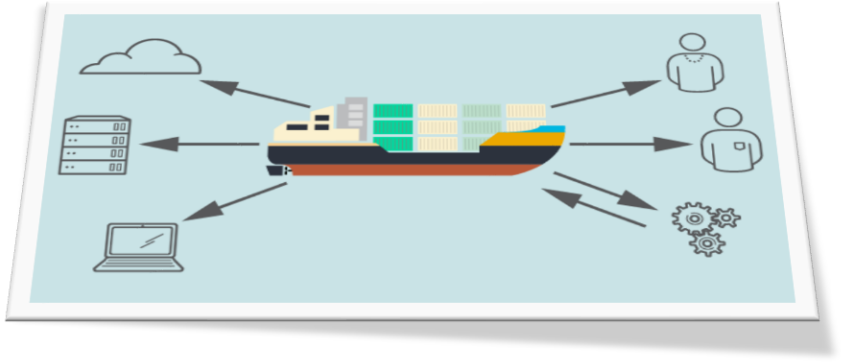





**The most popular programming languages for services and microservices are.**

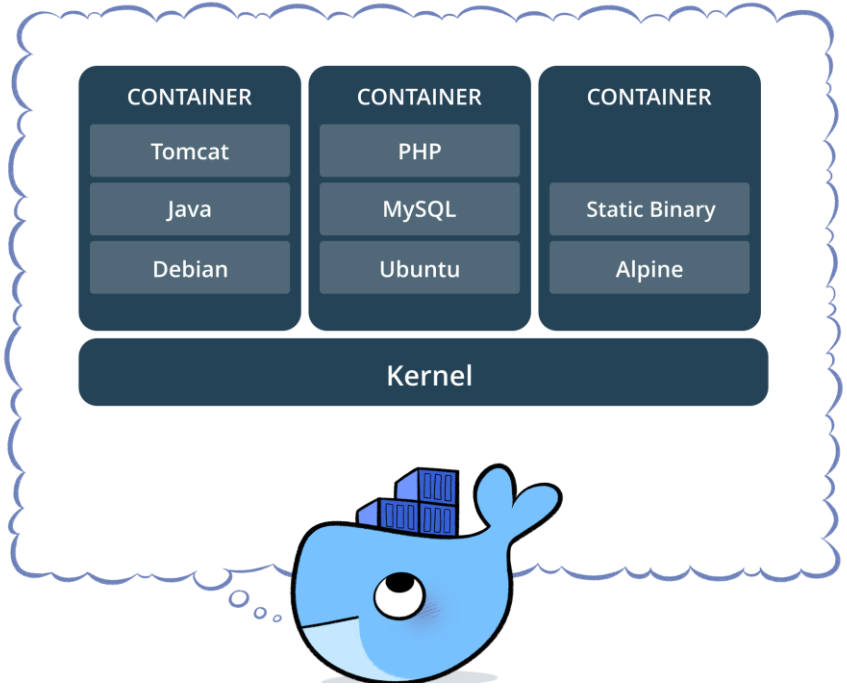
# WHAT ARE CONTAINERS?





Containers encapsulate discrete components of application logic provisioned only with the minimal resources needed to do their job.

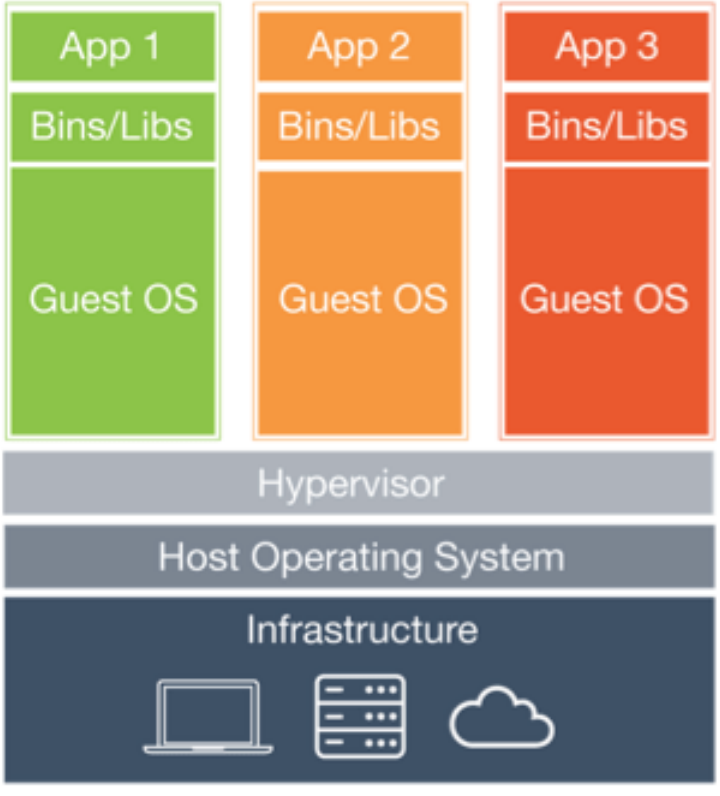
# docker



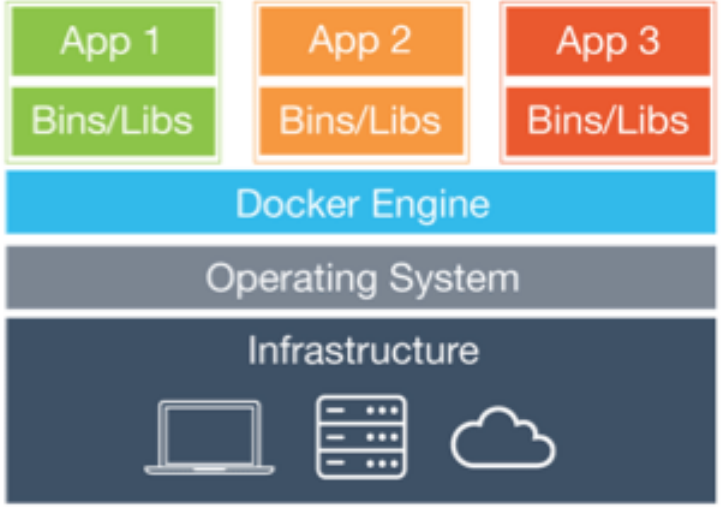

- Lightweight, stand-alone, executable package of software to run specific services.
- Package includes code, runtime, system libraries, configurations, etc.

# docker





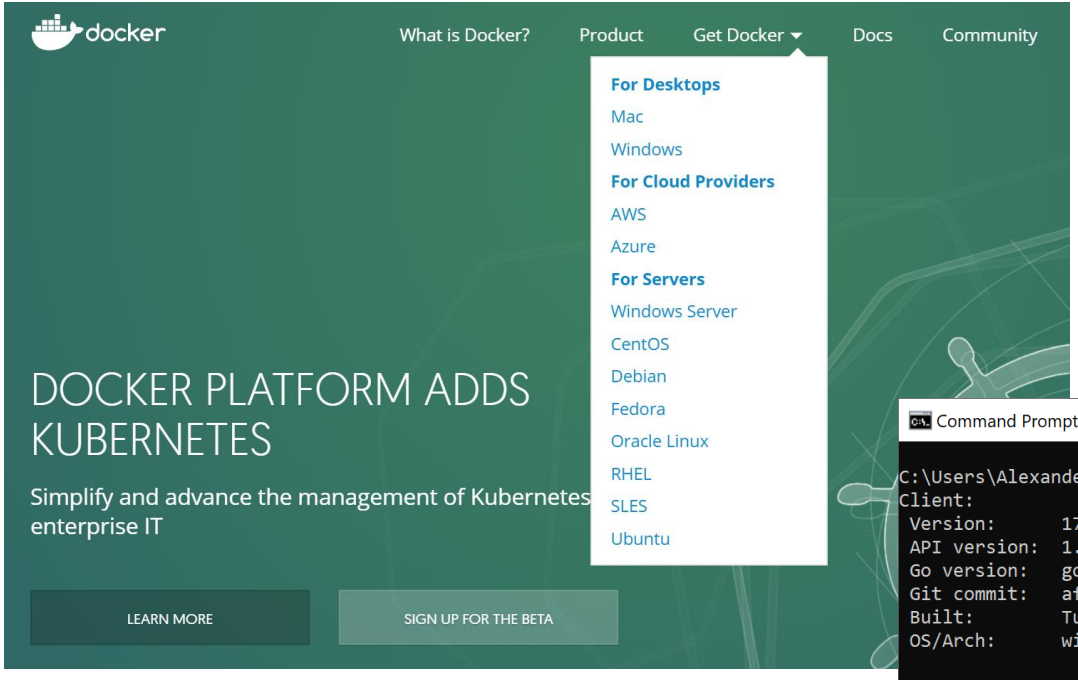

Virtual Machines

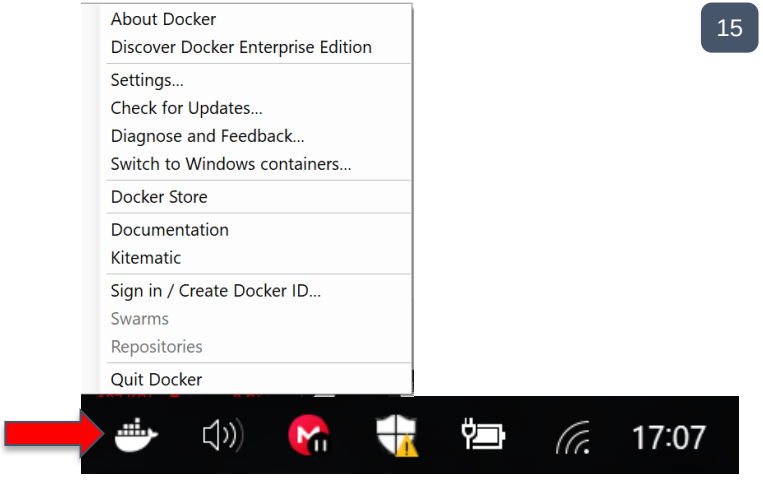


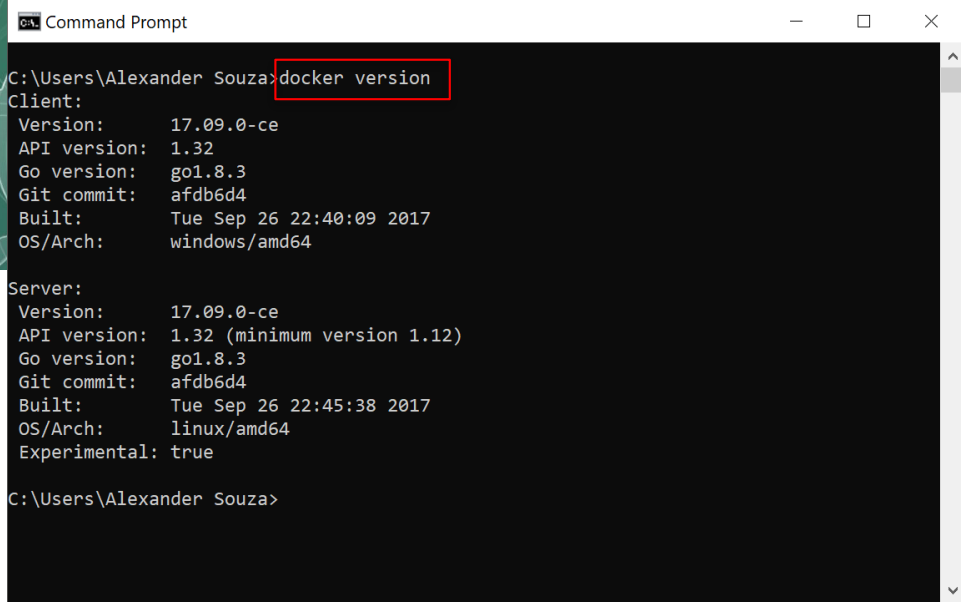

Containers

# Install docker



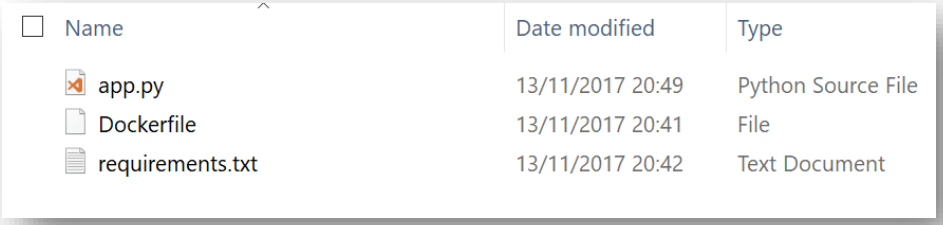


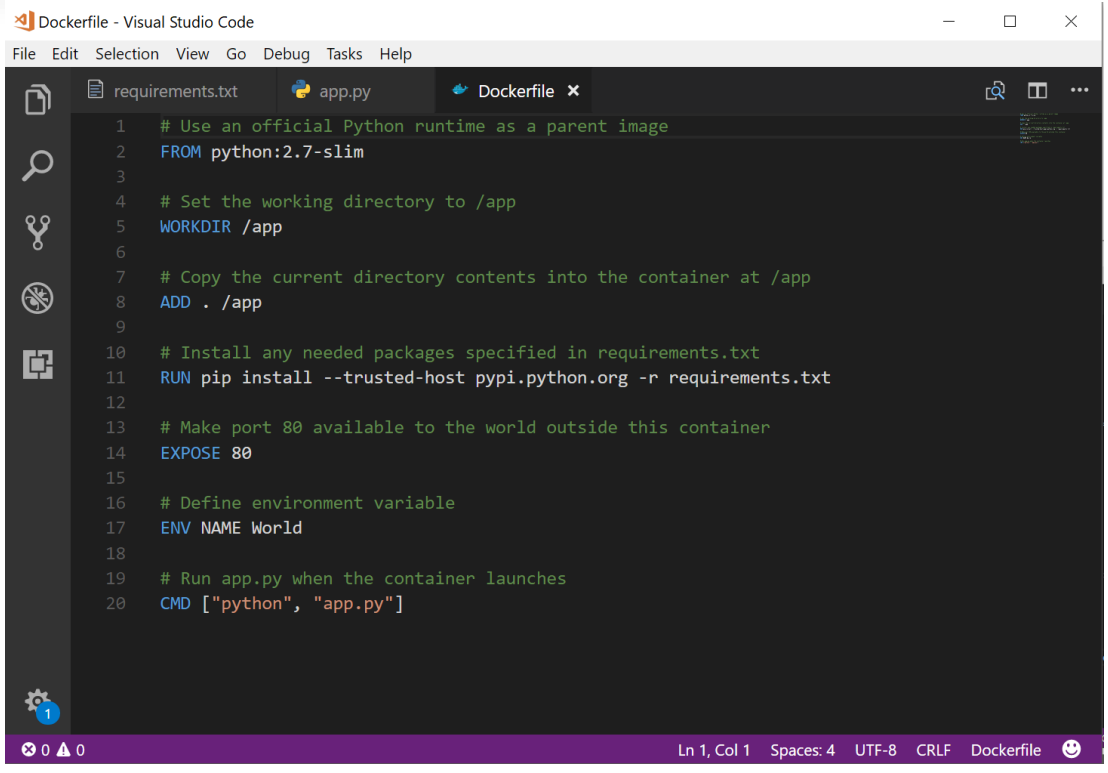



# Get Started



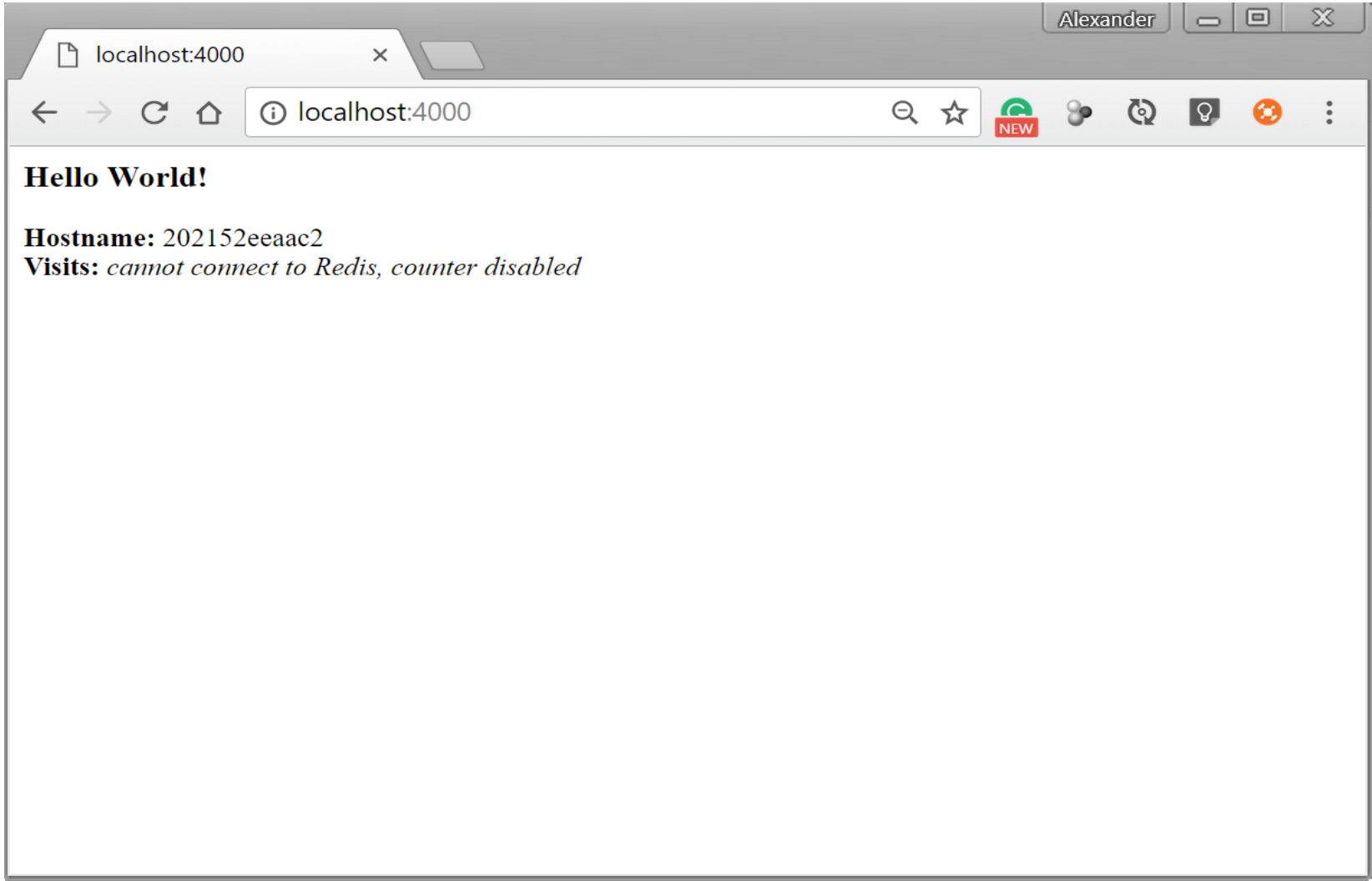


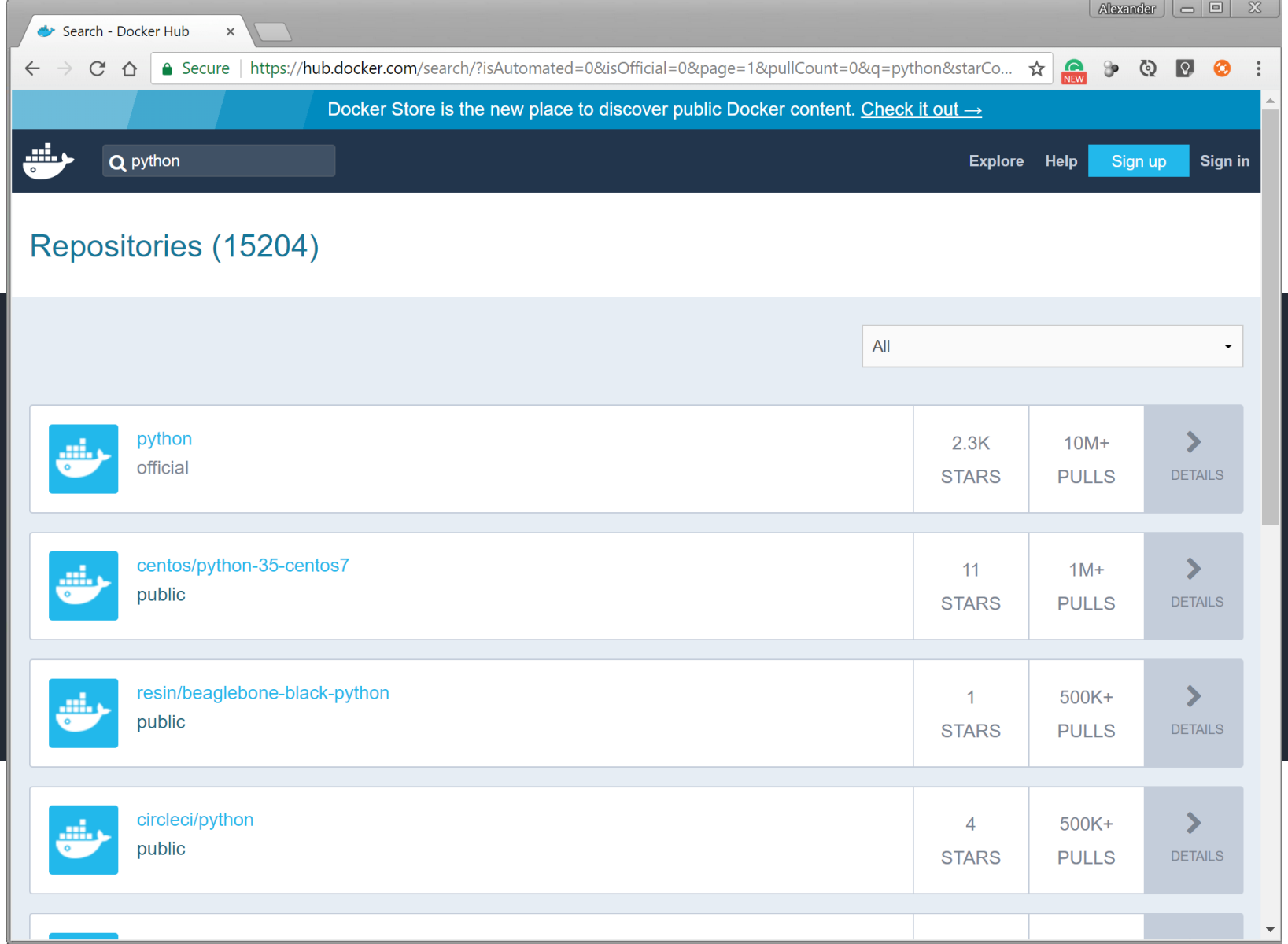
| Name | Date modified | Type |
|---|---|---|
| app.py | 13/11/2017 20:49 | Python Source File |
| Dockerfile | 13/11/2017 20:41 | File |
| requirements.txt | 13/11/2017 20:42 | Text Document |

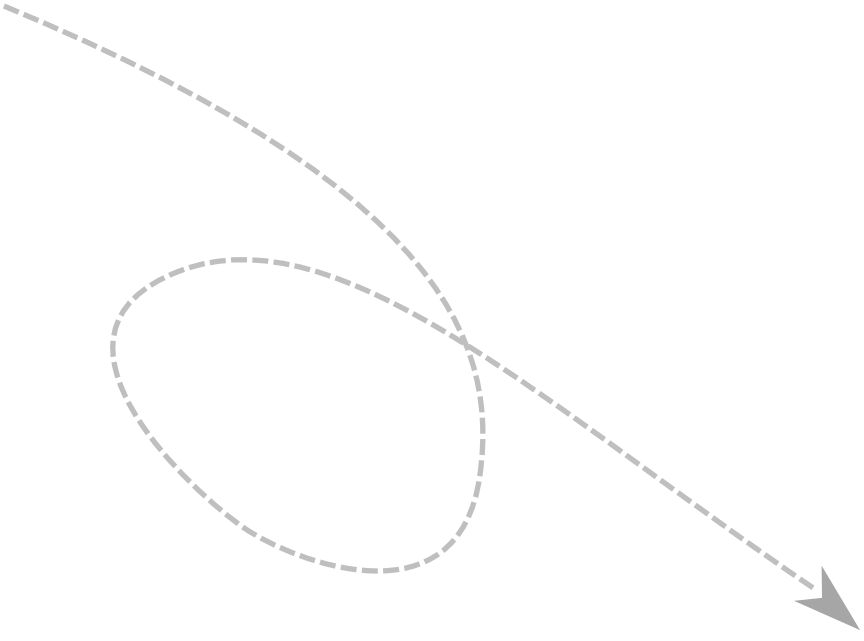


# Get Started




Alexander
localhost:4000
localhost:4000
NEW
Hello World!
Hostname: 202152eeaac2
Visits: cannot connect to Redis, counter disabled


Search - Docker Hub
Alexander
Secure
https://hub.docker.com/search/?isAutomated=0&isOfficial=0&page=1&pullCount=0&q=python&starCo...
Docker Store is the new place to discover public Docker content. Check it out →
python
Explore
Help
Sign up
Sign in
Repositories (15204)
All
python
official
2.3K STARS
10M+ PULLS
DETAILS
centos/python-35-centos7
public
11 STARS
1M+ PULLS
DETAILS
resin/beaglebone-black-python
public
1 STARS
500K+ PULLS
DETAILS
circleci/python
public
4 STARS
500K+ PULLS
DETAILS



## Advantages

Scalability

Flexibility

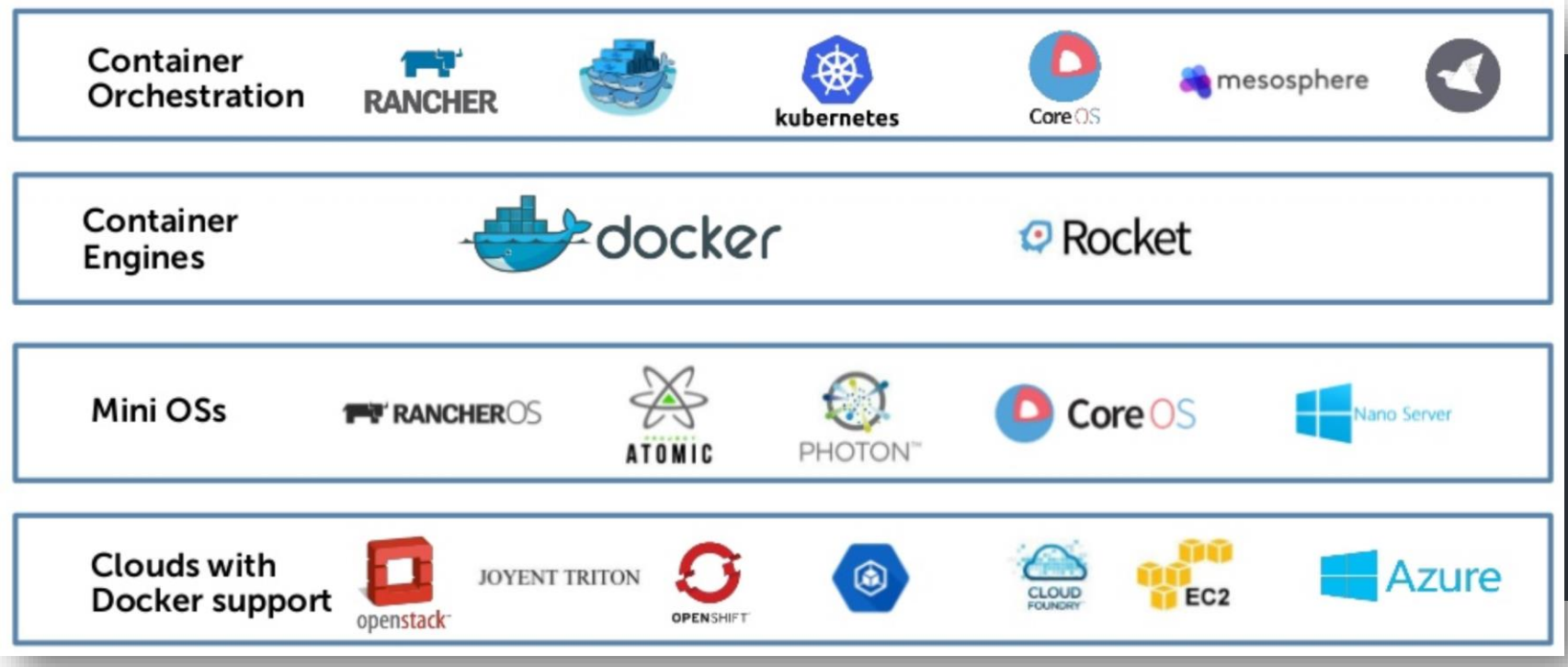
Portability

Simplicity

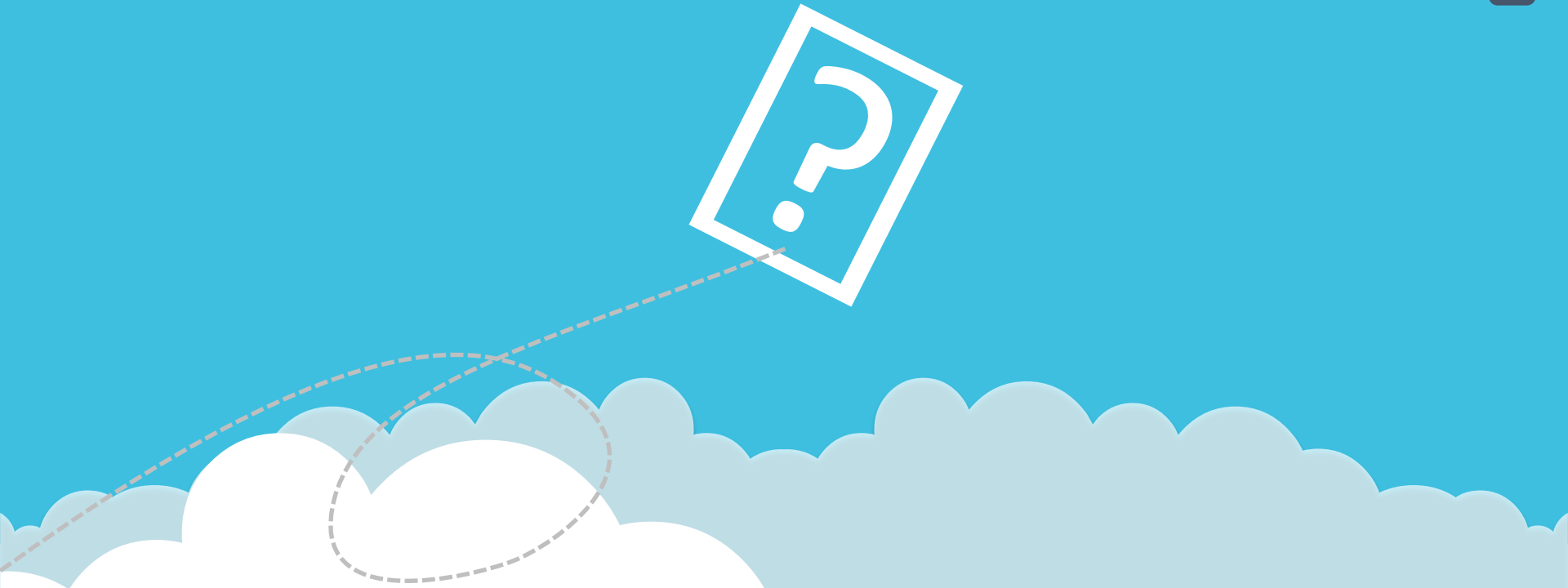
- Return on investment & cost savings
- Standardization & productivity
- CI efficiency
- Compatibility & maintainability
- Simplicity & faster configurations
- Rapid Deployment
- Continuous Deployment & Testing
- Multi-Cloud Platforms
- Isolation
- Security

# The following list contains the differentiating container platform feature





# Recap



# Thanks ☺