

Microservices



MICROSERVICES

MICROSERVICES VS MONOLITHIC

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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

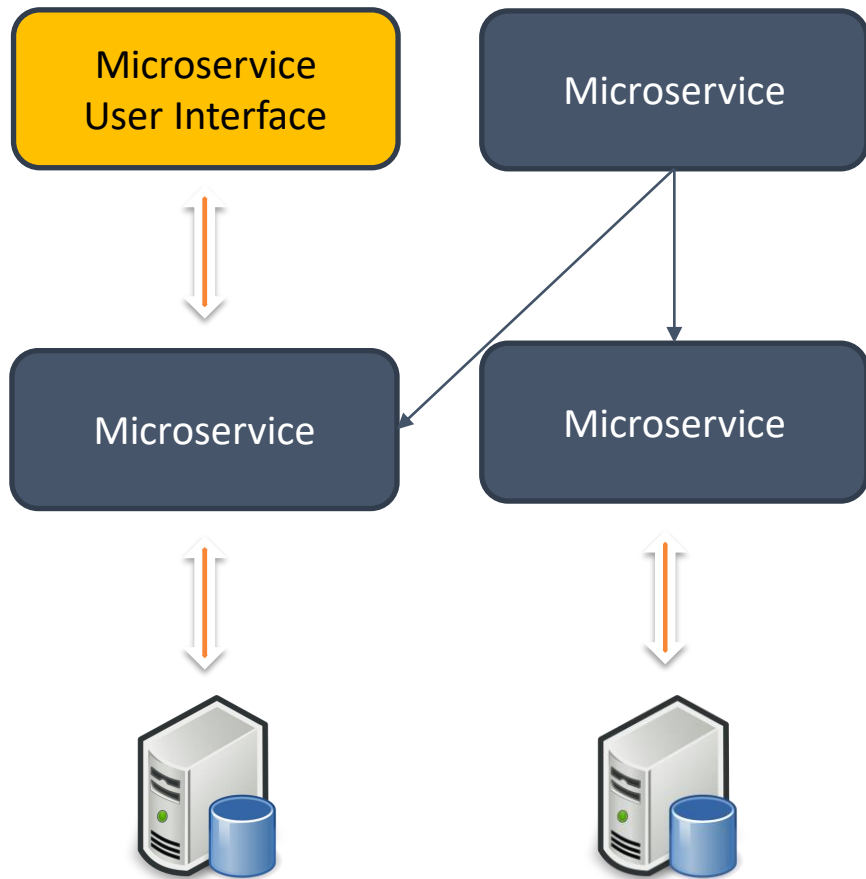


Advantages and Disadvantages

- + Simple Deploy
- Single Point of Failure
- + Minimizes duplicate code
- Extensive code base

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

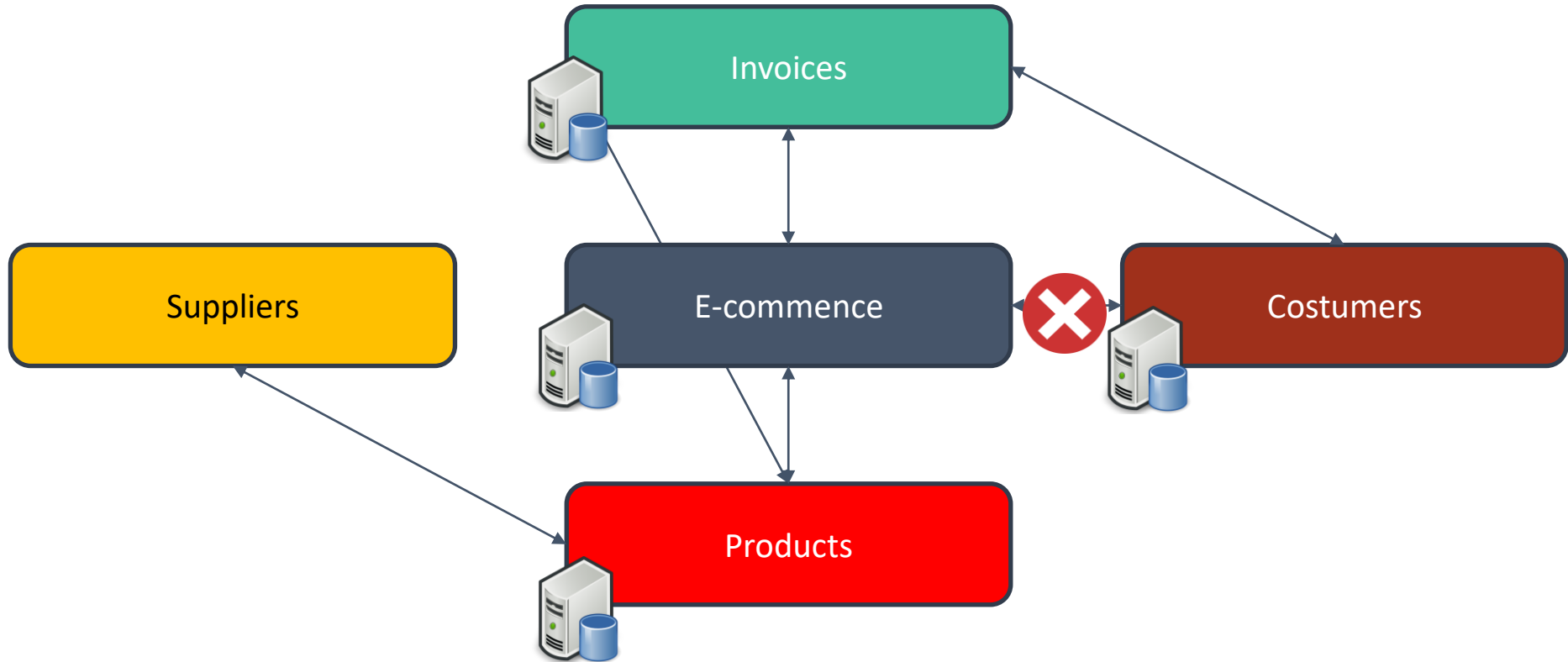
MICROSERVICES ARCHITECTURE



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

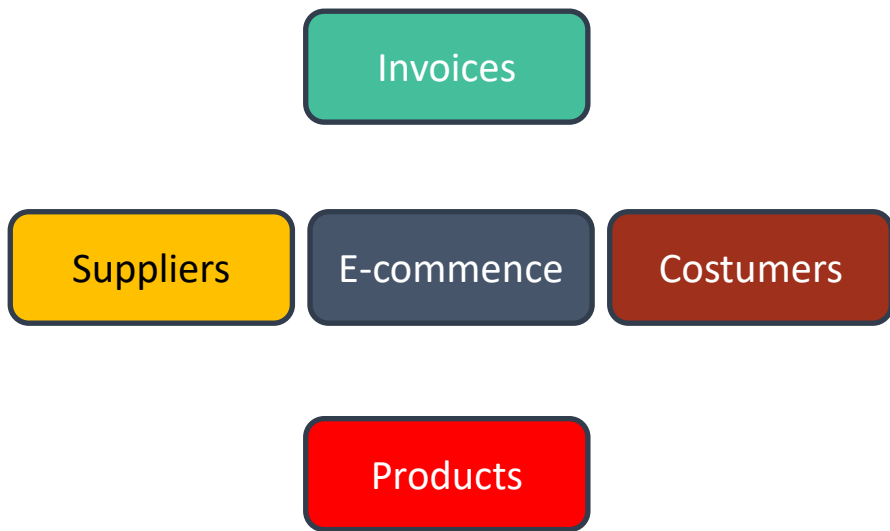
MICROSERVICES ARCHITECTURE

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MICROSERVICES ARCHITECTURE

Advantages and Disadvantages



Advantages and Disadvantages

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

CONCLUSION

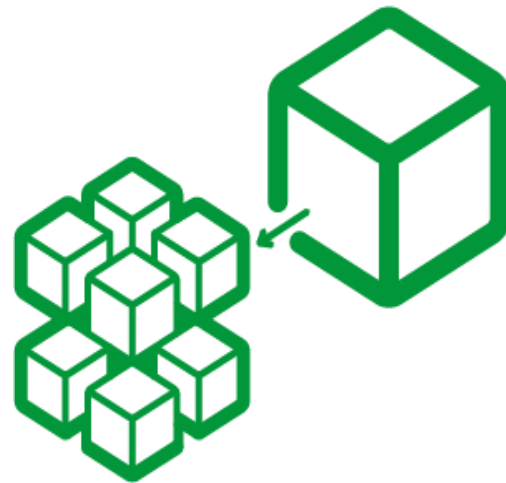
Microservice vs Monolithic

Microservice

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

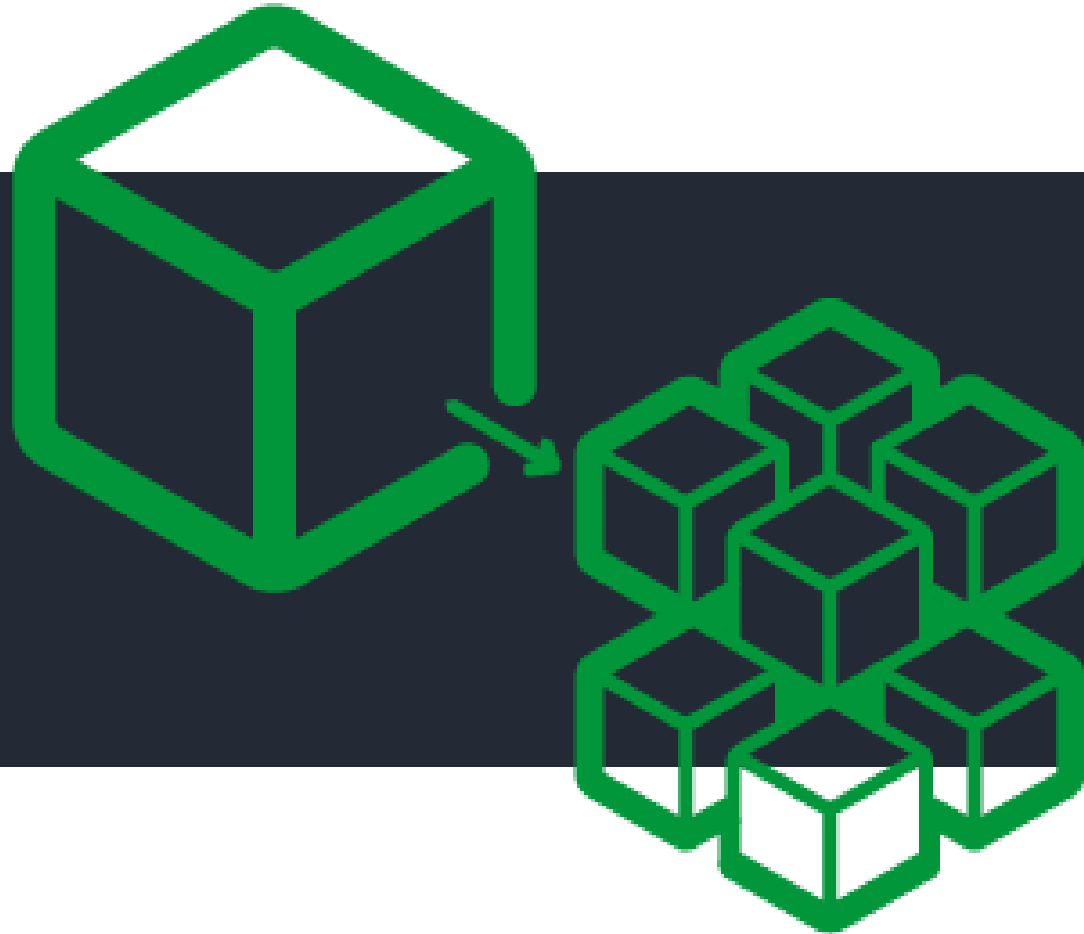
Monolithic

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



MICROSERVICES

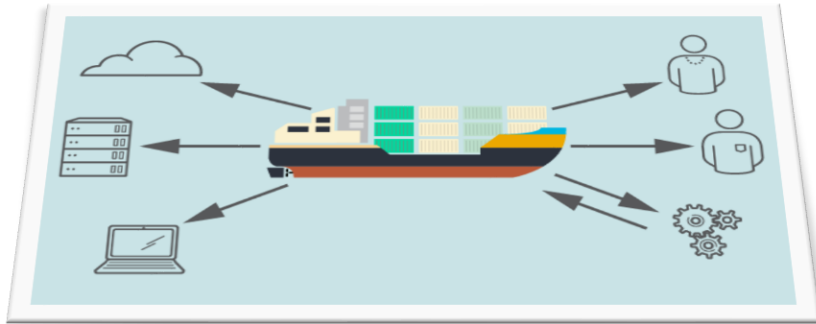
- Programming languages ?
- Containers ?
- Container platform ?



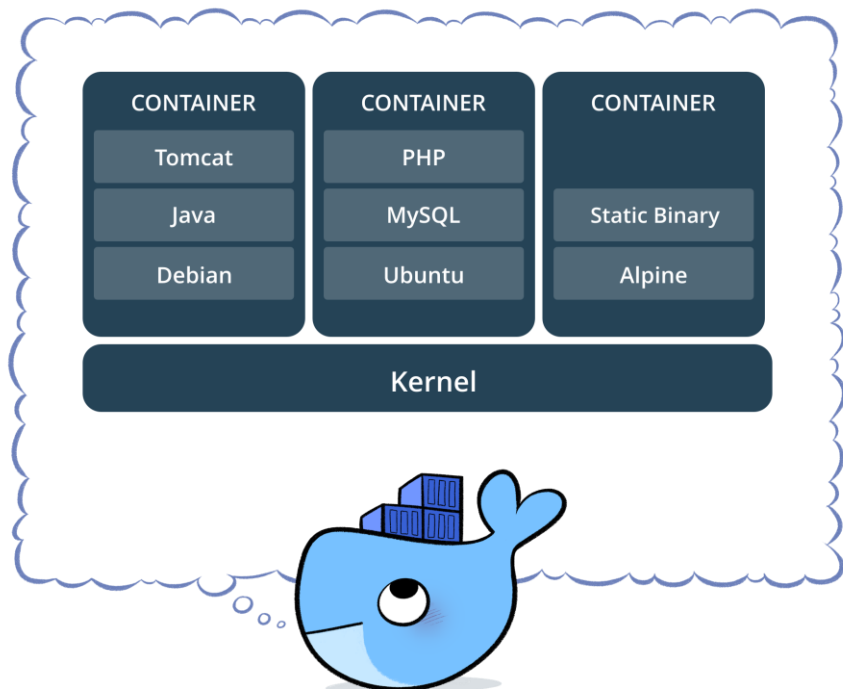


The most popular programming languages for services and microservices are.

WHAT ARE CONTAINERS?

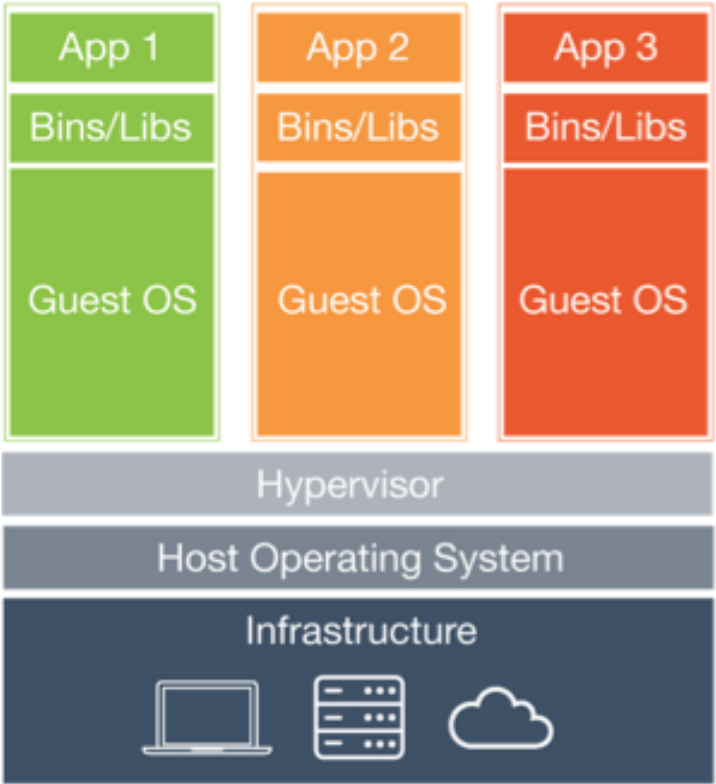


Containers encapsulate discrete components of application logic provisioned only with the minimal resources needed to do their job.

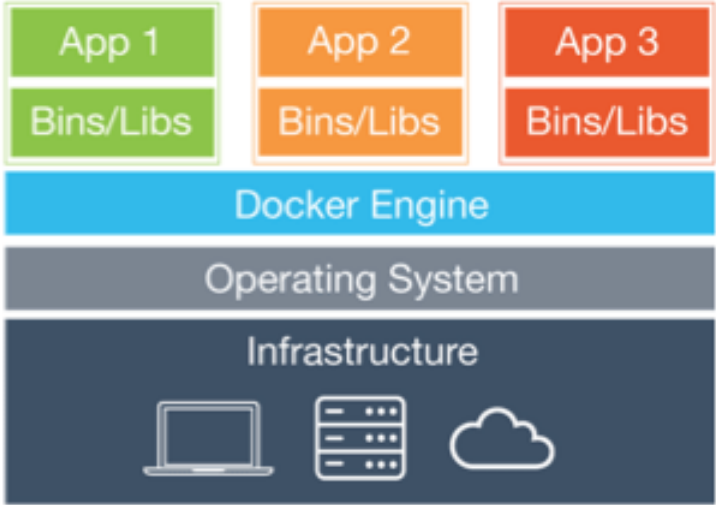


- Lightweight, stand-alone, executable package of software to run specific services.
- Package includes code, runtime, system libraries, configurations, etc.

docker



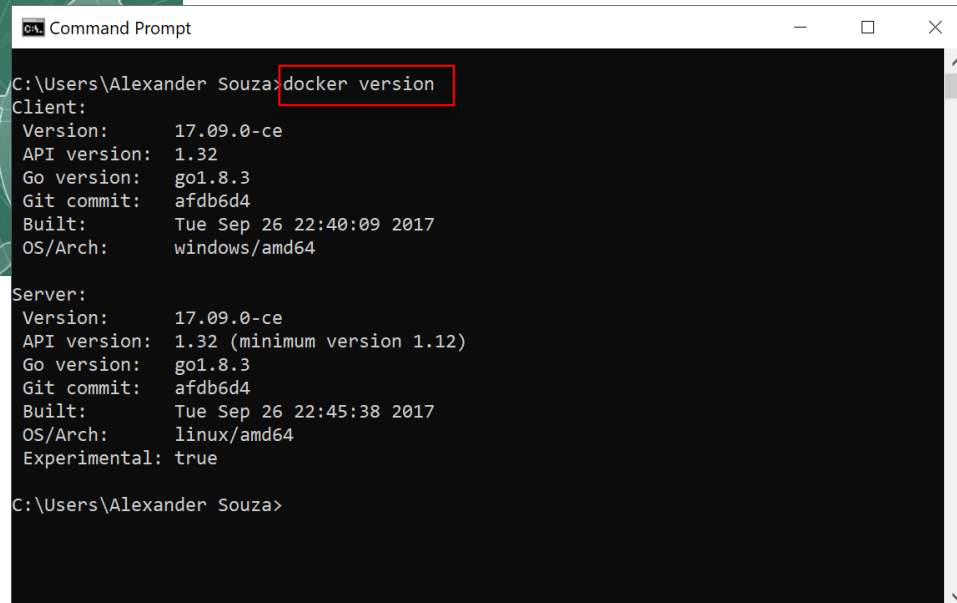
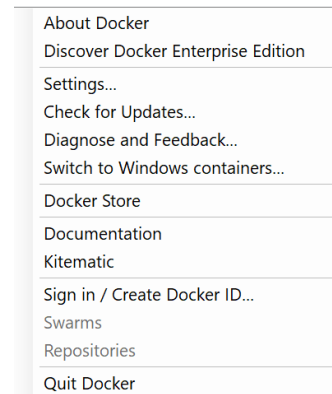
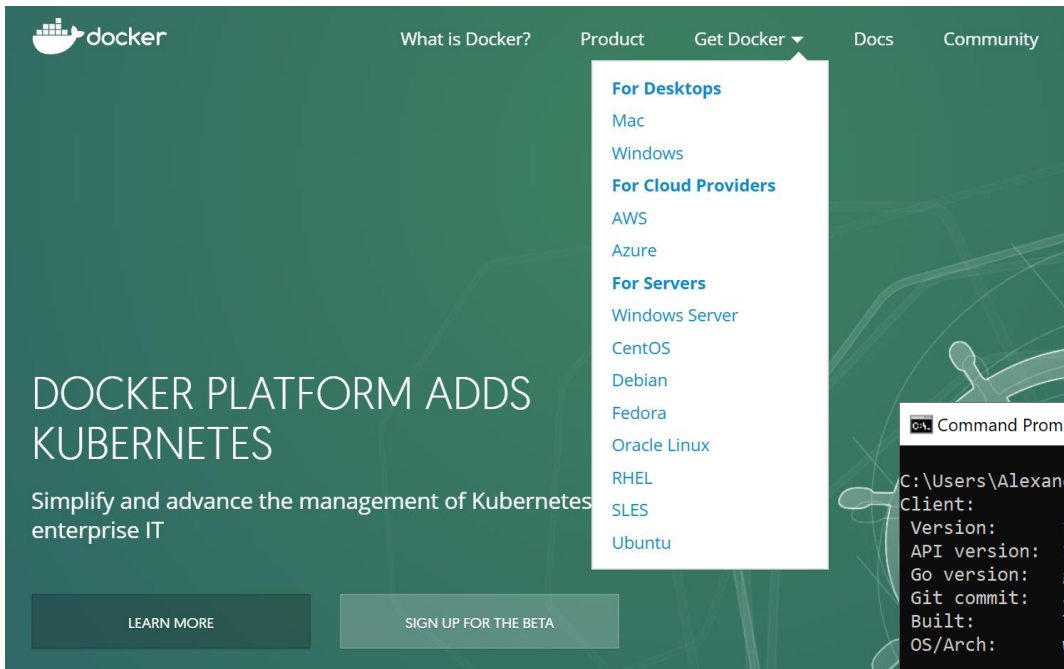
Virtual Machines



Containers




Install docker

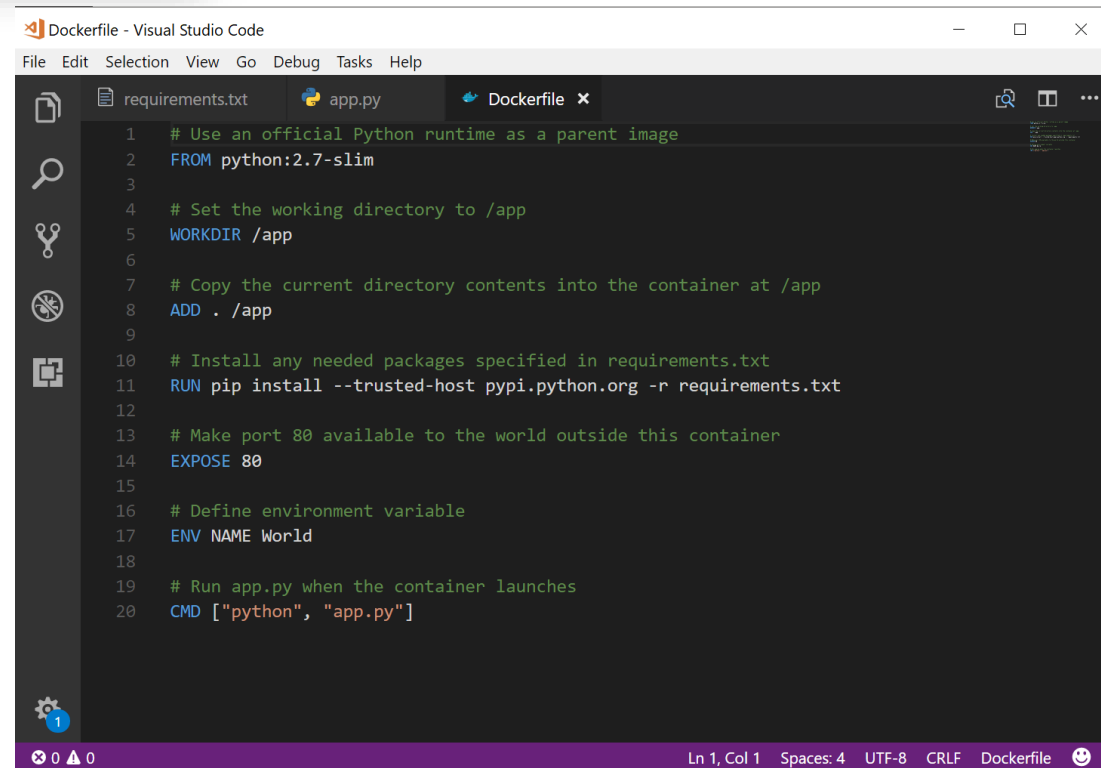
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Get Started

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<input type="checkbox"/> 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

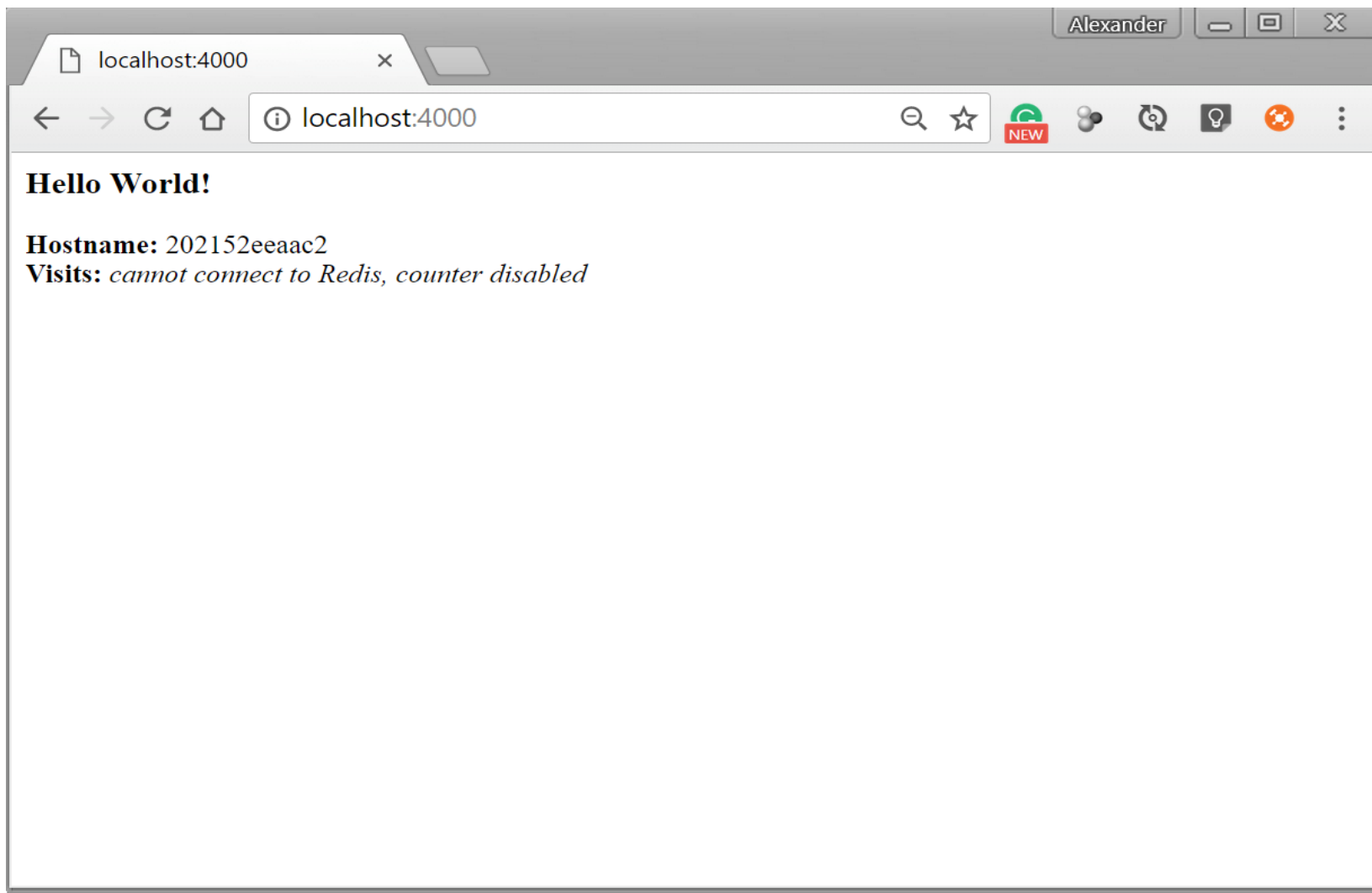


The screenshot shows the Visual Studio Code editor with a Dockerfile open. The file contains instructions for building a Python container. The editor has a dark theme and shows the file explorer on the left with 'requirements.txt', 'app.py', and 'Dockerfile' selected. The status bar at the bottom indicates 'Ln 1, Col 1', 'Spaces: 4', 'UTF-8', 'CRLF', and 'Dockerfile'.

```
1 # Use an official Python runtime as a parent image
2 FROM python:2.7-slim
3
4 # Set the working directory to /app
5 WORKDIR /app
6
7 # Copy the current directory contents into the container at /app
8 ADD . /app
9
10 # Install any needed packages specified in requirements.txt
11 RUN pip install --trusted-host pypi.python.org -r requirements.txt
12
13 # Make port 80 available to the world outside this container
14 EXPOSE 80
15
16 # Define environment variable
17 ENV NAME World
18
19 # Run app.py when the container launches
20 CMD ["python", "app.py"]
```


Get Started

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python

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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

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Container Orchestration



Container Engines



Mini OSs



Clouds with Docker support

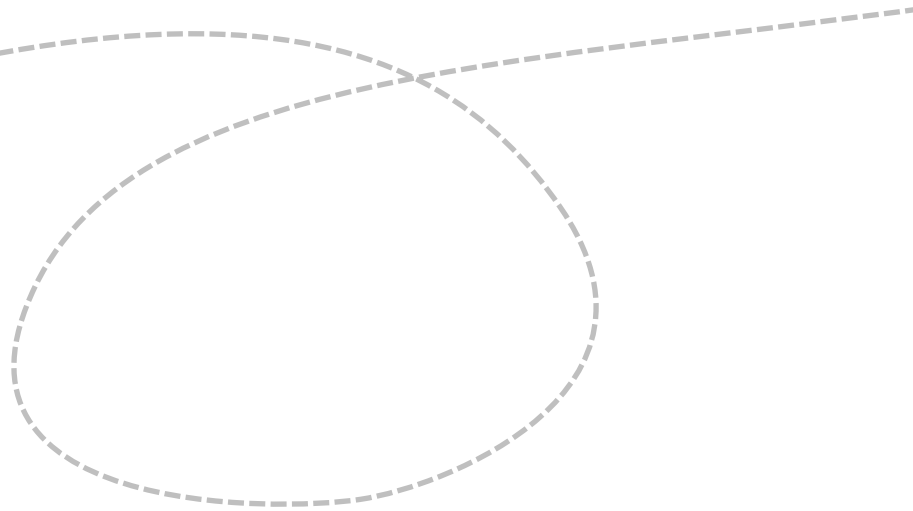


JOYENT TRITON





Recap





Thanks 😊