Docker for Python Developers

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About me

- Unemployment
- Organizor of Docker Taipei & Meteor Taipei
- python, javascript, golang, html/css
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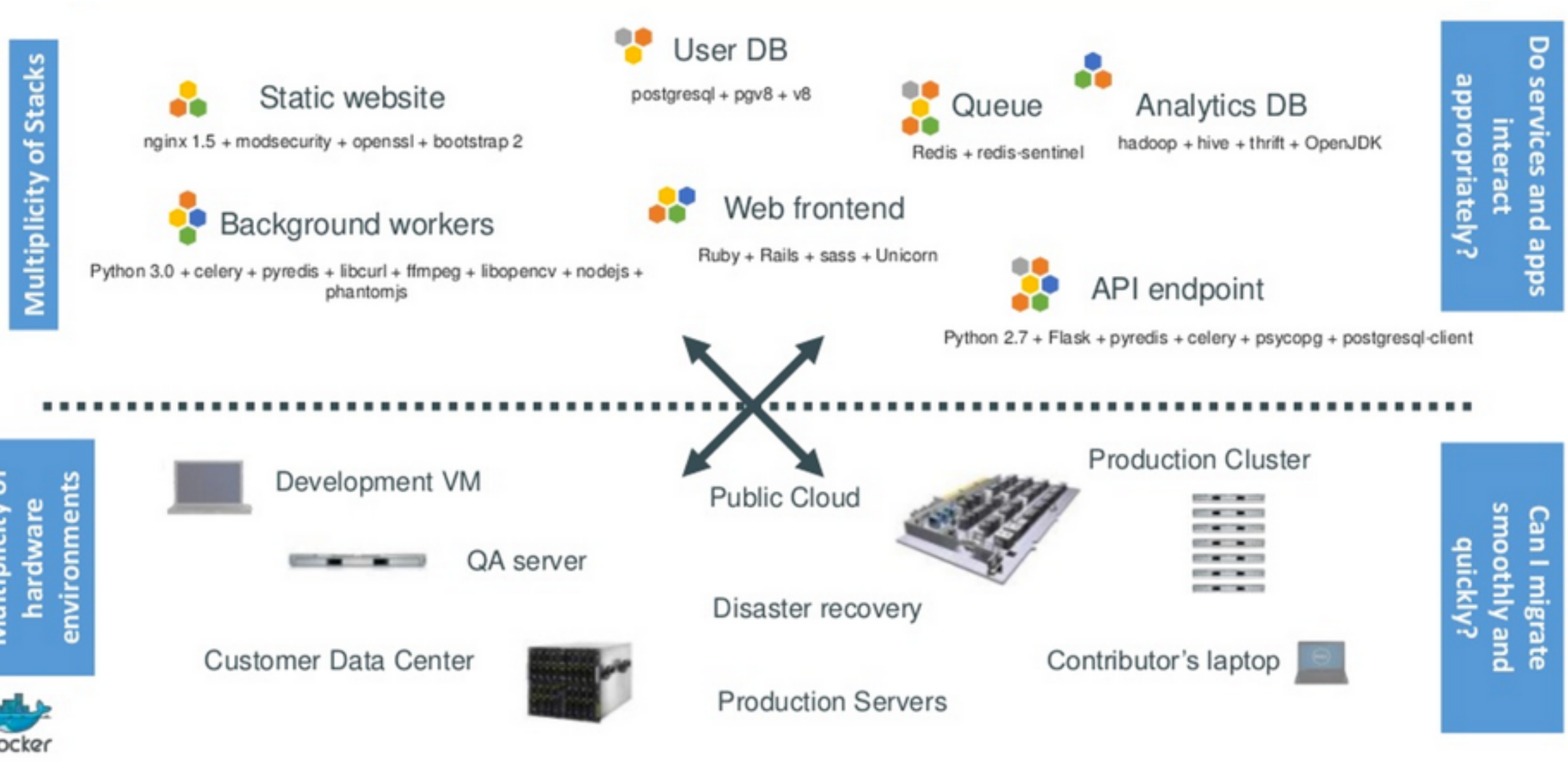
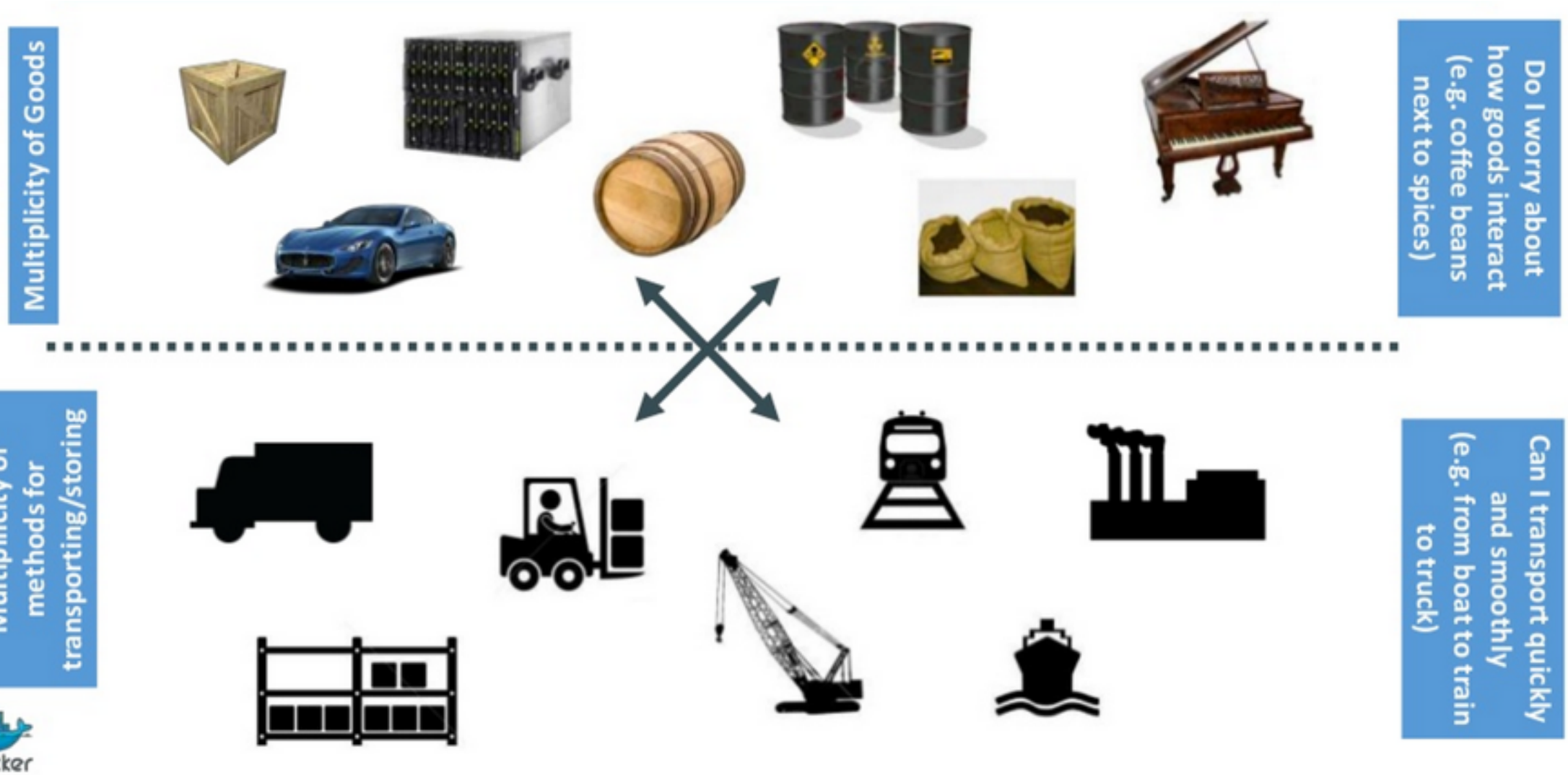
The Challenge



The Matrix From Hell

	Development VM	QA Server	Single Prod Server	Onsite Cluster	Public Cloud	Contributor's laptop	Customer Servers
Static website	?	?	?	?	?	?	?
Web frontend	?	?	?	?	?	?	?
Background workers	?	?	?	?	?	?	?
User DB	?	?	?	?	?	?	?
Analytics DB	?	?	?	?	?	?	?
Queue	?	?	?	?	?	?	?

Cargo Transport Pre-1960

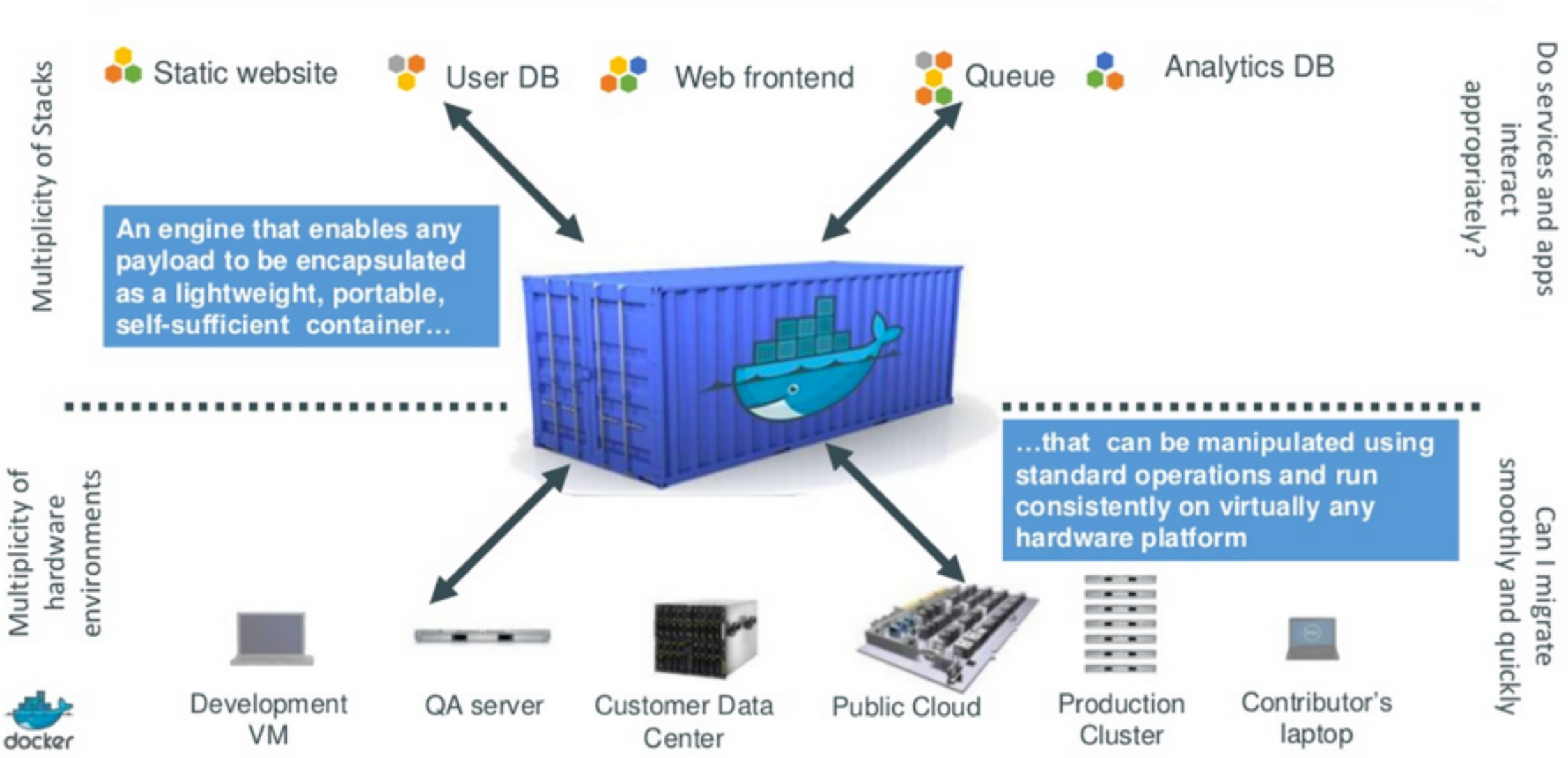


The Matrix From Hell

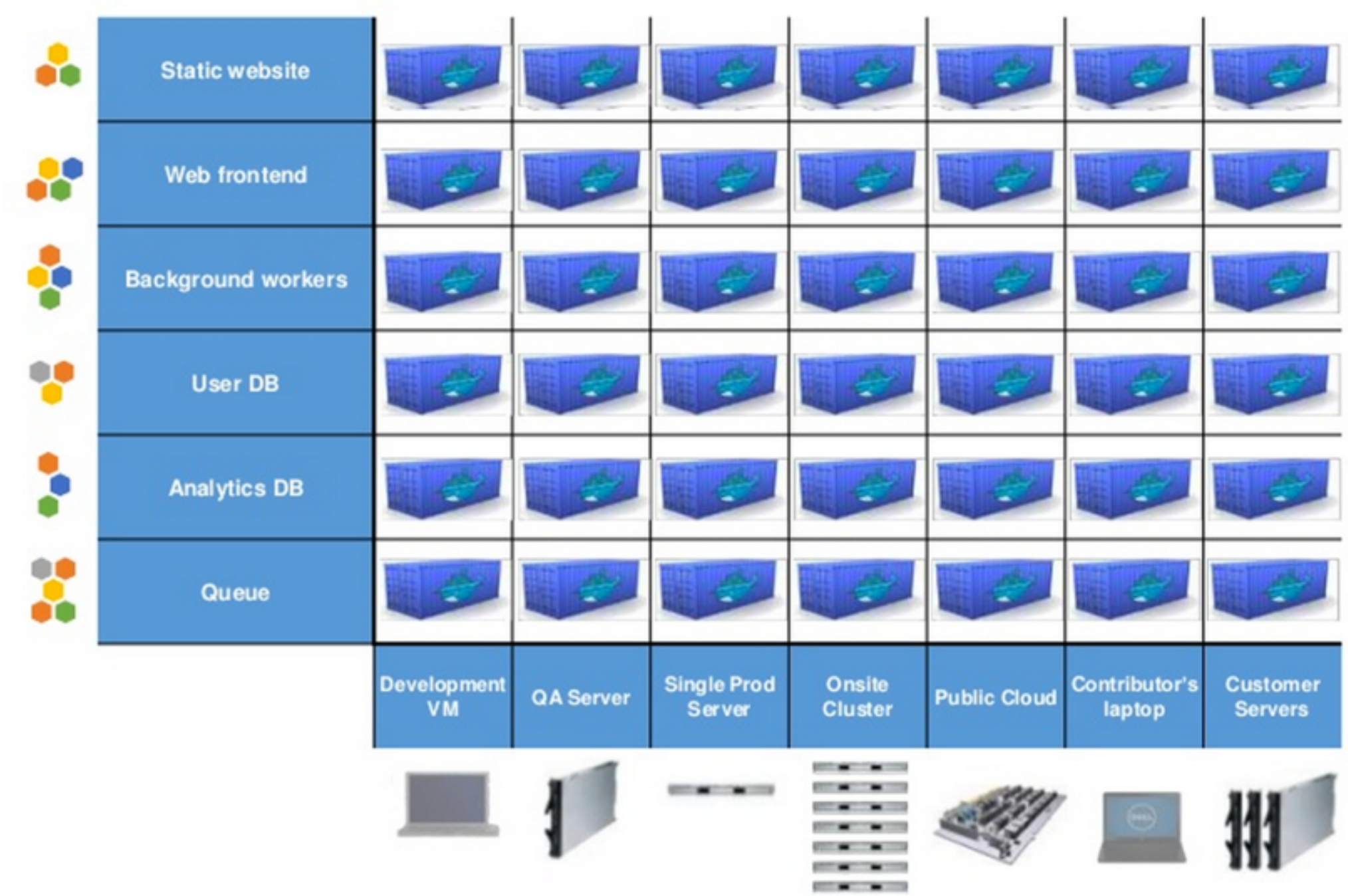
	?	?	?	?	?	?	?
	?	?	?	?	?	?	?
	?	?	?	?	?	?	?
	?	?	?	?	?	?	?
	?	?	?	?	?	?	?
	?	?	?	?	?	?	?
							

Solution:
Intermodal Shipping Container

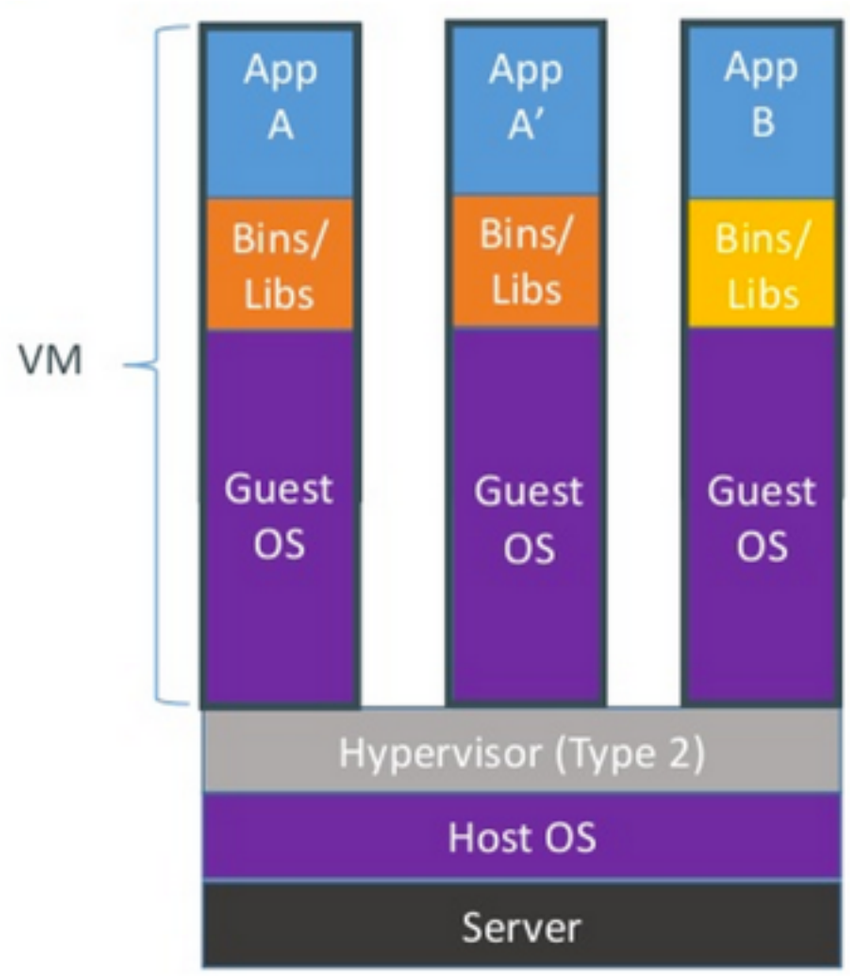
Docker is a shipping container system for code



Docker eliminates the matrix from hell

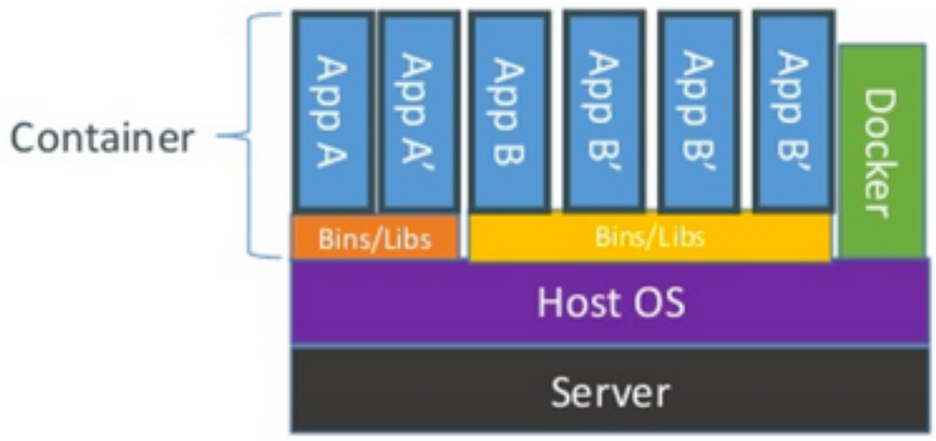


VMs vs Containers



Containers are isolated, but share OS and, where appropriate, bins/libraries

...result is significantly faster deployment, much less overhead, easier migration, faster restart



Installation

- Ubuntu https://docs.docker.com/installation/ubuntulinux/

- Mac OS X https://docs.docker.com/installation/mac/

- Windows https://docs.docker.com/installation/windows/

docker pull

- docker pull [IMAGE_NAME]

- Pull a image

docker images

- docker images

- List your images

docker run

- docker run [IMAGE_NAME] [COMMAND]

- Run a command in a container

docker commit

- docker commit [CONTAINER_ID] [NEW_IMAGE]

- Commit the changes of a container to a new image

Demo0

- docker pull, images, run commit

Demo1

- Build a simple web app which can only say hello…
- Use flask

Dockerfile

- Docker can build images automatically by reading a Dockerfile

- docker build -t [IMAGE_NAME] [PATH/TO/DOCKERFILE]

Demo2

- Use Dockerfile to build our hello app

Link Containers

- docker run --link [ANOTHER_CONATINER] [IMAGE]

Demo3

- Use Redis to count the number of hello(s)

fig

- http://www.fig.sh/

- Use a yml config file to boot containers in your projects

fig - example

```
web:
  build: .
  command: python app.py
  ports:
   - "5000:5000"
  volumes:
   - .:/code
  links:
   - redis
redis:
  image: redis
```

Demo4

- Use fig to boot our hello-redis app

Docker on Https

- By default, docker listen to the unix socket.
- You can make it listen to tcp, but you have to enable TLS (transport layer security)
- Hard way: https://docs.docker.com/articles/https/ .
- Easy way: https://github.com/docker/machine

Demo5

- Docker on Azure
- https://github.com/docker/machine#microsoft-azure
- Run our simple hello app on Azure

Q & A