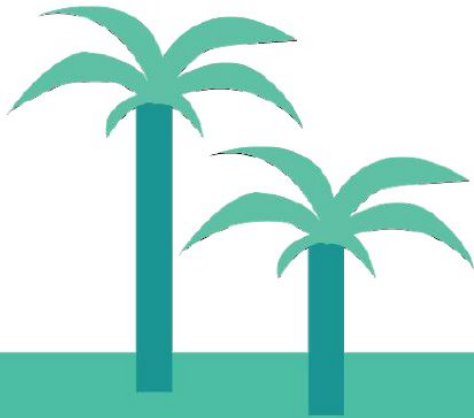
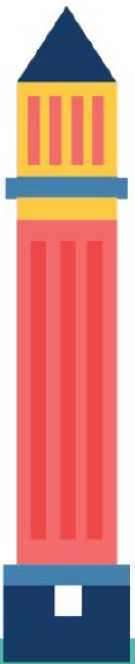


Meetup: Docker Grenoble

“DockerConEU and new tooling”

Michael Bright, 26th Feb 2019





Agenda

- DockerConEU 2018 Announcements
- Top Sessions
- New & evolved tools
- Docker-ce 18.09.2 Release
- Docker 6th Birthday: Show & Tell
- DockerCon SF, April 29 – May 2 2019

A stylized, colorful map of Europe serves as the background for the slide. It features various icons representing different cities and landmarks, such as the Eiffel Tower, Big Ben, the Colosseum, and various European cathedrals and castles. The map is rendered in a flat, illustrative style with a warm color palette of yellows, oranges, and reds.

DockerConEU 2018 Announcements

- Docker Desktop Enterprise
- CNAB: docker-app, duffie
- compose-on-Kubernetes
- docker-assemble

DockerConEU 2018 Announcements

Docker Desktop Enterprise

Developers

IT



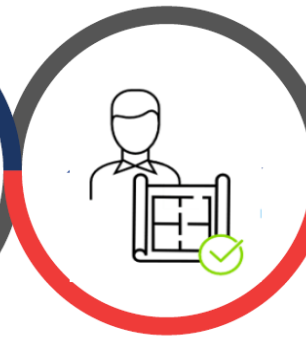
New Commercial Desktop Product



Creating production-Ready container solution in a secure way



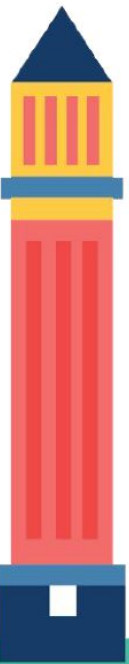
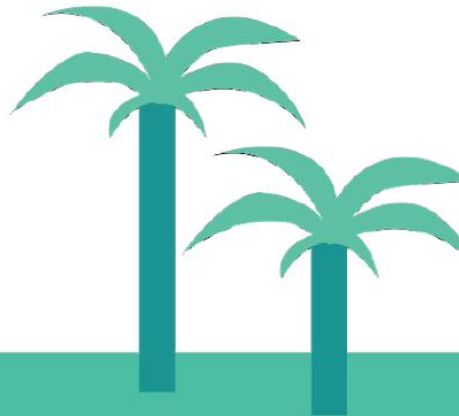
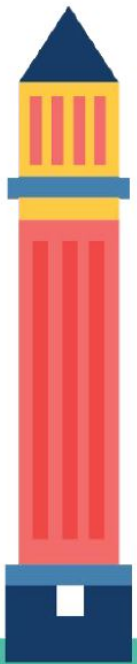
Configurable Version Packs
- App Designer UI



Company-provided application templates



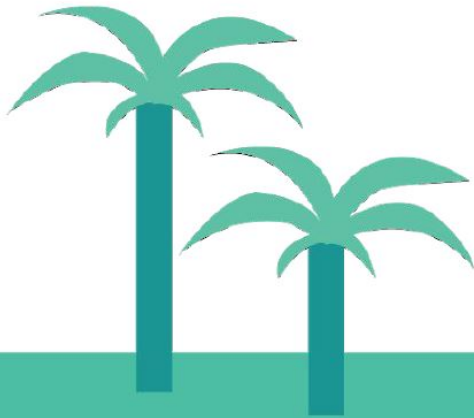
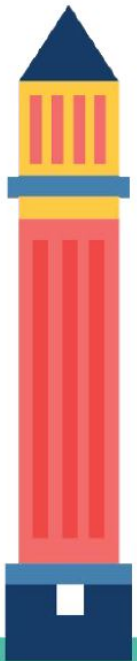
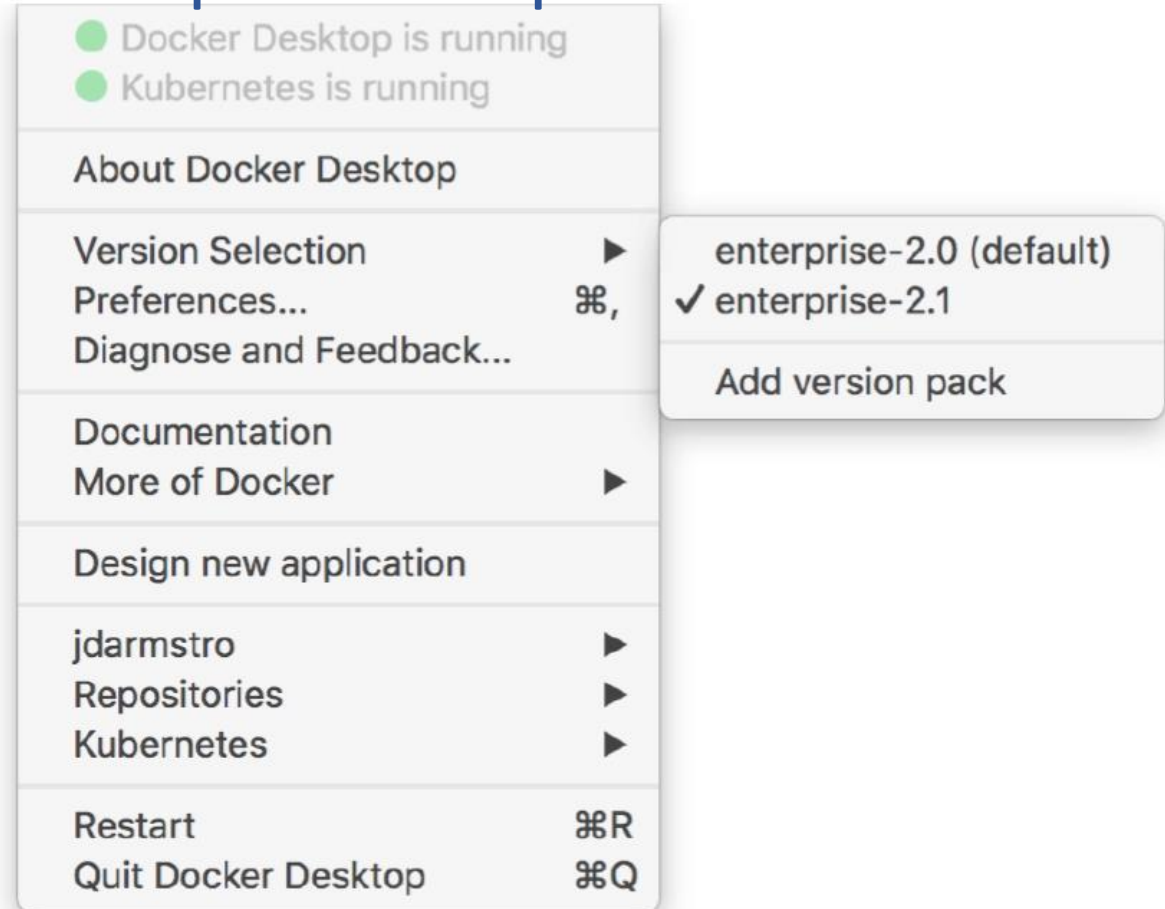
- Packaged as standard MSI
- Lockable settings via policy files
- Present developers with customized and approved application templates, ready for coding



DockerConEU 2018 Announcements

Docker Desktop Enterprise

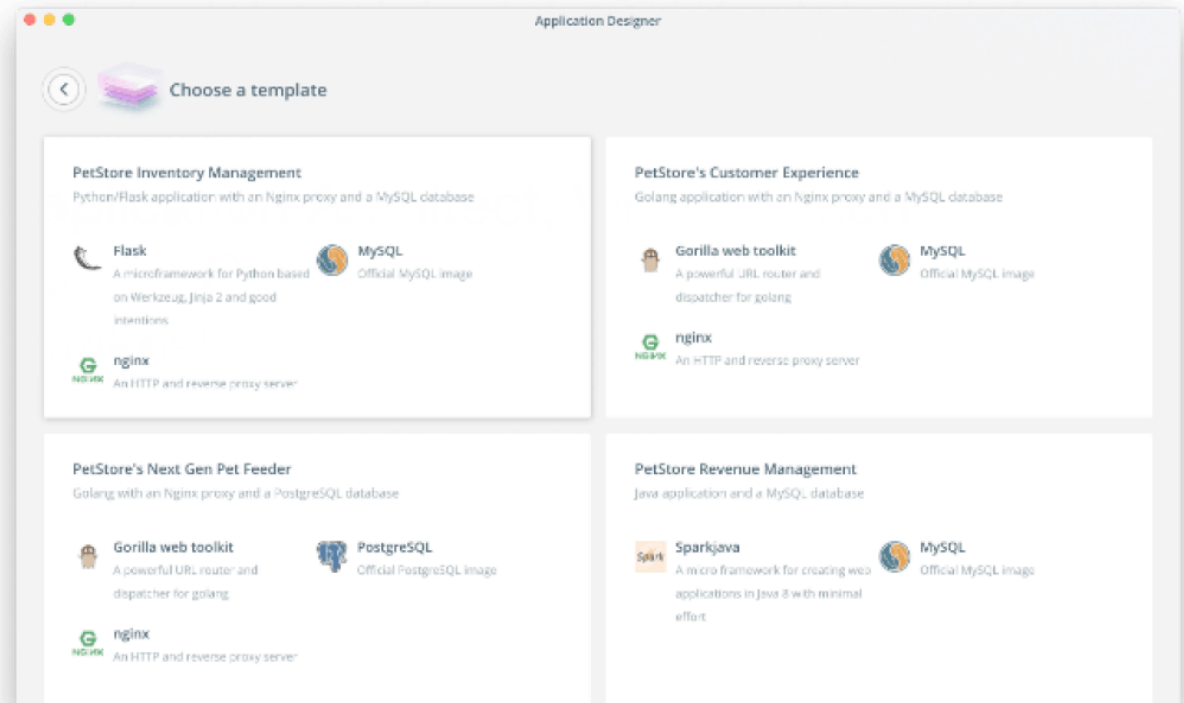
Allows selection of the
docker-engine version



DockerConEU 2018 Announcements

Docker Desktop Enterprise

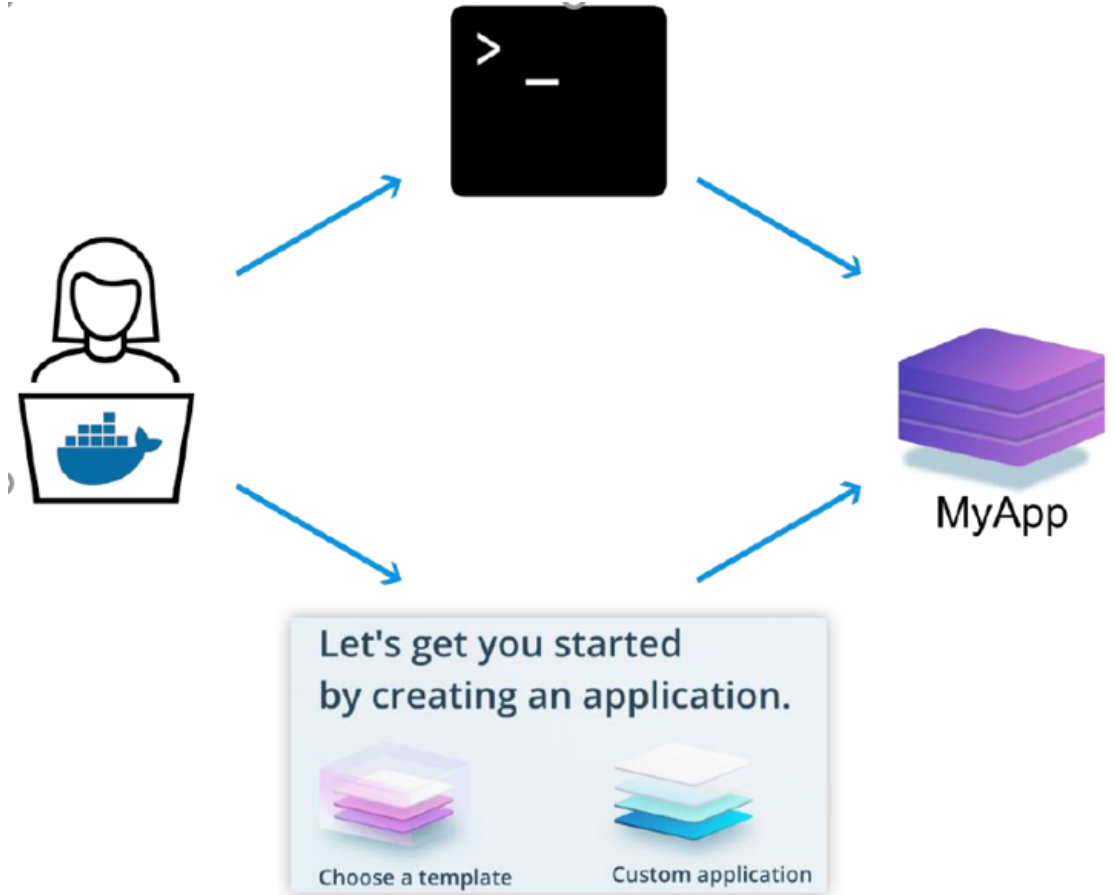
Includes Application Designer Templates



DockerConEU 2018 Announcements

Docker Desktop Enterprise

Development
via CLI or GUI





DockerConEU 2018 – Top Sessions

Videos on YouTube https://bit.ly/DCEU18_VIDEOS

or: <https://europe-2018.dockercon.com/videos-hub>

Slides mostly at: <https://www.slideshare.net/docker>

1. Dockerfile Best Practices
2. Program the Cloud Using Containers as the Building Block
3. From Monolith to Microservices
4. Provisioning & Managing Storage for Docker Containers
5. Monitoring & Debugging Containerized Systems at Scale

DockerConEU 2018 – Top Sessions



Dockerfile Best Practices



Tibor Vass
Docker, Inc.
@tiborvass



Sebastiaan van Stijn
Docker, Inc.
@thajeztah



DockerConEU 2018 – Top Sessions



 **dockercon18**
EUROPE



Program the Cloud Using Containers

Sean Gillespie
Software Engineer, Pulumi

 **dockercon18**

Pulumi demo

swgillespie

DEVELOPER

Michael Irwin

Relocation Architect, Virginia Tech

Senior Developer

Architect

<https://github.com/swgillespie/dockercon18>

DockerConEU 2018 – Top Sessions



 **dockercon18**
EUROPE

A presentation slide with an orange background. On the left is a circular portrait of Jeff Nickoloff wearing headphones. To the right of the portrait, the text reads: **From Monoliths to Microservices**, followed by **JEFF NICKOLOFF** and **Founder, Topple**. The slide is decorated with two stylized lighthouses on the sides and two palm trees in the center. The DockerCon 18 logo is in the bottom right corner.

From Monoliths to Microservices
JEFF NICKOLOFF
Founder, Topple

dockercon18

DockerConEU 2018 – Top Sessions

Provisioning & Managing Storage for Docker Containers



Anusha Ragunathan

Docker Inc
@AnushaRagunatha



Anshul Pundir

Docker Inc
@anshulpundir



DockerConEU 2018 – Top Sessions

OpenCensus



monitoring and debugging containerized systems

Jaana B. Dogan, Google
jbd@google.com



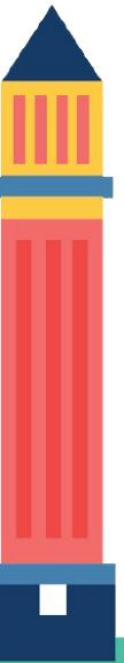
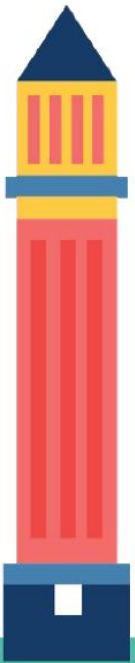


New tools: CNAB: Docker-app, Duffle

- CNAB: new application format
 - Duffle – CNAB tool
 - Docker-app
- Docker-assemble

New packaging format: CNAB

- CNAB: Cloud Native Application Bundles - A new application format, developed and simultaneously announced by Microsoft



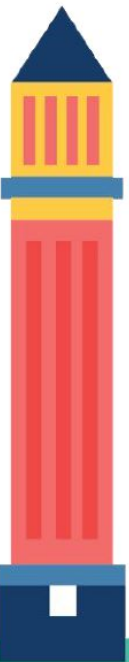
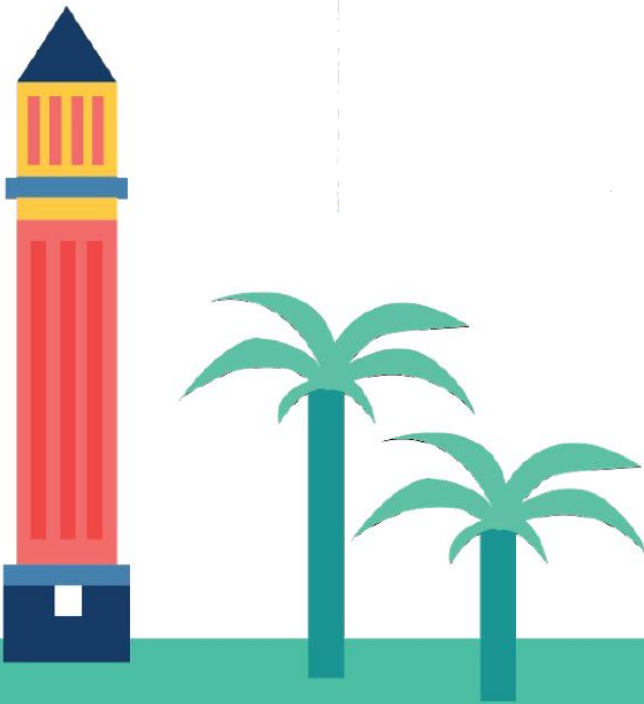
New packaging format: CNAB

No single solution for defining and packaging these Multi-service, Multi-format distributed applications.

Composite APIs(ARM, Terraform) & Tooling

Low Level APIs(JSON, REST API)

Primitives(VMs, Containers, Storage)



New packaging format: What is CNAB?

New open source package specification created by Microsoft & Docker for Bundling, Installing & Managing Distributed Apps

Manage distributed apps lifecycle via single installable file & toolset, reliably provision resources in different environments.

Cloud agnostic - from Azure to on-prem OpenStack, from Kubernetes to Swarm, and from Ansible to Terraform

<https://cnab.io>

New tools: CNAB - duffle

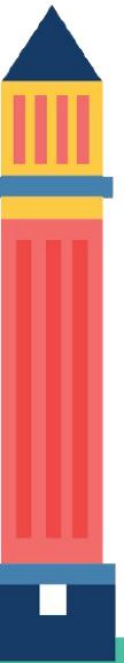
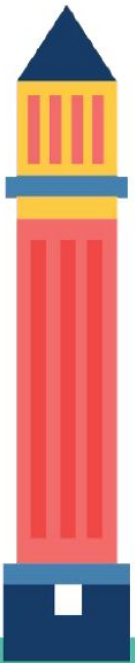
An open source reference implementation of a CNAB CLI tool to install & manage CNAB bundles

Package and unpackage distributed apps for deployment on whatever cloud platforms and services you use

Can create new bundles, sign and verify their integrity

As a reference implementation, it provides an example of how you can build CNAB-based solutions.

<https://duffle.sh>
<https://github.com/deislabs/duffle>

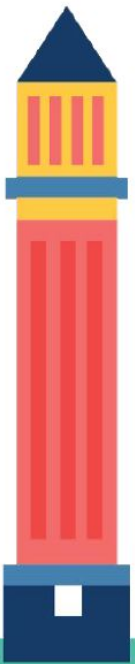


New tools: CNAB – the plan

Microsoft & Docker plan to donate CNAB to an open source foundation in 2019.

<https://github.com/docker/app>

“CNAB: Packaging for Distributed Applications with Multiple Toolchains” video
<https://skillsmatter.com/skillscasts/12659-ops-matters-with-gareth-rushgrove>



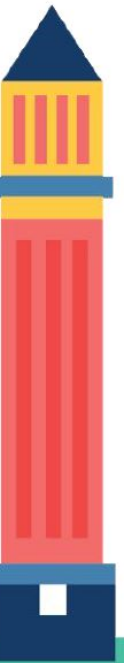
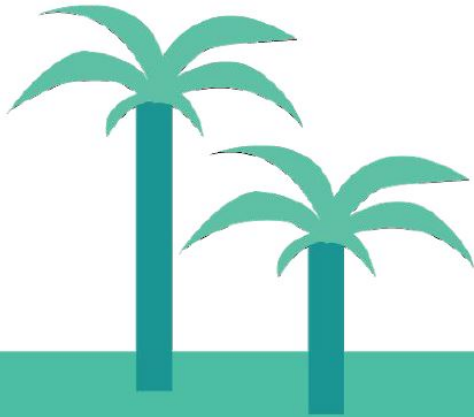
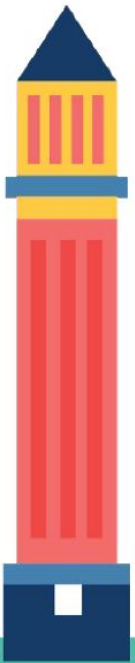
New tools: CNAB – docker-app

The first implementation of the spec is an experimental utility called **Docker App**, officially rolled out at Dockercon.

Expected to be integrated with Docker Enterprise in near future

Video: “CNAB: Packaging for Distributed Applications with Multiple Toolchains”
<https://skillsmatter.com/skillscasts/12659-ops-matters-with-gareth-rushgrove>

<https://github.com/docker/app>



New tools: CNAB – docker-app demo

garethr@redhat.com

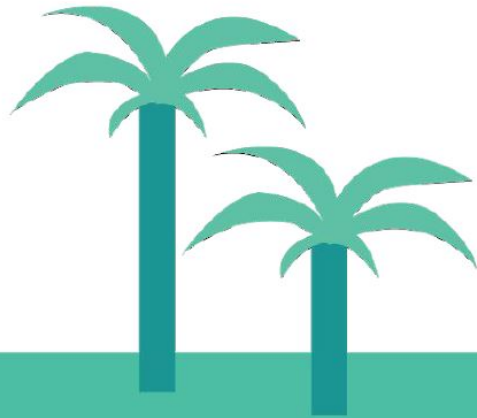
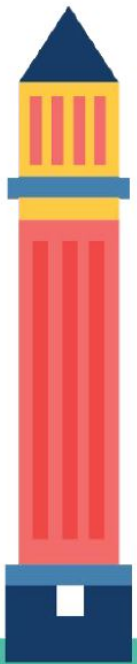
Red Hat Software Engineer

Michael Irwin

Release Architect, Virtualization

garethr@redhat.com

garethr@redhat.com



<https://github.com/garethr/docker-app-cnab-examples>

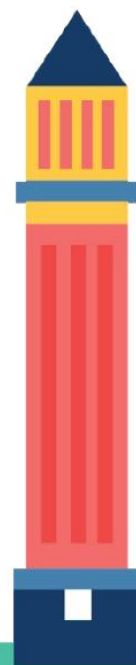
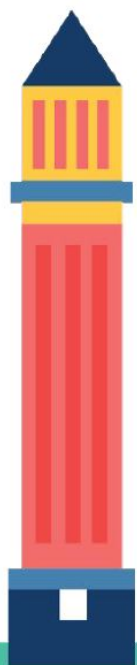
Resources for docker-app

<http://collabnix.com/how-i-built-elastic-stack-using-docker-application-packagedocker-app/>

<https://collabnix.com/a-first-look-at-docker-application-package-docker-app/>

<http://collabnix.com/building-helm-chart-for-kubernetes-cluster-running-on-docker-enterprise-2-0-using-docker-app-0-6-0/>

[**https://github.com/docker/app**](https://github.com/docker/app)



New tools: docker-assemble

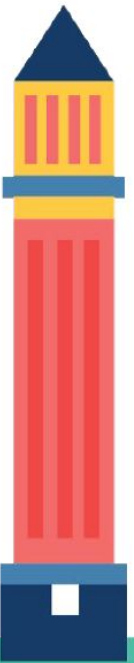
Generates optimized config & images from non dockerized apps

Enterprise feature for now —NOT in the community version.

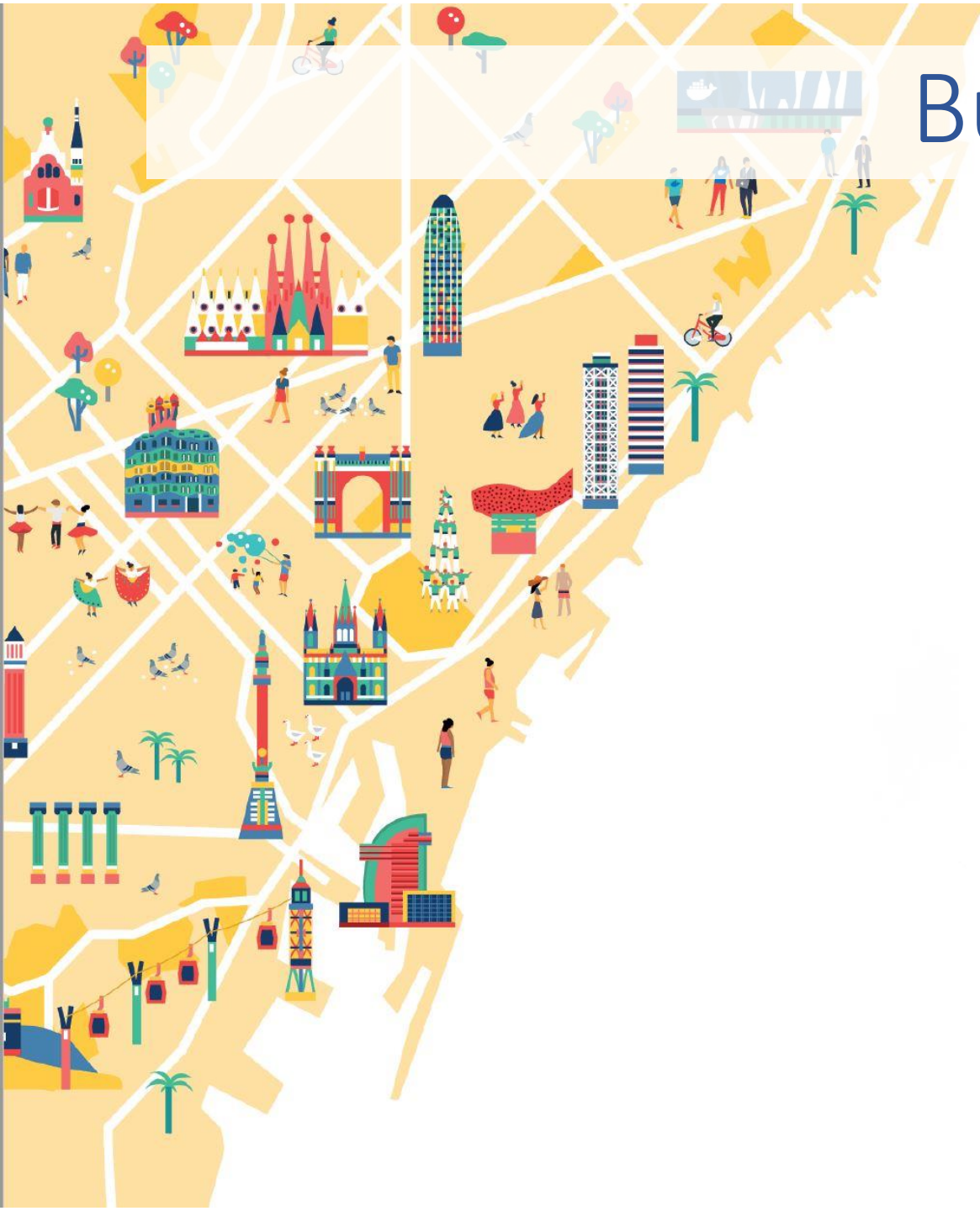
Analyzes app, dependencies & creates Docker image without authoring Dockerfiles (for Java and others today).

Built on top of BuildKit

Auto detects framework, versions etc. from a config file (.pom file)



BuildKit

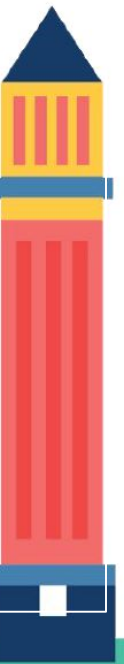
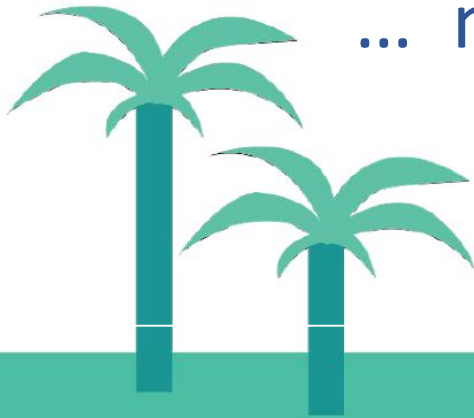
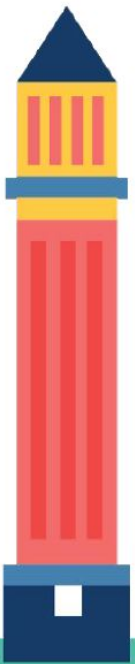


BuildKit

BuildKit is a Moby Project, which has been under development for some time.

Next-gen 'docker build' engine, with full backward Dockerfile compatibility, experimental in docker-ce 18.09 ...

... now available by default in docker-ce 18.09.2

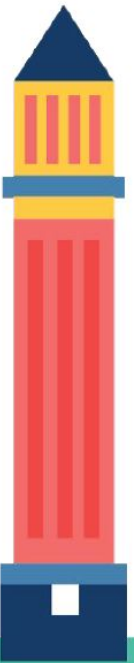


BuildKit

Problems it addresses

- Maintaining multiple compose files for different environments
- Difficult to share multi-service applications
- Hard to collaborate around a compose file

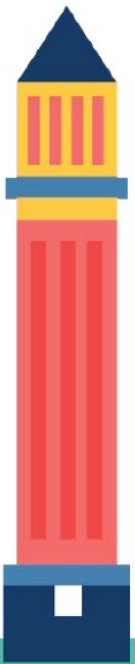
vs Buildpack - more than just an image (also ports, healthchecks, volume mounts, etc), and integrated into the enterprise toolchain



BuildKit

BuildKit allows faster & more powerful build scenario

- Volume mounts during multi-stage builds
 - Allows smaller build artifacts
- Secrets management
- Ssh connection
- Take artifacts FROM multiple parallel builds
- New build-cache storage
(docker system df; docker builder prune)

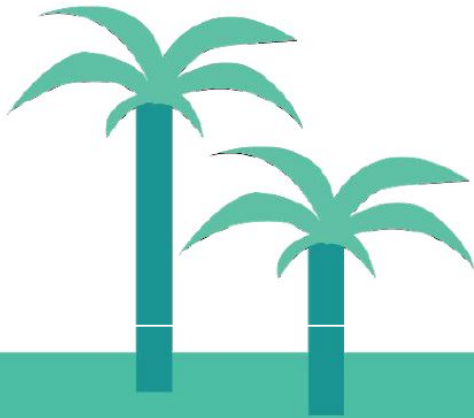
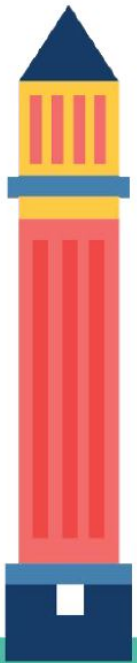


“Deep Dive” presentation at https://bit.ly/DCEU18_BUILDKIT
[@tonistiigi](#)

BuildKit

BuildKit supports multiple front ends

- Dockerfiles
- BuildPacks
- Docker-assemble



https://bit.ly/DCEU18_BUILDKIT
[@tonistiigi](#)

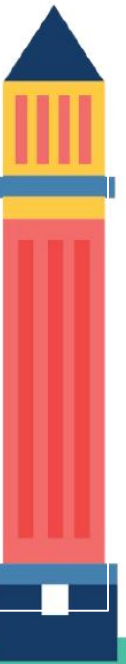
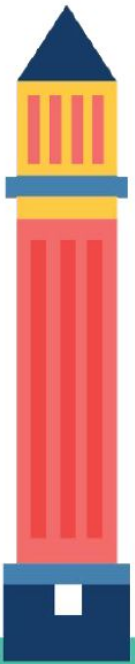
BuildKit

BuildKit brings new features to Docker 18.09

The '--mount' option on Dockerfile RUN enables mounting of

- external target directory avoiding unnecessary COPY
- Secrets to securely pass them to the build
- Ssh forwarding allowing use of keys from build
- cached mountpoints, shareable across builds
- # syntax = repo/image.tag allows alt. build FE

https://bit.ly/DCEU18_BUILDKIT
[@tonistiigi](#)



New tools: BuildKit demo

Wednesday 14th Feb

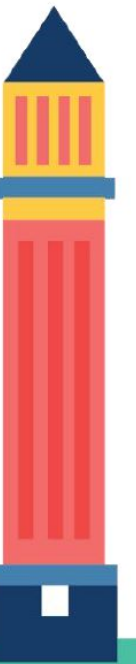
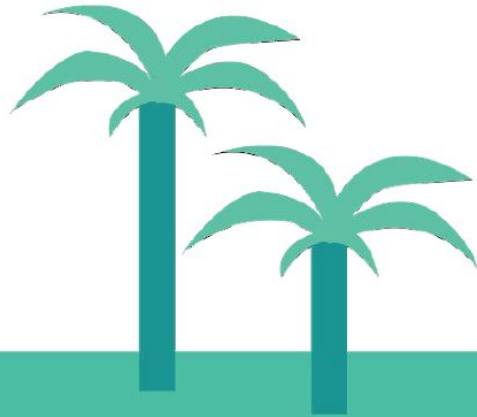
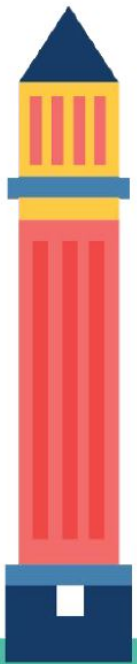
11:00 - 11:30 AM

Michael Irwin

Relocation Architect, Virginia Tech

Senior Container Architect

Architect



Docker-comp

Docker-compose for Kubernetes

Use docker-compose to build & test locally on Swarm or Kubernetes

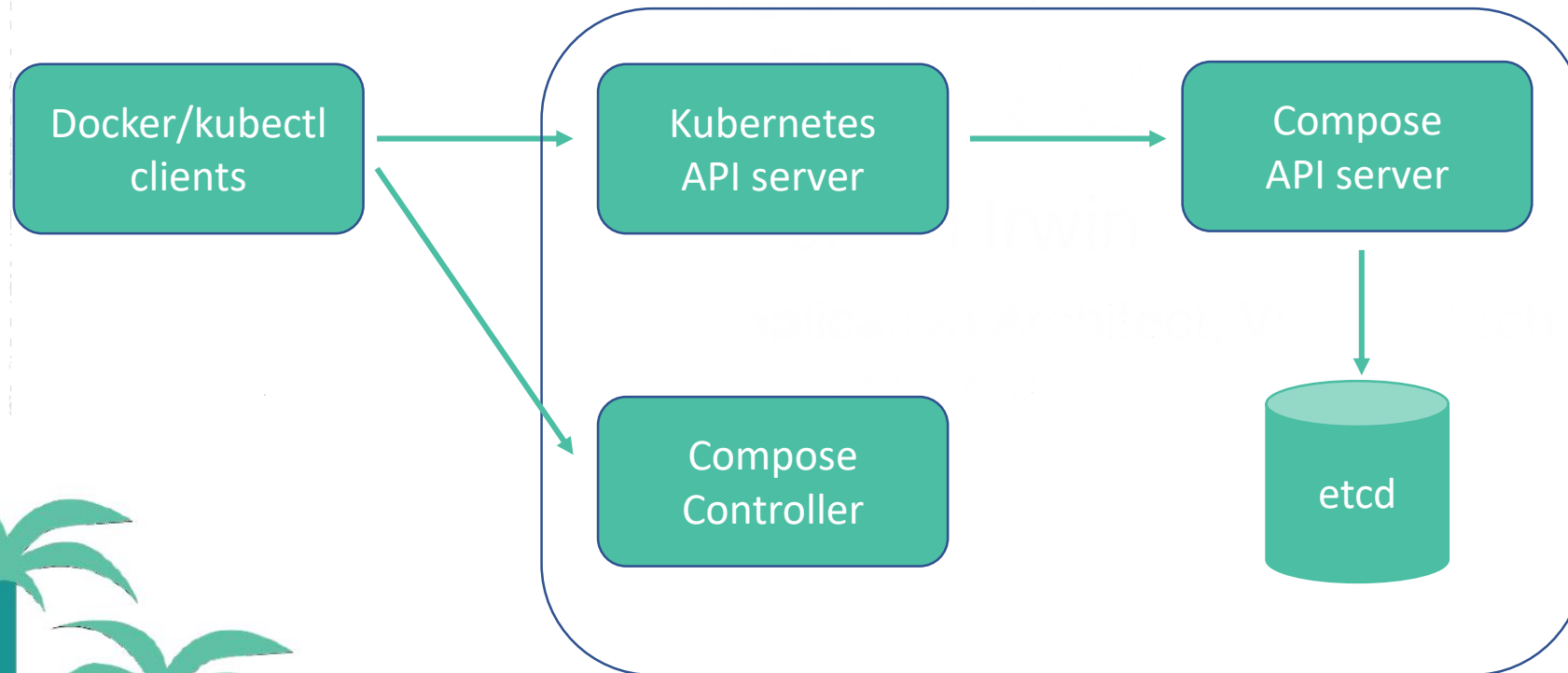
Use 'deploy stack' to Swarm or Kubernetes for Production

Implemented as a 'Compose Controller'



<https://github.com/docker/compose-on-kubernetes>

Docker-compose for Kubernetes



<https://github.com/docker/compose-on-kubernetes>
<https://github.com/docker/compose-on-kubernetes/blob/master/docs/architecture.md>

New tools: Compose on Kubernetes demo

Wednesday 14th March 2018

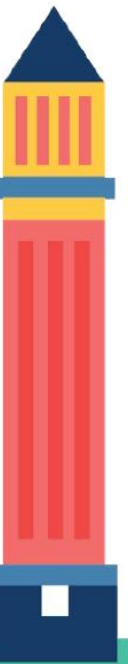
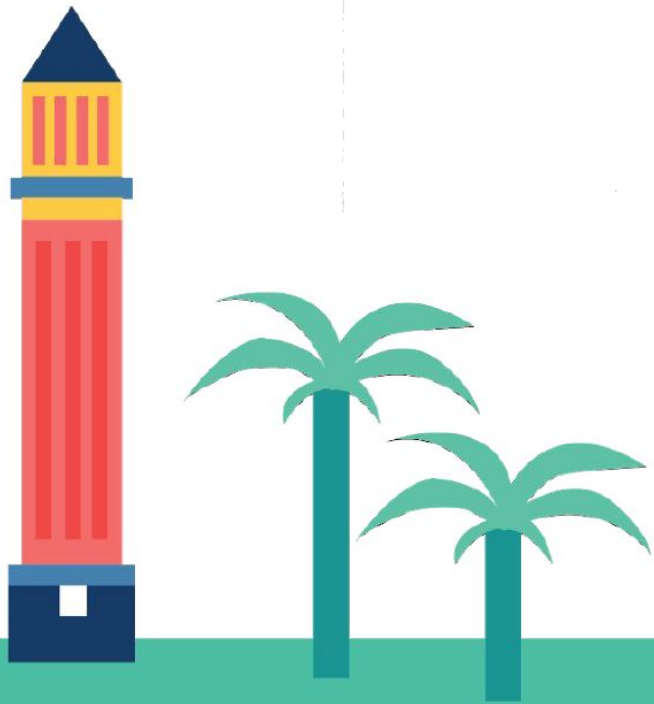
12:00pm - 12:30pm

Richard Irwin, Docker

Relocation Architect, Vivaldi, Open

Power, Docker, Kubernetes

Architecture



<https://github.com/docker/compose-on-kubernetes>

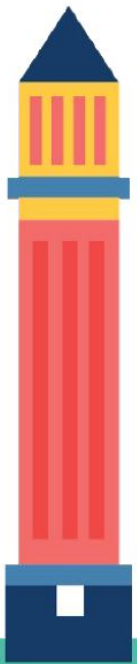
References

Compose on Kubernetes Guides exist for

- Azure AKS
- Google GKE
- MicroK8S
- Minikube

It is also integrated into Docker Desktop

<https://github.com/docker/compose-on-kubernetes/tree/master/docs>



A stylized, colorful map of Europe serves as a background for the slide. The map is composed of various geometric shapes and is populated with numerous small, vibrant icons representing different aspects of culture, architecture, and nature. These include cathedrals, modern skyscrapers, palm trees, people walking or cycling, and various animals like birds and swans. The map is primarily in shades of yellow and orange, with the icons in a wide array of colors.

Docker-ce 18.09.2

Docker-ce 18.09.2

Server: Docker Engine - Community

Engine:

Version: 18.09.2
API version: 1.39 (minimum version 1.12)
Go version: go1.10.6
Git commit: 6247962
Built: Sun Feb 10 03:42:13 2019
OS/Arch: linux/amd64
Experimental: false

If you would like to use Docker as a non-root user, you should now consider adding your user to the "docker" group with something like:

```
sudo usermod -aG docker robertsingh181
```

Remember that you will have to log out and back in for this to take effect!

WARNING: Adding a user to the "docker" group will grant the ability to run containers which can be used to obtain root privileges on the docker host.

Refer to <https://docs.docker.com/engine/security/security/#docker-daemon-attack-surface> for more information.

**** DOCKER ENGINE - ENTERPRISE ****

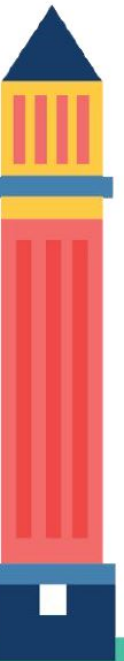
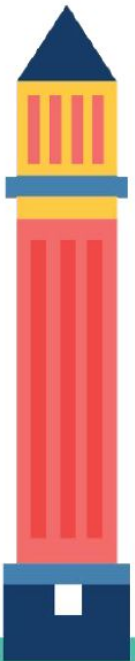
If you're ready for production workloads, Docker Engine - Enterprise also includes:

- * SLA-backed technical support
- * Extended lifecycle maintenance policy for patches and hotfixes
- * Access to certified ecosystem content

**** Learn more at <https://dockr.ly/engine2> ****

ACTIVATE your own engine to Docker Engine - Enterprise using:

```
sudo docker engine activate
```



Docker 6th Birthday: Show & Tell



Docker 6th Birthday: Show & Tell

by [@mattmoor](#)

[@mattmoor](#) Docker 6th Birthday

Michael Irwin

religion architect, Visual

group, London

London

London

London

London

London

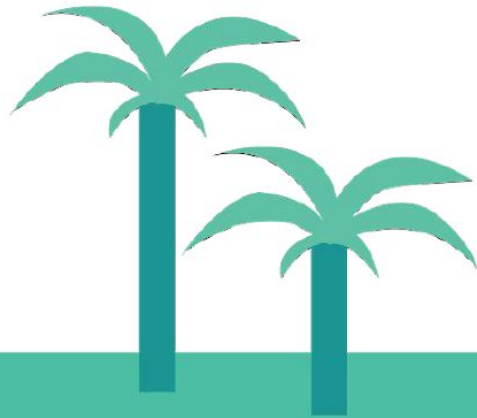
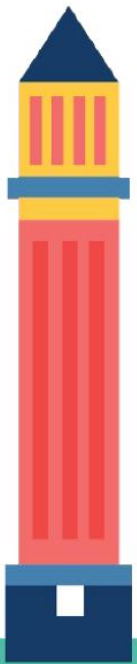
London

London

London

London

London



DockerCon SF, April 2019



DockerCon SF, April 2019

The CfP for DockerCon SF is now closed, but speakers at the Docker 6th Birthday may submit their talk at

https://bit.ly/DCUS19_CFP2



<https://dockercon19.smarteventscld.com/portal/newreg.ww>

[illegible]