


CNAB

The missing link



Yves Brissaud

 @_crev_

Yves Brissaud

Docker
Engineering

 [@_crev_](https://twitter.com/_crev_)



A large blue decorative shape on the left side of the slide, consisting of a rounded rectangle with a diagonal cutout.

CNAB?

Cloud Native Application Bundle

Application

"A program or piece of software designed to fulfil a particular purpose"

– Oxford English Dictionary

"Program or set of programs to assist the user of a computer in the processing of a specific task."

– Translation from Larousse

Cloud Native

*“ to work well in a cloud environment
on top of an infrastructure as a service*

pzf.fremantle.org/2010/05/cloud-native.html

→ elasticity

→ distributed infrastructure

Cloud Native

A blue banner for the GOTO Copenhagen 2018 Conference. The banner features the 'goto: copenhagen' logo in the top left, a white cloud outline in the top center, and the text 'GOTO Copenhagen 2018 Conference Nov. 19 - 21' in the top right. The main text reads 'Cloud native is about culture, **not** containers'. Below this, it says 'Holly Cummins IBM Cloud Garage'. The bottom of the banner shows a silhouette of a city skyline and a person sitting on a rock. A small Twitter icon and the text 'Follow us @gotocph' are in the bottom left corner.

goto:
copenhagen

GOTO Copenhagen 2018
Conference Nov. 19 - 21

Cloud native is about
culture, **not** containers

Holly Cummins
IBM **Cloud** Garage

Follow us @gotocph

[@holly_cummins](https://gotocph.com/2018/sessions/612)

Cloud Native: behind buzzwords, the cloud (🇫🇷)

<https://www.linkedin.com/pulse/cloud-native-sous-les-buzzwords-le-nuage-yves-brissaud/>

Cloud Native Application

- n services
 - vm
 - containers
 - serverless functions
 - ...
- n databases
- n managed services
- ...

On elastic resources!

How to describe it?

Single artifact

How to package?

Share, provision, without dozens of tools

How to manage lifecycle?

- Installation
- Upgrade
- Deletion

Cloud Native Application Bundle

“ A spec for packaging distributed apps.”

CNABs facilitate the bundling, installing and managing of container-native apps – and their coupled services.

CNAB's Goals

- Deploy complex applications easily
- Cloud agnostic
- Secure
- Handle a spread of use cases

App Definition and Development

Database

Streaming & Messaging

Application Definition & Image Build

Continuous Integration & Delivery

Orchestration & Management

Scheduling & Orchestration

Coordination & Service Discovery

Remote Procedure Call

Service Proxy

API Gateway

Service Mesh

Runtime

Cloud Native Storage

Container Runtime

Cloud Native Network

Provisioning

Automation & Configuration

Container Registry

Security & Compliance

Key Management

Platform

Certified Kubernetes - Distribution

Certified Kubernetes - Hosted

Certified Kubernetes - Installer

PaaS/Container Service

Observability and Analysis

Monitoring

Logging

Tracing

Chaos Engineering

Serverless

CLOUD NATIVE Landscape

CLOUD NATIVE COMPUTING FOUNDATION

Redpoint Amplify PARTNERS

l.cncf.io

This landscape is intended as a map through the previously uncharted terrain of cloud native technologies. There are many routes to deploying a cloud native application, with CNCF Projects representing a particularly well-traveled path.

Special

Kubernetes Certified Service Provider

Kubernetes Training Partner

Members

HOW STANDARDS PROLIFERATE:
(SEE: A/C CHARGERS, CHARACTER ENCODINGS, INSTANT MESSAGING, ETC.)



<https://xkcd.com/927/>



Reuse what we have

Containers

Application

Definition

▶ Dockerfile

▶ ?

Artifact

▶ OCI Image

▶ OCI Image

Sharing

▶ OCI Registry

▶ OCI Registry

App Definition: bundle.json

- Metadata
 - name, version, description
- Invocation Image
- Images
- Parameters
- Credentials
- Custom actions

bundle.json

Invocation Image

OCI image used to run actions (install, etc)

main entry point – *run tool*

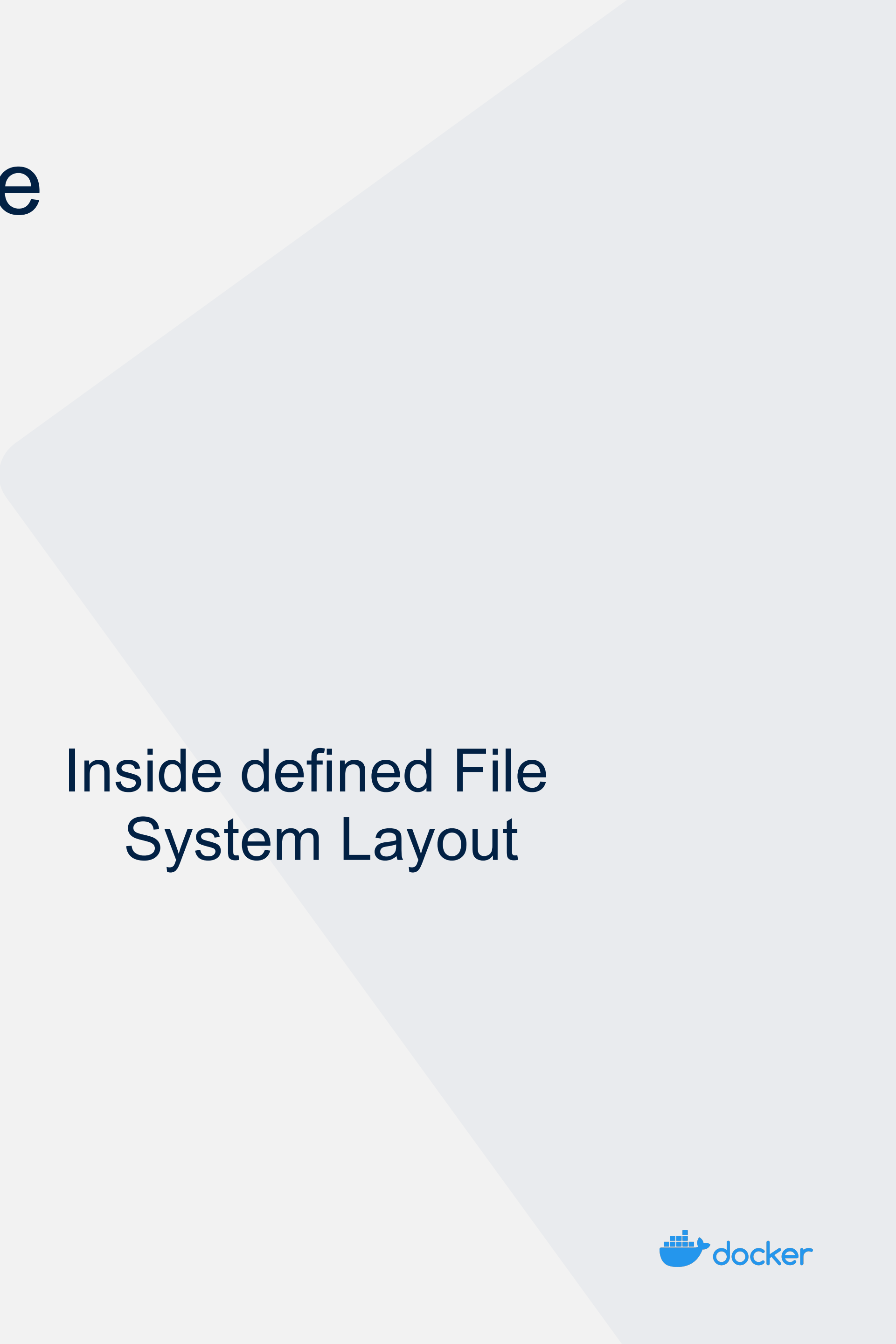
- *install, upgrade, ...* + custom actions

runtime metadata

- helm charts, terraform files, etc

Build instructions

- *Dockerfile, packer.json, etc*



Inside defined File
System Layout

Tools

- [Duffle](#): reference implementation of **all** features of the spec
- [Porter](#): opinionated CNAB builder
- [Docker App](#): opinionated CNAB builder and installer
- [Pivotal Build Service](#): source code to OCI images using CNAB to deploy
- [Pivotal Function Service](#): build & run functions, apps, containers on kubernetes distributed as CNAB bundle
- [cnab-go](#), [cnab-rs](#), [cnab-to-oci](#), ...

Spec + Tools = <3

```
$ porter build <bundle>
```

```
$ cnab-to-oci push <bundle>
```

```
$ docker app run <bundle>
```

```
$ duffie uninstall <bundle>
```

Docker App

<https://github.com/docker/app/tree/master/examples/voting-app>



Docker App (reuse what we have)

docker-compose v3 file format

- easy to use
- widely used
- easy to migrate

docker hub

- standard
- a lot of existing images

docker stack

- swarm
- kubernetes

Specification Status

CNAB Core 1.0

- ▶ `bundle.json` file
- ▶ Invocation image format
- ▶ Bundle runtime
- ▶ Bundle formats (thick/thin)

Drafts

- ▶ Registries
- ▶ Security
- ▶ Claims: record of CNAB installation
- ▶ Dependencies

Missing?

- ▶ Inner loop
 - daily work, local development, debug

Docker App

Migration from docker-compose to Docker App





 cnab.io

 [@cnab_spec](https://twitter.com/cnab_spec)

 github.com/cnabio

 [#cnab](#) on CNCF Slack

 github.com/docker/app

 Docker Community Slack

 [@_crev_](https://twitter.com/_crev_)

Questions?

