

Cloud Native Application Bundle

The missing link



speakerdeck.com/economie/devoxxfr-2021-cloud-native-application-bundle



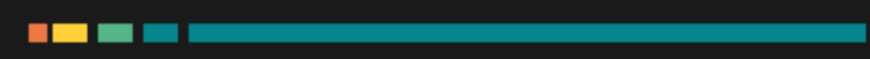
github.com/economie/devoxxfr-2021

Yves Brissaud @_crev_



Devoxx France



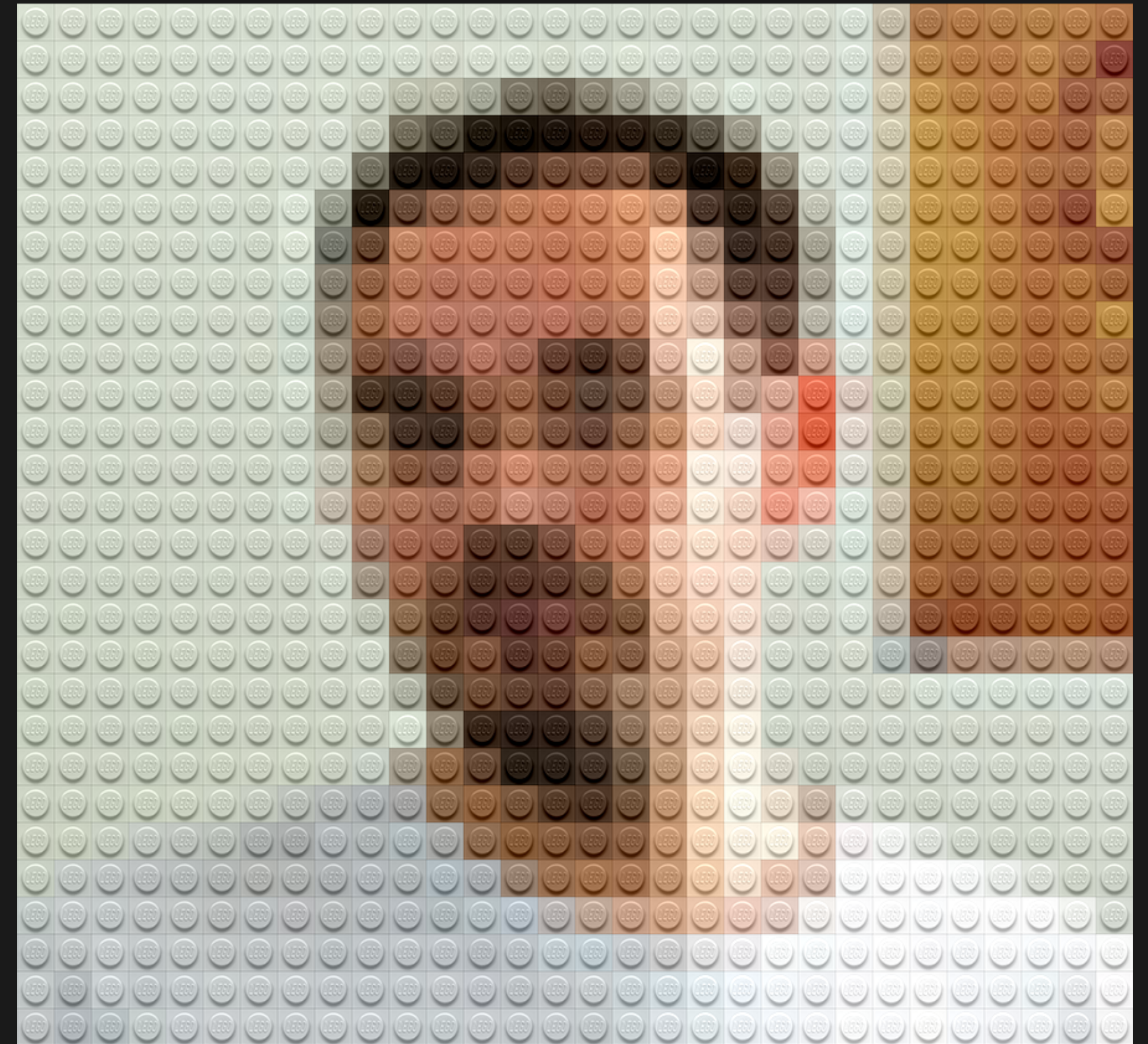


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 Docker

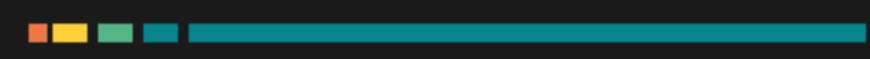
 Engineering (Docker Hub)

 @_crev_



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<https://www.docker.com/career-openings>

CNAB?



Devoxx France



Cloud Native Application Bundle



Devoxx France



Application

« Program or set of programs to assist the user of a computer in the processing of a specific task »

-Larousse

Cloud Native

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



The poster features a blue background with a white cloud outline at the top center. Below the cloud, the text 'Cloud native is about culture, **not** containers' is written in white. At the bottom, there is a silhouette of a city skyline and a person sitting on a rock. The GOTO Copenhagen logo is in the top left, and the conference details are in the top right.

goto:
copenhagen

GOTO Copenhagen 2018
Conference Nov. 19 - 21

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

Holly Cummins
IBM **Cloud** Garage

Follow us @gotocph

<https://gotocph.com/2018/sessions/612>
@holly_cummins

Cloud Native

Idempotence

Cloud Native

« Idempotence means an operation will have the same result when applied one or multiple times »

-Larousse

Cloud Native

Idempotence

- Infrastructure
 - AMI, ISO, OVF, ...
 - Packer

Cloud Native Application

Cloud Native Application

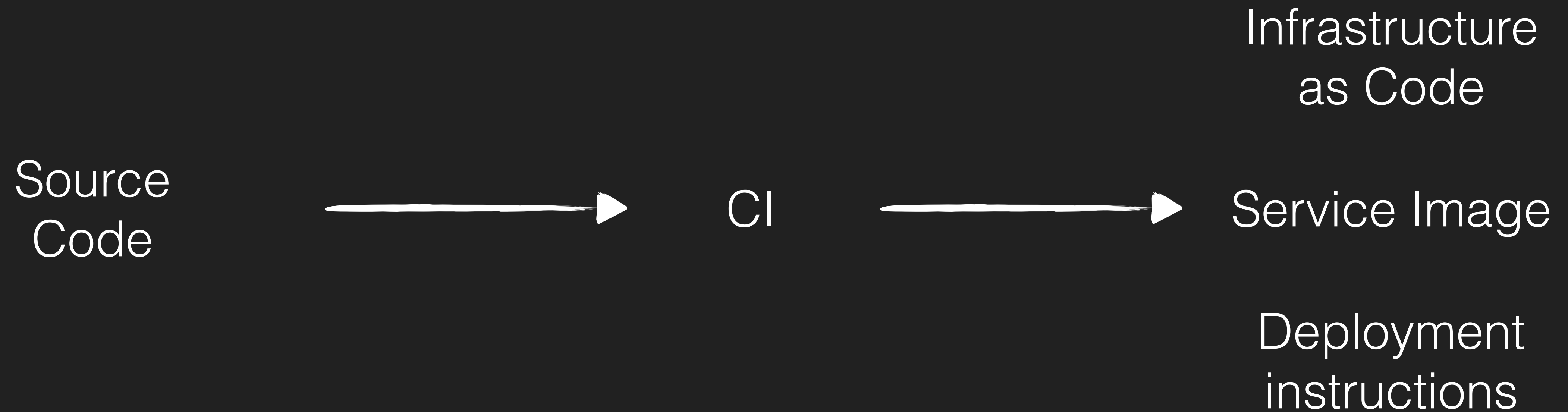
- n services
 - VMs, containers, serverless functions, etc
- n databases
- n managed services
- ...

On top of elastic resources

Cloud Native Application

- Terraform
- Kubernetes files, kustomize, Helm
- Scripts bash
- ...

Cloud Native Application

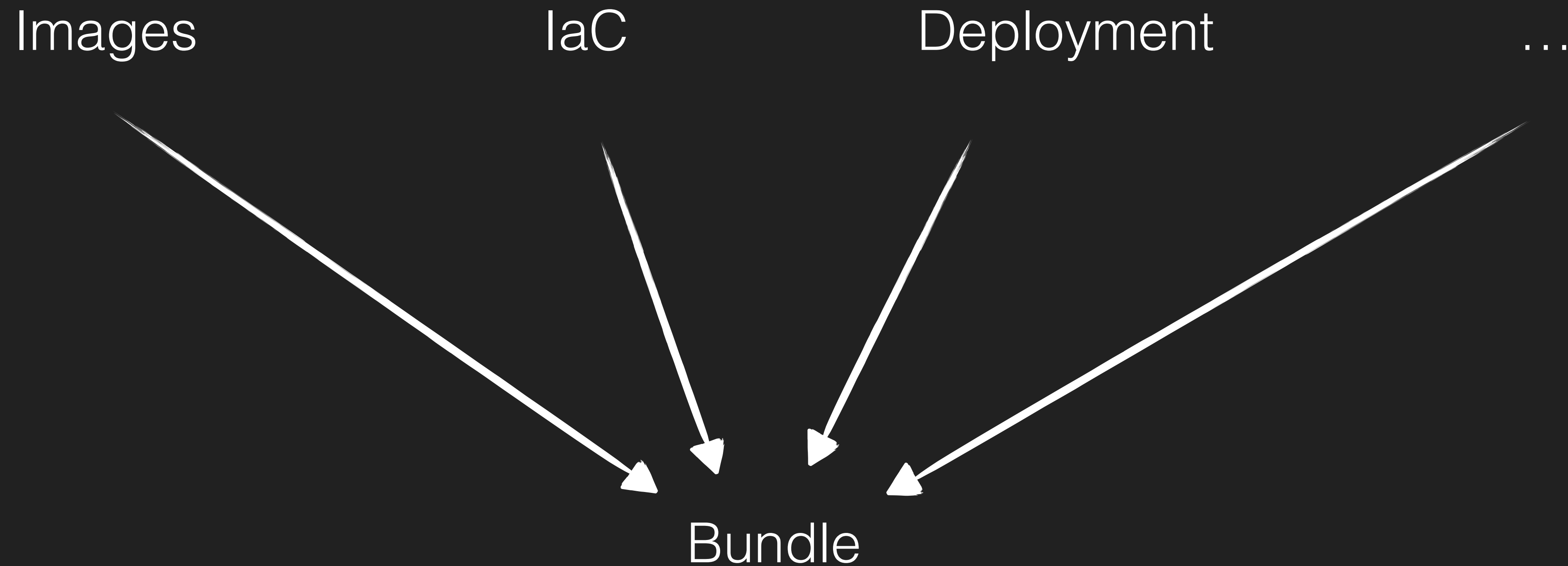


Cloud Native Application

Deployment:

1. Get source code in right version
2. Apply IaC
3. Apply deployment instructions
4. Download service images
5.

Cloud Native Application Bundle



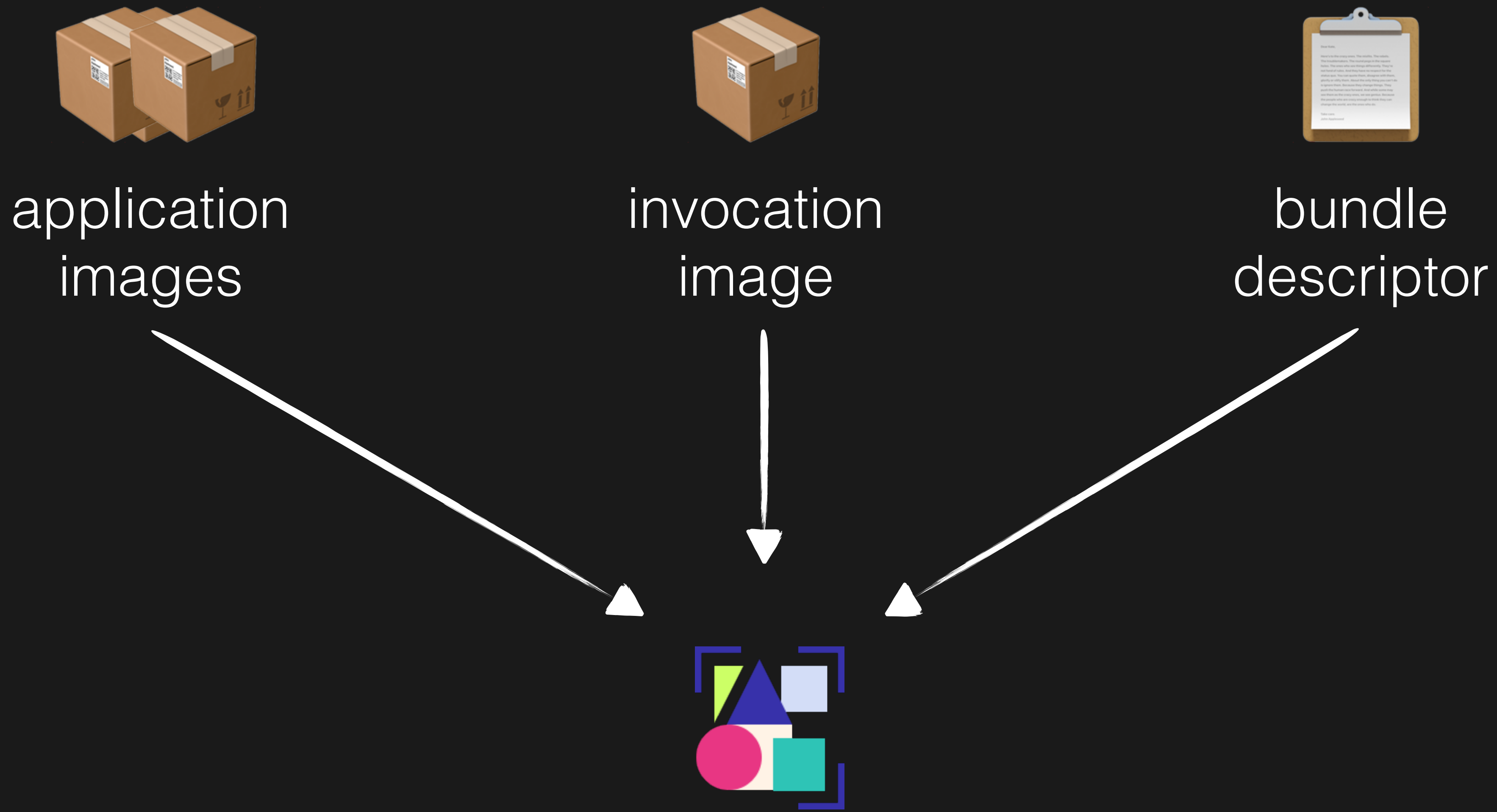
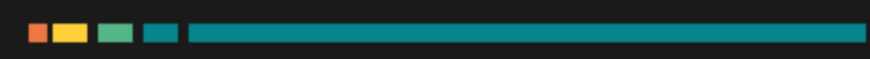
Cloud Native Application Bundle

- Immutable
- Inside a registry
- Self contained ➔ offline

Cloud Native Application Bundle

- Immutable
- Inside a registry
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Idempotence



Application Images

Containers you are already using!

No change needed to build or distribute them

Invocation Image

- ◆ Contains all needed tools
- ◆ Configuration, templates, etc
- ◆ Install / upgrade / uninstall

Cloud CLIs

Helm CLI

Helm Charts

Terraform CLI

IaC Code

kubectl



Invocation
image



Bundle Descriptor

- `bundle.json`
- List application and invocation images
- Parameters
- Credentials
- Outputs

Artefact final

OCI Image

CNAB

<https://cnab.io/>

Open specifications: <https://github.com/cnabio/cnab-spec>

CNAB Core 1.2.0

CNAB Security 1.0.0



Outils

cnab-go: CNAB Core implementation

<https://github.com/cnabio/cnab-go>

cnab-to-oci: tool to convert bundles to OCI images

<https://github.com/cnabio/cnab-to-oci>

duffle: cli to interact with bundles

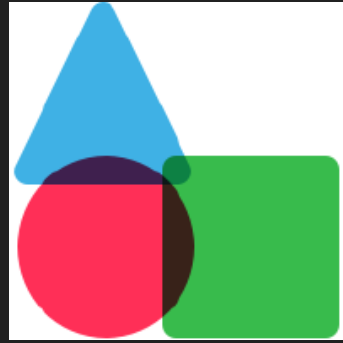
<https://duffle.sh>

porter: higher level tool to create and use bundles

<https://github.com/getporter/porter>

<https://porter.sh>

Porter



Made by Deis Labs (microsoft)

<https://deislabs.io>

The most user friendly



Porter

Porter

- `porter.yaml`
 - higher level than `bundle.json`
 - mixins
- Create `bundle.json`, then the OCI image

Demo Wordpress

Wordpress

- Deploy wordpress and its database
- Inside a configurable kubernetes namespace
- Using a helm chart

Demo Airgap

Airgap

- Embed Helm charts
- Embed application images

Resources

- <https://cnab.io>
- <https://cnab.io/community-meetings>
- #cnab on <https://slack.cncf.io>
- <https://porter.sh>
- <https://porter.sh/community>

Merci 🙏



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