redhat.

REPEATABLE DCO PLATFORMS

Built in partnership with ARCYBER

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SORENSON'S LESSONS

STANDARD PARTS

Standardized

Interoperable

Multi-vendor

STANDARD PROCESS

STANDARD INFRASTRUCTURE

BUILD FOR CHANGE

STANDARD PARTS

STANDARD PROCESS

Eliminate redundancy

Encourage flexibility

Drive modularity

STANDARD INFRASTRUCTURE

BUILD FOR CHANGE

STANDARD PARTS

STANDARD PROCESS

STANDARD INFRASTRUCTURE

Process drives tools.
Not the other way around.

BUILD FOR CHANGE

BUILD FOR CHANGE

Turn craftwork into commodities.

Design for improvement, not function.

SORENSON'S LESSONS

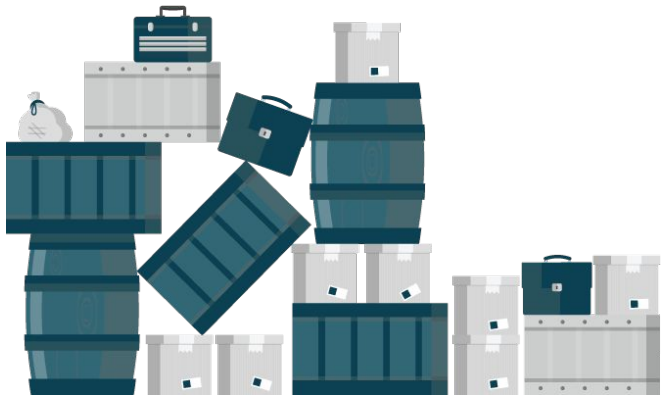
RELEASES PER YEAR

1/day → 1/hour

DCO Challenge:

ARCYBER requires dozens of applications for DCO mission.

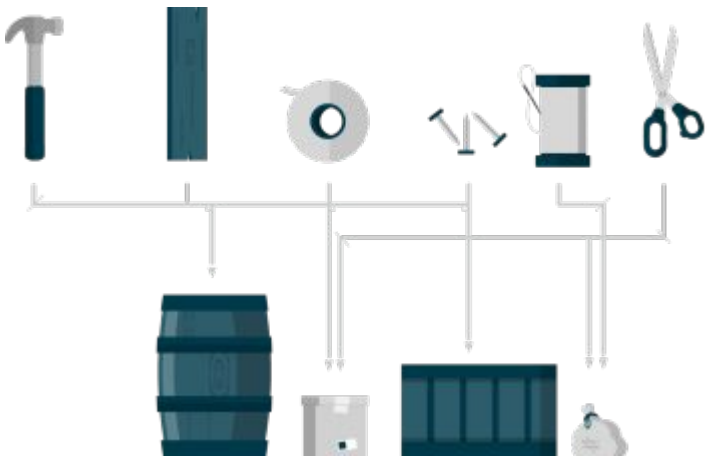
Applications require complicated collaboration during installation and integration every time they are deployed.



DCO Challenge:

Many CPTs have different requirements.

They also use different languages, databases, and tools.



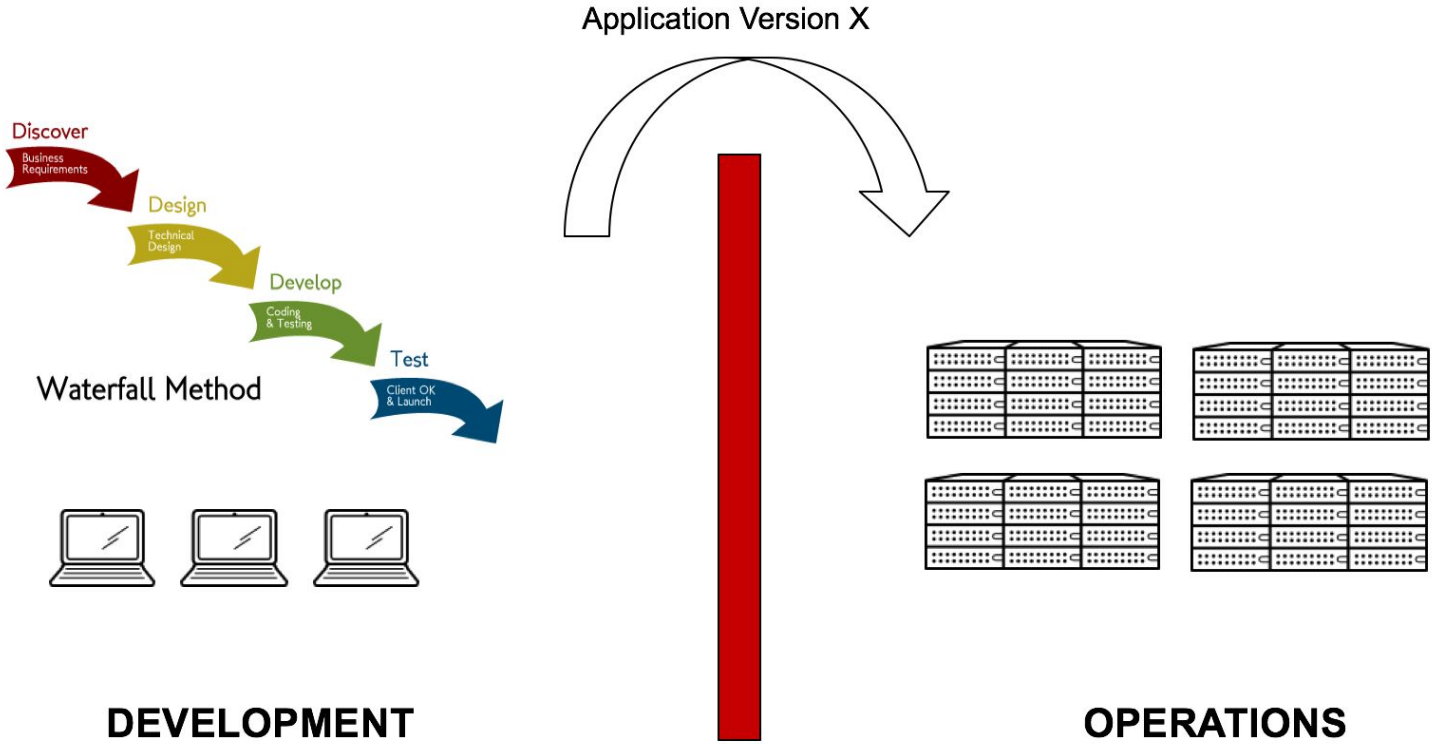
DCO Challenge:

To deploy, manage, configure DCO tools takes:

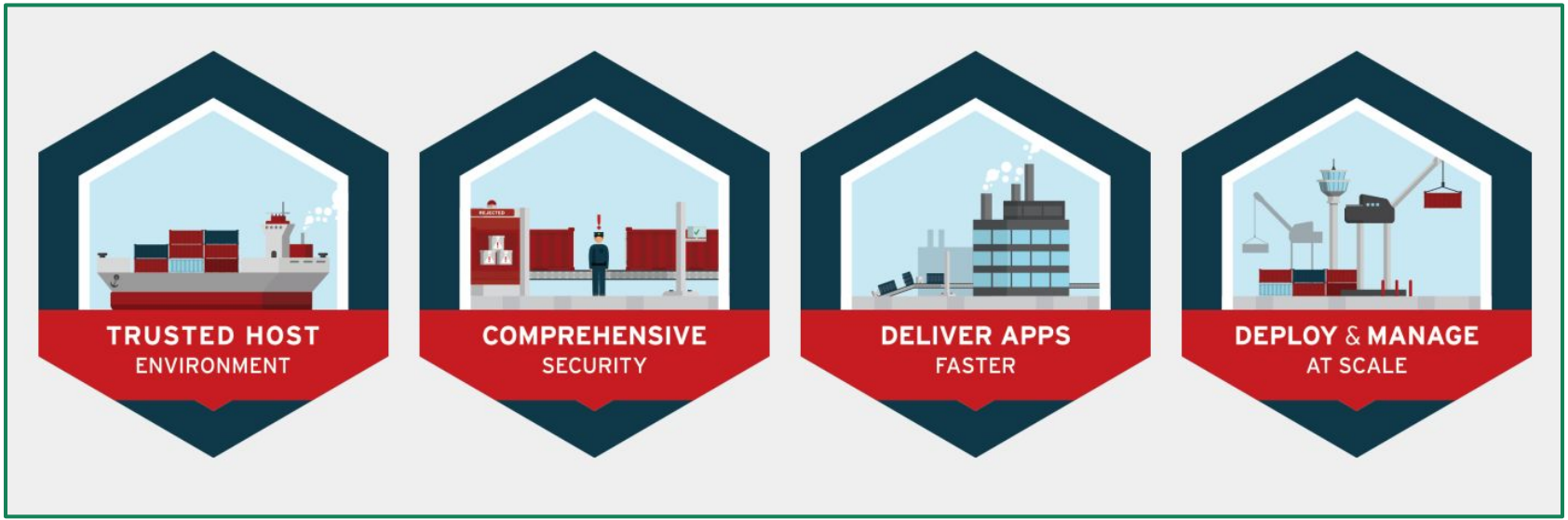
- People,
- Expertise,
- and the right systems, infrastructure, and architecture.

This costs time.

DCO Challenge: Waterfall and Silos



Goals

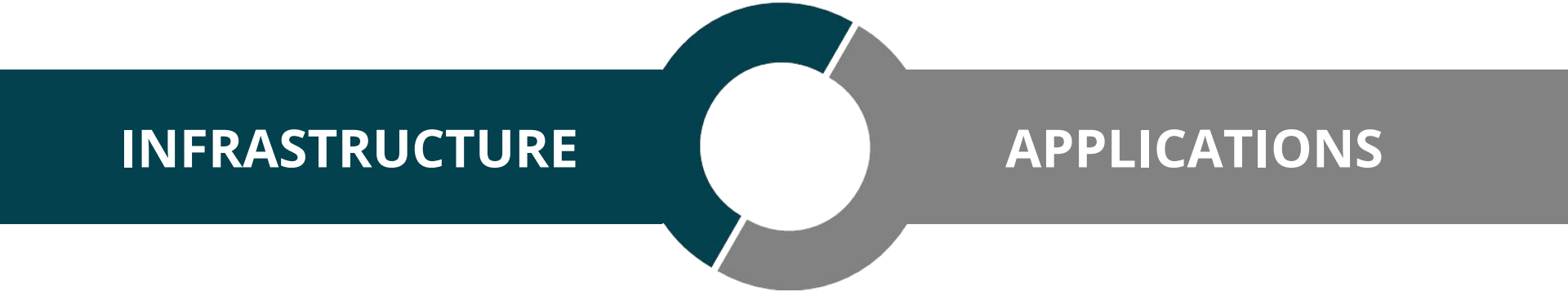

TRUSTED HOST
ENVIRONMENT
COMPREHENSIVE
SECURITY
DELIVER APPS
FASTER
DEPLOY & MANAGE
AT SCALE

A Solution

Adopting a container strategy allows applications to be easily shared and deployed.

WHAT ARE CONTAINERS?

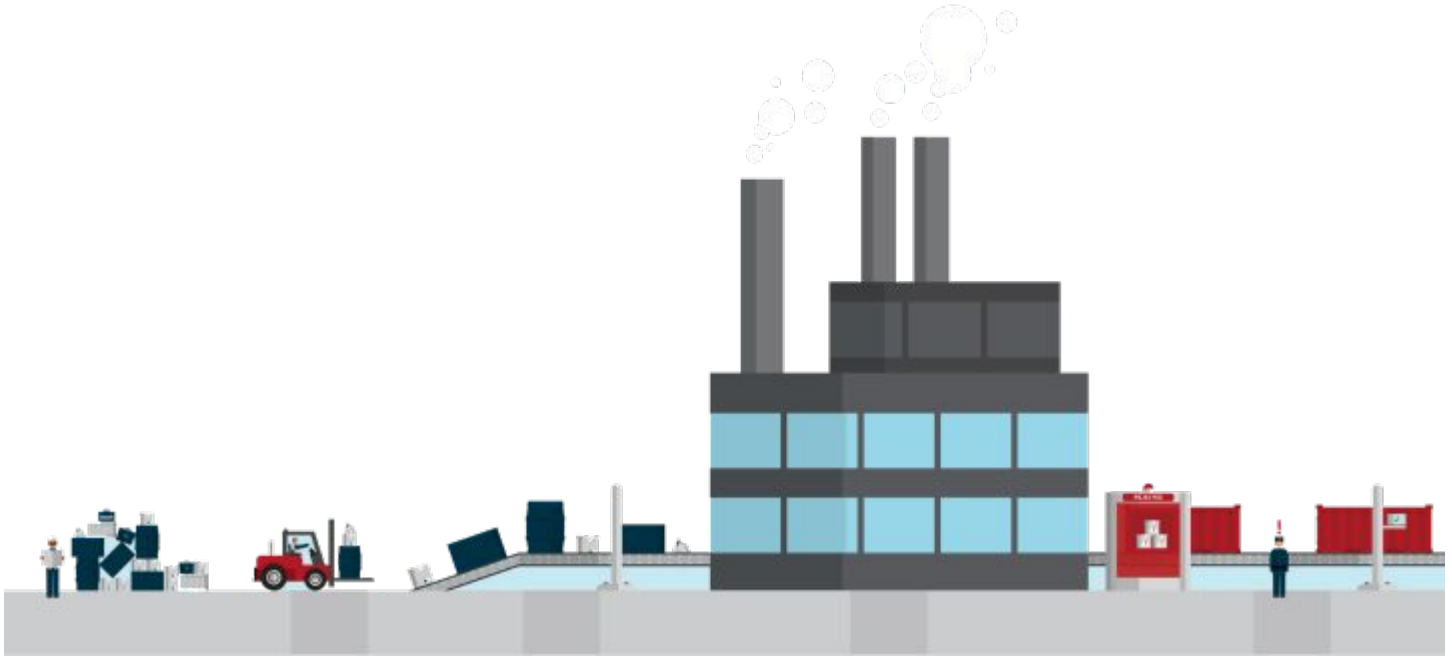
It Depends Who You Ask



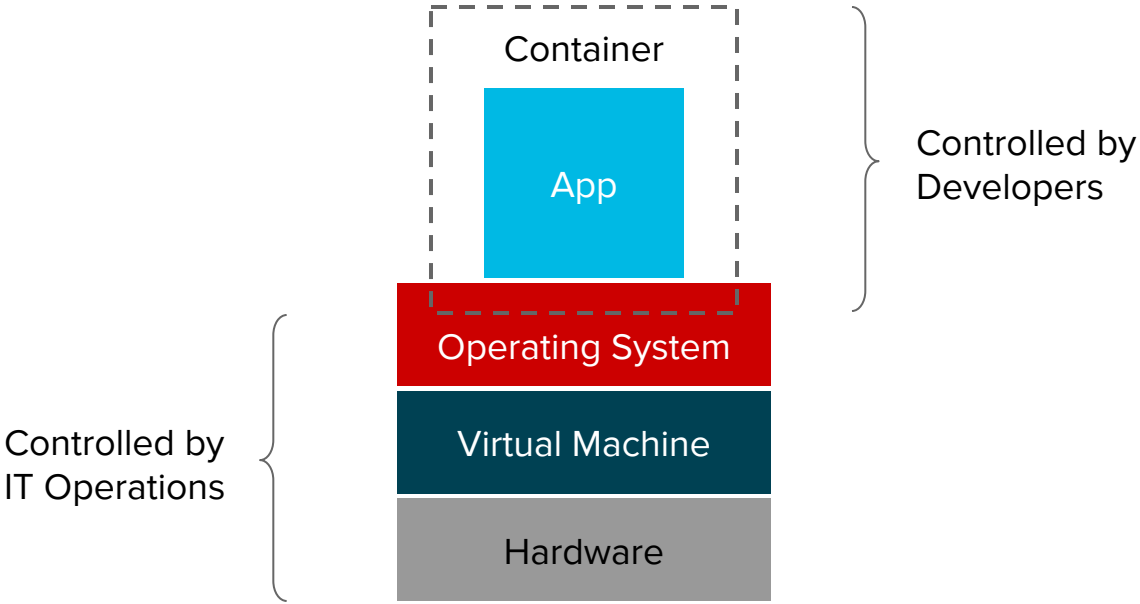
- Sandboxed application processes on a shared Linux OS kernel
- Simpler, lighter, and denser than virtual machines
- Portable across different environments

- Package my application and all of its dependencies
- Deploy to any environment in seconds and enable CI/CD
- Easily access and share containerized components

LOAD APPLICATIONS AT THE FACTORY, NOT THE DOCK



A SOLUTION


Container
App
Operating System
Virtual Machine
Hardware
Controlled by
Developers
Controlled by
IT Operations

Everything as code

Application monitoring

Automate everything

Rapid feedback

Continuous Integration/Delivery

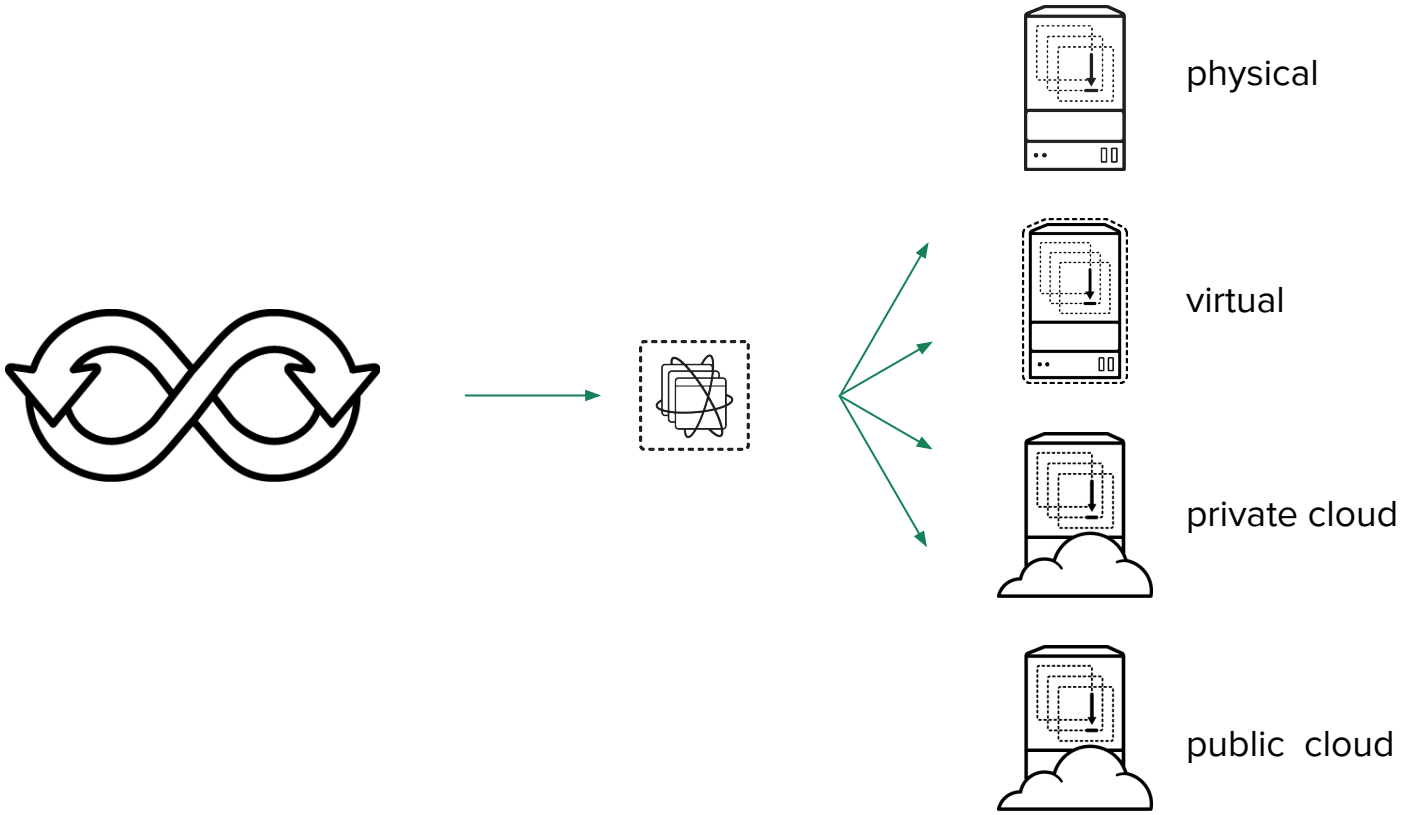
Rebuild vs. Repair

Application is always “releaseable”

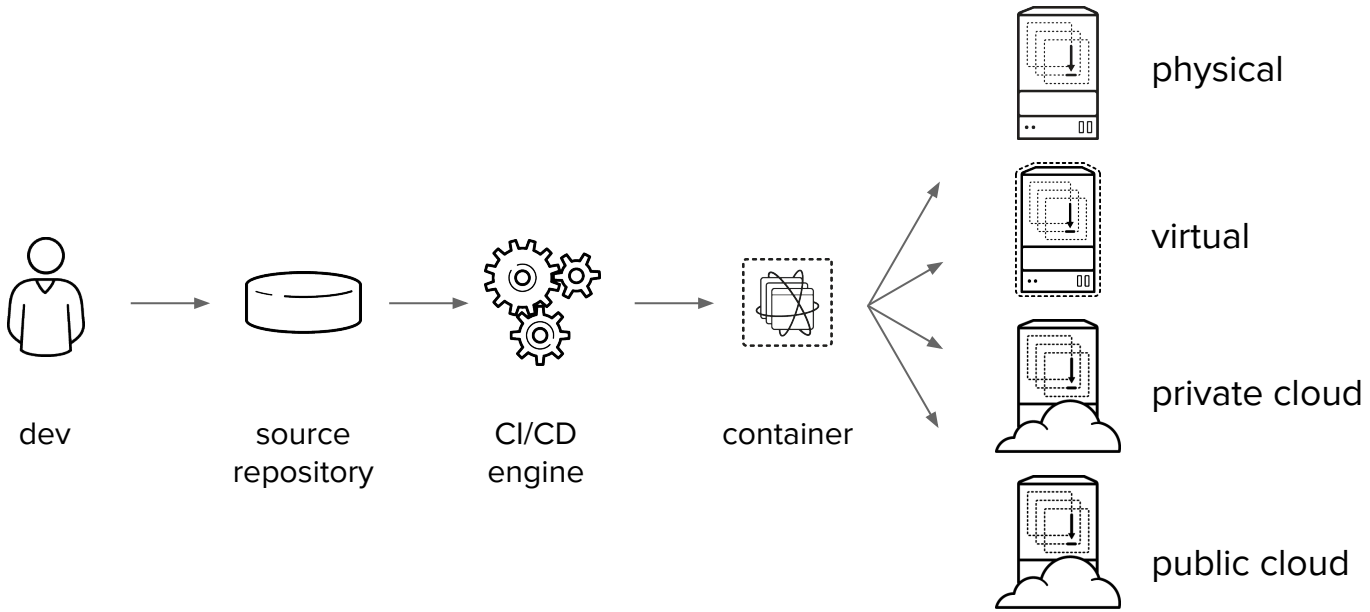
Delivery pipeline

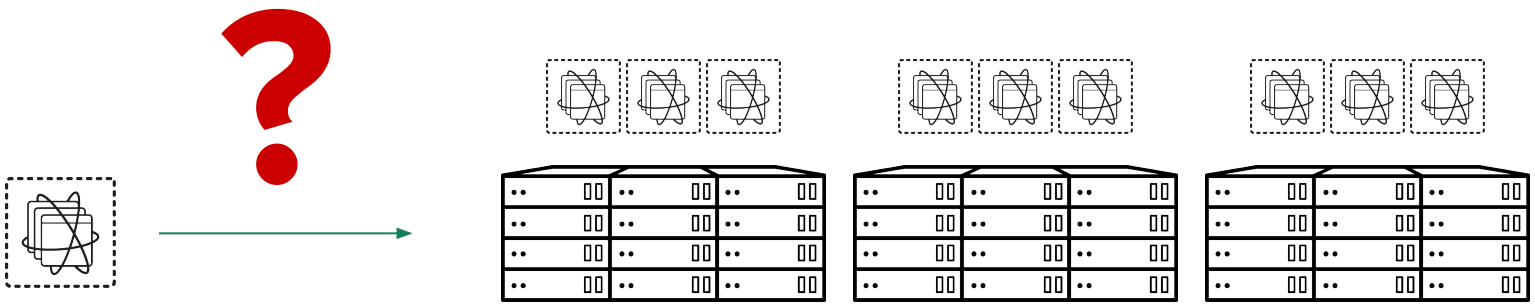
```
$ docker build -t app:v1 .
```

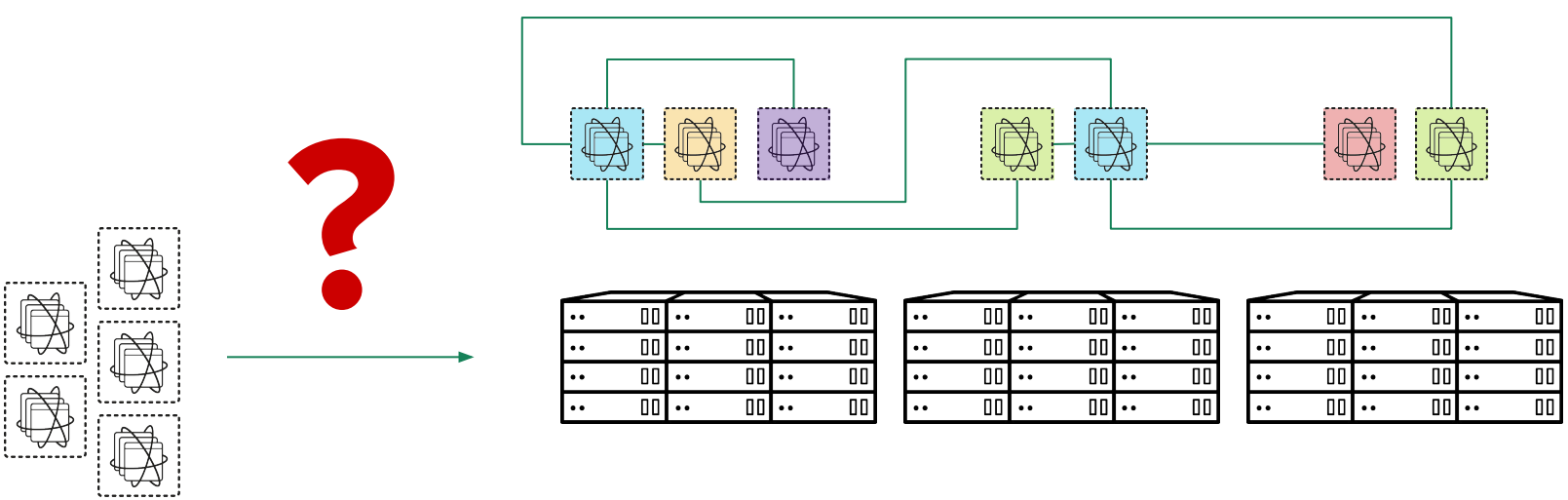
```
$ docker build -t app:v1 .

$ docker run app:v1
```


physical
virtual
private cloud
public cloud

TOOL FACTORY WITH CONTAINERS







WE NEED MORE THAN JUST CONTAINERS

Scheduling
Decide where to deploy containers

Security
Control who can do what

Lifecycle and health
Keep containers running despite failures

Scaling
Scale containers up and down

Discovery
Find other containers on the network

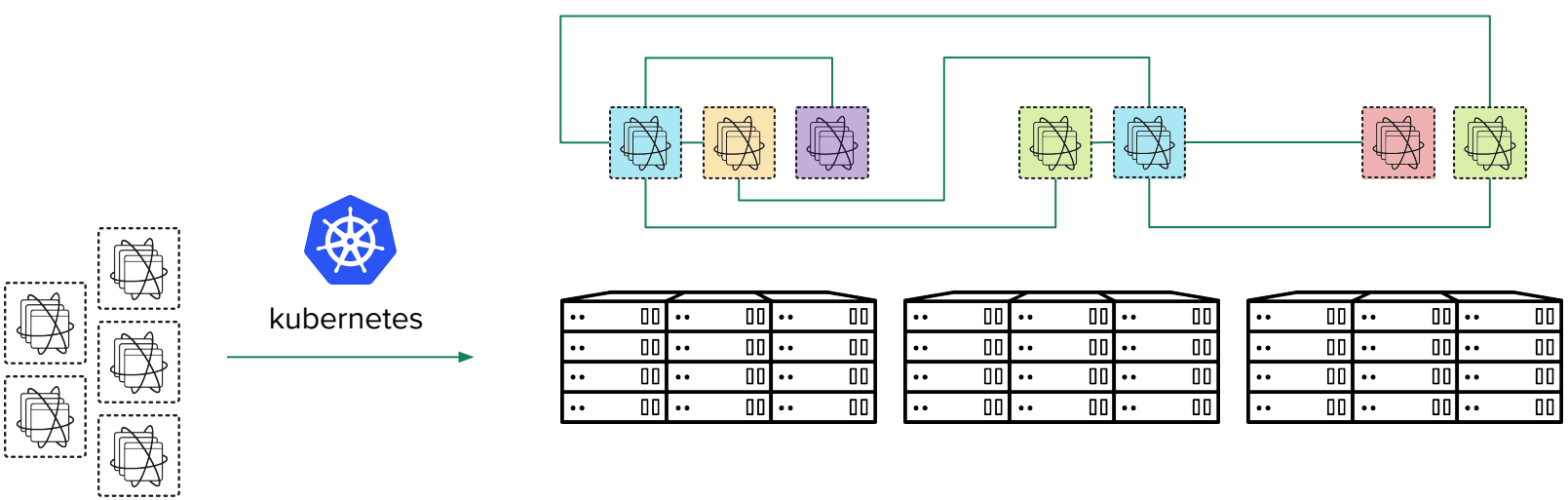
Persistence
Survive data beyond container lifecycle

Monitoring
Visibility into running containers

Aggregation
Compose apps from multiple containers

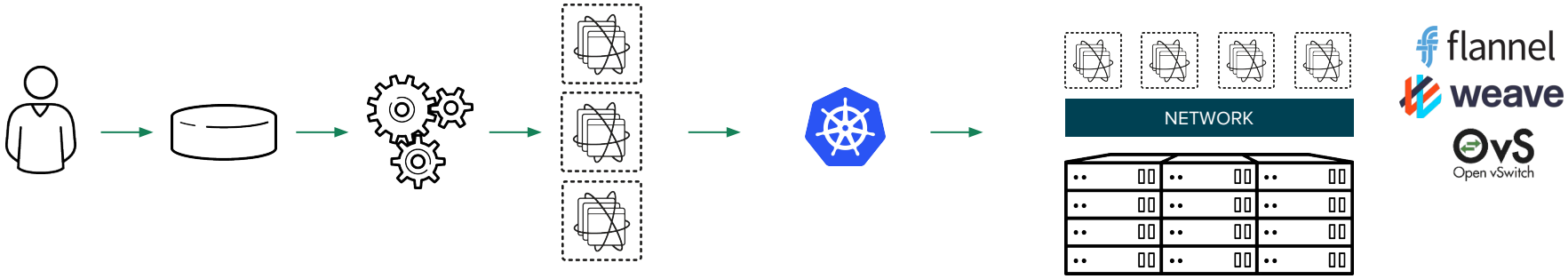
Kubernetes is an open-source system for automating deployment, operations, and scaling of containerized applications across multiple hosts

kubernetes


kubernetes

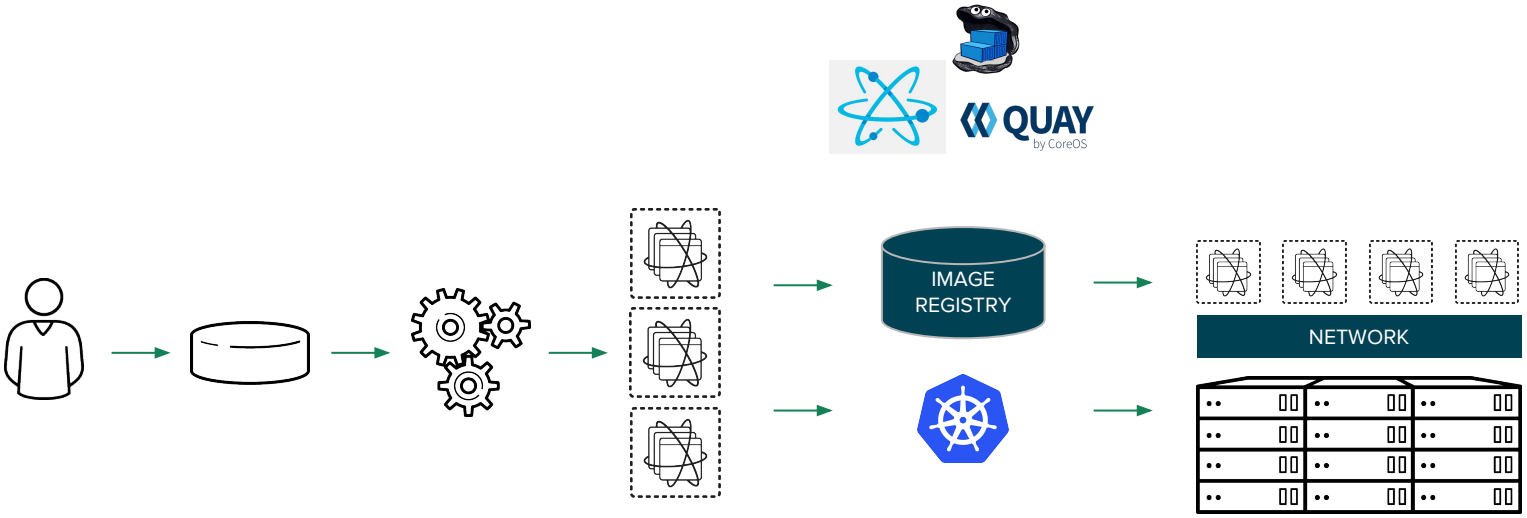
INDUSTRY CONVERGING ON KUBERNETES

DCO PLATFORM WITH CONTAINERS AND KUBERNETES



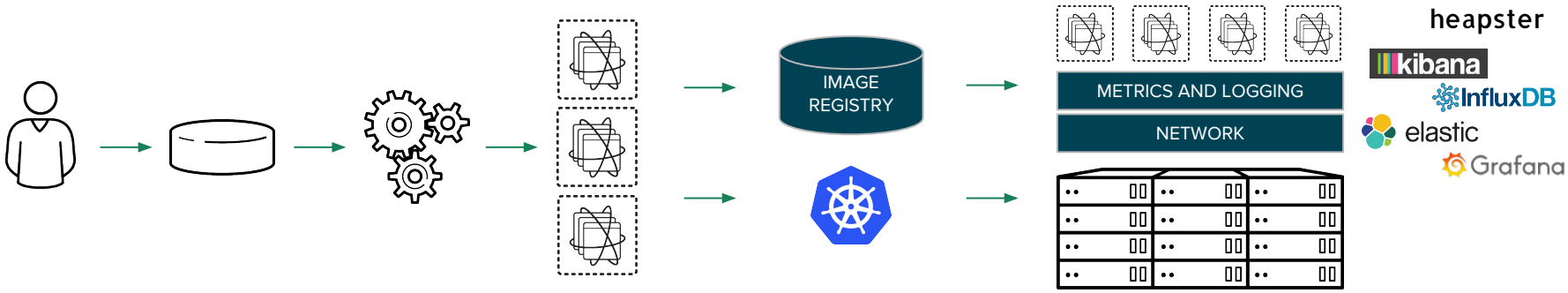
Not enough! Need networking

DCO PLATFORM WITH CONTAINERS AND KUBERNETES



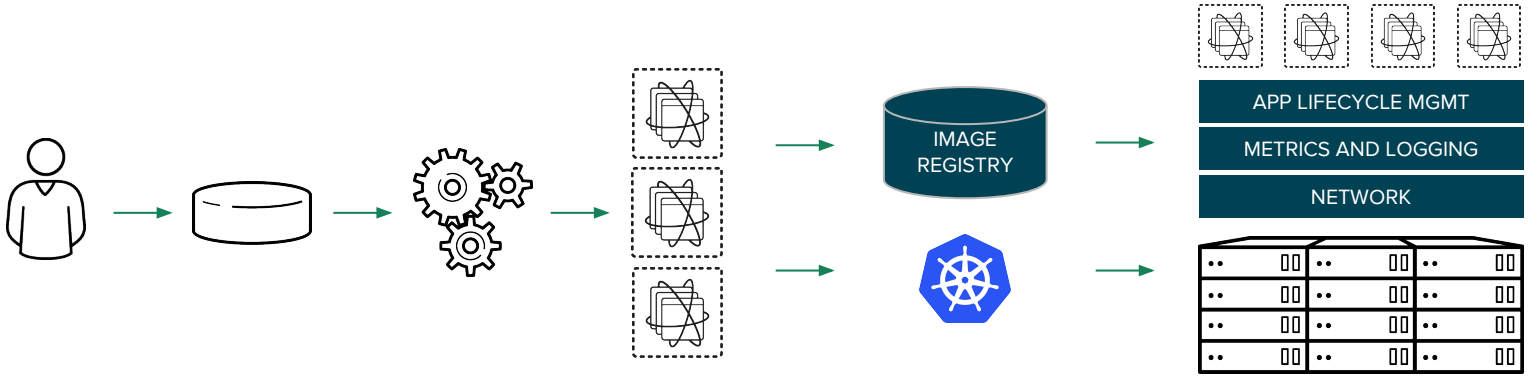
Not enough! Need an image registry

DCO PLATFORM WITH CONTAINERS AND KUBERNETES



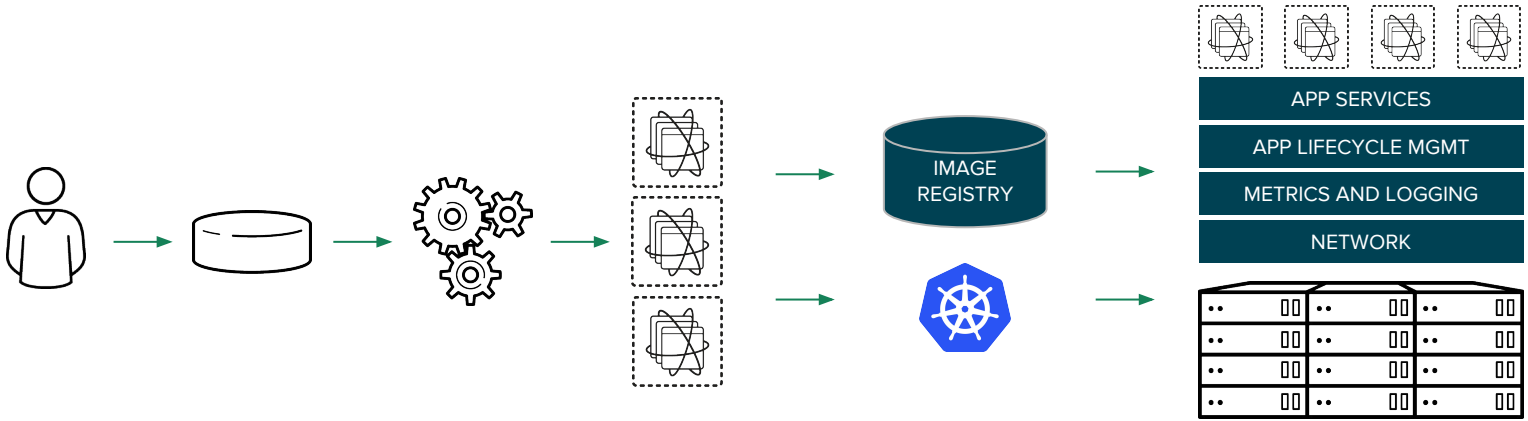
Not enough! Need metrics and logging

DCO PLATFORM WITH CONTAINERS AND KUBERNETES



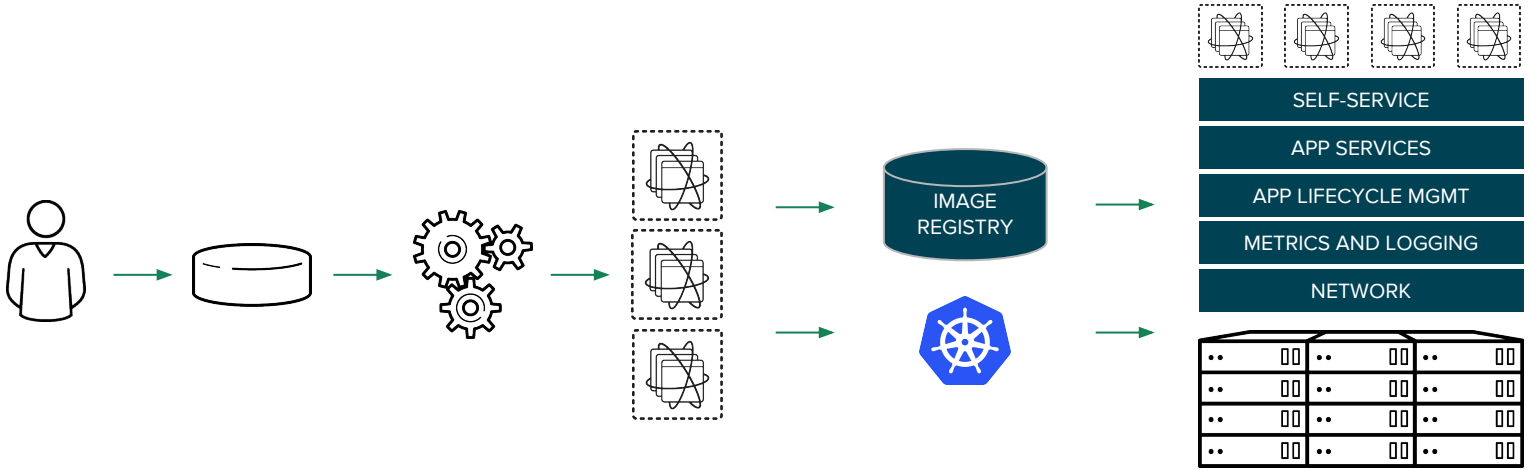
Not enough! Need application lifecycle management

DCO PLATFORM WITH CONTAINERS AND KUBERNETES



Not enough! Need application services e.g. database and messaging

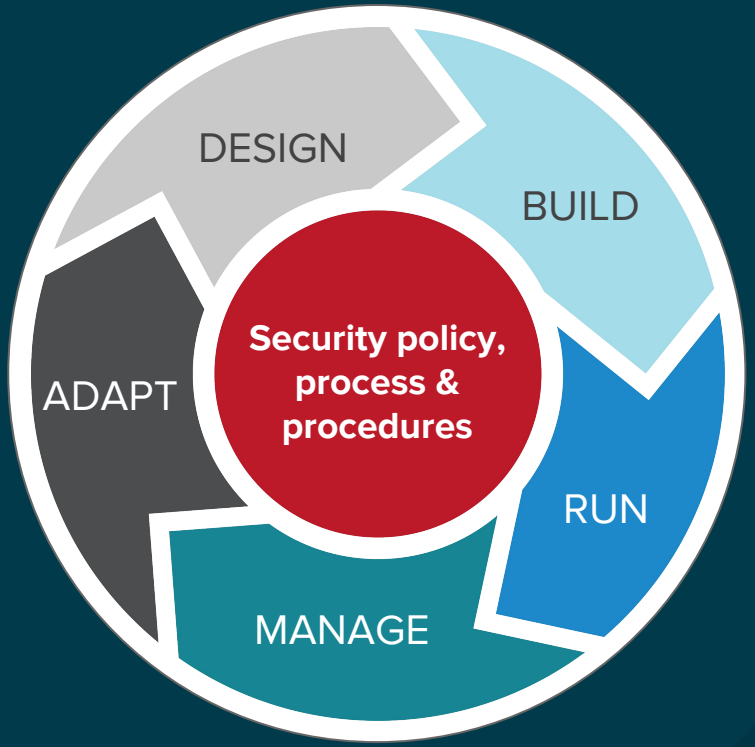
DCO PLATFORM WITH CONTAINERS AND KUBERNETES



Not enough! Need self-service portal

Container application platform based on Docker and Kubernetes for building, distributing and running containers at scale

REMEMBER THIS?



OpenShift for Government Accreditations & Standards

OCTOBER 2016

RHEL7 COMMON CRITERIA
- EAL4+
- Container Framework
- Secure Multi-tenancy

DECEMBER 2016

RHEL7 FIPS 140-2 CERTIFIED
- Data at Rest
- Data in Transport

MARCH 2017

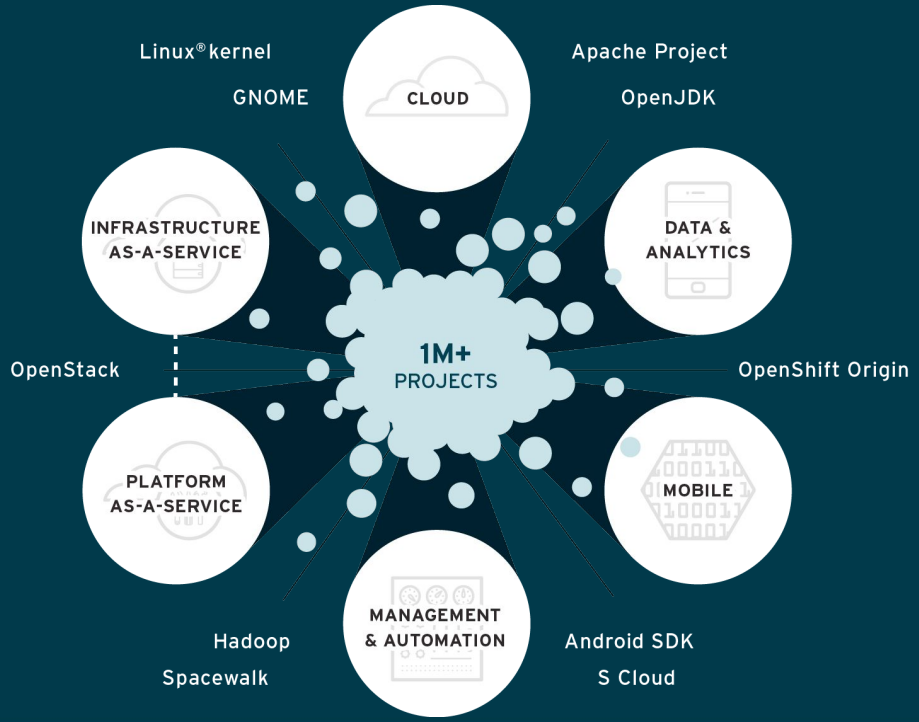
INDUSTRY FIRST: NIST CERTIFIED CONFIGURATION AND VULNERABILITY SCANNER FOR CONTAINER

JUNE 2017

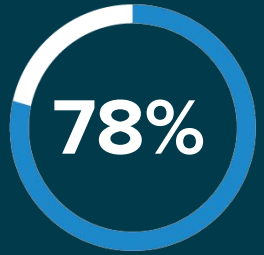
OPENSHIFT BLUEPRINT FOR AZURE
(FedRAMP MODERATE)

WHY OPEN SOURCE?

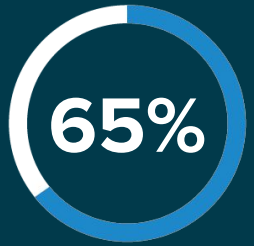
OPEN SOURCE DEVELOPMENT DRIVES RAPID INNOVATION



OPEN SOURCE ADOPTION...SOARING



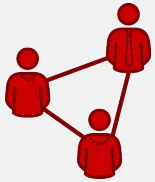
of enterprises run open source. [1]



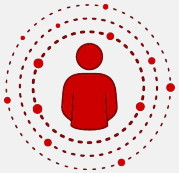
of companies are contributing to open software. [2]

[1] Black Duck Software, 9th Annual Future of Open Source survey, 2015. www.blackducksoftware.com/2015-future-of-open-source
[2] Black Duck Software, 10th Annual Future of Open Source survey, 2016. www.blackducksoftware.com/2016-future-of-open-source

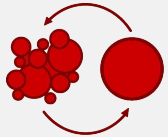
OPEN SOURCE CULTURE



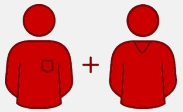
Collaboration



Transparency
(both access and the ability to act)



Shared problems are
solved faster



Working together creates
standardization


WE CAN DO MORE
WHEN WE WORK
TOGETHER

redhat.

THANK YOU

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