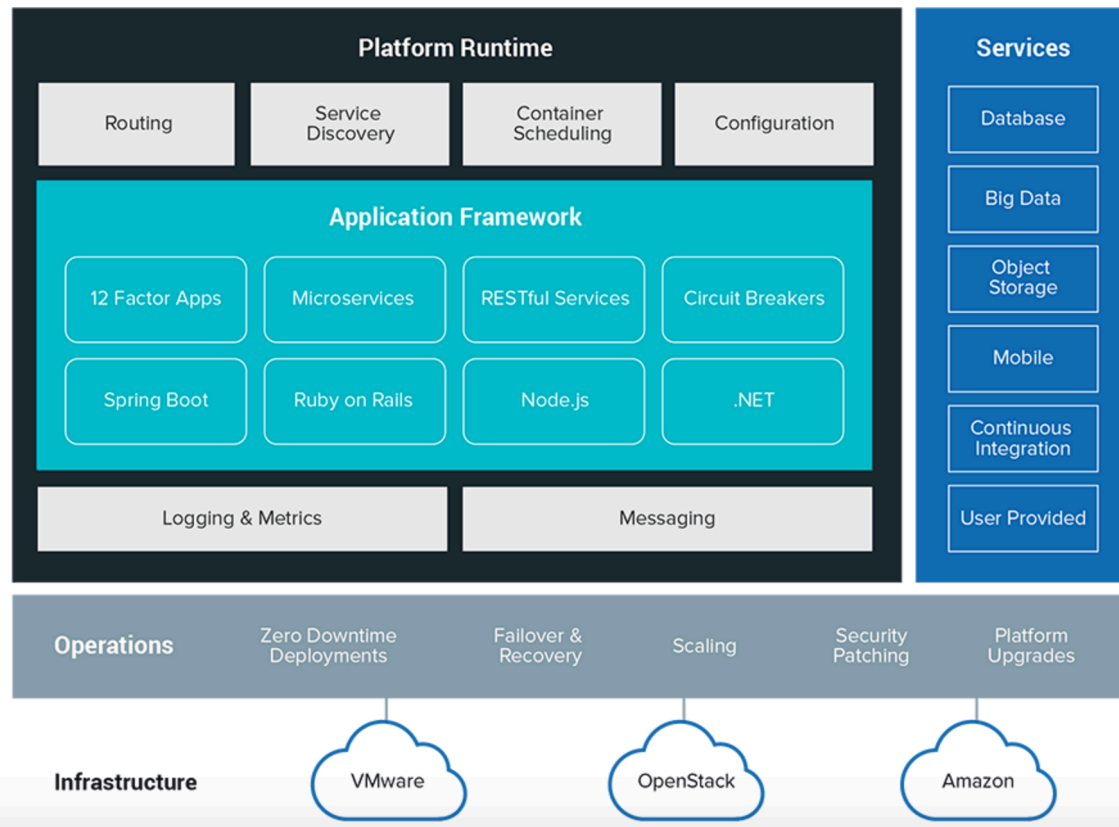


Pivotal Cloud Foundry

Technical Overview

Vivian Fialho – Platform Architect
vfialho@pivotal.io

Pivotal Cloud Foundry Architecture



Elastic Runtime

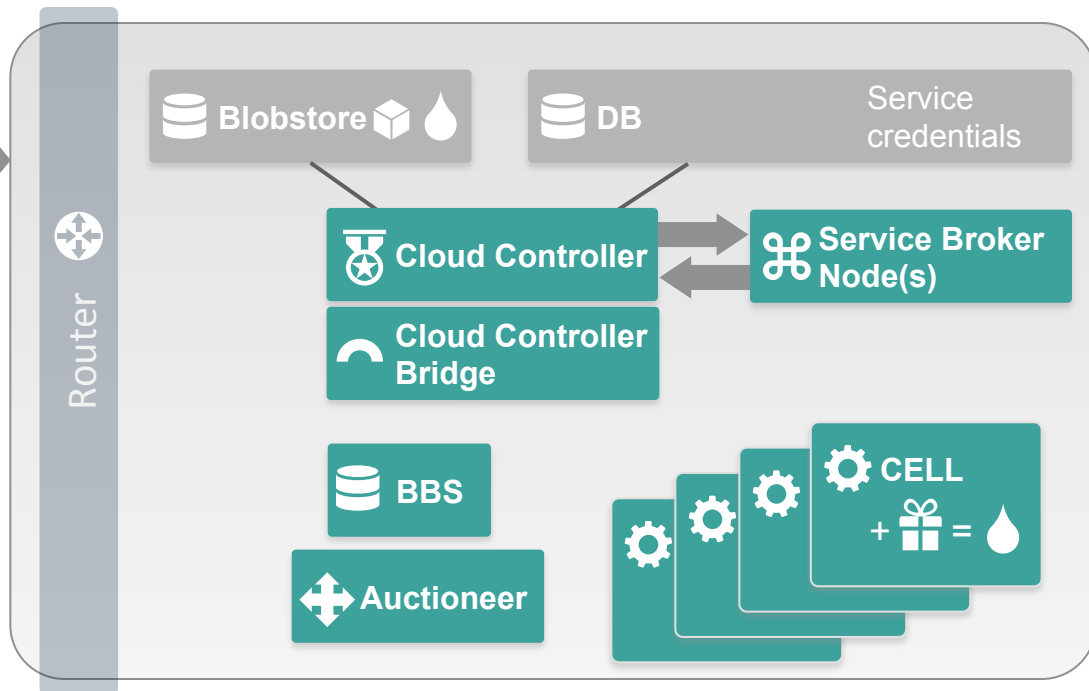
Technical Drill Down

Overview: Deploying *App* to Cloud Foundry *Runtime*

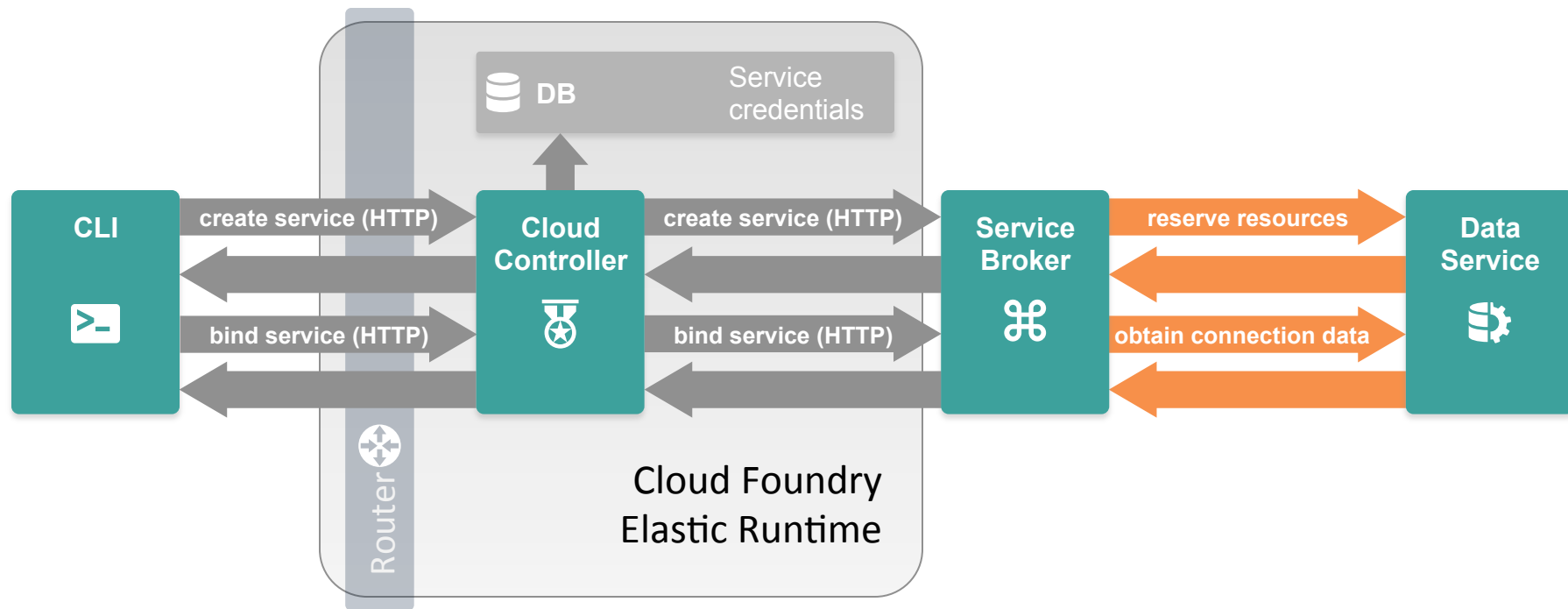
- ① Upload app bits and metadata
- ② Create and bind services
- ③ Stage application
- ④ Deploy application
- ⑤ Manage application health



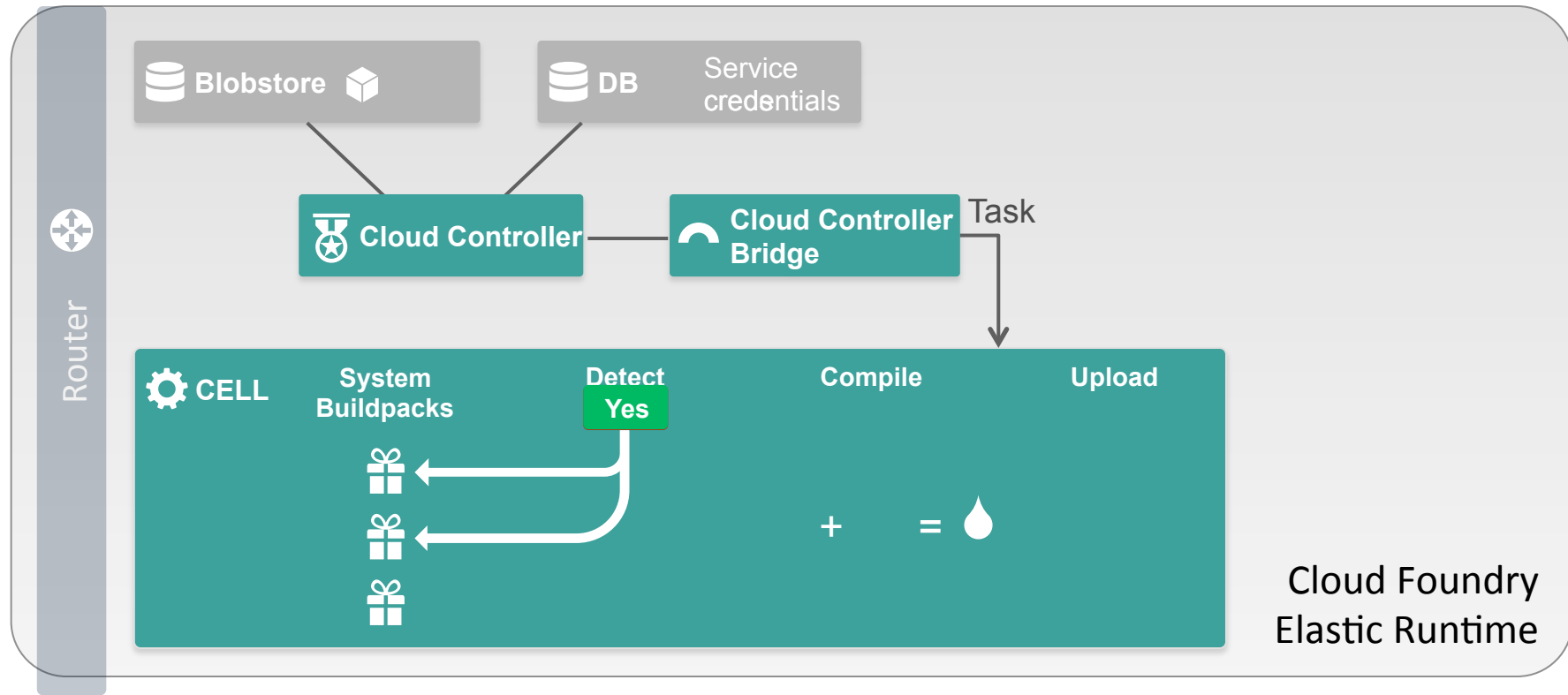
push app
+ app MD



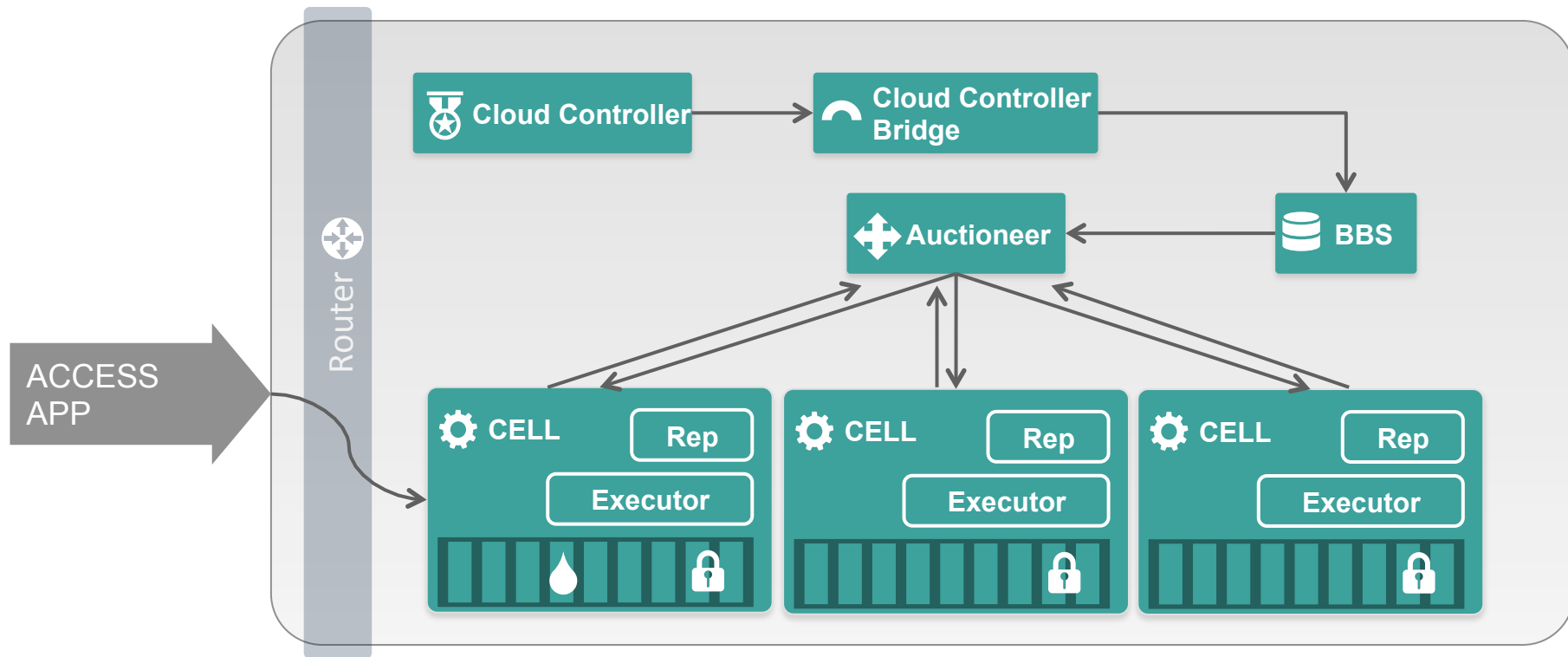
Creating and Binding a *Service*



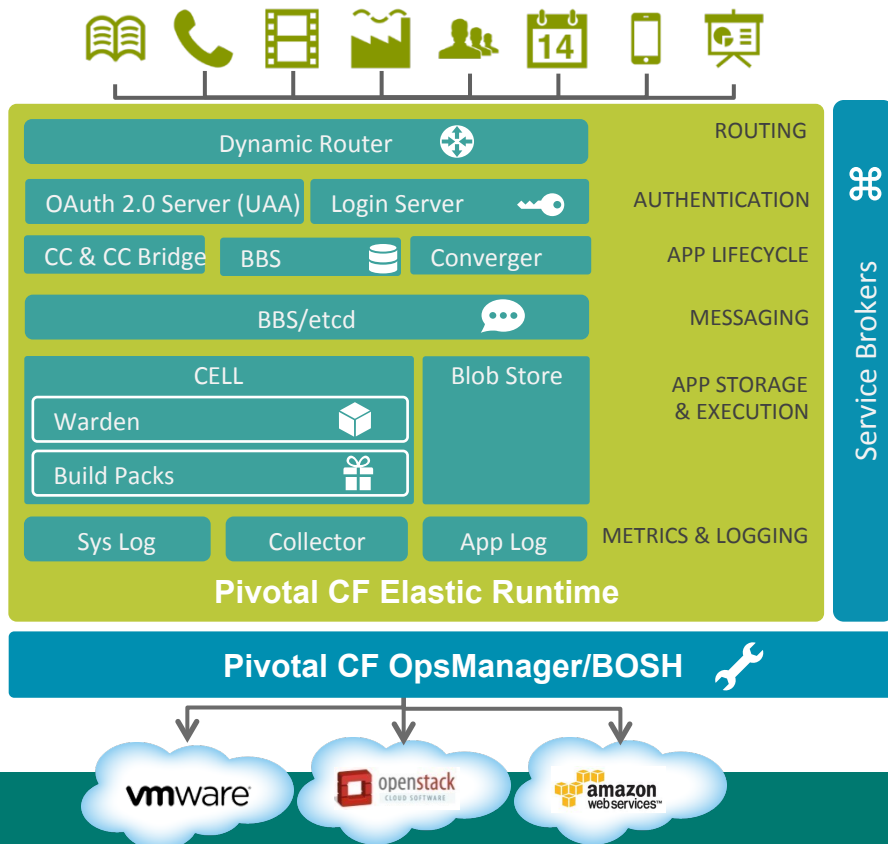
Stage an *Application*



Deploying an *Application*



Elastic Runtime High Level Architecture

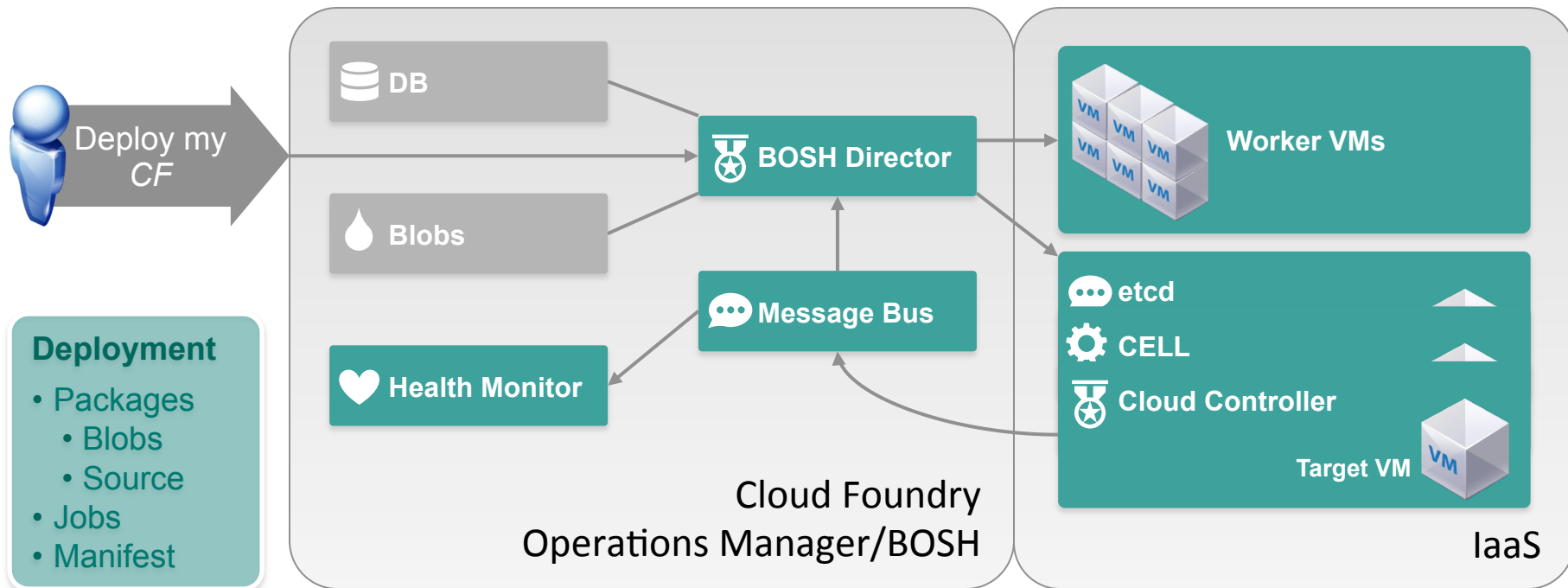


- Turnkey, fully automated Platform-as-a-Service
- Scalable runtime environment, extensible to most modern frameworks and languages running on Linux
- Instant expansion or upgrade with no downtime
- Deploy, scale and manage applications with bindable services using simplified semantics and APIs

BOSH

Overview

Deploying the CF Runtime with Cloud Foundry *BOSH*

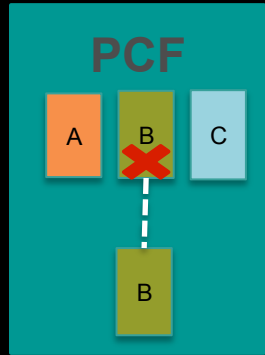


Four levels of HA

Built in!

How Pivotal CF enables four layers of HA

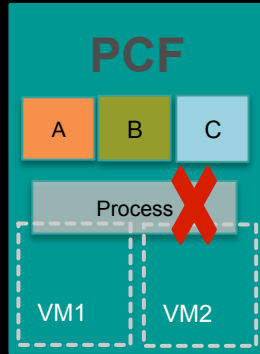
1.



If an app fails, PCF reboots app in a new container.

App Fail

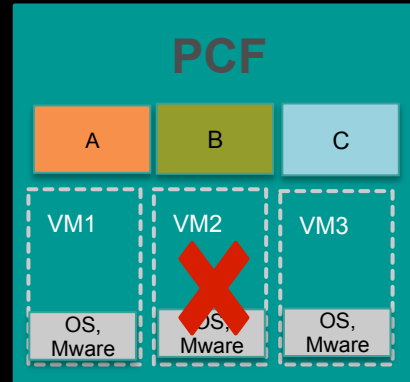
2.



If a process fails, PCF restarts the process

Process Fail

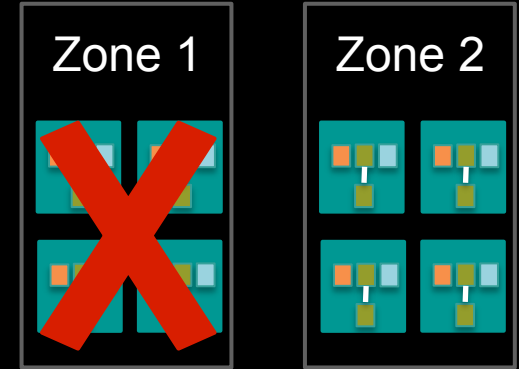
3.



If an **OS or network failure** occurs PCF kills the VM and reboots the host in a new Virtual machine.

VM Fail

4.

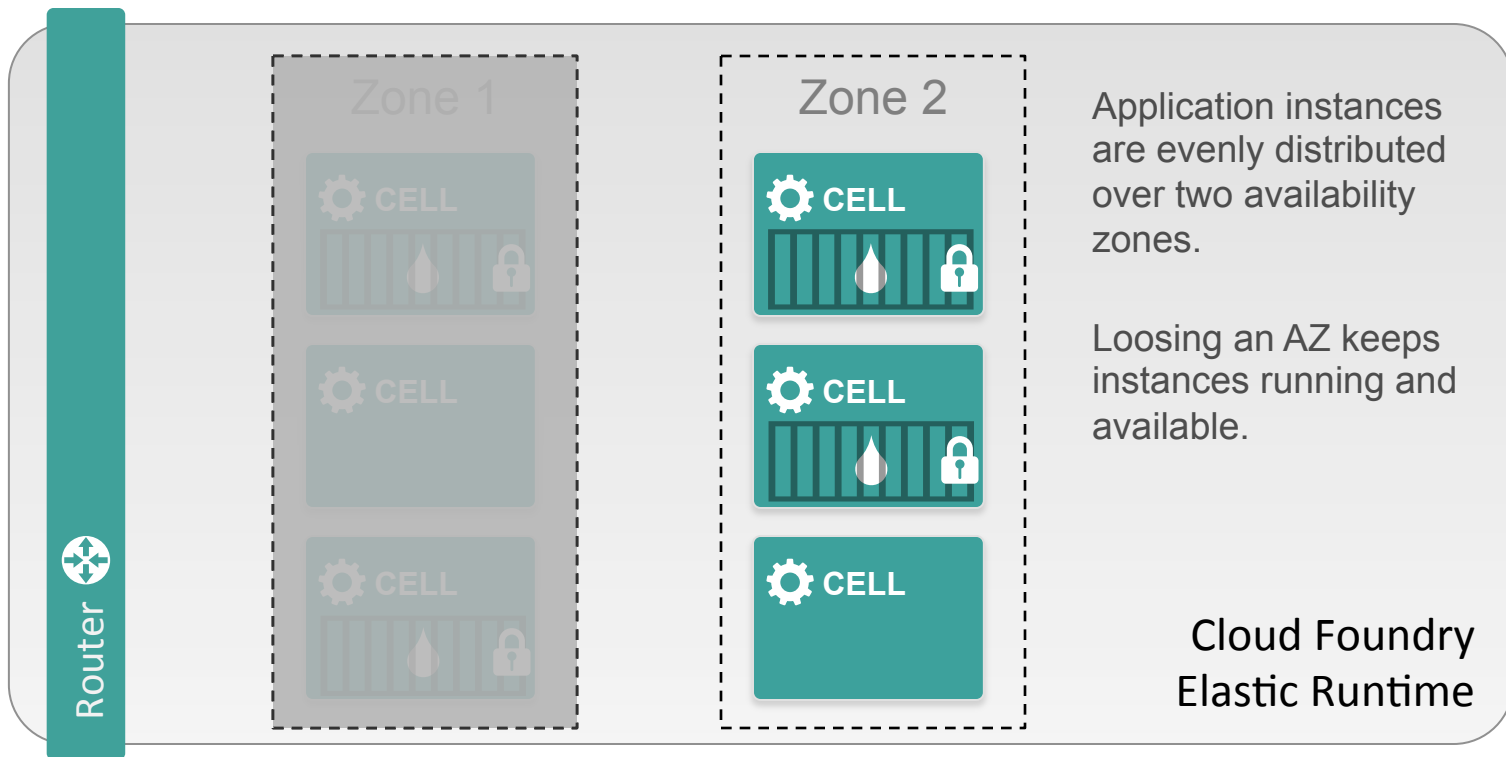


If a **datacenter rack fails**, PCF ensures applications stay running in multiple availability zones

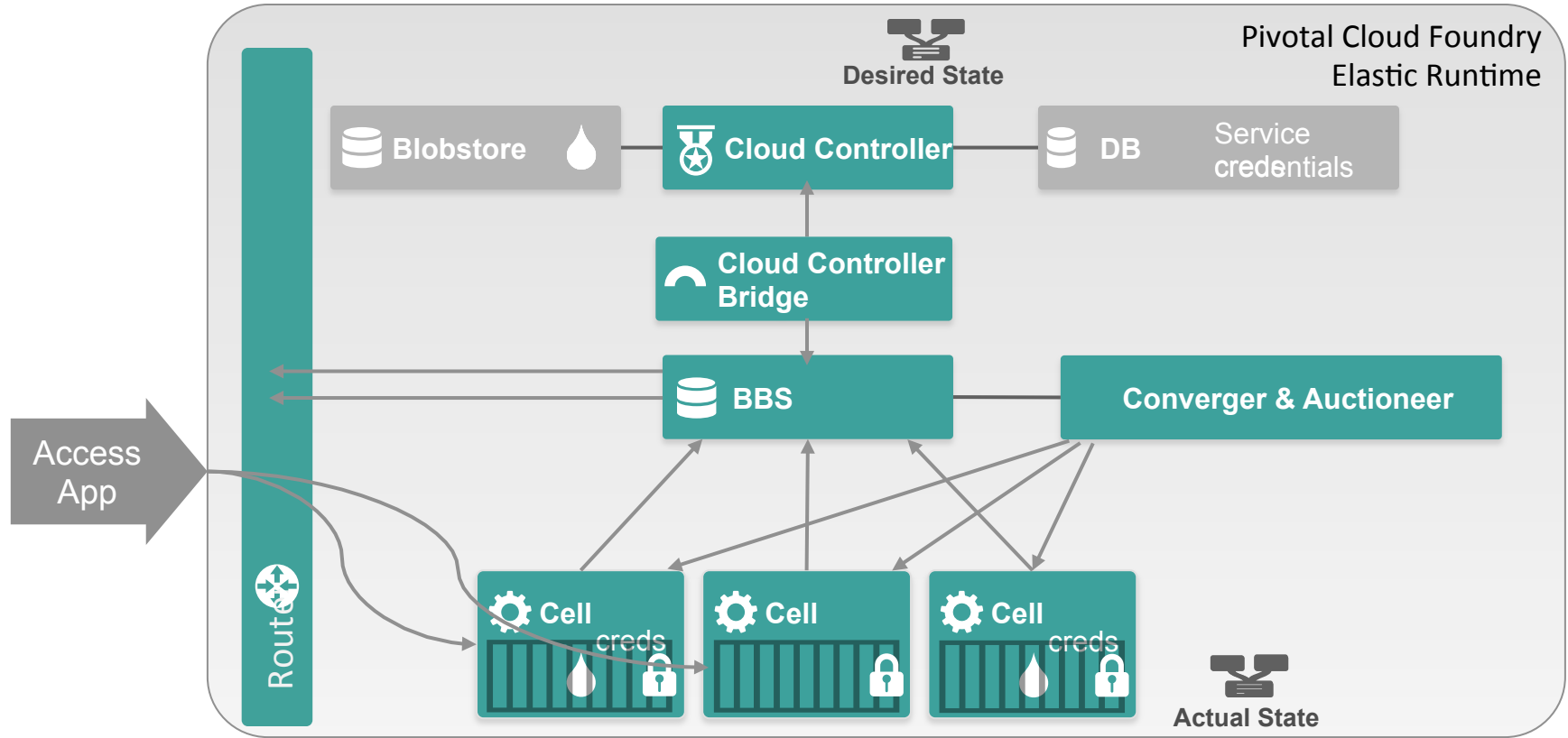
Rack Fail

Pivotal

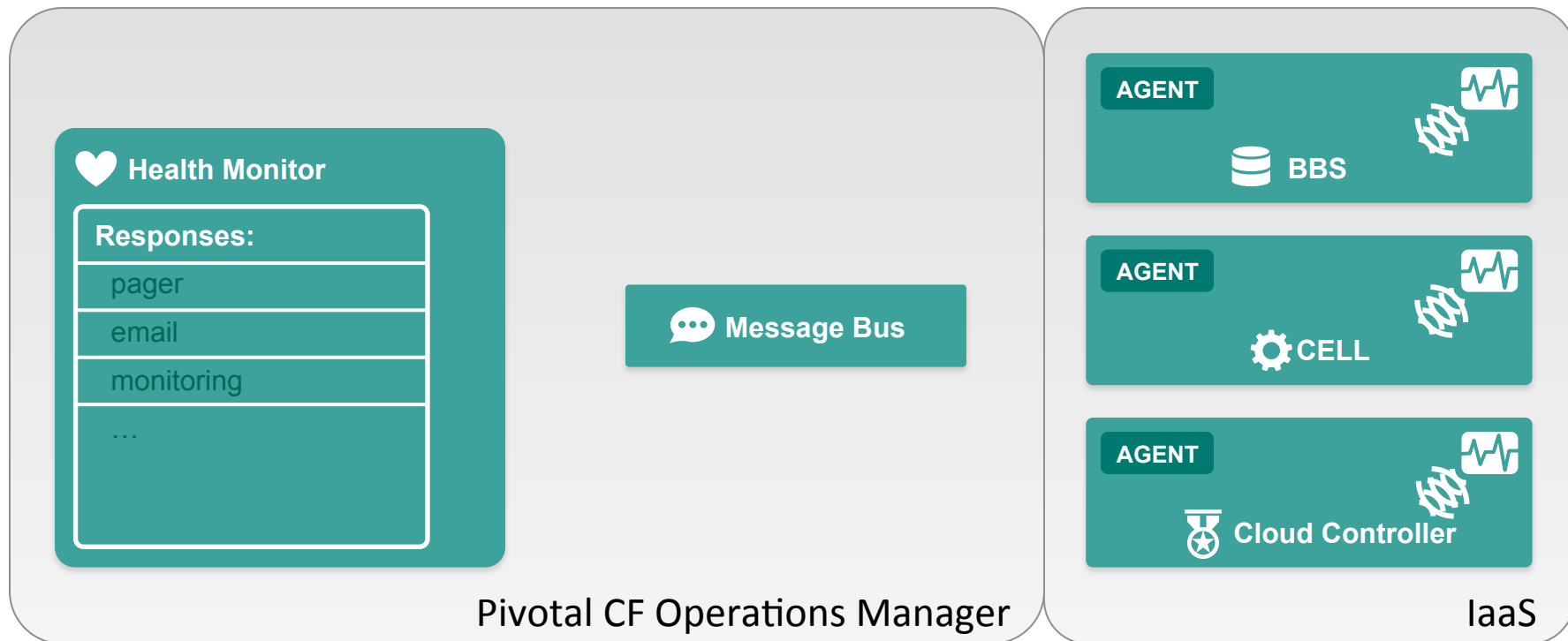
Application Instances and Availability Zones



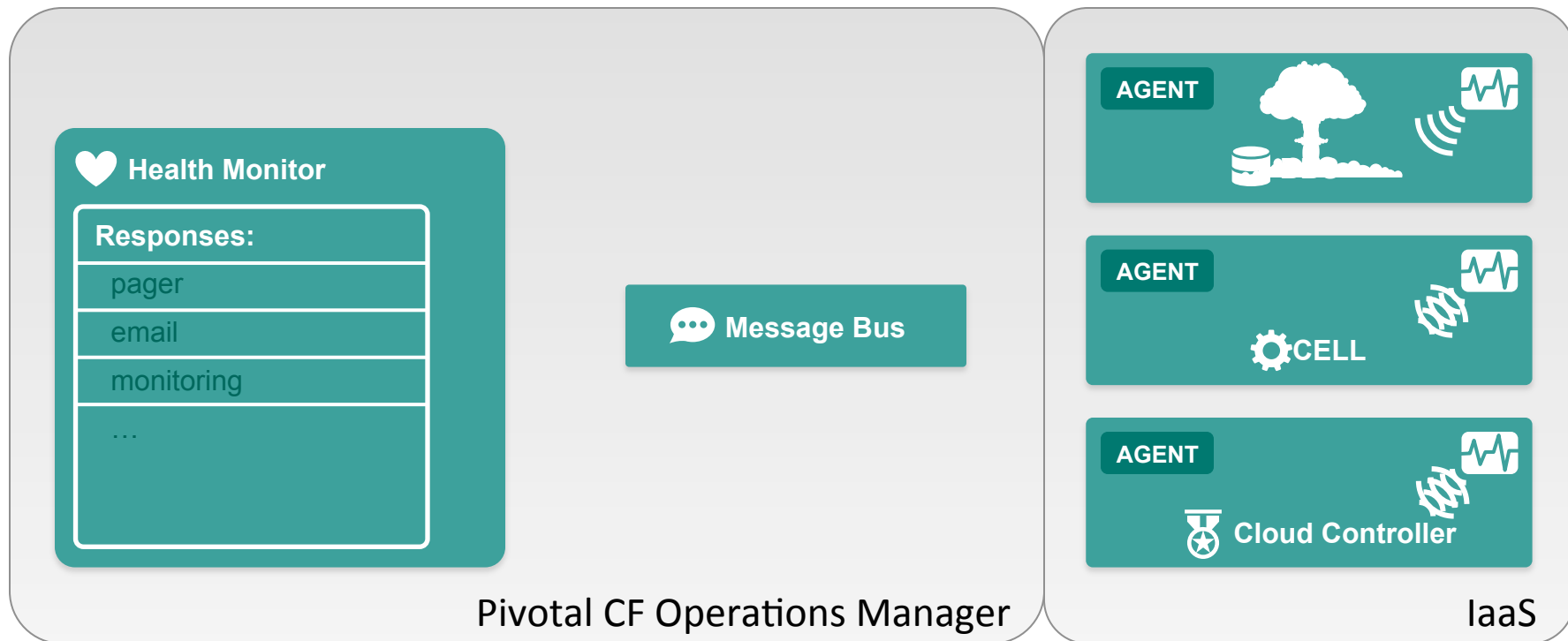
Failed *Application* Instances Replaced



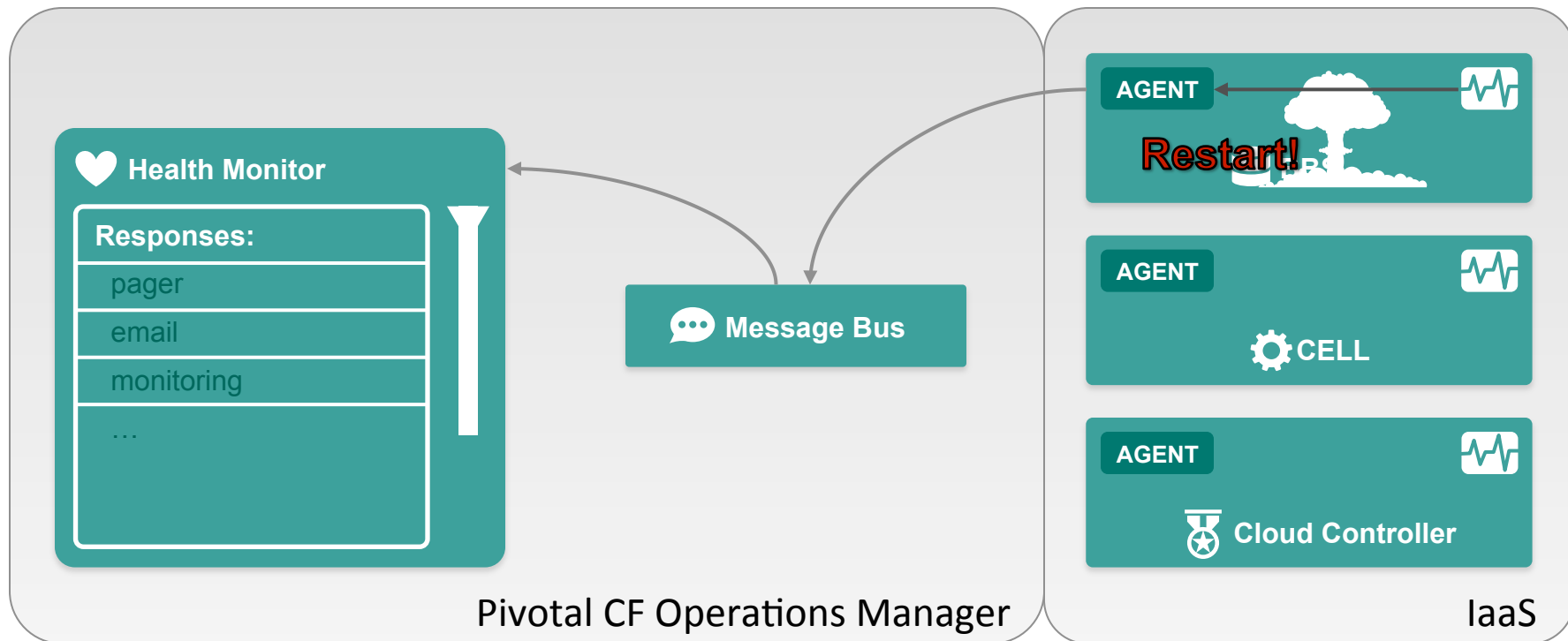
ERS Processes are Monitored



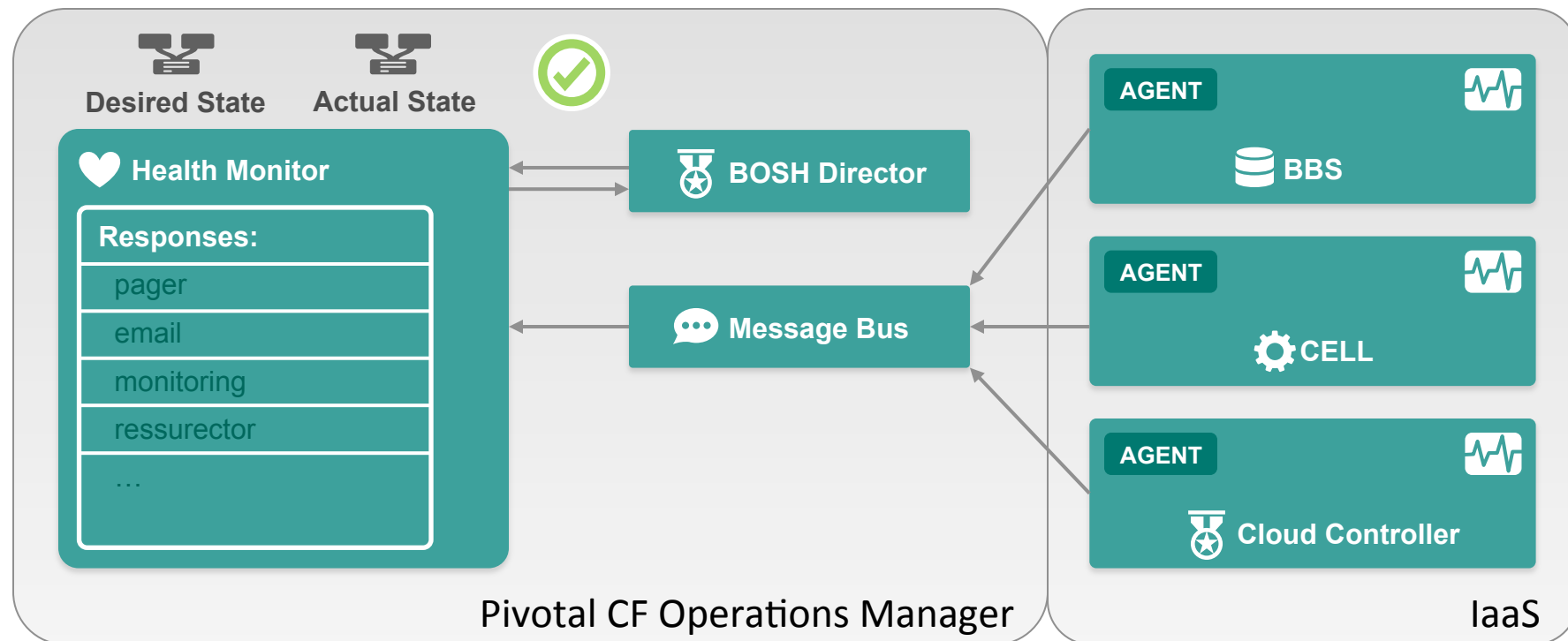
ERS Processes are Monitored



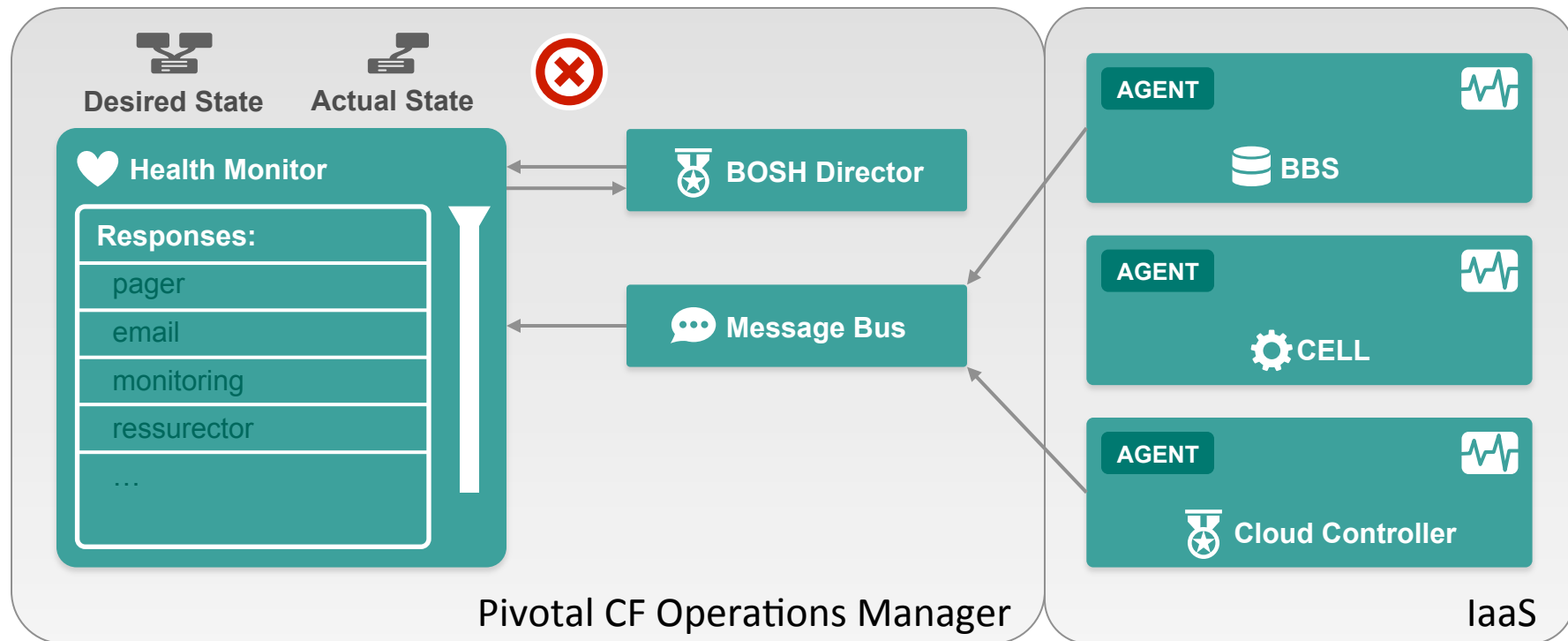
ERS Processes are Monitored



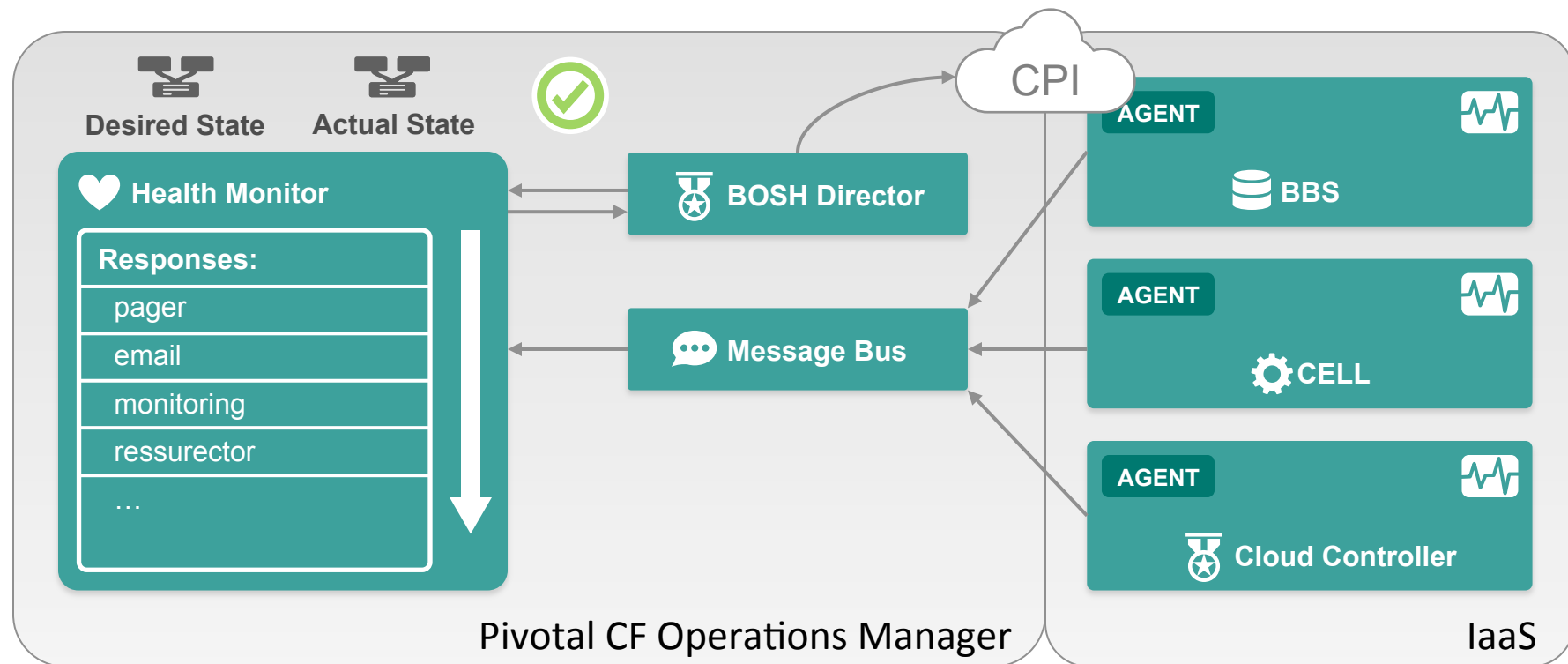
VMs are Monitored



VMs are Monitored



VMs are Monitored



Pivotal CF: Technical Capabilities

Automatic App Server &
OS Configuration
with Buildpacks
(*"just push your app"*)



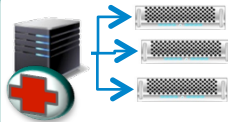
Application
Containerization &
Cluster Scheduling



Application
Network Security
Groups



Application to
Services
Binding and
Access



App Health
Management, Load
Balancing,
Rapid Scaling,
Availability Zones



Policy, Identity and
Roles Management

Native & Extended
Data, Mobile and
Platform Services



IaaS Provisioning, Scaling
& Configuration



Logging as a service,
Application metrics &
performance,
Metric based scaling

Deploy, Operate, Update & Scale with minimal downtime on choice of IaaS



vmware



Pivotal

Pivotal

BUILT FOR THE SPEED OF BUSINESS