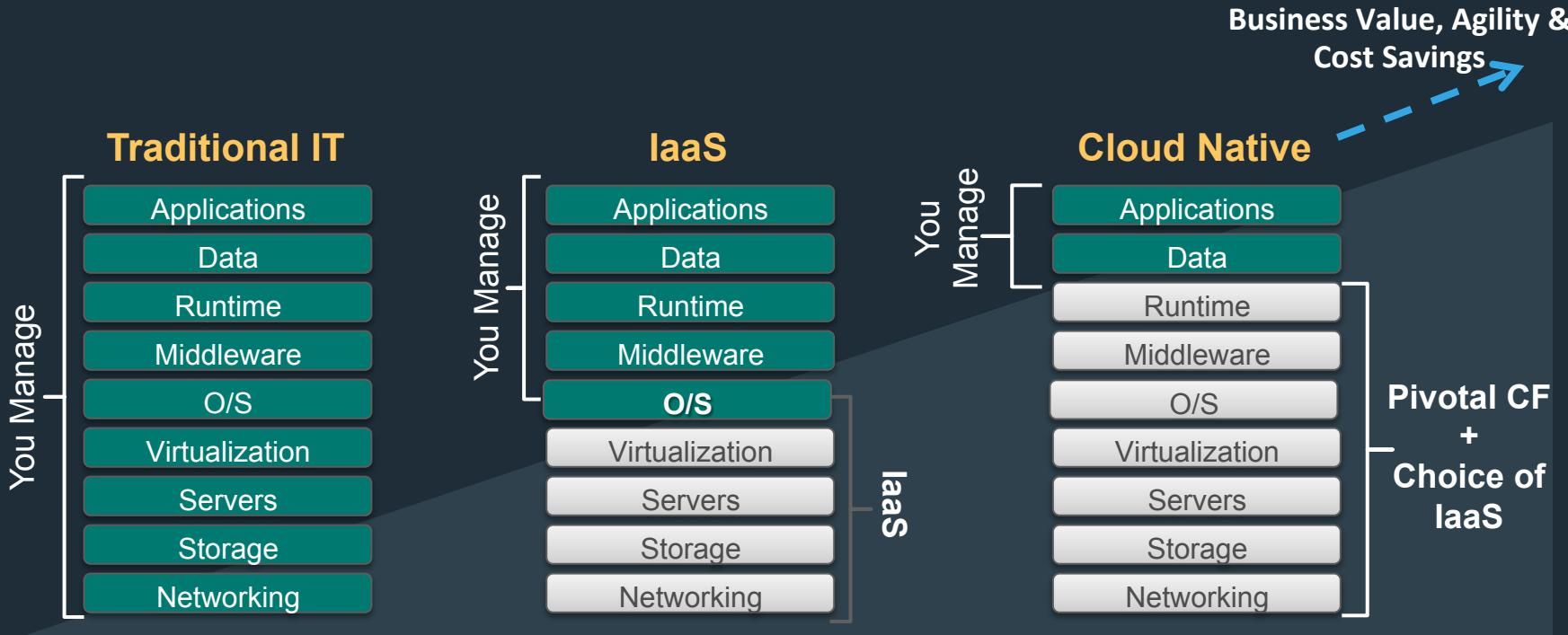


Pivotal Cloud Foundry

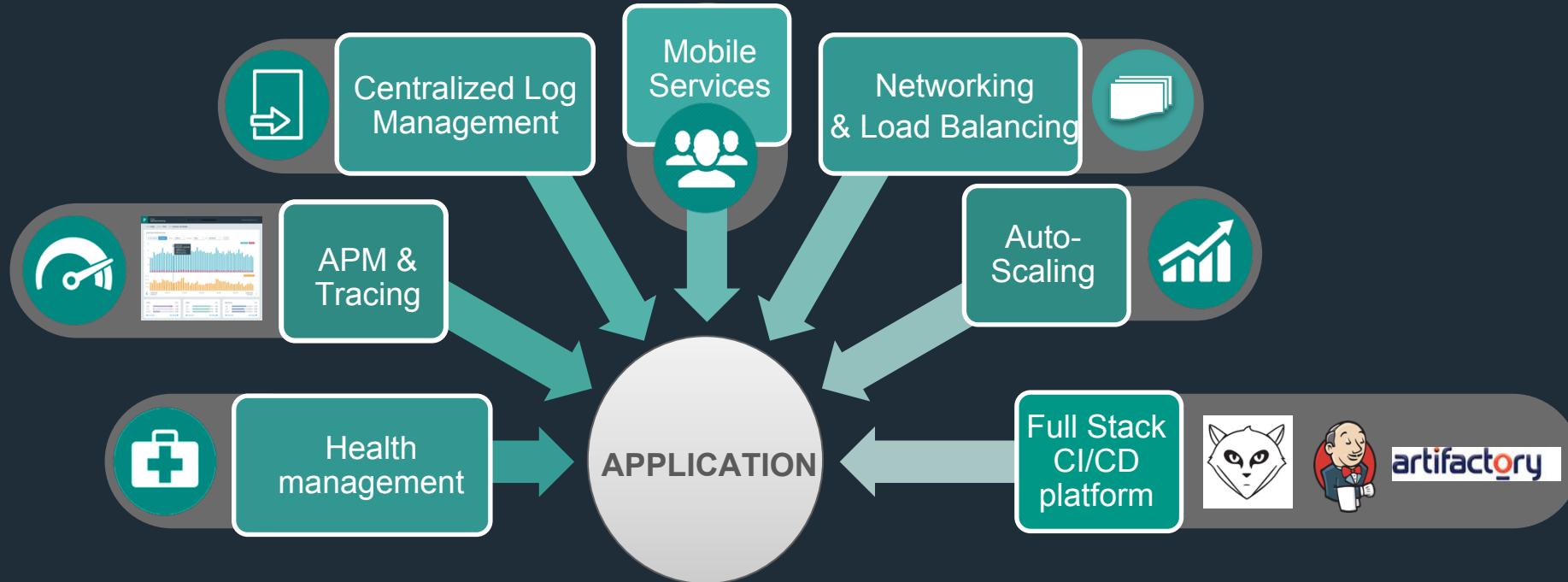
Architecture & Operations

Vivian Fialho / Platform Architect
vfialho@pivotal.io

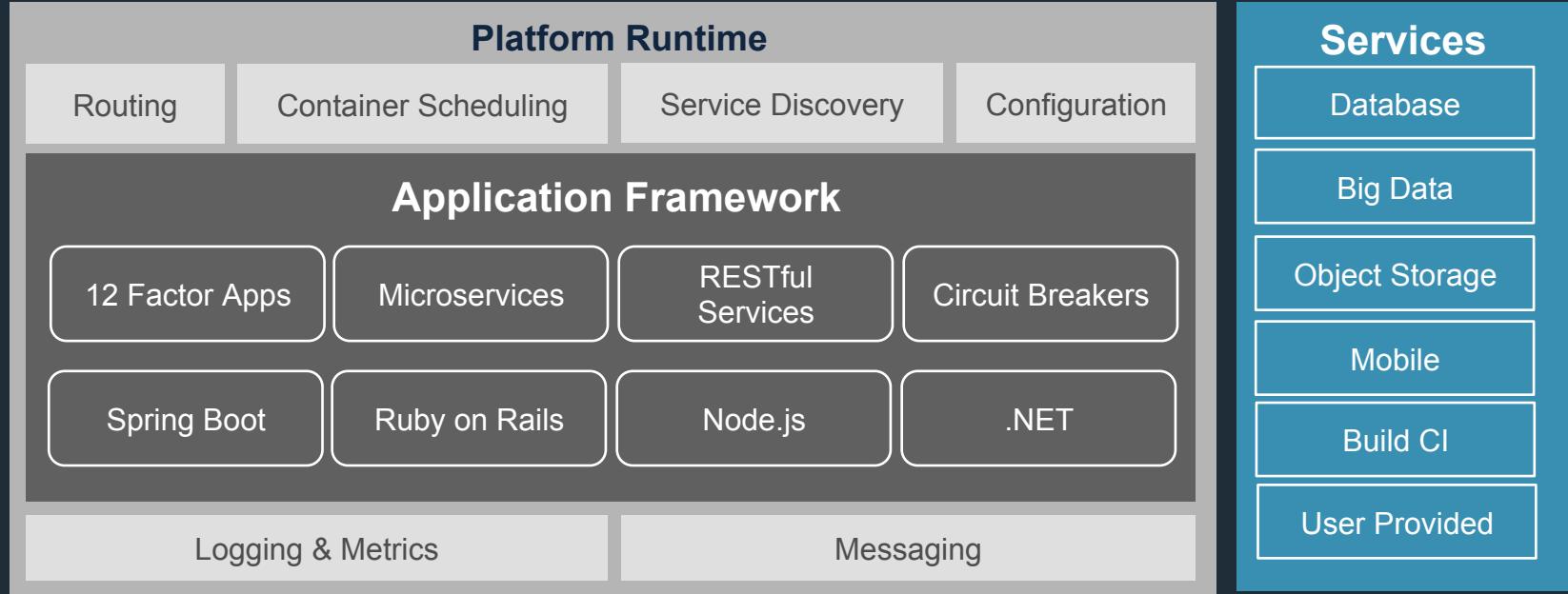
The Cloud Platform Evolution



Cloud Foundry: An Application-centric Platform



Pivotal Cloud Foundry at a Glance



Operations

Zero Downtime
Deployments

Failover &
Recovery

Scaling

Security
Patching

Platform
Upgrades



Pivotal™

Applications/APIs/Microservices



Compiled, staged, containerized, deployed and managed by platform
Java | .NET | Ruby | Node.js | Python | PHP | Go



Pre-packaged container deployed and managed by platform

PCF Tools

- Apps Manager UI (App Admin UI)
- CLI
- REST APIs
- PCF Metrics Dashboard

PCF Elastic Runtime

Automated, Polyglot Build/Package/Deploy

Container Scheduling

Elastic (Auto)Scale

Integrated Logging/Metrics* (Application & Platform)

Dynamic Routing & Extensible Route Services

Dev + Ops Role-Based Self-Service Access

Security (Application & Platform)

Self-Healing & High Availability (Application & Platform)

Zero Downtime Upgrades & Patches (Application & Platform)

Ops Manager UI (Cloud Admin UI)

Infrastructure Automation (BOSH)

Infrastructure Agnostic Software Packaging

Multi-Cloud Orchestration of Infrastructure Provisioning

Distributed Software Configuration and Health/Lifecycle Management

Infrastructure

VMware vSphere + Photon

OpenStack

Microsoft Azure

Google Cloud Platform

Amazon Web Services

BOSH Managed Services



MySQL



Gemfire



Redis



RabbitMQ



Spring Cloud Services



Single Sign On



Mobile Push Notifications



mongoDB



GitLab



Dingo PostgreSQL

PIVOTAL

PARTNER

Brokered Services



Greenplum DB



HDB

...



APP DYNAMICS



...

Oracle DB

MS SQL Server

Active MQ

IBM DB/2

...

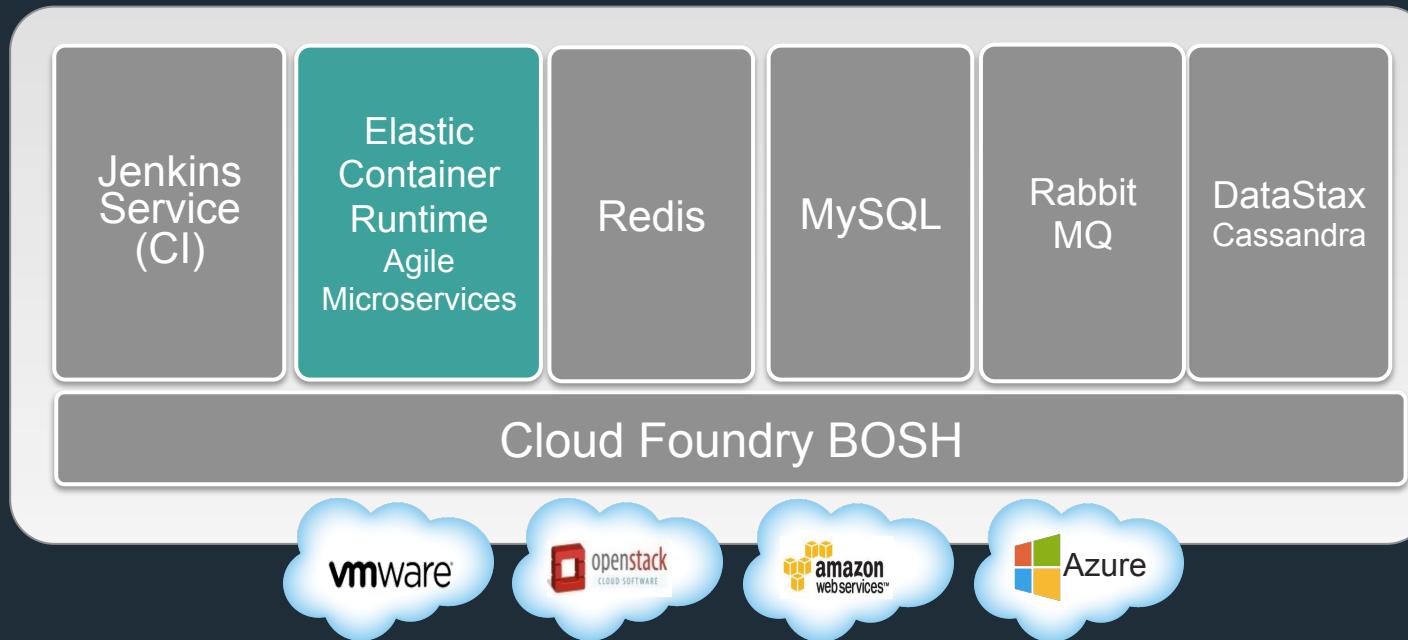


DEMO

CF

The Whole Stack

A Multi-Cloud 3rd Platform: Cloud Foundry



Elastic managed runtime service integrated into leading data services; all scaled and managed by CF BOSH

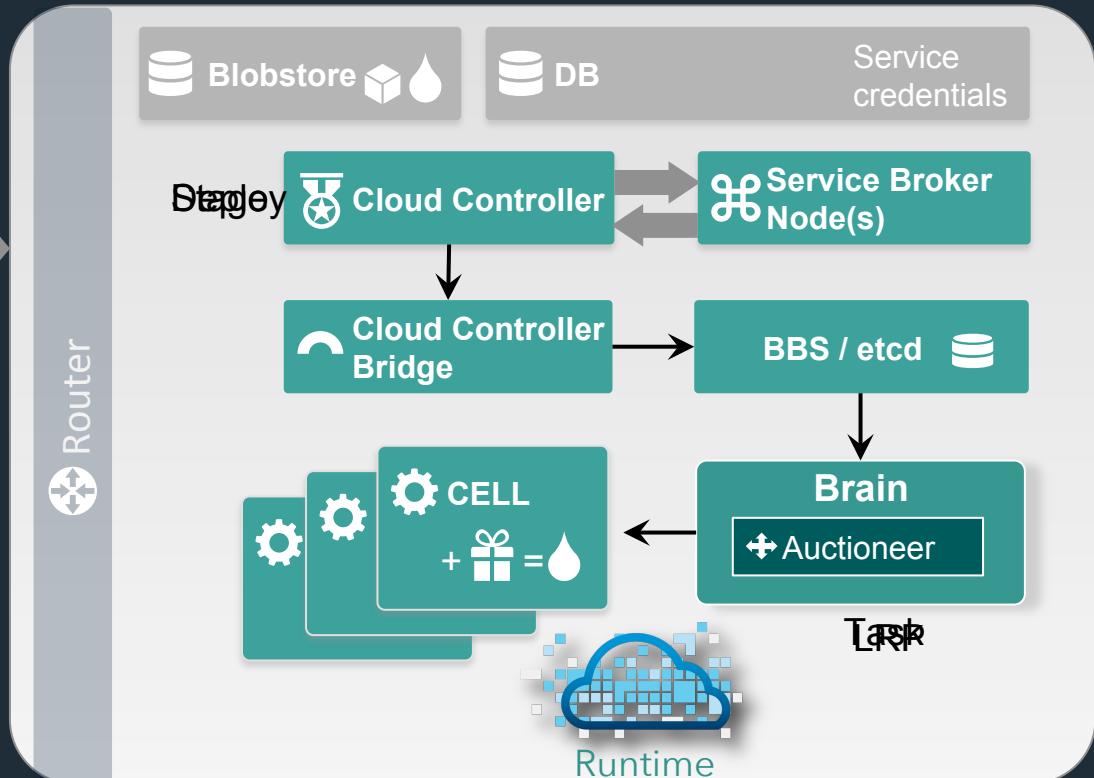
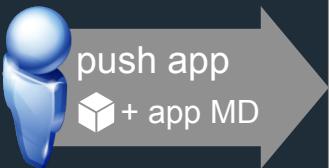
Multi-Cloud Declarative Service Deployment, Operations

Elastic Container Runtime

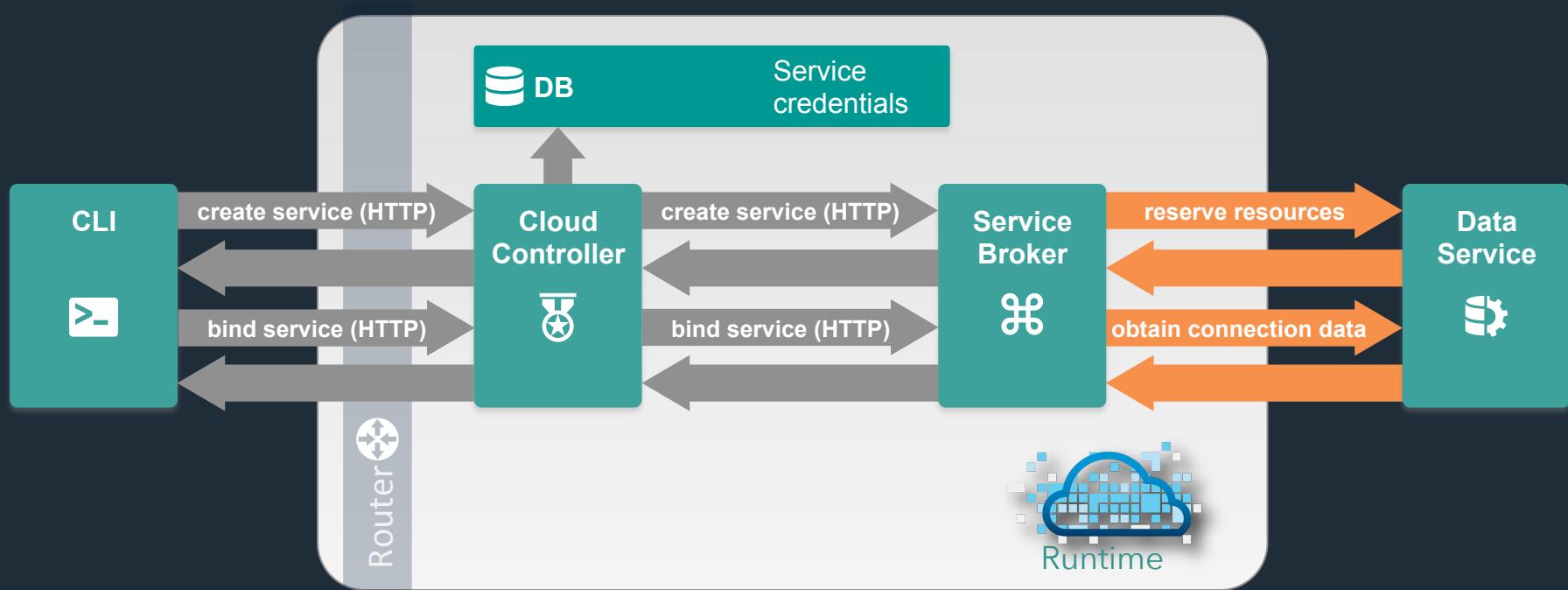
Technical Drill Down

Overview: Pushing an Application

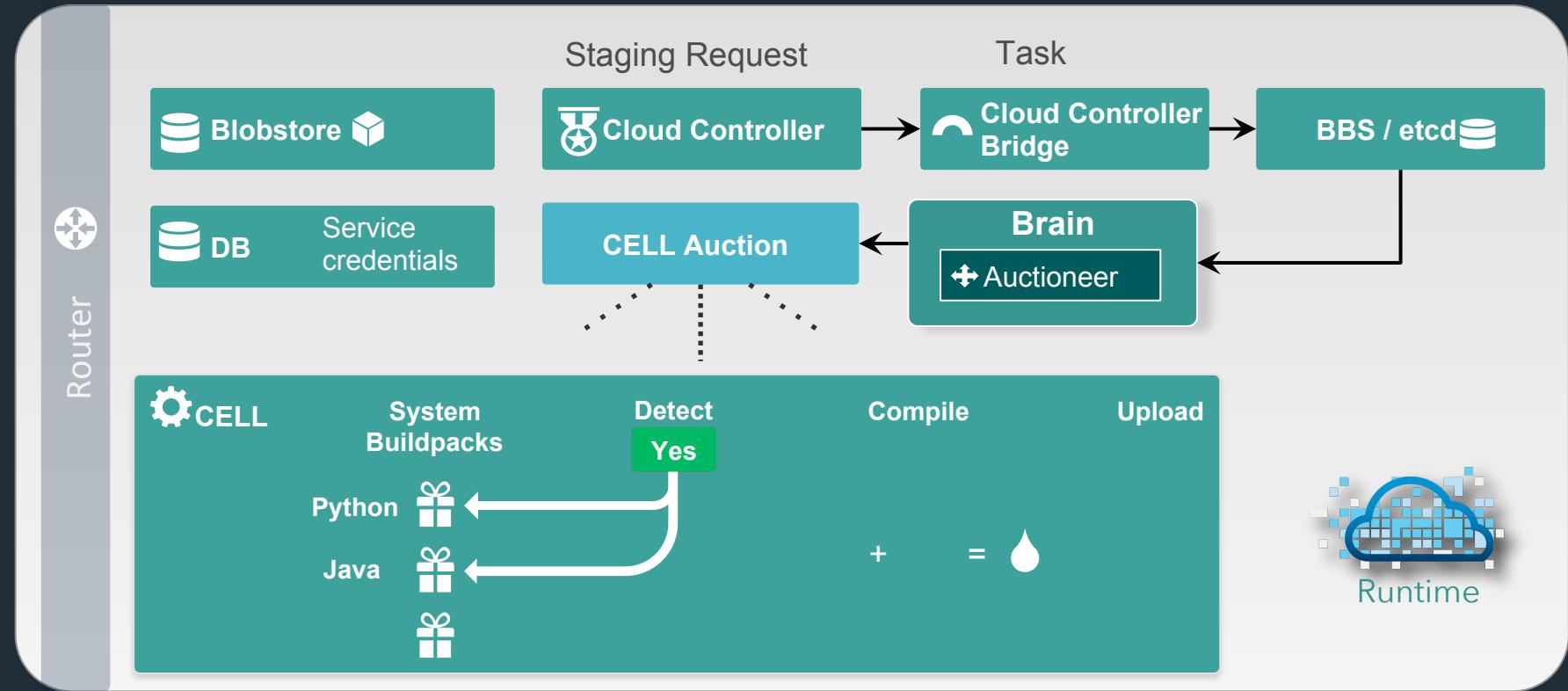
- ① Upload app bits and metadata
- ② Create and bind services
- ③ Stage application
- ④ Deploy application
- ⑤ Manage application health



Creating and Binding a Service

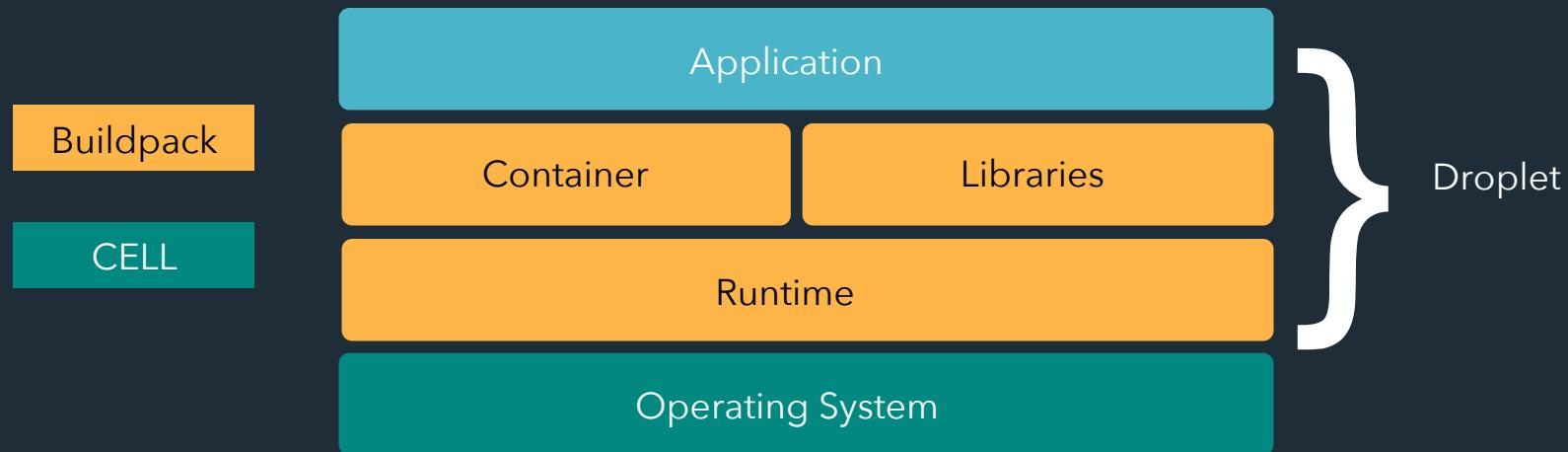


Staging an Application



Staging and Buildpacks

Buildpacks are responsible for preparing the machine image for an application.



Buildpack Flavors

Buildpacks installed into a Cloud Foundry instance or loaded from an external location at app deployment time

Buildpacks provided by public Cloud Foundry

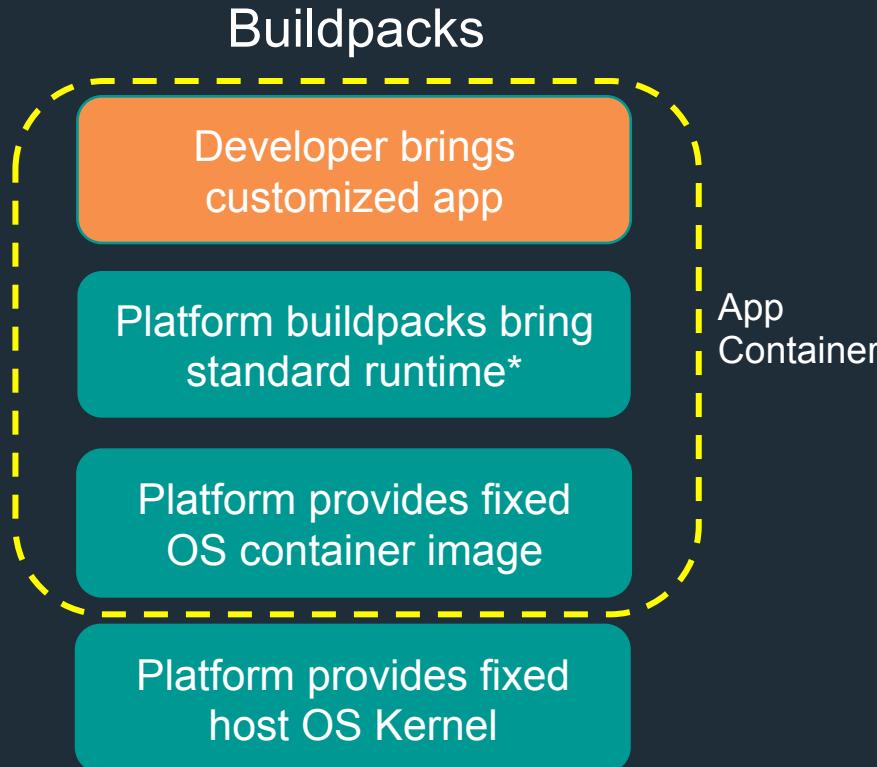
- Java
- Ruby
- Node.js
- Binary
- Go
- Python
- PHP
- Staticfile

[Java Buildpack](#)

[Cloud Foundry Community Buildpack](#)

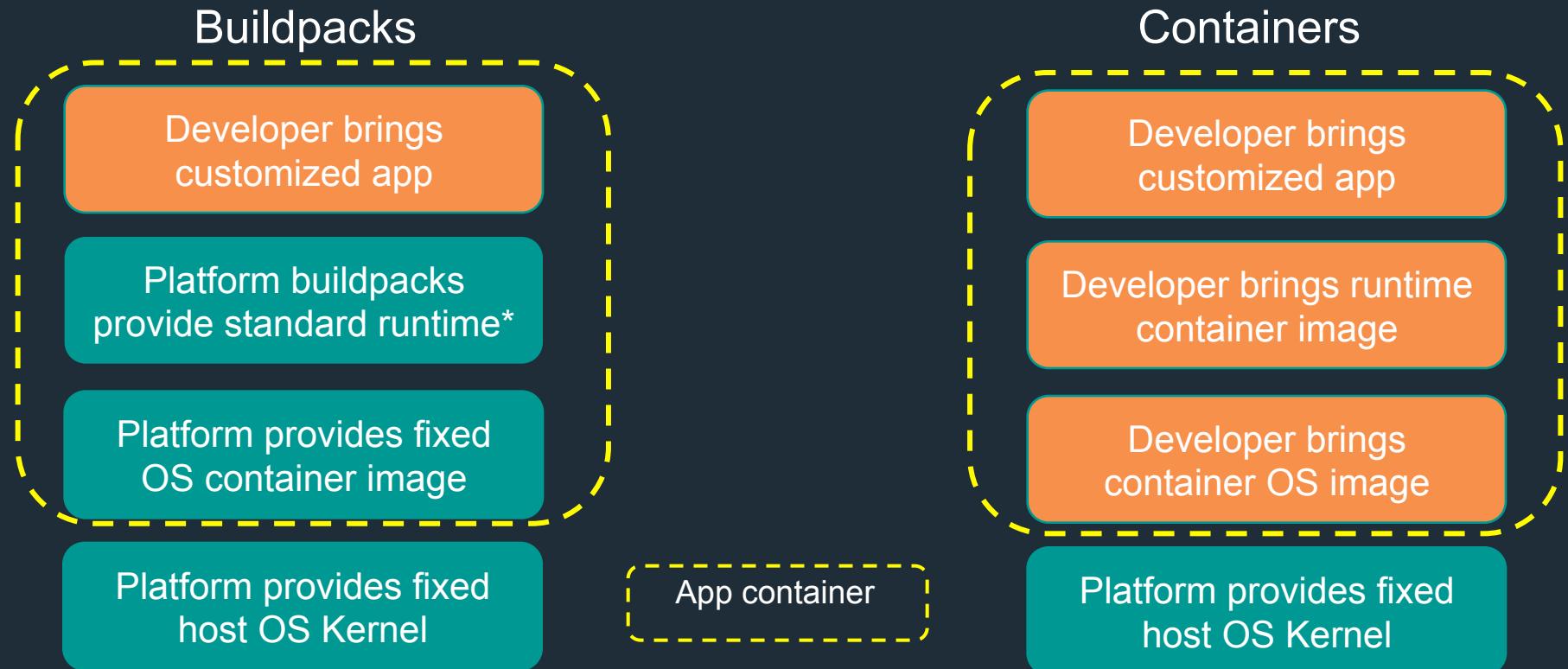
Write your own

Customize the Container Experience



* Devs may bring a custom buildpack

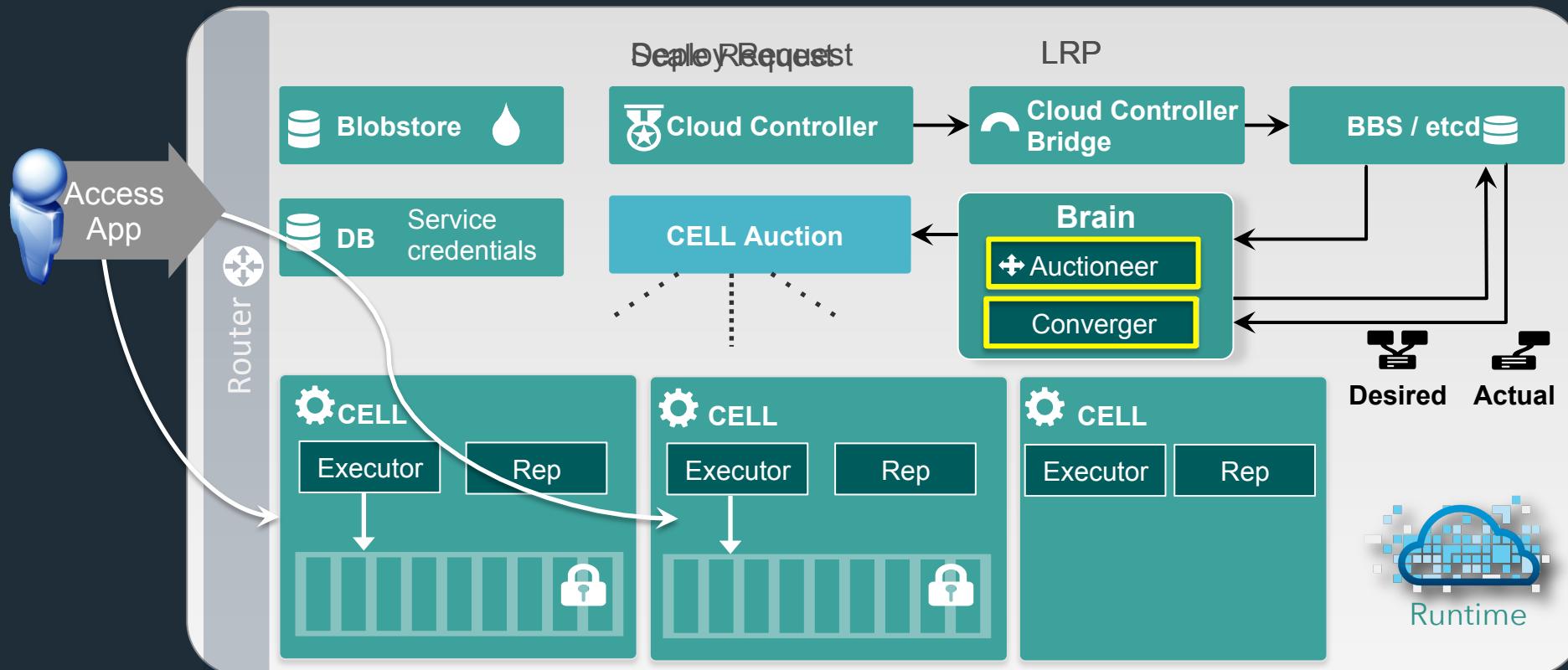
Customize the Container Experience



* Devs may bring a custom buildpack

Pivotal™

Application Containers and Scaling



A dark, atmospheric photograph of a modern building's interior or lobby. Large glass walls and a steel frame structure are visible in the background. In the foreground, several silhouetted figures of people are walking across a polished floor. A prominent horizontal teal line cuts across the middle of the image.

LABS

A teal cloud-shaped graphic containing the letters "CF".

CF

Capabilities of Pivotal Cloud Foundry

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, 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

openstack
CLOUD SOFTWARE

amazon
web services™

Azure

Pivotal™

Pivotal

BUILT FOR THE SPEED OF BUSINESS