

# Pivotal Cloud Foundry 101 Course



CLOUD **FOUNDRY**

What you'll learn from this course

- What is [Cloud Foundry](#)
- What are [Pivotal Cloud Foundry](#) and [Pivotal Web Services](#)
- How to develop your app as [Cloud-native application](#)
- How to deploy and maintain a cloud-native app in Cloud Foundry
- How to access external resources/services from your app
- How is Cloud Foundry designed

Why would I learn CF?

- Reportedly, some of the giants in IT industry actively use it in massive-scale production load, e.g. [Baidu](#) and IBM Bluemix.
- Our enterprise clients(Like ~~XXX~~, ~~XXX~~) use it.
- One of our industry spotlights is Cloud, and the recent heat shifted from IaaS to PaaS - and CF is a major and mature player in PaaS solutions
- Gain insights of modern PaaS architecture and design

# But I want to use Container-as-a-service!

I want to use [Docker](#)-native solutions!

I want to use [kubernetes](#)!

I want to use [Docker Swarm](#)!

I want to use [Rancher](#)!

# You'd still benefit from this course, because:

- Cloud Foundry actually supports deployment of Docker containers
- If you use [Heroku](#) or other PaaS/CaaS, it shares similarities with CF, e.g. buildpacks.
- You also learn how to design and implement apps that are cloud-native.
- You still gain insights of how a fully-mature & production-ready PaaS is architecturally designed.

OK, before our introduction to CF,  
we push an app straight to the cloud!

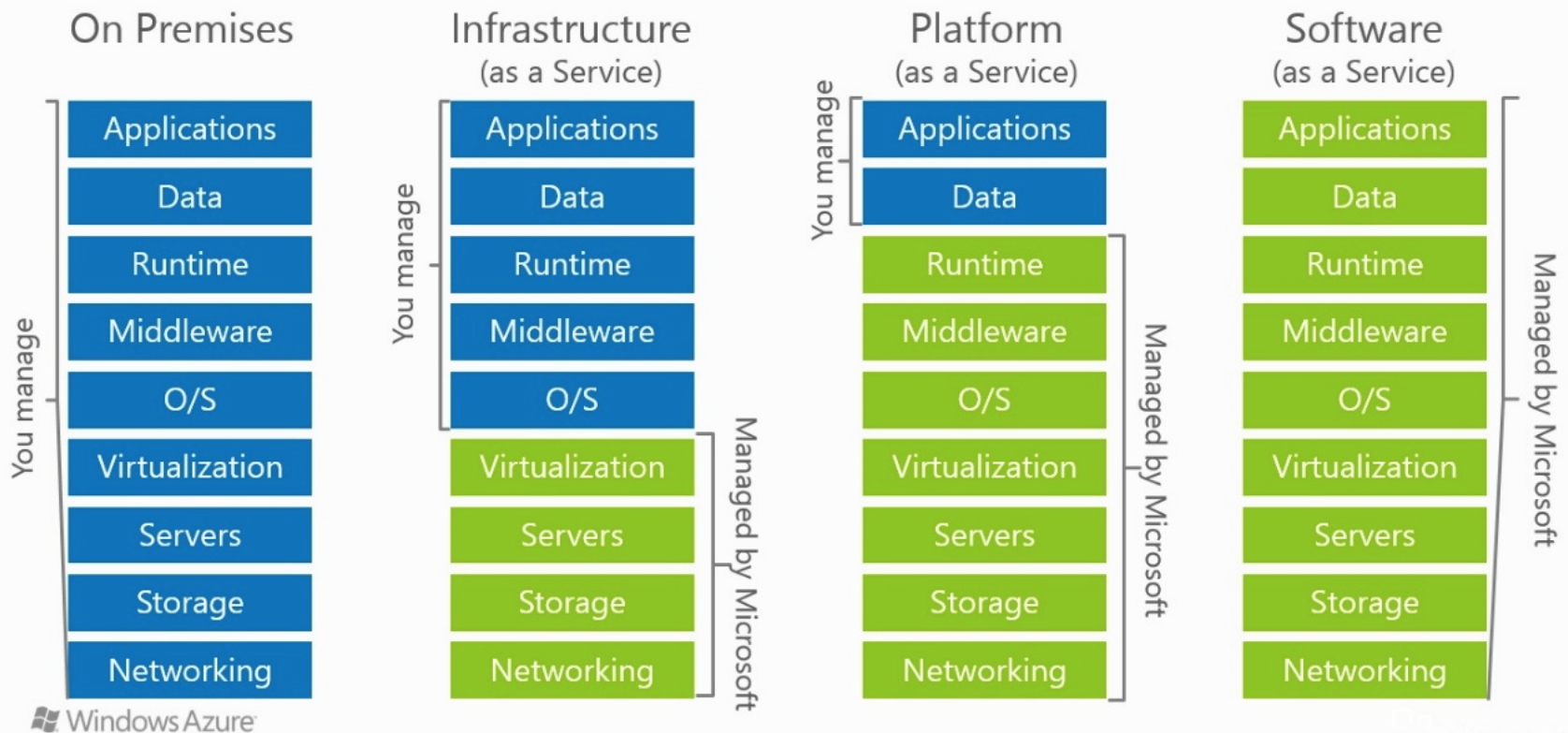


# Workshop #1

# Introduction to CloudFoundry

# Why PaaS

## Cloud Models



## Why Cloud Foundry

- Open source
- Stable & Robust
- Large user group/community
- Both old & modern

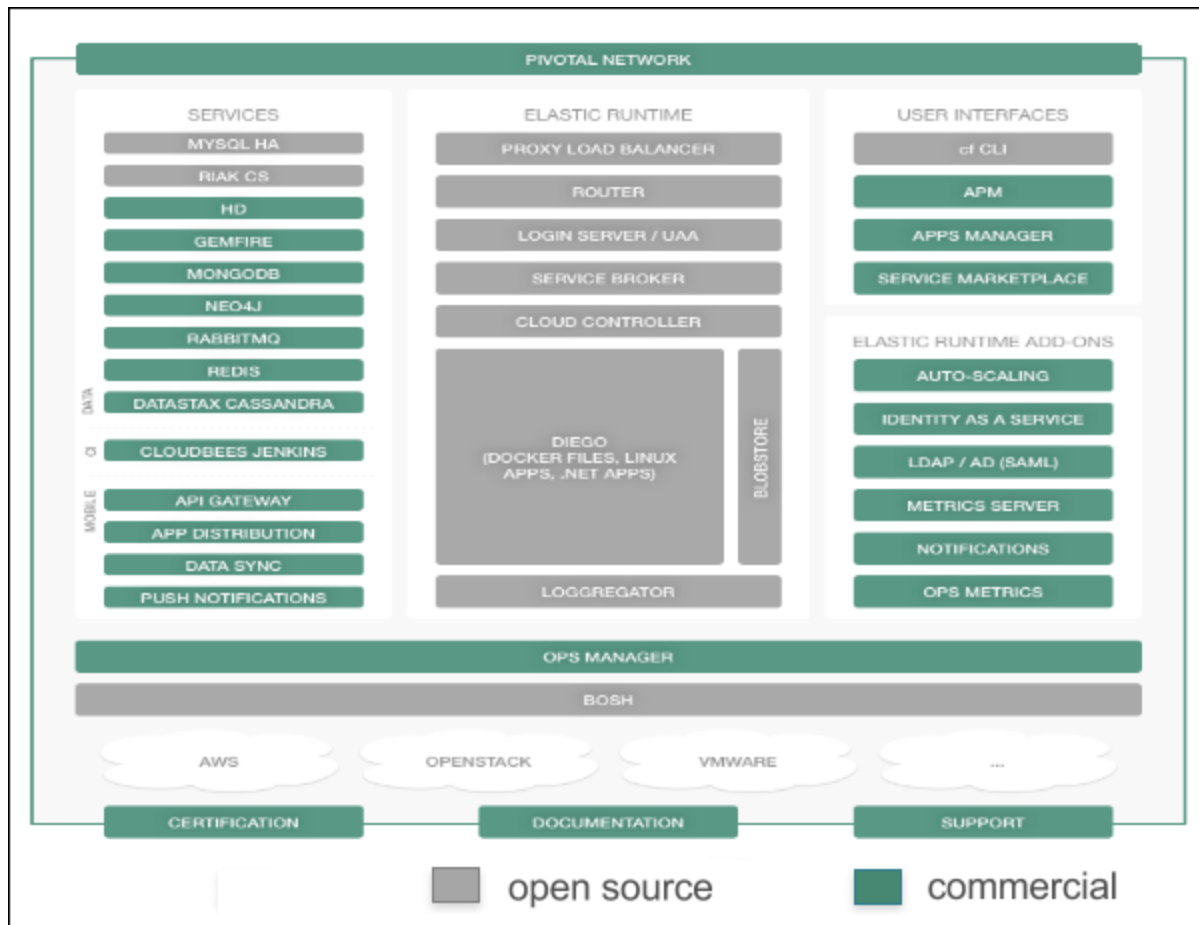
## Difference between CF, PCF and PWS

CF: Cloud Foundry - open source project

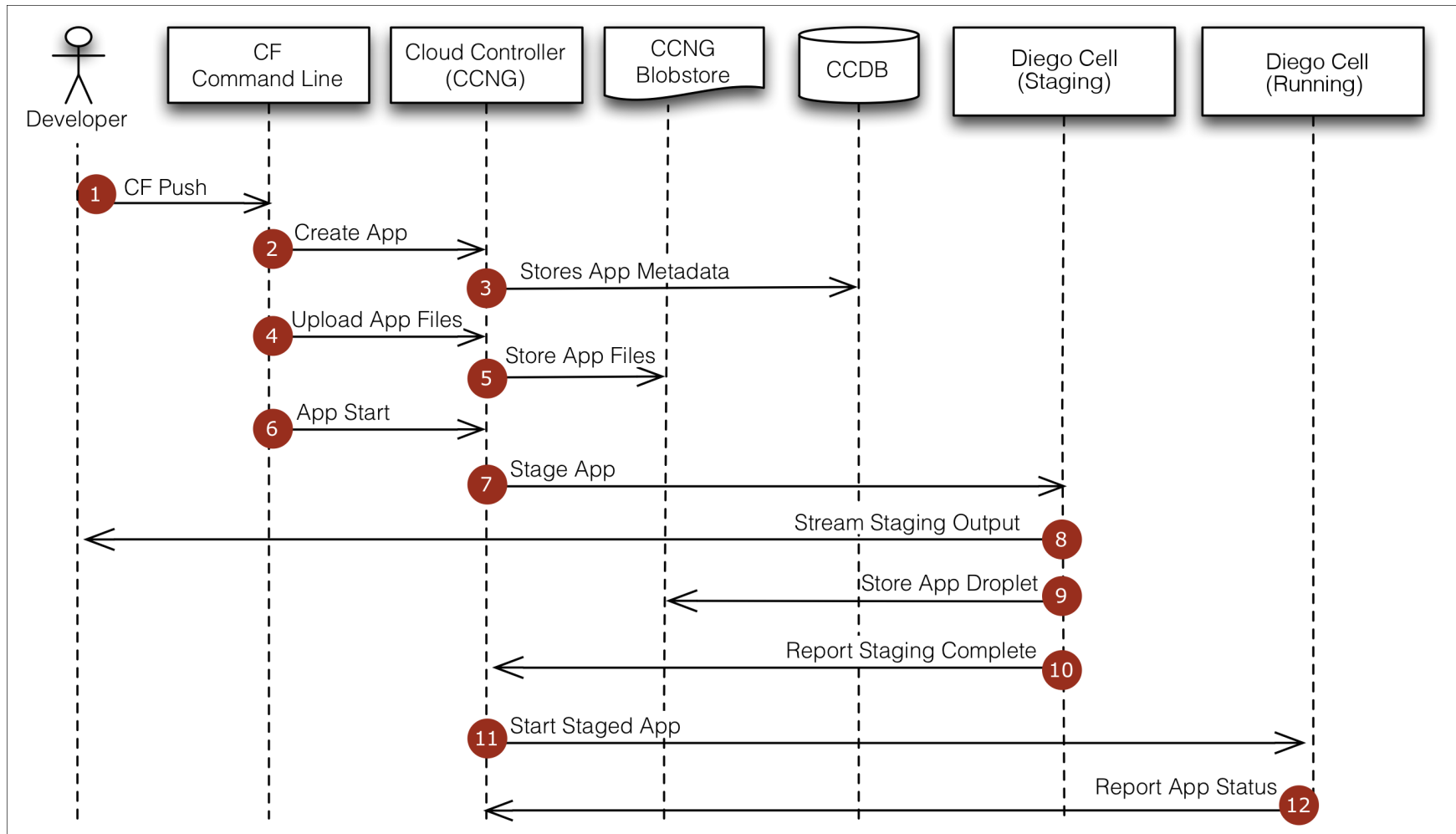
PCF: Pivotal Cloud Foundry = CF + proprietary add-ons

PWS: Pivotal Web Service - a public PaaS powered by PCF

# How PCF differs from CF

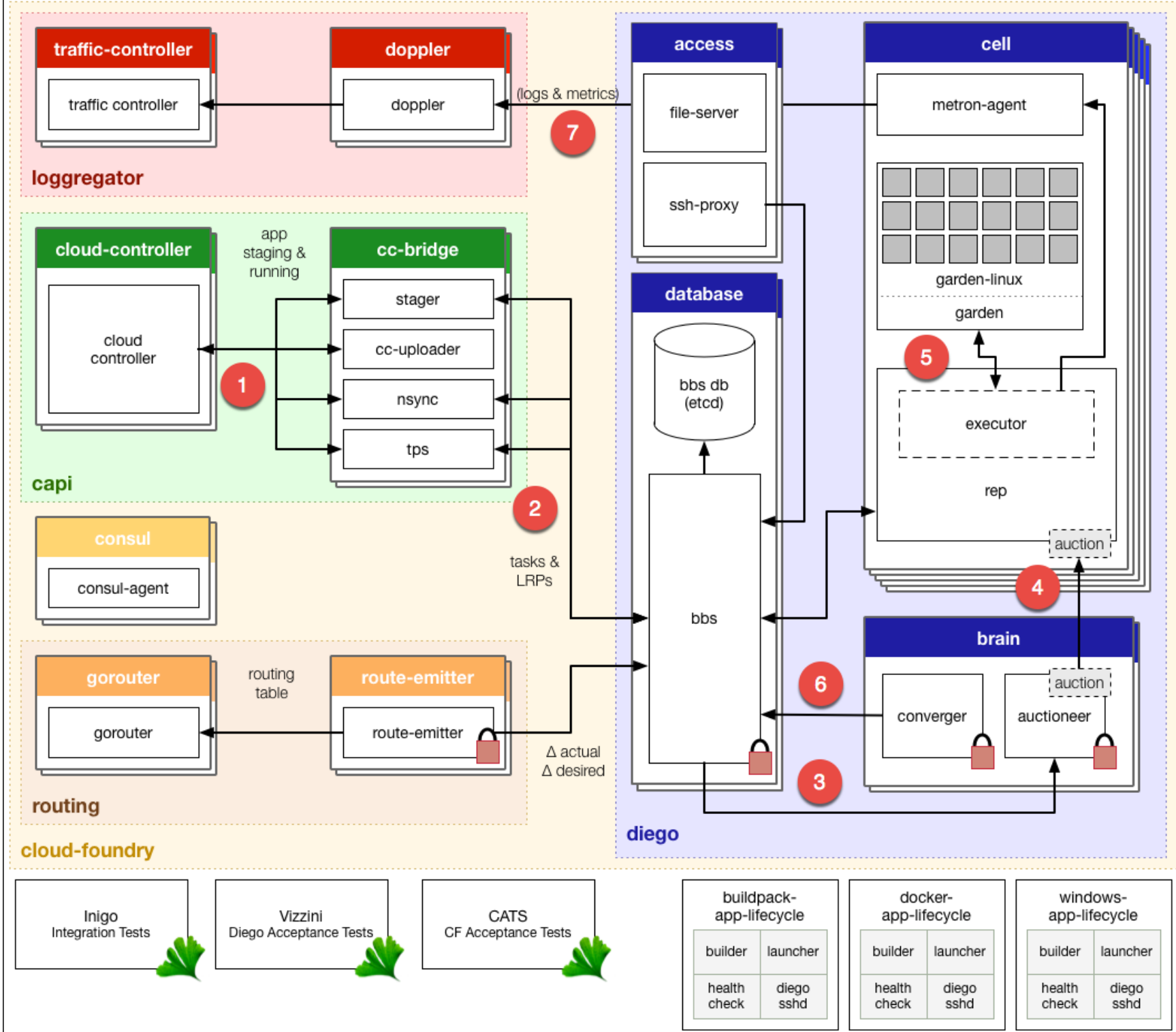


# What happened after **cf push**



# Cloud Foundry Architecture





# Manifest & Logging

# Workshop #2

# Cloud Foundry's HA architecture

## 4 levels of HA in CF

- Availability Zones
- Health Management for App Instances
- Process Monitoring
- Resurrection for VMs

Ref: <https://docs.cloudfoundry.org/concepts/high-availability.html#health-management-apps>

# Services

12-factor app: Store config in the environment.

<http://12factor.net/config>

12-factor app: Treat backing services as attached resources.

<http://12factor.net/backing-services>



# Workshop #4: services

Managed Service & User provided service instance

## Service instance lifecycle

- Create
- bind
- unbind
- delete