

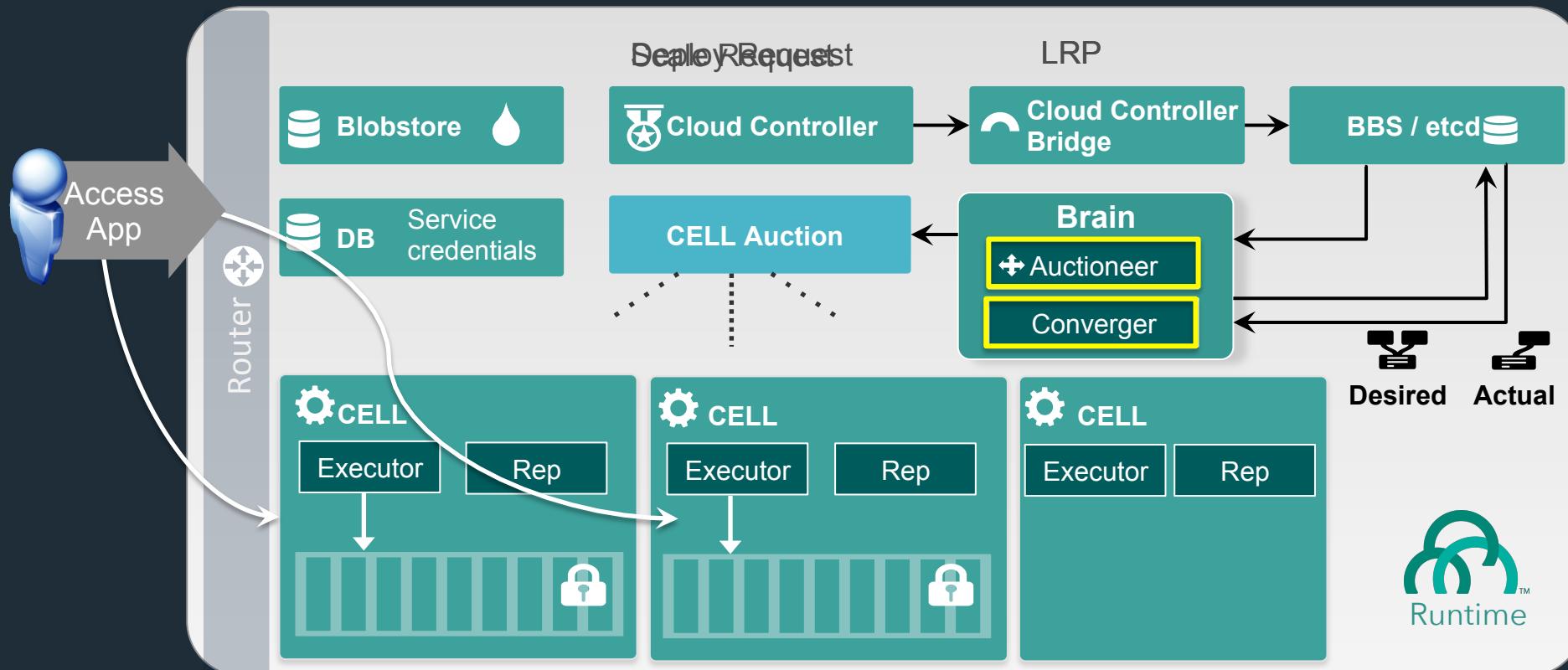
Pivotal Cloud Foundry

Labs Preview – Services, Scaling, Logs, HA

Scaling

Overview

Application Containers and Scaling



Services

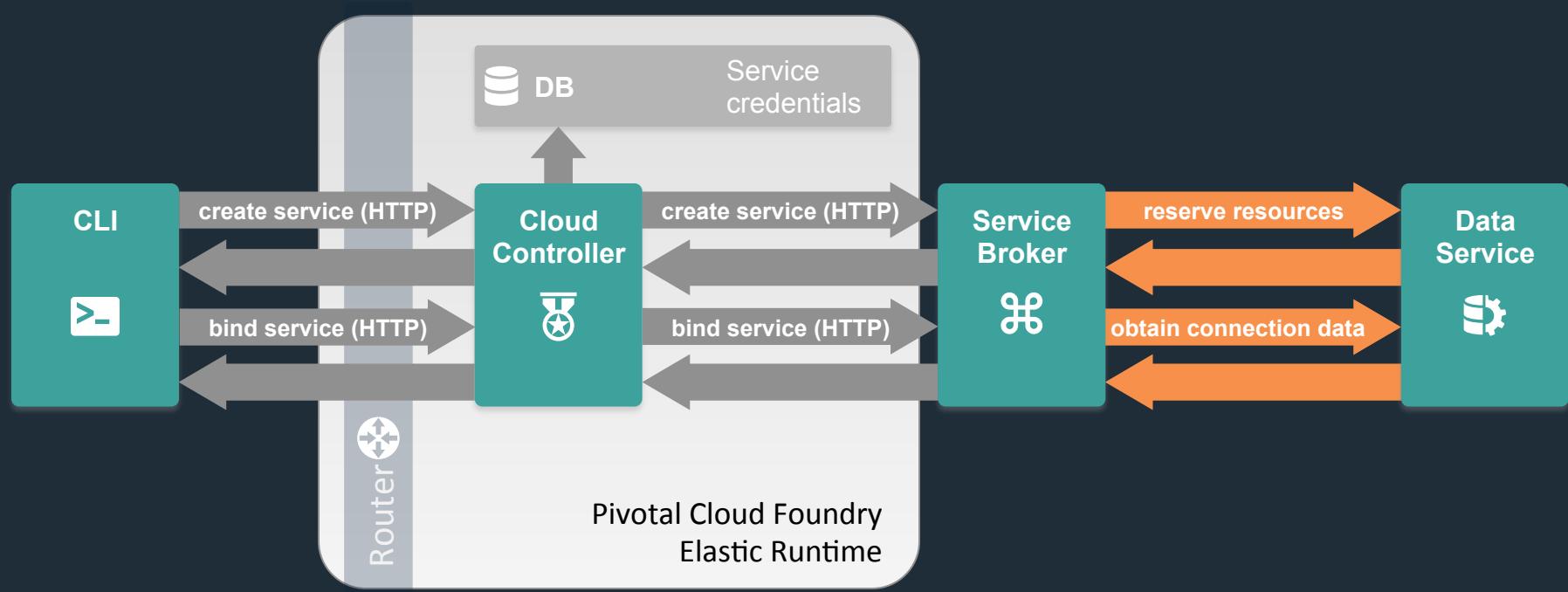
Overview

Three Types of Services

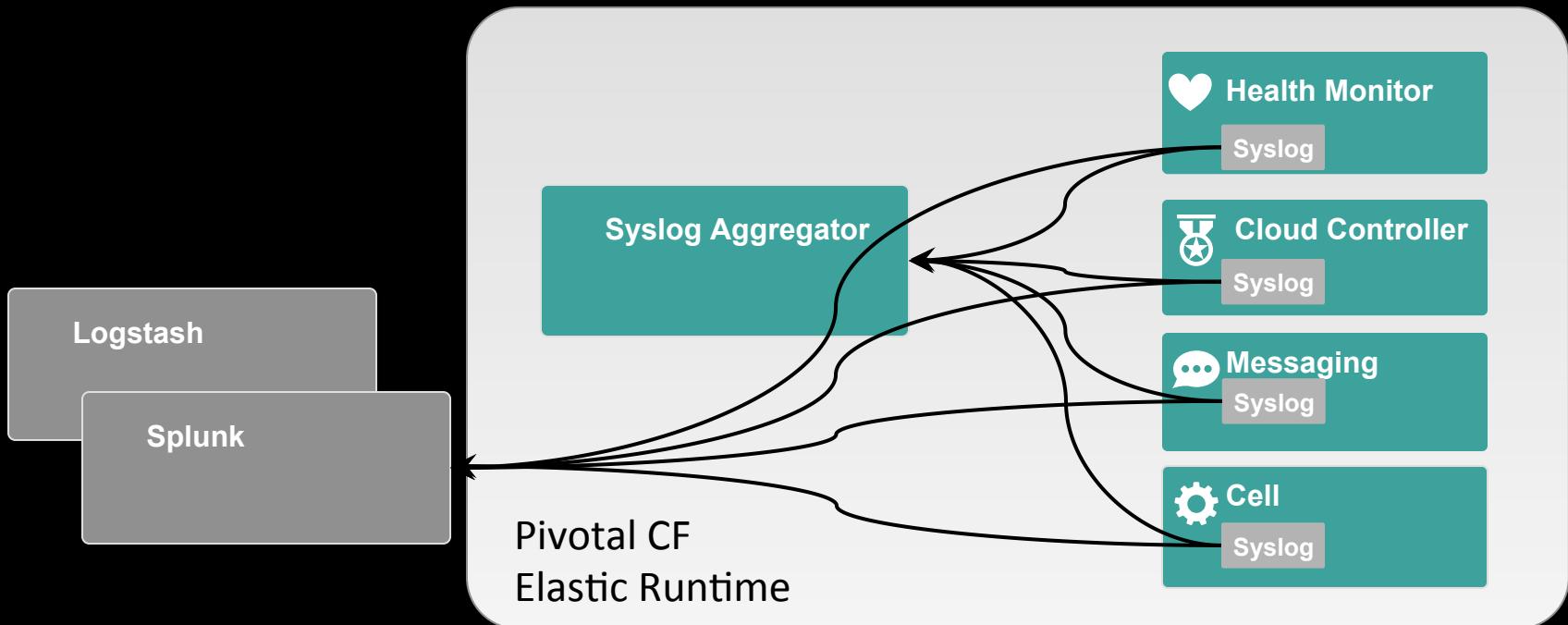


- **Managed** - Fully integrated, with full lifecycle management
- **Brokered** – Uses a service broker but is external to the platform
- **User-Provided** – Created and managed external to the platform

Creating and Binding a Service



Log Aggregation and CF Components



Logs and Metrics Firehose

One stream for all app logs and metrics

- **Log lines**
 - From applications and system components
- **HTTP Events**
 - Raw http events to generate performance analysis
- **Counters**
 - Track the number of increments in a time window
- **Gauges**
 - Monitor a value that varies over time
- **Errors**
 - Capture error source, code and message



Four Levels of HA

Built In!

Four Layers of High Availability – Built In

Application Instance

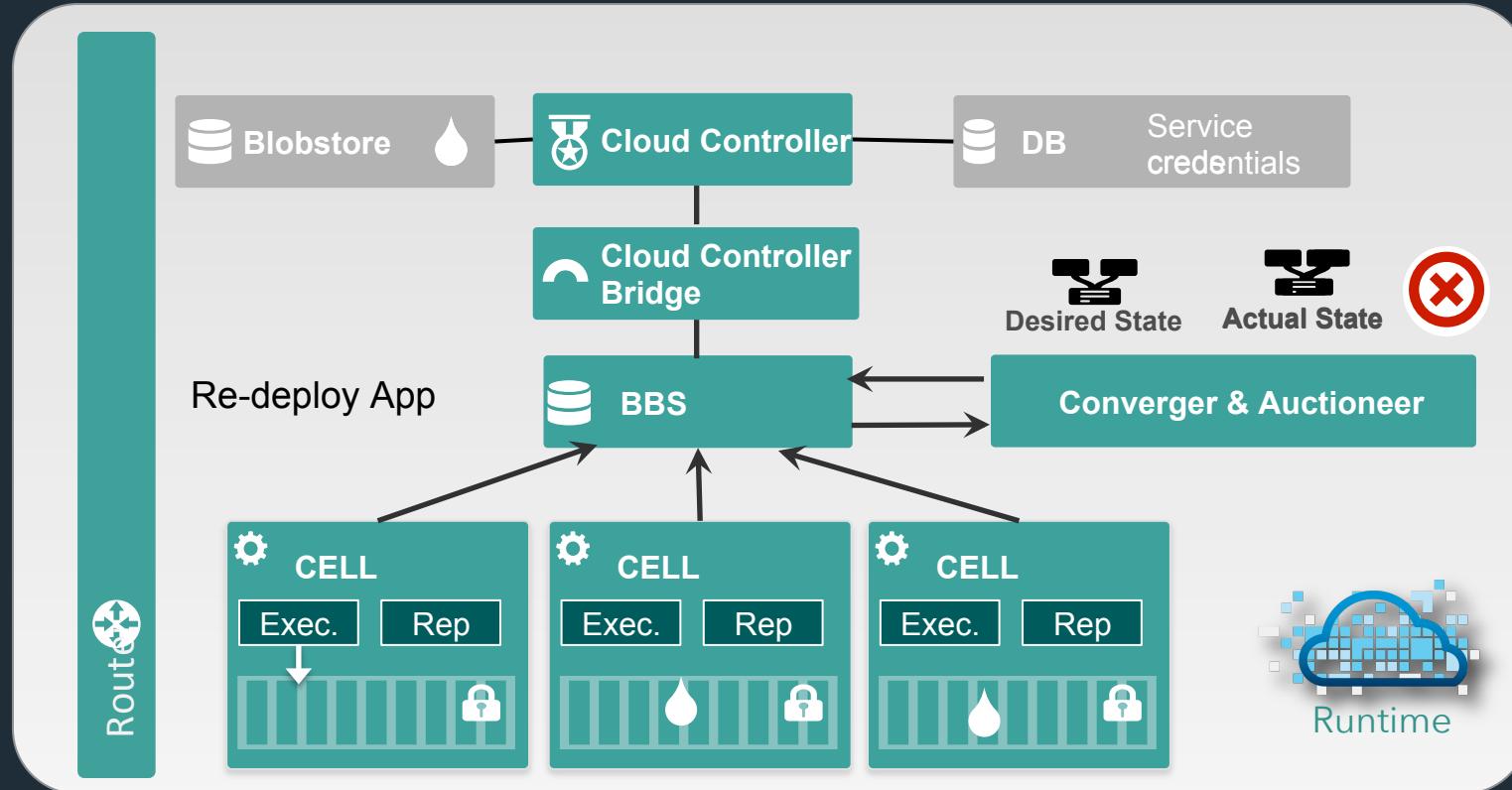
Platform Processes

Platform VMs

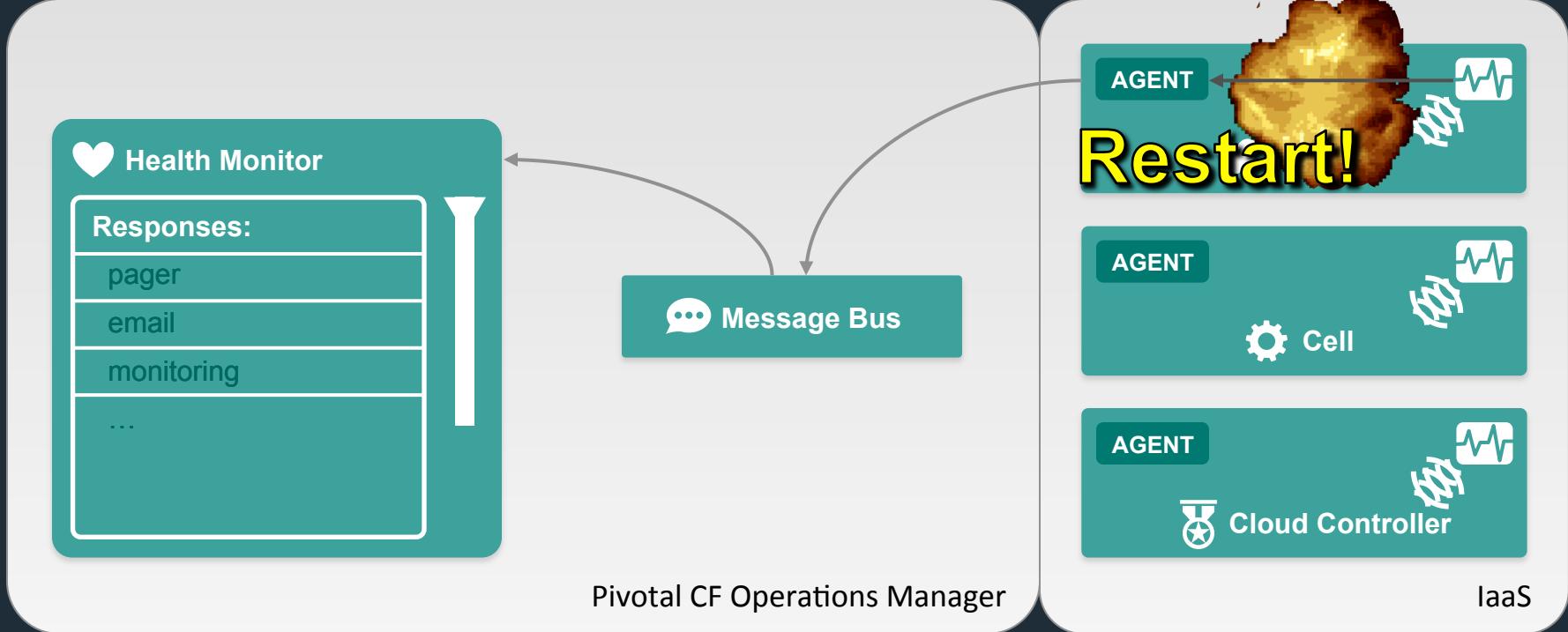
Availability Zones



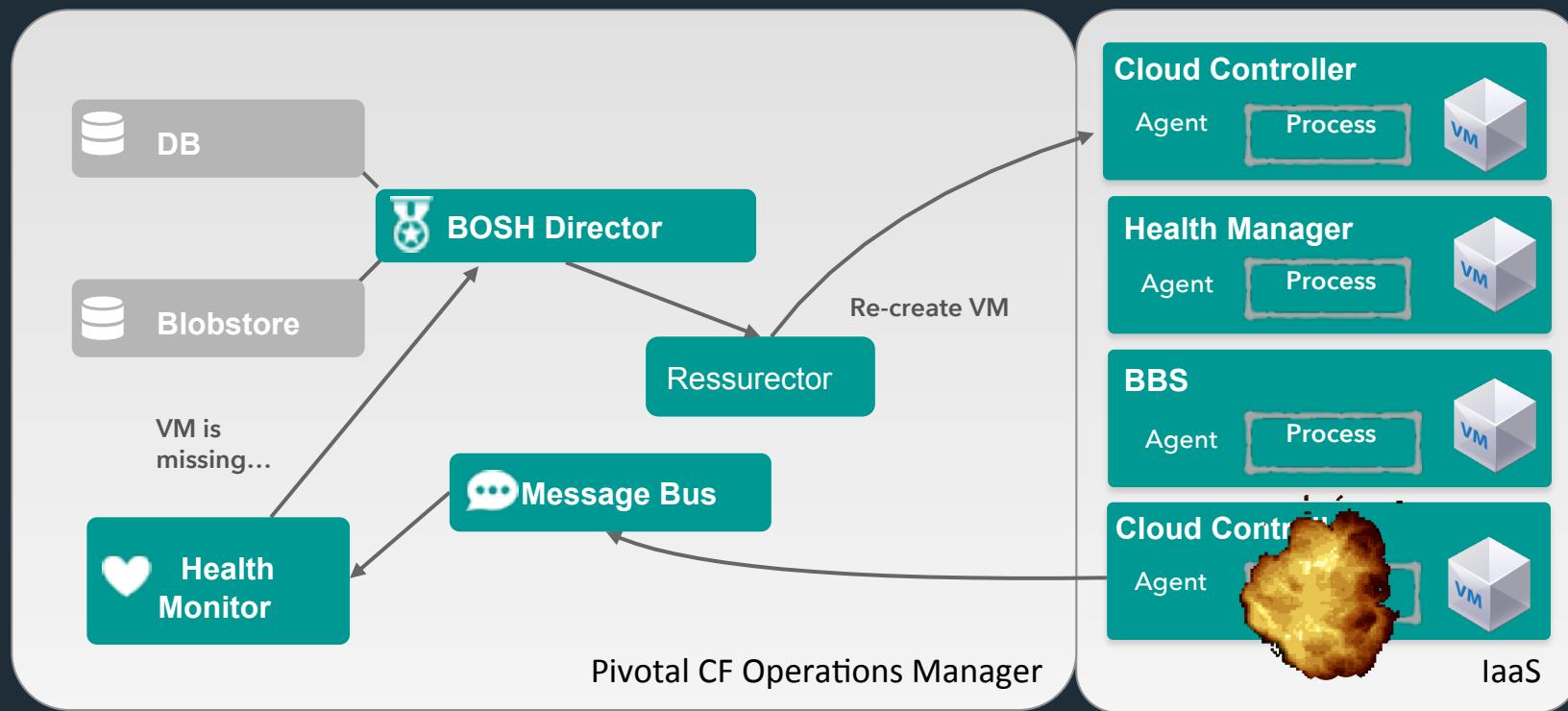
Application Instance HA



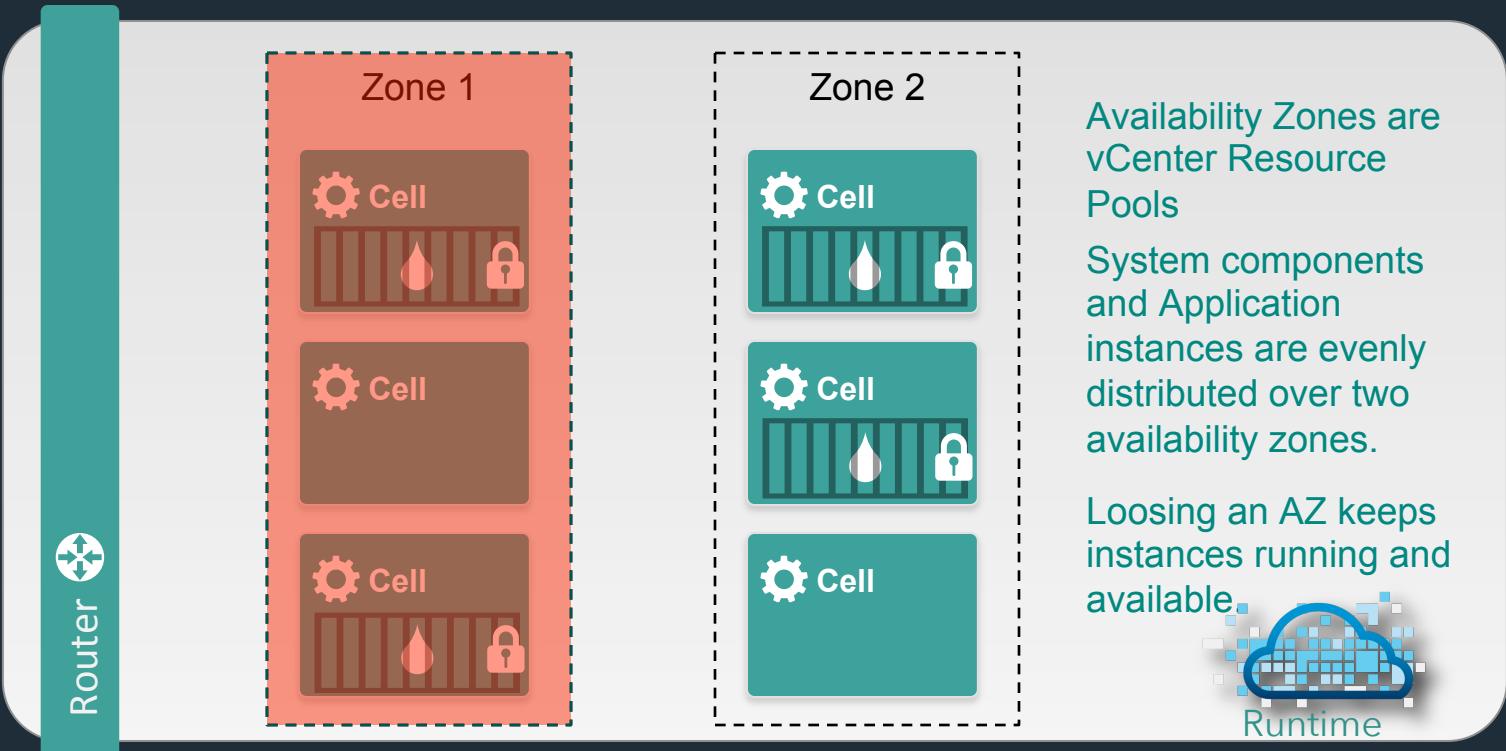
Platform Process HA



Platform Virtual Machine HA



Availability Zone HA



Pivotal Cloud Foundry

Labs Preview



DOMAINS AND ROUTES

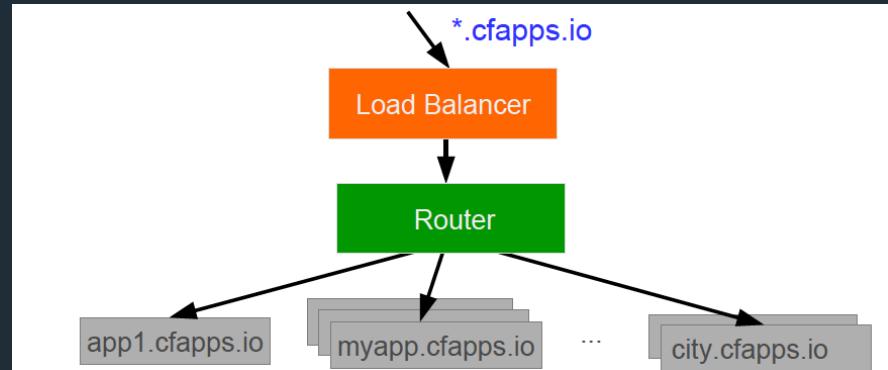
Domains

- Each Cloud Foundry installation has a default *app domain*
- Domains provide a namespace from which to create routes
- Requests for any routes created from the domain will be routed to Elastic Runtime.
- Domains can be shared or private in regards to PCF organizations

The screenshot shows the Pivotal Apps Manager interface. On the left, a sidebar lists the organization 'mborges-org' (selected), spaces ('development', 'production', 'Marketplace'), and links to 'Docs', 'Support', and 'Tools'. The main content area displays organization details: 'ORG mborges-org', 'QUOTA 2%', '128 MB of 5 GB Limit', '2 Spaces', '1 Domain', '2 Members', and a 'DOMAINS' section with a button 'Add a Domain'. A table lists domains under 'NAME': 'south.fe.pivot... (SHARED)' (with 'SHARED' highlighted by a red box). The top right corner shows a 'Usage Report' link.

Domains – Behind the Scenes

- A wildcard entry (*) is added to the DNS for the app domain
- That DNS entry points to a load balancer (or Cloud Foundry's HA Proxy), which points to the Cloud Foundry's Router
- The Router uses the subdomain to map to application instance(s)



Routes

- HTTP requests are routed to apps pushed by associating an application with a URL, known as route
- Many apps can be mapped to a single route resulting in load balanced requests
- Routes belong to a space
- Application can have multiple routes

The screenshot shows the Pivotal Apps Manager interface for the application 'pcf-scale-prod' in the 'development' space of the 'mborges-org' organization. The application has one instance running with 128 MB memory and 1 GB disk. The configuration shows the last push was on 12/22/15 at 23:56 UTC. The application is mapped to two routes: <https://pcf-scale-prod.south.fe.pivot.io> and https://pcf-scale-v1_2.south.fe.pivot.io. A red box highlights these two routes.



BLUE/GREEN DEPLOYMENT

Pivotal

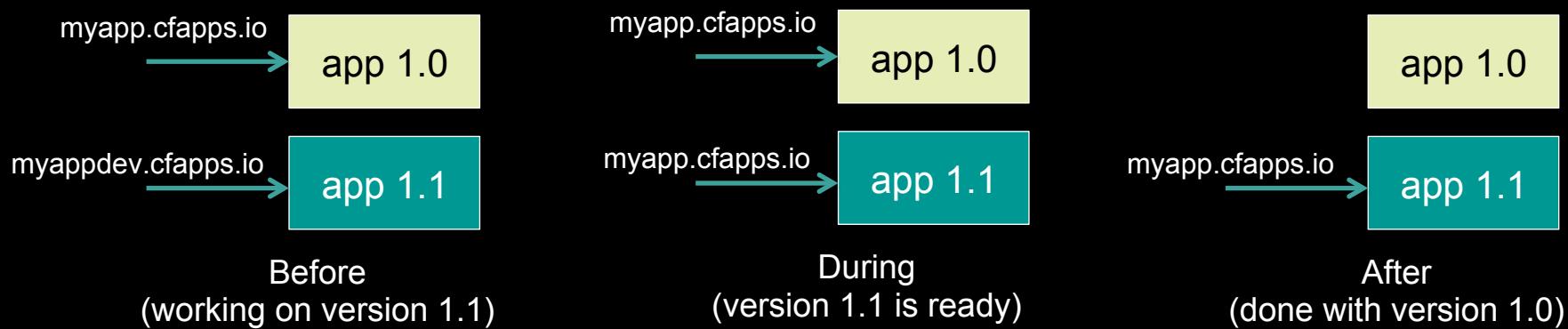
Blue-Green Deployments

- Blue-Green deployment is an approach to upgrading application with minimal downtime.
- It also enables easy rollback to the old version if the new version experiences problems
- It works by keeping both versions online, and switching from the old version to the new version



Blue-Green Deployments using Routes

- Main idea: you always want ***myapp.cfapps.io*** to be good
- Use routes to achieve this
- Because you are in a single space, multiple application can use the same routes



Slowly Turning on Traffic using Instances

- Start with four instance of blue, one instance of green
 - 80% of traffic will use version 1.0
- Decrease blue instance, increase green instances as confidence builds

