



Creating a portable Cloud Foundry on Kubernetes

Google Cloud



CLOUDFOUNDRY



- 1. Goals**
- 2. Cloud Foundry on K8s**
- 3. CF Services on K8s**

Goals



Fill in the blanks, from Wikipedia

_____ is a tool chain for release engineering, deployment & life-cycle management of large scale distributed services made of a server and a CLI tool. _____ is typically used to package, deploy and manage cloud software. _____ is particularly well-suited for managing the whole life cycle of large distributed systems.



BOSH

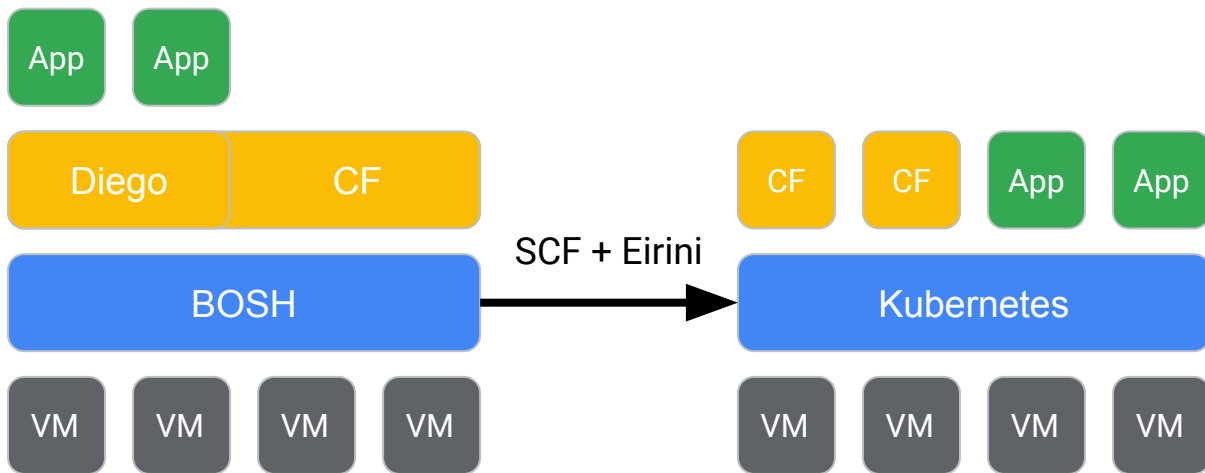
___BOSH___ is a tool chain for release engineering, deployment & life-cycle management of large scale distributed services made of a server and a CLI tool. _____BOSH___ is typically used to package, deploy and manage cloud software. _____BOSH___ is particularly well-suited for managing the whole life cycle of large distributed systems.

Kubernetes works just as well!

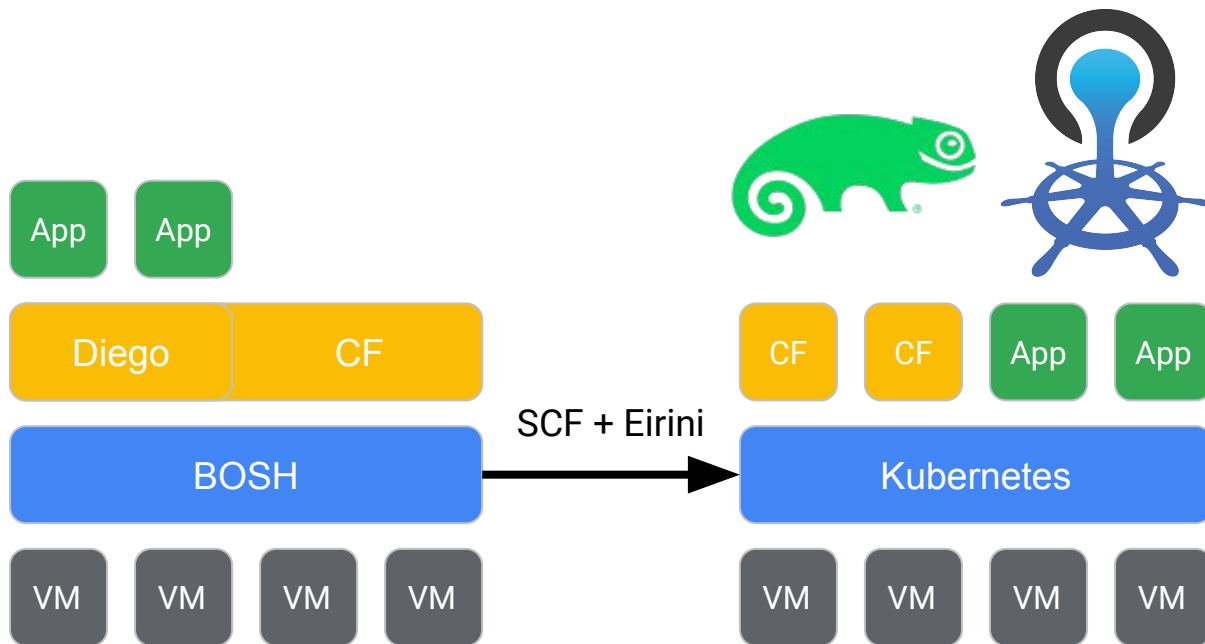
Kubernetes is a tool chain for release engineering, deployment & life-cycle management of large scale distributed services made of a server and a CLI tool. Kubernetes is typically used to package, deploy and manage cloud software. Kubernetes is particularly well-suited for managing the whole life cycle of large distributed systems.

Our Vision

Deploy **Cloud Foundry**, **applications**, and their dependencies into a self-contained, cloud-agnostic **Kubernetes** cluster.



How Its Done



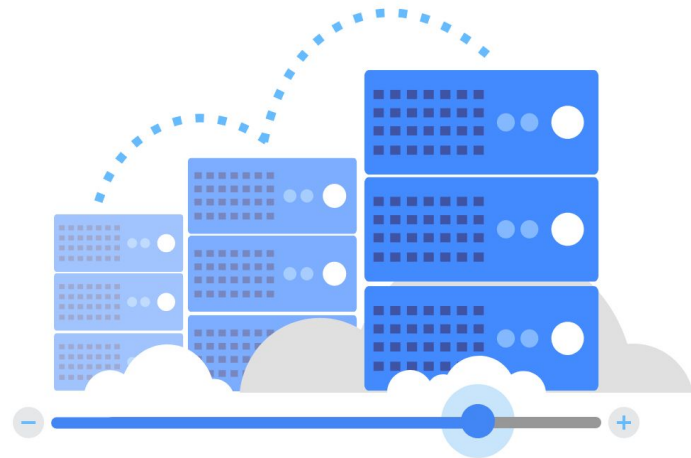
Benefits

- Manage CF like an app
- Pay for what you need
- Greater flexibility for data and legacy apps
- Single control plane for operators



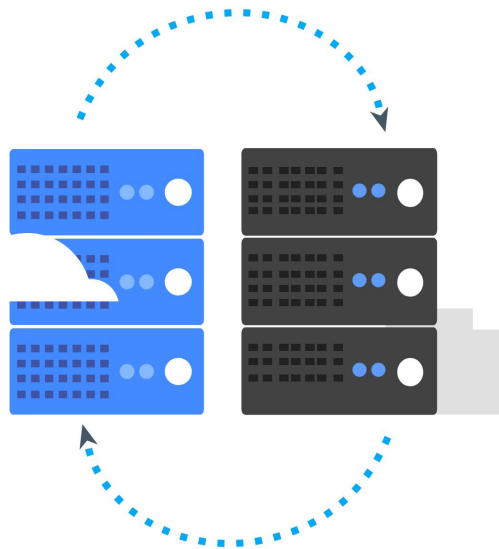
Benefits

- Manage CF like an app
- [Pay for what you need](#)
- Greater flexibility for data and legacy apps
- Single control plane for operators



Benefits

- Manage CF like an app
- Pay for what you need
- Greater flexibility for data and legacy apps
- Single control plane for operators



Benefits

- Manage CF like an app
- Pay for what you need
- Greater flexibility for data and legacy apps
- Single control plane for operators

Google Cloud Platform my-project

Kubernetes Engine

Workloads [REFRESH](#) [DEPLOY](#)

Workloads are deployable units of computing that can be created and managed within a cluster.

Is system object : False Filter workloads

<input type="checkbox"/> Name ^	Status	Type	Pods
<input type="checkbox"/> my-app	✓ OK	Stateful Set	1/1
<input type="checkbox"/> adapter	✓ OK	Stateful Set	1/1
<input type="checkbox"/> api-group	✓ OK	Stateful Set	1/1
<input type="checkbox"/> bits	✓ OK	Deployment	1/1
<input type="checkbox"/> blobstore	✓ OK	Stateful Set	1/1
<input type="checkbox"/> cc-clock	✓ OK	Stateful Set	1/1
<input type="checkbox"/> cc-uploader	✓ OK	Stateful Set	1/1
<input type="checkbox"/> cc-worker	✓ OK	Stateful Set	1/1
<input type="checkbox"/> cf-usb	✓ OK	Stateful Set	1/1
<input type="checkbox"/> diego-api	✓ OK	Stateful Set	0/0
<input type="checkbox"/> diego-brain	✓ OK	Stateful Set	0/0
<input type="checkbox"/> diego-cell	✓ OK	Stateful Set	0/0
<input type="checkbox"/> diego-ssh	✓ OK	Stateful Set	0/0
<input type="checkbox"/> doppler	✓ OK	Stateful Set	1/1
<input type="checkbox"/> eirini	✓ OK	Deployment	1/1
<input type="checkbox"/> locket	✓ OK	Stateful Set	1/1
<input type="checkbox"/> log-api	✓ OK	Stateful Set	1/1
<input type="checkbox"/> loggregator-fluentd	✓ OK	Daemon Set	1/1

Cloud Foundry on K8s



Deployment

Deploy Cloud Foundry

1. Terraform infrastructure
2. Helm install Cloud Foundry
3. Deploy an application



OPEN IN GOOGLE CLOUD SHELL

Deploy GCP Service Broker

1. Helm install service broker
2. Install/enable in Cloud Foundry
3. Deploy CF applications w/ services



OPEN IN GOOGLE CLOUD SHELL

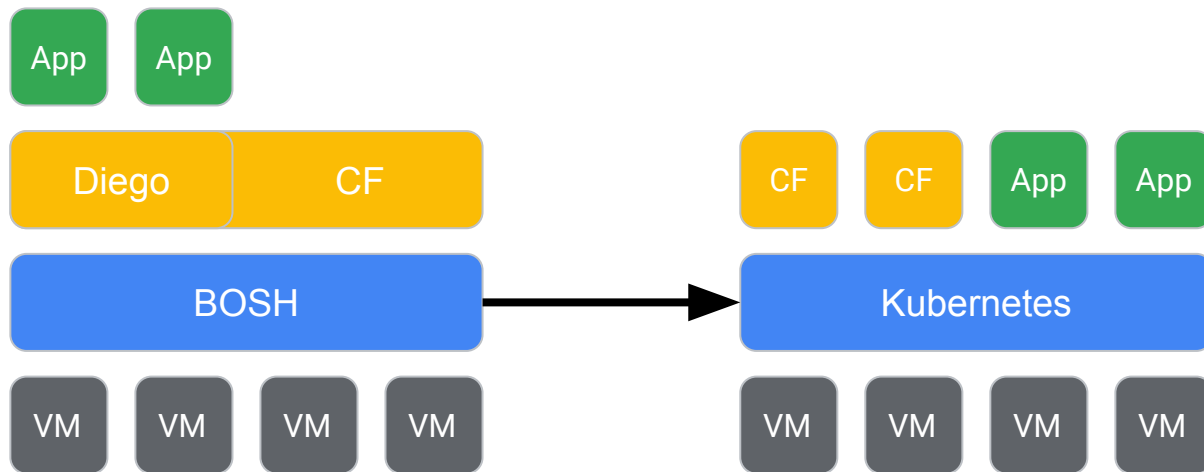


Google Cloud

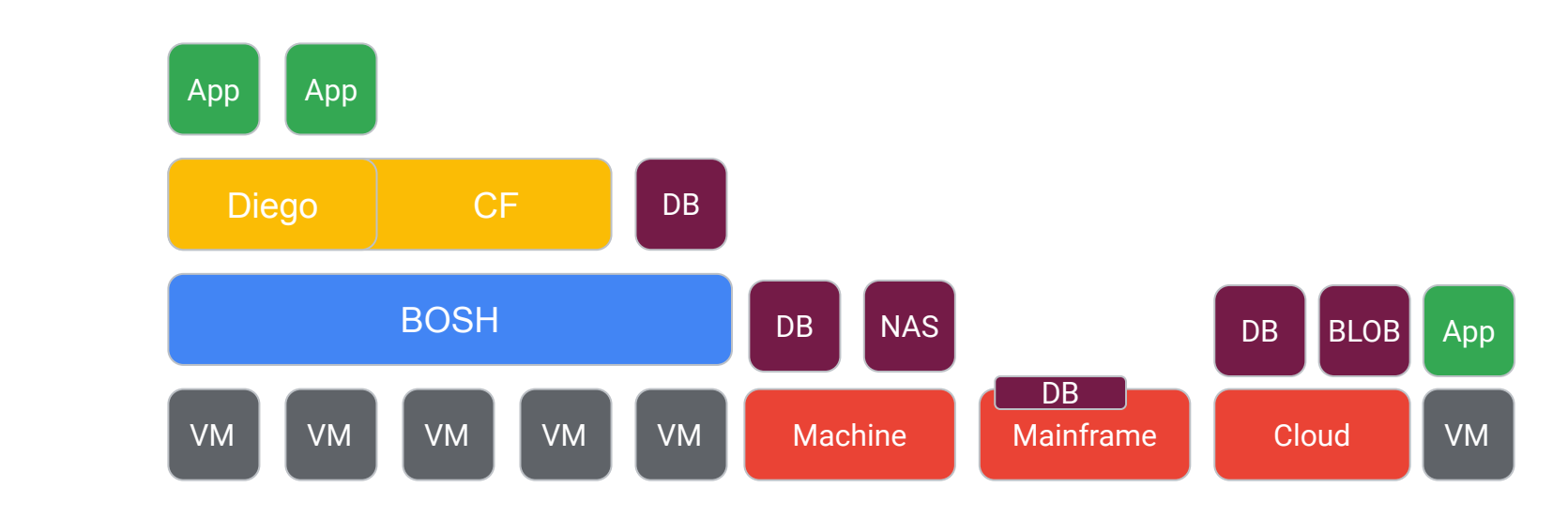
CF Services on K8s



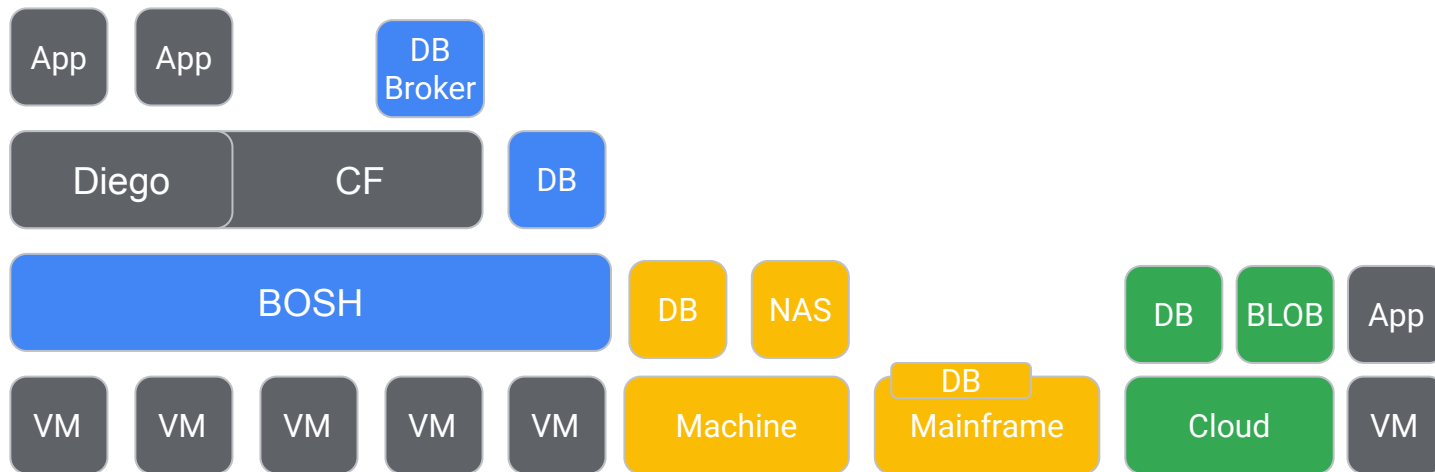
The expectation...



...the reality



Categories of Services



Solutions - Existing brokers in K8s

github.com/GoogleCloudPlatform/gcp-service-broker

github.com/Azure/open-service-broker-azure

github.com/aws-labs/aws-servicebroker



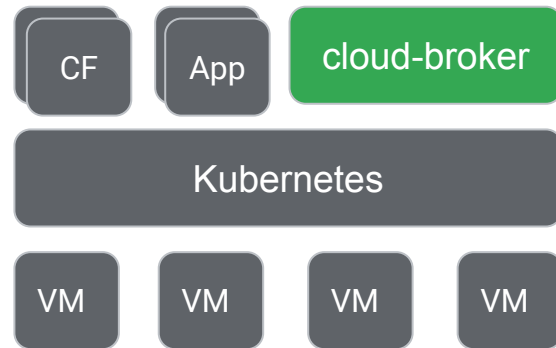
Cloud Service Brokers

AWS, Azure, and Google Cloud all have helm charts:

- <https://github.com/GoogleCloudPlatform/gcp-service-broker>
- <https://github.com/Azure/open-service-broker-azure>
- <https://github.com/aws-labs/aws-servicebroker>

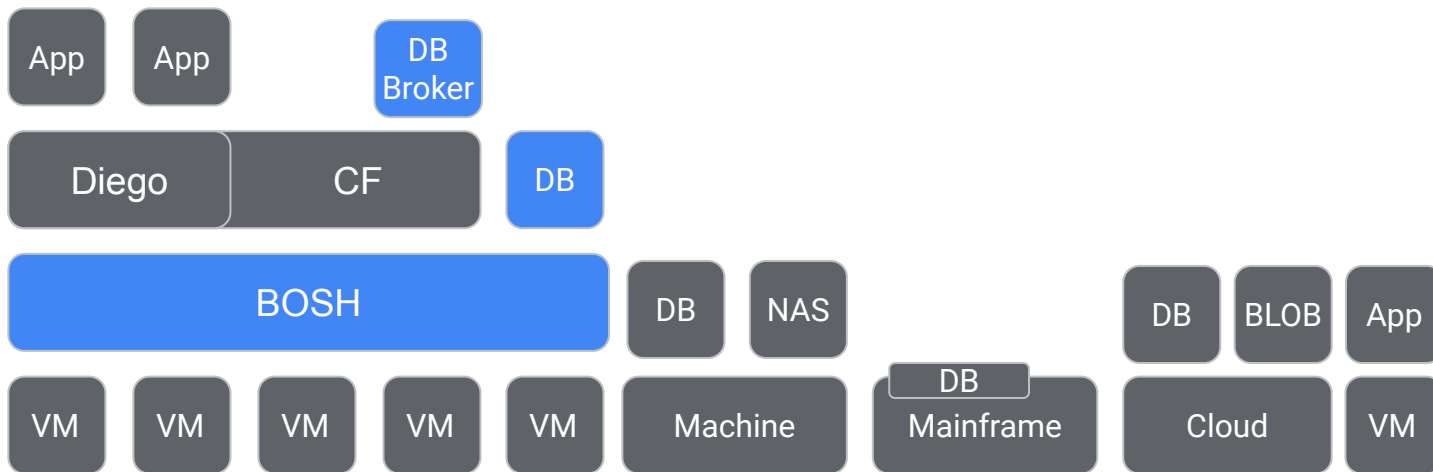
Or...if they have Terraform:

- <https://github.com/GoogleCloudPlatform/gcp-service-broker>



Solutions - Helm provider

github.com/google/helm-broker

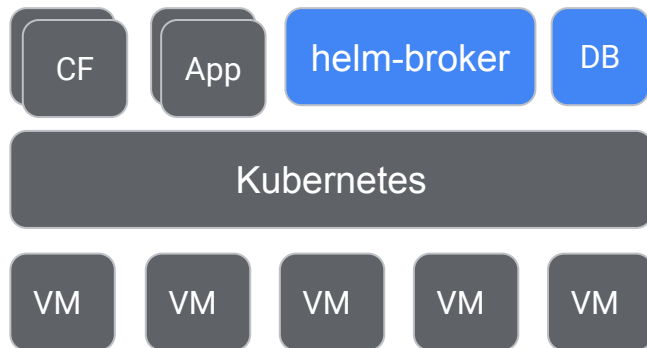


BOSH Services -> Helm Brokers

- + Inexpensive
- +/- Self-Managed
- **+ Availability**
- **+ Services**
 - Elastic
 - Redis
 - RabbitMQ
 - Kafka
 - 265 others...

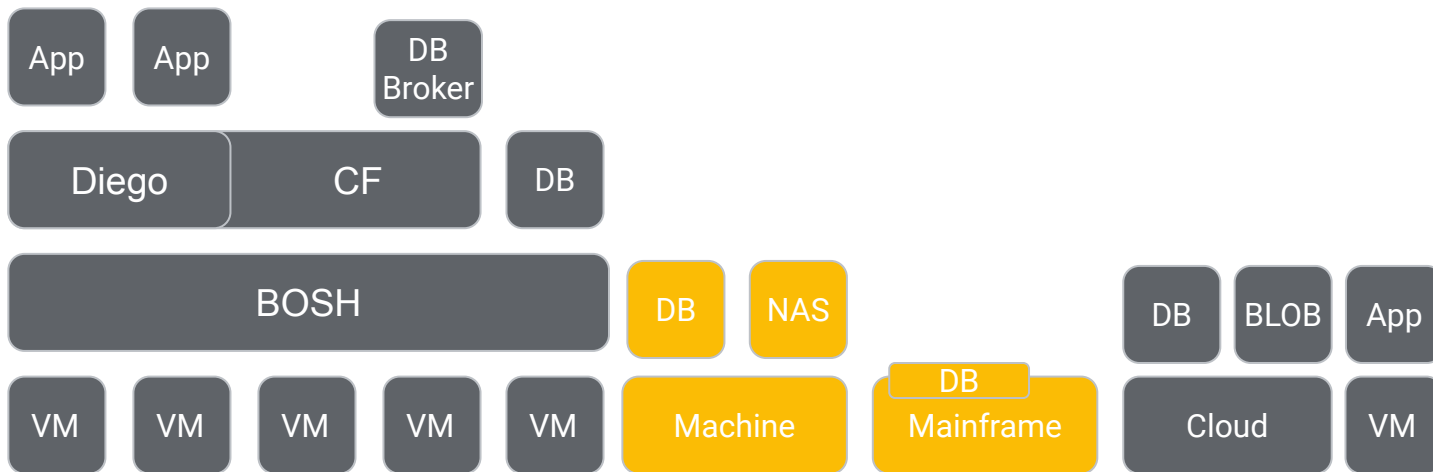
<https://github.com/google/helm-broker>

<https://github.com/cf-platform-eng/kibosh>



Solutions - Adapt to fit you

github.com/GoogleCloudPlatform/gcp-service-broker



Thank You

<https://graphite.page.link/cf-on-k8s>

[#gcp](https://slack.cloudfoundry.org)