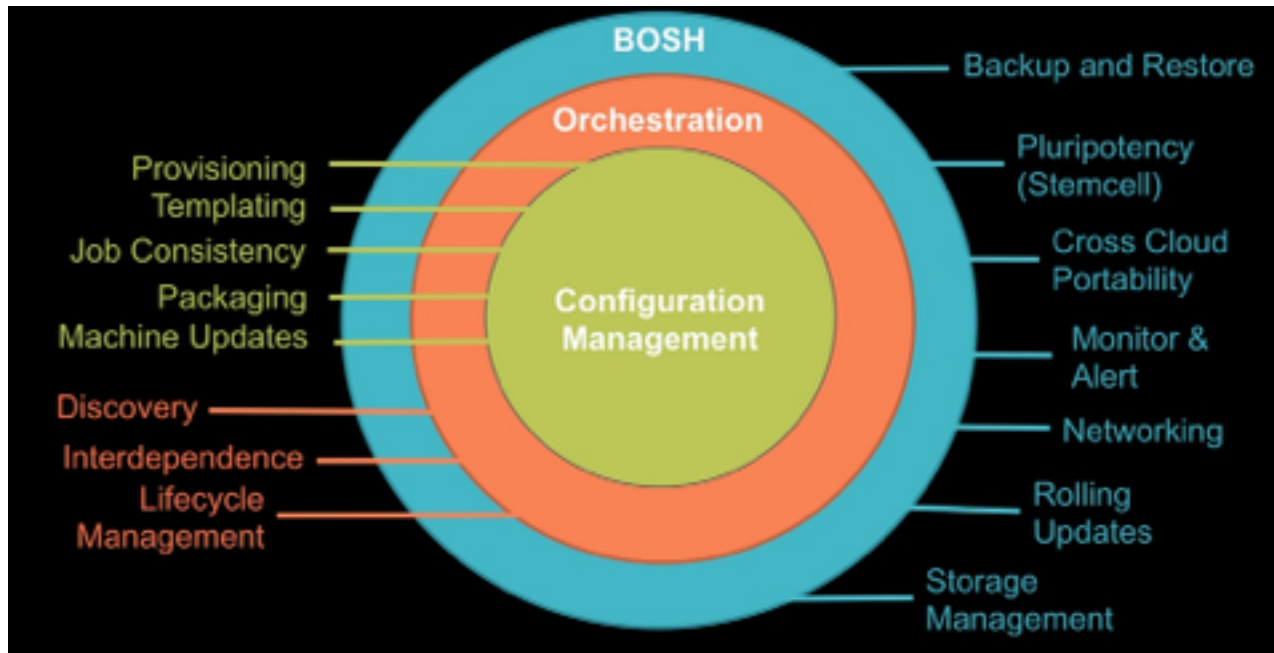


Pivotal

A NEW PLATFORM FOR A NEW ERA

“BOSH is an open-source tool chain for release engineering, deployment and lifecycle management of large-scale distributed services”



Why BOSH

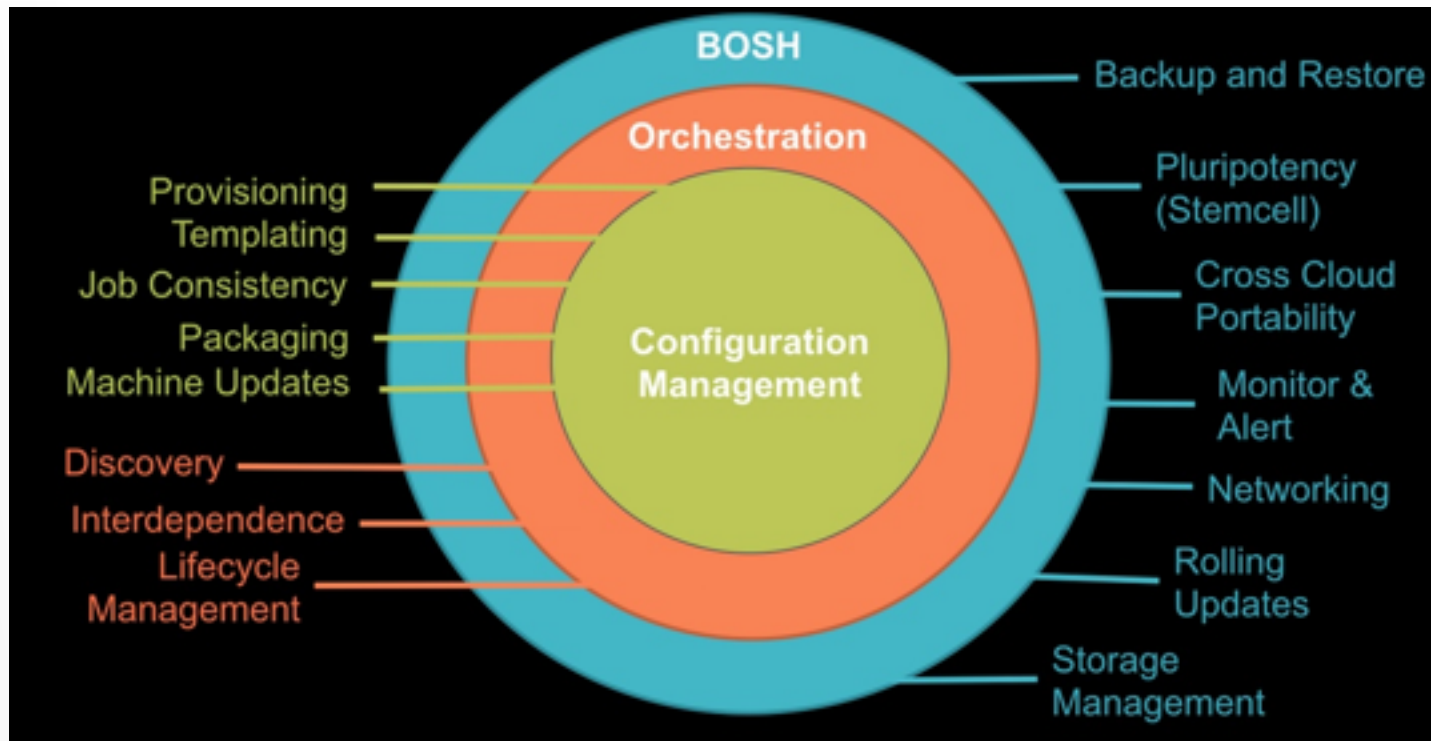
Provision services,
not machines

Enables continuous
delivery

Cloud-agnostic view
of Platform Ops

Holistic Toolchain for
“rule them all”

Eliminate bespoke
automation on top of
config management



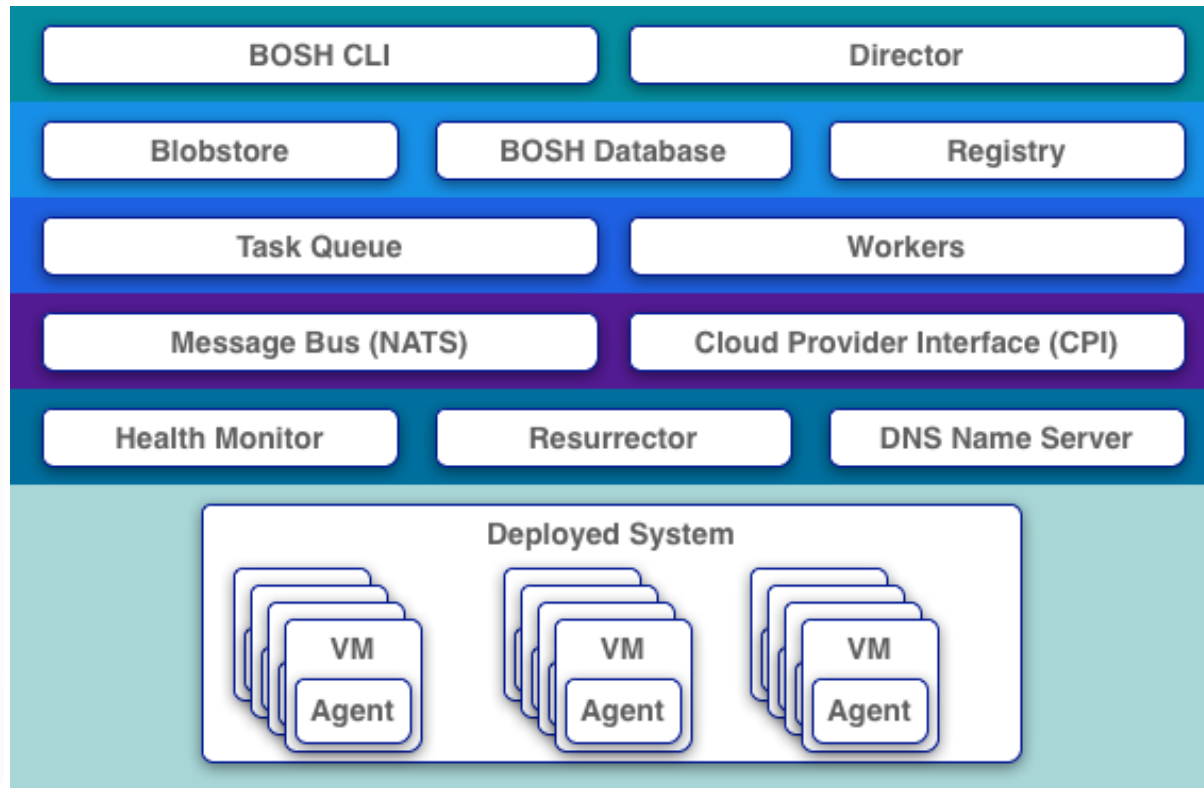
The BOSH Architecture

Very similar to CF architecture itself

Director as analogy to Cloud Controller

Different CPIs exist per IaaS implementation

Workers responsible for executing tasks as dictated by Director



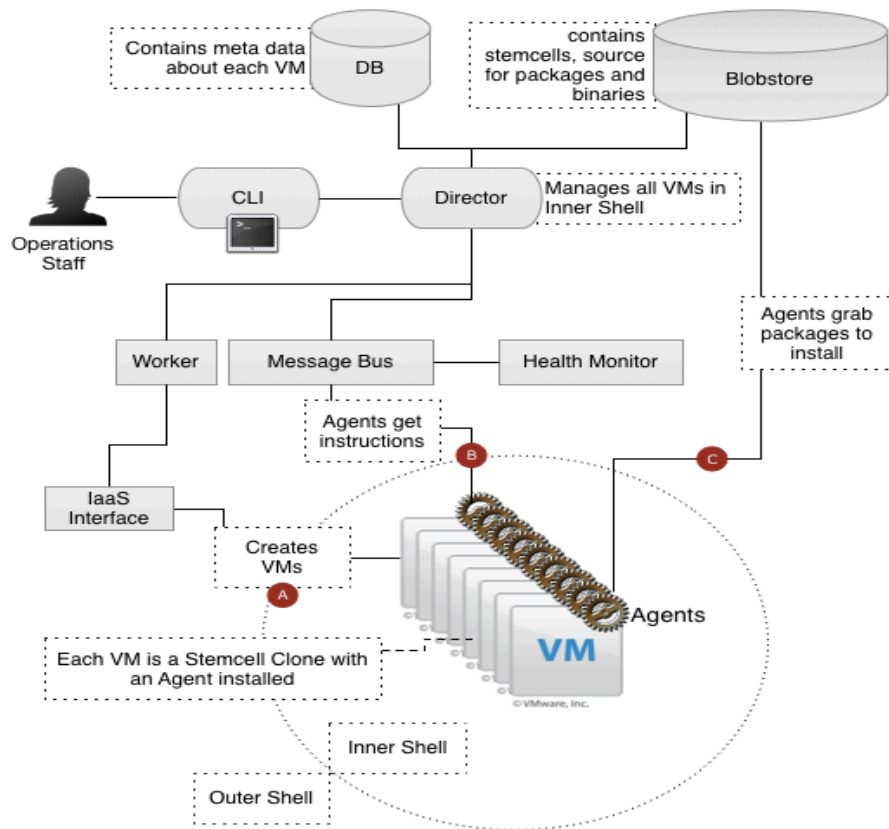
The BOSH Architecture

Very similar to CF architecture itself

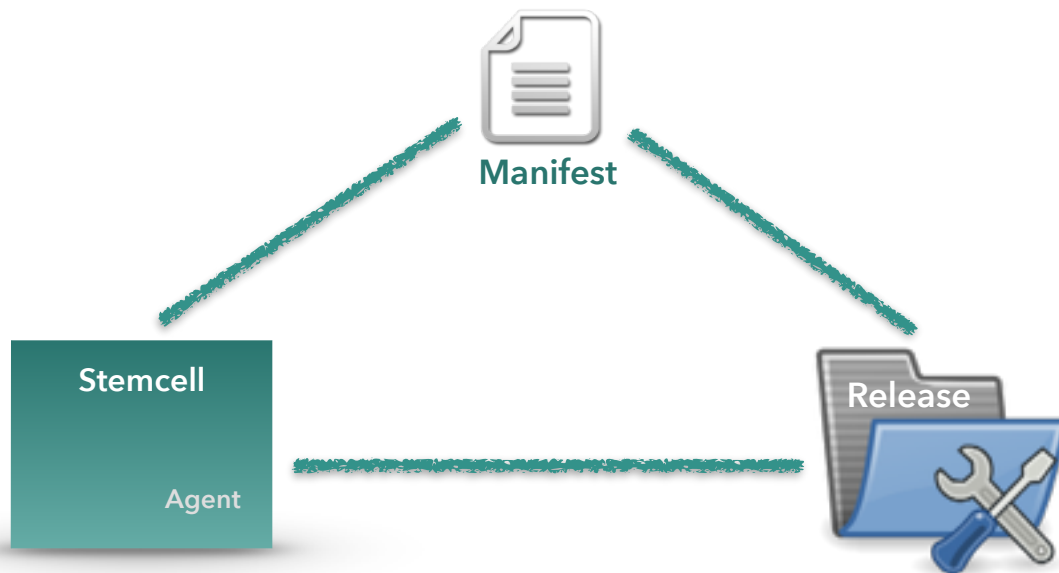
Director as analogy to Cloud Controller

Different CPLs exist per IaaS implementation

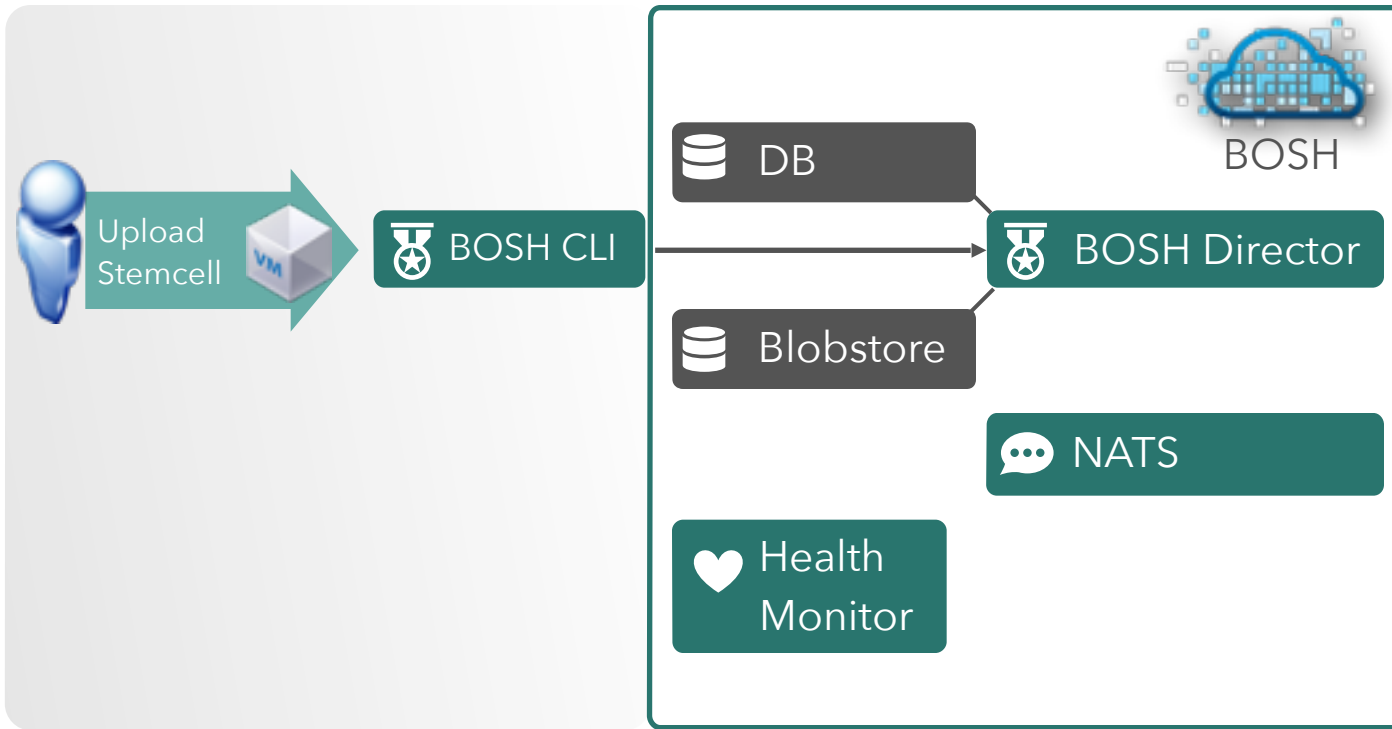
Workers responsible for executing tasks as dictated by Director



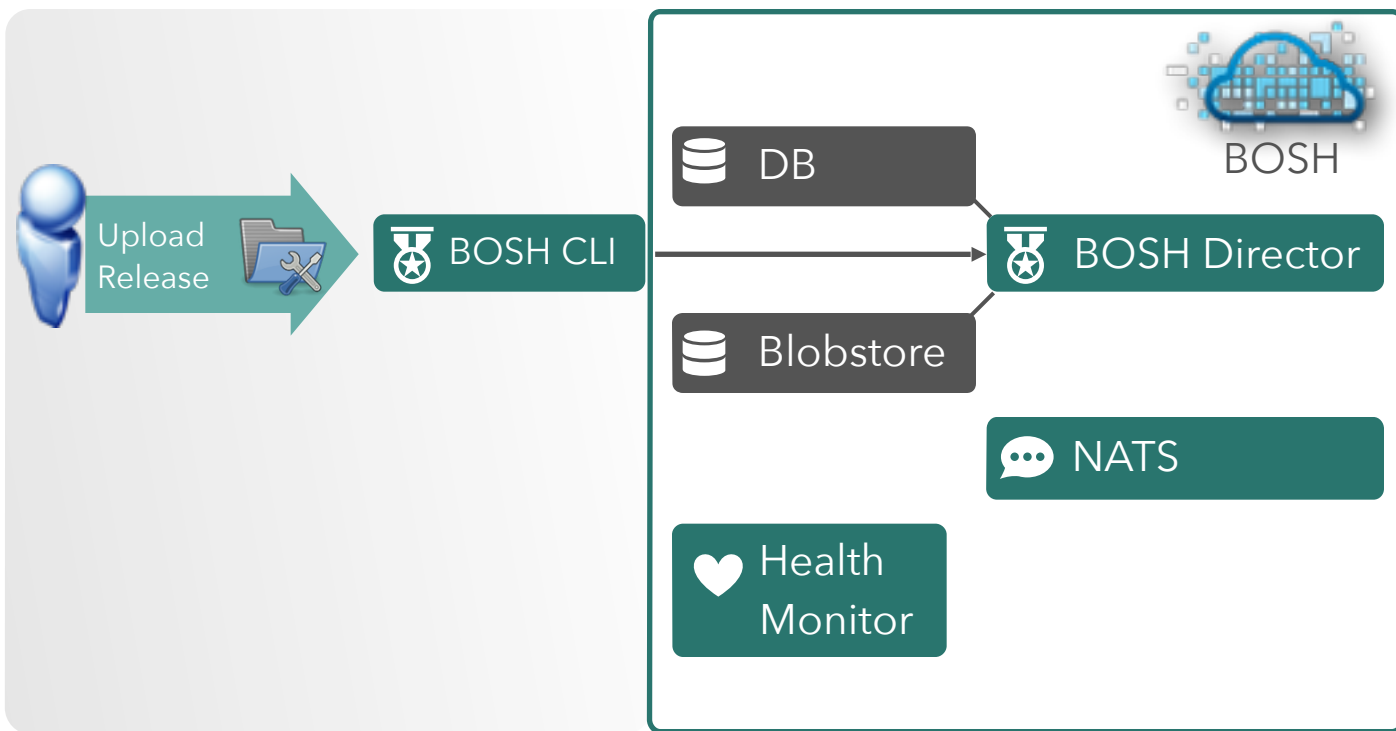
Three main components of a bosh deployment



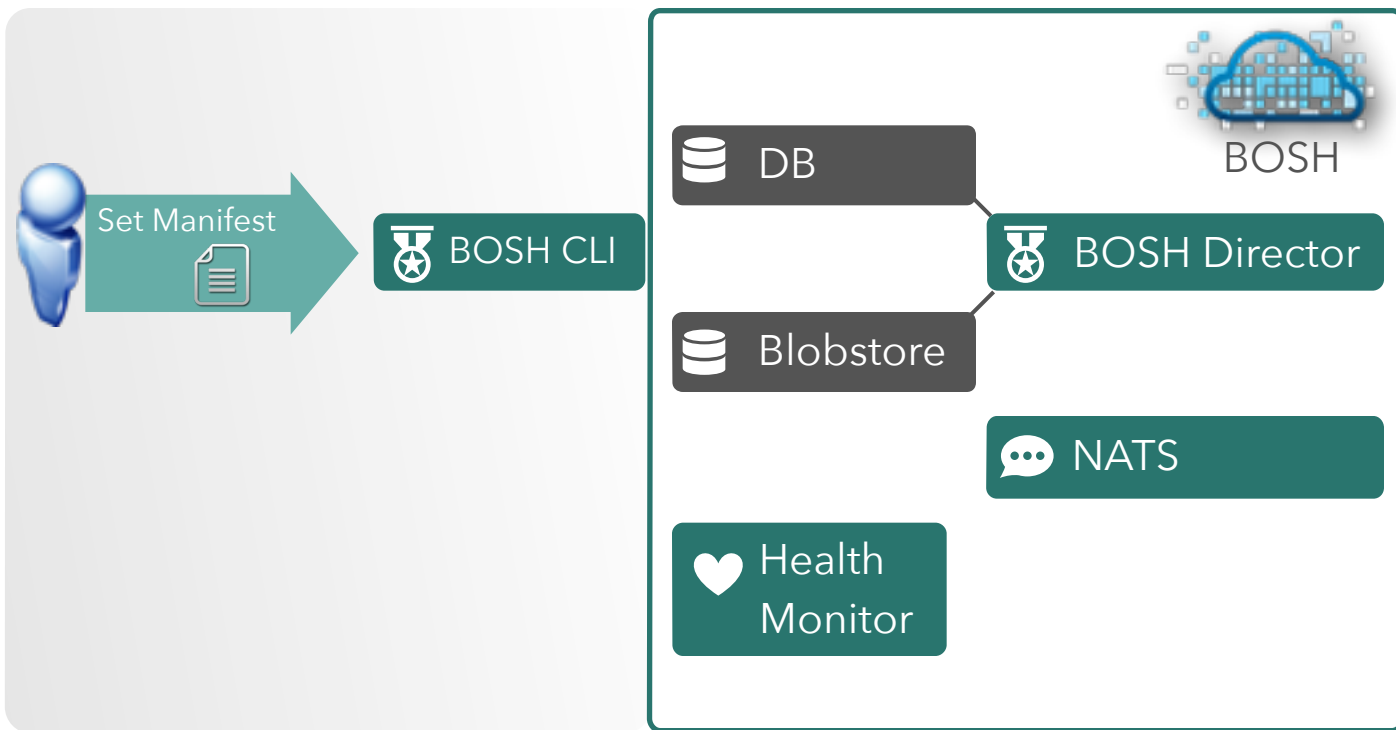
BOSH deployment



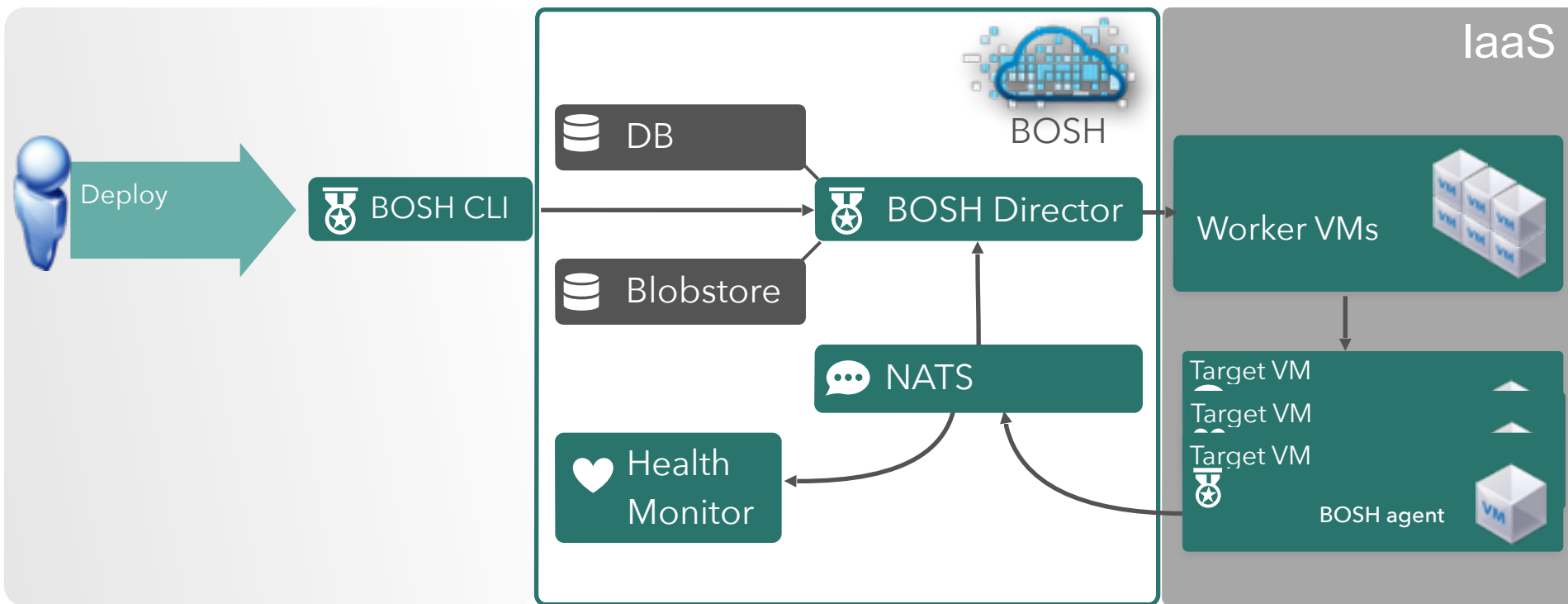
BOSH deployment



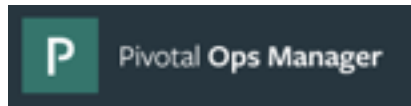
BOSH deployment



BOSH deployment



How about

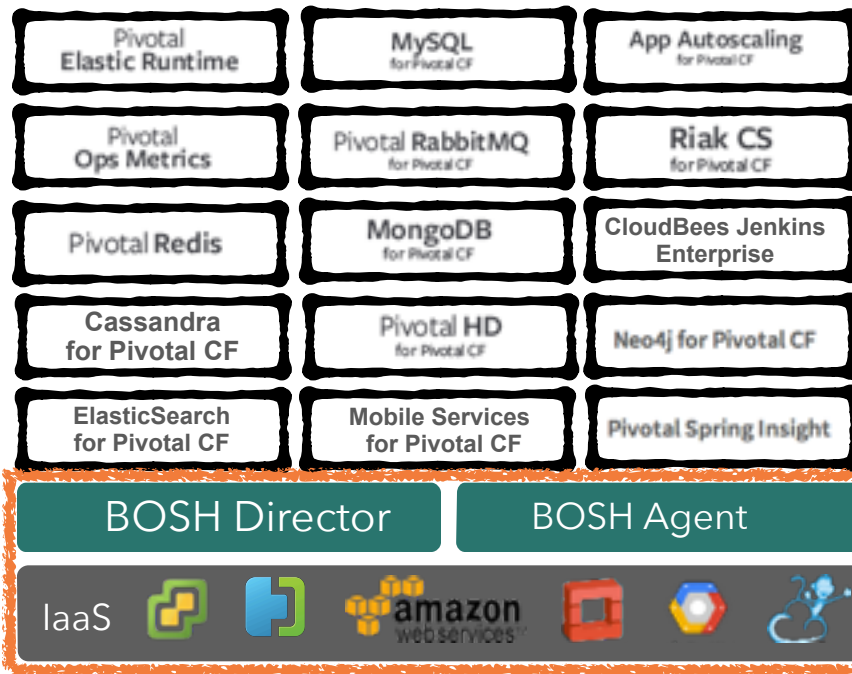


and CF?





Pivotal Ops Manager



Click to install

No downtime updates

Explore install logs

Click to scale the platform

Built-in High Availability

Built-in Platform Monitoring

Integrated services

The image displays the Pivotal Ops Manager interface. At the top, there is a dark blue header with the Pivotal logo (a green square with a white 'P') and the text 'Pivotal Ops Manager'. Below the header, there is a grid of 15 service tiles arranged in 5 rows and 3 columns. Each tile has a white background with a black border and contains the name of a service and its compatibility with Pivotal Cloud Foundry (CF). The services are: Pivotal Elastic Runtime, MySQL for Pivotal CF, App Autoscaling for Pivotal CF, Pivotal Ops Metrics, Pivotal RabbitMQ for Pivotal CF, Riak CS for Pivotal CF, Pivotal Redis, MongoDB for Pivotal CF, CloudBees Jenkins Enterprise, Cassandra for Pivotal CF, Pivotal HD for Pivotal CF, Neo4j for Pivotal CF, Elasticsearch for Pivotal CF, Mobile Services for Pivotal CF, and Pivotal Spring Insight. Below the grid, there are two green buttons: 'BOSH Director' and 'BOSH Agent'. At the bottom, there is a dark grey bar with the text 'IaaS' and several logos representing different cloud providers: OpenStack, Microsoft Azure, Amazon Web Services, Google Cloud Platform, and PaaS.

Pivotal Ops Manager

Pivotal Elastic Runtime	MySQL for Pivotal CF	App Autoscaling for Pivotal CF
Pivotal Ops Metrics	Pivotal RabbitMQ for Pivotal CF	Riak CS for Pivotal CF
Pivotal Redis	MongoDB for Pivotal CF	CloudBees Jenkins Enterprise
Cassandra for Pivotal CF	Pivotal HD for Pivotal CF	Neo4j for Pivotal CF
ElasticSearch for Pivotal CF	Mobile Services for Pivotal CF	Pivotal Spring Insight

BOSH Director BOSH Agent

IaaS     



Pivotal Ops Manager

CF

Pivotal
Elastic Runtime

MySQL
for Pivotal CF

App Autoscaling
for Pivotal CF

Pivotal
Ops Metrics

Pivotal RabbitMQ
for Pivotal CF

Riak CS
for Pivotal CF

Pivotal Redis

MongoDB
for Pivotal CF

CloudBees Jenkins
Enterprise

Cassandra
for Pivotal CF

Pivotal HD
for Pivotal CF

Neo4j for Pivotal CF

ElasticSearch
for Pivotal CF

Mobile Services
for Pivotal CF

Pivotal Spring Insight

BOSH Director

BOSH Agent

IaaS



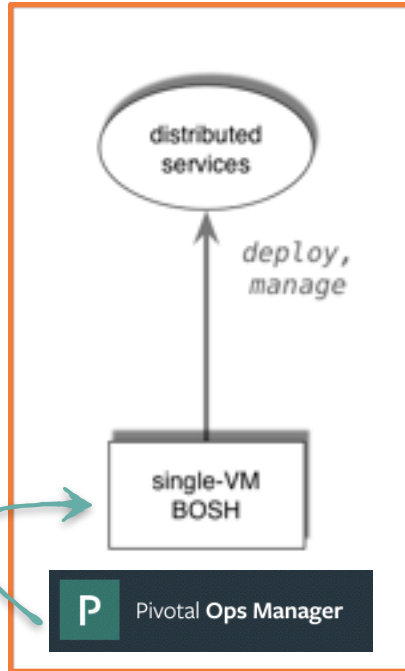
BOSH releases



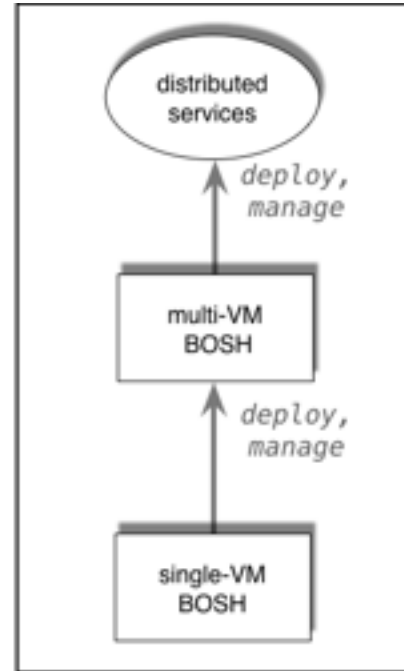
Pivotal™

BOSH possible flows

Pivotal CF flow



+ Bootstrap
+ Manage Releases
+ Manage Config
+ Bosh Client

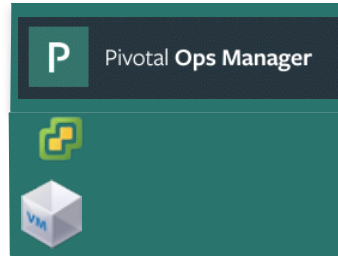


<http://docs.cloudfoundry.org/bosh/workflow.html>

How does a Pivotal CF install work?



Deploy Ops Manager VM



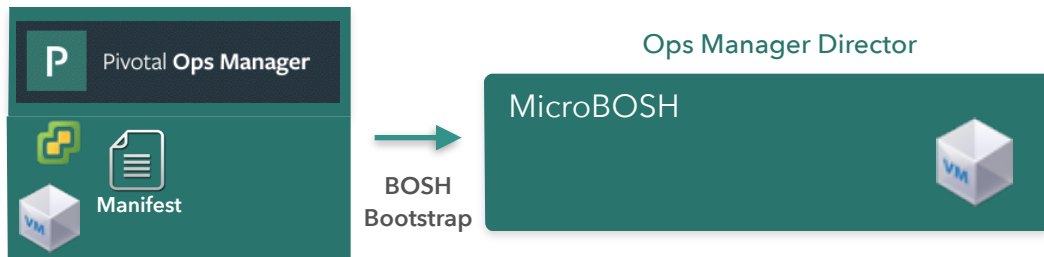
Deploy Ops Manager VM

Conf. IaaS tile / apply changes



Deploy Ops Manager VM

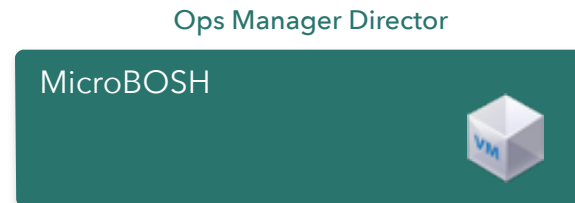
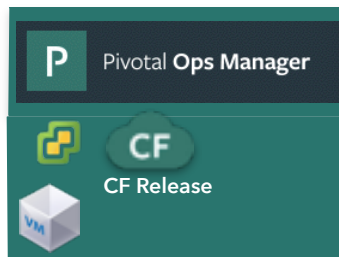
Conf. IaaS tile / apply changes



Deploy Ops Manager VM

Conf. IaaS tile / apply changes

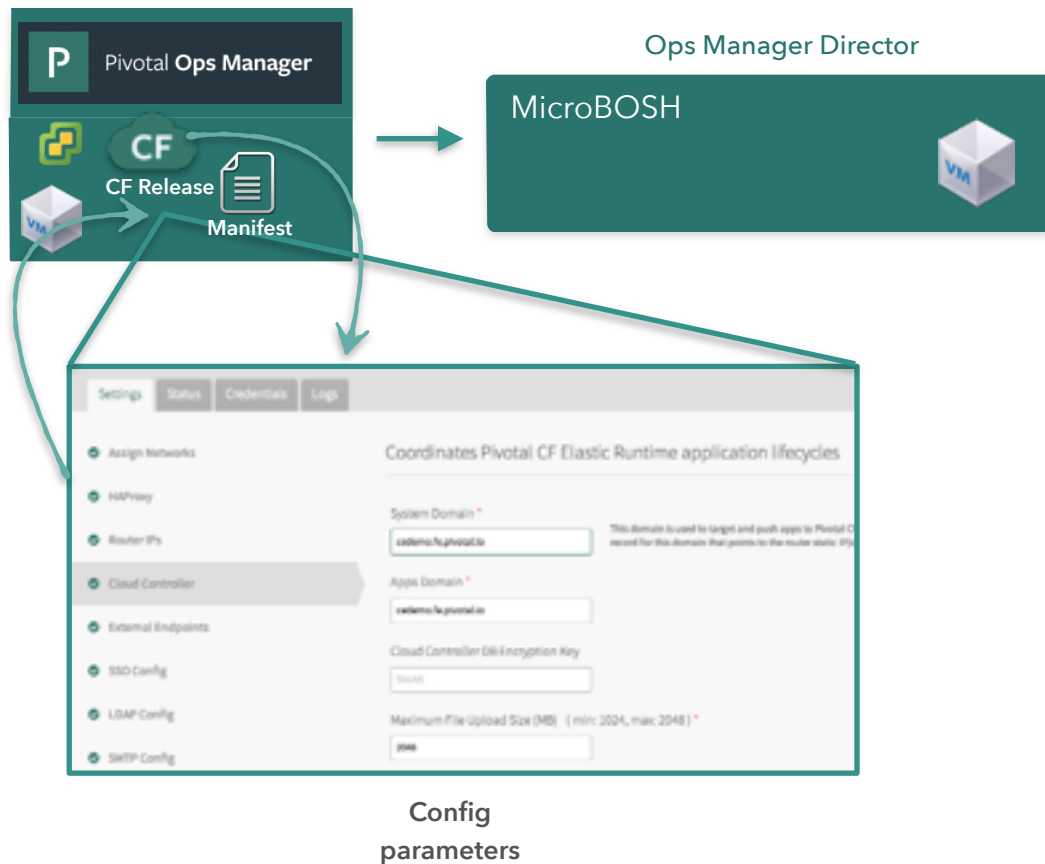
Add ER tile (BOSH release)



Deploy Ops Manager VM

Conf. IaaS tile / apply changes

Add ER tile (BOSH release)

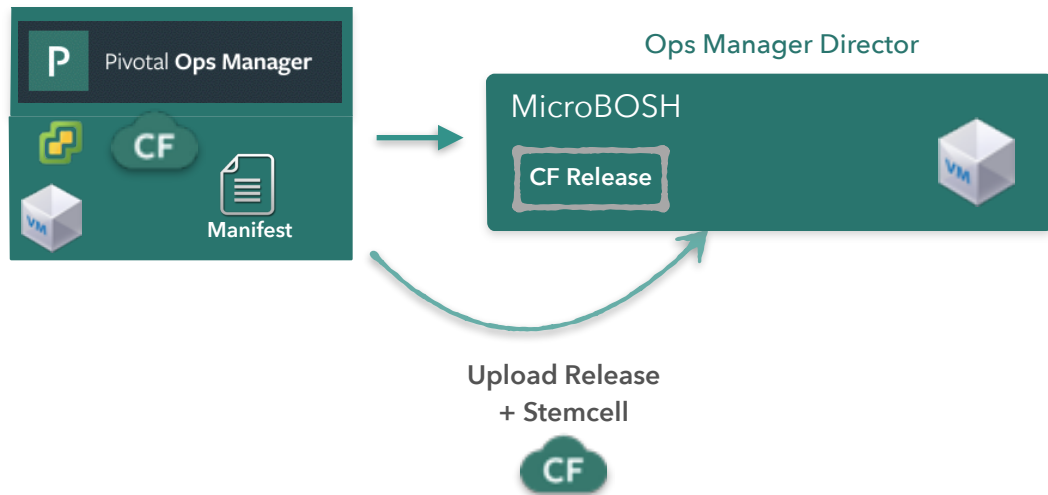


Deploy Ops Manager VM

Conf. IaaS tile / apply changes

Add ER tile (BOSH release)

Apply Changes

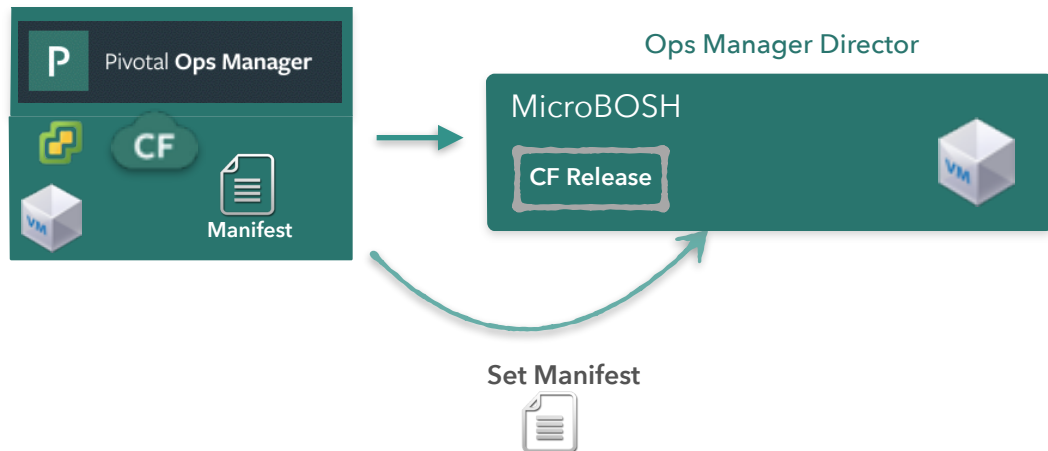


Deploy Ops Manager VM

Conf. IaaS tile / apply changes

Add ER tile (BOSH release)

Apply Changes

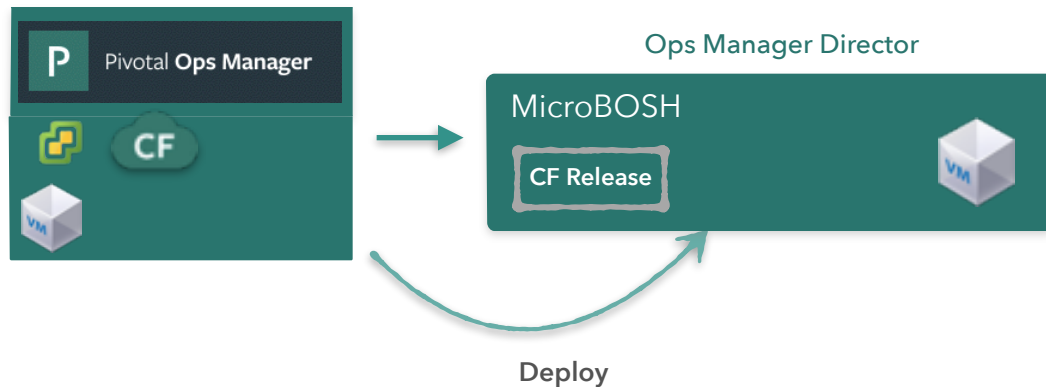


Deploy Ops Manager VM

Conf. IaaS tile / apply changes

Add ER tile (BOSH release)

Apply Changes

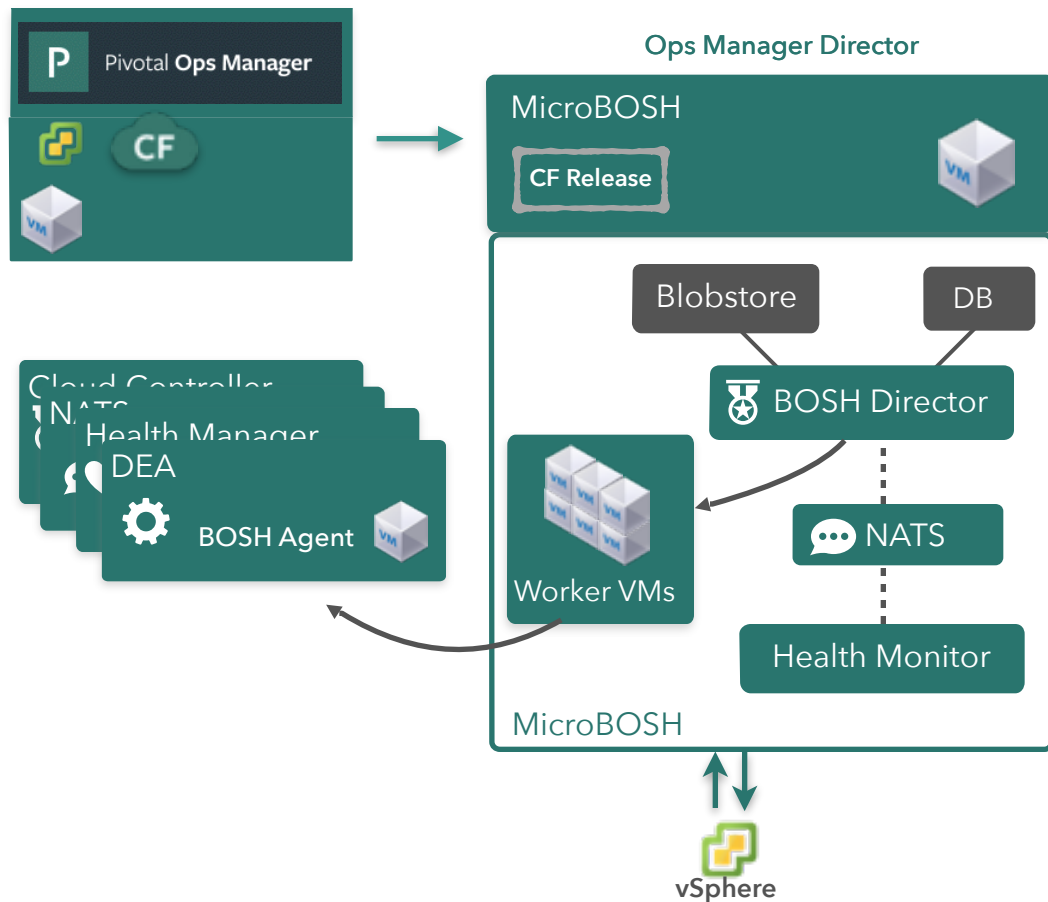


Deploy Ops Manager VM

Conf. IaaS tile / apply changes

Add ER tile (BOSH release)

Apply Changes

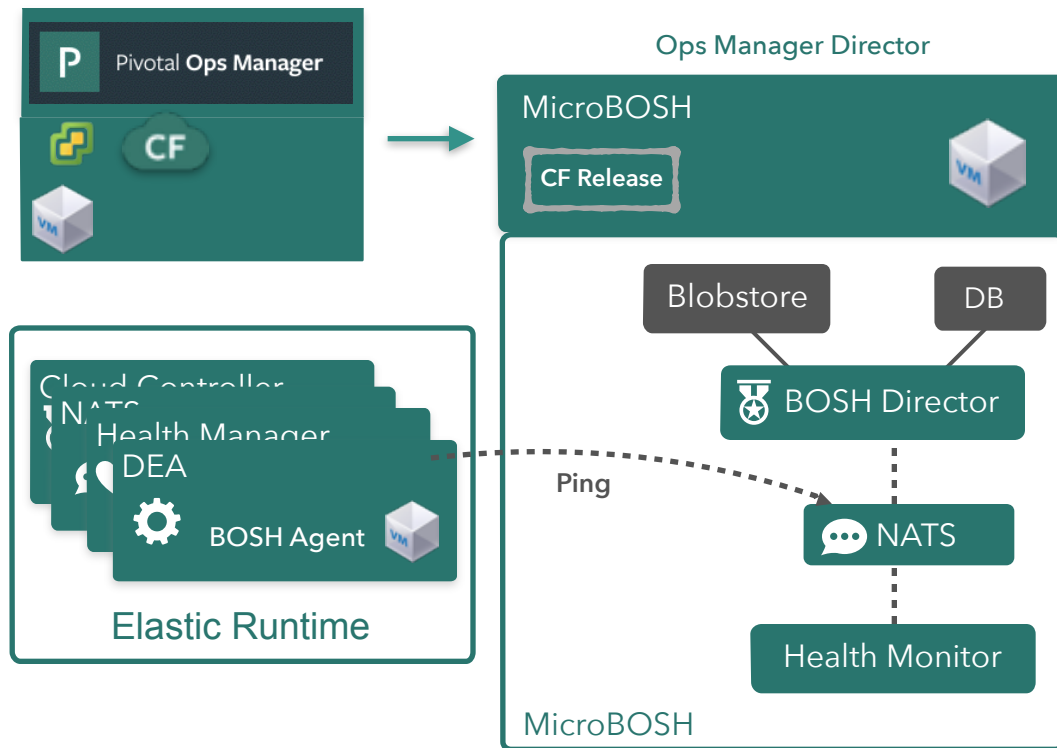


Deploy Ops Manager VM

Conf. IaaS tile / apply changes

Add ER tile (BOSH release)

Apply Changes



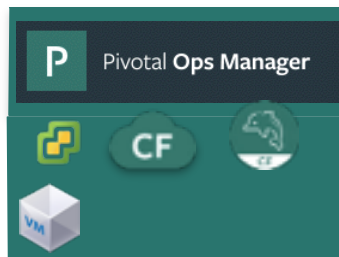
Deploy Ops Manager VM

Conf. IaaS tile / apply changes

Add ER tile (BOSH release)

Apply Changes

(... same for other services)



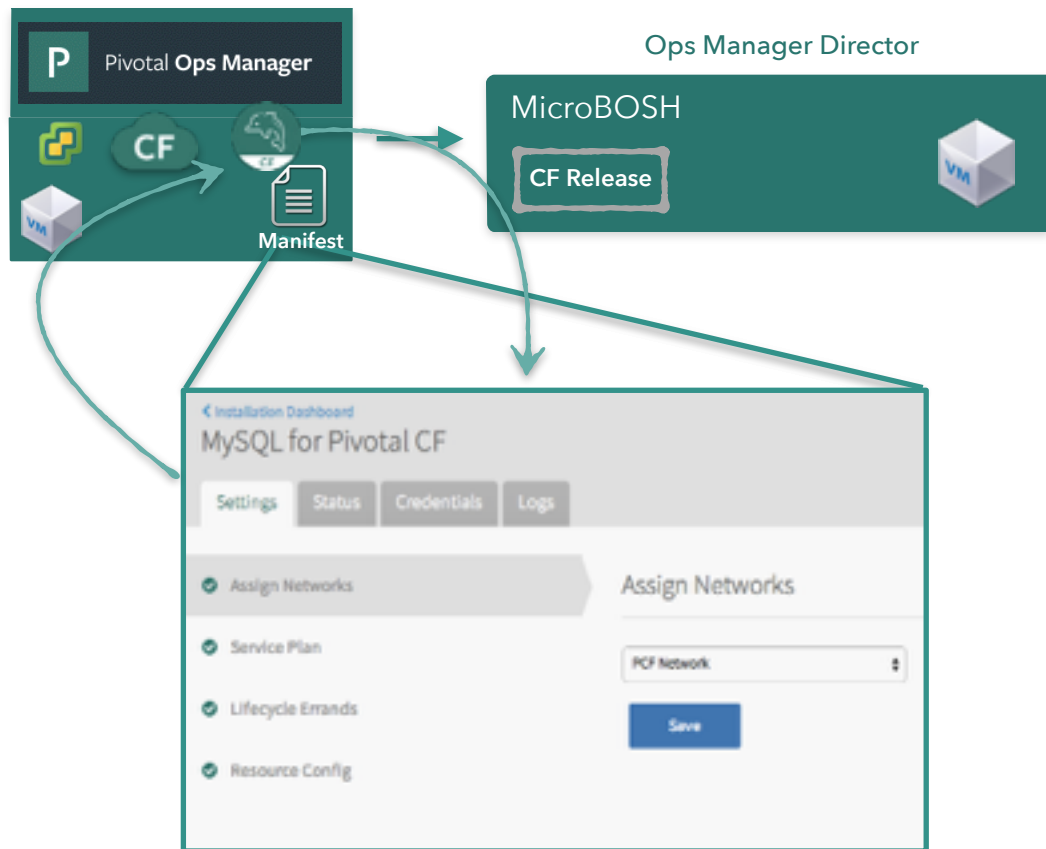
Deploy Ops Manager VM

Conf. IaaS tile / apply changes

Add ER tile (BOSH release)

Apply Changes

(... same for other services)



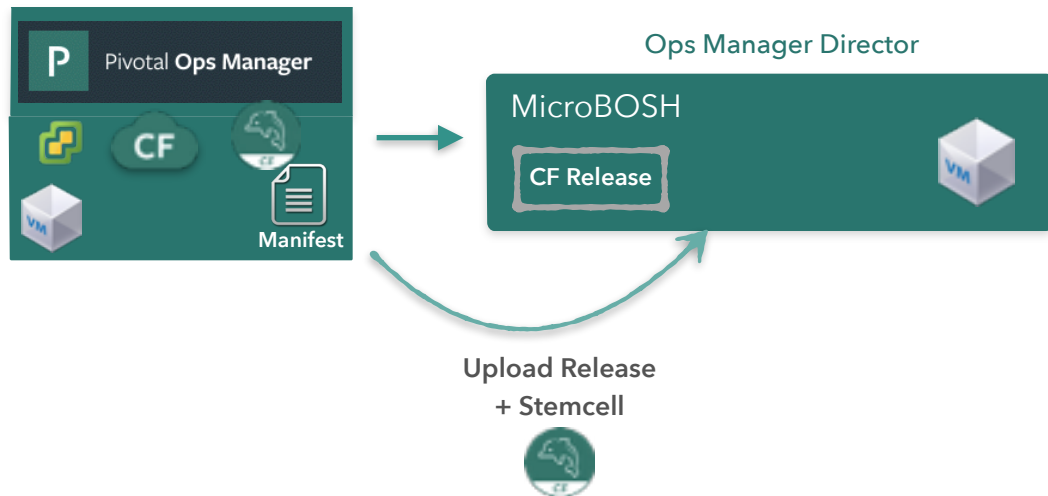
Deploy Ops Manager VM

Conf. IaaS tile / apply changes

Add ER tile (BOSH release)

Apply Changes

(... same for other services)



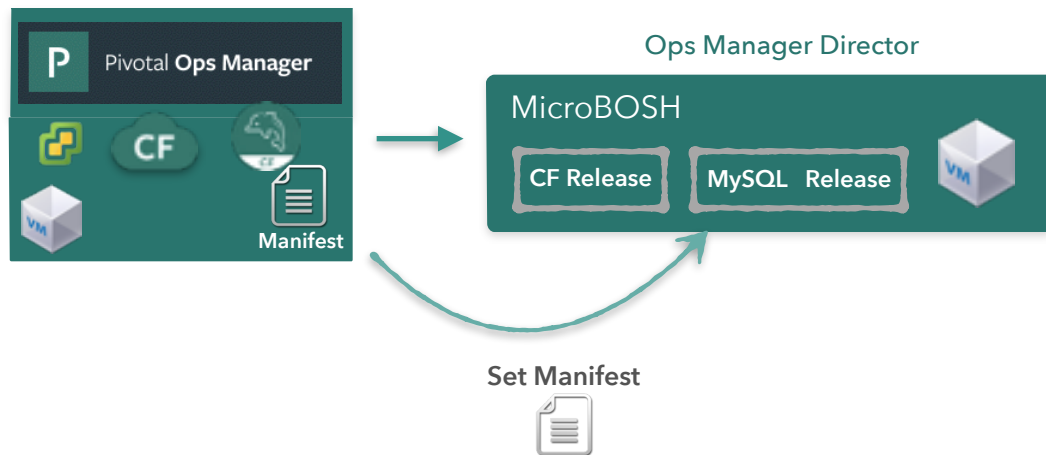
Deploy Ops Manager VM

Conf. IaaS tile / apply changes

Add ER tile (BOSH release)

Apply Changes

(... same for other services)



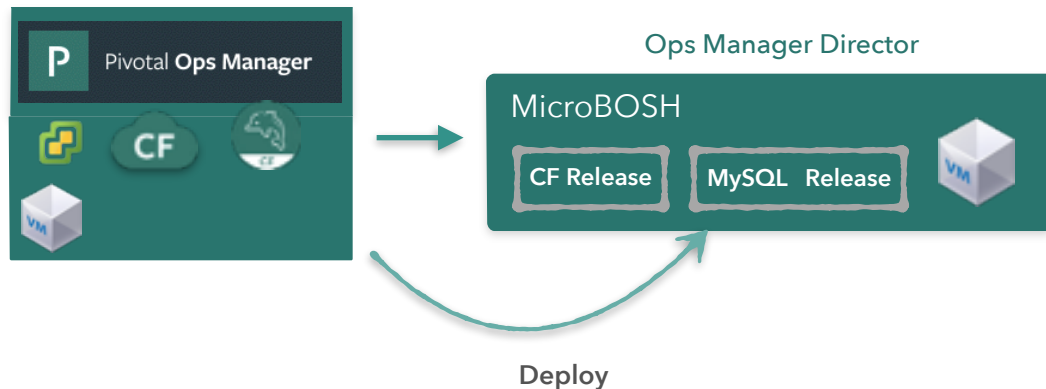
Deploy Ops Manager VM

Conf. IaaS tile / apply changes

Add ER tile (BOSH release)

Apply Changes

(... same for other services)



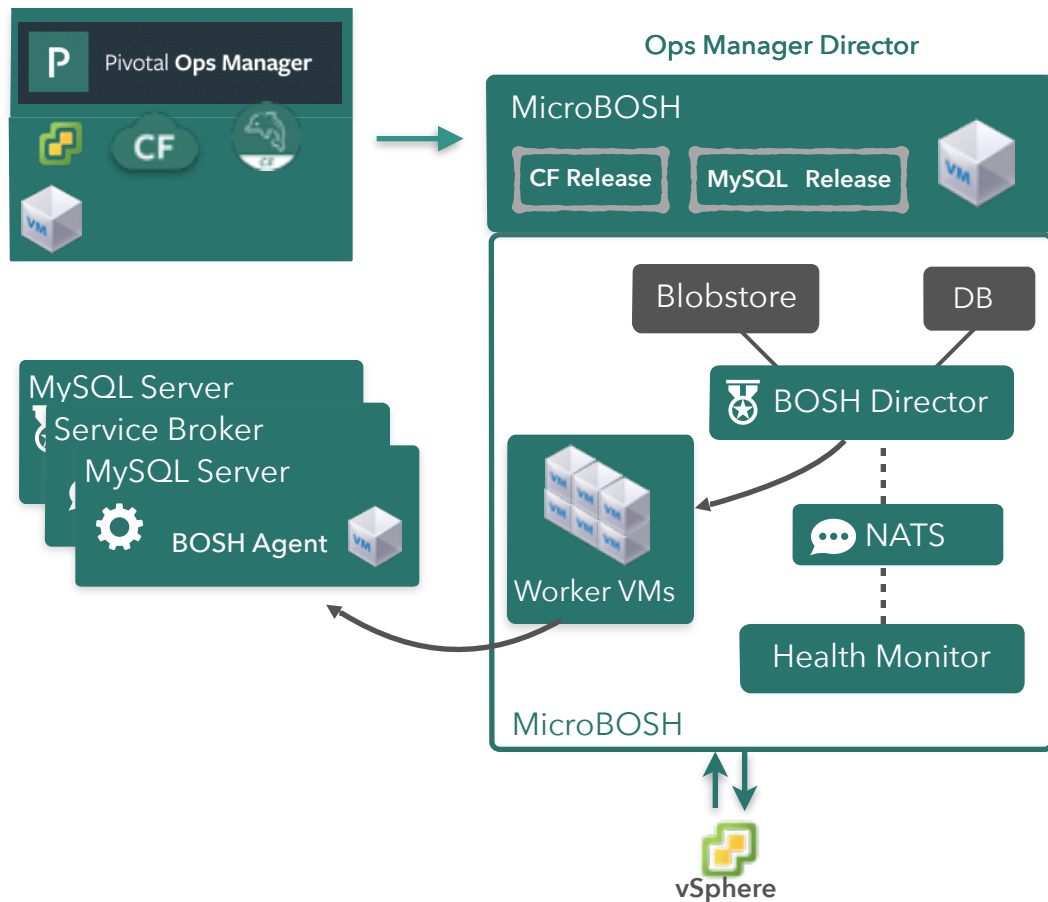
Deploy Ops Manager VM

Conf. IaaS tile / apply changes

Add ER tile (BOSH release)

Apply Changes

(... same for other services)



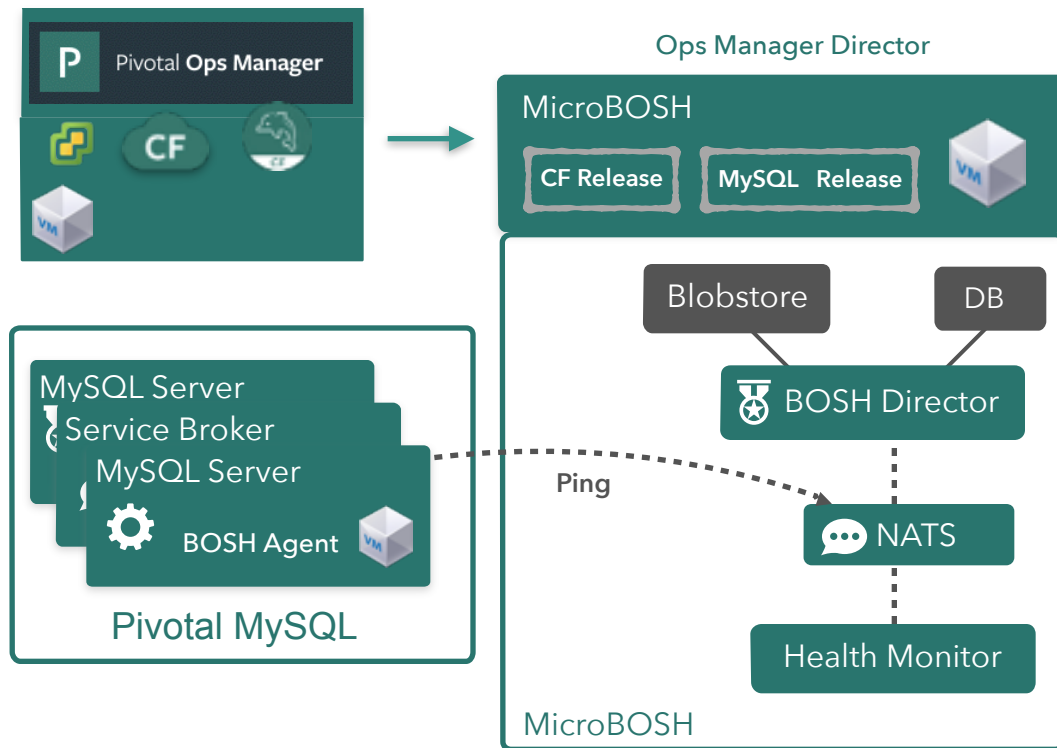
Deploy Ops Manager VM

Conf. IaaS tile / apply changes

Add ER tile (BOSH release)

Apply Changes

(... same for other services)



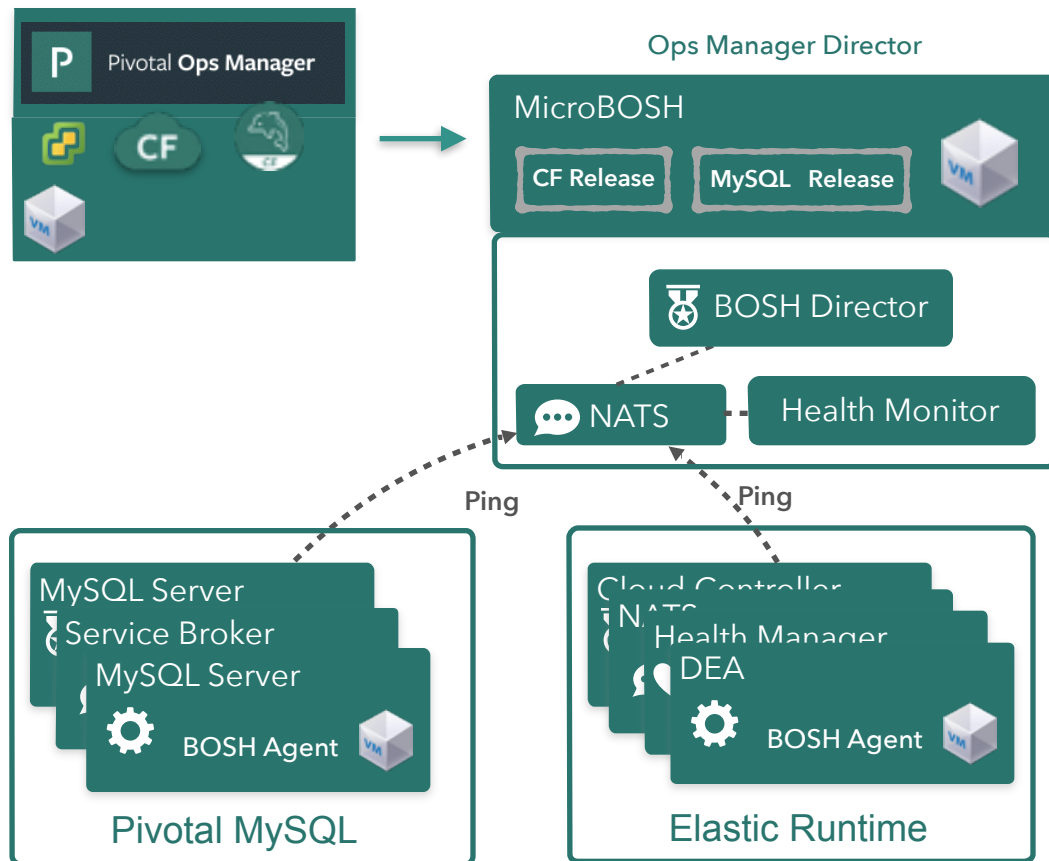
Deploy Ops Manager VM

Conf. IaaS tile / apply changes

Add ER tile (BOSH release)

Apply Changes

(... same for other services)



Pivotal Elastic Runtime

No upgrades available

Pivotal RabbitMQ

No upgrades available

CloudBees Jenkins Enterprise,
powered by Pivotal

No upgrades available

MongoDB for Pivotal CF

No upgrades available

Docker

0.0.0.19 ▾

App Autoscaling for Pivotal CF

1.3.2.0 ▾

Pivotal CF Ops Metrics

No upgrades available

Riak CS for Pivotal CF

No upgrades available

MySQL for Pivotal CF

No upgrades available

Import a Product

v1.3.2.0

v1.3.2.0

v1.3.2.0

v1.3.2.0

v1.3.2.0

v1.3.2.0

Upload a .pivotal file

p-rabbitmq-1.3.pivotal

... adding a new tile

What's inside a .pivotal file?

Ops Manager tile file



p-rabbitmq-1.3.pivotal

```
p_rabbitmq-1.3.0.0.rc.1.pivotal/
```

```
├─ content_migrations
```

```
│   └─ p_rabbitmq.yml
```

```
├─ metadata
```

```
│   └─ p_rabbitmq.yml
```

```
│   └─ p_rabbitmq.yml~
```

```
├─ releases
```

```
│   └─ cf-rabbitmq-14.tgz
```

```
└─ stemcells
```

```
    └─ bosh-stemcell-2682.1-vsphere-esxi-ubuntu-trusty-go_agent.tgz
```

Migration from previous versions

Manifest template (includes tile image)

BOSH release

Stemcell

What's inside a .pivotal file?

Ops Manager tile file

Installation Dashboard

Pivotal RabbitMQ

SettingsStatusCredentialsLogs

Assign Networks

Assign Availability Zones

RabbitMQ

Lifecycle Errands

Resource Config

Configuration for RabbitMQ. Only the server administrator credentials must be provided. All other settings can be left at default values.

RabbitMQ admin user credentials *

Username

Password

RabbitMQ plugins *

☐ rabbitmq-amqp1_0

☐ rabbitmq_auth_backend_ldap

☐ rabbitmq_auth_mechanism_ssl

☐ rabbitmq_consistent_hash_exchange

☐ rabbitmq_federation

☐ rabbitmq_federation_management

☐ rabbitmq_jsonrpc_channel

☐ rabbitmq_jsonrpc_channel_examples

☒ rabbitmq_management

☐ rabbitmq_management_visualiser

☐ rabbitmq_mqtt

☐ rabbitmq_shovel

☐ rabbitmq_shovel_management

☐ rabbitmq_stomp

form_types:

- name: rabbitmq-broker

label: RabbitMQ

description: Configuration for RabbitMQ. Only the server administrator credentials must be provided. All other settings can be left at default values.

property_inputs:

- reference: rabbitmq-cluster.server_admin_credentials

label: RabbitMQ admin user credentials

- reference: rabbitmq-cluster.plugins

label: RabbitMQ plugins

- reference: rabbitmq-haproxy.ports

label: RabbitMQ cluster HAproxy ports

- reference: rabbitmq-cluster.ssl_key

label: RabbitMQ server private key

- reference: rabbitmq-cluster.ssl_cert

label: RabbitMQ server certificate

- reference: rabbitmq-cluster.ssl_cacert

label: RabbitMQ server CA certificate

- reference: rabbitmq-cluster.cookie

label: Erlang cookie used by RabbitMQ nodes and rabbitmqctl

- reference: rabbitmq-cluster.config

label: RabbitMQ configuration



Manifest

What's inside a .pivotal file?

Ops Manager tile file

Installation Dashboard

Pivotal RabbitMQ

Settings Status Credentials Logs

Assign Networks

Assign Availability Zones

RabbitMQ

Lifecycle Errands

Resource Config

Configuration for RabbitMQ. Only the server administrator credentials must be provided. All other settings can be left at default values.

RabbitMQ adminuser credentials *


Username

Password

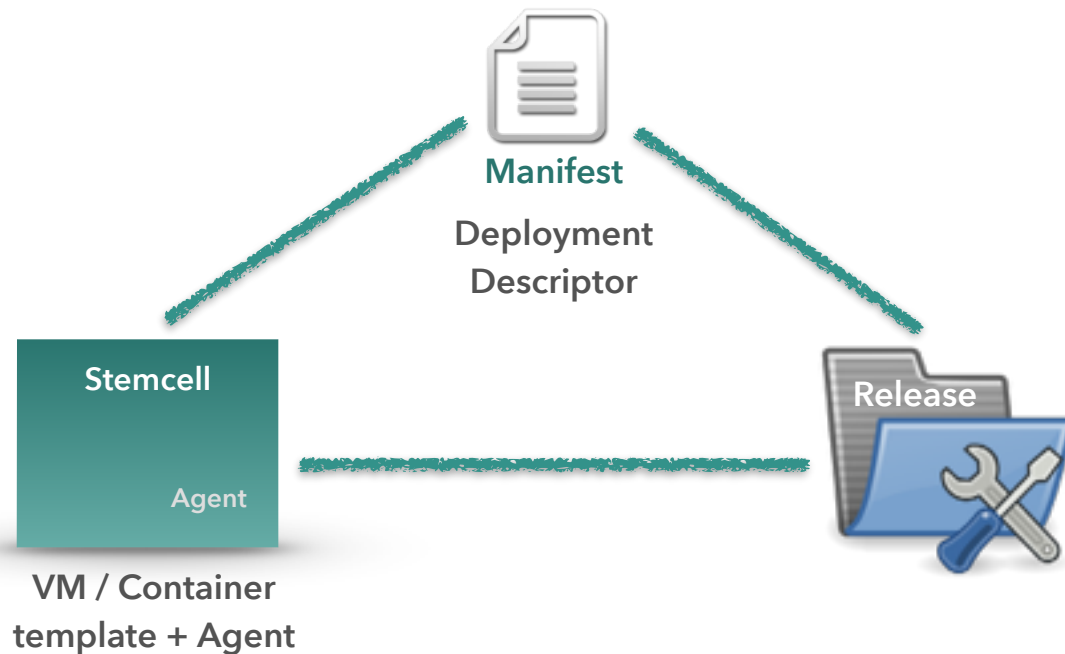
RabbitMQ plugins *

- ☐ rabbitmq_amqp1_0
- ☐ rabbitmq_auth_backend_ldap
- ☐ rabbitmq_auth_mechanism_ssl
- ☐ rabbitmq_consistent_hash_exchange
- ☐ rabbitmq_federation
- ☐ rabbitmq_federation_management
- ☐ rabbitmq_jsonrpc_channel
- ☐ rabbitmq_jsonrpc_channel_examples
- ☒ rabbitmq_management
- ☐ rabbitmq_management_visualiser
- ☐ rabbitmq_mqtt
- ☐ rabbitmq_shovel
- ☐ rabbitmq_shovel_management
- ☐ rabbitmq_stomp

```
- name: plugins
  type: multi_select_options
  label: RabbitMQ Plugins to enable
  description: "Select which RabbitMQ plugins you wish to enable. Note the Management plugin is required for integration with Cloud Foundry"
  options:
    - name: rabbitmq_amqp1_0
      label: rabbitmq_amqp1_0
    - name: rabbitmq_auth_backend_ldap
      label: rabbitmq_auth_backend_ldap
    - name: rabbitmq_auth_mechanism_ssl
      label: rabbitmq_auth_mechanism_ssl
    - name: rabbitmq_consistent_hash_exchange
      label: rabbitmq_consistent_hash_exchange
    - name: rabbitmq_federation
      label: rabbitmq_federation
    - name: rabbitmq_federation_management
      label: rabbitmq_federation_management
    - name: rabbitmq_jsonrpc_channel
      label: rabbitmq_jsonrpc_channel
    - name: rabbitmq_jsonrpc_channel_examples
      label: rabbitmq_jsonrpc_channel_examples
    - name: rabbitmq_management
      label: rabbitmq_management
    - name: rabbitmq_management_visualiser
      label: rabbitmq_management_visualiser
```

 Manifest

Three main components of a bosh deployment





... so what exactly is a BOSH release?



Anatomy of BOSH releases

<http://docs.cloudfoundry.org/bosh/create-release.html>

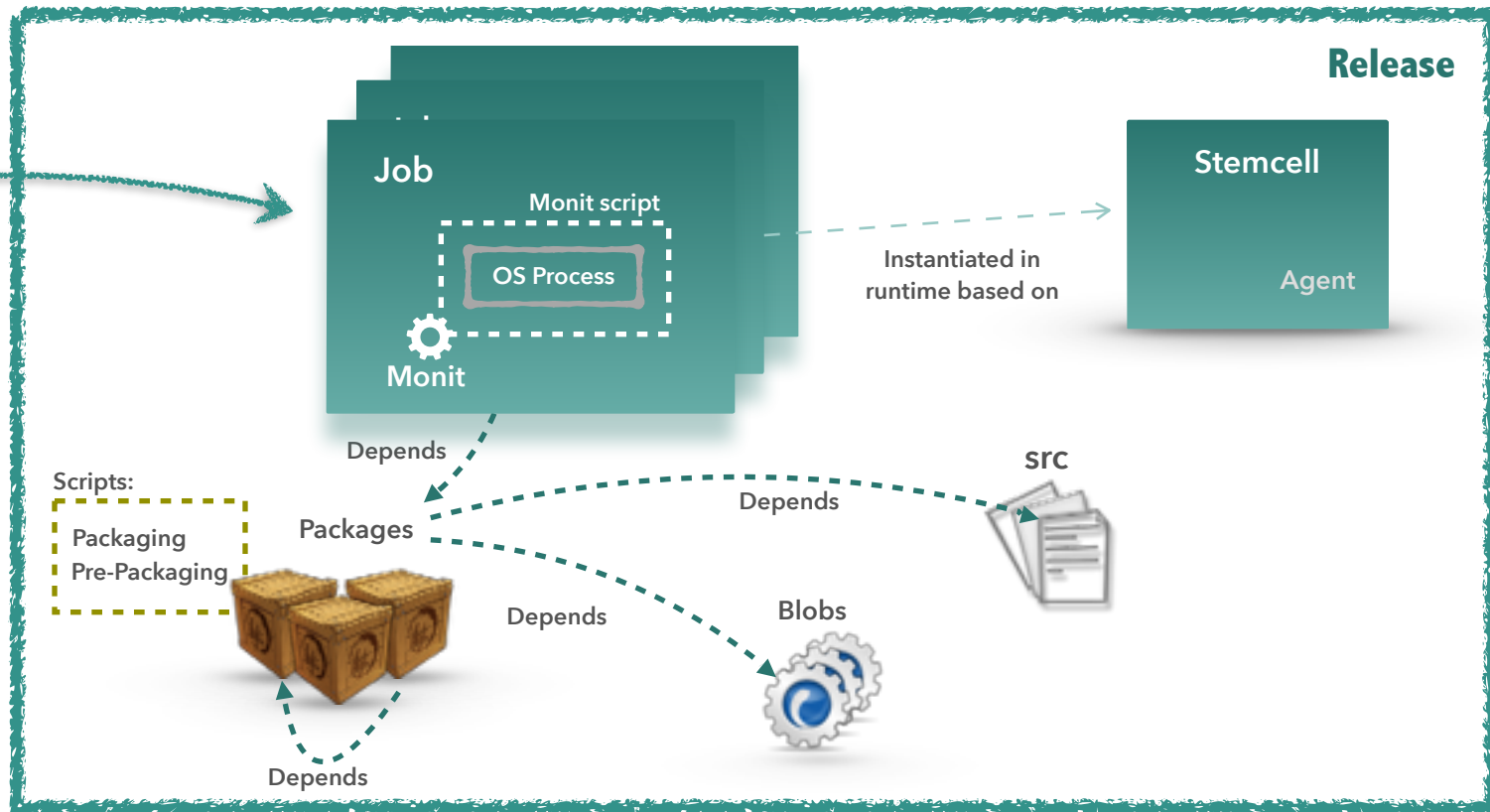
```
49 jobs:
50 - instances: 1
51   name: postgres
52   networks:
53   - name: default-network
54     static_ips:
55     - 10.244.0.2
56   persistent_disk: 2024
57   release: bosh_intro
58   resource_pool: default-pool
59   template: postgres
60   properties:
61     port: 5637
```



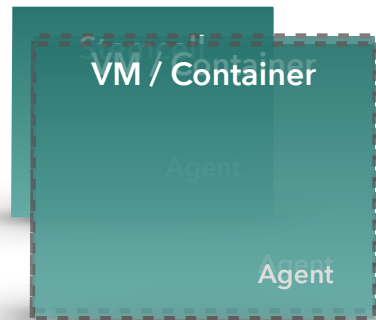
Manifest

Example of Jobs:

- DEA (CF)
- CloudController (CF)
- Service Broker (MySQL & Rabbit)
- Locator (possible GemFire release)

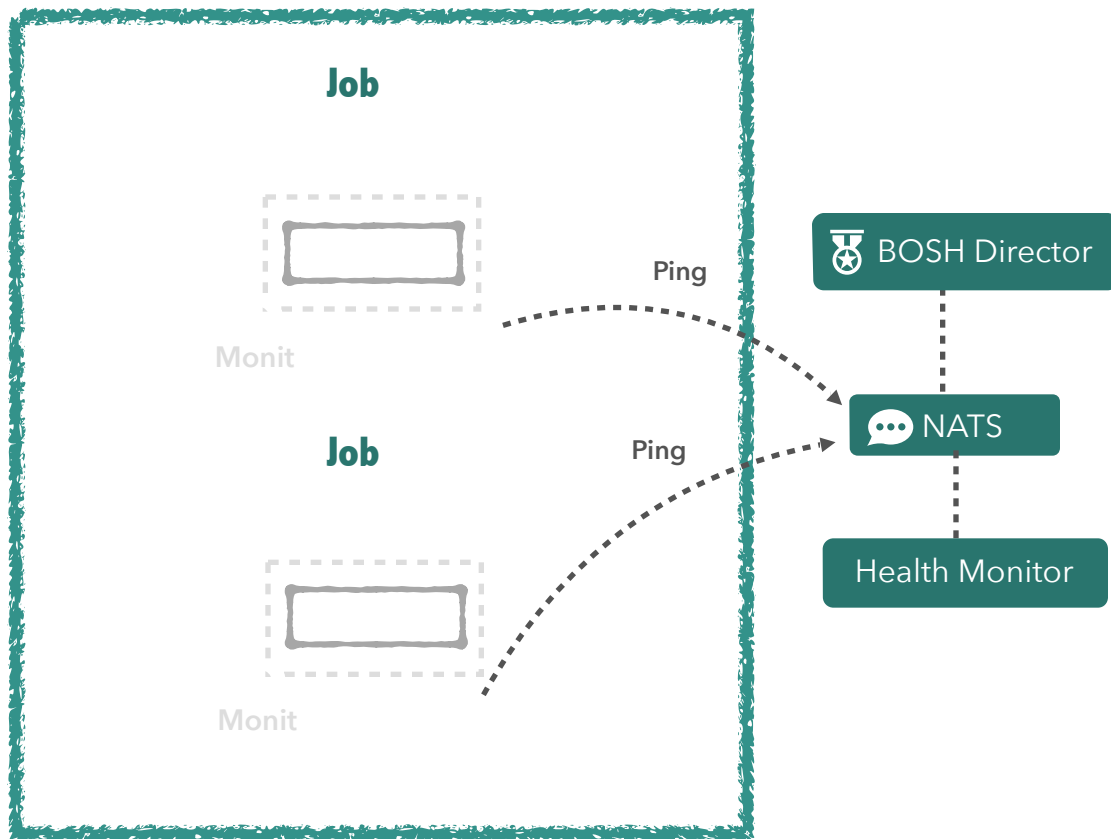


Job Creation



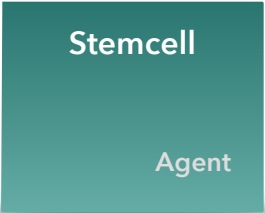
Compiled
Packages

Deployment

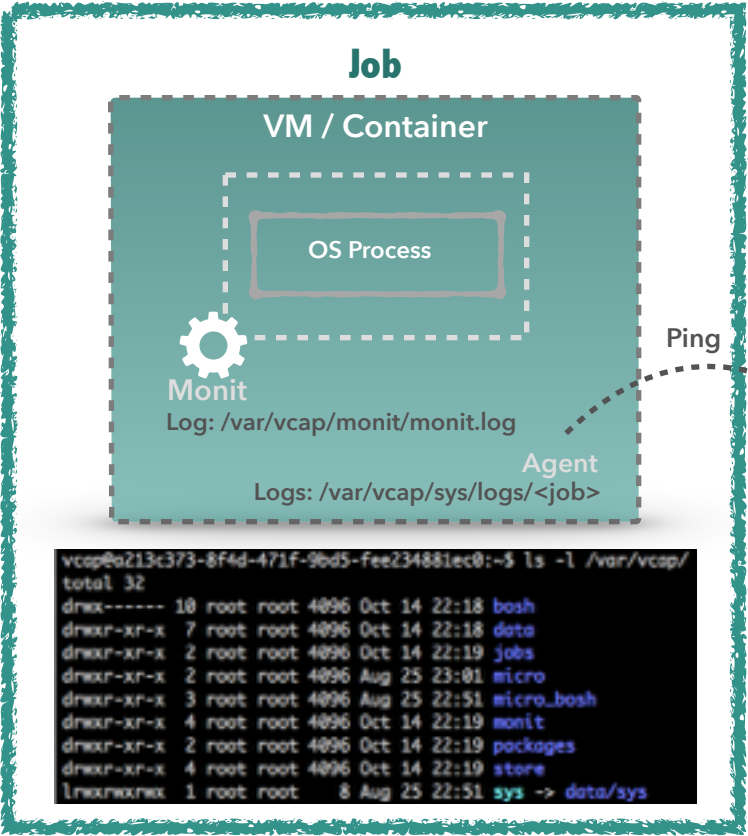


Logs

Deployment



Compiled Packages



Logs: /var/vcap/sys/logs/
hm9000*.log

Pivotal

A NEW PLATFORM FOR A NEW ERA