

# Bosh 2.0



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Etourneau Gwenn

@The\_shinji62

# About me



Etourneau Gwenn

Sr Solution Architect

Bef.: Platform Architect

Pivotal™



[https://twitter.com/the\\_shinji62](https://twitter.com/the_shinji62)



<https://github.com/shinji62>


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Hosted by: [Etourneau "Shinji62" Gwenn](#) (Organizer)

Tue Jun 28  
7:00 PM  
[✓ I'M GOING](#)  
14 going  
4 comments

### What's new

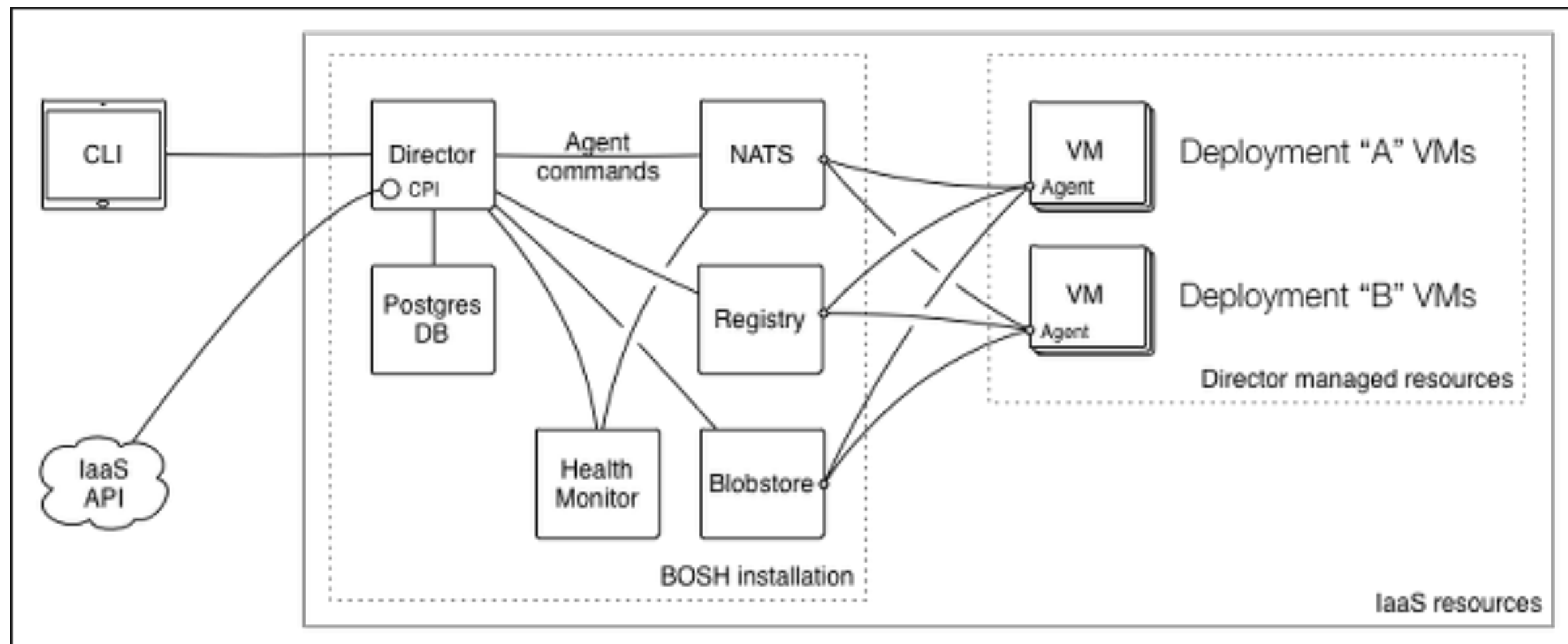
  
  
  
[MORE](#)

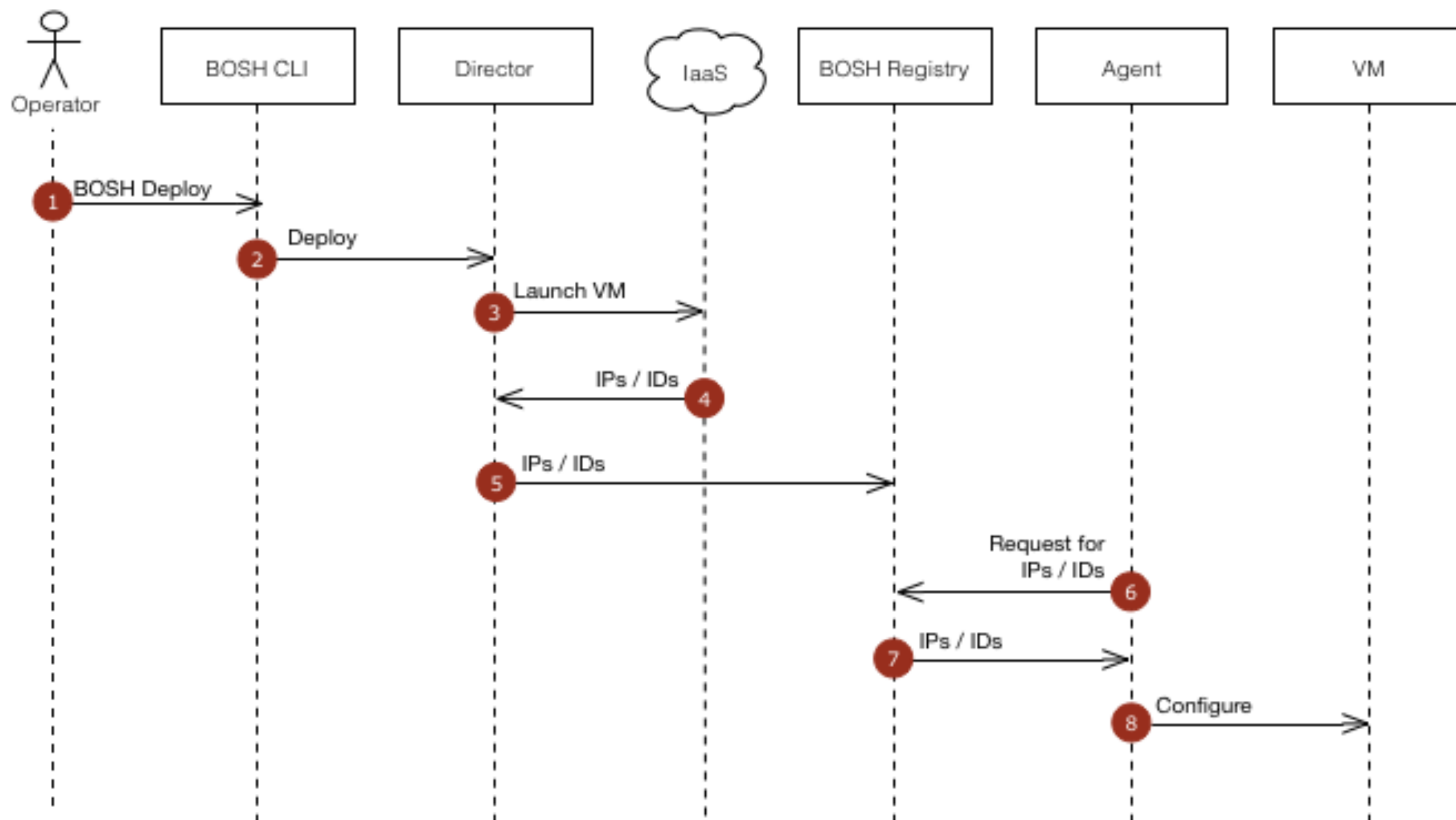
# Agenda

- wtf is bosh ?
- Architecture
- Demo
- Q&A

# WTF is bosh ?











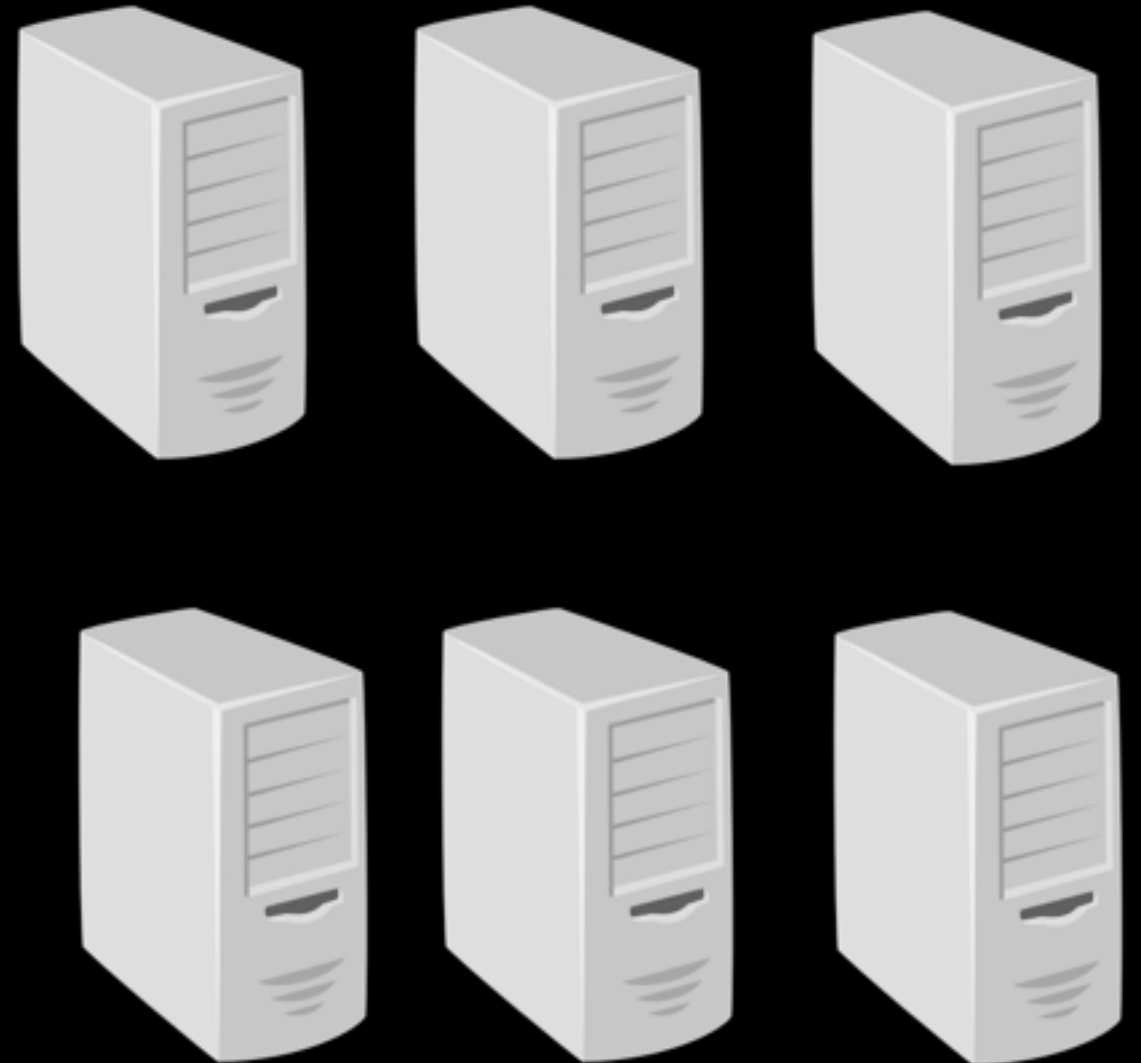
Bosh

Deployment files

```
bosh deployment cf-release.yml  
bosh deploy
```



Bosh

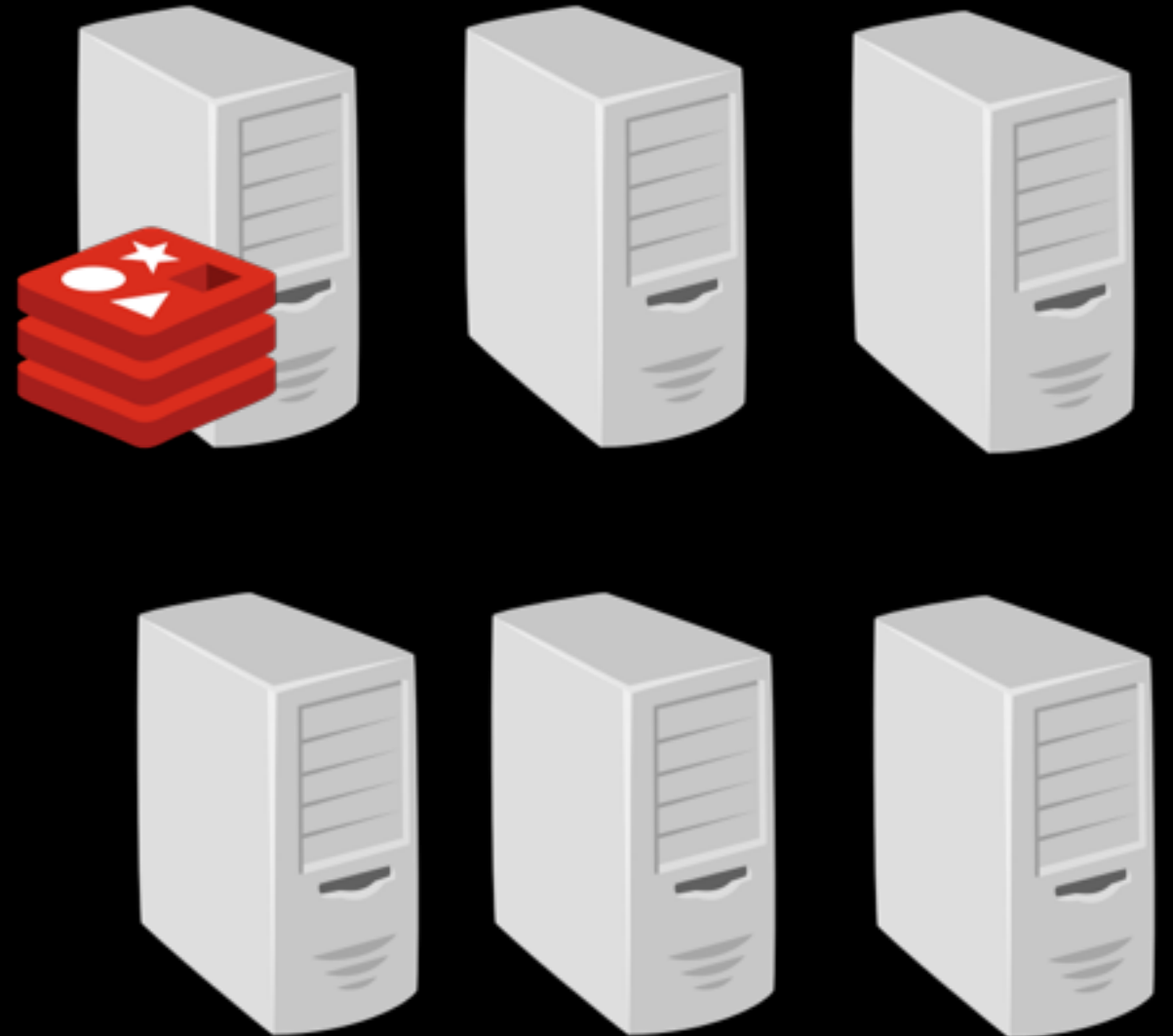


Deployment files

**bosh** deployment cf-release.yml  
**bosh** deploy



Bosh



Deployment files

**bosh** deployment cf-release.yml  
**bosh** deploy



Bosh

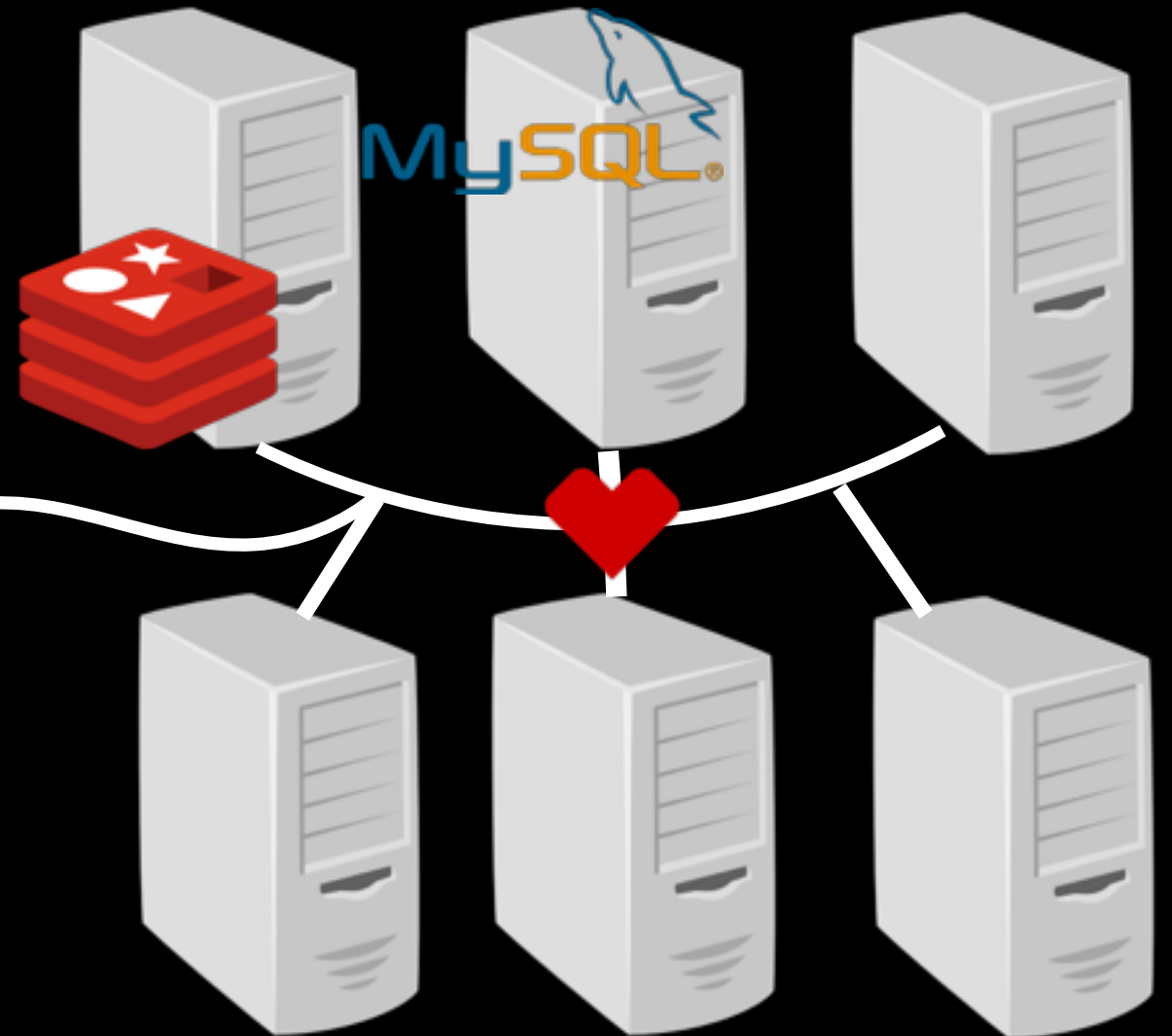


Deployment files

**bosh** deployment cf-release.yml  
**bosh** deploy



Bosh



Deployment files

**bosh** deployment cf-release.yml  
**bosh** deploy

# Deployment manifest

```
jobs:
- name: nats_z1
  instances: 1
  resource_pool: small_z1
  templates:
  - {name: nats, release: cf}
  - {name: nats_stream_forwarder, release: cf}
  - {name: metron_agent, release: cf}
  networks:
  - name: cf_private
    static_ips: [10.0.16.103]
```

Job information

```
- name: cf_public
  type: manual
  subnets:
  - range: 10.0.0.0/24
    gateway: 10.0.0.1
    dns: [10.0.0.2]
    reserved: ["10.0.0.2 - 10.0.0.10"]
    cloud_properties:
      subnet: REPLACE_WITH_PUBLIC_SUBN
    security_groups:
      - REPLACE_WITH_PUBLIC_SECURITY
      - REPLACE_WITH_BOSH_SECURITY_G
```

IaaS config.



cf-release.yml

# Deployment manifest

- Release info
- Stemcell info
- Networking
- Storage
- Resource Pools
- Config Properties

# Bosh Director



# Bosh Director

**CPI**



# Bosh Director

# Bosh Director

**CPI**

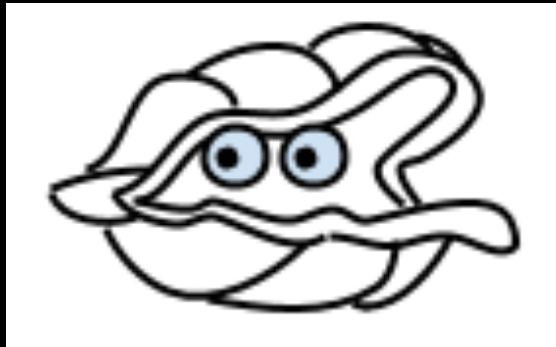


# Bosh Director

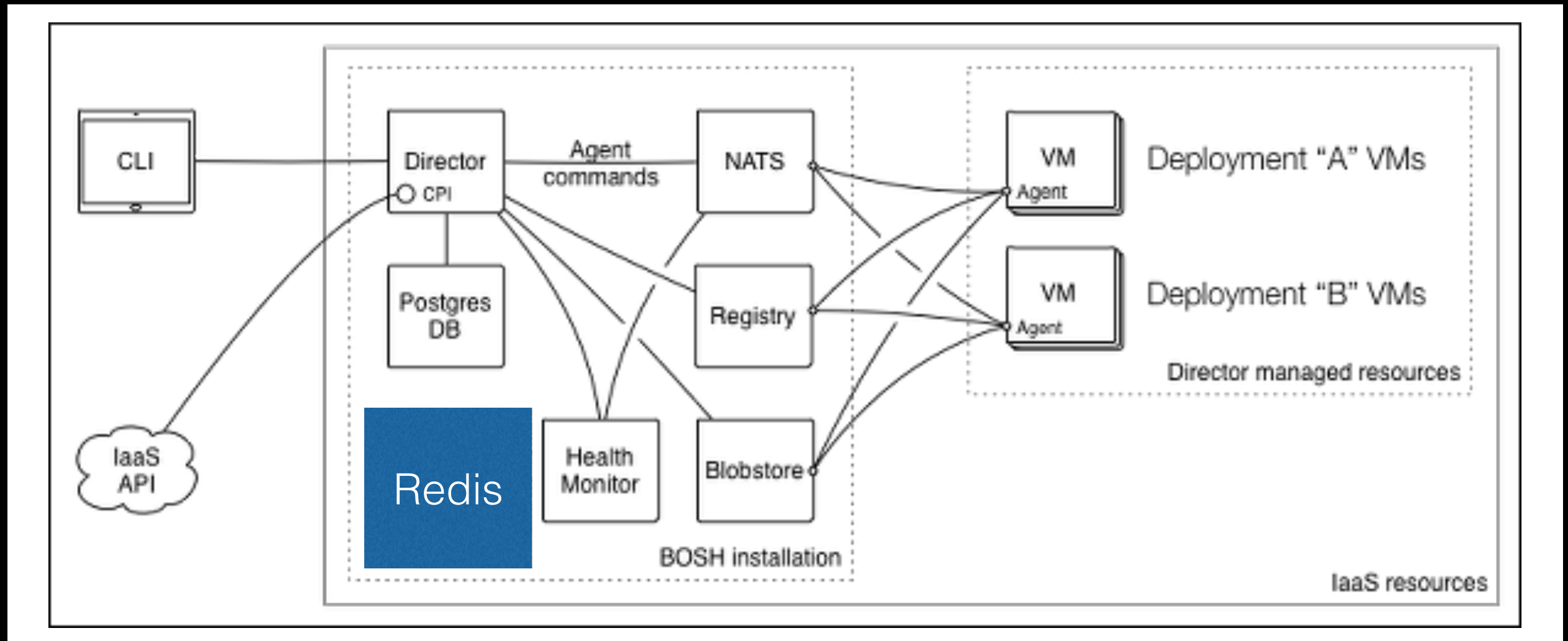
**CPI**



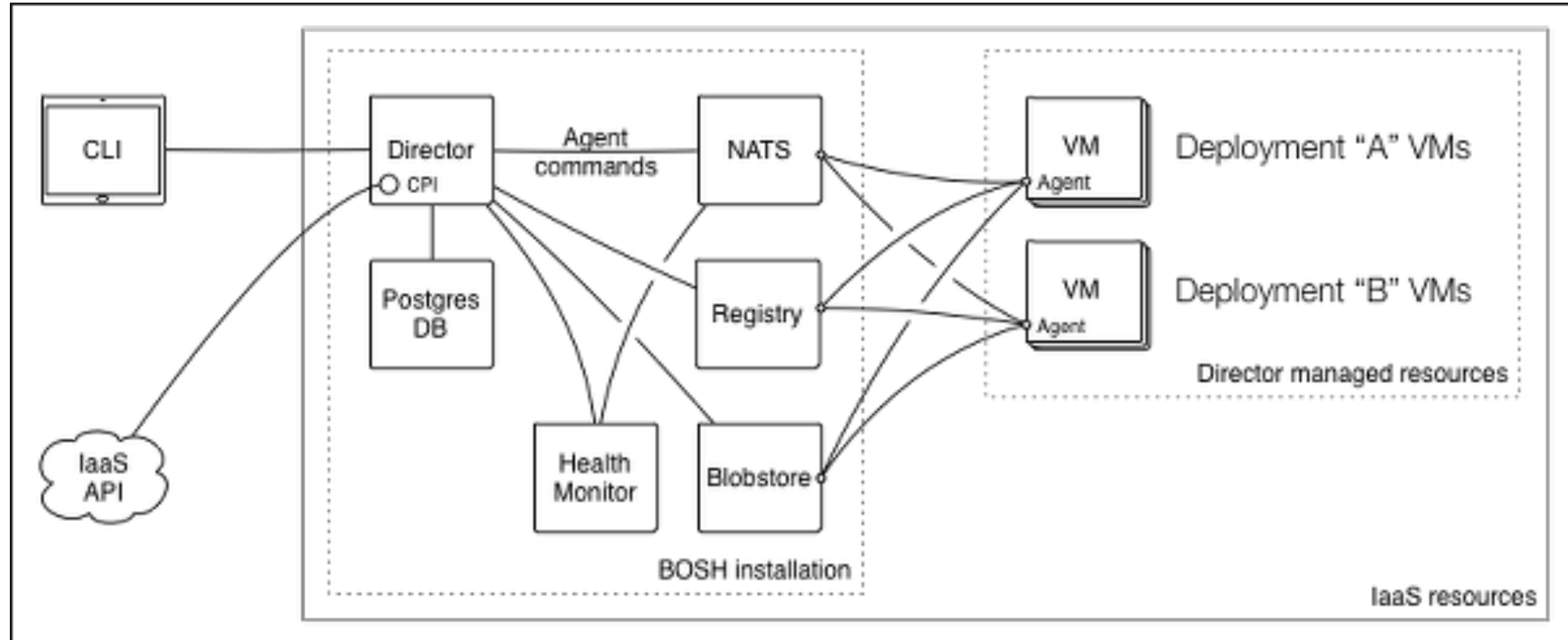
# Bosh 2.0



# Architecture Change



# Architecture Change



```
jobs:
- name: nats_z1
  instances: 1
  resource_pool: small_z1
  templates:
  - {name: nats, release: cf}
  - {name: nats_stream_forwarder, release: cf}
  - {name: metron_agent, release: cf}
  networks:
  - name: cf_private
    static_ips: [10.0.16.103]
```

Job information

```
- name: cf_public
  type: manual
  subnets:
  - range: 10.0.0.0/24
    gateway: 10.0.0.1
    dns: [10.0.0.2]
    reserved: ["10.0.0.2 - 10.0.0.10"]
    cloud_properties:
      subnet: REPLACE_WITH_PUBLIC_SUBN
      security_groups:
      - REPLACE_WITH_PUBLIC_SECURITY
      - REPLACE_WITH_BOSH_SECURITY_G
```

IaaS config.



cf-release.yml

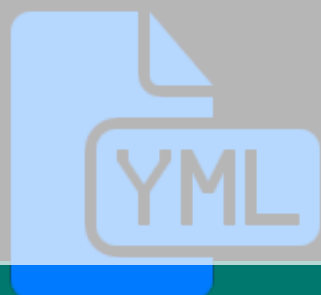


```
jobs:
- name: nats_z1
  instances: 1
  resource_pool: small_z1
  templates:
  - {name: nats, release: cf
  - {name: nats_stream_forwa
  - {name: metron_agent, rel
  networks:
  - name: cf_private
    static_ips: [10.0.16.103
```

```
- name: cf_public
  type: manual
  subnets:
  - range: 10.0.0.0/24
    1
    "10.0.2 - 10.0.0.10"]
  :
  E_WITH_PUBLIC_SUBN
  S:
  TH_PUBLIC_SECURITY
  TH_BOSH_SECURITY_G
```

Job information

config.



cf-release.yml

but Bosh 2.0 fix that

# Cloud-config

# Cloud Config

```
jobs:
- name: nats_z1
  instances: 1
  resource_pool: small_z1
  templates:
  - {name: nats, release: cf}
  - {name: nats_stream_forwarder, release: cf}
  - {name: metron_agent, release: cf}
  networks:
  - name: cf_private
    static_ips: [10.0.16.103]
```

Job information

```
- name: cf_public
  type: manual
  subnets:
  - range: 10.0.0.0/24
    gateway: 10.0.0.1
    dns: [10.0.0.2]
    reserved: ["10.0.0.2 - 10.0.0.10"]
    cloud_properties:
      subnet: REPLACE_WITH_PUBLIC_SUBN
      security_groups:
      - REPLACE_WITH_PUBLIC_SECURITY
      - REPLACE_WITH_BOSH_SECURITY_G
```

IaaS config.



# Cloud Config

```
- name: cf_public
  type: manual
  subnets:
  - range: 10.0.0.0/24
    gateway: 10.0.0.1
    dns: [10.0.0.2]
    reserved: ["10.0.0.2 - 10.0.0.10"]
    cloud_properties:
      subnet: REPLACE_WITH_PUBLIC_SUBN
    security_groups:
      - REPLACE_WITH_PUBLIC_SECURITY
      - REPLACE_WITH_BOSH_SECURITY_G
```

IaaS config.

cloud-config.yml



v2

# Cloud Config

- AZ Definition ==> New
- Resource Definition
- Storage Definition
- Networks



# Cloud Config

- AZ Definition ==> New
- Resource Definition
- Storage Definition
- Networks



# Deployment manifest

```
jobs:
- name: nats_z1
  instances: 1
  resource_pool: small_z1
  templates:
  - {name: nats, release: cf}
  - {name: nats_stream_forwarder, release: cf}
  - {name: metron_agent, release: cf}
  networks:
  - name: cf_private
    static_ips: [10.0.16.103]
```

Job information

```
- name: cf_public
  type: manual
  subnets:
  - range: 10.0.0.0/24
    gateway: 10.0.0.1
    dns: [10.0.0.2]
    reserved: ["10.0.0.2 - 10.0.0.10"]
    cloud_properties:
      subnet: REPLACE_WITH_PUBLIC_SUBN
      security_groups:
      - REPLACE_WITH_PUBLIC_SECURITY
      - REPLACE_WITH_BOSH_SECURITY_G
```

IaaS config.





# Deployment manifest

```
jobs:  
- name: nats_z1  
  instances: 1  
  resource_pool: small_z1  
  templates:  
  - {name: nats, release: cf}  
  - {name: nats_stream_forwarder, release: cf}  
  - {name: metron_agent, release: cf}  
  networks:  
  - name: cf_private  
    static_ips: [10.0.16.103]
```

Job information

deployment.yml



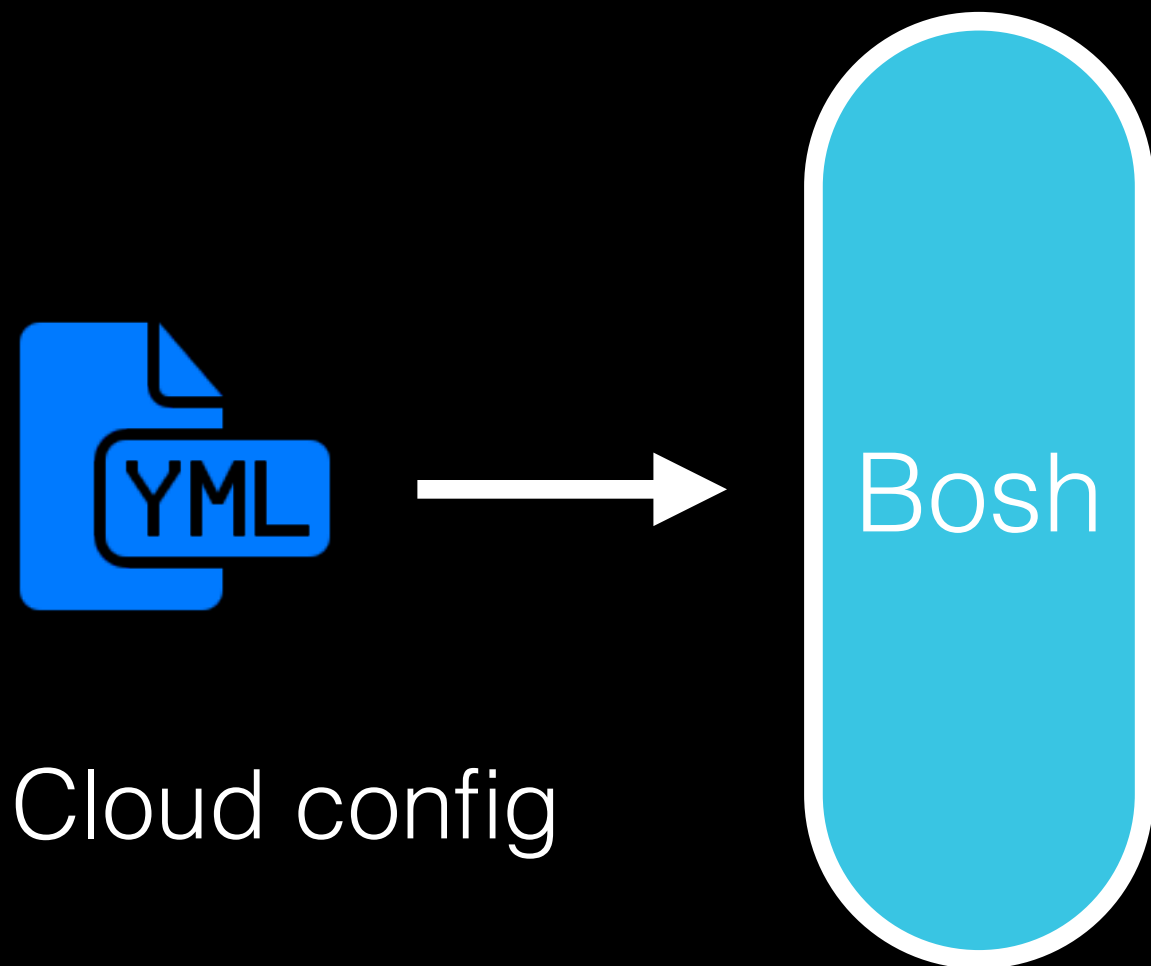
v2

# Deployment manifest

- Release info
- OS info
- Config properties
- Instance Groups



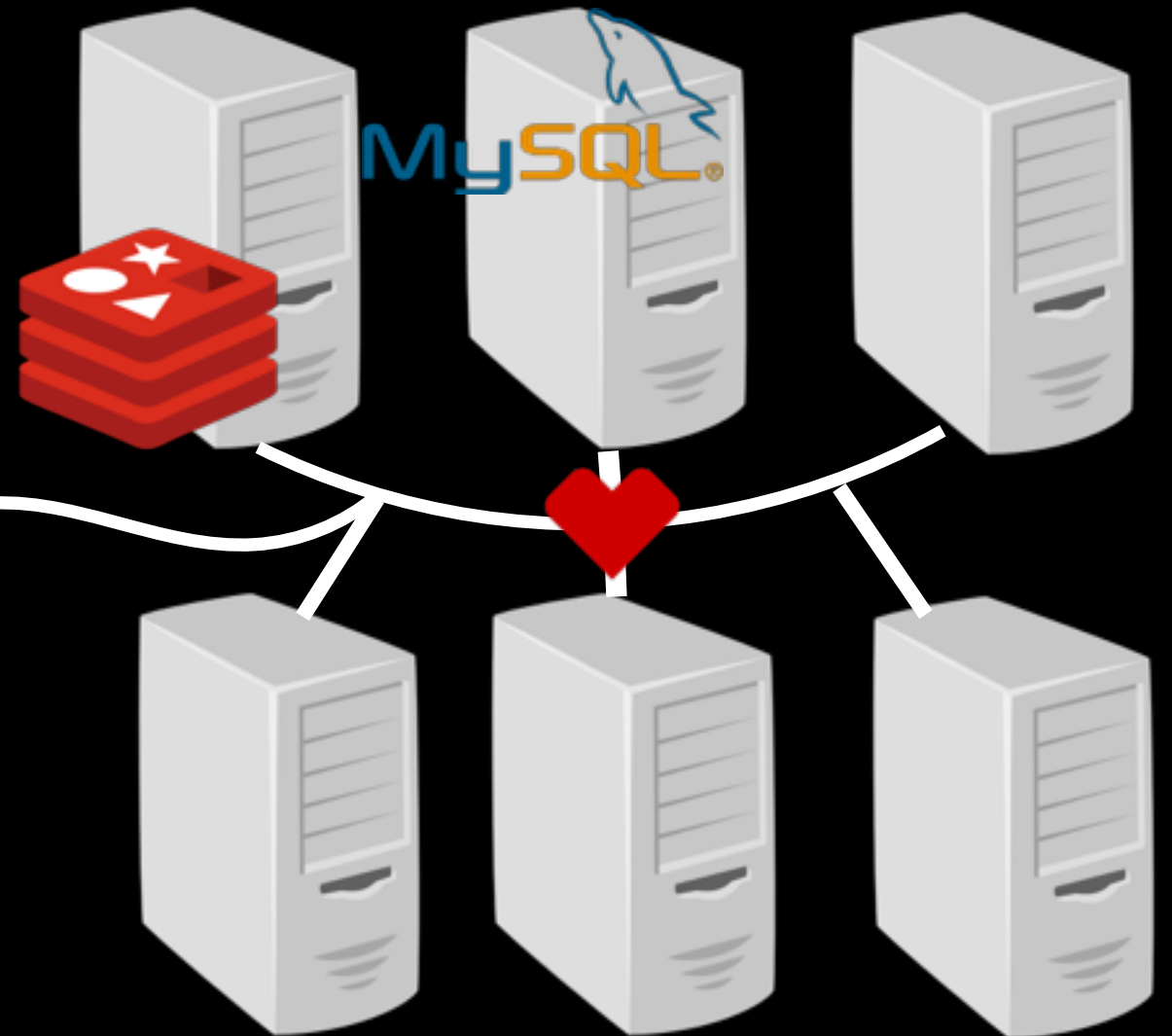
# Cloud Config



**bosh** update **cloud-config** aws.yml



Bosh



Deployment files

**bosh** deployment cf-release.yml  
**bosh** deploy

# Cloud-config



If you start to use cloud-config

You could not use manifest v1 anymore for all your past deployment and futur deployment.

# Runtime-config

Config to apply to all VM in your bosh director  
All deployments

# First class Availability zone

# Availability Zone

```
- instances: 1
  name: database_z1
  networks:
  - name: diego1
  persistent_disk: 1024
  properties:
    consul:
      agent:
        services:
          bbs: {}
          etcd: {}
```

```
- instances: 1
  name: database_z2
  networks:
  - name: diego1
  persistent_disk: 1024
  properties:
    consul:
      agent:
        services:
          bbs: {}
          etcd: {}
```





# Availability Zone

```
- instances: 1
  name: database_z1
  networks:
  - name: diego1
  persistent_disk: 1024
  properties:
    consul:
      agent:
        services:
          bbs: {}
          etcd: {}
```

```
- instances: 1
  name: database_z2
  networks:
  - name: diego1
  persistent_disk: 1024
  properties:
    consul:
      agent:
        services:
          bbs: {}
          etcd: {}
```

deployment.yml

Could be very very very very very long manifest



# Availability Zone

```
- instances: 1
  name: database
  azs: [z1, z2]
  networks:
  - name: diego1
  persistent_disk: 1024
  properties:
    consul:
      agent:
        services:
          bbs: {}
          etcd: {}
```

- Multiple instances will be balanced between az1 and az2
- Reduce a lot the deployment manifest

```
azs:
- name: z1
  cloud_properties:
    availability_zone: us-east-1b
- name: z2
  cloud_properties:
    availability_zone: us-east-1c
```



# Availability Zone

```
- instances: 1
  name: database
  azs: [z1, z2]
  networks:
  - name: diego1
  persistent_disk: 1024
  properties:
    consul:
      agent:
        services:
          bbs: {}
          etcd: {}
```

deployment.yml

- Multiple instances will be balanced between az1 and az2
- Reduce a lot the deployment manifest

```
azs:
- name: z1
  cloud_properties:
    availability_zone: us-east-1b
- name: z2
  cloud_properties:
    availability_zone: us-east-1c
```

cloud-config.yml



 Bosh links

```

- name: nats_z1
  ...
  ...
  networks:
  - name: cf_private
    static_ips: [10.0.16.103]
  properties:
    nats:
      machines: [10.0.16.103]
      password: PASSWORD
      port: 4222
      user: nats

- name: etcd_z1
  ...
  ...
  properties:
    etcd_metrics_server:
      nats:
        machines: [10.0.16.103]
        password: PASSWORD
        username: nats

.
.
.
- name: router
  ...
  ...
  properties:
    nats:
      machines: [10.0.16.103]
      password: PASSWORD
      username: nats

```

- Need to precise static IP because other job require to know which IP to use (ex database)
- Repeat property for all needed job
- etc...

YML

v1

```

- name: nats_z1
  ...
  ...
  networks:
  - name: cf_private
    static_ips: [10.0.16.103]
  properties:
    nats:
      machines: [10.0.16.103]
      password: PASSWORD
      port: 4222
      user: nats

- name: etcd_z1
  ...
  ...
  properties:
    etcd_metrics_server:
      nats:
        machines: [10.0.16.103]
        password: PASSWORD
        username: nats
  .
  .
  .
- name: router
  ...
  ...
  properties:
    nats:
      machines: [10.0.16.103]
      password: PASSWORD
      username: nats

```

- Need to precise static IP because other job require to know which IP to use (ex database)
- Repeat property for all needed job
- etc...

deployment.yml

YML

v1

```

- name: nats_z1
  ...
  ...
  provides:
    nats: {as: nats_info}
  networks:
    - name: cf_private
  properties:
    nats:
      password: PASSWORD
      port: 4222
      user: nats

- name: etcd_z1
  ...
  ...
  consumes:
    nats: {from: nats_info}

- name: router
  ...
  ...
  consumes:
    nats: {from: nats_info}

```

- Let bosh manage networking even static IP
- Self, implicit and cross-deployment links !
- Not only networks, instance application but also properties
- We can refer to other jobs using “provide” and “consume” keyword



# Online Resource



# Source Code

- Github <https://github.com/cloudfoundry/bosh>
- V2 example <https://github.com/shinji62/nats-release>

# Tutorials

- bosh.io <https://j.mp/learn-bosh> (bosh 1.0)

# D Documentation

- Official documentation <https://bosh.io>
- Links <https://bosh.io/docs/links.html>
- Links Property <https://bosh.io/docs/links-properties.html>
- Bosh AZ <https://bosh.io/docs/azs.html>
- Bosh Cloud Config <https://bosh.io/docs/cloud-config.html>

# B Bosh Discussion / notes

- <https://github.com/cloudfoundry/bosh-notes>

# slack



<https://cloudfoundry.slack.com/>

#bosh

Q & A

# Thank You !!

