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Energizing Enterprise IT with PaaS

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Why PaaS?

Non-Automation

There will be a delay ranging from 7-10 days. As infra team has asked to move the current setup of dev and test environment to new servers. So we need to install the entire software stack again

For UAT and Test servers, work has begun but been halted due to lacking capacity at X to install virtual hosts (due to vacation).

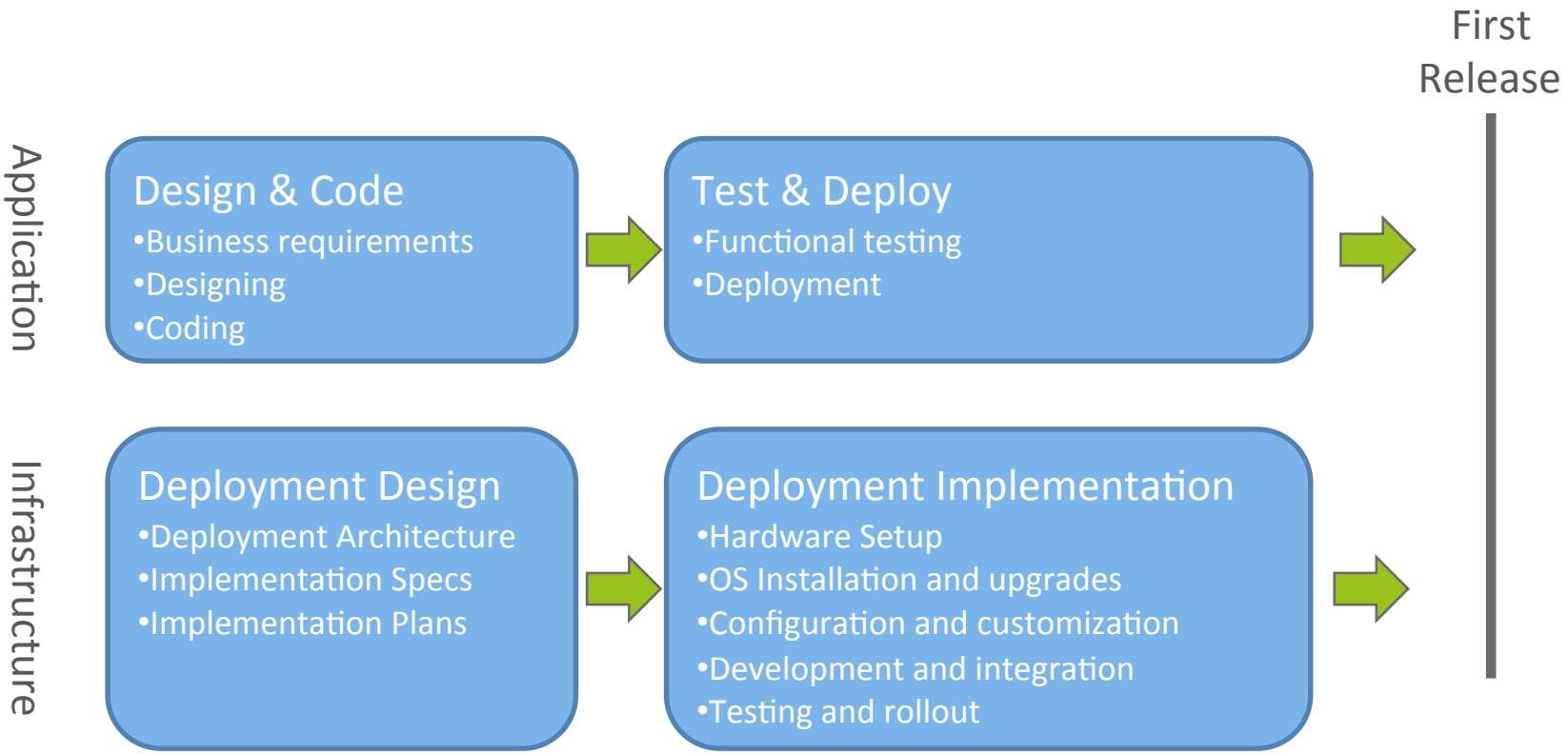
What exactly is still needed to make this issue go away? Is it memory? New servers?

It will take one more week to fix the entry in the name server.

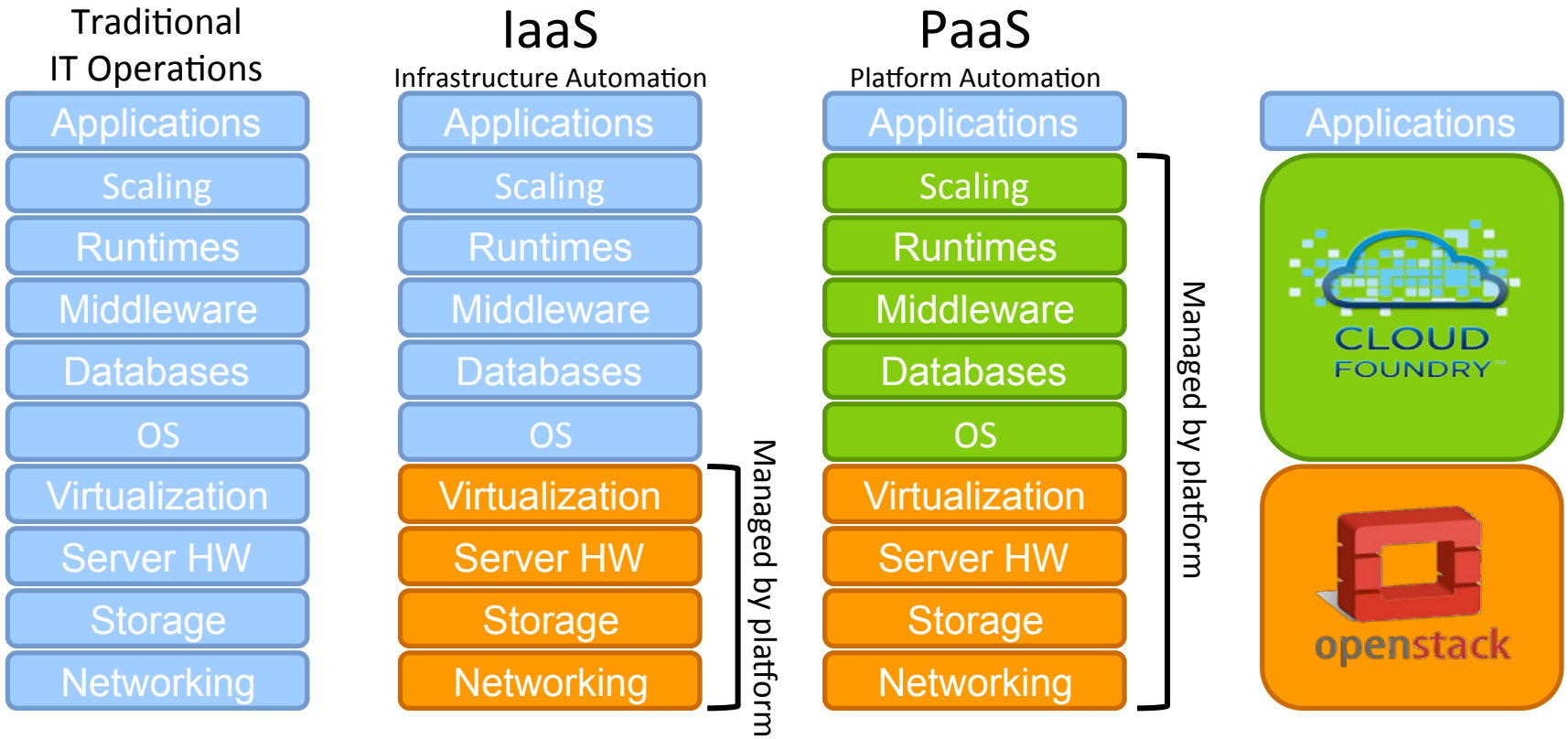
We have a dependency issue as library X doesn't work with the installed version of Java

We can't scale the application server dynamically, so we need to add one more server to address peak loads.

Application Delivery



Automating the Datacenter



Why not just IaaS?

IaaS means that:

- Developers still deploy and develop to a traditional OS environment
- OS level deployment and operations is simplified, but challenges are the same on the application level
- Application developers have no platform support for:
  - RAS (Reliability/Availability/Scaling)
  - Developer integration (deployment/testing/release mgmt)
  - Post deployment operational analysis

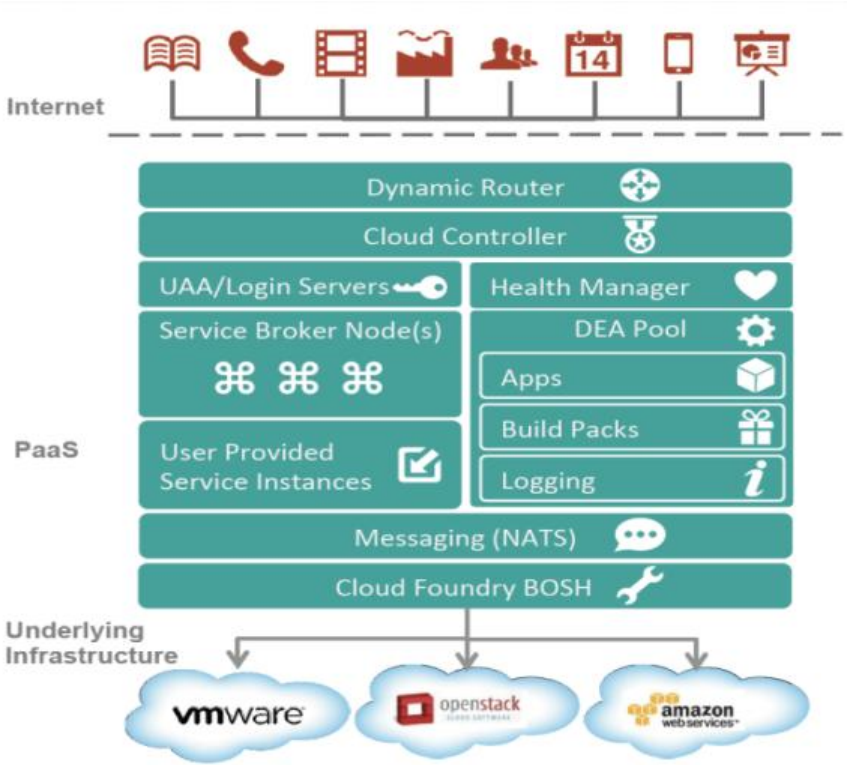
Extended PaaS Platform

Cloud Foundry Internals

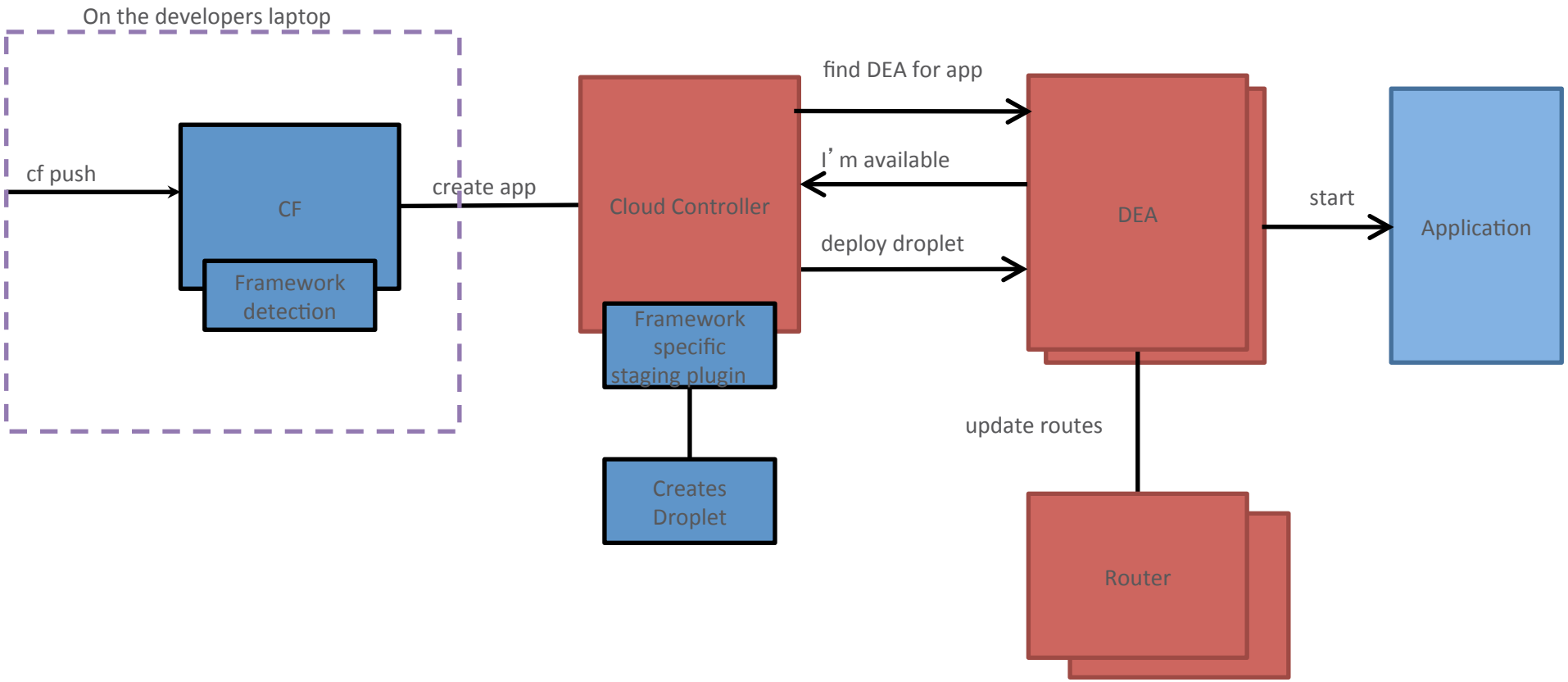
Cloud Foundry Architecture

The **Cloud Foundry** platform is abstracted as a set of large-scale distributed services. It uses **Cloud Foundry Bosh** to operate the underlying infrastructure from IaaS providers (e.g., VMware, Amazon AWS, OpenStack).

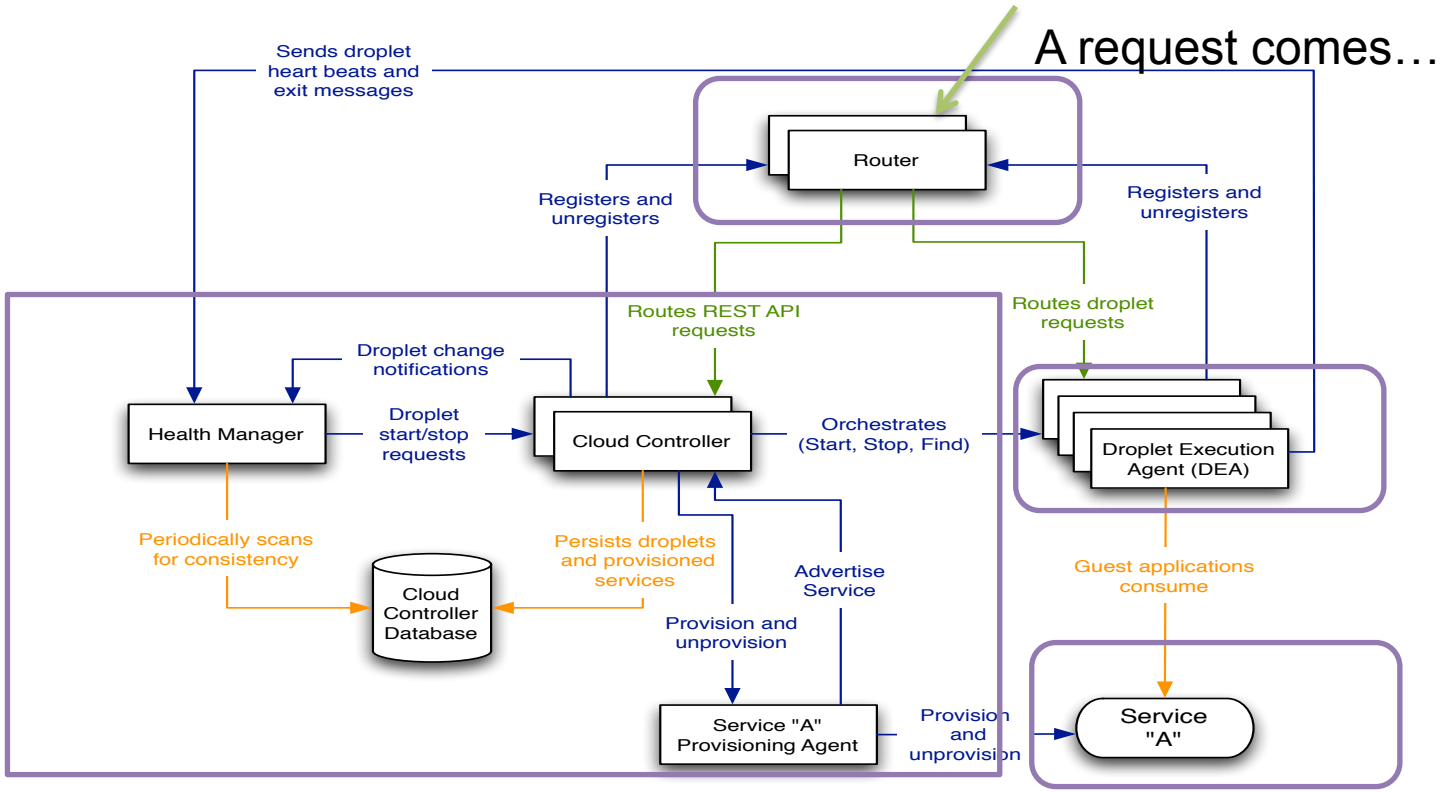
Components are dynamically discoverable and loosely coupled, exposing health through HTTP endpoints so agents can collect state information (app state & system state) and act on it.



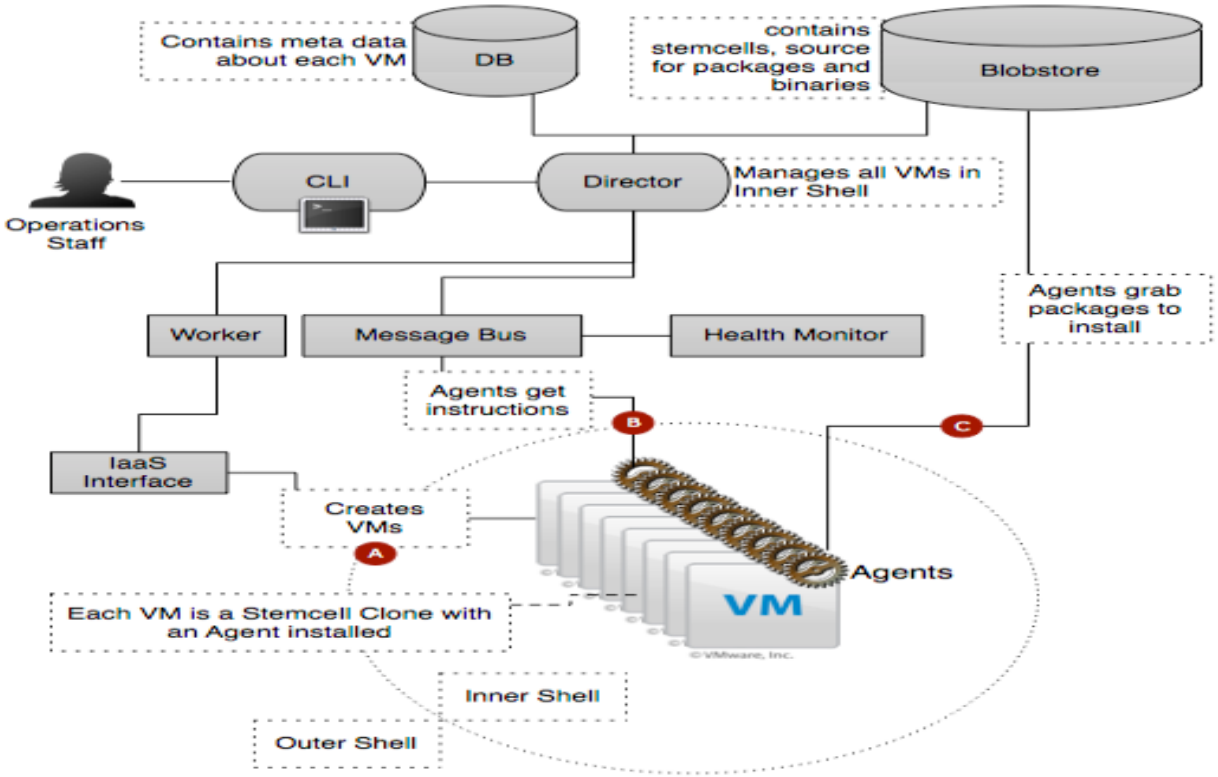
Application Deployment



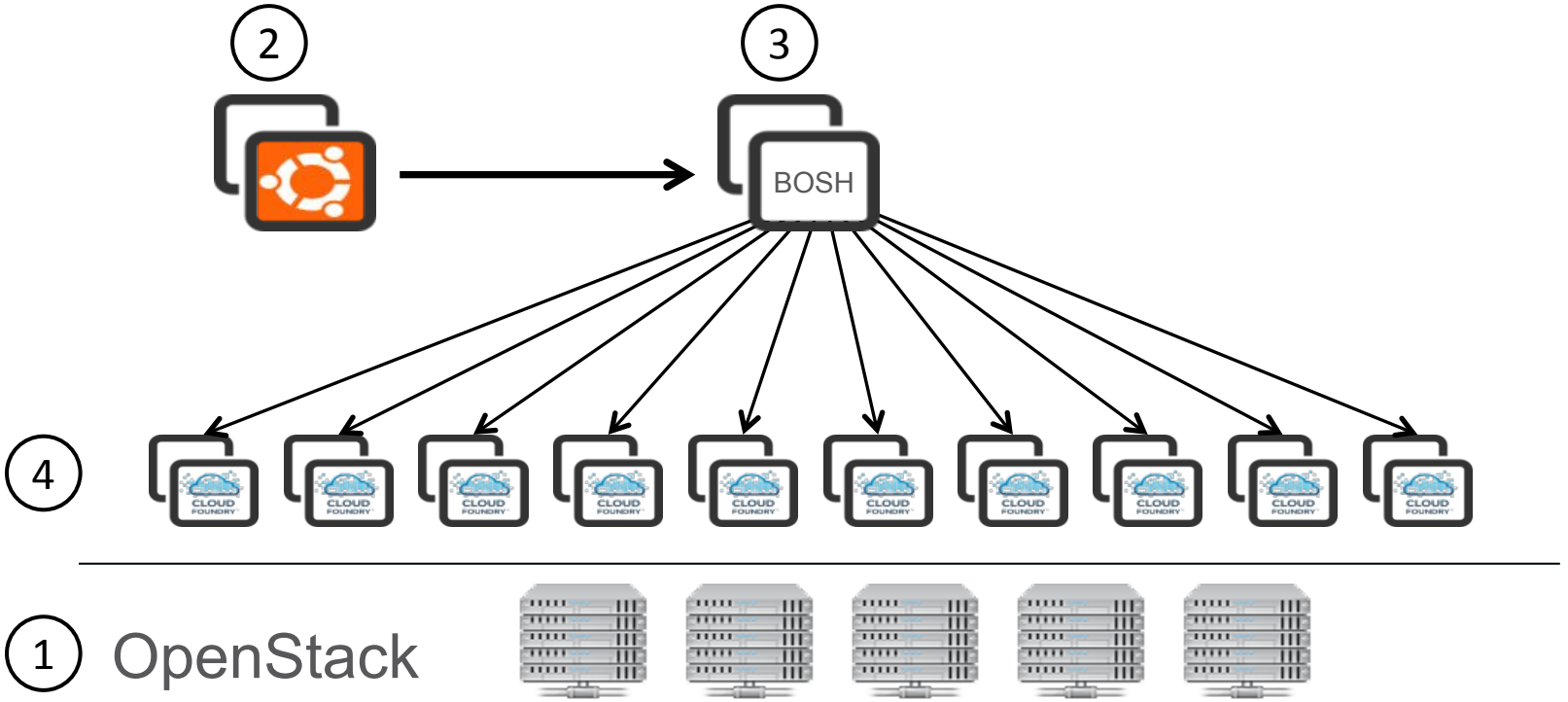
Application Execution



Platform Deployment (BOSH)



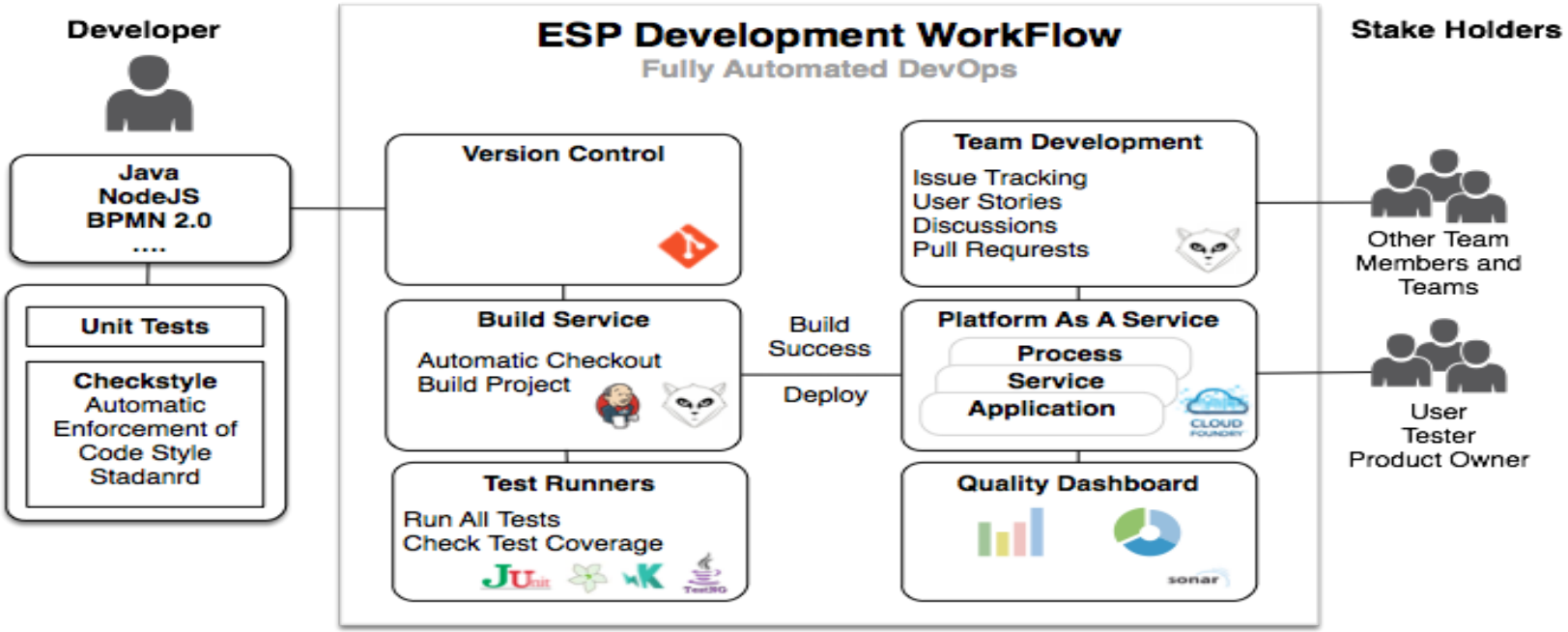
Deploying CF with micro-bosh



Development

Automated DevOps Workflow

Development Workflow



Challenges

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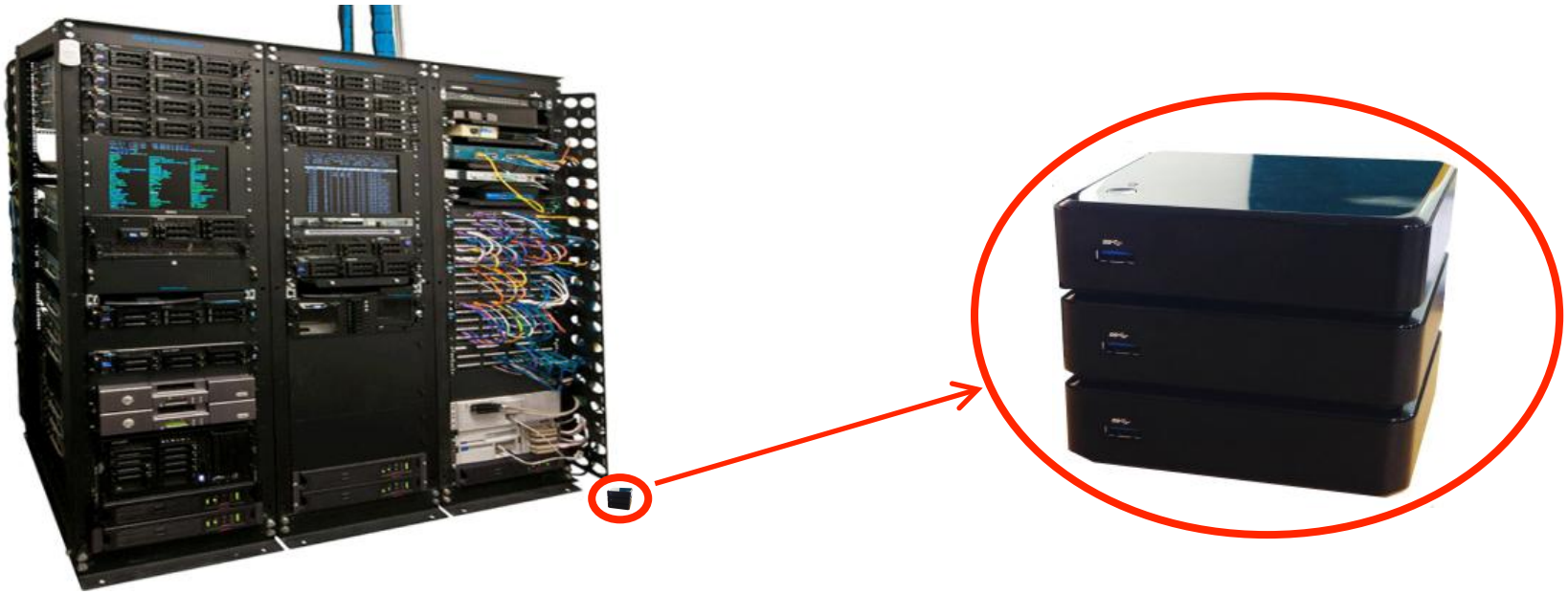
- Enterprise firewall / proxy
- Ruby dependency hell (no longer an issue)
- Immature platform (no longer an issue)
- Datacenter access and network config

Scaling Down

The Portable Datacenter

- Complete Openstack + CloudFoundry installation
- 3 Intel NUCs: each 2 Cores/16GB RAM/128GB SSD



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Questions?