Mike Johnston is an Infrastructure engineer with over 15 years of experience developing stable and performant infrastructure for Wal-Mart Stores Inc. and startups in northwest Arkansas. Mike is also one of the core creators of Supergiant, a infrastructure management tool for Kubernetes.

SUPERGIANT: Easy container orchestration using Kubernetes

`go report` `A+` `godoc` `reference` `build` `passing` `release` `v0.14.3` `coverage` `62%`

Supergiant is an open-source container orchestration system that lets developers easily deploy and manage apps as Docker containers using Kubernetes.

We want to make Supergiant the easiest way to run Kubernetes in the cloud.

Quick start...

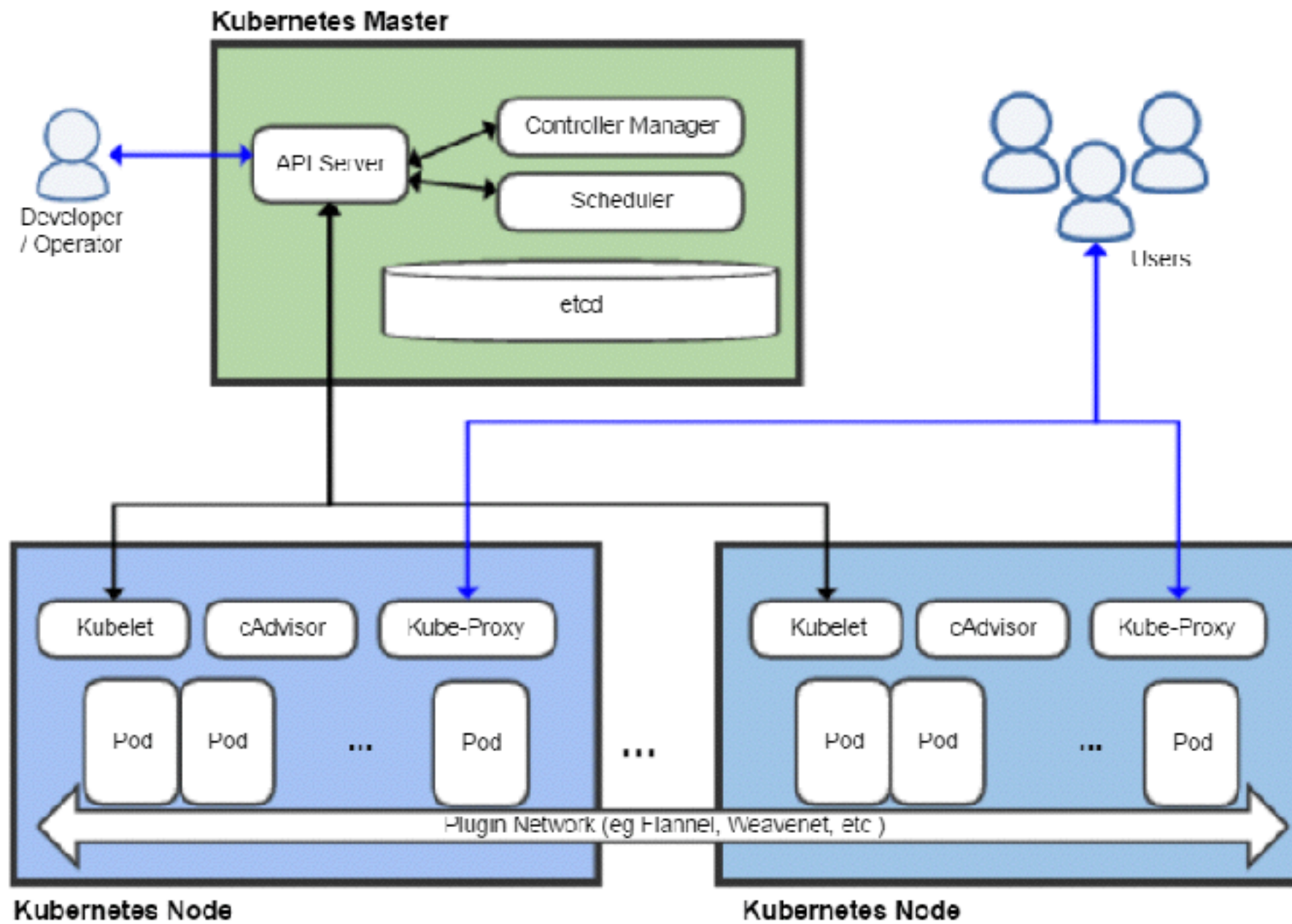- How to Install Supergiant Container Orchestration Engine on AWS EC2

Keeping Users & Your Bottom Line Happy:
Setting up a Multi-Million Dollar SaaS Service with Kubernetes

- High-level overview

- Recommended system methodology

- Performance and operational benefits of Kubernetes

- Secret sauce: Leverage kubernetes to achieve dramatic hardware savings

Kubernetes Master

Developer / Operator

API Server

Controller Manager

Scheduler

etcd

Users

Kubernetes Node

Kubelet   cAdvisor   Kube-Proxy

Pod   Pod   ...   Pod

Plugin Network (eg Flannel, Weavenet, etc)

Kubernetes Node

Kubelet   cAdvisor   Kube-Proxy

Pod   Pod   ...   Pod

Plugin Network (eg Flannel, Weavenet, etc)
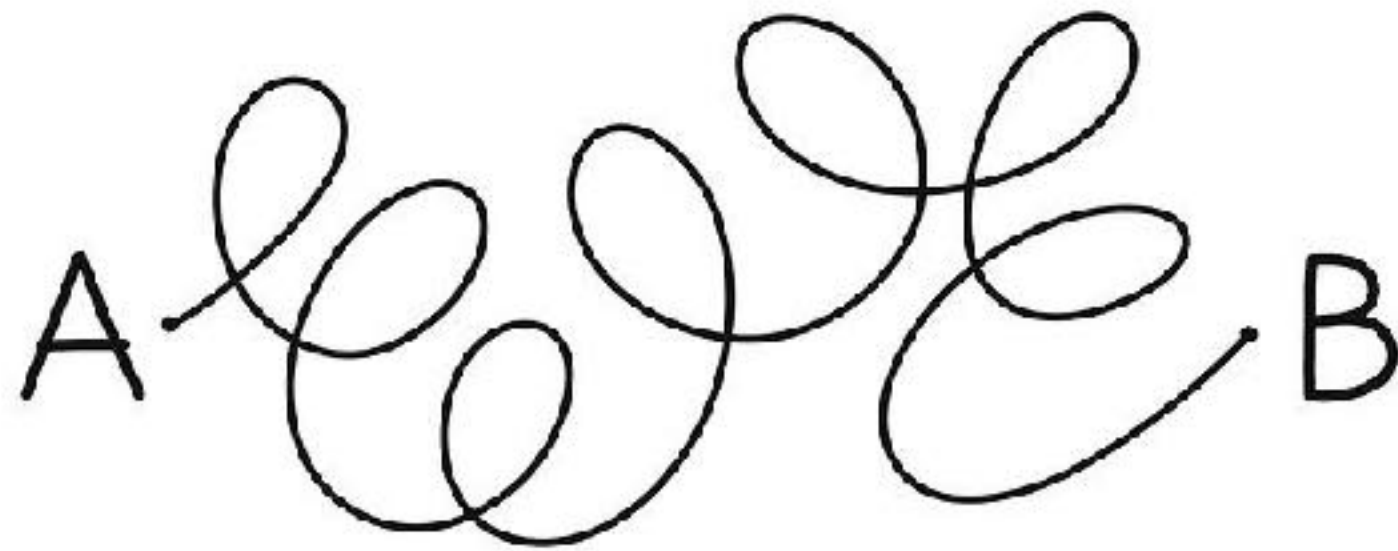
User ⬌ Provisioner ⬌ Kubernetes

User ↔ Provisioner ↔ Kubernetes

Immutable Infrastructure

im·mu·ta·ble

/i(m)'myo͞odəb(ə)l/

adjective

unchanging over time or unable to be changed.
"an immutable fact"
synonyms: fixed, set, rigid, inflexible, permanent, established, carved in stone

What is "Immutable Infrastructure?"

- Servers act similarly to objects in code.
- Servers should not be expected to change their configuration on the fly.
- When an infrastructure configuration is changed, it is replaced with a new version.
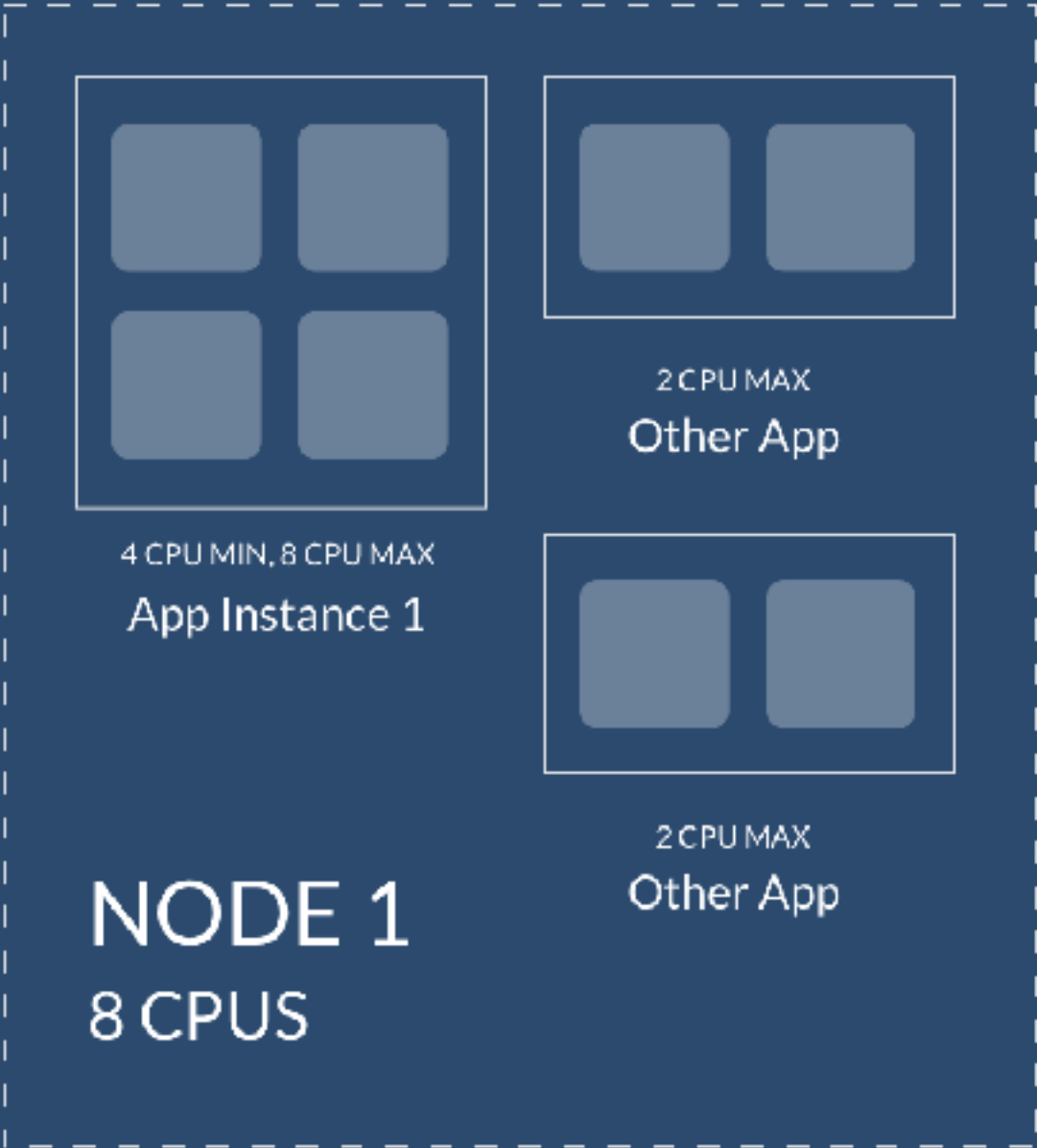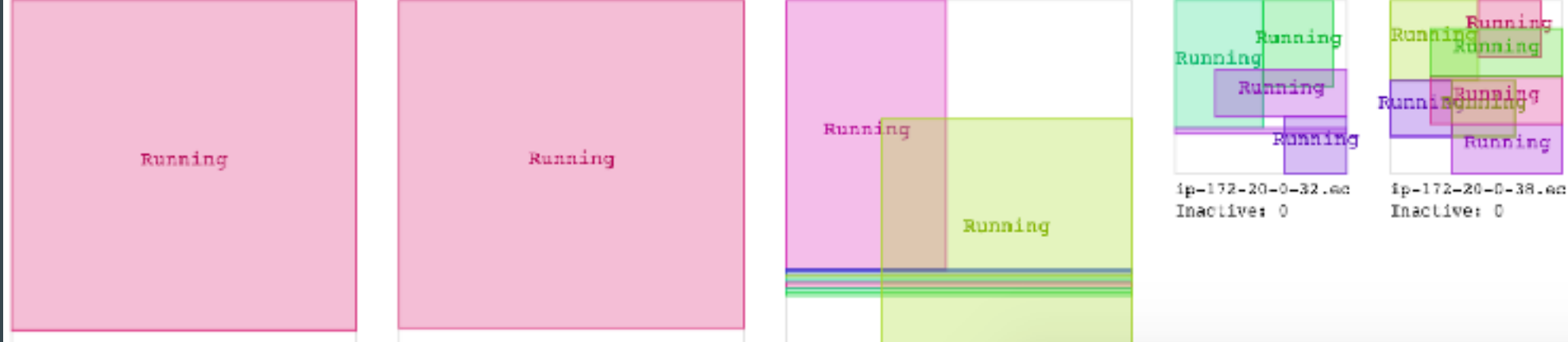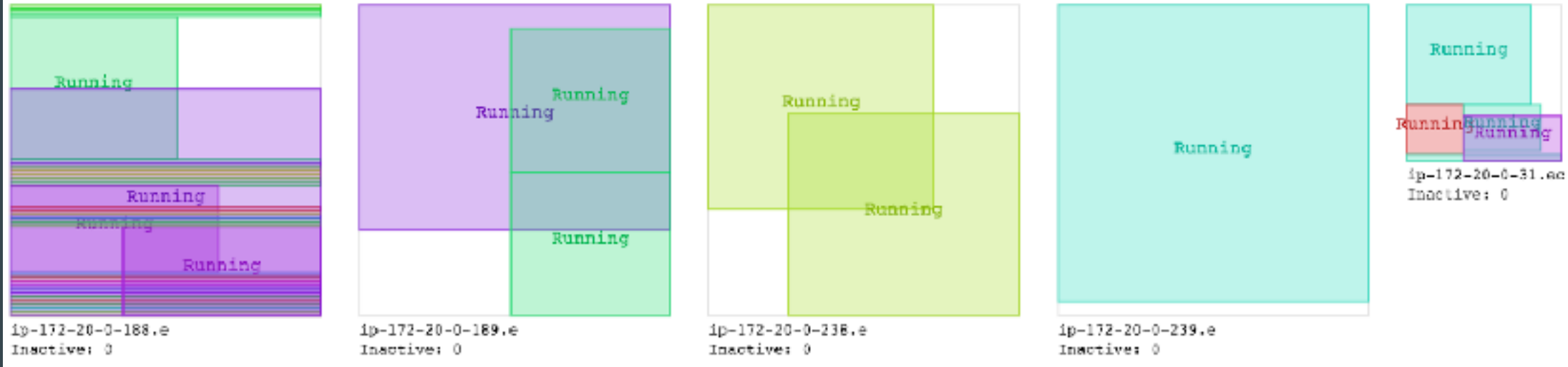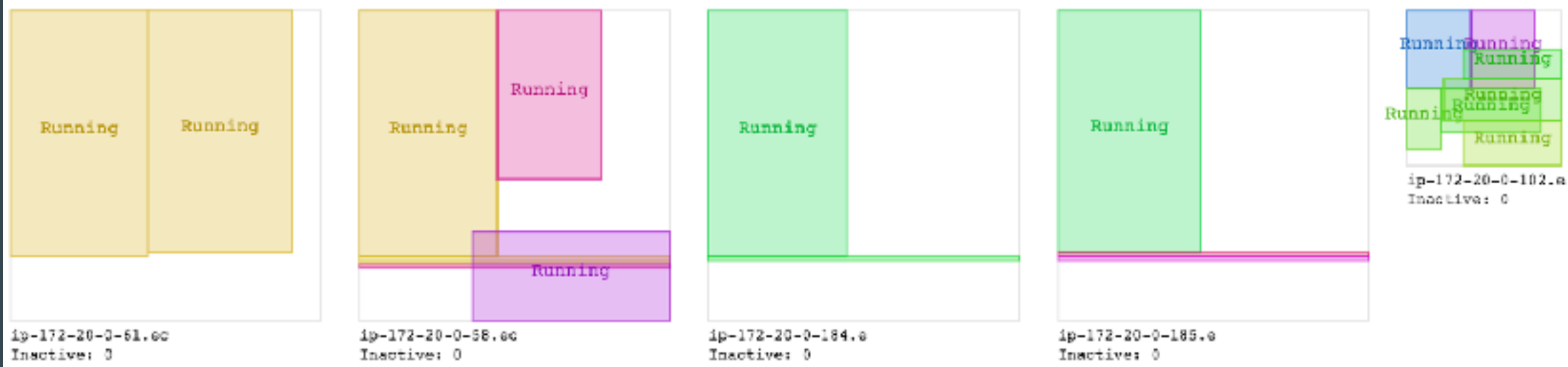- A server is rebuilt when it fails.

Benefits of Kubernetes:

- **Increased Performance**

- **Increased Stability**

- **Security Benefits**

The Secret Sauce:

How can you leverage Kubernetes in your organization to save big money?

-   Container "Packing"

Running Running Running Running Running Running Running
ip-172-20-0-192.e ip-172-20-0-190.e ip-172-20-0-5.ec2 ip-172-20-0-152.e ip-172-20-0-6.ec2 ip-172-20-0-138.e ip-172-20-0-63.ec
Inactive: 0   Inactive: 0   Inactive: 0   Inactive: 0   Inactive: 0   Inactive: 0   Inactive: 0

ip-172-20-0-101.a ip-172-20-0-111.a ip-172-20-0-112.a ip-172-20-0-136.a ip-172-20-0-137.a ip-172-20-0-139.a ip-172-20-0-140.a ip-172-20-0-39.ec
Inactive: 0   Inactive: 0   Inactive: 0   Inactive: 0   Inactive: 0   Inactive: 0   Inactive: 0   Inactive: 0

ip-172-20-0-102.a
Inactive: 0

ip-172-20-0-61.ec   ip-172-20-0-58.ec   ip-172-20-0-184.a   ip-172-20-0-185.a
Inactive: 0   Inactive: 0   Inactive: 0   Inactive: 0

ip-172-20-0-31.ec
Inactive: 0

ip-172-20-0-188.e   ip-172-20-0-189.e   ip-172-20-0-238.e   ip-172-20-0-239.e
Inactive: 0   Inactive: 0   Inactive: 0   Inactive: 0

ip-172-20-0-32.ec   ip-172-20-0-38.ec
Inactive: 0   Inactive: 0

Additional Points of Savings:

Increase hardware usage predictability so you can plan further ahead:

- Reserved instances

- Purchasing contracts

- Increased data center space

Thanks for attending this session!

Keeping Users & Your Bottom Line Happy:

Setting up a Multi-Million Dollar SaaS Service with Kubernetes

Contact Us

github.com/supergiant

slack.supergiant.io

qbox.io

@qboxio

Mike Johnston

Senior Infrastructure Engineer

mike@supergiant.io

@gopherstein