

# **JBoss. Cloud.**

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Technical Architect

JBoss Fellow

**JBoss Community**

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# Who am I?

- Joined JBoss in 2007
- Co-founder of Drools
- Bob the Despot of the Codehaus
- aka "BMW"

# Agenda

- Define some terminology
- BoxGrinder to create Virtual Machines
- SteamCannon to create a PaaS
- Demos
- Deltacloud

# Terminology

# IaaS

- Infrastructure as a service.
- Virtual hardware.
- Pretty barren.
- Amazon EC2, Rackspace Cloud

# PaaS

- Platform as a Service.
- Higher-order substrate for applications.
- Google App Engine, Heroku

# Image

- A snapshot/template for a server.
- Archetypical VM copied and launched.
- AMI, .vmx, .raw

# Instance

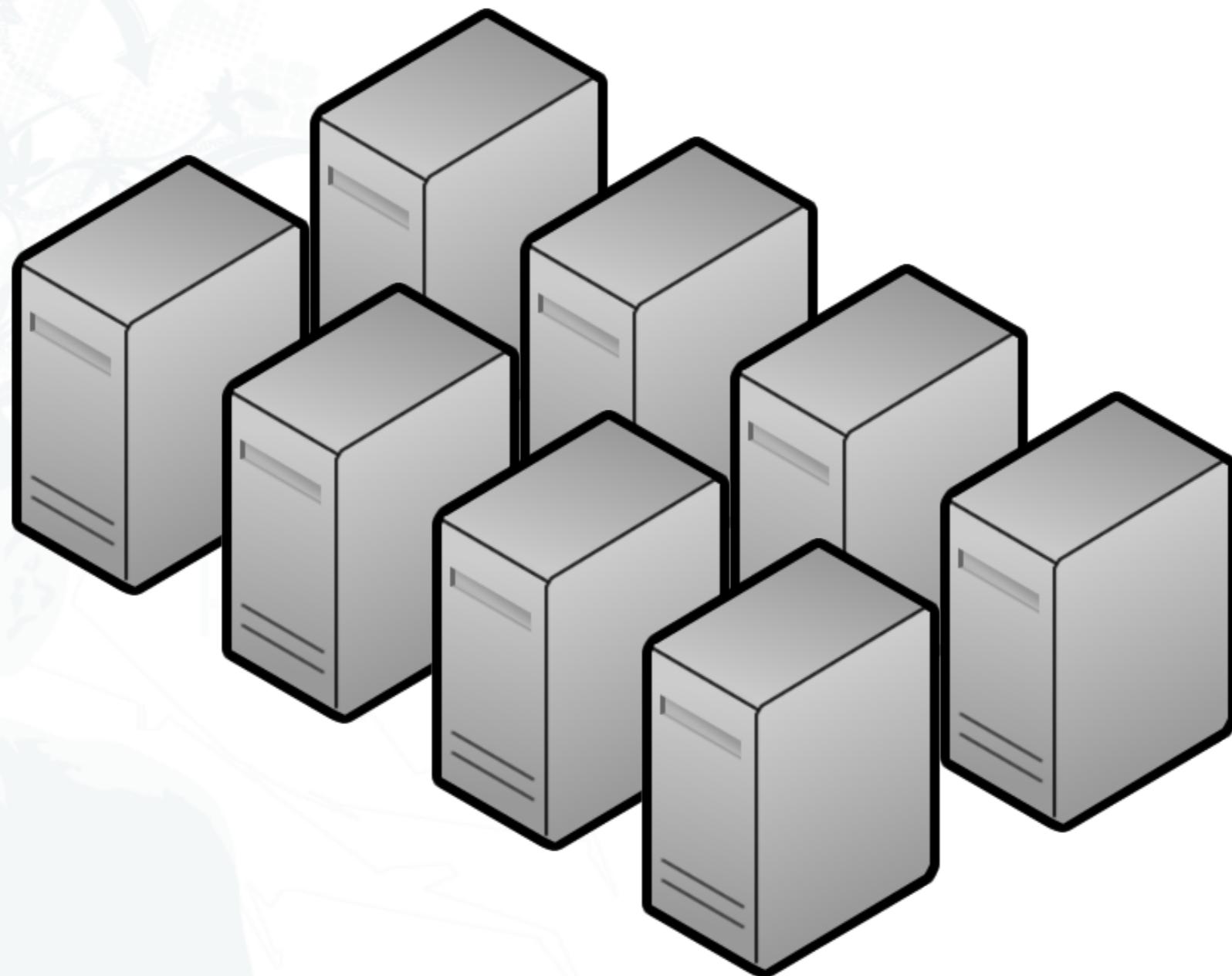
- A server launched from an image.

# **1. IaaS**

# Infrastructure

Virtual servers and networks, available and priced on a per-usage basis.

# Undifferentiated



# Slightly Differentiated





<http://www.flickr.com/photos/pagedooley/1092862034/>



<http://www.flickr.com/photos/equitus/3435154099/>



<http://www.flickr.com/photos/booleansplit/2979169728/>



**But serves no  
particular *purpose...***

## 2. PaaS



# **Platform gives purpose...**

# Platform

A substrate upon which to  
deploy your applications.

The contract your  
application targets.

# Application

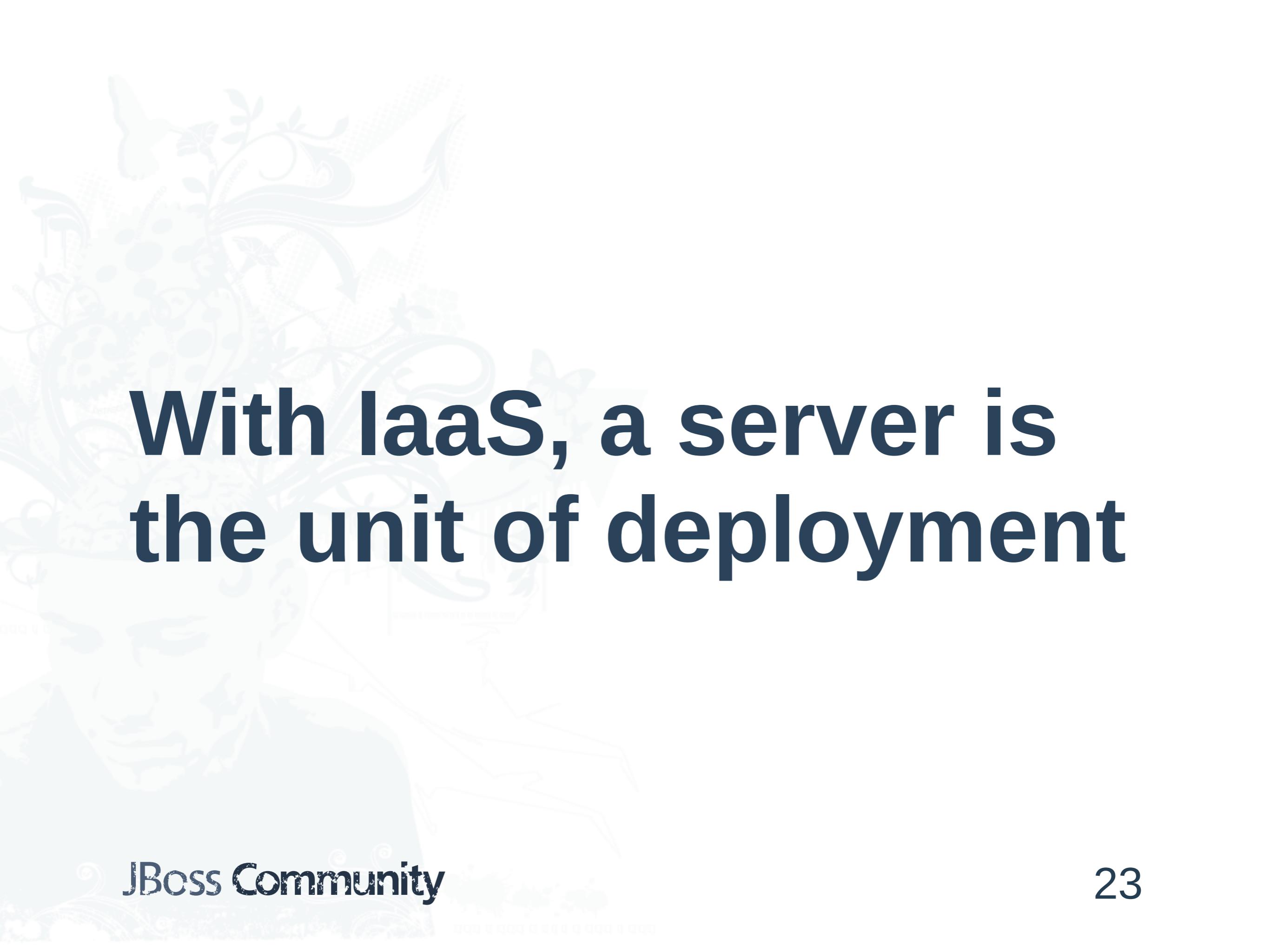
A collection of components, services and data solving some problem.

May be Java, Ruby, PHP, Perl, C, or a mixture.



**Don't get hung up  
on .wars and .ears.**

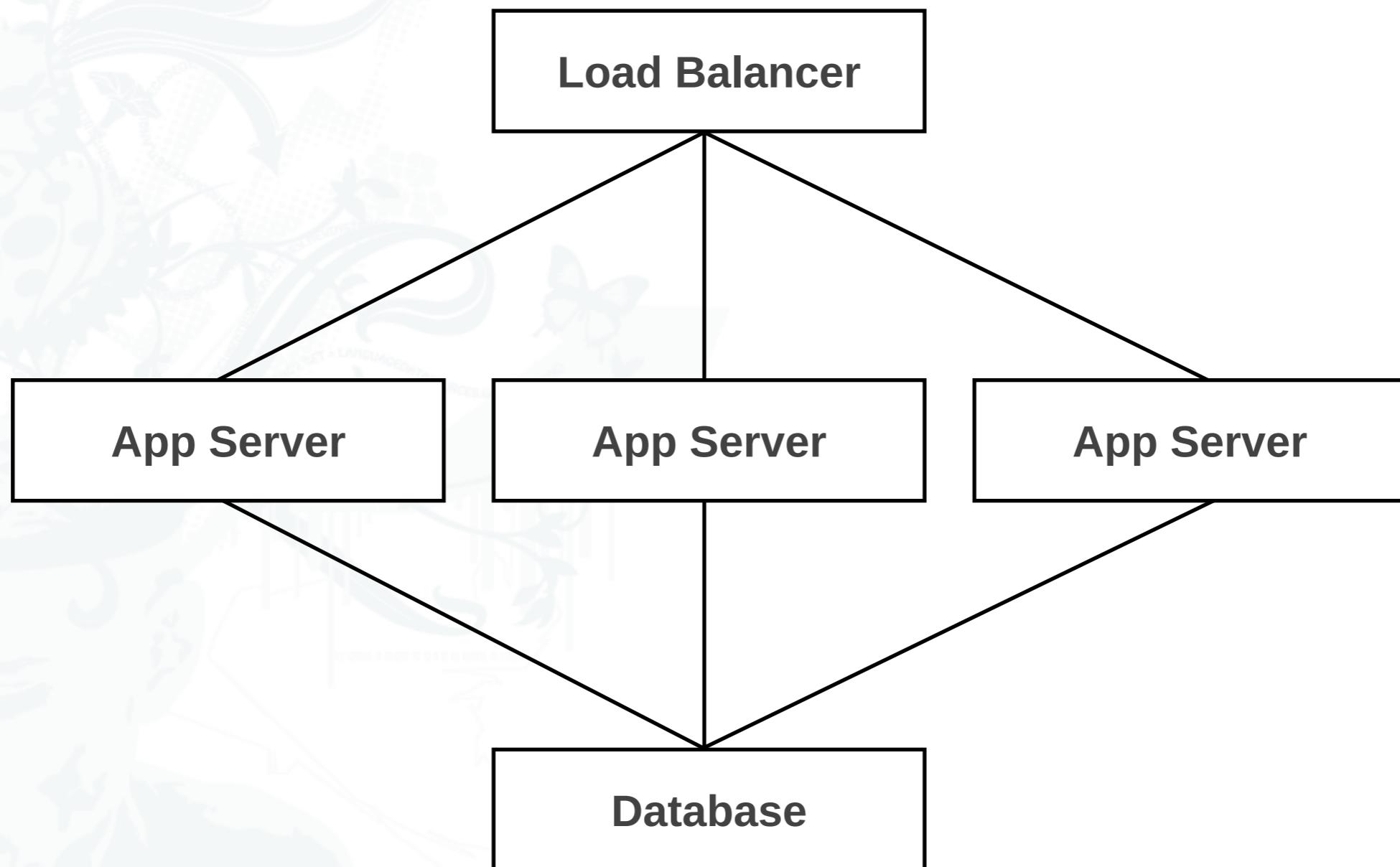
# Platforms customize the infrastructure

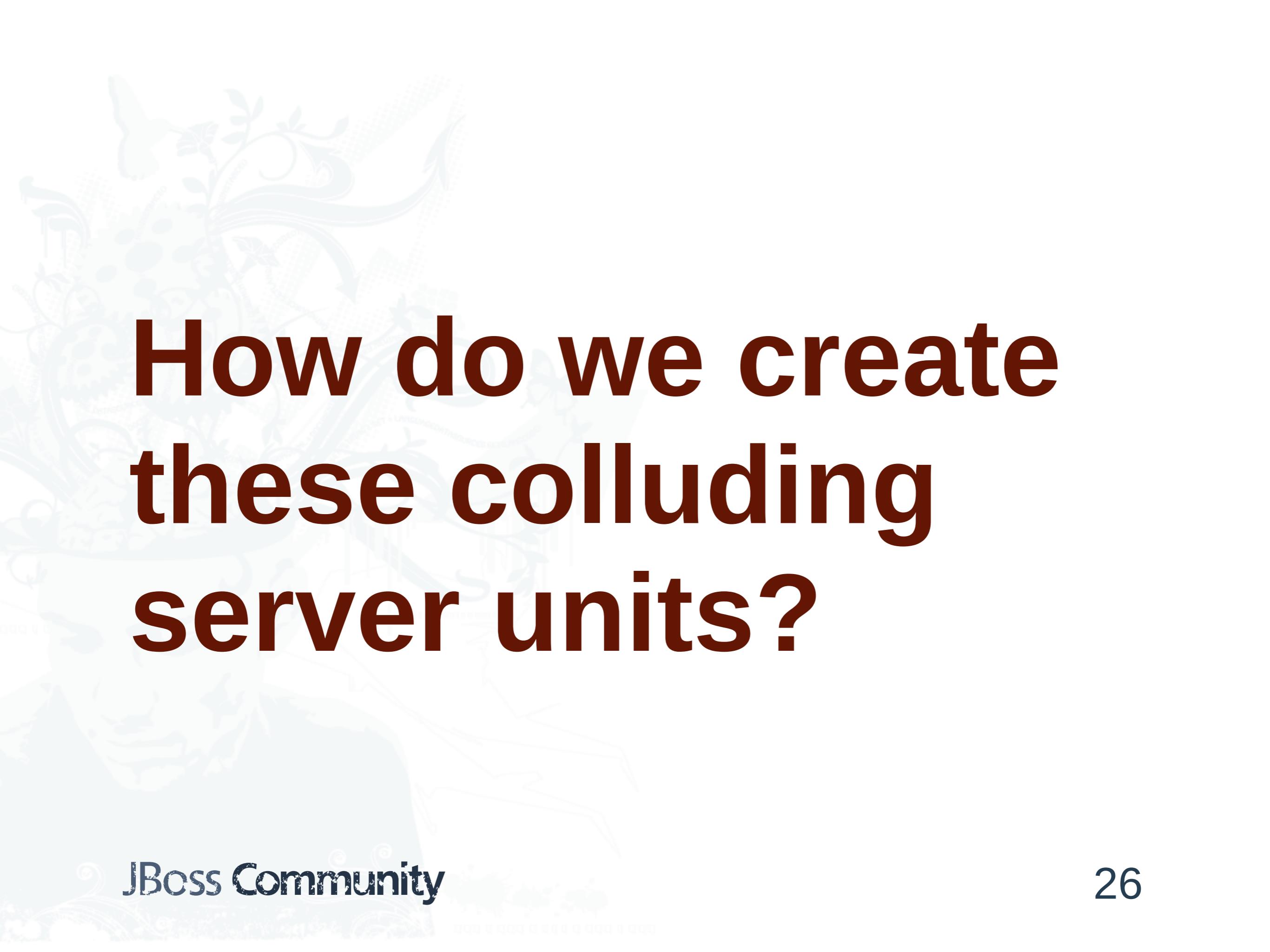


# **With IaaS, a server is the unit of deployment**

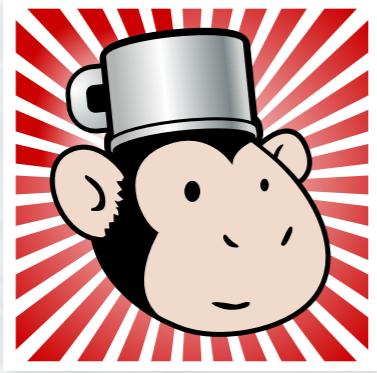


# Platforms are servers operating in *collusion*

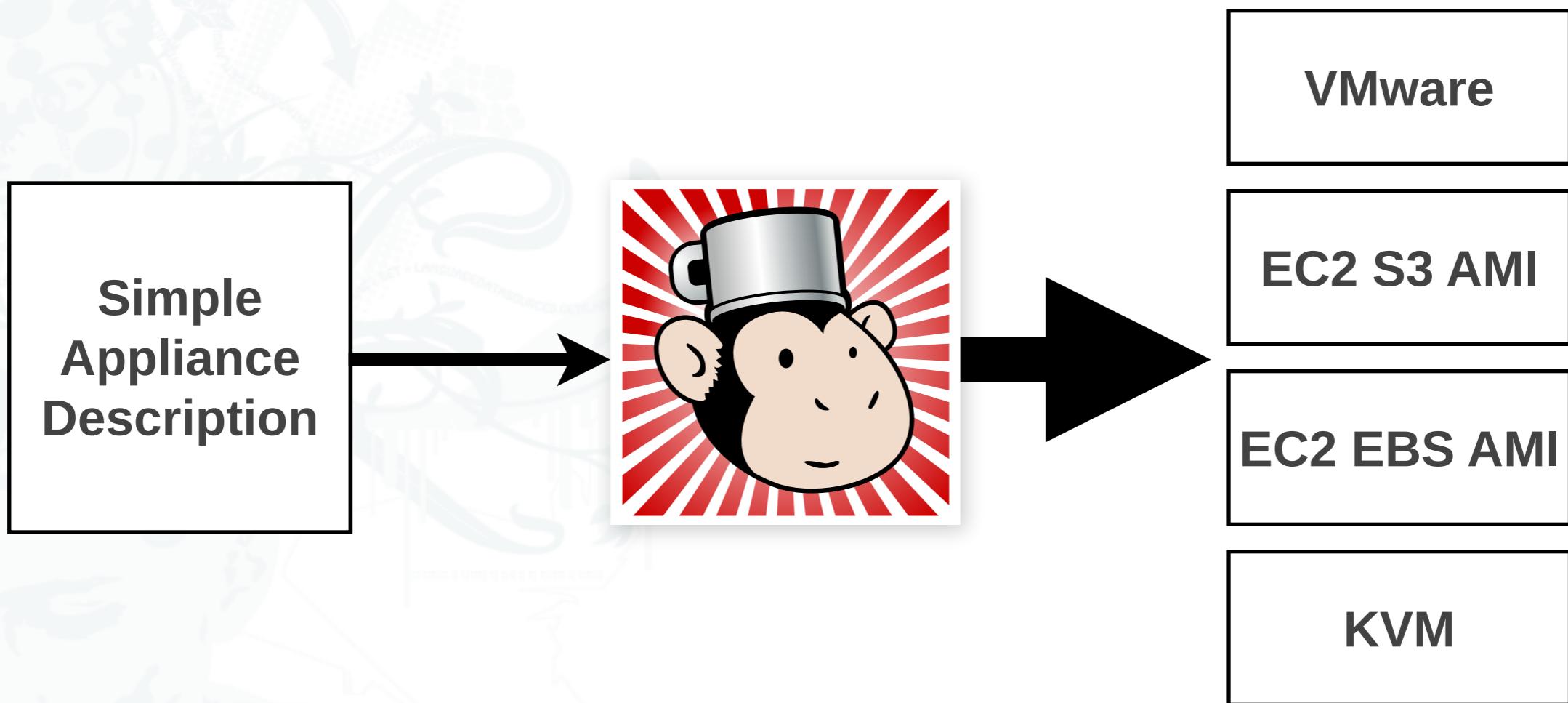




# How do we create these colluding server units?



# BoxGrinder



```
name: appserver
version: 1
release: 5
summary: SteamCannon back-end appliance
hardware:
  memory: 2048
  partitions:
    "/":
      size: 4
appliances:
  - _base
packages:
  includes:
    - jboss-as6
    - jboss-as6-cloud-profiles
    - torquebox-jruby
    - torquebox-deployers
    - torquebox-cloud-profiles-deployers
post:
  base:
    - "echo -e '\n - JBossAS' >> /etc/sysconfig/steamcannon-agent"
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```
$ boxgrinder-build -w \
appserver.appl \
-p ec2 -d ami
```



# Time passes...



**ami - XXXXXXX**

# A few times

- Front-end (httpd, mod\_cluster)
- Appserver (JBoss AS6 + TorqueBox)
- Database (PostgreSQL)
- All-in-one (JBoss AS6 + PostgreSQL)

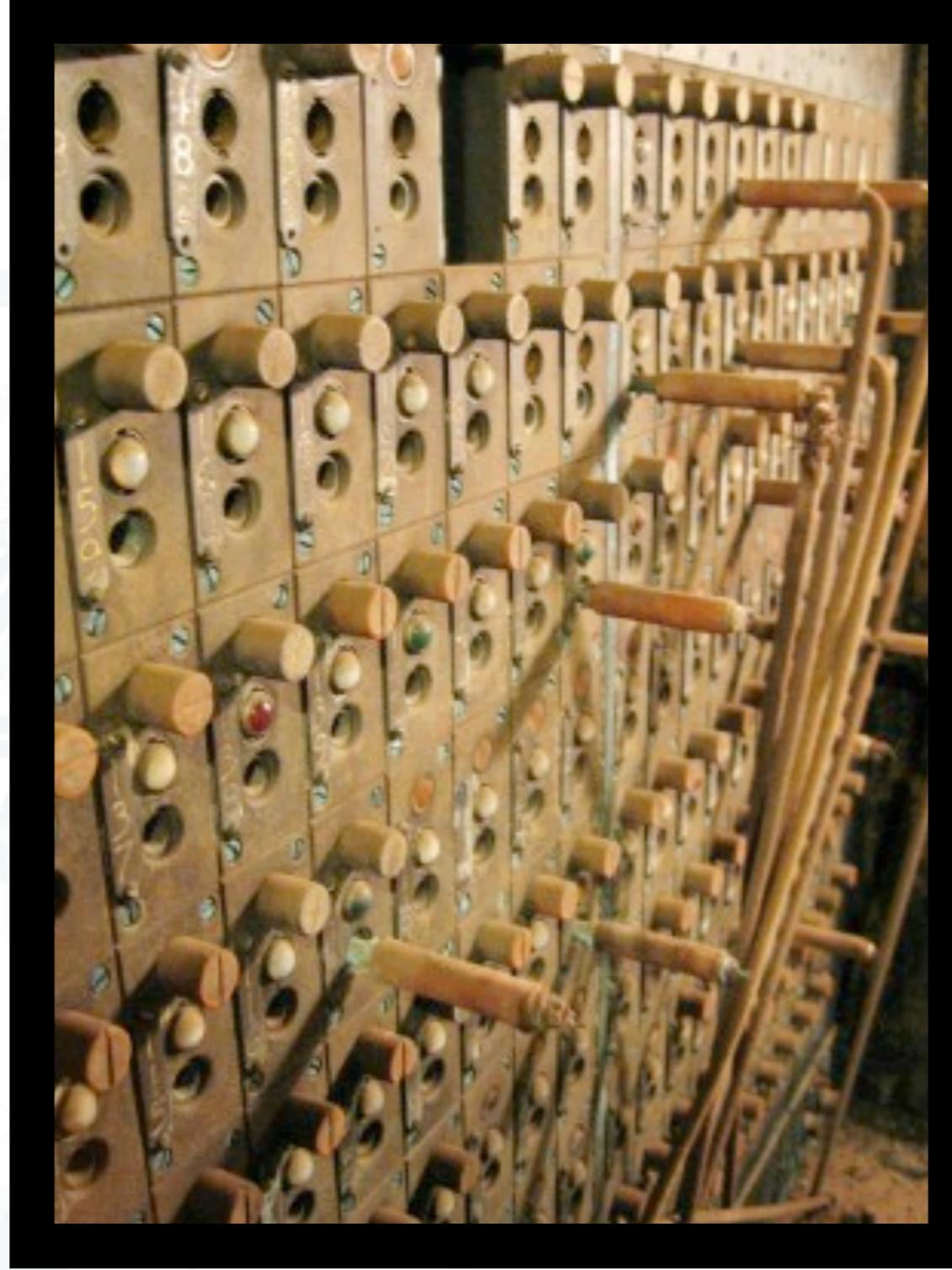


<http://www.flickr.com/photos/deltamike/112665708/>

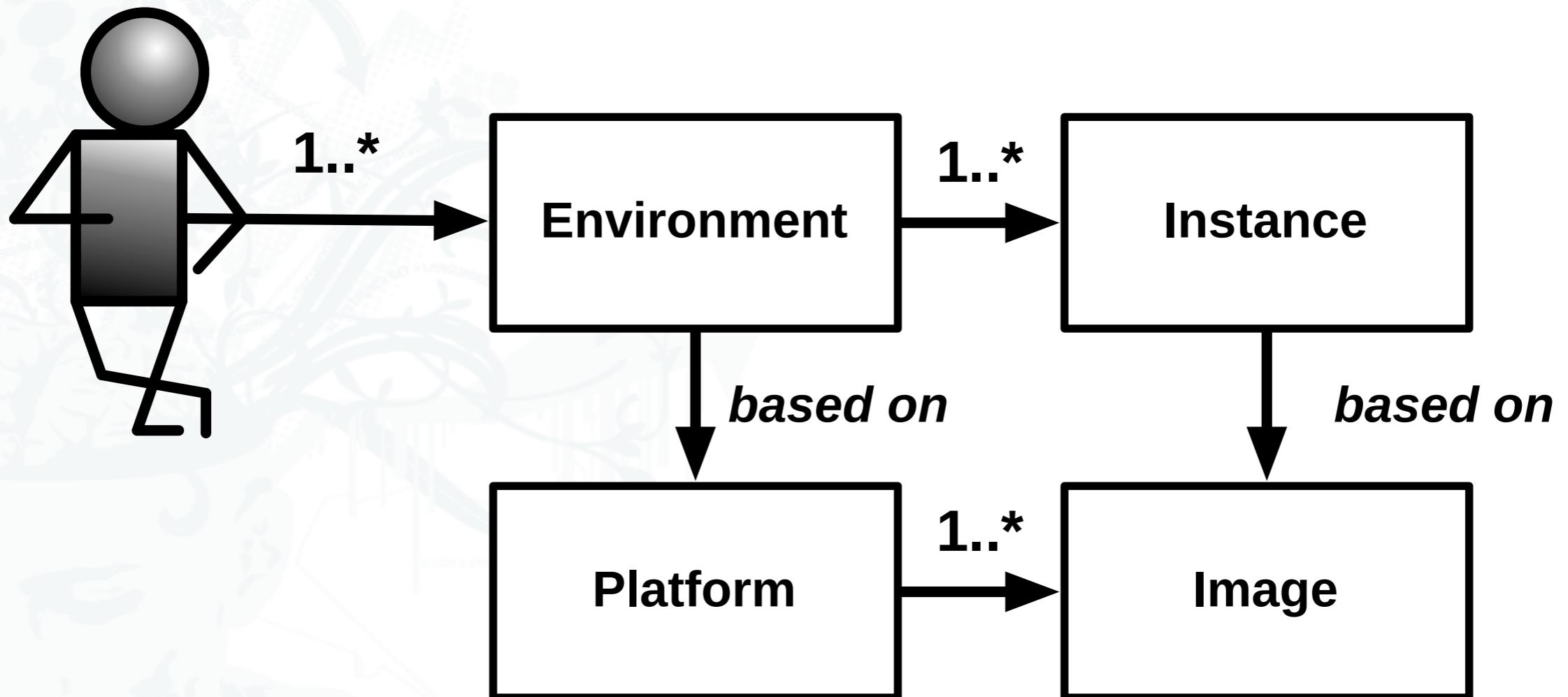


<http://www.flickr.com/photos/resedabear/4739589400/>

# SteamCannon



<http://www.flickr.com/photos/sheilascarborough/3532118420/>



# Platforms

- JBoss 2-Tier
- JBoss 3-Tier
- Developer Standalone

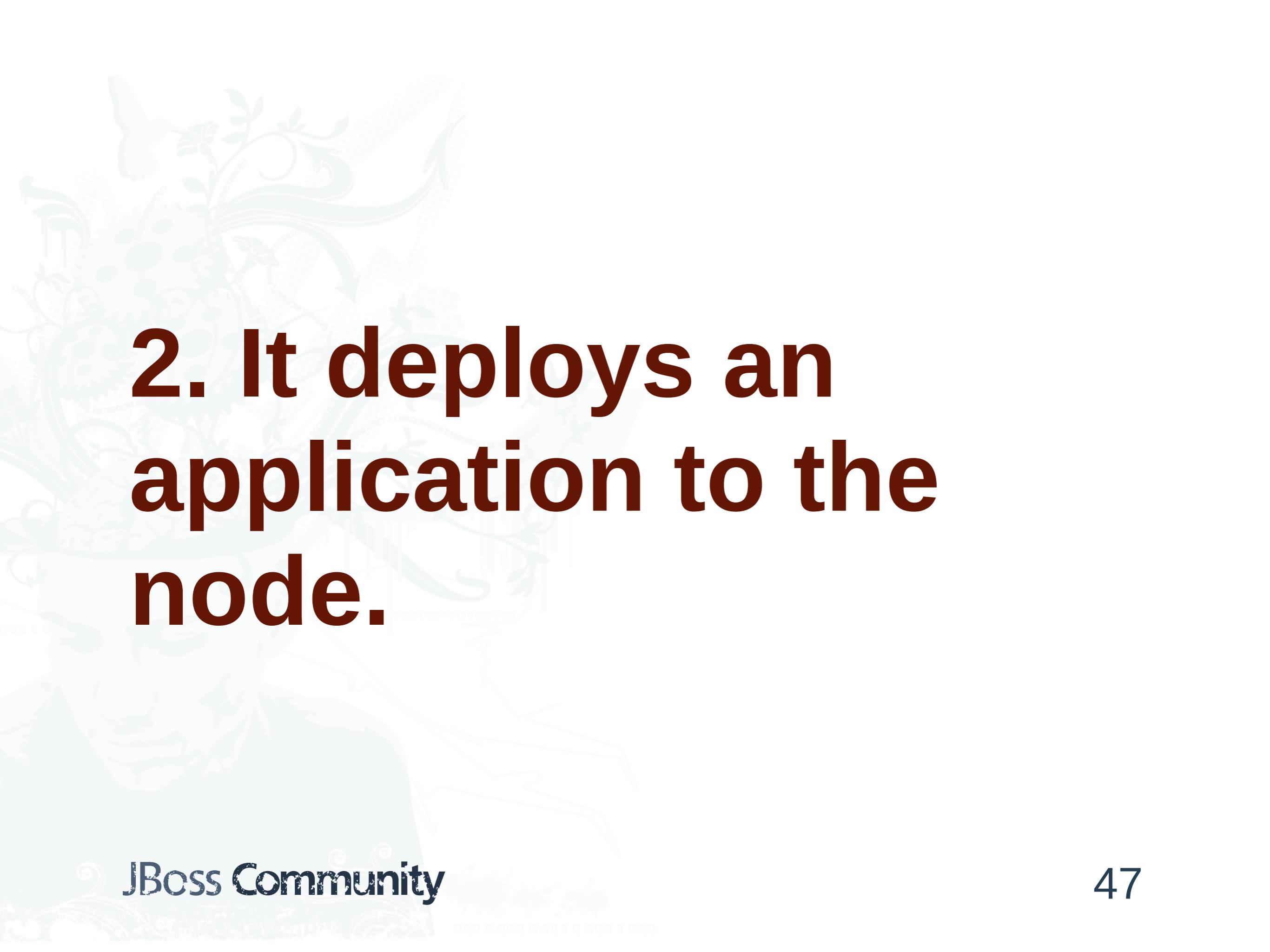
# Environments

- My Sandbox
- My Other Sandbox
- Staging
- QA
- Production
- Steven
- Experimental

# Demo!

## (Photo Album)

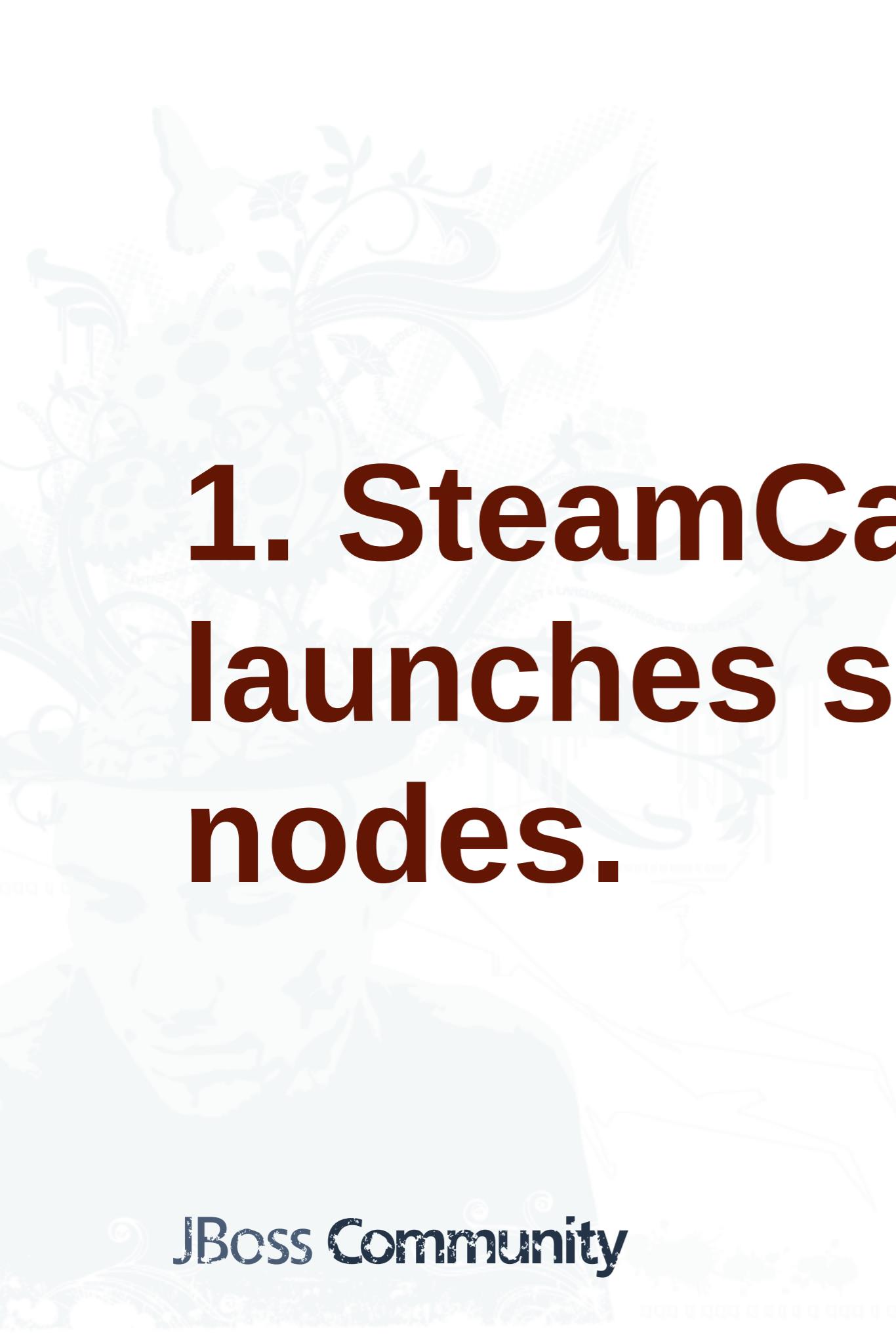
# 1. SteamCannon launches a node.



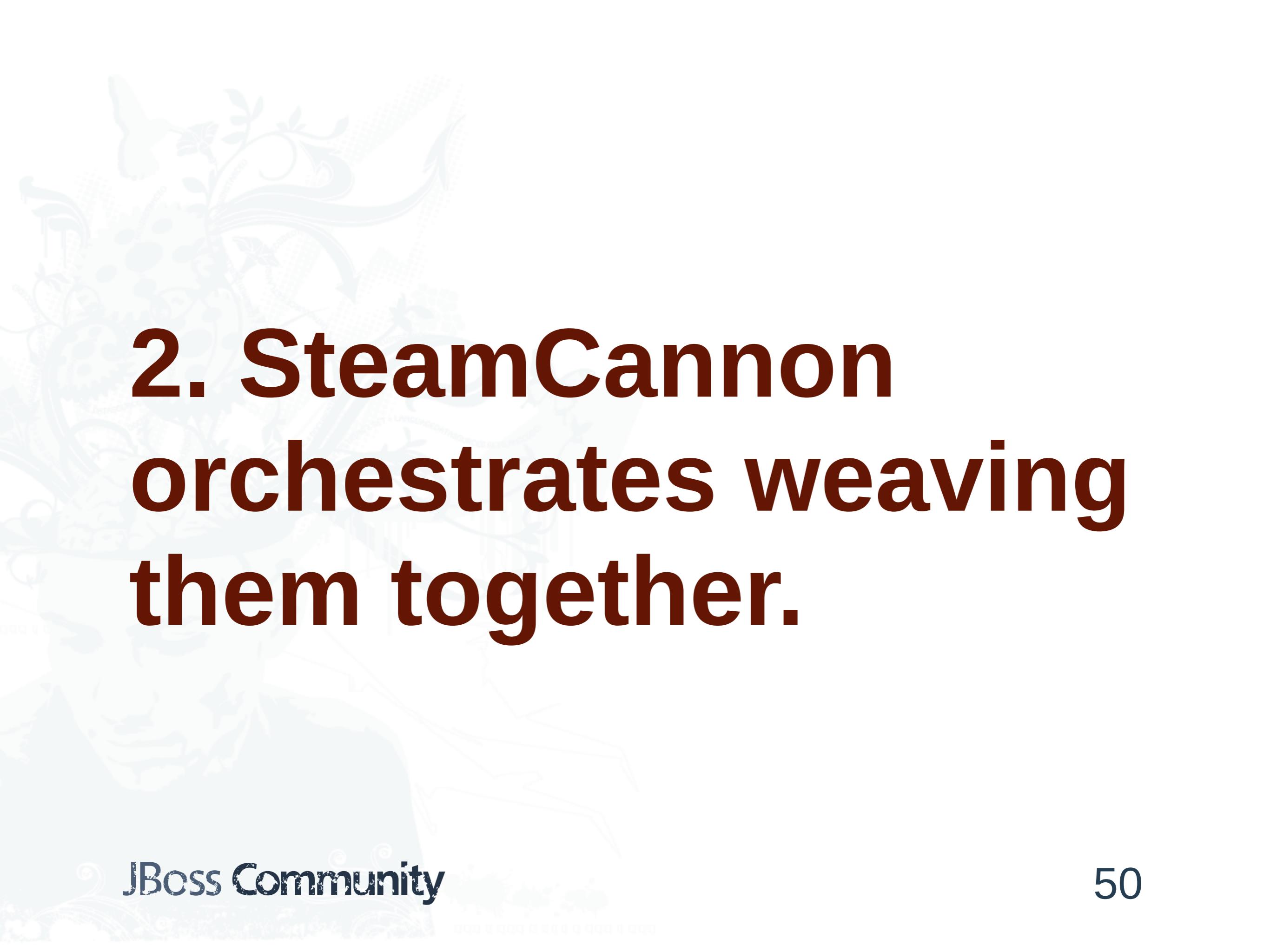
**2. It deploys an application to the node.**

# Demo!

(Rails 3, clustered, \*-ds.xml)



# **1. SteamCannon launches several nodes.**



## **2. SteamCannon orchestrates weaving them together.**

# **3. SteamCannon deploys artifacts to the correct services.**

# Bottom line...

- BoxGrinder allows us to bake "best practices" into server images
- SteamCannon adds trusted remote hands to do the logistics of clustering & configuration
- Click and deploy, even complex, multi-artifact applications

# Deltacloud

Oh yeah, SteamCannon talks  
to the IaaS provider using the  
**Deltacloud API.**

# Demo!

## (Deltacloud API)

# Future directions

- Additional platforms, including other data and service platforms
  - Infinispan (Data grid)
  - HornetQ (Messaging fabric)
- Improved UI/UX/Workflows
  - Higher-order "applications"
  - Movement between environments

# Try it!

- <http://boxgrinder.org/>
- <http://steamcannon.org/>
  - Download the VMware image
  - Boot the AMI
  - <http://steamcannon.org/try/>

# Q&A