The Machines are Alive

Engine Yard Cloud

On-demand deployment
and management for
Ruby on Rails applications

deployment vs. surfing

Jon Crosby

http://joncrosby.me

(we're hiring)

http://www.engineyard.com/about/careers

cloud computing definition

instant provisioning

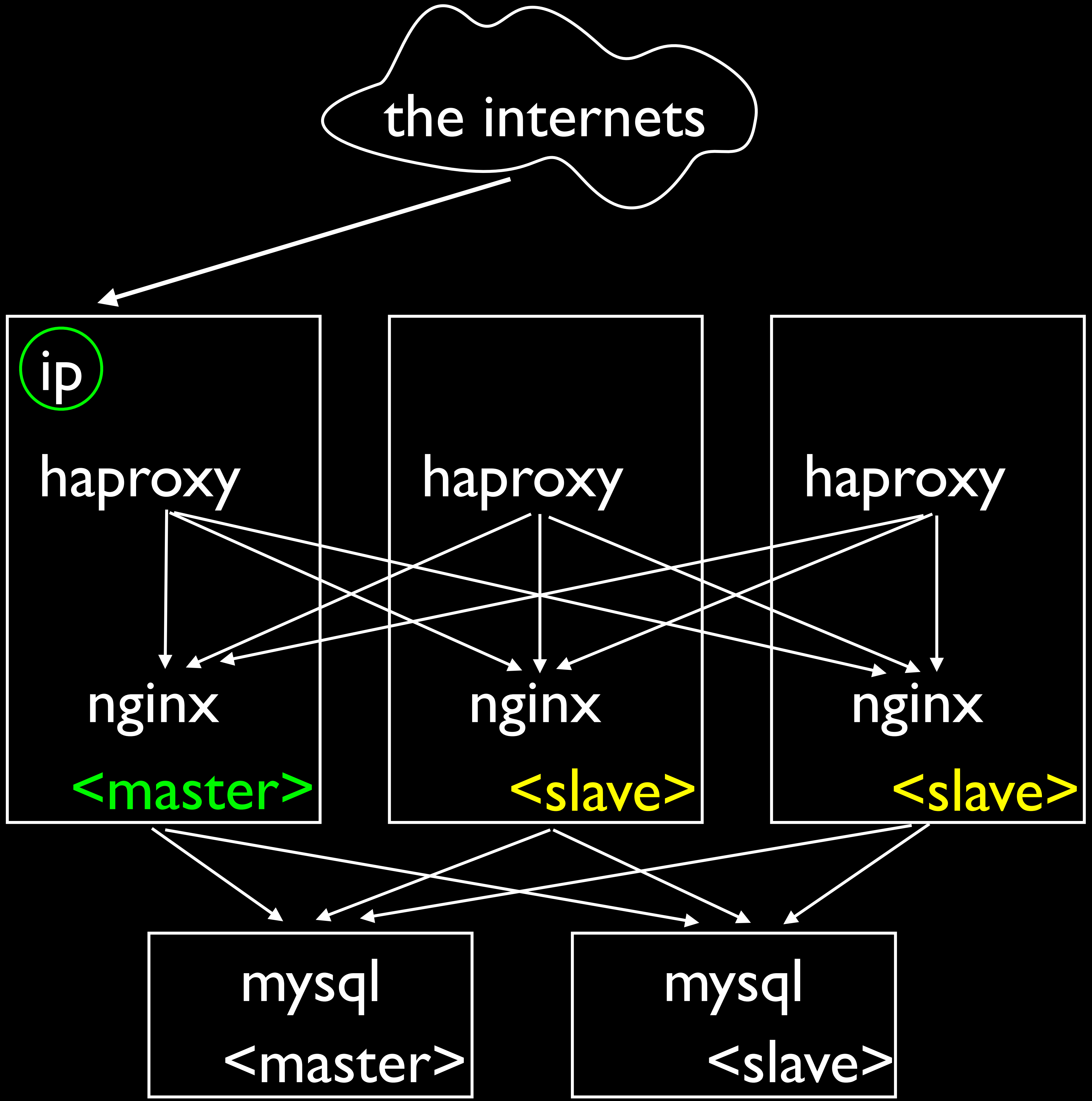
cost effective

repeatable

infrastructure described in code

elastic / scalable

git url -> cluster



the internets
ip
haproxy
haproxy
haproxy
nginx
nginx
nginx
<master>
<slave>
<slave>
mysql
<master>
mysql
<slave>

A Story

(of not scaling)

add a node

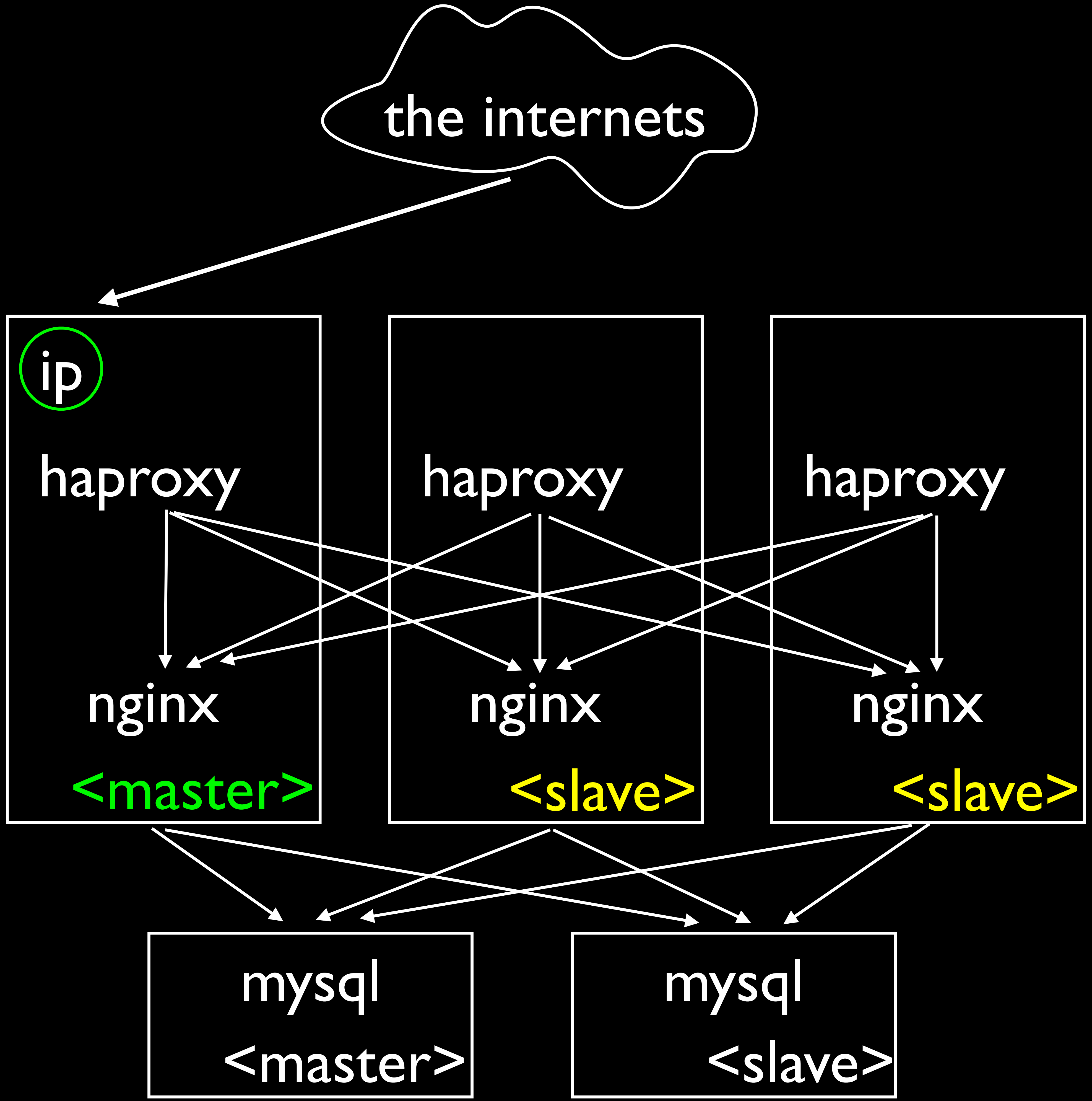
Stewart Smalley

no server is special

remove a node

self healing

"The Machines are Alive"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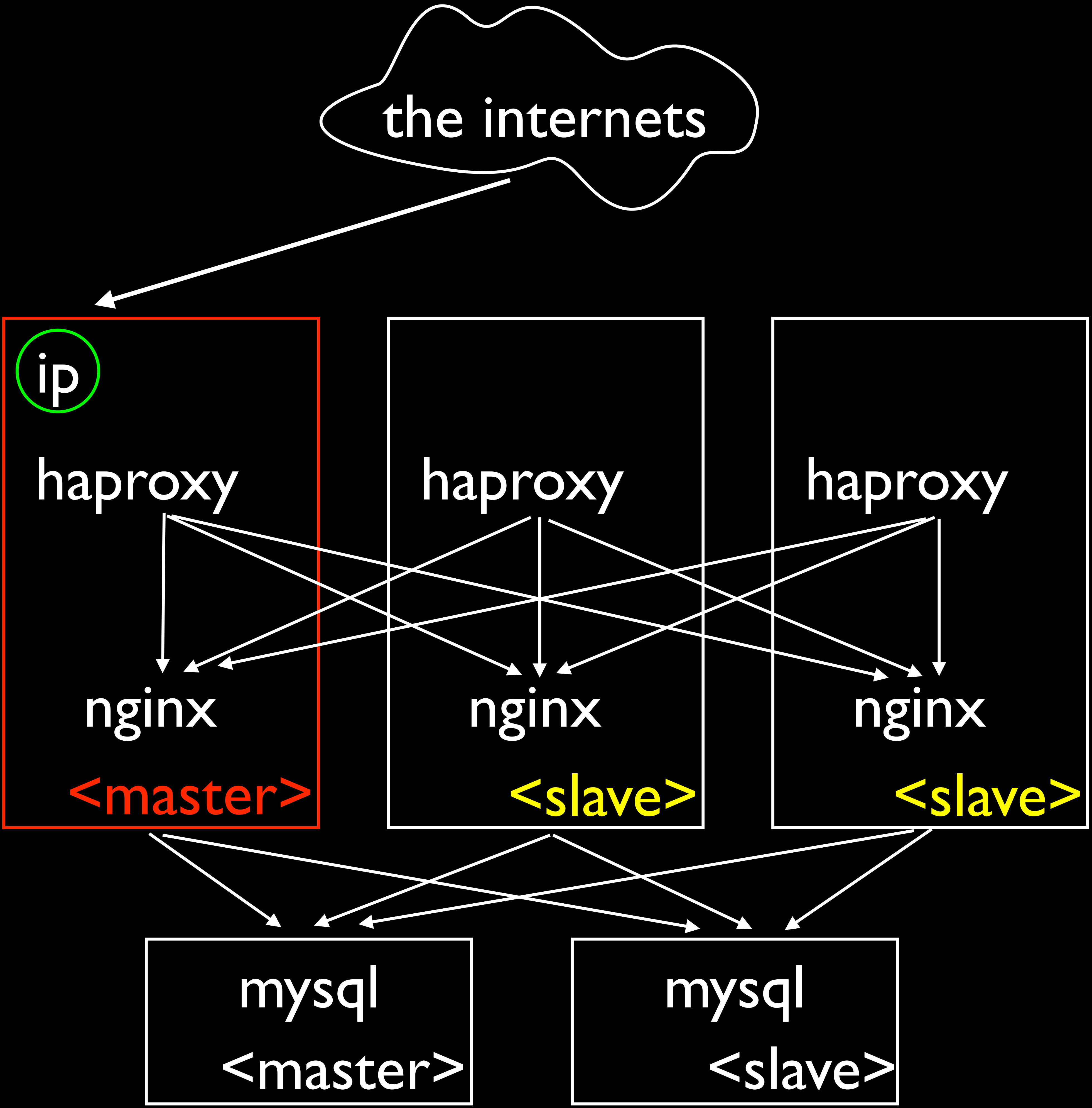
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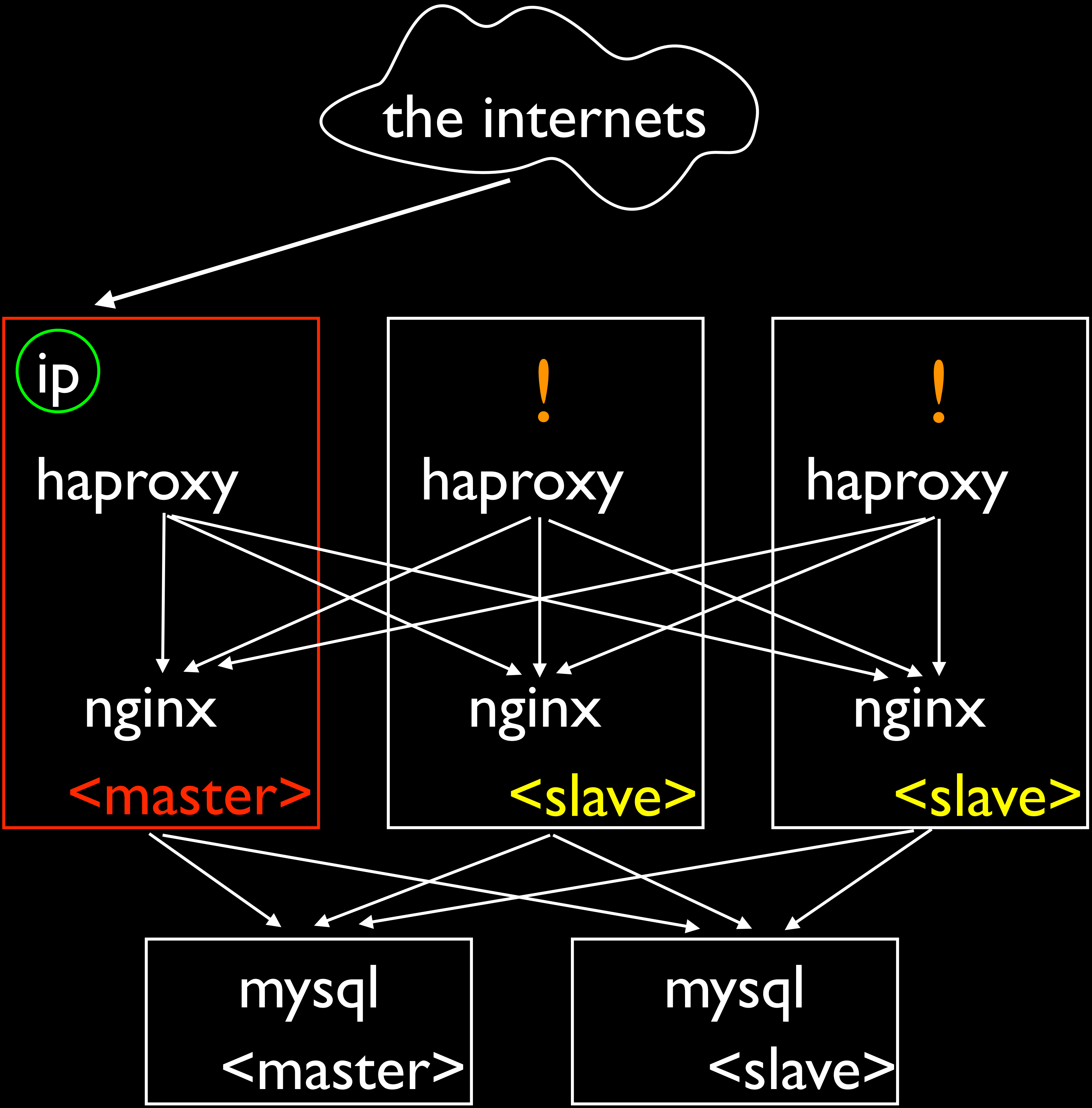
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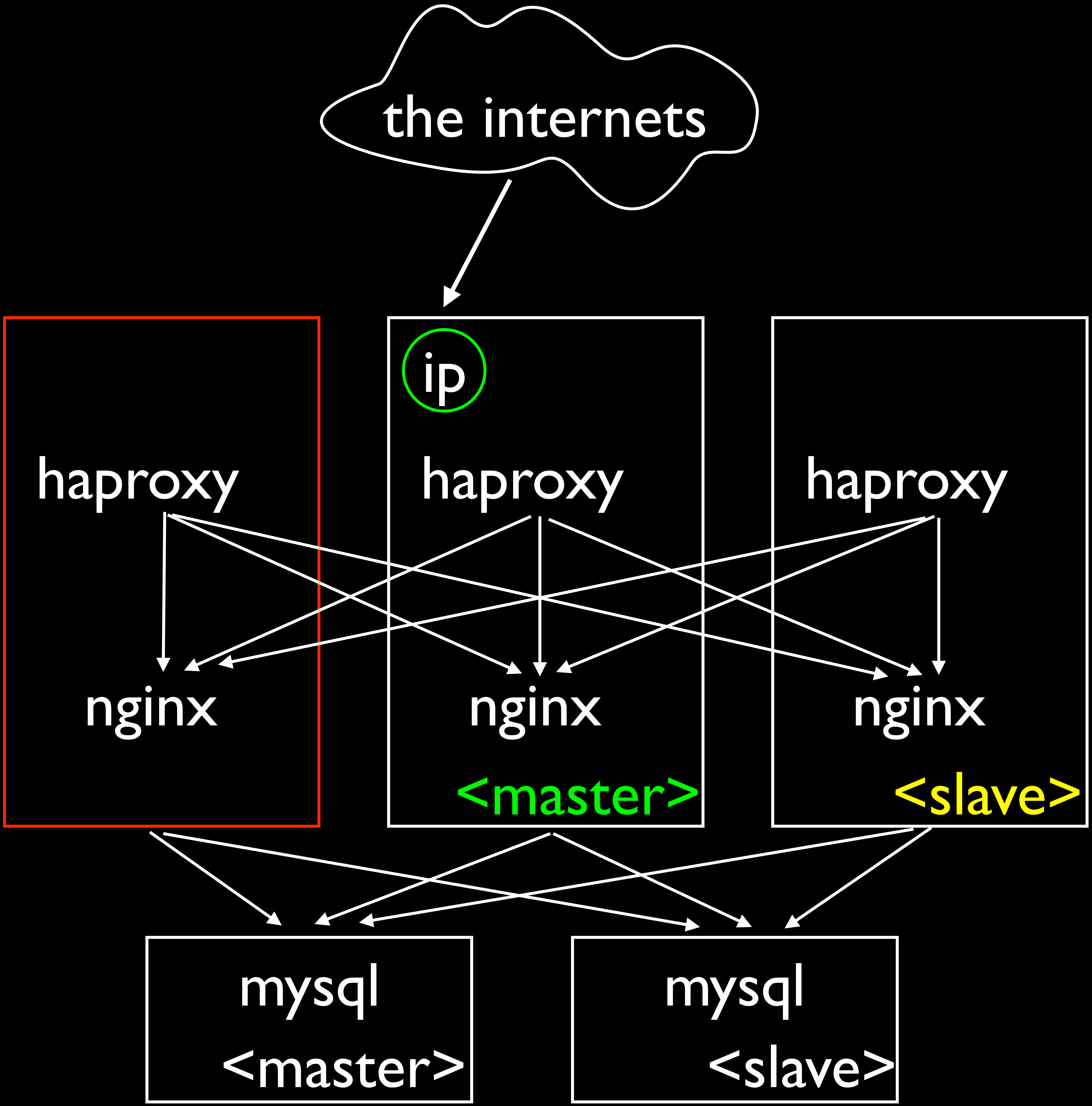
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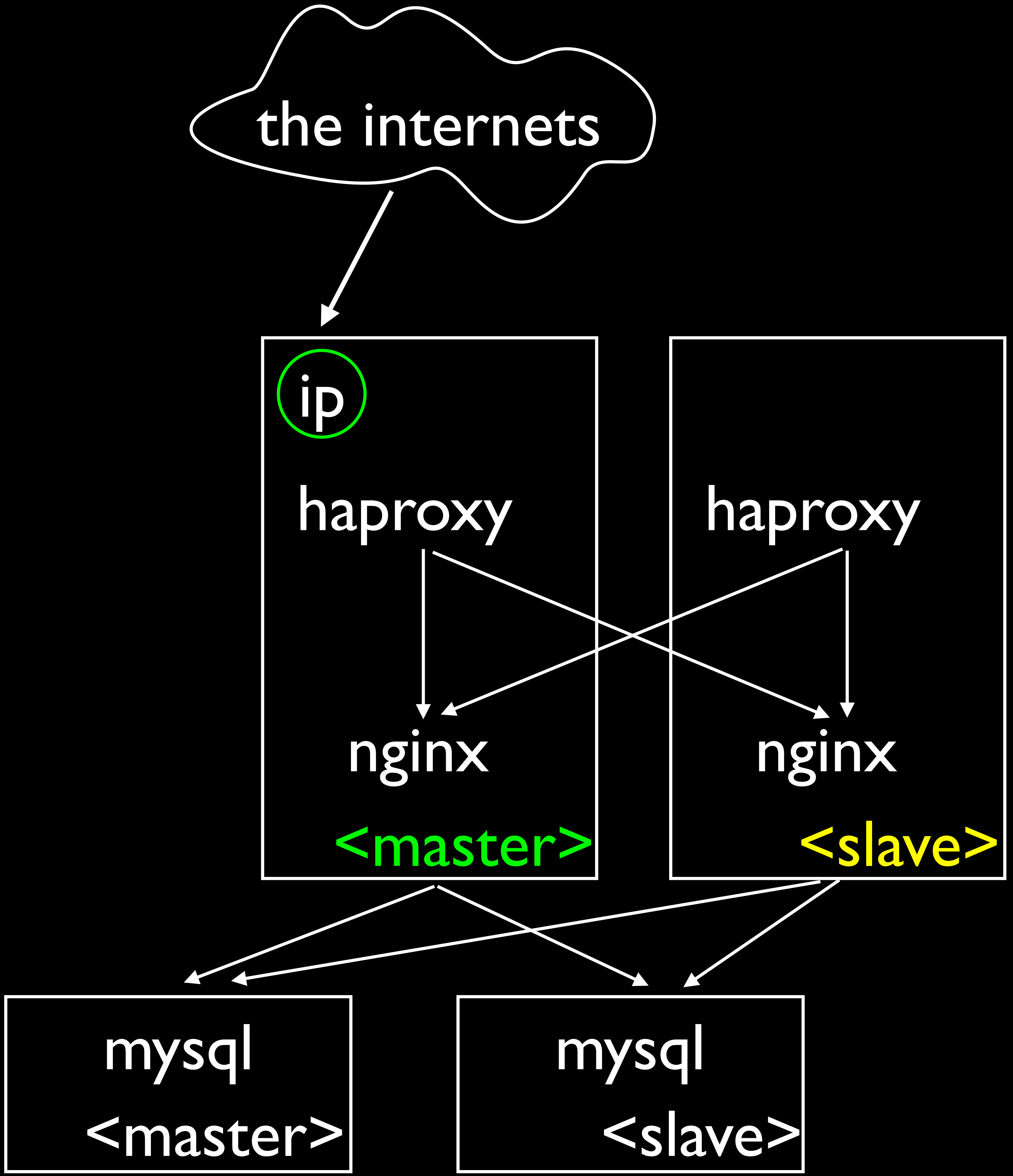
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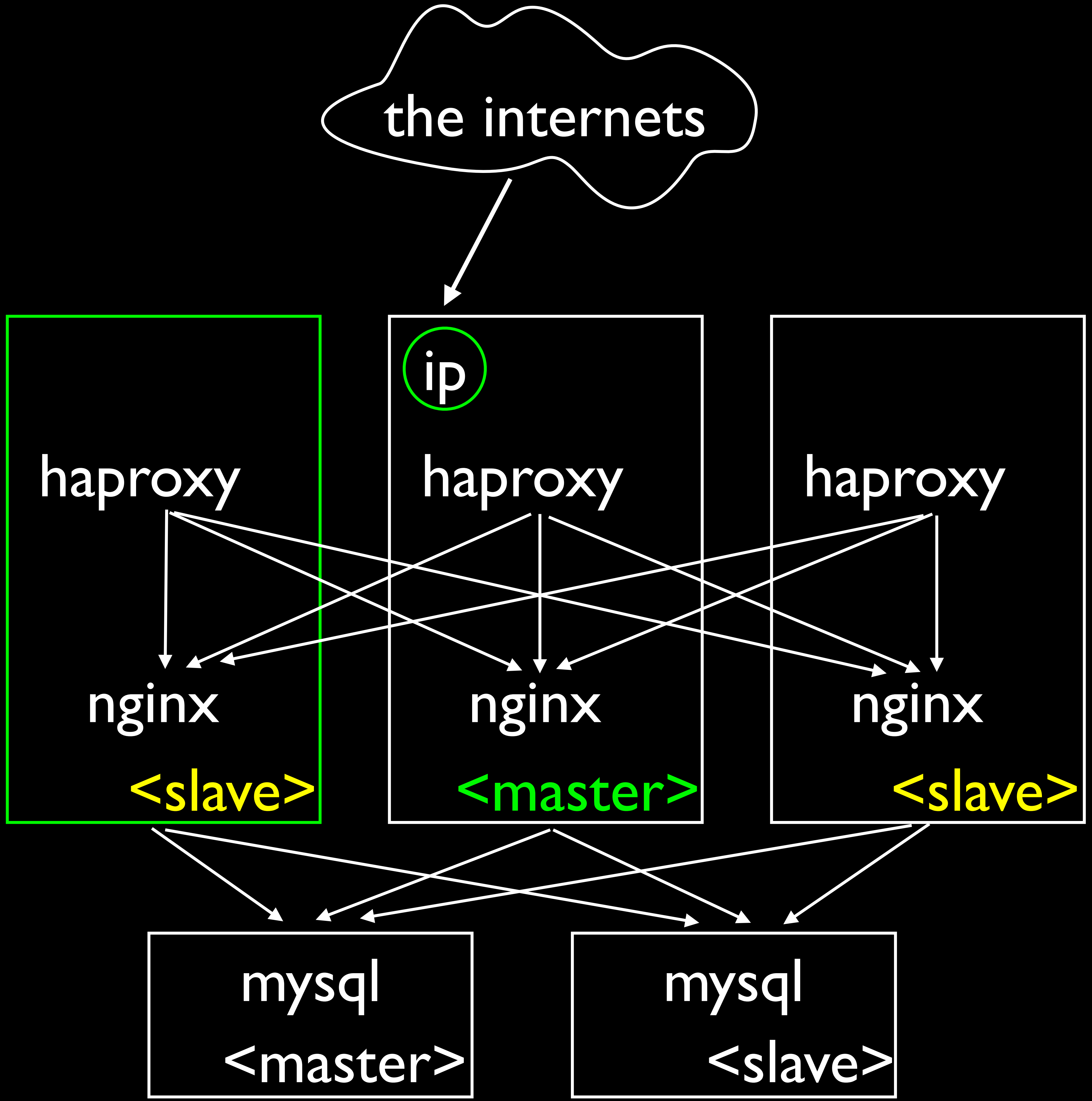
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deploying updates

deploy from the web

deploy hooks

```
deploy/
|-- after_restart.rb
|-- before_migrate.rb
|-- before_restart.rb
`-- before_symlink.rb
```

```
run “echo $RAILS_ENV >> #{release_path}/hello.log”
```

capistrano

deploy from git

cloning

murphy

monitoring and alerting

secret sauce

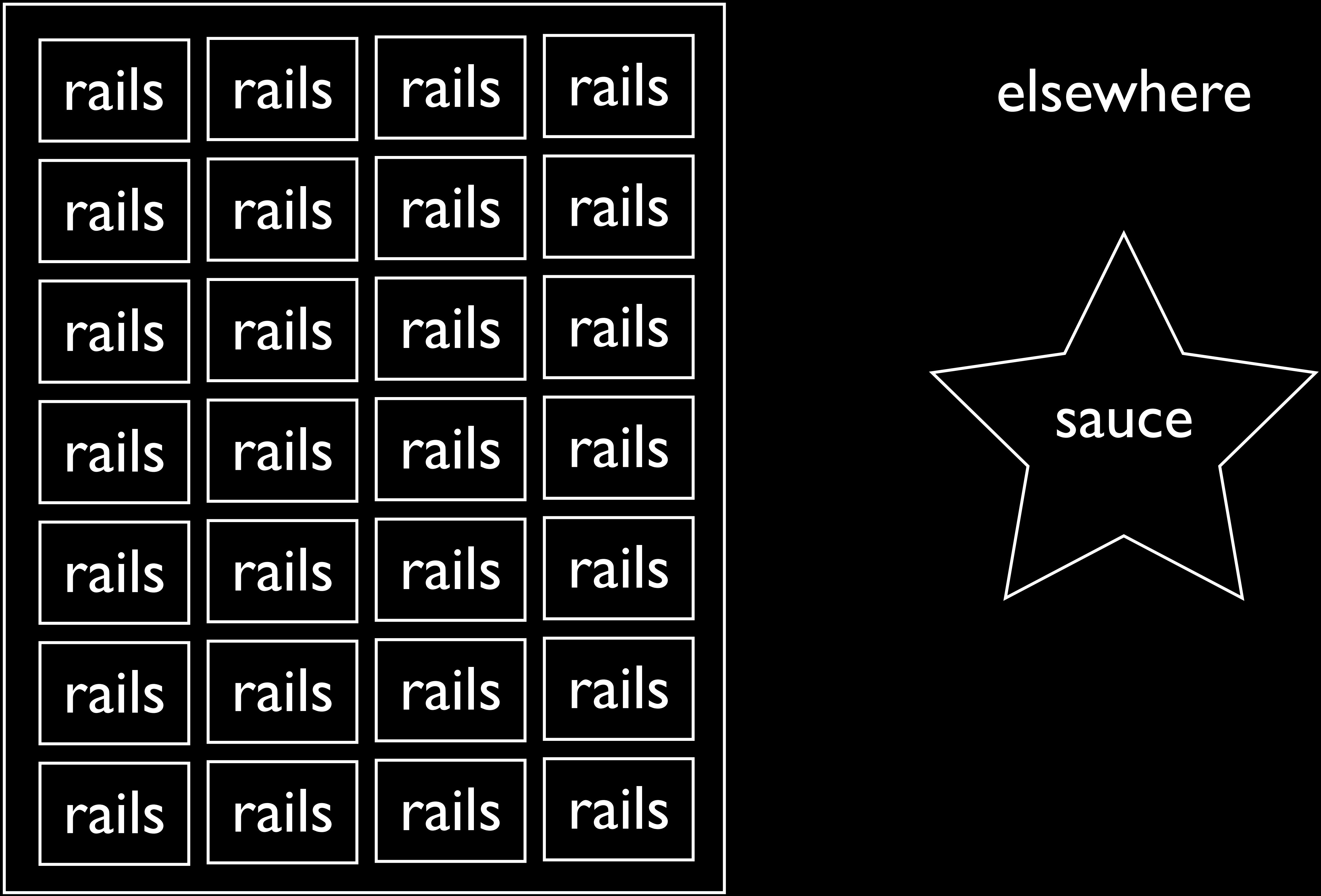
http://cloudscaling.com/blog/cloud-applications/the-secret-sauce-problem

credit: Randy Bias

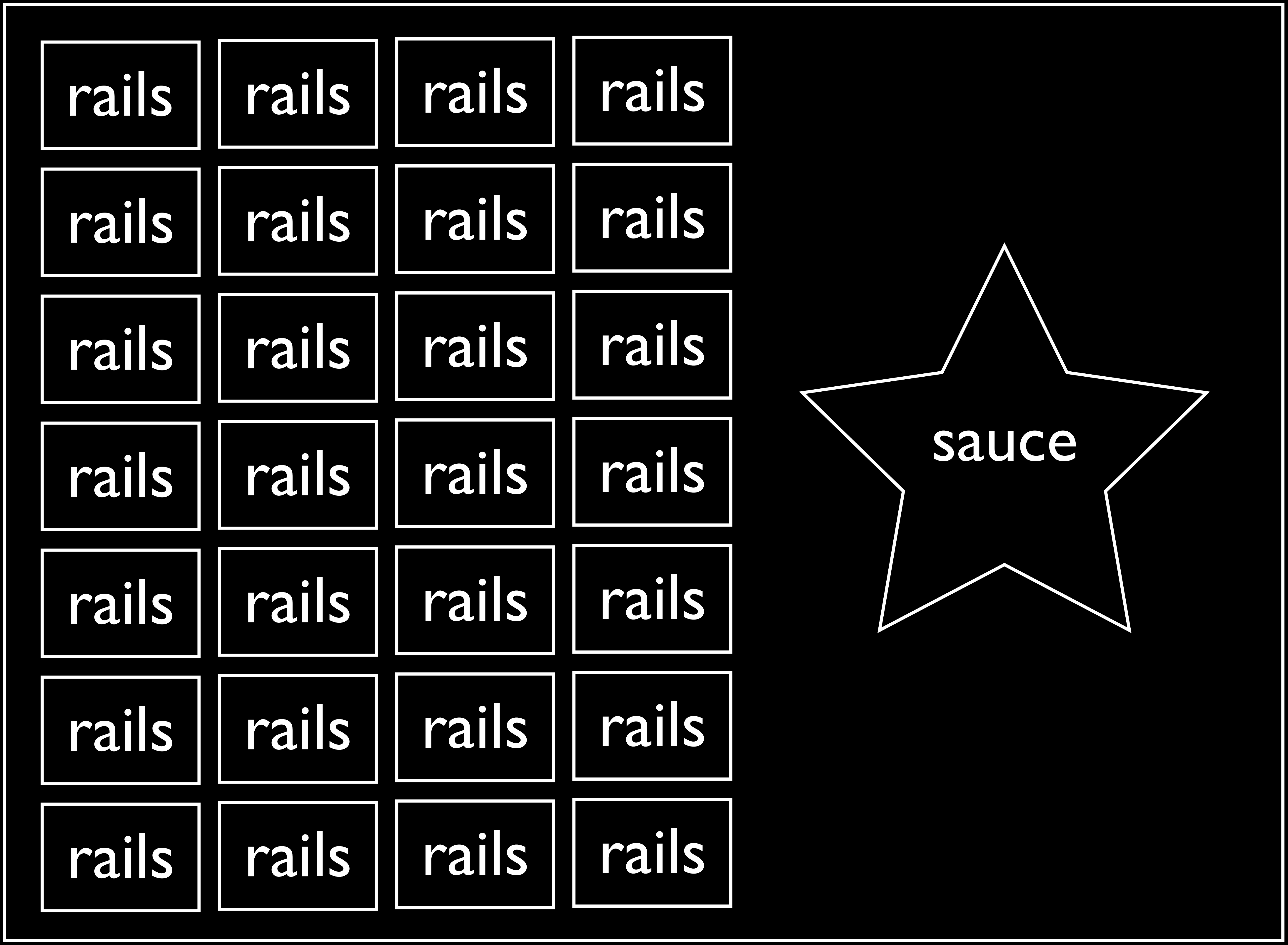
deployment platform

customizable

proprietary platforms



extensible platforms



customization with chef

systems integration framework

node

roles

cookbooks

recipes

resources

files, packages, services, etc.

chef example

```
if ['solo', 'app', 'app_master'].include?(node[:instance_role])
if ['solo', 'app', 'app_master'].include?(node[:instance_role])
```

/etc/chef/dna.json

```
{
 “instance_role” :“app_master”,
 “applications” : {
   “railsapp” : {
     “repository_name” :“git:\/\/github.com...
     “services” : [
       {
         “resource” :“mongrel”,
         “mongrel_base_port” : 5000,
         “mongrel_mem_limit” : 150,
         “mongrel_instance_count” : 5
       }
...
```

```
run_for_app("myapp") do |app_name, data|
directory "/var/run/sphinx" do
  owner node[:owner_name]
  group node[:owner_name]
  mode 0755
end
```

```
directory "/var/log/engineyard/sphinx/#{app_name}" do
  recursive true
  owner node[:owner_name]
  group node[:owner_name]
  mode 0755
end
```

```
remote_file "/etc/logrotate.d/sphinx" do
  owner "root"
  group "root"
  mode 0755
  source "sphinx.logrotate"
  action :create
end
```

```
template "/etc/monit.d/sphinx.#{app_name}.monitrc" do
  source "sphinx.monitrc.erb"
  owner node[:owner_name]
  group node[:owner_name]
  mode 0644
  variables({
    :app_name => app_name,
    :user => node[:owner_name]
  })
end
```

```
template "/data/#{app_name}/shared/config/sphinx.yml" do
  owner node[:owner_name]
  group node[:owner_name]
  mode 0644
  source "sphinx.yml.erb"
  variables({
    :app_name => app_name,
    :user => node[:owner_name]
  })
end
```

chef testing

test code

test infrastructure

?

appears tedious without clear benefit

```
echo “x” > file
assert(file)
assert(file.cat()) == “x”
```

chef == declarative

mock out unix?

assert critical parts

new parts evolve with confidence

```
|-- Rakefile
`-- cookbooks
    |-- couchdb
    |  + files
    |   |-- recipes
    |   |   `-- default.rb
    |   `-- templates
    |       `-- default
    |           `-- couch.ini.erb
    |-- postgres
    |   |-- recipes
    |   |   `-- default.rb
    |   `-- templates
    |       `-- default
    |           `-- database.yml.erb
    |
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    |   `-- templates
    |       `-- default
    |           `-- database.yml.erb
    |
```

testing chef with cucumber

BDD framework with plain text descriptions

```
Feature: Nginx Server
  In order to serve static HTTP requests
  As a Cloud customer
  I want to ensure nginx is properly configured

  Scenario: Nginx service is running
   Given chef has finished running
    Then the nginx service has been started
    And the nginx service has a pid

...
```

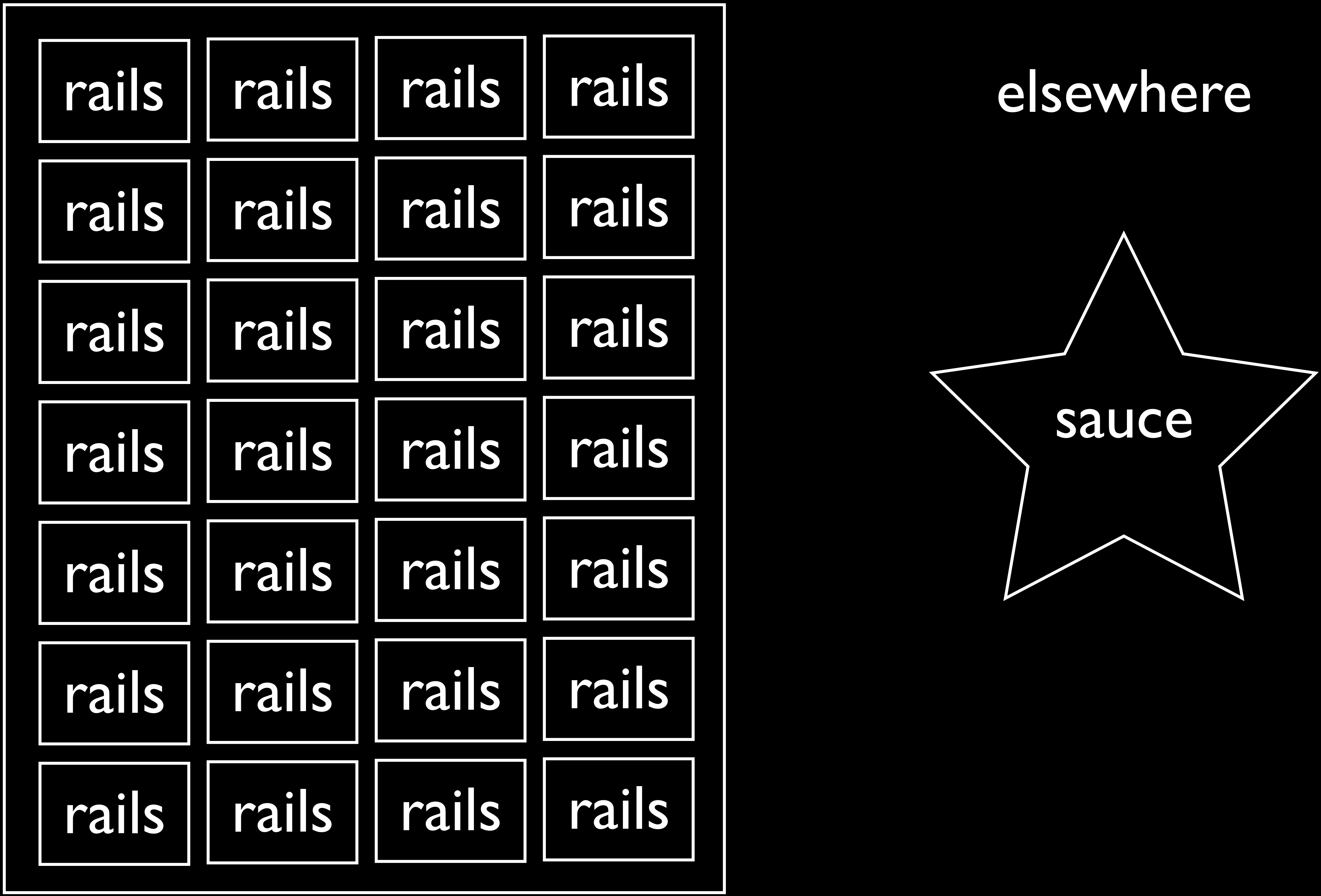
```
Scenario Outline: filesystem setup
  Then the <path> <type> exists
  And the owner of <path> is the user <user>
  And the group of <path> is the group of the <user> user
  And the permissions for <path> are <permissions>


...
```

```
Scenario Outline: filesystem setup
  Then the <path> <type> exists
  And the owner of <path> is the user <user>
  And the group of <path> is the group of the <user> user
  And the permissions for <path> are <permissions>

...
```

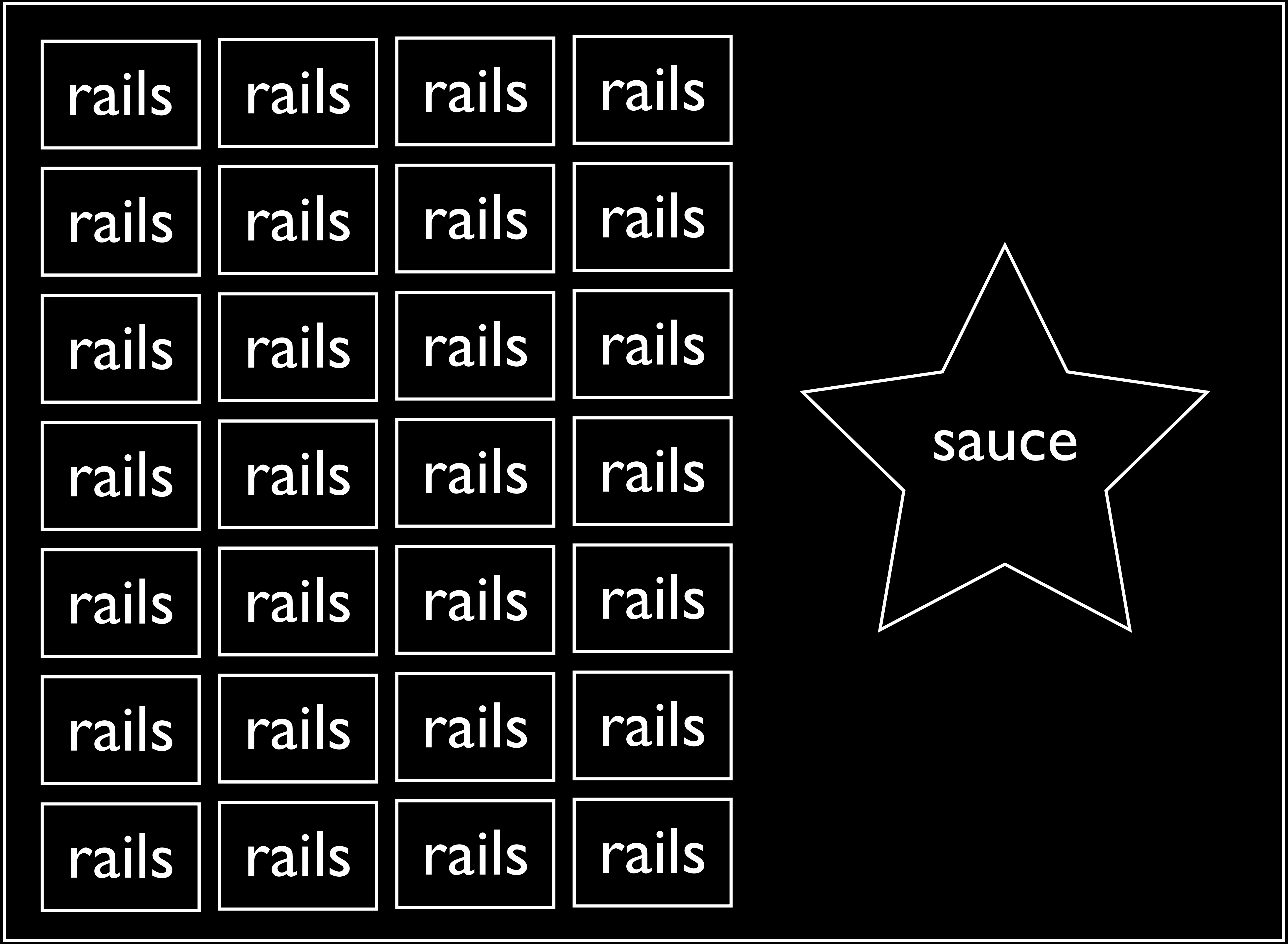
```
Scenarios: configuration
   | type      | permissions | user       | path                             |
   | file      |        0644 | customer's | /data/nginx/nginx.conf           |
   | directory |        0775 | customer's | /data/nginx/ssl                  |
   | directory |        0755 | customer's | /data/nginx/common               |
   | file      |        0644 | customer's | /data/nginx/common/proxy.conf    |
   | file      |        0644 | customer's | /data/nginx/common/servers.conf  |
   | directory |        0755 | customer's | /data/nginx/servers              |
   | file      |        0644 | customer's | /data/nginx/servers/default.conf |
   | file      |        0644 | customer's | /data/nginx/common/fcgi.conf     |
   | directory |        0775 | customer's | /var/log/engineyard/nginx        |
   | file      |        0755 | root       | /etc/init.d/nginx                |
   | file      |        0755 | customer's | /data/nginx/mime.types           |
   | file      |        0755 | customer's | /data/nginx/koi-utf              |
   | file      |        0755 | customer's | /data/nginx/koi-win              |
   | file      |        0600 | root       | /etc/conf.d/nginx                |
   | file      |        0755 | root       | /etc/logrotate.d/nginx           |
Scenarios: configuration
   | type      | permissions | user       | path                            |
   | file      |        0644 | customer's | /data/nginx/nginx.conf          |
   | directory |        0775 | customer's | /data/nginx/ssl                 |
   | directory |        0755 | customer's | /data/nginx/common              |
   | file      |        0644 | customer's | /data/nginx/common/proxy.conf   |
   | file      |        0644 | customer's | /data/nginx/common/servers.conf |
   | directory |        0755 | customer's | /data/nginx/servers             |
   | file      |        0644 | customer's | /data/nginx/servers/default.conf |
   | file      |        0644 | customer's | /data/nginx/common/fcgi.conf    |
   | directory |        0775 | customer's | /var/log/engineyard/nginx       |
   | file      |        0755 | root       | /etc/init.d/nginx               |
   | file      |        0755 | customer's | /data/nginx/mime.types          |
   | file      |        0755 | customer's | /data/nginx/koi-utf             |
   | file      |        0755 | customer's | /data/nginx/koi-win             |
   | file      |        0600 | root       | /etc/conf.d/nginx               |
   | file      |        0755 | root       | /etc/logrotate.d/nginx          |
       @app @app_master @nginx_passenger
       Feature: Nginx Server
         In order to serve static HTTP requests
         As a Cloud customer
         I want to ensure nginx is properly configured

         Scenario: Nginx service is running
           Given chef has finished running
           Then the nginx service has been started
           And the nginx service has a pid


       ...
```

chef + monitoring

proprietary platforms



extensible platforms



/etc/ey-alerts.json

```
{
  “skip” : [“mysqld”],
  “check” : [“ttsrv”]
}
```

growing community of recipes

open!

http://github.com/37signals/37s_cookbooks

http://github.com/opscode/cookbooks/

http://github.com/engineyard/ey-cloud-recipes

http://github.com/ezmobius/ey-nosql

scales with your needs

world class support

(new: two tiers, optional)

review

cloud computing platform

focused on ruby

configurable

open way

chef

scale up

scale out

on demand

your assignment:

find the secret sauce

build an amazing app

meaningful

worth using

don’t make a clone of facebook

don’t make a social network for turtles

don’t listen to social marketing gurus with great haircuts following over 1000 people on twitter being awesome

part of your job

git url

one server

anything you can imagine

no excuse not to do so

get started

cook the sauce

make your users happy

done

q/a