

# CHINESE FOOD



# ZENDESK AUTOMATION IN NUMBERS (SUNDAY FEB 22 2015)

- » 1823 nodes
- » 169 roles
- » 182 cookbooks
- » ~ 87,500 daily convergences
- » ~ 685,000 lines of code / data
- » ~ 27,000,000 attributes

# WHAT IS AUTOMATION?

# INFRASTRUCTURE SHOULD BE

- » Repeatable
- » Testable
- » Scalable
- » NO SPECIAL SNOWFLAKES



# ALSO

- » It's impossible to manage 1800 servers manually
- » without getting insane.



WHY  
CARE?

# AUTOMATIONS ARCHEOLOGY



**CFEngine**

**puppet  
labs<sup>®</sup>**

**CHEF™**

- » 1993 - CFEngine
- » 2005 - Puppet
- » 2007 - Zendesk
- » 2009 - Opscode Chef

# CFENGINE

```
package:  
  "nginx"  
    package_policy => "add",  
    package_method => "apt"
```

**WELL, LOOKS COOL BUT HOW DO I START?**

# PUPPET

```
package { 'nginx':  
  provider=>'apt',  
  ensure=>'installed'  
}
```

**THIS LOOKS EASIER, I THINK I CAN DO IT!**

# CHEF

```
package "nginx" do
  action :install
end
```

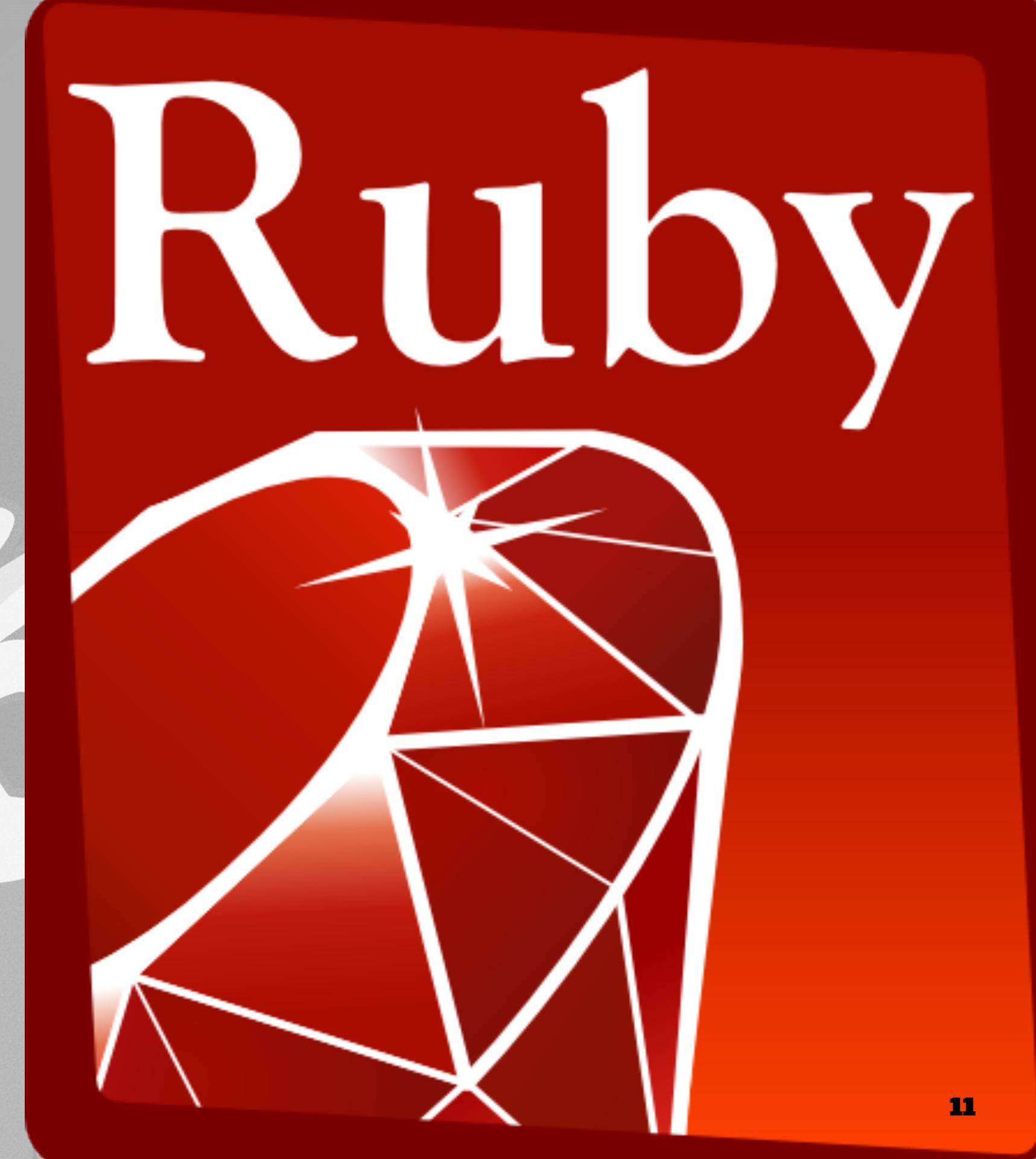
» As a bonus let's manage the service

```
service "nginx" do
  action [ :enable, :start ]
  supports :reload => true
end
```

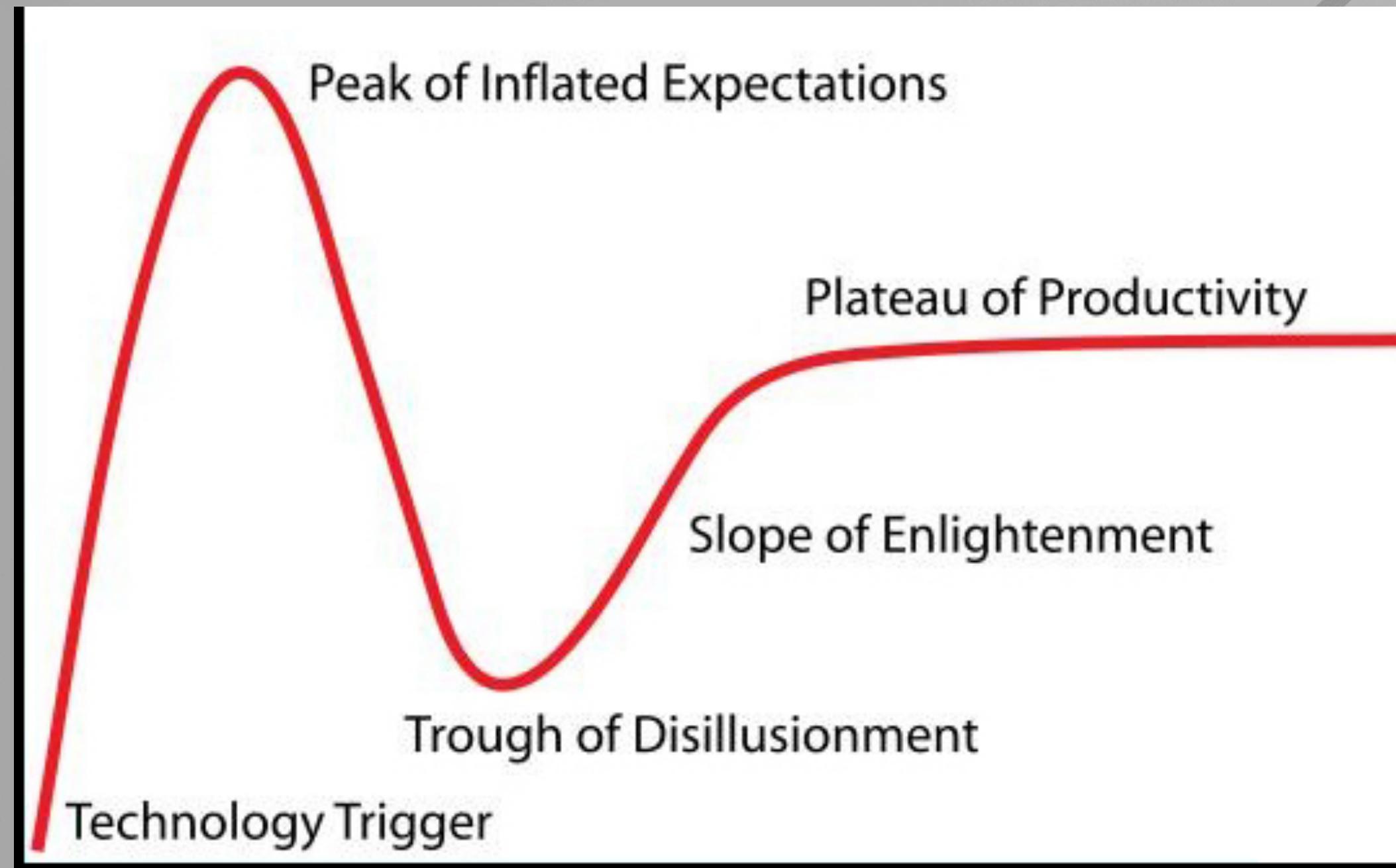
## HEY, I KNOW THIS!

# YES! IT'S RUBY

- » Uses a Ruby DSL and pure Ruby
- » Data is stored in JSON
- » Templates are erb files
- » Community
  - 2.023 Cookbooks
  - 61.320 Chefs



# LEARNING CURVE



# WHAT CHEF IS?

- » A configuration management system
- » An API for your infrastructure
- » A searchable catalog of attributes
- » Arbitrary datastore of global JSON data , also searchable.
- » Client / Server architecture

# BEHIND THE SCENES

- » erlang
- » nginx
- » redis
- » rabbitmq
- » solr
- » postgresql
- » couchdb



# **MAIN COMPONENTS**

## **NODES**

- » Physical, virtual or cloud machine that's managed by a chef-client.

## **NODE CONFIGURATION ITEMS**

- » Attributes and a run\_list

# CONFIGURATION ITEM ATTRIBUTES

- » Key / Value
- » Automatic and Manual
- » Searchable! 

```
knife search node 'zendesk_config_pod:4 AND zendesk_config_hostgroup:voice' -i  
voice1.pod4.sac1.zdsys.com  
voice2.pod4.sac1.zdsys.com  
voice3.pod4.sac1.zdsys.com  
voice4.pod4.sac1.zdsys.com
```

# ATTRIBUTES AUTOMATIC

## Examples

- How many CPU's the node have?
- How much memory the node have?
- What are the node IP addresses?
- Immutable attributes!

OHAI 

» Detect and populate attributes about your OS.

# ATTRIBUTES MANUAL

## Examples

- In which POD this server is?
- What projects are deployed to this server?
- Whatever key/value needed

## Where?

- Attribute Files, Node, Recipe, Environment, Role

# RUN\_LIST

- » Settings to configure a node into a desired state.
- » Ordered list of roles and/or recipes/cookbooks

# CONFIGURATION UNITS

## GROUPING:

- » Environments
  - production, qa, staging...
- » Roles
  - web, db, lb...
- » Nodes
  - server1.mydomain.com...
- » Attributes
  - kernel.release: 2.0.36 (yikes! this is not true!)

# MAIN COMPONENTS

## COOKBOOKS



- » fundamental unit of configuration and policy distribution.
- » defines a scenario.
- » all of the components that are required to support that scenario.

# COOKBOOK



» How do I write my first cookbook?

**IDEA**



**LET'S WRITE OUR FIRST COOKBOOK!**

» Install nginx

» Adds an "static" index file

# COOKBOOK



## INDEX FILE CONTENT

- » Hostname and main IP address
- » Memory
- » Number of CPU's
- » OS, distribution, distribution name and kernel Version
- » Configurable message

# DEMO TIME

**Windows**

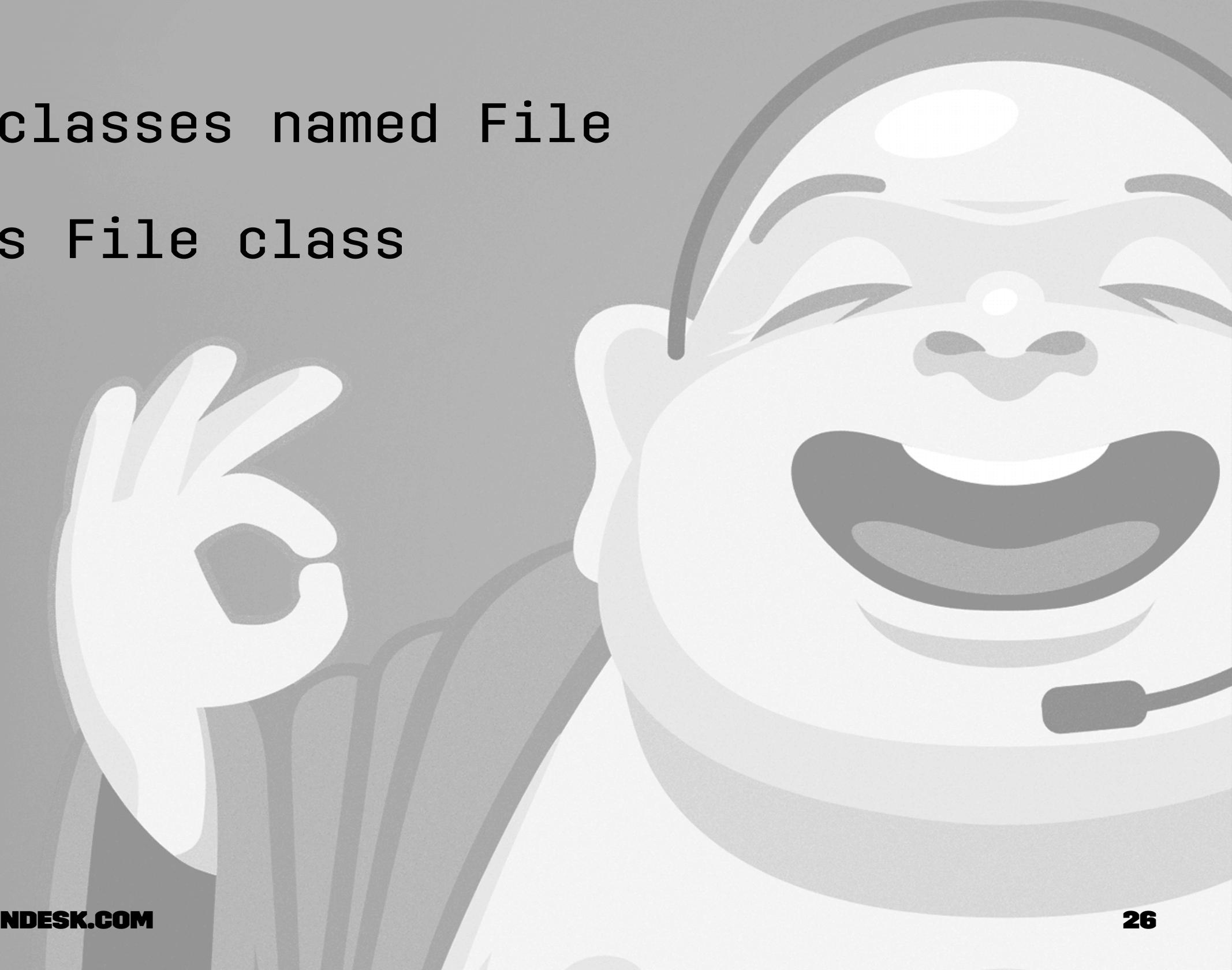
A fatal exception 0E has occurred at 0028:C0011E36 in UXD UMM(01) + 00010E36. The current application will be terminated.

- \* Press any key to terminate the current application.
- \* Press CTRL+ALT+DEL again to restart your computer. You will lose any unsaved information in all applications.

Press any key to continue \_

# WHY ::FILE?

- » Chef has its own classes named File
- » We want the Ruby's File class



# NEXT STEPS

- » Full chef basics class (~ 5:00 hours of duration)
- » Feeling adventurous?  
<http://github.com/caquino/chef-class>  
Vagrant lab and presentation

# THANKS

**HTTP://SYSHERO.ORG - @SYSHERO**

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