What's New with Chef 11

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RULE THE CLOUD

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What's New Since Chef 0.10?

- Windows support
- Librarian
- Spiceweasel
- Foodcritic
- Cookbooks in separate repositories
- Private Chef
- Food Fight podcast
- knife plugins for openstack, hp, azure, gce
- 0.10 renumbered to Chef 10
- full-stack client
- why-run
- output formatters
- Test Kitchen
- Solaris support
- Chef Developer Summit(2!)
- Berkshelf
- ChefConf
- Fauxhai
- docs.opscode.com
- Hangouts for reviews
- nyan-cat output formatter

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What is NOT in Chef 11

- CouchDB
- Ruby-based chef-server-api
- depsolver, gecode, treetop
- Merb
- OpenID support in Web UI
- Migration tooling (coming soon)

http://trainweb.org/carl/Pullman150/IMG_3380.jpg

What's NEW in Chef 11

- PostgreSQL
- erchef
- nginx
- Rails
- bookshelf
- omnibus-chef server

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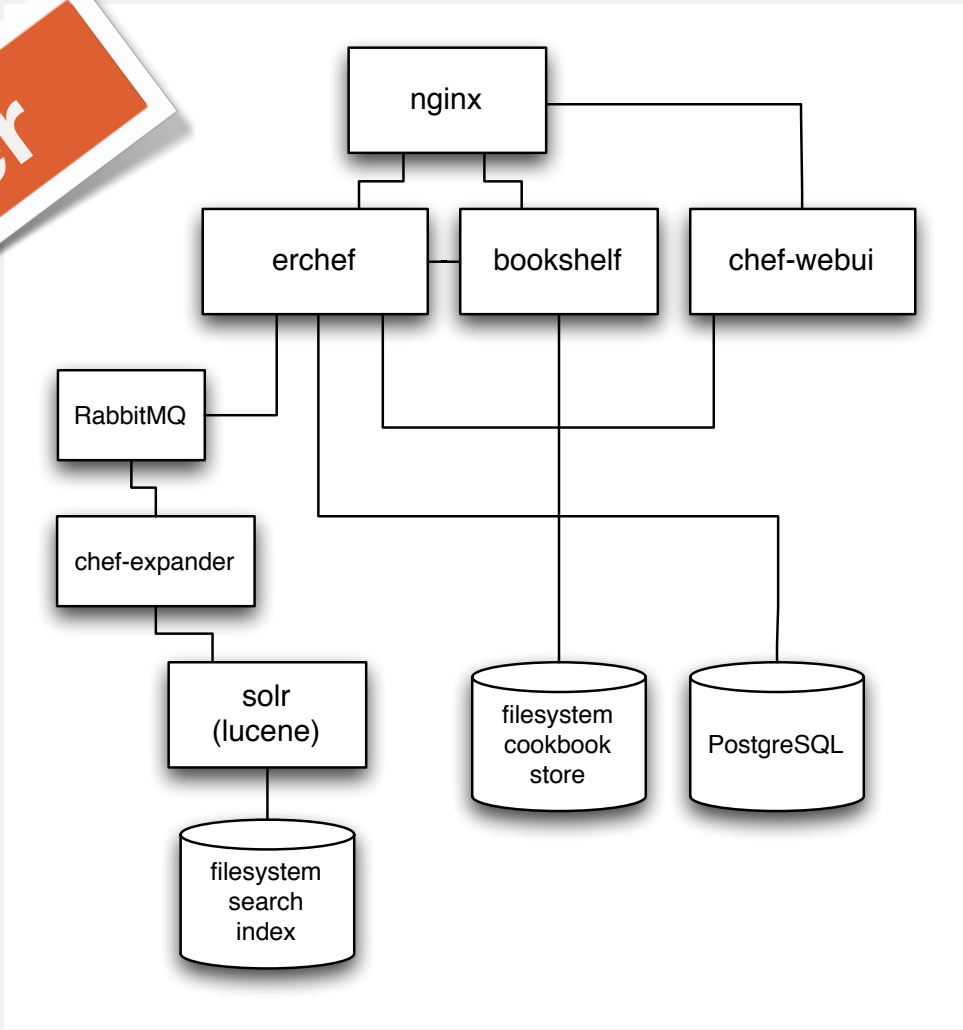
What's NEW in Chef 11

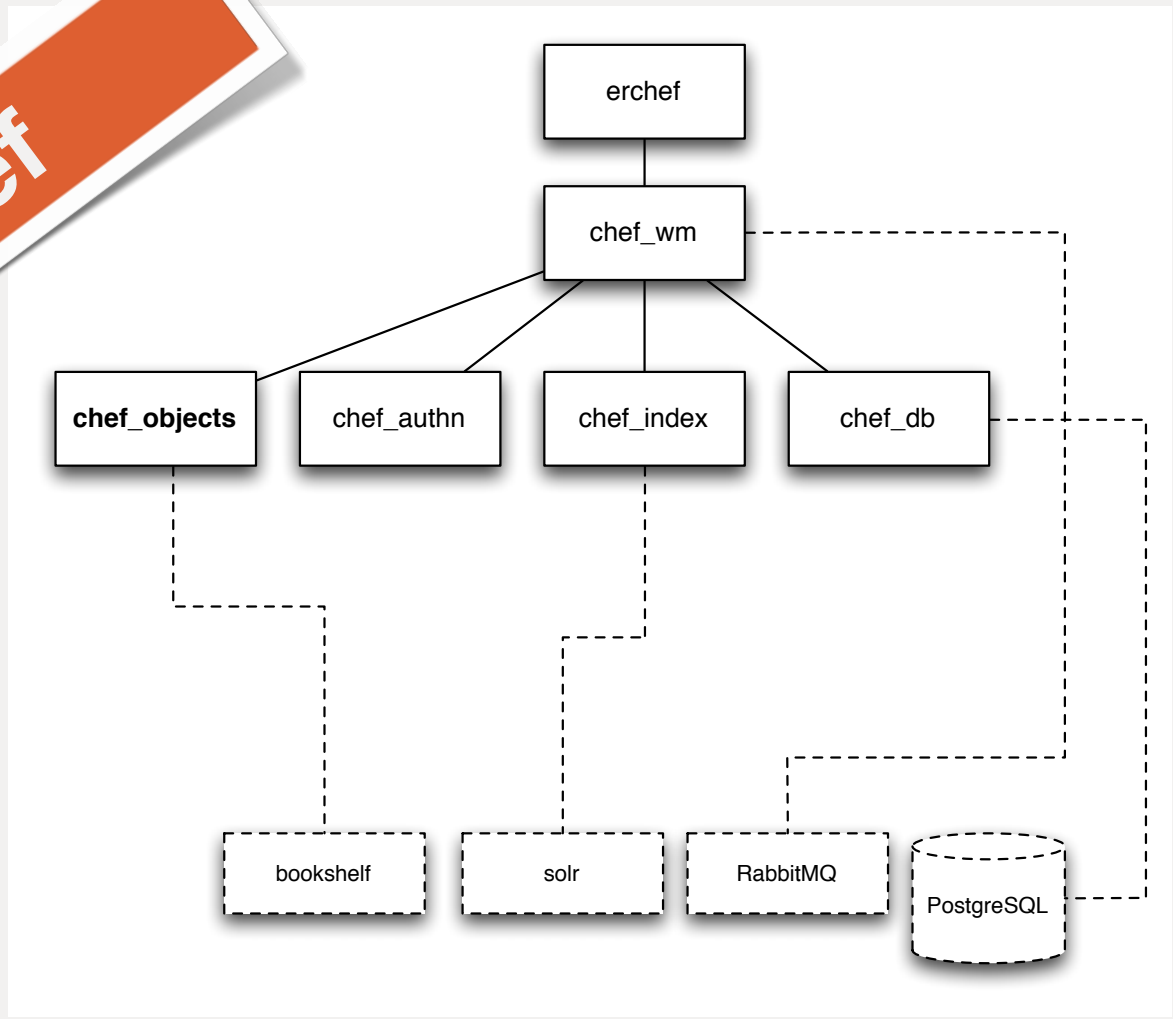
- chef-apply
- partial search
- users with key pairs
- partials in templates
- knife-essentials

Erchef + SQL RDBMS

Chef Server


nginx
erchef
bookshelf
chef-webui
RabbitMQ
chef-expander
solr
(lucene)
filesystem
search
index
filesystem
cookbook
store
PostgreSQL

Erchef


erchef
chef_wm
chef_objects
chef_authn
chef_index
chef_db
bookshelf
solr
RabbitMQ
PostgreSQL

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Erchef

- Erlang
- Concurrent, fault tolerant
- Distributed systems
- Complete Chef Server API rewrite

Let's see some graphs!

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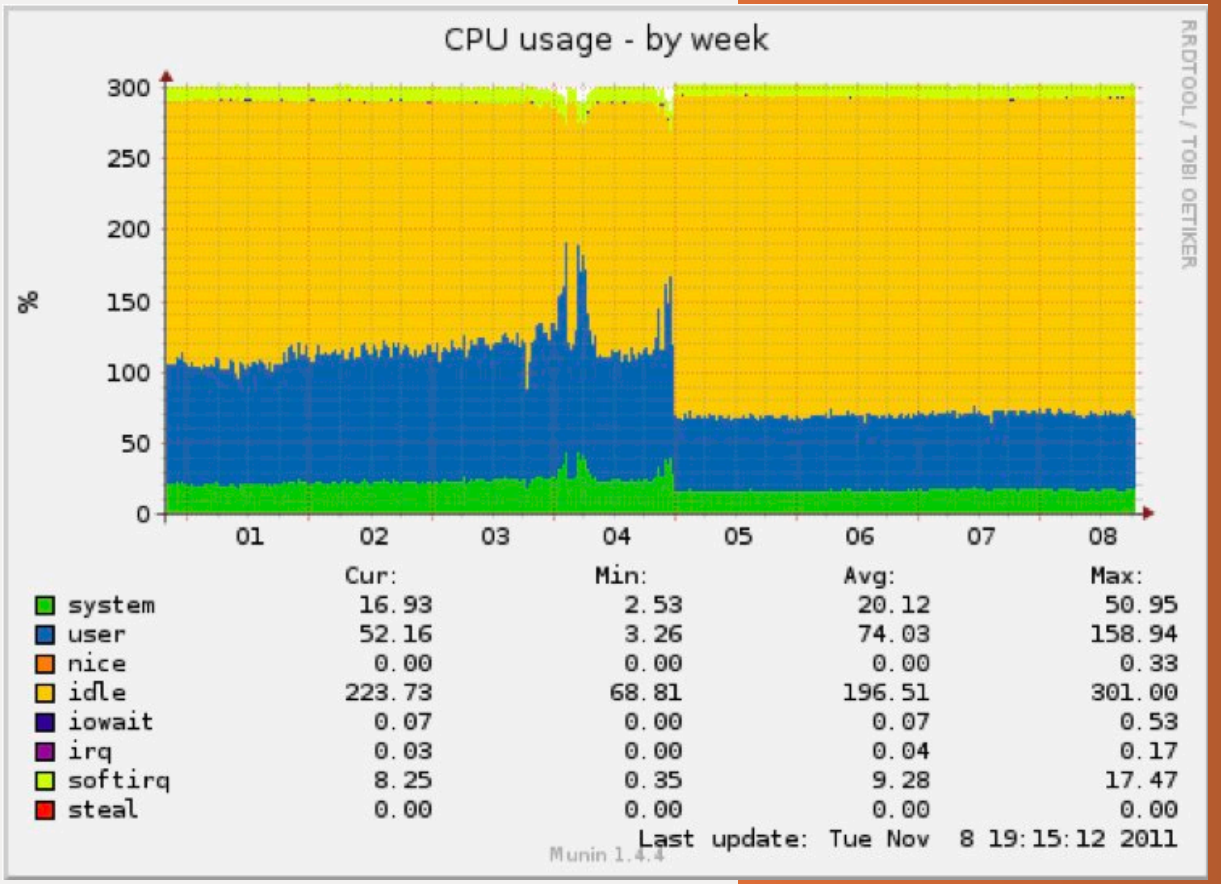
CPU Usage on Chef Server

- Erchef + Ruby Chef
- 12 mo old
- 3 CPU aggregate



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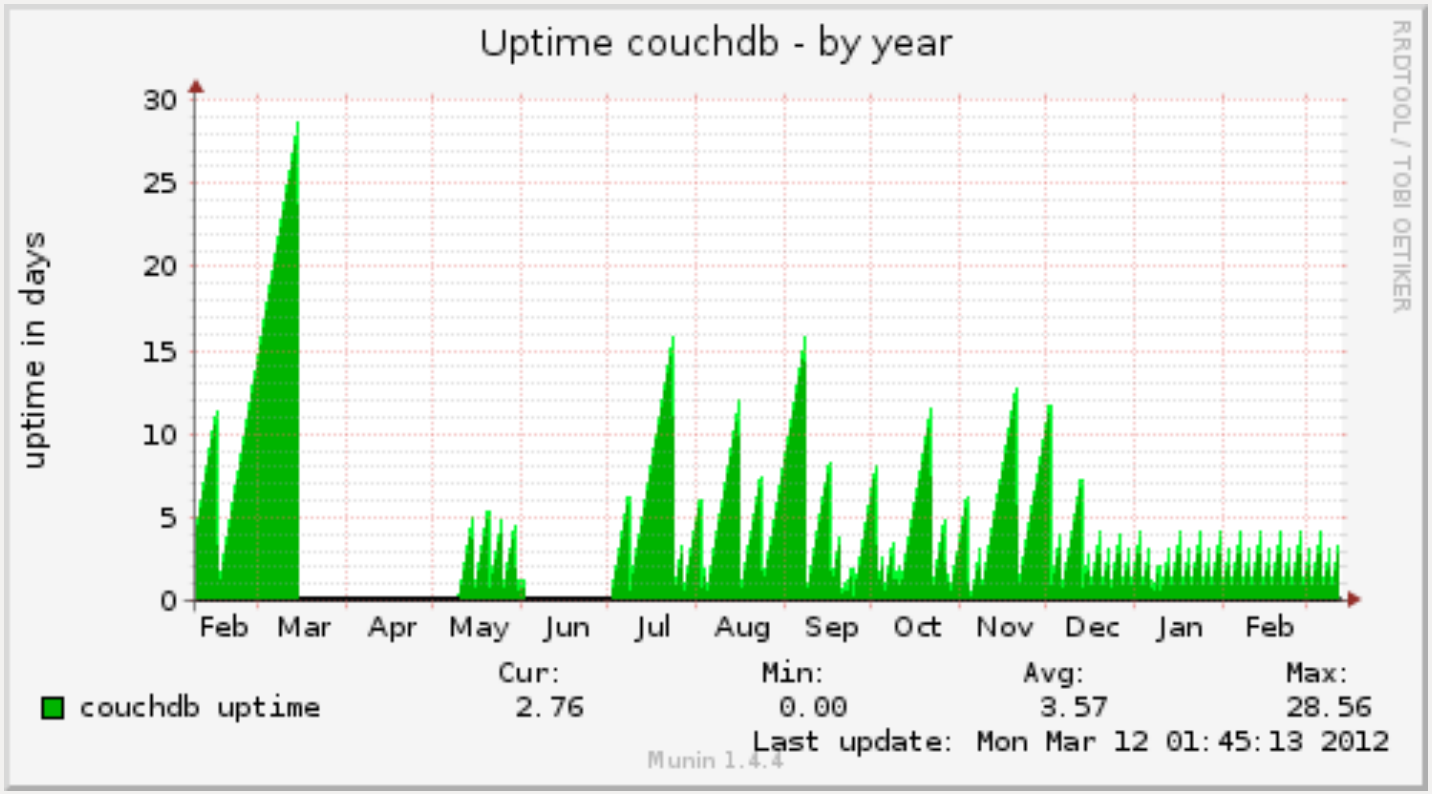
CouchDB Uptime - cron'd restarts



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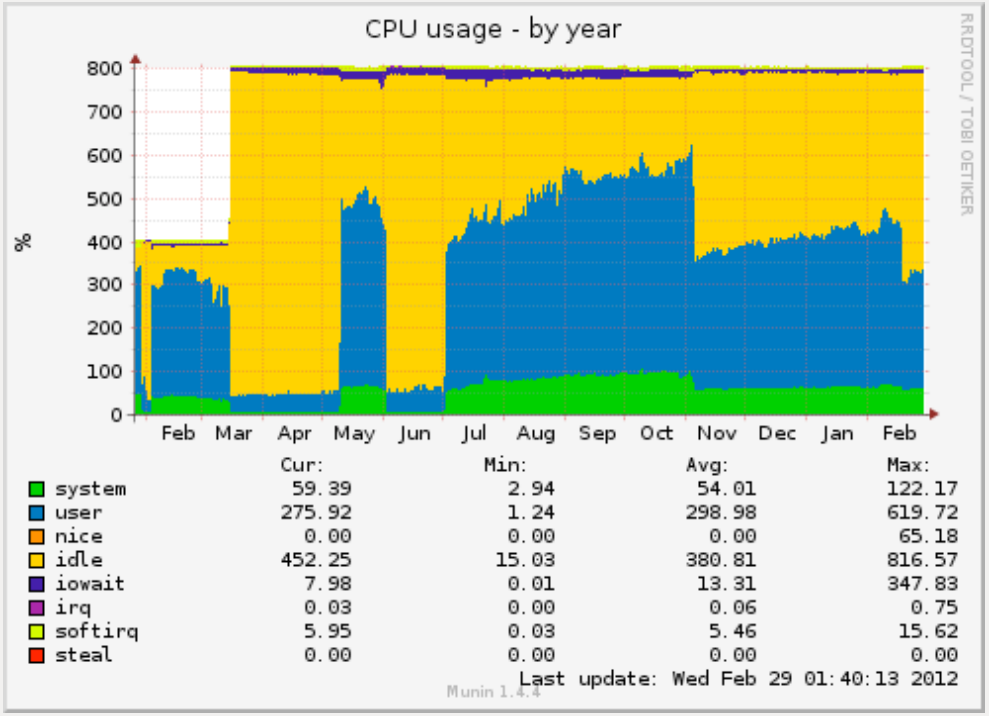
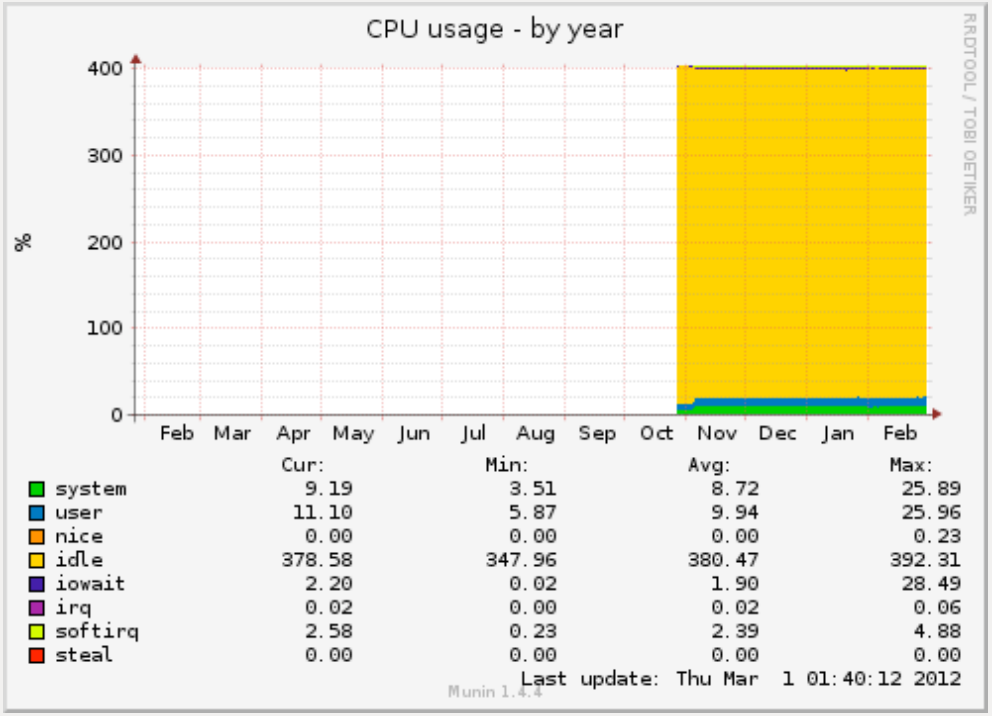
Database system CPU Usage

CouchDB



MySQL



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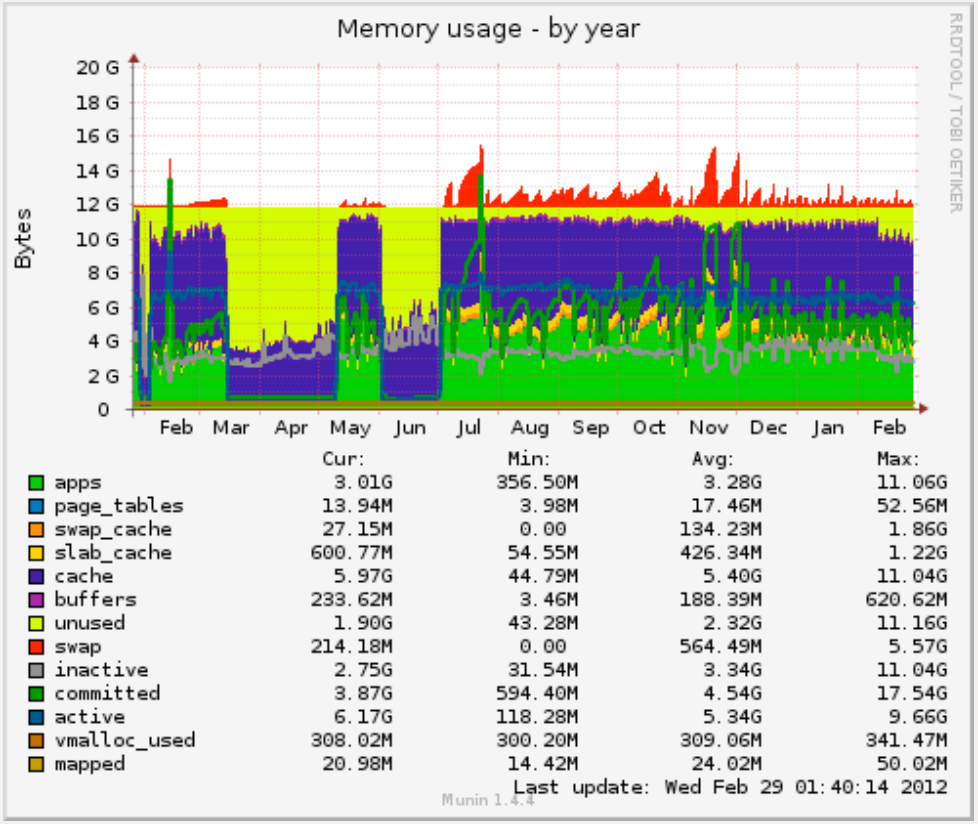
Database system Memory usage

CouchDB

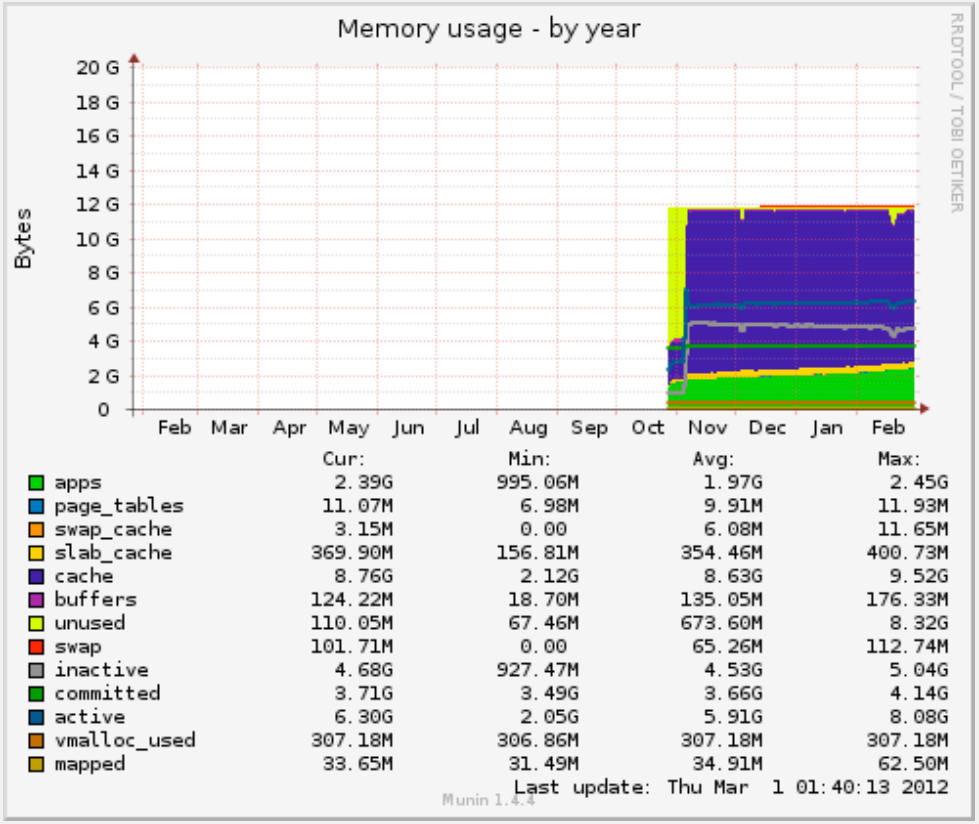


	Cur:	Min:	Avg:	Max:
apps	3.01G	356.50M	3.28G	11.06G
page_tables	13.94M	3.98M	17.46M	52.56M
swap_cache	27.15M	0.00	134.23M	1.86G
slab_cache	600.77M	54.55M	426.34M	1.22G
cache	5.97G	44.79M	5.40G	11.04G
buffers	233.62M	3.46M	188.39M	620.62M
unused	1.90G	43.28M	2.32G	11.16G
swap	214.18M	0.00	564.49M	5.57G
inactive	2.75G	31.54M	3.34G	11.04G
committed	3.87G	594.40M	4.54G	17.54G
active	6.17G	118.28M	5.34G	9.66G
vmalloc_used	308.02M	300.20M	309.06M	341.47M
mapped	20.98M	14.42M	24.02M	50.02M

Last update: Wed Feb 29 01:40:14 2012

Munin 1.4.4

MySQL



	Cur:	Min:	Avg:	Max:
apps	2.39G	995.06M	1.97G	2.45G
page_tables	11.07M	6.98M	9.91M	11.93M
swap_cache	3.15M	0.00	6.08M	11.65M
slab_cache	369.90M	156.81M	354.46M	400.73M
cache	8.76G	2.12G	8.63G	9.52G
buffers	124.22M	18.70M	135.05M	176.33M
unused	110.05M	67.46M	673.60M	8.32G
swap	101.71M	0.00	65.26M	112.74M
inactive	4.68G	927.47M	4.53G	5.04G
committed	3.71G	3.49G	3.66G	4.14G
active	6.30G	2.05G	5.91G	8.08G
vmalloc_used	307.18M	306.86M	307.18M	307.18M
mapped	33.65M	31.49M	34.91M	62.50M

Last update: Thu Mar 1 01:40:13 2012

Munin 1.4.4

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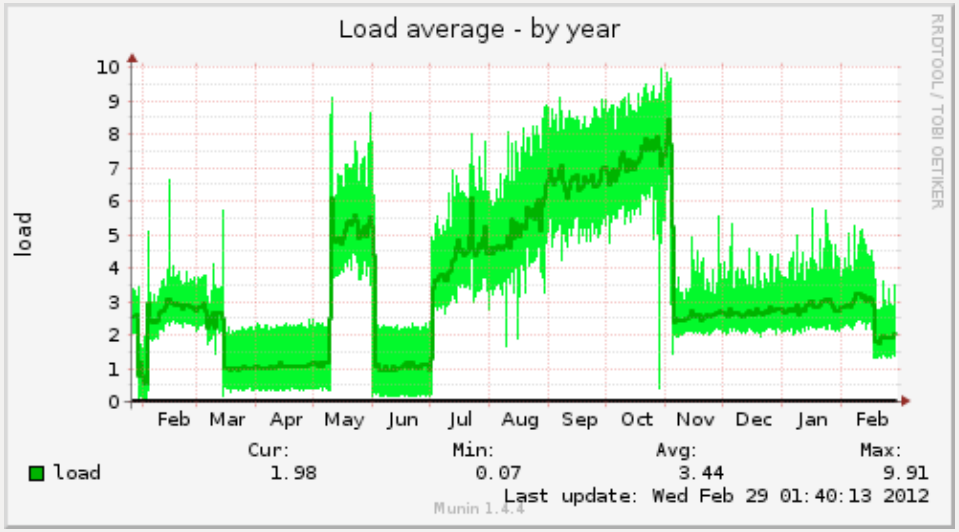
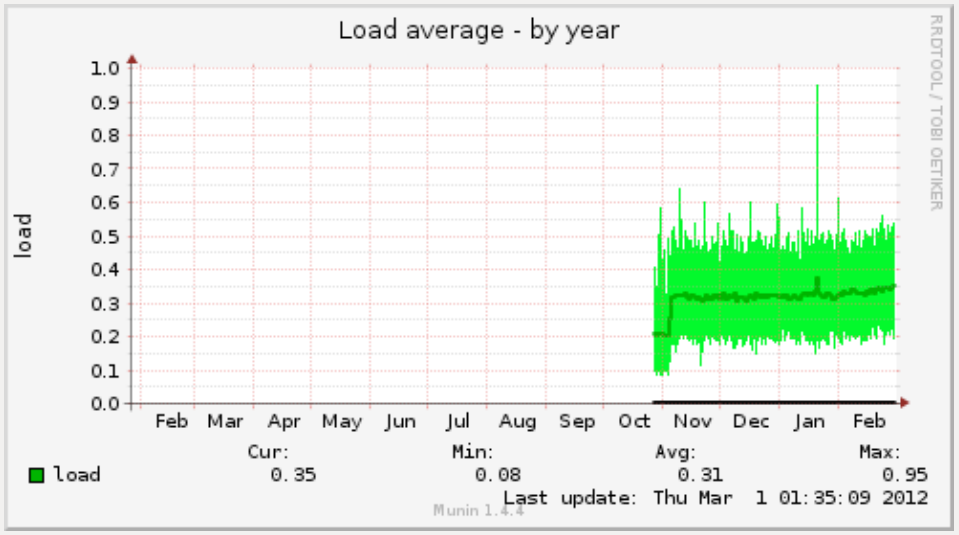
Database system Load Average

CouchDB



MySQL



Of course, we all know load average is not indicative of performance ;)

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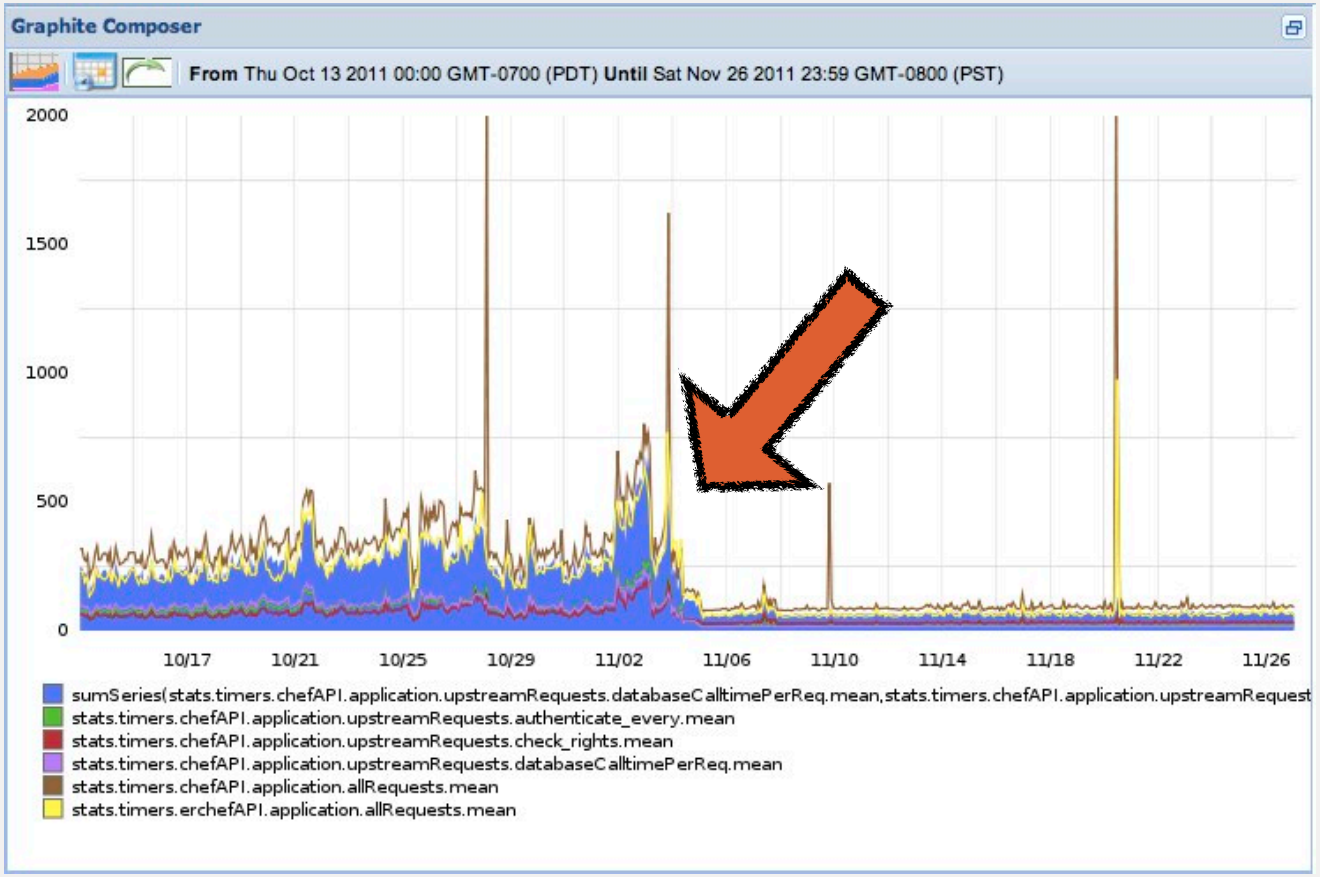
API Average Latency



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Some other Erchef Features...

- Nginx reverse proxy, https
- WebUI is Ruby on Rails
- Bookshelf stores cookbooks, like S3

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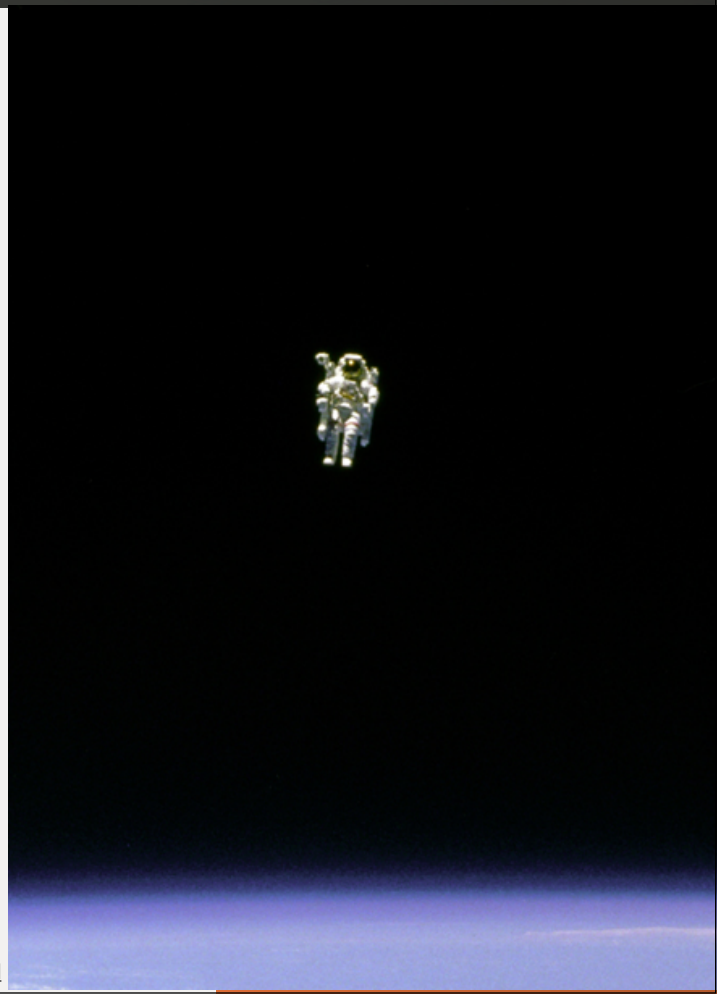
"Omnibus" Package

- full-stack for the Chef server
- RPMs, DEBs, Build your own?
  - opscode.com/chef/install
- chef-server-ctl
  - reconfigure
  - test
  - start/stop



http://apod.nasa.gov/apod/astropix.html

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chef-apply

- Run a single recipe file
  - without modifying the node's run_list
- included with Chef, /usr/bin/chef-apply
- From a file, a string or stdin

Example

```
% cat recipe.rb
package "git"
package "emacs"
git "git://github.com/jtimberman/.emacs.d.git" do
  action :sync
  user "jtimberman"
end

% sudo chef-apply recipe.rb
```

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partial search

```
partial_search(:node, 'role:web',
   :keys => { 'name' => [ 'name' ],
              'ip'   => [ 'ipaddress' ],
              'kernel_version' => [ 'kernel', 'version' ]
            }
).each do |result|
  puts result['name']
  puts result['ip']
  puts result['kernel_version']
end
```

- instead of entire node, just the pieces you want
- massive reduction in bandwidth and memory

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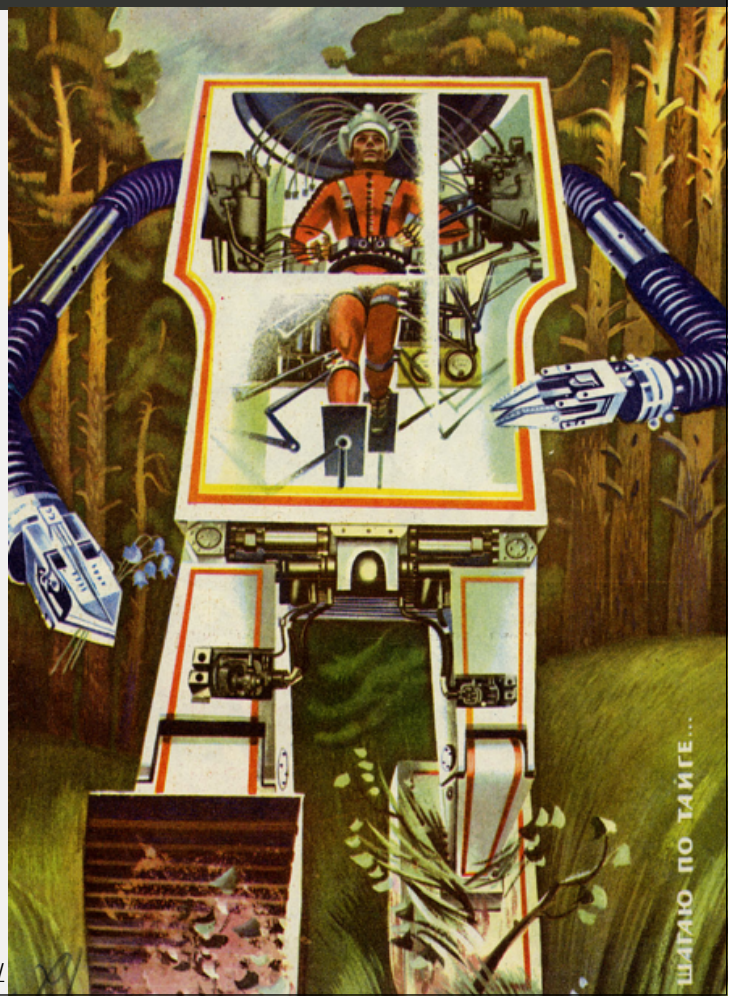
users with keypairs

- users can have key pairs, just like clients
- knife actions as a user instead of a client
- post a public key when you create a user/client
- "knife user" (11.2.0)



http://www.flickr.com/photos/albill/sets/72157628046395000/

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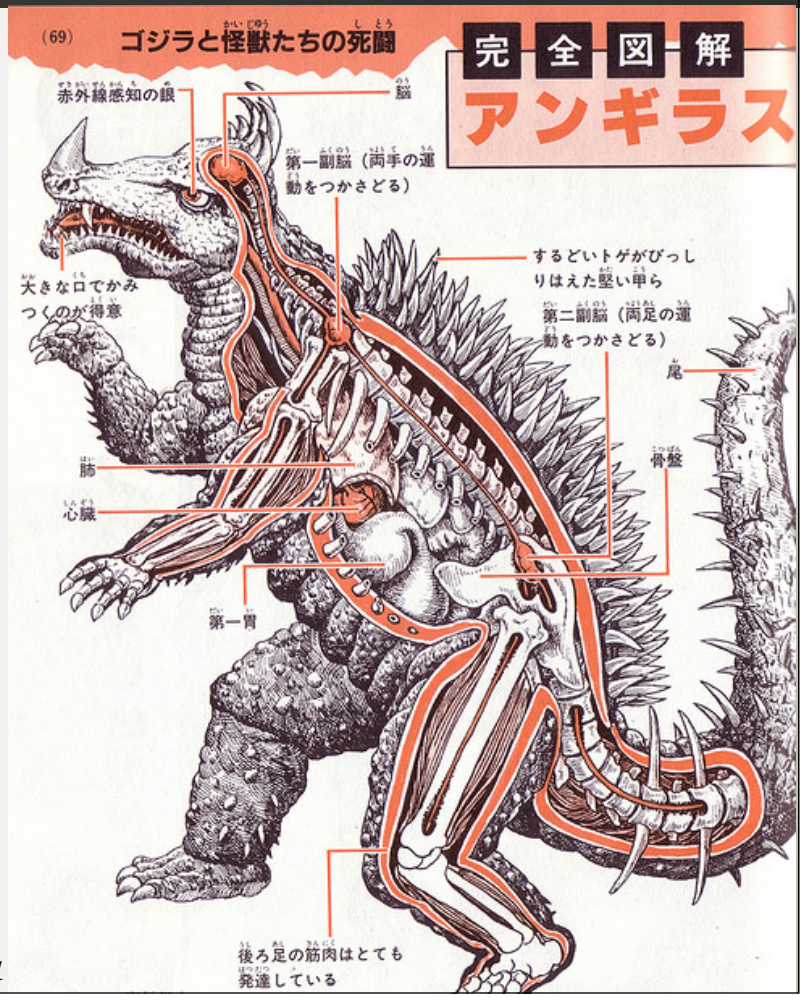
partials in templates

```
<?xml version='1.0' encoding='UTF-8'?>

<server xmlns="urn:jboss:domain:1.2">
    <extensions>
         <% if @infinispan -%>
        <extension module="org.jboss.as.clustering.infinispan"/>
        <% end -%>
        <extension module="org.jboss.as.web"/>
         <% if @webservices -%>
        <extension module="org.jboss.as.webservices"/>
        <% end -%>
        <extension module="org.jboss.as.weld"/>
    </extensions>
    <% if @infinispan
              include_template "infinispan.xml.erb"
    end -%>
    <% if @webservices
              include_template "webservices.xml.erb"
    end -%>
    <socket-binding-group name="standard-sockets" >
    ......
   </socket-binding-group>
</server>
```

- Thanks to Andrea Campi!



http://www.flickr.com/photos/modern_fred/2095565021/

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knife-essentials

- Treat local chef-repo and chef-server like a filesystem
- knife download
- knife diff
- knife show
- knife upload cookbooks/apache2
- knife list

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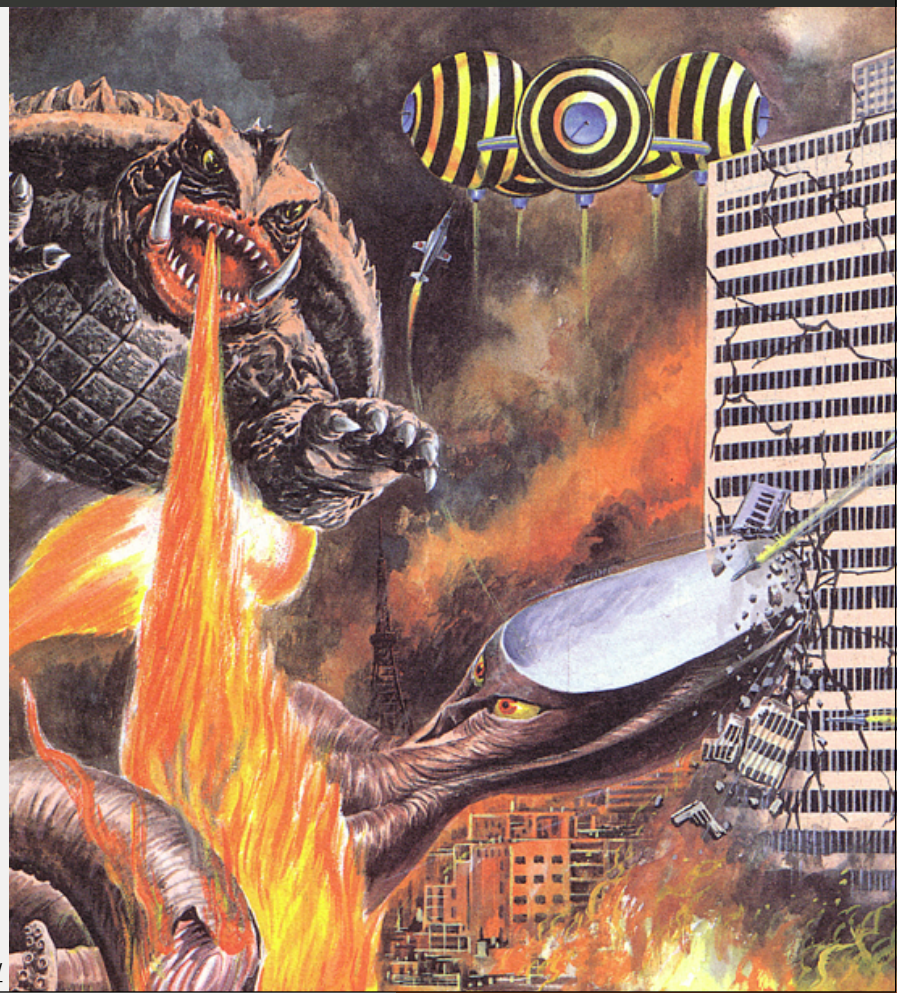
Chef 11 Breaking Changes

- http://docs.opscode.com/breaking_changes_chef_11.html
- chef-shell (formerly shef)
- no implicit node attributes (no more node['blah'] = 'foo')



http://www.flickr.com/photos/modern_fred/2096352938/

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Chef 11 Breaking Changes

- attribute files may access role and environment attributes
- delayed notifications run after failed converge
- encrypted data bag item format change
- chef-client lock so safe from simultaneous runs

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Support

- Commercial Support is now available for Open Source Chef, too.

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Thanks !

- What questions do you have?

- Nathen Harvey
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- @nathenharvey