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# JavaOne<sup>SM</sup>

## Lessons Learned: Kenai.com: JRuby Meets Rails in Production

Nick Sieger  
Sun Microsystems, Inc.  
TS-5413

# Nick

- > Former Java™ developer
- > JRuby core team member
- > Rails contributor
- > Kenai.com lead developer

# Project Kenai

- > A short play in three acts
- > About launching a web site
- > And branching out into unfamiliar territory
- > And building bridges

# Dramatis Personæ

- > Project Kenai the New Kid
  - Wet behind the ears
- > Java the Platform
  - A stalwart, dependable runtime
- > Rails the Framework
  - An upstart and a show-off
- > JRuby the Also-ran
  - A diplomat and peacemaker
- > Sun Microsystems, the Company
  - The caretaker and overlord

# Project Kenai Comes of Age

## Act I

Project **K=nai**  
beta

# Kenai.com feature set

- > People
- > Projects, container for:
  - Wikis
  - Forums
  - Mailing Lists
  - Issue Trackers
  - Source Code Repositories
  - APIs
  - New features continually added

# Kenai.com Demo/Live Tour

 **Project Kenai**  
beta

Welcome, [nicksieger](#) | [Logout](#) | [Domain Admin](#) | [Help](#) |

kenai.com > home

FORUMS

PEOPLE

PROJECTS

MY PAGE

HOME

PROJECT TAGS

» All tags

ajax animation application blog c  
c++ cloud code community  
computing database desktop  
development distributed eclipse  
education file framework game  
games glassfish graphics gui  
  
hibernate http image j2me **java**  
javaee javafx javascript javase jee  
jpa jquery jruby jsf learning library  
mac management maven mysql  
n1sps **netbeans** netbeans-  
platform opensolaris opensource  
osum p2p parser perl php plugin

## LEARN MORE - STAY ENGAGED

Thank you for logging in! Here are some learning assets and social tools to learn more and stay engaged with Project Kenai.

### Screencasts

- » [Welcome](#)
- » [Your Profile](#)
- » [Your Projects](#)

### Social Tools

- » [Kenai Blog](#)
- » [Kenai on Facebook](#)
- » [Kenai on Twitter](#)

WHAT YOU GET

## FORUM POSTS

Recent Posts

Active Topics

 **Looking for testers**  
1 hour ago by [Jose V Nunez Z](#)

 **Review my changes**

## SITE NEWS

[More news...](#)

### Project Kenai and NetBeans

The developer cloud experience just got richer! You can now access or start your Kenai project with the NetBeans 6.7 Public Beta. [\(more\)](#)

### Kenai Survey

Please take our short 5 minute survey so we can make Project Kenai better for you. [\(more\)](#)

### Win a Free Pass to JavaOne!

Submit a 30 second video on why you should be at JavaOne this year; come hang out with the Kenai Team if you win! [\(more\)](#)

## PROJECTS

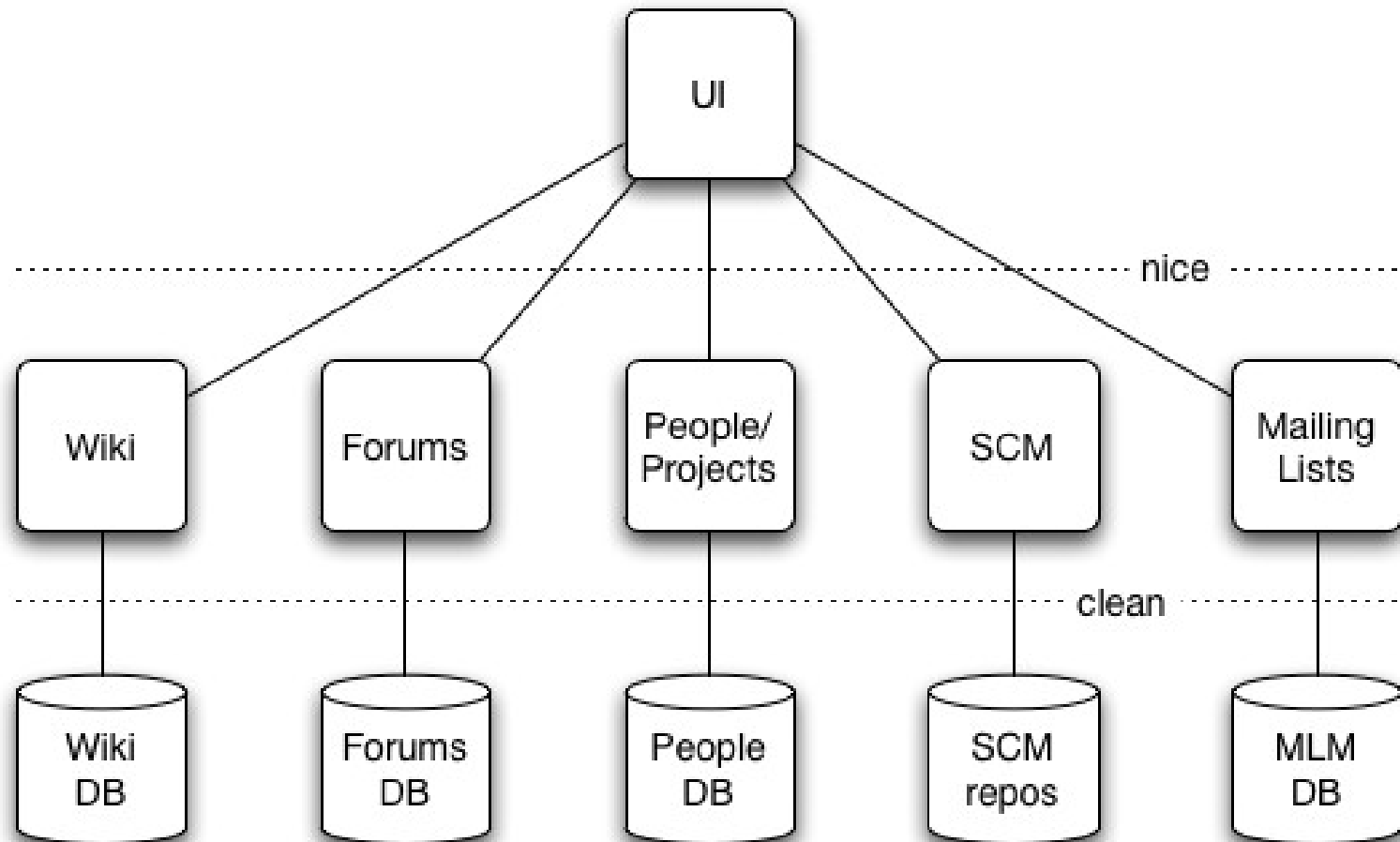
Featured

Recent

 **The AURA Project**  
Members: 12

 **JEDI: The Open Source Curriculum**

# Early Kenai

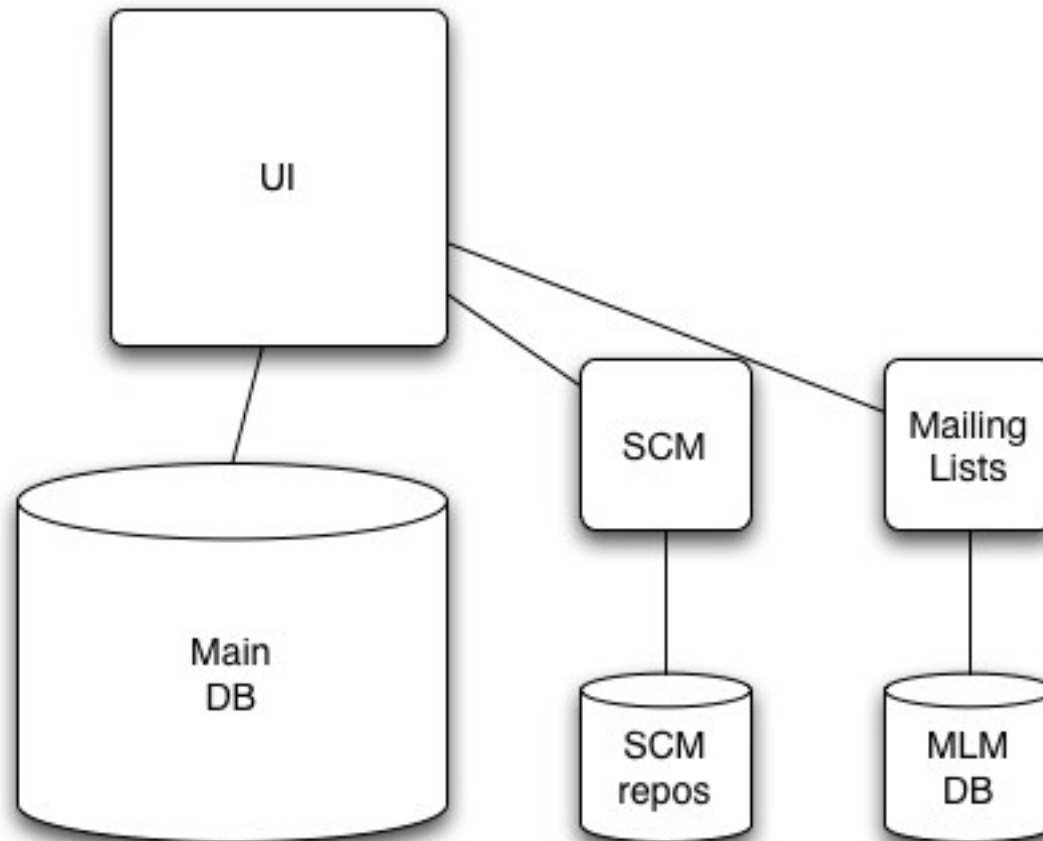




# Early Kenai: Problems

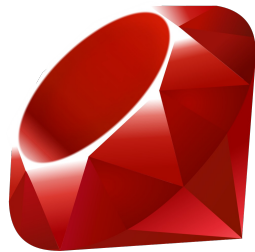
- > Too much data on the wire!
- > Bottom-up service design didn't bear fruit
- > UI usage patterns did not match APIs
- > Non-trivial speedup just from collapsing whitespace in XML

# Early Kenai: Consequences



# Kenai.com Meets Ruby and Rails

## Act II



**Ruby**  
*A Programmer's Best Friend*



# attachment\_fu

person_images
id
filename
thumbnail
content_type
size
width
height
parent_id

# attachment\_fu

```
class PersonImage < ActiveRecord::Base
  has_attachment :content_type => :image,
                 :storage => :file_system,
                 :max_size => 500.kilobytes,
                 :resize_to => '150x150!',
                 :thumbnails => {
                   :tiny => '20x20',
                   :small => '58x58',
                   :large => '100x100'
                 }
end
```

# image\_voodoo

```
class ImageVoodoo
  def resize(width, height)
    image = BufferedImage.new(width, height, color_type)
    graphics = image.graphics
    scaled_image = @src.get_scaled_instance(
      width, height, SCALE_SMOOTH)
    graphics.draw_image scaled_image, 0, 0, nil
    graphics.dispose
  end
end
```

# geokit

## Location

minneapolis, mn

This will be displayed as a map on your profile page.

Example: **San Francisco, CA**



**NICK SIEGER**



Username: nicksieger

# geokit

```
class Person < ActiveRecord::Base
  acts_as_mappable
  before_save :geocode_location
```

```
def geocode_location
  if !location.blank? && !changes['location'].nil?
    geo = GeoKit::Geocoders::MultiGeocoder.geocode(location)
    if geo.success
      self.lat, self.lng = geo.lat, geo.lng
    else
      errors.add(:location, "...")
    end
  end
end
end
end
```



# acts\_as\_solr

```
class Forum::Topic < ActiveRecord::Base
  acts_as_background_solr :fields => [
    :subject,
    :messages,
    {:forum_id=>:integer},
    {:project_id=>:integer}
  ]
end
```

```
Forum::Topic.find_by_solr "query"
```

# will\_paginate

```
class Wikis::PagesController < Wikis::BaseController
  def index
    @pages = Wiki::Page.paginate :conditions => { :wiki_id =>
@wiki.id },
      :page => params[:page], :order=>'name'
  end
end
```

# will\_paginate

<%= will\_paginate @pages %>















# Rails caching

- > Built-in caching framework
- > Multi-layered: page, action, fragment, object
- > Pluggable stores: memory, file, memcached

# Fragment Caching

```
<% cache page_cache_key(@page) do -%>  
<div class="wikiMainBody">  
  <%= text_as_html(@wiki, @page) %>  
</div>  
<% end -%>
```

# Object caching

Filename	Author	Revision	Modified	Log Entry
 .classpath	tom.enebo@gmail.com	<a href="#">7c4c8416</a>	29 days ago	update for mvn release of byteli...
 .externalToolBuilders	tom.enebo@gmail.com	<a href="#">f80fc40a</a>	over 2 years ago	JRUBY-994: Remove jruby serializ...
 .gitignore	headius@headius.com	<a href="#">fdd89691</a>	8 days ago	Add test-prawn and related targe...
 .project	tom.enebo@gmail.com	<a href="#">f80fc40a</a>	over 2 years ago	JRUBY-994: Remove jruby serializ...
 .settings	bill.dortch@gmail.com	<a href="#">0a625d65</a>	about 1 year ago	Updating Eclipse settings for 1....
 COPYING	vsizikov@gmail.com	<a href="#">dfa024cd</a>	11 months ago	minor wording update git-svn-id:...
 COPYING.CPL				
 COPYING.GPL	jpetersen@uni-bonn.de	<a href="#">25d9ca54</a>	over 6 years ago	- update license git-svn-id: htt...
 COPYING.LGPL	jpetersen@uni-bonn.de	<a href="#">25d9ca54</a>	over 6 years ago	- update license git-svn-id: htt...
 LEGAL	nick@nicksieger.com	<a href="#">ac3c5c20</a>	about 1 year ago	Adding back LEGAL (for Ola) git-...
 LICENSE.RUBY				
 README				

# Object caching

```
class Scm::ScmController < ApplicationController
  def show_file
    cache_key = [@feature.id, @feature.head, path_param].join(':')
    @entry = Rails.cache.fetch(cache_key) do
      @feature.entry(path_param)
    end

    value = Rails.cache.fetch("#{cache_key}.html") do
      render_to_string :partial => 'file_row', ...
    end

    render :text => value
  end
end
```

# Memcached

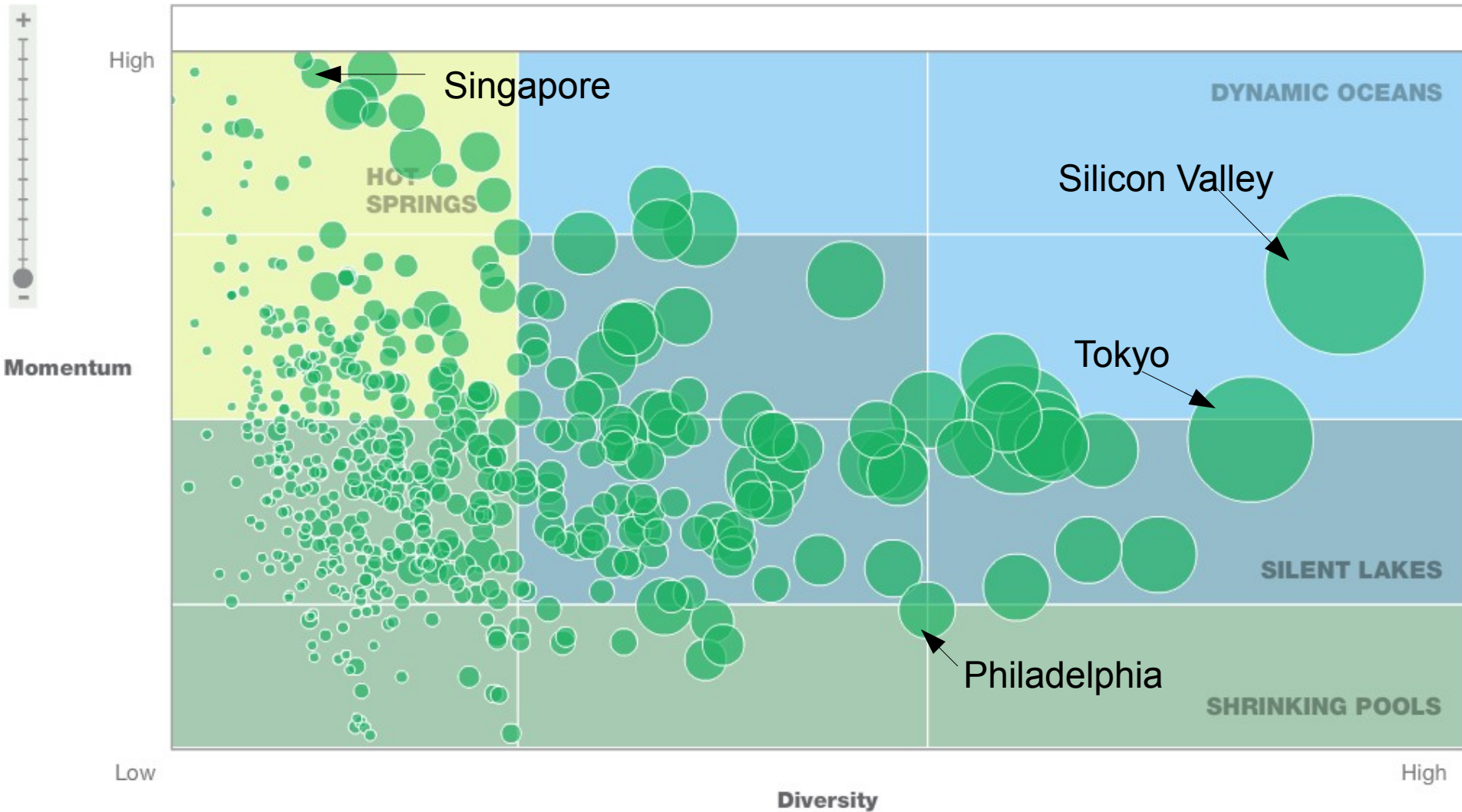


# JRuby-Memcache-Client

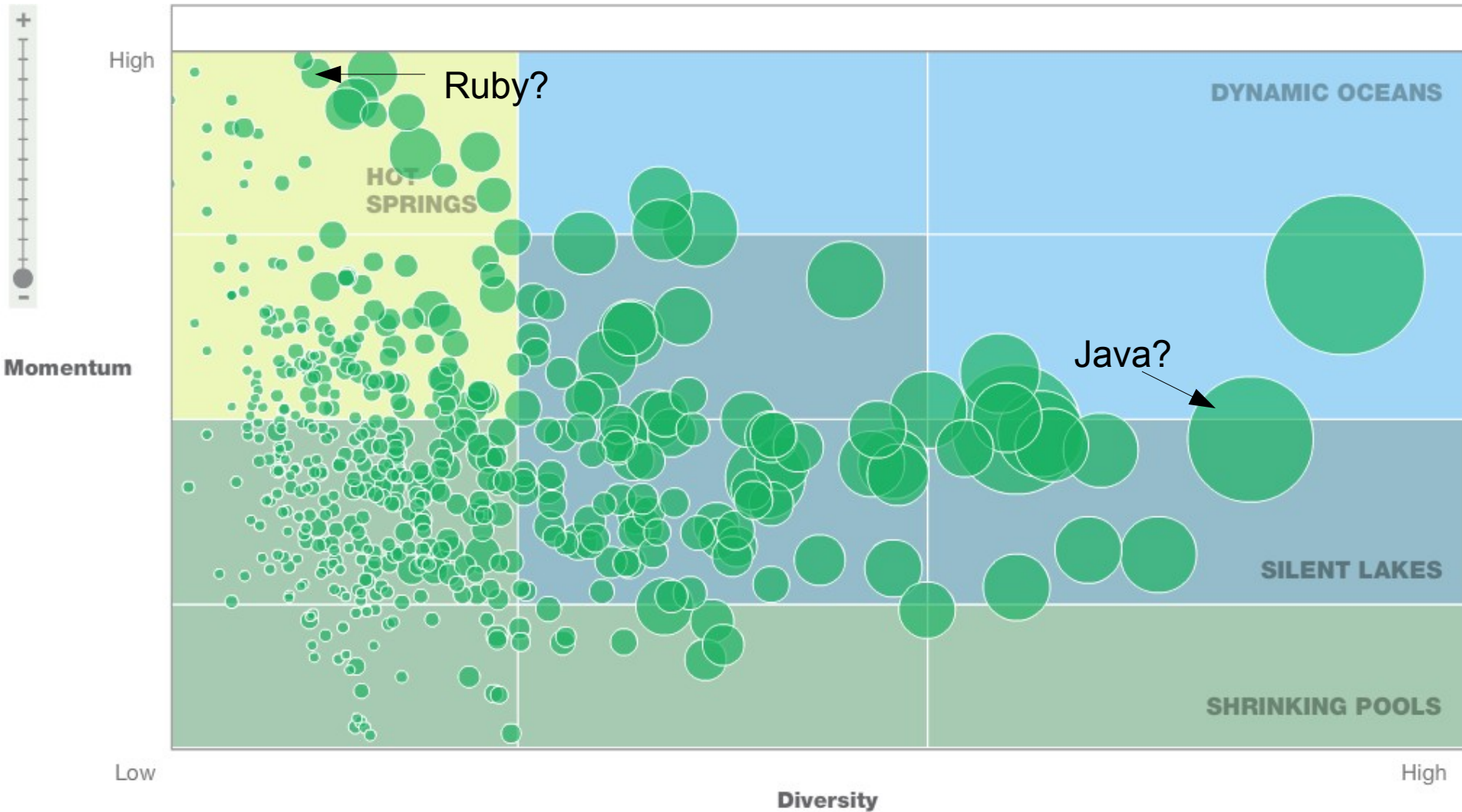
# Ruby and Rails: Takeaways

- > Impactful features can be added quickly
- > Healthy gem and plugin ecosystem
- > Rapid innovation

# McKinsey Innovation Clusters



# Ruby: “Hot Spring” of Innovation?



## Kenai.com codebase

- > 12K lines of application code
- > 10K lines of views (HTML + template code)
- > 1K lines of Javascript
- > 8K lines of test code
- > 73.7% test coverage

# Kenai goes to Production with JRuby

## Act III



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## Iron: Sun Fire T2000

- > 1.2GHz UltraSPARC T1 processor w/ 8 cores
- > 32 hardware threads
- > 32 GB RAM
- > Slow, but can handle a big load
- > Lots of 32-bit JVMs can run in 32 GB



# Software Stack

- > OpenSolaris Nevada
- > Apache
- > GlassFish
- > Subversion
- > Python, Mercurial, Django
- > Perl, SYMPA



# Software Stack (continued)

- > Postfix
- > Memcached
- > Solr
- > Git
- > Kestrel
- > Puppet

# Stack Overflow

- > OpenSolaris Nevada means no IPS
- > SPARC also means no IPS
- > Coolstack/webstack/Blastwave
- > Have to maintain our own packages

# Script Kiddies

- > No one on the team with deep sysadmin/automation experience
- > No previous system looks like the one you conceive yourself
- > Repeatable deployments were elusive

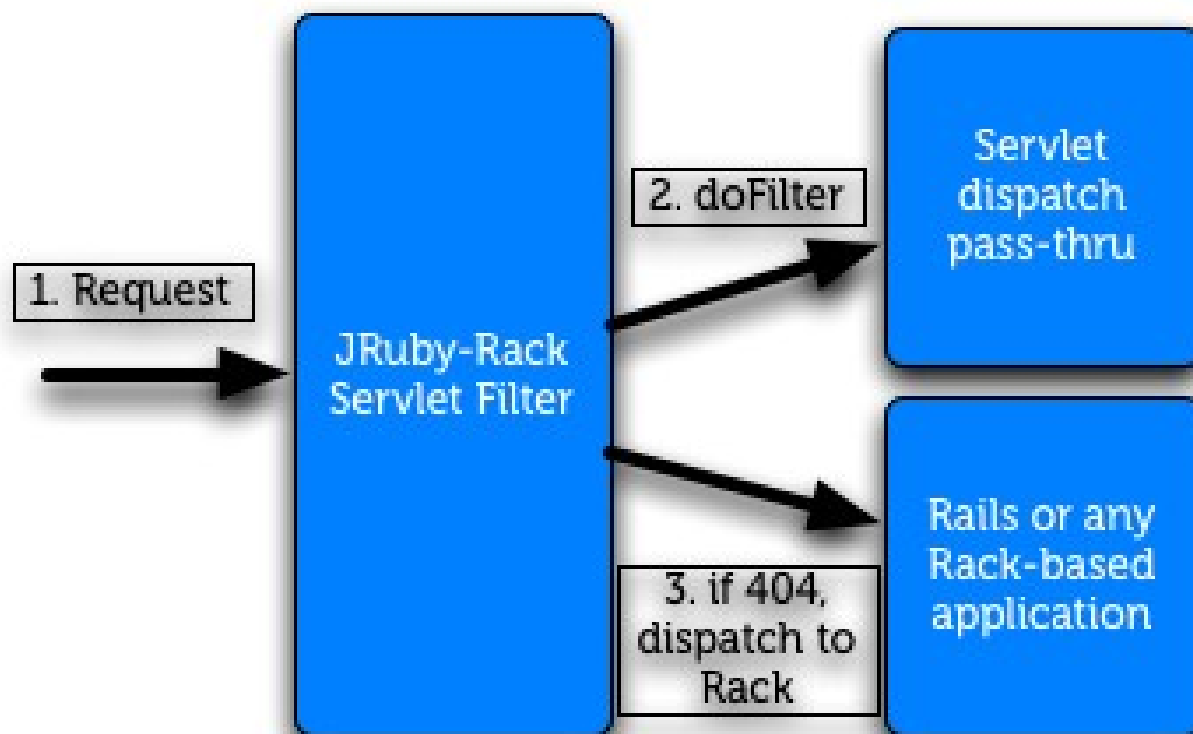
# Kenai meets Warbler

- > Tool to convert Rails app into a .war file
- > [warbler.kenai.com](http://warbler.kenai.com)



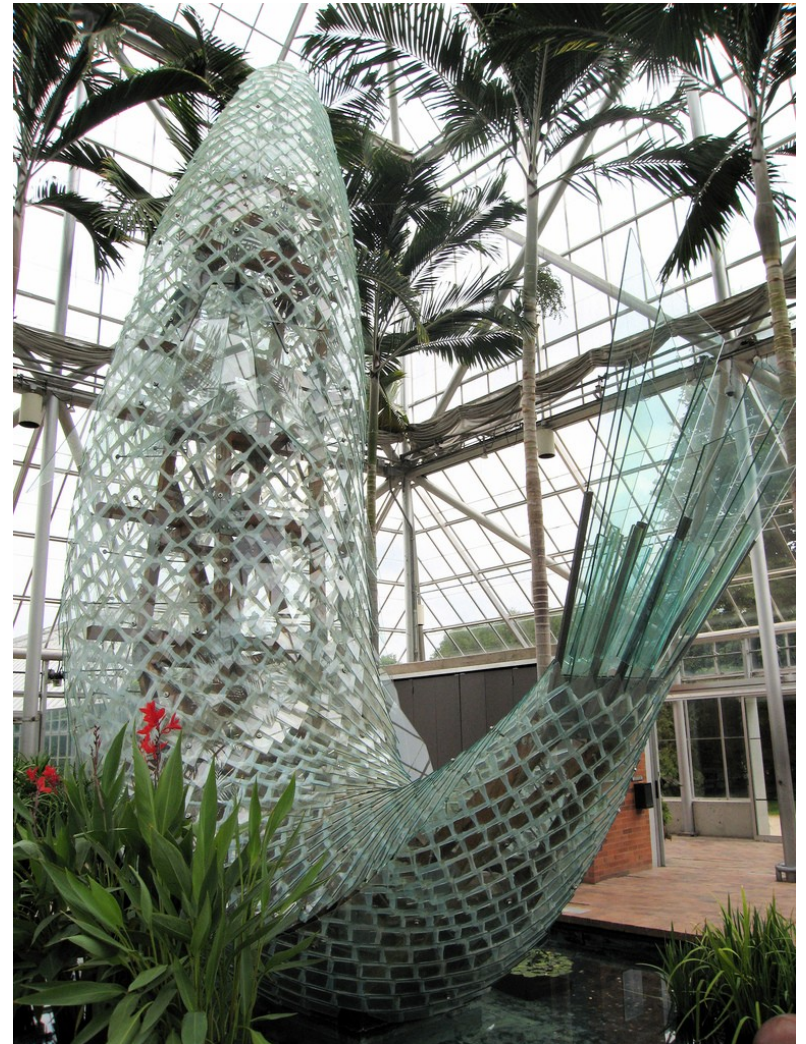
# JRuby-Rack: Warbler's partner

- > Servlet filter bridges servlets to Ruby web apps



# Project Kenai to live in GlassFish

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# Load testing

- > Initial results: Bad
- > `java.lang.OutOfMemoryError: PermGen space`
- > Crashing VMs
- > Low CPU utilization
- > This must be Rails' fault!

# Fixing the load tests

- > JRuby needed some burn-in
  - Fix PermGen by sharing classes and reducing code size
- > Improved CPU utilization by running more VMs
  - 32GB and 32 threads await



# GlassFish JVM Settings

> Placeholder

# Kenai.com current statistics

> Placeholder

## Takeaways

# Curtain

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## Java's part

- > Use Java for its strengths
- > Awesome, stable platform for servers
- > Not everything can (or needs to be) built in Java

## Rails' part

- > Rails may appear flashy
- > But it has Game to back it up
- > Highly productive
- > Rich community
- > Innovative
- > Fun!

## JRuby's part

- > Bridge technology par excellence
- > Marrying the best of both worlds
- > Greater choice
  - Java or Ruby libraries
- > Broaden your horizons
  - Takes away tedium and repetition of Java



# JavaOne<sup>SM</sup>

# Thank You

Nick Sieger  
nicholas.sieger@sun.com

TS-5413: Lessons Learned: Kenai.com: JRuby  
Meets Rails in Production

