PLAY VS. GRAILS SMACKDOWN

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Changelog

March 24, 2013: Updated **statistics** and **load tests** for **Devoxx France**.

June 24, 2012: **Play Performance Fix**.

June 19, 2012: Published for **ÜberConf**.

WHY A SMACKDOWN?

Play 2 and Grails 2 are often hyped as the **most productive** JVM Web Frameworks.

** We wanted to know how they enhanced the Developer Experience (DX).*

HAPPY TRAILS REQUIREMENTS

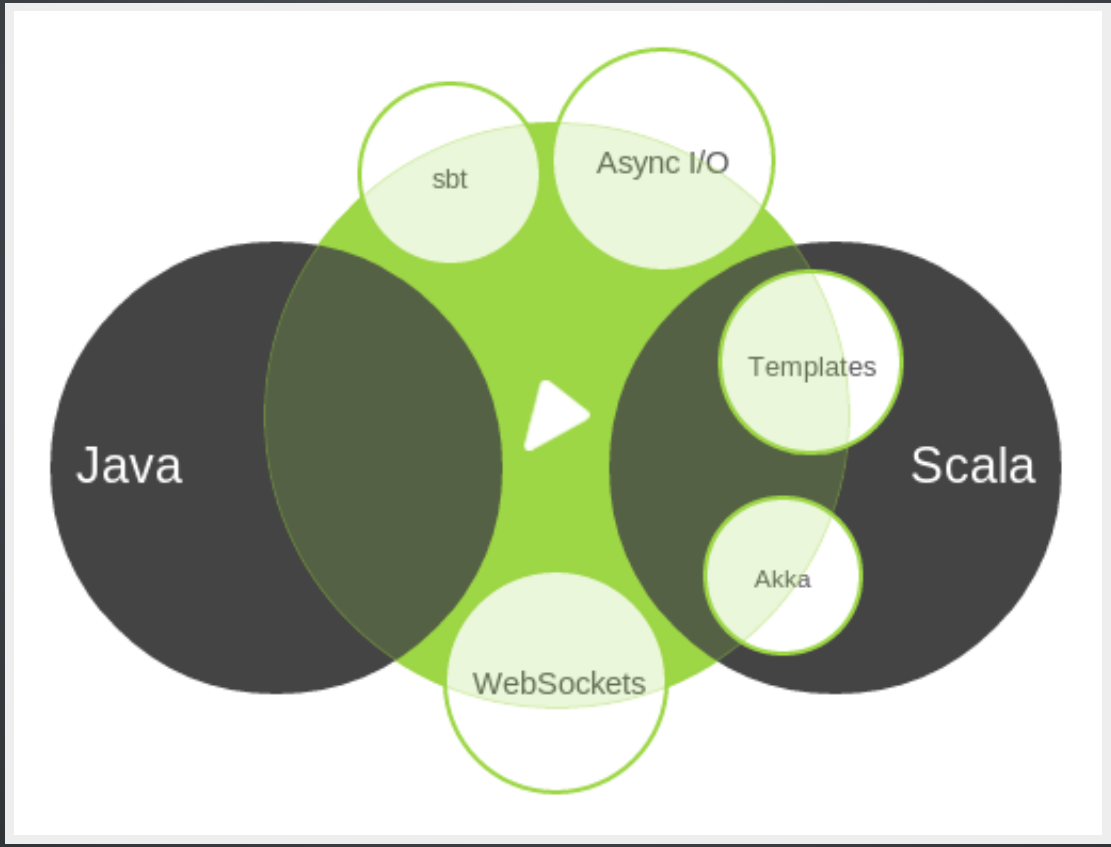
- Server-side Templates
- Play 2 with Java
- Form Validation
- Data Pagination
- Authentication
- Scheduled Jobs
- Atom / RSS
- Email Notifications
- Unit / Integration Tests
- Load Tests
- Performance Tests

Stretch Goals: Search, Photo Upload to S3

OUR SCHEDULE

- Week 1 - Data Model Definition
- Week 2 - Data Layer & URL Design
- Week 3 - Controllers & Auth
- Week 4 - Views
- Week 5 - Misc Polish

INTRO TO PLAY 2



“Play is based on a lightweight, stateless, web-friendly architecture and features predictable and minimal resource consumption (CPU, memory, threads) for highly-scalable applications - thanks to its reactive model, based on Iteratee IO.”

MY TOP 10 FAVORITE FEATURES

1. Simple
2. URL Routing
3. Class Reloading
4. Share-Nothing
5. Java & Scala Support
6. Great Testing Support
7. JPA/EBean Support
8. NIO Server (Netty)
9. Asset Compiler
10. Instant Deployment on Heroku

INTRO TO GRAILS 2

“ Powered by Spring, Grails outperforms the competition. Dynamic, agile web development without compromises. ”

MY TOP 10 FAVORITE FEATURES

1. Documentation
2. Clean URLs
3. GORM
4. IntelliJ IDEA Support
5. Zero Turnaround
6. Excellent Testing Support
7. Groovy
8. GSPs
9. Resource Optimizer
10. Instant Deployment on Heroku

OUR SETUP

- **IntelliJ IDEA** for Development
- **GitHub** for Source Control
- **CloudBees** for Continuous Integration
- **Heroku** for Production

Later added: QA Person and BrowserMob

CODE WALK THROUGH

We developed the same app, in similar ways, so let's look at the different layers.

- Database
- URL Mapping
- Models
- Controllers
- Views
- Validation
- IDE Support

- Job
- Feed
- Email
- Photo Upload
- Testing
- Demo Data
- Configuration
- Authentication

↓

DATABASE - GRAILS

- Hibernate is the default persistence provider
- Create models, Hibernate creates the schema for you

grails-app/conf/DataSource.groovy

```
environments {
    development {
        dataSource {
            dbCreate = "create-drop" // one of 'create', 'create-dr
op', 'update', 'validate', ''
            url = "jdbc:postgresql://localhost:5432/happytrails"
        }
    }
```

DATABASE - PLAY

- EBean is the default persistence provider in Java projects
- Evolutions can be auto-applied
- Initial evolution sql is auto-created
- Subsequent changes must be versioned
- Auto-created schema file is database dependent
- Play 2 supports multiple datasources (Play 1 does not)

conf/evolutions/default/2.sql

```
# --- !Ups

ALTER TABLE account ADD is_admin boolean;

UPDATE account SET is_admin = FALSE;

# --- !Downs

ALTER TABLE account DROP is_admin;
```

DATABASE - PLAY

Using Heroku Postgres in production rocks!

- Postgres 9.1
- Dataclips
- Fork & Follow
- Multi-Ingres

URL MAPPING - GRAILS

grails-app/conf/UrlMappings.groovy

```
class UrlMappings {
    static mappings = {
        "/$controller/$action?/$id?" {
            constraints {
                // apply constraints here
            }
        }
        "/"(controller: "home", action: "index")
        "/login"(controller: "login", action: "auth")
        "/login/authfail"(controller: "login", action: "authfail")
        "/login/denied"(controller: "login", action: "denied")
        "/logout"(controller: "logout")
        "/signup"(controller: "register")
        "/feed/$region"(controller: "region", action: "feed")
        "/register/register"(controller: "register", action: "regis
ter")
        "/register/resetPassword"(controller: "register", action: "
resetPassword")
        "/register/verifyRegistration"(controller: "register", acti
```

URL MAPPING - PLAY

conf/routes

```
GET     /                           controllers.ApplicationController.index()

GET     /signup                     controllers.ApplicationController.signupForm()
POST    /signup                     controllers.ApplicationController.signup()

GET     /login                      controllers.ApplicationController.loginForm()
POST    /login                      controllers.ApplicationController.login()

GET     /logout                     controllers.ApplicationController.logout()

GET     /addregion                  controllers.RegionController.addRegion()
POST    /addregion                  controllers.RegionController.saveRegion()

GET     /:region/feed               controllers.RegionController.getRegionFeed(region)

GET     /:region/subscribe          controllers.RegionController.subscribe(region)
GET     /:region/unsubscribe        controllers.RegionController.unsubscribe(region)

GET     /:region/addroute           controllers.RegionController.addRoute(region)
POST    /:region/addroute           controllers.RegionController.saveRoute(region)

GET     /:region/delete             controllers.RegionController.deleteRegion(region)

GET     /:region/:route/rate        controllers.RouteController.saveRating(region, route, rating: java.lang.Integer)

POST    /:region/:route/comment     controllers.RouteController.saveComment(region, route)

GET     /:region/:route/delete      controllers.RouteController.deleteRoute(region, route)

GET     /:region/:route             controllers.RouteController.getRouteHtml(region, route)

GET     /:region                    controllers.RegionController.getRegionHtml(region, sort ?= "name")
```

MODELS - GRAILS

- All properties are persisted by default
- Constraints
- Mappings with hasMany and belongsTo
- Override methods for lifecycle events

grails-app/domain/happytrails/Region.groovy

```
package happytrails

class Region {
    static charactersNumbersAndSpaces = /[a-zA-Z0-9 ]+/
    static searchable = true

    static constraints = {
        name blank: false, unique: true, matches: charactersNumbers
AndSpaces
        seoName nullable: true
        routes cascade:"all-delete-orphan"
    }

    static hasMany = [ routes:Route ]
```

MODELS - PLAY

- EBean + JPA Annotations
- Declarative Validations (JSR 303)
- Query DSL
- Lazy Loading (except in Scala Templates)

app/models/Direction.java

```
@Entity
public class Direction extends Model {

    @Id
    public Long id;

    @Column(nullable = false)
    @Constraints.Required
    public Integer stepNumber;

    @Column(length = 1024, nullable = false)
    @Constraints.MaxLength(1024)
    @Constraints.Required
    public String instruction;
```

CONTROLLERS - GRAILS

grails-app/controllers/happytrails/HomeController.groovy

```
package happytrails

import org.grails.comments.Comment

class HomeController {

    def index() {
        params.max = Math.min(params.max ? params.int('max') : 10,
100)
        [regions: Region.list(params), total: Region.count(),
         comments: Comment.list(max: 10, sort: 'dateCreated', order
: 'desc')]
    }
}
```

CONTROLLERS - PLAY

- Stateless - Composable - Interceptable
- Clean connection between URLs and response code

app/controllers/RouteController.java

```
@With(CurrentUser.class)
public class RouteController extends Controller {

    @Security.Authenticated(Secured.class)
    public static Result saveRating(String urlFriendlyRegionName, String urlFriendlyRouteName, Integer rating) {
        User user = CurrentUser.get();
        Route route = getRoute(urlFriendlyRegionName, urlFriendlyRouteName);

        if ((route == null) || (user == null)) {
            return badRequest("User or Route not found");
        }

        if (rating != null) {
            Rating existingRating = Rating.findByUserAndRoute(user, route);
            if (existingRating != null) {
                existingRating.value = rating;
                existingRating.save();
            }
            else {
                Rating newRating = new Rating(user, route, rating);
                newRating.save();
            }
        }

        return redirect(routes.RouteController.getRouteHtml(urlFriendlyRegionName, urlFriendlyRouteName));
    }
```

VIEWS - GRAILS

- Groovy Server Pages, like JSPs
- GSP Tags
- Layouts and Templates
- Optimized Resources

grails-app/views/region/show.gsp

```
<%@ page import="happytrails.Region" %>
<!doctype html>
<html>
<head>
    <meta name="layout" content="main">
    <g:set var="entityName" value="${message(code: 'region.label',
default: 'Region')}"/>
    <title><g:message code="default.show.label" args="[entityName]"
/></title>
    <link rel="alternate" type="application/atom+xml" title="${regi
onInstance.name} Updates"
          href="${createLink(controller: 'region', action: 'feed',
params: [region: regionInstance.seoName])}"/>
</head>
```

VIEWS - PLAY

- Scala Templates
- Composable
- Compiled

app/views/region.scala.html

```
@(region: Region, sort: String)

@headContent = {
    <link rel="alternate" type="application/rss+xml" title="@region
.getName RSS Feed" href="@routes.RegionController.getRegionFeed(reg
ion.getUrlFriendlyName)" />
}

@breadcrumbs = {
    <div class="nav-collapse">
        <ul class="nav">
            <li><a href="@routes.ApplicationController.index()">Hik
e</a></li>
            <li class="active"><a href="@routes.RegionController.ge
tRegionHtml(region.getUrlFriendlyName)">@region.getName</a></li>
        </ul>
```

VALIDATION - GRAILS

grails-app/controllers/happytrails/RouteController.groovy

```
    def save() {
        def routeInstance = new Route(params)
        if (!routeInstance.save(flush: true)) {
            render(view: "create", model: [routeInstance: routeInstance])
            return
        }

        flash.message = message(code: 'default.created.message', args: [message(code: 'rout
e.label', default: 'Route'), routeInstance.name])
        redirect(action: "show", id: routeInstance.id)
    }
```

grails-app/views/route/create.gsp

```
            <g:hasErrors bean="${routeInstance}">
            <div class="alert alert-error" role="alert">
                <g:eachError bean="${routeInstance}" var="error">
                <div <g:if test="${error in org.springframework.validation.FieldError}">dat
a-field-id="${error.field}"</g:if>><g:message error="${error}"/></div>
                </g:eachError>
            </div>
            </g:hasErrors>
```

VALIDATION - PLAY

app/controllers/RouteController.java

```
public static Result signup() {
    Form<User> signupForm = form(User.class).bindFromRequest();
    if (signupForm.hasErrors()) {
        return badRequest(views.html.signupForm.render(signupForm));
    }
```

app/views/signupForm.scala.html

```
@if(signupForm.hasGlobalErrors) {
    <p class="error alert alert-error">@signupForm.globalError.message</p>
}

@helper.form(action = routes.ApplicationController.signup(), 'class -> "form-hori
zontal") {
    @helper.inputText(signupForm("fullName"), '_label -> "Full Name")
    @helper.inputText(signupForm("emailAddress"), '_label -> "Email Address")
    @helper.inputPassword(signupForm("password"), '_label -> "Password")
    <div class="controls">
        <input type="submit" class="btn btn-primary" value="Create Account"/>
    </div>
}
```

IDE SUPPORT - GRAILS

RouteControllerTests.groovy – [happytrails] – happytrails – [~/dev/happytrails-grails2]

Grails:happytrails

happytrails-grails2 / test / unit / happytrails / RouteControllerTests.groovy

Grails View

- happytrails
  - Domain classes
  - Controllers
  - Views
  - Services
  - Configuration
  - grails-app/i18n
  - grails-app/jobs
  - grails-app/utils
  - web-app
  - Scripts
  - Sources:groovy
  - Sources:java
  - Tests:functional
  - Tests:integration
  - Tests:unit

RouteControllerTests.groovy | Route.groovy | Direction.groovy

Route | RouteController | Route Views | Tests

```
        assert response.redirectedUrl == '/region/show'
    }

    void testSendingBlankDirectionsAreOK() {
        populateValidParams(params)

        params['directions[0].sortNumber'] = ''
        params['directions[0].instruction'] = ''

        def route = new Route(params)
        assert route.save() != null
        params.id = route.id

        controller.update()

        println route.errors

        assert response.redirectedUrl == "/route/show/$route.id"
```

Debug Grails:happytrails

Debugger | Console

```
Configuring Spring Security UI ...
... finished configuring Spring Security UI

Configuring Spring Security Core ...
... finished configuring Spring Security Core
| Server running. Browse to http://localhost:8080/happytrails
```

5: Debug | 6: TODO | 9: Changes | Event Log

175:29 | UTF-8 | Git: grails2 | 576M of 2031M

IntelliJ Rocks!

IDE SUPPORT - PLAY

- $ play idea
- $ play eclipsify

- Java!!!
- Debugging Support via Remote Debugger
- Limited Testing within IDE

JOB - GRAILS

grails-app/jobs/happytrails/DailyRegionDigestEmailJob.groovy

```
package happytrails

import org.grails.comments.Comment

class DailyRegionDigestEmailJob {
    def mailService

    static triggers = {
        //simple repeatInterval: 5000l // execute job once in 5 sec
onds
        cron name:'cronTrigger', startDelay:10000, cronExpression:
'0 0 7 ? * MON-FRI' // 7AM Mon-Fri
    }

    def execute() {
        List<RegionUserDigest> digests = getRegionUserDigests()
```

JOB - PLAY

- Plain old `static void main`
- Independent of web app

app/jobs/DailyRegionDigestEmailJob.java

```
public class DailyRegionDigestEmailJob {

    public static void main(String[] args) {

        Application application = new Application(new File(args[0])
, DailyRegionDigestEmailJob.class.getClassLoader(), null, Mode.Prod
());

        Play.start(application);

        List<RegionUserDigest> regionUserDigests = getRegionUserDig
ests();
```

FEED - GRAILS

1. grails install-plugin feeds
2. Add feed() method to controller

grails-app/controllers/happytrails/RegionController.groovy

```
    def feed = {
        def region = Region.findBySeoName(params.region)
        if (!region) {
            response.status = 404
            return
        }

        render(feedType: "atom") {
            title = "Happy Trails Feed for " + region.name
            link = createLink(absolute:  true, controller: 'region'
, action: 'feed', params: ['region', region.seoName])
            description = "New Routes and Reviews for " + region.na
me
            region.routes.each() { route ->
                entry(route.name) {
                    link = createLink(absolute: true, controller: '
```

FEED - PLAY

- No direct RSS/Atom support
- Dependency: "rome" % "rome" % "1.0"

app/jobs/DailyRegionDigestEmailJob.java

```
        Region region = Region.findByUrlFriendlyName(urlFriendlyReg
ionName);

        SyndFeed feed = new SyndFeedImpl();
        feed.setFeedType("rss_2.0");

        feed.setTitle("Uber Tracks - " + region.getName());
        feed.setLink("http://hike.ubertracks.com"); // todo: extern
alize URL
        feed.setDescription("Updates for Hike Uber Tracks - " + reg
ion.getName());

        List entries = new ArrayList();

        for (Route route : region.routes) {
```

EMAIL - GRAILS

grails-app/jobs/happytrails/DailyRegionDigestEmailJob.groovy

```
println "Sending digest email to " + digest.user.username
mailService.sendMail {
    to digest.getUser().username
    subject "Updates from Ãber Tracks " + digest.regions
    body message
}
```

* powered by the mail plugin (built-in)

EMAIL - PLAY

- SendGrid Heroku Add-on
- Dependency: "com.typesafe" %% "play-plugins-mailer" % "2.0.2"

app/jobs/DailyRegionDigestEmailJob.java

```
MailerAPI mail = play.Play.application().plugin(MailerPlugin.class).email();
mail.setSubject("Uber Tracks Region Updates");
mail.addRecipient(regionUserDigest.user.getEmailAddress());
mail.addFrom("noreply@ubertracks.com");
mail.send(emailContent);
```

conf/prod.conf

```
smtp.host=smtp.sendgrid.net
smtp.port=587
smtp.ssl=true
smtp.user=${SENDGRID_USERNAME}
smtp.password=${SENDGRID_PASSWORD}
```

PHOTO UPLOAD - GRAILS

PHOTO UPLOAD - PLAY

- Amazon S3 for Persistent File Storage

app/models/S3Photo.java

```
PutObjectRequest putObjectRequest = new PutObjectRequest(bucket, key,
inputStream, objectMetadata);
putObjectRequest.withCannedAcl(CannedAccessControlList.PublicRead);

if (S3Blob.amazonS3 == null) {
    Logger.error("Cloud not save Photo because amazonS3 was null");
}
else {
    S3Blob.amazonS3.putObject(putObjectRequest);
}
```

app/controllers/RegionController.java

```
Http.MultipartFormData.FilePart photoFilePart = request().body()
    .asMultipartFormData().getFile("photo");
```

TESTING - GRAILS

- Unit Tests with @TestFor and @Mock
- Test URL Mappings with UrlMappingsUnitTestMixin
- Integration Testing with GroovyTestCase
- Functional Testing with Geb

test/unit/happytrails/RouteTests.groovy

```
package happytrails

import grails.test.mixin.*

@TestFor(Route)
class RouteTests {

    void testConstraints() {
        def region = new Region(name: "Colorado")
        def whiteRanch = new Route(name: "White Ranch", distance: 1
2.0, location: "Golden, CO", region: region)
        mockForConstraintsTests(Route, [whiteRanch])

        // validation should fail if required properties are null
```

TESTING - PLAY

- Standard JUnit
- Unit Tests & Functional Tests
- FakeApplication, FakeRequest, inMemoryDatabase
- Test: Controllers, Views, Routing, Real Server, Browser

test/ApplicationControllerTest.java

```
@Test
public void index() {
    running(fakeApplication(inMemoryDatabase()), new Runnable() {
        public void run() {
            DemoData.loadDemoData();

            Result result = callAction(routes.ref.ApplicationController.index());
            assertThat(status(result)).isEqualTo(OK);
            assertThat(contentAsString(result)).contains(DemoData.CRESTED_BUTTE_COLO
RADO_REGION);
            assertThat(contentAsString(result)).contains("<li>");
        }
    });
}
```

DEMO DATA - GRAILS

grails-app/conf/BootStrap.groovy

```
import happytrails.User
import happytrails.Region
import happytrails.Route
import happytrails.RegionSubscription
import javax.servlet.http.HttpServletRequest

class BootStrap {

    def init = { servletContext ->
        HttpServletRequest.metaClass.isXhr = {->
             'XMLHttpRequest' == delegate.getHeader('X-Requested-Wi
th')
        }

        if (!User.count()) {
            User user = new User(username: "mraible@gmail.com", pas
```

DEMO DATA - PLAY

app/Global.java

```
public void onStart(Application application) {

    //Ebean.getServer(null).getAdminLogging().setDebugGeneratedSql(
true);

    S3Blob.initialize(application);

    // load the demo data in dev mode if no other data exists
    if (Play.isDev() && (User.find.all().size() == 0)) {
        DemoData.loadDemoData();
    }

    super.onStart(application);
}
```

CONFIGURATION - GRAILS

grails-app/conf/Config.groovy

```
grails.app.context = "/"
grails.project.groupId = appName // change this to alter the defaul
t package name and Maven publishing destination
grails.mime.file.extensions = true // enables the parsing of file e
xtensions from URLs into the request format
grails.mime.use.accept.header = false
grails.mime.types = [html: ['text/html', 'application/xhtml+xml'],
        xml: ['text/xml', 'application/xml'],
        text: 'text/plain',
        js: 'text/javascript',
        rss: 'application/rss+xml',
        atom: 'application/atom+xml',
        css: 'text/css',
        csv: 'text/csv',
        all: '*/*',
        json: ['application/json', 'text/json'],
```

CONFIGURATION - PLAY

- Based on the TypeSafe Config Library
- Override config with Java Properties: -Dfoo=bar
- Environment Variable substitution
- Run with different config files: -Dconfig.file=conf/prod.conf

conf/prod.conf

```
include "application.conf"

application.secret=${APPLICATION_SECRET}

db.default.driver=org.postgresql.Driver
db.default.url=${DATABASE_URL}
applyEvolutions.default=true
```

AUTHENTICATION - GRAILS

Spring Security UI Plugin, *"I love you!"*

grails-app/conf/Config.groovy

```
grails.mail.default.from = "Bike Ãber Tracks <bike@ubertracks.com>"

grails.plugins.springsecurity.ui.register.emailFrom = grails.mail.d
efault.from
grails.plugins.springsecurity.ui.register.emailSubject = 'Welcome t
o Ãber Tracks!'
grails.plugins.springsecurity.ui.forgotPassword.emailFrom = grails.
mail.default.from
grails.plugins.springsecurity.ui.forgotPassword.emailSubject = 'Pas
sword Reset'

grails.plugins.springsecurity.controllerAnnotations.staticRules = [
        '/user/**': ['ROLE_ADMIN'],
        '/role/**': ['ROLE_ADMIN'],
        '/registrationCode/**': ['ROLE_ADMIN'],
        '/securityInfo/**': ['ROLE_ADMIN']
```

AUTHENTICATION - PLAY

- Uses cookies to remain stateless

app/controllers/Secured.java

```
public class Secured extends Security.Authenticator {

@Override
public String getUsername(Context ctx) {
    // todo: need to make sure the user is valid, not just the toke
n
    return ctx.session().get("token");
}
```

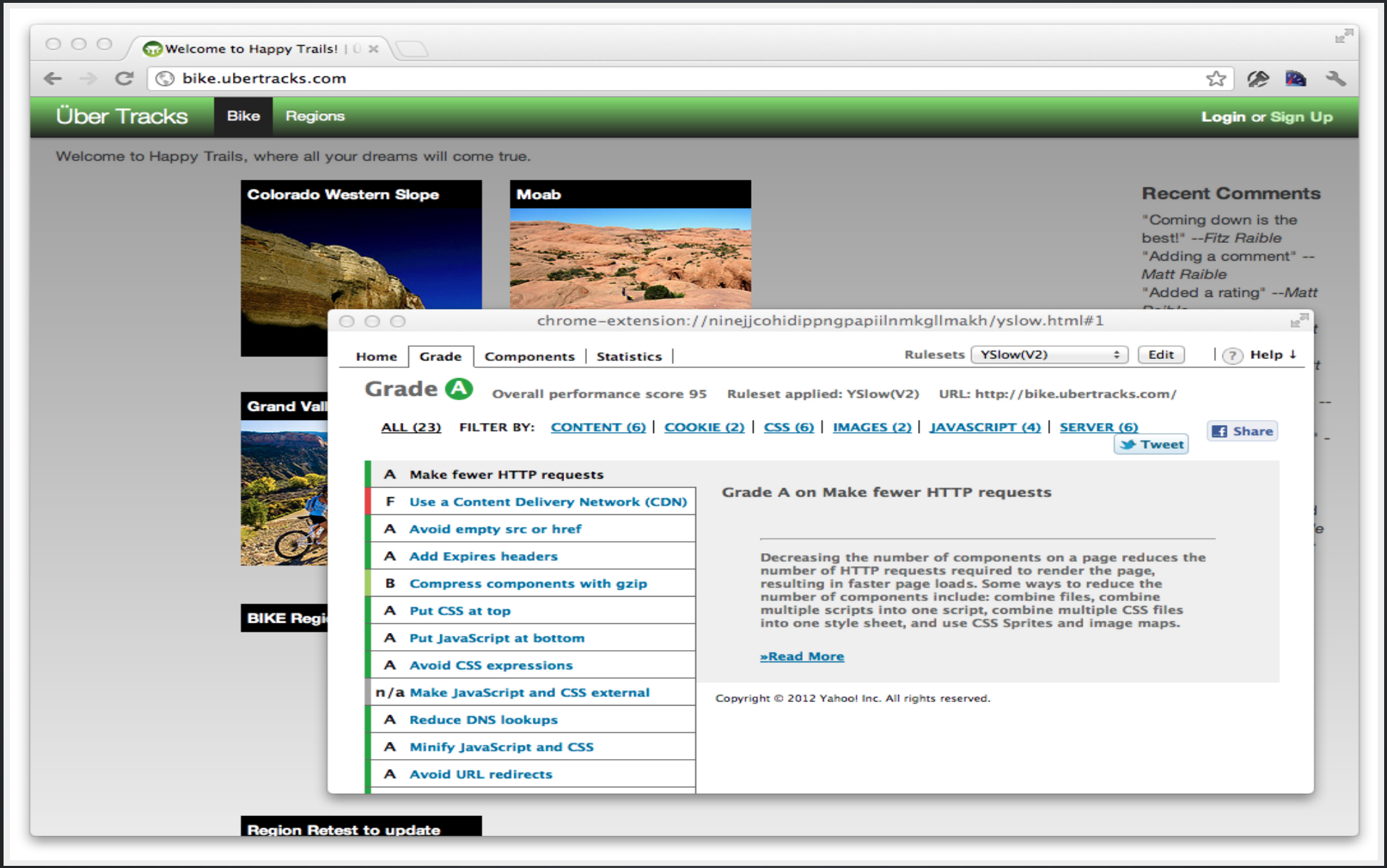
app/controllers/RegionController.java

```
@Security.Authenticated(Secured.class)
public static Result addRegion() {
    return ok(views.html.regionForm.render(form(Region.class)));
}
```

APPLICATION COMPARISON

- YSlow
- PageSpeed
- Lines of Code
- Load Testing
- Which Loads Faster?
- Security Testing

YSLOW


Welcome to Happy Trails!
bike.ubertracks.com
Über Tracks
Bike
Regions
Login or Sign Up
Welcome to Happy Trails, where all your dreams will come true.
Colorado Western Slope
Moab
Recent Comments
"Coming down is the best!" --Fitz Raible
"Adding a comment" -- Matt Raible
"Added a rating" --Matt
Grand Val
BIKE Regi
Region Retest to update
chrome-extension://ninejjcohidippngpapiilnmkgllmakh/yslow.html#1
Home
Grade
Components
Statistics
Rulesets
YSlow(V2)
Edit
Help
Grade A
Overall performance score 95
Ruleset applied: YSlow(V2)
URL: http://bike.ubertracks.com/
ALL (23)
FILTER BY:
CONTENT (6)
COOKIE (2)
CSS (6)
IMAGES (2)
JAVASCRIPT (4)
SERVER (6)
Share
Tweet
A Make fewer HTTP requests
F Use a Content Delivery Network (CDN)
A Avoid empty src or href
A Add Expires headers
B Compress components with gzip
A Put CSS at top
A Put JavaScript at bottom
A Avoid CSS expressions
n/a Make JavaScript and CSS external
A Reduce DNS lookups
A Minify JavaScript and CSS
A Avoid URL redirects
Grade A on Make fewer HTTP requests
Decreasing the number of components on a page reduces the number of HTTP requests required to render the page, resulting in faster page loads. Some ways to reduce the number of components include: combine files, combine multiple scripts into one script, combine multiple CSS files into one style sheet, and use CSS Sprites and image maps.
»Read More
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Hike – Uber Tracks – Region

hike.ubertracks.com

Uber Tracks | Hike | Login / Sign Up

Crested Butte, CO

Zermatt, Switzerland

Test Region_Linsay

RECENT COMMENTS

Email?

Region to delete

chrome-extension://ninejjcohidippngpapiilnmkgllmakh/yslow.html#1

Home | Grade | Components | Statistics | Rulesets YSlow(V2) Edit | Help

Grade B Overall performance score 86 Ruleset applied: YSlow(V2) URL: http://hike.ubertracks.com/

ALL (23) FILTER BY: CONTENT (6) | COOKIE (2) | CSS (6) | IMAGES (2) | JAVASCRIPT (4) | SERVER (6)

Tweet Share

A	Make fewer HTTP requests
D	Use a Content Delivery Network (CDN)
A	Avoid empty src or href
F	Add Expires headers
E	Compress components with gzip
A	Put CSS at top
A	Put JavaScript at bottom
A	Avoid CSS expressions
n/a	Make JavaScript and CSS external
A	Reduce DNS lookups
A	Minify JavaScript and CSS
A	Avoid URL redirects
A	Remove duplicate JavaScript and CSS
A	Configure entity tags (ETags)
A	Make AJAX cacheable

Grade A on Make fewer HTTP requests

Decreasing the number of components on a page reduces the number of HTTP requests required to render the page, resulting in faster page loads. Some ways to reduce the number of components include: combine files, combine multiple scripts into one script, combine multiple CSS files into one style sheet, and use CSS Sprites and image maps.

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PAGESPEED

Welcome to Happy Trails! | Ü

bike.ubertracks.com

Über Tracks | Bike | Regions | Login or Sign Up

Welcome to Happy Trails, where all your dreams will come true.

Colorado Western Slope

Moab

Grand Valley

Colorado Front Range

Recent Comments

"Coming down is the best!" --*Fitz Raible*
"Adding a comment" --*Matt Raible*
"Added a rating" --*Matt Raible*
"Added a rating" --*Matt Raible*
"trying to post 5" --*Matt Raible*
"trying to post 5 again" --*Matt Raible*
"and then there were 6" --*Matt Raible*
"Post again" --*Matt*

Elements | Resources | Network | Scripts | Timeline | Profiles | Audits | Console | PageSpeed | Search PageSpeed

Refresh | Clear

Overview

Low priority (6)

Defer parsing of JavaScript
Optimize the order of sty…
Enable compression
Minify HTML
Minify CSS
Specify a Vary: Accept-…

Already done! (21)

Overview

The page Welcome to Happy Trails! | Über Tracks got an overall PageSpeed Score of **93** (out of 100). Learn more

Suggestion Summary

Click on the rule names to see suggestions for improvement.

- **High priority.** These suggestions represent the largest potential performance wins for the least development effort. However, there are no high priority suggestions for this site. Good job!
- **Medium priority.** These suggestions may represent smaller wins or much more work to implement. However, there are no medium priority suggestions for this site. Good job!

Hike – Uber Tracks – Region

hike.ubertracks.com

Uber Tracks | Hike | Login / Sign Up

Crested Butte, CO

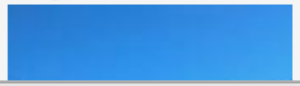
Zermatt, Switzerland

Test Region_Linsay

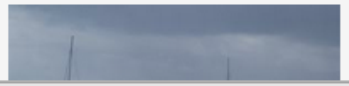
RECENT COMMENTS

- Email?
- Does an email come through on Admin?
- Testing that an email comes through!
- Add a comment
- Via User

Region to delete



Iteration 2



Elements | Resources | Network | Scripts | Timeline | Profiles | Audits | Console | PageSpeed | Search PageSpeed

Refresh | Clear

Overview

High priority (1)

Enable compression

Medium priority (2)

Leverage browser caching

Serve scaled images

Low priority (5)

Defer parsing of JavaScript

Optimize images

Minify HTML

Specify image dimensions

Overview

The page Hike - Uber Tracks - Regions got an overall PageSpeed Score of **49** (out of 100). Learn more

Suggestion Summary

Click on the rule names to see suggestions for improvement.

- **High priority.** These suggestions represent the largest potential performance wins for the least development effort. You should address this item first:
  Enable compression
- **Medium priority.** These suggestions may represent smaller wins or much more work to implement. You should address these items next:

LINES OF CODE

```
1. bash
mraible:happytrails-grails2 mraible$ cloc grails-app test
      85 text files.
      85 unique files.
      36 files ignored.

http://cloc.sourceforge.net v 1.56  T=0.5 s (98.0 files/s, 5058.0 lines/s)
-------------------------------------------------------------------------------
Language                     files          blank        comment           code
-------------------------------------------------------------------------------
Groovy                          49            524            190           1815
-------------------------------------------------------------------------------
SUM:                            49            524            190           1815
-------------------------------------------------------------------------------
mraible:happytrails-grails2 mraible$
```

1. bash

```
mraible:happytrails-play2 mraible$ cloc app conf test
      49 text files.
      49 unique files.
       4 files ignored.

http://cloc.sourceforge.net v 1.56  T=0.5 s (90.0 files/s, 5942.0 lines/s)
-------------------------------------------------------------------------------
Language                     files          blank        comment           code
-------------------------------------------------------------------------------
Java                            29            528             60           1784
HTML                            11             65              0            298
SQL                              3             58              0            148
Scala                            2              9              0             21
-------------------------------------------------------------------------------
SUM:                            45            660             60           2251
-------------------------------------------------------------------------------
mraible:happytrails-play2 mraible$
```

LOAD TESTING WITH BROWSERMOB

Neustar | Home

https://home.wpm.neustar.biz/#home

Neustar Web Performance Management

mraible

Home | Monitoring | Load Testing | Scripting | Alerting

Buy Monitoring Buy LoadTest

CHAT NOW

Get Started

Identify the resources you need to monitor and determine the application workflows to load test.

Design / Select Scripts

Write or select from any of our pre-designed test and monitoring scripts, using the familiar JavaScript syntax

Activate & Monitor

Activate scripts and get detailed monitoring and load test reports through our intuitive interface.

Monitors + New Monitor

bike.ubertracks.com — 15 INTERVAL
Checked: 2012-06-14T08:18:46.00

hike.ubertracks.com — 15 INTERVAL
Checked: 2012-06-14T08:16:48.00

Your Monitoring Packages + Add Package

Monitoring Trial (30 Days)
ACTIVATED ON JUN 13, 2012 06:58:12 AM

Load Tests + New Load Test

Hike Load Test
Date finished: Jun 14, 2012 04:01:00 AM

Bike Load Test
Date finished: Jun 14, 2012 03:04:00 AM

Your Load Test Packages + Add Package

Pay As You Go — ACTIVE
ACTIVATED ON JUN 13, 2012 06:58:11 AM

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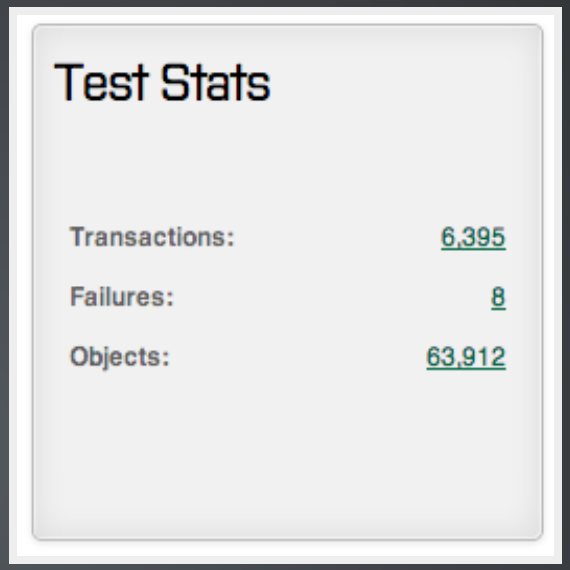
Sales: 1.888.367.4812 Support: 1.888.367.4820

LOAD TESTING - 1 DYNO

Bike (Grails)

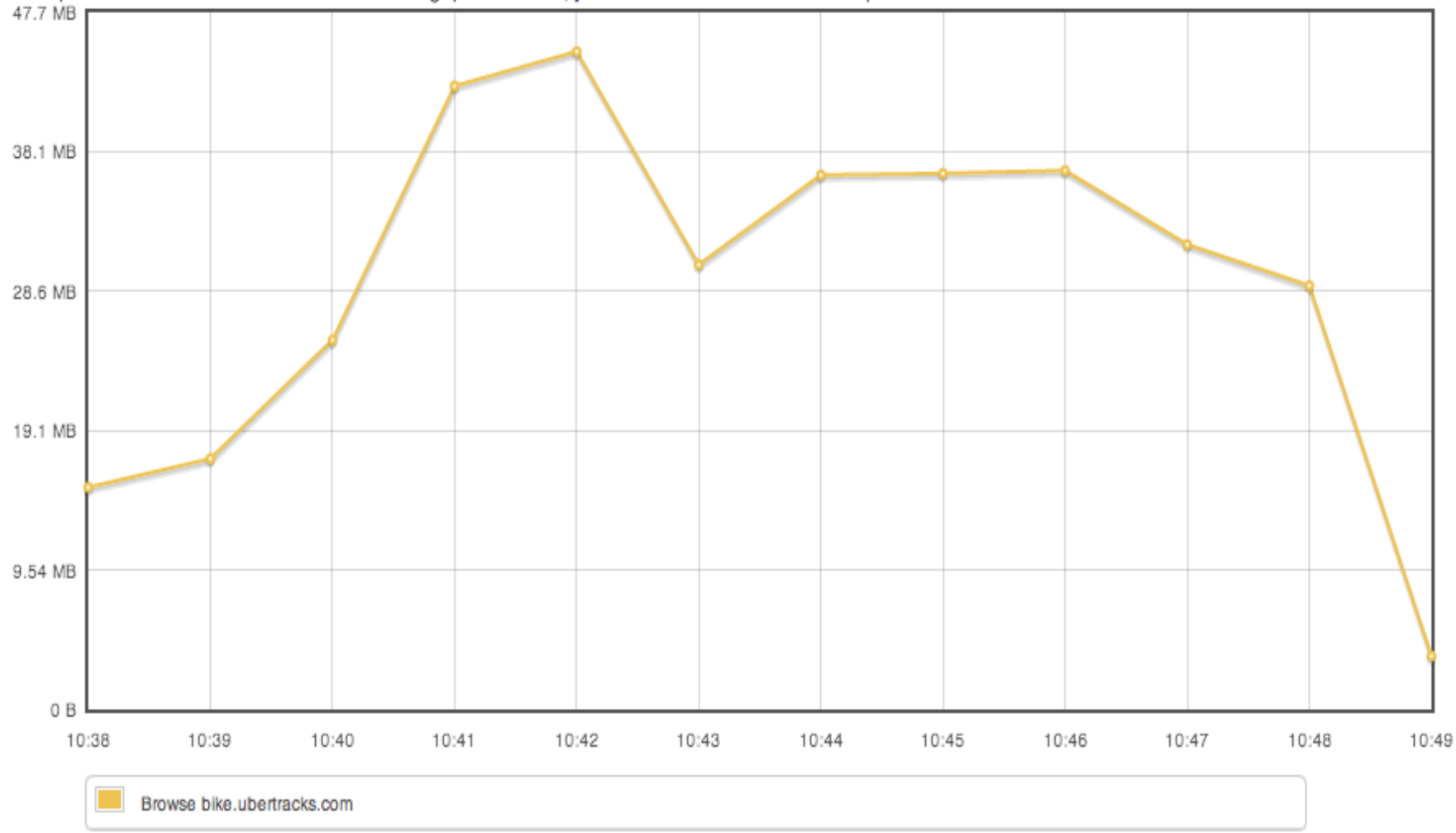


Hike (Play)

LOAD TESTING - 1 DYNO

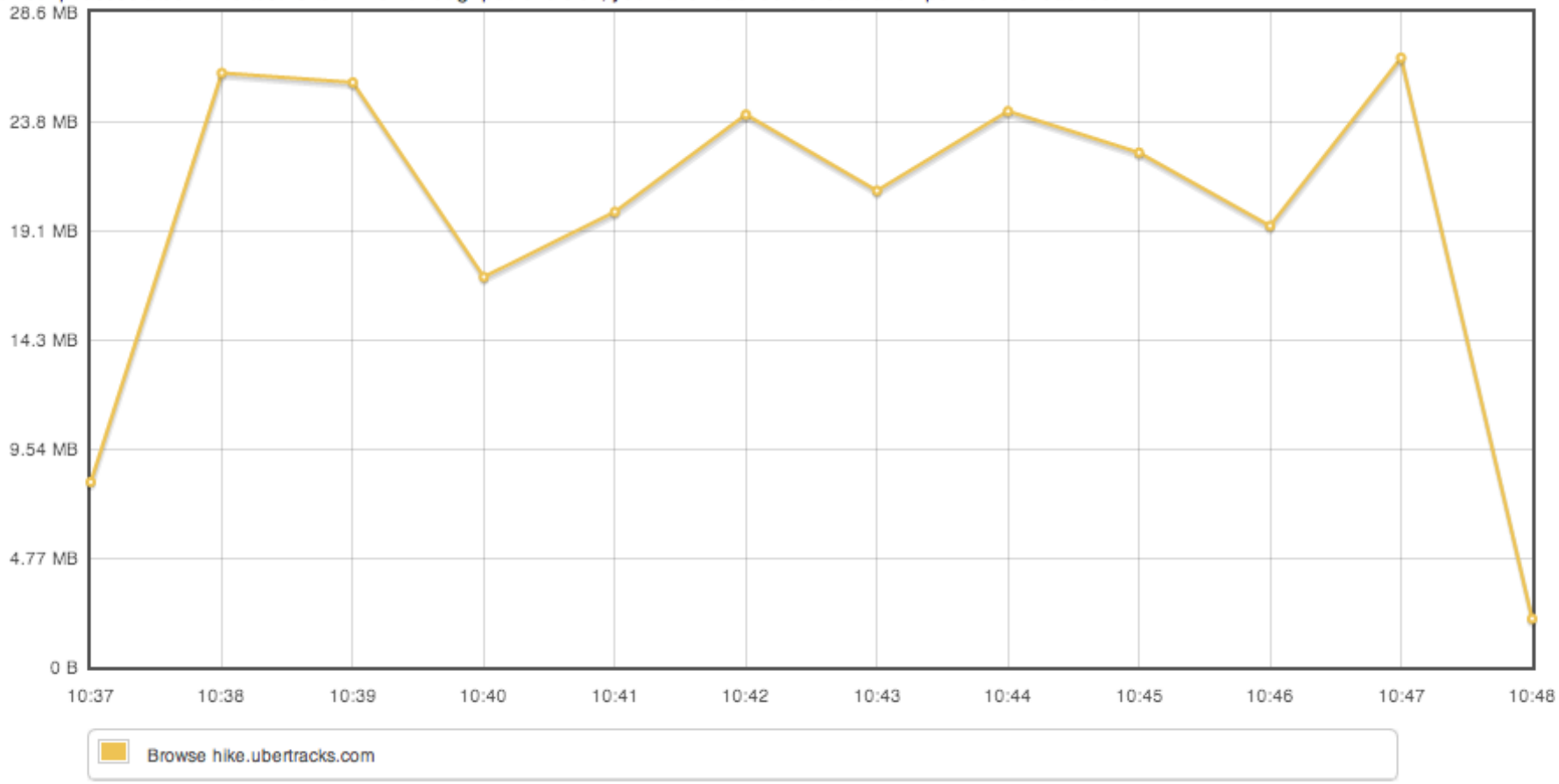
Data Throughput

Data throughput displays how many bytes were received by transactions that completed during each minute of the test, both as a total number of bytes as well as broken down by each script associated in the test. Often when throughput levels off, you have reached the saturation point of the load test.

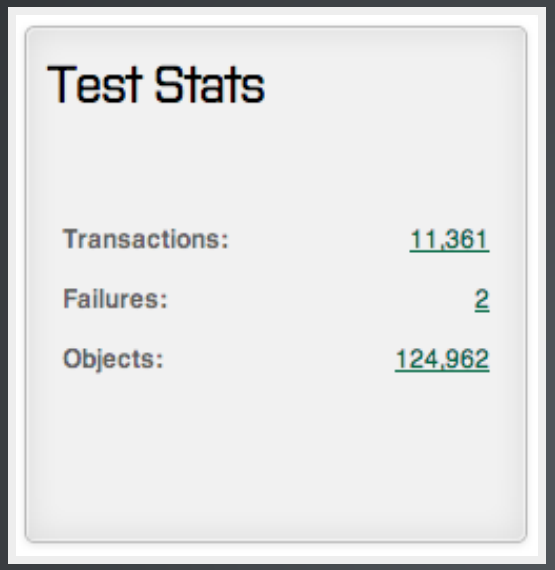


Data Throughput

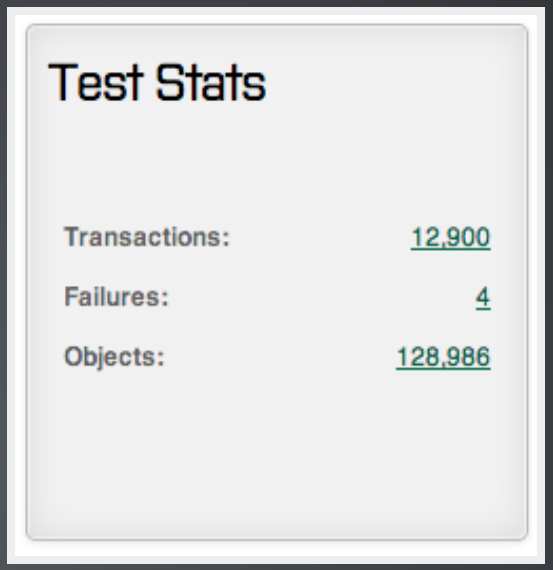
Data throughput displays how many bytes were received by transactions that completed during each minute of the test, both as a total number of bytes as well as broken down by each script associated in the test. Often when throughput levels off, you have reached the saturation point of the load test.



LOAD TESTING - 5 DYNOS



Bike (Grails)

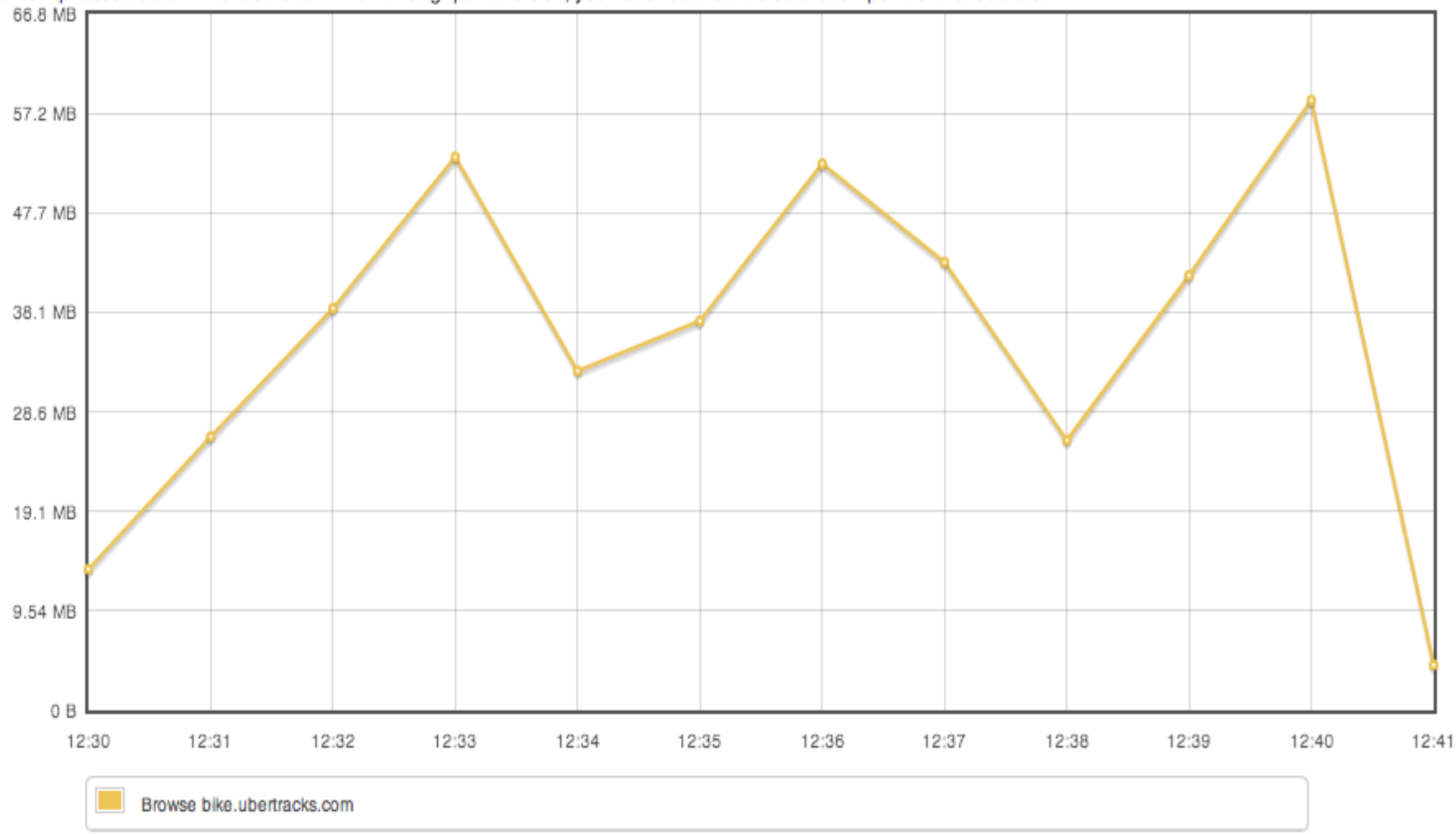


Hike (Play)

LOAD TESTING - 5 DYNOS

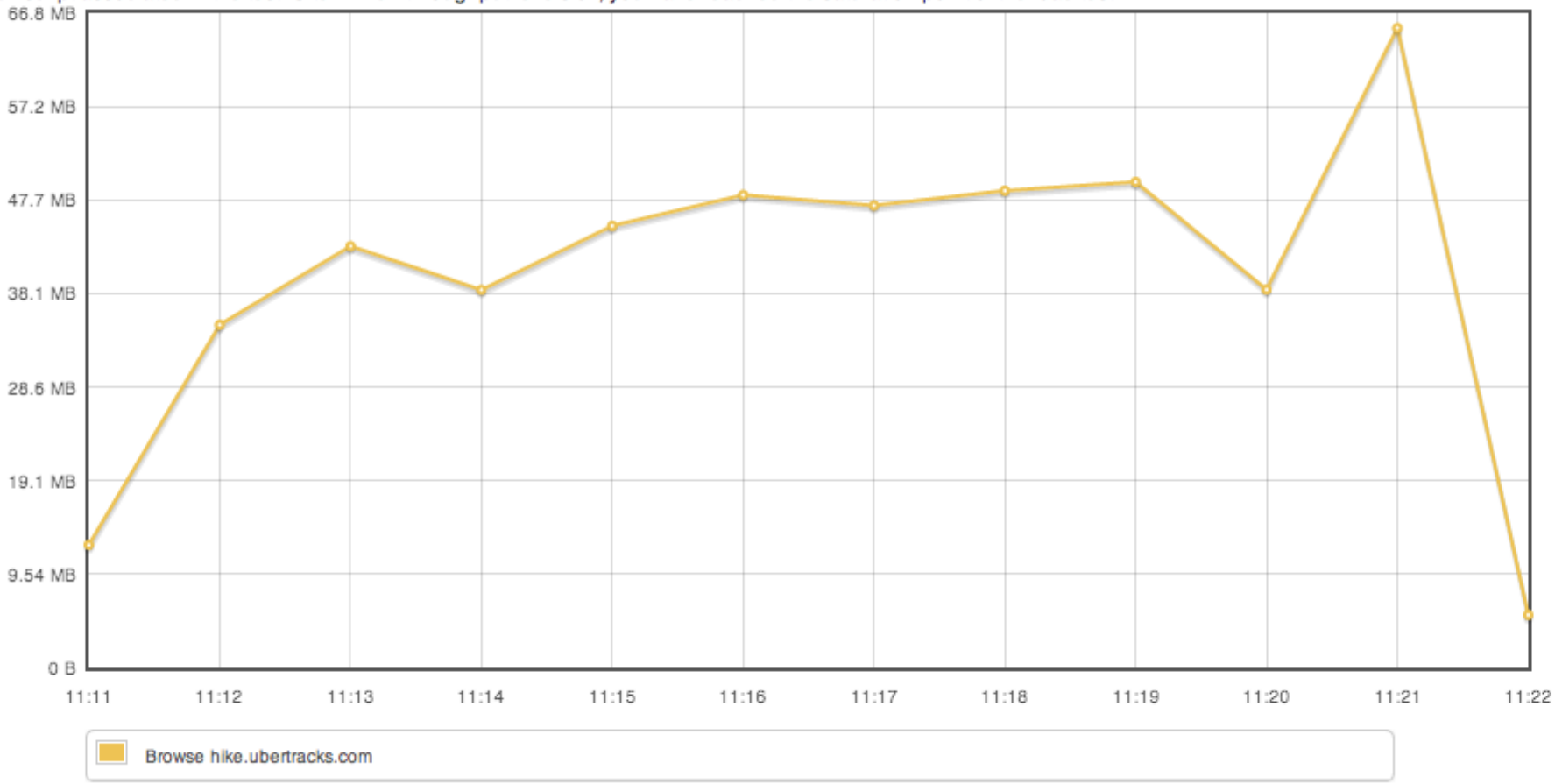
Data Throughput

Data throughput displays how many bytes were received by transactions that completed during each minute of the test, both as a total number of bytes as well as broken down by each script associated in the test. Often when throughput levels off, you have reached the saturation point of the load test.

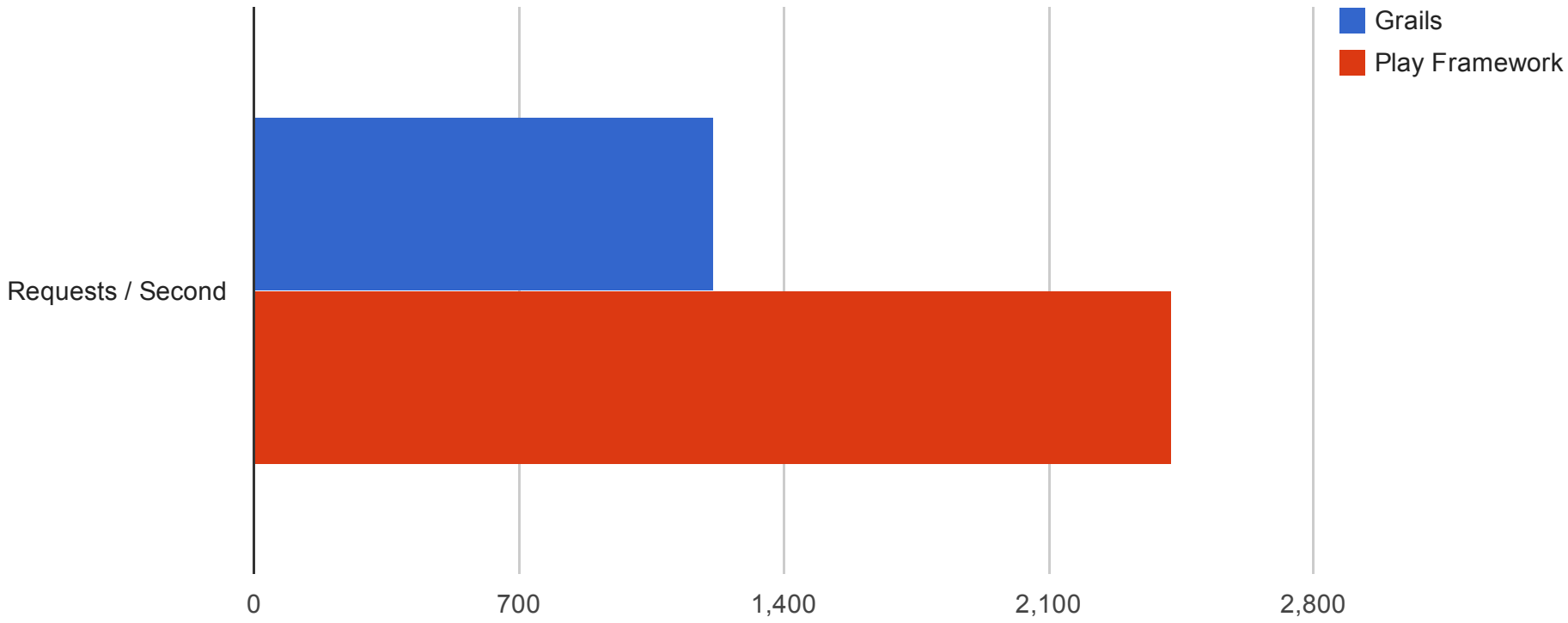


Data Throughput

Data throughput displays how many bytes were received by transactions that completed during each minute of the test, both as a total number of bytes as well as broken down by each script associated in the test. Often when throughput levels off, you have reached the saturation point of the load test.



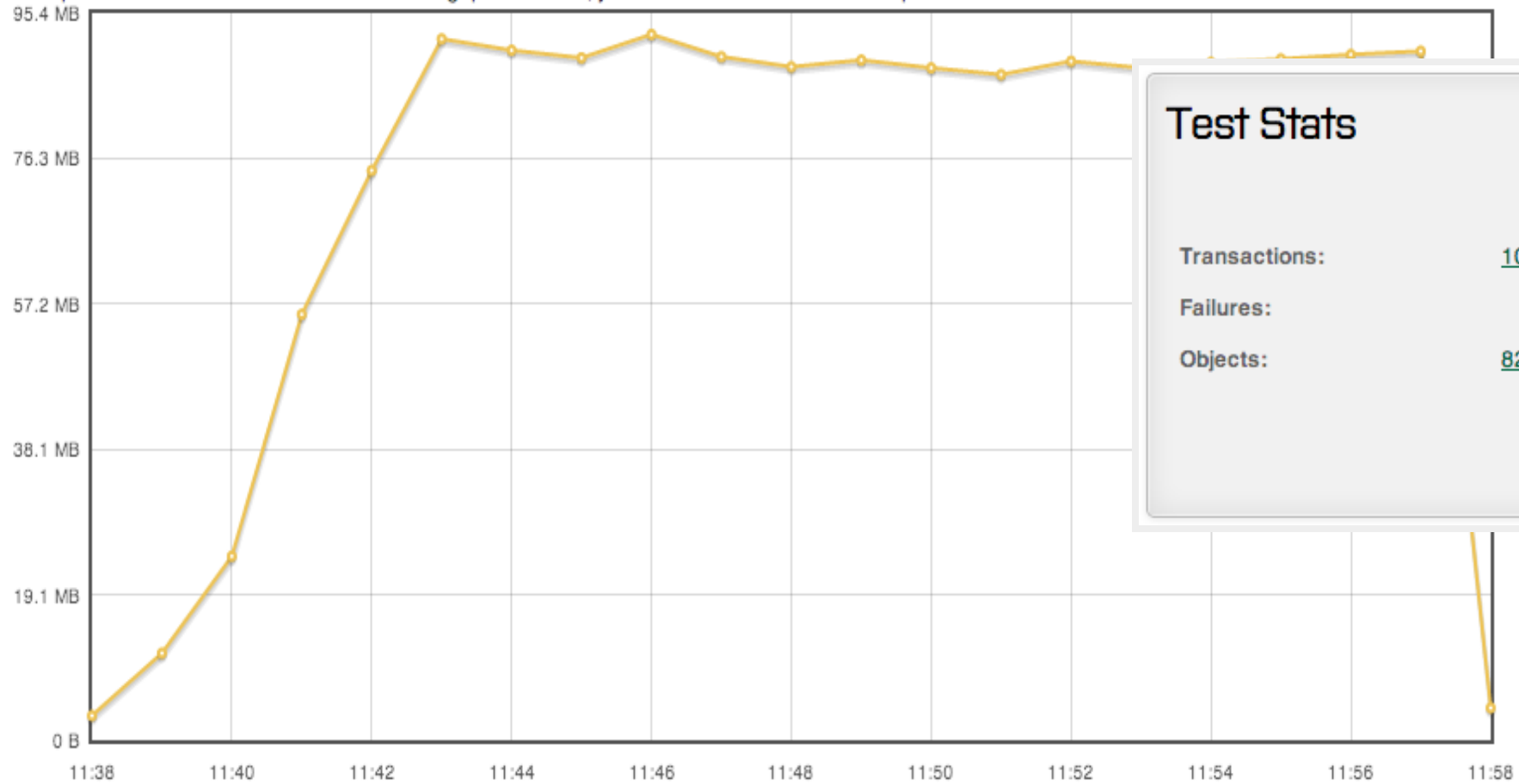
LOAD TESTING - 5 DYNOS



LOAD TESTING - 5 DYNOS + 100 USERS

Data Throughput

Data throughput displays how many bytes were received by transactions that completed during each minute of the test, both as a total number of bytes as well as broken down by each script associated in the test. Often when throughput levels off, you have reached the saturation point of the load test.

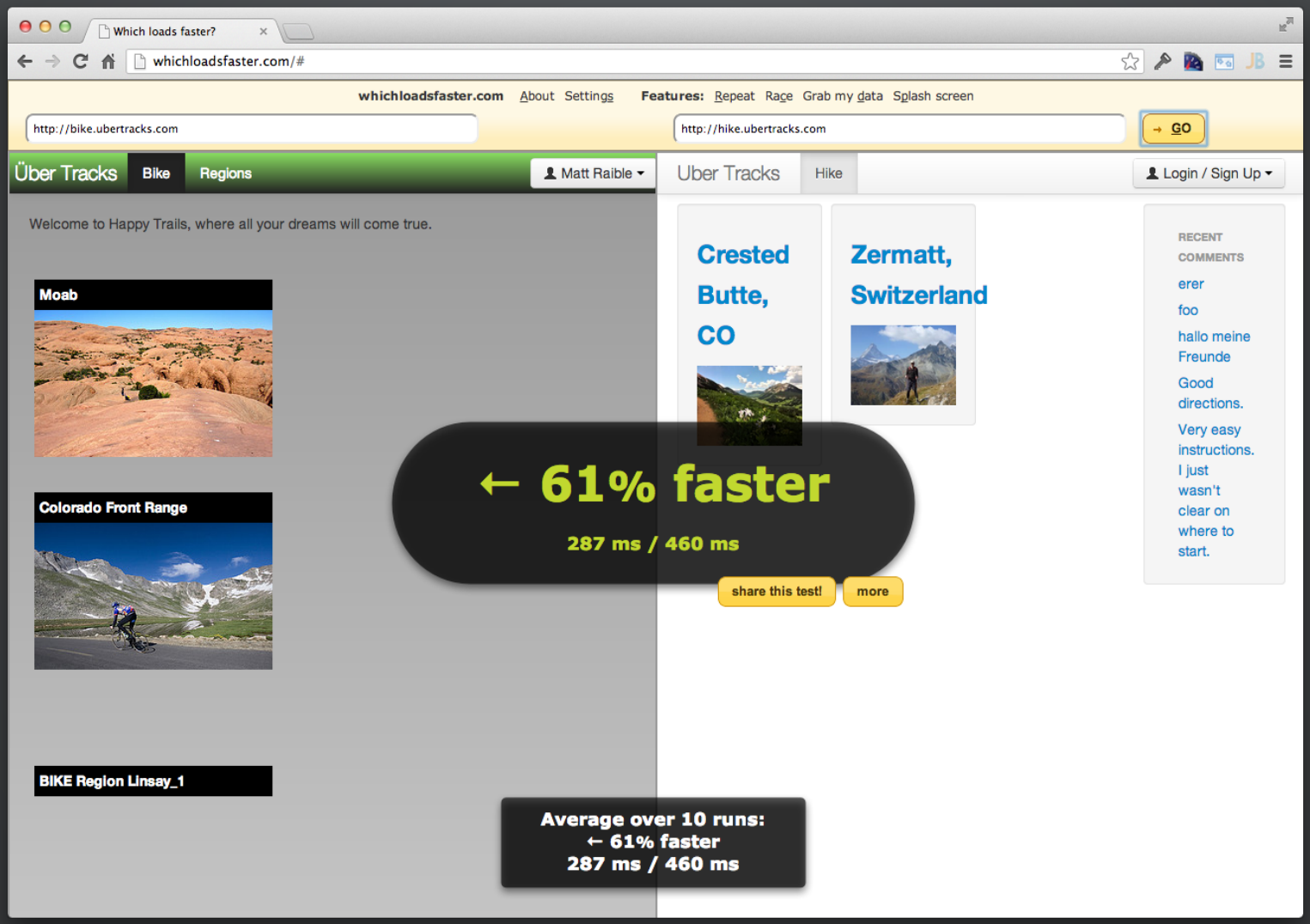


Test Stats

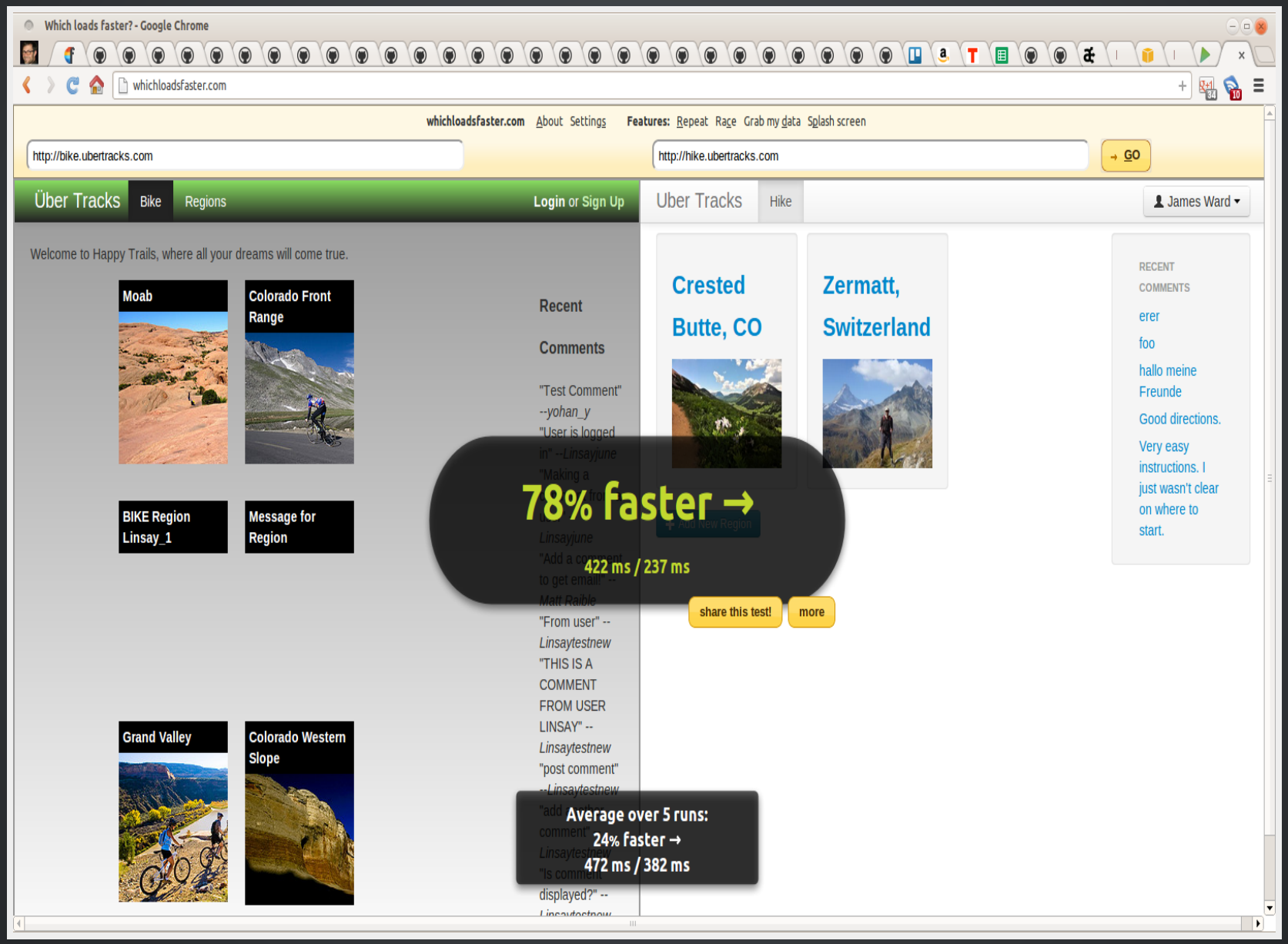
Transactions:	10,372
Failures:	1
Objects:	82,971

Check bike.ubertracks.com

WHICH LOADS FASTER?



WHICH ACTUALLY LOADS FASTER?



PEN TESTING WITH OWASP ZAP

Untitled Session - OWASP ZAP

Standard mode

Sites

- Sites
  - http://bike.ubertracks.com
    - GET:colorado-western-slope
    - GET:regions
    - colorado-front-range
      - GET:3-sisters
      - GET:white-ranch
    - GET:login
    - POST:j_spring_security_check(j_password,j_username)
    - GET:colorado-front-range
    - region
    - route

Quick Start | Request | Response | Break

Header: Text | Body: Text

```
HTTP/1.1 200 OK
Date: Wed, 27 Mar 2013 10:06:52 GMT
Server: Apache-Coyote/1.1
Content-Type: text/html;charset=UTF-8
Content-Language: en-US
Keep-Alive: timeout=5, max=100
Connection: Keep-Alive
Content-length: 4507
```

```
<!DOCTYPE html>
<!--[if lt IE 7 ]><html lang="en" class="no-js ie6"> <![endif]-->
<!--[if IE 7 ]><html lang="en" class="no-js ie7"> <![endif]-->
<!--[if IE 8 ]><html lang="en" class="no-js ie8"> <![endif]-->
<!--[if IE 9 ]><html lang="en" class="no-js ie9"> <![endif]-->
<!--[if (gt IE 9)|!(IE)]><!--><html lang="en" class="no-js"><!--<![endif]-->
<head>
    <meta charset="UTF-8">
    <meta name="viewport" content="width=device-width, initial-scale=1.0">
    <meta http-equiv="X-UA-Compatible" content="IE=edge,chrome=1">
    <title>Welcome to Happy Trails! | Über Tracks</title>
    <link rel="shortcut icon" href=
"/static/dDU481hieH4JcJkn2Rh9ldaUFFUnW7CHaWezwqnAGH2.ico" type="image/x-icon"
>
    <link rel="apple-touch-icon" href=
"/static/58OO7QmKXbmnS9XJimJ7mR2ojKIY3SzZ3YhD9bNCenX.png">
    <link rel="apple-touch-icon" sizes="114x114" href=
"/static/6emTJeZs15ZprPQVOMWhwdDrxzVfwcToL9XWeFKfX36.png">

    <meta name="layout" content="main"/>
```

Alerts | Active Scan | Spider | Forced Browse | Fuzzer | Params | Http Sessions | WebSockets | AJAX Spider

- Alerts (5)
  - Cross Site Scripting (Reflected)
  - SQL Injection - Error Based - Generic SQL RDBMS (2)
  - Password Autocomplete in browser (21)
  - X-Content-Type-Options header missing (19)
  - X-Frame-Options header not set (38)

Full details of any selected alert will be displayed here.

You can manually add alerts by right clicking on the relevant line in the history and selecting 'Add alert'.

You can also edit existing alerts by double clicking on them.

Alerts 2 0 2 1 | Current Scans 0 0 0 0 0 0

Untitled Session - OWASP ZAP

Standard mode

Sites

- Sites
  - http://hike.ubertracks.com
    - assets
      - GET:crested-butte-colorado
    - crested-butte-colorado
      - GET:crested-butte-colorado(sort)
      - GET:login
      - POST:login(emailAddress,password)
      - GET:logout
    - webjars
      - GET:zermatt-switzerland
    - zermatt-switzerland

Quick Start | Request | Response | Break

Header: Text | Body: Text

```
HTTP/1.1 200 OK
Date: Wed, 27 Mar 2013 10:28:48 GMT
Content-Type: text/html; charset=utf-8
Content-Length: 3244
Keep-Alive: timeout=5, max=99
Connection: Keep-Alive
```

```
<!DOCTYPE html>

<html>
<head>
    <title>Hike - Uber Tracks - Regions</title>
    <link rel="shortcut icon" type="image/png" href=
"/assets/images/favicon.png">
    <link rel='stylesheet' href=
```

History | Search | Break Points | Alerts | Active Scan | Spider | Forced Browse | Fuzzer | Params

- Alerts (3)
  - Password Autocomplete in browser
  - X-Content-Type-Options header missing (14)
  - X-Frame-Options header not set (14)

Full details of any selected alert will be displayed here.

You can manually add alerts by right clicking on the relevant line in the history and selecting 'Add alert'.

You can also edit existing alerts by double clicking on them.

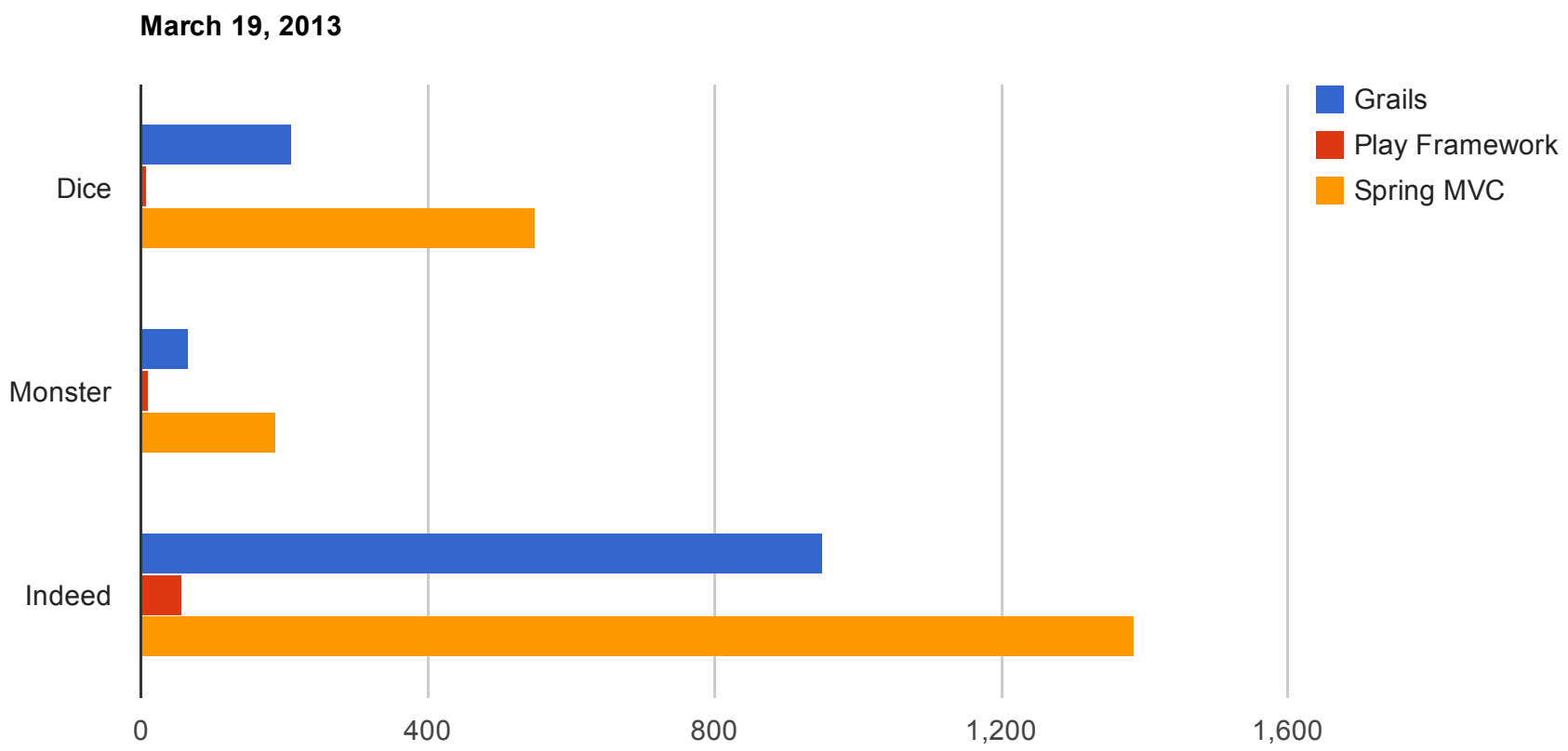
Alerts 0 0 2 1

Current Scans 0 0 0 0 0 0

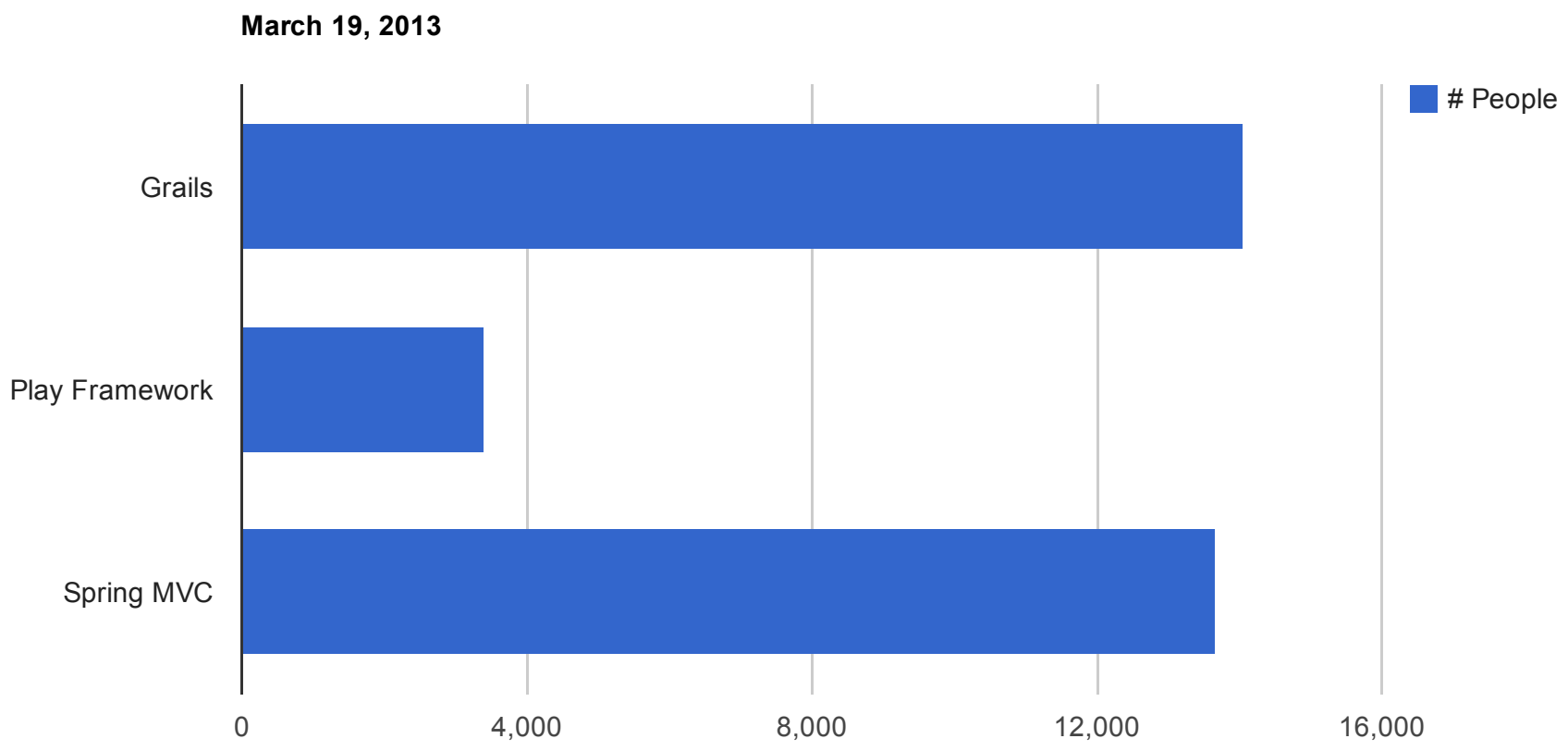
GRAILS 2 VS. PLAY 2

- Jobs
- LinkedIn Skills
- Google Trends
- Indeed
- Mailing List Traffic
- Books on Amazon
- 2012 Releases
- Stack Overflow
- Hacker News

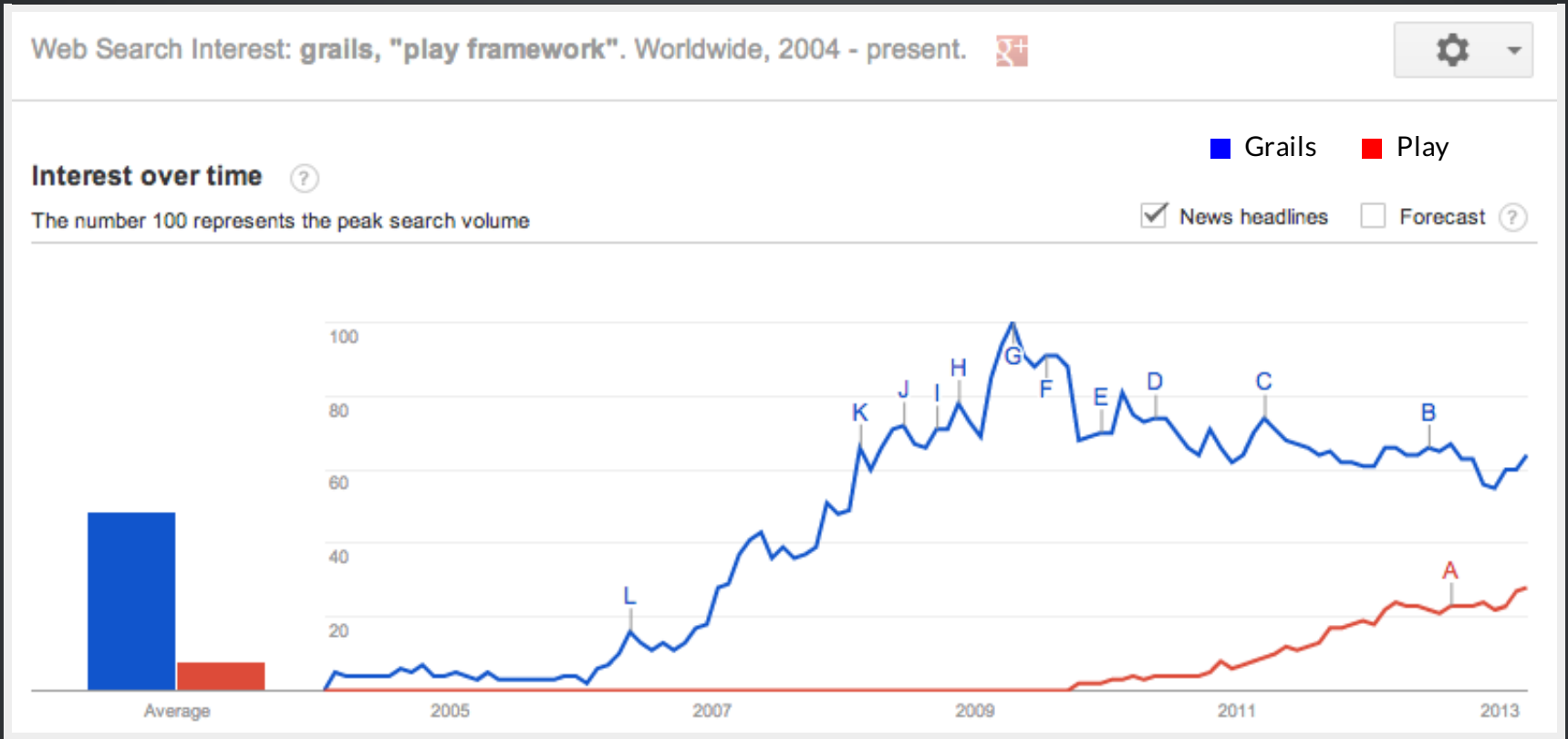
JOBS


March 19, 2013
Dice
Monster
Indeed
0
400
800
1,200
1,600
Grails
Play Framework
Spring MVC

LINKEDIN SKILLS



GOOGLE TRENDS



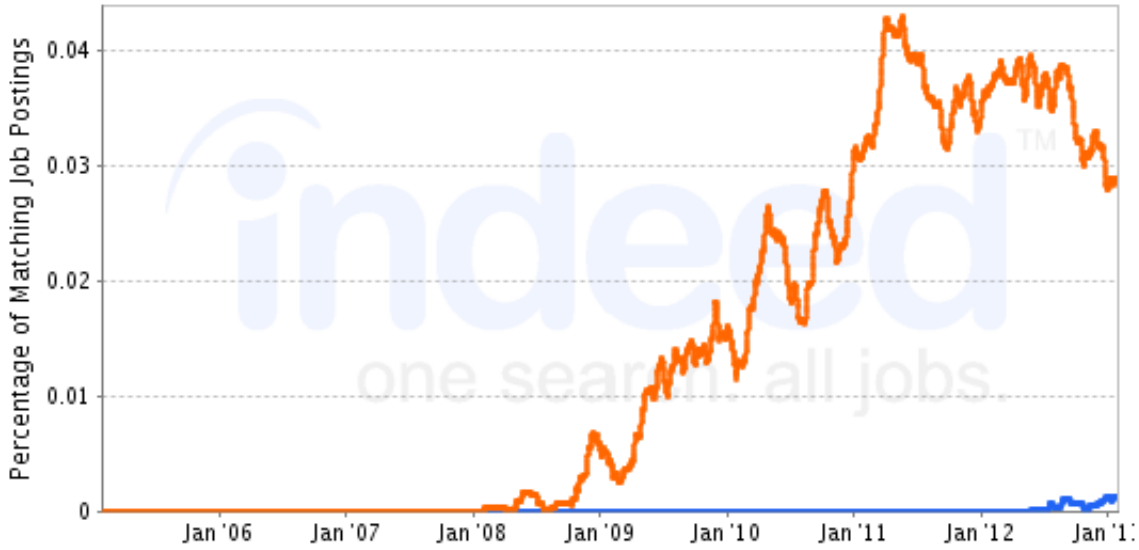
INDEED JOB TRENDS

Grails, "Play Framework" Job Trends

Scale: **Absolute** - Relative

Job Trends from Indeed.com

Grails "Play Framework"



Indeed.com searches millions of jobs from thousands of job sites.
This job trends graph shows the percentage of jobs we find that contain your search terms.

Find Grails jobs, "play Framework" jobs

Feel free to share this graph

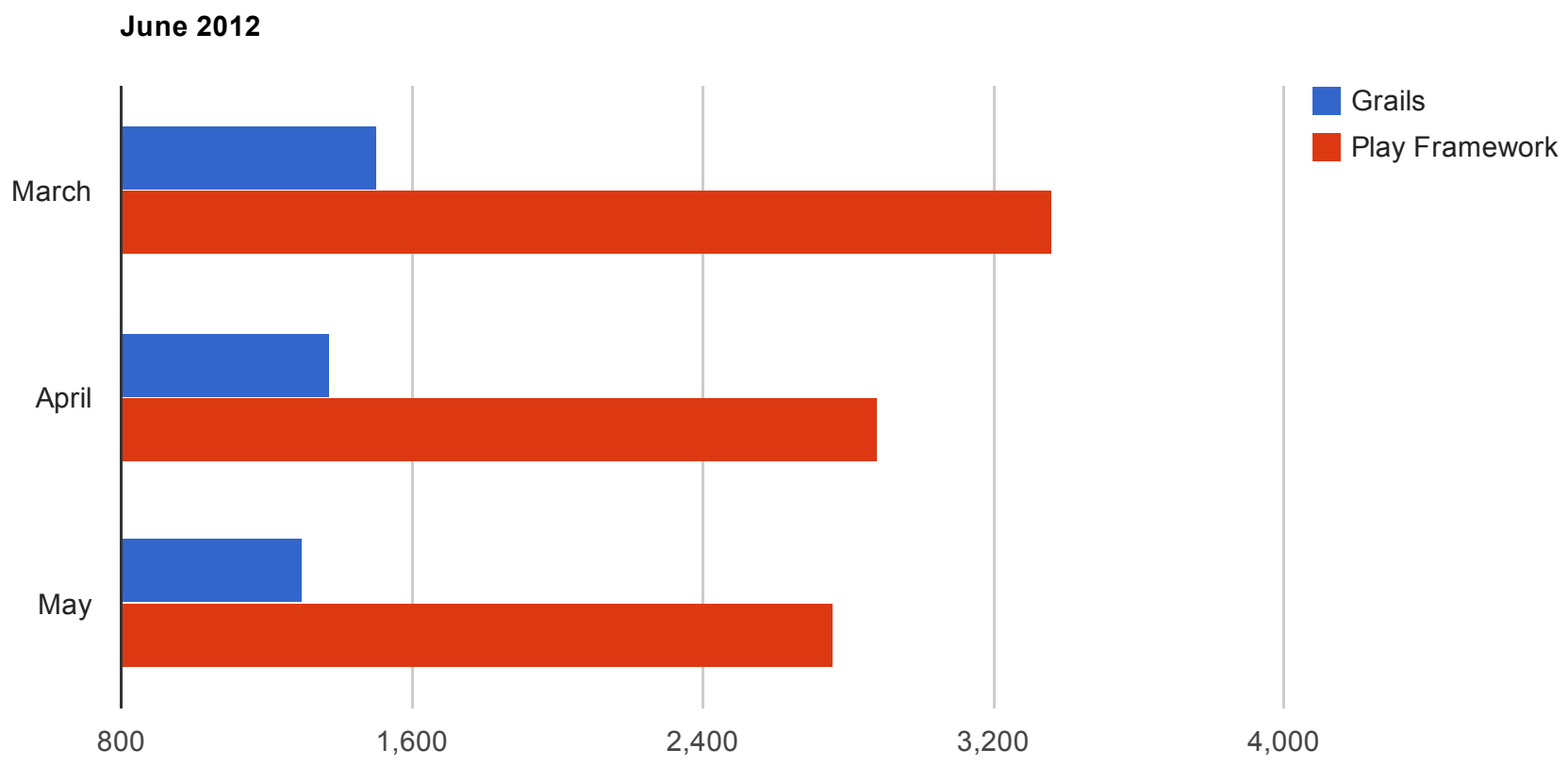
Email to a friend

Post on your blog/website

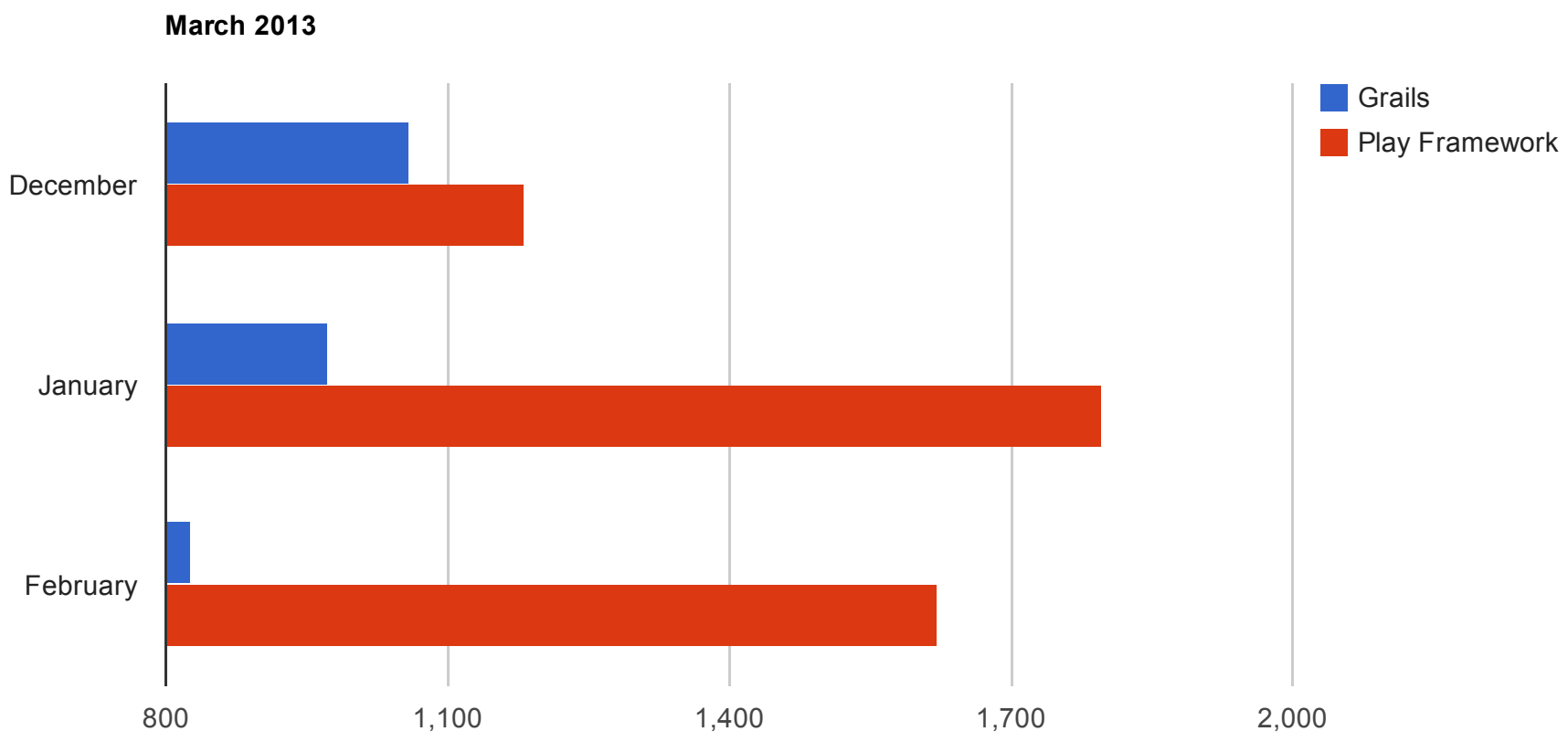
Top Job Trends

1. HTML5
2. MongoDB
3. iOS
4. Android
5. Mobile app
6. Puppet
7. Hadoop
8. jQuery
9. PaaS
10. Social Media

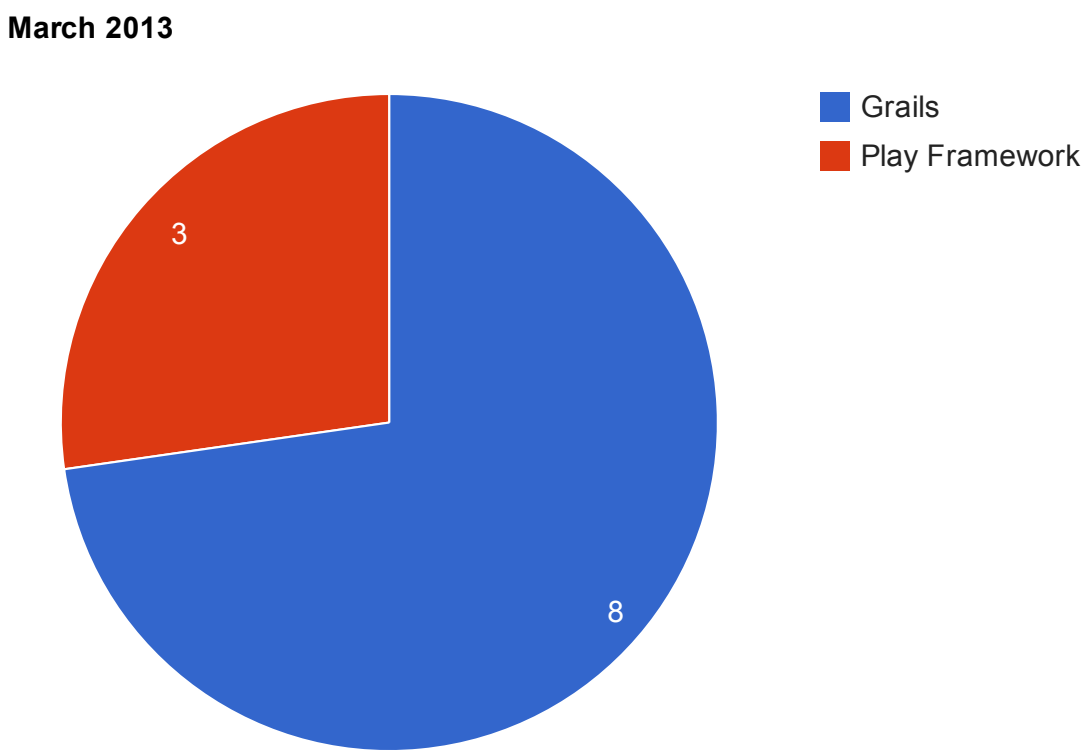
USER MAILING LIST TRAFFIC



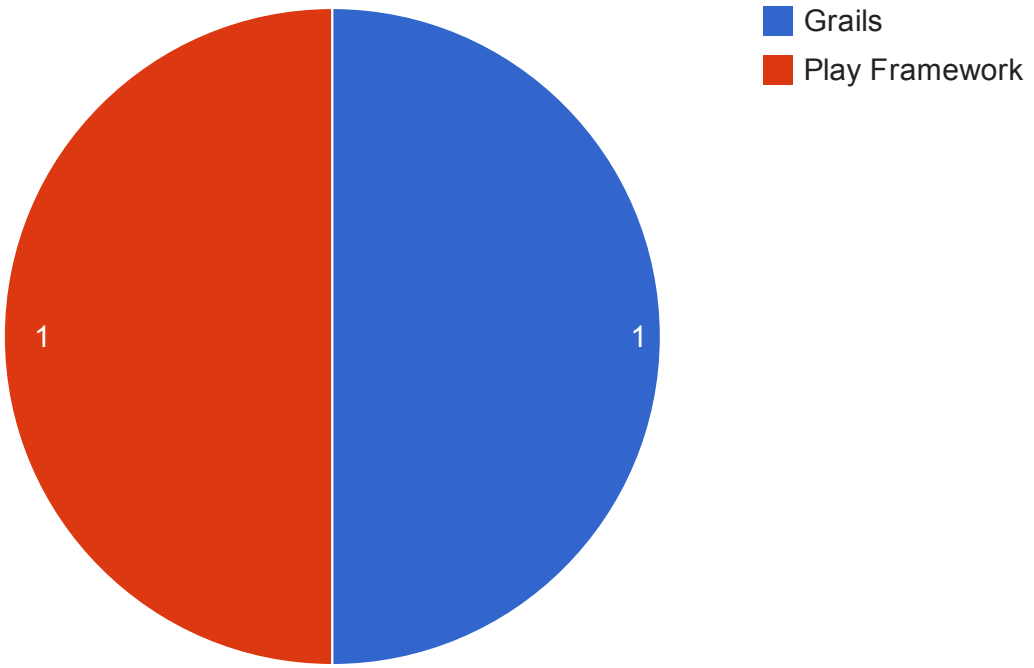
USER MAILING LIST TRAFFIC



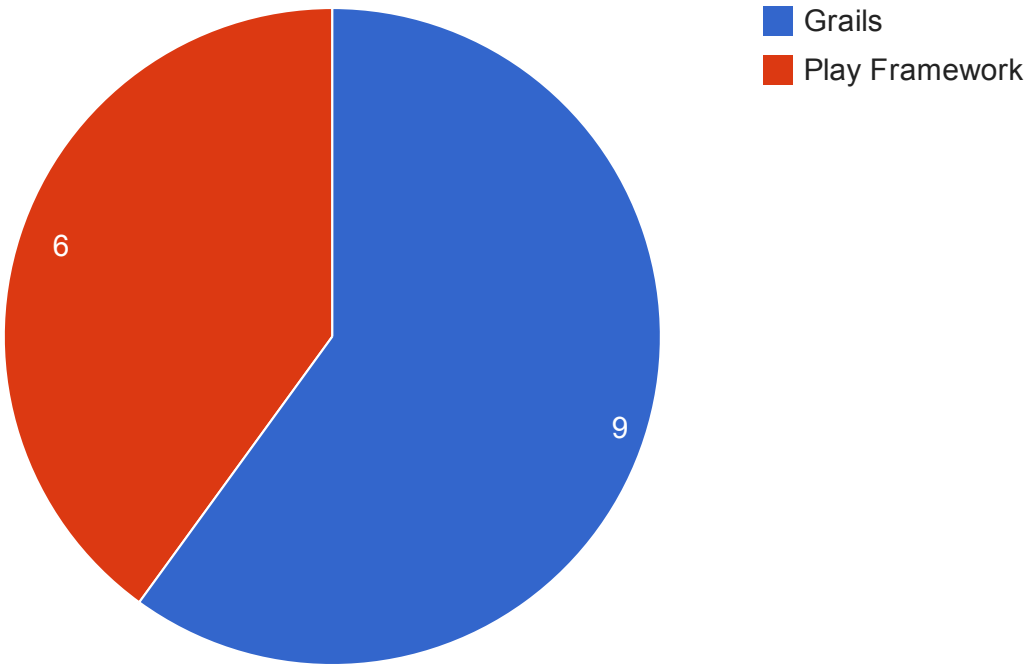
BOOKS ON AMAZON



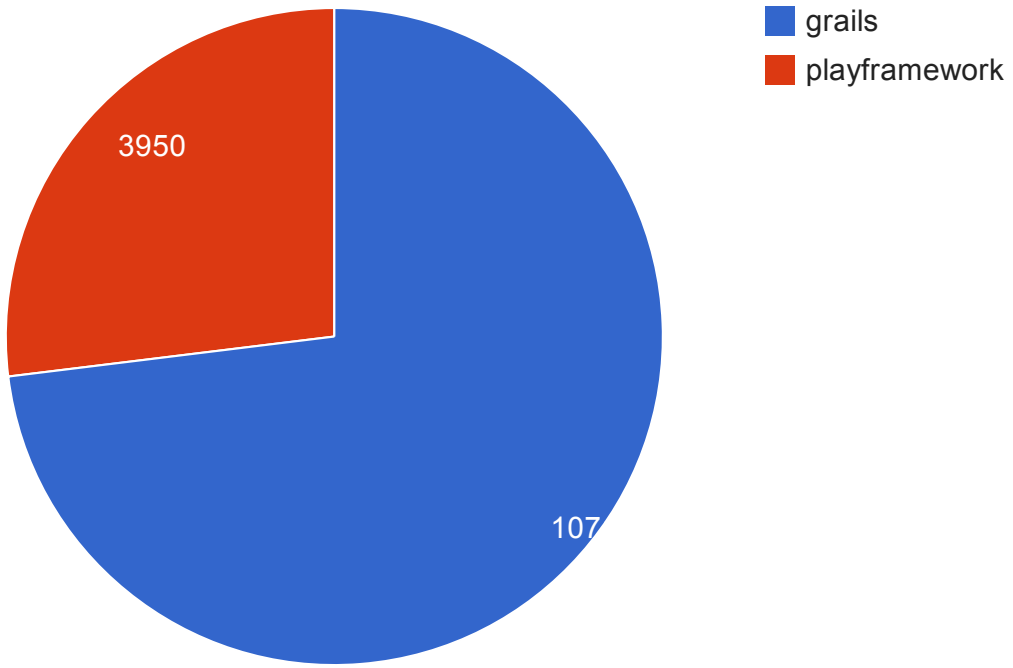
2013 RELEASES



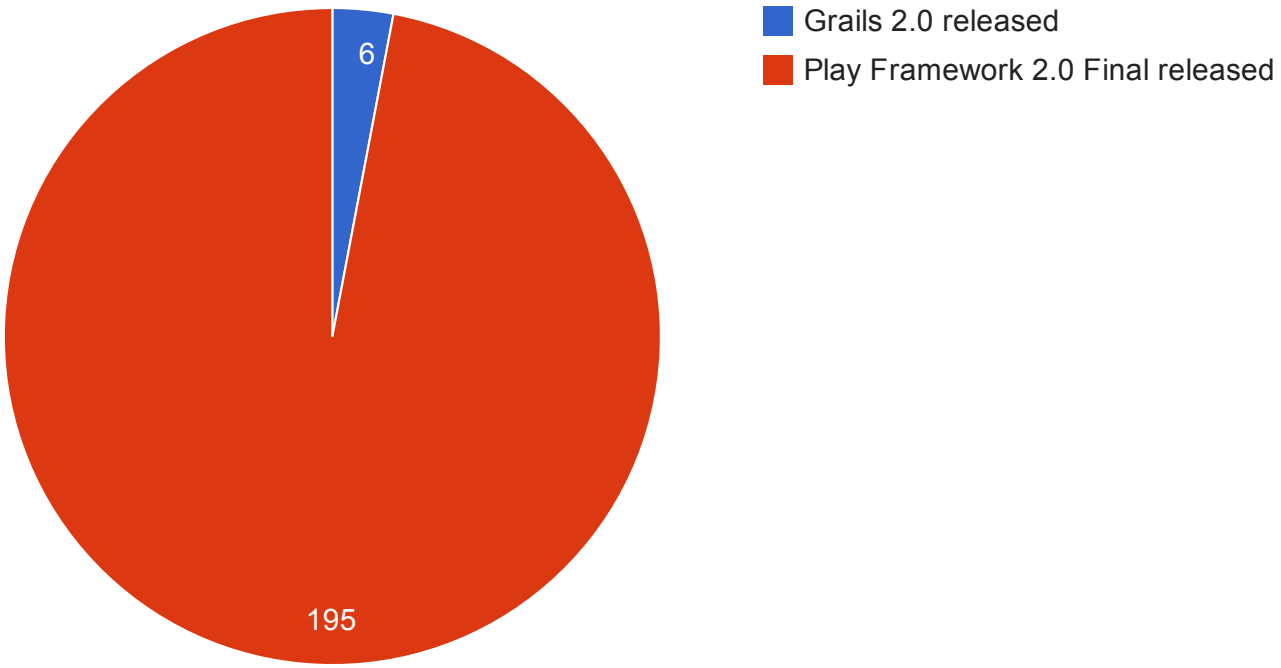
2012 RELEASES



STACKOVERFLOW QUESTIONS



HACKER NEWS



CONCLUSIONS: CODE

- From a code perspective, very similar frameworks.
- Code authoring good in both.
- Grails Plugin Ecosystem is excellent.
- TDD-Style Development easy with both.
- Type-safety in Play 2 was really useful, especially routes and upgrades.

CONCLUSIONS: STATISTICAL ANALYSIS

- Grails has better support for FEO (YSlow, PageSpeed)
- Grails has less LOC! (4 more files, but 20% less code)
- Apache Bench with 10K requests (2 Dynos):
  - Requests per second: {Play: 2227, Grails: 1053}
- Caching significantly helps!

CONCLUSIONS: ECOSYSTEM ANALYSIS

- "Play" is difficult to search for.
- Grails is more mature.
- Play has momentum issues.
- LinkedIn: more people know Grails than Spring MVC.
- Play has 3x user mailing list traffic.
- We had similar experiences with documentation and questions.
- Outdated documentation is a problem for both.
- Play has *way* more hype!

QUESTIONS?

- **http://ubertracks.com**
- Source:
  - **https://github.com/jamesward/happytrails**
  - Branches: grails2, play2_java
  - Presentation*: master/preso
- Contact Us:
  - **jamesward.com**
  - **raibledesigns.com**

* Presentation created with **Reveal.js**, **Google Charts** and **GitHub Files**.

ACTION!

Learn something new!*

* Or prove that we're wrong...