ApacheCon Europe
Sinsheim, Germany 5th-8th November 2012

RAVE™

Integrating Social Apps with Content Driven Sites using Apache Rave and Spring HMVC

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committer and PMC member for Apache Rave

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open source WCM vendor Hippo

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rave.apache.org

Agenda

- Slightly different scope of this presentation
- Brief introduction to Apache Rave
- Rave features, components and roadmap
- Rave Spring HMVC extension
- Rave JCR back-end and content services
- Demo
- Status and architectural choices

Scope of this presentation

Providing content driven sites with Apache Rave …

- takes more time and work than anticipated
- requires more dynamics than out-of-the-box Spring MVC (as used by Rave) is capable of
- is implemented through a custom Rave extension called Spring Hierarchical MVC (HMVC)
- but for now still is only available as the Rave sandbox module
- will need thorough community evaluation before adoption

Scope of this presentation

Thus:

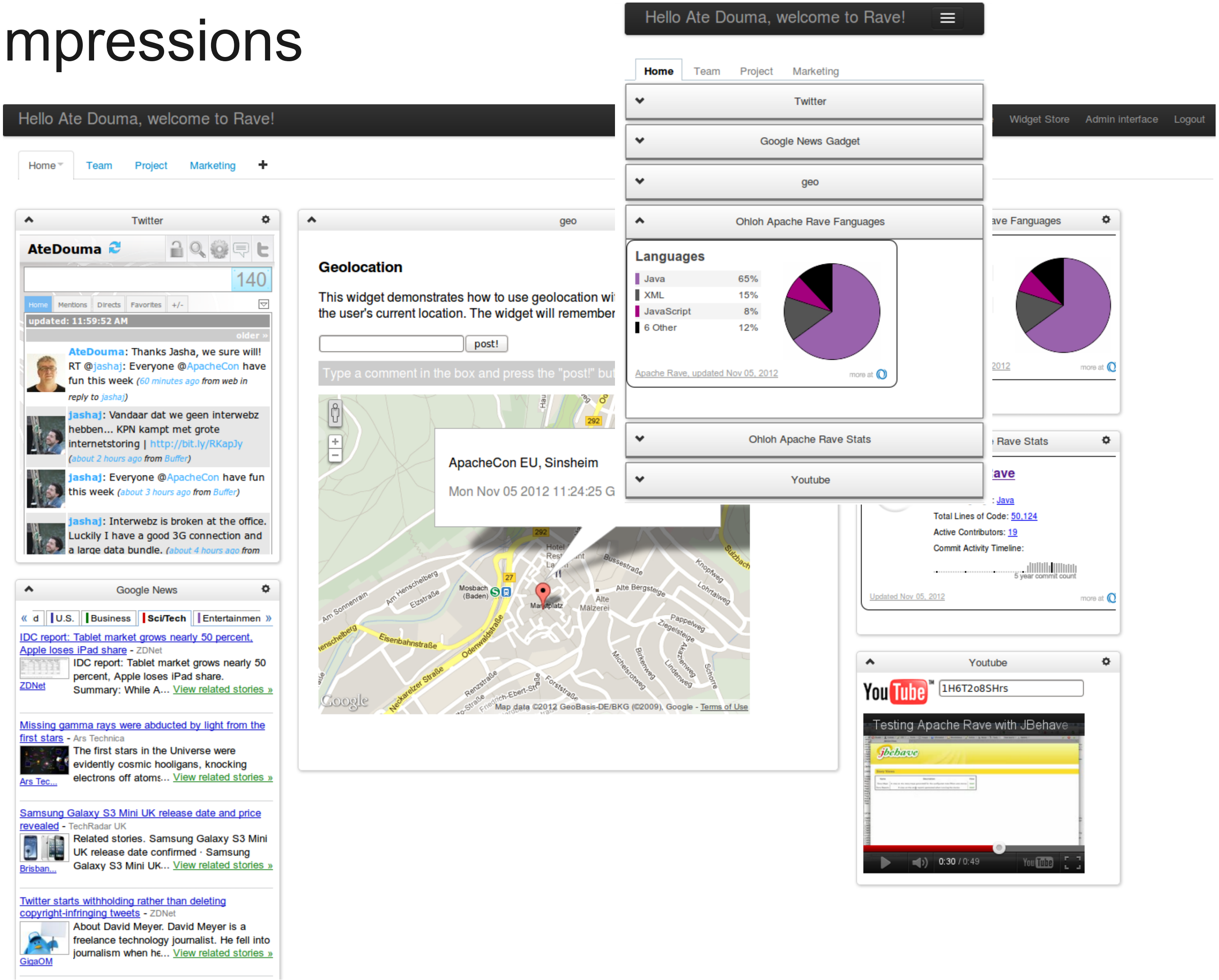
- I cannot (yet) show truly content driven sites with Rave
- but I will demo a dynamic HMVC based page layout and rendering
- and highlight some architectural choices to be made for further usage and/or integration in Rave

Brief introduction to Apache Rave

- Started March 2011 in the Apache Incubator
- Graduated as Top Level Project March 2012
- A lightweight web and social mashup engine
- A highly customizable Java platform for widgets, gadgets and personalized content
- Targets websites and mobile devices for (social) services, intranet and extranet solutions

Brief introduction to Apache Rave

Quick impressions



Hello Ate Douma, welcome to Rave!

Home Team Project Marketing

Twitter

Google News Gadget

geo

Ohloh Apache Rave Fanguages

Languages

Java	65%
XML	15%
JavaScript	8%
6 Other	12%

Apache Rave, updated Nov 05, 2012 more at

Ohloh Apache Rave Stats

Youtube

Hello Ate Douma, welcome to Rave!

Widget Store Admin interface Logout

Home Team Project Marketing +

Twitter

AteDouma

140

Home Mentions Directs Favorites +/-

updated: 11:59:52 AM

older »

AteDouma: Thanks Jasha, we sure will! RT @jashaj: Everyone @ApacheCon have fun this week (60 minutes ago from web in reply to jashaj)

jashaj: Vandaar dat we geen interwebz hebben... KPN kampt met grote internetstoring | http://bit.ly/RKapJy (about 2 hours ago from Buffer)

jashaj: Everyone @ApacheCon have fun this week (about 3 hours ago from Buffer)

jashaj: Interwebz is broken at the office. Luckily I have a good 3G connection and a large data bundle. (about 4 hours ago from

Google News

« d U.S. Business Sci/Tech Entertainmen »

IDC report: Tablet market grows nearly 50 percent, Apple loses iPad share - ZDNet
ZDNet
IDC report: Tablet market grows nearly 50 percent, Apple loses iPad share. Summary: While A... View related stories »

Missing gamma rays were abducted by light from the first stars - Ars Technica
Ars Tec...
The first stars in the Universe were evidently cosmic hooligans, knocking electrons off atoms... View related stories »

Samsung Galaxy S3 Mini UK release date and price revealed - TechRadar UK
Brisban...
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Twitter starts withholding rather than deleting copyright-infringing tweets - ZDNet
GigaOM
About David Meyer. David Meyer is a freelance technology journalist. He fell into journalism when he... View related stories »

geo

Geolocation

This widget demonstrates how to use geolocation wi
the user's current location. The widget will remember

post!

Type a comment in the box and press the "post!" but

ApacheCon EU, Sinsheim

Mon Nov 05 2012 11:24:25 G

Map data ©2012 GeoBasis-DE/BKG (©2009), Google - Terms of Use

ave Fanguages

2012 more at

Rave Stats

ave

: Java

Total Lines of Code: 50,124

Active Contributors: 19

Commit Activity Timeline:

5 year commit count

Updated Nov 05, 2012 more at

Youtube

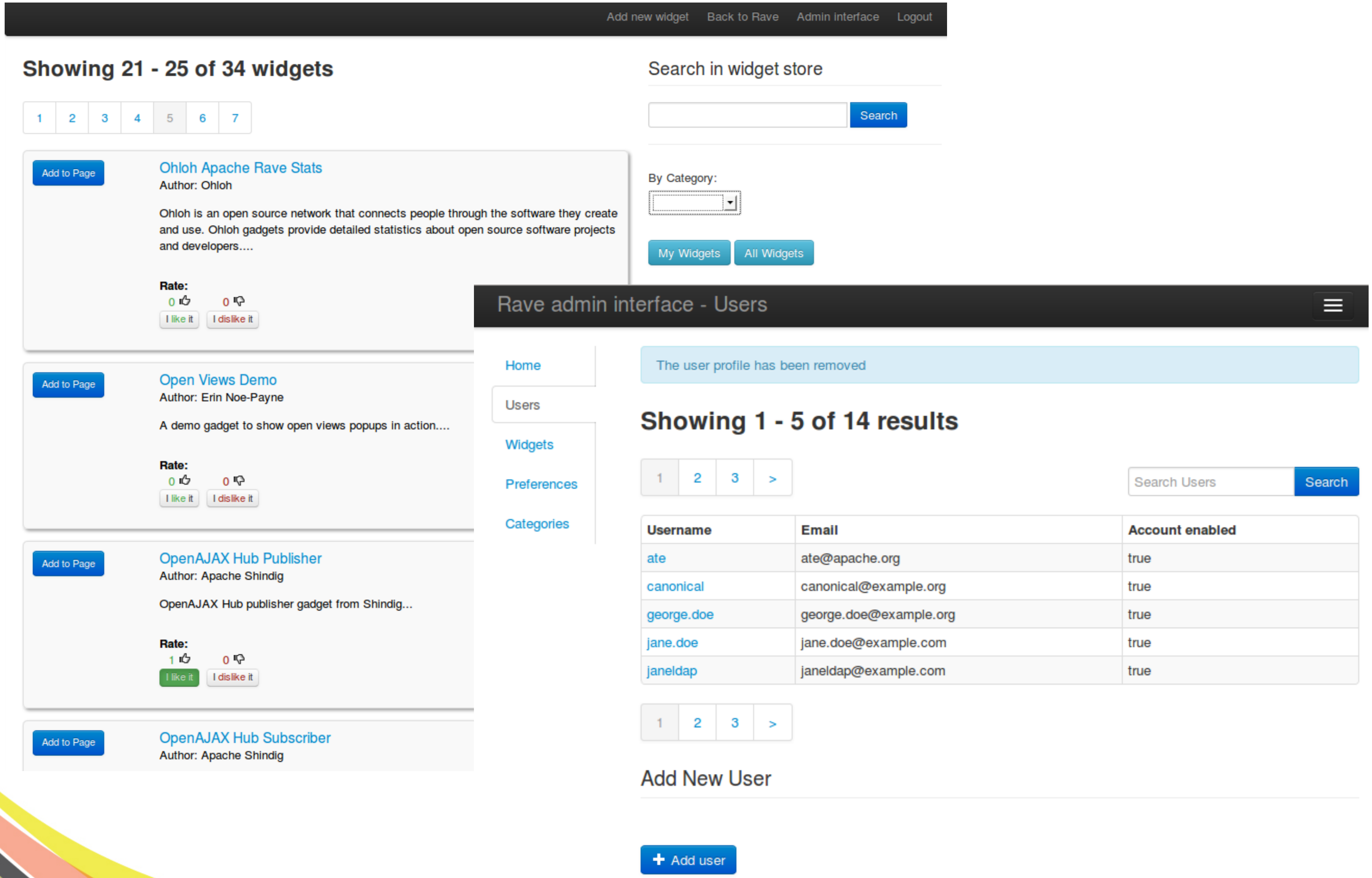
1H6T2o8SHrs

Testing Apache Rave with JBehave

0:30 / 0:49

Brief introduction to Apache Rave

Quick impressions



Showing 21 - 25 of 34 widgets

Search in widget store

By Category:

Ohloh Apache Rave Stats
Author: Ohloh

Ohloh is an open source network that connects people through the software they create and use. Ohloh gadgets provide detailed statistics about open source software projects and developers....

Rate:
0 👍 0 👎

Open Views Demo
Author: Erin Noe-Payne

A demo gadget to show open views popups in action....

Rate:
0 👍 0 👎

OpenAJAX Hub Publisher
Author: Apache Shindig

OpenAJAX Hub publisher gadget from Shindig...

Rate:
1 👍 0 👎

OpenAJAX Hub Subscriber
Author: Apache Shindig

Rave admin interface - Users

The user profile has been removed

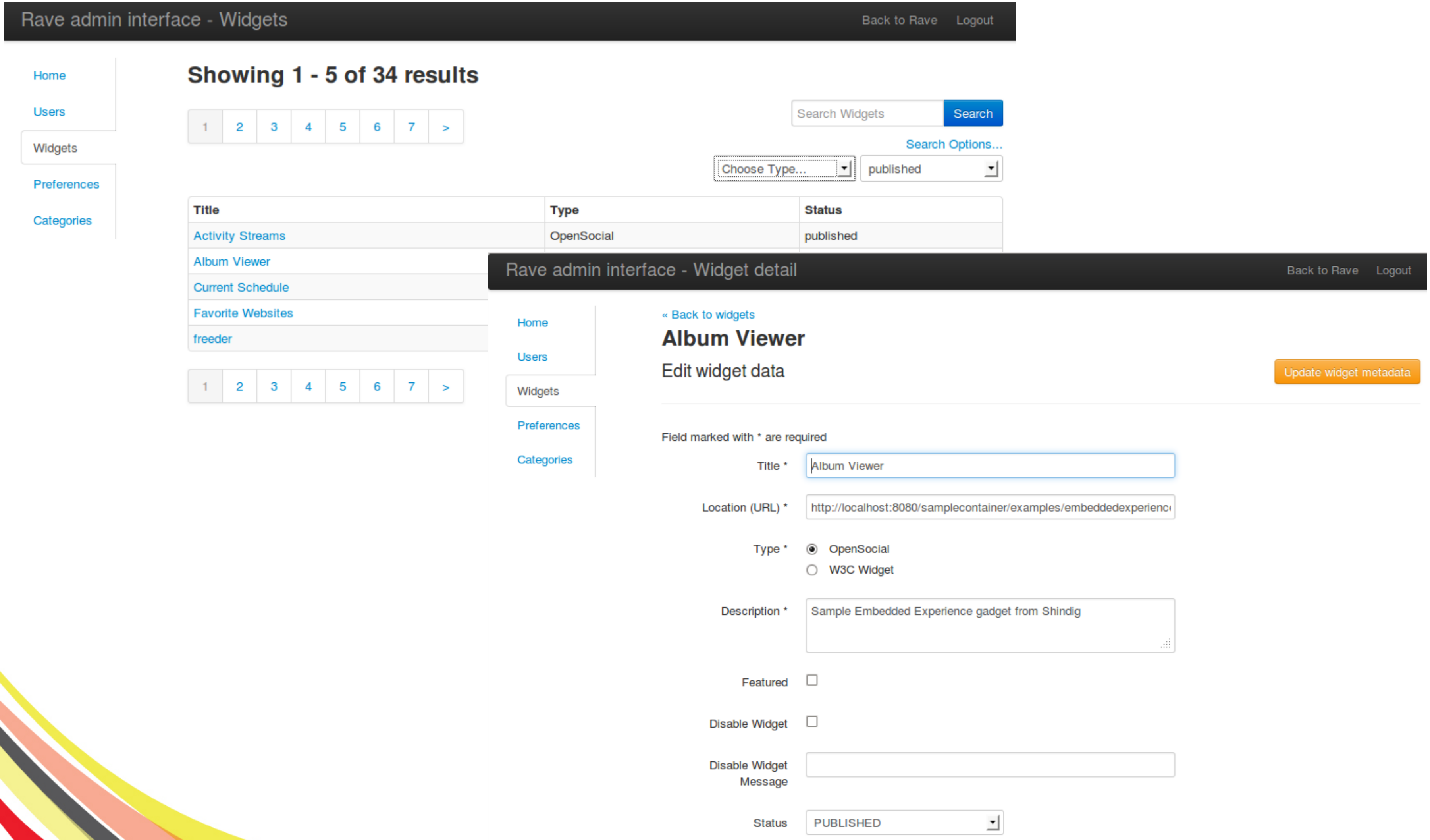
Showing 1 - 5 of 14 results

Username	Email	Account enabled
ate	ate@apache.org	true
canonical	canonical@example.org	true
george.doe	george.doe@example.org	true
jane.doe	jane.doe@example.com	true
janeldap	janeldap@example.com	true

Add New User

Brief introduction to Apache Rave

Quick impressions



Rave admin interface - Widgets

Showing 1 - 5 of 34 results

Title	Type	Status
Activity Streams	OpenSocial	published
Album Viewer		
Current Schedule		
Favorite Websites		
freeder		

Rave admin interface - Widget detail

Album Viewer

Edit widget data

Field marked with * are required

Title * Album Viewer

Location (URL) * http://localhost:8080/samplecontainer/examples/embeddedexperienc

Type * ● OpenSocial ○ W3C Widget

Description * Sample Embedded Experience gadget from Shindig

Featured □

Disable Widget □

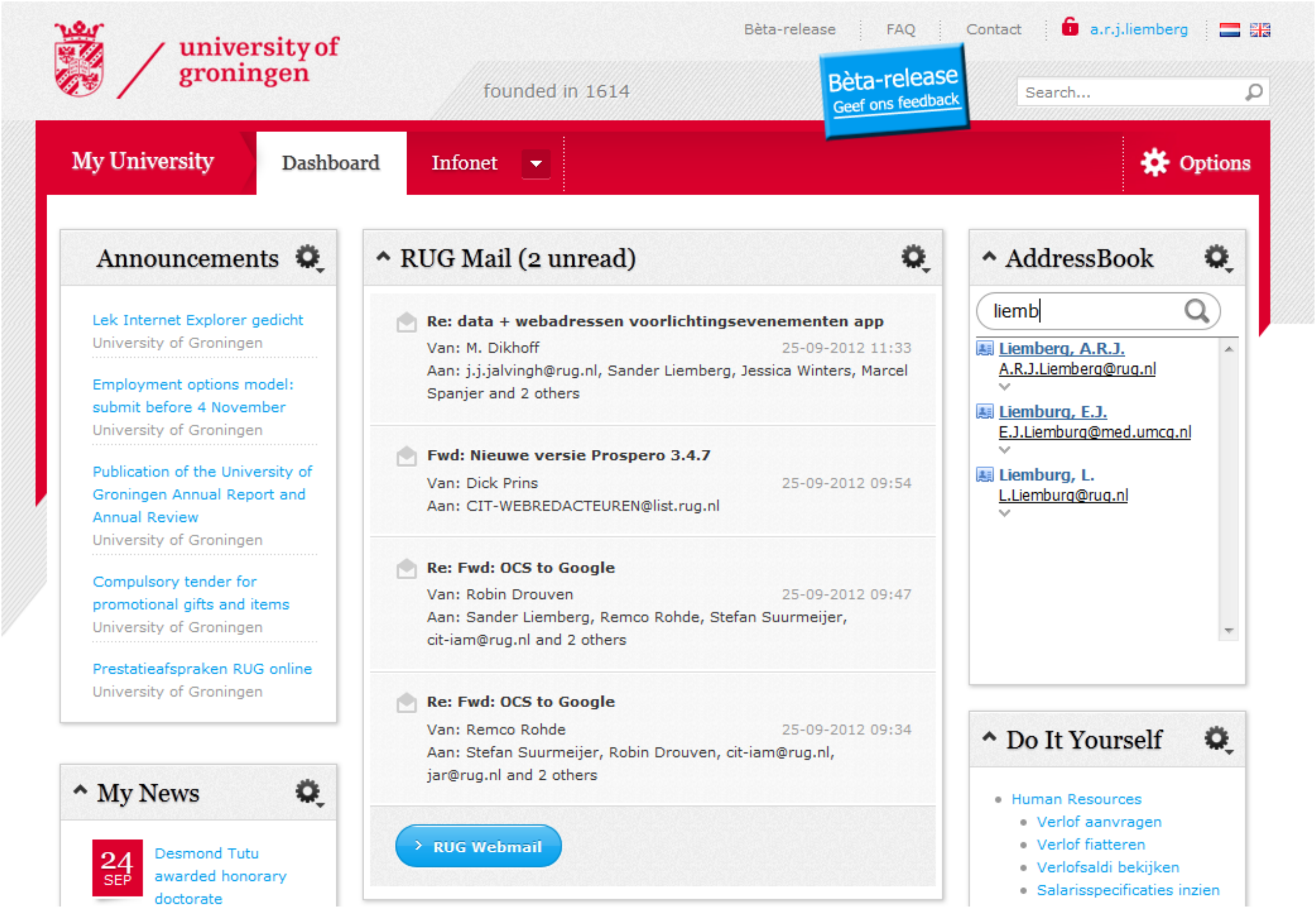
Disable Widget Message

Status PUBLISHED

Brief introduction to Apache Rave

Example: In production at University of Groningen (NL)

My University portal, 45K users (student + staff)



Announcements

Lek Internet Explorer gedicht
University of Groningen

Employment options model: submit before 4 November
University of Groningen

Publication of the University of Groningen Annual Report and Annual Review
University of Groningen

Compulsory tender for promotional gifts and items
University of Groningen

Prestatieafspraken RUG online
University of Groningen

My News

24 SEP Desmond Tutu awarded honorary doctorate

RUG Mail (2 unread)

Re: data + webadressen voorlichtingsevenementen app
Van: M. Dikhoff 25-09-2012 11:33
Aan: j.j.jalvingh@rug.nl, Sander Liemberg, Jessica Winters, Marcel Spanjer and 2 others

Fwd: Nieuwe versie Prospero 3.4.7
Van: Dick Prins 25-09-2012 09:54
Aan: CIT-WEBREDACTEUREN@list.rug.nl

Re: Fwd: OCS to Google
Van: Robin Drouven 25-09-2012 09:47
Aan: Sander Liemberg, Remco Rohde, Stefan Suurmeijer, cit-iam@rug.nl and 2 others

Re: Fwd: OCS to Google
Van: Remco Rohde 25-09-2012 09:34
Aan: Stefan Suurmeijer, Robin Drouven, cit-iam@rug.nl, jar@rug.nl and 2 others

AddressBook

liemb

Liemberg, A.R.J.
A.R.J.Liemberg@rug.nl

Liemburg, E.J.
E.J.Liemburg@med.umcg.nl

Liemburg, L.
L.Liemburg@rug.nl

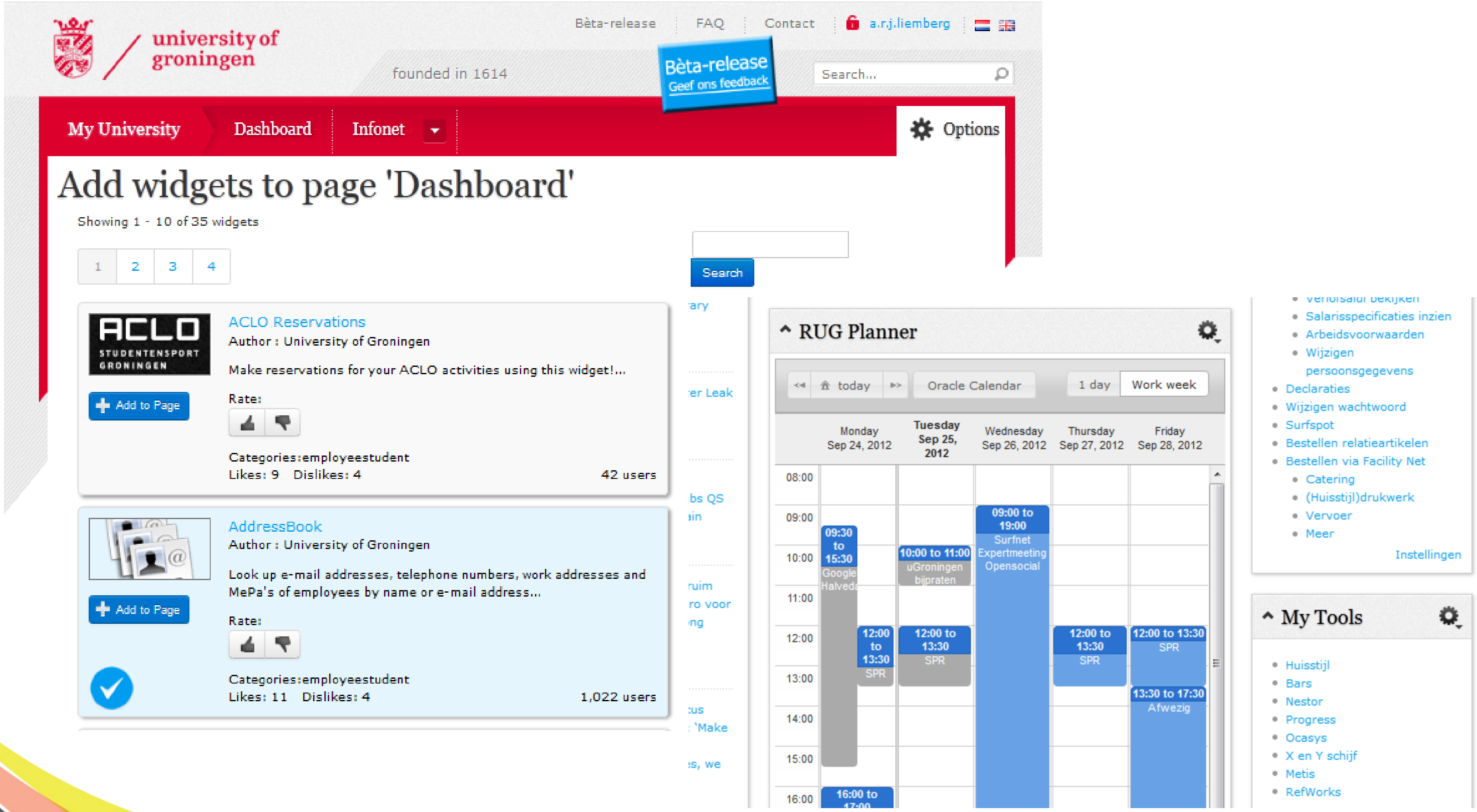
Do It Yourself

- Human Resources
  - Verlof aanvragen
  - Verlof fiatteren
  - Verlofsaldi bekijken
  - Salarisspecificaties inzien

Brief introduction to Apache Rave

Example: In production at University of Groningen (NL)

My University portal, 45K users (student + staff)



Add widgets to page 'Dashboard'

Showing 1 - 10 of 35 widgets

ACLO Reservations
Author : University of Groningen
Make reservations for your ACLO activities using this widget!...
Rate:
Categories:employeestudent
Likes: 9 Dislikes: 4 42 users

AddressBook
Author : University of Groningen
Look up e-mail addresses, telephone numbers, work addresses and MePa's of employees by name or e-mail address...
Rate:
Categories:employeestudent
Likes: 11 Dislikes: 4 1,022 users

RUG Planner

Monday Sep 24, 2012 | Tuesday Sep 25, 2012 | Wednesday Sep 26, 2012 | Thursday Sep 27, 2012 | Friday Sep 28, 2012

08:00
09:00
10:00
11:00
12:00
13:00
14:00
15:00
16:00

09:30 to 15:30 Google Halveda
16:00 to 17:00
10:00 to 11:00 uGroningen bijpraten
12:00 to 13:30 SPR
09:00 to 19:00 Surfnet Expertmeeting Opensocial
12:00 to 13:30 SPR
12:00 to 13:30 SPR
12:00 to 13:30 SPR
13:30 to 17:30 Afwezig

- Verlofsaldi bekijken
- Salarisspecificaties inzien
- Arbeidsvoorwaarden
- Wijzigen persoonsgegevens
- Declaraties
- Wijzigen wachtwoord
- Surfspot
- Bestellen relatieartikelen
- Bestellen via Facility Net
  - Catering
  - (Huisstijl)drukwerk
  - Vervoer
  - Meer

Instellingen

My Tools

- Huisstijl
- Bars
- Nestor
- Progress
- Ocasys
- X en Y schijf
- Metis
- RefWorks

Rave features, components and roadmap

Features

- Skinnable, Twitter Bootstrap UI
- Mobile and desktop view
- User profile page, friends connections
- Page management, personalization, page sharing
- Widget store, widget rating, commenting
- Admin interface for security, widgets, preferences

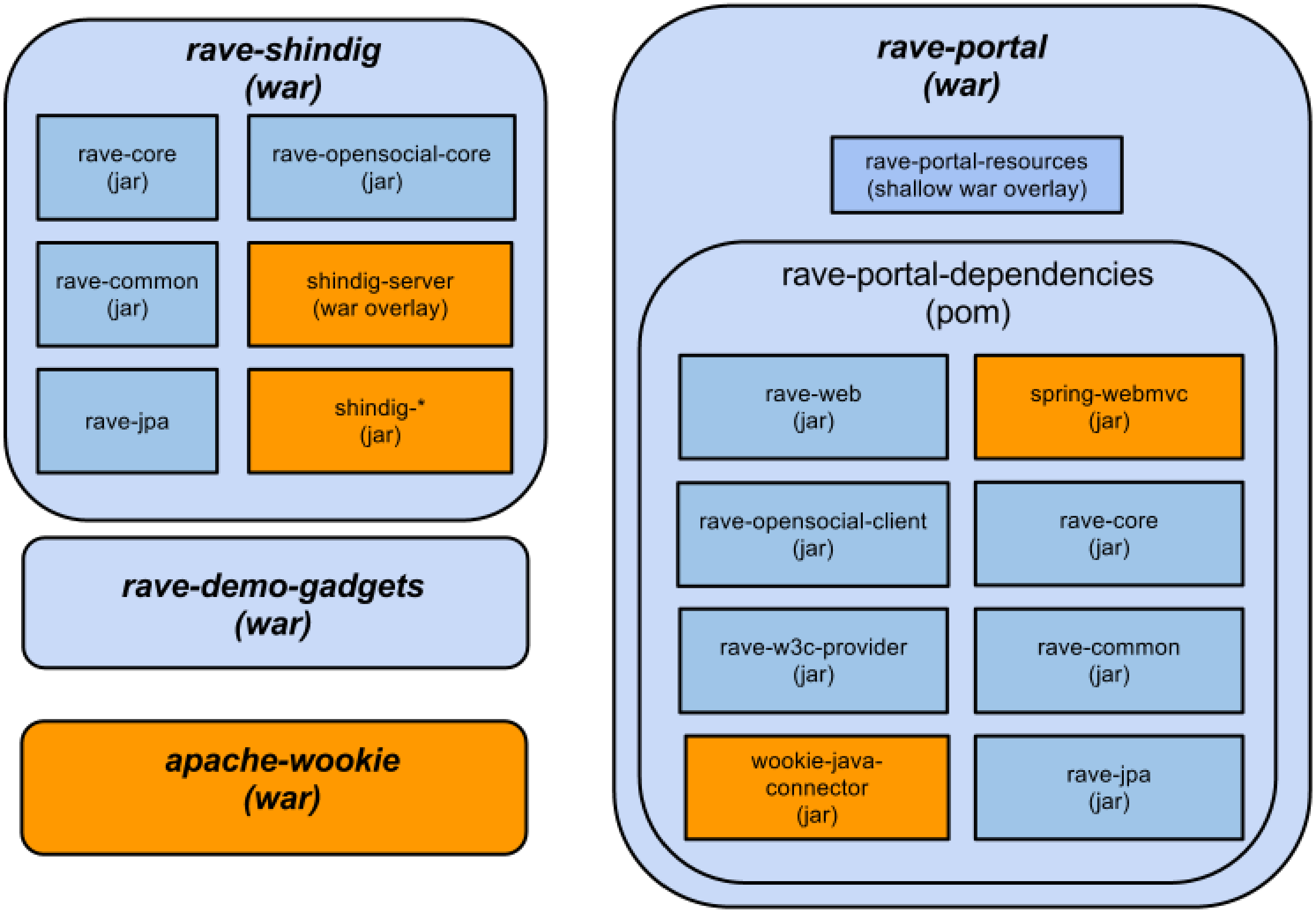
Rave features, components and roadmap

Features

- Spring Security, JPA, LDAP, OpenID, SAML2, OAuth
- Pluggable persistence model, Apache OpenJPA
- Generalized Rave Widget model, OpenSocial, W3C, …
- Basic inter-widget communication, OpenAJAX Hub
- Spring MVC, Spring MVC, Apache Tiles, REST APIs
- Apache Shindig (OpenSocial), Apache Wookie (W3C Widgets)

Rave features, components and roadmap

Rave components and deployment model



Rave features, components and roadmap

Roadmap and desired features

- Multiple persistence back-ends, MongoDB*, JCR**
- Improved user page model, spaces, security
- More and extended social capabilities
- Enhanced inter-widget communication
- More enhanced front-end customizations
- Dynamic site, page layouts and templates**
- Freemarker templates support**
- Dynamic web content, resources, images, etc.**

* *Rave mongo branch, go see the*
"Mongo, its all the Rave" presentation later today, by Matt Franklin

** *Rave content-services sandbox, topic of this presentation* ☺

Rave Spring HMVC extension

Current front-end render model ('plain' Spring MVC):

- @RequestMapping annotated controller methods
  note: since Spring 3.1+ the primary supported usage
- ties the URL mapping ***at compile time*** to the method
- the mapped method is responsible for the full data model needed for every render element on the page,
  it needs to be aware of the full page requirements
- Uses Apache Tiles templating to ***map and wrap*** the controller method View to a full page layout

Rave Spring HMVC extension

Limitations of standard Spring MVC:

- Controllers cannot be runtime mapped to other URL routes: no runtime route (re)mapping support
- Front-end linking to (other) controllers is 'hard-wired'
- Controllers needs to be 'all knowing' of the page requirements: modifying page structures and layouts may impact changes to many/all controllers
- DRY (Don't Repeat Yourself) is difficult: many controllers duplicate logic (like for menu handling)
- Tiles templates difficult to manage and 'tweak' when you need changes on specific pages only

Rave Spring HMVC extension

Hierarchical MVC:

- HMVC is a known* pattern you'll find applied by most portal engines and many CMS driven websites
- Frameworks like alloy and kohana (PHP) are based on it, also our Hippo CMS site framework
- It allows building and rendering a page through a set of loosely coupled controllers, instead of only one
- Child controllers only are responsible for their own fragment functionality and may be reused across pages, or even multiple times within the same page
- Pages themselves become reusable building blocks

* *http://techportal.inviqa.com/2010/02/22/scaling-web-applications-with-hmvc/*

Rave Spring HMVC extension

The Rave Spring HMVC extension features:

- external 'route' mapping to wire pages or services
- external hierarchical page structure mapping *named* fragments to controllers
- page fragment inheritance and merge, custom properties and render/template “viewName” configuration
- mapping definitions in XML or JCR/JSON, auto-reload on changes
- wire HandlerInterceptor(s) to specific routes and/or fragments
- a @Routed controller annotation to distinguish from @Controller
- standard @RequestMapping or extra @Named annotation to map controller methods in a route->page->fragment URL context
  - reverse route and name (path) or id based url-mapping support

Rave Spring HMVC extension

Example routes and page fragment definitions:

```
<route path="/"                      component="/userPage"      referenceId="homeRoute"/>
<route path="/page/view/{pageId}"    component="/userPage"      referenceId="pageRoute"/>
<route path="/person/{username:.*}"  component="/userProfile"   referenceId="userProfileRoute"/>
<route path="/person/id/{userid:.*}" component="/userProfile"/>


<pageFragment name="userProfile"    interceptors="userProfile" extends="extended">
  <property name="topnav.userProfile">true</property>
  <pageFragment name="body"      viewName="pages/userprofile/page-body">
    <pageFragment name="form"    viewName="pages/userprofile/page-form"
        controller="org.apache.rave.portal.web.mvc.controller.UserProfileFormController"/>
    <pageFragment name="tabs"    viewName="layouts/person_profile"/>
    <pageFragment name="content" viewName="pages/userprofile/page-content"/>
  </pageFragment>
</pageFragment>

<pageFragment name="extended" viewName="pages/userpage/page" extends="standard">
  <pageFragment name="header" viewName="pages/userpage/page-header"/>
</pageFragment>

<pageFragment name="standard" viewName="pages/userpage/page">
  <pageFragment name="header" viewName="pages/header"/>
  <pageFragment name="footer" viewName="pages/footer"/>
</pageFragment>
```

Rave JCR back-end and content services

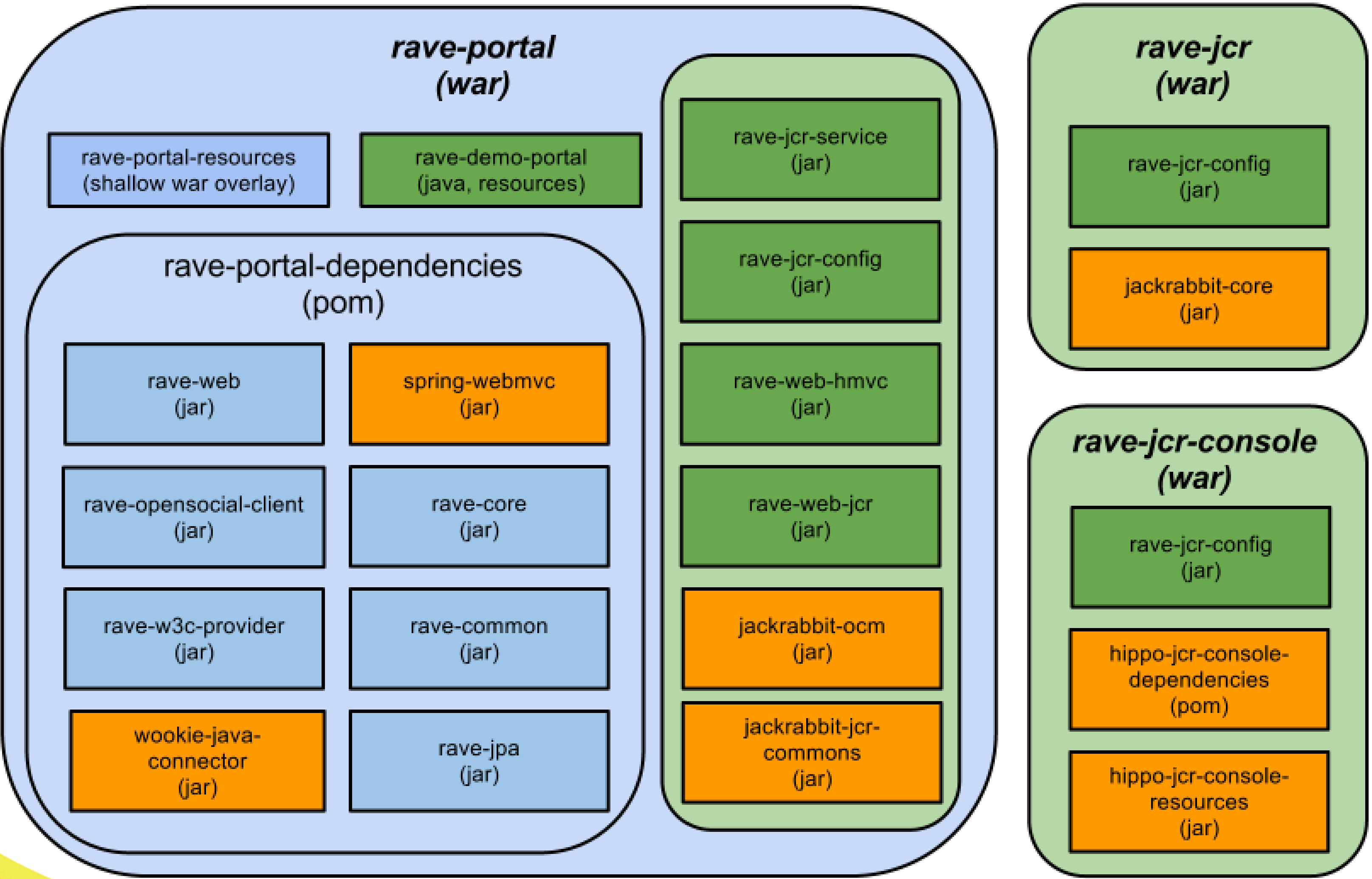
Features:

- extends Rave to dynamically manage and retrieve content, markup, resources, images, etc.
- custom and extendable content domain models mapped to a hierarchical Java Content Repository (JCR), Apache Jackrabbit
- leverages jackrabbit-ocm POJO bean persistence manager
- provides JCR back-end for Rave Spring HMVC configurations
- content bootstrapping and import/export in JSON format
- JSP/Freemarker tags
- optional JCR Web Console for development and administration*

** using and extending the open source (Apache License) Hippo JCR Console*

Rave JCR back-end and content services

Rave content services components and deployment model



Demo

Status and architectural choices

Rave Spring HMVC status:

- it already works, but more extensive use-cases most likely will bring up more challenges
- can be used concurrently with 'standard' Spring MVC, allows for gradual migration, but how practical is that?
- current implementation was discussed with and reviewed by Rossen Stoyanchev, Springsource architect for SpringMVC, and he is interested in this solution, but ...
- using and implementing a HMVC based *solution* is different from what Spring developers are accustomed to, even if on API level there is hardly any difference
- it depends on current Spring MVC behavior, alignment with newer Spring versions is not ensured
  - is or should using Spring MVC be the (only) solution?

Status and architectural choices

Rave JCR back-end and content services status:

- (very) basic level of functionality now is available and working
- bringing this to production quality level, and scalable, will require much more effort
- will also need more advanced features build on top (content workflow, versioning, type editing, security, etc.)
- not everyone will need (or want) this, should it remain optional?
- there are other JCR based solutions available who already have these advanced features, albeit not readily usable within the ASF
- should Rave invest in and depend on this heavily, or maybe leave it to the community to integrate on this level themselves?

Thank you for your attention

Apache Rave

- http://rave.apache.org
- http://rave.apache.org/mailing-lists.html
- http://rave.apache.org/source.html
- http://rave.apache.org/downloads.html