The Tutorial

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Zotonic's goals

- Maximise the use of hardware
- Frontender friendly
- Hit the ground running

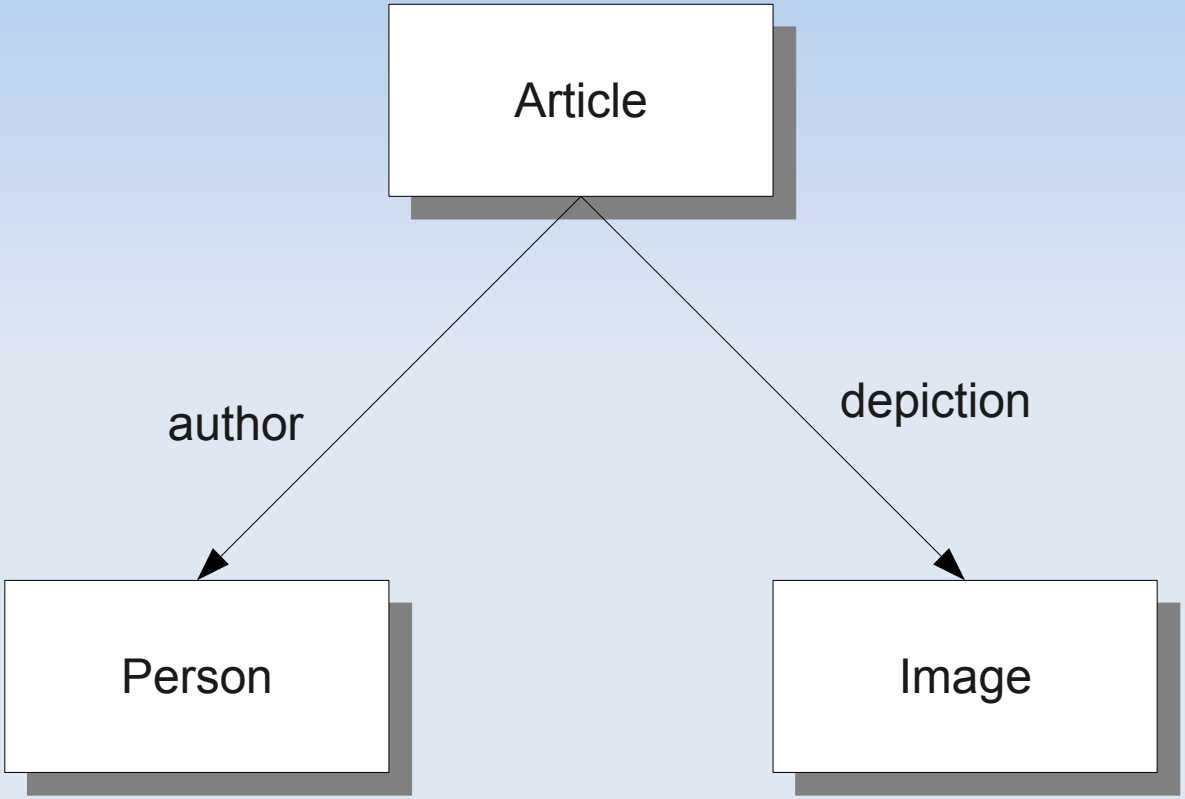
So, what's in the box?

- Multiple sites
- Admin interface
- User management
- Page management
- Menu editor
- Commenting
- Image management
- Video embedding
- Integrated e-mail sending + receiving (!)
- API OAuth
- i18n
- SEO modules
- Importer modules
- Mailinglist

Getting technical

- The data model
- HTTP request flow
- Modules & sites
- URL dispatching
- The building blocks

Data model: *everything is a thing*



HTTP request flow

Modules

- Modules are self-contained:
  - Dispatch rules, resources, templates, css, javascript, images, translations, template filters, actions, validators, API services, models, …
- Prioritized list
- File lookup mechanism
- Every module can be a gen_server

Notification system

- Is how modules extend and offer functionality
- gen_event-like
- Listen to notifications
- Send notifications:
  - notify, notify1, fold, map, first
  - Both sync and async

```
% @doc Check if the recipient is a known user, if so redirect the received
e-mail
observe_email_received(#email_received{localpart=Recipient} = Received,
Context) ->
    case m_identity:lookup_by_username(Recipient, Context) of
        undefined ->
            undefined;
        Props ->
            case proplists:get_value(is_verified, Props) of
                true ->
```

URL dispatching

- Dispatch rules per site
  - (and per module)
- Dispatch rules have names
- e.g. this rule serves the contact.tpl on the /contact URL:

```
{contact,
 [“contact”],   controller_template, [ {template, "contact.tpl"} ]},
```

The page controller

- Webmachine entrypoint for pages
- 404 check
- Authorization check + logon redirect
- Template selection

Template system

- Extended ErlyDTL
  - Expressions: {% if a + b > c %}
  - Tuple and list data types
  - Data access through *models*: {{ m.rsc[id].title }}
- Templates can be made more specific by category and/or unique page name
- Templates with the same name override each other
  - Uses module priority

Template ex.: page.page_projects.tpl

```
{% extends "page.tpl" %}

{% block content_body %}
{% cache 7200 %}

{% for r in m.search[{archive_year cat='project'}] %}
    <div class="grid_9 alpha omega">
        <h2 class="year">{{ r.year }}</h2>
    </div>

    {% for group in m.search[{query publication_year=r.year|append:""
                            cat='project'
                            sort="-publication_start"}]|chunk:3 %}

     <div class="grid_9 alpha omega">

        {% for id in group %}
        {% catinclude "inc/listitem.tpl" id alpha=forloop.first
omega=forloop.last%}
        {% endfor %}

    </div>
    {% endfor %}

{% endfor %}

{% endcache %}
{% endblock %}
```

Scomps — screen components

- For when you need more logic than a template can handle
- Erlang module
- Cacheable
- Example: {% menu id=id %}

Javascript — Event handling

- Ajax postbacks
- Form submits
- Calls event/2 function
- Communicates back to browser by sending javascript
  - Inspired by Nitrogen

```
{% button postback={click foo="bar"} text="click me" %}
```

```
event({postback, {click, Args}, _Trigger, _Target}, Context) ->
z_render:wire({alert, [{text,"hello"}]}, Context).
```

Javascript — Push connections

- Uses either Comet or WebSockets
- Attaches to the page process
- Transports Javascript to the UA

REST services

- API method is an Erlang module
- /api/mymodule/mymethod
- In /services module directory
- JSON input / output
- Process GET and POST

Hands on!

- Get Vagrant (version >= 1.1!)
- Clone:
  ```
  git clone
  https://github.com/arjan/zotonic-vagrant-tutorial.git
  ```
- Get it running
  ```
  vagrant up
  ```
- … get some coffee…
- Visit: **`http://localhost:8000`**
- …you can also run it on your local machine, outside vagrant

Let's start!

Tutorial use case: Portfolio site

- Site with information about your projects
- Each project has:
  - Title, text
  - Slide show of large images
  - List of related projects

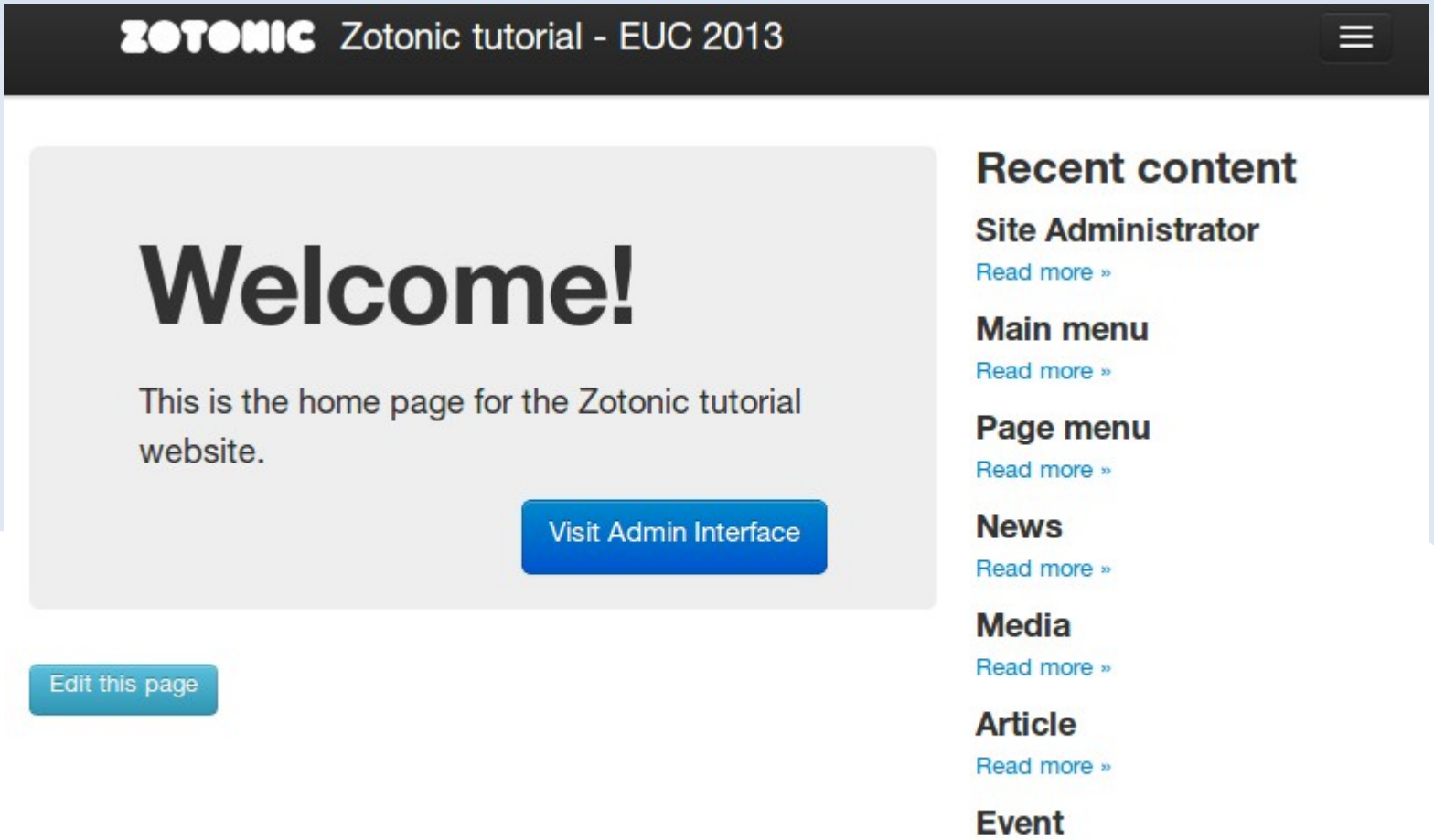
Easy development

- apt-get install inotify-tools
- Enable mod_development
- Emacs' zotonic-tpl-mode for editing templates
  - … and of course erlang-mode / flymake-mode
- Each step of this tutorial is a git tag! e.g.

```
git checkout step-0
```

#0 – base site

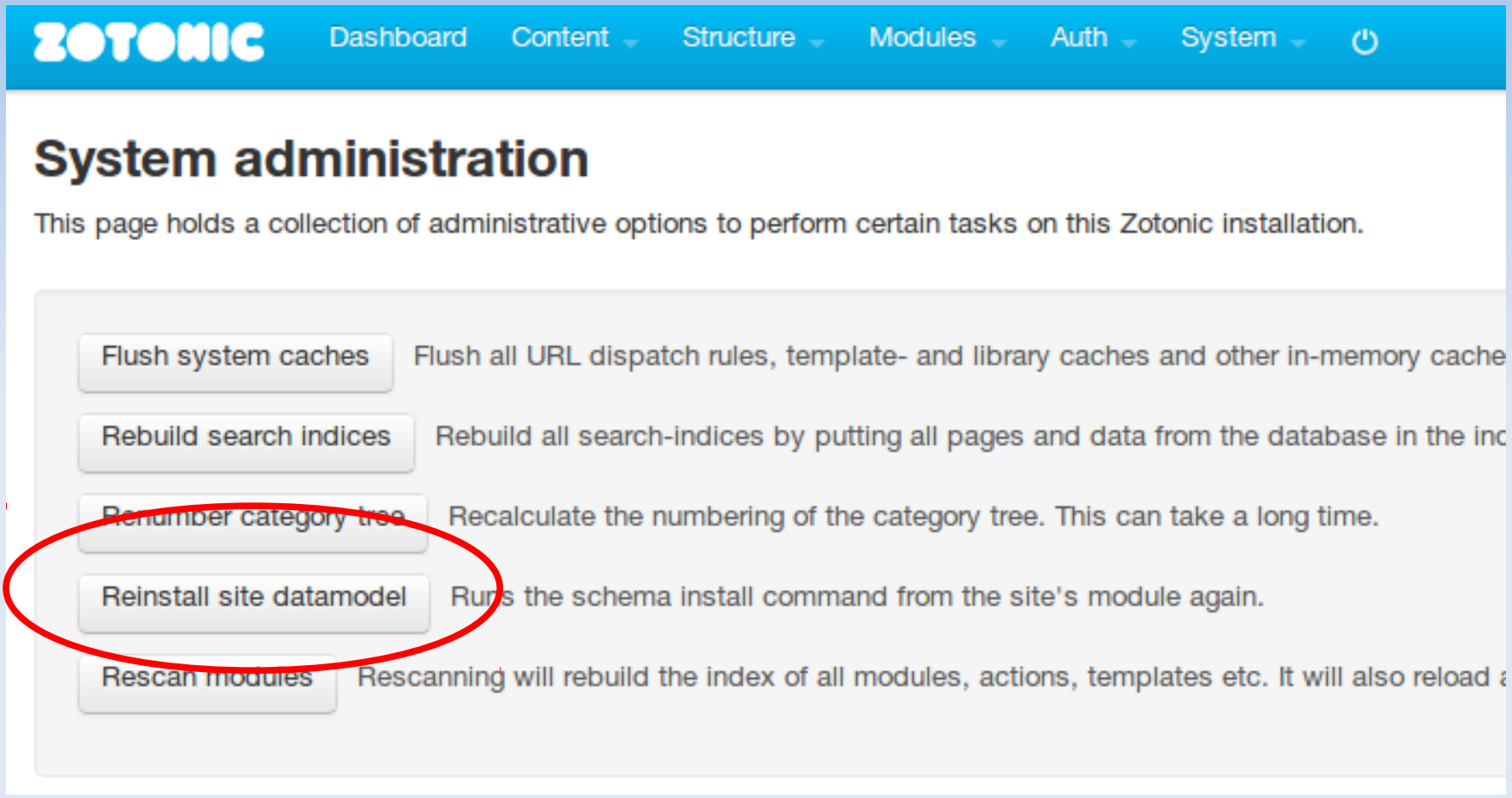
- This is what we started with, created using:
  - **`zotonic addsite -L -s basesite tutorial`**



#1 – create *project* category

Define the our site-specific *domain model*: specific categories that this site uses.

- In the site's module (tutorial.erl), we create manage_schema/2
- Returns a #datamodel{} record
- When done:
  - z:m(), z:flush().
  - Click “reinstall data model” button in the admin




```
Recompile: /home/arjan/devel/zotonic/priv/sites/tutorial/tutorial
08:02:23.128 [info] [tutorial] info @ z_datamodel:153  Creating new category 'project'
```

#2 – create project page template

Create a page specific for resources of the category *project*.

- Template name: *page.project.tpl*
- Loops through the list of images

- Note: look at *templates/tablet/page.tpl* in mod_base_site to see the template block names that you can use

#3 – project list

A list of recent projects, ordered by their publication date

- The easy way:
  - Create resource with category “search query”
  - Search query: *“cat=project sort=-publication_start”*
  - Give it the page path “/projects”
  - This can go in your #datamodel{}
-

#3b – alternative project list

- The hard(coded) way:
  - Set up new dispatch rule for /all-projects
  - Create all-projects.tpl, write template code…
  - (git checkout step-3b)

#4 – feedback form

A form which sends an email to the site administrator.

- Add form to page.project.tpl
- Create event handler in tutorial.erl
  - Takes form data,
  - Sends email
  - Email is HTML; rendered from template

#5 – notification system

We want to make sure a project always has at least one *edge* of type “author”

- create observe_rsc_update_done/2 in tutorial.erl
  - Tip: Look in zotonic_notifications.hrl for more hooks into the system!
- Add code
- Test it in the admin!
  - (reload after save to see the new edge)

```erlang
%% @doc This notification function gets triggered on the update of any resource.
observe_rsc_update_done(#rsc_update_done{id=Id, post_is_a=Categories}, _Context) ->
    lager:warning("Update the resource ~p which is a: ~p", [Id, Categories]),
    undefined.
```

```
Recompile: /home/arjan/devel/zotonic/priv/sites/tutorial/tutorial
10:54:51.454 [warning] Update the resource 316 which is a: [project]
```

Thank you!

- Please come to my talk on friday!
  - “Making it fast” - the performance of Zotonic
  - … or chat with me & Andreas :-)
- Online resources:
  - http://zotonic.com
  - http://zotonic.com/docs
  - IRC, XMPP, mailing lists
  - Tutorial source code, tutorial slides