Symfony vs. Integrating products when to use a framework

Xavier Lacot – Clever Age

Who I am

- Symfony developer since end 2005
- Several contributions (plugins, docs, patches, etc.)
- Manager of the PHP Business Unit of Clever Age
- Clever Age - http://clever-age.com/
  - Based in Paris, Bordeaux and Lyon, ~70 people
  - Technical architecture expertise
  - Development,
  - Consulting / training / etc.

Contents

- A (web) developer's life ?
- The choice of a technical architecture
- A practical sight on CMS and framework's code
- Howto...
  - Integrate Symfony within other products
  - A CMS with Symfony in less than one day
- Publication time : cleverMediaLibrary

A (web) developer's life

http://www.flickr.com/photos/nathonline/918128338

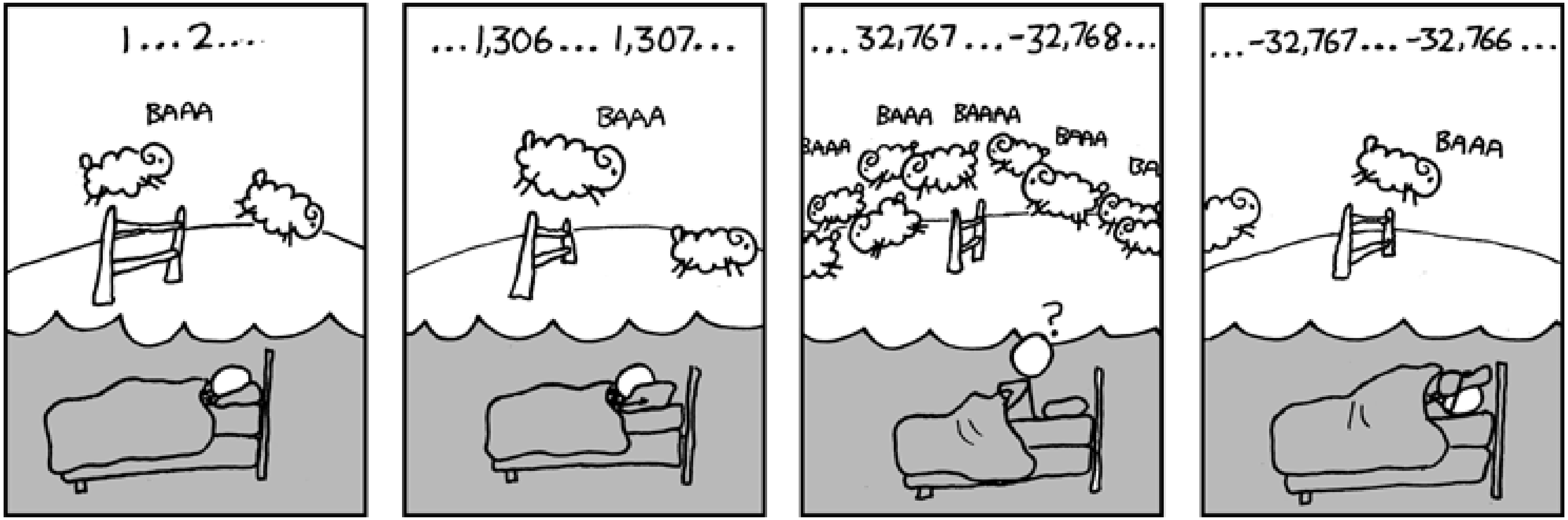
A developer's life

- Web projects cover a large panel
  - Content management
  - Social networks
  - Customer Relation Management
  - Communication
  - Collaborative
  - File sharing
  - Specific applications
- In almost every web project, a developer will loose some hair

A developer's life

Wide range of difficulty

- 5 days of html integration for a small « webpage »
- … 1000+ development days using a framework for a social/2.0 platform
- Often, the right solution does not exist !



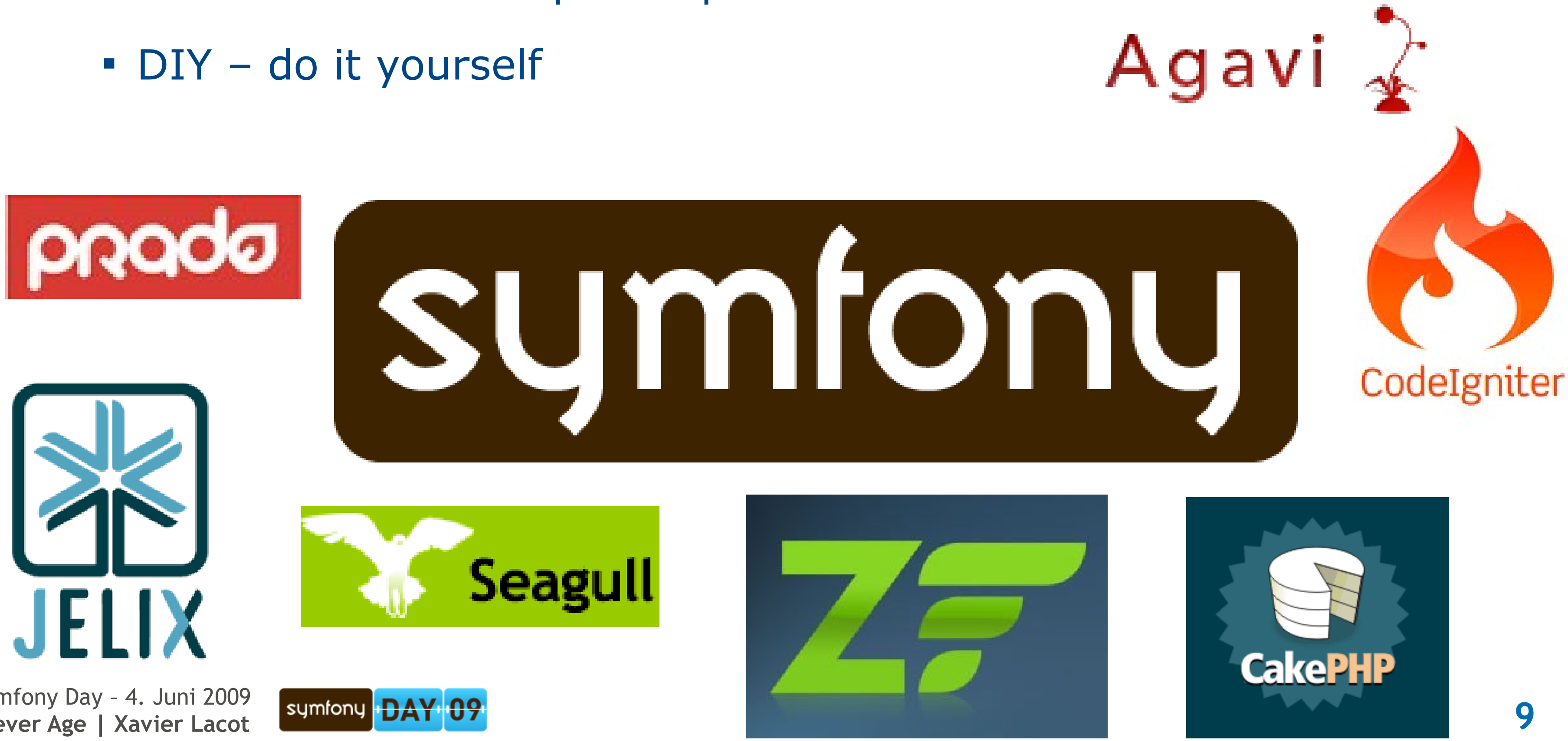
A developer's life

- **The developer has the choice between a lot of tools**
  - Frameworks
  - Integrated (open source) products
  - The bad : Integrated (closed-source) products
  - The worse : closed-source frameworks

What do I mean with « products » ?

- CMS, forums, CRM tools, blogs, photo gallery, etc.
- Not designed as development platforms, but as usable tools
- Usually only available as packages archives (zip, tar.gz)
- Not based on a framework

- ...and with « frameworks » ?
  - Not « functionalities-oriented »
  - Created as a development platform
  - DIY – do it yourself



… for instance, Symfony

Symfony, a « full options » framework

cli

mvc

ajax

crud

cache

events

routing

+600 plugins

performance

documentation

admin generator

internationalization

unit and functional tests

ORMs (Propel or Doctrine)

The choice of a technical architecture

Several considerations

- Complexity of the project (workload, features, scalability)
- Development methodology
- Is there a lot of personnalisation ?
  - Adding functions
  - Removing functions
- Do plugins/extensions exist, that cover the requirements ?

Integrating products

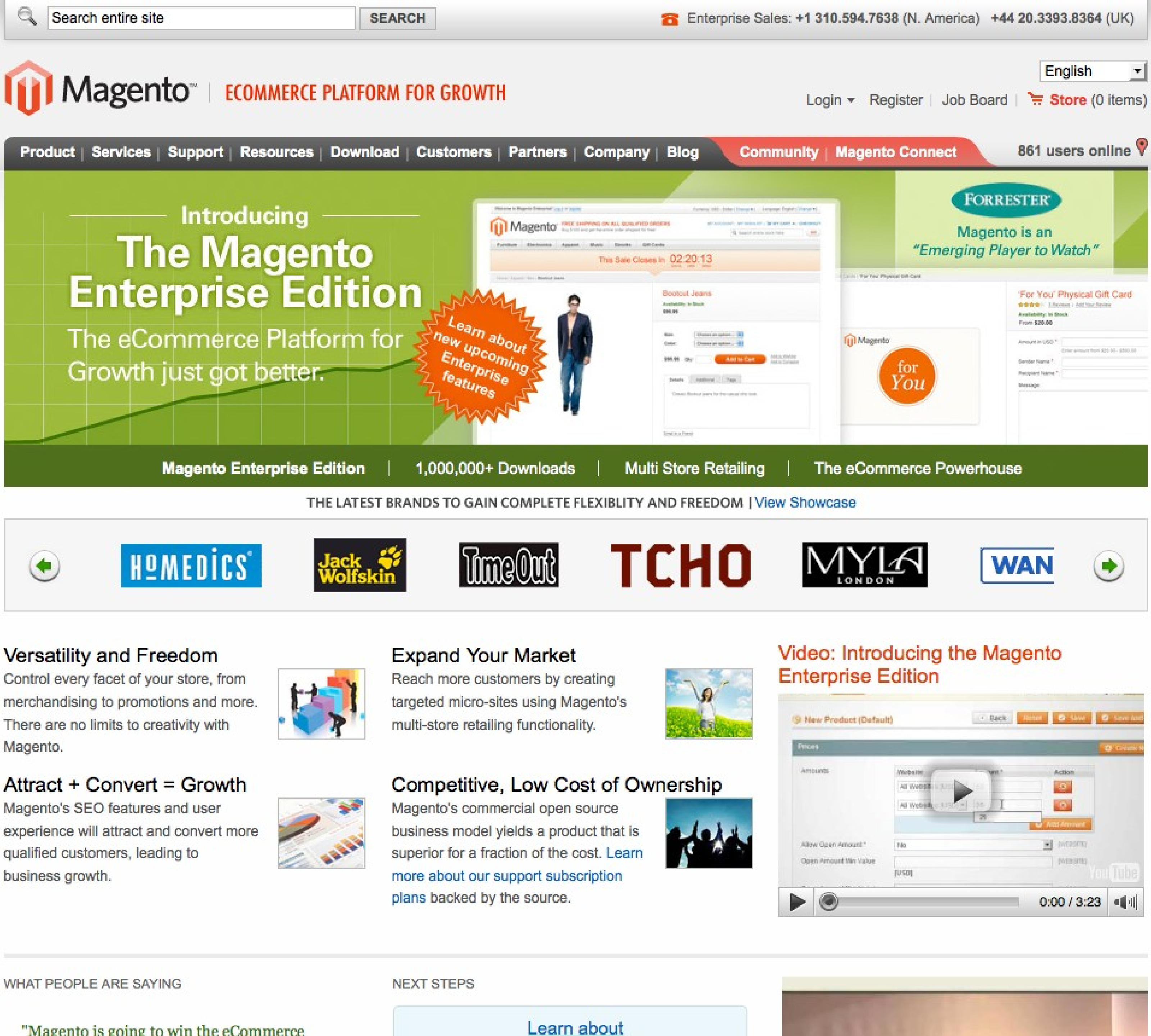
- **Integrating products is a good idea**
  - It may save time, money, and pressure
  - It may help building a better application
  - At least the client will get the product's feature set
  - Don't always re-invent the wheel !
- **Perfect solutions for common needs**

… the hell is that client rarely have common needs !

Possible options :

- Change some code :
  - issues with future upgrades
- Change code + submit ticket :
  - lot more work (contributions needs to be clean)
  - Not sure it is accepted
- Create extensions when possible
  - These products are not designed for developing !
- Drop the product and code yourself
  - Clearly define the project

«CMS are good to make simple websites that are mainly meant to be looked at, while frameworks are good to make complex websites that are meant to be interacted with »



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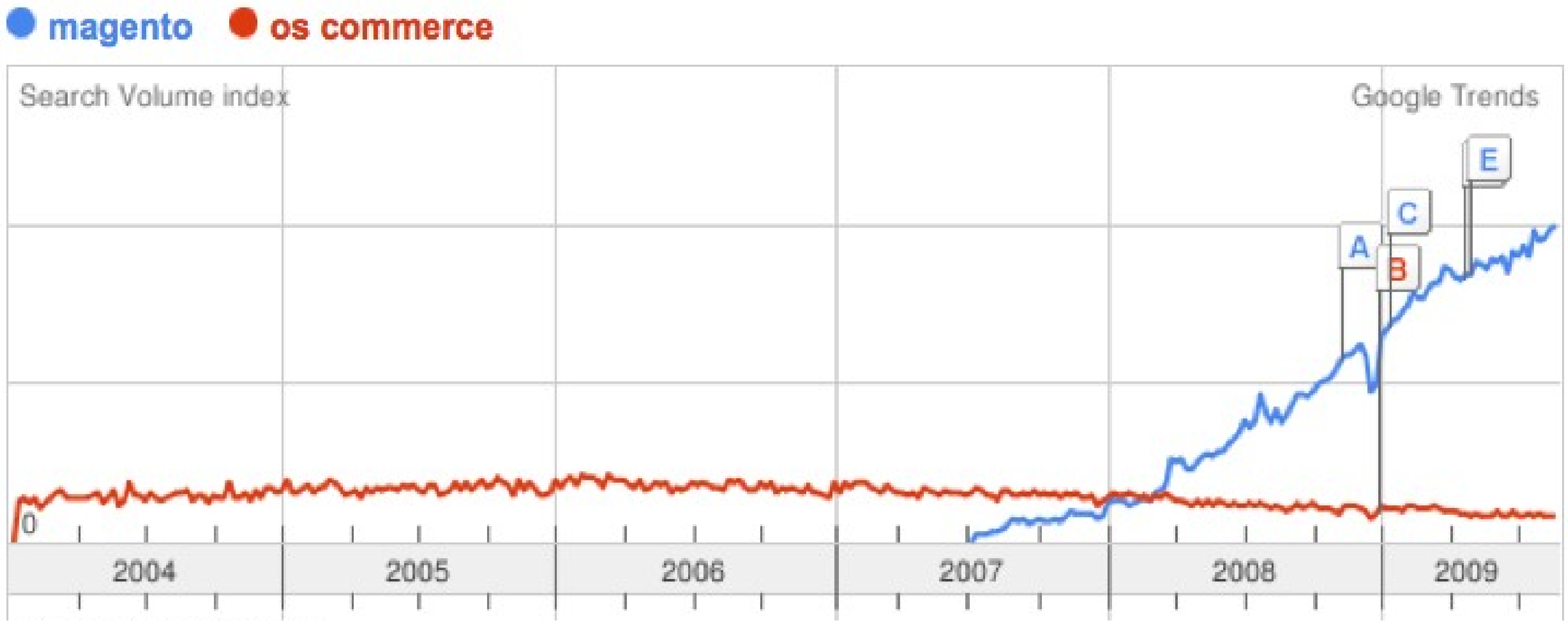
Learn about

- **Magento Commerce is a sort of success story**
  - Based on Zend Framework
  - Overhealmed OS Commerce in 2 years



- **Gold rules**
  - Think simple – not a overload of useless functions
  - Backend must be easy to use
    - WYSIWYG editor
    - Adapted widgets
  - Follow standards – never hack up
  - Documentation !
  - Open the development : search contributors
  - Release often

- The equation is simple :

Time to hack vs. Time to build

- What do you prefer in your life ?

A practical sight on products and framework's code

- **The quality largely varies**
  - Security
  - A common design pattern (MVC ?)
  - Portability (database, etc.)
  - ORM
  - Developer tools / Technical documentation
  - Performance
  - API
  - Object-oriented
  - Standards compliance

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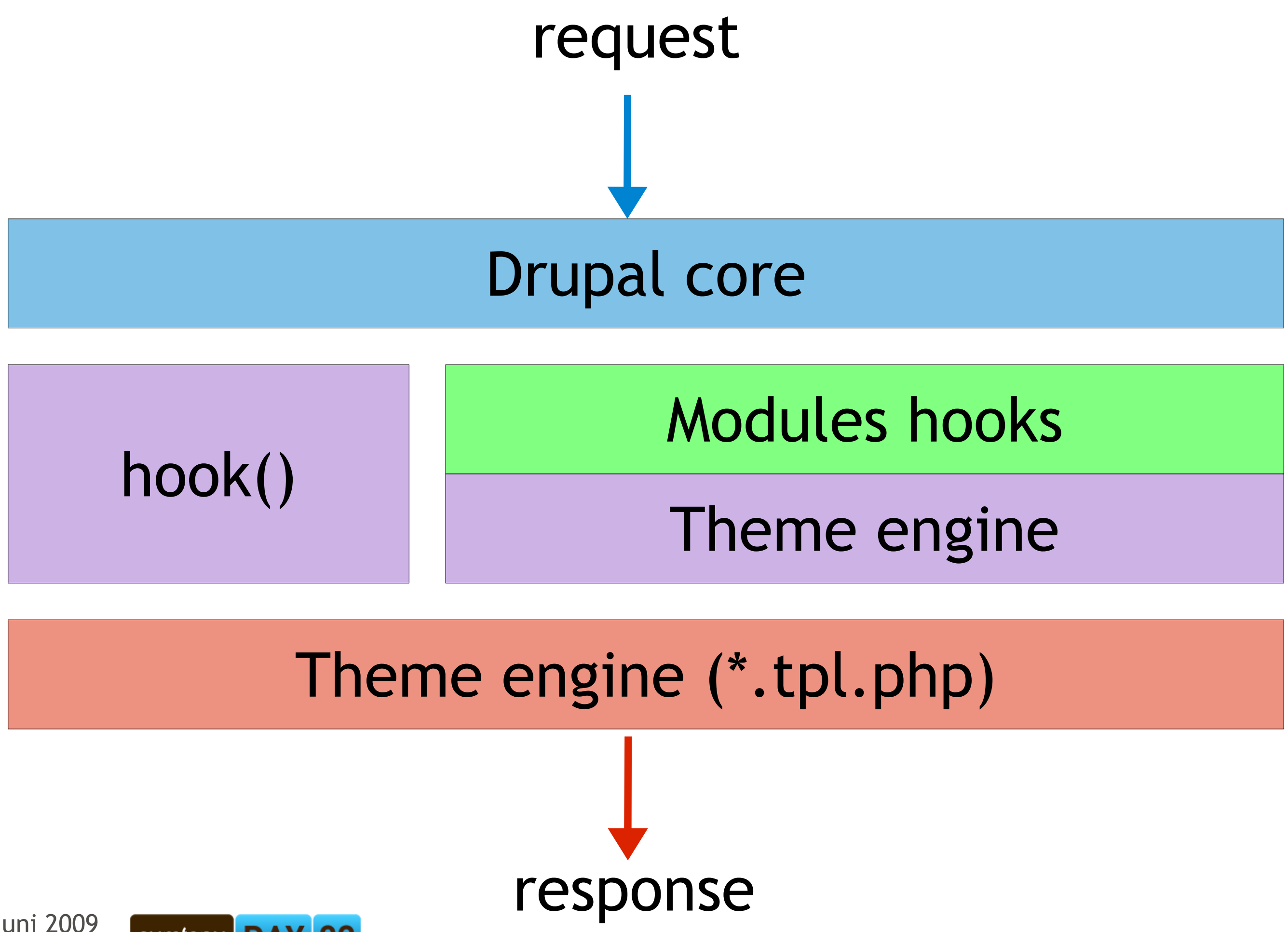
Digital Architecture

For instance : Drupal architecture



For instance : some Drupal facts

- Forms validation … w00t

```
if (!empty($form_values['departing']) && ( $departing < $date )) {
  form_set_error('departing', t('The departing date isn\'t valid.'));
}
```

- We love documentation...

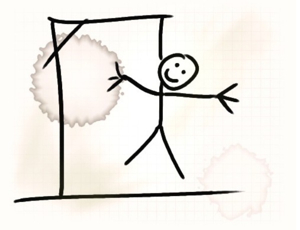
```

function node_form_submit($form_id, $form_values) {
  global $user;
  ...
```

- … and also SQL queries !

```
 db_query('DELETE FROM {node} WHERE nid = %d', $node->nid);
 db_query('DELETE FROM {node_revisions} WHERE nid = %d', $node->nid);
```

- ~70 000 lines of PHP code, ~75 files only…



- **Overall criticism :**
  - Poorly (well, not) OO
  - No MVC, Modules are a mess
  - No native developer tool, core code is not commented
  - No ORM. The « database layer » main usage is to map « drupal_query() » to db specific functions
  - Forms management is archaiq
  - Writing modules might turn into a nightmare – 5000 lines+ of code in a single file, etc.
  - From a purely technical point of view : #FAIL

- **Positive points:**
  - It works out of the box
  - If there are very few customizations to do, then it is the prfect solution (no development at all)
  - There is a huge community
    - Lots of contributions
    - /!\ mot of them are unusable !!!
  - The « client effect » always works

So how to take profit out of both ?

Consider the following context

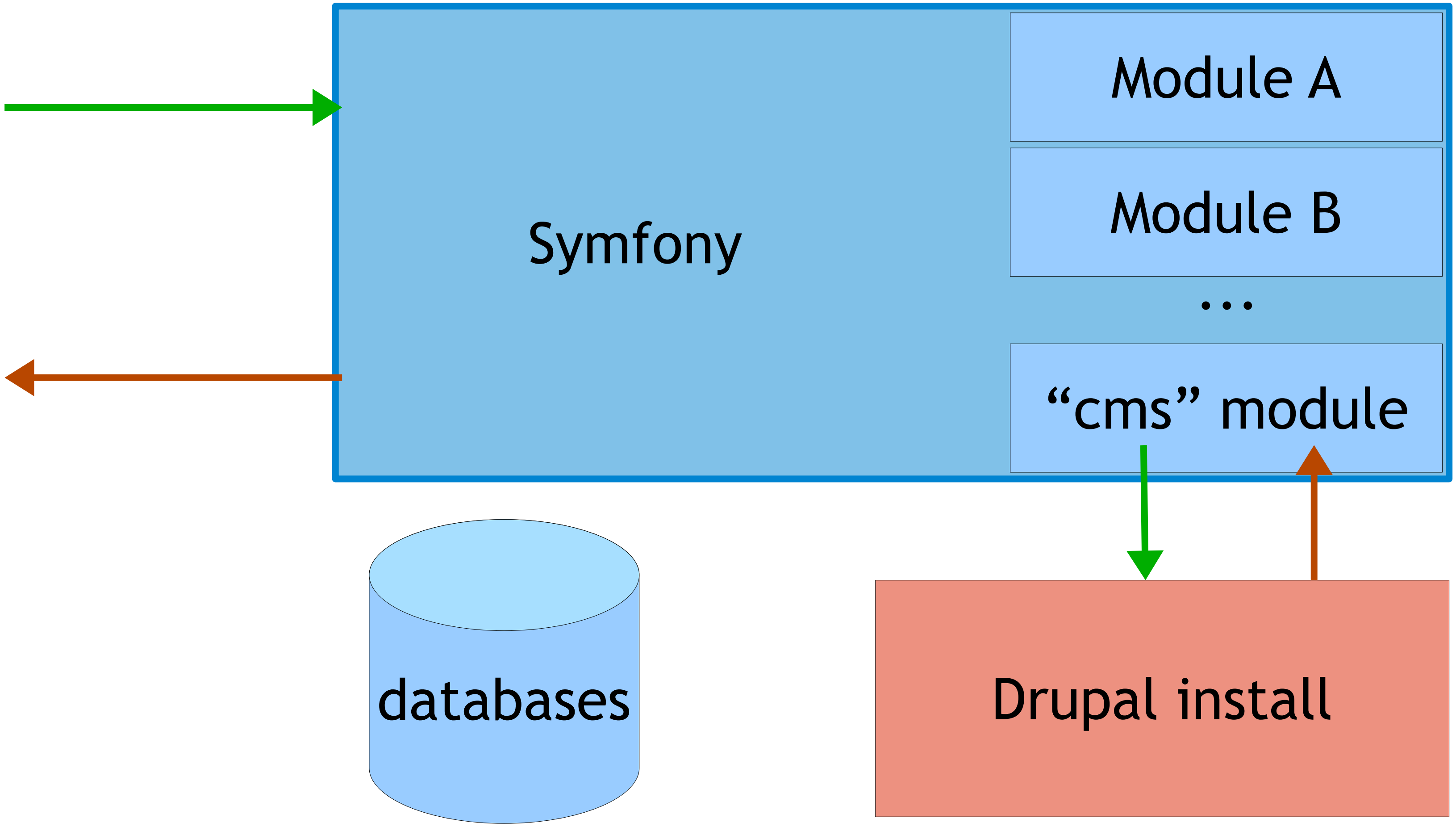
- Very large company
- Non-technical people
- High content management requirements
- A big part of the site is a custom development
- We do not have a lot of days

...a common situation

How to integrate Symfony with other products

- **Facts:**
  - Not possible to develop everything
  - Using the CMS as the development tool won't help
- **=> let's integrate Symfony ! Several ways:**
  - Include-based integration
  - Several Apache mountpoints
  - XMPP-based communication

How to integrate Symfony with other products



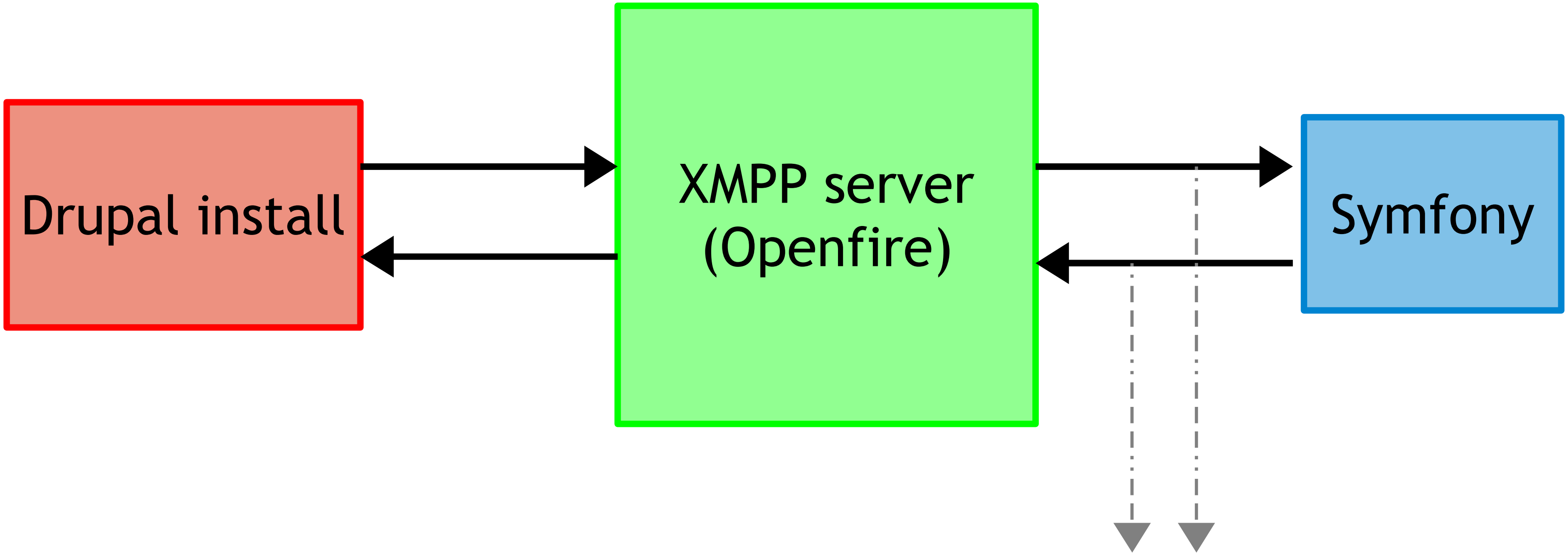
- **routing.yml, last rule :**

```
drupal:
  url:   /:uri
  param: { module: cms, action: drupal }
  requirements: { uri: ^(.)*$ }
```

- **Cms module / executeDrupal() :**

```
public function executeDrupal(sfWebRequest $request)
{
  ob_start('drupal');
  include(sfConfig::get('sf_root_dir').'/lib/drupal/index.php');
  $this->return = ob_get_flush();
}
```

- **Second solution, XMPP calls for db synchronisation (huge work, but w00t):**



Uses pubSub as data format

The one-development-day Symfony CMS

A minimal CMS

- **What is a minimal CMS ?**
  - Backend
    - Users management,
    - Possibility to create pages at certain urls
    - Posibiliy to put content in these pages
    - Media management
  - Frontend
    - Ability to display informations

A minimal CMS

Backend components

- sfDoctrineGuardPlugin
- cleverMediaLibraryPlugin
- some tables for the model:

```
content:
  id:
  displayed_author:   varchar(150)
  title:              varchar(255)
  body:               longvarchar
  created_at:         timestamp
  created_by:         { type: integer, foreignTable: sf_guard_user, foreignReference: id }
  publication_status: varchar(20)
  published_at:       timestamp
  published_by:       { type: integer, foreignTable: sf_guard_user, foreignReference: id }
  updated_at:         timestamp
  updated_by:         { type: integer, foreignTable: sf_guard_user, foreignReference: id }
  meta_description:   longvarchar
  meta_keywords:      longvarchar
```

A minimal CMS : frontend highlights

- « catch-all » routing rule in routing.yml

```
# for html pages
cms:
  url:   /:uri.html
  param: { module: cms, action: view }
  requirements: { uri: ^(.)*$ }

# for all other defined url
cms_garbage:
  url:   /:uri
  param: { module: cms, action: view }
  requirements: { uri: ^(.)*$ }
```

Publication time : cleverMediaLibraryPlugin

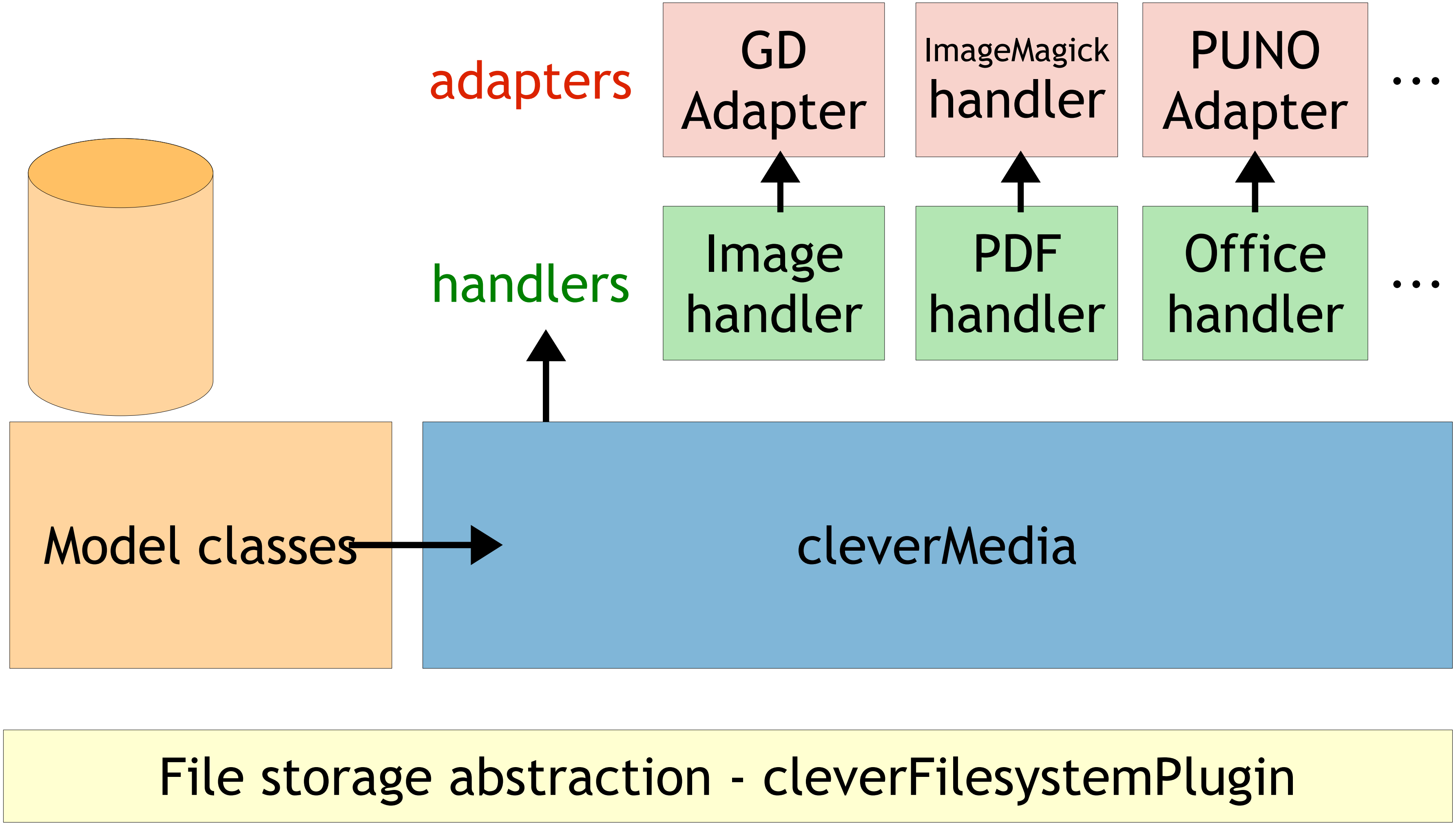
Objectifs

- An enterprise solution for managing media
- Supports a large number of file formats
  - Images, videos
  - Documents
  - etc.
- Storage abstraction
- Media management API
- Metadata support
- Search (tags + index), credentials
- Performance

Formats de fichiers supportés

- Images, whatever the type (jpg, gif, png, etc.)
  - Several adapters are available:
    - Imagemagick tools
    - GD
- PDF documents
- Office documents
  - OpenOffice
  - MS Office
  - Uses PUNO (PHP ↔ OpenOffice UNO bridge) – **not stable**
- Videos
  - Ffmpeg / imagemagick

Schema


adapters
GD Adapter
ImageMagick handler
PUNO Adapter
…
handlers
Image handler
PDF handler
Office handler
…
Model classes
cleverMedia
File storage abstraction - cleverFilesystemPlugin

File storage abstraction cleverFileSystemPlugin (1/3)

- Adapters set
  - Disk
  - FTP
  - S3
  - … contributions are welcome !
- The API is classical
  - Statistics: exists / getSize / isDir / isFile
  - Directories operations: mkDir / listDir /
  - File operations: write / unlink / rename / read / copy

File storage abstraction
cleverFileSystemPlugin (2/3)

- File system creation

```
$fs = cleverFilesystem::getInstance(array(
    'type'      => 'disk',
    'root'      => '/path/to/root',
    'cache_dir' => '/tmp'
));

// filesystem operations
$content = $fs->listDir('');
$content = $fs->listDir('path/to/directory');
```

File storage abstraction cleverFileSystemPlugin (3/3)

```
$fs = cleverFilesystem::getInstance('ftp_michel');
```

```
app:
  cleverFilesystemPlugin:
    filesystems:
      ftp_michel:
        cache_dir:      /tmp
        type:           ftp
        host:           localhost
        username:       michel
        password:       p4ssw0rd
        Port:           21
        root:           ftpserv
```

ftp://michel:p4ssw0rd@localhost:21/ftpserv/

API usage

```
// retrieve a folder
$parent =
ccMediaFolderPeer::retrieveByPath('meetings/cologne');

// Create a folder
$folder = new ccMediaFolder();
$fields = array(
  'name'         => 'Symfony Day Cologne',
  'created_by' => $this->getUser()->getUserId(),
  'updated_by' => $this->getUser()->getUserId()
  'parent'       => $parent
);
$folder->update($fields);
$folder->save();
```

API usage

```
// retrieve a folder
$parent =
ccMediaFolderPeer::retrieveByPath('meetings/cologne');

// Create a file
$image = new ccMedia();
$fields = array(
    'cc_media_folder' => $folder,
    'source'          => 'http://lacot.org/image.png',
    'filename'        => 'new_filename.png',
    'updated_by'      => $this->getUser()->getUserId(),
    'created_by'      => $this->getUser()->getUserId()
);
$image->update($fields);
$image->save();
```

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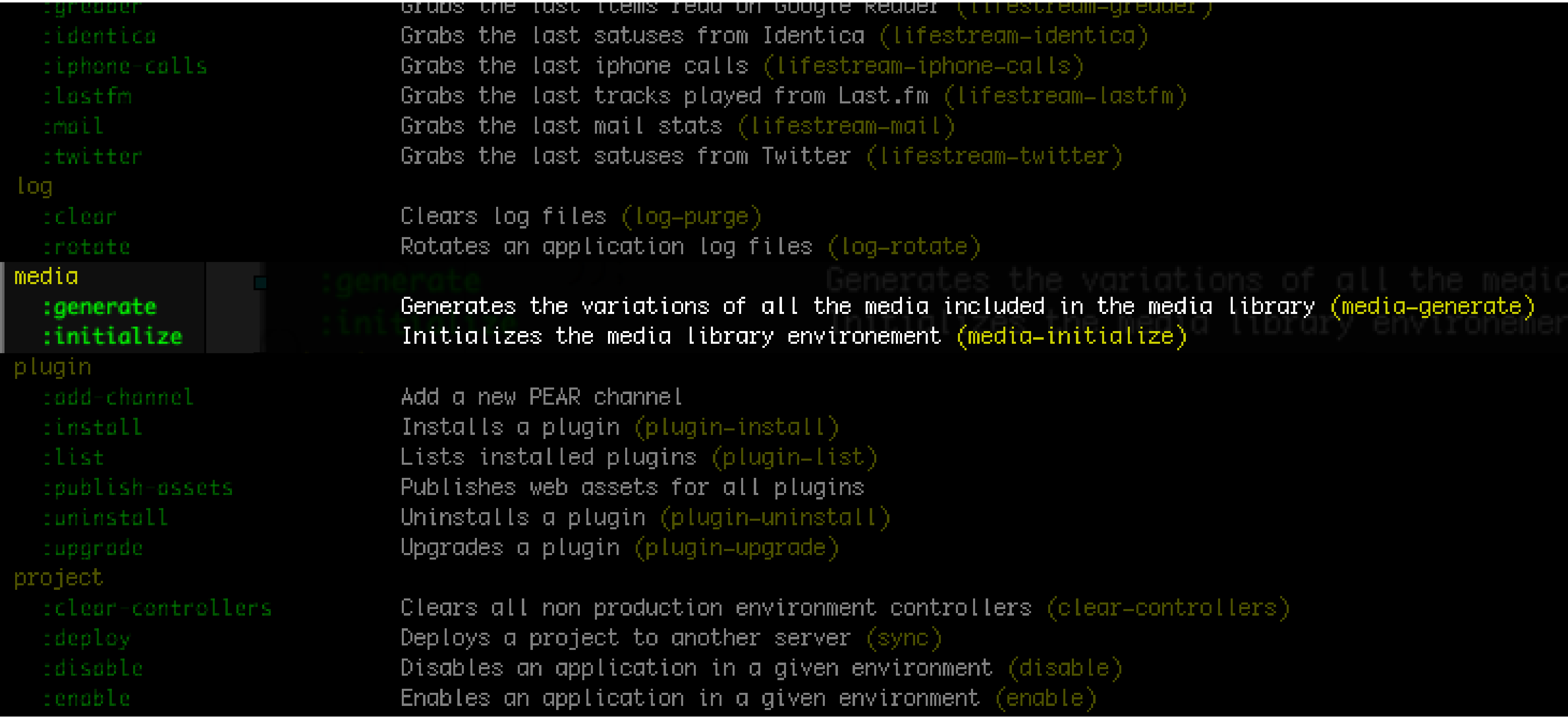
tasks



```
  :greader                    Grabs the last items read on Google Reader (lifestream-greader)
  :identica                   Grabs the last satuses from Identica (lifestream-identica)
  :iphone-calls               Grabs the last iphone calls (lifestream-iphone-calls)
  :lastfm                     Grabs the last tracks played from Last.fm (lifestream-lastfm)
  :mail                       Grabs the last mail stats (lifestream-mail)
  :twitter                    Grabs the last satuses from Twitter (lifestream-twitter)
log
  :clear                      Clears log files (log-purge)
  :rotate                     Rotates an application log files (log-rotate)
media
  :generate                   Generates the variations of all the media included in the media library (media-generate)
  :initialize                 Initializes the media library environement (media-initialize)
plugin
  :add-channel                Add a new PEAR channel
  :install                    Installs a plugin (plugin-install)
  :list                       Lists installed plugins (plugin-list)
  :publish-assets             Publishes web assets for all plugins
  :uninstall                  Uninstalls a plugin (plugin-uninstall)
  :upgrade                    Upgrades a plugin (plugin-upgrade)
project
  :clear-controllers          Clears all non production environment controllers (clear-controllers)
  :deploy                     Deploys a project to another server (sync)
  :disable                    Disables an application in a given environment (disable)
  :enable                     Enables an application in a given environment (enable)
```

Questions

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