Prepare your extension for Joomla 4

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DIGITALPEAK

About Me

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Doing Joomla extensions since 2007

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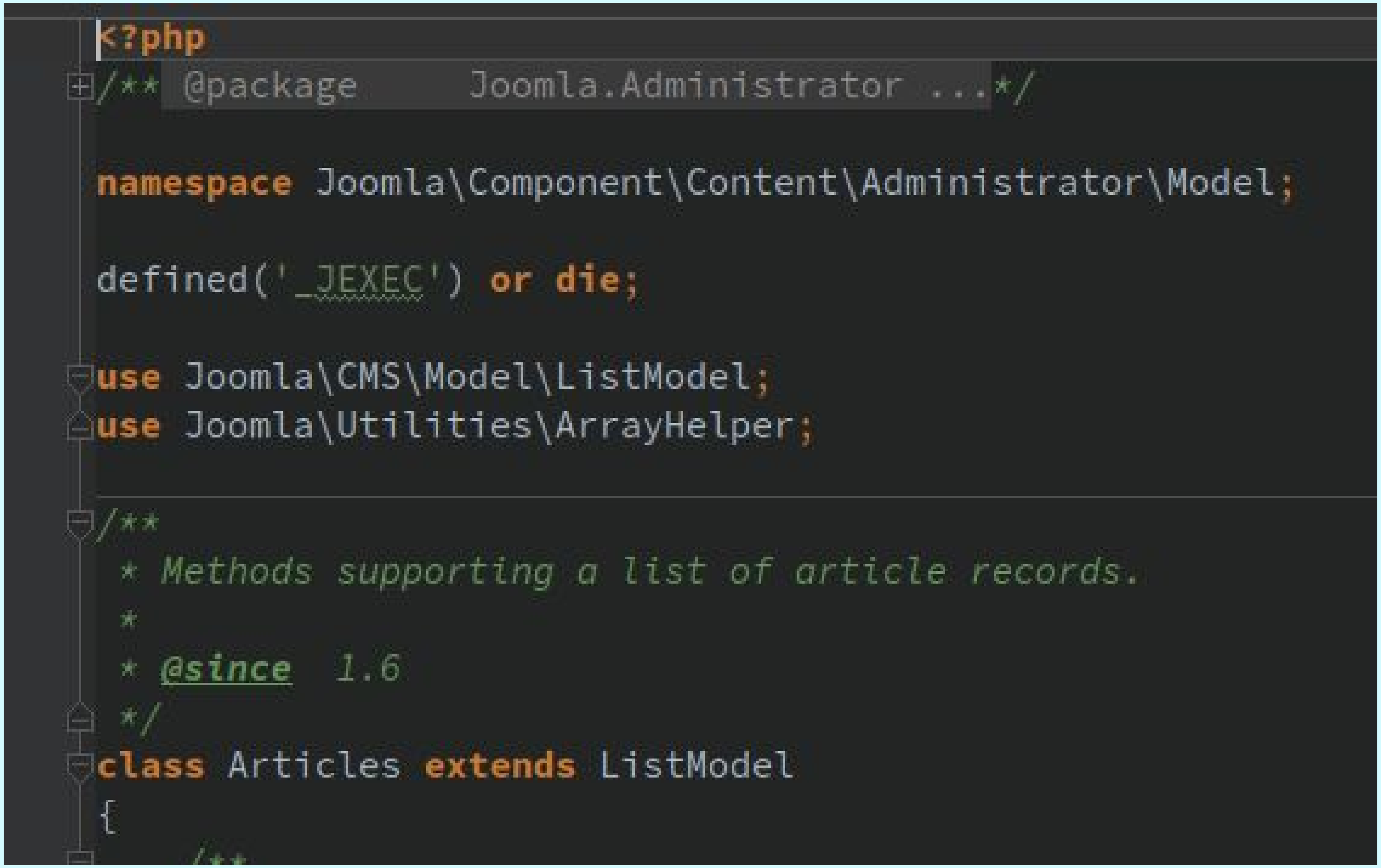
Agenda

- Namespaces in PHP
- Dependency injection
- MVC Layer
- Component
  - Namespacing
  - Dispatcher
  - Form
- Modules
- Plugins
- Backwards compatibility
- Questions

Namespaces in PHP

- Organising classes in a defined structure
- Autoloaded through the classloader, no manual *include* or *require* anymore
- Example ContentModelArticles becomes \Joomla\Component\Content\Administrator\Model\Articles
- JLoader can handle the namespaces automatically
- We can distinguish between front end and back end classes
- Files can be found in /libraries/src/Joomla/CMS

Namespaces in PHP



```php
<?php
/** @package     Joomla.Administrator ...*/

namespace Joomla\Component\Content\Administrator\Model;

defined('_JEXEC') or die;

use Joomla\CMS\Model\ListModel;
use Joomla\Utilities\ArrayHelper;

/**
 * Methods supporting a list of article records.
 *
 * @since  1.6
 */
class Articles extends ListModel
{
    /**
```

Dependency Injection

- No woodoo
- Better unit testing
- Application and Input get injected into the dispatcher and the MVC layer

MVC Layer: Introduction

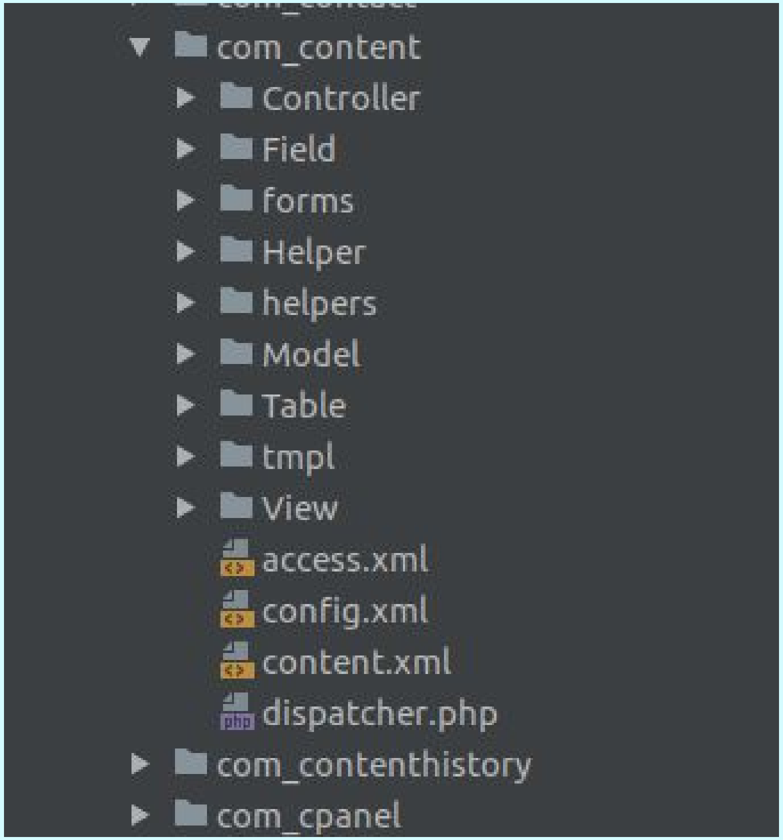
- Basically the legacy layer becomes the default MVC in Joomla 3
- Convert your “New MVC” component to the namespaced MVC, it was done with com_config
- “New MVC” layer will be deprecated

MVC Layer: Libraries

- The old classes still exist but the real files do exist in
- JControllerLegacy is now \Joomla\CMS\Controller\Controller
- JModelLegacy is now \Joomla\CMS\Model\Model
- JViewLegacy is now \Joomla\CMS\View\AbstractView
- JTable stays is now \Joomla\CMS\Table\Table
- JPlugin is now \Joomla\CMS\Plugin\CMSPlugin

Component: Namespacing

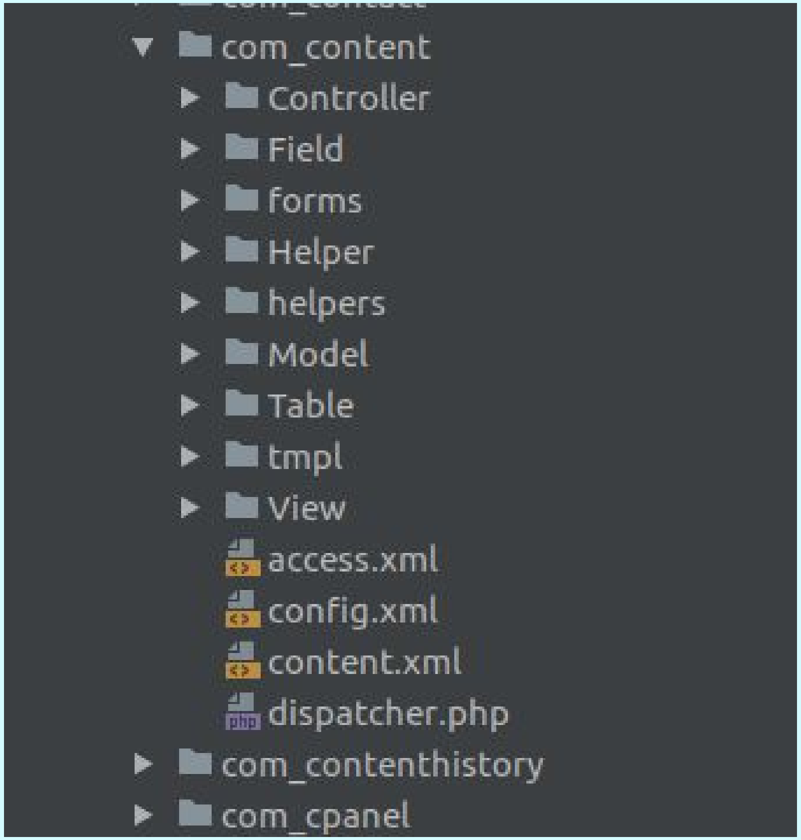
- A Joomla 4 component will have the structure as in the picture
- Uppercase folders have classes
- Lowercase folders do hold the rest like forms or template files
- Dispatcher is not namespaced
- Root classes become a \ and front
- Controller and Model need an additional parameter *MvcFactory*
- Front end namespace is \FooVendor\Component\Bar\Site
- Back end namespace is \FooVendor\Component\Bar\Administrator



```
▼ com_content
    ▶ Controller
    ▶ Field
    ▶ forms
    ▶ Helper
    ▶ helpers
    ▶ Model
    ▶ Table
    ▶ tmpl
    ▶ View
      access.xml
      config.xml
      content.xml
      dispatcher.php
▶ com_contenthistory
▶ com_cpanel
```

Component: Namespacing Todo

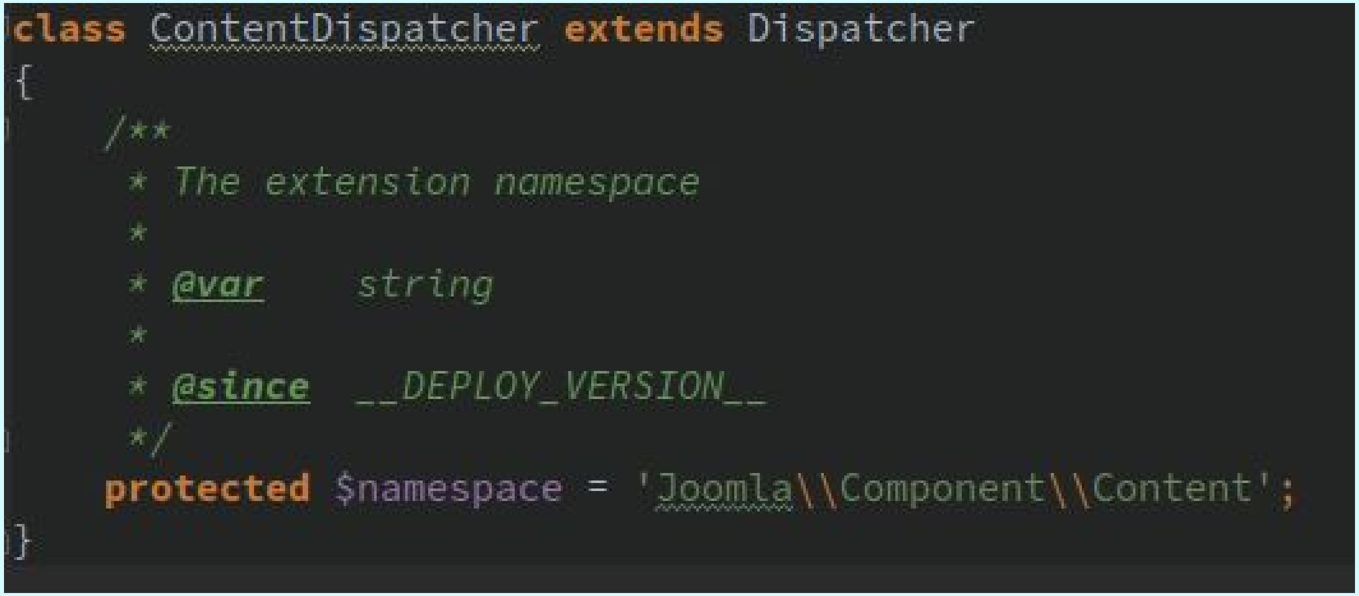
- Helpers are need to be done on a case per case basis
  - ContentHelper
  - RouteHelper
  - QueryHelper
  - AssociationsHelper
- JHtml



```
▶ com_contact
▼ com_content
    ▶ Controller
    ▶ Field
    ▶ forms
    ▶ Helper
    ▶ helpers
    ▶ Model
    ▶ Table
    ▶ tmpl
    ▶ View
      access.xml
      config.xml
      content.xml
      dispatcher.php
▶ com_contenthistory
▶ com_cpanel
```

Component: Dispatcher

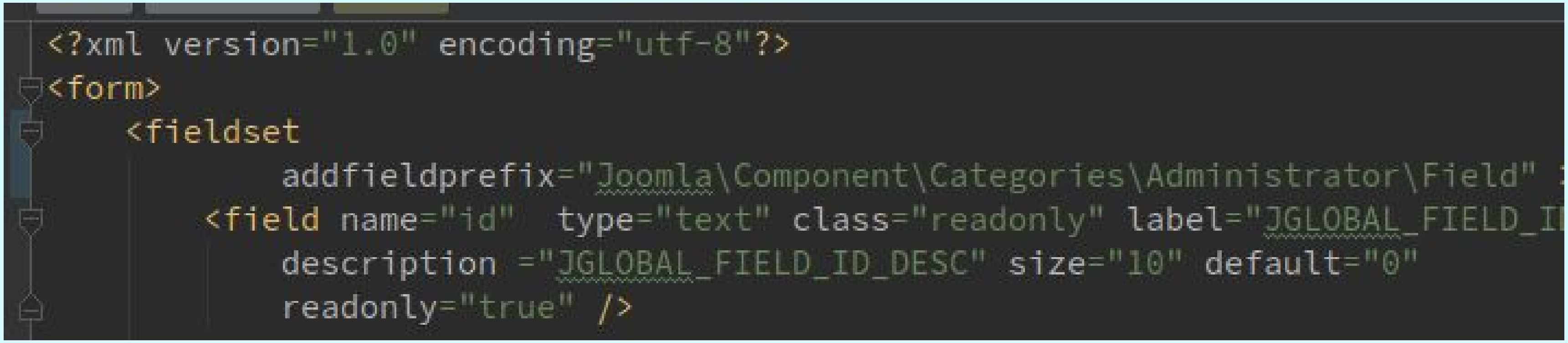
- Replacement single entry file content.php in root
- Get the application injected
- Dispatches the controller



```
class ContentDispatcher extends Dispatcher
{
    /**
     * The extension namespace
     *
     * @var    string
     *
     * @since  __DEPLOY_VERSION__
     */
    protected $namespace = 'Joomla\\Component\\Content';
}
```

Component: Form

- Forms are in the folder forms under root in the extension on, eg. /forms/article.xml
- Extra fields are registered with addfieldprefix attribute which adds the namespace



```
<?xml version="1.0" encoding="utf-8"?>
<form>
    <fieldset
            addfieldprefix="Joomla\Component\Categories\Administrator\Field"
        <field name="id"  type="text" class="readonly" label="JGLOBAL_FIELD_I
            description ="JGLOBAL_FIELD_ID_DESC" size="10" default="0"
            readonly="true" />
```

Modules

- Module file stays as single entry file
- Namespacing is done on the additional classes
- Modules namespace is \FooVendor\Module\Bar\Administrator for front end
- Modules namespace is \FooVendor\Module\Bar\Site for front end

Plugins

- Plugin file stays the same not namespaced
- When you have additional classes, they can be namespaced
- Plugin namespace is \FooVendor\Plugin\Content\Bar

Backwards compatibility

- Target is that a Joomla 3 extension will run on Joomla 4
- Target is that a Joomla 4 extension will run on Joomla 3.9
- Classmapping for libraries so JForm still exists and maps to \Joomla\CMS\Form\Form
- Changes are added not replaced to make sure the old code works
- Support Joomla 3 extensions during full Joomla 4 lifecycle
- Changing to a more service oriented architecture
- No Class overloading anymore
- Event system has changed completely

Questions?

Slides on https:/joomla.digital-peak.com/jab17

Thank you and enjoy the day :-)