

# Prepare your extension for Joomla 4



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# About Me

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# Agenda

- Namespaces in PHP
- MVC Layer
- Component
  - Namespacing
  - Dispatcher
  - Form
- Modules
- Plugins
- Backwards compatibility
- Demo Weblinks migration
- 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\ArticlesModel
- JLoader can handle the namespaces automatically
- We can distinguish between front end and back end classes
- Files can be found in /libraries/src



# Namespaces in PHP

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

namespace Joomla\Component\Content\Administrator\Model;

defined('_JEXEC') or die;

+use ...

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



# MVC Layer: Introduction

- Basically the legacy layer becomes the default MVC in Joomla 4
- “New MVC” layer will be deprecated
- FOF2 got removed from core
- Use Bootstrap 4 in the layouts
- JModelLegacy::getInstance will be deprecated, use the models directly
- MVCFactoryInterface to create model instances



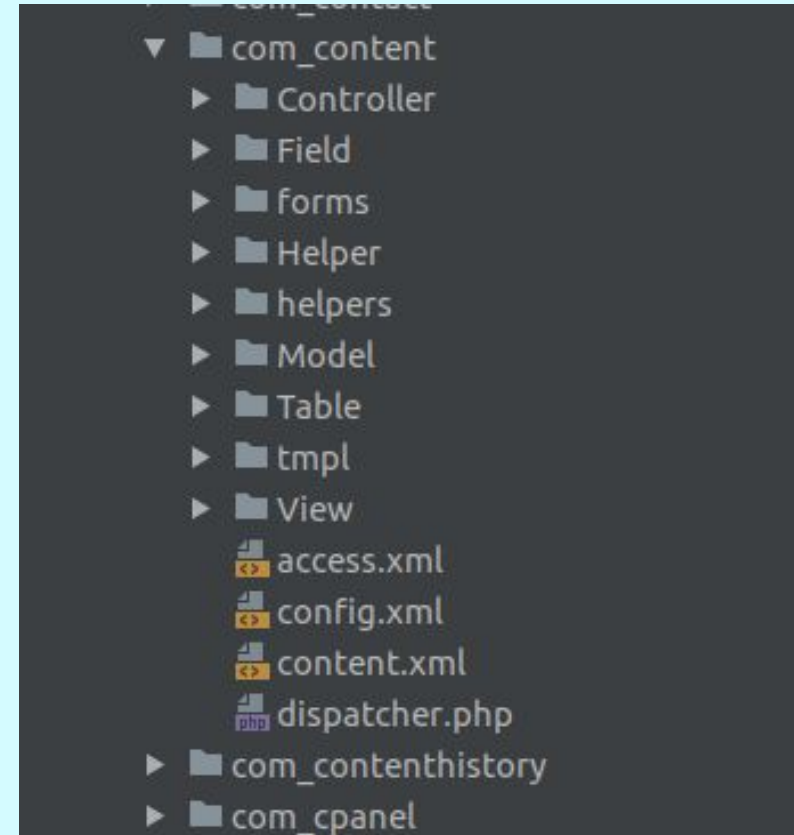
# MVC Layer: Libraries

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



# Component: Namespacing

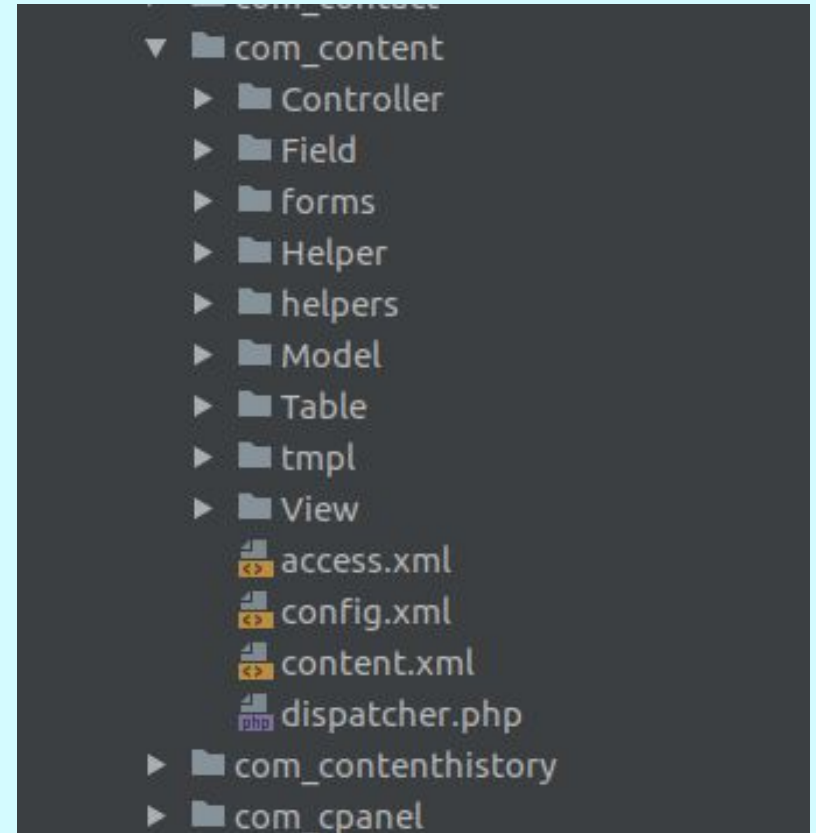
- A Joomla 4 component will have the structure as in the picture
- Uppercase folders have classes
- Lowercase folders do hold the rest like forms or template files
- Dispatcher is not namespaced
- Root classes do become a \ and front
- Controller and Model need an additional parameter *MVCFactoryInterface*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





# Component: Namespacing Todo

- Helpers are need to be done on a case per case basis
  - ContentHelper
  - RouteHelper
  - QueryHelper
  - AssociationsHelper
- How to register the services in JHtml



# 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_ID"
    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
- All core modules are namespaced



# 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



# 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
- Removed old deprecated code
- Changing to a more service oriented architecture, using interfaces
- Class overloading should be avoided
- Event system has changed completely. JEventDispatcher is removed, use `Factory::getApplication()->triggerEvent('');`



# Weblinks migration: Introduction

- Weblinks is a core supported Joomla extension
- Manages links
- Development happens on Github

<https://github.com/joomla-extensions/weblinks>

- It runs on Joomla 4 with a few modifications

<https://github.com/joomla-extensions/weblinks/pull/362>





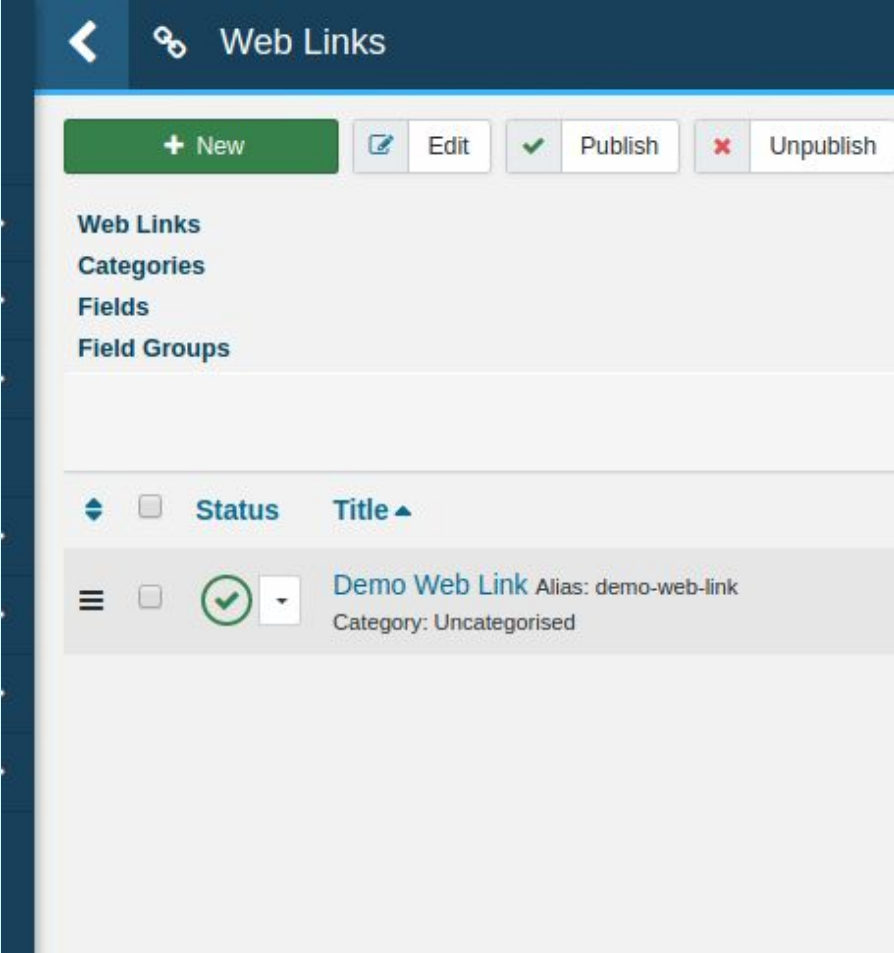
# Weblinks migration: Dispatcher

- Create the dispatcher
- Namespace the WeblinksController as DisplayController



# Weblinks migration: List view

- Define the default view in the DisplayController
- Namespace the weblinks list controller
- Namespace the weblinks model
- Namespace the weblinks list view
- Move the weblinks template files to the right position

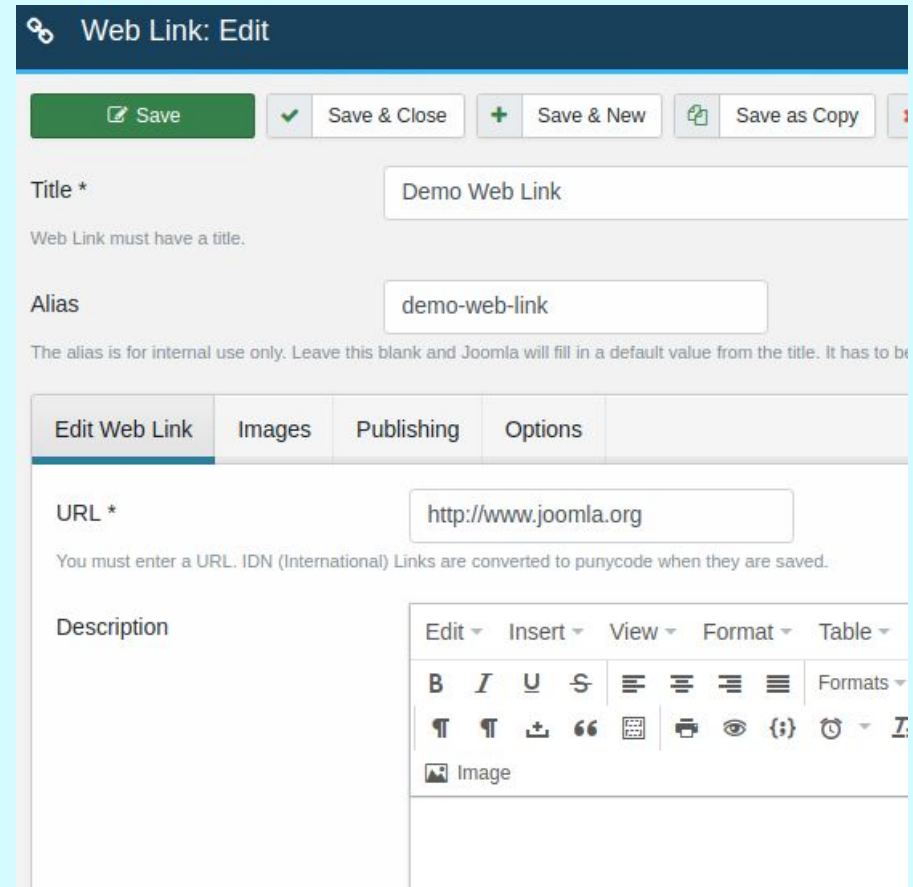


The screenshot shows the Joomla! administration interface for the 'Web Links' component. At the top, there is a dark blue header with a back arrow, a refresh icon, and the title 'Web Links'. Below the header, there is a row of action buttons: a green '+ New' button, an 'Edit' button with a pencil icon, a 'Publish' button with a green checkmark icon, and an 'Unpublish' button with a red 'x' icon. The main content area is divided into sections: 'Web Links', 'Categories', 'Fields', and 'Field Groups'. Below these sections, there is a table with columns for 'Status' and 'Title'. The table contains one entry: 'Demo Web Link' with a status of 'Published' (indicated by a green checkmark icon) and an alias of 'demo-web-link'. The category is listed as 'Uncategorised'.



# Weblinks migration: Form View

- Namespace the weblink controller
- Namespace the weblink model
- Namespace the weblink table
- Namespace the weblink view
- Move the weblink template files to the right position



**Web Link: Edit**

**Save** **Save & Close** **Save & New** **Save as Copy**

**Title \*** Demo Web Link  
Web Link must have a title.

**Alias** demo-web-link  
The alias is for internal use only. Leave this blank and Joomla will fill in a default value from the title. It has to be

**Edit Web Link** **Images** **Publishing** **Options**

**URL \*** http://www.joomla.org  
You must enter a URL. IDN (International) Links are converted to punycode when they are saved.

**Description**

**Edit** **Insert** **View** **Format** **Table**

**B** **I** **U** **S** **≡** **≡** **≡** **≡** **Formats**

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**Image**



# Weblinks migration: Bootstrap 4

- The layout files do need to be adapted
- default.php and edit.php change from row-fluid to row
- default.php and edit.php change from spanX to col-md-X



# Weblinks migration: Misc

- The XML forms are moved to the root folder of the component
- The fields should be put into the folder Field
- For front end applies the same as back end



# Questions?

Slides on

<https://joomla.digital-peak.com/blog/215-joomla-world-conference-2017>



Thank you and enjoy the day :-)

