

# Upgrade Guide

## Directory Structure & Files

Most notable about the 2.0.0 release will be the new directory structure and reorganization of the various files and extensions comprising the CMS.

Files are essentially divided between two primary directories: app and core.

```
/app
/core
index.php
```

The app directory is where everything concerning a specific hub lives. That is, it's the home to all the logs, cache data, uploads, and extensions unique to a specific instance of a hub.

## Constants

|                     |  |
|---------------------|--|
| Joomla              | Hubzero  |
| JPATH_ROOT          | PATH_ROOT  |
| JPATH_BASE          | PATH_ROOT  |
| JPATH_SITE          | PATH_ROOT  |
| JPATH_ADMINISTRATOR | PATH_ROOT  |
|                     | No files or code should be placed into or read from the administrator directory and it is slated for deletion in a future version. |
| JPATH_COMPONENT     | Component::path(\$option)  |
| n/a                 | PATH_APP   |
|                     | Points to ROOT/app where all hub-specific data resides.  |
| n/a                 | PATH_CORE  |
|                     | Points to ROOT/core where the framework and core extensions live.  |
| __JEXEC             | __HZEXEC__   |

It is highly recommended, when including files within the same extension (component, module, plugin), to use the `__DIR__` and `__FILE__` PHP constants and relative paths.

```
<?php
// This file is example.php, located in:
// ROOT/app/components/com_example/admin
```

```
// dirname(__DIR__) moves up one directory
// ROOT/app/components/com_example/models
require_once(dirname(__DIR__) . DS . 'models' . DS . 'foo.php');

// ROOT/app/components/com_example/admin/controllers
require_once(__DIR__ . DS . 'controllers' . DS . 'example.php');
```

## Common Classes

To make upgrading an extension a little easier, a number of Joomla classes (and their methods) have equivalent classes in the new framework.

### JRoute

```
JRoute::_();                                Route::url();
```

### JText

The JText class, used for translating language keys, was replaced by the Lang facade. Along with this, the `_()` and `sprintf()` methods were merged to allow for a single call to `Lang::txt()` with a variable number of arguments. If more than one argument is passed to the `txt()` method, the translator will attempt to perform variable replacement in the translated string.

```
// Language file
COM_EXAMPLE_HELLO="Hello!"
COM_EXAMPLE_HELLO_NAME="Hello, %s!"

...

// PHP

// Outputs 'Hello!'
echo Lang::txt('COM_EXAMPLE_HELLO');

// Outputs 'Hello, HUBzero!'
echo Lang::txt('COM_EXAMPLE_HELLO_NAME', 'HUBzero');
```

```
JText::_();                                Lang::txt();
JText::sprintf();                          Lang::txt();
JText::plural();                           Lang::txts();
JText::alt();                              Lang::alt();
```

### JRequest

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To make transitioning easier, all public JRequest methods have been preserved on the global request object, which can be accessed through the application container or the Request facade.

```
// Via the application container
$request = App::get('request');
$foo = $request->getVar('foo');

// Via the facade
$foo = Request::getVar('foo');
```

In the majority of cases, this means simply dropping the 'J' from JRequest will be sufficient for upgrading an extension's code.

JRequest::\*

Request::\*

### JToolbarHelper

Perhaps one of the easier conversions; Simply replace instances of JToolbarHelper with the Toolbar facade. Method names and the arguments passed to them stay the same.

```
// Joomla
JToolbarHelper::publishList();
JToolbarHelper::unpublishList();

// Hubzero
Toolbar::publishList();
Toolbar::unpublishList();
```

### JSubMenuHelper

As with JToolbarHelper above, only the class name need be updated. All primary method names stay the same.

```
// Joomla
JSubMenuHelper::addEntry(
    JText::_('COM_COLLECTIONS_POSTS'),
    'index.php?option=com_collections&controller=posts',
    $controllerName == 'posts'
);
```

```
// Hubzero
Submenu::addEntry(
    Lang::txt('COM_COLLECTIONS_POSTS'),
    Route::url('index.php?option=com_collections&controller=posts'),
    $controllerName == 'posts'
);
```

### JHtml

Unlike many of the other classes mentioned above, the class, method, and arguments changed for the replacement of Html. Easily enough, the "J" can simply be dropped to have a class name of just Html. The method name and first argument passed to said method is a little more complicated but follows a strict pattern. For Html, all arguments were passed to a method of `_()`, the first argument being a dot-notation combination of sub library and the function to call within it.

```
echo JHTML::_('grid.sort', 'COM_COLLECTIONS_COL_TITLE', 'title', @$this->filters['sort_Dir'], @$this->filters['sort']);
```

For the Html class, the method is now the name of the sub-library and the first argument passed is the name of the function to call.

```
echo Html::grid('sort', 'COM_COLLECTIONS_COL_TITLE', 'title', @$this->filters['sort_Dir'], @$this->filters['sort']);
```

### Examples:

```
// Joomla
JHtml::_('behavior.framework');
```

```
// Hubzero
Html::behavior('framework');
```

## Factory Objects

The following is a list of conversions for objects typically acquired from Joomla's JFactory. In most cases, the objects or their equivalents are available for retrieval from the global App. A number of the objects also have associated Facades for quicker access. In the examples below **method()** is variable and implies that the method formerly called on the Joomla object can be called statically on the facade.

### Example 1:

```
// Joomla
$user = JFactory::getUser();
echo $user->get('name');

// Hubzero
echo User::get('name');
```

### Example 2:

```
// Joomla
$doc = JFactory::getDocument();
$doc->addStyleSheet('/some/file.css');

// Hubzero
Document::addStyleSheet('/some/file.css');
```

| Joomla                   | Hubzero                                | Hubzero Facade   |
|--------------------------|--|--|
| JFactory::getDbo();      | App::get('db');                        | n/a  |
| JFactory::getUser();     | App::get('user');                      | User:: <b>method()</b> ;   |
| JUser::getInstance();    | User::getInstance();                   |  |
| JFactory::getSession();  | App::get('session');                   | Session:: <b>method()</b> ;  |
| JFactory::getDocument(); | App::get('document');                  | Document:: <b>method()</b> ;   |
| JFactory::getConfig();   | App::get('config');                    | Config:: <b>method()</b> ;   |
| JFactory::getLanguage(); | App::get('lang');                      | Lang:: <b>method()</b> ;   |
| JFactory::getCache();    | App::get('cache.store');               | Cache:: <b>method()</b> ;  |
| JFactory::getLogger();   | App::get('log')->logger('{log name}'); | Log:: <b>method()</b> ;  |
|                          |  | Note: The facade only interacts with the debug log. Use App::get('log'); to interact with any other log. |

### Dates

Along with a replacement class for Joomla's JDate, the CMS includes a global Date class to make handling and formatting of dates a little easier.

### Now

The Date class will always return an instance of HubzeroUtilityDate. If no specific time or timestamp is specified, it will default to 'now'.

```
// Output the current timestamp (UTC) in the database's format. ex: "2015-04-03 12:23:56"
echo Date::toSql();
```

```
// Output the current timestamp (UTC) in Unix format.
echo Date::toUnix();
```

```
// Output the current timestamp (UTC) year. ex: "2015"
echo Date::format('Y');
```

```
// Output the current timestamp adjusted to the timezone of the hub. For example, if the UTC time is "12:23 pm" and the hub's set timezone is Eastern Standard Time (EST), the time outputted will be "08:23 am"
echo Date::toLocal('g:i a');
```

### Specified date

A specific timestamp and timezone can be passed to the of method. If no timezone is provided, the timezone will default to UTC.

```
// Output the current timestamp (UTC) year. ex: "2013"
echo Date::of('2013-08-12 17:01:34')->format('Y');
```

```
// Output the current timestamp adjusted to the timezone of the hub. ex: "1:01 pm"
echo Date::of('2013-08-12 17:01:34')->toLocal('g:i a');
```

### Users

The global user object, retrieved from `JFactory::getUser()` can now be accessed anywhere within the CMS from the User facade. Any method, other than `getInstance()`, statically called on User will be acted upon the current, global user. This is the same as calling `JFactory::getUser()->method()`.

```
// Joomla
echo JFactory::getUser()->get('name');
```

```
// Hubzero
echo User::get('name');
```

The `getInstance()` method can be used to retrieve the underlying object (of the facade) and assigned to a variable as needed.

```
// Joomla
$user = JFactory::getUser();
// ... or ...
$user = JUser::getInstance();
```

```
// Hubzero
$user = User::getInstance();
```

Obtaining instances of new users can be achieved by calling `getInstance($id_or_username)` on the User facade in the same manner as calling `JUser::getInstance($id_or_username)` or `JFactory::getUser($id_or_username)`.

```
// Joomla
$user = JFactory::getUser(1234);
// ... or ...
$user = JUser::getInstance(1234);
```

```
// Hubzero
$user = User::getInstance(1234);
```