Introduction to Zend Framework 2 on the IBM i
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• I’ve been doing web application development on the IBMi for 12 years, 7 of those have been PHP

• ZF2 certified architect

• Contributed to the PHP Toolkit

• I have given PHP training courses

• 4th Zendcon, 1st time speaker
Agenda

- Overview of ZF2
- Configuration
- Review the Controller, Model and View
- Running your RPG programs
- Intro to Service Manager and Events Manager
- Using pieces of ZF2
What is Zend Framework 2?

- A framework is a way to organize your code
- Provides the infrastructure you need for almost everything related to your web application
- First released in fall of 2012
- Zend Framework 1 was released in 2006 was less flexible
And why should I use it?

• It’s by the makers of PHP and is supported
• It’s optimized and fast – only loads classes when it needs them
• It has open architecture and is very flexible
• It’s design to use modules means you can share and reuse code easily
• Easy to extend and maintain
• It’s the only framework I know of that has native support for IBM db2
• Excellent for project that are large or could grow large
• You can use pieces in smaller projects
Setting up Apache

- **STRTCPSVR SERVER(*HTTP) HTTPSVR(*ADMIN)**
- **http://myiporservername:2001/HTTPAdmin**

```xml
<VirtualHost *:80>
    DocumentRoot /path/to/skeleton/public
    SetEnv APPLICATION_ENV "development"
    <Directory /path/to/skeleton/public>
        DirectoryIndex index.php
        AllowOverride All
        Order allow,deny
        Allow from all
    </Directory>
</VirtualHost>
```
The Skeleton

- The skeleton sets up the MVC system and module layer for you
- Install via composer:
  - `php composer.phar create-project --stability="dev"` `zendframework/skeleton-application path/to/install`
- Or unzip and FTP to the IFS
  - [https://github.com/zendframework/ZendSkeletonApplication/zipball/master](https://github.com/zendframework/ZendSkeletonApplication/zipball/master)
  - (http://dev.excelsystems.com:8887)
• **Database and Toolkit Configuration (config/application.config.php)**

```php
'service_manager' => array(
    'factories' => array(
        //Database adapter for service manager
        'dbadapter' => function($sm) {
            return new \Zend\Db\Adapter\Adapter(array(
                'driver' => 'IbmDb2',
                'platform' => 'IbmDb2',
                'platform_options' => array('quote_identifiers' => false),
                'database' => '*LOCAL',
                'username' => 'DEVUSER',
                'password' => 'DEVUSER',
                'driver_options' => array(
                    'i5_naming' => DB2_I5_NAMING_ON,
                    'i5_libl' => 'MYLIB QGPL'
                ),
            ));
        },
    ),
),
```

// Toolkit object for service manager
'tkconn' => function ($sm) {
    $dbAdapter = $sm->get('dbadapter');
    $dbAdapter->getDriver()->getConnection()->connect();
    $conn = $dbAdapter->getDriver()->getConnection()->getResource();
    require('ToolkitService.php');
    $namingMode = DB2_I5_NAMING_ON;
    $tkObj = ToolkitService::getInstance($conn,$namingMode);
    return $tkObj;
},
},
Your layout

• It’s in /module/Application/view/layout/layout.phtml
  
  ▶ It contains the header and footer HTML that will be in all of your pages (unless you tell it not to)
  
  ```html
  <html>
  <head>
  <!-- bunch css files -->
  </head>
  <body>
      <!-- your site header HTML -->

      <?php echo $this->content; ?>

      <!-- your site footer HTML -->

  <!-- bunch of javascript files -->
  </body>
  </html>
  ```
Your first module

• It’s a logical grouping of functionality

• What should your first module do?

• It will have it’s own folder under “module”

• It must have a Module.php file
  ▸ It will typically have a src folder for your model, controllers, etc.
  ▸ It will also typically have a view folder for your html/json/other views

• Let’s look at a Module.php file
The Controller, routing and actions

- Configure your controller, route and default action in Module.php
  - Let’s take a look

- Your URL is defined within the routes key in your module config.
  - It will be something like: [http://myip/mymodule/](http://myip/mymodule/)

- Usually actions will follow
  - [http://myip/mymodule/someaction/](http://myip/mymodule/someaction/)

- When accessed the routing process will look for the mymodule controller, and a function called someactionAction()
  - Let’s take a look
The controller cont.

- **Functions to get user input**

```php
$request = $this->getRequest();
if ($request->isPost()) {
    $email = $request->getPost('email');
}
```

- **Functions to pass data to the view**

```php
$model = new ViewModel();
return $model->setVariables(array('email' => $email));
```

- Let’s see a Login Controller
The Model (Zend\Db)

- We configured the adapter in application.config.php
- Zend\Db has functions to help you build your SQL
  - Has built in security (unless you go around it)
- Sample select:

```php
$sqlAdapter = new Sql($this->getAdapter());
$select = new Select();
$select->columns(array('COL1', 'COL2', 'COL3'));
$select->from('MYTABLE');
$select->where(array('email = ?', $email));
$statement = $sqlAdapter->prepareStatementForSqlObject($select);
$result = $statement->execute();
```

- Same code for db2/mysql/etc!
The model cont...

- **Inserts**

```php
$apptTable = new TableGateway('TABLE00', $this->dbAdapter);
$data = array(
    'APTNO' => $appointment->id,
    'CRDATE' => date('Ymd'),
);

$apptTable->insert($data);
```

- **Updates**

```php
$numrows = $apptTable->update($data, array("APTNO" => $appointment->id));
```

- **And Deletes**

```php
$apptTable->delete(array('APTNO' => $id));
```
Calling your RPG/CL program

- We configured the Toolkit in `application.config.php`
- Once we get it from the service manager, we can call it like we would in any other PHP application:

```php
$tkobj = $sm->get('tkconn');
$parms[] = $tkobj->AddParameterChar($type, $parmlength, $rtnField, $rtnField, $parmValue, $varying);
$this->tkobj->AddParameterPackDec($type, $length, $dec, $rtnField, $rtnField, $parmValue);
$result = $this->tkobj->PgmCall($program, $lib, $parms, null, null);
$outparms = $result['io_param'];
```
A quick intro to the Service Manager

- Your binding directory
- “bind” your services typically in the module config

  ```php
  'service_manager' => array(
    'factories' => array(
      'product-table' => function($sm){
        return new Model\ProductTable($sm->get('dbadapter')); },
    ),
  ),
  )
  
- You can get or use your service anywhere
- In the controller for instance:
  
  ```php
  $this->getServiceLocator()->get('product-table');
  ```
The entire Zend Framework 2 MVC architecture is run using events.

The basics:
- Attach:
  
  ```
  $myEventManager = new EventManager();
  $myEventManager->attach('eventName', someKindOfCallable);
  ```
- And Listen:
  
  ```
  $myEventManager->trigger('eventName', null, $someparms);
  ```
- Listen to ZF2 events
  - See the code
Using pieces of ZF2

• Add the autoloader:

```php
$zf2Path = getenv('ZF2_PATH');
if ($zf2Path) {
    if (isset($loader)) {
        $loader->add('Zend', $zf2Path);
    } else {
        include $zf2Path . '/Zend/Loader/AutoloaderFactory.php';
        Zend\Loader\AutoloaderFactory::factory(array(
            'Zend\Loader\StandardAutoloader' => array(
                'autoregister_zf' => true
            )
        ));
    }
} else {
    include $zf2Path . '/Zend/Loader/AutoloaderFactory.php';
    Zend\Loader\AutoloaderFactory::factory(array(
        'Zend\Loader\StandardAutoloader' => array(
            'autoregister_zf' => true
        )
    ));
}
```

• And use the pieces:

```php
use Zend\Mail;
$mail = new Mail\Message();
$mail->setBody($body);
$mail->setFrom('Stephanie@excelsystems.com', 'Your Application');
$mail->setTo($email->to);
$mail->setSubject($email->subject);
$transport = new Mail\Transport\Smtp($options);
$transport->send($mail);
```
Other helper classes

- Zend\Form
- Zend\Filter
- Zend\Validator
- Zend\Pdf
- Zend\Crypt
- Zend\Session

- And much, much more!
Any questions?

• I would love your feedback:
  ▸ Joind.in/

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