



# The modx CMS and framework

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# Why modx?

- CMS + framework
- Open Source + PHP
- Flexibility (no framework “straight-jacket”)
- Graphical approach
- Simple & accessible, yet powerful (like PHP)
- Active community





# A little history ...

- The beginnings: fork of Etomite
- Main modx guys: Ryan Thrash, Jason Coward, Shaun McCormick
- modx Evolution: the beginning
- modx Revolution: the re-write



# Requirements

- PHP 5.1.1+
- Apache 1.3.x+ / IIS / lighttpd / Zeus
- MySQL 4.1.20+
- Linux / Mac OS X / Windows



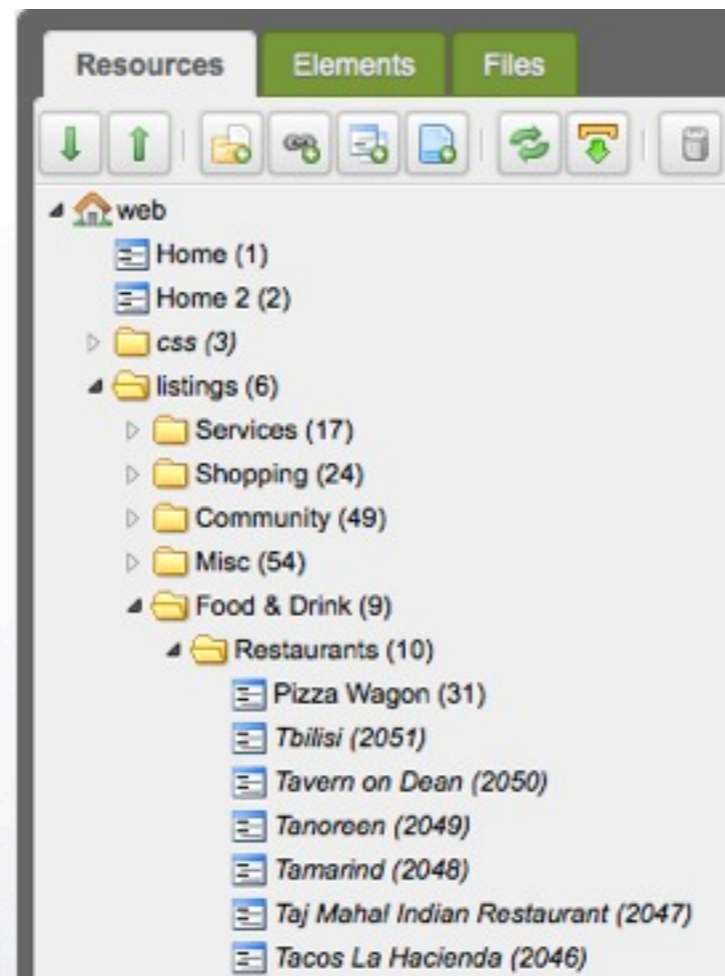


# Documents / Resources

- **Basic unit of information**
- **Document == Resource == “Page”**
- **Document: File or Folder**



# Documents as folders







# Documents as files

Document: Taj Mahal Indian Restaurant Save Duplicate Preview Cancel

Create/Edit Document Page Settings Template Variables Access Permissions

ID: 2047

Uses Template: Listing Detail  Published

Title: Taj Mahal Indian Restaurant

Long Title:

Description:

Resource Alias: taj-mahal-indian-restaurant

Link Attributes:

Summary (introtex):

Parent Resource: 10

Menu Title:

Menu Index: 0

Hide From Menus:



# Templates

- At the foundation of every modx site
- Basic “glue” for all site elements
- Determine every document’s look
- Help to classify documents based on their type / purpose

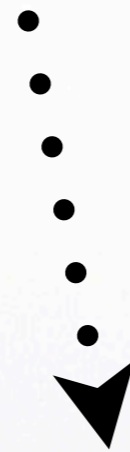




Documents



Templates



Template Variables  
(a.k.a. TVs)





# Template Variables

Create/Edit Document | Page Settings | **Template Variables** | Access Permissions

Data Import | Listings

neighborhood	Bay Ridge, Brooklyn, NY
cuisines	Chowhound Approved Christmas Specialties Dance Floor Diners European Flair Family Dining Family Run Fine Dining
status	Active Closed Pending
phone	(718) 836-1512
address	7315 3rd Ave., Brooklyn, NY
city	Brooklyn
summary	North Indian Cuisine





# Snippets

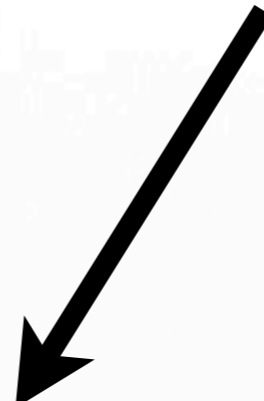
- contain PHP code
- act like functions
- can be called by documents & templates
- In an MVC architecture, the “M” (model)



Document



Template



Snippet





# Snippet: definition (#1)

### Snippet: google\_maps

Save Cancel Help!

Create/edit snippet Properties

Here you can add/edit snippets. Remember, snippets are 'raw' PHP code, and if you expect the output of the snippet to be shown at a certain point within the template, you need to return a value from within the snippet.

Snippet name:

Description:

Category:

Lock snippet for editing:

Clear Cache on Save:

Snippet code (php)

```
<?php
//Params:
//lat - latitude, lng -longitude, desc - description
require_once MODX_BASE_PATH . 'includes/maps/phoogle.class.php';
require_once MODX_BASE_PATH . 'core/config/custom_config.inc.php';

$map = new PhoogleMap();
$map->setAPIKey(GMAPS_API_KEY);

echo "<html> <head>\n";

$map->printGoogleJS();

echo "</head> <body>\n";

$map->addGeoPoint($lat, $lng, $desc);
$map->showMap();

echo "</body></html>";
?>
```





# Snippet: definition (#2)

Snippet: google\_maps\_iframe\_contents

Save | Cancel | Help!

Create/edit snippet | Properties

Here you can add/edit snippets. Remember, snippets are 'raw' PHP code, and if you expect the output of the snippet to be shown at a certain point within the template, you need to return a value from within the snippet.

Snippet name:

Description:

Category:

Lock snippet for editing:

Clear Cache on Save:

Snippet code (php)

```
<?php
//Get params: lat, lng, desc

$googleMap = $modx->runSnippet('google_maps',array(
    'lat' => $_GET['lat'],
    'lng' => $_GET['lng'],
    'desc' => $_GET['desc']
));
echo $googleMap;
?>
```

Side-note: this is a little sneak peak at the modx API!





# Snippet: calling it (from a document)

Document: Google Maps Iframe Page

Save Duplicate Preview Cancel Help!

Create/Edit Document Page Settings Template Variables Access Permissions

ID: 2131

Uses Template: Blank Template  Published

Title: Google Maps Iframe Page

Long Title:

Description:

Resource Alias: gmap

Link Attributes:

Summary (introtext):

Parent Resource: 0

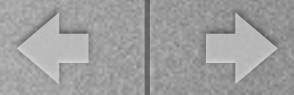
Menu Title:

Menu Index: 13

Hide From Menus:

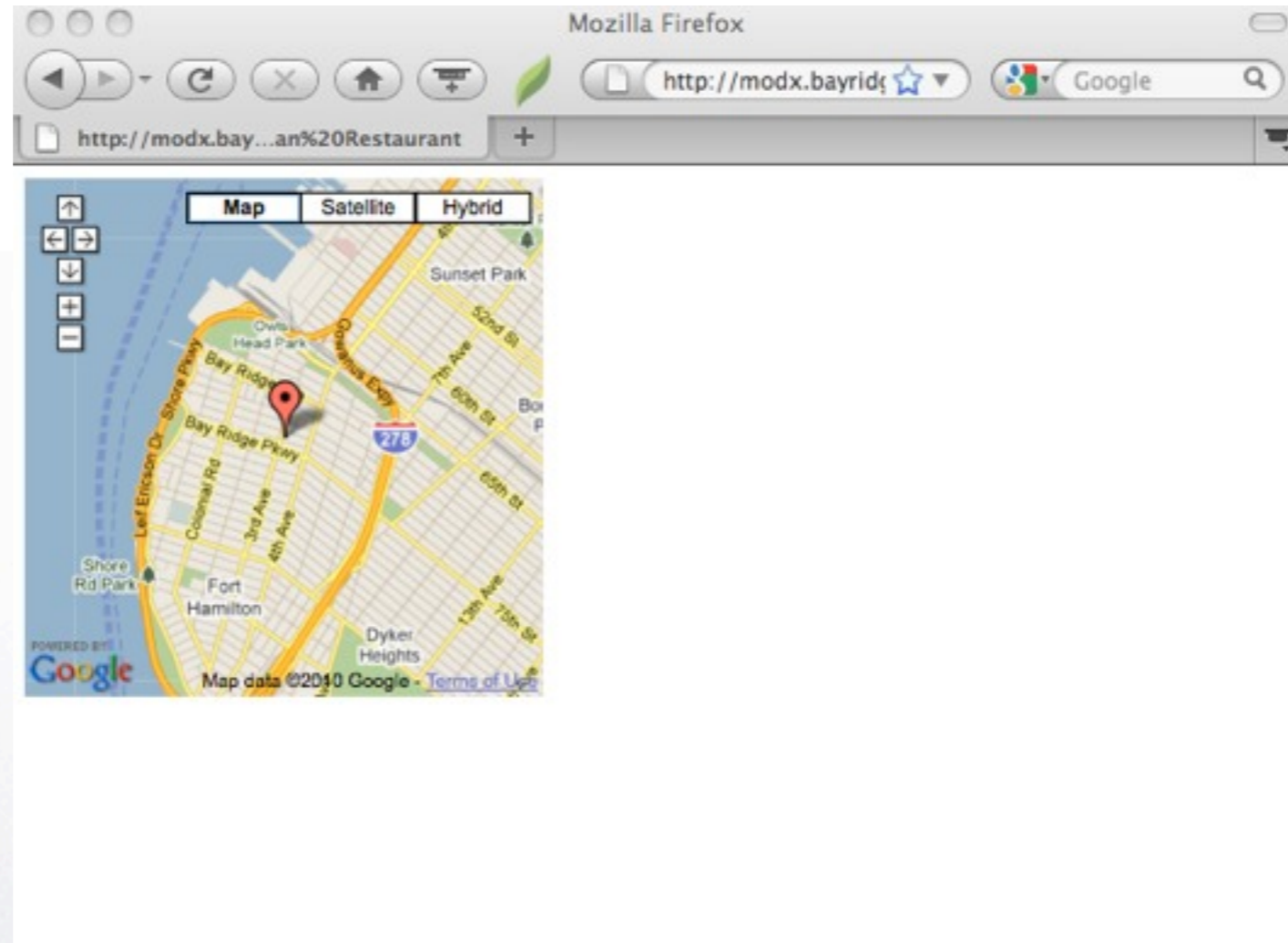
RESOURCE CONTENT

```
[[!google_maps_iframe_contents]
```



# And the result is ...

<http://modx.bayridge-business.com/gmap.html?lat=40.6323290&lng=-74.0270810&desc=Taj%20Mahal%20Indian%20Restaurant>







# Snippet: calling it (from a template)

Template: Listing Detail

Save Cancel Help

Create/edit template Properties Template Variables

Create and edit templates. Changed or new templates won't be visible in your site's cached pages until the cache is emptied, however, you can use the preview function on a page to see the template in action.

Template name: Listing Detail

Description:

Category: Listings

Lock template for editing:

Clear Cache on Save:

Template code (html)

```
[[*address]] <br />
[[*neighborhood]] <br />
[[*phone]] <br /> <br />
[[*summary]] <br />

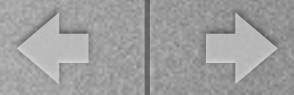
<br />
<br />
<h4 class="page_title">Comments</h4>
<div class="hr dotted clearfix">&nbsp;</div>
[[!modComments? &docId='[[*id]]' ]]
[[!rooter]]

</div>
<!-- End Main Content -->

<!-- Begin Sidebar -->

<div class="grid_4">
  <h4>Our History</h4>
  <div class="hr dotted clearfix">&nbsp;</div>

  <dl class="history">
```



# Snippets in a template affect all documents using that template!

## Bay Ridge Business Directory

Find Businesses LISTINGS    Latest Gossip COMMENTS    Live here REAL ESTATE    Publicize ADD LISTING

---

### Taj Mahal Indian Restaurant

---

7315 3rd Ave., Brooklyn, NY  
Bay Ridge, Brooklyn, NY  
(718) 836-1512

North Indian Cuisine

#### Comments

the greatest indian food in nyc. amazing service, very friendly. never crowded. sophisticated decor. great for large parties -- not to mention great prices and complimentary deserts and appetizers.

John (bablisuga1o4)  
May 26th, 2008 (m/d/y) [Taj Mahal Indian Restaurant](#)

Add a new comment:

Name:

E-Mail:

Message:  
Verification Words:

---

#### Our History

1994 Lorem ipsum dolor sit amet, consectetur adipiscing elit. Nulla vel diam id mauris accumsan egestas. Sed sed lorem. Integer id mi vel sapien fermentum vehicula. Pellentesque vitae lacus a sem posuere fringilla. Vestibulum dolor.

1996 Lorem ipsum dolor sit amet, consectetur adipiscing elit. Nulla vel diam id mauris accumsan egestas. Sed sed lorem. Integer id mi vel sapien fermentum vehicula. Pellentesque vitae lacus a sem posuere fringilla. Vestibulum dolor.

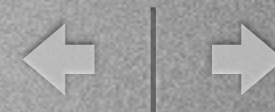
2000



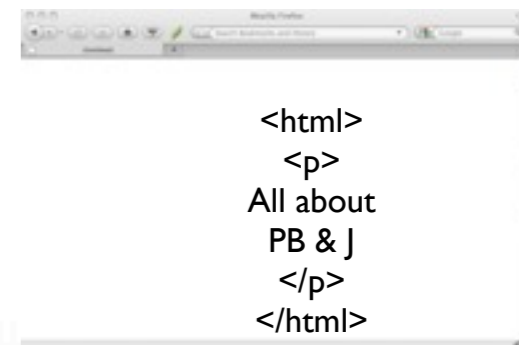


# Chunks

- Pieces of HTML, with placeholders
- Think of them as simplified Smarty templates
- Used by snippets, or templates to create HTML output
- In an MVC architecture, the “V” (view)



Document



Rendered Page



Snippet

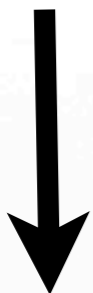


Chunk





Template



Chunk



Document



Rendered  
Page



# Chunk: definition

Chunk: gmap\_iframe

Save Cancel Help!

Create/edit chunk Properties

Here you can add/edit chunks. Remember, chunks are 'raw' HTML code; so any PHP code won't be processed.

Name:

Description:

Category:

Lock chunk for editing:

Clear Cache on Save:

Chunk code (html)

```
<iframe src='[[+base_url]]gmap.html?lat=[[+lat]]&lng=[[+lng]]&desc=[[+desc]]' height='325' width='325'></iframe>
```





# Chunk: calling it (from a template)

Template: Listing Detail

Save Cancel Help

Create/edit template Properties **Template Variables**

Create and edit templates. Changed or new templates won't be visible in your site's cached pages until the cache is emptied, however, you can use the preview function on a page to see the template in action.

Template name: Listing Detail

Description:

Category: Listings

Lock template for editing:

Clear Cache on Save:

Template code (html)

```
<br />

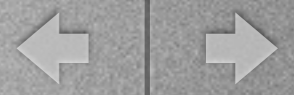
[[!$qmap_iframe? $base_url='[[++site_url]]' $lat='[[*latitude]]' $lng='[[*longitude]]'
$desc='[[*pagetitle]]']]

<br />
<br />
<h4 class="page_title">Comments</h4>
<div class="hr dotted clearfix">&nbsp;</div>

[[!modComments? $docId='[[*id]]' ]]
```

- Chunks accept parameters
- You can pass either system settings (site\_url) or template variables (latitude, longitude, pagetitle) as parameters





# And the result is ...

<http://modx.bayridge-business.com/listings/food-drink/restaurants/taj-mahal-indian-restaurant/>

## Bay Ridge Business Directory


[Find Businesses LISTINGS](#)
[Latest Gossip COMMENTS](#)
[Live here REAL ESTATE](#)
[Publicize ADD LISTING](#)

---

### Taj Mahal Indian Restaurant

7315 3rd Ave., Brooklyn, NY  
 Bay Ridge, Brooklyn, NY  
 (718) 836-1512

North Indian Cuisine



#### Our History

**1994** Lorem ipsum dolor sit amet, consectetur adipiscing elit. Nulla vel diam id mauris accumsan egestas. Sed sed lorem. Integer id mi vel sapien fermentum vehicula. Pellentesque vitae lacus a sem posuere fringilla. Vestibulum dolor.

**1996** Lorem ipsum dolor sit amet, consectetur adipiscing elit. Nulla vel diam id mauris accumsan egestas. Sed sed lorem. Integer id mi vel sapien fermentum vehicula. Pellentesque vitae lacus a sem posuere fringilla. Vestibulum dolor.

**2000**

---

#### Comments





the greatest indian food in nyc. amazing service, very friendly, never crowded. sophisticated decor. great for large parties -- not to mention great prices and complimentary deserts and appetizers.

John (babitsuga1o4@aol.com)  
 May 26th, 2008 (m/d/y) [Taj Mahal Indian Restaurant](#)





# modx tag syntax

		Evolution (old)	Revolution (new)
Template Variable 		[*content*]	[[*content]]
Cached Snippet 		[[amzn_book_srch]]	[[amzn_book_srch]]
Uncached snippet 		[! amzn_book_srch!]	[[!amzn_book_srch]]
Chunk 		{{gmap_iframe}}	[[ \$gmap_iframe ]]
Chunk placeholders		[+latitude+]	[[+latitude+]]

More info.: <http://rtfm.modx.com/display/revolution20/Tag+Syntax>



# “Hackable” URLs

- Using aliases and folders to create, hackable, semantic URLs
- E.g.:  
<http://modx.bayridge-business.com/listings/food-drink/restaurants/taj-mahal-indian-restaurant/>
- Organize your content in the same way that you think about it, and the URLs will reflect this semantic structure automatically!





# Caching

- Document-level caching
- Snippet-level caching
- Caching is essential for high-traffic sites!



# Document-level caching

Document: Spartan Souvlaki Save Duplicate

Create/Edit Document Page Settings **Template Variables** Access Permissions

Container:

Rich Text:

Published On: 2010-09-21 7:34 am

Publish Date:

Unpublish date:

Searchable:

**Cacheable:**

Empty Cache:

Deleted:

Content Type: HTML

Content Disposition: Inline

Class Key: modDocument

Document are cacheable by default





# Snippet- and element-level caching

- Cached snippet: `[[google_maps]]`
- Uncached snippet: `[[!google_maps]]`
- Uncached chunk: `[[!$chunk]],`
- Uncached placeholder: `[[!+placeholder]]`
- Uncached template variable `[[!*template_var]]`



# Page-level + snippet-level caching

Page	Snippet	Result (Page)
Cached	Cached	Cached
Cached	Uncached	If only 1 snippet / page: Uncached If > 1 snippet/page: Mixed
Uncached	Cached	Uncached
Uncached	Uncached	Uncached





# Caching: summary

- Page-level cache overrides snippet-level cache
- Best practice: keep all pages cached, use uncached snippets for sections doing data processing, or needing instant updates
- Page cache is automatically cleared when the page (or snippets it uses) is updated



# Extending modx

- snippets, plugins, packages (“add-ons”)
- plugins: pieces of PHP code that affect how the modx manager and user-facing site operate
- packages: collections of snippets and chunks available through the modx manager

Browse add-ons: <http://modx.com/extras/repository/>10





# Extending modx: upgrading packages

## Package Management

Help!

Packages Providers

Packages are collections of MODx components that can be used within MODx in a variety of ways. Here you can manage them, update their installation status, disable or enable installed packages, or download new ones from remote providers. Right-click on a row in the grid for more options.

Add New Package Download Extras

NAME	VERSION	RELEASE	INSTALLED	UPDATES AVAILABLE	PROVIDER	
ditto	3.0	alpha3	Sep 26, 2010 12:42 AM	No	modxcms.com	Uninstall
getpage	1.0.0	rc1	Jul 31, 2010 11:26 PM	Yes	modxcms.com	Uninstall
getresources	1.1.0	pl	Jul 31, 2010 11:26 PM	Yes	modxcms.com	Uninstall
googlemapstv	1.0	rc3	Sep 26, 2010 01:07 AM	No	modxcms.com	Uninstall
login	1.0.3	rc1	Jul 31, 2010 11:29 PM	Yes	modxcms.com	Uninstall
quip	1.1.1	pl	Sep 21, 2010 05:07 PM	No	modxcms.com	Uninstall
wayfinder	2.1.1	rc1	Sep 26, 2010 12:42 AM	No	modxcms.com	Uninstall

Page 1 of 1 Displaying 1 - 7 of 7





# Extending modx: adding new packages

The screenshot shows the MODx Package Retriever interface. The main heading is "Package Retriever" and the sub-heading is "Select Packages to Download". The interface is divided into several sections:

- PACKAGE BROWSER:** A search bar and a tree view of the modxcms.com repository. The tree view shows folders for MODx Add-Ons, Core Extensions, Front End Templates, Manager Templates, and Site Packages.
- Download Extras:** A section with instructions to choose a repository, total package and download counts (86 packages, 245,758 downloads), and two lists of popular and newest additions.
- Most Popular:** A list of 10 popular packages with their names and download counts.
- Newest Additions:** A list of 10 newest packages with their names, versions, and dates.
- Bottom Section:** A table listing specific packages with their names, versions, types, dates, and status.

Navigation buttons for "Back" and "Finish" are visible at the bottom left of the main content area.

Package Name	Version	Type	Date	Status
quip	1.1.1	pl	Sep 21, 2010 05:07 PM	No
wayfinder	2.1.1	rc1	Sep 26, 2010 12:42 AM	No





# modx API

## Why use the modx API?

- Call a snippet from a snippet
- Parse a chunk, and return its output from a snippet
- Cache the result of a function
- Save data to the database using xPDO library



# Using the modx API

- All snippets running within modx have access to the global \$modx object
- The \$modx object is the main, and most important object
- Call various methods of \$modx

API Reference: <http://rtfm.modx.com/display/revolution20/modX>





# modx API, snippets

## **Call a snippet from a snippet:**

```
$googleMap = $modx->runSnippet('google_maps',array(  
    'lat' => $_GET['lat'],  
    'lng' => $_GET['lng'],  
    'desc' => $_GET['desc']  
));
```



# modx API, chunks

## **Parse a chunk, and return its output (from a snippet)**

### Snippet:

```
$row = array('name' => 'Tom Jones', 'email' => 'tj@tomjones.example.com', 'message' => 'hi there!');  
  
$formattedComment = $this->oModx->getChunk('show_comment', $row);  
  
echo $formattedComment;
```

### Chunk:

```
<p> [[+message]] <br />  
  
[[+name]] <em>([[+email]])</em> </p>
```





# modx API - accessing TVs

- Get current document's id:

```
$modx->resource->get('id');
```

- Get current document's (built-in) "content" TV:

```
$modx->resource->get('content');
```

- Get the value of current document's (custom) "latitude" TV:

```
$oTV = $modx->getObject( 'modTemplateVar', array( 'name'=>'latitude' ) );
```

```
$latitude = $oTV->renderOutput($modx->resource->get('id'));
```



# modx API - running DB queries

- PDO -> xPDO -> \$modx (\$modx inherits from PDO!)

- Sample code:

```
foreach( $modx->query('SELECT cuisine_id, cuisine FROM cuisines LIMIT 5') as $row ){  
    echo $row['cuisine_id'] . ',' . $row['cuisine'] . '<br />';  
}
```

- Result

```
1,nocuisine  
2,Christmas Specialties  
3,Italian  
...
```

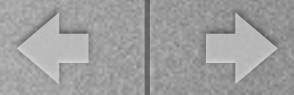
(More on xPDO and PDO in the appendix)





# Modx Plugins

- **Extend and modify core modx functionality**
- **Example: create a custom routing system to serve “virtual pages”, using 404 handler**



# Modx Plugin Events

**New Plugin** Save Cancel Help!

Create/edit plugin System Events Properties

Select the events that you would like this plugin to listen to.

NAME	ENABLED	GROUP	PROPERTY SET	PRIORITY
OnBeforeCacheUpdate	<input type="checkbox"/>	System		
OnBeforeChunkFormDelete	<input type="checkbox"/>	Chunks		
OnBeforeChunkFormSave	<input type="checkbox"/>	Chunks		
OnBeforeDocFormDelete	<input type="checkbox"/>	Resources		
OnBeforeDocFormSave	<input type="checkbox"/>	Resources		
OnBeforeEmptyTrash	<input type="checkbox"/>	Resources		
OnBeforeManagerLogin	<input type="checkbox"/>	Security		
OnBeforeManagerLogout	<input type="checkbox"/>	Security		
OnBeforeManagerPageInit	<input type="checkbox"/>	System		
OnBeforePluginFormDelete	<input type="checkbox"/>	Plugins		
OnBeforePluginFormSave	<input type="checkbox"/>	Plugins		





# Questions? Comments?



# Thank You!

- See appendix for links, and more info.





# Appendix

## Start Here:

- Main site: <http://www.modxcms.com/>
- Forums: <http://modxcms.com/forums/>
- modx Revolution documentation: <http://rtfm.modx.com/display/revolution20/Home>
- Book: MODx Web Development (covers modx Evolution). <https://www.packtpub.com/modx-web-development/book>
- Bob's Guides: <http://bobsguides.com/MODx.html>



# xPDO

xPDO is an object-relational mapping framework that stands at the core of modx Revolution. It was written by modx core contributor Jason Coward.

PDO reference: <http://us3.php.net/manual/en/intro.pdo.php>

xPDO intro.: <http://rtfm.modx.com/display/xPDO20/Fundamentals>

xPDO class ref.: <http://rtfm.modx.com/display/xPDO20/Class+Reference>

xPDO api docs: <http://api.modxcms.com/xpdo/xPDO.html>

xPDO forum: <http://modxcms.com/forums/index.php/board,219.0.html>

Blog Posts:

<http://marcoraven.net/modx/modxrevolutionxpdo.html>





# Useful Packages

## Listing and Summarization:

- getResources:

<http://modx.com/extras/package/?package=552>

- Ditto:

<http://modx.com/extras/package/?package=96>



# Useful Packages

## Menus:

- Wayfinder:

<http://modx.com/extras/package/?package=487>

- Breadcrumbs:

<http://modx.com/extras/package/?package=54>

For all packages, see: <http://modx.com/extras/repository/10>