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FORMERLY MX DEVELOPER'S JOURNAL

Web Developer's & Designer's Journal

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VOLUME 4 ISSUE 4 **2006**

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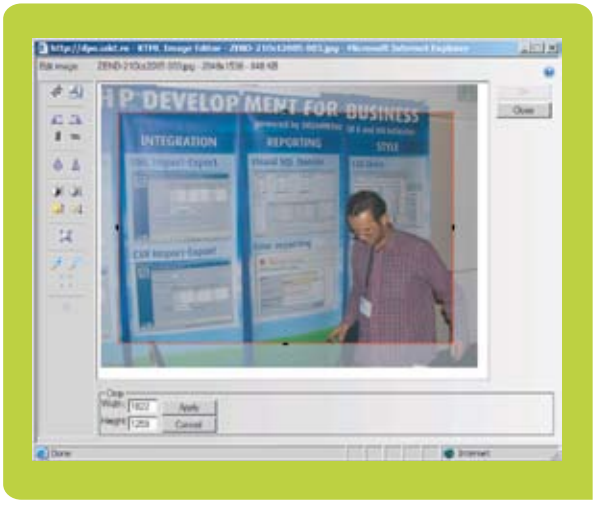

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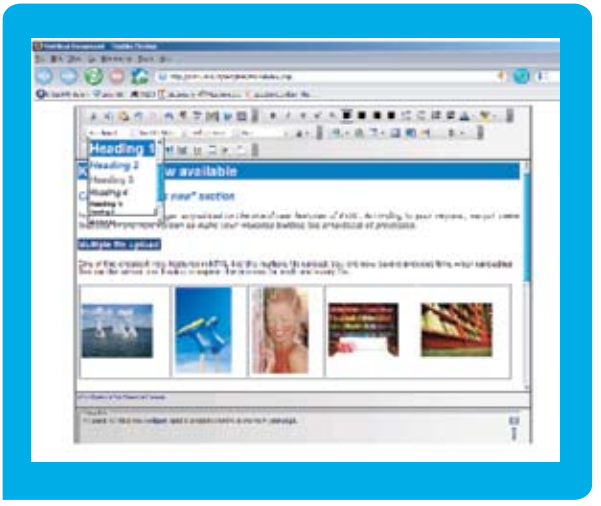

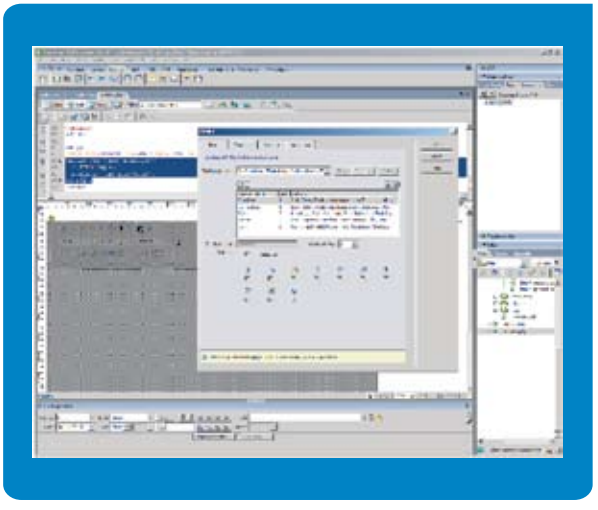

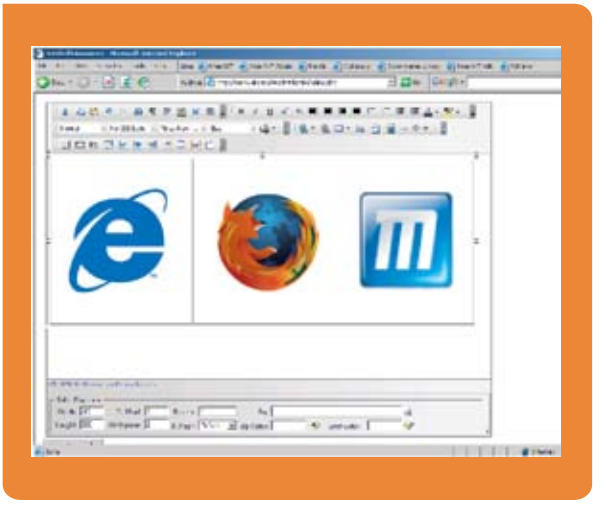

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Cover Price U.S. $5.99
U.S. $29.99 (12 issues/1 year)
Canada/Mexico: $49.99/year
International: $59.99/year
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Back Issues: $12/each

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MX Developer's Journal (ISSN#1546-2242) is published monthly (12 times a year) by SYS-CON Publications, Inc., 135 Chestnut Ridge Road, Montvale, NJ 07645.

Welcome to Web Developer's & Designer's Journal

by Jeremy Geelan

The advisability of eating in your own kitchen is something you often hear about, but never does it make more sense than when applied in the world of software development. Why accept that service-oriented architecture is a must for your mission-critical backend systems, for example, if you find that the developer recommending such a trajectory does not personally make use of SOA?

From this month, as weve all seen, Adobe is very prominently eating in its own kitchen (its recently-acquired kitchen, I should say): it has relaunched Adobe.com which is now a mega-fusion of the original Macromedia and Adobe sites as a ColdFusion-powered site. All credit to whoever is behind this important and timely initiative: what better recommendation of a product can there be than that the company who owns it uses it not just in a customer-facing context, but in the customer facing context: the company web site?

Ben Forta, well known to ColdFusion developers worldwide, commented about Adobe.com's new look: "It's clean. The menus are intuitive. Downloads are all listed in one place. [There are] shortcut URLs (try www.adobe.com/coldfusion for example). Having products listed on the homepage is great."

The site switchover, which has energized both designers and developers, has been an object lesson in why I am so confident, along with many others Web-wide judging by the buzz evident throughout the blogosphere, that the whole that is Macromedia + Adobe is going to be shown over time to be considerably greater than the sum of its parts.

Think about it. This is the first time that developers and designers have been such close corporate bedfellows, at least at Adobe. This high-octane combination of two previously disparate communities is the fons et origo of the New Adobe, the rationale for the entire merger. And it is precisely why we have re-launched MX Developer's Journal this month as ***Web Developer's & Designer's Journal***, with Adobe's close cooperation and involvement.

The ecosystem reflected in the magazine will, moving forward, be as vibrant as any new marriage. The fact is that developers have as much to learn from designers as designers do from developers. WebDDJ aims to aid and abet the honeymoon right away, and then over coming years mirror the rise of this great new combined company until its silver anniversary at least.

Next month it will be my pleasure to introduce you to the new editorial board, which we at SYS-CON Media are equally proud to say is backed and guided by a brand new International Advisory Board which reads like a "Who's Who" of some of the very finest interface designers and Web developers in the industry today.

The opportunity, presented by the coming together of two great companies, to widen and deepen the coverage we offer each month has proven too strong to resist, so hold onto your hats! Next month we'll be drilling down into just some of the welter of new topics, themes, and issues that the magazine will now be covering, in addition to almost everything we already covered for the past four years.

How Web Developer's & Designer's Journal takes shape over the coming months and years will, as always, be in large part a function of feedback from readers, too. We can most easily be reached by e-mail, just send your comments and suggestions to WebDDJ@sys-con.com.

Meantime, enjoy. We'll meet here again next month!

Jeremy Geelan is group publisher and editorial director of SYS-CON Media and is responsible for the development of new titles and technology portals for the firm. He regularly represents SYS-CON at conferences and trade shows, speaking to technology audiences both in North America and overseas.

Flexstore on Rails

The traditional shopping cart application

by Christophe Coenraets

flexstore is a traditional Shopping Cart application. In this tutorial, we create two modules:

1. The administration module is an internal application used to maintain the product database. You use the administration module to create, update, and delete products.
2. The store module is a customer-facing application. Customers use the store module to browse and filter the product catalog.

In the administration module, we use Rails' simple scaffolding feature to automatically provide the default infrastructure to list, view, create, edit, and delete products. In the store module, we experiment with additional features:

- Templates
- Filtering using AJAX
- Partial Page Templates
- Builder Templates
- Putting a Flex front-end on top of a Ruby on Rails application

This tutorial uses a MySQL database. It is assumed that you already have MySQL up and running.

Create the Flexstore Database

1. Create a database called "flexstore"

Note: Provide values for userid (-u) and password (-p) as appropriate if the above values don't match your installation.

Open a command prompt, navigate to the bin directory of your MySQL Server installation, and type the following command:

```
mysqladmin -uroot create flexstore
```

2. Import the data
   - Download flexstore.sql.zip at http://coenraets.com/tutorials/flexonrails/resources/flexstore.sql.zip
   - Extract flexstore.sql into the bin directory of your MySQL Server installation
   - Type the following command to import the data in the flexstore database:

```
mysql -uroot flexstore < flexstore.sql
```

Install Ruby and Rails

1. Install Ruby
   - Download the Ruby installer at http://rubyforge.org/frs/download.php/4174/ruby182-15.exe
   - Run the installer. Accept all the default settings.

2. Install Rails
   Type the following command in the c:\ruby directory:

```
gem install rails --remote --include-dependencies
```

Create the Administration Module

1. Create the Flexstore application
   - Create a directory called Rails in c:\
   - Type the following command in c:\rails:

```
rails flexstore
```

2. Configure the database for the flexstore application
   - Edit database.yml in c:\rails\flexstore\config
   - Set the database parameter to flexstore in the development, test, and production sections
3. Create a controller for the administration module
   Type the following command in c:\rails\flexstore

```
ruby script\generate controller Admin
```

4. Create a model for the products
   Type the following command in c:\rails\flexstore:

```
ruby script\generate model Product
```

5. Modify the admin controller to enable Rails' scaffolding
   - Edit admin_controller.rb in c:\rails\flexstore\app\controllers
   - Modify the class as shown in Figure 1.

6. Test the application
- Start the WEBrick web server installed with Rails
  Type the following command in c:\rails\flexstore:

```
ruby script\server
```

- Open a browser and access the following URL:

```
http://localhost:3000/admin
```

Rails' scaffolding defined in the Admin controller automatically provides default actions and views to list, view, create, edit and delete products. Each of these actions and views can be overwritten. We overwrite the default index action in the next steps.

7. Define a custom index action
   - Edit admin_controller.rb in c:\rails\flexstore\app\controllers
   - Define an index action as shown in Figure 2.

8. Create the view for the index action
   - Create a file name index.rhtml in c:\rails\flexstore\app\views\admin
   - Edit index.rhtml as follows:

```
<html>
<head>
<title>Product List</title>
</head>
<body>
<table>
<tr>
<td>Name</td>
<td>Price</td>
</tr>
<% @products.each do |product| %>
<tr>
<td><%= link_to product.name, :action => "show", :
id => product.id %></td>
<td align="right"><%= sprintf("$%0.2f", product.
price) %></td>
</tr>
<% end %>
</table>
<p><%= link_to "Create new product", :action =>
"new" %></p>
</body>
</html>
```

9. Test the application. Open a browser and access the following URL:

```
http://localhost:3000/admin
```

10. Validation
- Edit product.rb in c:\rails\flexstore\app\models
- Modify the class as shown in Figure 3.

11. Test the application again. Try to add a product without a name or with a non numeric price value.

Create the Store Module

1. Deploy the product images and the flexstore stylesheet
   - Download assets.zip at http://coenraets.com/tutorials/flexonrails/resources/assets.zip .
   - Extract assets.zip in c:\rails\flexstore\public.

2. Create a controller for the administration module
   Type the following command in c:\rails\flexstore:

```
ruby script\generate controller Store
```

3. Define an index action in the Store controller
   - Edit store_controller.rb in c:\rails\flexstore\app\controllers
   - Define an index action as shown in Figure 4.

4. Create the view for the index action
   - Create a file name index.rhtml in c:\rails\flexstore\app\views\store
   - Edit index.rhtml as follows:

```
<html>
<head>
<title>Flexstore on Rails</title>
<%= stylesheet_link_tag "flexstore", :media =>
"all" %>
</head>
<body>
<!-- begin catalog -->
<div id="catalog">
<% for product in @products %>
<!-- begin thumbnail -->
<div class="thumbnail">
<strong><%= product.name %></strong>
<img src="<%= product.image %>"/>
<div>
<font color="#CC6600"><b><%= sprintf("$%0.2f",
product.price) %></b></font>
<p>
<%= product.camera==1?'Camera<br />':'' %>
<%= product.video==1?'Video<br />':'' %>
<%= product.triband==1?'Triband':'' %>
</p>
</div>
</div>
<!-- end thumbnail -->
<% end %>
</div>
<!-- end catalog -->
</body>
</html>
```

5. Test the application
   Open a browser and access the following URL:

```
http://localhost:3000/store
```

Using Partial Page Templates

In real life, you would probably have to display product thumbnails in different parts of the application. In fact, we will need product thumbnails in the filter

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Figure 1

Figure 2

Figure 3

Figure 4

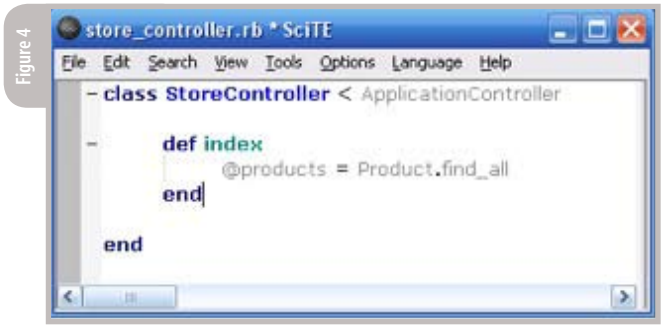
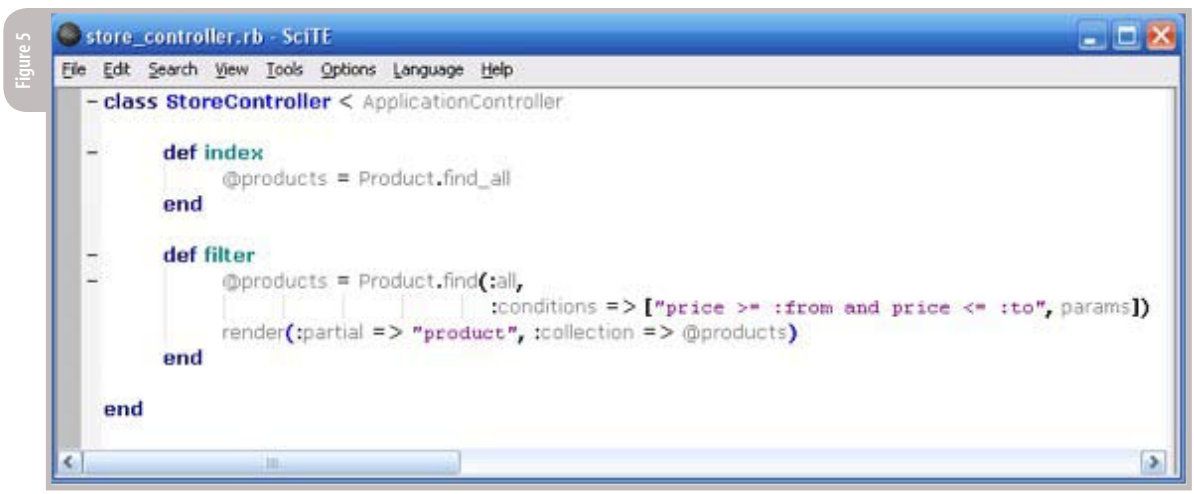


Figure 5



module described in the next section. To avoid code duplication, we will isolate the HTML fragment used to render a product thumbnail in a partial page template.

1. Create a file named _product.rhtml (the partial page template) in c:\rails\flexstore\app\views\store
2. Open index.rhtml in c:\rails\flexstore\app\views\store
3. Copy the HTML fragment corresponding to the thumbnail div and paste it in _product.rhtml
4. In index.rhtml:
   - Delete the content of the catalog div (both the for loop and the thumbnail div)
   - Add the following line of code as the sole content of the catalog div:

```
<%= render(:partial => "product", :collection => @products) %>
```

Because we are passing a collection (the list of products) as a parameter, the partial page template will be repeaded for each item in the collection.

5. Test the application. The product catalog should look the same as in the previous section.

```
http://localhost:3000/store
```

Filtering with AJAX

In this section, we provide the product catalog with filtering capabilities to allow the user to specify a price range. In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Notice the use of the partial page template to return a list of thumbnails for the products in the selected price range.

response to the user's selection, the product catalog is refreshed to display the phones in the selected price range only. For a better user experience, the product catalog is refreshed without refreshing the entire page. This is accomplished using Rails' built-in support for Ajax.

1. Add a filter action to the store controller
   - Edit store_controller.rb in c:\rails\flexstore\app\controllers
   - Define a filter action as shown in Figure 5.

2. Modify the index view to allow the user to enter a price range
   - Edit index.rhtml in c:\rails\flexstore\app\views\store
   - Add the following JavaScript include tag immediately after the stylesheet link tag

```
<%= javascript_include_tag "prototype" %>
```

   - Add the following html fragment immediately before the catalog div.

```
<div id="left">
<%= form_remote_tag(:update => "right", :url => {:action => :filter}, :loading => "$('right').innerHTML=''") %>
Select your price range:<br />
<br />
From:<br />
<%= text_field_tag("from", "0") %>
<br />
<br />
To:<br />
<%= text_field_tag("to", "1000") %><br />

<br />
<%= submit_tag "Filter" %>
<%= end_form_tag %>
</div>
```

3. Change the id of the catalog div to "right". This will allow the stylesheet to position the product catalog to the right of the filter panel.
4. Test the application

```
http://localhost:3000/store
```

Builder Templates

Using Builder templates, you can dynamically generate XML documents. This provides an integration point that allows other technologies to integrate with Rails, and leverage productivity features of the framwework. In this section, we create a template that generates an XML document for the product catalog.

1. Add a productlist action to the store controller
   - Edit store_controller.rb in c:\rails\flexstore\app\controllers
   - Define a productlist action as shown in Figure 6.

"For a better user experience, the product catalog is **refreshed without refreshing the entire page**"

Figure 6

store_controller.rb * SciTE

File Edit Search View Tools Options Language Help

```
class StoreController < ApplicationController

    def index
        @products = Product.find_all
    end

    def filter
        @products = Product.find(:all,
                                 :conditions => ["price >= :from and price <= :to", params])
        render(:partial => "product", :collection => @products)
    end

    def productlist
        @products = Product.find_all
    end

end
```

2. Create the builder template

- Create a file called productlist.rxml in c:\rails\flexstore\app\views\store
- Edit productlist.rxml as follows:

```
xml.list do
@products.each do |product|
xml.product do
xml.name(product.name)
xml.description(product.name)
xml.image(product.image)
xml.camera(product.camera)
xml.video(product.video)
xml.triband(product.triband)
xml.price(product.price, :currency =>
"USD")
end end
end
```

3. Test the Builder template by accessing the following URL in a browser:

```
http://localhost:3000/store/pro-
ductlist
```

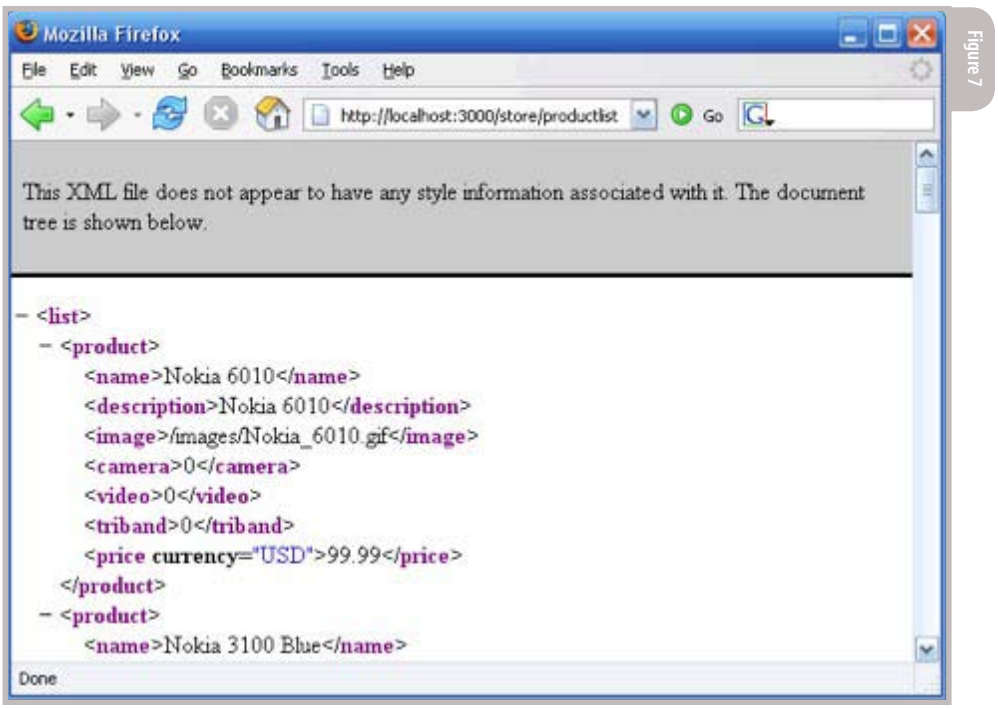


Figure 7

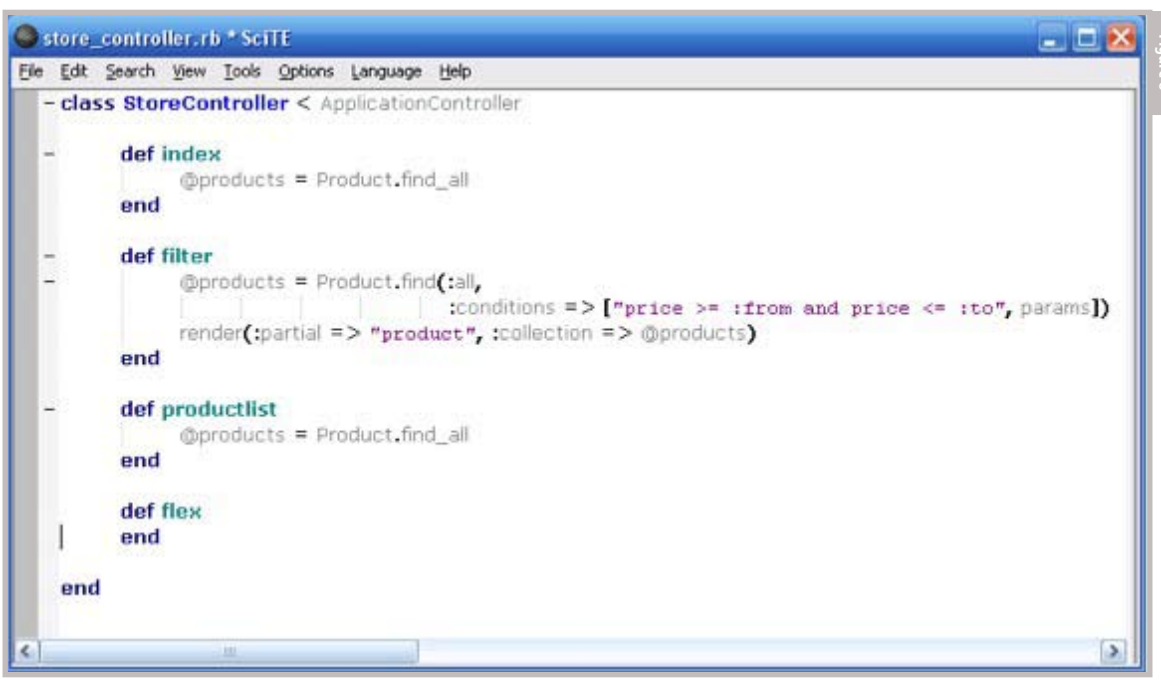


Figure 8

You should see an XML document similar to the as shown in Figure 7.

Putting a Flex Front-End on Top of the Rails Application

In this section, we use Flex to improve the user experience of the product catalog. The user interface to capture the filtering criteria is still implemented in HTML.

The Flex-based product list uses the Builder template created in the previous section to retrieve the catalog data. Contrary to our current version, the Flex-based list handles product filtering at the client-side. Combined with the use of rich effects and transparency, this provides the user with smoother transitions between selections. These transitions implement the User Interface Design best practise of "visual continuity", and include visual cues indicating which products are being filtered out and filtered in.

1. Define a Flex action
   - Edit store_controller.rb in c:\rails\flexstore\app\controllers
   - Define a flex action as shown in Figure 8.

2. Deploy catalog.swf (the compiled version of the Flex-based product catalog).
   - Download flexcatalog.zip at http://coenraets.com/tutorials/flexonrails/resources/flexcatalog.zip.
   - Extract flexcatalog.zip in c:\rails\flexstore\public

"Contrary to our current version, the Flex-based list **handles product filtering at the client-side**"

Figure 9

Notes:

- This application was built using the Flex XML-based framework. You can download the source code at http://coenraets.com/tutorials/flexonrails/resources/flexstore_source.zip.
- The application was built with Flex 2 beta and requires Flash Player 8.5 beta 2 available at http://labs.adobe.com.

3. First Cut

   In our first iteration, the user interface of the application remains very similiar to the HTML version. We simply replace the HTML-based product list with a Flex-based version.
   - Create a file named flex.rhtml in c:\rails\flexstore\views\store
   - Copy the code below in the flex.rhtml

```
<html>
<head>
<title>Flexstore on Rails</title>
<%= stylesheet_link_tag "flexstore", :
media => "all" %>
<script type="text/javascript" src="/
flex/embedflash.js" ></script>
<script type="text/javascript" src="/
flex/FABridge.js" ></script>
<script>
function filter() {
var from = document.
getElementById("from").value;
var to = document.
getElementById("to").value;
var flexApp = FABridge.store.root();
flexApp.filter(from, to);
}
</script>
</head>
<body>
<div id="left">
Select your price range:<br />
<br />
From:<br />
<input type="text" id="from"
value="0"/>
<br />
<br />
To:<br />
<input type="text" id="to"
value="1000"/><br />
<br />
<input type="submit" value="Filter"
onclick="filter()"/>
</div>
```

```
<div id="flex">
<script>embedFlash("flexApp", "/
flex/catalog.swf", 690, 510,
"bridgeName=store");</script>
</div>
</body>
</html>
```

- Test the application

```
http://localhost:3000/store/flex
```

4. Optimizing the user experience

In this second iteration, we optimize the filtering experience: We use sliders (from the Yahoo UI library) to select the price range. The Flex-based product list reacts to the user's selection as the sliders are dragged.

- Install the Yahoo sliders. Download slider.zip at http://coenraets.com/tutorials/flexonrails/resources/slider.zip, and unzip the file in c:\rails\flexstore\public.
- Overwrite the content of flex.rhtml with the code in right side bar.

Resources

- Ruby on Rails web site
- Flex on Adobe Labs

Christophe Coenraets is currently the Senior Evangelist for Adobe's developer-centric Rich Internet Applications initiative. He worked at Powersoft—which then became part of Sybase—from 1994 to 2000, then started working with Java in 1996 and became the Technical Evangelist for the company's Java and Internet Application Division. After joining Macromedia as the Technical Evangelist for JRun, the company's J2EE application server, Christophe started working on Rich Internet Applications and on ways of integrating Flash front ends with J2EE back-ends. He has been a regular speaker at conferences worldwide for the last 10 years, including demonstrating Flex at the "Real-World AJAX" seminar series both in New York and San Jose. He'll also be speaking at AjaxWorld Conference & Expo in October (http://ajaxworldconference.com/). ccoenrae@adobe.com

```
<html>
<head>
<title>Flexstore on Rails</title>
<%= stylesheet_link_tag "flexstore", :
media => "all" %>
<script type="text/javascript" src="/
flex/embedflash.js" ></script>
<script type="text/javascript" src="/
flex/FABridge.js" ></script>
<script type="text/javascript" src="/yui/
YAHOO.js" ></script>
<script type="text/javascript" src="/yui/
event.js" ></script>
<script type="text/javascript" src="/yui/
dom.js" ></script>
<script type="text/javascript" src="/yui/
dragdrop.js" ></script>
<script type="text/javascript" src="/yui/
slider.js" ></script>
<script type="text/javascript">
var slider1, slider2;
function init() {
document.getElementById("camera").checked
= false;
document.getElementById("video").checked
= false;
document.getElementById("triband").
checked = false;
slider1 = YAHOO.widget.Slider.getHorizSli
der("slider1", "thumb1", 0, 200, 2);
slider1.onChange = function(offsetFromSt
art) {
var newValue = offsetFromStart * 5;
document.getElementById("value1").
innerHTML = newValue;
var flexApp = FABridge.store.root();
flexApp.setMinimum(newValue);
};
slider1.onMouseUp = function() {
var flexApp = FABridge.store.root();
flexApp.layoutTiles();
};
slider2 = YAHOO.widget.Slider.getHorizSli
der("slider2", "thumb2", 200, 0, 2);
slider2.onChange = function(offsetFromSt
art) {
var newValue = 1000 + offsetFromStart *
5;
document.getElementById("value2").
innerHTML = newValue;
var flexApp = FABridge.store.root();
flexApp.setMaximum(newValue);
};
slider2.onMouseUp = function() {
var flexApp = FABridge.store.root();
flexApp.layoutTiles();
};
}
window.onload = init;
</script>
</head>
<body style="margin-top:20px; margin-
left:20px;">
Select your price range:<br />
<br />
<div id="slider1" class="sliderBG"
onkeypress="return handleHorizSliderKey(t
his, YAHOO.util.Event.getEvent(event))" >
Minimum: $<span id="value1" >0</span>
<div id="thumb1" class="thumb"><img
id="img1" src="/yui/horizSlider.png"></
div>
</div>
<br /><br />
<div id="slider2" class="sliderBG"
onkeypress="return handleHorizSliderKey(t
his, YAHOO.util.Event.getEvent(event))" >
Maximum: $<span id="value2" >1000</span>
<div id="thumb2" class="thumb"
style="left:200px"><img src="/yui/
horizSlider.png"></div>
</div>
<br /><br />
Select the required features<br />on your
mobile device:<br />
<br />
<table>
<tr><td><input type="checkbox"
id="camera" onClick="var app = FABridge.
store.root();app.setCamera(this.
checked);"/></td><td>Camera</td></tr>
<tr><td><input type="checkbox" id="video"
onClick="var app = FABridge.store.
root();app.setVideo(this.checked);"/></
td><td>Video</td></tr>
<tr><td><input type="checkbox"
id="triband" onClick="var app = FABridge.
store.root();app.setTriband(this.
checked);"/></td><td>Triband</td></tr>
</table>
<div id="flex">
<script>embedFlash("flexApp", "/
flex/catalog.swf", 690, 510,
"bridgeName=store");</script>
</div>
</body>
</html>
· Test the application
http://localhost:3000/store/flex
```

Build a Simple Content Management System

Let Web authors edit HTML content online visually

by Cristian Ivascu

In this article you'll learn how to create a basic content management system using Adobe Dreamweaver 8 and KTML 4 Lite edition. You can use this system to manage content for an online newspaper, a company presentation Web site, or a site with articles. At the end of this article users of the Content Management System will be able to:

Note: You can build this application on any of the supported server models — PHP_MySQL, ColdFusion, ASP VBScript, or PHP_ADODB. The steps are similar. However, for this article, we used PHP 5 and MySQL as the development framework.

- See the list of articles that exist in the site database – with title, description, and an Edit link next to each item
- Edit the articles using KTML Lite, a free online HTML editor.

Using KTML Lite, the text boxes or text areas used to edit content can be replaced with an online HTML editor that allows you to format text, style it using CSS, upload and insert images and media, upload and manage files.

You need approximately 20 minutes to complete this tutorial.

Getting Started

Before starting on this project, there are some prerequisites to take care of. You need:

- Dreamweaver 8: Try www.macromedia.com/go/trydreamweaver or www.interaktonline.com/Store/Macromedia-Affiliate/Redirect/
- KTML Lite, a free Dreamweaver extension from InterAKT Online. You can download it from www.interaktonline.com/Products/Online-HTML-Editor/KTML-for-Dreamweaver/Try-Download/?from=mm_ktml4

Setting Up the Development Framework

First you have to set up your application server environment and install Dreamweaver 8 and KTML Lite. This article assumes that you've already installed and configured a Web server with PHP and MySQL support. If not, take a look at the following articles from the Developer Center:

- Setting Up Your PHP Server Environment Using Linux, Apache, MySQL and PHP (by David Sklar) if you use the LAMP platform
- Setting Up the PHP, MySQL, and Apache Server Platform on Macintosh OS X for Dreamweaver MX (by Minh Huynh) if you're working in Mac OS
- Setting up PHP for Microsoft IIS (by Andrew Stopford) if you're a fan of IIS

If you're using Windows, take a look at WAMP Server, a free tool that automatically installs Apache, PHP 5, MySQL server, phpMyAdmin, and SQLiteManager. For detailed instructions on installing WAMP Server, see this technical note on the InterAKT Knowledge Base.

Defining Your Site

Before you build the application, you need to set up your site in Dreamweaver. For a quick site setup, take a look at this technical note: How to Define a Site in Dreamweaver. The site will only contain two files, which you can create right now:

- index.php – displays the list of articles
- edit.php – contains a form used to edit the content for a selected article.

Setting Up Your Database

The application is entirely dynamic. It stores articles in a database table. As you will only implement displaying and editing articles, the database will only need one table: article_art.

Now that you have an idea of how your database will look, fire up the sample SQL script in your MySQL console or your favorite database management software (such as phpMyAdmin (see www.phpmyadmin.net/home_page/index.php) and create the database. Before you can connect to the database you have to create the site files.

Create the Database Connection

To connect to the database in Dreamweaver, follow these steps:

1. Open the index.php file.
2. In the Application panel click the Databases tab to open it.
3. Next click the Plus (+) button and select the MySQL Connection option.
4. A dialog box will open, allowing you to define the connection parameters. Configure it as shown below:
   - In the Connection Name text box enter connSimpleCMS.
   - In the MySQL server text box enter the address (IP or hostname) of the computer that's running the MySQL database server.
   - In the User name text box, enter the name of the user that is allowed to connect to the database. Note: Using "root" as a user name gives your applications full rights on the database and shouldn't be used for real-life cases.
   - In the Password text box, enter the password of the user that connects to the database. Note: If you don't know your database authentication information, contact your hosting company or your network administrator.
5. In the Database text field enter the name of the database you created at the beginning of this article – articles. Note: Make sure you replace the sample database authentication information values with the actual values for your server.

Create the Article List

Now you'll build the main page that displays a list of articles in the database. The page will display the article title, description, and an edit link. To implement this functionality you need to:

1. Create a recordset that retrieves article information – the ID, title, and description.
2. Display the article title and description and loop through the entire set of articles.
3. Create a link to the edit page and pass the article ID as an URL parameter.

Create the Articles Recordset

Dreamweaver retrieves information from a database through recordsets. A recordset is the result of running a SELECT statement on a database and contains the records returned by the query. To create the article recordset:

1. Open the index.php page in Dreamweaver.
2. From the Application panel > Binding tab click the Plus (+) button and select the New Recordset (Query) option.
3. In the user interface that loads configure the recordset properties: table to

Table 1

Articles	article_art
id_art	Primary key: unique identifier for each article
title_art	The article title
description_art	A short description for the article
content_art	The body of the article

use, columns to retrieve, etc., as shown:

a. In the Name text box enter the new recordset identifier: rsArticles.
b. In the Connection dropdown menu select the connSimpleCMS database connection created at the beginning of this article.
c. In the Table dropdown menu select the article_art database table.
d. In the Columns area click the Selected radio button. This way you can decide what columns to retrieve from the database,
e. Holding down the CTRL key (or the Apple key on a Macintosh) click on the id_art, title_art and description_art columns to select them.

4. You can see a fully configured interface in Figure 1. Click OK to complete the recordset creation process and add it to the page.

The newly created recordset will be displayed in the Bindings tab of the Application panel, and you can expand it to see the columns it retrieves. You will use the dynamic fields to display the article details.

Display Article Information

Next you have to display the article data retrieved from the database. Dreamweaver helps speed up the Web development process by providing ready-to-use components for such tasks. To display our data you'll use the Dynamic Table command:

1. Place the cursor on the index.php page in Design view.
2. On the Insert bar switch to the Application tab, then click the Dynamic Table icon.
3. Configure the dynamic table to use the rsArticles recordset and display all the entries. Then hit OK to apply the changes and create the table.
4. The table automatically displays all fields from the recordset and uses the column names as table headers. To make it usable you have to customize it:
   a. First remove the first column entirely – the one displaying the article ID.
   b. For the second column change the header text from title_art to Article title.
   c. For the third column change the header from description_art to Article description.
   d. Also check the Header checkbox in the Property Inspector for both column headers.
5. The table now displays the information in a clear way. All that's left is to add the link to the edit page. Because we're going to use a single page to edit any of the database articles, the link pointing to it must also pass the unique ID for each article. That way the correct one will be loaded for editing:
   a. First add a new column to the table, where the links will be. Right-click on the last column and from the Table category select the Insert Rows or Columns option.

> "Dreamweaver helps speed up the Web development **process by providing ready-to-use components"**

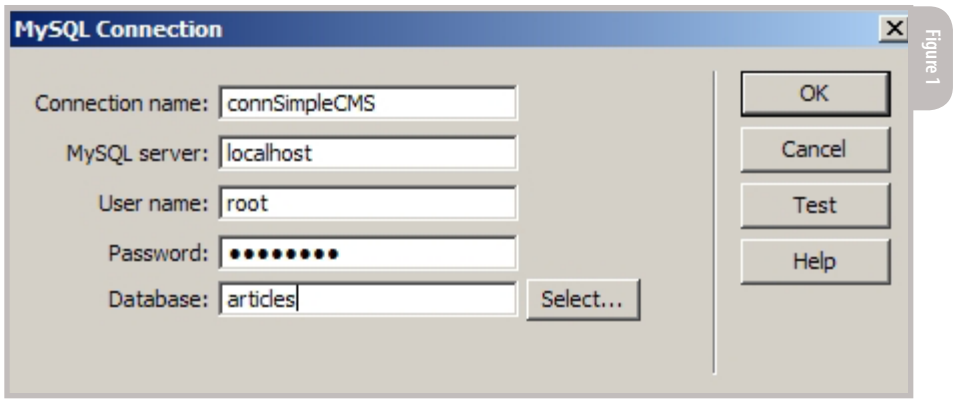


Figure 1

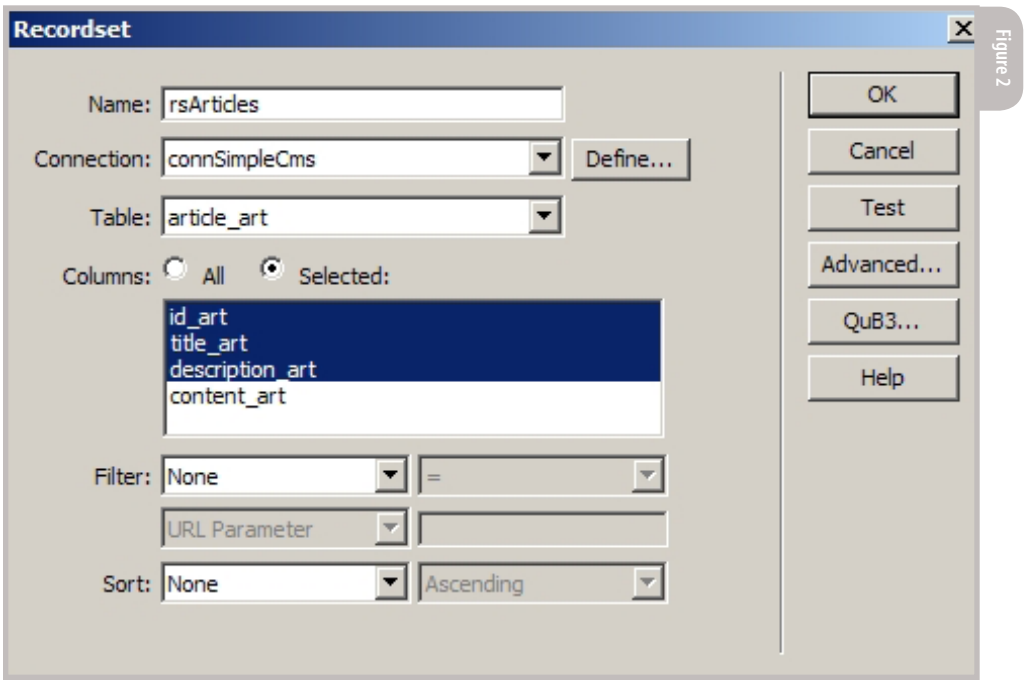


Figure 2

Figure 3

Article title	Article description	
KTML 4 is available!	The next generation of the award winning HTML editor is now available. KTML 4 offers an easy-to-use familiar interface	Edit
InterAKT's Fifth Anniversary	InterAKT is celebrating five years of hard work.	Edit

b. In the dialog box select the Column option and click OK.
c. Put the cursor on the second row's last column and type Edit.
d. Select the text and click on the folder icon next to the Link text field in the Property Inspector.
e. Select the edit.php file in the site root. Click the Parameters button to define what URL parameters will be sent along. To tell the edit page what article to load in the list you must pass its ID as an URL parameter.
f. For the first parameter Name enter id_art. For the Value click the dynamic value and select the id_art field of the rsArticles recordset.
g. Click OK to create the link.
6. Save the page and preview it in the browser. It should resemble Figure 3.

Now you'll create the article editing form that will display the contents of the selected article and let you edit them.

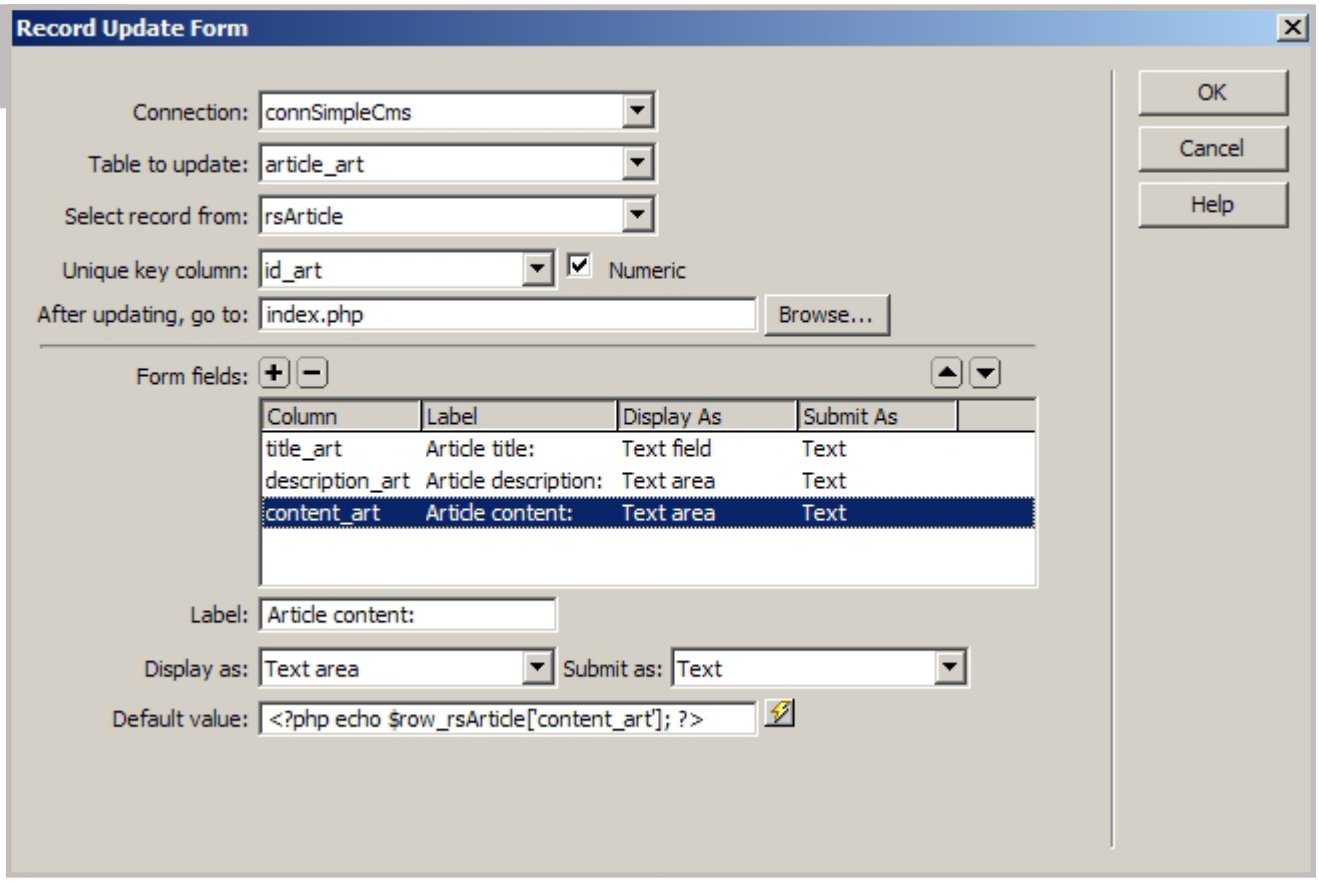
Create the Article Editing Form

At this point, the articles are listed correctly. In this section you'll move on and create the update form using the Update Form Wizard from Dreamweaver. Then you'll enhance the update form by replacing the default text area with the KTML editor.

First create the basic update form:

1. Open the edit.php file in Dreamweaver.
2. First add a filtered recordset that retrieves only the article referenced by the ID in the URL parameter from the database. Configure the recordset as follows:
   a. For the name, use rsArticle. Use the same database connection as before – connSimpleCMS.
   b. This time retrieve all the columns in the database. Check the All radio button.
   c. In the Filter dropdown menu select the column to filter the recordset by – id_art. For the method use the URL parameter and for the reference use id_art.
   d. Click OK to create the recordset.
3. In the Insert bar switch to the Application tab and click on the

Figure 4



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Update Record (Record Update Form Wizard) icon.

4. Configure the user interface as follows:
   a. In the Connection dropdown menu select connSimpleCMS.
   b. In the Table to update dropdown menu select the article_art table.
   c. In the Select record from dropdown menu select the rsArticle recordset.
   d. In the After updating, go to text box enter index.php. This way after the article's been updated the user will be returned to the list.
   e. In the Form fields grid click the id_art field to select it. Next click the Minus (-) button to remove it from the operation. The article ID is set to automatically increment so you don't need to give it a value.
   f. Select the title_art field. In the Label text field enter Article title.
   g. For the description_art field set the Label to Article description. In the Display as dropdown menu select Text area.
   h. Do the same for the content_art field: set the Label to Article content and the Display as to Text area.
   i. Click OK to create the update form.
5. You can see a sample configured interface in Figure 4.
6. The last thing to do is to add a Cancel button so the user can return to the list.
7. Put the cursor next to the Update record button generated automatically by the wizard.
8. From the Forms tab of the Insert bar click the Button icon to add a new one. Then click on it to select it and from the Property Inspector set its action to None. In the Value text field enter Cancel.
9. With the button still selected expand the Tag panel and select the Behaviors tab. Select the Go to URL behavior.
10. In the dialog box, enter index.php for the URL to load. Click OK to apply the changes.

You can test the editing form now. Simply load the article list and click the Edit link for one of them. You'll find that it's not that easy to edit the content, especially if you need to add HTML formatting to the text.

Next you'll replace this text area with KTML Lite, the online HTML editor that will make editing content a breeze. KTML allows even non-technical users to edit content in a WYSIWYG environment much like they would in Microsoft Word or some other word processors.

Replacing a Standard Textarea with a Rich Text Editor

Now it's time to make the staff that will work to update the site happy. Instead of learning HTML, they'll put their Word skills to good use; the textarea will turn into something much friendlier – a visual HTML online editor, where you can apply formatting to text, insert images, create hyperlinks or tables.

Before starting to replace the textarea with KTML Lite, make sure you have the extension installed.

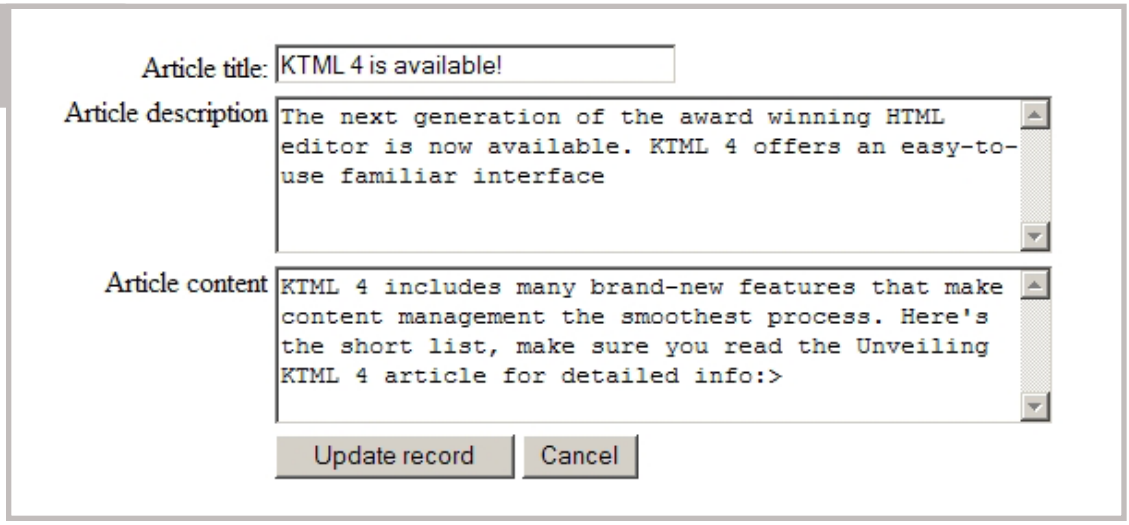
An extension is a tool that can be added to Dreamweaver to bring greater functionality and enhance its capabilities. Extensions can vary from small HTML programs to complex Java applications. Their purpose is to reduce the areas of manual coding, and minimize repetitive tasks to increase productivity.

You can install and manage extensions using Macromedia Extension Manager, an accessory to Dreamweaver. Extensions are usually delivered as executable MXP files. Just run them and Extension Manager will initiate the installation. You can find a lot of extensions on the Dreamweaver Exchange (see www.macromedia.com/cfusion/exchange/index.cfm), the biggest repository for extensions on the Web.

The steps to follow to enhance the page are:

1. Open the edit.php page.
2. In the Application panel click the Server Behaviors tab to open it.
3. Click on the textarea used for editing the article contents to select it.
4. In the Server Behaviors tab click the Plus (+) button > KTML 4 > KTML 4 Lite.
5. The KTML 4 Lite server behavior has four sets of options that you can use to configure the editor to suit your needs: editor size, toolbars, buttons, security permissions, and more, as you can see in Figure 7.
6. In the Basic tab, set primary editor options:
   a. In the Apply to field dropdown menu the ID of the textarea is already selected.

Figure 5



b. In the Width text box enter 650. For Height enter 500. This will be the size of the editor.
c. The KTML editor lets you format content using CSS styles. In the CSS style text field enter the path to the stylesheet you want to use or leave it at the default value.
d. KTML lets users upload images, movies, and documents to the server and insert them in their pages. In the Files upload folder and Media upload folder text boxes you can specify where the uploaded files will be stored. Leave these settings at their default values. These folders will be automatically created for you when first used.
e. In the Show toolbar dropdown menu select On load. This way, the toolbar will be displayed as soon as the editor loads.
f. In the Show property panel dropdown menu select Yes. This will display the Property Inspectors for all the supported elements.

7. Next configure what toolbars and buttons are displayed in the Toolbars tab:
   a. In the Toolbar presets dropdown menu you can select what predefined configuration of buttons you want to use.
   b. Using the grid you can add or remove toolbars from the current configuration. For each selected toolbar, you can use the checkboxes to display or hide buttons. You don't have to change anything on this tab.
8. In the Security tab define file upload restrictions:
   a. In the Allowed document types and Allowed media types lists, specify the file extensions that can be uploaded to the server.

"An extension is a tool that can be added to Dreamweaver **to bring greater functionality and enhance its capabilities"**

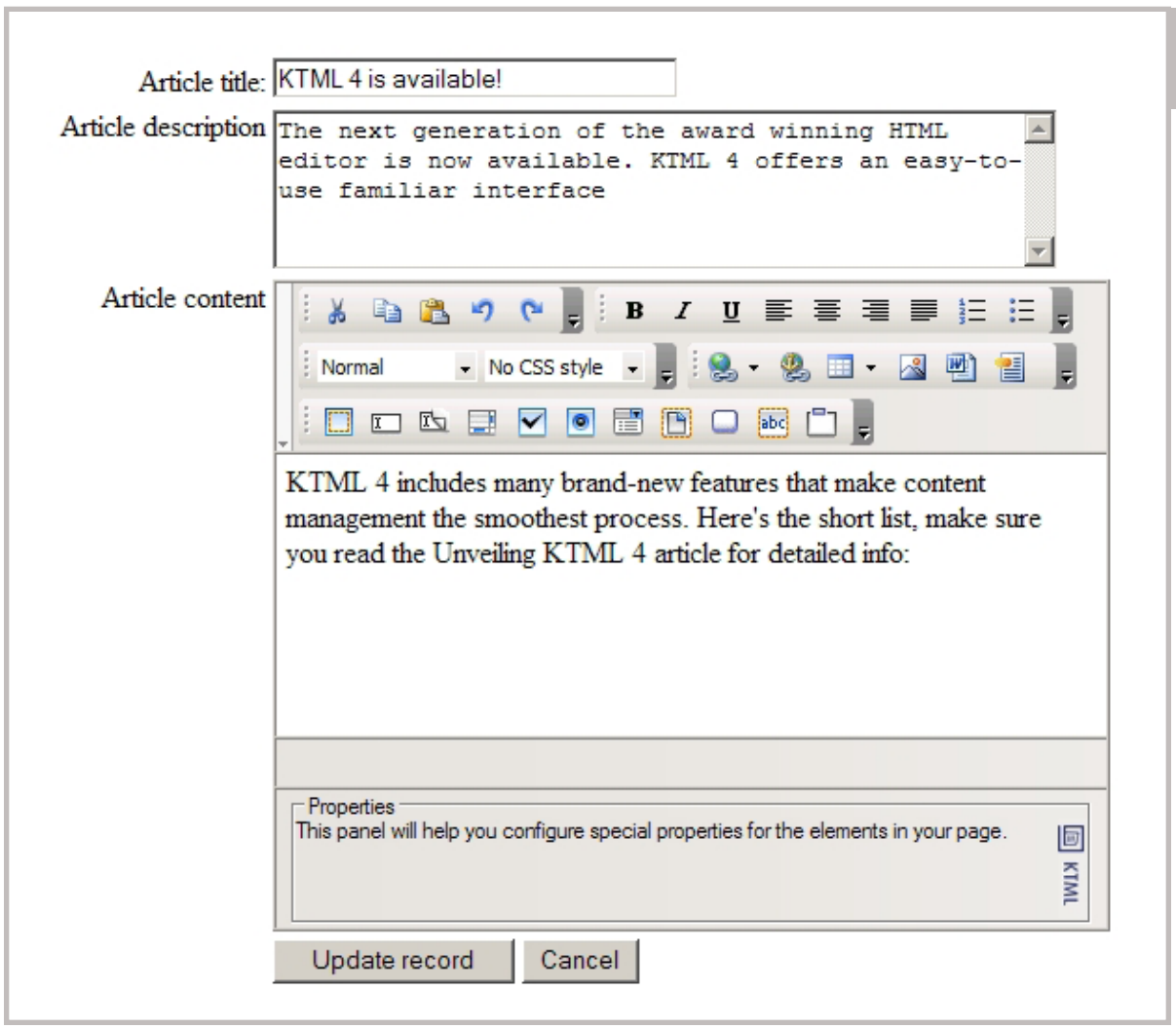


Figure 6

b. In the Maximum file size text box you can enter the maximum allowed size for uploaded files.
c. In the Strip server location select whether the full server path will be used for links or not.

9. When done configuring all options, click OK to close the user interface and apply the changes. A translator – a scale image that represents the editor – is now displayed instead of the textarea.

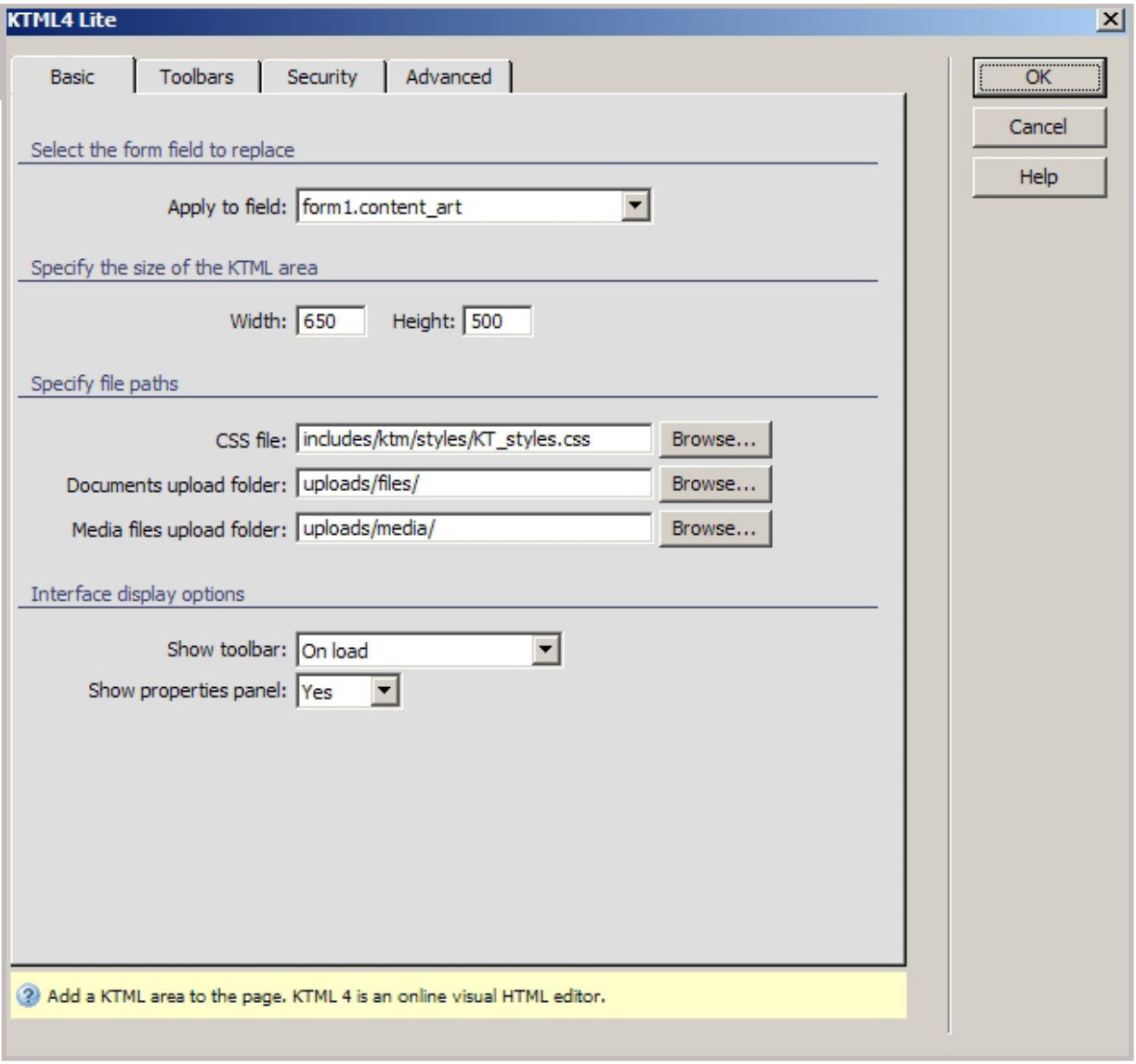
Using the online HTML editor, the site users don't have to have a diploma in HTML editing, but simply know how to use a basic word processor and they'll do just fine.

Where to Go From Here

You can find out more about KTML from the following articles:

- The KTML live demo page, accessible at www.interaktonline.com/Products/Online-HTML-Editor/KTML-for-Dreamweaver/Live-Demos/, where you can use the editor and discover what it can do.
- Unveiling KTML at www.interaktonline.com/Products/Online-HTML-Editor/KTML-for-Dreamweaver/Documentation/Articles/Unveiling+KTML+4.html?id_art=28 shows the features and several uses of the editor.
- Learn how to build and edit content for a Travel Agency site from the Adobe developer center article at www.macromedia.com/devnet/dreamweaver/articles/dw_ktml.html.
- The user manual is available online in Flash format and you can access it at www.interaktonline.com/Documentation/KTML/index.html.
- If you want to push KTML's limits and extend what it can do for you then you should take a look at the API documentation at www.interaktonline.com/Documentation/KTMLLITE-API/index.html.
- KTML 4 Lite also has a big brother – the full version that adds more Property Panels for almost all the elements you can insert from the editor, spellchecking, XHTML compliance, even an integrated image editor. You can find out what the differences are between the two versions at www.interaktonline.com/Products/Online-HTML-Editor/KTML-for-Dreamweaver/VersionComparison/.

Figure 7



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- Bob Flynn, Indiana University MMUG

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Migrating Flash Projects to Video

Creating broadcast quality Flash projects

by Chris Georgenes

Macromedia Flash is everywhere. No seriously, it is everywhere. Not only is Flash used for online and offline movies, websites, games, and applications but it's also used for DVDs and broadcast television.

In fact, my first few years working with Flash (versions 3 and 4) were dedicated to authoring content for several broadcast animated series. Exporting from Flash to video formats so I could import and edit them on an Avid workstation was my only authoring requirement of Flash. I didn't need to know about Flash for the web, ActionScript, optimization, preloaders, or even buttons. It was analog Flash at its purest and that was the world of Flash that I lived in.

Eventually my Flash world expanded into the online realm of dynamic content when Shockwave.com asked me to develop an online animated series. I quickly learned how Flash was truly the Swiss army knife of design and development tools.

Today some of my clients request that their online content be repurposed for video, so the line between Flash for online and offline content occasionally becomes blurred.

You can do the same for your clients-or for yourself. What you need to do is learn how to set up the Stage so that your Flash project outputs optimally to video, use broadcast-safe colors in your project, and export your project to video.

Tip: If you are authoring several Flash movies that use the same properties, click the Make Default button before you click OK in the Document Properties dialog box. This ensures that every new Flash document you create will share these properties.

Setting Up the Stage for Video

Let's start with the basics. Open a new Flash document and then select Modify > Document (Control+J) to open the Document Properties dialog box (see Figure 1).

Here you determine the width and height of the Stage and its frame rate. But before you change anything, you need to decide what aspect ratio you are authoring to, so read on before you change anything.

NTSC (National Television Standards Commission), the video standard used in North America and most of South America, uses a 4:3 aspect ratio, which basically means a rectangular shape like a television set. To break it down in simpler terms, 4:3 means that for every four units wide, the picture is three units high. Apply this formula to a 16:9 screen and you'll get 16 units of width for every nine units of height. Simple arithmetic so far, but it's about to get tricky.

NTSC uses a pixel resolution of 720 x 480 pixels. But guess what? NTSC doesn't use square pixels; they are rectangular. (Why do they have to make everything so complicated?) A problem arises when you develop content for video on your computer because you are creating square pixels to be displayed as rectangular pixels. That means your image will no longer have the correct aspect ratio and will look slightly stretched. To compensate for this pixel chaos, you need to adjust the width of the movie so that the pixel resolution is now 720 x 540. Panic is now over.

NTSC uses a frame rate of 29.97 or 30 frames per second (fps). You can export Flash movies that have different frame rates such as 12, 15, or 24 fps without worry. These frame rates will be converted to 30 by your video editing software, although a movie authored at 12 fps and converted to 30 fps will not look as smooth as a movie originally authored at 30 fps.

PAL (Phase Alternating Line), the predominant video standard outside the Americas, also has a 4:3 aspect ratio but uses a 720 x 576 pixel resolution and a frame rate of 25 fps. PAL has a greater resolution than NTSC and therefore has a better picture quality. Its higher color gamut level produces higher contrast levels as well. But the lower frame rate, compared to NTSC's frame rate, will not be as smooth.

Film uses 24 fps, which is also a popular frame rate among animators. Although you can use 24 fps in your Flash project, when you export it to video you will need to convert the frame rate as

Tip: If you convert the safety layer to a guide layer, it will not be exported with the rest of the movie's contents. Because a guide layer is not included upon export, it's a cool way to retain the assets in your movie that you otherwise would not want to delete from the Stage. To convert a layer to a guide layer, right-click the area containing the layer name and select Guide in the context menu (see Figure 3).

well. This is easily done during the export process by specifying the appropriate frame rate for the video format to which you are authoring (PAL or NTSC). Keep in mind that this does not speed up your animation; rather, it simply makes your animation not appear as smooth. Because film and PAL have nearly the same frame rate (24 and 25, respectively), there will be hardly any visual difference.

Widescreen television, or HDTV, uses an aspect ratio of 16:9, which you can convert the same way by multiplying 16 and 9 by the same number. For example, 16 x 100 = 1600 and 9 x 100 = 900, for a total width and height of 1600 x 900 with which to author HDTV content. Depending on your display size and resolution, you may want to adjust the amount by which you multiply 16 and 9.

While resolution is important in video, Flash is resolution-free. As long as you are working in the correct aspect ratio, you can always resize your video when exporting. If you are using imported bi tmaps in your Flash movie, you will want to use a width and height that exactly matches your final output to prevent the images from becoming scaled in Flash. Back to Flash and your open Document Properties dialog box. Type in the width and height of your aspect ratio, enter the frame rate, and click OK.

Ensuring Title and Action Safety

Televisions do not generally display the entire width and height of your movie. They show a smaller portion of the true display size. Cropping a bit on all four sides will almost guarantee that what you create in Flash shows up in its entirety on a TV set.

Any good video editor will take this discrepancy into account. There's nothing worse than finding out too late that the title sequence you labored over for 10 hours appears on most TVs with several characters cropped, or is even completely invisible. To prevent this, you need to define which area is considered the safe zone within the dimensions of your movie.

There are two safe zones to consider: the action-safe zone and the title-safe zone. The action-safe zone lies 10 percent in from the absolute edge of the video.

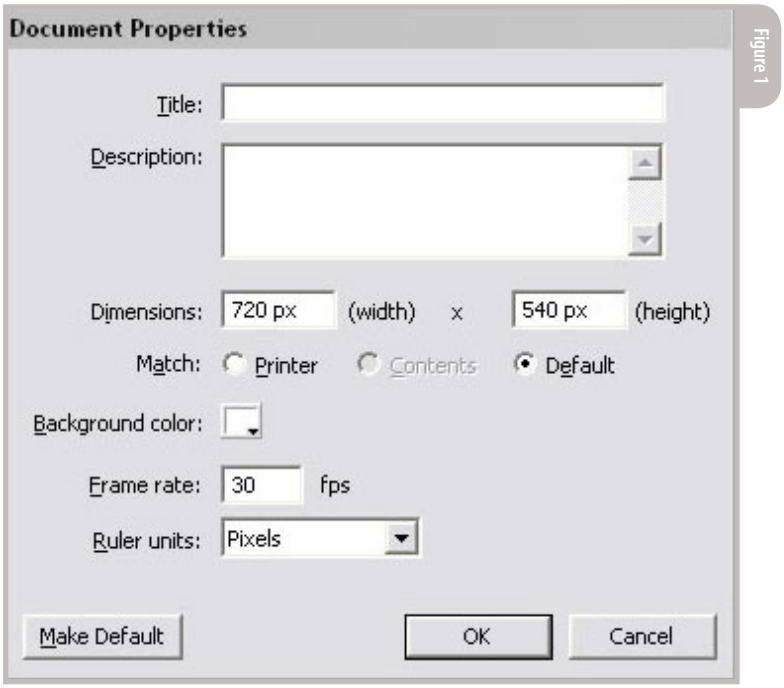


Figure 1

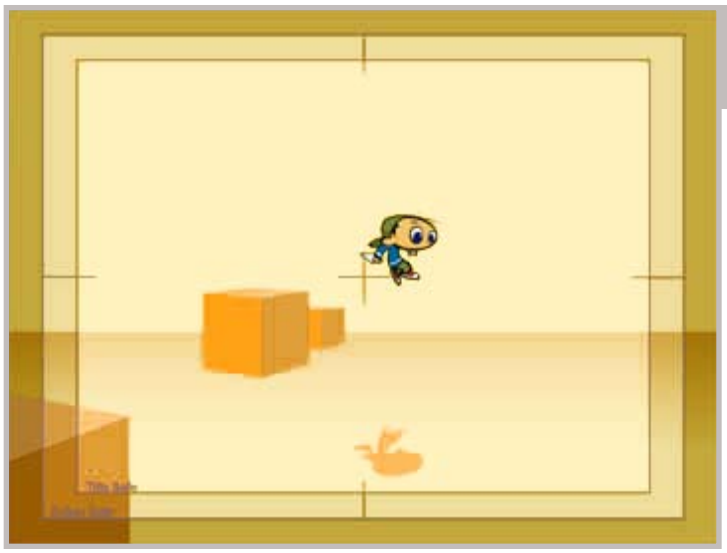


Figure 2

You can assume that everything falling within this zone will appear on a television screen.

The title-safe zone is smaller than the action-safe zone (see Figure 2) because it is much more important to ensure that all titles are clearly legible without any chance of a single letter being cropped. For this reason, the title-safe zone lies 20 percent in from the absolute edge of the video. When you add titles to your movie, make sure they are positioned entirely within this safer title-safe zone to avoid being cropped.

Place the title-safe zone in your Flash project on its own layer above all other content. This way when you are ready to

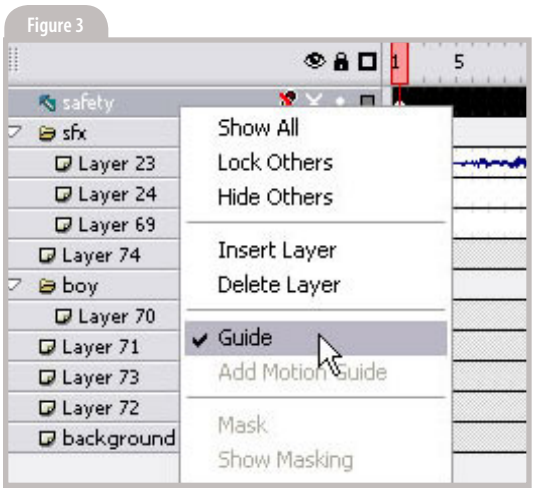
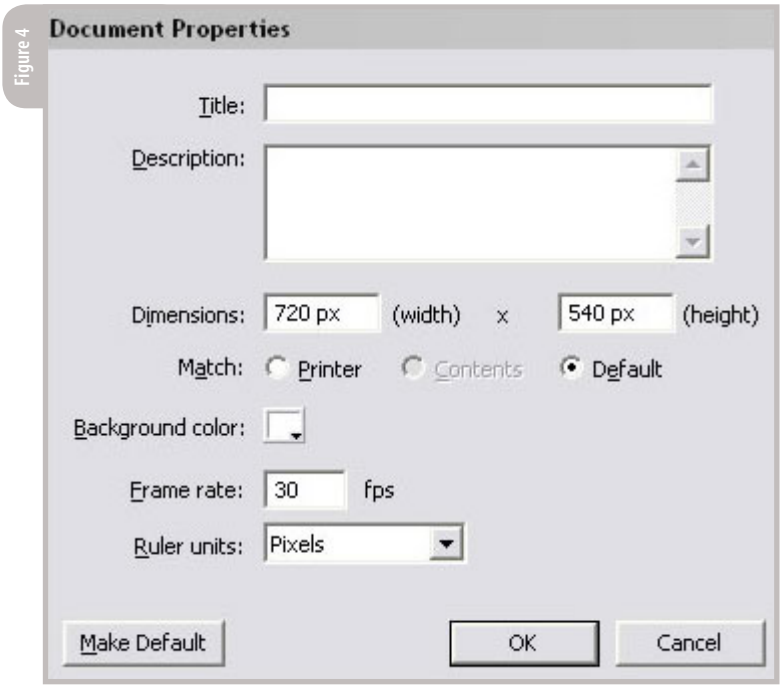
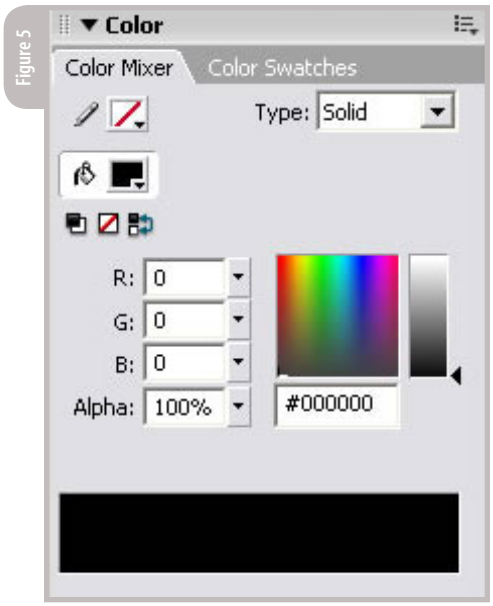


Figure 3





export to video, you can delete this layer to prevent it from being included in the video file.

Using Safe Colors

The computer monitor you are looking at as you read this article is designed to display the full range of 256 RGB color values (0-255). By contrast, television can display only a limited range of color values. There's a good chance that some colors you are using in your Flash movie fall outside the television value range, resulting in very noticeable color bleeding.

Open the Color Mixer tab in the Color panel and select pure white in the fill color swatch. The RGB values will update to reflect the values 255-255-255, where R = 255, G = 255, and B = 255 (see Figure 4).

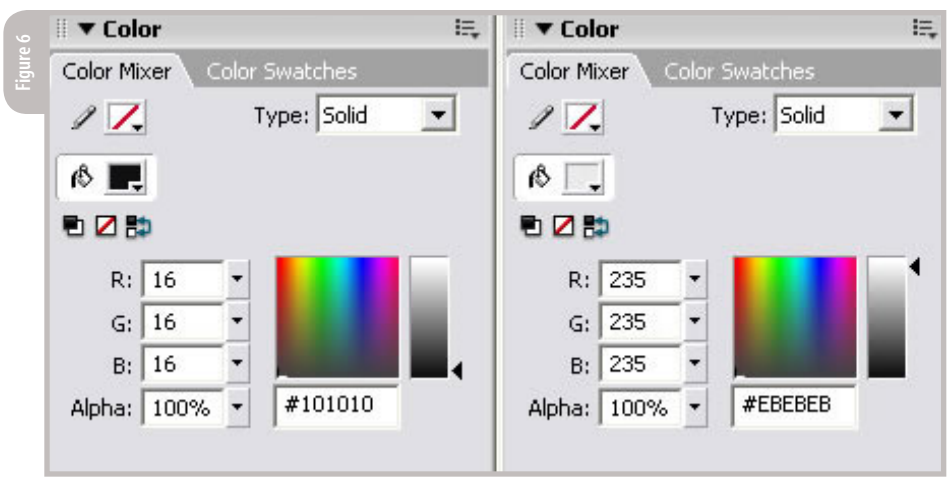
Now select black in the color swatch and watch the RGB values update to show 0-0-0 (see Figure 5). This represents the full 256-color range of the RGB color value that is legal for computers to display.

For television, however, you must limit this range to between 16 and 235 colors. This means that the color value of black should be 16-16-16 and the color value of white should be 235-235-235 (see Figure 6).

The color red is one of the more usual suspects because it has a tendency to bleed more than any other color. To mix a television-safe value for red, open the Color Mixer tab in the Color panel and select the brightest red by clicking the fill color swatch and selecting the red color swatch on the far left side (see Figure 7).

Notice how the RGB color values are 255-0-0, which is far from the legal color gamut that television can display. Edit this color value by highlighting the R value of 255 and entering 235. Highlight the G value and enter 16 and do the same for the B value. You now have an NTSC-safe red color swatch with an RGB value of 235-16-16. Use the Type pop-up menu to add this swatch to your palette (see Figure 8).

If you apply this simple formula each time you mix colors in Flash, you will remain well inside the television color value range. The blue used for the pupils of my boy character, for example, are considered safe because they have an RGB value of 16-51-204 (see Figure 9).



Handling Movie Clips and Graphic Symbols

Exporting Flash projects to video format requires everything to be on the main Timeline. Graphic symbols are treated as part of the Timeline because, technically, they are in sync with it. So if you have nested animations, make sure to use the Graphic symbol type for all your symbols.

There is more than one way to create a symbol. If you have a vector drawing or imported image on the Stage, select it and choose Modify > Convert to Symbol. You will be presented with the Convert to

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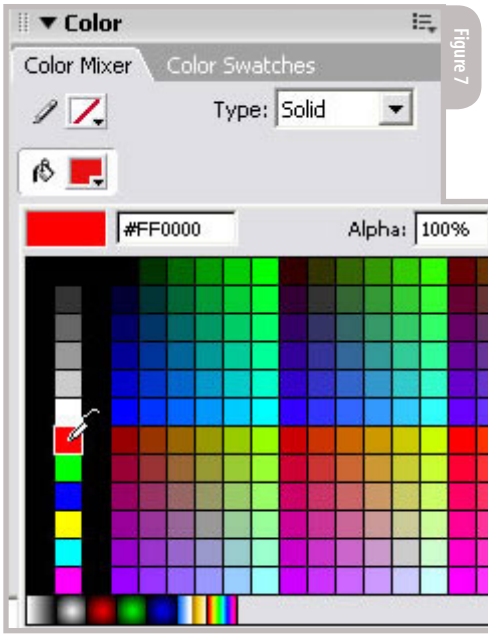


Figure 7

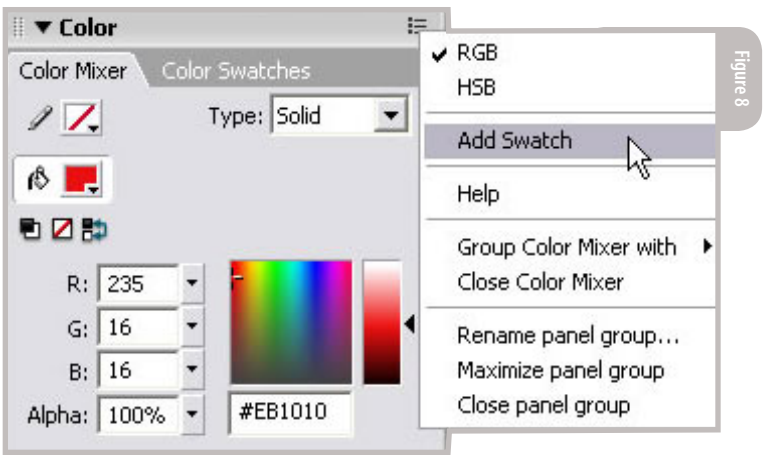


Figure 8

> "I can't emphasize enough the importance of avoiding the use **of movie clip symbols containing content beyond the first frame"**

Symbol dialog box (see Figure 10), where you can type in a symbol name, select its type, and determine its registration point.

Avoid movie clips. Avoid movie clips. Avoid movie clips! I can't emphasize enough the importance of avoiding the use of movie clip symbols containing content beyond the first frame. The movie clip in the exported movie will appear as a static image only. Did I say to avoid movie clips?

If any of your movie clips contain an animation, you must convert it to the Graphic symbol behavior. Movie clips are independent from the main Timeline and are not synchronized with other timelines. Graphic symbols play in sync with the main Timeline and other graphic symbols. They also render to video format, while movie clips do not. To convert a Movie Clip symbol to a Graphic symbol, select the movie clip instance on the Stage and, from the Property inspector (Window > Properties or press Control+F3), change its behavior from Movie Clip to Graphic (see Figure 11).

Next, change the behavior of the instance from Single Frame to either Loop or Play Once, depending on your needs (see Figure 12). Make sure there are enough frames on the main Timeline to accommodate the graphic symbol's length. To lengthen the timeline, choose a frame in the Timeline panel that represents the duration of the movie and select Insert > Timeline > Frame (or press F5). You will now be able to drag the playhead back and forth (or press Enter) to see your nested animation play.

In general, when you author content for video, avoid dynamic content completely. Flash documents that include ActionScript, buttons, and dynamically loaded content will fail during export. Even a simple stop(); action causes the export to fail. But if you do have dynamic content, read the later section on SWF2Video.

Exporting to Video

Your movie is now ready for exporting. You have the right aspect ratio, frame rate, and colors, and everything is on the main Timeline or set as Graphic symbols. You're good to go.

You have more than one option when you export your video, and there are slight differences depending on whether you are authoring in Mac OS or Windows.

Basically it comes down to three different options: AVI (Audio Video Interleave), Apple QuickTime, or an image sequence. Formerly your choice

of platform dictated your format. Macintosh users exported to QuickTime and Windows users exported to AVI. Now both formats are compatible across platforms.

AVI and QuickTime Export Settings

Mac users have the option of exporting to QuickTime video, which results in a true pixel-based video file. Exporting to QuickTime on Windows produces just a Flash movie in QuickTime Player; it is not a pixel-based video file. The only way to export to a true pixel-based video format in Windows is to purchase QuickTime Pro (currently US$29.99 from Apple Computer), open the exported movie from Flash in QuickTime Pro, and then export it again as a QuickTime movie.

When you export from Flash to AVI or QuickTime, you will have a few options from which to choose. Typically it is a good practice to keep your movie as uncompressed as possible and at the highest color bit available.

QuickTime Export Settings

There are many settings you can make in the Export QuickTime dialog box (see Figure 13):

- ***Dimensions:*** Enter a width and height in pixels for the exported QuickTime video, or select Match Movie to make the QuickTime video the same size as the Flash SWF file and keep its aspect ratio.

Alpha: Control the transparency mode of your movie, as follows:

- ***Alpha Transparent*** makes the Flash background transparent, allowing content behind it to be visible
- ***Copy*** makes the Flash track opaque and masks all content in tracks (layers within the QuickTime wrapper) behind the Flash track
- ***Auto*** makes the Flash track transparent if it's on top of any other tracks and opaque if it's the bottom (or only) track in the SWF file

Layer: Select where in the stacking order the Flash movie resides, as follows:

- ***Top*** places the Flash track always on top of other tracks in the QuickTime video
- ***Bottom*** positions the Flash track behind other tracks
- ***Auto*** positions the Flash track in front of other tracks if any Flash objects are in front of video objects in the Flash application, and behind all other tracks if Flash objects are not in front
- ***Streaming Sound:*** Export all streaming audio used in the Flash project to a QuickTime soundtrack.
- ***Controller:*** Specify the QuickTime controller style used to play the exported video: None, Standard, or QuickTime VR.
- ***Loop:*** Repeat the video when it reaches the last frame.
- ***Paused at Start:*** Pause the video until some user interaction occurs.
- ***Play Every Frame:*** Play every frame of the movie without skipping (sound is disabled).

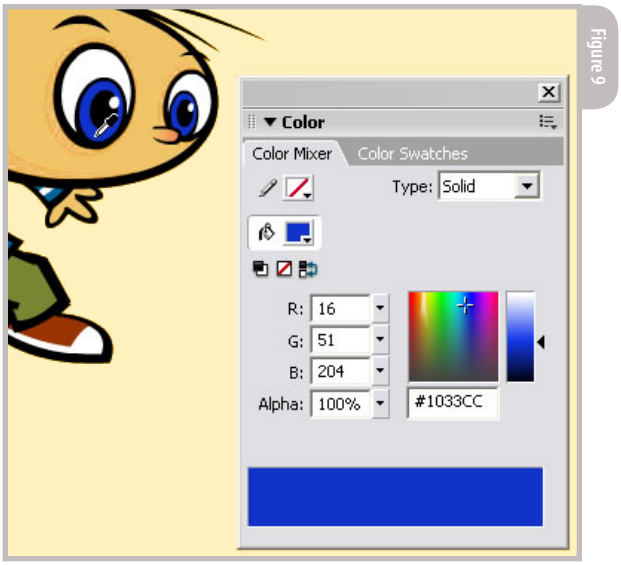


Figure 9

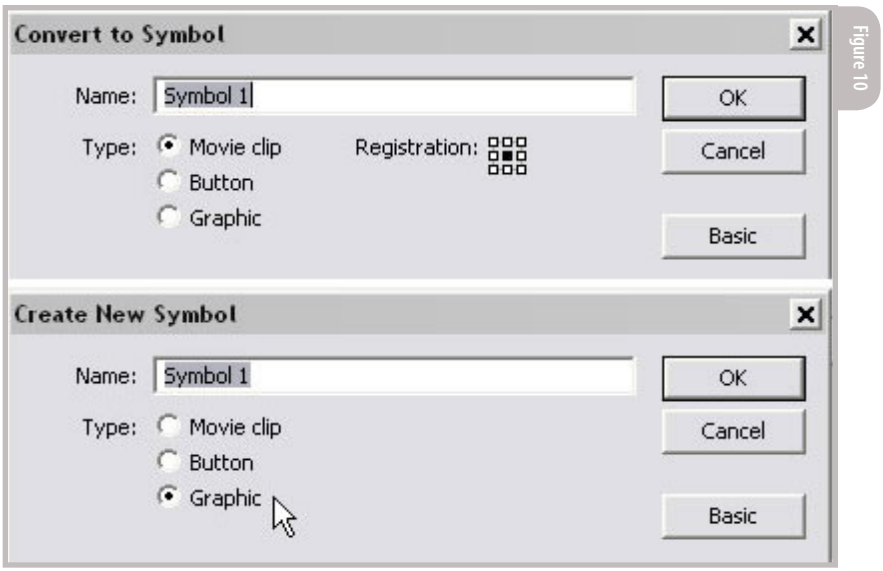


Figure 10

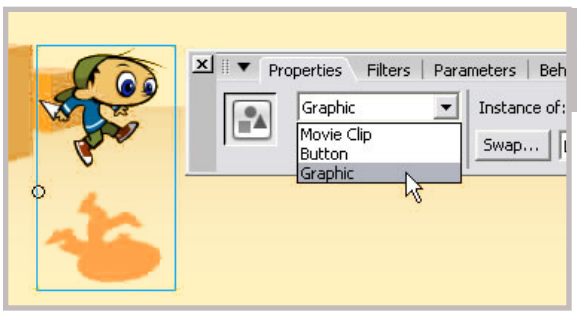


Figure 11

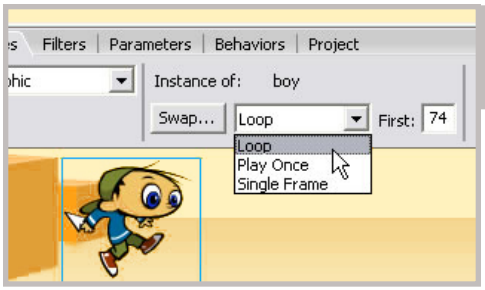


Figure 12

Figure 13

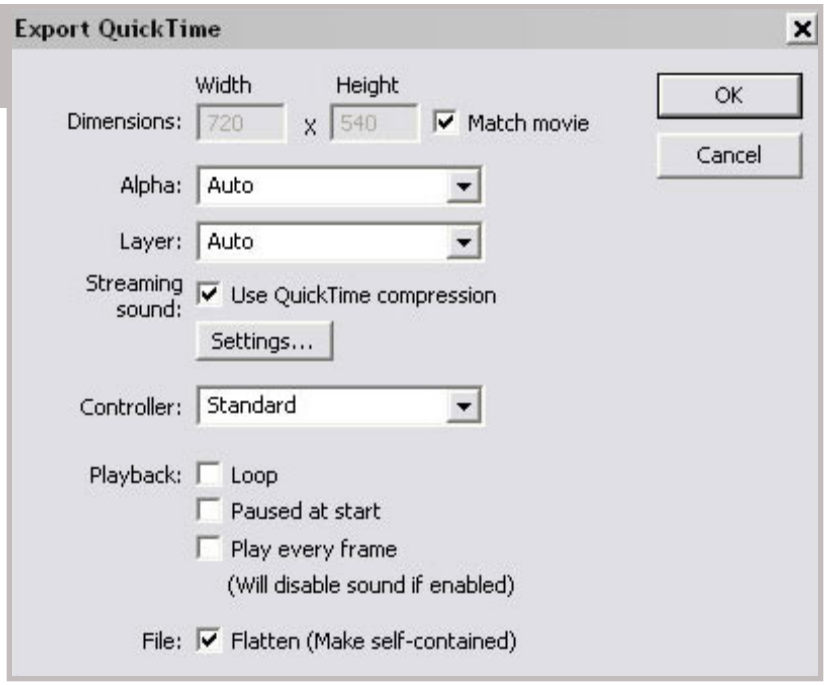
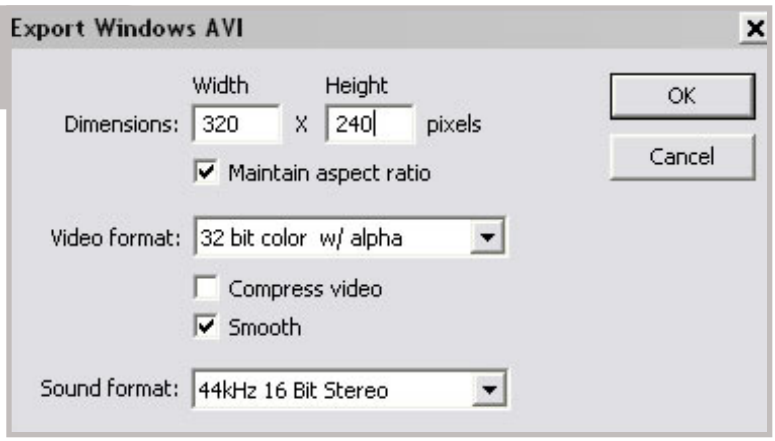


Figure 14



- ***File Flatten (Make Self-Contained):*** Combine the Flash content and imported video content into a single QuickTime video file, making it easy to distribute and archive.

Deselecting this option links the QuickTime file to whatever external files compose it. This keeps the QuickTime file size consequently smaller. It's also useful if you ever want to edit one or more of the dependant files individually. Once you update them, the QuickTime movie reflects your changes because it references them externally. Of course, if you ever move, delete, or corrupt any referenced file, the QuickTime movie will not be able to show it.

AVI Export Settings

There are not as many settings to make in the Export Windows AVI dialog box as there are for QuickTime (see Figure 14):

- ***Dimensions:*** Enter a width and height in pixels for the exported AVI video. Check the Maintain Aspect Ratio option to keep the same aspect ratio as your Flash movie.
- ***Video Format:*** Select 18-bit, 16-bit, 24-bit color or 32-bit with Alpha format. An 18-, 16-, and 24-bit color represents eight bits for every RGB color value. A 32-bit color is the same, with the addition of eight more bits representing the transparency of the color value.
- ***Compress Video:*** Display a dialog box allowing you to select from a list of standard AVI compression options.
- ***Smooth:*** Apply anti-aliasing to the exported AVI movie.
- ***Sound Format:*** Set the sampling rate and size of the soundtrack (if sound is present) and whether to export it in mono or stereo.

Handling Audio

If your Flash project contains any audio, there are some important technical details you need to consider. Quality is important, specifically sounds recorded in stereo at a 44.1 kHz sampling rate and 16-bit depth. When you develop a project for video output, it is always best to record at the highest quality whenever possible.

Working with Compressed Audio

In a situation where your sound file is relatively long, say five minutes or more, it may be best to convert it to a compressed format that Flash can import, such as MP3. Once you convert your audio file to a compressed format, the file size will be much easier to work with. Importing a compressed version of the sound into Flash also helps keep the movie file size manageable. Just make sure to retain a backup copy of the original high-quality sound file so you can reimport it into your Flash file for final export later.

Speaking of length, the actual running time of a half-hour television program is approximately 22 minutes. But working with a 22-minute Timeline in Flash is potentially problematic. At 30 frames per second, a 22-minute animation ends up being 39,600 frames long. Because Flash is not really capable of handling timelines of this length, instability can become a factor. To avoid crashing and the potential of a corrupt file, break up the audio into smaller chunks and import them into several different Flash files that you can later stitch together in your video editing program. I recommend that you work in smaller durations, somewhere between 30 and 60 seconds long.

There are a number of useful audio editing tools available to edit your sound files. My personal favorites are Sound Forge Audio Studio and Vegas, both from Sony. They run only in Windows. Adobe Audition is another choice for Windows users. For Mac users, there's Soundtrack Pro from Apple. If you are on a budget, try Audacity, a very capable and open-source (free) audio editing tool available for Mac OS, Windows, and Linux.

When your animation is complete and you are ready to export it to video, delete the compressed sound files from the Flash movie. Export only the animation to your chosen video format and then import this video file, along with the original high-quality sound files, into your video editing program of choice, such as Adobe Premiere or Apple Final Cut Pro. This method not only keeps your FLA sizes to a minimum but also provides some editing flexibility because both sound and animation are maintained on separate tracks for further editing.

Synchronizing Animation with Sound

To sync your animation with the imported audio in Flash, you must embed the audio in the main Timeline. Select File > Import and locate the audio file on your hard drive. Once it's imported, create a new layer on your main Timeline, select the first keyframe in this new layer, and locate the sound file in the Property inspector from the Sound pop-up menu.

By default, the sound behavior is set to Event. An Event sound plays in its entirety, independent of the Timeline, and does not ensure proper synchronization with the animation. You can change the behavior from Event to Stream by selecting the Sync pop-up menu in the Property inspector. When you set the sound to Stream, you will be able to grab the playhead and move it back and forth across the Timeline and hear the sound play. This is called scrubbing. Sound files, when set to Stream, are embedded in the Timeline and will be in sync with the animation that resides on the Timeline and any graphic symbols containing nested animation.

Figure 15

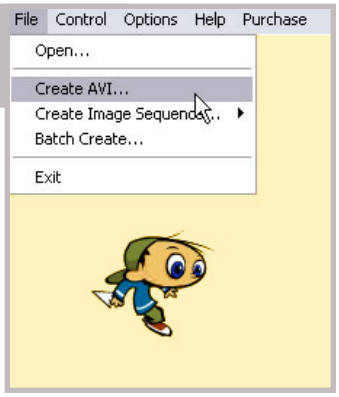
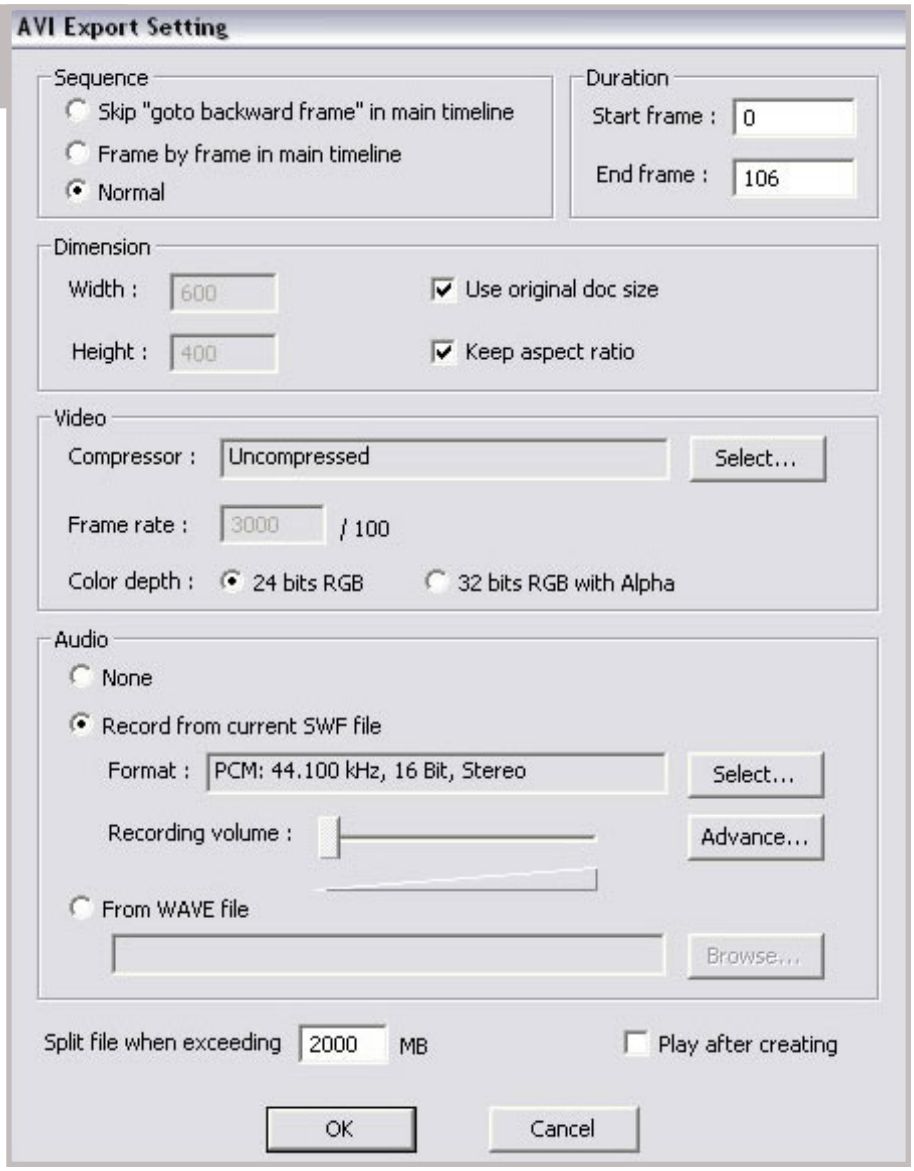


Figure 16



Exporting Dynamic Content with SWF2Video

I know I said earlier that when you author content for video, avoid dynamic content completely, but when it comes to exporting a Flash movie with dynamic content-anything that requires user input or that goes beyond just time-based animation (for example, using ActionScript)-you do have solutions.

One such solution is SWF2Video by Flashants, a powerful utility that converts SWFs published from Flash to AVI format. This includes movie clips, ActionScript events, human interactions, and audio.

The SWF2Video interface is surprisingly simple. Select File > Open and navigate to the SWF movie published from Flash and choose File > Create AVI. After naming your AVI file, you will be presented with the AVI Export Setting dialog box. From here you can select how the sequence is exported as well as edit the dimensions, apply compression or leave as uncompressed, set audio options (if any), and more.

The SWF2Video IDE is amazingly simple. Upon launch there's little more than a window with the familiar File, Control, Options, and Help menus. Select File > Open and navigate to your SWF. Open the File menu again and select Create AVI (see Figure 15) or Create Image Sequence. SWF2Video even supports batch processing of files.

When you select Create AVI, the AVI Export Setting dialog box opens, allowing you to refine your movie considerably further (see Figure 16).

The Sequence settings are as follows:

- ***Skip "goto backward frame" in main***

timeline: If the Flash movie contains a loop in the main Timeline by using the gotoAndPlay(0); command, select this option to break the loop by ignoring the ActionScript code.

- ***Frame by frame in main timeline:*** Convert the main Timeline animation into a keyframe sequence.
- ***Normal:*** Convert with the movie's normal playback sequence, including movie clips and ActionScript events.

For the Duration setting, specify the start and end points during export by entering the exact frame numbers.

There are several Video settings to make as well:

- ***Frame rate:*** Default is the original setting of the movie. If you modify this value, the output video will be faster or slower than the original movie.
- ***Color Depth:*** Select 24 bits RGB or 32 bits RGB with Alpha format. The 24-bit color setting represents eight bits for every RGB color value. The 32-bit color setting is the same as 24 bits with the addition of eight more bits representing the transparency of the color value.

Clicking Select in the Video section opens the Video Compression dialog box (see Figure 17). Here you can choose the appropriate compressor to apply to your video. Leave this set to Full Frames (Uncompressed) because this is always best when working with high-quality video. People do not generally compress this because otherwise loss of quality will occur.

Other video compression settings are as follows:

- ***Compression quality:*** Select from 0 to 100 to adjust the amount of compression.
- ***Key frame interval:*** If you select a compressed format, you will have the option of setting a keyframe interval (see Figure 18). This setting determines how frequently a full frame of the source video is preserved in the Timeline. A smaller value results in more keyframes, and subsequently a larger file size. A greater value results in fewer keyframes and a smaller file size. Animation with little motion (such as a talking head) may be suitable with a larger keyframe interval value, while a movie with an abundance of animation may benefit from a smaller keyframe value.
- ***Data rate:*** Specify the data rate of the converted video.

If you have any audio in your Flash project, you'll want to make the following Audio settings:

- ***Record from current SWF file:*** Record audio from the current SWF file and then merge it with the video.
- ***Recording volume:*** Adjust the volume level of the waveform recording device.
- ***From WAVE file:*** Use an external WAVE file to create your audio by clicking Browse to choose the WAVE file. The audio data of this WAVE file is merged with the video data; the audio in the original SWF file is ignored.

The final two settings are important to consider too:

- ***Split file when exceeding:*** Specify the file size limit before the file is split into two different files.
- ***Play after creating:*** Open the output AVI file with your preferred default media player when export is complete.

SWF2Video is the perfect companion to Flash for anyone wanting to convert dynamic Flash files to a time-based video format.

Once you export your Flash project to your preferred video format, you can import it into a video editing program such as Premiere or Final Cut Pro, or a compositing and motion graphics program like Adobe After Effects, for further editing, special effects, and color correction.

Where to Go from Here

My Flash career began with authoring content for broadcast video. At the time I was the director of creative development for an animation studio in the Boston area. Part of my job was to research and implement graphics and animation software into the production process. We produced and animated content for Comedy Central, ABC, and The Cartoon Network, and were completely desperate to find the right tool to replace the animation program we were rapidly outgrowing.

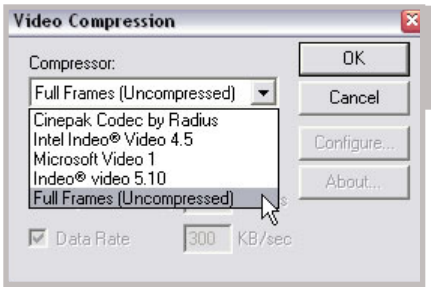


Figure 17

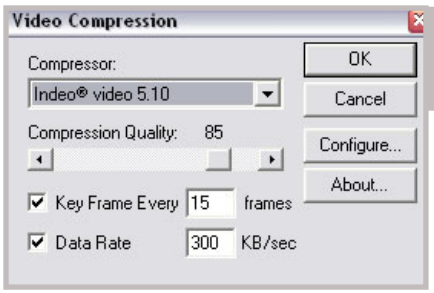


Figure 18

When I discovered Flash, I knew right away that this tool would allow us to grow as an animation studio. It had all the features we were looking for, including support for QuickTime and AVI formats.

I hope this article successfully conveys some of my experience. It should help answer at least some of your Flash-to-video questions. Future articles will cover using After Effects to add some cool visual effects to your movies and burning video content to DVD using Adobe Premiere.

In the meantime, here are some other resources that address exporting Flash to video and creating broadcast-quality Flash projects:

- Taking Flash Animation to DVD Video (by Brooke Burgess)
- Flashants Forum (makers of SWF2Video)
- Flash to Video Tutorial (from FlickerLab)
- Flash to Video Encoder PRO 4.2 (from GeoVid)
- Flash MX Design for TV and Video (by Janet Galore and Todd Kelsey; Wiley, 2002)

Chris Georgenes is a full-time freelance artist, animator, and all-around designer for the web, CD-ROM, and television. His clients include Pileated Pictures, LucasArts, Universal Records, Plot Developers, and AOL, among others. He maintains www.mudbubble.com as his online portfolio and www.keyframer.com as his Flash tutorial website. Chris is also a member of Team Macromedia.

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FlashASP.NET

Dynamic interactive medium for Web applications

Ryan Moore

As the World Wide Web's landscape has evolved from the days of multimedia-void static HMTL pages, the need for a dynamic interactive medium for Web applications has become apparent. Adobe Flash, as many developers know, is the most widely distributed, capable technology for achieving this new Internet medium. But Flash developers can't achieve the features expected from modern Web applications with Flash alone – for Flash's resources to be put to proper use, Flash must team up with a server-side technology capable of functionality such as database access and file manipulation. Microsoft's newest Web technology, ASP.NET, is a perfect counterpart for Flash, putting powerful capabilities at the fingertips of Flash developers, created using a programming language that is both friendly and familiar to ActionScript developers.

ASP.NET

ASP.NET, like other Web platforms such as PHP, JSP, and ColdFusion, is a set of Web development technologies that can be used to create Web applications and Web Services. ASP.NET is the next generation of Microsoft's Active Server Pages, a technology that was widely used to create Web applications in the 90s and early 2000s. ASP.NET represents not only the newest in Microsoft's Web technology arsenal, but also one of the most advanced Web development platforms currently available.

ASP.NET by itself is actually just a small part of a larger development framework created by Microsoft, known collectively as the .NET Framework. The .NET Framework is a software development platform that is used to build and deploy applications for a variety of uses, ranging from Web-based applications to Web Services to desktop-based applications. Although created by Microsoft, the .NET Framework is an Open Source standard, designed to be completely platform-independent, and therefore isn't restricted to execute on a Microsoft-based operating system.

The Open Source, platform-independent distribution of the .NET Framework is called Mono and is available at www.gomono.com. Among other things, the Mono Framework lets ASP.NET applications be deployed on non-Microsoft base Web servers, such as Linux or Sun. Languages like ASP.NET are typically referred to as "server-side" languages because, unlike Flash applications, which are displayed and execute in the Flash Player on a user's computer, server-side languages perform their magic on a Web server. Typically, server-side languages like ASP.NET are used to generate HTML documents that are sent to a browser for display. Server-side languages are used, for example, to generate all of the content you see on large-scale sites like www.amazon.com or www.cnn.com. When used in conjunction with Flash, however, ASP.NET is used instead to access and process information, package that information in a well-defined manner, and transmit that information to a Flash interface, which displays it for a user. Its ability to function in this role lets developers access the powerful functionality of ASP.NET without relying on HTML as a user interface. Instead, a rich interactive medium such as Flash can be employed, dramatically increasing the capabilities of Web-based applications.

Why Use ASP.NET for Flash Development?

Just because ASP.NET is one of the newest and most powerful server-side platforms available doesn't necessarily make it a good match for Flash developers. It's because some of ASP.NET's underlying features match up perfectly with the needs of Flash development that make it a perfect server-side comrade. And not only does ASP.NET provide all of the machinery necessary for Flash development, but it makes that machinery easy to operate, taking care of much of the underlying grunt work that other languages don't.

One of the foundations of the .NET Framework and ASP.NET is called the Framework Class Library (referred to as FCL). The FCL is a collection of reusable, commonly used objects. These objects let developers build on complex code that has already been created, eliminating the need to "reinvent the wheel" in your application. The Framework Class Library is very similar to the pre-built classes and components provided in Flash such as MovieClip, Button, and variable types such as String and Number. The libraries

in FCL include tremendously powerful collections, such as ADO.NET – the .NET Framework's data access libraries – and ASP.NET – the libraries that give .NET the ability to create and distribute Web applications. Access to the FCL gives developers a major jumpstart in application development, allowing focus to reside on the higher-level design of the application and steer clear of unnecessary dirty work. For Flash developers specifically this means that you can spend more time on the Flash side of the application and less on server-side functionality.

One of the classes included in FCL that makes integrating with Flash a breeze is Web Services. Using ASP.NET, the creation of Web Services is a very painless process, since much of the underlying work is already contained in FCL. Web Services make it possible for developers to execute complex functions with an ASP.NET application and return complex results to a Flash application without having to create complicated data-formatting procedures.

Another reason that Flash developers will find ASP.NET a good match is the programming language commonly used to create ASP.NET applications, C#. C# (pronounced see sharp), is the newest language in the C family of languages. C# is a best-of-breed language combining the most popular features of C++, Java, and Visual Basic – which share the same foundations as ActionScript's foundation, JavaScript. Because C# and ActionScript have emerged from very similar models, their syntax is very similar, making for an easy transition between the two languages. Like ActionScript 2.0, C# is also a fully object-oriented language, which makes development very intuitive for an ActionScript programmer. I should mention that, although C# is the preferred language for creating ASP.NET applications, it's by no means the only one. Because of the flexibility of the .NET Framework, ASP.NET applications can be written in any ASP.NET compatible language, such as VB.NET and JScript (Java for .NET). This flexibility also makes the transition process easier for a developer who might already be familiar with one of these compatible programming languages.

What Types of Functionality Can ASP.NET Be Used For?

Although there are an infinite number of things that you can use ASP.NET to do, there are some powerful features that are commonly incorporated into Flash applications:

- ***Access stored data from a database:*** Using ASP.NET, it's possible to retrieve data from nearly any kind of database, including Microsoft SQL, MySQL, Access, and Oracle, to display in a Flash-based interface.
- ***Insert and update database data:*** ASP.NET can be used to update or insert data coming from a Flash interface into a database. Acting as the intermediary, ASP.NET can handle any database connectivity issues and respond accordingly.
- ***File uploads:*** File uploading is an essential feature of many Web-based applications. With Flash 8, Adobe released the ability to upload files from a user's file system directly to a Web server, monitoring the progress along the way. Using ASP.NET, it's possible for Flash to "hand off" the file to the Web server for proper placement.
- ***Image manipulation:*** Using ASP.NET, image files that exist on a Web server can be run through any number of manipulations, including resizing, cropping, and conversion. This can be a very useful feature when used in combination with Flash 8's advanced image processing techniques and user-uploaded image files.
- ***Security:*** ASP.NET is capable of many security-based functions that aren't available when using just Flash. FCL

"Flash Remoting is the most powerful and versatile of the options for **communicating between a Flash movie and a .NET Web server"**

```
ram name="menu" value="true">
ram name="play" value="true">
ram name="loop" value="true">
ram name="scale" value="none">
ram name="flashvars" value="baseUrl=http%3a%2f%2fwww.lsb.com%2f">
bed src="loader.swf" quality="high" wmode="window" play="true" lo
```

Figure 1

```
19    var Form_lv:LoadVars = new LoadVars();
20    Form_lv.firstName = TextFirstName.text;
21    Form_lv.lastName = TextLastName.text;
22    Form_lv.phoneNumber = TextPhone.text;
23    Form_lv.emailAddress = TextEmail.text;
24    From_lv.how = ComboHow.selectedItem.label;
25    Form_lv.sendAndLoad(Url_str, Response_lv, "POST");
```

Figure 2

Figure 3

```
XmlTextWriter xmlWriter = new XmlTextWriter(Response.OutputStream, System.Text.Encoding.UTF8);
xmlWriter.WriteStartDocument();
xmlWriter.WriteStartElement("gallery");

string[] dirs = Directory.GetDirectories(Server.MapPath("~/images"));
foreach (string dirname in dirs)
{
    xmlWriter.WriteStartElement("folder");
```

has advanced encryption and decryption algorithms built-in, making it easy for developers to do complex security techniques.

Creating ASP.NET Applications

Another one of the strengths of ASP.NET for Flash developers is the preferred development environment used to create ASP.NET applications – Visual Studio.NET. Visual Studio.NET 2005 is one of the most advanced development environments in existence today. The features built into Visual Studio.NET not only help make ASP.NET development more effortless, but also help developers new to .NET programming learn these languages more easily.

In the past, Visual Studio.NET was not an affordable tool for many developers, with its various editions starting at around $1,000. However, with its 2005 product line, Microsoft has released a version of Visual Studio.NET called the Express Editions that is available free of charge until November 6, 2006. Specifically for Flash developers, the Visual Web Developer Edition is a perfect tool for beginning ASP.NET development, and is available for download at http://msdn.microsoft.com/vstudio/express/vwd/.

Figure 4

```
- <ProductCategory>
    <CatId>1</CatId>
    <CatName>Boats</CatName>
  </ProductCategory>
- <ProductCategory>
    <CatId>2</CatId>
    <CatName>Paddles</CatName>
  </ProductCategory>
- <ProductCategory>
    <CatId>3</CatId>
    <CatName>PFDs</CatName>
  </ProductCategory>
- <ProductCategory>
    <CatId>4</CatId>
    <CatName>Helmets</CatName>
```

Methods Used for Flash-ASP.NET Interaction

When creating applications that make use of Flash and ASP.NET, a major obstacle can be the fact that they are two very separate systems – one executing on a client system, another on a Web server. Because of this separation, it's very important to understand the methods available to communicate between the two systems – without the proper communication channel, the two systems are useless to each other. As the Flash Player has evolved, so have many methods available to do this communicating.

FlashVars

FlashVars are a method of communicating between ASP.NET and Flash that uses tags embedded in HTML to exchange data. FlashVars only allow for one-way communication – from the server to the Flash Movie. Because of this, FlashVars aren't an alternative for applications that require data to be sent from a client-side application to a Web server, such as an e-mail form. FlashVars, however, are a very fast and efficient form of communication and are often overlooked in circumstances where small amounts of data have to be sent to a Flash Movie.

FlashVars are unique among the exchange methods in that the data they contain is sent along with the .swf file when requested by a client browser instead of in a separate load after a Flash movie is loaded. This kind of exchange is less obtrusive to the user than other methods and is a good solution in certain circumstances.

LoadVars

The LoadVars object is much more versatile than FlashVars in terms of the direction and amount of data that can be exchanged. The LoadVars object is capable of either sending data to the server for processing, loading data from the server, or sending data to the server and waiting for a response back from the server in one operation. The LoadVars object uses name-value pairs to exchange data between the client and the server. The LoadVars object is best used in a scenario that requires two-way communication between the Flash Movie and server-side logic, but doesn't require large amounts of data to be passed. The LoadVars object requires that the .NET developer handle the formatting of the exchanged data – potentially a real pain, depending on the amount you intend to pass.

XML Object

The Flash XML Object is another option for communicating between a Web server and Flash client. The XML object is very similar to the LoadVars object in functionality in that it can both send data to the Web server and get data from it. The difference between the XML object and the LoadVars object is the format in which the data being sent and received is formatted. Whereas the LoadVars object expects a name-value pair as a response, the XML object sends and receives a well-formatted structured XML document. Structured XML data makes the XML object much more suitable than the LoadVars object for handling larger amounts of data.

Web Services

Introduced with Flash MX 2004 Processional Edition, Web Services are the newest method for communicating between Flash and ASP.NET. Web Services use SOAP (Simple Object Access Protocol), an XML-based format, to transfer data between the client and server. Web Services are an industry standard for exposing proprietary "services" for others to use in their applications. An example of a web Service is the search method offered by Google. By using this method through Web Services, it's possible for you to make a Flash application that uses

Figure 5

CategoryID	CategoryName	Description
1	Beverages	Soft drinks, coffees, teas, beers, and ales
2	Condiments	Sweet and savory sauces, relishes, spreads, and se
3	Confections	Desserts, candies, and sweet breads
4	Dairy Products	Cheeses
5	Grains/Cereals	Breads, crackers, pasta, and cereal
6	Meat/Poultry	Prepared meats
7		
8		

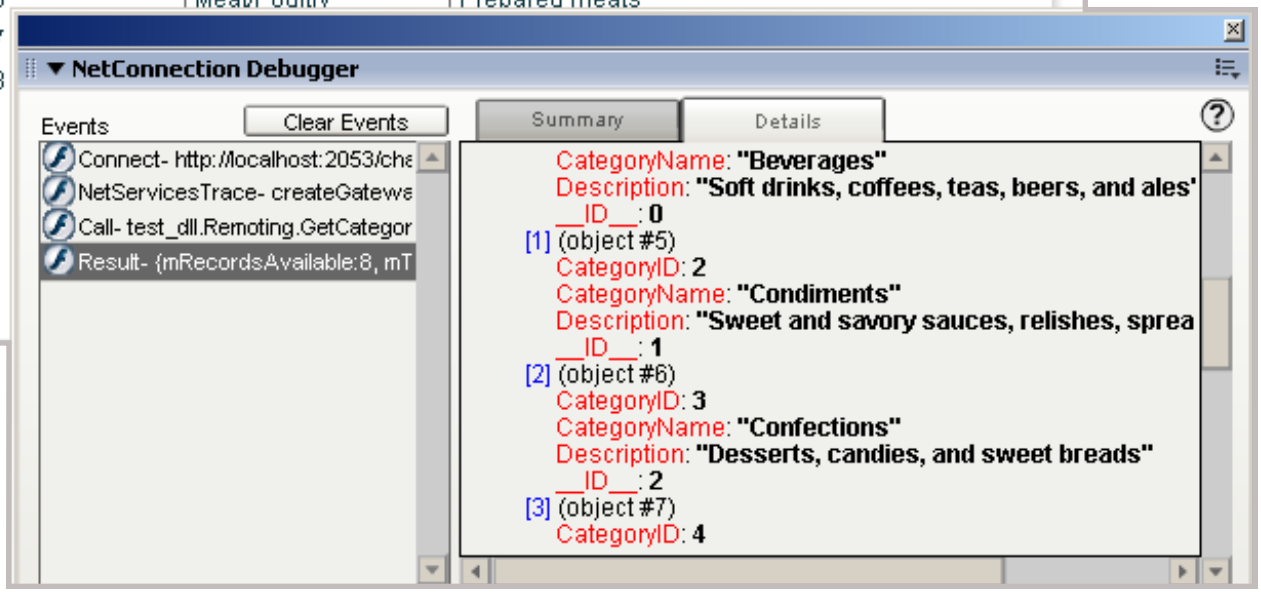

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Figure 6

the Google search engine. As mentioned earlier, Web Service creation is very easy with ASP.NET, making it an excellent choice for Flash applications.

Flash Remoting for .NET

Flash Remoting is the most powerful and versatile of the options for communicating between a Flash movie and a .NET Web server. Using Flash Remoting, it's possible to access data directly from an ASP.NET Web application in a secure, quick, and efficient way. Flash Remoting uses a binary message format for transferring messages between the Flash client and server-side ASP.NET code called ActionScript Messaging Format, or AMF. AMF, like any of the other methods, travels between the client and server over HTTP, so you don't have to worry about security mechanisms (such as firewalls) interfering with your communication. Although modeled on the same protocol as Web Services, AMF is much more lightweight than the other communication options, and therefore travels much more quickly than calls using the Web Service connector. AMF is also securable using SSL, so it's a great option for security-sensitive applications. Using Adobe's version of Flash Remoting does come with a price tag, however. Flash Remoting for ASP.NET is a standalone server-side component not included with Flash MX 2004, which costs $999 per Web server. Thankfully, there's an Open Source alternative to the Adobe Flash Remoting for .NET package called Fluorine. Fluorine is an Open Source Flash (www.osflash.org) project and is available for download at http://fluorine.thesilentgroup.com/.

Flash & ASP.NET Resources

The information I've covered in this article is just a brief overview of the world of Flash development with ASP.NET. I have recently written a book published by Friends of Ed called *Foundation ASP.NET for Flash*, which thoroughly covers all of the Flash-ASP.NET communication methods mentioned above, as well as a step-by-step introduction to ASP.NET development with C# and Visual Studio.NET. I encourage you to pick up a copy and add yourself to the growing community of Flash-ASP.NET developers. You'll also find a growing source of Flash and ASP.NET resources, as well as a support forum on the Foundation ASP.NET for Flash homepage at www.flashasp.net.

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2005 was the year of streaming video and the birth of **Internet TV**, the long-awaited convergence of television and the Internet. Now that broadband is available to more than 100 million households worldwide, every corporate Website and every media company must now provide video content to remain competitive, not to mention live and interactive video Webinars and on-demand Webcasts.

20 years ago the advent of desktop publishing tools opened the doors for the creation of some of today's well-known traditional print media companies as well as revolutionized corporate print communications. Today, with maturing digital video production, the advent of fully featured PVRs, and significant advances in streaming video technologies, **Internet TV** is here to stay and grow and will be a critical part of every Website and every business in the years to come.

It will also very rapidly become a huge challenge to network and cable television stations: **Internet TV** is about to change forever the $300BN television industry, too.

The Internet killed most of print media (even though many publishers don't realize it yet), Google killed traditional advertising models, and **Internet TV** will revolutionize television the way we watch it today. You need to be part of this change!

Jeremy Geelan
Conference Chair, iTVCon.com
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- Choosing Your PVR
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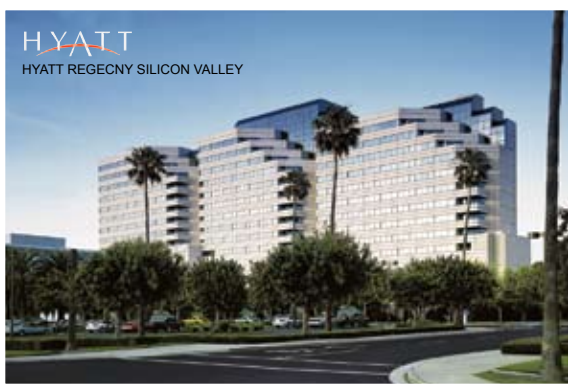

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Real-World Flex

Tips and tricks from Adobe's intrepid Flex Evangelist

by Christophe Coenraets

Some people take the dog for a walk, other go play a round of golf. Not Christophe Coenraets. His idea of a good time is to illustrate Flex and JMS integration by extending a simple "realtime feed" application that he built a while back! *Web Developer's & Designer's Journal* is proud to bring you each month two of the month's best tips from Adobe's intrepid Flex Hero.

Using Flex 2 with Flash Media Server

I recently built a proof of concept that included a call center integration scenario. The use case revolved around a user getting stuck while trying to complete an online process, and engaging in a real time collaboration session with a customer services representative to sort out the problem.

The nature of the collaboration between the end-user and the support representative was very rich and included the following features:

1. Chat
2. Videoconference / video chat
3. The support representative was able to "drive" the end-user's UI
4. The support representative was also able to remotely fill in the user's form. In other words, data typed in the support rep's application automatically appeared (in real time) in the user's app.

From the end-user point of view, all this was done "in context" without ever leaving the application, and without starting any other application.

The application turned out to be really easy to implement with Flex 2:

- Features (1) and (3) were enabled by the new Message Service in Flex 2.
- Feature (4) was enabled by the Data Services in Flex 2. Using the data services, two clients can point to the same destination (the same data set). Changes made by one client are automatically reflected in the other client. No code required!
- Feature (2) was enabled by the Flash Media Server.

Here's a simple example of how to integrate Flex and Flash Media Server to support rich media streaming and video-conferencing. This is surprisingly easy to do with just a few lines of code.

To run this example you will have to:

1. Install FlexBuilder 2. You can download the beta here: http://labs.adobe.com/.
2. Install the Flash Media Server (you can download a free developer edition here: http://www.adobe.com/products/flashmediaserver/
3. Download the sample application code here: http://coenraets.com/apps/fms.zip
4. In C:\Program Files\Macromedia\Flash Media Server 2\applications\flex_videoconference, create a directory called flex_videoconference and copy the main.asc file in that directory
5. Create a FlexBuilder project and copy fms.mxml and VideoContainer.as in that project
6. Run fms.mxml

The application starts your webcam, publishes the captured video stream to Flash Media Server.and then "plays" the video streamed by Flash Media Sever in a second video component.

Embedding HTML in a Flex Application using an IFrame

I have recently been involved in several projects where there was a need to embed HTML content in a Flex application. Depending on the specific requirements of your application, there are a couple of approaches you can use...

1. The Flex Text components (Label, Text, TextArea) support basic HTML formatting through their htmlText attribute. You can find an example of this approach in the Samples Explorer where the Code Viewer uses the HTML capabilities of the TextArea to provide syntax coloring.
2. You can embed a Flex application in a page that also contains traditional HTML. The Flex application can communicate with the HTML document

Note: I am not advocating that you use this technique as your default approach to combine Flex and HTML content. Depending on your application, the approaches (1) and (2) described above may represent a better solution. If these approaches don't meet your specific requirements, the technique implemented in the attached example can be very useful.

"You may need a single Flex application that embeds HTML **content with no restriction in terms of HTML tags and features supported"**

(and the other way around) through JavaScript. You can also embed multiple Flex applications in a page. These applications can then communicate directly with each others using the LocalConnection API.

In some cases, these approaches may not go far enough: You may need a single Flex application that embeds HTML content with no restriction in terms of HTML tags and features supported.

In this case, another approach is to position an IFrame on top of a specific area of your Flex application to provide a container for the HTML content which will then appear embedded in the application. This technique may initially sound complex or cumbersome to implement, especially if the different containers of your Flex application resize dynamically and you have to keep the IFrame in sync. In the attached example, I abstracted the complexity of this approach in an IFrame component written in mxml. The IFrame component extends Canvas and is used like any other Flex container. Behind the scenes, it acts as a proxy for the actual HTML IFrame. For example, when the IFrame component is resized or moved it automatically asks the HTML document to resize/move the actual IFrame.

- Run the example (resize the browser window to see how the IFrame is resized accordingly): http://coenraets.com/apps/iframe/index.htm
- Download the example : http://coenraets.com/apps/iframe/iframe.zip
- View the source code: http://coenraets.com/apps/cv.jsp?descriptor=iframe/source.xml

Christophe Coenraets is currently the Senior Evangelist for Adobe's developer-centric Rich Internet Applications initiative. He worked at Powersoft—which then became part of Sybase—from 1994 to 2000, then started working with Java in 1996 and became the Technical Evangelist for the company's Java and Internet Application Division. After joining Macromedia as the Technical Evangelist for JRun, the company's J2EE application server, Christophe started working on Rich Internet Applications and on ways of integrating Flash front ends with J2EE back-ends. He has been a regular speaker at conferences worldwide for the last 10 years, including demonstrating Flex at the "Real-World AJAX" seminar series both in New York and San Jose. He'll also be speaking at AjaxWorld Conference & Expo in October (http://ajaxworldconference.com/). ccoenrae@adobe.com

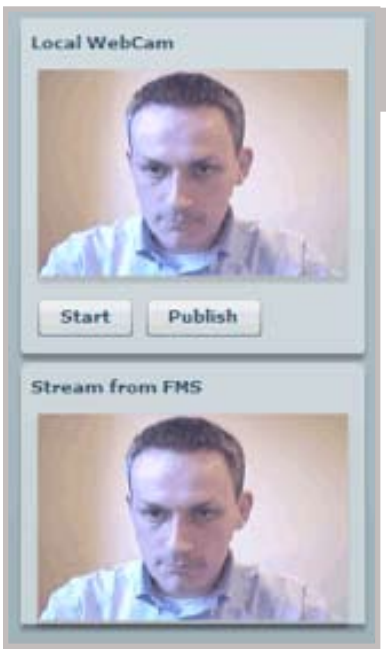


Figure 1

Advertising **Index**

Close Gaps Next to Floating Images in Internet Explorer

Creative fixes

by Zoe Gillenwater

One of the most common tasks when laying out the content of a web page is floating images to the right or left so that text flows around them. This is dead simple to do with CSS:

```
img {
float: right;
margin: 0 0 1em 1.5em;
}
```

A problem can arise if the text beside an image is not long enough to wrap around it. In this case, the next image could potentially float up into this space beneath the text, instead of sitting directly beneath the previous floated image. Once again, this is simple to fix:

```
img {
float: right;
clear: right;
margin: 0 0 1em 1.5em;
}
```

The addition of the clear to the floated image ensures that each one will always sit below the previous one. However, placing the float and clear properties on the same element can cause large gaps to appear in Internet Explorer (IE) — gaps that take more complicated CSS to fix than what we've used so far.

To see the problem, download the support files for this article and open IE_adjacent_float_gap.html in Dreamweaver. Preview it in IE. Unless you have a very narrow screen so that the text of the first paragraph is long enough to wrap around the first image, what you will see should resemble Figure 1.

What seems to be happening is this: IE floats the first image to the right. The text of the paragraph that follows it wraps around it. Next up in the XHTML source is the second image, which is also floated to the right and cleared below the first image. But instead of allowing the text that follows the second image to flow up beside the first image, as it ought to, the text acts as if it, too, had a clear applied to it.

When an IE bug is present, the first line of defense is to see if it falls to either of the two "magic bullets" described in How To Attack An Internet Explorer (Win) Display Bug by Holly Bergevin and John Gallant. I'll save you some trouble — this one doesn't. No matter which elements you apply position: relative or height: 1% to, the gap remains.

What to do now? Georg Sørtun, a helpful and inventive member of css-discuss, came up with the idea to make the content adjacent to the floats inline. For some reason, perhaps because the clear property can only be applied to block-level elements, the content no longer acts like it is inheriting the clear, and the gap is gone.

Go to the Code View of IE_adjacent_float_gap.html. Add the conditional comment block below that includes special styles for IE only to the head of the document, below the closing style tag.

```
<!--[if IE]>
<style type="text/css">
p {
display: inline;
}
</style>
<![endif]-->
```

If you preview in IE after adding the above code, you will see that the gap is now gone. Of course, since the paragraphs are all inline now, they all run together as one big lump of text. This is even worse than before!

Luckily, we can make IE treat the paragraphs like blocks again, without making the gap return, by giving them "layout."

The Holly Hack, described in the article How To Attack An Internet Explorer (Win) Display Bug referenced earlier, is one way

In a real page, the styles for all browsers would be placed in one style sheet, which would be linked or imported from the head of the page, while the styles for IE would be linked or imported from within the conditional comments. Here, the styles are listed within the head of the page itself for your ease of editing.

"hasLayout" is an IE-only property that makes certain IE bugs disappear and changes how elements are laid out and relate to each other. If you want to dig into how hasLayout works, read this excellent article by Ingo Chao, On having layout.

to give an element layout because it sets a dimension on the element. But the Holly Hack doesn't work here. Georg Sørtun had the answer again, though: use zoom instead. This is another IE-only property that induces layout, and if we set it to "1" it will not change the appearance of the text (if set to 2, it would zoom in to make the text twice as big, for instance). When it is applied to the paragraphs, they split apart again. With some padding added between them, they look like normal paragraphs once more (see Figure 3). Modify your IE-only CSS to match the block below:

```
p {
display: inline;
zoom: 1;
padding: .5em 0;
}
```

Although an h2 element, not just paragraphs, is also adjacent to the floated and cleared images, applying this fix to the paragraphs only was good enough in this case — IE is a mysterious browser! However, on real pages that are more complicated, you may need to apply the fix to all content that is adjacent to gap-inducing floats. Tinkering is always present when IE needs to be supported!

The only other thing we may want to tweak at this point is the spacing of the the headings in relationship to the paragraphs. Headings have default top and bottom margins. These margins are butting up against and adding to the padding we've applied to the paragraphs to space them out from one another. So, add these additional rules within the conditional comment:

```
h1 {
margin: .3em 0;
}
h2 {
margin: .5em 0;
}
```

Now the spaces between the headings and paragraphs are consistent with how they looked before.

There's one niggling side effect of this method. If you scroll down the page, you will see that the paragraph that is adjacent to the bottom of the second photo no longer wraps around that photo's bot-

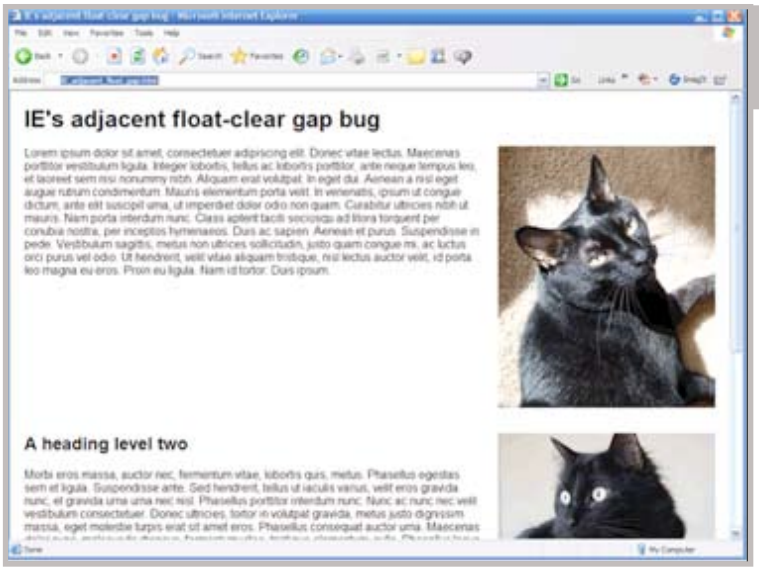


Figure 1

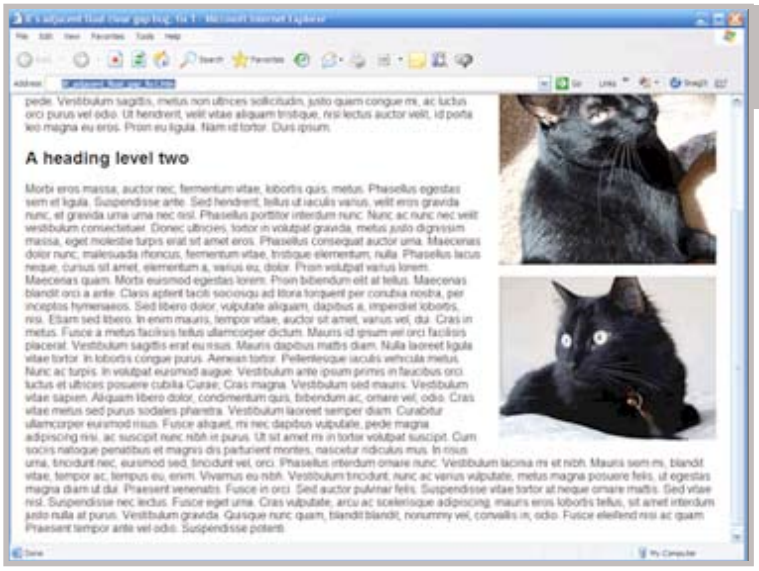


Figure 2

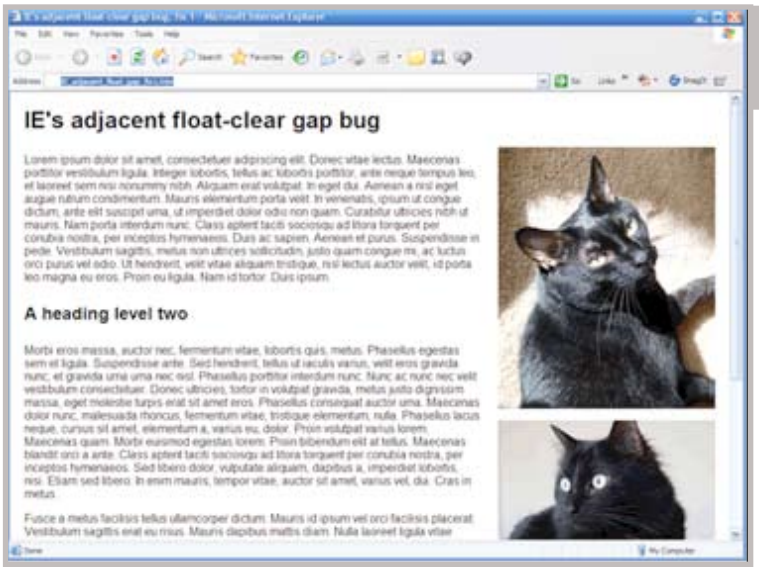
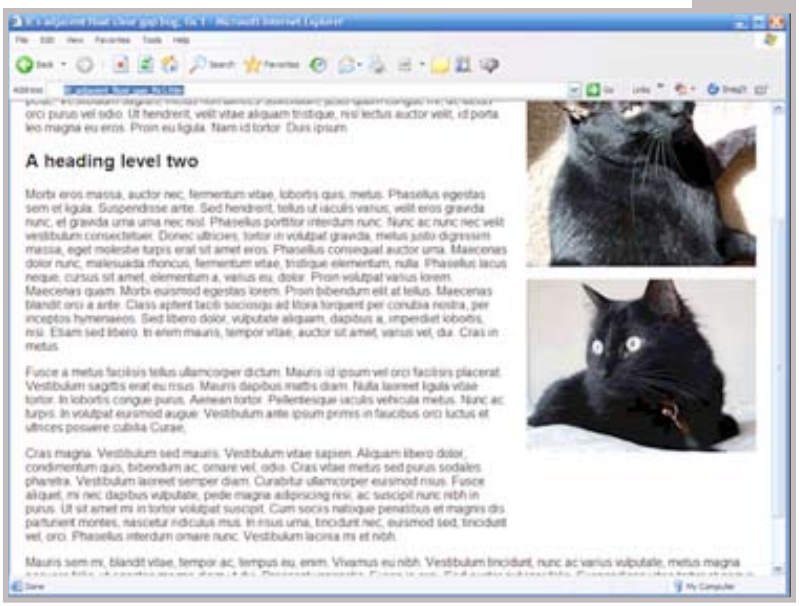


Figure 3

Figure 4



tom (see Figure 4). This new gap cannot be prevented or fixed. However, it will occur much less frequently than the first gap, usually be smaller in size, and is generally easy to overlook, so this solution is best for most situations.

If, however, you have a very picky client who uses IE and cannot stand the gap underneath some images, there is another method that you can use, courtesy of Ingo Chao, another creative css-discuss member.

Go back to your XHTML file and remove the entire conditional comment — it's no longer needed. Instead, add the following class:

```
.fixgap {
float: right;
height: 0;
}
```

Then, add this line of HTML immediately before the second floated image:

```
<div class="fixgap"><!-- --></div>
```

Preview the file in IE. Both the gap above the text and below the photo will be gone.

You can add this empty div above every float-clear combination element. If you go with this method, keep in mind that you are adding unneeded bulk to your pages and that there's a chance (especially if your pages are maintained by someone else) that the empty divs could be accidentally removed down the road. For these reasons, the first method is recommended in most cases.

Summary

Recommended Fix

Add this rule to an IE-only style sheet:

```
p {
display: inline;
zoom: 1;
padding: .5em 0;
}
```

Also, adjust margins on any content adjacent to the paragraphs.

See the file IE_adjacent_float_gap_fix1.html.

Alternate Fix

Add this rule to the main style sheet:

```
.fixgap {
float: right;
height: 0;
}
```

Add this line of HTML immediately before the float-clear combination element:

```
<div class="fixgap"><!-- --></div>
```

See the file IE_adjacent_float_gap_fix2.html.

Thanks to Georg Sørtun, Ingo Chao, and Bruno Fassino for their creative fixes to yet another IE bug!

"Tinkering is always present **when IE needs to be supported**"

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