



White Paper

Using Dreamweaver® UltraDev™ for ColdFusion® Development

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“Dreamweaver UltraDev can save ColdFusion developers valuable time, especially during the application design and prototyping stages.”

-Ben Forta, Allaire

All Web developers want to speed up the development of their Web sites. This is the fundamental reason they use ColdFusion, because it's the fastest coding language available for robust Web application development. The benefit of using industry-standard code editors such as ColdFusion Studio is that they have features that accelerate your development, like snippets, syntax completion and tag insight. However, there are unique benefits to using the visual development environment of Dreamweaver UltraDev.

Seventy percent of developers choose Dreamweaver, the foundation of UltraDev, because it has all the professional HTML-rendering capabilities you can't find in any other product. When you develop with UltraDev, you combine the presentation-layer development capabilities of Dreamweaver with the application-building power of ColdFusion. There are several key features—unique to UltraDev—that speed up the development process, including its capability to integrate with ColdFusion Studio. The following is a detailed description of these features.

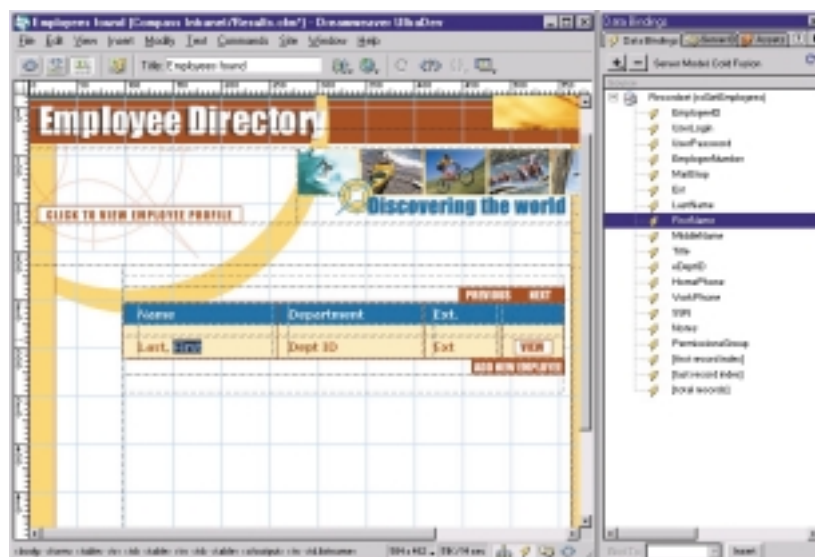
Data Sources

A Data Source in UltraDev is simply a visual representation of an actual source of content. This Data Source can be a recordset, a variable, a stored procedure, a directory or any other source of raw data. You hand-code this by using a CFQUERY tag to create a database query. In order to do this, you have to know the exact structure of your query and test it outside of the application environment to ensure that it is valid. UltraDev, however, allows you to build and represent that query visually.

Using the UltraDev Recordset Creation palette, you can browse the available tables, views and stored procedures from the data source as you create your query. In UltraDev, you simply specify the RDS connection you wish to use and all of this information is instantly made available. You don't have to remember your exact database structure to build a successful query, and you can test its results right in the Query Editor. The Query Builder even allows you to manually write out SQL to use, or build the query by selecting database elements to include.

When you create the query in the SQL Query Builder, UltraDev will insert the CFQUERY tag with the necessary parameters on the page. After you do this, the database columns show up as Data Sources in the Data Bindings palette (see Figure 1).

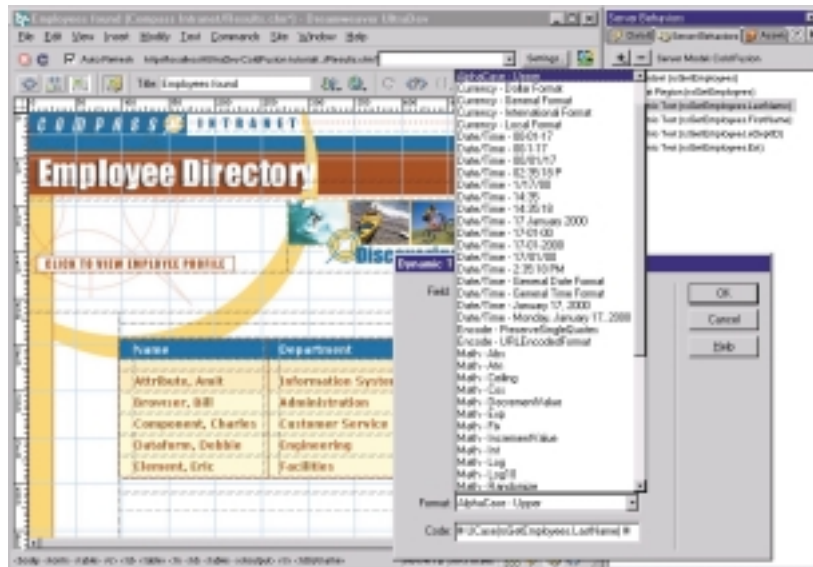
Figure 1: Data sources in the Data Bindings palette. Recordset columns are just a click away.



This method has several advantages over hand coding:

- The data can be inserted into a visual representation of the page, thereby keeping it exactly where you want it on the page.
- Data formatting functions, like money formatting or date and time formatting, are pre-programmed into UltraDev. You can apply them to the data source with a just one click (see Figure 2).

Figure 2: Data Formats can easily be applied to any data source.



- The available data sources are always listed in the palette for easy access.
- Data sources can be used in conjunction with Server Behaviors for automatically generating complex pre-processed ColdFusion code with your own data source.
- New data sources can be built using the extensibility architecture in Dreamweaver for other ColdFusion or custom tags.

Server Behaviors

A Server Behavior is a small section of code that can be inserted into a Web page as a unit with attributes that you can individually define. For example, if you have a CFQUERY tag on the page to allow users to retrieve certain data from a database, you might want to output that data to a table. In UltraDev, you can place a table on the page visually, insert your data, apply any styles that you may want to apply and then apply a Repeat Region to the table row. This will generate the standard CFOUTPUT statement that ColdFusion developers will recognize, but with a catch: the variables defined can only be used with other Server Behaviors for complex recordset navigation.

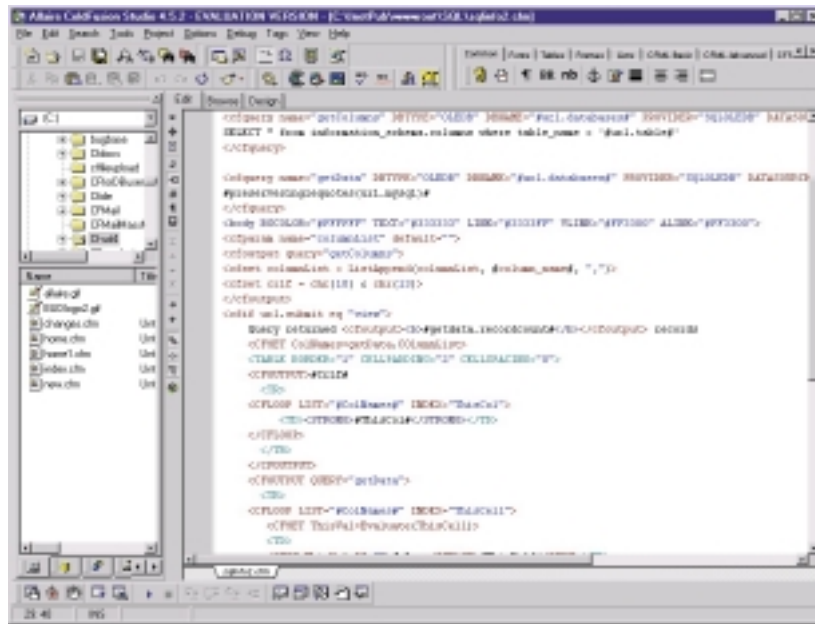
Server Behaviors are predefined for many of the typical tasks that a ColdFusion developer might do on a day-to-day basis when building a Web application, such as inserting, updating and deleting content from a database. The new Server Behavior Builder in UltraDev 4 allows developers to create their own Server Behaviors using custom scripts or modifying existing Server Behaviors. Server Behaviors can also be packaged and shared with other UltraDev users.

Live Data Preview

Live Data Preview is the standout feature of Dreamweaver UltraDev. With this feature turned on, you can view and edit your Web page while actual live content from the database is simultaneously displayed in the design environment. The feature works regardless of whether you developed the page in UltraDev, ColdFusion Studio or some other application.

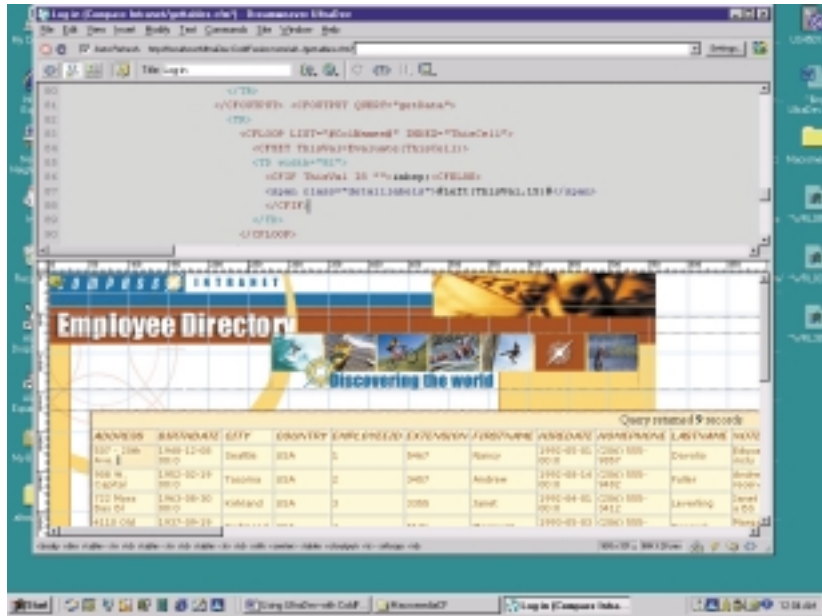
By turning the feature on, you can view the page as if it were in a browser and still maintain full-page editing capability. For example, if you were to code your application in ColdFusion Studio, but wanted to be able to adjust the size, layout and styles of your content, you could bring the page into the UltraDev environment, turn on Live Data and then make adjustments to the page as necessary. All of the underlying HTML would be automatically written to the page. If you look at Figure 3, you'll see a typical ColdFusion page in ColdFusion Studio.

Figure 3: ColdFusion Studio allows vast control over your code.



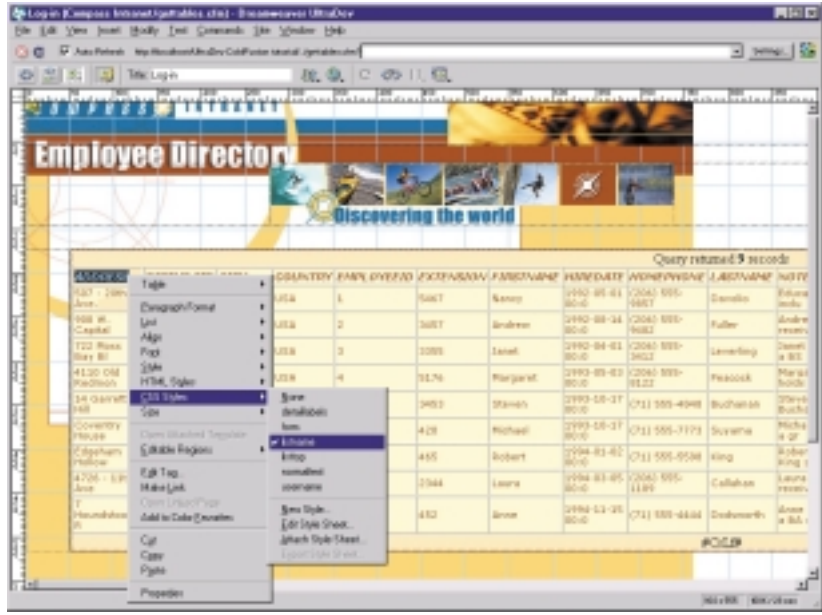
A ColdFusion Studio user has the option of browsing the page or editing the page. Live Data lets you simulate the browsing experience while simultaneously editing and making changes to the page visually. Figure 4 shows the page in the UltraDev environment with Live Data turned on.

Figure 4: UltraDev gives you complete control over the visual look of your Web page without sacrificing the control of the code.



The split window gives you the best of both worlds. If you are the type of programmer who likes to tweak the code and then browse the results, you'll be able to see the code changes immediately reflected in the design environment using the Live Data Preview function of UltraDev. Not only are your code changes reflected, but any changes you make in the visual environment are reflected in the code as well (Figure 5).

Figure 5: Using the split window in UltraDev allows you to work on the code and the design simultaneously, with instantaneous updates as you work.



Live Objects

In Dreamweaver, the core functionality of the program resides in the Objects. An Object is an HTML element—like a table, form field or image—that can be inserted into your page. Live Objects, a feature debuting in UltraDev 4, provides you a combination of HTML and server-side code that allows complex scripts to be inserted into your page. They differ from Server Behaviors in that Live Objects can be combinations of many HTML elements and/or Server Behaviors inserted all at one time. For example, the interface for the Record Update Form Live Object (Figure 6) allows you to take the columns from a recordset (a CFQUERY tag) and create form fields and labels for each database field.

Figure 6: The Record Update Form Live Object simplifies the process of adding Update commands and form fields to the page.

The screenshot shows the 'Insert Record Update Form' dialog box. It has the following fields and options:

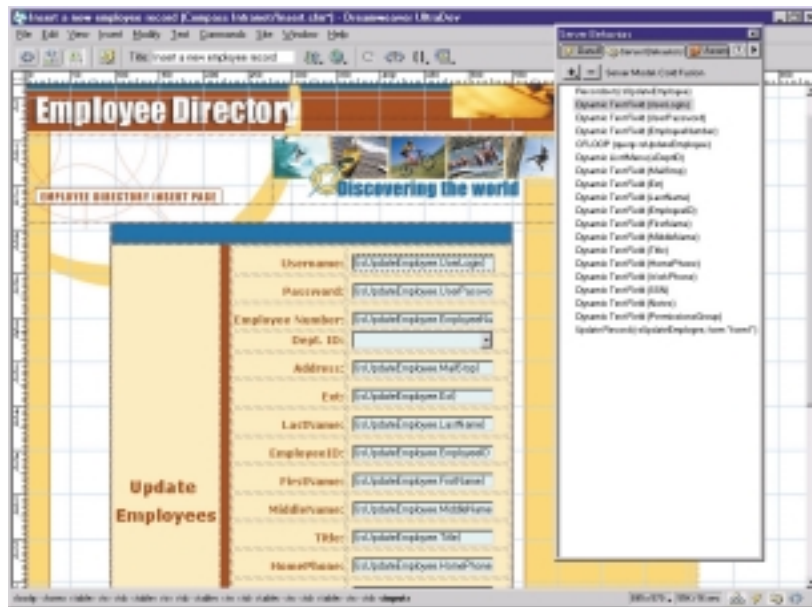
- Connection: connEmployeez (with a 'Define...' button)
- Table to Update: Employee
- Select Record From: rsUpdateEmployee
- Unique Key Column: EmployeeID (with a checked 'Numeric' checkbox)
- After Updating, Go To: Detail.cfm (with a 'Browse...' button)
- Form Fields: A table with columns 'Column', 'Label', 'Display As', and 'Submit As'. The table contains the following data:

Column	Label	Display As	Submit As
UserLogin	Username:	Text Field	Text
UserPassword	Password:	Text Field	Text
EmployeeNum...	Employee Number:	Text Field	Numeric
DeptID	Dept. ID:	Menu	Numeric
- Label: Dept. ID:
- Display As: Menu
- Submit As: Numeric
- A 'Menu Properties...' button is located below the 'Display As' and 'Submit As' fields.

Buttons on the right side include 'OK', 'Cancel', and 'Help'.

After you assign the functionality, the Live Object can be inserted into the page with just one click (Figure 7). The object includes a table, all form fields necessary for the update (each one field is “bound” to a database column) and the ColdFusion code necessary to perform the database update. Once the database is updated, an optional redirect page will appear.

Figure 7: The Record Update Live Object appears once it is applied to the page.



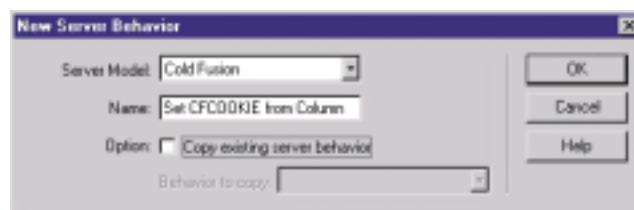
After applying the Live Object, you are free to go back and modify the elements that were inserted.

Server Behavior Builder

If you have simple or complex scripts that you find yourself using over and over, these can be turned into Server Behaviors. The advantage of using Server Behaviors rather than copying and pasting the code in ColdFusion Studio is not apparent at first, but after you've used Server Behaviors a few times you will begin to see their power and appreciate their convenience.

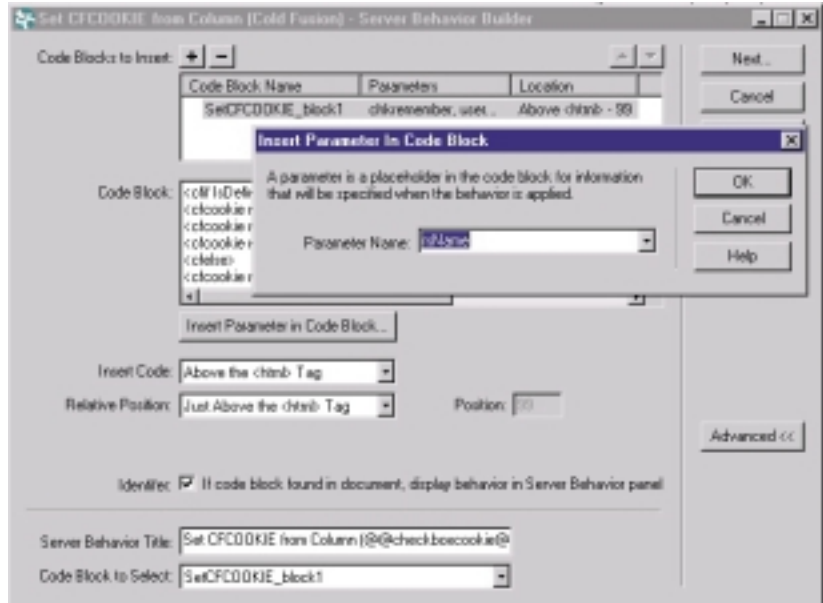
You can insert user-defined attributes into your code, which gathers data from a variety of sources. For example, let's say you have a block of code that redirects a user based on a value from a column in a database after setting a cookie. First you create a new Server Behavior by clicking "New Server Behavior" in the Server Behavior palette. This brings up the New Server Behavior dialog box (Figure 8).

Figure 8: Creating a new Server Behavior in UltraDev.



Next, you insert a new code block and paste your code into the window. You can then highlight the sections of code that are going to be user-defined and insert parameters by clicking the Insert Parameters In Code Block button. This brings up the dialog box shown in Figure 9.

Figure 9: Inserting a parameter into a new Server Behavior.

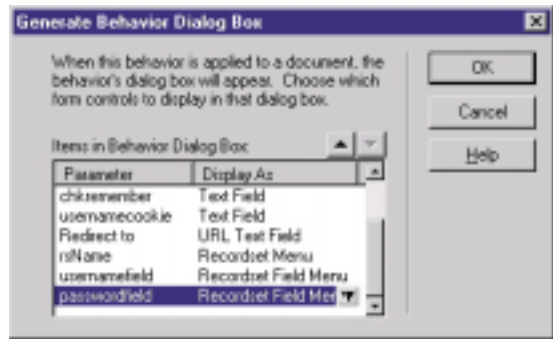


You can insert one or more blocks of code with a Server Behavior. Your scripts can be as simple as a <CFIF> tag wrapped around a section of code, or as complex as a whole page of ColdFusion code.

The Server Behavior Builder allows you to specify where you want the code to appear also. For example, you can insert the code at the current cursor location on the page, or you can insert it in a specified location above the <html> tag, or you can choose to wrap a balanced tag pair around a selected section of code. Also, each code block can be inserted in a different location just as easily.

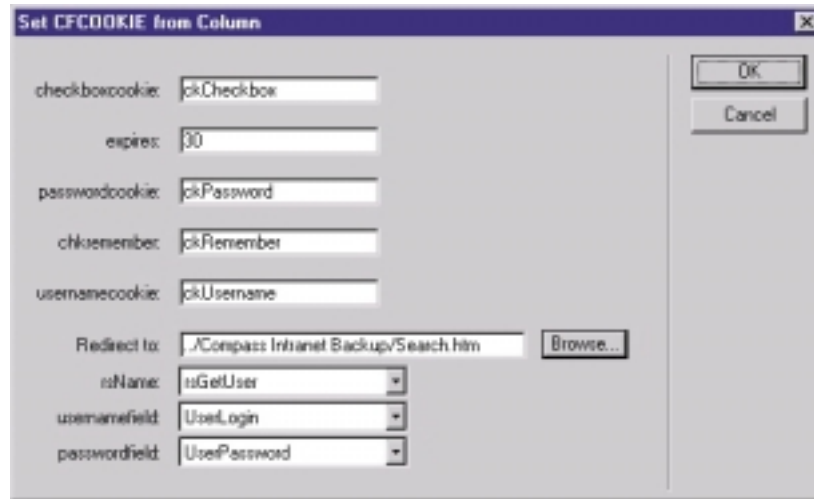
After inserting all of your code blocks and clicking the OK button, you can then choose which types of user parameters you need. The stock choices are Recordset Menu, Recordset Field Menu, URL Text Field, Text Field and Dynamic Text Field (Figure 10).

Figure 10: You can set up the type of user input that your new Server Behavior will accept.



You can set up the new Server Behavior with user-defined attributes. Then, every time you apply the Server Behavior, a list of declared recordsets and columns will pop up in your Server Behavior interface. By clicking a Browse button, you can point the Server Behavior to the page in your site for the redirect, and UltraDev will generate all the code for you. Figure 11 shows the finished Server Behavior in use.

Figure 11: The new Set CFCOOKIE from Column Server Behavior in use.



Roundtrip™ HTML and Roundtrip™ Server Markup

Dreamweaver has always been known for one of the unique features that it offers, Roundtrip HTML. Roundtrip HTML lets you edit your page visually, with changes occurring immediately in the code. Or, if you edit your code in the Code window, you'll see your changes reflected visually. It's an easy concept to understand, but not a function that's easy to implement in an HTML-authoring program. Dreamweaver accomplishes this, and UltraDev adds Roundtrip Server Markup into the mix. If you change the ColdFusion code in the Code window—or even in another software program—UltraDev will recognize the changes instantly. If you're in the Live Data mode, you can see the changes in the design environment. This is because UltraDev has a sophisticated mechanism in place that passes your page to the actual live server before displaying the page in the design environment. This is why an UltraDev user can develop ColdFusion pages on a Macintosh® just as effectively as with Windows®.

Using UltraDev and ColdFusion Studio Together

Using UltraDev alone isn't nearly as powerful as when combined with ColdFusion Studio. By the same token, ColdFusion Studio by itself isn't nearly as powerful as when used with UltraDev. Both have their places in the Web developer's arsenal.

For those programmers who work with designers, Dreamweaver UltraDev is a welcome addition. Designers typically use Dreamweaver to create their pages, the addition of UltraDev to Dreamweaver can only speed workflow since UltraDev recognizes all code specific to Dreamweaver as its own.

ColdFusion programmers who prefer to code everything by hand will benefit greatly from UltraDev, because it allows them to view the page in Live Data Mode while simultaneously working in ColdFusion Studio.

Both developers and designers will appreciate the integration of the two products. As you switch from ColdFusion Studio to UltraDev, UltraDev will prompt you with "The file has been modified outside of Dreamweaver: Do you want to reload it?" (see Figure 12). ColdFusion Studio will do the same thing if you make a change in UltraDev and then go back to ColdFusion Studio. This makes it very convenient to make visual changes to your pages in UltraDev and still have the coding environment of ColdFusion Studio at your disposal—a tremendous boost to your productivity.

Figure 12: If you are using UltraDev and ColdFusion Studio simultaneously, you will be prompted when the file has changed in one environment or the other.



Using UltraDev to Learn JSP

The future of ColdFusion is heading towards Java™. While it's not happening in the next release of ColdFusion Server (5.0), the following generation will be based in Java and run JSP pages natively. What this means for the ColdFusion developer is more control over the pages and greater flexibility to use whatever technology is at his/her disposal. Even Ben Forta, the guru of ColdFusion developers, teaches JSP in his columns and writes books about JSP.

UltraDev is a multiplatform development product. When you purchase UltraDev, ASP, JSP and ColdFusion are all supported equally. While there isn't a simple "switch" to convert your site, you can develop in ColdFusion and then go back and recreate the same site in JSP or ASP by simply applying the same Server Behaviors to the page.

To illustrate this point, take a look at the code that is output by inserting a session variable on the page in ColdFusion:

```
<cfoutput>#Session.UserID#</cfoutput>
```

The code is created by defining a session variable in the Data Bindings palette. After doing that, you are free to insert it by clicking the Insert button or by dragging and dropping it onto the page. If you apply another Server Behavior to this variable that has a <cfoutput> tag in it, UltraDev will remove the extraneous <cfoutput> tags.

Next, open up a JSP page and do the same thing:

```
<%= ((session.getValue("UserID")!=null)?session.getValue("UserID"):"") %>
```

The code is a little more complex, but by examining it you'll be able to see exactly what is going on. JSP inline scripts are surrounded by <% %> just like ASP. Also, just like ASP, there is a shorthand method of displaying the data on the Web page: <%=. The expression also uses a shorthand version of if/then. The expression is saying "If the session variable named UserID isn't null, use the value; otherwise, use an empty string." The final effect is that the session variable is displayed on the page.

By using the UltraDev Server Behaviors, you can deploy a site in ColdFusion, and then apply the same Server Behaviors in JSP and compare the difference in code. Also, UltraDev comes with a developer version of JRun™ 3.0 Server on the CD-ROM—one of the best JSP servers on the market, and certainly one of the easiest to use.

User Authentication

Included in the UltraDev package of Server Behaviors is a set of user authentication behaviors that take the hard work out of programming this aspect of your site. The behaviors consist of the following:

- Log In User
- Restrict Access To Page
- Log Out User
- Check New Username

These behaviors can be applied easily to your existing pages or to new pages as you develop them.

One of the great features of UltraDev code is that it will coexist beside your hand-coded ColdFusion code. You can do your coding in ColdFusion Studio and use UltraDev to design the site and add sections of code that are repetitive, such as a Restrict Access To Page behavior. You can even use the Server Behavior Builder to build your own version of the behavior or modify the existing behaviors.

Working With Designers

Web designers who are serious about their craft use Dreamweaver for their design. UltraDev offers a significant upgrade to the functionality of Dreamweaver with its server-side functionality. Also, the designer is able to work in a couple of different ways. He or she can build the page without the server-side code and then turn it over to the programmer to work his/her magic.

The designer can even use Dreamweaver templates to “lock out” the programmer from rearranging the visual aspect of the pages. Editable regions can be placed wherever the programmer might need to insert some dynamic content. The designer can then take the page back from the programmer and work with the page in Live Data mode to visually edit the page in a more realistic manner—in other words, in a way more closely resembling the way the end user will see the page.

Also, Dreamweaver UltraDev now contains source control using WebDAV or Visual Source Safe for collaborative development. One of the handy features of UltraDev is that the designer and the programmer can both do the work they need to do within the same environment. Web site collaborators can leave notes to other members of the team that show up in the Site Files window, and you can even create your own columns for company-specific notes. Also, files can be checked out and checked in, thereby locking out others from editing a page that is still in progress.

Fireworks® Integration

Macromedia Fireworks has come into its own as the program of choice for Web developers who do their own graphics work. Fireworks was designed from the ground up as a Web graphics program and it truly excels in this area. With the latest generation of the UltraDev 4 Fireworks 4 Studio, the integration is taken to a new level. You can create graphics and menus in Fireworks and export them to an UltraDev site. The interfaces are instantly familiar—the new standard user interface is identifiable between all Macromedia programs. Also, graphics can be edited in Fireworks right from the UltraDev design environment and the changes will instantly show up in your site.

Fireworks features an extensibility architecture similar to that of Dreamweaver. You can create extensions in UltraDev that can communicate with Fireworks and vice versa. Also, as a programmer you might not have the need to learn complex graphics commands. UltraDev makes it easy to do a quick optimization of your images for the Web without leaving the UltraDev environment. Simply right-click (control-click on the Macintosh) on an image and choose Optimize in Fireworks and then follow the directions.

Extensions

Building your own Server Behaviors is the exciting new part of UltraDev that truly makes the program a power tool for all levels of developer and coder. As previously mentioned, complex scripts can be turned into Server Behaviors quickly and effortlessly. Also, Server Behaviors can be made of scripts that take advantage of your custom ColdFusion tags, making them a snap to use.

Extensions can also be packaged and shared with other users. The Macromedia Exchange currently has over 300 extensions that range from simple rollovers to complex server-side scripts that were created by other developers and shared through this central repository of extensions. In addition, many of the extensions have been tested and approved by Macromedia. A Macromedia seal of approval on an extension is a good indication that the extension has gone through a QA program to ensure its quality.

One example of functionality through extensions is the new CFML code reference. You can download this from the Exchange for UltraDev at www.macromedia.com/exchange/ultradev and it will install a context-sensitive code reference within the program. Code references are also available, for your convenience, for JSP, ASP, HTML, CSS and DOM. And, beyond the Exchange, more and more Web sites feature UltraDev and Dreamweaver extensions.

ColdFusion and UltraDev—A Winning Combination

It's no secret to ColdFusion developers that ColdFusion has a distinct advantage over many of the other server-side technologies. The power of the language is built right into the tags. Also, the tag-based language is easy to learn. Novices can increase their skill levels in a much shorter period of time than with other languages such as VBScript or Java. But even with the advanced power of ColdFusion, UltraDev offers the ColdFusion developer more opportunities to speed up the process by presenting the page from the programming perspective as well as from the designer's perspective.

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