

Putting on a Flash Face (Flash Remoting and other technologies)

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Overview:

Flash can do much more than gratuitous animations—it's the perfect front-end to complex data because you can add rich media and compelling interactivity. Besides the existing support for XML and flat text databases, Flash now seamlessly exchanges data with application servers and web services through Flash Remoting. In addition, the Flash Communication Server lets multiple users connect to the same live data including streaming media. The benefits of rich-internet applications created in Flash include an immersive branded interface, local storage of complex data (beyond what cookies can do), and no need to refresh the browser—which all lead to a better user experience.

Definitions and Buzzwords:

Rich Internet Application: The idea that Flash can perform as a utility-type application. Flash is rich with audio, animation, graphics, and interactivity. It's an application because you can access and write complex data. (Often pronounced "ree ah", despite my preference.)

Other words to impress people when discussing RIAs: collaboration, the user experience, usability, scalability, legacy, mission-critical, drill-down, populate.

Parse: To extract certain data or translate one data format to another. Say you had state names Wash., Oregon, Cal., etc. and wanted just the two-letter form (WA, OR, CA)... you'd have to parse the data.

Application Server: A web server that delivers customized pages based on a programming language. Instead of creating static pages by hand, an application server can dynamically create pages on the fly.

Technologies:

Web Services: A common way to format data for sharing (research WSDL and SOAP). For example, Amazon's web service lets you search and retrieve data from their catalog of products and then present that data in your own interface (even in Flash if you want). Some are free, some cost money. Through licensed accounts businesses have some control over how their data is presented—but, generally, that's up to the subscriber. However it does mean data has far greater reach than what's possible by storing it on one site and expecting visitors.

XML: Basically, it's a way to format data so that not only the content but a description of that content is included (but no formatting). Sort of like if all books had a standard way of formatting their table of contents. You could judge or read any book's contents in an identical way.

Databases and SQL: Databases provide a way to store data in a structured format. SQL offers a standard way to search the contents database tables and produce results in the form of queries (which, you can think of as rows of data in named columns).

Baker's Sugar: An ultra-fine processed white sugar that's only recently become available to consumers. Personally, the only difference I've been able to notice is the price.

Tools:

Studio MX: A suite of development tools—older versions upgraded to "MX" (includes Flash MX, Dreamweaver MX, Fireworks MX, Freehand MX, and a development version of ColdFusion MX). There are several other MX products not including in the studio: Director MX, Flash Communication Server MX, and ColdFusion MX (several platform versions).

Flash Remoting: More a "feature" than a "product" as it's built into ColdFusion MX (though you can buy it for .NET and Java servers). It lets Flash movies send and receive data to application servers (which can, in turn, link to databases and web services). In addition to parsing common data types (so you don't have to), data travels over HTTP using a small and fast binary message format (called AMF—action message format) which is asynchronous (meaning Flash can proceed instead of waiting for data to arrive).

Flash Communication Server MX: This server lets you build Flash Player files that let users share data in real-time with others. In addition, live or recorded streams of video and audio can be included in your applications. This is probably the most exciting product in Macromedia history.

Sweet Facts (or—depending on your age—"Features That Are The Bomb"):

Flash Remoting:

Data returned from database queries arrive Flash in the native RecordSet data format. This version of generic object can serve as a data provider to many Components (including the DataGrid) meaning you don't have to parse a thing!

Flash Communication Server:

When FlashCom notifies all connected movies that part of a Shared Object variable has changed, only the data that changed is downloaded (along with information as to the nature of the change).

ColdFusion MX:

--The developer edition is free and you can even run it on Macintosh.

--Cold Fusion Components (CFCs) become web services at the turn of a switch.

Dreamweaver MX

--You can load remote web services into a panel and drag/drop them into your code.

--Similarly, data sources (databases) can be listed in a panel and easily accessed.

Resources:

Jeremy Allaire's vision of rich internet applications:

www.macromedia.com/desdev/mx/flash/whitepapers/richclient.pdf

Jonathan Gay and Sarah Allen's vision of the Flash Communication Server:

www.macromedia.com/desdev/mx/flashcom/articles/comserver.pdf

More Macromedia visions of rich internet apps:

www.macromedia.com/desdev/mx/studio/whitepapers/rich_internet_apps.pdf

Simple tutorial and sample "note board" application (that uses remoting):

www.macromedia.com/desdev/ria/note_board/

Macromedia DevNet:

www.macromedia.com/devnet/

More sample apps:

www.macromedia.com/resources/business/sample_apps/

My books:

www.phillipkerman.com/books/