Available demonstrations based on the IBM WebSphere Application Server Feature Pack for Web 2.0

- Ajax globalization live demonstration: http://ajaxdemo.dfw.ibm.com/DojoGlobalizationDemo/DojoCarStore/index.jsp
- Quote Streamer for WebSphere Application Server live demonstration: http://ajaxdemo.dfw.ibm.com/quotestreamer
- Apple IPhone and IPod touch Snowboard demonstration: http://ajaxdemo.dfw.ibm.com/snowboard/
- Redesigned Plants By WebSphere demonstration: http://ajaxdemo.dfw.ibm.com/Plants-Ajax/

Descriptions of demonstrations

Ajax globalization demonstration overview

The Ajax globalization demonstration is a globalized fictional MVC Web application car store demonstration. The application shows that it is possible to integrate Ajax with traditional J2EE Web technology to construct a globalized end-to-end Ajax Web application that can switch between locales (including bidirectional languages such as Arabic) "on the fly". The demonstration makes use of the Dojo toolkit for the Ajax library on the client side, and WebSphere Application Server JSP and JSF technology on the server side. After dragging cars and dropping them onto the shopping cart, select "Check Out" for an example of localized form input.

Ajax technologies to notice while viewing the Ajax globalization demonstration:

- There is no refreshing of the page.
- You can drag images and drop them in the shopping cart without the page refreshing. You can also scroll to different areas of the page without the page refreshing. The scrolling is done by the Scrolling Carousel widget provided by Dojo Toolkit.
- Dragging the cars onto the cart is a widget.
- Fading is a Dojo effect.

View Ajax globalization live demonstration at
http://ajaxdemo.dfw.ibm.com/DojoGlobalizationDemo/DojoCarStore/index.jsp

Quote streamer demonstration overview

The Quote Streamer for WebSphere Application Server sample application uses the Web Pub Sub Enterprise Bridge for Ajax library to simulate stock quotes to a Dojo-enabled client application. The Web Pub Sub ESB bridge library links a Dojo enabled client to a WebSphere Application Server's internal message broker for Web-based publication/subscription implementation. Simulated quotes are generated by a CommonJ timer that publishes messages to a Service Integration Bus topic space.

Communication is achieved through the Bayeux protocol. The Dojo Toolkit's Cometd client links incoming JavaScript Object Notation (JSON) messages to the Dojo event/topic system for processing. In the QuoteStreamer sample application, multiple Dojo widgets are specified in a market report summary article in HTML format. These Dojo widgets process incoming stock quote messages and visually indicate stock changes. These visual changes include: update to the current price of a stock, daily stock price change, and daily stock percent price change. When the price of a stock changes, the daily price change and daily percent price turn green (increase) or red (decrease) before fading back to the normal background color.

Ajax technologies to notice while viewing the live demonstration of the quote streamer:

- There is no refreshing of the page.
- Fading is a Dojo effect.
- Actual values are generated on the server. The Bayeux protocol long polling transport is used for the long lived connection. The server holds the connection open for a timeout period of 30 seconds or until an event is received. In the QuoteStreamer sample, the server generates quotes every 4 seconds. Events are received asynchronously from the server with low latency.

View the Quote Streamer for WebSphere Application Server live demonstration at
http://ajaxdemo.dfw.ibm.com/quotestreamer

Bayeux protocol: http://svn.xantus.org/shortbus/trunk/bayeux/bayeux.html
The Dojo Toolkit's Cometd: http://www.cometd.com/

Apple IPhone and IPod touch Snowboard demonstration

This application displays the innovative possibilities of using the WebSphere Application Server Feature Pack for Web 2.0. The application uses both client-side and server-side technologies to serve Web content to Apple's iPhone or iPod touch.

The technologies used - Client side
On the client-side, the JavaScript Dojo Toolkit, IBM provided JavaScript SOAP library, and iUI JavaScript library are used.

The iUI library is an open-source library used to provide iPhone/iPod touch graphical interface. The library is not provided with the Web 2.0 Feature Pack, but illustrates how easy it is to integrate other components into applications created with the Feature Pack. Also, note that the use of the iUI library is not an endorsement of the iUI library by IBM; the library is used only to provide the look and feel of an iPhone/iPod touch application.

The Dojo Toolkit is an open-source JavaScript library supported by IBM that allows you to build dynamic capabilities into Web pages. Dojo provides a rich set of user interface widgets, many of which can be used on the iPhone/iPod touch, I/O APIs for making Ajax requests, and generic JavaScript language enhancements.

The SOAP library is an IBM extension to the Dojo Toolkit that allows you to package and SOAP requests to SOAP enabled web-services. The Soap library is used to connect to Soap based web-services described in the section on putting it all together.

Client side - Web publish and subscribe
The Dojo Toolkit and Web 2.0 Feature Pack support a Cometd server model for asynchronously pushing message events from the server to the client. The technologies allow you to create applications where events are published directly from the server to the browser without having to implement a polling model.

The technologies used - The server side
On the server-side, the IBM WebSphere Application Server hosts the application on IBM's demonstration service. The server-side application makes use of the Feature Pack's Ajax Proxy, and JSON4J library. The Ajax Proxy allows you to create Web applications that support cross-domain scripting in the browser. The Ajax Proxy is typically used when aggregating multiple Web sites together. As an example, taking content from another Web service and combining it with your own content.

The JSON4J library is a compact Java library that can be used to package JavaScript Object Notation (JSON) data. JSON data is an easily crated data format that is readily evaluated by today's JavaScript browsers.

Server side - Publish and subscribe
The Feature Pack for Web 2.0 provides server-side support for the Bayeux protocol and integrates with WebSphere Application Server's service integration bus. Combined with Dojo's support of Cometd, events can be pushed from the server to the client. Integration with the service integration bus allows events from JMS or Web services to be pushed asynchronously to the iPhone or iPod touch using a WiFi connection.

Putting it all together
The application provides the ability to retrieve weather information from popular ski resorts. The weather information is provided for free from the United States Department of Commerce National Oceanic and Atmospheric Administration (NOAA). The content is available using a SOAP request to their servers. A postal zip-code is used as the location to retrieve. The content is returned in an XML format which is parsed by the client.

The SOAP request to the NOAA service is created on the iPhone or iPod touch client using the IBM SOAP extension provided in the Feature Pack. The SOAP request is passed to the Ajax Proxy provided by the Feature Pack which in turn forwards the request to the NOAA server for processing. The weather result is then forwarded back to the client. The client processes the XML data returned from the NOAA servers and displays the result.

In addition to weather information, the Web application provides the ability to display snowboard gear information and displays the ease by which you can create your own dynamic application using the Feature Pack.

On the client-side, a custom Dojo widget is created to display the gear information. When the widget is created, an Ajax request to the WebSphere server is made to retrieve content information. The information retrieved is based on the user selected ID. The Servlet performs a lookup and returns the information in a JSON format using the JSON4J library provided with the Feature Pack. The client retrieves the response and displays the data.

A chat application is also provided which highlights the publish-and-subscribe support provided with the Web 2.0 Feature Pack. On the client, the cometd support provided by Dojo is used to establish a connection to the WebSphere Application Server. Using the Feature Pack, the server provides support for cometd and integrates the publish-and-subscribe messaging with WebSphere's service integration bus. A text entry from one client is broadcast to the server which in turn broadcasts the text to any device that may also be connected. Text is pushed to any listening devices which results in a chat display.

View live Snowboard demonstration from an Apple IPhone and IPod Touch at
http://ajaxdemo.dfw.ibm.com/snowboard/

Plants by WebSphere: A redesign

A redesign of the Plants by WebSphere application borrows the plants theme to show how to use additional features of the Feature Pack for Web 2.0. One of the features is highlighted below:

- Mash-ups – Perhaps one of the most powerful applications of the Web is programmable Web, a Web Oriented Architecture where callable services are available all over the Internet. An application can pick and choose appropriate services to augment the core functions. For example, this application invokes services from Wikipedia to provide users with detailed plant descriptions. The data is cached in local database with configurable expiration. This prevents accessing Wikipedia repeatedly for the same information.

View the redesigned Plants by WebSphere live demonstration at
http://ajaxdemo.dfw.ibm.com/Plants-Ajax/