

Top Tier: Hot-Rodding your Browser

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Like the browser, most browser add-ons are free and relatively useful

The browser is the presentation tier of your web application. Learn how to use it to its full potential by integrating embedded editors, spellcheckers and Javascript framework libraries. Most of the available modules are free, high quality and have excellent support communities.

Javascript framework libraries encapsulate Ajax functionality as well as providing widget formatting so you don't have to be a Javascript expert to put sophisticated visual elements on your Janus web site. On the Janus server side we'll show how to load Javascript libraries to a 204 file and how to specify rules so that it's served correctly and cached efficiently.



What's out there?

Commercial/promotional products

- Yahoo, Google, MS, &tc.
- These products often disappear into the browser itself

Single-function routines and libraries

- Spell-checkers, editors, visual widgets, Flash-navbar generation, &tc.
- Implemented as Javascript, ActiveX, client-side Java or Flash

Javascript Frameworks

- Wide variety of approaches, implementing visual widgets, encapsulating AJAX functionality, improving Javascript's ease-of-use



Why do I want to use these libraries and utilities?

- Performing work in the client (browser) reduces I/O to the server.
- Javascript performance is now very good.
- Some functions are better if processed directly in the browser (e.g. spell-checking, WYSIWYG editing)
- Some functions **must** be done in the browser
- Javascript frameworks won't make you a better programmer but they will make you a more efficient one.



In particular, why a Javascript Framework?

- Frameworks implement many difficult functions as simple method calls.
- DOM scripting, DHTML, AJAX
- Browser inconsistencies are safely abstracted away from the user
- Generally well integrated with CSS



How do you choose a Javascript Framework?

- The Big Players:
 - JQuery -- <http://www.jquery.com>
 - Prototype -- <http://www.prototypejs.org/api>
 - Dojo – <http://dojotoolkit.org/>
 - Mochikit -- <http://mochikit.com/>
 - Yahoo Javascript --
<http://developer.yahoo.com/yui/>
 - Google Toolkit --
<http://code.google.com/webtoolkit/>



How do you choose a Javascript Framework?

- Who is using them?
- JQuery – Drupal, Fatwire, Joomla (very popular with open source CMS community)
- Prototype -- Apple
- Dojo – AOL
- Mochikit – disaffected college students
- Yahoo Javascript -- Yahoo
- Google Toolkit -- Google



How do you choose a Javascript Framework. Feature Comparison



Prototype is a JavaScript Framework that aims to ease development of dynamic web applications.

Featuring a unique, easy-to-use toolkit for class-driven development and the nicest Ajax library around, Prototype is quickly becoming the codebase of choice for web application developers everywhere.

Prototype extends the DOM so it adds many convenience methods, the most useful being \$ and \$\$, which allow you to select elements by ID or CSS selectors, respectively. The framework is class-oriented so the different features are grouped into individual classes. The framework is very clean and focuses on convenience methods on making scripting a lot easier. Prototype makes AJAX requests very simple and easy to use and is probably one of the greater strengths of this framework. Also notable is its dealing with JSON (JavaScript Object Notation), an alternative to XML for AJAX requests.



How do you choose a Javascript Framework. Feature Comparison



script.aculo.us provides easy-to-use, cross-browser user interface JavaScript libraries to make your web sites and web applications fly.

Prototype itself does not deal with anything visual, including animations and controls. This is where script.aculo.us comes in, a visual framework built on top of Prototype to provide an array of effects and controls. script.aculo.us provides six core effects (Opacity, Scale, Morph, Move, Highlight, Parallel) and a bunch of built-in “Combination effects” that use these to achieve more complicated effects. There is also a big collection of user-contributed effects which will give you more options than other frameworks. script.aculo.us controls include Draggables, Droppables, Sortables, Slider, Autocompletion, and In Place Editing. Also noticeable are its Builder (a helper to build DOM fragments) and Unit Testing.

Prototype/script.aculo.us is already integrated into Ruby on Rails and CakePHP, which is one reason why it makes it such a popular choice. The framework documentation is wiki driven and the community is pretty active.



How do you choose a Javascript Framework. Feature Comparison



jQuery is a fast, concise, JavaScript Library that simplifies how you traverse HTML documents, handle events, perform animations, and add Ajax interactions to your web pages.

jQuery takes a different approach to extending the DOM and instead of being class oriented like Prototype, jQuery provides the jQuery object, created using \$, which is extended to provide all the jQuery functionality. An interesting feature of jQuery is its “chainability.” Since every call returns the queried object, you can link functions one after another, making many calls in one statement. Very clean, easy-to-use AJAX.

jQuery’s effects and controls are limited. There’s drag and drop, and sortables for controls but no autocompletion, which is featured in most other frameworks. However, this emphasizes the “lightweight footprint” of jQuery, being less than 20 kilobytes compressed. jQuery’s documentation is also a wiki and has an active user community



How do you choose a Javascript Framework.

Feature Comparison

The Yahoo! User Interface (YUI) Library: DOM scripting, DHTML and AJAX. The YUI Library also includes several core CSS resources.

Created by people at Yahoo!, this framework has the biggest name and its documentation shows it. There's a cheat sheet for all the components and multiple demo examples

The visual effects are somewhat limited compared to script.aculo.us but beyond that, YUI handles XMLHttpRequest, Browser History Manager, and more in addition to the basics the other frameworks offer. YUI visual controls generally better than other frameworks. Some examples include AutoComplete, Button, Calendar, DataTable, Menu, Rich Text Editor, TabView, and more. YUI also has a collection of CSS Tools, that has many prebuilt CSS sheets (useful if you don't mind looking like a thousand other sites). Yahoo! Provides lots of examples and cheat sheets.

Heavier-weight and more difficult to get started with than other frameworks.



How do you choose a Javascript Framework. Feature Comparison



MooTools is a compact, modular, Object-Oriented JavaScript framework designed for the intermediate to advanced JavaScript developer. It allows you to write powerful, flexible, and cross-browser code with its elegant, well documented, and coherent API.

This framework stresses being “compact,” which is apparent by how you download the framework. You select the individual elements you want to download and the compression you want, giving you a file that is custom made to how you want to use it. MooTools takes a object-oriented class approach similar to Prototype and has a nice selection of built-in components. The Accordion plugin is worth mentioning. For a website where minor JavaScript is used for effects or controls, MooTools is a good choice.



How do you choose a Javascript Framework. Feature Comparison

The Dojo Toolkit is an open-source JavaScript toolkit for building great web applications. It shortens the time between idea and implementation by providing a well conceived API and set of tools for assisting and fixing the issues experienced in everyday web development. It is lightning fast, extremely robust, and supplies a solid set of tools for DOM manipulation, Animations, Ajax, Event and keyboard normalization, Internationalization (i18n) and Accessibility (a11y). The Base of Dojo is a single, lightweight entity (26KB "across the wire"). Dojo is completely free, liberally licensed (AFL or BSD), and transparently developed by an active group of developers with a strong community presence.

No matter the size of your projects, Dojo is the ultimate scalable solution to your development woes. The built-in package system ends the headache of tracking dependencies, the build system combines and shrinks optimized "layers" of code for deployment, and D.O.H. makes unit and regression testing a breeze.



How do you choose a Javascript Framework. Feature Comparison

A wide variety of other frameworks are out there and available for you to evaluate:

- Ext JS
- moo.fx
- Rico
- Qooxdoo
- The Dojo Toolkit
- Noloh
- Google
- Mochikit



Loading to Janus/204

Janus FTP Helper

- Implemented as part of Janus Sockets
- Based on Janus port-level rules
- Excellent for bulk uploads of sets of files
- Limited utility when dealing with complex directory structures

HTTP Put

- Excellent for bulk uploads, but the clients have all been mothballed

Form-based upload

- Easy, fast, one-proc-at-a-time



Loading to Janus/204 (pt. 2)

- Some Javascript frameworks are designed to work from a remote location; no need to load to Janus or 204.
- i.e. Dojo



Running from Janus/204

- Binary versus clear-text uploads
- If you upload in binary you have to send the library in binary (the upload rule has to match the server rule)
- Binary
 - No line-length limit
 - No line-end problems
 - No ability to edit source.
- Text
 - 255 character limit to uploaded files.
 - Can be edited if you're careful about line-ends and other special characters



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Spell Checking with the Google toolbar

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