

Ajax: What's the Buzz About?

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Outline

- 1 **Technical Matters**
- 2 What changes. New applications.
- 3 Opportunities and Issues



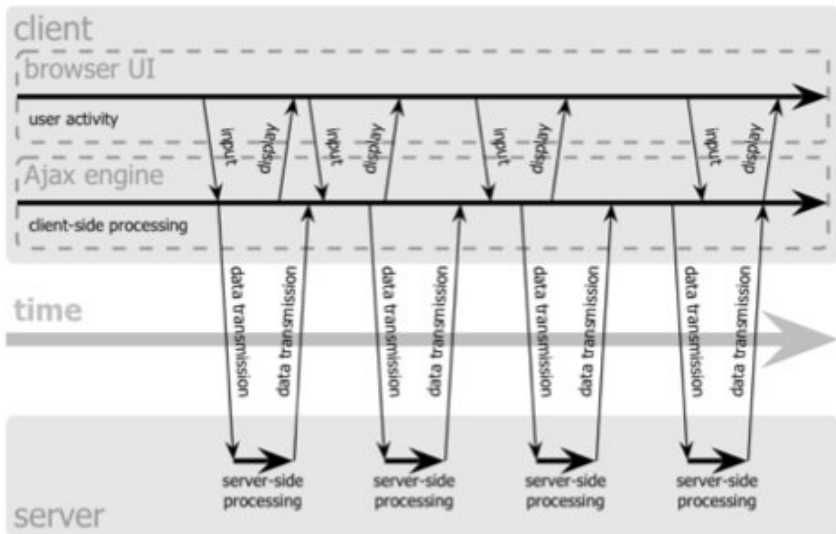
What's Ajax

Asynchronous Javascript and XML

- A Web page communicate asynchronously with the server
- Results are fetched in the background, without interrupting the user
- The page is updated without a general refresh
- There is no need to *Submit* the data explicitly



Ajax web application model (asynchronous)



Ground-breaking changes!

The example of GMAIL.

- Big popular application that changed the concept of Web mail.
- Instantaneous update of UI after events - no full page reload.
- Also, smarter way to manage folder.

And then Google Maps.

- Immediate response to user's click.
- No changes to page context!!



Microsoft actually invented it!!

Outlook Web Access for Exchange 2000 literally was the grand-daddy of AJAX. AJAX leverages the XmlHttpRequest object for communication with the server "in the background". The XmlHttpRequest object in IE was developed primarily for OWA.

A few articles MSDN later and a team I worked on started using it for internal corporate web applications. The Soap wizard & web behavior shipped and things became simple. Skip forward a few years, an XMLHttpRequest implementation goes into Firefox/Mozilla and Google picks up the stick and runs with it.

(from <http://channel9.msdn.com/Showpost.aspx?postid=137234>)



...so what?

- When the user *acts*, a msg is sent to server.
- The answer is retrieved in the background.
- The UI is updated using DHTML and Javascript.
- Nice UI widgets: windows, menus, sliders...
- With fast connections, it can look like a nice desktop app.



Javascript

It is a scripting language embedded into all major browsers. It is a general purpose language with objects etc. It gives programmatical access to the structure of the Web document. It can *read* forms, *update* contents etc.

Started as a proprietary feature of Netscape. Today, standardized by ECMA.

Alternatives:

- VBScript (for Internet Explorer)
- Java Applet (Java VM needed)
- Flash (plug-in needed)

Actually, some applications are using Flash for some advanced tricks (e.g. data-storage: AMASS).



Dynamic HTML

- Javascript can manipulate HTML by adding rows to tables, changing colors to text, showing/hiding pictures etc. It can do most graphic effects of desktop UIs.
- This is done without reloading the page, in place.
- The API to HTML is a W3C standard, but every browser has its own problems. This is slowly improving (IE7 should be more standard).
- Libraries and frameworks can hide the differences.

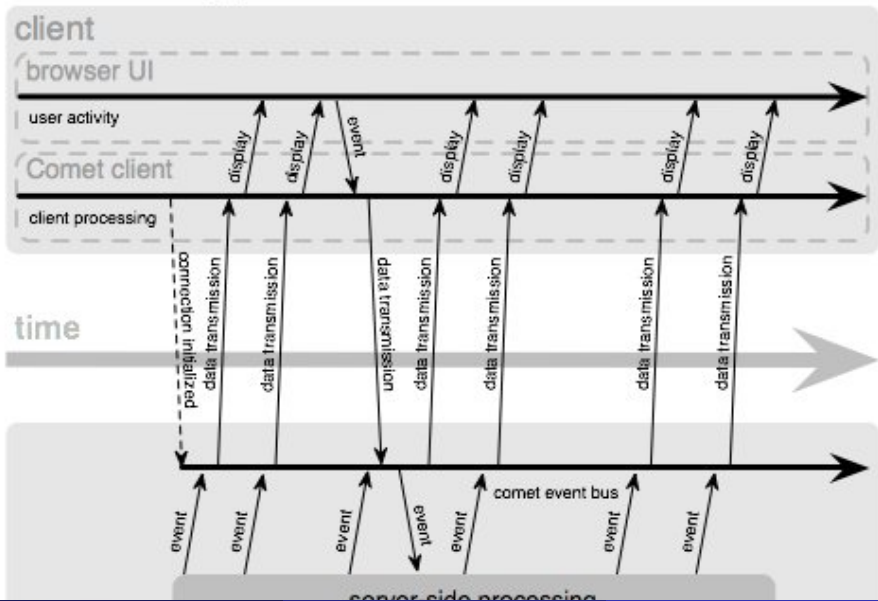


Even more: COMET

- AJAX is a *pull* approach, because the client needs to poll the server for new data
- If the XMLHttpRequest connection is kept open (like a socket), and parsed, you can implement *pull*
- Used by the Gmail version of GoogleTalk.
- Connections are reset every few minutes to avoid stale connections.
- Scalability: one connection per client!!!



Comet web application model



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Positive Points

- More responsive Web applications.
- They can mimic Desktop applications.
- Applications are held *somewhere there*, centralized sys-admin.
- Cross-platform, only a browser is needed.



Negative Points

- The concept of bookmark is lost!
- Potentially, everything could be tracked (mouse movement).
- Harder life for search engine.
- Privacy issues (later).



Java Web Start

- SUN launched Java Web Start (2000 - 2002) as a platform to download (and maintain) Java desktop applications from a remote server. The JavaWS framework offered a JavaVM and downloaded the latest version of the application.
- It didn't catch. No great applications available.
- In AJAX, the framework is the browser itself, for Javascript applications.



Did I miss the train?

Date: Fri, 28 Jan 2005 14:32:40 +0100

From: Diegolino <diegolino@gmail.com>

Ciao Luca, Simone etc. mi e' tornato in mente un discorso che facevamo tempo fa, con Simone, cioe' la possibilita' di usare thin-client e fornire tutto il software in remoto.

Avete tutti provato Gmail? Ha le prestazioni, la velocita' e la maneggevolezza di un'applicazione "locale", ma gira su web, cioe' e' disponibile su qualsiasi client con Javascript.

L'idea pare venga da una compagnia chiamata Oddpost.com, che per prima ha sfruttato Javascript pesantemente per un'applicazione di webmail. Io non ho ancora visto una versione di Office che sfrutti un simile trucco, ma non siamo lontani: usando messaggi compressi e cifrati, e' pensabile di avere applicazioni con prestazioni degne di un'applicazione che gira in locale, ma lavori su dati "globali" disponibili su web.



Applications

- ajaxwrite.com is MS Word over the Web. Similar interface and functionality. It can import/export Word documents. It runs without any installation process and runs on multiple platforms (the VM is Firefox).
- Launched on March 22nd 2006 (a week ago), 500,000 documents in the first 6 days.
- Then ajaxsketch.com (March 29), similar to the graphic part of PowerPoint.
- Also, collaborative tools (backpackit.com), graphic tools (pixoh.com), remote storage, mail etc.



http://app2.ajaxwrite.com - ajaxWrite 0.9 - Mozilla Firefox


File Edit View Insert Format Windows Help

welcome.doc

Welcome to ajaxWrite

Tables & Graphics

We have preloaded this Microsoft Word .doc file to show off some of the capabilities of ajaxWrite. You can edit one of your own .doc files by selecting "File: Open", or create a new document by selecting "File: New". (You'll be prompted to name your new file before it opens.) Any document can then be saved as a .doc file to a local drive.



Bulleted Lists

AjaxWrite offers many benefits:

- Loads in 6 seconds
- Look and feel of a traditional application so you're productive right away
- Opens and edits Microsoft .doc files
- Access from anywhere, just go to ajaxWrite.com from any Firefox browser
- Use it with **any** operating system (Mac/Win/Lin)
- Small – under 400k so it's fast even on slower computers
- Never have to update – always find the latest version at ajaxWrite.com

Done Adblock

Buddy List www.ajaxwrite.com - ... http://app2.ajaxwrite...

10:30 AM

http://app2.ajaxwrite.com - ajaxSketch 0.9 - Mozilla Firefox

File Edit View Format Windows Help

welcome.svg

Launch ajaxSketch

Create your sketch

Save as an SVG

Drop it into any document

Resize your sketch as big or small as you need -

Done Adblock

Buddy List Welcome to ajaxSket... http://app2.ajaxwrite...

10:32 AM

Ajax Desktops

- Several providers offers a rich Web page with connection to email, RSS feeds/news, stock information, weather reports, games. Various *gadgets* are available to each. They bring to Web the features of Tiger's Dashboard and similar. Actually, Tiger's widgets are ... HTML code!!
- Yahoo just bought Konfabulator, which offered this service for the desktop!
- Microsoft Live is a complex application that should integrate with Office.



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HTML Container

File Edit View Insert Format Windows Help

welcome.doc

Introducing ajaxWrite.

The look, feel, and functionality of Microsoft Word, in a completely web-based AJAX platform.



Works in Fold.com, too...

We have preloaded this document to give you something to tinker with straight away. Below is just a sampling of our functionality.

Use Bulleted Lists

The benefits of ajaxWrite and its web-based interface include:

- Global access, all you need is an internet connection
- Platform independent, you can use it with any operating system
- Automatic updates and upgrades, no more computer restarts or missed patches/updates
- Server side management — all the busywork is done for you
- True export to PDF functionality

ash Container



ED.COM

ssful Static Fire

Dumps Linux for Microsoft

obile

ll Acquired Alienware

OF Wars, Duval Layoff, F...

Make Your Business



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Services

- Your applications are on the Web, maintained, updated, reliable.
- If you cache the Javascript, you have instant launch time.
- You need a fast connection but...
- ...maybe, limited functionality if off-line.



Services

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- If you cache the Javascript, you have instant launch time.
- You need a fast connection but...
- ...maybe, limited functionality if off-line.
- Your desktop, calendar, contact list is on-line.
- Your computer can become a thin client to all this information.
- Just local cache of data/apps for efficiency.
- Your office *anywhere*.



Data

- Your data can also be stored on-line.
- GmailFS, .Mac and many more.



Putting everything together

- Maybe you could store your files *somewhere*, tell the application to fetch them for you... you have a full traveling cross-platform office.
- Potentially, a Web spreadsheet application could be much faster on number-grinding than your desktop (thanks Daniele).



Privacy

- Google homepage can connect *internally* to Gmail, but there are competitors. Would you give them your email password? Your messenger screen name? Your credit card number? The password to your remote file system?
- How is your information stored? How long is it kept? What is it done with it? Is it sold/mined for money?



Grid anybody?

- There are some known trusted service providers.
- Their internal computing architecture is hidden.
- Information is available remotely, anywhere.
- Services could be connected simply.



Grid anybody?

- There are some known trusted service providers.
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- Information is available remotely, anywhere.
- Services could be connected simply.
- Where we looking for Grid in the wrong place?



CoreGRID definition of Grid

"A fully distributed, dynamically reconfigurable, scalable and autonomous infrastructure to provide location independent, pervasive, reliable, secure and efficient access to a coordinated set of services encapsulating and virtualizing resources (computing power, storage, instruments, data, etc.) in order to generate knowledge."



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It looks like there is not one Grid, but just several service providers on the Web.



Future

- You will just need the latest Firefox and a fast ADSL.



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- You will just need the latest Firefox and a fast ADSL.
- All your system (really) running from a live CD + cache.



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- Say hello to sys-admin!



Future

- You will just need the latest Firefox and a fast ADSL.
- All your system (really) running from a live CD + cache.
- Say hello to sys-admin!
- Mimmo, did you want something to invest on?

