Ajax Unplugged

Architecture and Tips for Taking Web Applications Offline

Kevin Henrikson
KevinH@zimbra.com
Agenda

- Who am I?
- Why do we need offline AJAX?
- What options are there?
  - Review some offline approaches
- Demo!
- Architecture of Zimbra Desktop
- Challenges for the developer
- Questions?
Why Offline?

- Lack of always-on internet access
  - Always-on need for information
- Travel – Air, Train, Auto, etc
- ISP service interruptions
  - Client or Server (Data Center)
- Remote; unconnected land and water
  - Even a remote office
- More and more data lives in ‘the cloud’
  - Today’s SAAS require network access
- Your users are asking for it!
Why Offline AJAX?

- Data closer to the user (Akamai principle)

- Performance (client and server)
  - Removes latency from network ops
  - Offloads more work to client CPU
  - Allows server requests to be batched

- Clear simple programming model
  - SAAS still enforces good design

- Same UI both online/offline
  - Saves $$ training users for one app
  - Saves $$ on software costs of separate offline app
What solutions are out there today?

- Apollo (Adobe)
- Dojo Offline Toolkit (Dojo/Sitepen)
- Slingshot (Joyent/Magnetk)
- Firefox 3 Offline Support (Mozilla)
- XUL Runner (Mozilla)
- Roll your own
  - Salesforce.com
  - TiddlyWiki
  - Zimbra Desktop
Apollo (Adobe)

- Features
  - Most demo/example apps are Flash/Flex based
  - Eventually could be delivered via Flash
  - WebKit for HTML/JavaScript rendering
  - WinXP SP2+ & Mac OSX 10.4.8+

- License
  - Plan to contribute rendering changes to WebKit
  - Actual runtime appears to be closed source
  - Developer license cost

- Availability
  - Developer Alpha
  - Several demo apps (on their wiki)
Dojo Offline Toolkit (Dojo/Sitepen)

- **Features**
  - Mac OSX & Win32
  - Supports standard JavaScript/HTML
  - Tiny proxy and offline/online events
  - Pluggable storage (Flash, Browser storage, etc)

- **License**
  - Open Source
  - Same license as Dojo (AFL or BSD)

- **Availability**
  - Developer Alpha
  - Live Demo Moxie (doc editor)
Slingshot (Joyent/Magnetk)

- **Features**
  - Mac OSX & WinXP
  - Safari (WebKit) & Internet Explorer
  - Ruby on Rails
  - Handles sync of some data

- **License**
  - Doesn’t appear to be open source
  - Free if using Joyent’s application hosting

- **Availability**
  - Closed beta starting soon
  - Screencast of demo app
XUL Runner (Mozilla)

- **Features**
  - Where Firefox runs (*nix, Win, Mac)
  - Gecko rendering for HTML/JavaScript
  - WHATWG client-side storage, offline events
  - `<link rel="offline-resource">` to put resources into offline cache
  - The jar: URI scheme
- **License**
  - MPL - Open Source
- **Availability**
  - Developer Preview
  - Shipping apps today (Google Adwords Editor)
Firefox 3 (Mozilla)

- **Features**
  - Anywhere Firefox runs (*nix, Win, Mac)
  - Gecko rendering for HTML/JavaScript
  - WHATWG client-side storage, offline events
  - `<link rel="offline-resource">` to put resources into offline cache
  - The jar: URI scheme
- **License**
  - MPL - Open Source
- **Availability**
  - Developer Preview
See it in action

Demo
Zimbra Offline (Zimbra)

- Features
  - Linux, Win32 and Mac
  - Firefox, Internet Explorer and Safari
  - Identical AJAX interface to online version
  - Micro Server for sync, persistence, and search
    - Derby (Meta Data, User Profile)
    - Lucene (Full text search)
    - Jetty (HTTP, JSP)
    - Filesystem for messages
  - Support for large datasets multi-GB

- License
  - MPL/ZPL - Open Source

- Availability
  - Zimbra Desktop Alpha
Zimbra Micro Server Architecture

Zimbra<br>IMAP<br>POP<br>Zimbra Desktop Sync Service<br>Zimbra Message Store<br>Lucene Index<br>Derby Meta-data/User profile<br>JDBC<br>Jetty<br>J2SE JRE<br>Underlying file system
Challenges for the Developer

- Selecting *what* to take offline
  - Security risks
  - Does the user need it?
  - Can they use it offline?
- Sync is hard
  - Conflict resolution
  - Multi-user and multi-client
- End-User Desktop Support
  - Risk of increased support/debugging costs
- Upgrades and Patches
  - Have a plan *before* you release
Thank You!

Questions?

More Information:
www.zimbra.com/desktop
www.zimbra.com/blog
www.zimbra.com/forums
Some Related Links

- http://labs.adobe.com/technologies/apollo/
- http://ejohn.org/blog/offline-events/
- http://www.tiddlywiki.com/
- http://www.zimbra.com/desktop
Zimbra Snapshot

Next-Generation Messaging and Collaboration
- Mail, Contacts, Calendar, Mobile, Web Documents, Wiki, VOIP, RSS, Mash-ups, Search, Sharing, Web services, etc.

What Makes Us Different?
- Innovation – rich, ubiquitous user experience + cost-effective administration
- Open Source – transparency, community, extensibility
- Compatibility – investment protection, flexibility, application integration

Principals: Enterprise / ISP software and UM/Messaging veterans
- Openwave / Onebox.com — UM, Email, Mobile messaging
- BEA/WebLogic & Javasoft (Sun) — Java, J2EE, XML, etc.

Investors: Benchmark, Redpoint, Accel

Partners: redhat, Mac, IBM, HP, Sun

Awards: