# Ajax Unplugged

## Architecture and Tips for Taking Web Applications Offline

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- 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?



AJAX Unplugged



## 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!



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



- 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



### 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)





- 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





- Features
  - Where Firefox runs (\*nix, Win, Mac)
  - Gecko rendering for HTML/JavaScript
  - WHATWG client-side storage, offline events
  - Ink 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)





- Features
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## See it in action



# Demo



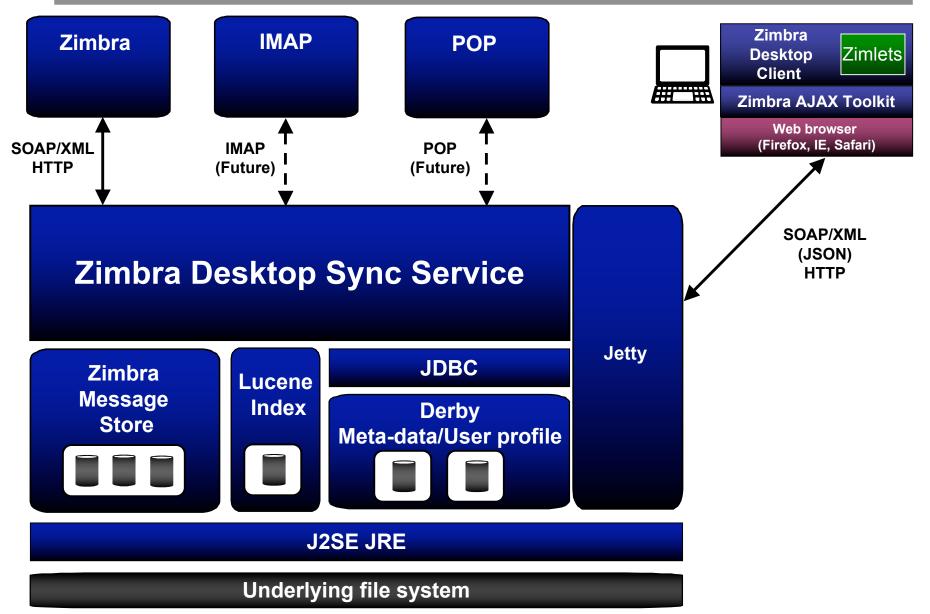


#### Features

- 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





## **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?**

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## Zimbra Snapshot

#### **Next-Generation Messaging and Collaboration**

 Mail, Contacts, Calendar, Mobile, Web Documents, Wiki, VOIP, RSS, Mashups, 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



