Firefox 4
Wait - what happened to Firefox 3.7?

• Firefox 3.7 primarily motivated by out of process plugins
• UX team suggested longer “bake time” for theme update
• Jetpack reboot removed dependency pressures
• New engineering capabilities allowed for back-porting
• We turned Firefox 3.7 into Firefox 3.6.4
Wait - what happened to Firefox 3.7?

The primary goal for Firefox 3.7 was out of process plugins, which will be shipped to users in Firefox 3.6.4
Firefox 4
Firefox 4 - Motivation

1. Who uses Firefox?

2. What are those people trying to do?

3. How can Firefox be the best tool for the job?

4. What does Firefox need to succeed?

5. How can Firefox help lead the Open Web forward?
Firefox 4 - Motivation

• Who uses Firefox?
  • End users (early adopters, mainstream)
  • Web developers (early adopters, mainstream)
  • Firefox developers (wait - that’s us!)
Firefox 4 - Motivation

• What are those people trying to do?

• Users: interact, create, find, learn, experience, control

• Developers: build, create, express, impress, reach

How can Firefox be the best tool for this?

How can we lead the Open Web?

What does Firefox need to succeed?
Firefox Themes

**for users...**

- Fast, friendly and empowering
  - Simpler, cleaner, faster navigation
  - Control your relationship with websites
  - Personalize and customize

**for web developers...**

- Tools for capable, fast Web apps
  - New HTML5 / Web technologies
  - Native multimedia capabilities
  - Great developer tools

**a technology base that's...**

- Fast, secure, optimized
  - Faster JS, DOM, and UI
  - Stable & secure by design
  - Optimized for today's hardware
Firefox 4 - Plan for Users

- **Fast, friendly and empowering**
  - Simpler, cleaner, faster navigation
  - Control your relationship with websites
  - Personalize and customize

- New, sleek, simpler default theme
  - Fewer user interface controls
  - Fewer pixels between user and content

- Performance optimizations (user experience)
  - User experience improvements
  - No more modal dialogs
  - No interruptions at startup
  - Updates apply in the background

- Faster navigation for today’s web users
  - Switch to tab
  - Dedicated “application tabs”
  - Tab Candy

(please don’t overreport)
Simpler, cleaner, faster navigation

New sleek, simpler default theme
Simpler, cleaner, faster navigation

Performance optimizations

mercredi 12 mai 2010
Simpler, cleaner, faster navigation

Faster navigation for today's web users

mercredi 12 mai 2010
Firefox 4 - Plan for Users

Fast, friendly and empowering

Simpler, cleaner, faster navigation
Control your relationship with websites
Personalize and customize

Simple, powerful control over websites’ permissions
One-click overview of user/site relationship
Backup and share user data with Firefox Sync
Single click sign on to websites

PLANS MIGHT CHANGE
(please don’t overreport)

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Managing your relationship with websites

Control over websites’ permissions

PLANS MIGHT CHANGE
(please don’t overreport)
Firefox 4 - Plan for Users

Fast, friendly and empowering

Simpler, cleaner, faster navigation
Control your relationship with websites
Personalize and customize

New customization management interface
Easier to discover and find relevant add-ons
Install add-ons without restart
Jetpack based add-ons running out of process

PLANS
MIGHT
CHANGE
(please don't overreport)

mercredi 12 mai 2010
Personalize and customize

New Add-ons Manager
## Firefox 4 for Users: Risks and gaps

### Simple, clean fast navigation
- Started theme changes on trunk
- Switch-to-tab on trunk, “App Tabs” work started
- Work begun to remove modal dialogs
- Work planned for updater improvements
- User experience performance issues identified

### Giving users control & ownership
- Designs for user control over permissions started
- Weave planning to be ready for first beta
- Account Manager evaluation version released

### Full ability for customization
- New extension manager landed
- Jetpack work underway
- New AMO interactiveness plans begun

### Gaps & Risks
- Need to prioritize and resource user experience performance issues
- Need to identify measurements & targets for performance issues
- Need to address performance problems from dirty profiles
- Must quickly finalize use cases and designs for permissions manager
- Must resource permissions manager work
- Solid Weave integration plan
- Account Manager specification still in flux
- Compatibility issues from API changes
- Evangelism of Jetpack and API changes

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**Please don’t overreport**

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*mercredi 12 mai 2010*
Firefox 4 - Plan for Web Developers

**Tools for capable, fast Web apps**

- **New HTML5 / Web technologies**
  - Native multimedia capabilities
  - Great developer tools

**Bidirectionally connected apps (Websockets)**

**Better AJAX-y interactions (PushState)**

**New interactions (gesture & multi-touch)**

**Easier layout and styling (CSS3)**

**HTML5 Parser (HTML5)**

**Content creation (contentEditable, HTML5 forms)**

**Structured data storage (IndexedDB)**

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**PLANS MIGHT CHANGE**

(please don’t overreport)
Firefox 4 - Plan for Web Developers

**Tools for capable, fast Web apps**

- New HTML5 / Web technologies
- Native multimedia capabilities
- Great developer tools

**Animation of web content (CSS Transitions, SMIL)**
- Animation API (RefreshDriver)

**High quality native video playback (<video>)**

**High quality native audio playback (<audio>)**

**Faster 2D drawing (<canvas>)**
- Fullscreen API

**3D capabilities (WebGL)**

*mercredi 12 mai 2010*
Firefox 4 - Plan for Web Developers

Tools for capable, fast Web apps

- New HTML5 / Web technologies
- Native multimedia capabilities
- Great developer tools

Firebug compatibility
Remote JavaScript Debugger
Web Console
Web Inspector
New profile manager
Timer API
Memory Diagnostic Tools

PLANS MIGHT CHANGE
(please don't overreport)

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<table>
<thead>
<tr>
<th>Theme</th>
<th>Current Projects</th>
<th>Gaps &amp; Risks</th>
</tr>
</thead>
</table>
| New HTML5/Web Technologies | • CSS3, HTML5 implementation (partial)  
• WebSockets, CSP, PushState implementation mostly complete  
• Multitouch Gestures in DOM underway  
• IndexedDB spec & implementation  
• contentEditable bugfixes, HTML5 forms project specified | • Need to prioritize and evangelize based on web developer need  
• IndexedDB specification unlikely to be finalized  
• contentEditable / HTML5 form work likely to be partial  
• decisions on shipping implementations of unfinished specifications |
| Native multimedia capabilities | • CSS3, SMIL and RefreshDriver for controlling animation  
• updated native video support  
• Fullscreen API specified  
• WebGL implementation started, resourced | • Our CSS syntax maps to W3C, doesn’t match WebKit  
• video codec path under investigation  
• WebGL underresourced, driver requirements risky  
• some user control issues with fullscreen API |
| Great developer tools | • Web Console and Web Inspector work started  
• about:memory partially implemented  
• Firebug compatibility tracking  
• JSD2 planned, work starting | • Inspector is behind schedule  
• Console is not as visually appealing as WebKit tools  
• about:memory needs additional resources  
• Profile Manager is unowned |
Firefox 4: Plan for Platform

JägerMonkey
HTML5 Parser off main thread
64 bit support
Startup timeline optimizations
Reduced I/O operations on main thread
JS threads and GC
DOM Performance improvements
Layers for compositing, scrolling
Pathological performance investigations

Fast, secure, optimized

Faster JS, DOM, and UI
Stable & secure by design
Optimized for today’s hardware
Firefox 4: Plan for Platform

- CSP (allowing secure pages)
- :visited fix (privacy)
- ForceTLS (authenticated login)
- CritSmash
- Early Security Reviews
- PAKE (authenticated login)

Fast, secure, optimized

- Faster JS, DOM, and UI
- Stable & secure by design
- Optimized for today’s hardware

(please don’t overreport)

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Firefox 4: Plan for Platform

Graphics compositing with Layers
Hardware acceleration using Direct2D
Multitouch support
Aero Peek integration
OSX integration
Standards for contacts, cameras, microphones

Fast, secure, optimized

- Faster JS, DOM, and UI
- Stable & secure by design
- Optimized for today’s hardware

(please don’t overreport)
# Firefox 4 Platform: Risks and gaps

<table>
<thead>
<tr>
<th>Theme</th>
<th>Current Projects</th>
<th>Gaps &amp; Risks</th>
</tr>
</thead>
</table>
| Faster JS, DOM and UI responsiveness | • JägerMonkey work started  
• DOM performance improvements begun  
• JS threads and GC plan in place  
• Over 50% of I/O off the main thread  
• Layers for graphic compositing and scrolling improvements | • JägerMonkey targets still under evaluation  
• DOM performance measurements hard to prove  
• Our use of cache is potentially holding us back immensely  
• Several ideas for responsiveness, but all unowned |
| Stable and secure by design | • :visited change complete  
• CSP, ForceTLS implementations well underway  
• CritSmash program tracking to targets | • No sandboxing beyond OOPP for Jetpack and plugins |
| Optimized for today’s hardware | • Direct 2D optimizations  
• Harfbuzz for text rendering  
• Multitouch support  
• Windows 7 feature integration | • Decisions need to be made for supported/unsupported OSes  
• No plan for Firefox on touch-based devices (Fennec only?)  
• Need plan for driver hell in Direct2D space |
Firefox 4: Release Milestones

Firefox 3.6
- 3.6
- 3.6.1
- 3.6.3
- 3.6.4
- 3.6.5 (OOPP)
- 3.6.6
- 3.6.7
- 3.6.8

Firefox 4
- A1
- A2
- A3
- A4
- A5
- Beta
- frequent beta updates
- String, UI freeze
- API freeze
- RCI

Jan Feb Mar Apr May June July Aug Sep Oct Nov Dec

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Firefox 3.6.4
- Mozilla 2010 summit

Firefox 3.6.5
- String, UI freeze

Firefox 4
- Beta
- frequent beta updates
- API freeze
- RCI

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PLANS MIGHT CHANGE
(please don’t overreport)

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Firefox 4 - Beta Program

• Aimed at early adopters and mainstream users
• Frequent updates (14 - 21 days)
• Interactive
• Focused on gathering feedback and data from “the field”
Firefox 4 - First Beta (OMGNOTFINALDONOTQUOTE just belzner’s proposal)

- Most of the new theme for user evaluation
- New extension manager for user / add-on developer evaluation
- Tab management improvements, basic application tab support
- HTML5 parser, CSS3 transitions, CSP, WebSockets, :visited
- “Reference” Layers implementation
Firefox Platform: Doing two things at once

• in 2009 and early 2010 we proved that we can split our focus

• once we branch for beta, must have plans in place

• priority will be given to full content/chrome process separation

• will start developing & communicating those plans next month
Firefox 4

- Project updates Mondays @ 11am PT
- Development tracking Tuesdays @ 11am PT
- Product planning Wednesdays @ 11am PT