

mozilla

Mozilla & Firefox

Sylvestre Ledru

N'hésitez pas à m'interrompre !

(désolé, c'est la seule phrase en Français)

Who am I ?

34

- Curriculum
 - DEUG MIAS (first year)
 - DUT informatique de gestion
 - IUP MIAGE
 - DESS informatique distribuée (Paris XII)

Who am I ?

Before Mozilla

- PhD in Australia & Paris XII (3 months)
- Worked for two years in a Geophysics software company in Melbourne

Who am I ?

Before Mozilla

- Inria on Scilab (+ Digiteo + Scilab Enterprises) for 7 years
- IRILL for 3 years (part time)

Who am I ?

Before Mozilla

- Debian for 7 years (contributor)
- LLVM/Clang developer for 3 years
- Mozilla for a year – Firefox Release manager
Volunteer on Thunderbird

About:Mozilla

- Adventure started by Netscape (~1994)
- Failed against Microsoft (Internet Explorer)
- Decided to open the sources of Netscape



- Documentary about this period:

Code rush:

<https://www.youtube.com/watch?v=u404SLJj7ig>

About:Mozilla

- Brought by AOL in 1998
- AOL gave some money to the Mozilla Foundation in 2003
- Mozilla was nothing
- Massive refactorings
- Firefox 1.0 released 10 years ago
 - A game changer (popup blocker, tab, etc)



About:Mozilla

- About 1050 employees
- 12 offices (Mountain View, SF, Toronto, Taipei, Paris, etc)

About:Mozilla

- Revenue of \$314M (2013)
 - Mainly from the search deal
 - Google before 2015, now Yahoo, Baidu and Yandex
 - Some other source of revenues (add, donation, etc)
- Salaries ?
 - Important competition with Fb, Twitter, Google, etc
 - Bonus



About:firefox

About:Firefox

- Web browser with ~500 million users
- About 12.5M Lines of code
- Only (major) browser developed by a non-profit
- Support 4 operating systems:
 - Microsoft Windows XP => 8 (32 & ~64 bit)
 - GNU/Linux
 - Mac OS X
 - Android

Soon iOS

About:Firefox

- Third browser in term of market share
- 12 to 22 % market share
(don't trust them)
- Chrome started in 2008















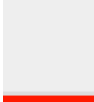





About:Code

Gecko is the based of Firefox

And ... Thunderbird, Seamonkey and
Firefox OS

... has had **230,442 commits** made by
3,254 contributors
representing **12,625,661 lines of code**

About:Code

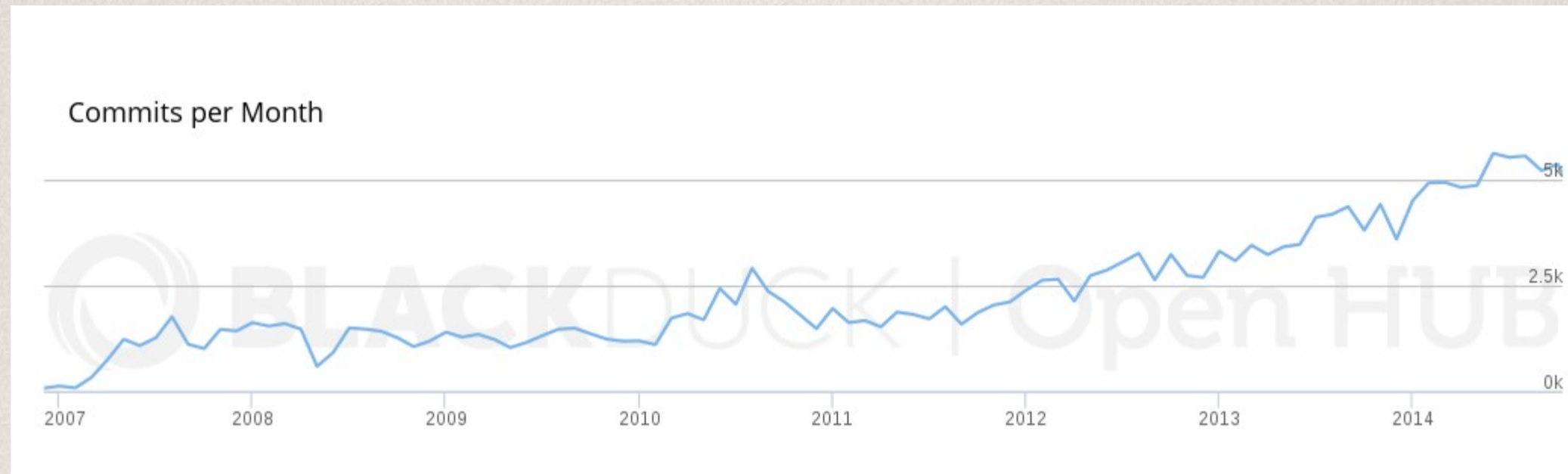
Language	Code Lines	Comment Lines	Comment Ratio	Blank Lines	Total Lines	Total Percentage
 C++	4,672,191	759,328	14.0%	994,916	6,426,435	 38.1%
 JavaScript	2,582,781	406,071	13.6%	398,976	3,387,828	 20.1%
 C	1,908,830	569,284	23.0%	340,596	2,818,710	 16.7%
 HTML	1,433,843	44,196	3.0%	130,543	1,608,582	 9.5%
 XML	615,470	15,551	2.5%	46,428	677,449	 4.0%
 Java	382,887	91,187	19.2%	73,538	547,612	 3.2%
 Python	338,610	102,401	23.2%	90,145	531,156	 3.2%
 Autoconf	173,533	2,456	1.4%	24,893	200,882	 1.2%
 CSS	144,758	2,106	1.4%	27,408	174,272	 1.0%
 Assembly	136,031	19,223	12.4%	24,615	179,869	 1.1%

Source : openhub

https://www.openhub.net/p/firefox/analyses/latest/languages_summary

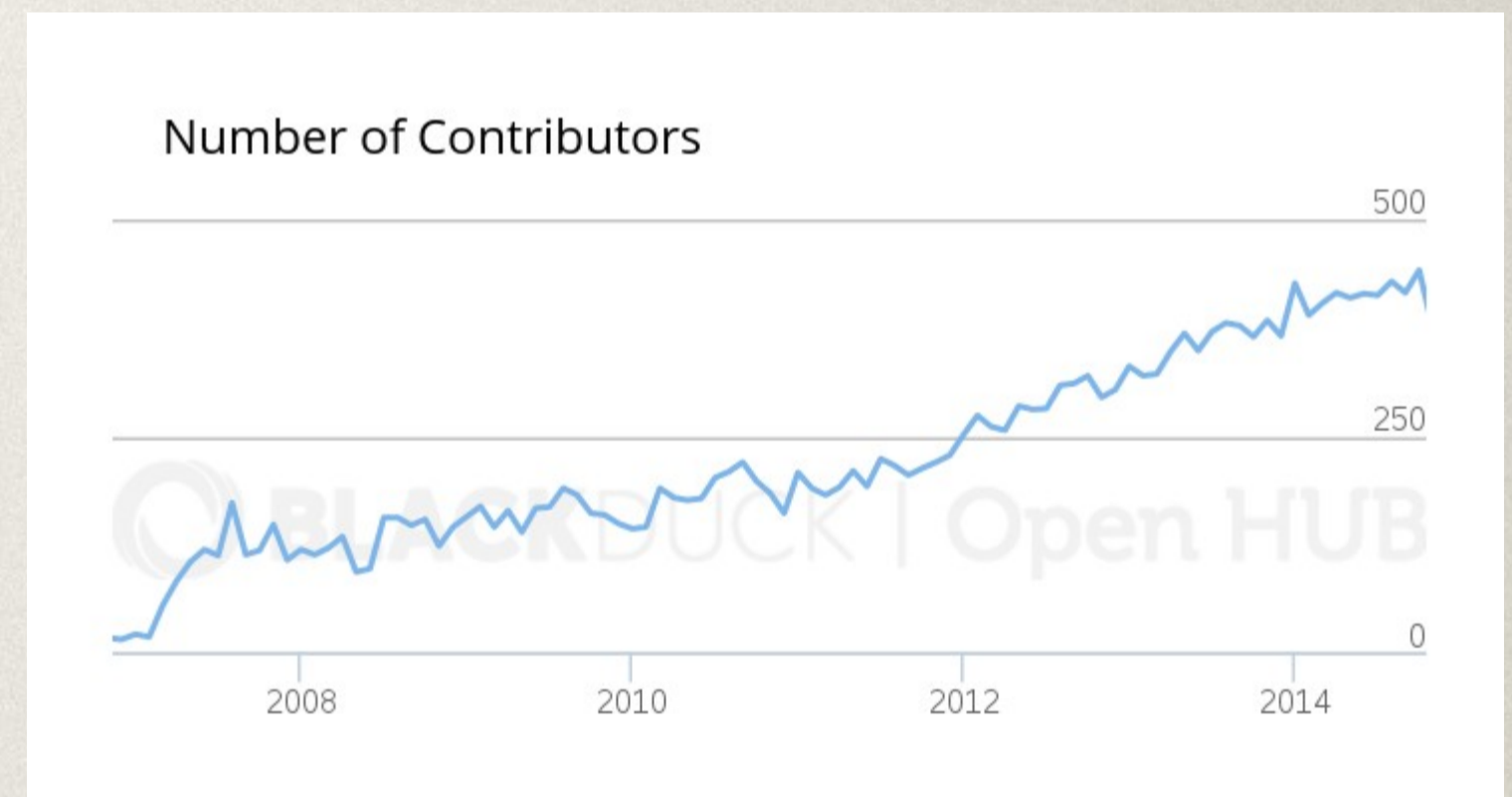
Some Lovely Graphs

Healthy open source project?



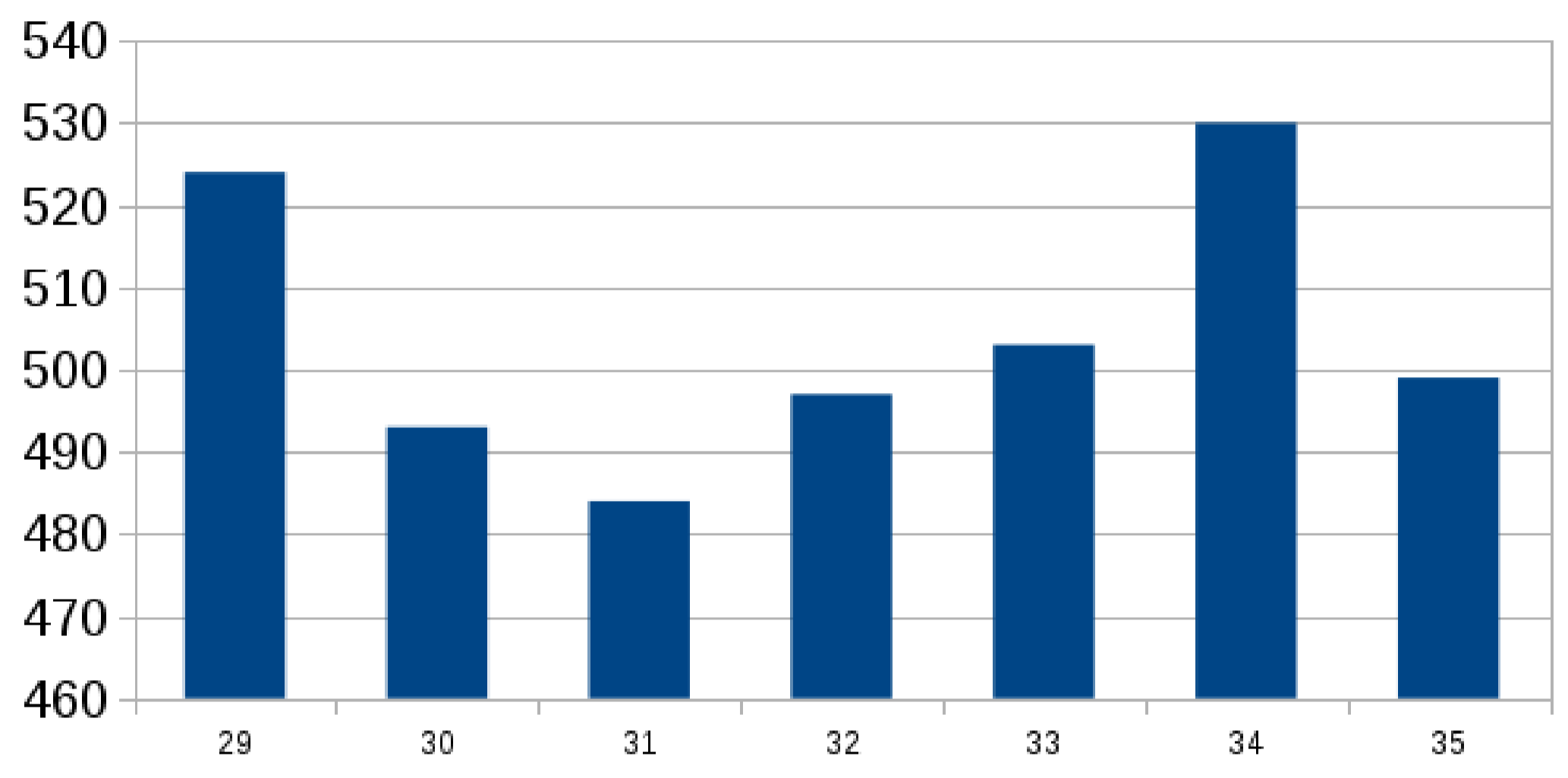
Activity

30 Day Summary	12 Month Summary
<i>Dec 9 2014 — Jan 8 2015</i>	<i>Jan 8 2014 — Jan 8 2015</i>
3340 Commits	59599 Commits
327 Contributors including 40 new contributors	Up +15113 (33%) from previous 12 months
	1212 Contributors Up +180 (17%) from previous 12 months

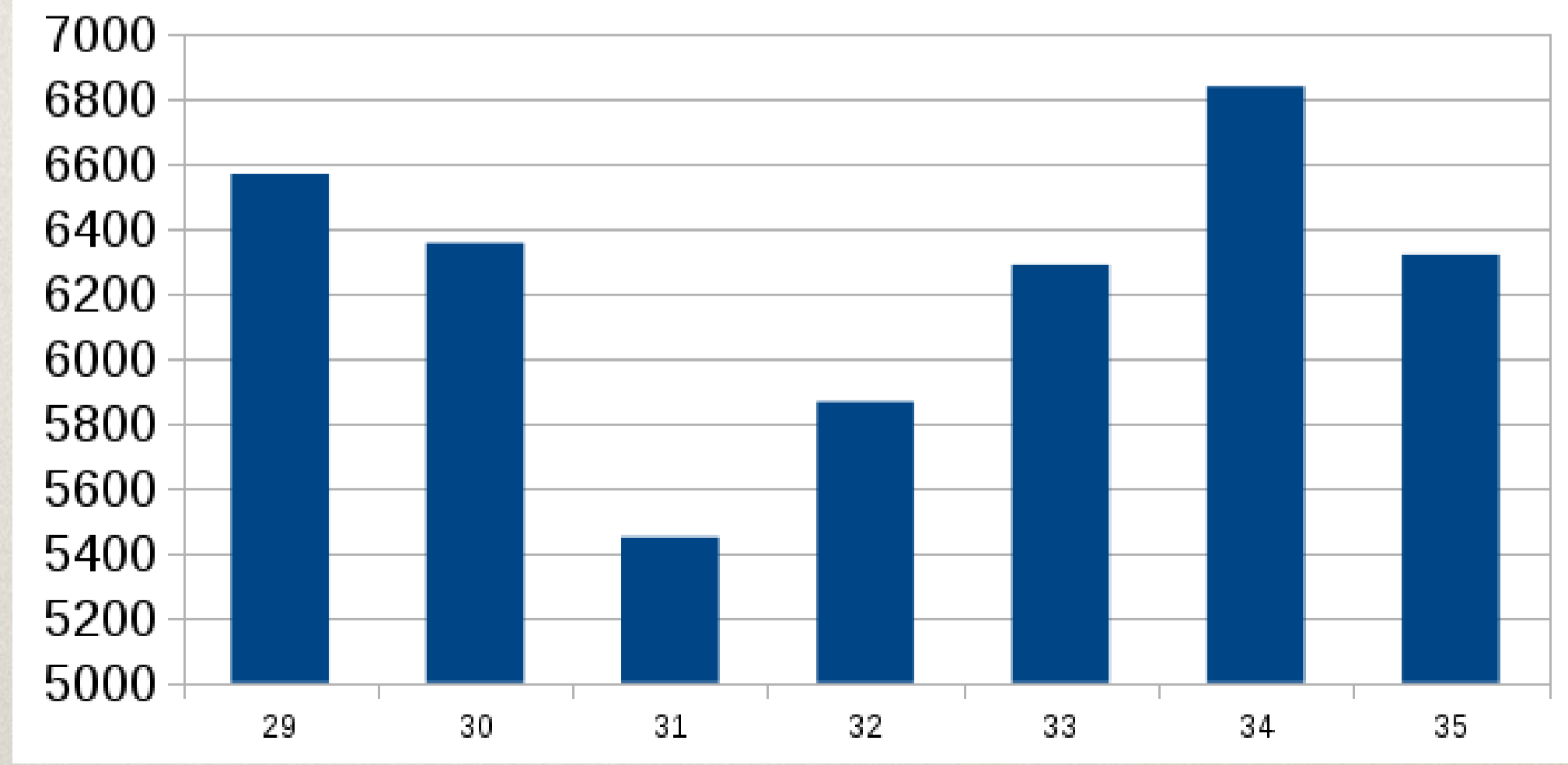


More contribution stats !

Developer per version



Changeset per version



Contributions ?

- Paid staff - Mozilla Corp/foundation
334 - 65 %
- Volunteers
141 - 28 %
- Sony
5
- Telefonica
3
- Adobe
3
- Tor
- Google
- Microsoft
- Cisco
- ...

Firefox Releases

- One major release every 6 weeks
- ESR – lock-step with major releases, security focus
- In parallel, 3 other feedback *branches* :
 - Nightly - updated daily with recent code changes
 - Developer Edition (a.k.a Aurora) + aurora on mobile - updated on change
 - Beta – 2 per week Desktop – 1 for Mobile
- Managed by 4 people (3 staff, one volunteer)

Train model

More about ESR

Major ESR (Extended Support Release) version is created every 8 months, with two cycles of overlap with the prior version

- Security (high/critical) every 6 weeks (in sync with Firefox)
- Other issues by request from mailing list community
- Used by some GNU/Linux distributions (example: Debian), major companies, university, etc
- Active community mailing list, various sized orgs
- Base for Thunderbird & Seamonkey

Release management

Making sure that Firefox releases are released in good shape and on time, deciding when to build & when to wait for patches.

Coordinate work between :

- Quality Engineering
- Stability
- Release Engineering
- Firefox Developers
- L10n
- Security
- User Advocacy
- Addons
- Marketing

The screenshot shows the Mozilla Wiki page for 'Release Management'. The page layout includes a sidebar on the left with navigation links such as 'Main page', 'Product releases', and 'How to Contribute'. The main content area has a 'Discussion' tab selected, and a search bar. A prominent orange banner at the top of the main content area reads: 'New feature! You can now embed Google documents (how-to), calendars (how-to), presentations (how-to) and spreadsheets (how-to). Read more about January's MozillaWiki releases.' Below this banner, the title 'Release Management' is displayed. Underneath the title, there is a 'Quick Links' section with a list of links: 'Release Calendar', 'Release Process', 'Current and Past Releases', 'Public Firefox Merge/Release Scheduling Calendar', and 'Release Scheduling Calendar (more detailed)'. To the right of the 'Quick Links' section, there is a video player showing a meeting with a large video of a man speaking and a smaller inset video of another man.

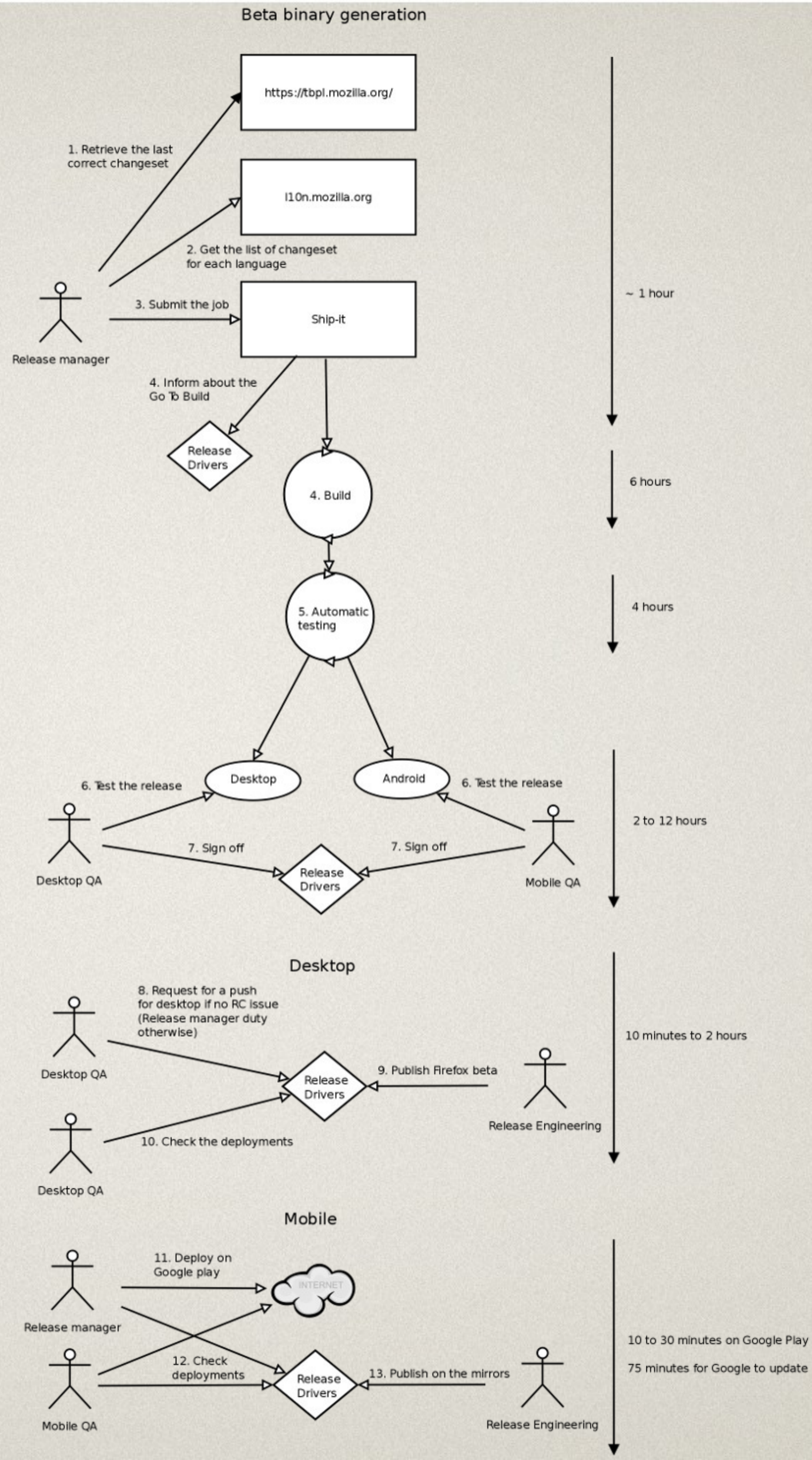
Quality

- A web browser is comparable to an OS (network, JIT, video, sound, parallel, etc)
- Complex code base with legacy code
- Hard to test all cases + test suites are time consuming



Time to release

About: Beta Reliable Process Works



Release Week

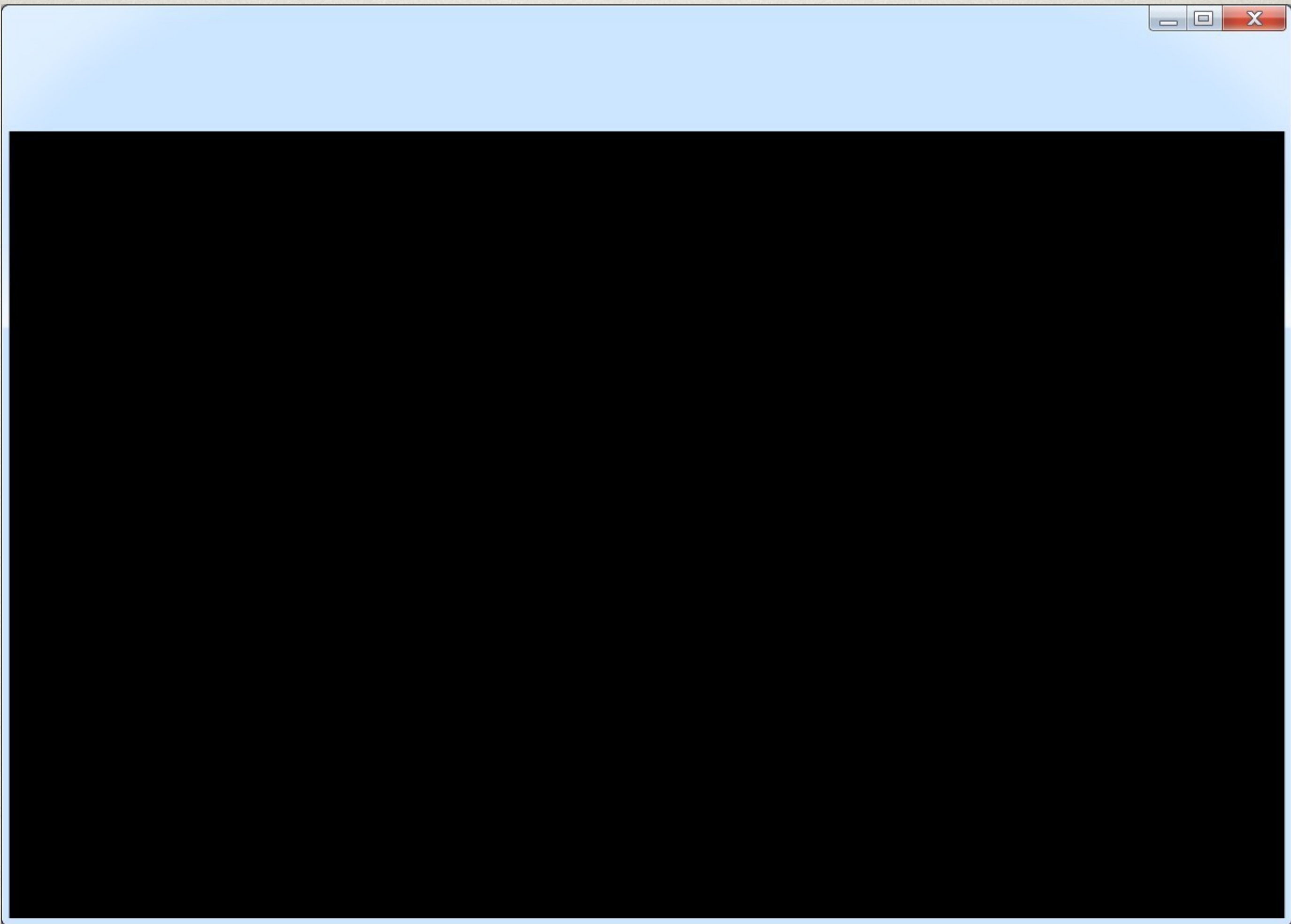
- Our final RC has shipped to Beta pop
- Collect feedback from users, crash data
- Checking for ADP crash or other last-minute risk
- Sign off for release
- Release notes prepared and reviews
- Merge branches, kick off Beta 1 of version.next
- DevEd updates disabled for the week

Release Day

- Published Tuesday at 15:00 European time
- Updates only enabled for 25% users for 24 hrs
- Start watching Bugzilla, Input, crash data

Post-Release Feedback

- Even with all that, we have had failures



Post-Mortem: OMTC

- Example : OMTC « Off-main-thread compositing »
 - Enabled on Mac OS X for a while (Firefox 24)
 - Enabled on Windows during the 33 cycle
 - A few top crashers fixed during the aurora & beta cycle
 - Sign off of all teams for the 33 release
 - For some users, black screen instead of Firefox

What Happened: OMTC

- Some graphic drivers are older, not supported
- We can't test on all devices/systems
- Our telemetry didn't catch any issues
- Our aurora/beta users probably update their graphic drivers and/or user newer ones
- Hard identifying the signal from the noise
- Some users who had the bug think « it is so big that someone will already have reported this »

Lessons Learned: OMTC

- Potential solutions :
 - Do more testing on older devices
 - Get more data of users configurations (graphic cards, drivers versions, etc)
 - Could there be an automated test for a black screen?

What works – Train model

- Releases are no longer a “big deal”
- Missing a train is also not a “big deal”, less pressure to push features that aren't ready
- Flags for enabling/disabling help get test coverage over a few cycles on any release channel
- Small changes can have impact – shorten update throttling, push out more betas



How to contribute

Basic rules

- Don't be shy. We have all been beginners at some point
- RTFM
- Find a mentor/friend to guide you
- Use Firefox nightly
- Report bugs - <https://bugzilla.mozilla.org/>

Think small

- Try to build Firefox
- Start with a small bug
Easy example : remove a C/C++ warning
- Don't try to fix a big issue
You will probably fail
- The workflow represents
an important part of the contribution process

Demos

<http://www.joshmatthews.net/bugzahoy/>

[https://dxr.mozilla.org/mozilla-central/source/
dom/media/raw/RawReader.cpp?from=dom/media/raw/
RawReader.cpp#228](https://dxr.mozilla.org/mozilla-central/source/dom/media/raw/RawReader.cpp?from=dom/media/raw/RawReader.cpp#228)

mozilla

Questions ?

Sylvestre Ledru

@sylvestreledru

sylvestre@mozilla.com